

**School of Design and the Built Environment**

**Integration of Building Information Modelling and Geographic  
Information System at Data Level Using Semantics and Geometry  
Conversion Approach Towards Smart Infrastructure Management**

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**This thesis is presented for the Degree of  
Doctor of Philosophy  
of  
Curtin University**

**September 2018**

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## **Declaration**

To the best of my knowledge and belief this thesis contains no material previously published by any other person except where due acknowledgment has been made.

This thesis contains no material which has been accepted for the award of any other degree or diploma in any university.

Signature:

A handwritten signature in black ink, appearing to read "Junxing", written in a cursive style.

Date: 23-October-2018

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## **Acknowledgements**

Pursuing a doctoral degree is not an easy-to-do task, especially in a foreign country where you would probably encounter problems concerning language, culture, religion, and so forth, in addition to the challenging degree itself. I have experienced enormous desperation in identifying a meaningful topic, frustration of failing experiments, and many other difficulties, but eventually I managed to go through all of those. That is right the meaning of life, to become a man after suffering from enormous pain and still have the mind to keep going forward no matter how many fails you have had.

On completion of this thesis, I would first like to express my sincere appreciation to my family, for their unconditional support for my decision to study abroad. Without them, this special experience would never take place.

Special thanks to my supervisors, Professor Xiangyu Wang, Professor Graeme Wright for their dedication and commitment to my research, and Dr Yi Tan from Hong Kong University of Science and Technology from whom I attained the initial inspiration for this research. Without them, I would never be able to go this far.

A very special gratitude goes out to all down at Main Roads Western Australia and Woodside Energy for providing funding and part of the experiment data.

I am also grateful to my friends and colleagues who have contributed to my research directly or indirectly, including Dr Hun-ling Chi, Dr Jun Wang, Ms Angela Wilson, Dr Jian Chai, Mr Peng Wang and my former co-supervisor Dr Xin Liu.

And finally, last but by no means least, to the Carpenters, Debbie Carpenter, Brodie Carpenter and Luke Carpenter. You have always been so kind and generous to me since the first day I moved into your house. I feel like I had been in my own house all the time. Thanks to my roommates, Joe Fogelman and Dean Quaife for helping me with questions regarding Australia and the English language.

Without family and friends, life would be meaningless. Life is a long journey during which new people might come while some old ones may leave that you might never meet again. Cherish everyone around you and the time you had together.

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## Abstract

Building Information Modelling (BIM) and Geographic Information Systems (GIS) originate from different domains and were designed for different purposes; however, interest in integrating them has grown rapidly over the past decade. Such integration could be carried out at roughly two levels, i.e. application and data levels. This study focuses mainly on foundational data-level integration, as full application-level integration is only possible with successful data-level integration. The aim of this study is to achieve data transformation from BIM to GIS, specifically from IFC to Shapefile, so that BIM models can be utilised in a GIS environment.

First, the principal problems constraining BIM/GIS integration are identified through a literature review; data level problems are categorised into two sub-levels (geometry and semantic levels).

Second, solutions are proposed for the problems identified:

- For geometry transformation, the general problem is that the commonly used tool, the Data Interoperability extension for ArcGIS (DIA) built on the Feature Manipulation Engine (FME), is not robust enough, and may crash, resulting in geometry errors or semantic information losses. This study provides two solutions:  
(a) Enhancing the conventional approach. Different transformation paths are identified and tested; if the tool crashes while transforming IFC to Shapefile, an intermediate data format can be used. Additionally, an efficient and economic approach is developed to geo-reference 3D objects for addressing geometric errors.  
(b) An open source approach (OSA) is created using open source technologies, including Python and many of its packages, with these offering more flexibility and reliability than commercial software packages and allowing access by more people. The OSA is mainly focused on extraction of geometric information as well as of a limited number of attributes.
- For problems relating to semantic information losses, an extract and attach approach (EAA) is developed, with an advanced algorithm designed to automatically search for object attributes in the XML-based IFC files (ifcXML). This searches for default attributes and hidden attributes that are stored in independent attribute entities, then attaching them to the geometry model to enrich its semantic information.

Finally, the proposed approaches are validated using construction scenarios such as bridge and oil rig models. Based on these transformed BIM models, an

infrastructure management system is developed using Web-GIS technology, combining 2D and 3D techniques to optimize visualisation and management of infrastructure. This system also has the capability to receive and visualize real-time sensor data; it is basically a framework, which could be used to manage various targets, including bridges, oil rigs, and other kinds of infrastructure, provided that detailed BIM models are available. It is also an extensible system to which new functions can be added, without altering existing ones.

The main findings of this study include the following:

(1) If the DIA crashes during execution, an intermediate format can be used to complete the transformation of IFC to Shapefile, at the cost of different amounts of geometric and semantic information losses, depending on the intermediate format used. If the conventional approach is used, direct transformation from IFC to Shapefile is therefore always preferred. Otherwise, 3DS, VRML, SKP, COLLADA, and OBJ could be used as intermediate formats.

(2) The 3D geo-referencing approach proposed in this study can be successfully applied. Compared with rebuilding the model from scratch, this technique is more efficient. In this study, it offers time savings of 90%, since geo-referencing the bridge model takes about 2 hours, while rebuilding it takes at least 20 hours.

(3) The OSA can be used to transform IFC to Shapefile; it is more efficient and reliable than the DIA and its performance is comparable to that of the FME. OSA models are more compact and thus easier to manage and could be used in a wider array of applications, such as 4D construction simulation.

(4) More attributes can be extracted using the EAA than using the DIA. However, it has also been found that the transformation from IFC to ifcXML cannot guarantee information consistency, as some changes in content (e.g. for “Tag” and “Name”) were observed after transformation.

(5) Customised functions for document object model (DOM) manipulation were developed to improve data processing efficiency; these are shared with other researchers to facilitate their studies.



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# **Integration of Building Information Modelling and Geographic Information System at Data Level Using Semantics and Geometry Conversion Approach Towards Smart Infrastructure Management**

## **1 Background and motivation**

### **1.1 Introduction**

This study tries to integrate Building Information Modelling (BIM) and Geographic Information Systems (GIS) at data level, which is the foundation of the further application-level integration. This chapter sets the background for the research and provides an introduction to this study. It also provides an overview of the subsequent chapters of this thesis.

The rest of this chapter is organised as follows. Section 1.2 provides the background of the study, including the definitions of BIM and GIS, motivation for integration, and levels of integration. Section 1.3 states the problems involved in BIM/GIS integration. Section 1.4 presents the scope and aim of the study. Section 1.5 provides an overview of the chapters to follow. Section 1.6 concludes the chapter with a summary.

### **1.2 Background**

#### **1.2.1 Overview**

BIM and GIS have their roots in different knowledge areas. BIM serves the Architecture, Engineering and Construction / Facility Management (AEC/FM) domain by providing detailed 3D building models that can be used throughout the lifecycle of a construction project, including plan, design, construction, operation, and dismantling (Volk, Stengel, and Schultmann 2014, Azhar 2011). GIS analyses and visualises location-related problems in geospatial science, environmental science, and natural resource management by integrating heterogeneous spatial data and various attribute data, and deriving knowledge through various spatial analysis tools and modelling approaches (Longley 2005, Chang 2006).

GIS and BIM have both developed rapidly in recent times. GIS technologies have been around for more than 50 years, since the advent of the first well-recognised GIS application, Canada Geographic Information System (CGIS) in 1966 (Coppock and Rhind 1991). Over this period, GIS has evolved from a small specialist technology to one that has broad use and impact across many disciplines. For example, governments in the developed countries of Europe and North America profoundly rely on GIS for disaster management (Gunes and Kovel 2000, Cutter 2003, Barredo 2007). A recent report from P&S Market Research shows that the global GIS industry had a value of \$8.98 billion in 2016, estimated to continue to grow at a compound annual growth rate of 10.1%, to reach \$17.51 billion by 2023 (Research 2017). The BIM world is also expanding. It is estimated that the global BIM market will grow from \$3.16 billion in 2016 to \$7.64 billion by 2022 (MarketsandMarkets 2017). Due to the growing importance of BIM, many countries, including Japan, UK, and member states of the European Union (EU), specify or mandate the use of BIM for publicly-funded construction and building projects (Travaglini, Radujković, and Mancini 2014).

There is now a trend towards merging BIM and GIS. Figure 1-1 presents total citations referring to BIM/GIS integration per year from 2009 to 2017. Over this period, the number of citations increased 100-fold, from only 3 to 358. Behind the rising curve is researchers' growing interest in BIM/GIS integration, reflecting the significance of this topic.

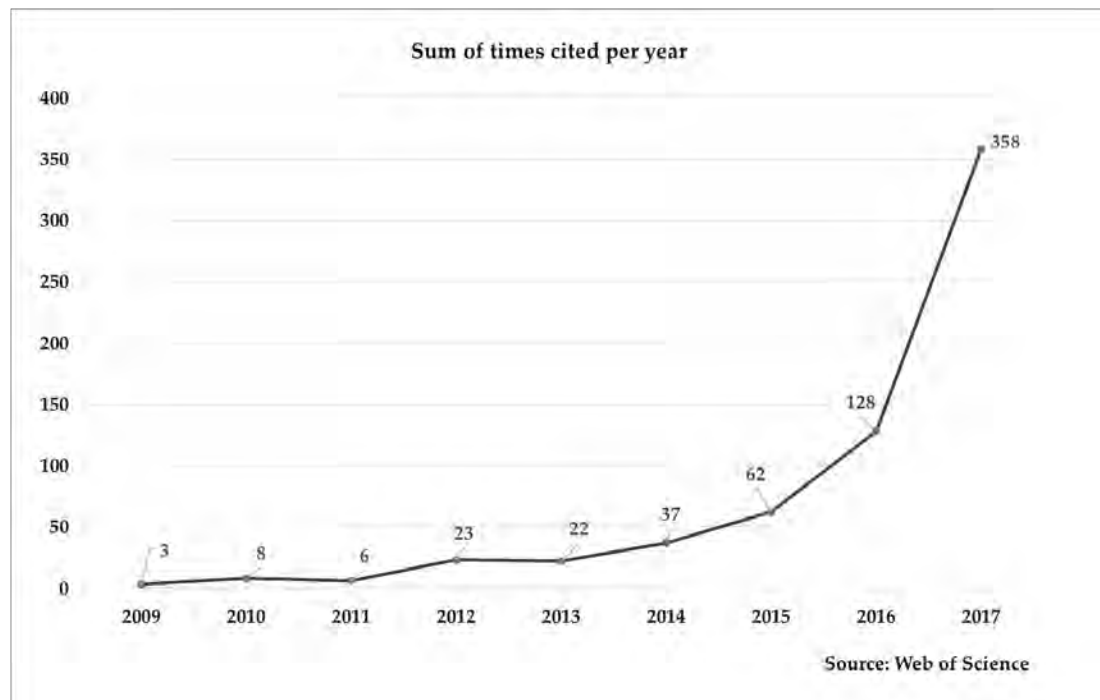


Figure 1-1 Sum of times cited per year from 2009 to 2017 regarding BIM/GIS integration.



## 1.2.2 Geographic Information System (GIS)

### 1.2.2.1 GIS overview

The term “Geographic Information System” was first used by Roger Tomlinson in 1968 in his paper "A Geographic Information System for Regional Planning" (Tomlinson 1968). Narrowly speaking, GIS is a platform comprising hardware, software, and a spatial data and system manager, with various toolsets that can be applied to heterogeneous data, especially spatial data; these allow integration, storage, manipulation, analysis, and visualisation, used to reveal patterns, trends, and relationships that might not be directly evident from the original form (Amin and Noori 2016). Broadly speaking, GIS means Geographic Information Science which is a rapidly developing field that is concerned with the concepts, principles, and methods that are put into practice using the tools and techniques of Geographic Information System (Longley et al. 2015). In short, Geographic Information Science is the study of Geographic Information System.

Therefore, GIS can refer to a discipline that involves a number of fields such as computer science, cartography, geography, spatial science, statistics and surveying, or a specific application such as ArcGIS, QGIS, SuperMap, and MapGIS. Figure 1-2 shows relevant disciplines and their contribution to GIS.

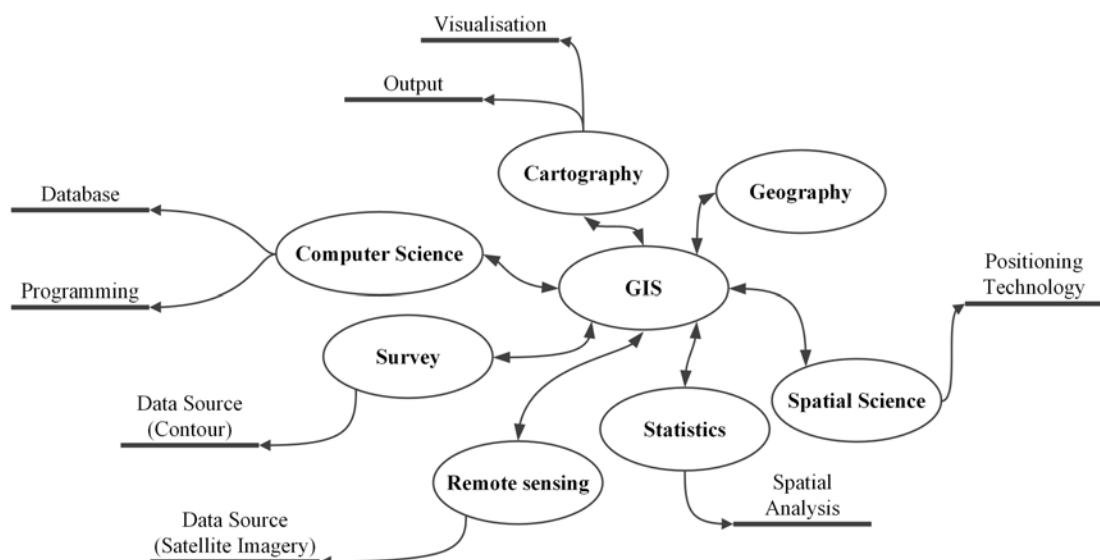


Figure 1-2 GIS and related disciplines.

Surveying, remote sensing, and spatial science provide input data for GIS, in forms such as cadastral maps, satellite imagery, and Digital Elevation Models (DEMs). These data can be stored in databases and analysed using statistical and spatial analysis methods. Computer science integrates high-level algorithms with digital systems and

programming to facilitate data management and processing Database technology is utilised to efficiently design a GIS database, and store and query data stored in it using Structured Query Language (SQL). Finally, the results derived, either from queries or from spatial analysis, can be visualised using cartography in the form of map outputs.

### ***1.2.2.2 Focus of GIS***

In terms of traditional applications, GIS continues to be used for purposes of site selection (Yadav et al. 2017, Tsangaratos et al. 2017, Chaudhary et al. 2016, Horn and Cross 2016, Al-Khafaji and Abdurraheem 2017), land use and land cover change detection (Kumar, Velayudham, and Kanthavel 2017, Szabó et al. 2016), environment protection (Aguilar et al. 2017, Pagán et al. 2017), environment risk assessment (Nixdorf et al. 2017, Kourgialas and Karatzas 2017), property ownership and taxation, resource and energy management (Bousquet et al. 2017, Aly, Jensen, and Pedersen 2017, Amirinia, Mafi, and Mazaheri 2017), management of utilities (Anaya and Pollitt 2017), cost efficiency (Lim and Koo 2016), and prediction of natural hazards including wildfires (Prieto Herraes et al. 2017), floods (Liu et al. 2017), and landslides (Miao et al. 2017), among many others.

There are also new applications that extend its capabilities and reveal new knowledge; these include indoor navigation (Li et al. 2016), data mining (Chen, Panahi, and Pourghasemi 2017), big data (Yao et al. 2017, Xing and Sieber 2016), Internet of Things (IoT), Smart City (Lv et al. 2016), Artificial Intelligence (AI) (Crişan, Pintea, and Palade 2017), and parallel computing (Wei and Murray 2016, Zhao et al. 2016), among others. In recent years, GIS has embraced Web-based, and real-time technologies to provide wider and instant access to geospatial data. Developed applications include Web GIS-based flood management and farm animal monitoring systems (Duruz et al. 2017, Chen et al. 2017), real-time threat reporting systems, and shelf life prediction systems (Bobek et al. 2016, Sciortino et al. 2016).

The GIS world is also strengthening its 3D capabilities via both internal and external approaches. In the former case, it is developing new applications or upgrading existing applications that have the ability to create and modify 3D models. Externally, GIS is seeking 3D data sources elsewhere, for example, in Computer Aided Design (CAD) and BIM (Di Giulio et al. 2017).

### **1.2.3 Building Information modelling (BIM)**

#### ***1.2.3.1 BIM overview***

BIM has emerged as an approach for creating, sharing, exchanging, and managing information among all stakeholders throughout a project life cycle (Wang, Sun, et al. 2015). According to Eastman, who introduced BIM into the AEC/FM domain, the term “BIM” has two meanings (Eastman et al. 2011); it can refer to the Building Information Model or to Building Information Modelling. The former refers to virtual 3D building models containing rich building information, while the latter refers to the process of creating and processing 3D building models. The National Building Information Model Standard Project Committee defines BIM as a digital representation of a facility’s physical and functional characteristics, and a shared knowledge resource for information about a facility, forming a reliable basis for decisions during its life-cycle, from the earliest concept to demolition (States 2016).

In general, BIM can be treated as: (1) a number of tools that improve work productivity - for instance, design managers can automatically detect clashes between different design disciplines using BIM tools; (2) a central database that stores up-to-date project life-cycle data; and (3) a central platform that facilitates collaboration among project stakeholders at different phases (i.e. planning, design, construction, and operation).

#### ***1.2.3.2 Focus of BIM***

BIM plays a key role in digitalising critical building information and creating and maintaining a single source of truth for each project. During the building design stage, BIM is widely used for improving design quality and increasing designer productivity. For instance, Wang et al. applied BIM for Mechanical, Electrical and Plumbing (MEP) layout design and optimisation, achieving significant cost-savings (Wang et al. 2016). Specific BIM uses in the design stage include design reviews, building analysis (e.g. structural, lighting, and energy analyses), code validation, and design coordination (Yung et al. 2014, Wang et al. 2014, Wang, Wang, et al. 2013).

During the construction stage, BIM can be used for site layout planning, construction simulation, tracking and control of construction progress, and digital fabrication (Li, Hou, et al. 2014, Li, Wang, et al. 2014, Wang, Zhang, et al. 2015). A 4D BIM model is created at this stage through the linking of a 3D model to the fourth dimension of time (Koo and Fischer 2000). With the help of 4D BIM, the project team can efficiently simulate the overall construction process before field execution and

identify errors in the logic of the schedule, potential time-space conflicts, and accessibility issues (Koo and Fischer 2000, Chong et al. 2016). When integrating with other technologies such as radio frequency identification (RFID) and laser scanning, BIM can result in greater effectiveness (Fang et al. 2016, Turkan et al. 2012). For instance, Wang et al. developed real-time construction quality control by integrating BIM and laser scanning (Wang, Sun, et al. 2015). Similarly, Turkan et al. applied 4D BIM together with 3D sensing technologies (including laser scanning) for automated tracking of construction progress (Turkan et al. 2012).

During the operation and maintenance stages, as-built BIM models play a crucial role in recording building information that is useful for facility managers to analyse space-related data and perform cost-benefit analyses. With continuous updating, the as-built BIM model can serve as a living information platform that contains an accurate snapshot of the completed space. In addition, other relevant facility information, such as serial codes, warranties, and maintenance records can be also linked to the as-built BIM model. Existing applications of BIM for operation and maintenance management include asset management, space management and tracking, disaster planning and response, maintenance scheduling, and building system analysis (Chong et al. 2014, Wang, Li, et al. 2013).

Recently, Web-based BIM solutions have attracted substantial attention from both industry and academia. Project stakeholders can share their BIM models online, and end-users can access these BIM models via a Web browser. There is no longer a need for clients to install any specialised BIM applications to view BIM projects. However, existing Web-based BIM solutions such as Autodesk Forge (Inc. 2018b) and BIM Surfer (Surfer 2011) are not able to handle large BIM models due to the performance limitations of WebGL. Semantic BIM is another trend which tries to leverage semantic web technologies to facilitate data linking between BIM and other data sources. For instance, Lee et al. developed a linked data system for sharing construction defect information using ontologies and BIM (Lee et al. 2016).

#### **1.2.4 Differences between BIM and GIS**

BIM and GIS are quite different in terms of focus, scope of interest, reference system, and data storage. BIM attempts to model every aspect of buildings (Volk, Stengel, and Schultmann 2014) including their structures and appearances, as well as attributes such as owner, history, and cost for purposes of structural analysis (Zhang and Hu 2011), energy analysis (Azhar, Brown, and Farooqui 2009), construction cost

estimation (Lee, Kim, and Yu 2014), or building maintenance (Motawa and Almarshad 2013). Due to the limited spatial extent of buildings, the spatial scope of BIM is relatively small and a local coordinate system (2D or 3D cartesian coordinate system) is usually adopted to locate objects. On the other hand, GIS usually models regional or national space, or even the entire earth, including oceans, continents, and all types of natural and man-made features, in 2D or 3D. As a result, the spheroidal shape of the earth must be considered in its coordinate system. While GIS can also use a local coordinate system, this is very rare and may be treated as a limitation. Figure 1-3 compares the scope of BIM and GIS.

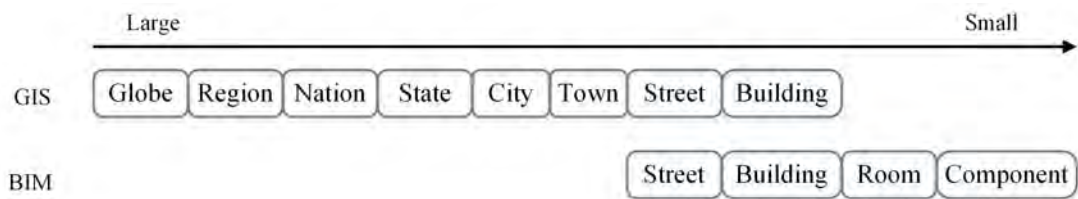


Figure 1-3 Comparative scopes of BIM and GIS.

Due to the different philosophies behind BIM and GIS, they use different data structures to store and exchange data within their own domain. This makes it challenging to achieve full integration of BIM and GIS.

Despite these differences, BIM and GIS do share some common characteristics with respect to data error checking (clash detection/topology analysis) (Azhar 2011), 4D simulation (Hu and Zhang 2011), data content, and extensibility. For instance, both systems model spatial information, with BIM focusing on indoor space and GIS focusing on outdoor space (Kang and Hong 2015a).

### 1.2.5 Drivers for BIM/GIS integration

Before the necessity of merging BIM and GIS was realised, GIS technology was already being applied in the AEC domain. Cheng developed a GIS-based system for real-time erection process monitoring together with barcodes (Cheng and Chen 2002), while ArcSite was designed to determine the optimal location for temporary facilities on construction sites (Cheng and O'Connor 1996). Li used GIS to manage on-site material and equipment to reduce construction waste and improve construction efficiency (Li et al. 2005). GIS has also been applied to optimize the location of tower cranes on construction sites (Irizarry and Karan 2012, Marzouk and Abubakr 2016) and improve safety during construction (Bansal 2011, Zhang et al. 2013).

The motivation for merging the two systems arises from both GIS and BIM sides, due to the potential benefits of integration (Zhu, Wright, et al. 2018, Alsaggaf and Jrade 2015).

GIS requires the assistance of BIM to enhance its 3D capabilities. GIS was initially focused on 2D spatial data processing and its capabilities for 3D data manipulation are quite limited (Saygi et al. 2013). In the case of the Environmental Systems Research Institute (ESRI), for example, its widely-used desktop GIS applications ArcScene and ArcGlobe can only create 3D models by extruding 2D drawings, and only simple editing functions (such as move, rotate, scale, split, merge, and union) are available. Models created in this way only reach Level of Detail 1 (LoD1), according to the definition of LoDs in CityGML, i.e. the most basic block models. The release of ArcGIS Pro has greatly improved the 3D data manipulation capabilities of ArcGIS (Keränen and Kolvoord 2017); however, by far the best practice for creating 3D models in GIS is still using CAD or BIM (such as Revit and SketchUp), and then transforming those models into a format that can be used by GIS.

The detailed 3D models created in BIM can not only help GIS extend its scope by enabling spatial analysis at a finer scale - for example, using building models to establish indoor networks for emergency response (Teo and Cho 2016), extending noise assessment from regional-level to room-level (Deng, Cheng, and Anumba 2016a), and evaluating the influence of flood at building level (Amirebrahimi et al. 2016b) - but also better serve the needs of emerging studies on Smart Cities and finer grained natural hazard impact assessments (Amirebrahimi et al. 2016a), as well as widening its applications in the AEC/FM domain, such as for constructing high energy efficiency buildings (Di Giulio et al. 2017) and minimising construction waste (Blengini and Garbarino 2010). The most important contribution of BIM to GIS would be providing detailed 3D building models incorporating rich building information. All these aforementioned cases would be difficult for GIS to achieve without BIM technology.

As for BIM, it focuses on all building-related activity, including planning, design, construction, operation, and demolition. Environmental factors, such as location and weather, are important factors in these construction activities. For instance, during the planning phase, the location of a building is determined considering various environmental factors, such as light, terrain, and heat. During the construction phase, weather conditions (temperature, rainfall) are monitored, as they may affect construction progress and safety. Before demolition, any impacts on the environment

should be fully investigated. Unfortunately, BIM cannot efficiently handle all these spatial data. BIM would thus also benefit from GIS because it needs the rich spatial analysis functions of GIS to enhance its decision-making capabilities, such as taking distance into consideration when selecting a construction material suppliers (Wang, Zhang, et al. 2017).

BIM and GIS are complementary. GIS practitioners help link BIM to the outside world, while BIM practitioners are introducing GIS to the indoor environment. The two systems can achieve much more in combination rather than operating separately.

Table 1-1 shows the benefits of BIM/GIS integration by comparing with BIM and GIS using a case of microscale flood damage assessment. A microscale flood damage assessment includes the following tasks, including outdoor space modelling, flood simulation, indoor space modelling and the final building-level damage assessment.

Table 1-1 Benefits of BIM/GIS integration, a case of microscale flood damage assessment.

Tasks	GIS	BIM	GIS+BIM
<b>Outdoor space modelling</b>	√	X	√
<b>Flood simulation</b>	√	X	√
<b>Rich indoor space modelling</b>	X	√	√
<b>Building-level damage assessment</b>	X	X	√

In this case which aims to assess building-level flood damage, GIS alone is capable to model the outdoor space and conduct the large-scale outdoor flood simulation, but without the detailed indoor space models, GIS is unable to assess the damage to buildings. On the other hand, even though BIM can model the detailed indoor space, but it lacks the ability of outdoor space modelling and flood simulation, it cannot achieve the goal as well.

### 1.2.6 Levels of integration

The integration of BIM and GIS can be conducted at several levels. Irizarry, Karan et al. (Irizarry, Karan, and Jalaei 2013) categorised relevant studies into two interrelated levels: fundamental and application levels. The fundamental level focuses on data exchange standards and interoperability at the data level, while the application level concentrates on the development of new methods that utilize the full potential of BIM and GIS. Kang and Hong (Kang and Hong 2015a) classified relevant studies into five groups based on similar subject keywords, namely schema-based, service-based, ontology-based, process-based, and system-based approaches.

Meanwhile, Amirebrahimi, Rajabifard et al. (Amirebrahimi et al. 2016a) present a three-level framework, grouping studies into application, process, and data levels. At the data level, data structures are modified to meet the requirements of the other system, or existing data standards are extended, at either of two sub-levels, i.e. geometry or semantic levels. At geometry level, geometric information is translated, while semantic-level integration emphasises full attribute information translation.

At the process level, both BIM and GIS are adopted in a workflow and cooperate with each other. Application-level integration has two forms. (1) One form is using BIM and GIS technologies together in a project. For example, Wang et al. used building models and spatial analysis to select appropriate suppliers (Wang, Zhang, et al. 2017). Irizarry, Karan et al. integrated BIM/GIS in construction supply chain management, with BIM providing detailed information about buildings and GIS used to visualize logistics patterns and material layouts, and to track materials and resources (Irizarry, Karan, and Jalaei 2013). Tan et al. used BIM and GIS to optimize lift operations and vessel transport schedules for disassembly of multiple offshore platforms (Tan et al. 2018). (2) The second form is incorporating the functionalities of one into the other by developing application extensions, representing a more advanced form of integration.

Application-level integration is the most difficult to achieve and tends to be time-consuming, relying on full data exchange between BIM and GIS. Data-level integration is the most essential and should receive the most attention and effort. Data exchange at the data level of integration is the foundation for application-level integration (Zhu, Wright, et al. 2018). Progress in data-level integration can facilitate data-level integration. The relationship between application-level and data-level integration is shown in Figure 1-4.

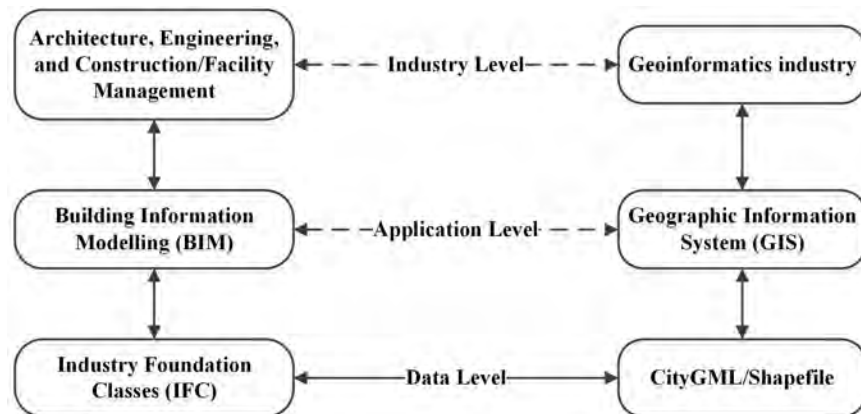


Figure 1-4 BIM/GIS integration levels.



The data-level integration has two sublevels, i.e. geometry and semantic levels. Geometry-level integration is about the transformation of geometric information, while semantic-level integration is about the transfer of semantics, which is more difficult.

### **1.3 Problem statement**

For full integration of the two systems, a number of challenges need to be addressed.

(1) The first and most fundamental challenge is efficient information exchange. Currently, few options are available for users to transform Industry Foundation Classes (IFC) to Shapefiles. This is mainly conducted through the Data Interoperability extension for ArcGIS (DIA), a commercial extension package for ArcGIS to expand the range of supported data formats (ESRI 2018b). Behind the DIA is an independent data engine, the Feature Manipulation Engine (FME), which acts as a “Swiss army knife” for data exchange (Software 2018). It supports a range of data formats including CityGML, Shapefile, and geodatabase (Jusuf, Mousseau, Godfroid, and Hui 2017, Jusuf, Mousseau, Godfroid, and Soh 2017) and can be run independently. In comparison with the complicated FME, the DIA is more widely used because of its simplicity.

However, the DIA is known for its poor performance in relation to IFC/Shapefile transformation. (a) Inappropriate parameter settings may result in unexpected crashes. (b) There may also be geometric information errors. In situations where direct transformation fails, it is possible to use an intermediate format (IF), such as 3DS and Collaborative Design Activity (COLLADA), as a connection between IFC and Shapefile to finalize the transformation. However, this comes at the cost of geometric information losses (Zhu, Wang, et al. 2018). (c) The number of attributes DIA can retrieve is far less than those offered by IFC, which means significant semantic information losses (Zhu et al. 2017). Thus far, no perfect approach is yet available to perform IFC/Shapefile transformations.

(2) The second challenge, from a broad perspective, is the semantic mismatch between the AEC domain and the geospatial industry. BIM serves AEC/FM, which puts emphasis on buildings, bridges, and other infrastructure closely related to cities, while GIS serves the geospatial areas, focusing on natural features on the earth surface, such as lakes and forests, and some artificial features, such as roads and buildings. When comparing the two, GIS covers a wider range of features on earth; however, in

terms of buildings, BIM includes far more detail than GIS. This is a major challenge, which cannot be solved without the collaboration of relevant organisations in both areas.

## **1.4 Scope and aim**

This study focuses on the basic challenge of BIM/GIS integration, i.e. data exchange (data-level integration). The second challenge outlined above involves amendment of relevant existing standards, such as IFC and City Geography Markup Language (CityGML); this cannot be accomplished at the level of individuals. The principal aim of this study is therefore to enhance the conventional approach and develop an alternative new reliable open source approach for BIM and GIS to exchange information effectively and efficiently. Specifically, this study aims to:

- (1) Enhance the conventional transformation approach by exploring and testing new transformation paths, in addition to direct transformation;
- (2) Develop a new open source method for more stable, efficient geometry transformation from BIM to GIS;
- (3) Develop an efficient approach for transferring semantic information from BIM to GIS;
- (4) Demonstrate the contribution that BIM/GIS integration could make to the construction industry by developing a Web GIS-based infrastructure management system.

## 1.5 Thesis structure

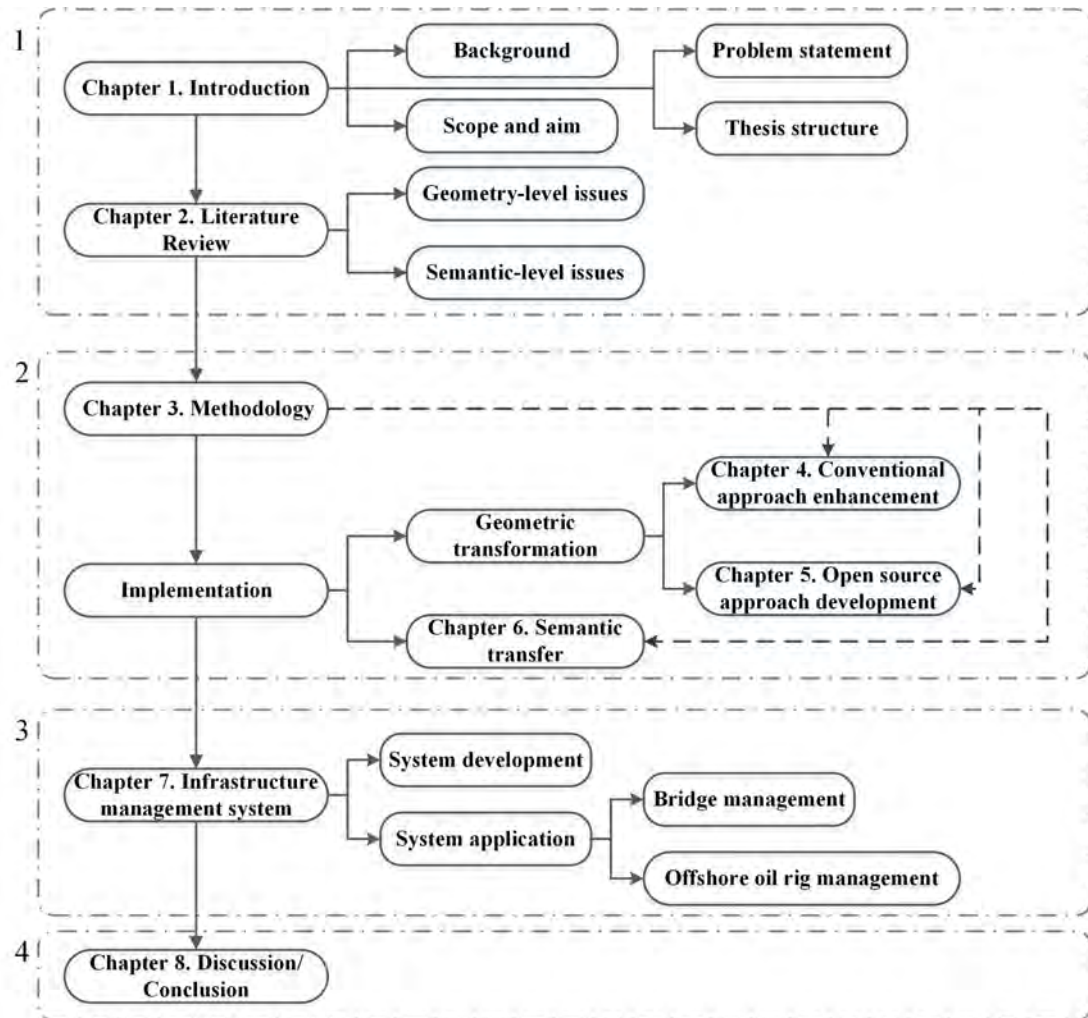


Figure 1-5 Logical structure of the study.

Logically, this thesis has four parts: (1) introduction and literature review, (2) methodology and implementation of IFC/Shapefile transformation, (3) development of the infrastructure management system, and final (4) discussion and conclusion, as shown in Figure 1-5.

In detail, the thesis has eight relatively independent but logically linked chapters. (1) Chapter 1 described the background, problem, scope and aims of this study, as well as the structure of the thesis. (2) Chapter 2 summarises literature on the integration of BIM and GIS, through which main advances in this area are outlined. (3) Chapter 3 outlines the methodology, including important principles involved and the workflow of the entire study. (4) Chapter 4 describes enhancement of the conventional approach of geometric transformation from BIM to GIS using the commercial software, ArcGIS. (5) Chapter 5 describes the development of an open source approach for geometry transformation from IFC to Shapefile. (6) Chapter 6 presents an approach to achieve

semantic information transfer from BIM to GIS. (7) Chapter 7 describes an infrastructure management framework developed with web GIS technology and the transformation of BIM models from IFC. (8) Chapter 8 concludes the thesis and anticipates future directions of BIM/GIS integration. Each chapter is followed by a chapter summary to reiterate the main points and findings.

## **1.6 Chapter summary**

This chapter described the background to this thesis. It discussed the definitions of BIM and GIS, as well as their current research focuses. In the light of these developments, the fundamental differences and similarities between BIM and GIS are identified. In addition, it discussed the motivation for integrating BIM and GIS from both BIM and GIS, and considered the integration at two levels, i.e. application level and data level.

This study is motivated by the inefficient information exchange between BIM and GIS in the context of data-level integration, which is mainly introduced by the use of different data models and the semantic mismatch between the AEC domain and the geospatial industry. In addition, it is argued that the poor performance of commercial software, DIA, for IFC/Shapefile transformation has aggravated the situation.

Hence, this thesis attempts to (1) enhance the conventional transformation approaches which use commercial software, (2) develop a more stable and efficient method using open source technologies, (3) develop an efficient approach for transferring semantic information from BIM to GIS, and (4) demonstrate the contribution that BIM/GIS integration could make to the construction industry.

## 2 Literature review

### 2.1 Introduction

This chapter reviews the research literature in order to understand the problems with the data-level integration. The data-level integration has two sublevels, i.e. geometry and semantic levels.

The remainder of this chapter is organised as follows. Section 2.2 reviews the problems at geometry level in relation to spatial reference system, 3D representation transformation, and level of detail. Section 2.3 reviews the problems at semantic level in relation to semantics loss and solutions. Section 2.4 summarises the chapter.

### 2.2 Geometry-level issues

At the geometry level, the focus is on the transformation of geometric information. In this regard, there are a number of problems to be addressed, regarding the spatial reference system, 3D geometry representation, and level of detail contained in the resultant models.

#### 2.2.1 Spatial reference system

BIM adopts a local placement system (LPS), in which objects defined in their own local coordinate system (2D or 3D cartesian coordinate system) are placed relative to other objects. For instance, any window is placed relative to a wall. In short, LPS represents the spatial relationship between different LCSs. This mechanism facilitates model modification in BIM; if the location of a wall is to be changed, only the wall needs to be modified, while the locations of windows or doors attached to it will be adjusted correspondingly. On the contrary, GIS generally uses a geographic coordinate system (GCS) or projected coordinate system (PCS) to cover large areas such as regions, nations, or even the entire world; each feature inside it has absolute coordinates in the form of latitude, longitude, and altitude. Note that GIS can also use a local coordinate system (LCS) when GCS is not available. This reference system gap can usually be bridged by a method proposed in the literature (Wu and Hsieh 2007) as represented in Equation 2-1:

$$\begin{bmatrix} B_x \\ B_y \\ B_z \end{bmatrix} = M \times \begin{bmatrix} A_x \\ A_y \\ A_z \end{bmatrix} + \Delta, \quad 2-1$$

where vectors  $A$  and  $B$  are coordinates of the same object in different coordinate systems,  $M$  is the transformation matrix, and  $\Delta$  is the origin shift of the destination coordinate system.

However, Equation 2-1 is very generalised, it does not detail how the transformation matrix and origin shift can be obtained. In practice, instances of misuse in acquiring the transformation matrix have been noted (Wu and Hsieh 2007). Such misuse will be fully discussed and rectified in this study.

Another problem is that coordinate system transformations between different levels of LCS are not fully addressed (Deng, Cheng, and Anumba 2016b, Wu and Hsieh 2007, Kang and Hong 2015a, 2018). LCS transformation is a BIM-specific problem because of the use of LPS. During the geometry transformation, elements defined in a lower LCS must be eventually transformed into the site-level LCS, step by step. For example, before the coordinates of a building element can be transformed into a GCS, they must first be transformed into storey-level LCS, building-level LCS, and finally site-level LCS, step by step. Most studies have mentioned transformations between LCSs and GCSs, but transformations between different levels of LCSs have not been fully studied.

### **2.2.2 3D representation transformation**

As mentioned earlier, GIS and BIM adopt different approaches to represent 3D geometry. Taking IFC as an example, BIM can use one of, or a combination of Constructive Solid Geometry (CSG), sweep, and boundary representation (B-rep) to represent 3D geometry, while GIS usually only uses B-rep, such as in CityGML and Shapefile. The different natures of these different 3D geometry representation methods act as barriers for easy data transformation.

From the perspective of IFC to CityGML/Shapefile transformation, the main obstacle is the transformation of IFC B-rep to another B-rep, sweep to B-rep, and CSG to B-rep. The B-rep to B-rep issue is essentially a matter of coordinate system transformation, while sweep to B-rep or CSG to B-rep transformation is still a problem (Deng, Cheng, and Anumba 2016b). Deng et al. claim that sweep to B-rep transformation could be achieved VIA a customised function for CityGML (Deng, Cheng, and Anumba 2016b), but this function has yet be tested against Shapefile.

Another problem is that generations of B-rep are not fully covered. Take the transformation of sweep to B-rep, for example. After the first step coordinate transformation, a sweeping area and a sweeping path can be obtained; however, their

conversion to the faces of B-rep has not yet been fully studied (Deng, Cheng, and Anumba 2016b).

### **2.2.3 Level of detail matching**

When CityGML is involved in data-level integration, level of detail matching is another challenge. LoDs in GIS and BIM reflect the amount of detail contained in a city or building model. Both have five levels, however, with different definitions for corresponding levels. For example, CityGML defines a building model in LoD0 as the footprint or roof edge of the building, while an element defined as LOD100 in IFC may not even be a geometric representation (Forum 2017). As a result, these levels cannot be simply mapped.

Progress is being made on this front. In research conducted by de Laat and Van Berlo, IFC models were successfully exported to CityGML LoD4 (de Laat and Van Berlo 2011). Donkers et al. developed a method to automatically generate CityGML LoD3 building models from IFC files for the construction of a city model (Donkers et al. 2016), while Deng et al. transformed IFC buildings to CityGML models of LoD1 to LoD4 (Deng, Cheng, and Anumba 2016b).

### **2.2.4 Geometry transformation approaches**

Geometry transformation between BIM and GIS can be partly achieved using commercial software packages, such as BIMServer and IfcExplorer for transformation of IFC to CityGML, and the FME and DIA for transformation of IFC to Shapefile. However, none of these tools can fully transfer geometry and semantics between BIM and GIS (Donkers 2013). In this study, we refer to conducting a transformation using commercial software packages as the conventional approach.

## **2.3 Semantic-level issues**

### **2.3.1 Semantics loss**

An obvious problem in data-level integration is that semantic information may not be fully transformed, mainly due to semantic mismatches between the two domains. Most solutions for dealing with semantic losses are exclusively based on the CityGML standard.

Semantic mismatches between BIM and GIS mean (1) that there are different definitions for the same object. For example, a window in IFC is defined as

“IfcWindow” while it is just “window” in CityGML, or (2) that one defines a component while the other does not. For instance, IFC defines beam, column, stair, and so on, while CityGML does not, and generalises these as “BuildingInstallation” (de Laat and Van Berlo 2011, Donkers et al. 2016). This has resulted in problems in some applications. For example, when creating an indoor evacuation network, the lack of corresponding connection information between stairs makes it difficult to create geometric links between different storeys, and impedes the ability to navigate between floors (Xu et al. 2016).

### **2.3.2 Solutions for semantics loss**

The semantics loss problem tends to happen on the GIS side. The main effort in semantic-level integration involves bridging the gap between the two schemas, which means modifications of current schemas are required. Different strategies are being adopted for this purpose, such as schema extension, simplification, or new intermediate schema creation.

#### **2.3.2.1 Schema modification**

In terms of schema extension, it is usually CityGML that is extended. This can be achieved by Application Domain Extensions (ADEs). The CityGML standard supports ADEs to incorporate new definitions for objects. One example would be GeoBIM, developed by de Laat and Van Berlo, defining “stair” in CityGML, which was not originally included (de Laat and Van Berlo 2011). In some cases, the IFC is also extended. Borrmann, Kolbe et al. extended the IFC model for incorporating multi-scale representation of shield tunnels, later transformed into CityGML (Borrmann et al. 2015). Another well-known example is the IFC for GIS (IFG) initiated by the Norwegian State Planning Authority (Statens Bygningstekniske Etat) to provide geographic information within the framework of the IFC schema (El-Mekawy, Östman, and Shahzad 2011). However, this strategy may encounter problems in terms of visualisation. The geometry from a CityGML ADE may not be correctly represented in some 3D viewers such as Autodesk LandExplorer (de Laat and Van Berlo 2011).

In some scenarios, the IFC schema is too complex for specific tasks, such as indoor navigation, and the schema thus has to be simplified. The BIM Oriented Indoor Data Model (BO-IDM) was developed by Isikdag et al. for the purpose of facilitating indoor navigation. It eliminates solid elements in the building model, such as holes in slabs and walls, maintaining only necessary attributes (Isikdag, Zlatanova, and Underwood 2013).



### 2.3.2.2 Creation of new schema

The last approach is to establish a new data model, or an intermediate data model, as the bridge for IFC and CityGML. For creation of a new data model, an example would be the Urban Flood Model, which is XML-based and designed to facilitate micro-level flood damage assessment (Amirebrahimi et al. 2015). In this case, geometry and semantics from IFC were extracted using the DIA and BIMServer respectively, merged again using the unique identifier of each element, and finally imported into the designed data model. In the second scenario of creating an intermediate data model, all information from one end will go through the intermediate data schema in order to reach the other end. This method usually relies on semantic web technology, a set of technologies used to represent, publish, and browse structural data on the Web (Hor, Jadidi, and Sohn 2016).

The core of a semantic web is the ontology, a term that originates from philosophy but that has obtained a new meaning in computer science. An *ontology* typically consists of a finite list of terms and the relationships between them, used to describe a domain of discourse (Antoniou and Van Harmelen 2008). A hierarchy structure is used to describe an ontology. Figure 2-1 presents the hierarchy structure for an ontology of indoor location. In this case, the “Spatial Thing” has four subclasses, including building, premises, floor, and room, while “room” is divided into lab and meeting room. It also shows the relationships between them; for example, the building should be located in premises, while a floor should be in a building, and a building can be adjacent to another building.

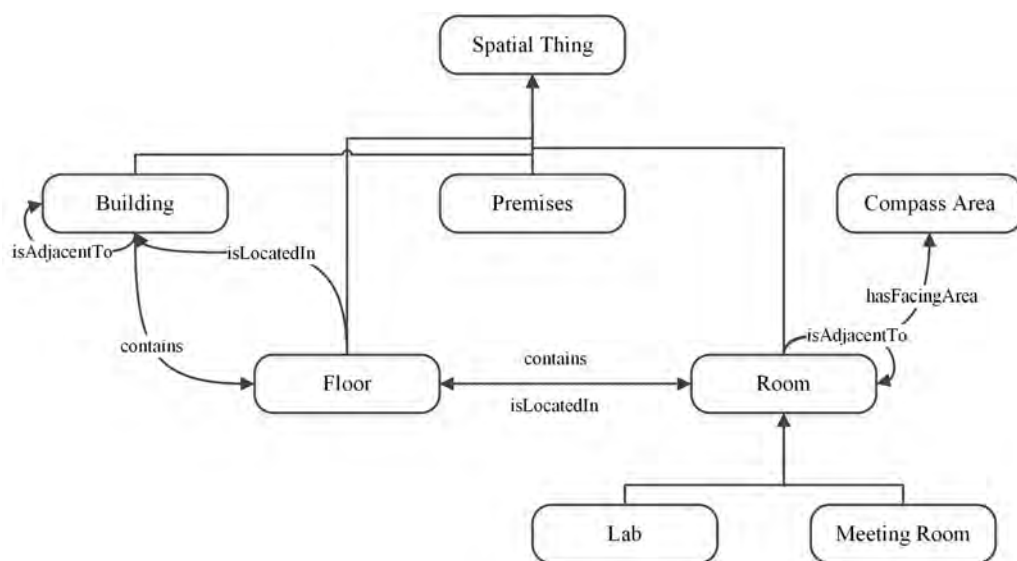


Figure 2-1 An ontology example for indoor location (Wang, De, et al. 2013).

This approach usually comprises three steps. First, ontologies are constructed for both fields. Second, ontology mapping is used to link similar relationships or concepts between source and target ontologies, outputting an extended ontology containing all classes and properties from both GIS and BIM domains. Third, GIS data and building elements are translated into semantic Web standards, after which, a query language, such as SPARQL, can be used to retrieve the information needed from the model (Karan, Irizarry, and Haymaker 2015). Karan and Irizarry used this approach in an attempt to extend BIM's scope to the preconstruction planning phase by enabling site layout design that tends to be carried out by GIS (Karan and Irizarry 2015). Deng, Cheng et al. adopted a similar method for creating a reference ontology called Semantic City Model, which serves as an intermediate model to exchange information between IFC and CityGML, and with which they achieved mapping between BIM and 3D GIS at different levels of detail (Deng, Cheng, and Anumba 2016b). Costa, Sicilia et al. developed a District Data Model (DDM), which contains information from IFC and CityGML data as well as contextual data, to support the retrofitting of energy-efficient districts (Costa et al. 2016). Other examples include the Unified Building Model (UBM), designed and tested by El-Mekawy using BIMServer (El-Mekawy, Östman, and Shahzad 2011), supporting bidirectional information exchange between IFC and CityGML at LoD1–LoD4, and the Integrated Geospatial Information Model (IGIM) by Hor, Jadidi et al. (Hor, Jadidi, and Sohn 2016).

At the semantic level, two strategies are mainly being used, i.e. (i) developing new data models that are usually ontology-based, using semantic web technology, and (ii) modifying existing schema, including schema simplification and extension. These two strategies have one thing in common in that they both rely on existing schemas (IFC/CityGML). Modification is directly conducted against schemas, while in the development of new data models, the classes, relationships and attributes defined in those existing schemas are borrowed to create the ontologies. Even though using existing schemas is not compulsory for establishment of ontologies, schema-based ontologies created for integration are more complete and sounder in terms of structure than those built on the knowledge of a single individual, considering that a schema represents the knowledge of a group of specialists.

The semantic web-based method is promising; however, it is often time-consuming to use these techniques, as they are still under development. Moreover, there are very few widely-accepted ontologies for the AEC domain. Different projects

independently develop their own ontologies, impairing effective information exchange across this field (Karan and Irizarry 2015).

## 2.4 Chapter summary

First, this chapter reviewed the literature in order to understand the integration problems at geometry level. It was revealed that: (1) in terms of spatial reference system, even though mathematic equation is available for coordinate system transformation, it is over-generalised in the case of IFC, and the transformations between different levels of LCS are not fully addressed; (2) in terms of representation transformation, sweep to B-rep or CSG to B-rep transformation is still a problem. While CityGML has been examined in the transformation from sweep to B-rep, the performance of Shapefile has not yet been tested. In addition, the generations of B-rep are not fully covered; (3) when CityGML is used, level of detail matching is another challenge, since the definitions for LoD are not the same in CityGML and IFC.

Then, this chapter discussed causes of semantic mismatches and work carried out by various researchers to solve the problem of semantic loss. It was revealed that two strategies are mainly being used, i.e. modifying existing schema (schema extension or schema simplification) and developing new ontology-based schema using semantic web technology. However, developing new schema can be time-consuming and can be affected by the fact that very few widely-accepted ontologies are available for the AEC domain.

Figure 2-2 presents the main problems and solutions at data-level integration.

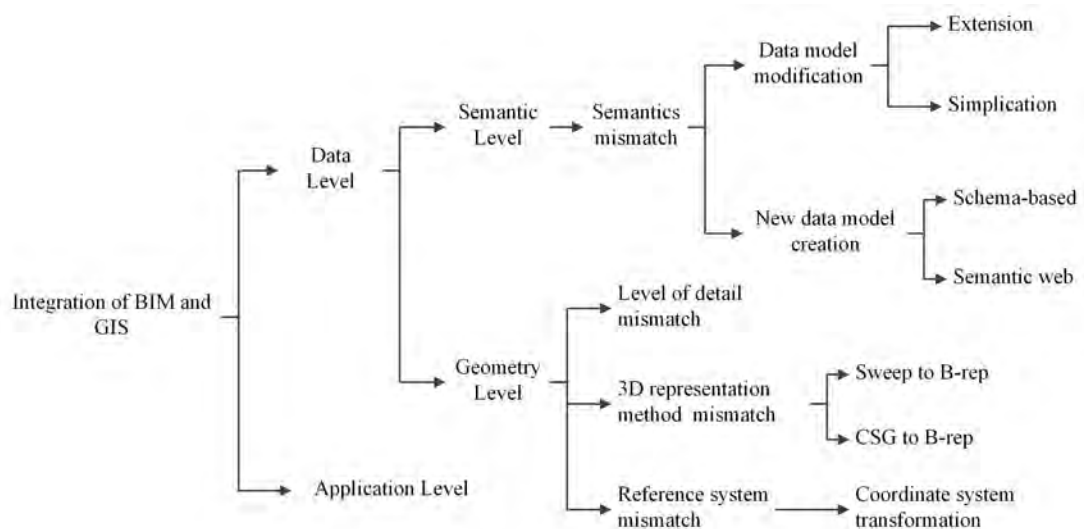


Figure 2-2 The main problems and solutions at data-level integration.

### 3 Research framework

#### 3.1 Introduction

A thorough literature review has identified two main problems regarding data-level BIM/GIS integration: geometric information transformation and semantic information transfer. This chapter explains the research framework of this study (Figure 3-1). It can be divided into three logically linked sections: (1) geometry transformation, (2) semantic information transfer, and (3) the development of an infrastructure management system.

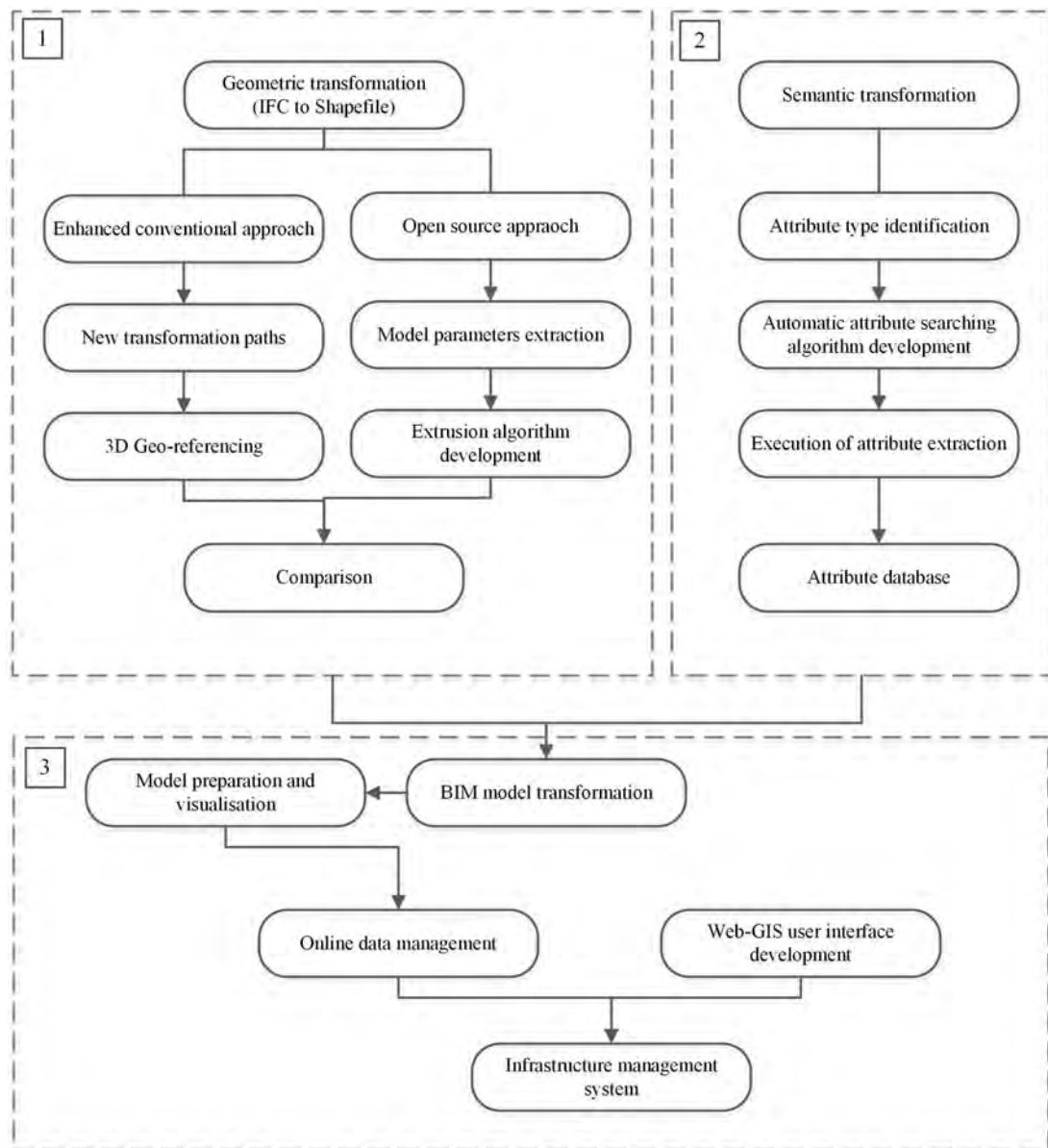


Figure 3-1 The framework of this study.

This chapter is structured as follows. Section 3.2 investigates relevant data standards, such as IFC, CityGML, and Shapefile. Section 3.3 explains geometry transformation by using commercial software and by developing an open source approach. Section 3.4 explains how the semantic information can be transferred from BIM to GIS. Section 3.5 explains the development of the infrastructure management system. Section 3.6 describes the BIM models used in this study. Section 3.7 summarises the chapter.

## 3.2 Relevant standards

When discussing data-level integration, data formats cannot be neglected. The flow of information from BIM to GIS, or vice versa, always results in changes in the data structure or format. Many data formats can be used to store 3D geometry, such as 3D Studio Max (.3ds) (Inc. 2018a), SketchUp (.skp) (Inc. 2018e), Virtual Reality Modelling Language (VRML) (Wikipedia 2018c), GeoVRML (.wrl) (Group 2018), Openflight (.flt) (Wikipedia 2018a), and COLLADA (.dae) (Inc. 2018c). However, the most used 3D data formats for BIM/GIS integration are IFC, CityGML, and multipatch (Shapefile).

### 3.2.1 Representative formats

IFC is the most widely-used data exchange format in the AEC domain and is the main format to be considered for BIM/GIS integration. On the GIS side, there are mainly two formats available, including CityGML and Shapefile. In theoretical studies, CityGML is more often studied (Kang and Hong 2015b, Jusuf, Mousseau, Godfroid, and Hui 2017), while for practical use purposes, Shapefile is more widely adopted (Amirebrahimi et al. 2016a, Xu et al. 2016, Tashakkori, Rajabifard, and Kalantari 2015). Figure 3-2 shows information flow paths from BIM to GIS using IFC, CityGML, and Shapefile.

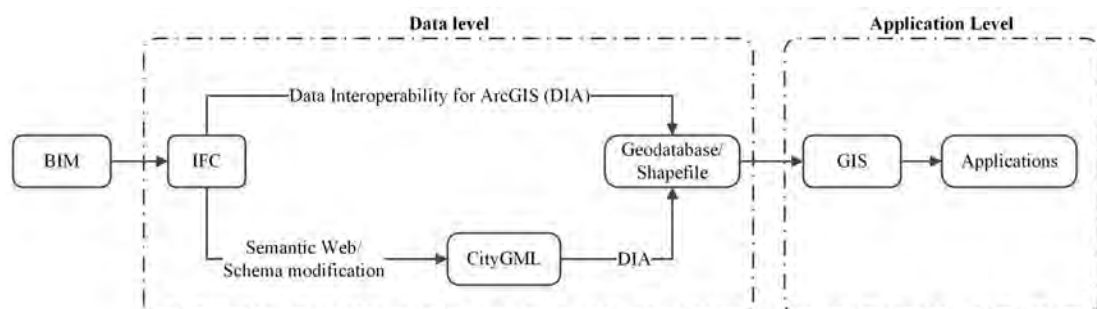


Figure 3-2 Information flow from BIM to GIS.

This study uses Shapefile as the destination format for receiving BIM information for the following reasons:

(1) Shapefile is the most widely-used exchange format in GIS, used by academia and governments around the world (including the government of Western Australia (Authority 2018)) for information sharing and exchange. Shapefile has been widely adopted for application-oriented studies addressing BIM/GIS integration (Amirebrahimi et al. 2016a, Xu et al. 2016, Tashakkori, Rajabifard, and Kalantari 2015).

(2) By adopting Shapefile, issues related to CityGML no longer remain relevant. CityGML has a number of problems, despite it being considered an appropriate format for BIM/GIS integration and having been adopted as a representative data format for GIS (Teo and Cho 2016, Deng, Cheng, and Anumba 2016b, a, Delgado et al. 2015) by many studies, especially those trying to solve the semantic mismatch problem (Kang and Hong 2018, Kang and Hong 2015b, Jusuf, Mousseau, Godfroid, and Hui 2017). These problems are discussed below:

a) CityGML is not an efficient format for analysis. CityGML is actually a standard initiated by organisations in the AEC domain, such as Autodesk, Inc. and Bentley Systems, Inc., for whom the first concern was information exchange, rather than information analysis. CityGML needs to be transformed again before it can be used by a GIS; as shown in Figure 3-2, even if CityGML is used, it has to first be transformed into a native format, such as Shapefile for ArcGIS.

b) CityGML introduces problems such as LoD and semantics matching. Both CityGML and IFC have defined LoDs and LoD matching has to be considered during transformation. The semantics mismatch problem also has to be appropriately addressed before information can be input into CityGML.

c) CityGML results in larger file sizes. It has been observed that after transformation to CityGML, file size increased tenfold or more (de Laat and Van Berlo 2011). This is due to the nature of XML-based data formats. The use of tags by XML for ensuring accuracy and consistency of information increases file sizes.

However, Shapefile also has drawbacks. For example, it is not a semantic data model, which means no building components (such as roof, room, window, or door) are defined. Additionally, Shapefile does not support topology (Cepicky and OpenGeoLabs 2017) and has not been updated by its developer (ESRI) for many years. Nevertheless, these problems do not affect Shapefile as a recipient of BIM information, because the current Shapefile standard is still capable of handling the

geometric information of BIM and the semantic information can be stored in separate database and linked to each geometry.

### 3.2.2 Industry Foundation Classes (IFC)

The IFC data model was created by buildingSMART (formerly the International Alliance for Interoperability) (Mignard and Nicolle 2014), in response to the information-rich but fragmented construction industry (Aziz et al. 2006, Pathirage, Amaratunga, and Haigh 2007) and the existence of different proprietary data formats that impaired information exchange within the AEC domain (Atazadeh et al. 2017). Even though there are many open BIM standards, such as BIMXML (ONUMA 2018) and COINS (TechniaTranscat 2018), IFC is the primary open data schema (standard) used for information exchange and sharing within AEC/FM domains (Amirebrahimi et al. 2016a, Deng, Cheng, and Anumba 2016b, Fu et al. 2006). Key concepts relevant to IFC include IFC classes, methods for 3D representations, Level of Development (LOD), its spatial structure, and coordinate systems. These will be discussed in the following sections.

#### 3.2.2.1 IFC classes, attributes, and relationships

IFC is an object-oriented data model, which treats everything within as an object, and all objects are managed by classes. There is one and only one root class, i.e. `IfcRoot`, and the rest of the classes are subtypes of it. Classes can be categorised into three abstract class groups, i.e. `IfcObject`, `IfcPropertyDefinition`, and `IfcRelationship` (Wix 2015). `IfcObject` defines all possible things related to construction activities; these can be physical objects (`IfcProduct`), an action of constructing (`IfcProcess`), or a human or an organisation (`IfcActor`). `IfcPropertyDefinition` describes all possible properties (attributes) that an object can have, such as owner history, name, size, colour, and so forth. `IfcRelationship` builds the connection between objects and other classes, either properties or other objects. The relationship between them is illustrated in Figure 3-3. In IFC, the attributes and relationships are also objects.

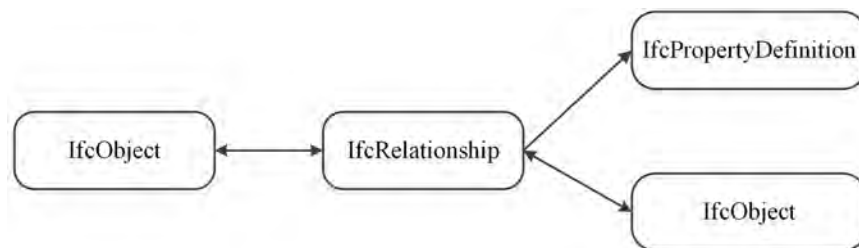


Figure 3-3 Relationship between `IfcObject`, `IfcRelationship`, and `IfcPropertyDefinition`.

The attributes of an object can be defined in various places in an IFC file, including (1) in the object itself, (2) in a property set, and (3) in other individual attribute objects, such as materials (Figure 3-4). According to where an attribute is defined, attributes can be generally divided into two groups: (1) default attributes that are defined directly in the object; and (2) hidden attributes that are stored in a property set or an individual attribute object.

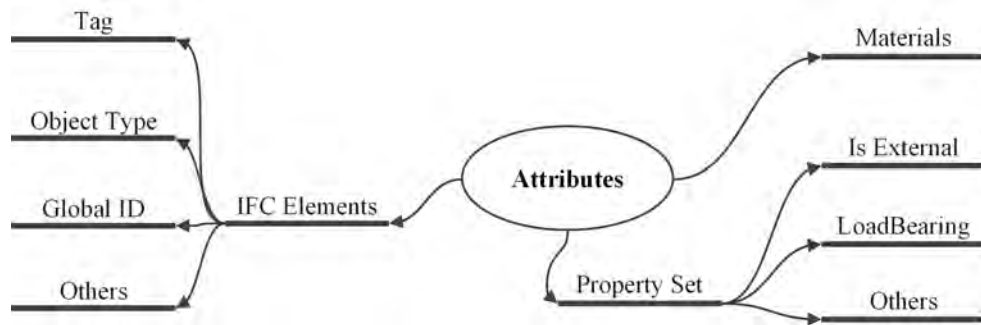


Figure 3-4 Attributes attached to an object.

Figure 3-5 shows an example of hidden attributes of a slab with id of i1800. Through three types of relationship, i.e. *IfcRelDefinitionsByProperties*, *IfcRelAssociatesMaterial* and *IfcRelContainedInSpatialStructure*, the slab is connected with three other objects, including *IfcPropertySet*, *IfcMaterial* and *IfcBuildingStorey*, where explicit attributes are stored.

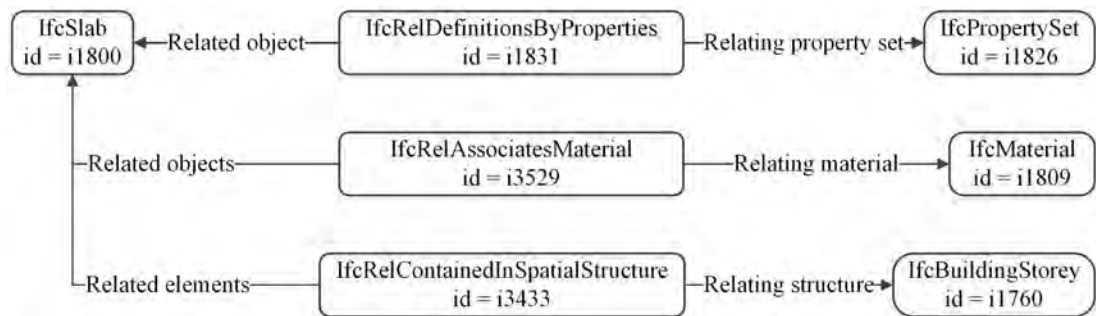


Figure 3-5 Example of hidden attributes of a slab element.

The extraction of default attributes is relatively easy, especially from ifcXML, which is a well-organised XML-based IFC schema. However, acquiring hidden attributes is a significant challenge. To achieve this, not only do the attributes themselves need to be obtained, but also the relationships between attributes and corresponding objects.

### 3.2.2.2 3D representations and Level of Development (LOD)

There are three approaches for representing 3D geometry in IFC, i.e. B-rep, CSG, and sweep (Donkers et al. 2016). (1) B-rep represents a 3D object using its bounding



surfaces, and is usually used for complex objects, such as windows and doors (Wu and Hsieh 2007). (2) CSG defines a number of primitive objects such as spheres, cones, pyramids, or cylinders, and uses the result of a series of Boolean operations (difference, union, and intersection) of those primitive objects to represent 3D objects. A CSG tree is used to record all necessary information (primitive objects and Boolean operations) for creating an object (Wyvill, Guy, and Galin 1999). (3) In the case of sweep, a 2D profile and a sweeping path are used together to define a 3D geometry. Examples of B-rep, CSG, and sweep are shown in Figure 3-6.

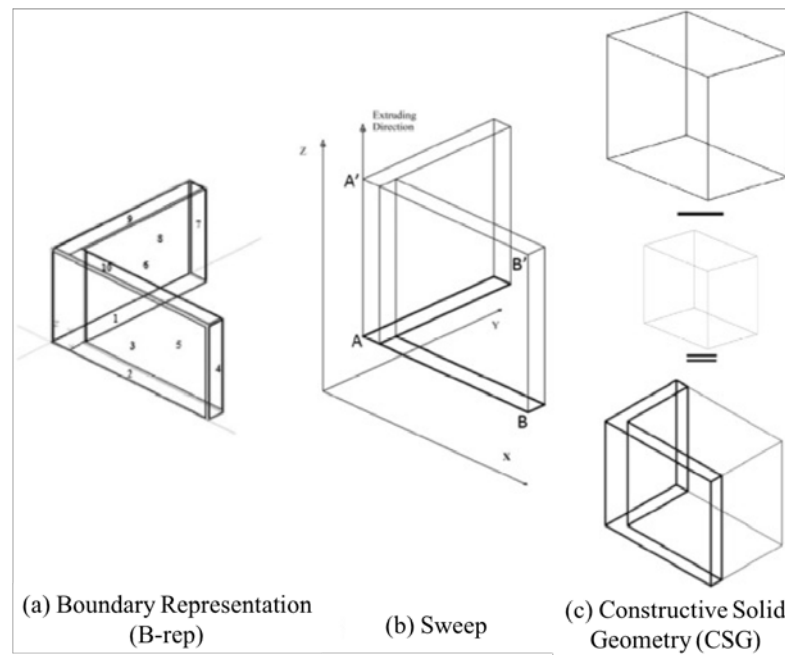


Figure 3-6 (a) Boundary Representation, (b) Sweep, (c) Constructive Solid Geometry (Deng, Cheng, and Anumba 2016b).

IFC classifies BIM models into five groups according to the level of information they contain, defined as LODs, ranging between LOD 100 and LOD 500 (Deng, Cheng, and Anumba 2016b). **Figure 3-7** shows a precast structural inverted T-beam model from LOD 200 to LOD 400. With increasing LOD, more details are contained in the model. At LOD 200, there is only one solid structure in the model, but LOD 400 would comprise a complex model with several components, including lifting devices, expansion joints, etc. An example for LOD 100 is not given, because LOD 100 elements are not geometric representations. Note that LOD 100, 200, 300, 400, and 500 are defined by the American Institute of Architects (AIA), while LOD 350 is developed by the BIMForum working group (Forum 2017), as the organisation found it necessary to define an LOD between LOD 300 and LOD 400 for detailed coordination between disciplines, e.g. clash detection/avoidance, layout, etc.

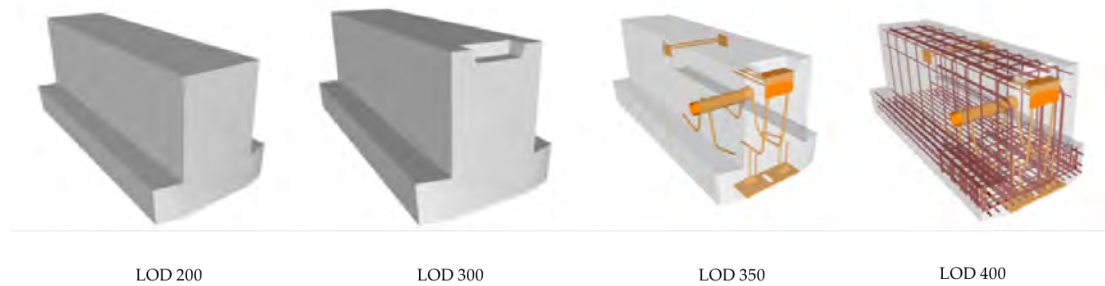


Figure 3-7 A precast structural inverted T-beam (concrete) model from LOD 200 to LOD 400 (Forum 2017).

### 3.2.2.3 EXPRESS-based and XML-based IFC

IFC has two forms, i.e. EXPRESS-based IFC (default IFC) and XML-based IFC (ifcXML). If not specified, IFC refers to EXPRESS-based IFC, and ifcXML is the XML representation of the EXPRESS-based IFC. Even though ifcXML is not as widely used as IFC and tends to produce larger files for the same information (Deng, Cheng, and Anumba 2016b), it is a well-structured data format that is both human- and machine-readable. Users can easily and directly interpret the information contained in an ifcXML.

In spite of their differences in appearance and data structure, the two forms share the same IFC ontology, which means that an object defined in IFC and ifcXML should have the same geometry, attributes, and relationships (buildingSMART 2018a). **Table 3-1** presents the codes needed to define a slab in both ifcXML and IFC. It can be easily observed that IFC is more compact than ifcXML while ifcXML is much easier to interpret. In addition, there is an obvious difference in the unique identifier in this standard. ifcXML uses an attribute “id”, ‘i1800’ in this case, while EXPRESS-based IFC adopts the line number in the data section, i.e. a hash sign (#) followed by a number (‘#683’ in this case).

Table 3-1 Defining a slab object in ifcXML and EXPRESS-based IFC.

Type	Definition
ifcXML	<pre> &lt;IfcSlab id="i1800"&gt;   &lt;GlobalId&gt;2ORPjZcQj4QOesDYdoyqLE&lt;/GlobalId&gt;   &lt;OwnerHistory&gt;     &lt;IfcOwnerHistory ref="i1677" xsi:nil="true"/&gt;   &lt;/OwnerHistory&gt;   &lt;Name&gt;Pile Cap-Rectangular:2000 x 2000 x 900mm:217729:2000 x 2000 x 900mm:217729 : Pile Cap-Rectangular:2000 x 2000 x 900mm:217729:277722&lt;/Name&gt;   &lt;ObjectType&gt;Pile Cap-Rectangular:2000 x 2000 x 900mm:217729:Pile Cap-Rectangular:2000 x 2000 x 900mm:217729&lt;/ObjectType&gt;   &lt;ObjectPlacement&gt; </pre>

Type	Definition
	<pre> &lt;IfcLocalPlacement ref="i1774" xsi:nil="true"/&gt; &lt;/ObjectPlacement&gt; &lt;Representation&gt;   &lt;IfcProductDefinitionShape ref="i1796" xsi:nil="true"/&gt; &lt;/Representation&gt; &lt;Tag&gt;277722&lt;/Tag&gt; &lt;PredefinedType&gt;floor&lt;/PredefinedType&gt; &lt;/IfcSlab&gt; </pre>
<b>EXPRESS-based IFC</b>	<pre> #683= IFCSLAB('2ORPjZcQj4QOesDYdoyqLE',#41,'Pile Cap- Rectangular:2000 x 2000 x 900mm:217729',\$','Pile Cap-Rectangular:2000 x 2000 x 900mm',#667,#681,'217729',.FLOOR.); </pre>

### 3.2.2.4 IFC spatial hierarchy

The elements in IFC form a spatial structure. This structure looks like an upside-down tree and is referred to as an IFC-Tree in this study. Figure 3-8 presents an example of an IFC-Tree. Each element in the tree is a node. A node with a child is referred to as a parent node. For instance, site1 is a parent node with children being building1, building2, and building3. A node without any children is a leaf node, and a node without a parent is a root node. The root node of IFC-Tree is always the project node. Under the project node, there may be one or more site nodes, which may contain one or more buildings. A building could have more than one storey, and in a storey, there may be various building elements, such as columns, slabs, walls, beams, and so on. Through the IFC-Tree, from the root node it is possible to reach any other nodes. This mechanism provides the potential to retrieve all elements of an IFC model.

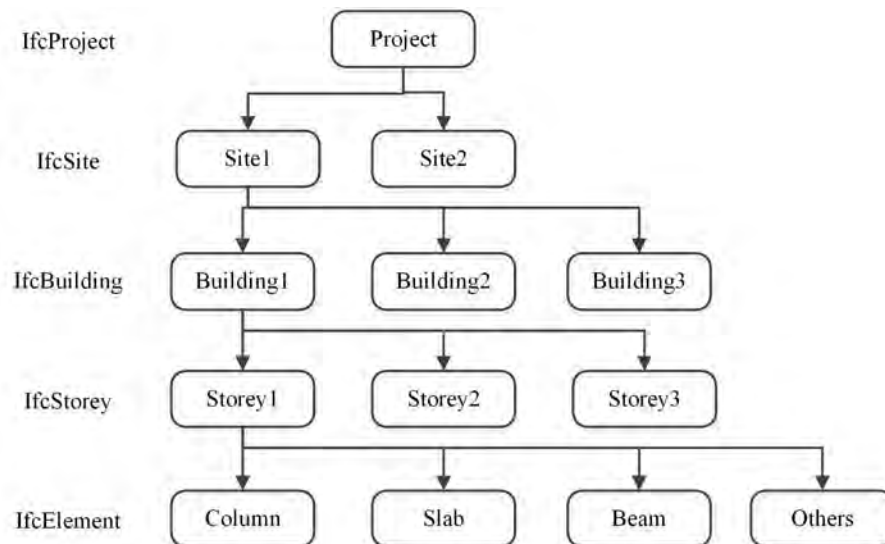


Figure 3-8 IFC spatial structure, IFC-Tree.

### 3.2.2.5 IFC local coordinate system (LCS) and local placement system (LPS)

In IFC, every element is placed within its own LCS. The LCS of an element is determined by two parameters, i.e. its origin and the direction of its axes. There are at least four levels of LCS in an IFC model, i.e. element-level LCS, storey-level LCS, building-level LCS, and site-level LCS. An upper-level LCS is called a parent LCS in this study; it may have one or more child LCSs. For instance, the site-level LCS is the parent of a building-level LCS, the building-level LCS is the parent of a storey-level LCS, and so forth. An example is given in Figure 3-9. All building elements are attached to a storey, and the storey is placed in a building, while the building is attached to a site. The site could be linked to a world coordinate system (WCS), e.g. WGS 1984 World Mercator.

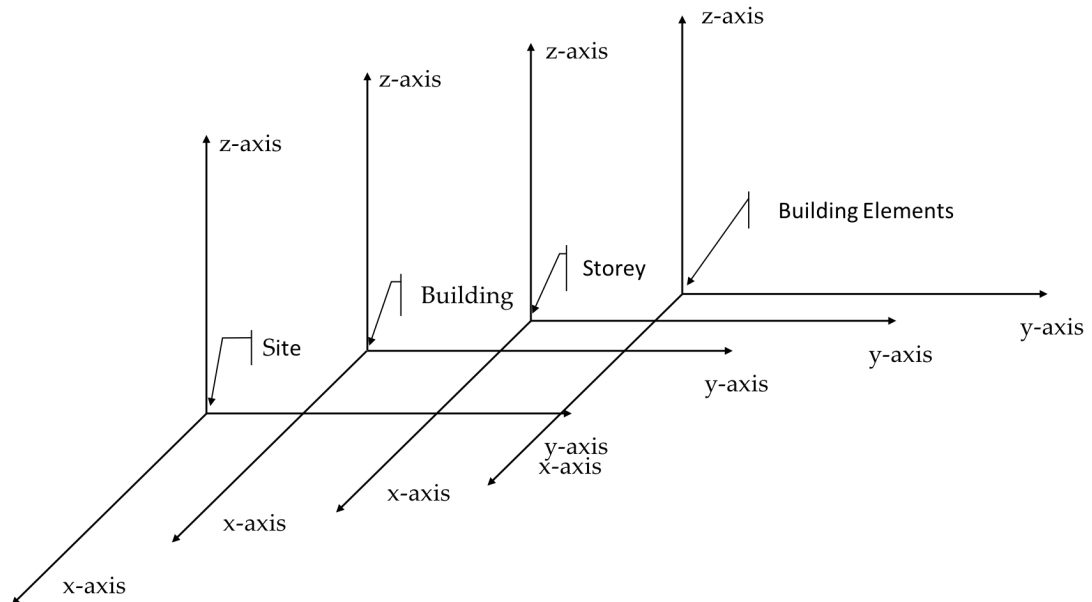


Figure 3-9 IFC placement system.

In this study, the term LPS is used to represent the relationship between a child LCS and its parent LCS. As shown in Figure 3-10, an LPS can record the relative position of a child LCS to its parent, also pointing to an upper-level LPS, which records the relationship between the parent LCS and its parent. For example, in Figure 3-10, through the element LPS, not only can the element LCS be transformed into a storey LCS, but the LPS of the storey can also be obtained. The placement system used by IFC can thus form a cascading system. Through this placement system, the geometry of an element defined in its own LCS can be transformed step by step to the LCS of the site or even to a WCS.

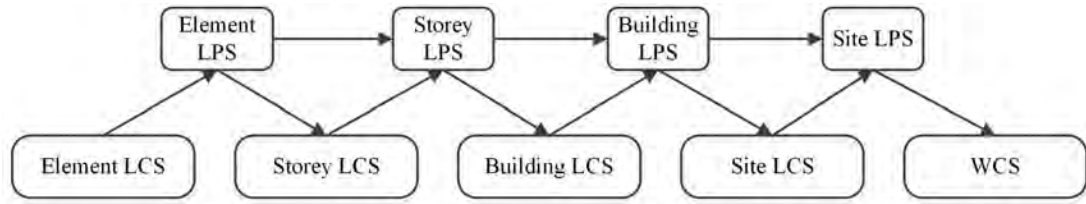


Figure 3-10 Relationship between LCS and LPS.

### 3.2.3 City Geography Markup Language (CityGML)

There are a range of XML-based standards approved by the Open Geospatial Consortium (OGC) used for environmental information exchange, including CityGML for virtual 3D city models, Geography Markup Language (GML) for geographical features, Keyhole Markup Language (KML) for geographic visualisation, and IndoorGML for modelling indoor spaces for navigation purposes. Of these, CityGML is the most common format in terms of BIM/GIS integration.

CityGML is an open standard data model and exchange format to store 3D models of cities and landscapes based on GML defined by the OGC in Extensible Markup Language (XML) format (Deng, Cheng, and Anumba 2016a). It is an application schema for GML 3.1.1 (GML3) that is a standard for sharing or exchanging 2D and 3D geospatial information over the internet (Mignard and Nicolle 2014). It defines the basic entities, attributes, and relations of a city, essential for cost-effective sustainable 3D city model maintenance. As in most XML-based data models, there are two parts included in CityGML, i.e. the schema that describes the document and the instance document that contains the actual data.

As with IFC, CityGML has definitions for different LoDs, from LoD0 to LoD4, to reflect the amount of detail included in a model. **Figure 3-11** present building models of a single residential building from LoD1 to LoD4. Obviously, more content is included in a model with a higher LoD. The LoD0 model is just the footprint of the building (in 2D), while LoD1 models comprise basic block models with flat roofs. In LoD3 and LoD4, models incorporate doors and windows and have similar exterior views; however, their internal components are quite different. LoD4 contains interior spaces (rooms) and internal walls, while the LoD3 model does not. However, a building model in CityGML is less complete and well-developed than in BIM, even at LoD4 (Amirebrahimi et al. 2016a).

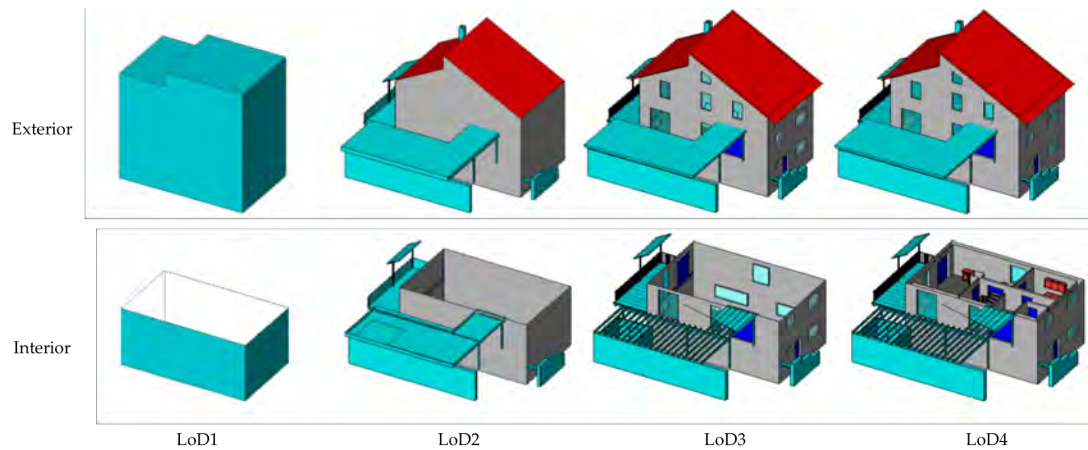


Figure 3-11 Building models in LoD1-LoD4 (source: (Gröger et al. 2012)).

In terms of 3D representation, different from IFC, CityGML only uses B-rep to represent 3D geometry, which means that the transformation from IFC to CityGML involves transformation of the 3D representation method.

In situations where the current standard cannot meet the requirement of specific projects, CityGML supports ADEs, a feature that makes this standard extendable. Users can add new features, such as classes, attributes, or relations, to the existing standard to meet their particular needs.

### 3.2.4 Shapefile standard

#### 3.2.4.1 Shapefile overview

Shapefile is an open spatial data format developed by ESRI for the purpose of storing non-topological geometrical and attribute information for spatial features, such as points, lines, surfaces, and multipatches (ESRI 1998, Brundu et al. 2015).

A Shapefile file consists of at least three parts, i.e. a main file (.shp), an index file (.shx), and a dBASE table (.dbf) (ESRI 1998). The main file stores geometric information for all features, in which each record is a shape with a list of its vertices. The index file indexes all those features in the main file and supports faster data access; a Shapefile without an index file can also be accessed but at a slower speed. The dBASE table is used to keep details of attributes for those spatial features. Apart from those three parts, a Shapefile can also have other components, such as a projection file (.prj), and an XML file (.shp.xml) for recording geospatial metadata.

The geometry types supported by Shapefile generally include points, polylines, polygons, and multipatches (Table 3-2).

Table 3-2 Supported shape types in Shapefile.

Value	Shape Type	Value	Shape Type
0	Null Shape	15	PolygonZ
1	Points	18	MultiPointZ
3	PolyLine	21	PointM
5	Polygon	23	PolyLineM
8	MultiPoint	25	PolygonM
11	PointZ	28	MultiPointM
13	PolyLineZ	31	MultiPatch

#### 3.2.4.2 3D representation for Shapefile

Multipatch is the shape type for 3D geometry, developed by ESRI in 1997, and uses B-rep for 3D objects (ESRI 2008). A multipatch could be thought as a container for a collection of geometries that represent 3D surfaces. A surface (patch) is referred to as a part of the multipatch. There are six types of surface, namely triangle stripe, triangle fan, outer ring, inner ring, first ring, and ring. In a single multipatch model, these types can occur simultaneously, and in order to distinguish between them, a value is assigned to each type (Table 3-3).

Table 3-3 Part types in multipatch.

Value	Part Type	Value	Part Type
0	Triangle Stripe	3	Inner Ring
1	Triangle Fan	4	First Ring
2	Outer Ring	5	Ring

### 3.3 Geometry transformation

Geometry transformation refers to extracting and changing the structure of the geometry of the IFC so that the shape can be rebuilt in Shapefile. This study adopts two independent approaches to transformation, namely (1) enhancing the conventional approach by solving tool crashing and geometric error issues, and (2) developing a new approach using open source technology to overcome problems in the conventional approach.

For enhancement of the conventional approach, apart from the usual direct transformation path, indirect transformation paths are assessed and compared, in order to identify the best transformation path. This is to solve the tool crashing issue. In addition, a 3D geo-referencing method is developed to address geometric errors in the resultant models.

An open source approach (OSA) is also developed to overcome issues with the conventional approach; the OSA is designed to be more flexible and reliable. These three tasks are carried out in sequence: (1) investigating the geometry of IFC and

extracting geometry parameters; (2) consecutive coordinate transformation between different levels of coordinate systems; and (3) automatic generation of qualified multipatches. Development work is carried out using Python and some open source packages, such as IfcOpenShell (IfcOpenShell 2018), Pyshp (Foundation 2018c), and VPython (VPython 2018) for interpreting IFCs and creating Shapefiles.

### **3.3.1 Structure of IFC geometry**

IFC was initiated in 1994; however, to date very little conclusive information regarding its geometry is available. Even though some primitive information about shape definition and geometry placement is provided, it is still not that clear how to use those fragmented pieces of information to rebuild a whole model outside BIM.

The first step in development of an OSA is therefore a full investigation into the structure of IFC geometry, to determine all relevant primitive geometric elements and how to assemble them. For this process, IfcOpenShell is used to interpret the IFC file, an open source software library that helps software developers and users to work with the IFC file format (IfcOpenShell 2018), and official documents from buildingSMART are referenced to establish definitions of each primitive geometric element.

The main tasks at this stage include: (1) deciphering the geometrical structure of IFC; (2) learning the key elements of geometric information and their roles in representing geometry; (3) determining where to obtain those elements; and (4) finding out how the coordinate system could be properly transformed.

### **3.3.2 Coordinate system transformation**

#### ***3.3.2.1 Coordinate system overview***

In geometry, a coordinate system (CS) is a system using one or more numbers (coordinates) to uniquely determine the location of points or other geometric elements on a manifold space (Weisstein 2018). There are two types of CS in terms of the number of dimensions - two-dimensional (2D) and three-dimensional (3D) CSs. In a 2D CS, location is indicated by two coordinates  $(x, y)$  in a plane space. An object in a 2D CS can have width and length. In 3D, the location of a point is represented by three coordinates  $(x, y, z)$ ; thus, besides length and width, an object can also have height.



In geospatial science, a spherical CS, referred to as a GCS, is usually adopted. A point on the earth can thus be indicated by latitude ( $\lambda$ ), longitude ( $\varphi$ ), and altitude or height (H). The most widely-used GCS is WGS-84.

A spherical CS is straightforward in terms of understanding; however, it is not suitable for calculating distance, orientation, and area on Earth, which are important in some specific applications. For this reason, based on GCS, PCSs were developed. A PCS is defined on a flat, two-dimensional surface, and can be used to calculate the length and/or area of a geometry (ESRI 2017b). The coordinates ( $x, y$ ) in a PCS can be calculated using the following formulas:

$$\begin{cases} x = f_1(\lambda, \varphi) \\ y = f_2(\lambda, \varphi) \end{cases} \quad 3-1$$

where  $x$  and  $y$  are the coordinates in the PCS, and  $\lambda$  and  $\varphi$  are corresponding latitude and longitude in GCS, while  $f_1$  and  $f_2$  are functions to conduct the projection.

Different PCSs have varying distortions in length, angle, or area in geometry, and thus an appropriate PCS must be selected. For example, to correctly obtain the area of a geometry, a PCS without area distortion must be adopted (Maling 2013).

If an improper PCS is used or the purpose of application is changed, then the PCS has to be replaced accordingly by an appropriate one. Geo-referencing is the allocation of map-based coordinates (cartesian or geographical) to features, objects or images that are currently referenced in an arbitrary coordinate system. In BIM the arbitrary coordinate system could be a project coordinate system with assumed origin and orientation. The purpose of geo-referencing is assigning the “right” coordinates to features.

### 3.3.2.2 *Right-hand rule*

In mathematics and physics, the right-hand rule is a common mnemonic for understanding orientation of axes in 3-dimensional space (Wikipedia 2018b). In this thesis, the right-hand rule is primarily related to two tasks, denoting the type of coordinate system used and determining direction of the cross product of two vectors.

The coordinate system used by IFC is right-hand, while the other type of coordinate system is left-hand. An example for each is given in Figure 3-12. The right-hand coordinate system has a default origin of (0,0,0) and three perpendicular axes, i.e. x-axis, y-axis, and z-axis, denoted by (1,0,0), (0,1,0), and (0,0,1) respectively.

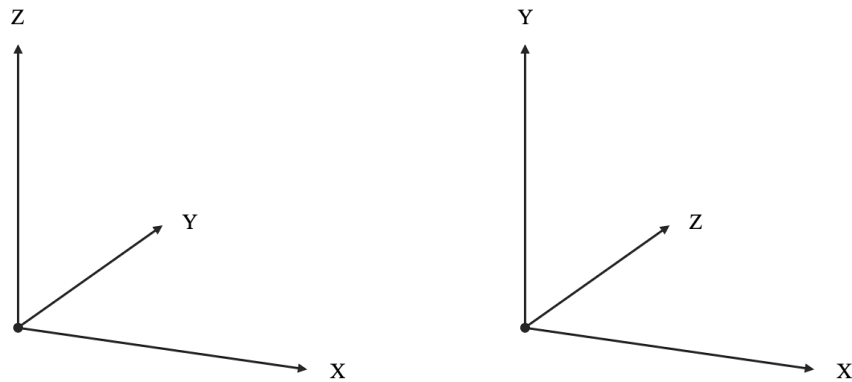


Figure 3-12 Left-hand coordinate system (left) and right-hand coordinate system (right).

The left-hand rule is also used to determine the direction of the cross product of two vectors, as shown in Figure 3-13. With this rule, given x-axis and z-axis, the direction of y-axis, which is not directly provided by IFC, could be determined.

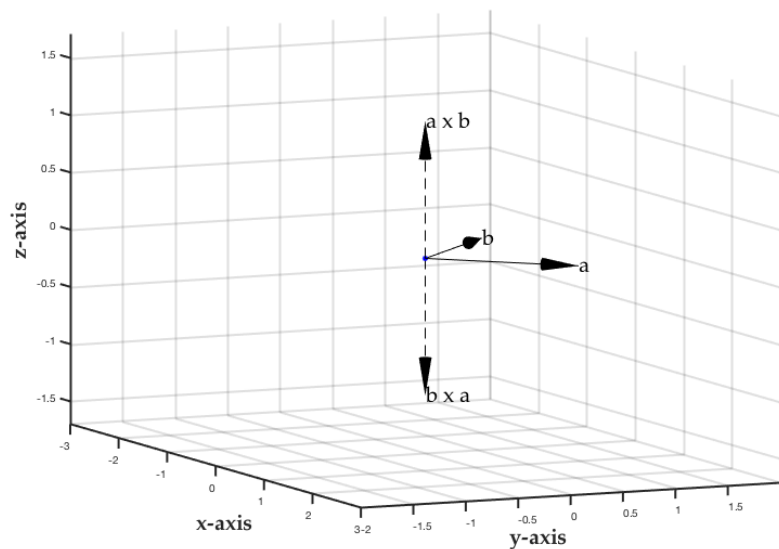


Figure 3-13 Direction of cross product of vector  $a$  and  $b$ .

### 3.3.2.3 Transformation between different coordinate systems

CS correctness is the basic requirement for data to be used in a GIS. Without a correct CS, BIM models, or generally any spatial data, cannot be properly processed by a GIS. Geo-referencing is a process to assign proper geographic coordinates to objects without coordinates or with improper coordinates.

During coordinate transformation, three aspects should be considered, namely (1) change of origin, (2) change in scale, and (3) rotation of the axes.

A general equation for transformation can be expressed as:

$$T_{\text{coor}} = R \times S_{\text{coor}} + \Delta, \quad 3-2$$

where  $T_{\text{coor}}$  is the target coordinate,  $S_{\text{coor}}$  denotes the source coordinate,  $R$  stands for

transformation matrix, and  $\Delta$  is the shift of CS origin. Depending on the algorithm used, the transformation matrix  $\mathbf{R}$  may vary.

### 3.3.2.3.1 2D coordinate transformation

A number of algorithms are available to carry out 2D transformations, including Helmert transformation, affine transformation (Maling 2013), and projective transformation (ESRI 2017a).

The Helmert transformation can be expressed as:

$$\begin{pmatrix} x \\ y \end{pmatrix} = \begin{pmatrix} m \cos \alpha & m \sin \alpha \\ -m \sin \alpha & m \cos \alpha \end{pmatrix} \begin{pmatrix} \hat{x} \\ \hat{y} \end{pmatrix} + \begin{pmatrix} x' \\ y' \end{pmatrix}, \quad 3-3$$

where the term  $m$  is referred to as a *scalar*,  $\alpha$  indicates the rotation of the axis,  $x$  and  $y$  are the target coordinates,  $\hat{x}$  and  $\hat{y}$  indicate the source coordinates, and  $x'$  and  $y'$  are the change of origin, or as:

$$\begin{pmatrix} x \\ y \end{pmatrix} = \begin{pmatrix} A & B \\ -B & A \end{pmatrix} \begin{pmatrix} \hat{x} \\ \hat{y} \end{pmatrix} + \begin{pmatrix} C \\ F \end{pmatrix}. \quad 3-4$$

While Helmert transformation assumes the change of scale is identical in all directions, the affine transformation allows the change of scale to be different in different directions. Affine transformation may be written as

$$\begin{pmatrix} x \\ y \end{pmatrix} = \begin{pmatrix} m \cos \alpha & m \sin \alpha \\ -n \sin \alpha & n \cos \alpha \end{pmatrix} \begin{pmatrix} \hat{x} \\ \hat{y} \end{pmatrix} + \begin{pmatrix} x' \\ y' \end{pmatrix}, \quad 3-5$$

where  $m$  and  $n$  are scalars for the x-axis and y-axis, respectively, or as:

$$\begin{pmatrix} x \\ y \end{pmatrix} = \begin{pmatrix} A & B \\ D & E \end{pmatrix} \begin{pmatrix} \hat{x} \\ \hat{y} \end{pmatrix} + \begin{pmatrix} C \\ F \end{pmatrix}, \quad 3-6$$

where  $x$  and  $y$  are the target coordinates, and  $\hat{x}$  and  $\hat{y}$  indicate the source coordinates (Song, Zhou, and Guan 2014).  $A$ ,  $B$ ,  $C$ ,  $D$ ,  $E$ , and  $F$  are referred to as transformation parameters. The shift of origin  $\Delta$  is indicated by  $C$  and  $F$ , while the effect of scaling and rotation is combined in parameters  $A$ ,  $B$ ,  $D$ , and  $E$ , which form the transformation matrix  $\mathbf{R}$ .

### 3.3.2.3.2 3D coordinate transformation

The coordinate transformation in 3D space is more complicated than in 2D space in terms of calculation of the transformation matrix  $\mathbf{R}$ ; this can be obtained by (Maling 2013):

$$\mathbf{R} = \begin{pmatrix} \cos \alpha & \sin \alpha & 0 \\ -\sin \alpha & \cos \alpha & 0 \\ 0 & 0 & 1 \end{pmatrix} \begin{pmatrix} \cos \gamma & 0 & \sin \gamma \\ 0 & 1 & 0 \\ -\sin \gamma & 0 & \cos \gamma \end{pmatrix} \begin{pmatrix} 1 & 0 & 0 \\ 0 & \cos \beta & \sin \beta \\ 0 & -\sin \beta & \cos \beta \end{pmatrix}, \quad 3-7$$

where  $\alpha$ ,  $\gamma$ , and  $\beta$  indicate rotation of the x, y, and z-axes respectively. 3D transformation can then be completed by:

$$\begin{pmatrix} x \\ y \\ z \end{pmatrix} = \mathbf{R} \begin{pmatrix} \hat{x} \\ \hat{y} \\ \hat{z} \end{pmatrix} + \Delta. \quad 3-8$$

#### 3.3.2.3.3 Equation for transformation

To complete the transformation, it is necessary to obtain the transformation parameters or transformation matrix. In some cases where the scalar, change of origin, and axis rotation are already known, combinations of Equations 3-7 and 3-8 can be applied to perform the transformation of 3D coordinates, while Equations 3-3 or 3-4 can be used in conjunction for 2D coordinates. However, in other cases where the relevant parameters are not provided, the transformation matrix  $\mathbf{R}$  has to be calculated using a certain number of control points before transformation can be carried out using Eq. 3-2.

### 3.3.3 Geometry regeneration in GIS

After coordinate transformation, a set of points can usually be acquired. The next challenge is how to use those points to rebuild geometry that complies with the multipatch standard.

For this process, an automatic multipatch generation (AMG) algorithm is developed and validated for automatic production of multipatches from the extrusion profile and extrusion path. Two official documents from ESRI, i.e. ESRI Shapefile technical description and the multipatch geometry type specification, are the main sources used to guarantee that the generated geometry is aligned with the standard.

## 3.4 Semantics transfer

Since there are generally two types of attributes, default attributes and hidden attributes, the attribute types of a model are first identified in the semantics transfer section. Default attributes refer to those that can be found directly linked to the object, while hidden attributes refer to those in property sets or other attribute objects.

Considering that EXPRESS-based IFC is not user-friendly, ifcXML will be used for semantics transfer. Using the Document Object Model (DOM), attributes can be extracted from ifcXML and be attached to the geometry afterwards. This is referred to as an EAA.

The core of EAA is an algorithm for automatic attribute searches, developed using MATLAB; a number of customised functions for better DOM manipulation are also developed.

### 3.4.1 Semantics loss

Semantics losses have been noted in my studies and discussed in previous sections of this thesis. This refers to the loss of information, when some information from BIM models is not accurately transferred to GIS.

There are various causes of semantics losses. If CityGML is used, these are mainly caused by semantic mismatches between BIM and GIS. In this study, in which Shapefile is being used, these are mainly caused by the complex nature of the IFC standard that uses a reference mechanism to reduce data size and improve data manipulation efficiency. With this mechanism, one object may be referenced by other objects. For example, the entity “IfcOwnerHistory” is referenced by almost all other entities in the same file. This creates problems for attribute transfer. The attributes stored in other attribute objects tend to be neglected during the transformation, such as the attribute “material” stored in an individual object “IfcMaterial” and others stored in property sets. The loss of semantics information could result in inconvenience. For instance, selecting material for visualisation would be difficult.

### 3.4.2 Document Object Model (DOM) and DOM manipulation

According to w3schools, the DOM is defined as a standard object model for XML, a standard programming interface for XML, which is platform- and language-independent (w3schools 2018d). In general, it is a technique that organises the contents in an XML file into an abstract but structured model and provides access to various programming languages, such as MATLAB and JavaScript. With DOM, XML files can be used for programming purposes other than just storing and exchanging information (w3schools 2018d).

DOM is an abstract model but can be visualised as a node tree, in which there is one and only one root node and a number of intermediate and leaf nodes. Every node in the node tree can be reached from the root node using the relationships between them, such as parent, child, and sibling.

Figure 3-14 presents a sample node tree of an IfcSlab. In this case, IfcSlab is the root node and is the parent of four children, i.e., GlobalId, OwnerHistory, ObjectType, and Tag. Nodes with the same parent are siblings, as in the case of OwnerHistory and ObjectType. The DOM models and provides access to XML-based data.

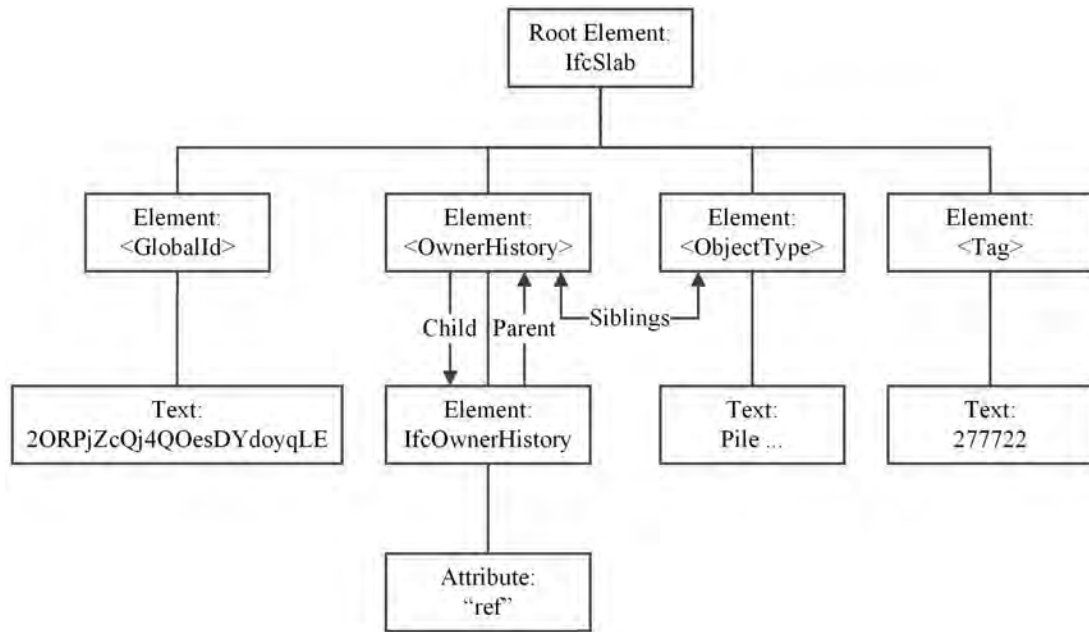


Figure 3-14 The node tree for the slab in Table 3-1.

XML files can be manipulated through the node tree. A node can be accessed using the `getElementsByTagName` or the `getElementById` methods, by looping through the node tree, or by navigating the node tree using node relationships (such as child and sibling). A node can also be created, changed, removed, replaced, or cloned (w3schools 2018c).

### 3.4.3 DOM manipulation using customized MATLAB functions

MATLAB provides a range of functions for manipulating DOM. However, these are not yet adequate to efficiently complete the attribute extraction task. A set of customised functions for DOM manipulation are developed in this study. Table 3-4 lists the 10 developed functions, namely `getChildMaterialElement`, `getElementChildren`, `getElementName`, `getId`, `getThisRef`, `hasChild`, `hasElementChild`, `hasOnlyTextChild`, `replaceRefChild`, and `setIdXML`. Detailed codes are provided in Appendix 2.

Table 3-4 List of customized DOM manipulation functions.

Method	Function
<code>getChildMaterialElement</code>	Search an element node called "IfcMaterial" under a node and all its descendants

Method	Function
<b>getElementChildren</b>	Return all the element node of a parent node
<b>getElementName</b>	Return a list of child node title
<b>getId</b>	Get the id attribute of a node
<b>getThisRef</b>	get the ref attribute of the current node
<b>hasChild</b>	Judge if a node has child nodes
<b>hasElementChild</b>	Judge if a node has element child nodes
<b>hasOnlyTextChild</b>	Judge if a node only has text child nodes
<b>replaceRefXML</b>	Replace the node with a 'ref' attribute with the corresponding element node
<b>setIdXML</b>	If a node has attribute "id", set it as the unique identifier

### 3.5 Development of the infrastructure management system

In the system development section, an infrastructure management system is created using Web GIS technology and programming tools such as HTML, CSS, JavaScript, and ArcGIS API for JavaScript. The features that distinguish this system from others include: (1) an advanced visualisation combining 2D and 3D views; and (2) real-time sensor data reception, allowing sensor data to be received and visualised in real-time. Prior to system development, spatial data (models) have to be pre-processed so that they can be managed and accessed online.

#### 3.5.1 HTML, CSS and JavaScript

HTML stands for Hyper Text Markup Language and is the standard markup language for creating Web pages; it describes the structure of Web pages using markup. Its elements are the building blocks of HTML pages, which are represented by tags that label pieces of content as "heading", "paragraph", "table", and so on. As with XML, HTML also has a DOM, through which the HTML can be accessed and manipulated (w3schools 2018b).

CSSs (Cascading Style Sheets) describe how HTML elements are to be displayed on screen, paper, or in other media, and can simultaneously control the layout of multiple web pages (w3schools 2018a, Robson and Freeman 2012).

JavaScript is a high-level, dynamic, weakly typed (Wang, Dou, et al. 2017), prototype-based, multi-paradigm, and interpreted programming language. It is used to make web pages interactive and provide online programs, including video games (Flanagan 2006, Freeman and Robson 2014).

In a nutshell, in the construction of a website, HTML is the frame of the website, CSS control the appearance of the website, while JavaScript determines the functions or actions of the website (Figure 3-15).

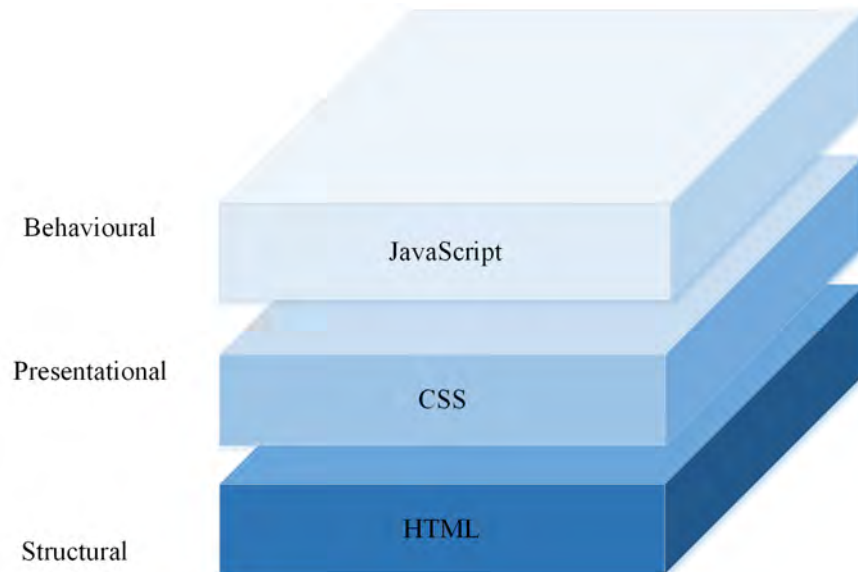


Figure 3-15 Relationship between HTML, CSS, and JavaScript.

### 3.5.2 ArcGIS API for JavaScript

ArcGIS Application Programming Interface (API) for JavaScript (ESRI 2018a) is an API for the JavaScript language. With this API, 2D/3D maps and scenes can be introduced into a website to achieve interactive functionalities.

This API tends to be used with ArcGIS Online, allowing storage and management of basic components such as maps, scenes, features, and layers. Before the API can manipulate the features, scenes, or maps, it has to point to the item using a unique ID. **Figure 3-16** presents an ontology of the API, including the basic concepts and relationships between classes defined in the API.

The *view* object at the centre of the diagram has two children - map view (2D) and scene view (3D). It controls almost everything on the interface, such as environmental conditions (light), field of view, visible layers, and user interface (UI) components such as legend and layer list. It also connects the map with the HTML file, indicating which area of the map to display.

There are two paths for obtaining *layer* information from the *view* object – either through the *layer view* or through *map*. The *layer view* object includes visible layers, while the *map* object contains all layers, whether visible or not; to do this, the *map* object must point to a *scene* on ArcGIS Online.



With the *layer* object, all features and their attributes can be obtained through iterations as objects, or through *query* objects as output attributes, and are then displayed.

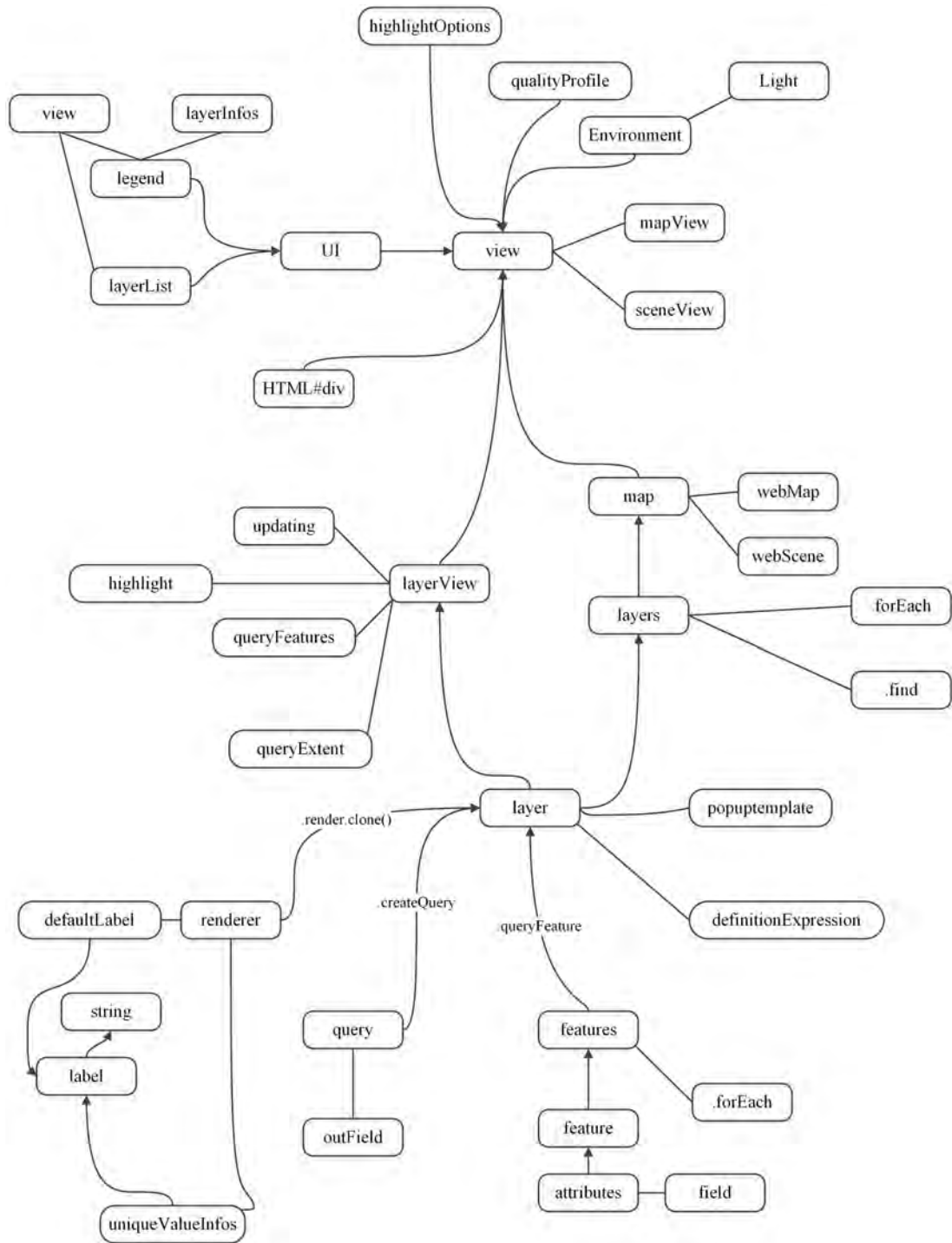


Figure 3-16 Ontology for ArcGIS API for JavaScript.

### 3.5.3 Web GIS and JavaScript Object Notation (JSON)

Web GIS is a term used to refer to any GIS that uses Web technologies (Fu and Sun 2010), or in general, to a GIS operating online. With Web GIS, geospatial

information can be managed, shared, and delivered to a wider group of recipients. In the simplest situation, a Web GIS consists of two parts - a Web application server hosting the service and a client consuming the service; the latter can be a Web browser or a desktop application. Figure 3-17 represents the typical architecture of a Web GIS.



Figure 3-17 The typical architecture of Web GIS.

JavaScript Object Notation (JSON) (Jackson 2016) is used to transfer information between the server and the client. JSON is a lightweight, text-based, language-independent data-interchange format (Bray 2014). As with XML, it is mainly used for exchanging information over the internet, but has recently become more popular than XML (Afsari, Eastman, and Castro-Lacouture 2017). In this study, JSON is used during simulation of real-time bridge structural health monitoring because of its popularity.

#### 3.5.4 Online data management, ArcGIS Online and ArcGIS Pro

ArcGIS Online (ESRI 2018d) is used to manage BIM data as well as other spatial data. ArcGIS Online is a cloud-based mapping and analysis solution. It is used to: (1) create maps, scenes, and apps; (2) share and collaborate; (3) explore and analyse data; and (4) manage data. ArcGIS Pro works seamlessly with ArcGIS Online to create, visualize, and share 2D and 3D data, perform analysis, and more (Keranen and Kolvoord 2017).

### 3.6 Experiment data

In this study, experimental data include two bridge models created in BIM. One is from a bridge in Western Australia, while the other is built using 2D drawings. Some historical monitoring data provided by Main Roads Western Australia (MRWA) is also used to simulate real-time monitoring.

#### 3.6.1 Bridge 1 model

The first bridge was created in Autodesk Revit (Figure 3-18). Mainly, three types of components were modelled, i.e. slab, beam, and column. The corresponding real

bridge (No.1223) is located in Rockingham, Western Australia, and belongs to MRWA. This bridge model is used for geometry transformation and semantic transfer.

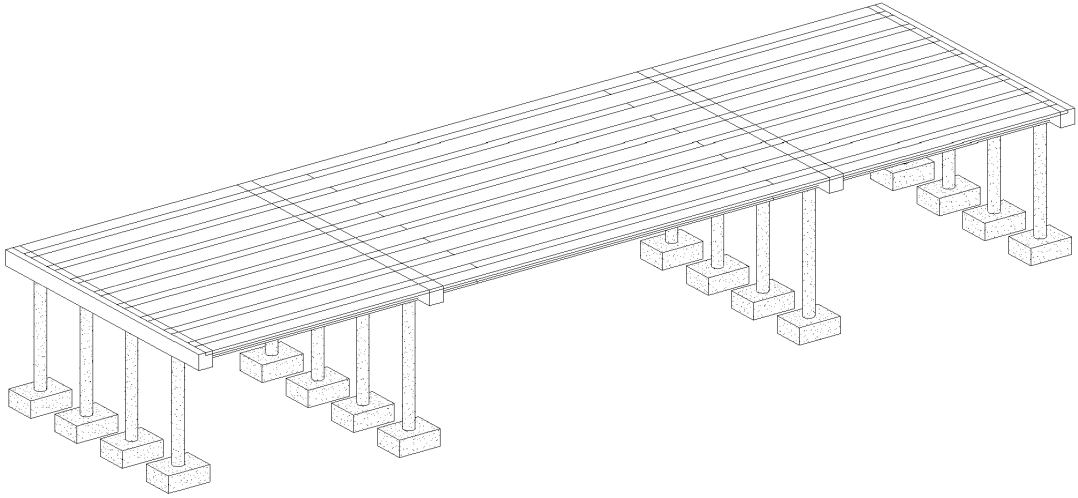


Figure 3-18 Bridge 1 model used in this study.

### 3.6.2 Bridge 2 model

The Bridge 2 model was built with Tekla (Figure 3-19). It comprises six types of components, including beam, slab, column, and footing. This bridge is still at planning stage and there is thus no corresponding real bridge. This bridge model is mainly used to validate the 3D geo-referencing method.

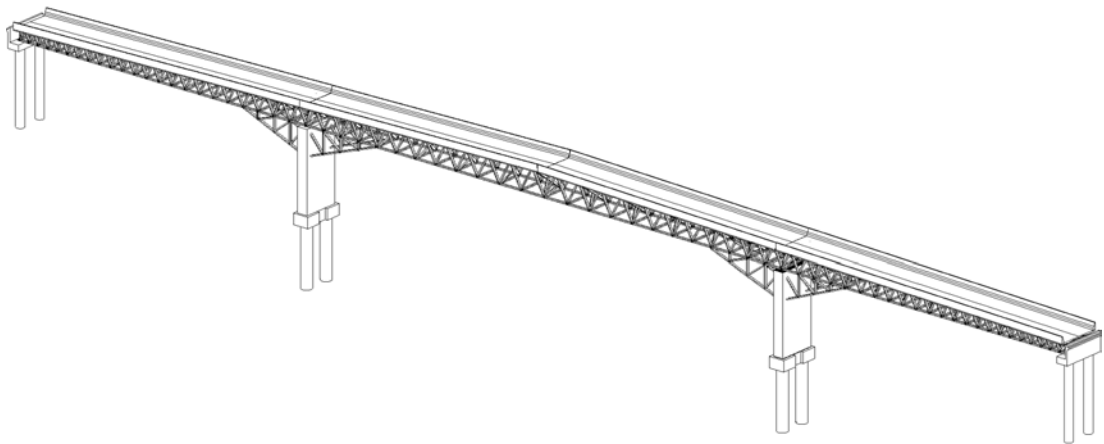


Figure 3-19 Bridge 2 model used in this study.

### 3.6.3 Real-time sensor data

#### 3.6.3.1 Bridge structural health monitoring system

Bridge 1 is being monitored using a long-term bridge monitoring system developed by Strainstall, a company that develops monitoring solutions for the safety and performance of assets (Strainstall 2018). This system includes various sensors, including 16 strain gauges, four temperature sensors, eight displacement sensors, six accelerometers, 16 strain ring, one wind direction sensor, and one wind speed sensor, with a sampling rate of 100 samples/second.

All data is initially stored in binary format in 30-minute files on a PC and is then transferred to the base for data processing. The processed data is periodically transferred onto the File Transfer Protocol (FTP) server and separated into daily, weekly, and monthly folders. The logical structure of this system is illustrated in Figure 3-20.

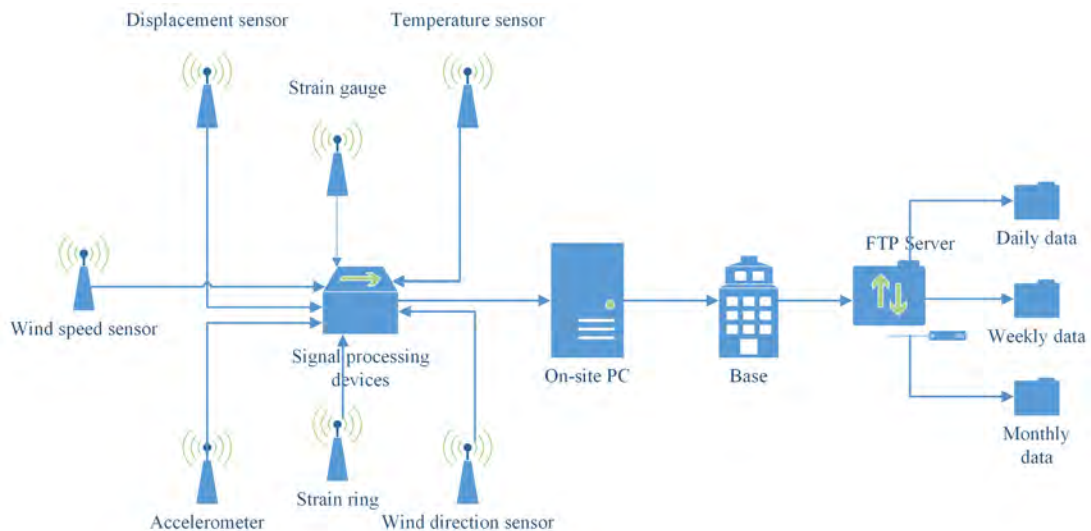


Figure 3-20 Logical structure of the monitoring system.

Timestamps are provided with each file, corresponding to GMT. These timestamps are checked on a weekly basis to ensure accuracy.

If any strain gauges read above the pre-set event trigger level, then the system will dynamically log all sensors of the system, displaying a more detailed breakdown of the sample readings collected. These files contain all data starting from 1 minute before the event until 1 minute after. The files are uploaded to a separate folder on the FTP server.

### 3.6.3.2 *Event data processing for real-time simulation*

The real-time data stream from Straininstall was not available for use in this study. Two-minute event data provided by the MRWA is therefore used instead, to simulate real-time monitoring.

Processing steps include the following: (1) Attribute simplification. Not all columns recorded in two-minute event data are used in the simulation. The sensors used are randomly selected and are listed in Table 3-5. (2) Sensor value aggregation. A total of 100 data values generated in any one second are averaged, providing a single data point per second. (3) Date and time format transformation from simple text to timestamp. (4) File format transformation from Office Excel (.xlsx) to JSON.

Table 3-5 Sensors used for simulation.

Sensor type	Sensor tag	Number of sensors
Displacement sensor	MRWA-POT-01	1
Wind speed sensor	MRWA-WS-01	1
Wind direction sensor	MRWA-WD-01	1
Temperature sensor	MRWA-TH-01, MRWA-TH-03	2
Stress ring	MRWA-SR-01, MRWA-SR-06	2
Stress gauge	MRWA-SG-01, MRWA-SG-05	2
Accelerator	MRWA-ACC-01, MRWA-ACC-06	2

Steps 1–3 will be completed in Excel, while the last step for transforming Excel to JSON will be completed using MATLAB. The codes for the transformation from Excel to JSON are provided in Appendix 6.

## 3.7 Chapter summary

The purpose of this chapter was to describe the research framework employed in this study. First, Shapefile was selected as the representative format for GIS other than CityGML, because Shapefile is the most widely-used exchange format in GIS and by adopting it, the problems introduced by CityGML, such as level of detail matching, can be avoided.

Second, the geometry transformation from IFC to Shapefile using commercial software was enhanced by using various transformation paths and intermediate formats.

Third, an AMG, based on open source technologies, was designed to transform the geometry information. It was revealed that the coordinate systems in IFC comply

with the right-hand rule, and coordinate system transformation, no matter 2D or 3D, can be completed by a general equation. The difference is in the acquisition of transformation matrix and origin shift.

Fourth, an EAA was developed to facilitate semantic information transfer from BIM to GIS. Here, the node tree of XML was investigated, and a couple of customised functions were developed using MATLAB to facilitate DOM manipulation.

Fifth, an infrastructure management system was developed using Web GIS technology to demonstrate the potential applications of this study in construction industry.

## 4 Enhancement of the conventional approach

### 4.1 Introduction

This study utilises two approaches for geometry transformation - the conventional approach using ArcGIS and an OSA. This chapter describes enhancement of the ArcGIS approach.

The chapter is structured as follows. Section 4.2 describes the indirect transformation method, compared with the direct transformation from IFC to Shapefile. Section 4.3 examines the potential intermediate formats and different transformation paths. Section 4.4 tests transformation paths using Bridge 1 model and analyse the results. Section 4.5 develops a two-step approach for geo-referencing 3D models. Section 4.6 concludes the chapter with a summary.

### 4.2 Indirect transformation method

By far, the most commonly used approach for geometry transformation from IFC to Shapefile is using the commercially-available DIA, a customised version of the FME for ArcGIS (ESRI 2018b). As discussed earlier in this work, this method has some constraints, in particular software crashes and possible geometric errors and semantic information loss in resultant models.

To overcome the sudden crash problem, this study proposes an indirect transformation method, using a third IF to connect IFC and Shapefile. Figure 4-1 shows the conventional direct and proposed indirect transformation paths. The indirect transformation process is divided into two consecutive parts, namely transformation from IFC to an IF, and then from the IF to Shapefile.

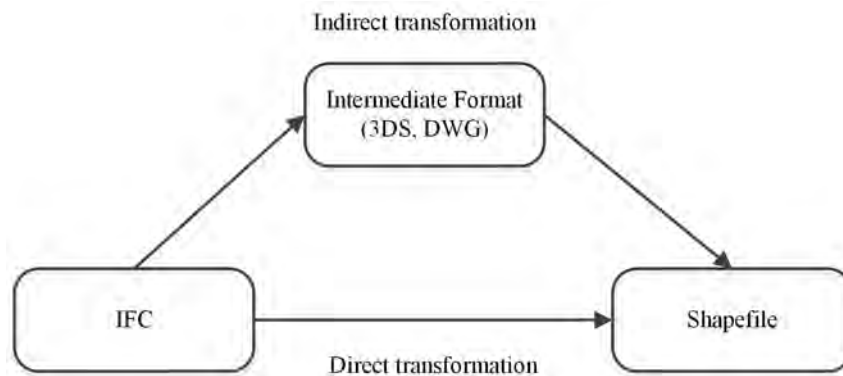


Figure 4-1 Direct transformation and indirect transformation.

Apart from DIA, the transformation of IF to Shapefile can also be carried out using other ArcGIS methods, such as in-built functions for importing 3D data in specific formats, such as 3DS. An IF and transformation method together constitute a transformation path. Different paths can produce different outputs in terms of geometry and retention of semantic information.

This study investigates such potential paths for transforming IFC to Shapefile. Their performance is assessed and compared with the result of direct transformation, so as to identify the best transformation method and intermediate format, if required.

Also, to address possible geometric error issues in resultant models, a two-step 3D geo-reference method is developed based on the traditional 2D geo-reference method used in 2D scenarios.

### 4.3 Methodology for indirect transformation

#### 4.3.1 Intermediate formats (IFs)

Theoretically, any format that supports 3D data could serve as an IF. According to a technical report by the Image Spatial Data Analysis Group (McHenry and Bajcsy 2008), there are more than 140 formats available for 3D information. The most widely-used 3D formats have been identified through a literature review (Mao and Harrie 2016, Dimopoulou et al. 2014) (Table 4-1).

Table 4-1 Common 3D data formats.

	Format	Description
1	3DS	A format for 3D modelling, animation, and rendering
2	COLLADA	A format for exchanging digital assets
3	DWG	A binary file format for storing 2D or 3D design data
4	DXF	A CAD format for exchanging data with other programs
5	OBJ	A format that represents 3D geometry alone
6	VRML	A format that represents 3D interactive vector graphics
7	SKP	A format used to store data for SketchUp
8	KML	A format for visualization in 3D earth browsers, e.g. Google Earth
9	KMZ	A zipped version of KML
10	IFC	A format for exchanging building and construction data

#### 4.3.2 Transformation paths

Potential paths for converting IFC to Shapefile through various IFs are shown in Figure 4-2.



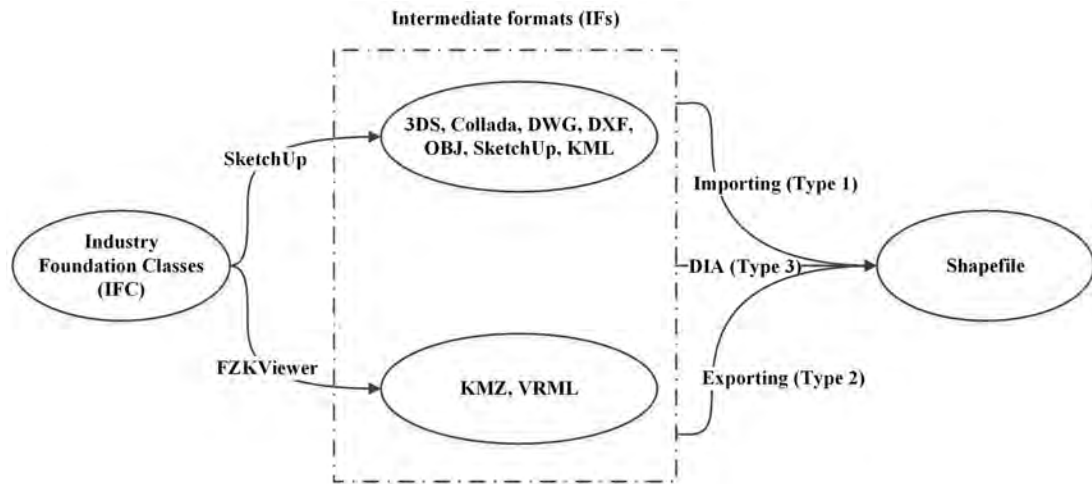


Figure 4-2 Paths for transforming IFC to Shapefile.

Except for the direct transformation path, all other paths comprise two parts: (1) transformation from IFC to IF, and (2) transformation from IF to final Shapefile.

The first part is completed using SketchUp (Inc. 2018d) and FZKViewer (KIT 2018). In this study, FZKViewer version 4.8 was used to transform IFC to KMZ and VRML, while SketchUp was used to complete the remaining seven data format transformations. The second part was conducted in ArcGIS, which has three main approaches for conducting such transformations: (1) Certain 3D formats, such as COLLADA and VRML, can be imported directly into ArcGIS through the tool “import 3D files”, and then exported as a Shapefile; this method is referred to as importing (Type 1). (2) In some cases, ArcGIS is capable of identifying specific external formats, such as IFC and DXF. After being dragged into ArcGIS, these can then be displayed and exported to Shapefile, with the process referred to as exporting (Type 2). (3) Type 3 involves use of the DIA, supporting the transformation of a wider array of formats. In the case of KML and KMZ, ArcGIS has an additional tool to convert these into a map layer which can later be exported into Shapefile; this method is also assessed.

A transformation path refers to the combination of a format and method. For example, 3DS and Type 1 together form a transformation path.

## 4.4 Experiment and analysis

### 4.4.1 Experiment

Results show that the transformation from IFC to Shapefile can in most cases be completed through different paths. Figure 4-3 shows transformation of Bridge 1 model through a COLLADA/Type 1 path. The shape of the bridge has been well retained.

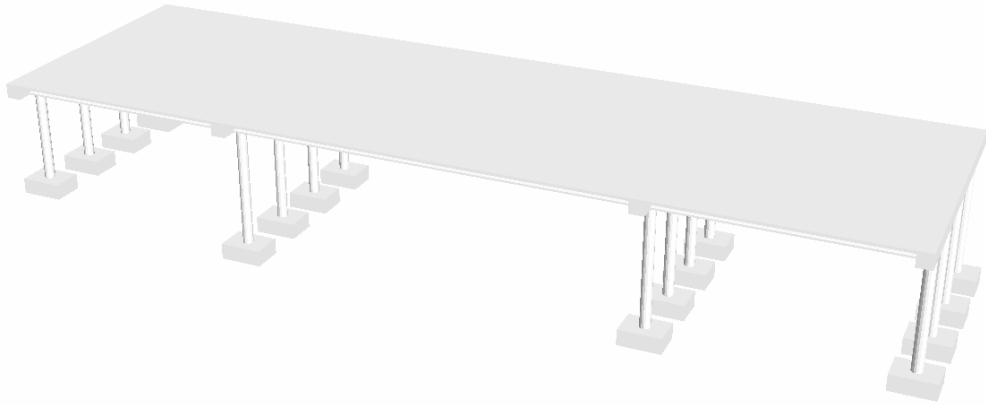


Figure 4-3 The transformed Bridge 1 model in ArcScene.

Table 4-2 presents the test results of the experiment. “----” indicates that the transformation path is not applicable, while “x” indicates a failed transformation. The presence of a number in a cell indicates a successful transformation, and the number indicates the number of components contained in the transformed bridge model. This number can be used to indicate the level of geometry information loss. For instance, a value of 1 means that the original 61 constituents of the bridge have been merged, and thus geometry information has been lost, while a value of 61 indicates no geometry information loss. Of the 26 applicable transformation paths, 8 paths failed, 2 paths resulted in models comprising 2460 components (geometric information loss), 12 paths merged the bridge parts into one (geometric information loss), and only 4 paths retained the original 61 components.

Table 4-2 The assessment of transformation.

	Formats	Importing (Type 1)	Exporting (Type 2)	DI (Type 3)	Other
1	3DS	1	61	61	----
2	COLLADA	1	1	x	----
3	DWG	----	x	2460	----
4	DXF	----	x	2460	----
5	OBJ	----	1	1	----
6	VRML	1	1	1	----

	Formats	Importing (Type 1)	Exporting (Type 2)	DI (Type 3)	Other
7	SKP	1	1	1	----
8	KML	----	x	x	x
9	KMZ	----	1	x	x
10	IFC	----	61	61	----

There are numerous versions of SketchUp available, including versions 3 to 8 and versions 2013 to 2017. This study tested the supportiveness of each method in relation to different versions. As shown in Table 4-3, the study found that different methods can support different versions. Type 1 was only able to transform versions 3 to 7, while Types 2 and 3 supported almost all versions, except for version 2017.

Table 4-3 Versions of SketchUp supported by different methods.

	Importing (Type 1)	Exporting (Type 2)	DI (Type 3)
V3	√	√	√
V4	√	√	√
V5	√	√	√
V6	√	√	√
V7	√	√	√
V8	X	√	√
2013	X	√	√
2014	X	√	√
2015	X	√	√
2016	X	√	√
2017	X	X	X

#### 4.4.2 Analysis

In general, the results show that different IFs can produce similar results through different paths. For instance, both 3DS and IFC were able to produce a bridge model with 61 pieces. An IF can also produce different outputs if different transformation methods are used. For example, KMZ can be transformed through Type 2 but not through Type 3. 3DS can produce a merged bridge model through Type 1, but a 61-piece bridge model using Types 2 or 3.

##### 4.4.2.1 Comparison of transformation methods

As noted earlier, three methods are mainly used to transform IFC to Shapefile, namely importing (Type 1), exporting (Type 2), and DIA (Type 3).

Type 1 only supports a limited number of formats, and only 3DS, COLLADA, VRML, and SKP were successfully transformed. Type 2 supports seven formats, not

including DWG, DXF, and KML. The same number of formats is supported by Type 3, but this does not support COLLADA, KML, and KMZ. The performance of Types 2 and 3 was comparable, with both supporting seven formats, while the performance of Type 1 was somewhat weaker, only supporting four formats.

#### 4.4.2.2 Comparison of IFs

In addition to the source IFC format, nine intermediate formats were assessed. Their performance varied significantly. For example, 3DS, VRML, and SKP could be converted into Shapefile using any of the three methods, while DWG, DXF, and KMZ can only be transformed through one method. KML was not successfully transformed using any of these methods.

In addition to semantic information loss, geometry information loss was also noted during the test. The formats were grouped and ranked according to the degree of geometric and semantic information loss during transformation, with results shown in Table 4-4.

Table 4-4 Ranking of intermediate formats.

Group	Formats
1	IFC, 3DS
2	VRML, SKP, COLLADA, OBJ
3	DWG/DXF, KML, KMZ

The first group comprises IFC and 3DS. These retained all geometric information (61 pieces). IFC outperformed 3DS in terms of semantic information retention, as the latter lost all semantic information. COLLADA, OBJ, VRML, and SKP are in the second less favourable group; in this case, much geometric and semantic information was lost because of the merging of different constituents into a single one. The third group comprises DWG, DXF, KML, and KMZ; these are considered least suitable, either because of the failure of the transformation (KML, KMZ) or because of splitting of the bridge model into thousands of small pieces (DWG, DXF). Consequently, the order of preference is: IFC, 3DS, VRML, SKP, COLLADA, OBJ, DWG/DXF, and KML. KMZ is not included because results indicated that it cannot be successfully transformed using any of these methods.

#### 4.4.2.3 Spatial disorder in resultant models

Transformation resulted in some unexpected geometry changes; for example, resultant models had different sizes, locations, and orientations. These problems are referred to as geometric error.

Figure 4-4 presents results for different format models transformed through Type 2. As expected, these had different spatial coordinates after transformation, but they also had different spatial locations, orientations, and even sizes (a smaller model is shown in the red box in Figure 4-4). The same issue was observed with models transformed through Types 1 and 3. It might be caused by the nature of different intermediate formats, as models derived from 3DS have the same spatial location, regardless of transformation method.

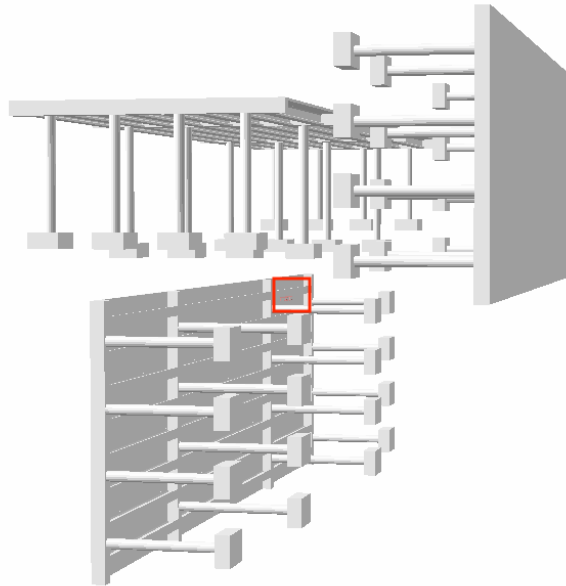


Figure 4-4 Models from different formats through exporting (Type 2) with different locations, orientations, and sizes.

## 4.5 Geo-referencing 3D models

The observed orientation and size problem, as well as the incompatibility of spatial reference systems (CSs), shows the necessity for geo-referencing resultant 3D models. All BIM models need to be geo-referenced before they can be properly processed by GIS. However, there is no well-defined approach to geo-referencing 3D building models, notwithstanding the fact that GIS has a mature paradigm for geo-referencing 2D data such as remote sensing imagery (Turner, Lucieer, and Wallace 2014). The main difficulty in 3D geo-referencing lies in the selection of control points.

This section proposes a two-step approach to geo-referencing 3D models by extending an existing 2D geo-referencing algorithm. The first step, completed in ArcMap, is to rectify x- and y-coordinates (2D footprint), and the second is to adjust the z-value of each point. Multiple tools are used in combination, including ArcMap, ArcScene, and ArcGIS Pro.

Figure 4-5 presents the workflow for geo-referencing 3D models. To validate the proposed method, the Bridge 2 was used, since more geometric errors, including size error, location error, and orientation error, were observed in this model.

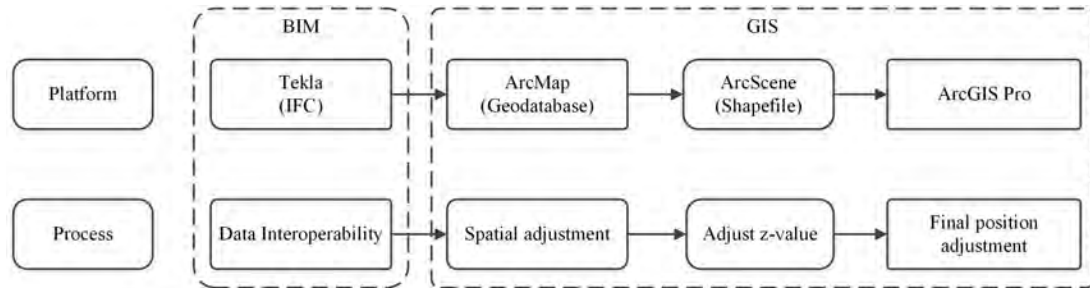


Figure 4-5 Workflow of geo-referencing 3D models.

#### 4.5.1 Rectification of x- and y-coordinate

This section describes rectification of x- and y-coordinates. A “right” footprint (RF) first has to be created. The original footprint of the model is referred to as the “wrong” footprint (WF). Figure 4-6 shows the WF and RF of Bridge 2. The WF is represented as a red rectangle. Due to improper use of the CS, its size on the map is much larger than it should be.



Figure 4-6 The WF in red box and the RF in the green box.

To complete geo-referencing, a number of control points are selected. Their coordinates are obtained in both RF and WF, and the mathematical relationship between them is established. The two sets of coordinates of a control point, one from RF and the other from WF, constitute a displacement link. In a 2D case, at least three displacement links are required. Table 4-5 shows the selected control points for Bridge

2. x-source and y-source are coordinates from the WF, while x-destination and y-destination are from the RF.

Table 4-5. Control points for geo-referencing.

ID	x-source	y-source	x-destination	y-destination	Residual error
1	12446488.628050	2709125.359343	12550256.642045	2634645.825519	0.000000
2	12439460.110040	2704345.198607	12550248.151620	2634646.084748	0.000000
3	12571785.074786	2524895.501584	12550250.684949	2634424.219664	0.000000
4	12564756.556776	2520115.340848	12550242.194525	2634424.478929	0.000000

Affine transformation was used to adjust coordinates. The residual error is a measure of the fit between true and transformed locations, generated for each displacement link; this can be calculated by:

$$RE = \sqrt{(x_a - x_d)^2 + (y_a - y_d)^2}, \quad 4-1$$

where RE is the residual error,  $x_a$  and  $y_a$  are adjusted coordinates (x-source and y-source), and  $x_d$  and  $y_d$  are values of the x-destination and y-destination, respectively. In this case, all residual errors are zero, indicating high transformation accuracy. Figure 4-7 shows the rectified footprint of the bridge.



Figure 4-7 Rectified footprint of the second bridge.

### 4.5.2 Adjustment of height information

After rectification of x- and y-coordinates, the height (z-value) should also be adjusted proportionally; otherwise, the model will be distorted. An example is given in Figure 4-8.

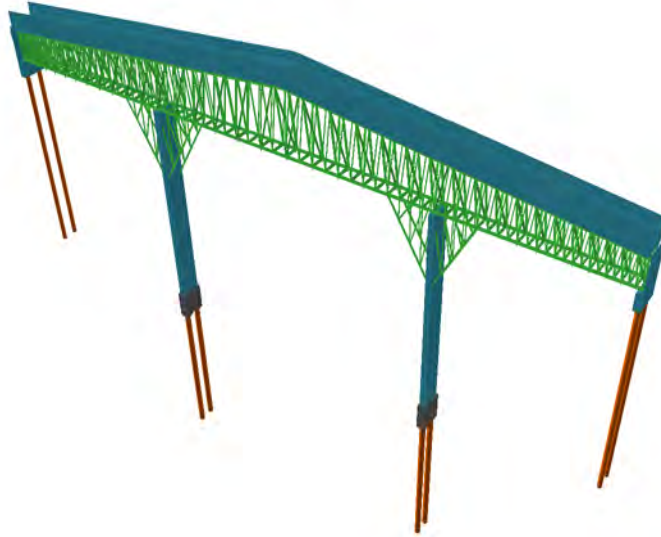


Figure 4-8 Distorted bridge model with improper height information.

The z-value is adjusted by

$$z_a = f \times z_b, \quad 4-2$$

where  $z_a$  is the adjusted height,  $z_b$  denotes the original value, and  $f$  stands for a scaling factor, which can be calculated as follows:

$$f = L_r/L_w, \quad 4-3$$

where  $L_r$  is the size of the RF, and  $L_w$  stands for the size of the WF. The size can be represented by length or width, whereas height is not available. The  $f$  is of great importance to guarantee the correctness of the structure of the model. In this case, the width of the TF is 8.5 metres (map units), while width of the WF is 8500 metres (map units), measured in ArcMap.

The fully rectified model is shown in Figure 4-9(a), while Figure 4-9(b) shows the bridge model in the “real” scene created by GIS.



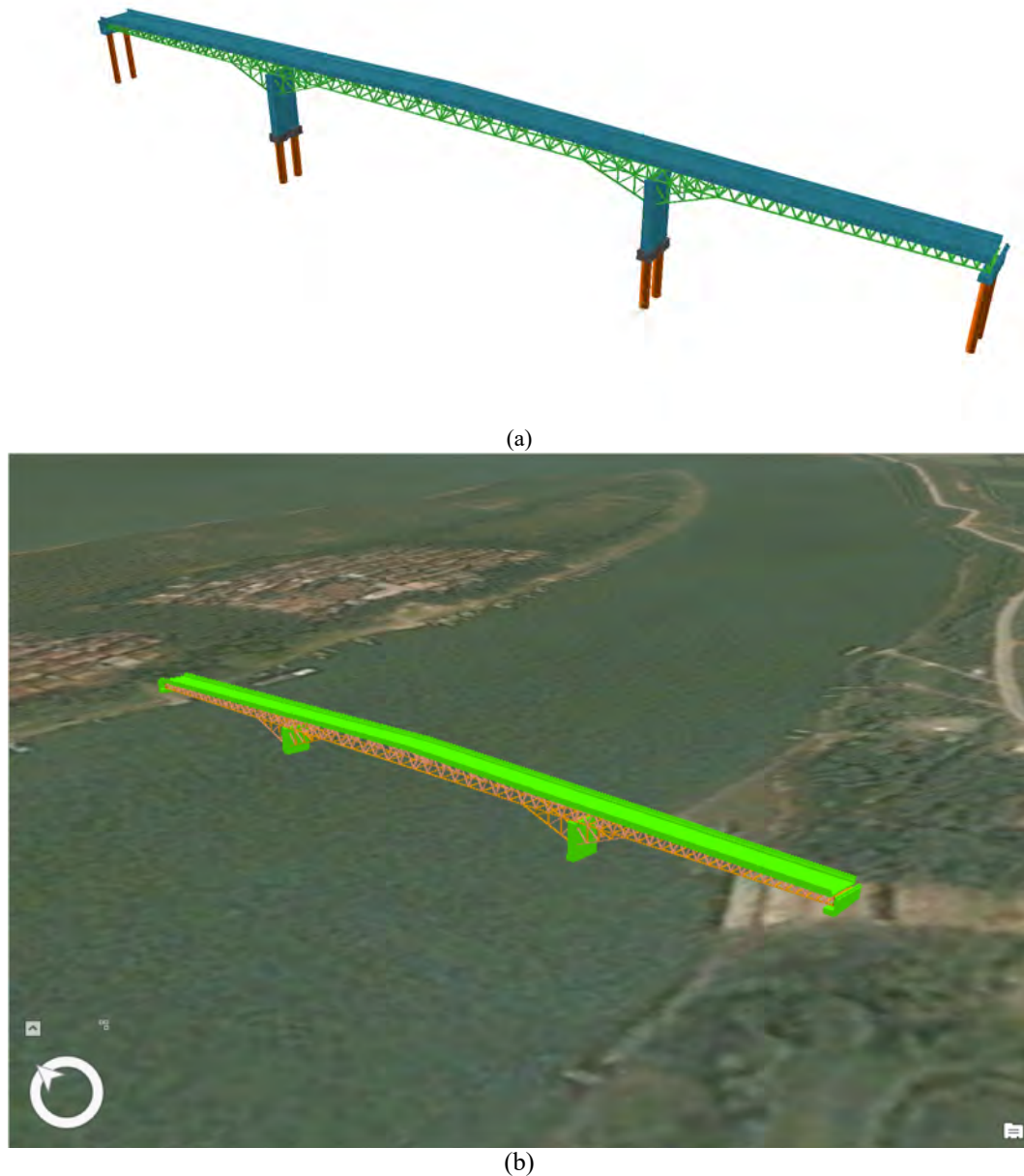


Figure 4-9 Rectified bridge model (a) and the rectified model in a real scene (b).

## 4.6 Chapter summary

This chapter presents the enhancement of the conventional approaches that use commercial software by using indirect transformation approach.

First, the most widely-used 3D formats and transformation methods were identified. These data formats and transformation methods were then used to constitute various transformation paths.

Second, Bridge 1 model was used to test these transformation paths. It was found that direct transformation should always have the priority. If direct transformation is

not available, 3DS can be used as intermediate format to retain the most geometric and semantic information.

Third, a two-step approach was developed to geo-reference transformed models that have spatial errors such as incorrect location, orientation, or size.

## **5 Development of Open Source Approach (OSA)**

### **5.1 Introduction**

This chapter describes the development of a method for transforming the IFC into Shapefile using an OSA, trying to improve the robustness and efficiency of the transformation. It mainly focuses on geometry transformation, but some semantic information, such as for necessary attributes, also needs to be retrieved. Of the three approaches for 3D representation of IFC, namely CSG, B-rep, and sweep, this study focuses on the sweep approach.

The rest of this chapter is organised as follows. Section 5.2 describes geometry parameters extraction and transformation. Section 5.3 develops the automatic multipatch generation algorithm based on the information obtained in the previous section. Section 5.4 presents the workflow of open source approach. Section 5.5 conducts the experiment using Bridge 1 model to examine the proposed approach. Section 5.6 compares OSA with DIA and FME. Section 5.7 demonstrates the application of model in 4D simulation. Finally, in Section 5.8, a summary is provided.

### **5.2 Geometry parameters extraction and transformation**

BIM uses a parametric method to create models, with a shape in a model represented by a set of parameters. For instance, a rectangle is defined by its length and width. To rebuild shapes in GIS, the relevant parameters first have to be retrieved and transformed. This process starts with an examination of the geometry of the IFC standard.

#### **5.2.1 IFC geometry**

To retrieve the geometric information of a building element, two types of information (attributes) are essential, i.e. placement of the element (IfcLocalPlacement) and its representation (IfcProductDefinitionShape). Placement describes the location of an element, while representation defines the shape of that element. Figure 5-1 presents the attribute structure of a typical IFC geometry. All attributes needed for extraction of geometric information are illustrated; some important items are numbered for easier access later, e.g. #1 refers to element, #2 refers to object placement.

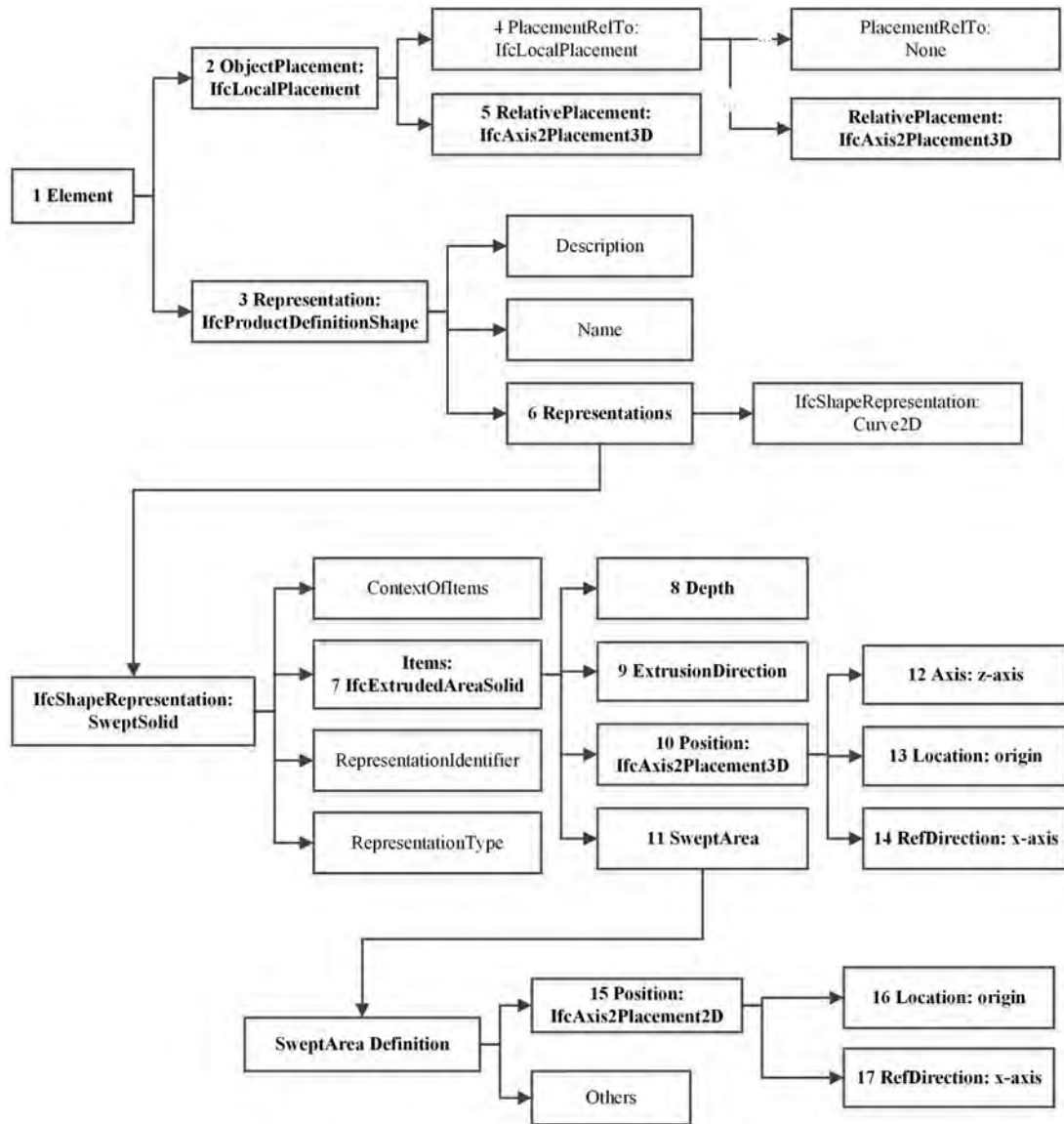


Figure 5-1 Attribute structure of IFC geometry. IfcLocalPlacement decides where an object is to be placed, and IfcProductDefinitionShape defines the shape of object. Important items are numbered.

### 5.2.1.1 Shape of element

The shape of a building element is determined by its representation attribute (#3), defined in a relationship entity named IfcProductDefinitionShape. Through this entity, all extrusion parameters for rebuilding the geometry can be retrieved, namely extrusion depth (#8), extrusion direction (#9), position (#10), and swept area (#11).

Extrusion direction defines the direction of sweep, while extrusion depth defines the sweeping length along that direction. These can be obtained directly from the IfcExtrudedAreaSolid (#7). Swept area determines the extrusion profile, or the shape for sweeping, while the position determines where the extrusion is to be placed in the LCS of that element. Since an element may contain one or more parts, position is used to discriminate between these different parts.

### 5.2.1.2 Placement of element

The placement of a building element is determined by its placement attribute (#2), `IfcLocalPlacement`. This attribute points to the LPS of that element. The LPS of an element consists of two parts, i.e. its parent LPS and the relationship between the LCS of the element and its parent LCS. Taking a column as an example, Figure 5-2 shows the LPS and LCS of the column as well as the path for transformation of its LCS to the LCS of site or even to a WCS. In this case, the column requires 3 transformations for achievement of site LCS. If a geographic location is linked to the site, the column could eventually reach a WCS.

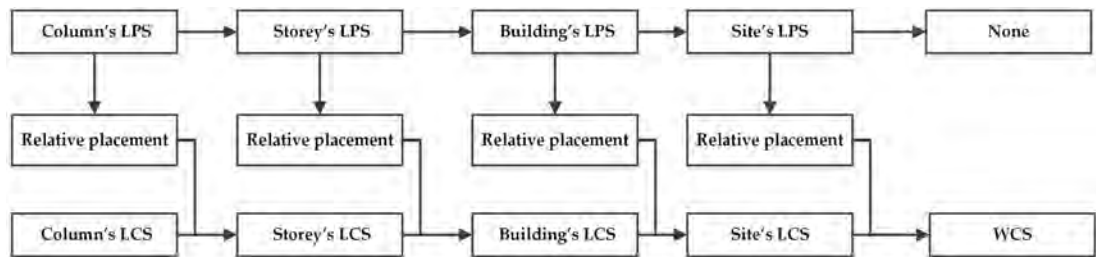


Figure 5-2 The local placement system (LPS) and local coordinate system (LCS) of a column.

## 5.2.2 Extraction and transformation of extrusion parameters

### 5.2.2.1 Extraction of extrusion parameters

The sweep method needs a swept area (extrusion profile) and a sweeping path (extrusion direction and depth) to create a geometry. Entrance to these is through `IfcExtrudedAreaSolid` (#7), which records extrusion depth, extrusion direction, and swept area. The sweeping path can be obtained by multiplying extrusion depth and direction; however, determination of swept area requires more steps. Depending on the type of swept area, different methods have to be applied to extract these parameters.

The final extrusion profile is in the form of a sequence of points that constitute a closed ring, calculated from these geometric parameters. In this paper, the terms extrusion profile, swept area, and ring are used to refer to the same item, namely a shape used for sweeping.

IFC has a range of predefined, parameterised profile definitions for different shapes (swept area), such as circle, rectangle, ellipse, L-shape, U-shape, C-shape, Z-shape, and T-shape (buildingSMART 2018c). A predefined shape is usually defined by a few specific parameters. For example, a circle is defined by the location of the centre and its radius. In situations where additional extrusion profiles are needed, customised shapes can also be defined. For example, the I-like beam in the Bridge 1 model of this study is customised. In most cases, it is only the parameters for creation

of an extrusion profile that can be directly obtained from IFC, rather than the sequence of points forming the extrusion profile.

However, from these parameters, a set of points approximating the swept area can be obtained. Figure 5-3 illustrates three typical shape definitions. (1) `IfcArbitraryClosedProfileDef` defines any arbitrary shape. It records the position of each point. In this case, the ring of points can be directly obtained. (2) `IfcRectangleProfileDef` defines a rectangle with a specific length along the x-axis (`XDim`) and y-axis (`YDim`). The rectangle's centre is defined as the origin of the 2D LCS of the profile, and thus, the coordinates for the four corners can be derived as  $(XDim/2, YDim/2)$ ,  $(XDim/2, -YDim/2)$ ,  $(-XDim/2, -YDim/2)$ ,  $(-XDim/2, YDim/2)$ , forming a ring to approximate the rectangle. (3) `IfcCircleProfileDef` defines a circle with a specified radius, with the circle centre defined as the origin of the profile's 2D LCS. As with the rectangle above, a number of points approximating the circle can be acquired. All other predefined, parameterised shapes can be acquired using a similar approach.

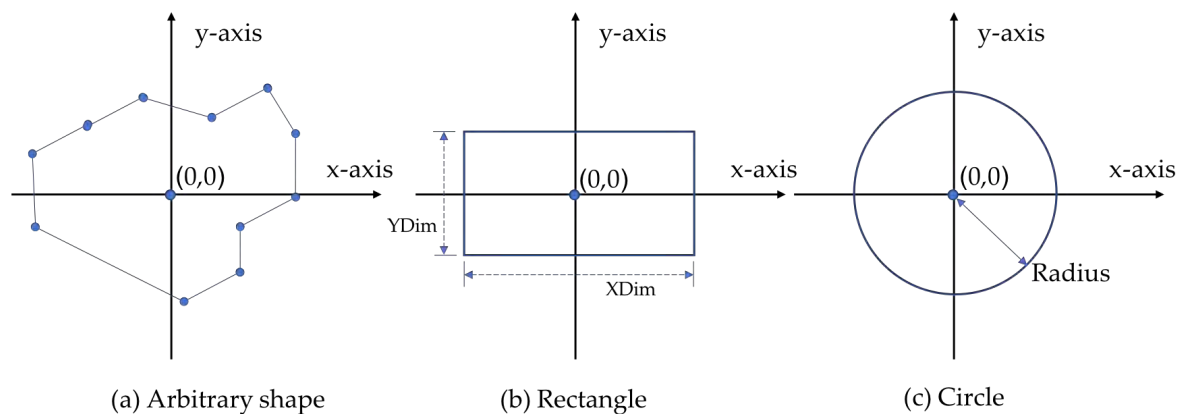


Figure 5-3 Sweeping profile definitions for arbitrary shape, rectangle and circle.

### 5.2.2.2 Extrusion profile transformation

Since the profiles are defined in their own 2D LCS, their coordinates have to be transformed before they can be used for extrusion. The relationship between the profile's 2D LCS and its parent is defined in the `IfcAxis2Placement2D` (#15) object. This has two attributes. The "location" attribute (#16) records the origin shift of the 2D LCS, while the direction of the x-axis is stored in the "RefDirection" (#17) attribute (Figure 5-4).

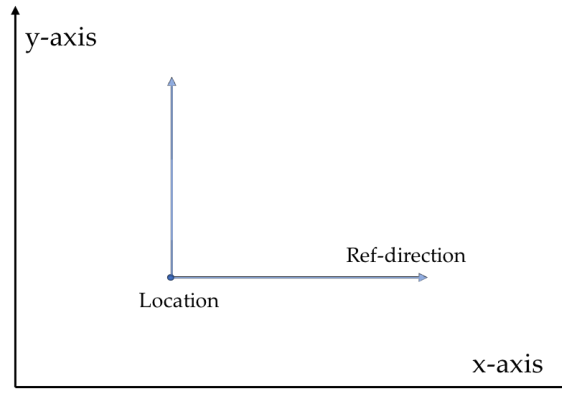


Figure 5-4 2D local placement system (LPS). The black is the x-y plane of the parent 3D LCS, and the blue is the child 2D LCS for defining the sweeping profile.

The transformation from the child 2D LCS to its parent can be completed as follows:

$$\begin{bmatrix} x' \\ y' \end{bmatrix} = R \times \begin{bmatrix} x \\ y \end{bmatrix} + \begin{bmatrix} x_0 \\ y_0 \end{bmatrix} \quad 5-1$$

or

$$\begin{bmatrix} x' & y' \end{bmatrix} = \begin{bmatrix} x & y \end{bmatrix} \times R^T + \begin{bmatrix} x_0 & y_0 \end{bmatrix}, \quad 5-2$$

where  $x'$  and  $y'$  are coordinates in the parent LCS (target), while  $x$  and  $y$  are their corresponding coordinates in the child 2D LCS (source),  $R$  is the transformation matrix, and  $x_0$  and  $y_0$  are the origin shift of the child LCS. The transformation matrix  $R$  is calculated by:

$$R = \begin{bmatrix} i & j \\ -j & i \end{bmatrix}, \quad 5-3$$

in which  $(i, j)$  denotes the x-axis direction of the child LCS, usually a normalised  $1 \times 2$  vector, and can be obtained directly from the “RefDirection” attribute (#17).

### 5.2.3 Swept area and extrusion path transformation between LCSs

#### 5.2.3.1 Transformation between LCSs

GIS does not use the LPS that is adopted by IFC; instead, it uses a WCS. All geometries are placed in the WCS with absolute coordinates. In situations where a WCS is not defined, GIS can also use an LCS. However, models defined in LCS have to be geo-referenced before they can be correctly visualised and analysed in GIS (Zhu et al. 2017). Accordingly, if IFC geometry is to be transformed into Shapefile, the geometry coordinates have to be transformed at least to the site’s LCS, or if possible, to a WCS.

The relative placement object (#5) defines how a child LCS is placed relative to its parent. #5 has information about the origin shift of the child LCS (“Location”) and

the direction of the x-axis (“Ref-direction”) and z-axis (“Axis”), as illustrated in Figure 5-5. The direction of the y-axis is not given directly but can be deduced from the given x-axis and y-axis using the right-hand rule (Wikipedia 2018b). Note that a child LCS can have different directions to its parent. As shown in Figure 5-5, the z-axis of the child is along the x-axis of the parent, while the x-axis is along the y-axis of the parent.

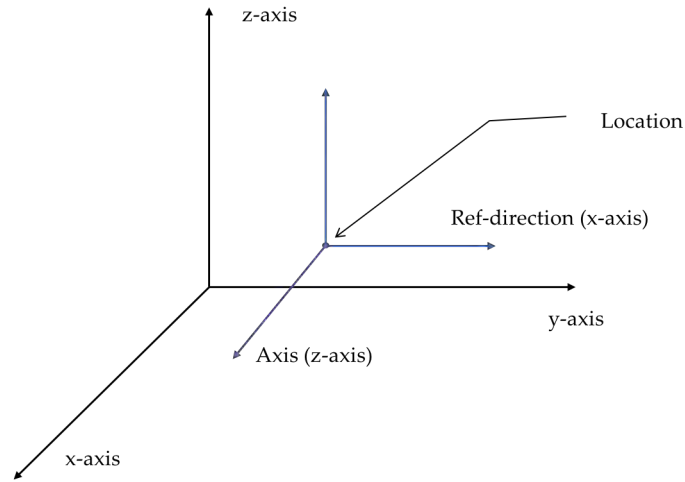


Figure 5-5 A 3D local placement system (LPS). Black colour indicates the parent LCS, while the blue is the child LCS.

The coordinate system transformation from child LCS to its parent can be completed by:

$$\begin{bmatrix} x' \\ y' \\ z' \end{bmatrix} = R \times \begin{bmatrix} x \\ y \\ z \end{bmatrix} + \begin{bmatrix} x0 \\ y0 \\ z0 \end{bmatrix}, \quad 5-4$$

where  $x'$ ,  $y'$ , and  $z'$  are coordinates of the parent LCS,  $x$ ,  $y$ , and  $z$  are the corresponding coordinates in the child LCS,  $x0$ ,  $y0$ , and  $z0$  are the origin shift, and  $R$  is the transformation matrix, obtained by:

$$R \times m = M, \quad 5-5$$

or

$$R = M \times m^{-1}, \quad 5-6$$

where  $m$  is the matrix of the axis directions of the child LCS, and  $M$  is the corresponding matrix for the parent LCS, which is a constant, defined as follows:

$$M = \begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{bmatrix}.$$

$M$  is a constant because any 3D LCS has a local origin of  $[0, 0, 0]$ , a default x-axis direction of  $[1, 0, 0]$ , a default y-axis direction of  $[0, 1, 0]$ , and a default z-axis direction of  $[0, 0, 1]$ .



From Equations 5-4 and 5-6, it can be inferred that a transformation can only be completed when  $M$ ,  $m$ , and origin shift are provided. While  $M$  is a constant and origin shift can be obtained directly, the acquirement of  $m$  is relatively complicated, and requires first obtaining the y-axis direction.

In the IFC's right-hand coordinate system, the third axis can be derived from the two given axes. For example, given the x-axis ( $\vec{x}$ ) and z-axis ( $\vec{z}$ ), the y-axis ( $\vec{y}$ ) can be calculated by:

$$\vec{y} = \vec{z} \times \vec{x} \quad 5-7$$

or

$$\vec{y} = -\vec{x} \times \vec{z}, \quad 5-8$$

where  $\vec{y}$  is the cross product of vectors  $\vec{z}$  and  $\vec{x}$  and is perpendicular to both  $\vec{z}$  and  $\vec{x}$ ;  $m$  can then be obtained by vertical stacking, as follows:

$$m = [\vec{x} \ \vec{y} \ \vec{z}]^T. \quad 5-9$$

The final equation for 3D coordinate transformation is:

$$\begin{bmatrix} x' \\ y' \\ z' \end{bmatrix} = M \times [\vec{x} \ \vec{y} \ \vec{z}]^T \times \begin{bmatrix} x \\ y \\ z \end{bmatrix} + \begin{bmatrix} x0 \\ y0 \\ z0 \end{bmatrix} \quad 5-10$$

or

$$[x' \ y' \ z'] = [x \ y \ z] \times (M \times [\vec{x} \ \vec{y} \ \vec{z}]^T)^T + [x0 \ y0 \ z0]. \quad 5-11$$

Equations 5-10 and 5-11 are equivalent, but Equation 5-11 is more straightforward. However, there are different opinions in the literature regarding coordinate transformation; these are addressed in detail later in Section 8.1.4.

In addition to the swept area, the extrusion direction should be transformed. This transformation can be completed by:

$$\vec{v}' = R \times \vec{v}, \quad 5-12$$

where  $\vec{v}'$  is the extrusion direction in the parent LCS,  $\vec{v}$  is the direction in the child LCS, and  $R$  is the transformation matrix, obtained by Equation 5-6. The only difference between swept area transformation and extrusion direction transformation is that transformation of extrusion direction does not take the origin shift into consideration.

### 5.2.3.2 Iterating transformation of sweeping area and extrusion direction

In most cases, it is difficult to know where an LCS is located in the placement system; this implies uncertainty in terms of knowing how many coordinate transformations need to be conducted. An iterator for searching the LPS and

conducting the transformation therefore needs to be designed. Table 5-1 shows the pseudo python code for the developed iterator.

Table 5-1 The python pseudo code for searching LPS and performing coordinate transformation.

---

```
def keepTransformArea(oldLocation, localPlacement):
    newLocation = []
    if localPlacement is not None:
        newLocation = oldAreaToNew(oldLocation, localPlacement.RelativePlacement)
        if localPlacement.RelativePlacement is not None:
            keepTransformArea(newLocation, localPlacement.PlacementRelTo)
    return newLocation

def keepTransformDirection(oldDirection, localPlacement):
    newDirection = []
    if localPlacement is not None:
        newDirection = oldDirectionToNew(oldDirection,
        localPlacement.RelativePlacement)
        if localPlacement.RelativePlacement is not None:
            keepTransformDirection(newDirection, localPlacement.PlacementRelTo)
    return newDirection
```

---

The logic is as follows: (a) if the local placement attribute of an element exists, then obtain the necessary information and perform the coordinate transformation, then (b) check if this local placement attribute points to a parent; if yes, find the parent LPS and repeat (a) and (b) until no more parent LPSs can be found, and finally return the transformed extrusion profile and extrusion direction.

### 5.3 Automatic multipatch generation (AMG) algorithm

After coordinate transformation, three types of information are ready for the extrusion process, i.e. the extrusion profile in the form of a sequence of points, the extrusion direction, and extrusion depth ( $\mathbf{d}$ ). The extrusion profile can be treated as an  $n \times 3$  matrix ( $\mathbf{M}$ ) where  $n$  is the number of points forming the profile. The extrusion direction ( $\mathbf{V}$ ) is a normalised vector, and extrusion depth is just a scalar indicating how long the extrusion profile is to be swept along the extrusion direction. The corresponding point set  $\mathbf{M}'$  on the other side of the extrusion can be obtained by:

$$\mathbf{M}' = \mathbf{M} + \mathbf{d} \times \mathbf{V}. \quad 5-13$$

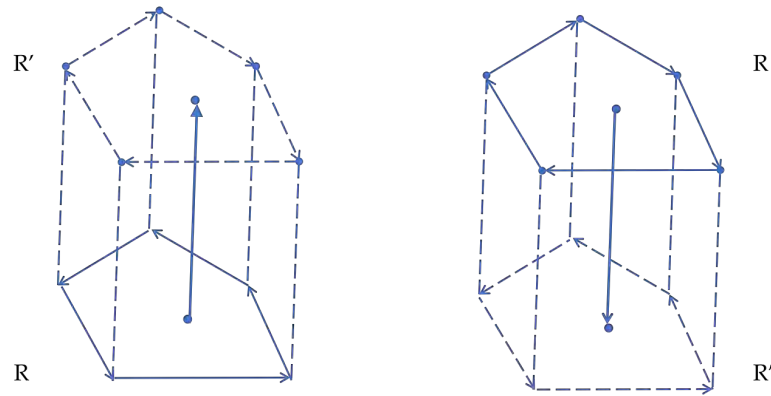
As specified in the white paper on multipatch geometry issued by ESRI (ESRI 2008), a multipatch can be defined by a series of closed faces (patches). Each face has to be individually defined using a ring, and the order of each ring should be clockwise relative to an outside observer. An AMG algorithm was developed, within which a few factors affect generation of a multipatch, such as observation perspective, initial ring order, and after-extrusion ring order. It is assumed that the initial observation perspective is top-down.

### 5.3.1 Influencing factors

For multipatch generation, ring order is the most important concept, as it determines whether a qualified multipatch can be produced. As per multipatch specifications (ESRI 2008), the points in a ring should be added in a clockwise order relative to an outside observer. To ensure that each generated ring meets this requirement, two factors have to be considered when designing the multipatch generation algorithm, i.e. the initial ring order of the extrusion profile and the extrusion direction. There are two issues to be solved; one is determination of ring order in 3D space, and the other is the influence of extrusion direction on the generated rings.

It is difficult to determine the ring order in 3D space if the observation perspective is not given. For example, if a ring is clockwise from a top-down perspective, it would be counterclockwise from a bottom-up perspective. In this study, a top-down perspective is therefore assumed when developing the AMG algorithm.

The extrusion direction influences the order of generated rings. For example, after extrusion, the order of one of the two rings, i.e. the original ring  $R$  and its corresponding extruded ring  $R'$ , has to be reversed. The one to be reversed is determined by the extrusion direction. Taking a simple case as an example, in 3D space,  $R$  is on the x-y plane and clockwise from a top-down perspective, and initially  $R'$  has the same order as  $R$  (clockwise). If the extrusion direction is along the positive z-axis, then  $R$  has to be reversed to be counter-clockwise (Figure 5-6(a)), where the order of  $R$  was initially clockwise. However, if the extrusion direction is along the negative z-axis,  $R'$  has to be reversed (Figure 5-6(b)).  $R$  and  $R'$  always have opposite order, i.e. if one is clockwise, the other has to be counterclockwise.



(a) Extrusion along positive z-axis

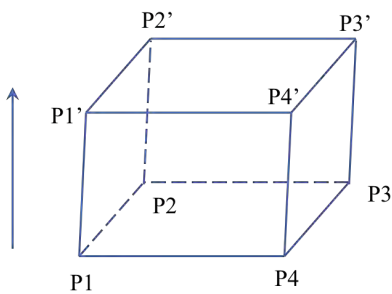
(b) Extrusion along negative z-axis

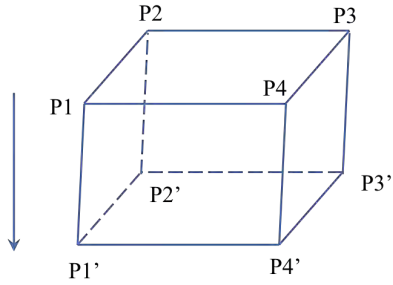
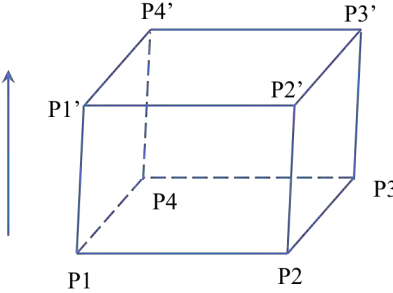
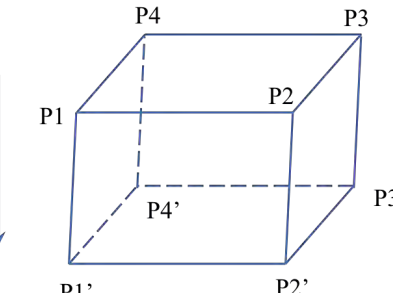
Figure 5-6 Extrusion along z-axis in two directions. (a) extrusion along positive z-axis, and (b) extrusion along negative z-axis.

### 5.3.2 Four simple extrusion cases

According to the initial order of the extrusion profile and extrusion direction, there are in total four possible combinations, namely (1) a clockwise ring extruded along a positive-z direction, (2) a clockwise ring extruded along a negative-z direction, (3) a counter-clockwise ring extruded along a positive-z direction, and (4) a counter-clockwise ring extruded along a negative-z direction. A simple rectangle with four vertexes ( $P_1, P_2, P_3,$  and  $P_4$ ) is used as the extrusion profile to demonstrate the extrusion methods for these four cases, listed in Table 5-2.  $R_1, R_2, R_3, R_4, R_5,$  and  $R_6$  are the six rings generated using these points.

Table 5-2 Four cases of extrusion types.

Types	Extruded rings and points order
<p data-bbox="316 1621 336 1648">1</p>  <p data-bbox="440 1783 884 1814">Clockwise ring along positive-z (Type 1)</p>	$R_1: P_1 \rightarrow P_4 \rightarrow P_3 \rightarrow P_2 \rightarrow P_1$ $R_2: P_1 \rightarrow P_2 \rightarrow P_2' \rightarrow P_1' \rightarrow P_1$ $R_3: P_2 \rightarrow P_3 \rightarrow P_3' \rightarrow P_2' \rightarrow P_2$ $R_4: P_3 \rightarrow P_4 \rightarrow P_4' \rightarrow P_3' \rightarrow P_3$ $R_5: P_4 \rightarrow P_1 \rightarrow P_1' \rightarrow P_4' \rightarrow P_4$ $R_6: P_1' \rightarrow P_2' \rightarrow P_3' \rightarrow P_4' \rightarrow P_1'$

Types	Extruded rings and points order
<p>2</p>  <p>Clockwise ring along negative-z (Type 2)</p>	$R_1: P_1 \rightarrow P_2 \rightarrow P_3 \rightarrow P_4 \rightarrow P_1$ $R_2: P_1 \rightarrow P_1' \rightarrow P_2' \rightarrow P_2 \rightarrow P_1$ $R_3: P_2 \rightarrow P_2' \rightarrow P_3' \rightarrow P_3 \rightarrow P_2$ $R_4: P_3 \rightarrow P_3' \rightarrow P_4' \rightarrow P_4 \rightarrow P_3$ $R_5: P_4 \rightarrow P_4' \rightarrow P_1' \rightarrow P_1 \rightarrow P_4$ $R_6: P_1' \rightarrow P_4' \rightarrow P_3' \rightarrow P_2' \rightarrow P_1'$
<p>3</p>  <p>Counter-clockwise ring along positive-z (Type 3)</p>	$R_1: P_1 \rightarrow P_2 \rightarrow P_3 \rightarrow P_4 \rightarrow P_1$ $R_2: P_1 \rightarrow P_1' \rightarrow P_2' \rightarrow P_2 \rightarrow P_1$ $R_3: P_2 \rightarrow P_2' \rightarrow P_3' \rightarrow P_3 \rightarrow P_2$ $R_4: P_3 \rightarrow P_3' \rightarrow P_4' \rightarrow P_4 \rightarrow P_3$ $R_5: P_4 \rightarrow P_4' \rightarrow P_1' \rightarrow P_1 \rightarrow P_4$ $R_6: P_1' \rightarrow P_4' \rightarrow P_3' \rightarrow P_2' \rightarrow P_1'$
<p>4</p>  <p>Counter-clockwise ring along negative-z (Type 4)</p>	$R_1: P_1 \rightarrow P_4 \rightarrow P_3 \rightarrow P_2 \rightarrow P_1$ $R_2: P_1 \rightarrow P_2 \rightarrow P_2' \rightarrow P_1' \rightarrow P_1$ $R_3: P_2 \rightarrow P_3 \rightarrow P_3' \rightarrow P_2' \rightarrow P_2$ $R_4: P_3 \rightarrow P_4 \rightarrow P_4' \rightarrow P_3' \rightarrow P_3$ $R_5: P_4 \rightarrow P_1 \rightarrow P_1' \rightarrow P_4' \rightarrow P_4$ $R_6: P_1' \rightarrow P_2' \rightarrow P_3' \rightarrow P_4' \rightarrow P_1'$

From Table 5-2, Types 1 and 4 have the same set of ring orders, while Types 2 and 3 have the same set of ring orders. Accordingly, there can be two extrusion types. For an initial ring with n vertexes, the extruded rings can be represented as AMG-1 and AMG-2, as per Table 5-3.

Table 5-3 AMG types.

AMG type	Rings
AMG-1	$R_1: P_1 \rightarrow P_n \rightarrow P_{n-1} \rightarrow \dots \rightarrow P_3 \rightarrow P_2 \rightarrow P_1$
	$R_2: P_1 \rightarrow P_2 \rightarrow P_2' \rightarrow P_1' \rightarrow P_1$
	$R_3: P_2 \rightarrow P_3 \rightarrow P_3' \rightarrow P_2' \rightarrow P_2$
	.....
	$R_n: P_{n-1} \rightarrow P_n \rightarrow P_n' \rightarrow P_{n-1}' \rightarrow P_{n-1}$
	$R_{n+1}: P_n \rightarrow P_{n+1} \rightarrow P_{n+1}' \rightarrow P_n' \rightarrow P_n$
	$R_{n+2}: P_1' \rightarrow P_2' \rightarrow P_3' \rightarrow \dots \rightarrow P_{n-1}' \rightarrow P_n' \rightarrow P_1'$

AMG type	Rings
	$R_1: P_1 \rightarrow P_2 \rightarrow P_3 \rightarrow \dots \rightarrow P_{n-1} \rightarrow P_n \rightarrow P_1$
	$R_2: P_1 \rightarrow P_1' \rightarrow P_2' \rightarrow P_2 \rightarrow P_1$
	$R_3: P_2 \rightarrow P_2' \rightarrow P_3' \rightarrow P_3 \rightarrow P_2$
AMG-2	.....
	$R_n: P_{n-1} \rightarrow P_{n-1}' \rightarrow P_n' \rightarrow P_n \rightarrow P_{n-1}$
	$R_{n+1}: P_n \rightarrow P_n' \rightarrow P_{n+1}' \rightarrow P_{n+1} \rightarrow P_n$
	$R_{n+2}: P_1' \rightarrow P_n' \rightarrow P_{n-1}' \rightarrow \dots \rightarrow P_3' \rightarrow P_2' \rightarrow P_1'$

### 5.3.3 Determination of ring order and extrusion direction

To decide which AMG type is to be used, the direction of ring order and the extrusion direction first have to be determined. A definition of ring direction is first given.

The positive direction of a ring can be determined by the right-hand rule, i.e., if right fingers are curled in the direction of ring order then the right thumb points in the positive direction of the ring (Figure 5-7).

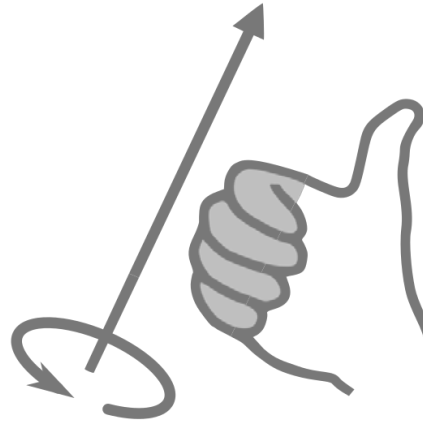


Figure 5-7 Positive direction of a ring (Wikipedia 2009).

The direction of ring order and extrusion direction can be determined by comparing the positive direction of ring and extrusion direction with a referencing direction, such as the z-axis. Since the ring is always defined in the x-y plane of a 3D space in this study, the positive ring direction should always be either along the positive-z or negative-z. The relationship between the positive direction of ring and positive-z can be determined by:

$$dr = (\overrightarrow{P_i P_{i+1}} \times \overrightarrow{P_{i+1} P_{i+2}}) \cdot [0 \ 0 \ 1], \quad 5-14$$

where  $dr$  is the dot product of two directions,  $\overrightarrow{P_i P_{i+1}}$  is a vector pointing from  $P_i$  to  $P_{i+1}$ ,  $\overrightarrow{P_{i+1} P_{i+2}}$  is a vector pointing from  $P_{i+1}$  to  $P_{i+2}$ , and  $i \leq n - 2$  ( $n$  stands for the

number of points in a ring).  $\overrightarrow{P_i P_{i+1}} \times \overrightarrow{P_{i+1} P_{i+2}}$  is the positive direction of the ring.  $[0\ 0\ 1]$  is a vector indicating the direction of the positive-z. If  $dr > 0$ , then the positive direction of ring and positive-z have the same direction.

The relationship between extrusion direction and positive-z can be determined by:

$$dp = path \cdot [0\ 0\ 1], \quad 5-15$$

where  $path$  is the extrusion path, and  $[0\ 0\ 1]$  is a vector indicating the direction of the positive-z axis. If  $dp > 0$ , then the extrusion path and positive-z axis form an angle  $< 90^\circ$ , and the extrusion direction can therefore also be considered as being along the positive-z.

Through  $dr$  and  $dp$ , AMG selection can be determined. If  $dr \times dp > 0$ , then the positive direction of the ring and the extrusion path have the same direction, and AMG-2 should be used for multipatch generation. This applies to Types 2 and 3. Otherwise, AMG-1 should be used, for Types 1 and 4.

### 5.3.4 Number of rings

The number of rings in the resultant multipatch is determined by the number of points in the shape to be extruded. In the example given in Table 5-2, a four-point shape generated a multipatch with six faces. In cases where the extrusion path is a curve, a similar approach can be followed to generate these faces. The number of rings can be determined by:

$$N_{rings} = N_{points} \times N_{path} + 2, \quad 5-16$$

where  $N_{rings}$  is the number of rings,  $N_{points}$  is the number of points in the swept area, and  $N_{path}$  indicates the number of direction vectors in the path.

For each multipatch part, one attribute has to be attached, i.e. GlobalId. It is the unique identifier (UID) in IFC and can serve as a primary key if an external database is to be attached to enrich the semantic information of the resultant model.

### 5.3.5 Validation of AMG

A test has been designed and conducted to determine the influence of these factors on the resultant multipatch: (1) from a top-down perspective, generating a clockwise and counter-clockwise ring with the same set of points for testing the influence of initial ring order, the points in the ring can be found in Figure 5-8; (2) extruding them along both directions of the z-axis using the AMG algorithm to investigate the influence of extrusion direction; and (3) modifying the AMG algorithm so that the two

rings,  $R$  and  $R'$ , have the same order, referred to as AMG', and then repeating (2) to test the influence of after-extrusion ring order on the resultant multipatch.

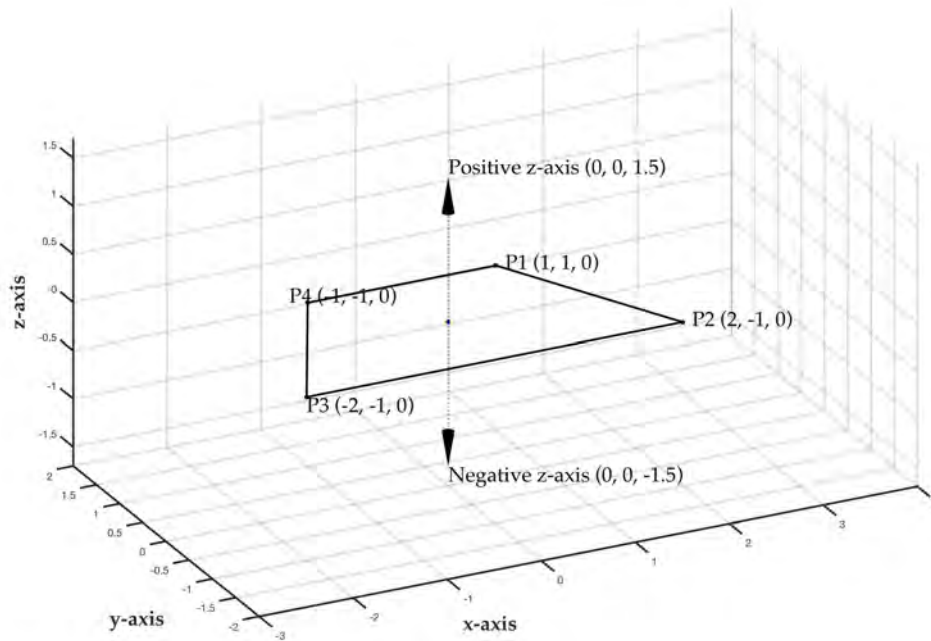


Figure 5-8 Extrusion profile and paths for the test.

Since all three factors, including initial ring order, extrusion direction, and algorithm, have two options, there will be eight consequent combinations in total (Figure 5-9), including (a) the clockwise ring processed with AMG, (b) the counter-clockwise ring processed with AMG, (c) the clockwise ring processed with AMG', and (d) the counter-clockwise ring processed with AMG'. Each sub-figure contains two results; the top is for the positive-z direction and the bottom is for the negative-z direction. The preliminary results show that all eight generation processes can output a multipatch.



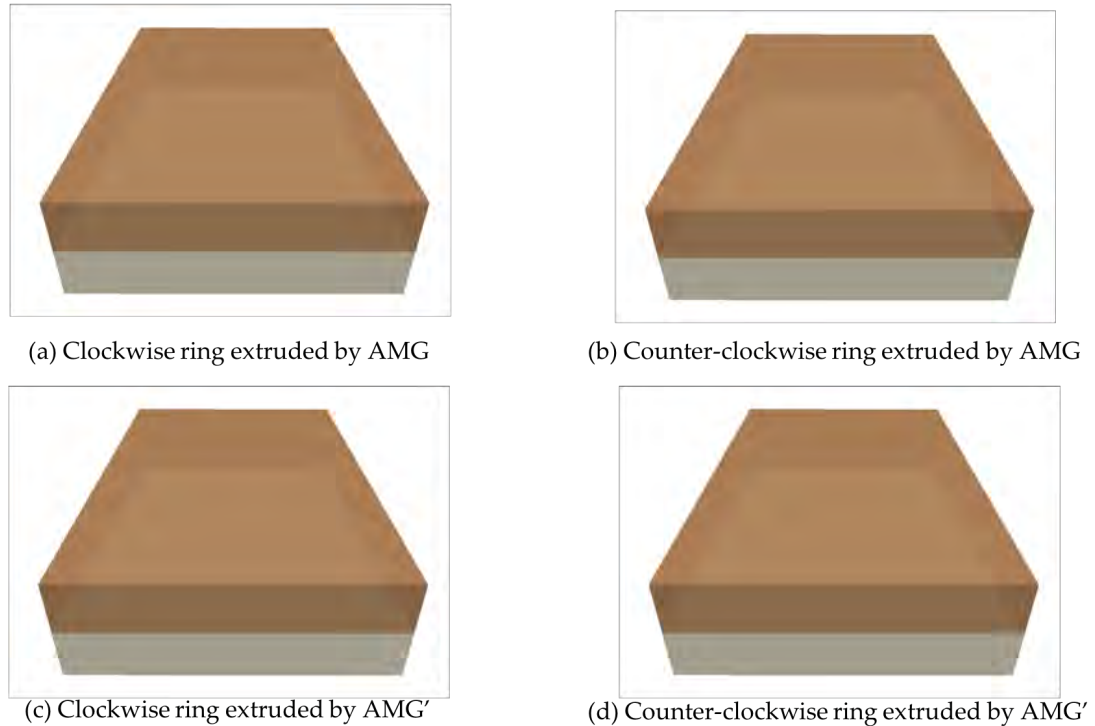


Figure 5-9 Effect of the order of ring and extrusion direction on the generation of multipatch. The multipatch from (a) a clockwise ring processed with AMG, (b) a counter clockwise ring processed with AMG, (c) a clockwise ring processed with AMG', and (d) a counter clockwise ring processed with AMG'.

B-rep contains two types of information, i.e. geometric information and topological information. When checking to test if the multipatches were closed (topologically correct), different results were returned. A closed multipatch can do more than one which is not closed, allowing for functions such as volume calculation, 3D union, and 3D intersect (ESRI 2018c). The result is shown in Table 5-4. This provides information about the test approach, whether a part is closed, and area and volume of multipatches.

Table 5-4 Closure test on the outputted multipatches.

Test Approach	Closed	Area	Volume
Clockwise, positive z-axis, AMG	Yes	27.71	9
Clockwise, negative z-axis, AMG	Yes	27.71	9
Counterclockwise, positive z-axis, AMG	Yes	27.71	9
Counterclockwise, negative z-axis, AMG	Yes	27.71	9
Clockwise, positive z-axis, AMG'	No	27.71	0
Clockwise, negative z-axis, AMG'	No	27.71	0
Counterclockwise, positive z-axis, AMG'	No	27.71	0
Counterclockwise, negative z-axis, AMG'	No	27.71	0

It can be inferred that, even though rings with arbitrary initial order can be used to generate faces, resultant multipatches may not be closed and therefore cannot be

used to calculate volume. Using the AMG, all generated multipatches were closed, regardless of initial ring order and extrusion direction.

#### 5.4 Workflow of open source approach (OSA)

The objective of this part of the study was to extract IFC geometries and transform them into multipatches. Figure 5-10 shows the OSA workflow, which largely relies on the IFC-Tree.

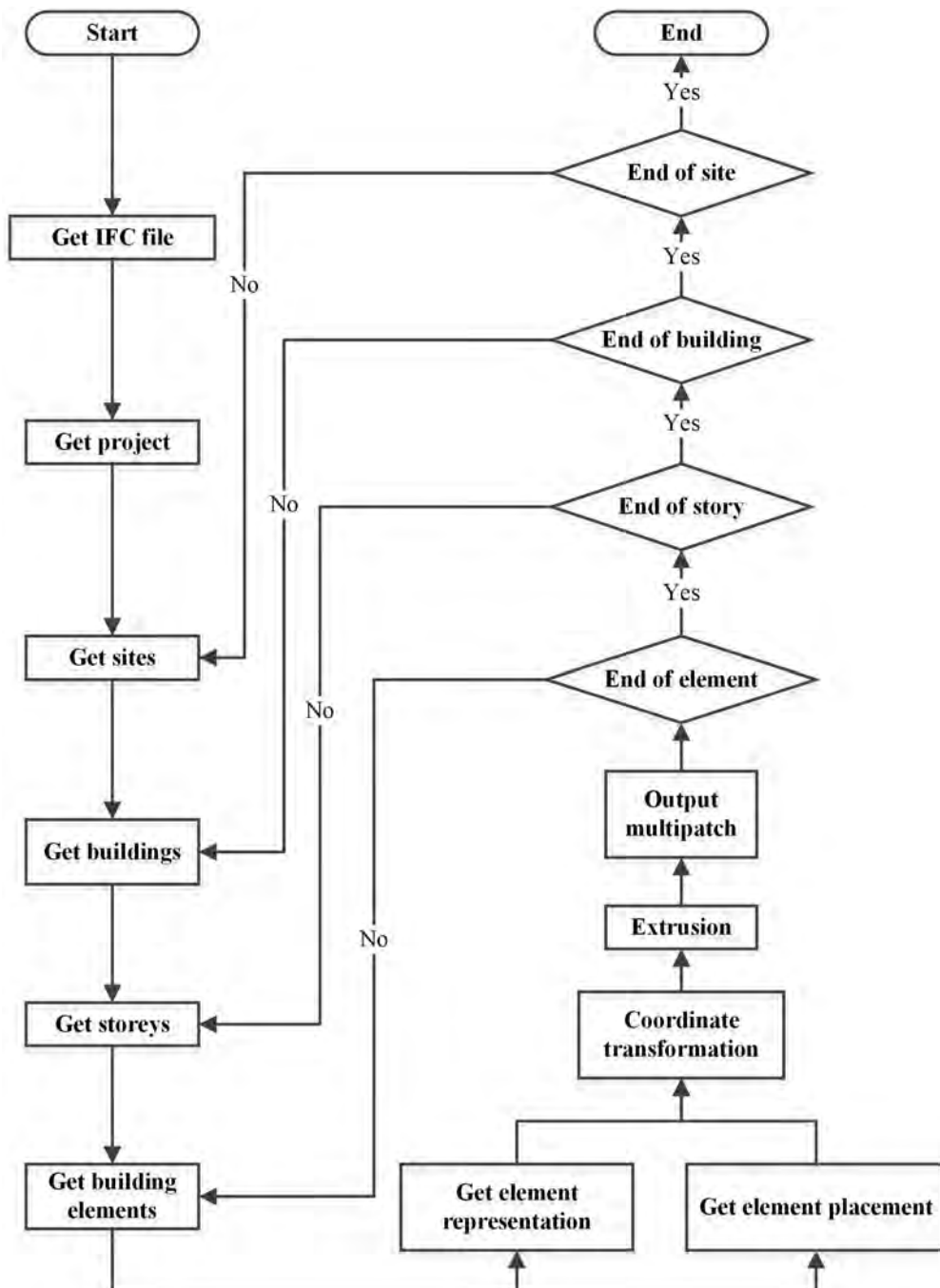


Figure 5-10 Workflow of OSA.

First, an IFC file is used to build the IFC-Tree; from the IFC-Tree, the project node is obtained, after which sites, buildings, storeys, and all building elements are obtained in order. For each building element, its representation and placement are fetched for coordinate transformation. Then extrusion is performed using AMG and the resultant faces are outputted as multipatches.

A check is carried out after completing each element to determine if all sites, buildings, storeys, and elements have been thoroughly processed. If not, the process involves going back to process the next item.

The coding work was conducted in Python, a popular open source programming language (McKellar 2014). The packages used include IfcOpenShell for parsing the IFC file (IfcOpenShell 2018), Numpy for number processing, Pysph for Shapefile reading and writing (Foundation 2018c), and VPython for generation of some shape profiles (VPython 2018), e.g. circles. All Python codes can be found in Appendix 1.

## 5.5 Experiment

### 5.5.1 Extrusion profile extraction

Bridge 1 was used to validate this approach developed in this chapter. The swept area and extrusion path of each element were extracted from the IfcExtrudedAreaSolid object (#7). Table 5-5 presents the IFC id, GlobalId, IFC type, profile type, and transformed extrusion path of each element.

Table 5-5 Extrusion profile and path for all the elements of the bridge.

IFC_id	GlobalId	IfcType	Profile	Extrusion Path
1297	1EXFMHqKzCSuCNvOD\$XrKm	IfcBeam	IfcArbitraryClosedProfileDef	[16.79, 0, 0]
1360	1EXFMHqKzCSuCNvOD\$XrPM	IfcBeam	IfcArbitraryClosedProfileDef	[16.79, 0, 0]
1422	1EXFMHqKzCSuCNvOD\$XrUz	IfcBeam	IfcArbitraryClosedProfileDef	[16.79, 0, 0]
1484	1EXFMHqKzCSuCNvOD\$XrVh	IfcBeam	IfcArbitraryClosedProfileDef	[16.79, 0, 0]
1546	1EXFMHqKzCSuCNvOD\$Xr2o	IfcBeam	IfcArbitraryClosedProfileDef	[16.79, 0, 0]
1608	1EXFMHqKzCSuCNvOD\$Xr2C	IfcBeam	IfcArbitraryClosedProfileDef	[16.79, 0, 0]
1670	1EXFMHqKzCSuCNvOD\$Xr0o	IfcBeam	IfcArbitraryClosedProfileDef	[16.79, 0, 0]
1732	1EXFMHqKzCSuCNvOD\$XrFb	IfcBeam	IfcArbitraryClosedProfileDef	[-16.79, 0, 0]
1794	1EXFMHqKzCSuCNvOD\$XrCq	IfcBeam	IfcArbitraryClosedProfileDef	[-16.79, 0, 0]
1856	1EXFMHqKzCSuCNvOD\$XrCO	IfcBeam	IfcArbitraryClosedProfileDef	[-16.79, 0, 0]
1918	1EXFMHqKzCSuCNvOD\$XrDi	IfcBeam	IfcArbitraryClosedProfileDef	[-16.79, 0, 0]
1980	1EXFMHqKzCSuCNvOD\$Xsou	IfcBeam	IfcArbitraryClosedProfileDef	[-16.79, 0, 0]
2042	1EXFMHqKzCSuCNvOD\$Xso3	IfcBeam	IfcArbitraryClosedProfileDef	[-16.79, 0, 0]
2104	1EXFMHqKzCSuCNvOD\$XspS	IfcBeam	IfcArbitraryClosedProfileDef	[-16.79, 0, 0]
2166	3FJz985D4uedEijlNTAbV	IfcBeam	IfcArbitraryClosedProfileDef	[17.63, 0, 0]

IFC_id	GlobalId	IfcType	Profile	Extrusion Path
2228	3FJzf985D4uedEijlNTAYT	IfcBeam	IfcArbitraryClosedProfileDef	[16.79, 0, 0]
2290	3FJzf985D4uedEijlNTAXQ	IfcBeam	IfcArbitraryClosedProfileDef	[-16.79, 0, 0]
2352	3FJzf985D4uedEijlNTBVE	IfcBeam	IfcArbitraryClosedProfileDef	[16.73, 0, 0]
2414	3FJzf985D4uedEijlNTBNW	IfcBeam	IfcArbitraryClosedProfileDef	[16.73, 0, 0]
2476	3FJzf985D4uedEijlNTBLz	IfcBeam	IfcArbitraryClosedProfileDef	[16.73, 0, 0]
2538	3FJzf985D4uedEijlNTBLY	IfcBeam	IfcArbitraryClosedProfileDef	[16.73, 0, 0]
2600	3FJzf985D4uedEijlNTBKl	IfcBeam	IfcArbitraryClosedProfileDef	[16.73, 0, 0]
2662	3FJzf985D4uedEijlNTBKE	IfcBeam	IfcArbitraryClosedProfileDef	[16.73, 0, 0]
2724	3FJzf985D4uedEijlNTBJd	IfcBeam	IfcArbitraryClosedProfileDef	[16.73, 0, 0]
2753	1HpmN5aLT6mh\$syK__BSLr	IfcSlab	IfcRectangleProfileDef	[0, 0, -0.15]
193	2XBW1hR7rFARVZ6Xhpg4Ju	IfcColumn	IfcCircleProfileDef	[0, 0, 7.32]
243	2XBW1hR7rFARVZ6Xhpg4J_	IfcColumn	IfcCircleProfileDef	[0, 0, 7.32]
281	2XBW1hR7rFARVZ6Xhpg4Jy	IfcColumn	IfcCircleProfileDef	[0, 0, 6.55]
320	2XBW1hR7rFARVZ6Xhpg4K2	IfcColumn	IfcCircleProfileDef	[0, 0, 5.79]
359	2XBW1hR7rFARVZ6Xhpg4K0	IfcColumn	IfcCircleProfileDef	[0, 0, 7.32]
397	2XBW1hR7rFARVZ6Xhpg4K6	IfcColumn	IfcCircleProfileDef	[0, 0, 7.32]
415	2XBW1hR7rFARVZ6Xhpg4K4	IfcColumn	IfcCircleProfileDef	[0, 0, 6.55]
433	2XBW1hR7rFARVZ6Xhpg4KA	IfcColumn	IfcCircleProfileDef	[0, 0, 5.79]
471	2XBW1hR7rFARVZ6Xhpg4K8	IfcColumn	IfcCircleProfileDef	[0, 0, 7.32]
509	2XBW1hR7rFARVZ6Xhpg4KE	IfcColumn	IfcCircleProfileDef	[0, 0, 7.32]
527	2XBW1hR7rFARVZ6Xhpg4KC	IfcColumn	IfcCircleProfileDef	[0, 0, 6.55]
545	2XBW1hR7rFARVZ6Xhpg4KI	IfcColumn	IfcCircleProfileDef	[0, 0, 5.79]
583	2XBW1hR7rFARVZ6Xhpg4KG	IfcColumn	IfcCircleProfileDef	[0, 0, 7.32]
621	2XBW1hR7rFARVZ6Xhpg4KM	IfcColumn	IfcCircleProfileDef	[0, 0, 7.32]
639	2XBW1hR7rFARVZ6Xhpg4KK	IfcColumn	IfcCircleProfileDef	[0, 0, 6.55]
657	2XBW1hR7rFARVZ6Xhpg4KQ	IfcColumn	IfcCircleProfileDef	[0, 0, 5.79]
683	2ORPjZcQj4QOesDYdoyqLE	IfcSlab	IfcRectangleProfileDef	[0, 0, 0.91]
711	2ORPjZcQj4QOesDYdoyqKh	IfcSlab	IfcRectangleProfileDef	[0, 0, 0.91]
737	2ORPjZcQj4QOesDYdoyqI8	IfcSlab	IfcRectangleProfileDef	[0, 0, 0.91]
763	2ORPjZcQj4QOesDYdoyqHT	IfcSlab	IfcRectangleProfileDef	[0, 0, 0.91]
789	2ORPjZcQj4QOesDYdoyqG0	IfcSlab	IfcRectangleProfileDef	[0, 0, 0.91]
815	2ORPjZcQj4QOesDYdoyqFr	IfcSlab	IfcRectangleProfileDef	[0, 0, 0.91]
841	2ORPjZcQj4QOesDYdoyqDE	IfcSlab	IfcRectangleProfileDef	[0, 0, 0.91]
867	2ORPjZcQj4QOesDYdoyqCz	IfcSlab	IfcRectangleProfileDef	[0, 0, 0.91]
893	2ORPjZcQj4QOesDYdoyqBq	IfcSlab	IfcRectangleProfileDef	[0, 0, 0.91]
919	2ORPjZcQj4QOesDYdoyq8Z	IfcSlab	IfcRectangleProfileDef	[0, 0, 0.91]
945	2ORPjZcQj4QOesDYdoyq5A	IfcSlab	IfcRectangleProfileDef	[0, 0, 0.91]
971	2ORPjZcQj4QOesDYdoyq4\$	IfcSlab	IfcRectangleProfileDef	[0, 0, 0.91]
997	2ORPjZcQj4QOesDYdoyq3a	IfcSlab	IfcRectangleProfileDef	[0, 0, 0.91]
1023	2ORPjZcQj4QOesDYdoyq0F	IfcSlab	IfcRectangleProfileDef	[0, 0, 0.91]
1049	2ORPjZcQj4QOesDYdoyq\$a	IfcSlab	IfcRectangleProfileDef	[0, 0, 0.91]
1075	2ORPjZcQj4QOesDYdoyqz1	IfcSlab	IfcRectangleProfileDef	[0, 0, 0.91]
1116	3U9JTh5dXBHgCvQQkSJPbb	IfcBeam	IfcRectangleProfileDef	[0, -15.94, 0]
1163	3U9JTh5dXBHgCvQQkSJPX0	IfcBeam	IfcRectangleProfileDef	[0, -15.94, 0]
1199	3U9JTh5dXBHgCvQQkSJMq	IfcBeam	IfcRectangleProfileDef	[0, -15.94, 0]
1234	3U9JTh5dXBHgCvQQkSJQKX	IfcBeam	IfcRectangleProfileDef	[0, -15.94, 0]

From Table 5-5, it can be observed that of the 61 building elements, 24 were extruded along the x-axis (I-like beams), 4 were extruded along the y-axis (beams right above columns), while 33 were along the z-axis (all columns and slabs).

There are three types of profile being used in the bridge, namely arbitrary closed profile (IfcArbitraryClosedProfileDef), rectangle profile (IfcRectangleProfileDef), and circle profile (IfcCircleProfileDef). Beams use either arbitrary closed profiles (for I-like beams) or rectangular profiles (for beams right above columns), while all columns utilize circular profiles, and slabs use rectangular profiles. Examples of the profiles of beams, slabs, and columns in their 2D LCS are illustrated in Figure 5-11.

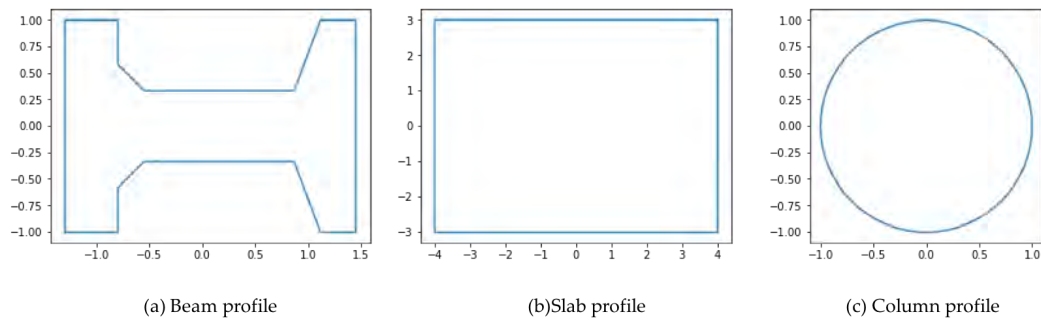


Figure 5-11 Profiles for (a) beam, (b) slab, and (c) column in their own 2D local coordinate system.

## 5.5.2 Extrusion

Using the provided profiles and their corresponding extrusion path, boundary representations for elements were calculated using the AMG. Figure 5-12 shows the extruded beam, slab, and column that correspond to the profiles in Figure 5-11.

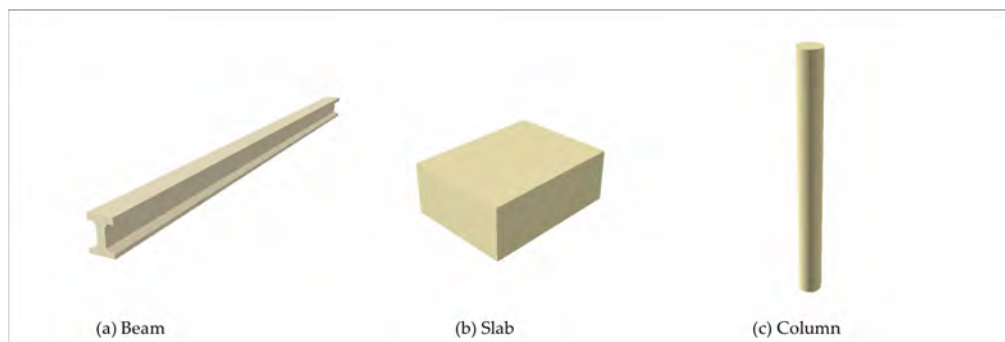


Figure 5-12 Extruded (a) beam, (b) slab, and (c) column.

The whole transformed model of Bridge 1 is shown in Figure 5-13. The components are rendered according to their IFC type in ArcScene. In addition to these extrusion-related attributes, information on storey, building, site, and project is also extracted and attached to the bridge model.

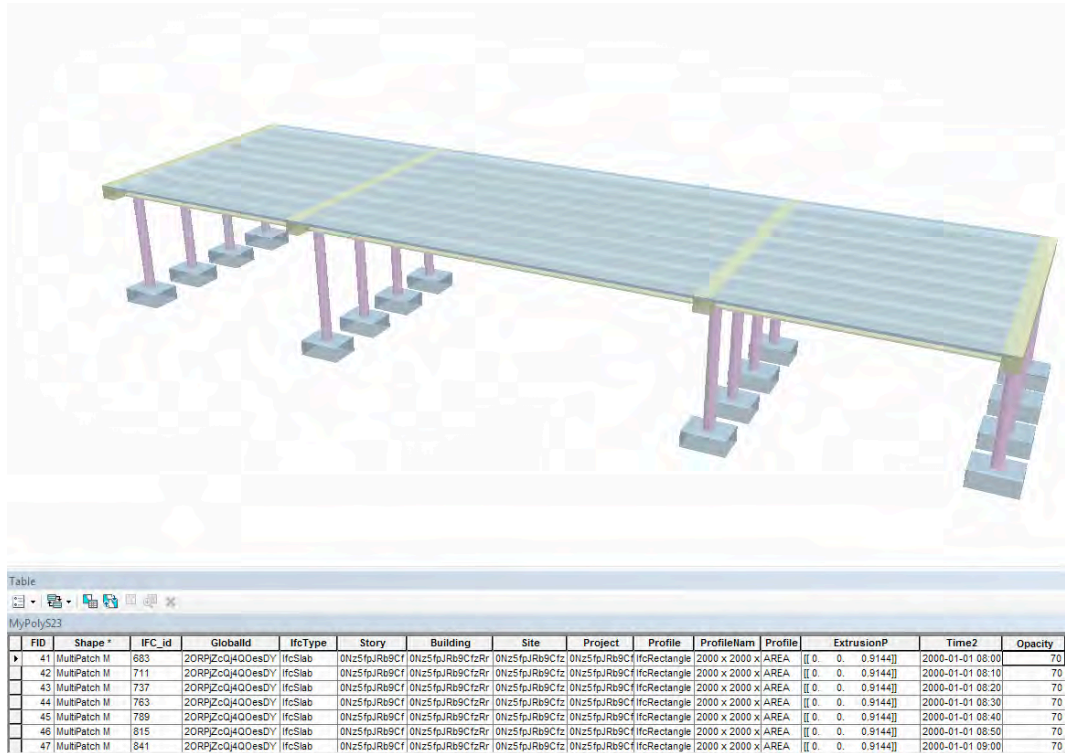


Figure 5-13 The extracted bridge model displayed in ArcScene.

The output bridge model is still in its 3D LCS, as no geographic location has been assigned to the site. If the model is to be put in a WCS, the reference latitude, longitude, and altitude of the site must first be provided and transformed into coordinates in a PCS; this should be a planar WCS such as WGS1984 World Mercator. Another 3D coordinate transformation is then performed.

### 5.6 Comparison between DIA, OSA and FME

In order to assess the performance of the OSA, the bridge 1 model was also transformed using the DIA with the workflow proposed by Don Kuehne (Kuehne 2016) and using FME with the workflow (developed in FME Workbench) described in Figure 5-14.

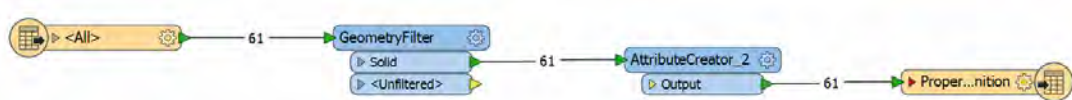


Figure 5-14 FME data transformation model.

The comparison considers execution time, output, and model scale, as shown in Table 5-6.

Table 5-6 Comparison between DIA and OSA.

	DIA	OSA	FME
<b>Execution time</b>	32.3 seconds	2.5 seconds	0.8 second
<b>Output</b>	3 shapefiles for the bridge	1 shapefile for the bridge	1 shapefile for the bridge
<b>Model Scale</b>	False	True	False

The execution time of the DIA was 32.3 seconds, the OSA took 2.5 seconds, and the FME took 0.8 seconds. Thus, the DIA is the least efficient and the OSA is comparable to FME as it was only 1.7 seconds slower. In terms of the number of output Shapefiles, the DIA cut the bridge model into three individual parts (beam, slab, and column), which incurs inconvenience for data management, whereas DIA and FME output one model for the entire bridge. The output model of the DIA and FME may have error in the model scale if IFC uses a length unit other than “meter”, the default length unit of GIS. A comparison of the scale of models generated by the DIA and OSA is shown in Figure 5-15. The bridge size generated by the DIA (gray) is approximately three times larger than the OSA output (yellow). The FME and DIA produced the same-sized bridge; as the DIA is essentially based on FME, it could be considered a customized version of FME for ArcGIS. However, the DIA was much less efficient than the FME in this case.

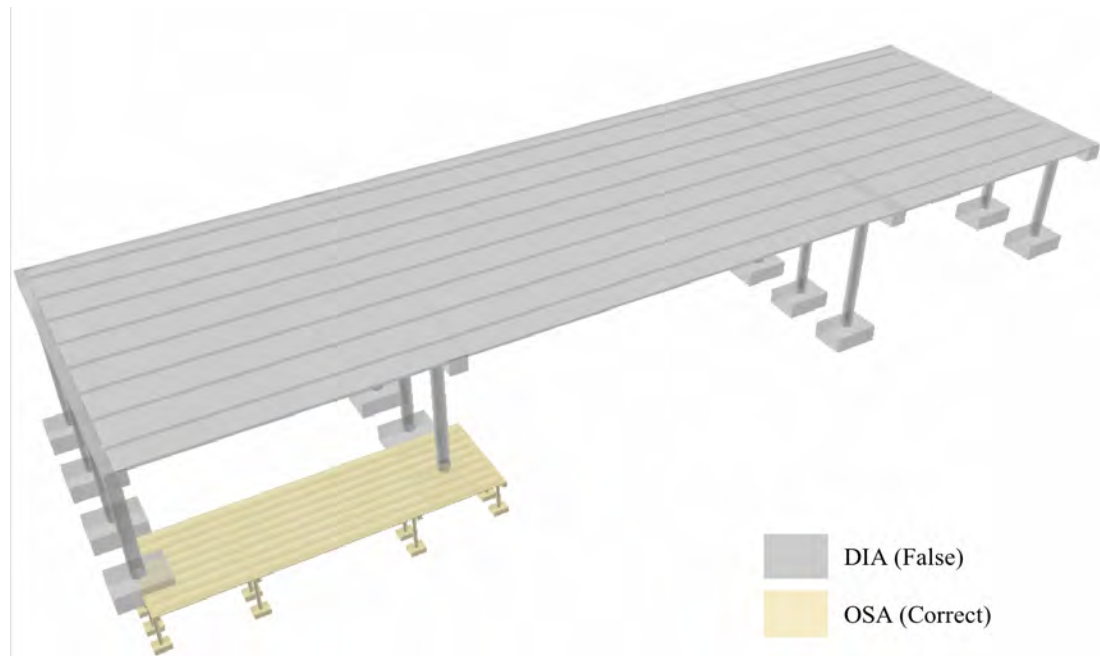


Figure 5-15 Comparison between outputs of DIA and OSA.

## 5.7 4D simulation

The bridge model created using OSA was easier to manage than the model from DIA and can be used in more applications, such as 4D simulation of construction processes.

4D simulation is an important function of BIM (Tan et al. 2018), used to simulate the whole construction process according to construction schedule (Hu and Zhang 2011). GIS has similar functionality; it can display geospatial data in a time series, when a time attribute is assigned to each element, indicating when the relevant construction work should be completed. The simulation is more efficient when operated against one data layer (one Shapefile), but DIA breaks a model into several parts according to feature types. Taking the bridge model as an example, this is divided into three Shapefiles for storing slabs, beams, and columns separately. The proposed method outputs the bridge in one Shapefile, and thus the model can be used to simulate the construction process after a time attribute has been assigned. A number of time values are attached to each geometry to demonstrate this functionality. The simulation process is described in Figure 5-16.

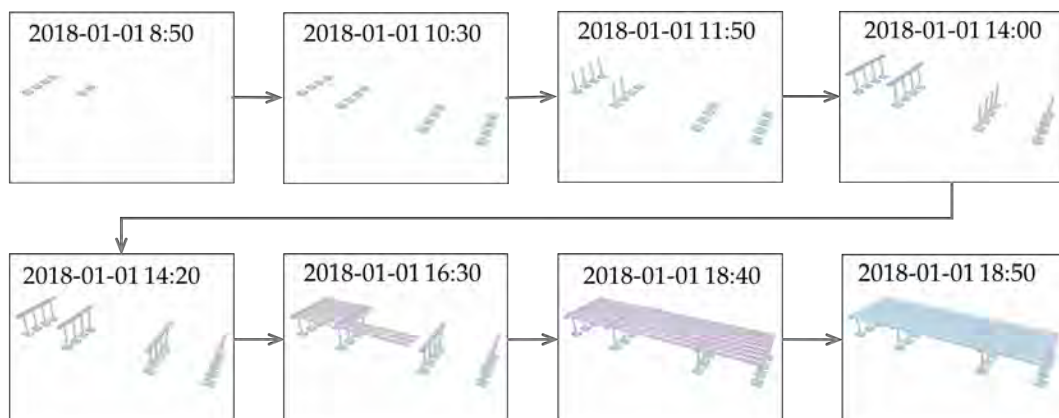


Figure 5-16 4D simulation of the bridge model.

## 5.8 Chapter summary

This chapter achieved geometry transformation using OSA.

First, the geometry structure of IFC was investigated, and key attributes for rebuilding the geometry were identified, i.e. representation and placement. The interior structure of these two attributes were also thoroughly investigated to obtain the parameters for extrusion (i.e. extrusion depth, extrusion direction, and swept area) and coordinate system transformation (i.e. location, x-axis, and z-axis).



Second, based on these coordinate system transformation parameters, the equation specific for IFC coordinate system transformation was developed, as well as an iterator for transformation between LCSs.

Third, based on the extrusion parameters, the influencing factors on the generation of multipatch were identified and analysed, namely observation perspective, initial ring order, extrusion direction, and after-extrusion ring order. It is assumed that the observation perspective is top-down. After that, the AMG was developed to rebuild geometry in the form of B-rep. During the development, four basic extrusion cases were given, and it was found that they can be divided into two types, depending on the relationship between the initial ring order and extrusion direction. An equation was also developed to determine this type of relationship. The validation of AMG found that incorrect after-extrusion ring order can result in unclosed B-rep, and using the developed AMG, all generated multipatches are closed, regardless of initial ring order and extrusion direction.

Fourth, a comparison between DIA, OSA, and FME was conducted. It was found that OSA is more efficient than DIA and is comparable to FME. The models transformed by OSA have the correct scale and is easier to manage. Those models can also be used in more applications, such as 4D simulation.

## 6 Semantics transfer from BIM to GIS

### 6.1 Introduction

This chapter describes how attributes in the IFC file are extracted and transferred to GIS. Attributes in IFC can be divided into two groups, i.e. default attributes and hidden attributes, depending on whether an attribute is directly defined in the object. While default attributes are easy to retrieve, transferring hidden attributes poses a real challenge. This study proposes an EAA that has the capability of reducing semantic information loss by developing an advanced IFC attribute search algorithm with the ability to collect all related attributes, including hidden ones.

The remainder of this chapter is organised as follows. Section 6.2 explains the extracting and attaching approach. Section 6.4 develops the attribute searching algorithm based on ifcXML. Section 6.4 conducts the experiment using the Bridge 1 model and analyses the results. Section 6.5 provides a summary of the chapter.

### 6.2 Extracting and attaching approach (EAA)

Figure 6-1 shows the general workflow of EAA, comprising three main parts: (1) transformation from Express-based IFC to ifcXML, (2) attribute extraction using MATLAB, and (3) joining attributes with the geometry model through GlobalId.

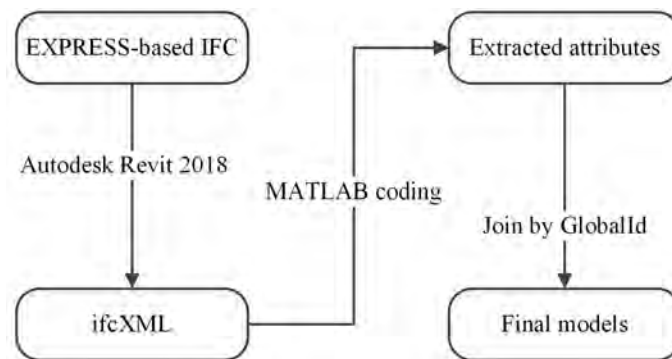


Figure 6-1 Workflow of semantic information transfer.

The EXPRESS-based IFC is first transformed into ifcXML in Autodesk Revit, because ifcXML is both human- and machine-readable. Then an attribute searching algorithm is developed, with which the attributes of an object can be extracted from ifcXML and finally attached to the geometry model.

### 6.3 Development of attribute searching algorithm

The relationship entity is key to determining the attributes of an object. All entities, including object entities, relationship entities, and attribute entities are defined separately in IFC. However, relationship entities connect attribute entities to object entities. Therefore, to extract the attributes of a geometry (object), relevant relationship entities first have to be identified.

As previously mentioned, IFC attributes can be divided into default and hidden attributes. Hidden attributes are stored in two types of attribute entity - property set entity (buildingSMART 2018d) and material entity (buildingSMART 2018b). The corresponding objectified relationship entities that connect them to objects are *IfcRelDefinesByProperties* (buildingSMART 2018g) and *IfcRelAssociatesMaterial* (buildingSMART 2018f), respectively.

To efficiently and thoroughly extract attribute entities through those relationship entities, an automatic attribute searching algorithm was developed, shown in the flowchart in Figure 6-2. The DOM of the ifcXML file was first built using MATLAB, allowing for retrieval of all contents of the IFC.

This algorithm has three main parts: (1) file check; (2) property set extraction; and (3) material information extraction. During file check, the algorithm checks whether the input file is an XML file, and whether it has the necessary “ifc:uos” tag, then checking each entity to determine whether it has an ‘id’ attribute; if yes, ‘id’ is set as its unique identifier (ID). File check is included to make sure the input file fulfils the requirements of property set and material information extraction. The detailed process for the latter is described below.

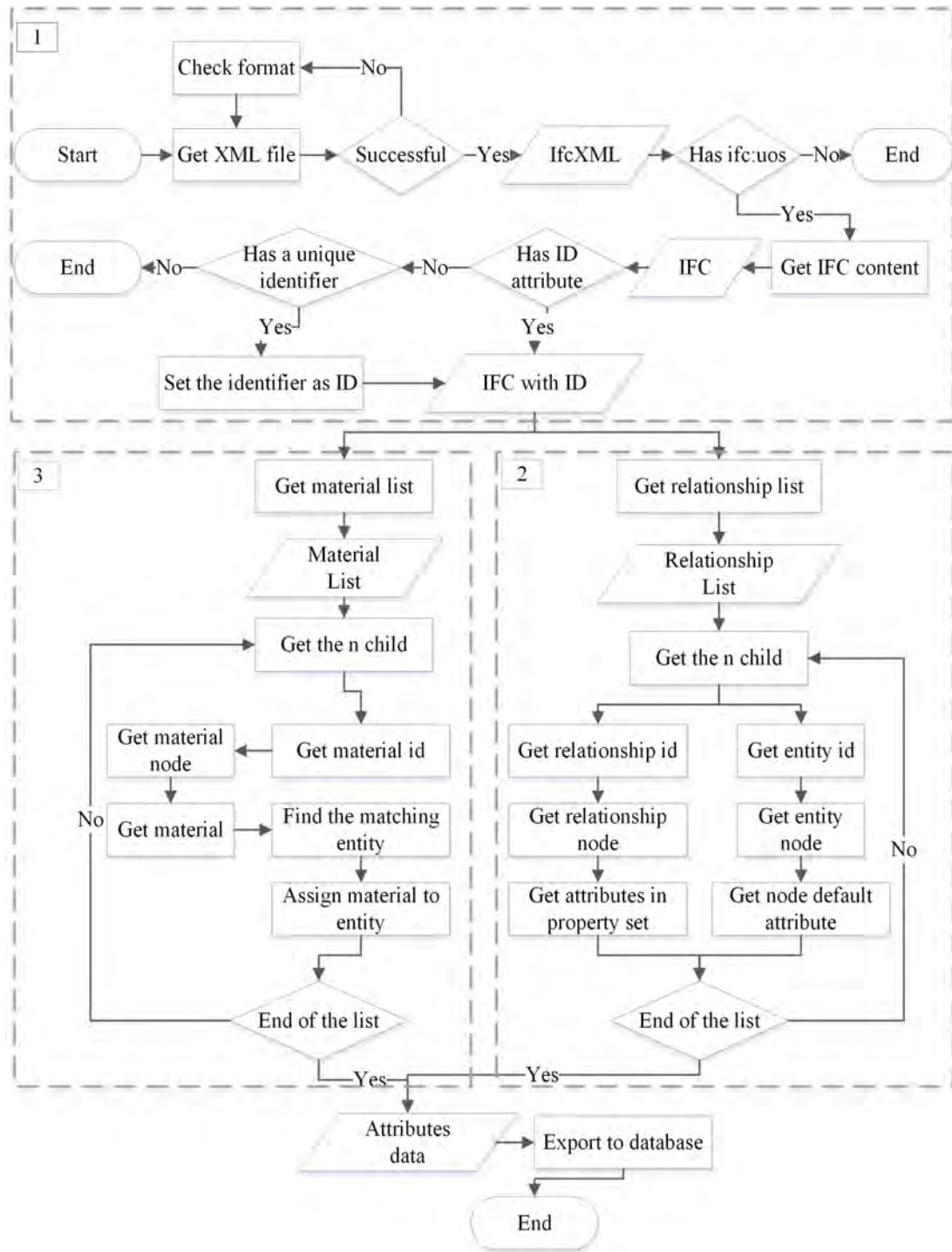


Figure 6-2 Flow chart for attribute extraction.

### 6.3.1 Default attributes

Table 6-1 shows the default attributes of beams, columns, and slabs, the main components of the Bridge 1 model. Beams and columns have the same set of default properties, including Global ID, owner history, name, object type, object placement, representation, and tag, while slab has an extra predefined type.

Table 6-1 Default attributes of slab, column, and beam.

Type	IFC class	Default Attributes
Slab	IfcSlab	Global ID, owner history, name, object type, object placement, representation, tag, predefined type
Column	IfcColumn	Global ID, owner history, name, object type, object placement, representation, tag
Beam	IfcBuildingElementProxy	Global ID, owner history, name, object type, object placement, representation, tag

Since object placement and representation are related to geometry and have been extracted through the OSA, they are ignored in this section. Apart from these default attributes, hidden attributes are mainly stored in property sets and material objects.

### 6.3.2 Property set extraction

Property set defines all dynamically extensible properties. The entrance to the property set is `IfcRelDefinesByProperties`, an objectified relationship entity that defines the relationships between property set definitions and objects. It stores IDs, pointing to an object and its corresponding property set. Properties are aggregated in property sets. For a specific object, `IfcRelDefinesByProperties` defines a one-to-one relationship between the object and a property set. The detailed procedure for extracting properties in a property set is illustrated in Figure 6-3.

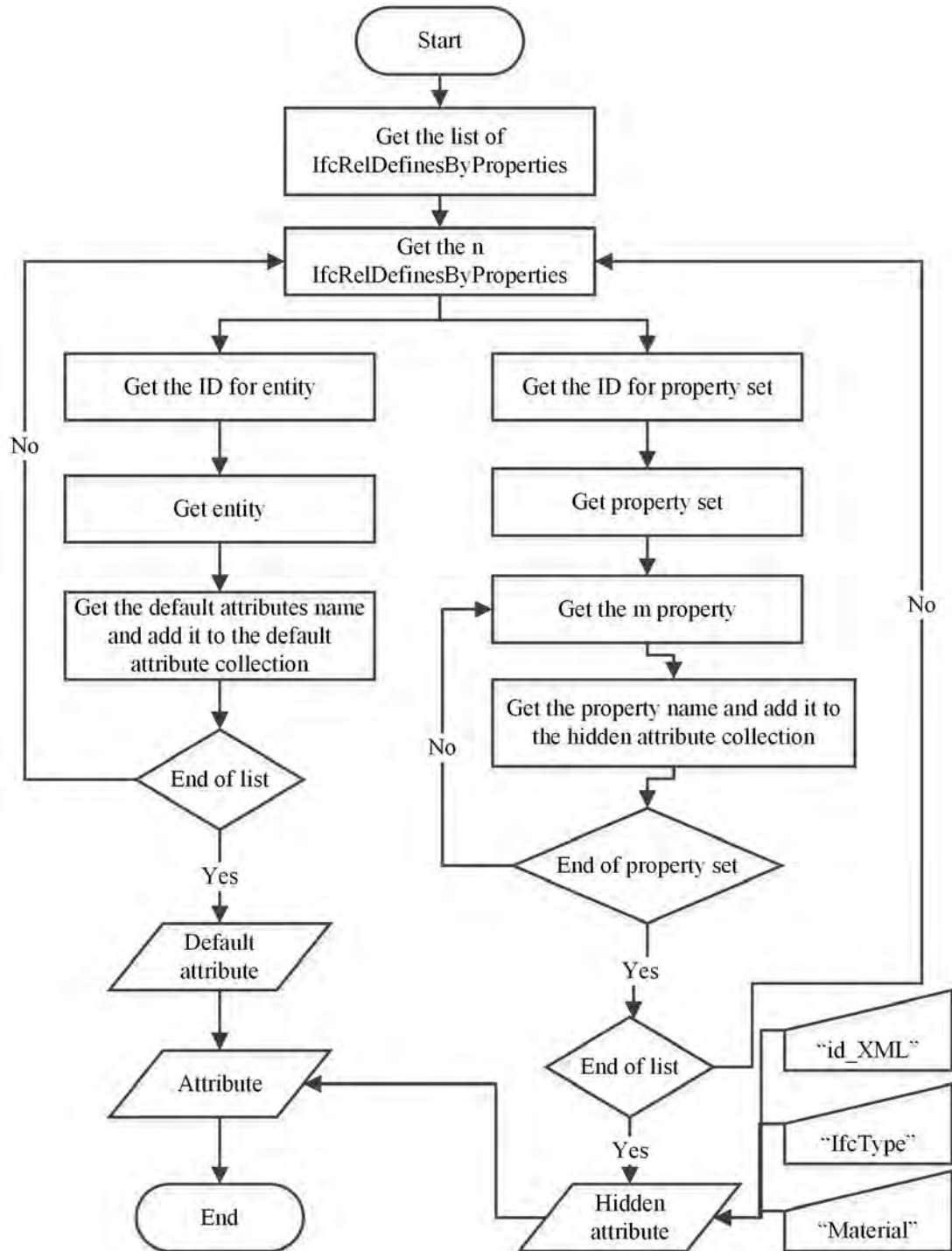


Figure 6-3 Flowchart for obtaining the properties in a property set.

The process begins by acquiring the list of relationship entities, *IfcRelDefinesByProperties*, in the bridge model. Each entity records the ID for a bridge element and the ID for its corresponding property set. After that, there are two relatively separate processes; one is to obtain all possible attribute titles, the other is to obtain attribute values for every object. Three additional attributes are also added, i.e. 'id\_XML' for recording the unique identifier (ID), 'IfcType' for recording the type of

element defined in IFC, and ‘material’ that is reserved for further material information to be extracted in the next step.

### 6.3.3 Material information extraction

The entrance to the material attribute is the relationship entity `IfcRelAssociatesMaterial`. `IfcRelAssociatesMaterial` stores the ID of a specific material entity and a list of IDs of objects that use that material. Figure 6-4 shows the material information extraction process.

The first step involves obtaining the list of relationship entities, `IfcRelAssociatesMaterial`. For each entity, two tasks are conducted. The first is obtaining material information, which is stored under the “RelatingMaterial” attribute of the entity. Since a material can be a single material, a material list, a material layer set, or a material layer set usage (buildingSMART 2018e), i.e. the wanted material entity, “`IfcMaterial`”, may not be the direct child of the “RelatingMaterial” node, and the search for “`IfcMaterial`” should therefore be conducted among all descendants of the “RelatingMaterial” node, not only its direct children. The pseudo code for the search is given in Table 6-2.

Table 6-2 The pseudo MATLAB code for searching material node among all the descendant nodes.

---

```

function getChildMaterialElement(node)
    nodeName = node.getNodeName;
    if strcmp(nodeName,'IfcMaterial')
        material_id = node.getAttribute('ref');
        save('id', 'material_id')
    else
        if hasElementChild(node)
            children = getElementChildren(node);
            for i = 1 : length(children)
                getChildMaterialElement(children{i});
            end
        end
    end
end
end

```

---

The second task is to obtain all related bridge elements and assign the material to them. Since a material can be assigned to more than one element, this is completed with the assistance of the `id_XML` attribute obtained in the previous section.

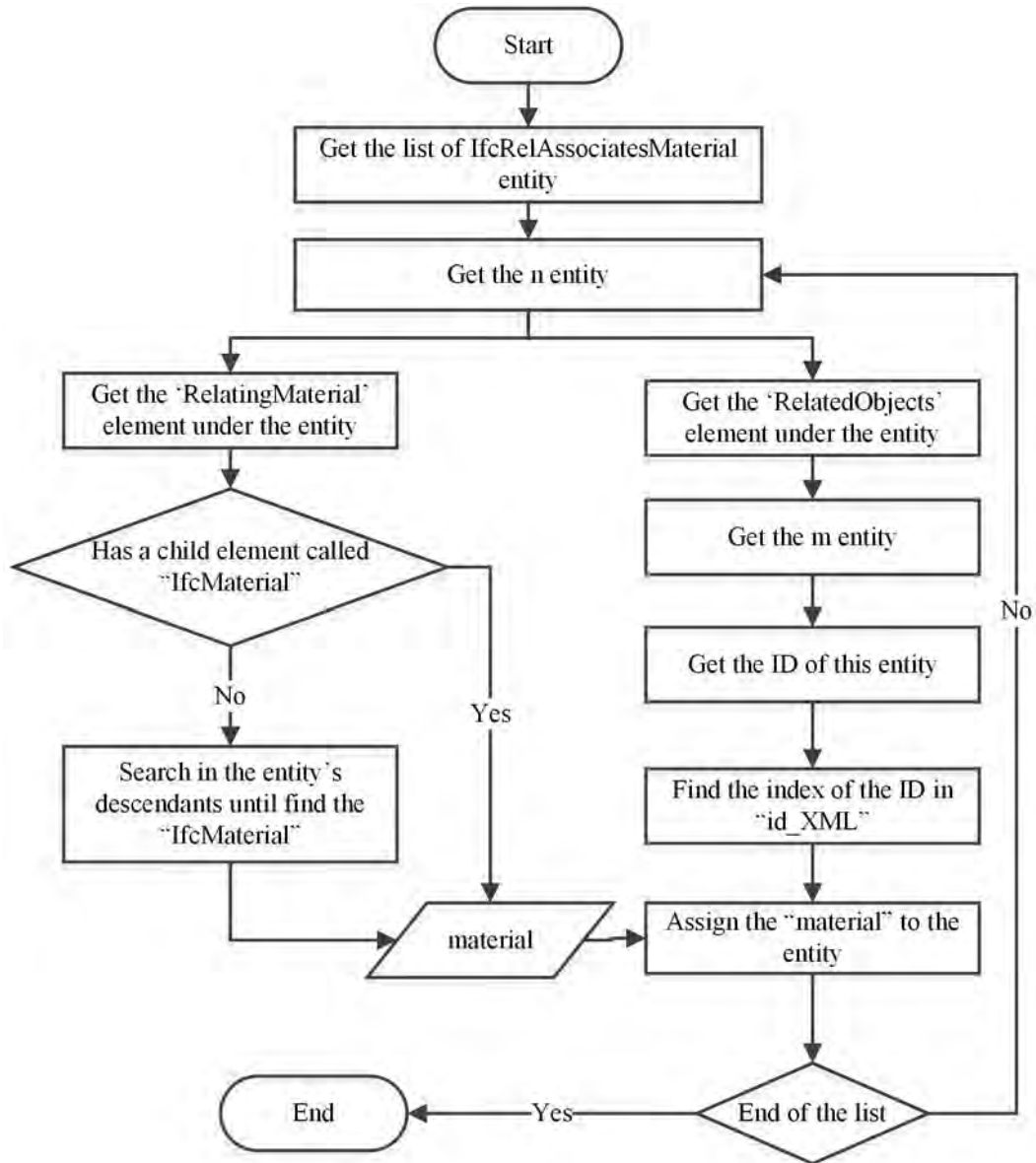


Figure 6-4 Flow chart for obtaining the material.

Finally, after all attributes have been retrieved, these are merged and then exported into an Excel (.xls) file and joined with the geometry through the unique GlobalId.

All development work was completed in MATLAB, and a set of customised functions for XML DOM manipulation were developed in this study to improve process efficiency.



## 6.4 Experiment and analysis

### 6.4.1 Extracted attributes

The Bridge 1 model was used to validate this approach. A total of 21 attributes were eventually identified and extracted, including 8 default attributes and 13 hidden or other attributes, as shown in Table 6-3.

Table 6-3 List of attributes extracted.

Type	Attributes Name
Default attributes	GlobalId, OwnerHistory, Name, ObjectType, ObjectPlacement, Representation, Tag, and PredefinedType
Hidden attributes	Reference, IsExternal, LoadBearing, and PitchAngle
Others	BuildingAddress, CompositionType, Elevation, LongName, id_XML, AboveGround, NumberOfStoreys, and Material

Table 6-4 presents some of the extracted attributes and their values, including reference, isExternal, loadbearing, and material.

Table 6-4 Example of extracted hidden attributes.

GlobalId	id_XML	IfcType	Reference	Is External	Load Bearing	Material
2ORPjZcQj4QOesDYdoyqLE	i1800	IfcSlab	2000 x 2000 x 900mm	false	true	Concrete, Cast-in-Place gray
2ORPjZcQj4QOesDYdoyqKh	i1854	IfcSlab	2000 x 2000 x 900mm	false	true	Concrete, Cast-in-Place gray
2ORPjZcQj4QOesDYdoyqI8	i1880	IfcSlab	2000 x 2000 x 900mm	false	true	Concrete, Cast-in-Place gray
2ORPjZcQj4QOesDYdoyqHT	i1906	IfcSlab	2000 x 2000 x 900mm	false	true	Concrete, Cast-in-Place gray
2ORPjZcQj4QOesDYdoyqG0	i1932	IfcSlab	2000 x 2000 x 900mm	false	true	Concrete, Cast-in-Place gray
2ORPjZcQj4QOesDYdoyqFr	i1958	IfcSlab	2000 x 2000 x 900mm	false	true	Concrete, Cast-in-Place gray
2ORPjZcQj4QOesDYdoyqDE	i1984	IfcSlab	2000 x 2000 x 900mm	false	true	Concrete, Cast-in-Place gray
2ORPjZcQj4QOesDYdoyqCz	i2010	IfcSlab	2000 x 2000 x 900mm	false	true	Concrete, Cast-in-Place gray
2ORPjZcQj4QOesDYdoyqBq	i2036	IfcSlab	2000 x 2000 x 900mm	false	true	Concrete, Cast-in-Place gray
2ORPjZcQj4QOesDYdoyq8Z	i2062	IfcSlab	2000 x 2000 x 900mm	false	true	Concrete, Cast-in-Place gray
2ORPjZcQj4QOesDYdoyq5A	i2088	IfcSlab	2000 x 2000 x 900mm	false	true	Concrete, Cast-in-Place gray
2ORPjZcQj4QOesDYdoyq4S	i2114	IfcSlab	2000 x 2000 x 900mm	false	true	Concrete, Cast-in-Place gray
2ORPjZcQj4QOesDYdoyq3a	i2141	IfcSlab	2000 x 2000 x 900mm	false	true	Concrete, Cast-in-Place gray
2ORPjZcQj4QOesDYdoyq0F	i2167	IfcSlab	2000 x 2000 x 900mm	false	true	Concrete, Cast-in-Place gray
2ORPjZcQj4QOesDYdoyqSa	i2193	IfcSlab	2000 x 2000 x 900mm	false	true	Concrete, Cast-in-Place gray
2ORPjZcQj4QOesDYdoyqz1	i2219	IfcSlab	2000 x 2000 x 900mm	false	true	Concrete, Cast-in-Place gray
2XBW1hR7rFARVZ6Xhpg4KQ	i2371	IfcColumn	Column 2	false	true	Concrete, Cast-in-Place gray
2XBW1hR7rFARVZ6Xhpg4KK	i2410	IfcColumn	Column 2	false	true	Concrete, Cast-in-Place gray
2XBW1hR7rFARVZ6Xhpg4KM	i2448	IfcColumn	Column 1 605	false	true	Concrete, Cast-in-Place gray
2XBW1hR7rFARVZ6Xhpg4KG	i2487	IfcColumn	Column 1 567	false	true	Concrete, Cast-in-Place gray
2XBW1hR7rFARVZ6Xhpg4K1	i2506	IfcColumn	Column 2	false	true	Concrete, Cast-in-Place gray
2XBW1hR7rFARVZ6Xhpg4KC	i2524	IfcColumn	Column 2	false	true	Concrete, Cast-in-Place gray
2XBW1hR7rFARVZ6Xhpg4KE	i2562	IfcColumn	Column 1 493	false	true	Concrete, Cast-in-Place gray
2XBW1hR7rFARVZ6Xhpg4K8	i2601	IfcColumn	Column 1 455	false	true	Concrete, Cast-in-Place gray
2XBW1hR7rFARVZ6Xhpg4KA	i2620	IfcColumn	Column 2	false	true	Concrete, Cast-in-Place gray
2XBW1hR7rFARVZ6Xhpg4K4	i2638	IfcColumn	Column 2	false	true	Concrete, Cast-in-Place gray
2XBW1hR7rFARVZ6Xhpg4K6	i2676	IfcColumn	Column 1 381	false	true	Concrete, Cast-in-Place gray
2XBW1hR7rFARVZ6Xhpg4K0	i2715	IfcColumn	Column 1 343	false	true	Concrete, Cast-in-Place gray
2XBW1hR7rFARVZ6Xhpg4K2	i2734	IfcColumn	Column 2	false	true	Concrete, Cast-in-Place gray
2XBW1hR7rFARVZ6Xhpg4Jy	i2752	IfcColumn	Column 2	false	true	Concrete, Cast-in-Place gray
2XBW1hR7rFARVZ6Xhpg4J_	i2790	IfcColumn	Column 1 227	false	true	Concrete, Cast-in-Place gray
2XBW1hR7rFARVZ6Xhpg4Ju	i2829	IfcColumn	Column 1	false	true	Concrete, Cast-in-Place gray
3FJzI985D4uedEijINTBJd	i2895	IfcBuildingElementProxy	i beam1:222747 2156 : i beam1:i beam1:222747 2156	---	---	Concrete - Cast-in-Place Concrete 1098
3FJzI985D4uedEijINTBKE	i2914	IfcBuildingElementProxy	i beam1:222747 2156 : i beam1:i beam1:222747 2156	---	---	Concrete - Cast-in-Place Concrete 1098
3FJzI985D4uedEijINTBKI	i2932	IfcBuildingElementProxy	i beam1:222747 2156 : i beam1:i beam1:222747 2156	---	---	Concrete - Cast-in-Place Concrete 1098
3FJzI985D4uedEijINTBVE	i3004	IfcBuildingElementProxy	i beam1:222747 2156 : i beam1:i beam1:222747 2156	---	---	Concrete - Cast-in-Place Concrete 1098
3FJzI985D4uedEijINTAXQ	i3069	IfcBuildingElementProxy	i beam1:222747 : i beam1:i beam1:222747	---	---	Concrete - Cast-in-Place Concrete 1098
3FJzI985D4uedEijINTAYT	i3088	IfcBuildingElementProxy	i beam1:222747 : i beam1:i beam1:222747	---	---	Concrete - Cast-in-Place Concrete 1098
3FJzI985D4uedEijINTAbV	i3106	IfcBuildingElementProxy	i beam1:222747 2156 : i beam1:i beam1:222747 2156	---	---	Concrete - Cast-in-Place Concrete 1098
1EXFMHqKzCSuCNvODSXspS	i3124	IfcBuildingElementProxy	i beam1:222747 : i beam1:i beam1:222747	---	---	Concrete - Cast-in-Place Concrete 1098

GlobalId	id_XML	IfcType	Reference	Is External	Load Bearing	Material
1EXFMHqKzCSuCNvOD\$Xso3	i3142	IfcBuilding ElementProxy	i beam1:222747 : i beam1:i beam1:222747	---	---	Concrete - Cast-in-Place Concrete 1098
1EXFMHqKzCSuCNvOD\$Xsou	i3160	IfcBuilding ElementProxy	i beam1:222747 : i beam1:i beam1:222747	---	---	Concrete - Cast-in-Place Concrete 1098
1EXFMHqKzCSuCNvOD\$XrDi	i3178	IfcBuilding ElementProxy	i beam1:222747 : i beam1:i beam1:222747	---	---	Concrete - Cast-in-Place Concrete 1098
1EXFMHqKzCSuCNvOD\$XrCO	i3196	IfcBuilding ElementProxy	i beam1:222747 : i beam1:i beam1:222747	---	---	Concrete - Cast-in-Place Concrete 1098
1EXFMHqKzCSuCNvOD\$XrCq	i3214	IfcBuilding ElementProxy	i beam1:222747 : i beam1:i beam1:222747	---	---	Concrete - Cast-in-Place Concrete 1098
1EXFMHqKzCSuCNvOD\$XrFb	i3232	IfcBuilding ElementProxy	i beam1:222747 : i beam1:i beam1:222747	---	---	Concrete - Cast-in-Place Concrete 1098
1EXFMHqKzCSuCNvOD\$Xrfo	i3250	IfcBuilding ElementProxy	i beam1:222747 : i beam1:i beam1:222747	---	---	Concrete - Cast-in-Place Concrete 1098
1EXFMHqKzCSuCNvOD\$Xr2C	i3268	IfcBuilding ElementProxy	i beam1:222747 : i beam1:i beam1:222747	---	---	Concrete - Cast-in-Place Concrete 1098
1EXFMHqKzCSuCNvOD\$Xr2o	i3286	IfcBuilding ElementProxy	i beam1:222747 : i beam1:i beam1:222747	---	---	Concrete - Cast-in-Place Concrete 1098
1EXFMHqKzCSuCNvOD\$XrVh	i3304	IfcBuilding ElementProxy	i beam1:222747 : i beam1:i beam1:222747	---	---	Concrete - Cast-in-Place Concrete 1098
1EXFMHqKzCSuCNvOD\$XrUz	i3322	IfcBuilding ElementProxy	i beam1:222747 : i beam1:i beam1:222747	---	---	Concrete - Cast-in-Place Concrete 1098
1EXFMHqKzCSuCNvOD\$XrPM	i3340	IfcBuilding ElementProxy	i beam1:222747 : i beam1:i beam1:222747	---	---	Concrete - Cast-in-Place Concrete 1098
1EXFMHqKzCSuCNvOD\$XrKm	i3358	IfcBuildingE lementProxy	i beam1:222747 : i beam1:i beam1:222747	---	---	Concrete - Cast-in-Place Concrete 1098
1HpmN5aLT6mh\$SyK_BSLr	i3392	IfcSlab	Floor:Generic 150mm	false	false	Concrete - Cast-in-Place Concrete

The DIA was also used to conduct the same transformation, to enable a comparison with EAA results. Table 6-5 shows the number of attributes retrieved by DIA and EAA for each bridge component. As shown, the number of extracted attributes is affected by the type of bridge component. Using DIA, the numbers of extracted attributes for slabs, beams, and columns were 8, 7, and 7 respectively, while using EAA, the corresponding numbers were 20, 15, and 17. Overall, therefore EAA retrieved more properties than the DIA.

Table 6-5 Number of attributes retrieved by DIA and EAA.

No	IfcType	DIA	EAA	No	IfcType	DIA	EAA
1	IfcSlab	8	20	32	IfcColumn	7	17
2	IfcSlab	8	20	33	IfcColumn	7	17
3	IfcSlab	8	20	34	IfcColumn	7	17
4	IfcSlab	8	20	35	IfcColumn	7	17
5	IfcSlab	8	20	36	IfcColumn	7	17
6	IfcSlab	8	20	37	IfcBuildingElementProxy	7	15
7	IfcSlab	8	20	38	IfcBuildingElementProxy	7	15
8	IfcSlab	8	20	39	IfcBuildingElementProxy	7	15
9	IfcSlab	8	20	40	IfcBuildingElementProxy	7	15
10	IfcSlab	8	20	41	IfcBuildingElementProxy	7	15
11	IfcSlab	8	20	42	IfcBuildingElementProxy	7	15
12	IfcSlab	8	20	43	IfcBuildingElementProxy	7	15
13	IfcSlab	8	20	44	IfcBuildingElementProxy	7	15
14	IfcSlab	8	20	45	IfcBuildingElementProxy	7	15
15	IfcSlab	8	20	46	IfcBuildingElementProxy	7	15
16	IfcSlab	8	20	47	IfcBuildingElementProxy	7	15
17	IfcBuildingElementProxy	7	15	48	IfcBuildingElementProxy	7	15
18	IfcBuildingElementProxy	7	15	49	IfcBuildingElementProxy	7	15
19	IfcBuildingElementProxy	7	15	50	IfcBuildingElementProxy	7	15
20	IfcBuildingElementProxy	7	15	51	IfcBuildingElementProxy	7	15
21	IfcColumn	7	17	52	IfcBuildingElementProxy	7	15
22	IfcColumn	7	17	53	IfcBuildingElementProxy	7	15
23	IfcColumn	7	17	54	IfcBuildingElementProxy	7	15
24	IfcColumn	7	17	55	IfcBuildingElementProxy	7	15
25	IfcColumn	7	17	56	IfcBuildingElementProxy	7	15
26	IfcColumn	7	17	57	IfcBuildingElementProxy	7	15
27	IfcColumn	7	17	58	IfcBuildingElementProxy	7	15

No	IfcType	DIA	EAA	No	IfcType	DIA	EAA
28	IfcColumn	7	17	59	IfcBuildingElementProxy	7	15
29	IfcColumn	7	17	60	IfcBuildingElementProxy	7	15
30	IfcColumn	7	17	61	IfcSlab	8	20
31	IfcColumn	7	17				

Figure 6-5(a) shows the attributes of a slab after extracted attributes were joined with those from the DIA. Attributes above the red line are from the DIA, while those below are from the EAA. The following can be noted. (1) The meaning of some DIA attributes is difficult to interpret, such as ifc\_parent and ifc\_para\_1. An object can only have one parent, but ifc\_parent and ifc\_para\_1 are apparently two different objects, and it is therefore impossible to determine which is the real parent. Another similar example is ifc\_unique, the meaning of which is also unclear. These attributes thus cannot be used for other purposes. (2) Not all objects have all EAA attributes, and attributes not owned by an object are displayed as “null”.

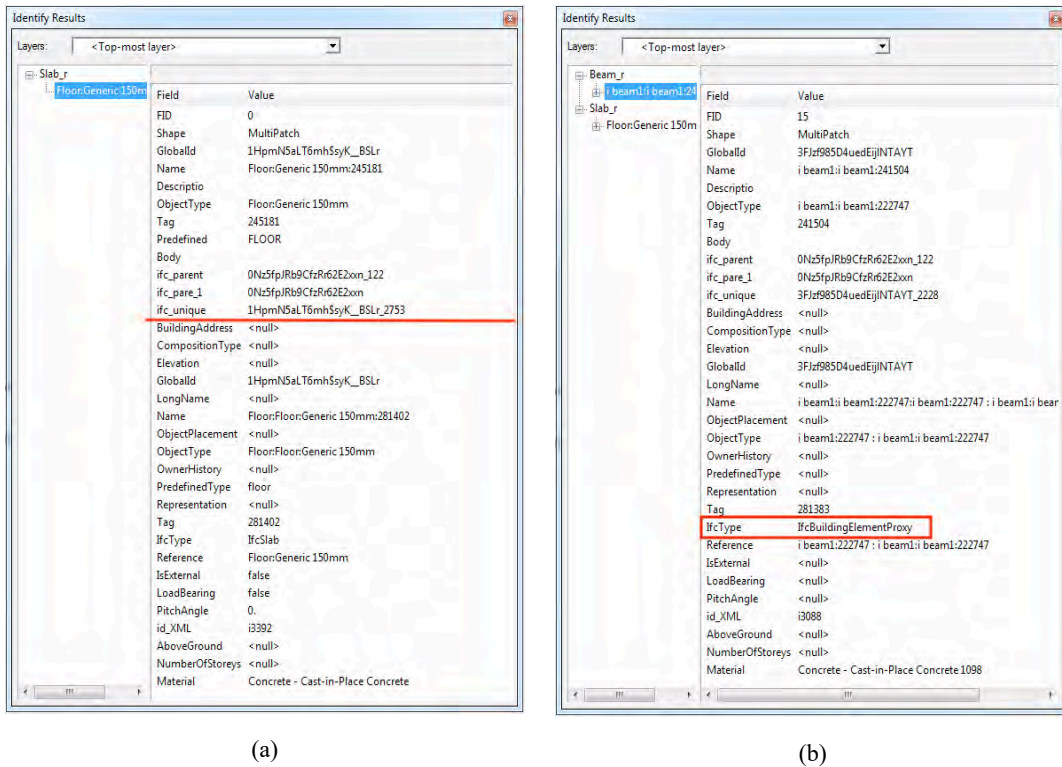


Figure 6-5 (a) An example of added attributes. DIA attributes are above the red line, while those newly added are below, (b) IfcBeam was changed to IfcBuildingElementProxy during the IFC/ifcXML transformation.

### 6.4.2 Problems in the transformation of IFC to ifcXML

The ifcXML file used in this study was transformed from an IFC file through Autodesk Revit. Theoretically, these files should convey the same information. However, it has been found that this transformation cannot guarantee information consistency.

(1) The value of some attributes was changed. For instance, the value for “Tag” in IFC is “245181”, while it is “281402” in ifcXML (see Figure 6-5(a)). Other attributes having this problem include “name”, “ObjectType”, and “Predefined Type”.

(2) The customised beam models were changed to “IfcBuildingElementProxy” from “IfcBeam” (Figure 6-5(b)). “IfcBuildingElementProxy” is an entity for building elements without a defined meaning. During model creation, as no beam model in the Revit library precisely reflected what was needed, the beams in the bridge had to be customised using CAD. They were still treated as “IfcBeam” in IFC, but after transformation, they were all redefined as “IfcBuildingElementProxy”.

These results indicate that information might be changed during the transformation from IFC to ifcXML. Some post-transformation information should therefore be used with caution.

### **6.4.3 Challenge in assigning unique identifier for entities**

For a DOM, there are three ways to reach a node in the node tree - either by a unique identifier (such as “GlobalId” in IFC or “ID” in XML), or by a tag name, or by the relationship between nodes (parent, child, or sibling). Different nodes can be returned when different ways are used. Using the unique identifier, a specific entity can be acquired; using the tag, a list of entities with the same tag name can be acquired; using the relationship, the parent, children, and siblings of a node can be obtained.

In this study, however, it was initially noted that attempts to obtain elements by unique identifier were not successful with the “id” attribute in ifcXML, even though the “id” is truly unique. It was later found that this was due to “id” not being the default ID type recognised by an XML file; this means that, to the DOM, “id” is just an ordinary attribute and not a unique “ID”. Defining an ID attribute can greatly improve the efficiency of object searching within a DOM. Therefore, the first challenge of this part of the study was to identify elements with an “id” attribute and to set this as the unique ID. A customised function “setIdXML” was developed to perform this task; this is an iterator for continuing to search for elements with an “id” attribute and for setting that “id” as the “ID” that can be recognised by the DOM.

### **6.4.4 Relationship types in IFC**

In this study, relationship entities were used to extract hidden attributes, utilising two types of relationship - IfcRelDefinesByProperties and IfcRelAssociatesMaterial. However, there are other types of relationships in Bridge 1 model (Table 6-6)

(buildingSMART 2018h). For instance, `IfcRelDefinesByType` is a relationship between an object type and objects, and `IfcRelAggregates` defines the general concept of elements being composed or decomposed, e.g. a roof is the aggregation of roof elements, such as roof slabs, rafters, purlins, etc. These types of relationship have not been used because they have similar information with the adopted two types and are more related to geometry and spatial relationships, which are not the focus of this research. Nevertheless, these relationships would be helpful in research involving geometry manipulation, especially `IfcRelContainedInSpatialStructure`, since any element can only be assigned once to a certain level in the spatial structure. These relationship types should also be investigated if bidirectional information exchange is to be achieved, since in the world of IFC, almost all objects and attributes are connected by relationship entities.

Table 6-6 List of relationship in the bridge model.

Relationship Type	Function
<code>IfcRelDefinesByProperties</code>	Relationships between property set definitions and objects
<code>IfcRelAssociatesMaterial</code>	Relationship between a material definition and elements or element types to which this material definition applies
<code>IfcRelDefinesByType</code>	Relationships between an object type and objects.
<code>IfcRelContainedInSpatialStructure</code>	Relationship used to assign elements to a certain level of the spatial project structure Any element can only be assigned once to a certain level of the spatial structure
<code>IfcRelAggregates</code>	Relationship defines the general concept of elements being composed or decomposed.

## 6.5 Chapter summary

This chapter focused on the transfer of semantic information from BIM to GIS to eliminate semantics losses by using an extracting and attaching approach.

First, all IFC attributes were categorised into two groups: default and hidden attributes, and two primary IFC attribute entities that store hidden attributes were identified, i.e. `IfcRelDefinesByProperties` and `IfcRelAssociatesMaterial`. Based on their internal structures, an automatic attribute searching algorithm was designed, and those customised functions were used to facilitate DOM manipulation.

Third, the Bridge 1 model was used to validate this approach. The results showed that compared with DIA, EAA can retrieve 12 additional attributes for slabs and 8

additional attributes for both columns and beams. It was also found that the conversion from EXPRESS-based IFC to XML-based IFC (ifcXML) cannot guarantee the information consistency. Therefore, the conversion from IFC to ifcXML is conducted with caution.

## 7 Development of infrastructure management system

### 7.1 Introduction

The purpose of BIM/GIS integration is to use information from BIM in GIS, or vice versa. Previous chapters have described enhancement of the conventional approach for such transformation and development of an OSA for transformation of geometric information from IFC to Shapefile. The development of an EAA for transferring attributes from ifcXML to Shapefile has also been described. They enabled more reliable and efficient transformation or transfer of geometric and semantic information from BIM to GIS. This chapter describes how the transformed models are used together within an infrastructure management system, demonstrating utilisation of these models.

The rest of the chapter is organised as follows. Section 7.2 describes the information flow from BIM to GIS and finally to the end users. Section 7.3 presents the data preparation and online data management processes. Section 7.4 describes the development of infrastructure management system. Section 7.5 demonstrates the use cases of this system, including bridge management system and offshore oil rig management system. Finally, in Section 7.6, a summary is provided.

### 7.2 Information flow from BIM to GIS to end users

Figure 7-1 shows the information flow from the source IFC through GIS to the end users. BIM data in IFC format are processed by the proposed OSA and GIS software applications such as ArcMap, ArcScene, and ArcGIS Pro. The processed BIM models are later managed and published on ArcGIS Online and ArcGIS Server. The processed BIM models are later managed and published on ArcGIS Online and information is then delivered to end users through the interface of the developed system for them to more easily view and query the BIM information.

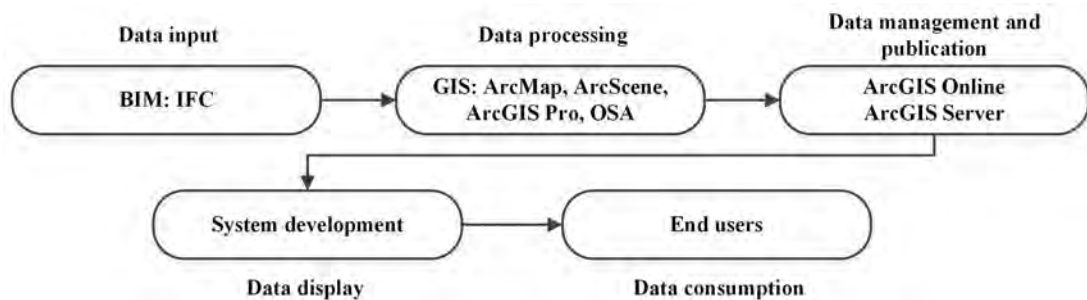


Figure 7-1 Information flow from source to end user.

This chapter focuses on three main aspects: data pre-processing, system development, and system application. These are each described below.

### 7.3 Data preparation and management

BIM models need to be properly processed before they can be useful to end users. This involves two stages. The first is transformation of BIM models (IFC) to GIS models (Shapefile); this can be completed using the proposed OSA or conventional ArcGIS. The second is processing the transformed models further to ensure they meet the requirements of online data management and sharing. Figure 7-2 shows detailed model processing steps, from source IFC to end publication using both the OSA and the conventional approach.

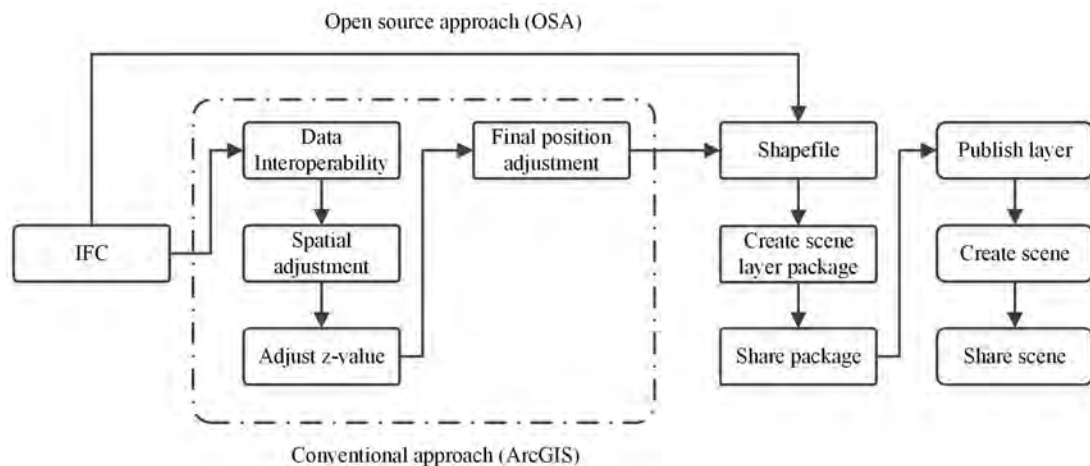


Figure 7-2 Detailed data processing.

After obtaining Shapefiles, creation and sharing of the scene layer package was conducted in ArcGIS Pro; subsequent layer publication, creation and scene sharing were completed in ArcGIS Online.

#### 7.3.1 Transformation from BIM to GIS

Compared with the conventional approach, OSA eliminates much of the human intervention needed for data transformation from BIM to GIS, using Python scripts. It has the potential to be combined with other data processing steps that also use Python, greatly improving data efficiency. OSA is therefore the recommended approach for this process.



### 7.3.2 Model processing and publication

The second stage is mainly completed by ArcGIS Pro. The built-in data processing model builder of ArcGIS Pro was adopted to automate some data processing.

The model builder can create graphic models indicating the workflow of data processing; these can be repeatedly used and shared. An example of a data processing model is shown in Figure 7-3. This contains three submodels for processing of slabs, columns, and beams, respectively. Each submodel has the same structure and contains two functions indicated by yellow boxes, namely creating scene layer packages and publishing packages to ArcGIS Online. Scene layer package is a format that can be accepted by the latter. The datasets and processing result status are indicated by ellipse. This data processing model has been built for publication of Shapefile to ArcGIS Online.

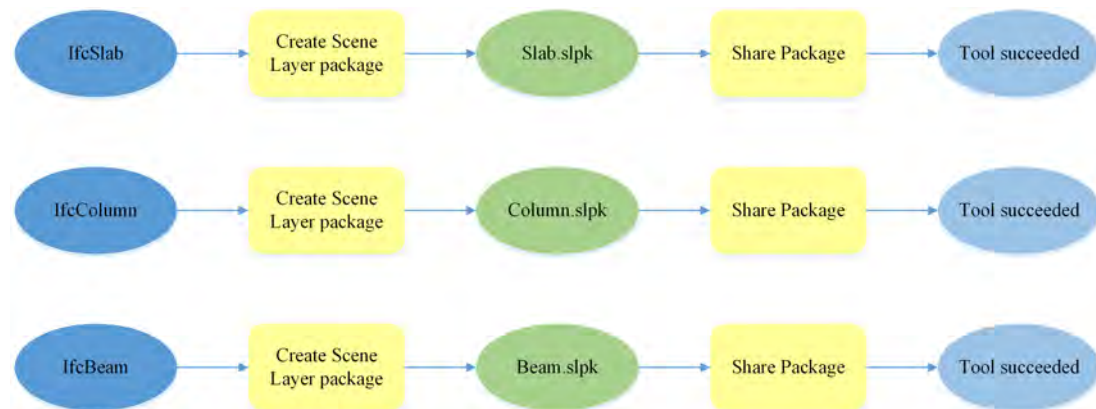


Figure 7-3 Data processing graphic model.

After being published onto ArcGIS Online, BIM data can be managed, shared, or simply visualised online. Figure 7-4 represents the interface of ArcGIS Online for data management. All datasets can be configured as either private or public. Private datasets can only be accessed by the owner, while public datasets are shared online and can be accessed by other ArcGIS Online users.

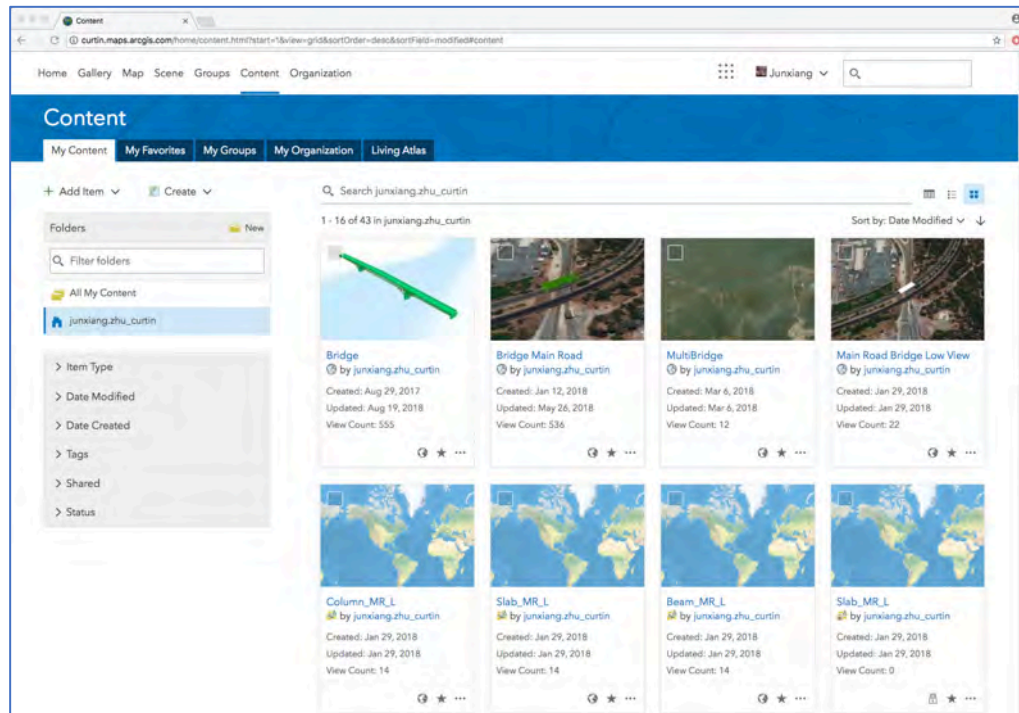


Figure 7-4 Data management interface of ArcGIS Online.

### 7.3.3 Creation of scenes

Before BIM models can be used by Web GIS applications, they must be incorporated into a scene. A scene in this case refers to the combination of various geographic elements, including digital elevation models (DEMs), background satellite images, BIM models, and so forth. Each scene is assigned an id that uniquely identifies it. Through the identifier, the scene can be referenced by other applications.

ArcGIS Online itself has a tool named Scene Viewer for visualising created scenes. This allows some basic functions, such as background selection, background transparency setting, shadow setting and measurement of length, and scene modification. This tool is quite useful when scenes or the appearances of BIM models need to be modified online. The effects of different settings are described below.

Figure 7-5 shows a scene with different transparency settings ranging from 0% to 100%. Depending on the transparency setting, underlying components may also be observed. Figure 7-6 shows the scene with different backgrounds, including image, topographic, OpenStreetMap, and Street. Different backgrounds have different visual effects. Figure 7-7 shows shadows at various times of the day, ranging from 9:00 to 18:00.

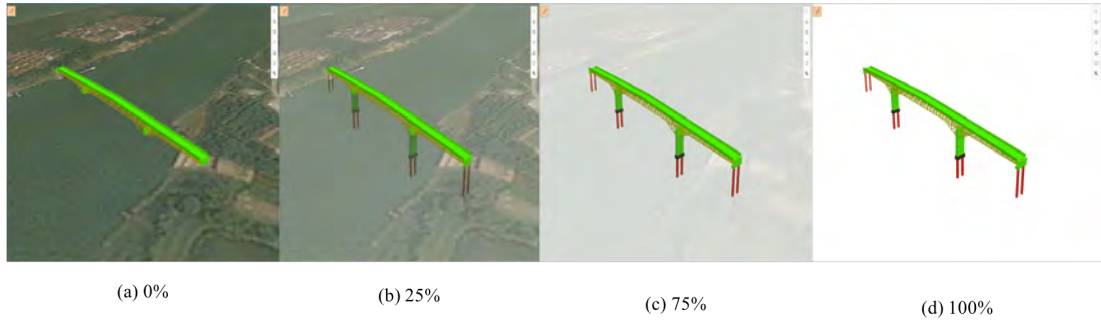


Figure 7-5 Different settings on background transparency.

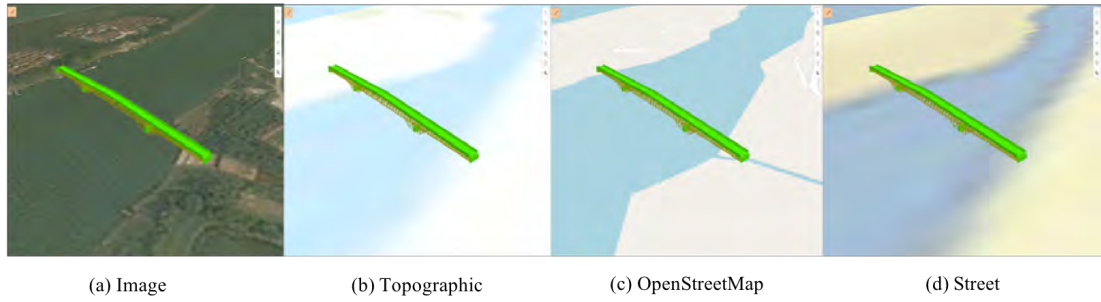


Figure 7-6 Different backgrounds.

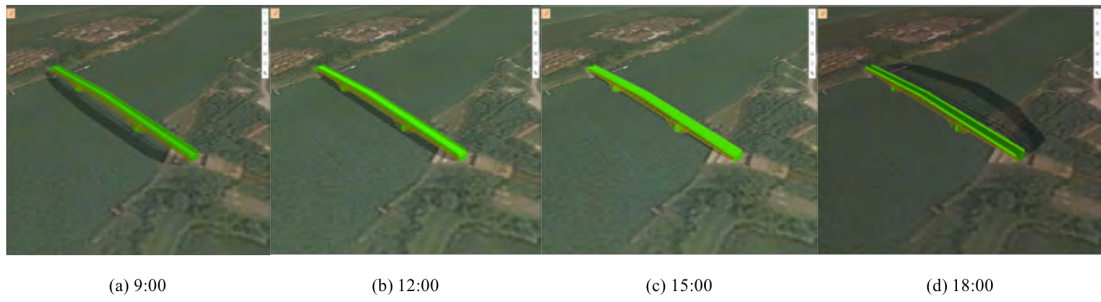


Figure 7-7 Different time settings on shadow from 9:00 to 18:00.

For purposes of this study, three scenes were created in total - one for Bridge 1 in Western Australia, one for the planned Bridge 2 in China, and one for offshore oil rigs (Figure 7-8).

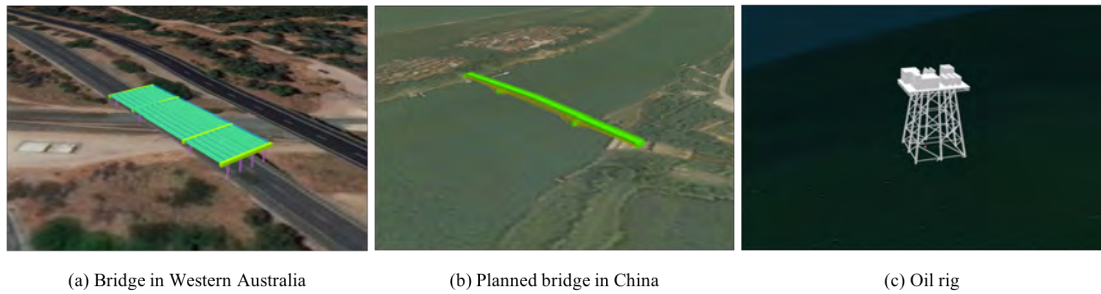


Figure 7-8 Scenes created in this study.

## 7.4 System development

### 7.4.1 System framework

The developed system requests data from ArcGIS Online, the ArcGIS Server, and an FTP Server for real-time sensor data. This system is deployed on a Web Server, which can then be accessed by various end clients such as desktops, laptops, tablets, and smart phones through the Internet. Figure 7-9 shows the physical structure of the system.

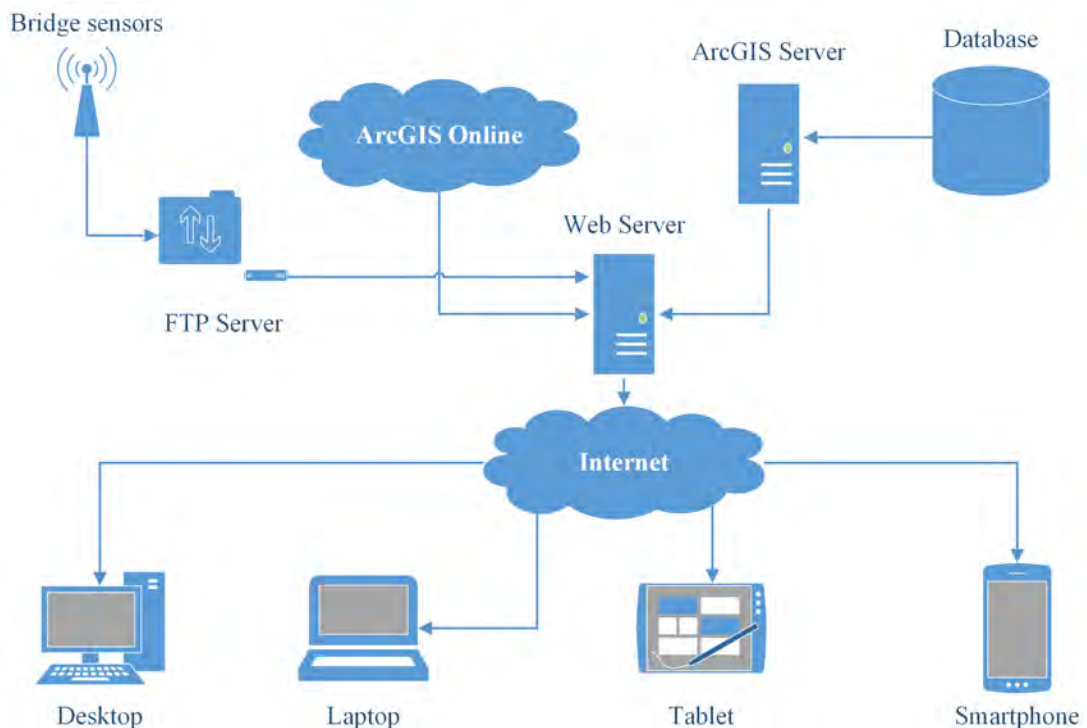


Figure 7-9 Physical structure of the system.

Three important functions have been added to this system, namely optimised visualisation by combining 2D and 3D views, infrastructure model exploration, and real-time sensor data reception and visualisation.

(1) The optimised visualisation combines 2D and 3D views. Over a large area (small scale), a 2D map is used to denote the locations of models, while over a small area (large scale), a 3D view is displayed, showing the detailed infrastructure model. This can be fully explored using built-in navigation functions, such as zoom in, zoom out, and rotation. The background map can also be changed using multiple options. (2) The attributes of the model can be retrieved, queried and displayed, including IFC attributes, as well as any other customised attributes. (3) Considering the growing significance of sensors in the construction industry, the function of real-time sensor

data reception and visualisation is also incorporated. Figure 7-10 presents the logical structure of the system, showing connections between input data, functions, and system.

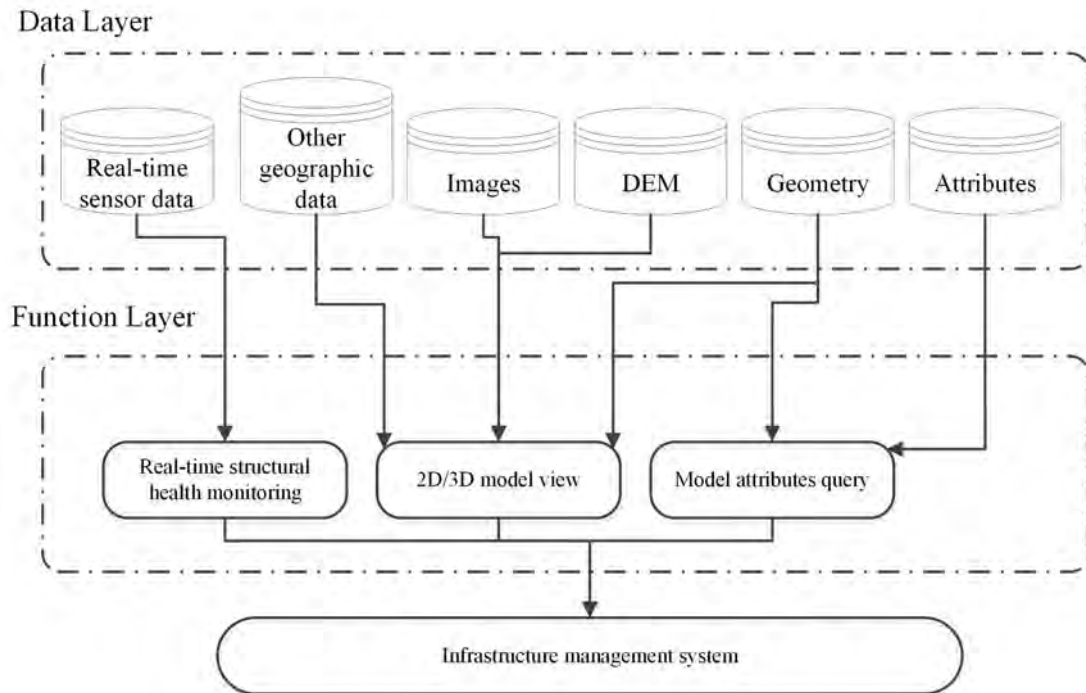


Figure 7-10 Logical structure of the system.

There are two layers, namely data and function layers. Real-time sensor data is used to simulate real-time structural health monitoring. Images, DEM, the geometry of BIM models, and other geographic data are used in the 2D/3D view. The geometry and attributes of BIM models support model information queries.

#### 7.4.2 Software structure

In order to consume data stored in ArcGIS Online and to utilize system functions, a user interface needs to be developed.

HTML, CSS, and JavaScript are the most fundamental tools for Web development; however, they are sometimes inefficient for certain tasks. Building on them, a couple of higher-level packages or toolkits, such as jQuery and Angular, have been developed to improve coding efficiency. This study takes advantage of a number of packages, including Dojo (Foundation 2018b, Zammetti 2008), jQuery (Foundation 2018a), Rickshaw (Shutterstock 2018), and Bootstrap (team 2018). Their hierarchy structure is shown in Figure 7-11. Bootstrap is at the bottom, on HTML/CSS level, which is of high efficiency in Web layout design and control. Above Bootstrap, at JavaScript level, Dojo is used to achieve the function of model visualisation,



component selection, view navigation, background layer selection, and component attributes retrieval. jQuery controls the movement of windows and the function of buttons, while Rickshaw is used to create and display charts of real-time sensor data.

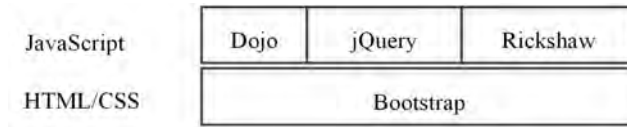


Figure 7-11 Techniques used in web developing.

A light-weight Integrated Development Environment (IDE), Visual Studio Code, was used for coding work. The developed codes are given in Appendices 3, 4 and 5.

### 7.4.3 Simulation of real-time monitoring

Since a real-time stream was not available for this study, the two-minute event data provided by MRWA was used for simulation of real-time monitoring.

The simulation has three main steps. (1) Processing event data using MATLAB and transfer into JSON. (2) Setting up a server and sending the JSON file to the server. (3) Requesting the JSON from the client. A server has to be used to host the JSON file, because the security mechanisms used by most browsers, such as Firefox and Chrome, do not allow a JSON file to be accessed from a local directory. Simulation of real-time monitoring is described in Figure 7-12.

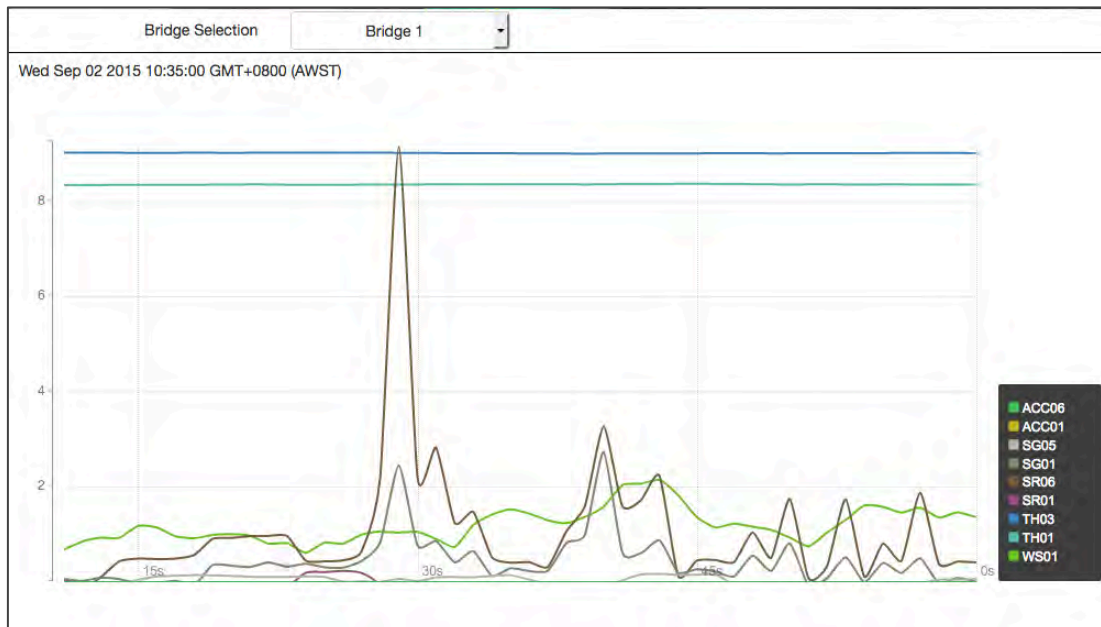


Figure 7-12 Simulation of real-time monitoring.

### 7.4.4 System interface

The developed system interface (Figure 7-13) contains five sections, namely navigation tools, background selection tool, infrastructure model display, sensor data visualisation, and infrastructure component list and attribute list.



Figure 7-13 System interface.

(1) Navigation tools control the orientation of the scene and allow the user to return to the default view through just one click, in cases where a user may get lost in the scene. (2) The background selection tool allows switching between different background maps, such as imagery, topography, streets, ocean, and so on. (3) Model display is the main section for displaying models, occupying much of the interface. (4) The status panel is designed for visualisation of sensor data. Finally, (5) the infrastructure component and attribute lists are used to show all components in the infrastructure model and their attributes, such as global ID, name, tag, and so on.

Figure 7-14 shows the system running on different end clients, including desktop, table, and smart phone. This system is currently designed for use on desktops and laptops with large screens. It can also be run on tablets or smartphones, but this is not recommended at present.



Figure 7-14 System running on different end clients, (a) desktop, (b) tablet, and (c) Smart phone.

## 7.5 System application use cases

This system is a framework that can be applied to the management of various facilities, as long as BIM models can be created and converted. This study has converted two types of models, namely bridge and oil rig models. These models in the format of IFC and Shapefile have been shared through Dropbox, and the 3D scenes created on ArcGIS Online are also open to access. The links to these materials, together with the original IFC files, are attached in Appendix 7.

### 7.5.1 Bridge management system

Using the developed system framework, two bridge management systems were developed, for the Bridge 1 (Figure 7-15), and for Bridge 2 in Guangdong, China (Figure 7-17).



Figure 7-15 Bridge 1 management system for Main Roads WA.



Figure 7-16 shows the current bridge management system used by MRWA. This is essentially just a 2D map with dots representing the locations of bridges; information that can be shared is therefore quite limited.

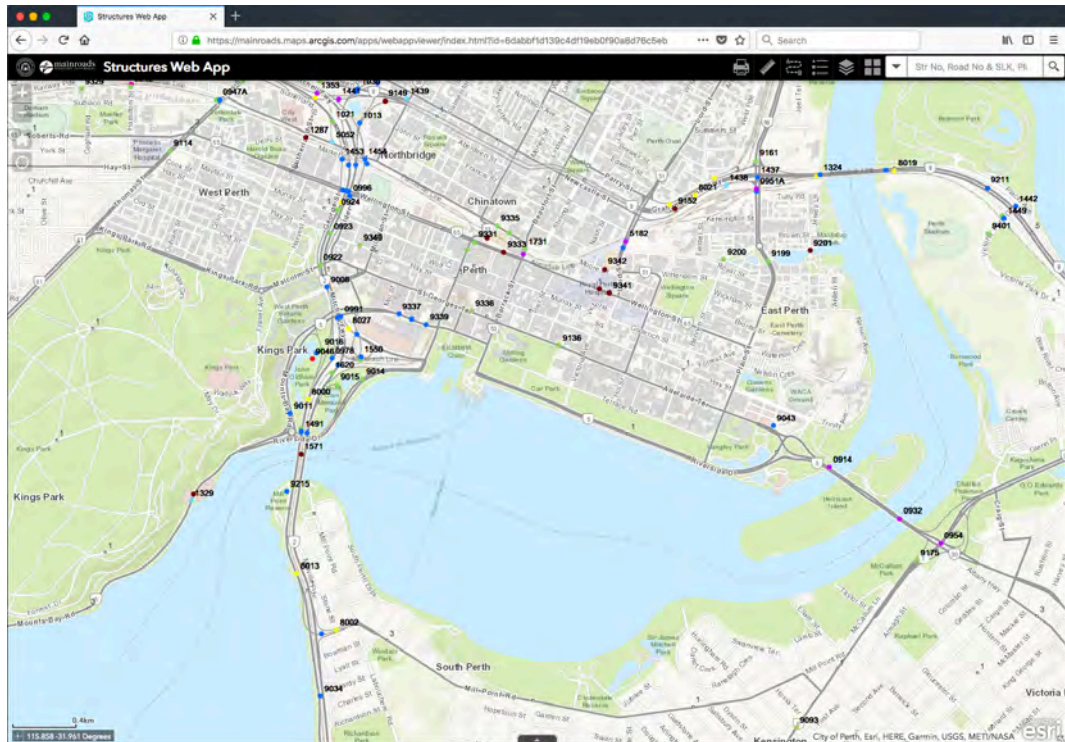


Figure 7-16 Web-based bridge management system currently being used by Main Roads, Western Australia.

Compared with the current bridge management system used by MRWA, this system (1) introduces 3D bridge models and is able to display their details, including both geometry and attributes, (2) receives and visualises real-time structure health monitoring data.

This system is currently still a prototype with limited functions. However, it is an extensible platform, and new functionalities can be developed and added to facilitate infrastructure management. For example, using additional information, such as the manufacturing date of a certain kind of component, it might be possible to automatically generate a maintenance schedule.

For Bridge 2 in Guangdong, China (Figure 7-17), this system was mainly used for visualisation purposes, since this bridge is still at planning stage. However, new functions for construction site layout management might be added in conjunction with GIS spatial analysis, to facilitate the construction work.

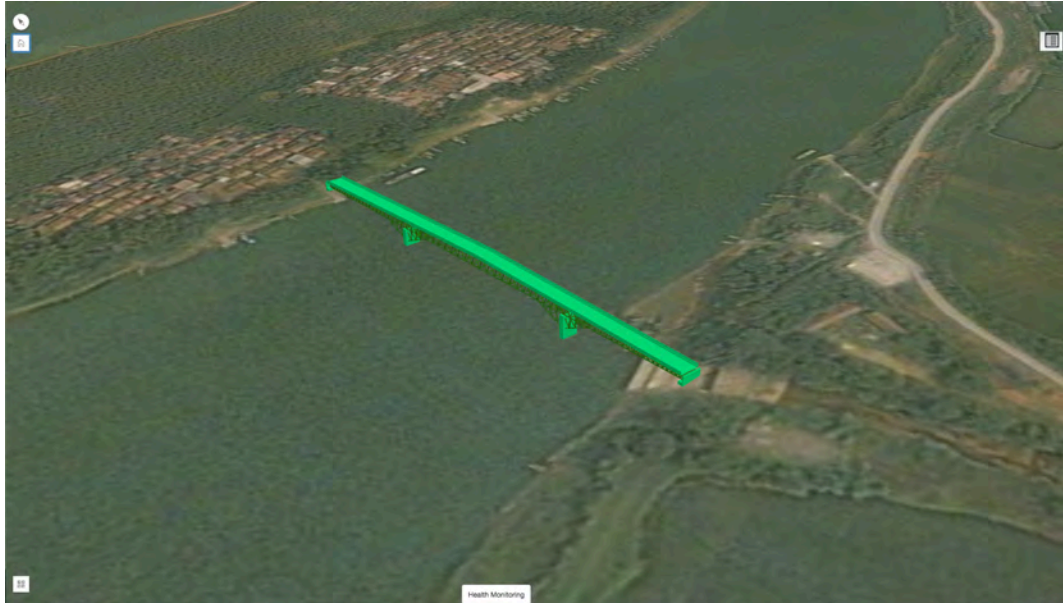


Figure 7-17 Management system for planned Bridge 2 in Guangdong, China.

### 7.5.2 Offshore oil rig management

An offshore oil rig management system has also been developed. This system was developed to test and visualize a process for optimising lift operations and vessel transport schedules for disassembly of multiple off-shore platforms (Tan et al. 2018). In this system, there are three different off-shore oil rig models and one on-shore management facility at various locations.

At small scale, all platforms and onshore facility are displayed in a 2D view. When the scale is large enough, detailed 3D models can be viewed. Figure 7-18 shows the 2D view illustrating oil rig locations as well as the onshore facility at a small scale, while Figure 7-19 shows the detailed rig model of Platform 3 at large scale.

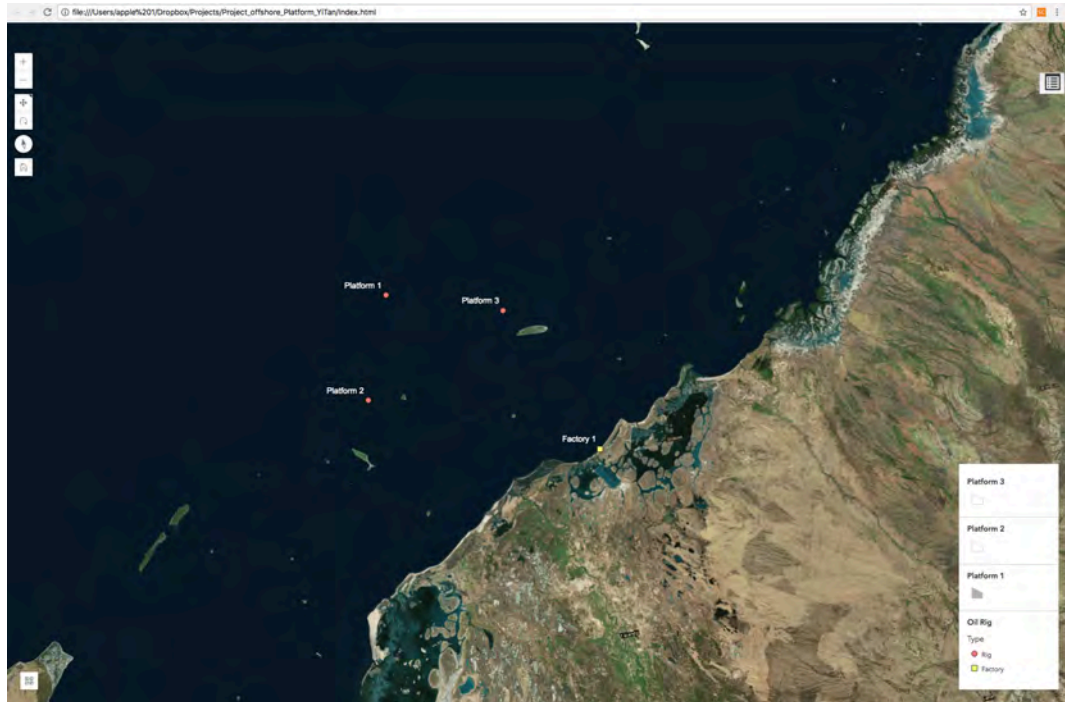


Figure 7-18 2D layout (small scale).

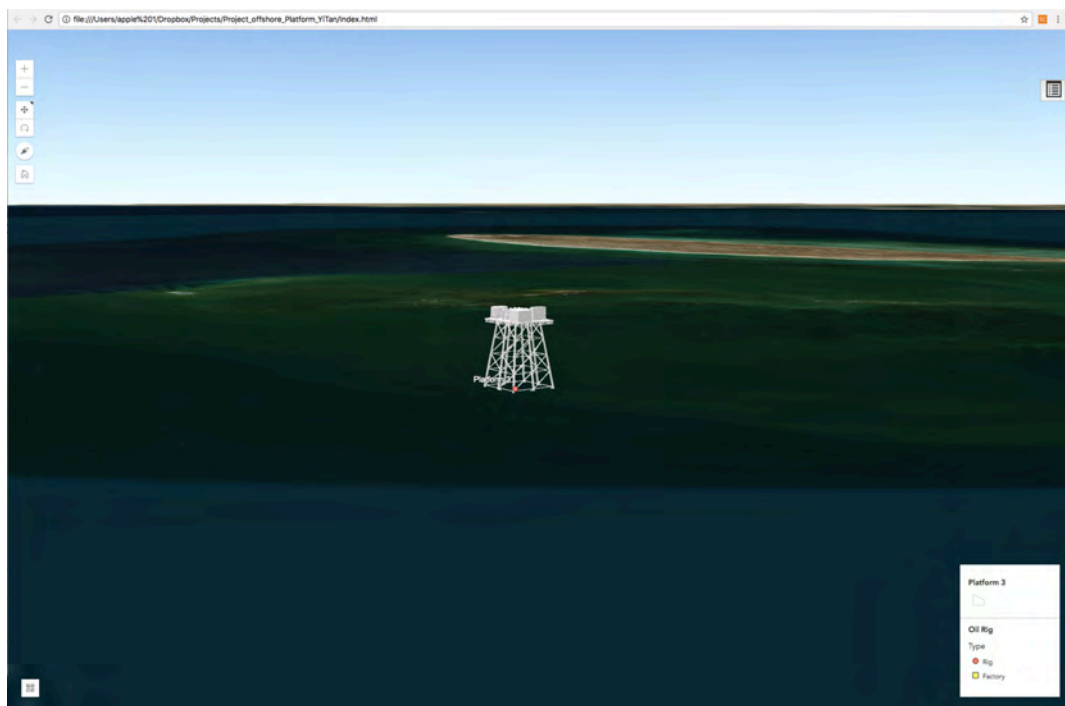


Figure 7-19 3D layout (large scale).

## 7.6 Chapter summary

This chapter focused on the development of the infrastructure management system to demonstrate the potential application of this study.

First, the BIM models used in this study were transformed using OSA into Shapefile, and a graphic model was developed in ArcGIS Pro to automate the data processing and management.

Second, an infrastructure management system framework was designed, which contains three parts, i.e. data sources, functionalities, and visualisation. It is able to process real-time sensor data, images, DEM, geometry, attributes, and other geographic data. In terms of functionality, it has achieved real-time structural health monitoring, 2D/3D model view, and model attributes query. To visualise the outputs, a user interface was developed.

Third, based on the framework, two specific management systems were developed. One system is for the management of bridge, and the other is for the management of offshore oil rigs.

## **8 Discussion and conclusion**

### **8.1 Introduction**

This chapter summarises and concludes this thesis. Section 8.2 discusses a couple of aspects on differences between integration levels, barriers to data-level BIM/GIS integration, and disputes over coordinate system transformation. Section 8.3 concludes the thesis from four aspects. Section 8.4 discusses the limitations of this study. Section 8.5 provides suggestions for future work.

### **8.2 Discussion**

#### **8.2.1 Differences between integration levels**

This study mainly focused on data-level integration between BIM and GIS, not considering application level. However, the boundary between the two is sometimes not distinct. In some situations, it is difficult to determine whether a study is at application or data level, because application-level studies also have to rely on data exchange to varying degrees. During the selection of papers for the literature review, studies giving very detailed descriptions of the data exchange process were considered as being at data level. For example, Costa, Sicilia et al. describe in detail how BIM and GIS data were transformed from IFC or CityGML through Web Ontology Language (OWL) to formats that could be utilised by simulation applications, such as EnergyPlus and CitySIM for city simulation (Costa et al. 2016). On the contrary, if only few details were given and the authors focused more on application, then the study was considered as being at application level. An example is the study conducted by Yamamura et al. for assessing urban energy performance using BIM and GIS, in which the authors describe the assessment process in detail, but little information is given on how BIM data was consumed by the GIS (Yamamura, Fan, and Suzuki 2017).

At data level, there are also differences between geometry and semantic levels. Table 8-1 compares the two. Results from the geometry level are mainly for visualisation purposes; this is relatively easier to achieve but contains less semantic information, and information tends to flow from BIM to GIS. On the other hand, information obtained from semantic level integration is relatively rich and can be used for analysis purposes; however, such integration is more difficult.

Table 8-1 Comparison between geometry- and semantic-level integration.

	Geometry level	Semantic level
Level of difficulty to achieve	Median	High
Purpose	Visualization	Visualization/Analysis
Direction of information flow	One-way from BIM to GIS	Bidirectional
Richness of information	Low	High
Semantic loss	Yes	No

### 8.2.2 Barriers to data-level BIM/GIS integration

The ultimate goal of BIM/GIS integration at data level is to achieve free information exchange between the two systems, which means that both geometry and semantic information can flow freely between the two. However, this goal is far from being achieved. By far, information tends to flow unidirectionally from BIM to GIS, especially at the geometry level. Bidirectional transformation between IFC and Shapefile is difficult for several reasons:

(1) Unbalanced data needs. Smart/digital cities, sensor networks, and IoT are all topical research topics in GIS, and all rely on 3D models. The more detail a 3D model contains, the more a GIS is able to achieve. GIS urgently requires detailed 3D city models to advance studies in these areas.

(2) IFC is a semantic data model with detailed description of almost everything involved in construction activities, while Shapefile is a format mainly for geometry. Without availability of additional semantic information, the transformation from Shapefile to IFC is impossible.

(3) It is difficult to retrieve all object attributes. Apart from default attributes, IFC separately stores properties as property sets; these are distributed and difficult to locate. Even if all semantic information could be extracted in future through methodological advances, the nature of Shapefile means that some information cannot be stored in a reasonable way, such as relationship entities between building elements and properties.

(4) There are difficulties relating to transformation between different 3D representations. IFC has three approaches to represent 3D geometries, i.e. CSG, sweep, and B-rep, while Shapefile only uses B-rep. The transformation from sweep to B-rep, and B-rep to B-rep has been realised (Deng, Cheng, and Anumba 2016b); however, in the reverse direction, only the transformation from B-rep to B-rep is possible. A geometry represented by sweep or GCS will have to be represented by B-rep after a

round trip (IFC to Shapefile, and then back to IFC). In this sense, bidirectional information transformation is impossible without information modification.

Additionally, if CityGML is used, differences in definitions of level of detail have to be considered. Both IFC and CityGML have 5 definitions for LoD or LOD; however, these do not correspond. This means that the lowest IFC LOD cannot be simply matched with the lowest LoD of CityGML. Appropriate links between these need to be well developed.

Some studies have achieved bidirectional information exchange, such as through GeoBIM (de Laat and Van Berlo 2011) and the Semantic City Model (Deng, Cheng, and Anumba 2016b). However, the methods proposed in these studies tend to be project-specific, which means approaches utilised in one study may not be directly extrapolated. More work needs to be carried out to achieve more generic methods for bidirectional information exchange.

### **8.2.3 Coordinate transformation types and algorithm for geometry transformation**

There are three disputes regarding geometry transformation: (1) coordinate transformation between LCSs, (2) an equation suitable for the transformation, and (3) determination of the y-axis direction in a right-hand 3D LCS.

(1) The transformation between LCSs has long been neglected. During geometry extraction, there can be three types of coordinate transformation, including transformation from site-level LCS to a WCS (T1), transformation between LCSs (T2), and transformation from the 2D LCS of an extrusion area to its parent (T3). These three types of transformation are vital to the success of geometry transformation. T2 and T3 together determine whether a geometry can be generated correctly, while T1 decides whether the geometry can be placed at the correct location. If any of these are not completed correctly, the output geometry can have errors. Although T1 is considered in most studies, T2 and T3 seem to be neglected (Deng, Cheng, and Anumba 2016b, Wu and Hsieh 2007, Kang and Hong 2015a, 2018).

(2) Transformation algorithm. Some studies suggest using Equation 3-7 to perform the transformation (Wu and Hsieh 2007). However, using this equation, the acquisition of transformation matrix is not practical. In practice, it is difficult to obtain the rotation angles of axes, i.e.  $\alpha, \beta, \gamma$ , from the IFC file directly. It is thus difficult for the transformation to be completed, unless additional information on rotation angles is provided. A reasonable equation for 3D transformation is Equation 5-10. The main

difference between the two equations is the acquisition of transformation matrix  $\mathbf{R}$ . With Equation 5-10, all elements that contribute to the calculation of transformation matrix  $\mathbf{R}$  can be obtained from IFC files, namely the direction of the x-axis and the z-axis. This leads to the next dispute.

(3) Determination of the direction of the y-axis. IFC does not provide  $\mathbf{R}$  directly; instead, it only provides the direction of the x-axis ( $D_x$ ) and z-axis ( $D_z$ ). With  $D_x$  and  $D_z$ , the direction of the third axis, y-axis ( $D_y$ ), can be deduced. Some studies suggest the use of  $D_x \times D_z$  to obtain  $D_y$  (Deng, Cheng, and Anumba 2016b). However, this is not appropriate, because all LCSs in IFC comply with the right-hand rule and, accordingly,  $D_x \times D_z$  has the right opposite direction with  $D_y$ . This study recommends use of  $D_z \times D_x$ , or  $-D_x \times D_z$ . With the right  $D_y$ , the transformation matrix  $\mathbf{R}$  can be calculated by  $\mathbf{M} \times [D_x \ D_y \ D_z]^T^{-1}$ , where  $\mathbf{M}$  is a  $3 \times 3$  identity matrix.

### 8.3 Conclusions

BIM and GIS originate from different domains, the former from AEC/FM, the latter from geospatial sciences. Nevertheless, interest in integrating BIM and GIS is growing, and the benefits brought about by integration of the two systems are being increasingly shown through research. The core problem for integration is data exchange between the two systems, specifically, geometry transformation and semantic information transfer.

This study first reviewed relevant papers published within the last decade, as well as seminal papers, to identify main issues and gaps. The conventional approach for data exchange using ArcGIS was then enhanced by assessing alternative transformation paths and developing a 3D geo-referencing method for 3D models. An OSA, equipped with an AMG algorithm, was then developed to facilitate geometry transformation, combined with an EAA, equipped with an advanced attribute search algorithm for transferring semantic information. Lastly, an infrastructure management system was developed using Web GIS techniques for better infrastructure management, optimising visualisation by combining 2D and 3D views and with the capability of receiving and visualising real-time sensor data.

The main findings of this study are summarised in the following sections.



### 8.3.1 Transformation using traditional approach

To enhance the traditional approach, this study tested different paths to transform IFC files to Shapefiles. Results showed that use of different IFs and paths produces different outputs. If the conventional approach is to be used, note that:

(1) Direct transformation from IFC to Shapefile should always be the first option. Direct transformation from IFC to Shapefile results in least geometric and semantic information loss among all transformation paths, while other formats result in varying but significant losses of geometric and semantic information.

(2) If direct transformation is not possible, 3DS should be the second choice, while KML, KMZ, DWG, and DWF should be least considered due to their poor performance. Resultant models from IFC, 3DS can be used for visualisation and analysis purposes. On the contrary, the outcomes of other formats can only be used for visualisation purposes, due to serious geometric and semantic information losses.

(3) The 3D geo-referencing method could improve efficiency. Compared with rebuilding the model from scratch, 3D geo-referencing technology could improve efficiency by about 90%, since geo-referencing a model takes about 2 hours, while rebuilding takes at least 20 hours.

### 8.3.2 Transformation using open source approach

Besides enhancing the traditional approach, this study also proposed an OSA comprising three steps: parameter extraction, coordinate system transformation, and multipatch generation, for which a customised multipatch generation algorithm (AMG) was developed to create multipatches automatically from specific parameters (swept area and path). The main findings include the following:

(1) The transformation of IFC to Shapefile could be achieved with open source technology, is even more stable and efficient than the DIA, and is comparable to the FME. The resultant Shapefile could be deployed in more applications and is easier to manage.

(2) Using AMG, a qualified multipatch can always be generated, regardless of initial ring order and extrusion direction. It has also been found out that with any ring, no matter whether clockwise or counter-clockwise, patches can always be generated. However, resultant multipatches may not be closed.

(3) All three types of coordinate transformation are important to successful geometry transformation, namely transformation from the site-level LCS to a WCS

(T1), transformation between LCSs (T2), and transformation from the extrusion profile's 2D LCS to its parent (T3). These coordinate transformations can essentially be completed using similar equations. However, they have different purposes. T2 and T3 together determine whether a geometry (shape) is generated correctly, while T1 decides whether the geometry is placed at the correct geographic location.

### **8.3.3 Semantic information transfer**

This study also proposed an EAA to reduce semantic information loss. EAA was used to extract semantic information from ifcXML to enrich the semantic information of models. The main findings include the following:

(1) The DIA is able to retrieve default attributes, such as GlobalID, name, and tag; however, the meaning of some of the extracted attributes (such as ifc\_parent and ifc\_unique) is difficult to interpret. Therefore, the ability of the DIA to transfer meaningful semantic information from BIM to GIS is quite limited.

(2) Hidden attributes stored in attribute entities, such as property set and material objects, could be extracted from ifcXML and successfully attached to Shapefiles using the proposed EAA. Compared with other studies on semantic information transfer, the proposed method does not rely on time-consuming data model modification or ontology creation and thus is more efficient and easier.

(3) The transformation from IFC to ifcXML cannot guarantee information consistency. Changes in content, such as for "Tag" and "Name", were observed after transformation. In addition, a customised beam defined as "IfcBeam" in IFC was also found to be changed to "IfcBuildingElementProxy".

(4) A set of customised functions for DOM manipulation were developed to improve data processing efficiency and can also be used by other researchers to facilitate their studies.

### **8.3.4 Infrastructure management system**

A Web GIS-based infrastructure management system was developed to demonstrate potential usages of BIM models in GIS applications, including for bridge management and offshore oil rig management.

However, at this stage, this system is nothing more than a prototype with limited functions. Fortunately, this system is extensible, and new functions can be added without impacting existing functions.

## 8.4 Limitations

Even though geometric and semantic information can be successfully transformed or transferred using the proposed methods, and even though an effective Web GIS-based infrastructure management system has been developed, there remain a number of issues that have not been adequately resolved. These include the following:

(1) The problem of semantics loss has not been adequately solved, remaining a problem in this study. Even though EAA is developed, through which the attributes of a model can be retrieved, the semantic mismatch problem is not addressed. EAA can extract what BIM has defined but cannot fill the gap between existing BIM/GIS data schemas. On the other hand, the spatial relationships, which are a part of semantic information, were completely lost. IFC is a semantic data model that defines the relationship between objects, while Shapefile is not. This means the relationship information will be inevitably lost after transformation. An approach is needed to address this problem.

(2) Of the three methods used by IFC for 3D representation, including CSG, B-rep and sweep, only sweep was discussed in this study. Other methods, such as CSG-to-B-rep transformation, also merit exploration. CSG uses a different mechanism from sweep to represent geometry information. To realise the transformation, two problems have to be addressed. The first is the definition of primitive objects, and the second is the Boolean operations between these objects in the context of GIS.

(3) Full bidirectional information exchange between BIM/GIS has not yet been achieved. This study mainly focused on the transformation from BIM to GIS, since GIS requires detailed 3D models to facilitate research in areas such as Smart Cities, IoT, and Big Data. The reverse transformation is also important, if BIM and GIS are to be integrated seamlessly and information could flow freely between them.

(4) The functionality of the developed infrastructure management system is limited. Thus far, this is nothing more than a prototype with only a 2D and 3D map view, attribute queries, and real-time sensor data reception and visualisation. Additionally, this system is only recommended to run on large screens, e.g. desktops and laptops. Therefore, new functions should be developed, such as real-time rendering for showing the status of components and real-time sensor data analysis. And, more adaptive CSS styles are needed to suit various screen sizes.

## 8.5 Suggestions for future work

Based on this study, the following aspects could be enhanced in future:

(1) Wider profile support for the OSA. In this study, only three sweep profiles are considered, i.e. an arbitrary profile, a rectangle profile, and a circle profile, while in IFC there are 12 predefined, parameterised profiles, such as ellipse, T-shape, Z-shape, and I-shape, as well as four other methods for creating customised profile definition, such as `IfcCompositeProfileDef` and `IfcDerivedProfileDef`. The ability to process these profiles would greatly enhance OSA capabilities.

(2) Hollow profile support for the OSA. A hollow profile is a shape with a hole or holes. The current AMG algorithm is only suitable for a solid area without any holes, which means it cannot transform tube models or any other similar models; these models also play an important role in the semantics of a city. This aspect therefore also needs to be enhanced.

(3) Exploring other data exchange formats. In this study, Shapefile is used as the recipient of BIM information. However, other formats also deserve to be explored. One of these is JSON, because of its common use in Web-based data transmission and because both BIM and GIS are advancing towards Web-based applications. On the BIM side, Afsari, Eastman et al. have designed ifcJSON, which is a JSON implementation of IFC specifications (Afsari, Eastman, and Castro-Lacouture 2017), and on the GIS side, GeoJSON is a JSON-based format for encoding a range of geographic data structures (Butler et al. 2008). If these could be joined in some way, there would be another option for achieving data-level integration of BIM/GIS.

From a broader perspective, GIS and BIM cannot replace each other for a long period of time and will continue to operate as independent but functionally complementary systems. At present, the priority is still to achieve full and effective data exchange between them, and the following aspects should be improved:

(1) Bidirectional exchange. At this stage, the priority should be full data exchange, which means that information can flow freely between the two systems in terms of both geometry and semantics. Information flow is mainly unidirectional from BIM to GIS. Some research claims successful bidirectional information transfer, but the amount and type of information that can be transferred is quite limited.

(2) A more generic data exchange approach is needed, since current solutions for semantic information exchange are likely to be project-specific. This may largely rely on extension of CityGML and on standardisation of ontologies of these two areas. As

construction of the ontology for a domain requires a good understanding of that domain, ultimate integration requires the efforts of individuals and organisations from both BIM and GIS. Thus, research and discussion on CityGML is also of great significance.

(3) Semantic annotation of 3D models based on geometric structure characteristics, which could assign semantic information to a shape. This technology could be important to achieve transformation from Shapefile to IFC, since Shapefile is a non-semantic data model. The technology for assigning semantic information to geometry would be the first step of Shapefile/IFC bidirectional transformation. This technology has been applied to images and videos (Wang, Yan, et al. 2017, Cera et al. 2018), but further studies are required to enable semantic annotation using geometric structure characteristics.

It is not hard to anticipate that BIM and GIS could eventually be combined, through advances in information technology and efforts from individuals and organisations in both domains. In due course, new issues may arise. One of these might be challenges in handling huge data (in terms of both size and number). In BIM, the size of a complex single building model may reach several GB, and thus the data size of a whole city model comprising hundreds or even thousands of buildings would be enormous and cannot be well handled by present technologies. New techniques are needed to address this issue, such as innovative methods for reducing data size without semantic information loss. Another challenge might be developing efficient methods for model creation. The current process for creating city models is still cumbersome and time-consuming, especially for those with high levels of detail. Even a simple bridge model takes several days to build, not to mention the creation of a whole city. New efficient methods are needed to facilitate this process if a city model is to be built quickly and efficiently.

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## Appendix

### Appendix 1 Python codes for geometry transformation

---

```
import time
start_time = time.time()
import ifcopenshell
import ifcopenshell.geom
import numpy as np
import gdal
import shapefile
import vpython

settings = ifcopenshell.geom.settings()
settings.set(settings.USE_PYTHON_OPENCASCADE, True)

ifc_file = ifcopenshell.open('../bridegmodel.0001.ifc')

#Only one project in n IFC file in any case
project = ifc_file.by_type('IfcProject')[0]

#get the relationship between project and sites
project_sites = project.IsDecomposedBy[0]

#get all the sites in a project, there could be multupal sites in a project
sites = project_sites.RelatedObjects

# only one site in the project in this case, since len(sites)=1
site1 = sites[0]

#get the relationship between site and buildings
site1_buildings = site1.IsDecomposedBy[0]

#get all the buildings in a site, there could be multupal buildings in a site
buildings = site1_buildings.RelatedObjects

#only one building in the site in this case, since len(buildings)=1
building1 = buildings[0]

#get the relationship between buildindg and storeys
building1_storeys = building1.IsDecomposedBy[0]

#get all the storeys in the building, there could be multupal storeys in a building
storeys = building1_storeys.RelatedObjects

#there are two storeys in the building, since len(storeys)=2

storey1 = storeys[0]
```

---

---

```

storey2 = storeys[1]

n = 0
shpWriter = shapefile.Writer(shapeType=shapefile.MULTIPATCH)
shpWriter.field("IFC_id")
shpWriter.field("GlobalId")
shpWriter.field("IfcType")
shpWriter.field("Story")
shpWriter.field("Building")
shpWriter.field("Site")
shpWriter.field("Project")
shpWriter.field("Profile")
shpWriter.field("ProfileName")
shpWriter.field("ProfileType")
shpWriter.field("ExtrusionPath")
for storey in storeys:
    storey_elements = storey.ContainsElements[0]
    elements_in_storey = storey_elements.RelatedElements
    for element in elements_in_storey:
        newCoor = []
        newDirection = []
        pos = []
        element_representations = element.Representation.Representations
        for rep in element_representations:

            if rep.RepresentationIdentifier == 'Body':
                if rep.RepresentationType == 'SweptSolid':
                    if rep.Items[0].SweptArea.is_a() == 'IfcArbitraryClosedProfileDef':
                        pos = extrudedAreaSolidParameter(rep.Items[0])
                        placement = rep.Items[0].Position
                        newCoor = oldCoorToNew(pos[0],placement)
                        newDirection = oldDirectToNew(pos[1], placement)
                        coor_transformed = keepTransformArea(newCoor,element.ObjectPlacement)
                        direction_transformed =
keepTransformDirect(newDirection,element.ObjectPlacement)
                        depth = pos[2]
                        #taking the elevation of storey into consideration
                        coor_transformed = addElevation(coor_transformed,storey.Elevation)

                        profile = rep.Items[0].SweptArea.is_a()
                        profileType = rep.Items[0].SweptArea.ProfileType
                        profileName = rep.Items[0].SweptArea.ProfileName

                        #start writing
                        area = coor_transformed*0.3048 #unit transformation from foot to meter
                        path = direction_transformed*depth*0.3048
                        parts = extrusionMat(area,path)
                        partTypes = (np.ones(len(area)+1)*5).tolist()
                        shpWriter.poly(parts=parts, partTypes=partTypes,shapeType=31)
                        shpWriter.record(IFC_id = element.id(),GlobalId = element.GlobalId,

```

---

```

IfcType = element.is_a(), Story = storey.GlobalId,
Building = building1.GlobalId, Site = site1.GlobalId,
Project = project.GlobalId ,Profile = profile,
ProfileType = profileType, ProfileName = profileName,
ExtrusionPath = str(path))

elif rep.Items[0].SweptArea.is_a() == 'IfcRectangleProfileDef':
    pos = extrudedAreaSolidParameter(rep.Items[0])
    placement = rep.Items[0].Position
    newCoor = oldCoorToNew(pos[0],placement)
    newDirection = oldDirectToNew(pos[1], placement)
    coor_transformed = keepTransformArea(newCoor,element.ObjectPlacement)
    direction_transformed =
keepTransformDirect(newDirection,element.ObjectPlacement)
    depth = pos[2]
    #taking the elevation of stroey into consideration
    coor_transformed = addElevation(coor_transformed,storey.Elevation)

    profile = rep.Items[0].SweptArea.is_a()
    profileType = rep.Items[0].SweptArea.ProfileType
    profileName = rep.Items[0].SweptArea.ProfileName
    #start writing
    area = coor_transformed*0.3048 #unit transformation from foot to meter
    path = direction_transformed*depth*0.3048
    parts = extrusionMat(area,path)
    partTypes = (np.ones(len(area)+1)*5).tolist()
    shpWriter.poly(parts=parts, partTypes=partTypes, shapeType=31)
    shpWriter.record(IFC_id = element.id(), GlobalId = element.GlobalId,
        IfcType = element.is_a(), Story = storey.GlobalId,
        Building = building1.GlobalId, Site = site1.GlobalId,
        Project = project.GlobalId ,Profile = profile,
        ProfileType = profileType, ProfileName = profileName,
        ExtrusionPath = str(path))

elif rep.RepresentationType == 'MappedRepresentation':
    if rep.Items[0].MappingSource.MappedRepresentation.Items[0].SweptArea.is_a() ==
'IfcCircleProfileDef':
        pos =
extrudedAreaSolidParameter(rep.Items[0].MappingSource.MappedRepresentation.Items[0])
        placement = rep.Items[0].MappingSource.MappedRepresentation.Items[0].Position
        #transform from the area local coordiante system to its upper level coordiante
system
        newCoor = oldCoorToNew(pos[0],placement)
        newDirection = oldDirectToNew(pos[1],placement)

        newCoor = oldCoorToNew(newCoor,rep.Items[0].MappingSource.MappingOrigin)
        newDirection =
oldDirectToNew(newDirection,rep.Items[0].MappingSource.MappingOrigin)

```

---

```

# transform the mapping
newCoor = transformToMappingTargetArea(newCoor,rep.Items[0].MappingTarget)
newDirection =
transformToMappingTargetDirection(newDirection,rep.Items[0].MappingTarget)

    coor_transformed = keepTransformArea(newCoor,element.ObjectPlacement)
    direction_transformed =
keepTransformDirect(newDirection,element.ObjectPlacement)
    depth = pos[2]
    #taking the elevation of storey into consideration
    coor_transformed = addElevation(coor_transformed,storey.Elevation)

    profile =
rep.Items[0].MappingSource.MappedRepresentation.Items[0].SweptArea.is_a()
    profileType =
rep.Items[0].MappingSource.MappedRepresentation.Items[0].SweptArea.ProfileType
    profileName =
rep.Items[0].MappingSource.MappedRepresentation.Items[0].SweptArea.ProfileName
    #start writing
    area = coor_transformed*0.3048 #unit transformation from foot to meter
    path = direction_transformed*depth*0.3048
    parts = extrusionMat(area,path)
    partTypes = (np.ones(len(area)+1)*5).tolist()
    shpWriter.poly(parts=parts, partTypes=partTypes,shapeType=31)
    shpWriter.record(IFC_id = element.id(),GlobalId = element.GlobalId,
                    IfcType = element.is_a(), Story = storey.GlobalId,
                    Building = building1.GlobalId, Site = site1.GlobalId,
                    Project = project.GlobalId ,Profile = profile,
                    ProfileType = profileType, ProfileName = profileName,
                    ExtrusionPath = str(path))

#else:
    #print 'Represation not found'

    n = n + 1
    print element.id(), element.is_a()

print n

shpWriter.save('/Volumes/DataStore/Dropbox/Public/public_shp/MyPolyS25')
print("--- %s seconds ---" %(time.time()-start_time))
def extrudedAreaSolidParameter(areaSolid):
    depth = areaSolid.Depth
    direction = areaSolid.ExtrudedDirection.DirectionRatios
    area_raw_2D = []
    result = []
    if areaSolid.SweptArea.is_a() == 'IfcArbitraryClosedProfileDef':
        for point in areaSolid.SweptArea.OuterCurve.Points:
            area_raw_2D.append(list(point.Coordinates))

```

---

```

elif areaSolid.SweptArea.is_a() == 'IfcRectangleProfileDef':
    L = areaSolid.SweptArea.XDim
    W = areaSolid.SweptArea.YDim
    coor_orgi = np.mat([[L/2,W/2],[L/2,-W/2],[-L/2,-W/2],[-L/2,W/2],[L/2,W/2]])
    coor_shfit = np.mat(areaSolid.SweptArea.Position.Location.Coordinates)
    coor_trans = np.mat(areaSolid.SweptArea.Position.RefDirection.DirectionRatios)
    transMat = make2DTransfer(coor_trans)
    area_raw_2D = coor_orgi*transMat+coor_shfit

elif areaSolid.SweptArea.is_a() == 'IfcCircleProfileDef':
    coor_orgi = vpython.shapes.circle(radius = areaSolid.SweptArea.Radius)
    coor_shfit = np.mat(areaSolid.SweptArea.Position.Location.Coordinates)
    coor_trans = np.mat(areaSolid.SweptArea.Position.RefDirection.DirectionRatios)
    transMat = make2DTransfer(coor_trans)
    area_raw_2D = coor_orgi*transMat+coor_shfit

else:
    print 'Profile not found! Please think about adding it!'

zero_z = np.mat(np.zeros(len(area_raw_2D))).T
area_raw_3d = np.hstack((np.mat(area_raw_2D),zero_z))

result.append(area_raw_3d)
result.append(direction)
result.append(depth)

return result

def make2DTransfer(x):
    transformMatrix = [[0,1],[-1,0]]
    y = x*transformMatrix
    result = np.vstack((x,y))
    return result

def make3DTransfer(x,z):
    x = np.mat(x)
    z = np.mat(z)
    y = -np.cross(x,z)
    result = np.vstack((x,y))
    result = np.vstack((result,z))
    return result

def oldCoorToNew(oldCoor,placement):
    x_axis = []
    z_axis = []
    if placement.RefDirection:
        x_axis = placement.RefDirection.DirectionRatios
    else:
        x_axis = [1,0,0]

```

---

```
if placement.Axis:
    z_axis = placement.Axis.DirectionRatios
else:
    z_axis = [0,0,1]
    coor_shift = placement.Location.Coordinates
    transMat3D = make3DTransfer(x_axis,z_axis)
    newCoor = np.mat(oldCoor)*(np.mat(np.eye(3))*transMat3D.I).T + np.mat(coor_shift)
    return newCoor

def oldDirectToNew(oldDirect,placement):
    x_axis = []
    z_axis = []
    if placement.RefDirection:
        x_axis = placement.RefDirection.DirectionRatios
    else:
        x_axis = [1,0,0]

    if placement.Axis:
        z_axis = placement.Axis.DirectionRatios
    else:
        z_axis = [0,0,1]

    transMat3D = make3DTransfer(x_axis,z_axis)
    newDirect = np.mat(oldDirect)*(np.mat(np.eye(3))*transMat3D.I).T
    return newDirect

def keepTransformArea(coor,localPlacement):
    coor_new=[]
    if not localPlacement is None:
        if not localPlacement.RelativePlacement is None:
            coor_new = oldCoorToNew(coor,localPlacement.RelativePlacement)
            keepTransformArea(coor_new,localPlacement.PlacementRelTo)
    return coor_new

def keepTransformDirect(coor,localPlacement):
    coor_new=[]
    if not localPlacement is None:
        if not localPlacement.RelativePlacement is None:
            coor_new = oldDirectToNew(coor,localPlacement.RelativePlacement)
            keepTransformDirect(coor_new,localPlacement.PlacementRelTo)
    return coor_new

def extrusionMat(arr_list,path):
    result = []
    arr_list = np.mat(arr_list)
    path = np.mat(path)
    arr_list2 = arr_list + path
    arr_list = np.matrix.tolist(arr_list)
    arr_list2 = np.matrix.tolist(arr_list2)
```

---



```

for i in range(len(arr_list)-1):
    temp = [arr_list[i],arr_list[i+1],arr_list2[i+1],arr_list2[i],arr_list[i]]
    result.append(temp)
arr_list.reverse() #to make the geometry comply to the topological rule
result.append(arr_list)
result.append(arr_list2)
return result

#add elevation to an element which is on a storey
def addElevation(oldCoor,elevation):
    oldCoor = np.mat(oldCoor)
    z1 = np.mat(np.ones(len(oldCoor))).T
    oldCoor[:, -1]=oldCoor[:, -1]+z1*elevation
    return oldCoor

def transformToMappingTargetArea(oldCoor,transOperation):
    if transOperation.Axis3 == None and transOperation.Axis1 == None and transOperation.Axis2
    == None:
        transMat = np.matrix([[1,0,0],[0,1,0],[0,0,1]])
        coor_shift = transOperation.LocalOrigin.Coordinates
        newCoor = np.mat(oldCoor)*(np.mat(np.eye(3))*transMat.I).T + np.mat(coor_shift)
        return newCoor

def transformToMappingTargetDirection(oldCoor,transOperation):
    if transOperation.Axis3 == None and transOperation.Axis1 == None and transOperation.Axis2
    == None:
        transMat = np.matrix([[1,0,0],[0,1,0],[0,0,1]])
        newCoor = np.mat(oldCoor)*(np.mat(np.eye(3))*transMat.I).T
        return newCoor

```

---

## Appendix 2 MATLAB codes for attributes extraction

```

dom = xmlread('brideg.ifcXML');
% get the ifc content in the file
ifc = dom.getElementsByTagName('ifc:uos').item(0);
disp(ifc.getChildNodes.getLength)
% conduct the operation of setting id as ID
setIdXML(ifc)
relList = dom.getElementsByTagName('IfcRelDefinesByProperties');
data = struct;
fields_all = <>;

for i = 0:relList.getLength-1
    [elem_id,prop_id] = getId(relList.item(i));
    disp(strcat(elem_id, '/', prop_id));
    temp_elemNode = dom.getElementById(elem_id);
    temp_elemNode.getNodeName;
    temp_names = getElementName(temp_elemNode);

```

---

---

```

    fields_all = [fields_all, temp_names];
end

fields_all = unique(fields_all);
% struct initialization, assign field names to the data struct
for i = 1:length(fields_all)
    data.(fields_all<I>) = [];
end

data.(IfcType) = [];

for i = 0:relList.getLength-1
    [elem_id,prop_id] = getId(relList.item(i));
    %get direct attributes from the element node
    temp_elemNode = dom.getElementById(elem_id);
    temp_names = getElementName(temp_elemNode);
    for j = 1:length(temp_names)

        if hasOnlyTextChild(temp_elemNode.getElementsByTagName(temp_names<j>).item(0))
            data(i+1).(temp_names<j>) =
char(temp_elemNode.getElementsByTagName(temp_names<j>).item(0).getTextContent);
            data(i+1).(IfcType) = char(temp_elemNode.getNodeName);
        else
            continue;
        end
    end
end

% get the hidden attributes from the property set node
temp_propNode = dom.getElementById(prop_id);

if hasChild(temp_propNode,'HasProperties')
    propSetNode = temp_propNode.getElementsByTagName('HasProperties').item(0);
    propertySet = getElementChildren(propSetNode); % cell Array
    for m = 1:length(propertySet)
        id = getThisRef(propertySet<m>);
        propNode = dom.getElementById(id);
        PropNodeChildren = getElementChildren(propNode);
        propNodeName = char(PropNodeChildren<1>.getTextContent);
        propNodeValue = char(PropNodeChildren<2>.getTextContent);
        data(i+1).(propNodeName) = propNodeValue;
    end
end

data(i+1).(id_XML) = elem_id;
end

% get the 'material' attributes
materialList = dom.getElementsByTagName('IfcRelAssociatesMaterial');
for i = 0:materialList.getLength-1

```

---

```

materialNodeRef = materialList.item(i).getElementsByTagName('RelatingMaterial').item(0);
getChildMaterialElement(materialNodeRef);
load('id');% loading the variable material_id from the id file, which has been stored
materialNode = dom.getElementById(material_id);
materialName = char(materialNode.getElementsByTagName('Name').item(0).getTextContent);

materialRelatedObjectsNode =
materialList.item(i).getElementsByTagName('RelatedObjects').item(0);
materialRelatedObjectSet = getElementChildren(materialRelatedObjectsNode);
for j = 1:length(materialRelatedObjectSet)
    materialRelatedObject = materialRelatedObjectSet<j>;
    id = getThisRef(materialRelatedObject);
    if any(strcmp(id, <data.id_XML>))
        [~, idx] = max(strcmp(id, <data.id_XML>));
        data(idx).('Material') = materialName;
    else
        continue
    end
end
end

data = data';
data_value = struct2cell(data);
data_value = data_value';
data_title = fieldnames(data);
data = [data_title;data_value];
save('data','data');
xlswrite('data.xls',data);

function [id_element, id_property] = getId(relNode)
id_element =
relNode.getElementsByTagName('RelatedObjects').item(0).getChildNodes.item(1).getAttribute('re
f');
id_element = char(id_element);
id_property =
relNode.getElementsByTagName('RelatingPropertyDefinition').item(0).getChildNodes.item(1).get
Attribute('ref');
id_property = char(id_property);
end

function setIdXML(node)

if node.hasAttributes && node.hasAttribute('id')
    node.setIdAttribute('id',true);
end

%set the node's children's id as ID, if the id attribute exists
if node.hasChildNodes
    for i = 0:node.getLength-1
        setIdXML(node.item(i));
    end
end

```

---

```
end
end

function tag_list = getElementName(node)
child_list = getElementChildren(node);
num_children = size(child_list,1);
tag_list = <num_children>;

for i = 1:num_children
    tag_list(i) = child_list<i>.getNodeName;
end
%tag_list = tag_list';
end

function [flag,idx] = hasElementChild(node)
idx = 0;
if node.hasChildNodes
    for i = 0:node.getLength-1
        if node.item(i).getNodeName == 1
            idx = idx + 1;
        end
    end
    if idx > 0
        flag = true;
    else
        flag = false;
    end
else
    flag = false;
end
end

function id = getThisRef(node)
if node.hasAttributes && node.hasAttribute('ref')
    id = char(node.getAttribute('ref'));
else
    id = 'None';
end
end

function nodes = getElementChildren(node)
nodes = <node.getLength>;
idx = 0;
if node.hasChildNodes
    for i = 0:node.getLength-1
        if node.item(i).getNodeName == 1
            idx = idx + 1;
            nodes(idx) = node.item(i);
        end
    end
end
end
```

---

```

    nodes = nodes';
end
end

function flag = hasChild(node,child_tag)
child_list = getElementChildren(node);
num_children = size(child_list,1);
flag_list = zeros(num_children,1);
tag_list = getElementName(node);
for i = 1:num_children
    flag_list(i) = strcmp(child_tag,tag_list<i>);
end
if any(flag_list)
    flag = true;
else
    flag = false;
end
end

function flag = hasOnlyTextChild(node)
idx_elem = 0;
idx_text = 0;
flag = false;
if node.hasChildNodes
    for i = 0:node.getLength-1
        if node.item(i).getNodeTypes == 1
            idx_elem = idx_elem + 1;
        end
        if node.item(i).getNodeTypes == 3
            idx_text = idx_text + 1;
        end
    end
    if idx_text > 0 && idx_elem == 0
        flag = true;
    end
end
end

function getChildMaterialElement(node)
nodeName = char(node.getNodeName);
if strcmp(nodeName,'IfcMaterial')
    material_id = char(node.getAttribute('ref'));
    save('id', 'material_id')
else
    if hasElementChild(node)
        children = getElementChildren(node);
        for i = 1:length(children)
            getChildMaterialElement(children<i>);
        end
    end
end
end
end

```

---

---

end

---

## Appendix 3 HTML codes for defining the structure of the web application

---

```
<!DOCTYPE html>
<html>

<head>
  <meta charset="utf-8">
  <meta name="viewport" content="initial-scale=1, maximum-scale=1,user-scalable=no">
  <title>Bridge Project Version 1.1</title>

  <link type="text/css" rel="stylesheet" href="http://jqueryui.com/themes/base/jquery.ui.all.css">
  <link rel="stylesheet"
href="https://maxcdn.bootstrapcdn.com/bootstrap/3.3.7/css/bootstrap.min.css">
  <link rel="stylesheet" href="https://js.arcgis.com/4.4/esri/css/main.css">
  <link rel="stylesheet" href="bridge.css">
  <link rel="stylesheet" href="rickshaw/rickshaw.min.css">
  <link type="text/css" rel="stylesheet" href="rickshaw/src/css/graph.css">
  <link type="text/css" rel="stylesheet" href="rickshaw/src/css/detail.css">
  <link type="text/css" rel="stylesheet" href="richshaw/src/css/legend.css">
  <link type="text/css" rel="stylesheet" href="examples/css/lines.css">

  <script src="rickshaw/vendor/d3.min.js"></script>
  <script src="rickshaw/vendor/d3.layout.min.js"></script>
  <script src="rickshaw/vendor/d3.v3.js"></script>
  <script src="rickshaw/rickshaw.js"></script>
  <script src="https://js.arcgis.com/4.4/"></script>
  <script src="https://ajax.googleapis.com/ajax/libs/jquery/3.2.1/jquery.min.js"></script>
  <script src="https://ajax.googleapis.com/ajax/libs/jquery/1.6.2/jquery.min.js"></script>
  <script src="https://ajax.googleapis.com/ajax/libs/jqueryui/1.8.15/jquery-ui.min.js"></script>
  <script src="https://maxcdn.bootstrapcdn.com/bootstrap/3.3.7/js/bootstrap.min.js"></script>
  <script src="bridge_mine.js"></script>

</head>

<body>

  <div id="titleDiv" style="display:none">
    <div id="logoImage">
      
    </div>
    <div id="logo">
    </div>
  </div>
```

---

```

<div id="viewDiv">
  <p style="font-size:18px; text-align:center;">loading, please wait....
  </p>
</div>

<div id="sideBar" class="panel-side" style="display:none">
  <div id="status">
    <span id="sidebarClose" class="glyphicon glyphicon-arrow-right"></span>
  </div>

  <div id="elem">
  </div>

  <div id="attr">

    <div id="attrHead">
      <div>
        <span id="attClose" class="glyphicon glyphicon-remove"></span>
      </div>
    </div>

    <table id="table">
    </table>
  </div>
</div>

<div id="listToggle" style="display:none">
  <button type="button" style="width:50px; height:50px;"><span class="glyphicon glyphicon-
list-alt"></span></button>
</div>

<div id="chartFrame" style="display:none">
  <div id="chartToggle"><button type="button" class="btn btn-default" id="chartToggleButton"
style="width:150px">Health</button></div>

  <div id="chart" style="display:none">
    <div class="container-fluid" id="chartSelection" style="background:white;border-bottom:
thin solid black;padding:2px 0">
      <div class = "row">
        <div class="col-sm-3" style="text-align:right">
          <p style="margin:6px 0 0 0">Bridge Selection</p>
        </div>
        <div class="col-sm-3" style="text-align: left;vertical-align:middle;">
          <select class="btn btn-default" style="height:35px; width:200px">
            <option value="bridge1">Bridge 1</option>
            <option value="bridge2">Bridge 2</option>
            <option value="bridge3">Bridge 3</option>
            <option value="bridge4">Bridge 4</option>
          </select>
        </div>
      </div>
    </div>
  </div>

```

---

---

```

    </div>
    <div class="col-sm-3" style="text-align:right;display:none">
      <p style="margin:6px 0 0 0">Sensor Selection</p>
    </div>
    <div class="col-sm-3" style="text-align: left;display:none">
      <select class="btn btn-default" style="height:35px; width:200px">
        <option value="varTemp">Temperature</option>
        <option value="varWindDirection">Wind Direction</option>
        <option value="varWindSpeed">Wind Speed</option>
        <option value="varVibration">Vibration</option>
      </select>
    </div>
  </div>
</div>

<div id="chartZoom">

  <div id="timeZoom"></div>
  <div id="legend"></div>
  <div id='chart_y'></div>
  <div id= 'chart_figure'></div>

</div>
</div>
</div>
</body>
</html>

```

---

## Appendix 4 CSS codes for defining the appearance of the web application

---

```

html,
body,

#viewDiv {
  padding: 0;
  margin: 0;
  height: 100%;
  width: 100%;
}

#titleDiv {
  position: absolute;
  background-color: white;
  color: black;
  top:0px;
  left:0px;
  height: 30px;

```

---



```
width:100%;
font-size: 11pt;
font-weight: bolder;
opacity: 1;
text-align: left;
vertical-align: middle;
z-index:2;
}

#logoImage {
  float:right;
}

#logo {
  margin: 8px 0px 0px 10px;
  vertical-align: middle;
  height:50%;
  font-family: sans-serif;
}

#sideBar {
  position: absolute;
  top:30px;
  right: 0px;
  width:300px;
  height:95%;
  overflow:auto;
  opacity:0.8;
}

.panel-side ul {
  list-style: none;
  margin: 0;
  padding: 0;
}

.panel-side li {
  list-style: none;
  color:black;
  padding: 5px 30px;
}

.panel-result {
  cursor: pointer;
  margin: 2px 0;
}

.panel-result:hover,
```

---

```
.panel-result:focus {  
  
    background-color: rgba(0, 0, 0, 0.3);  
}  
  
#listToggle{  
    position: absolute;  
    top:90px;  
    right: 0px;  
    z-index: 3;  
  
    width:50px;  
    height: 30px;  
    margin:0;  
    padding: 0;  
    text-align: left;  
}  
  
#sidebarClose:hover {  
    border: thin dashed black;  
}  
  
#status {  
    background:white;  
    color:black;  
    text-align: right;  
    border-bottom: 1px solid #ddd;  
  
    padding-right: 10px;  
  
}  
  
#attr {  
    padding-left:5px;  
    margin:10px 0px 0px 0px;  
    height:430px;  
    border-bottom: thin solid #ddd;  
    border-left: thin solid #ddd;  
    border-top: thin solid #ddd;  
  
    color: #2D2B2B;  
    background-color: white;  
    overflow: scroll;  
  
}  
  
#elem {  
    height:450px;  
    overflow-y:scroll;
```

---

```
margin:0;
padding: 5px;
min-width: 200px;
border-bottom: thin solid #ddd;
border-top: thin solid #ddd;
border-left: thin solid #ddd;
background-color:white;

}

#attrHead {
border-bottom: 1px solid #ddd;
text-align: right;
padding-right: 10px;
}

#attClose:hover {
border: thin dashed black;
}

#table{
border-bottom: 1px solid #ddd;
}

th {
text-align: left;

margin:2px;
padding-left: 2px;
height:35px;
}

td {
border-bottom: 1px solid #ddd;
padding-left:5px;
padding-right:5px;
}

.glyphicon.glyphicon-arrow-right {
font-size: 15px;
}

.glyphicon.glyphicon-list-alt {
font-size: 30px;
}
```

---

```
#chartFrame {
  position: absolute;
  bottom:5px;
  left:30%;
  width:1000px;
}

#chartToggle {
  margin:0px auto;
  text-align: middle;
}

#chartToggleButton {

  height:40px;
}

#chartZoom {
  width: 1000px;
  height:530px;
  margin:0;
  padding: 0 0 0 0;
  border: thin solid white;
  background-color:white;
}

#timeZoom {
  position: absolute;
  top:85px;
  left: 10px;
  text-align: left;
  z-index: 2;
}

#legend {
  position: absolute;
  bottom:50px;
  right: 5px;
  text-align: left;
  z-index: 2;
}

#chart_figure {
  width:830px;
  height: 400px;
  margin-top: 80px;
```

---

```
margin-left:50px;
}

#chart_y {
position: absolute;
top: 160px;
height: 400px;
width: 40px;

margin:0;
}
```

---

## Appendix 5 JavaScript codes for realizing the functionality

---

```
window.onload = function () {

var url = "http://localhost:8888/testdata2.json";
var request = new XMLHttpRequest();
request.open("GET", url);
request.onload = function () {
if (request.status == 200) {
updateGraph(request.responseText);

}
};
request.send(null);

};

function updateGraph(responseText) {

//var salesDiv = document.getElementById("chartZoom");
var sales = JSON.parse(responseText);
var tv = 1000;

// instantiate our graph!
var graph = new Rickshaw.Graph({
element: document.getElementById("chart_figure"),
renderer: 'line',
series: new Rickshaw.Series.FixedDuration([ { name: 'testOne' } ], undefined, {
timeInterval: tv,
maxDataPoints: 50,
timeBase: sales[1].Time
//new Date().getTime() / 1000
})
});

//x-axis
var axes = new Rickshaw.Graph.Axis.Time({
```

---

---

```
graph: graph,

});

// add some data every so often

var i = 0;

//alert(typeof(y_ticks));
var iv = setInterval(function () {
    if (i < sales.length) {
        // add data
        var data = { WS01: sales[i].WS01 };
        //data.WD01 = sales[i].WD01;
        data.TH01 = sales[i].TH01;
        data.TH03 = sales[i].TH03;
        data.SR01 = sales[i].SR01;
        data.SR06 = sales[i].SR06;
        data.SG01 = sales[i].SG01;
        data.SG05 = sales[i].SG05;
        data.ACC01 = sales[i].ACC01;
        data.ACC06 = sales[i].ACC06;
        document.getElementById("timeZoom").innerHTML = new Date(sales[i].Time * 1000);
        i++;
        graph.series.addData(data);
        graph.render();
    }

    //add legend after the first data was added, delete the first item
    if (i == 1) {
        graph.series.shift();
        var legend = new Rickshaw.Graph.Legend({
            graph: graph,
            element: document.getElementById('legend')
        });
    }
}, tv);

//y_axis
var y_ticks = new Rickshaw.Graph.Axis.Y({
    graph: graph,
    orientation: 'left',
    tickFormat: Rickshaw.Fixtures.Number.formatKMBT,
    element: document.getElementById('chart_y')
});

//hover detail
new Rickshaw.Graph HoverDetail({
    graph: graph
});
```

---

```
graph.render();

/*
//drag zoom
var drag = new Rickshaw.Graph.DragZoom({
  graph: graph,
  opacity: 0.5,
  fill: 'steelblue',
  minimumTimeSelection: 15,
  callback: function (args) {
    console.log(args.range, args.endTime);
  }
});

graph.render();

var shelving = new Rickshaw.Graph.Behavior.Series.Toggle({
  graph: graph,
  legend: legend
});

var order = new Rickshaw.Graph.Behavior.Series.Order({
  graph: graph,
  legend: legend
});

var highlight = new Rickshaw.Graph.Behavior.Series.Highlight({
  graph: graph,
  legend: legend
});

graph.render();
*/
}

require([
  "esri/config",
  "esri/views/SceneView",
  "esri/WebScene",
  "esri/widgets/Legend",
  "esri/widgets/LayerList",
  "esri/widgets/Expand",
  "esri/widgets/BasemapGallery",
  "esri/widgets/Home",
  "esri/tasks/support/Query",

  "dojo/on",
  "dojo/dom",
```

---

---

```
"dojo/domReady!"
], function (
    esriConfig, SceneView, WebScene, Legend, LayerList, Expand, BasemapGallery, Home, Query,
    on, dom
) {

    esriConfig.portalUrl = "https://curtin.maps.arcgis.com";

    var titleDiv = dom.byId("logo");

    var scene = new WebScene({
        portalItem: { // autocasts as new PortalItem()
            id: "d0c23acf6b4c4ae2962079d280104e12" //MR bridge
            //id: "9176c20040c444aab09b07efe0da89bd" //Guangdong bridge
            //id: "7aa434be547143c8bf9a0604d262a25d" // Combined bridges
        }
    });

    var view = new SceneView({
        map: scene,
        container: "viewDiv",
        padding: {
            top: 40
        }
    });

    view.ui.remove(["zoom", "navigation-toggle", "attribution", "compass"])

    //disable the default popup
    scene.then(function () {
        scene.layers.forEach(function (layer) {
            layer.popupEnabled = false;
        })
    })

    view.then(function () {
        // hide the attribute div and display the listToggle div
        $("#sideBar").show();
        $("#attr").hide();
        $("#chartFrame").show();
        $("#titleDiv").show();
        //$("#chart").show();

        var title = scene.portalItem.title;
        logo.innerHTML = "Information Management System for " + title + " Version 1.1";

        var pop = view.popup;

        pop.dockEnabled = true;
```

---



```
pop.set("dockOptions", {
    position: "bottom-center"
});

//Expand - LayerList
/*
    var layerList = new LayerList({
        container: document.createElement("div"),
        view: view
    });
    var layerListExpand = new Expand({
        expandIconClass: "esri-icon-collection",
        view: view,
        content: layerList.domNode
    });
    view.ui.add(layerListExpand, "bottom-left");
*/

//home
//view.ui.add(compass,"top-left");

var homeWidget = new Home({
    view: view
});
view.ui.add(homeWidget, "top-left");

//Expand - BasemapGallery
var bg = new BasemapGallery({
    view: view,
    container: document.createElement("div")
});

var basemapExpand = new Expand({
    view: view,
    content: bg.container,
    expandIconClass: "esri-icon-basemap"
});
view.ui.add(basemapExpand, "bottom-left");

var graphics;
var listContainer = document.getElementById("elem");
var highlight = null;

scene.layers.forEach(function (layer, index) {
    //create a headtitle for each layer, set its id and innerHTML
    var hd = document.createElement("h4");
    hd.setAttribute("id", "listHead" + index);
    hd.innerHTML = "+" + layer.title;
    listContainer.appendChild(hd);
```

---

---

```
var elemList = document.createElement("ul");
elemList.setAttribute("id", "elemList" + index);
elemList.classList.add("H" + hd.getAttribute("id"));

hd.addEventListener("click", function () {
    $(this).nextAll().toggle();

});

//define a div for the list of this layer
var listSection = document.createElement("div");
listSection.setAttribute("id", "listSection" + index);
listSection.setAttribute("class", "ltSection")

listSection.appendChild(hd);
listSection.appendChild(elemList);

view.whenLayerView(layer).then(function (lyrView) {
    lyrView.watch("updating", function (val) {
        if (!val) {
            var query = new Query({
                outFields: ["*"]
            });

            var fragment = document.createDocumentFragment();
            lyrView.queryFeatures(query).then(function (results) {
                //alert(JSON.stringify(results));
                elemList.innerHTML = "";
                graphics = results.features;
                //for debug, show the results in string
                //alert(JSON.stringify(results));
                results.features.forEach(function (feature) {

                    var attributes = feature.attributes;
                    //alert(JSON.stringify(attributes));
                    var name = attributes.Name;
                    var objectID = attributes.OBJECTID;
                    //alert(name);
                    var li = document.createElement("li");
                    li.classList.add("panel-result");
                    li.innerHTML = attributes.FID + " " + name;
                    li.addEventListener("click", function (evt) {
                        var target = evt.target;
                        var objectId = feature.attributes.FID;

                        var attrContent = document.getElementById("attr");
                        $("#attr").show();
```

```
var obj = feature.attributes;

//attrContent.innerHTML = "";
var tbl = document.getElementById("table");
tbl.innerHTML = "";
for (x in obj) {
    var tr = document.createElement("tr");
    var th = document.createElement("th");
    var td = document.createElement("td");
    th.innerHTML = x;
    td.innerHTML = obj[x];
    tr.appendChild(th);
    tr.appendChild(td);
    tbl.appendChild(tr);
}

//about highlight
if (highlight) {
    highlight.remove();
}

// Highlight the feature passing the objectId to the method
highlight = lyrView.highlight(
    [objectId]);

});
fragment.appendChild(li);

});
// Empty the current list
elemList.appendChild(fragment);

});

}
});

});

listContainer.appendChild(listSection);
$("ul").hide(); //hide all the ul for better visualization

view.on("click", function (event) {
    event.stopPropagation();

    if (highlight) {
        highlight.remove();
    }

    //alert(JSON.stringify(event));
```

---

---

```
view.hitTest(event).then(function (response) {
    //alert(JSON.stringify(response));
    if (response.results[0]) {
        var graphic2 = response.results[0].graphic;
        //alert(JSON.stringify(response));

        view.whenLayerView(graphic2.layer).then(function (lyrViewI) {

            highlight = lyrViewI.highlight(graphic2);
            $("#attr").show();
            //alert(JSON.stringify(graphic2));
            //alert(JSON.stringify(graphic2.getEffectivePopupTemplate()));

            var queryI = new Query({
                outFields: ["*"]
            });
            //queryI.where = "FID = " + graphic2.attributes.FID;
            //queryI.returnGeometry = false;
            //alert(queryI.where);
            queryI.objectIds = [graphic2.attributes.FID];
            lyrViewI.queryFeatures(queryI).then(function (resultsI) {
                var obj = resultsI.features[0].attributes;

                //attrContent.innerHTML = "";
                var tbl = document.getElementById("table");
                tbl.innerHTML = "";
                for (x in obj) {
                    var tr = document.createElement("tr");
                    var th = document.createElement("th");
                    var td = document.createElement("td");
                    th.innerHTML = x;
                    td.innerHTML = obj[x];
                    tr.appendChild(th);
                    tr.appendChild(td);
                    tbl.appendChild(tr);
                }

            });

        });
    }
});

});

});

});

});
```

---

```
$(document).ready(function () {
  $("#listToggle").click(function () {
    $(this).hide();
    $("#sideBar").animate({
      width: 'toggle'
    });
  });

  $("#sidebarClose").click(function () {

    $("#sideBar").animate({
      width: 'toggle'
    }, function () {
      $("#listToggle").show();
    });

  });

  $("#attClose").click(function () {
    $("#attr").hide();
  });

  $("#chartToggleButton").click(function () {
    $("#timeZoom").toggle();
    $("#legend").toggle();
    $("#chart_y").toggle();
    $("#chart_figure").toggle();
    $("#chart").animate({
      height: 'toggle'
    });

  });
});
```

---

## Appendix 6 MATLAB codes for transforming excel table to JSON

---

```
%read excel file by xlsread, and do the transformation by cell2struct, and
%last encode the struct to JSON through jsonencode.
format LONGG;
fpath = '/Volumes/DataStore/Dropbox/Papers/0Current/Paper-Bridge
Management/data/testdata.xlsx';
[data,title,row] = xlsread(fpath);
raw = raw(2:end,:);
```

---

```
d = cell2struct(raw,title,2);
json = jsonencode(d);

%
fpathout = '\Volumes\DataStore\Dropbox\Papers\0Current\Paper-Bridge
Management\data\testdata.json';
fid = fopen(fpathout,'w');
fwrite(fid,json);
fclose(fid);
```

## Appendix 7 Links for materials

All transformed models and created scenes have been stored on ArcGIS Online. In addition, other materials of this study, shared in Dropbox, include original models and transformed models of bridges and oil rigs, source codes of the system, and two videos, one showing the 4D simulation process and the other showing the user interface and functions of the system.

Links to them are as follows:

Material	Link
Oil Rig	<a href="http://arcg.is/1DOXef">http://arcg.is/1DOXef</a>
Bridge 1	<a href="http://arcg.is/1K9jLm">http://arcg.is/1K9jLm</a>
Bridge 2	<a href="http://arcg.is/11KDr0">http://arcg.is/11KDr0</a>
Others	<a href="https://www.dropbox.com/sh/h7c6cy2smkggy0d/AACXjZbfOcQAYVw7nRjTMffea?dl=0">https://www.dropbox.com/sh/h7c6cy2smkggy0d/AACXjZbfOcQAYVw7nRjTMffea?dl=0</a>

The primary IFC files are as follows:

### 1) Bridge 1

ISO-10303-21; HEADER;	#1= IFCORGANIZATION(\$,'Autodesk Revit 2017 (ENU)',\$,,\$); #5= IFCAPPLICATION(#1,'2017','Autodesk Revit 2017 (ENU)','Revit'); #6= IFCCARTESIANPOINT((0,0,0)); #9= IFCCARTESIANPOINT((0,0,0)); #11= IFCDIRECTION((1,0,0)); #13= IFCDIRECTION((-1,0,0)); #15= IFCDIRECTION((0,1,0)); #17= IFCDIRECTION((0,-1,0)); #19= IFCDIRECTION((0,0,1)); #21= IFCDIRECTION((0,0,-1)); #23= IFCDIRECTION((1,0,0)); #25= IFCDIRECTION((-1,0,0)); #27= IFCDIRECTION((0,1,0)); #29= IFCDIRECTION((0,-1,0)); #31= IFCAXIS2PLACEMENT3D(#6,\$,\$); #32= IFCLOCALPLACEMENT(#2770,#31); #35= IFCPERSON(\$,'Peng Wang10',\$,\$,\$,\$); #37= IFCORGANIZATION(\$,'',\$,\$); #38= IFCPERSONANDORGANIZATION(#35,#37,\$); #41= IFCOWNERHISTORY(#38,#5,\$,NOCHANGE,\$,\$,1502935464); #42= IFCSIUNIT(*,LENGTHUNIT,,\$,METRE.); #43= IFCDIMENSIONALEXPONENTS(1,0,0,0,0,0); #44= IFCMEASUREWITHUNIT(IFCRATIOMEASURE(0.3048),#42); #45= IFCCONVERSIONBASEDUNIT(#43,LENGTHUNIT,,'FOOT',#44); #46= IFCSIUNIT(*,AREAUNIT,,\$,SQUARE METRE.); #47= IFCSIUNIT(*,VOLUMEUNIT,,\$,CUBIC METRE.); #48= IFCSIUNIT(*,PLANEANGLEUNIT,,\$,RADIAN.); #49= IFCDIMENSIONALEXPONENTS(0,0,0,0,0,0); #50= IFCMEASUREWITHUNIT(IFCRATIOMEASURE(0.0174532925199433),#48); #51= IFCCONVERSIONBASEDUNIT(#49,PLANEANGLEUNIT,,'DEGREE',#50);
<pre> C:\Users\19109459\AppData\Local\Temp\{8D2D3580-2526-4746- B236-60955D2363C7}\ifc * Database version: 5507 * Database creation date: Thu Jan 11 16:20:53 2018 * Schema: IFC2X3 * Model: DataRepository.ifc * Model creation date: Thu Jan 11 16:20:53 2018 * Header model: DataRepository.ifc_HeaderModel * Header model creation date: Thu Jan 11 16:20:53 2018 * EDMuser: sdai-user * EDMgroup: sdai-group * License ID and type: 5605 : Permanent license. Expiry date: * EDMstepFileFactory options: 020000 ***** FILE_DESCRIPTION(('ViewDefinition [CoordinationView_V2.0]'),2,1); FILE_NAME('Project Number','2018-01-11T16:20:55','(',')','The EXPRESS Data Manager Version 5.02.0100.07 : 28 Aug 2013','20160225_1515(x64) - Exporter 17.0.416.0 - Alternate UI 17.12.14.0',''); FILE_SCHEMA(('IFC2X3')); ENDSEC; DATA;</pre>	

## Appendix

#52= IFCUNIUNIT(\*,MASSUNIT,..KILO,..GRAM.);  
#53= IFCUNIUNIT(\*,TIMEUNIT,..S.,SECOND.);  
#54= IFCUNIUNIT(\*,FREQUENCYUNIT,..S.,HERTZ.);  
#55=  
IFCUNIUNIT(\*,THERMODYNAMICTEMPERATUREUNIT,..S.,KELVIN.);  
#56=  
IFCUNIUNIT(\*,THERMODYNAMICTEMPERATUREUNIT,..S.,DEGREE CELSIUS.);  
#57= IFCDERIVEDUNITELEMENT(#52,1);  
#58= IFCDERIVEDUNITELEMENT(#55,-1);  
#59= IFCDERIVEDUNITELEMENT(#53,-3);  
#60=  
IFCDERIVEDUNIT((#57,#58,#59),THERMALTRANSMITTANCEUNIT,..S.);  
#62= IFCUNIUNIT(\*,LENGTHUNIT,..DECI,..METRE.);  
#63= IFCDERIVEDUNITELEMENT(#42,3);  
#64= IFCDERIVEDUNITELEMENT(#53,-1);  
#65=  
IFCDERIVEDUNIT((#63,#64),VOLUMETRICFLOWRATEUNIT,..S.);  
#67= IFCUNIUNIT(\*,ELECTRICCURRENTUNIT,..S.,AMPERE.);  
#68= IFCUNIUNIT(\*,ELECTRICVOLTAGEUNIT,..S.,VOLT.);  
#69= IFCUNIUNIT(\*,POWERUNIT,..S.,WATT.);  
#70= IFCUNIUNIT(\*,FORCEUNIT,..KILO,..NEWTON.);  
#71= IFCUNIUNIT(\*,ILLUMINANCEUNIT,..S.,LUX.);  
#72= IFCUNIUNIT(\*,LUMINOUSFLUXUNIT,..S.,LUMEN.);  
#73= IFCUNIUNIT(\*,LUMINOUSINTENSITYUNIT,..S.,CANDELA.);  
#74= IFCDERIVEDUNITELEMENT(#52,-1);  
#75= IFCDERIVEDUNITELEMENT(#42,-2);  
#76= IFCDERIVEDUNITELEMENT(#53,3);  
#77= IFCDERIVEDUNITELEMENT(#72,1);  
#78=  
IFCDERIVEDUNIT((#74,#75,#76,#77),USERDEFINED,'Luminous Efficacy');  
#80= IFCDERIVEDUNITELEMENT(#42,1);  
#81= IFCDERIVEDUNITELEMENT(#53,-1);  
#82= IFCDERIVEDUNIT((#80,#81),LINEARVELOCITYUNIT,..S.);  
#84= IFCUNIUNIT(\*,PRESSUREUNIT,..S.,PASCAL.);  
#85= IFCDERIVEDUNITELEMENT(#42,-2);  
#86= IFCDERIVEDUNITELEMENT(#52,1);  
#87= IFCDERIVEDUNITELEMENT(#53,-2);  
#88= IFCDERIVEDUNIT((#85,#86,#87),USERDEFINED,'Friction Loss');  
#90=  
IFCUNITASSIGNMENT((#45,#46,#47,#51,#52,#53,#54,#56,#60,#65,#67,#68,#69,#70,#71,#72,#73,#78,#82,#84,#88));  
#92= IFCAxis2PLACEMENT3D(#6,S,S);  
#93= IFCDIRECTION((6.12303176911189E-17,1));  
#95=  
IFCGEOMETRICREPRESENTATIONCONTEXT(\$,Model,3,0.0001,#92,#93);  
#98=  
IFCGEOMETRICREPRESENTATIONSUBCONTEXT('Axis','Model',\*,\*,\*,#95,S,GRAPH\_VIEW..S);  
#100=  
IFCGEOMETRICREPRESENTATIONSUBCONTEXT('Body','Model',\*,\*,\*,#95,S,MODEL\_VIEW..S);  
#101=  
IFCGEOMETRICREPRESENTATIONSUBCONTEXT('Box','Model',\*,\*,\*,#95,S,MODEL\_VIEW..S);  
#102=  
IFCGEOMETRICREPRESENTATIONSUBCONTEXT('FootPrint','Model',\*,\*,\*,#95,S,MODEL\_VIEW..S);  
#103=  
IFCPROJECT('0Nz5fpJrB9CfzRr61nz40s',#41,'Project Number',S,S,'Project Name','Project Status',(#95),#90);  
#109=  
IFCPOSTALADDRESS(S,S,S,S,'(Enter address here)',S,S,'Canberra',S,'Australia');  
#113=  
IFCBUILDING('0Nz5fpJrB9CfzRr61nz40t',#41,S,S,#32,S,,ELEMEN T..S,S,#109);  
#119= IFCAxis2PLACEMENT3D(#6,S,S);  
#120= IFCLocalPLACEMENT(#32,#119);  
#122=  
IFCBUILDINGSTOREY('0Nz5fpJrB9CfzRr62E2xxn',#41,'Ground Floor',S,S,#120,S,'Ground Floor',ELEMENT..0.);  
#124= IFCCARTESIANPOINT((0.,0.,10.));  
#126= IFCAxis2PLACEMENT3D(#124,S,S);  
#127= IFCLocalPLACEMENT(#32,#126);  
#128= IFCBUILDINGSTOREY('0Nz5fpJrB9CfzRr62E2xrm',#41,'Level 1',S,S,#127,S,'Level 1',ELEMENT..9.999999999999999);  
#130= IFCCARTESIANPOINT((0.,0.,34.));  
#132= IFCAxis2PLACEMENT3D(#130,S,S);  
#2980=  
IFCRELDEFINESBYTYPE('3peeyYoBb9QPfL2Nmo0C',#41,S,S,(#62 1),#609);  
#2817=  
IFCRELCONTAINEDINSPATIALSTRUCTURE('15Z0v90RiHrPC200 66FoKR',#41,S,S,(#193,#243,#281,#320,#359,#397,#415,#433,#471,#50 9,#527,#545,#583,#621,#639,#657,#683,#711,#737,#763,#789,#815,#84 1,#867,#893,#919,#945,#971,#997,#1023,#1049,#1075,#1116,#1163,#1 199,#1234),#128);  
#136= IFCAxis2PLACEMENT3D(#6,S,S);  
#2977=  
IFCRELDEFINESBYTYPE('2YX00PdwT8cwg5xYkMHT3',#41,S,S,(# 583),#571);  
#138= IFCCARTESIANPOINT((0.,-1.77635683940025E-15));  
#140= IFCAxis2PLACEMENT2D(#138,#23);  
#141= IFCCIRCLEPROFILEDEF(AREA,'Column 1',#140.0.99999999999999986);  
#142= IFCCARTESIANPOINT((45.,7.48,10.));  
#144= IFCAxis2PLACEMENT3D(#142,S,S);  
#145=  
IFCEXTRUDEDAREASOLID(#141,#144,#19.24.00000000000002);  
#146=  
IFCCOLORRGB(\$,0.752941176470588,0.752941176470588,0.75294 1176470588);  
#147=  
IFCSURFACESTYLERENDERING(#146.0.,S,S,S,IFCNORMALISE DRATIONMEASURE(0.5),IFCSPECULAREXPONENT(128.),NOTDEF INED.);  
#148=  
IFCSURFACESTYLE('Concrete, Cast-in-Place gray',BOTH,(#147));  
#150= IFCPRESENTATIONSTYLEASSIGNMENT((#148));  
#152= IFCSTYLEDITEM(#145,(#150),S);  
#155=  
IFCSHAPEREPRESENTATION(#100,'Body','SweptSolid',(#145));  
#158= IFCAxis2PLACEMENT3D(#6,S,S);  
#159= IFCREPRESENTATIONMAP(#158,#155);  
#161=  
IFCCOLUMNTYPE('2XBW1hr7rFARVZ4Xhpg4Ju',#41,'Column 1',S,S,(#159),215908,'Column 1',COLUMN.);  
#164= IFCMATERIAL('Concrete, Cast-in-Place gray');  
#167= IFCPRESENTATIONSTYLEASSIGNMENT((#148));  
#169= IFCSTYLEDITEM(S,(#167),S);  
#171= IFCSTYLEDREPRESENTATION(#95,'Style','Material',(#169));  
#174=  
IFCMATERIALDEFINITIONREPRESENTATION(S,S,(#171),#164);  
#177=  
IFCLASSIFICATION('http://www.csi.org.net/uniformat',1998,S,'Unifor mat');  
#179=  
IFCCARTESIANTRANSFORMATIONOPERATOR3D(S,S,#6,1.,S);  
#180= IFCMAPPEDITEM(#159,#179);  
#182=  
IFCSHAPEREPRESENTATION(#100,'Body','MappedRepresentation',(# 180));  
#184= IFCPRODUCTDEFINITIONSHAPE(S,S,(#182));  
#188= IFCCARTESIANPOINT((0.,-10.));  
#190= IFCAxis2PLACEMENT3D(#188,S,S);  
#191= IFCLocalPLACEMENT(#127,#190);  
#193= IFCCOLUMN('2XBW1hr7rFARVZ6Xhpg4Ju',#41,'Concrete-Round-Column:Column 1:215290',S,'Column 1',#191,#184,215290);  
#202=  
IFCPROPERTYSINGLEVALUE('Reference',S,IFCIDENTIFIER('Column 1'),S);  
#203=  
IFCPROPERTYSINGLEVALUE('LoadBearing',S,IFCBOOLEAN(T.),S );  
#204=  
IFCPROPERTYSINGLEVALUE('IsExternal',S,IFCBOOLEAN(F.),S);  
#205=  
IFCPROPERTYSET('27kQGpF09CpWuUq8TbUA\_',#41,'Pset\_Column Common',S,(#202,#203,#204));  
#210=  
IFCRELDEFINESBYPROPERTIES('2jdcSC8Fz1EPH6W132TjHy',#41, S,S,(#193),#205);  
#214= IFCAxis2PLACEMENT3D(#6,S,S);  
#2974=  
IFCRELDEFINESBYTYPE('3SUNG6BT1hw1fXx\$KXGx',#41,S,S,(# 509),#497);  
#216=  
IFCCARTESIANPOINT((7.88860905221023E-31,- 8.88178419700125E-16));  
#218= IFCAxis2PLACEMENT2D(#216,#23);  
#219=  
IFCCIRCLEPROFILEDEF(AREA,'Column 1',#218.0.9999999999999985);  
#220= IFCCARTESIANPOINT((123.,7.48,10.));  
#222= IFCAxis2PLACEMENT3D(#220,S,S);  
#223=  
IFCEXTRUDEDAREASOLID(#219,#222,#19.24.00000000000002);  
#224= IFCSTYLEDITEM(#223,(#150),S);  
#227=  
IFCSHAPEREPRESENTATION(#100,'Body','SweptSolid',(#223));  
#229= IFCAxis2PLACEMENT3D(#6,S,S);  
#230= IFCREPRESENTATIONMAP(#229,#227);  
#231=  
IFCCOLUMNTYPE('2XBW1hr7rFARVZ4Xhpg4J',#41,'Column 1',S,S,(#230),215908,'Column 1',COLUMN.);  
#233= IFCMAPPEDITEM(#230,#179);  
#235=  
IFCSHAPEREPRESENTATION(#100,'Body','MappedRepresentation',(# 233));  
#237= IFCPRODUCTDEFINITIONSHAPE(S,S,(#235));  
#239= IFCCARTESIANPOINT((0.,-10.));  
#241= IFCAxis2PLACEMENT3D(#239,S,S);  
#242= IFCLocalPLACEMENT(#127,#241);  
#243= IFCCOLUMN('2XBW1hr7rFARVZ6Xhpg4J',#41,'Concrete-Round-Column:Column 1:215292',S,'Column 1',#242,#237,215292);  
#246=  
IFCPROPERTYSET('0yZmqKwPn2oBawCukrZK\_r',#41,'Pset\_Colu mnCommon',S,(#202,#203,#204));  
#248=  
IFCRELDEFINESBYPROPERTIES('3BBEGmFC93rVLJX4SkwA',# 41,S,S,(#243),#246);  
#252= IFCAxis2PLACEMENT3D(#6,S,S);  
#2971=  
IFCRELDEFINESBYTYPE('1PdJSoI916CAGhW38\_qIF7',#41,S,S,(#47 1),#459);  
#254=  
IFCCARTESIANPOINT((-1.11022302462516E-16,- 1.71314993370160E-15));  
#256= IFCAxis2PLACEMENT2D(#254,#23);  
#257=  
IFCCIRCLEPROFILEDEF(AREA,'Column 2',#256.0.9999999999999985);  
#258= IFCCARTESIANPOINT((0.,0.,12.499999999999998));  
#260= IFCAxis2PLACEMENT3D(#258,S,S);  
#261=  
IFCEXTRUDEDAREASOLID(#257,#260,#19.21.50000000000002);  
#262= IFCSTYLEDITEM(#261,(#150),S);

#265= IFCSHAPEREPRESENTATION(#100,'Body','SweptSolid',(#261));  
#267= IFCAXIS2PLACEMENT3D(#6,\$,S);  
#268= IFCREPRESENTATIONMAP(#267,#265);  
#269= IFCCOLUMNTYPE('3c3Dpq0FbCchsFDvgSIPfQ',#41,'Column 2',S,S,S,(#268),215959,'Column 2',.COLUMN.);  
#271= IFCMAPPEDITEM(#268,#179);  
#273= IFCSHAPEREPRESENTATION(#100,'Body','MappedRepresentation',(#271));  
#275= IFCPRODUCTDEFINITIONSHAPE(\$,S,(#273));  
#277= IFCARTESIANPOINT((0.,7.48,-10.));  
#279= IFCAXIS2PLACEMENT3D(#277,\$,S);  
#280= IFCLOCALPLACEMENT(#127,#279);  
#281= IFCCOLUMN('2XBW1hR7rFARVZ6Xhpg4Jy',#41,'Concrete-Round-Column:Column 2:215294',S,'Column 2',#280,#275,215294);  
#284= IFCPROPERTYSINGLEVALUE('Reference',S,IFCIDENTIFIER('Column 2'),S);  
#285= IFCPROPERTYSET('32S0rM0vnCsg4QWvHMTf9',#41,'Pset\_ColumnCommon',S,(#203,#204,#284));  
#287= IFCREDEFINESBYPROPERTIES('0kNqY\_IT95jhHU8tEzMi2',#41,S,S,(#281),#285);  
#291= IFCAXIS2PLACEMENT3D(#6,\$,S);  
#2968= IFCREDEFINESBYTYPE('3sw5Bg0rFdvFNOicnLDVa',#41,S,S,(#397),#385);  
#293= IFCARTESIANPOINT((-1.11022302462516E-16,-1.71314993370160E-15));  
#295= IFCAXIS2PLACEMENT2D(#293,#23);  
#296= IFCIRCLEPROFILEDEF(.AREA.,'Column 3',#295,0.999999999999985);  
#297= IFCARTESIANPOINT((0.,0.,15.));  
#299= IFCAXIS2PLACEMENT3D(#297,\$,S);  
#300= IFCXTRUDEDAREASOLID(#296,#299,#19,19.00000000000002);  
#301= IFCSTYLEDITEM(#300,(#150),S);  
#304= IFCSHAPEREPRESENTATION(#100,'Body','SweptSolid',(#300));  
#306= IFCAXIS2PLACEMENT3D(#6,\$,S);  
#307= IFCREPRESENTATIONMAP(#306,#304);  
#308= IFCCOLUMNTYPE('3c3Dpq0FbCchsFDvgSIPfT',#41,'Column 3',S,S,S,(#307),216479,'Column 3',.COLUMN.);  
#310= IFCMAPPEDITEM(#307,#179);  
#312= IFCSHAPEREPRESENTATION(#100,'Body','MappedRepresentation',(#310));  
#314= IFCPRODUCTDEFINITIONSHAPE(\$,S,(#312));  
#316= IFCARTESIANPOINT((168.,7.48,-10.));  
#318= IFCAXIS2PLACEMENT3D(#316,\$,S);  
#319= IFCLOCALPLACEMENT(#127,#318);  
#320= IFCCOLUMN('2XBW1hR7rFARVZ6Xhpg4K2',#41,'Concrete-Round-Column:Column 3:215296',S,'Column 3',#319,#314,215296);  
#323= IFCPROPERTYSINGLEVALUE('Reference',S,IFCIDENTIFIER('Column 3'),S);  
#324= IFCPROPERTYSET('0EbSK28OL1DgLIVO\_d5Qy8',#41,'Pset\_ColumnCommon',S,(#203,#204,#323));  
#326= IFCREDEFINESBYPROPERTIES('31a4hG56DB7BdZq13pMXn',#41,S,S,(#320),#324);  
#330= IFCAXIS2PLACEMENT3D(#6,\$,S);  
#2965= IFCREDEFINESBYTYPE('2oSmgZYCXBC8v8r\_LPyk0a',#41,S,S,(#359),#347);  
#332= IFCARTESIANPOINT((0.,-3.55271367880050E-15));  
#334= IFCAXIS2PLACEMENT2D(#332,#23);  
#335= IFCIRCLEPROFILEDEF(.AREA.,'Column 1',#334,0.999999999999986);  
#336= IFCARTESIANPOINT((45.,19.98,10.));  
#338= IFCAXIS2PLACEMENT3D(#336,\$,S);  
#339= IFCXTRUDEDAREASOLID(#335,#338,#19,24.00000000000002);  
#340= IFCSTYLEDITEM(#339,(#150),S);  
#343= IFCSHAPEREPRESENTATION(#100,'Body','SweptSolid',(#339));  
#345= IFCAXIS2PLACEMENT3D(#6,\$,S);  
#346= IFCREPRESENTATIONMAP(#345,#343);  
#347= IFCCOLUMNTYPE('2XBW1hR7rFARVZ4Xhpg4K0',#41,'Column 1',S,S,S,(#346),215908,'Column 1',.COLUMN.);  
#349= IFCMAPPEDITEM(#346,#179);  
#351= IFCSHAPEREPRESENTATION(#100,'Body','MappedRepresentation',(#349));  
#353= IFCPRODUCTDEFINITIONSHAPE(\$,S,(#351));  
#355= IFCARTESIANPOINT((0.,0.,-10.));  
#357= IFCAXIS2PLACEMENT3D(#355,\$,S);  
#358= IFCLOCALPLACEMENT(#127,#357);  
#359= IFCCOLUMN('2XBW1hR7rFARVZ6Xhpg4K0',#41,'Concrete-Round-Column:Column 1:215298',S,'Column 1',#358,#353,215298);  
#362= IFCPROPERTYSET('24NeKGlyD0wAD7pSaYJGaD',#41,'Pset\_ColumnCommon',S,(#202,#203,#204));  
#364= IFCREDEFINESBYPROPERTIES('2HDYfPwPn9QRAYTKSn200E',#41,S,S,(#359),#362);  
#368= IFCAXIS2PLACEMENT3D(#6,\$,S);  
#2962= IFCREDEFINESBYTYPE('0voL39OcD9OfQRj4rkiLKD',#41,S,S,(#320),#433,#545,#657),#308);  
#370= IFCARTESIANPOINT((0.,-3.55271367880050E-15));  
#372= IFCAXIS2PLACEMENT2D(#370,#23);  
#373= IFCIRCLEPROFILEDEF(.AREA.,'Column 1',#372,0.999999999999985);  
#374= IFCARTESIANPOINT((123.,19.98,10.));  
#376= IFCAXIS2PLACEMENT3D(#374,\$,S);  
#377= IFCXTRUDEDAREASOLID(#373,#376,#19,24.00000000000002);  
#378= IFCSTYLEDITEM(#377,(#150),S);  
#381= IFCSHAPEREPRESENTATION(#100,'Body','SweptSolid',(#377));  
#383= IFCAXIS2PLACEMENT3D(#6,\$,S);  
#384= IFCREPRESENTATIONMAP(#383,#381);  
#385= IFCCOLUMNTYPE('2XBW1hR7rFARVZ4Xhpg4K6',#41,'Column 1',S,S,S,(#384),215908,'Column 1',.COLUMN.);  
#387= IFCMAPPEDITEM(#384,#179);  
#389= IFCSHAPEREPRESENTATION(#100,'Body','MappedRepresentation',(#387));  
#391= IFCPRODUCTDEFINITIONSHAPE(\$,S,(#389));  
#393= IFCARTESIANPOINT((0.,0.,-10.));  
#395= IFCAXIS2PLACEMENT3D(#393,\$,S);  
#396= IFCLOCALPLACEMENT(#127,#395);  
#397= IFCCOLUMN('2XBW1hR7rFARVZ6Xhpg4K6',#41,'Concrete-Round-Column:Column 1:215300',S,'Column 1',#396,#391,215300);  
#400= IFCPROPERTYSET('3rNCGba\$1AuufqHFqaJAMP',#41,'Pset\_ColumnCommon',S,(#202,#203,#204));  
#402= IFCREDEFINESBYPROPERTIES('19iH3aco10Cvn70\$J\$woT',#41,S,S,(#397),#400);  
#406= IFCMAPPEDITEM(#268,#179);  
#407= IFCSHAPEREPRESENTATION(#100,'Body','MappedRepresentation',(#406));  
#409= IFCPRODUCTDEFINITIONSHAPE(\$,S,(#407));  
#411= IFCARTESIANPOINT((0.,19.98,-10.));  
#413= IFCAXIS2PLACEMENT3D(#411,\$,S);  
#414= IFCLOCALPLACEMENT(#127,#413);  
#415= IFCCOLUMN('2XBW1hR7rFARVZ6Xhpg4K4',#41,'Concrete-Round-Column:Column 2:215302',S,'Column 2',#414,#409,215302);  
#418= IFCPROPERTYSET('04d8oE5vz6ZQvpuvPV9VcD',#41,'Pset\_ColumnCommon',S,(#203,#204,#284));  
#420= IFCREDEFINESBYPROPERTIES('1pImiD4\_5EngbMiiJUL\_uz',#41,S,S,(#415),#418);  
#424= IFCMAPPEDITEM(#307,#179);  
#425= IFCSHAPEREPRESENTATION(#100,'Body','MappedRepresentation',(#424));  
#427= IFCPRODUCTDEFINITIONSHAPE(\$,S,(#425));  
#429= IFCARTESIANPOINT((168.,19.98,-10.));  
#431= IFCAXIS2PLACEMENT3D(#429,\$,S);  
#432= IFCLOCALPLACEMENT(#127,#431);  
#433= IFCCOLUMN('2XBW1hR7rFARVZ6Xhpg4KA',#41,'Concrete-Round-Column:Column 3:215304',S,'Column 3',#432,#427,215304);  
#436= IFCPROPERTYSET('1bmn\_Hq6LcYQHpeUHqD4v',#41,'Pset\_ColumnCommon',S,(#203,#204,#323));  
#438= IFCREDEFINESBYPROPERTIES('20Z5Ffs1HF8hhSW6TBvrn',#41,S,S,(#433),#436);  
#442= IFCAXIS2PLACEMENT3D(#6,\$,S);  
#2959= IFCREDEFINESBYTYPE('2kdwrsT0Vwan3Y839fT',#41,S,S,(#281),#415,#527,#639),#269);  
#444= IFCARTESIANPOINT((0.,0.));  
#446= IFCAXIS2PLACEMENT2D(#444,#23);  
#447= IFCIRCLEPROFILEDEF(.AREA.,'Column 1',#446,0.999999999999986);  
#448= IFCARTESIANPOINT((45.,32.31,10.));  
#450= IFCAXIS2PLACEMENT3D(#448,\$,S);  
#451= IFCXTRUDEDAREASOLID(#447,#450,#19,24.00000000000002);  
#452= IFCSTYLEDITEM(#451,(#150),S);  
#455= IFCSHAPEREPRESENTATION(#100,'Body','SweptSolid',(#451));  
#457= IFCAXIS2PLACEMENT3D(#6,\$,S);  
#458= IFCREPRESENTATIONMAP(#457,#455);  
#459= IFCCOLUMNTYPE('2XBW1hR7rFARVZ4Xhpg4K8',#41,'Column 1',S,S,S,(#458),215908,'Column 1',.COLUMN.);  
#461= IFCMAPPEDITEM(#458,#179);  
#463= IFCSHAPEREPRESENTATION(#100,'Body','MappedRepresentation',(#461));  
#465= IFCPRODUCTDEFINITIONSHAPE(\$,S,(#463));  
#467= IFCARTESIANPOINT((0.,0.,-10.));  
#469= IFCAXIS2PLACEMENT3D(#467,\$,S);  
#470= IFCLOCALPLACEMENT(#127,#469);  
#471= IFCCOLUMN('2XBW1hR7rFARVZ6Xhpg4K8',#41,'Concrete-Round-Column:Column 1:215306',S,'Column 1',#470,#465,215306);  
#474= IFCPROPERTYSET('3St6oyVe9940\$pkSEeHoz',#41,'Pset\_ColumnCommon',S,(#202,#203,#204));  
#476= IFCREDEFINESBYPROPERTIES('15HLniD96pPFDnatCQ8GK',#41,S,S,(#471),#474);  
#480= IFCAXIS2PLACEMENT3D(#6,\$,S);  
#2956= IFCREDEFINESBYTYPE('0exDEGV6T77xkpihb8Wfl',#41,S,S,(#243),#231);  
#482= IFCARTESIANPOINT((0.,0.));  
#484= IFCAXIS2PLACEMENT2D(#482,#23);



## Appendix

#485= IFCCIRCLEPROFILEDEF(.AREA.,Column 1',#484.0.999999999999984);  
 #486= IFCCARTESIANPOINT((123.,32.31,10.));  
 #488= IFCAXIS2PLACEMENT3D(#486,\$,S);  
 #489= IFCEXTRUDEDAREASOLID(#485,#488,#19,24.00000000000002);  
 #490= IFCSTYLEDITEM(#489,(#150),S);  
 #493= IFCSHAPEREPRESENTATION(#100,'Body','SweptSolid',(#489));  
 #495= IFCAXIS2PLACEMENT3D(#6,\$,S);  
 #496= IFCREPRESENTATIONMAP(#495,#493);  
 #497= IFCCOLUMNMNTYPE('2XBW1hR7rFARVZ4Xhpg4KE',#41,'Column 1',S,S,(#496),215908,'Column 1',COLUMN.);  
 #499= IFCMAPPEDEITEM(#496,#179);  
 #501= IFCSHAPEREPRESENTATION(#100,'Body','MappedRepresentation',(#499));  
 #503= IFCPRODUCTDEFINITIONSHAPE(S,S,(#501));  
 #505= IFCCARTESIANPOINT((0.,0.,-10.));  
 #507= IFCAXIS2PLACEMENT3D(#505,\$,S);  
 #508= IFCLOCALPLACEMENT(#127,#507);  
 #509= IFCCOLUMN('2XBW1hR7rFARVZ6Xhpg4KE',#41,'Concrete-Round-Column:Column 1:215308',S,'Column 1',#508,#503,215308);  
 #512= IFCPROPERTYSET('01OhfeP0P4QZFm1oXzpmS',#41,'Pset\_ColumnCommon',S,(#202,#203,#204));  
 #514= IFCRELEDEFINESBYPROPERTIES('24G7Mng\_1EJQCpHoXZDEn',#41,S,S,(#509),#512);  
 #518= IFCMAPPEDEITEM(#268,#179);  
 #519= IFCSHAPEREPRESENTATION(#100,'Body','MappedRepresentation',(#518));  
 #521= IFCPRODUCTDEFINITIONSHAPE(S,S,(#519));  
 #523= IFCCARTESIANPOINT((0.,32.31,-10.));  
 #525= IFCAXIS2PLACEMENT3D(#523,\$,S);  
 #526= IFCLOCALPLACEMENT(#127,#525);  
 #527= IFCCOLUMN('2XBW1hR7rFARVZ6Xhpg4K',#41,'Concrete-Round-Column:Column 2:215310',S,'Column 2',#526,#521,215310);  
 #530= IFCPROPERTYSET('0foKkqSRzB3NurLkDf7q',#41,'Pset\_ColumnCommon',S,(#203,#204,#284));  
 #532= IFCRELEDEFINESBYPROPERTIES('2c99GEg6DD2gTeyoBo\_xJ',#41,S,S,(#527),#530);  
 #536= IFCMAPPEDEITEM(#307,#179);  
 #537= IFCSHAPEREPRESENTATION(#100,'Body','MappedRepresentation',(#536));  
 #539= IFCPRODUCTDEFINITIONSHAPE(S,S,(#537));  
 #541= IFCCARTESIANPOINT((168.,32.31,-10.));  
 #543= IFCAXIS2PLACEMENT3D(#541,\$,S);  
 #544= IFCLOCALPLACEMENT(#127,#543);  
 #545= IFCCOLUMN('2XBW1hR7rFARVZ6Xhpg4KI',#41,'Concrete-Round-Column:Column 3:215312',S,'Column 3',#544,#539,215312);  
 #548= IFCPROPERTYSET('1oVkJR3Tn9gxmQGkAxnVe',#41,'Pset\_ColumnCommon',S,(#203,#204,#323));  
 #550= IFCRELEDEFINESBYPROPERTIES('3DuKkrtWz8CQCqHV0iPQapK',#41,S,S,(#545),#548);  
 #554= IFCAXIS2PLACEMENT3D(#6,\$,S);  
 #2953= IFCRELEDEFINESBYTYPE('01ptN\_dubBUgCZEaDj98bq',#41,S,S,(#193),#161);  
 #556= IFCCARTESIANPOINT((0.,0.));  
 #558= IFCAXIS2PLACEMENT2D(#556,#23);  
 #559= IFCCIRCLEPROFILEDEF(.AREA.,Column 1',#558.0.999999999999986);  
 #560= IFCCARTESIANPOINT((45.,44.81,10.));  
 #562= IFCAXIS2PLACEMENT3D(#560,\$,S);  
 #563= IFCEXTRUDEDAREASOLID(#559,#562,#19,24.00000000000002);  
 #564= IFCSTYLEDITEM(#563,(#150),S);  
 #567= IFCSHAPEREPRESENTATION(#100,'Body','SweptSolid',(#563));  
 #569= IFCAXIS2PLACEMENT3D(#6,\$,S);  
 #570= IFCREPRESENTATIONMAP(#569,#567);  
 #571= IFCCOLUMNMNTYPE('2XBW1hR7rFARVZ4Xhpg4KG',#41,'Column 1',S,S,(#570),215908,'Column 1',COLUMN.);  
 #573= IFCMAPPEDEITEM(#570,#179);  
 #575= IFCSHAPEREPRESENTATION(#100,'Body','MappedRepresentation',(#573));  
 #577= IFCPRODUCTDEFINITIONSHAPE(S,S,(#575));  
 #579= IFCCARTESIANPOINT((0.,0.,-10.));  
 #581= IFCAXIS2PLACEMENT3D(#579,\$,S);  
 #582= IFCLOCALPLACEMENT(#127,#581);  
 #583= IFCCOLUMN('2XBW1hR7rFARVZ6Xhpg4KG',#41,'Concrete-Round-Column:Column 1:215314',S,'Column 1',#582,#577,215314);  
 #586= IFCPROPERTYSET('183ZBd0BTcG8X9rY\_NGYS',#41,'Pset\_ColumnCommon',S,(#202,#203,#204));  
 #588= IFCRELEDEFINESBYPROPERTIES('074YKngtv9dRvSpPuKYPBc',#41,S,S,(#583),#586);  
 #592= IFCAXIS2PLACEMENT3D(#6,\$,S);  
 #2923= IFCREASSOCIATESMATERIAL('0yo6YJ0SP6QIC4vFYaLbGS',#41,S,S,(#1116,#1163,#1199,#1234,#1297,#1360,#1422,#1484,#1546,#1608,#1670,#1732,#1794,#1856,#1918,#1980,#2042,#2104,#2166,#2228,#2290,#2352,#2414,#2476,#2538,#2600,#2662,#2724),#1119);  
 #594= IFCCARTESIANPOINT((0.,0.));

#596= IFCAXIS2PLACEMENT2D(#594,#23);  
 #597= IFCCIRCLEPROFILEDEF(.AREA.,Column 1',#596.0.999999999999984);  
 #598= IFCCARTESIANPOINT((123.,44.81,10.));  
 #600= IFCAXIS2PLACEMENT3D(#598,\$,S);  
 #601= IFCEXTRUDEDAREASOLID(#597,#600,#19,24.00000000000002);  
 #602= IFCSTYLEDITEM(#601,(#150),S);  
 #605= IFCSHAPEREPRESENTATION(#100,'Body','SweptSolid',(#601));  
 #607= IFCAXIS2PLACEMENT3D(#6,\$,S);  
 #608= IFCREPRESENTATIONMAP(#607,#605);  
 #609= IFCCOLUMNMNTYPE('2XBW1hR7rFARVZ4Xhpg4KM',#41,'Column 1',S,S,(#608),215908,'Column 1',COLUMN.);  
 #611= IFCMAPPEDEITEM(#608,#179);  
 #613= IFCSHAPEREPRESENTATION(#100,'Body','MappedRepresentation',(#611));  
 #615= IFCPRODUCTDEFINITIONSHAPE(S,S,(#613));  
 #617= IFCCARTESIANPOINT((0.,0.,-10.));  
 #619= IFCAXIS2PLACEMENT3D(#617,\$,S);  
 #620= IFCLOCALPLACEMENT(#127,#619);  
 #621= IFCCOLUMN('2XBW1hR7rFARVZ6Xhpg4KM',#41,'Concrete-Round-Column:Column 1:215316',S,'Column 1',#620,#615,215316);  
 #624= IFCPROPERTYSET('2YoMkaKmh0zPnowmsArWy',#41,'Pset\_ColumnCommon',S,(#202,#203,#204));  
 #626= IFCRELEDEFINESBYPROPERTIES('00tWp0xLASE6TQazO3VtV',#41,S,S,(#621),#624);  
 #630= IFCMAPPEDEITEM(#268,#179);  
 #631= IFCSHAPEREPRESENTATION(#100,'Body','MappedRepresentation',(#630));  
 #633= IFCPRODUCTDEFINITIONSHAPE(S,S,(#631));  
 #635= IFCCARTESIANPOINT((0.,44.81,-10.));  
 #637= IFCAXIS2PLACEMENT3D(#635,\$,S);  
 #638= IFCLOCALPLACEMENT(#127,#637);  
 #639= IFCCOLUMN('2XBW1hR7rFARVZ6Xhpg4KK',#41,'Concrete-Round-Column:Column 2:215318',S,'Column 2',#638,#633,215318);  
 #642= IFCPROPERTYSET('0SSrWYMXPFv9Ec1gGws\_ji',#41,'Pset\_ColumnCommon',S,(#203,#204,#284));  
 #644= IFCRELEDEFINESBYPROPERTIES('2T721OWEXFiAlxd6L3xFWZ',#41,S,S,(#639),#642);  
 #648= IFCMAPPEDEITEM(#307,#179);  
 #649= IFCSHAPEREPRESENTATION(#100,'Body','MappedRepresentation',(#648));  
 #651= IFCPRODUCTDEFINITIONSHAPE(S,S,(#649));  
 #653= IFCCARTESIANPOINT((168.,44.81,-10.));  
 #655= IFCAXIS2PLACEMENT3D(#653,\$,S);  
 #656= IFCLOCALPLACEMENT(#127,#655);  
 #657= IFCCOLUMN('2XBW1hR7rFARVZ6Xhpg4KQ',#41,'Concrete-Round-Column:Column 3:215320',S,'Column 3',#656,#651,215320);  
 #660= IFCPROPERTYSET('2r4f9QCv8YBzGN2nQ7iue',#41,'Pset\_ColumnCommon',S,(#203,#204,#323));  
 #662= IFCRELEDEFINESBYPROPERTIES('1TmXpRV16lOgIbOnPk\_yP',#41,S,S,(#657),#660);  
 #666= IFCAXIS2PLACEMENT3D(#6,\$,S);  
 #667= IFCLOCALPLACEMENT(#127,#666);  
 #668= IFCCARTESIANPOINT((0.,0.));  
 #670= IFCAXIS2PLACEMENT2D(#668,#23);  
 #671= IFCRECTANGLEPROFILEDEF(.AREA.,2000 x 2000 x 900mm',#670,8.,6.);  
 #672= IFCCARTESIANPOINT((0.,44.81,-0.5));  
 #674= IFCAXIS2PLACEMENT3D(#672,#19,#13);  
 #675= IFCEXTRUDEDAREASOLID(#671,#674,#19,3.);  
 #676= IFCSTYLEDITEM(#675,(#150),S);  
 #679= IFCSHAPEREPRESENTATION(#100,'Body','SweptSolid',(#675));  
 #681= IFCPRODUCTDEFINITIONSHAPE(S,S,(#679));  
 #683= IFCSLAB('2ORPjZcQj4QoesDYdoyqLE',#41,'Pile Cap-Rectangular:2000 x 2000 x 900mm:217729',S,'Pile Cap-Rectangular:2000 x 2000 x 900mm',#667,#681,217729,'FLOOR.);  
 #686= IFCPROPERTYSINGLEVALUE('Reference',S,IFCIDENTIFIER('2000 x 2000 x 900mm'),S);  
 #687= IFCPROPERTYSINGLEVALUE('PitchAngle',S,IFCPLANEANGLEMEASURE(0.,S);  
 #688= IFCPROPERTYSET('2ORPjZcQj4QoesFTBoylqLE',#41,'Pset\_SlabCommon',S,(#203,#204,#686,#687));  
 #690= IFCRELEDEFINESBYPROPERTIES('17e40z7TT8zQXOIEd7d1Du',#41,S,S,(#683),#688);  
 #694= IFCAXIS2PLACEMENT3D(#6,\$,S);  
 #695= IFCLOCALPLACEMENT(#127,#694);  
 #696= IFCCARTESIANPOINT((0.,0.));  
 #698= IFCAXIS2PLACEMENT2D(#696,#23);  
 #699= IFCRECTANGLEPROFILEDEF(.AREA.,2000 x 2000 x 900mm',#698,8.,6.);  
 #700= IFCCARTESIANPOINT((0.,32.31,-0.5));  
 #702= IFCAXIS2PLACEMENT3D(#700,#19,#13);  
 #703= IFCEXTRUDEDAREASOLID(#699,#702,#19,3.);  
 #704= IFCSTYLEDITEM(#703,(#150),S);  
 #707= IFCSHAPEREPRESENTATION(#100,'Body','SweptSolid',(#703));  
 #709= IFCPRODUCTDEFINITIONSHAPE(S,S,(#707));

#711= IFCSLAB('2ORPjZcQj4QOesDYdoyqKh',#41,'Pile Cap-Rectangular:2000 x 2000 x 900mm:217828',S,'Pile Cap-Rectangular:2000 x 2000 x 900mm',#695,#709,'217828',FLOOR.);	#833= IFCEXTRUDEDAREASOLID(#829,#832,#19.3.);
#714= IFCPROPERTYSET('2ORPjZcQj4QOesFTBoyyqKh',#41,'Pset_SlabCom mon',S,(#203,#204,#686,#687));	#834= IFCSTYLEDITEM(#833,(#150),S);
#716= IFCRELDEFINESBYPROPERTIES('3wp14Org10IRQsgbFL\$A41',#41,S,(#711),#714);	#837= IFCSHAPEREPRESENTATION(#100,'Body','SweptSolid',(#833));
#720= IFCAXIS2PLACEMENT3D(#6,S,S);	#839= IFCPRODUCTDEFINITIONSHAPE(S,S,(#837));
#721= IFCLOCALPLACEMENT(#127,#720);	#841= IFCSLAB('2ORPjZcQj4QOesDYdoyqDE',#41,'Pile Cap-Rectangular:2000 x 2000 x 900mm:218241',S,'Pile Cap-Rectangular:2000 x 2000 x 900mm',#825,#839,'218241',FLOOR.);
#722= IFCARTESIANPOINT((0.,0.));	#844= IFCPROPERTYSET('2ORPjZcQj4QOesFTBoyyqDE',#41,'Pset_SlabCom mon',S,(#203,#204,#686,#687));
#724= IFCAXIS2PLACEMENT2D(#722,#23);	#846= IFCRELDEFINESBYPROPERTIES('3HQCaLWOP2WO4_oSJS01h8',#41,S,(#841),#844);
#725= IFCRECTANGLEPROFILEDEF(.AREA.,'2000 x 2000 x 900mm',#724,8.,6.);	#850= IFCAXIS2PLACEMENT3D(#6,S,S);
#726= IFCARTESIANPOINT((0.,19.98,-0.5));	#851= IFCLOCALPLACEMENT(#127,#850);
#728= IFCAXIS2PLACEMENT3D(#726,#19,#13);	#852= IFCARTESIANPOINT((0.,-4.44089209850063E-16));
#729= IFCEXTRUDEDAREASOLID(#725,#728,#19.3.);	#854= IFCAXIS2PLACEMENT2D(#852,#23);
#730= IFCSTYLEDITEM(#729,(#150),S);	#855= IFCRECTANGLEPROFILEDEF(.AREA.,'2000 x 2000 x 900mm',#854,8.,6.);
#733= IFCSHAPEREPRESENTATION(#100,'Body','SweptSolid',(#729));	#856= IFCARTESIANPOINT((45.,7.48,-3.));
#735= IFCPRODUCTDEFINITIONSHAPE(S,S,(#733));	#858= IFCAXIS2PLACEMENT3D(#856,#19,#13);
#737= IFCSLAB('2ORPjZcQj4QOesDYdoyqI8',#41,'Pile Cap-Rectangular:2000 x 2000 x 900mm:217927',S,'Pile Cap-Rectangular:2000 x 2000 x 900mm',#721,#735,'217927',FLOOR.);	#859= IFCEXTRUDEDAREASOLID(#855,#858,#19.3.);
#740= IFCPROPERTYSET('2ORPjZcQj4QOesFTBoyyqI8',#41,'Pset_SlabCom mon',S,(#203,#204,#686,#687));	#860= IFCSTYLEDITEM(#859,(#150),S);
#742= IFCRELDEFINESBYPROPERTIES('2ENu4oVU59rOJMCPkL93co',#41,S,(#737),#740);	#863= IFCSHAPEREPRESENTATION(#100,'Body','SweptSolid',(#859));
#746= IFCAXIS2PLACEMENT3D(#6,S,S);	#865= IFCPRODUCTDEFINITIONSHAPE(S,S,(#863));
#747= IFCLOCALPLACEMENT(#127,#746);	#867= IFCSLAB('2ORPjZcQj4QOesDYdoyqCz',#41,'Pile Cap-Rectangular:2000 x 2000 x 900mm:218354',S,'Pile Cap-Rectangular:2000 x 2000 x 900mm',#851,#865,'218354',FLOOR.);
#748= IFCARTESIANPOINT((0.,-4.44089209850063E-16));	#870= IFCPROPERTYSET('2ORPjZcQj4QOesFTBoyyqCz',#41,'Pset_SlabCom mon',S,(#203,#204,#686,#687));
#750= IFCAXIS2PLACEMENT2D(#748,#23);	#872= IFCRELDEFINESBYPROPERTIES('0ZKT4UIPz8tAtL\$y\$Vgk',#41,S,(#867),#870);
#751= IFCRECTANGLEPROFILEDEF(.AREA.,'2000 x 2000 x 900mm',#750,8.,6.);	#876= IFCAXIS2PLACEMENT3D(#6,S,S);
#752= IFCARTESIANPOINT((0.,7.48,-0.5));	#877= IFCLOCALPLACEMENT(#127,#876);
#754= IFCAXIS2PLACEMENT3D(#752,#19,#13);	#878= IFCARTESIANPOINT((0.,0.));
#755= IFCEXTRUDEDAREASOLID(#751,#754,#19.3.);	#880= IFCAXIS2PLACEMENT2D(#878,#23);
#756= IFCSTYLEDITEM(#755,(#150),S);	#881= IFCRECTANGLEPROFILEDEF(.AREA.,'2000 x 2000 x 900mm',#880,8.,6.);
#759= IFCSHAPEREPRESENTATION(#100,'Body','SweptSolid',(#755));	#882= IFCARTESIANPOINT((123.,44.81,-3.));
#761= IFCPRODUCTDEFINITIONSHAPE(S,S,(#759));	#884= IFCAXIS2PLACEMENT3D(#882,#19,#13);
#763= IFCSLAB('2ORPjZcQj4QOesDYdoyqHT',#41,'Pile Cap-Rectangular:2000 x 2000 x 900mm:218002',S,'Pile Cap-Rectangular:2000 x 2000 x 900mm',#747,#761,'218002',FLOOR.);	#885= IFCEXTRUDEDAREASOLID(#881,#884,#19.3.);
#766= IFCPROPERTYSET('2ORPjZcQj4QOesFTBoyyqHT',#41,'Pset_SlabCom mon',S,(#203,#204,#686,#687));	#886= IFCSTYLEDITEM(#885,(#150),S);
#768= IFCRELDEFINESBYPROPERTIES('1jRvjOriP50wNLBmGUL92',#41,S,(#763),#766);	#889= IFCSHAPEREPRESENTATION(#100,'Body','SweptSolid',(#885));
#772= IFCAXIS2PLACEMENT3D(#6,S,S);	#891= IFCPRODUCTDEFINITIONSHAPE(S,S,(#889));
#773= IFCLOCALPLACEMENT(#127,#772);	#893= IFCSLAB('2ORPjZcQj4QOesDYdoyqBq',#41,'Pile Cap-Rectangular:2000 x 2000 x 900mm:218427',S,'Pile Cap-Rectangular:2000 x 2000 x 900mm',#877,#891,'218427',FLOOR.);
#774= IFCARTESIANPOINT((0.,0.));	#896= IFCPROPERTYSET('2ORPjZcQj4QOesFTBoyyqBq',#41,'Pset_SlabCom mon',S,(#203,#204,#686,#687));
#776= IFCAXIS2PLACEMENT2D(#774,#23);	#898= IFCRELDEFINESBYPROPERTIES('2hM54N7mDBORaSXjhFG8A1',#41,S,(#893),#896);
#777= IFCRECTANGLEPROFILEDEF(.AREA.,'2000 x 2000 x 900mm',#776,8.,6.);	#902= IFCAXIS2PLACEMENT3D(#6,S,S);
#778= IFCARTESIANPOINT((45.,44.81,-3.));	#903= IFCLOCALPLACEMENT(#127,#902);
#780= IFCAXIS2PLACEMENT3D(#778,#19,#13);	#904= IFCARTESIANPOINT((0.,0.));
#781= IFCEXTRUDEDAREASOLID(#777,#780,#19.3.);	#906= IFCAXIS2PLACEMENT2D(#904,#23);
#782= IFCSTYLEDITEM(#781,(#150),S);	#907= IFCRECTANGLEPROFILEDEF(.AREA.,'2000 x 2000 x 900mm',#906,8.,6.);
#785= IFCSHAPEREPRESENTATION(#100,'Body','SweptSolid',(#781));	#908= IFCARTESIANPOINT((123.,32.31,-3.));
#787= IFCPRODUCTDEFINITIONSHAPE(S,S,(#785));	#910= IFCAXIS2PLACEMENT3D(#908,#19,#13);
#789= IFCSLAB('2ORPjZcQj4QOesDYdoyqG0',#41,'Pile Cap-Rectangular:2000 x 2000 x 900mm:218063',S,'Pile Cap-Rectangular:2000 x 2000 x 900mm',#773,#787,'218063',FLOOR.);	#911= IFCEXTRUDEDAREASOLID(#907,#910,#19.3.);
#792= IFCPROPERTYSET('2ORPjZcQj4QOesFTBoyyqG0',#41,'Pset_SlabCom mon',S,(#203,#204,#686,#687));	#912= IFCSTYLEDITEM(#911,(#150),S);
#794= IFCRELDEFINESBYPROPERTIES('1ZGqXlgtvFZ9xjrWmR8z3R',#41,S,(#789),#792);	#915= IFCSHAPEREPRESENTATION(#100,'Body','SweptSolid',(#911));
#798= IFCAXIS2PLACEMENT3D(#6,S,S);	#917= IFCPRODUCTDEFINITIONSHAPE(S,S,(#915));
#799= IFCLOCALPLACEMENT(#127,#798);	#919= IFCSLAB('2ORPjZcQj4QOesDYdoyq8Z',#41,'Pile Cap-Rectangular:2000 x 2000 x 900mm:218604',S,'Pile Cap-Rectangular:2000 x 2000 x 900mm',#903,#917,'218604',FLOOR.);
#800= IFCARTESIANPOINT((0.,0.));	#922= IFCPROPERTYSET('2ORPjZcQj4QOesFTBoyyq8Z',#41,'Pset_SlabCom mon',S,(#203,#204,#686,#687));
#802= IFCAXIS2PLACEMENT2D(#800,#23);	#924= IFCRELDEFINESBYPROPERTIES('25XDdQJzX6mecVgFaDpnMj',#41,S,(#919),#922);
#803= IFCRECTANGLEPROFILEDEF(.AREA.,'2000 x 2000 x 900mm',#802,8.,6.);	#928= IFCAXIS2PLACEMENT3D(#6,S,S);
#804= IFCARTESIANPOINT((45.,32.31,-3.));	#929= IFCLOCALPLACEMENT(#127,#928);
#806= IFCAXIS2PLACEMENT3D(#804,#19,#13);	#930= IFCARTESIANPOINT((0.,0.));
#807= IFCEXTRUDEDAREASOLID(#803,#806,#19.3.);	#932= IFCAXIS2PLACEMENT2D(#930,#23);
#808= IFCSTYLEDITEM(#807,(#150),S);	#933= IFCRECTANGLEPROFILEDEF(.AREA.,'2000 x 2000 x 900mm',#932,8.,6.);
#811= IFCSHAPEREPRESENTATION(#100,'Body','SweptSolid',(#807));	#934= IFCARTESIANPOINT((123.,19.98,-3.));
#813= IFCPRODUCTDEFINITIONSHAPE(S,S,(#811));	#936= IFCAXIS2PLACEMENT3D(#934,#19,#13);
#815= IFCSLAB('2ORPjZcQj4QOesDYdoyqFr',#41,'Pile Cap-Rectangular:2000 x 2000 x 900mm:218170',S,'Pile Cap-Rectangular:2000 x 2000 x 900mm',#799,#813,'218170',FLOOR.);	#937= IFCEXTRUDEDAREASOLID(#933,#936,#19.3.);
#818= IFCPROPERTYSET('2ORPjZcQj4QOesFTBoyyqFr',#41,'Pset_SlabCom mon',S,(#203,#204,#686,#687));	#938= IFCSTYLEDITEM(#937,(#150),S);
#820= IFCRELDEFINESBYPROPERTIES('3s0x_LRb2oReY8MySCQ9r',#41,S,(#815),#818);	#941= IFCSHAPEREPRESENTATION(#100,'Body','SweptSolid',(#937));
#824= IFCAXIS2PLACEMENT3D(#6,S,S);	#943= IFCPRODUCTDEFINITIONSHAPE(S,S,(#941));
#825= IFCLOCALPLACEMENT(#127,#824);	#945= IFCSLAB('2ORPjZcQj4QOesDYdoyq5A',#41,'Pile Cap-Rectangular:2000 x 2000 x 900mm:218757',S,'Pile Cap-Rectangular:2000 x 2000 x 900mm',#929,#943,'218757',FLOOR.);
#826= IFCARTESIANPOINT((0.,0.));	#948= IFCPROPERTYSET('2ORPjZcQj4QOesFTBoyyq5A',#41,'Pset_SlabCom mon',S,(#203,#204,#686,#687));
#828= IFCAXIS2PLACEMENT2D(#826,#23);	#950= IFCRELDEFINESBYPROPERTIES('0ngntyLSPA VfICLqVbCQO5',#41,S,(#945),#948);
#829= IFCRECTANGLEPROFILEDEF(.AREA.,'2000 x 2000 x 900mm',#828,8.,6.);	#954= IFCAXIS2PLACEMENT3D(#6,S,S);
#830= IFCARTESIANPOINT((45.,19.98,-3.));	#955= IFCLOCALPLACEMENT(#127,#954);
#832= IFCAXIS2PLACEMENT3D(#830,#19,#13);	#956= IFCARTESIANPOINT((0.,-4.44089209850063E-16));

## Appendix

#958= IFCAXIS2PLACEMENT2D(#956,#23);  
#959= IFCRECTANGLEPROFILEDEF(.AREA.,2000 x 2000 x 900mm',#958,8.,6.);  
#960= IFCCARTESIANPOINT((123.,7.48,-3.));  
#962= IFCAXIS2PLACEMENT3D(#960,#19,#13);  
#963= IFCXTRUDEDAREASOLID(#959,#962,#19,3.);  
#964= IFCSTYLELITEM(#963,#150,\$);  
#967= IFCSHAPEREPRESENTATION(#100,'Body','SweptSolid',(#963));  
#969= IFCPRODUCTDEFINITIONSHAPE(\$,.(#967));  
#971= IFCSLAB('2ORPjZcQj4QOesDYdoyq4\$',#41,'Pile Cap-Rectangular:2000 x 2000 x 900mm:218864\$',#41,'Pile Cap-Rectangular:2000 x 2000 x 900mm',#955,#969,'218864\$',FLOOR.);  
#974= IFCPROPERTYSET('2ORPjZcQj4QOesFTBoyq4\$',#41,'Pset\_SlabCommon',\$(#203,#204,#686,#687));  
#976= IFCRELEDEFINESBYPROPERTIES('0vP4YjnePCXQJOpaP1UI06',#41,\$,.(#971),#974);  
#980= IFCAXIS2PLACEMENT3D(#6,\$,);  
#981= IFCLOCALPLACEMENT(#127,#980);  
#982= IFCCARTESIANPOINT((0.,0.));  
#984= IFCAXIS2PLACEMENT2D(#982,#23);  
#985= IFCRECTANGLEPROFILEDEF(.AREA.,2000 x 2000 x 900mm',#984,8.,6.);  
#986= IFCCARTESIANPOINT((168.,44.81,2.));  
#988= IFCAXIS2PLACEMENT3D(#986,#19,#13);  
#989= IFCXTRUDEDAREASOLID(#985,#988,#19,3.);  
#990= IFCSTYLELITEM(#989,#150,\$);  
#993= IFCSHAPEREPRESENTATION(#100,'Body','SweptSolid',(#989));  
#995= IFCPRODUCTDEFINITIONSHAPE(\$,.(#993));  
#997= IFCSLAB('2ORPjZcQj4QOesDYdoyq3a',#41,'Pile Cap-Rectangular:2000 x 2000 x 900mm:218923\$',#41,'Pile Cap-Rectangular:2000 x 2000 x 900mm',#981,#995,'218923\$',FLOOR.);  
#1000= IFCPROPERTYSET('2ORPjZcQj4QOesFTBoyq3a',#41,'Pset\_SlabCommon',\$(#203,#204,#686,#687));  
#1002= IFCRELEDEFINESBYPROPERTIES('2595QCC393rBhrDY\$35eEC',#41,\$,.(#997),#1000);  
#1006= IFCAXIS2PLACEMENT3D(#6,\$,);  
#1007= IFCLOCALPLACEMENT(#127,#1006);  
#1008= IFCCARTESIANPOINT((0.,0.));  
#1010= IFCAXIS2PLACEMENT2D(#1008,#23);  
#1011= IFCRECTANGLEPROFILEDEF(.AREA.,2000 x 2000 x 900mm',#1010,8.,6.);  
#1012= IFCCARTESIANPOINT((168.,32.31,2.));  
#1014= IFCAXIS2PLACEMENT3D(#1012,#19,#13);  
#1015= IFCXTRUDEDAREASOLID(#1011,#1014,#19,3.);  
#1016= IFCSTYLELITEM(#1015,#150,\$);  
#1019= IFCSHAPEREPRESENTATION(#100,'Body','SweptSolid',(#1015));  
#1021= IFCPRODUCTDEFINITIONSHAPE(\$,.(#1019));  
#1023= IFCSLAB('2ORPjZcQj4QOesDYdoyq0F',#41,'Pile Cap-Rectangular:2000 x 2000 x 900mm:219072\$',#41,'Pile Cap-Rectangular:2000 x 2000 x 900mm',#1007,#1021,'219072\$',FLOOR.);  
#1026= IFCPROPERTYSET('2ORPjZcQj4QOesFTBoyq0F',#41,'Pset\_SlabCommon',\$(#203,#204,#686,#687));  
#1028= IFCRELEDEFINESBYPROPERTIES('1GWMiGnND7805hH8gKqw7M',#41,\$,.(#1023),#1026);  
#1032= IFCAXIS2PLACEMENT3D(#6,\$,);  
#1033= IFCLOCALPLACEMENT(#127,#1032);  
#1034= IFCCARTESIANPOINT((0.,0.));  
#1036= IFCAXIS2PLACEMENT2D(#1034,#23);  
#1037= IFCRECTANGLEPROFILEDEF(.AREA.,2000 x 2000 x 900mm',#1036,8.,6.);  
#1038= IFCCARTESIANPOINT((168.,19.98,2.));  
#1040= IFCAXIS2PLACEMENT3D(#1038,#19,#13);  
#1041= IFCXTRUDEDAREASOLID(#1037,#1040,#19,3.);  
#1042= IFCSTYLELITEM(#1041,#150,\$);  
#1045= IFCSHAPEREPRESENTATION(#100,'Body','SweptSolid',(#1041));  
#1047= IFCPRODUCTDEFINITIONSHAPE(\$,.(#1045));  
#1049= IFCSLAB('2ORPjZcQj4QOesDYdoyqSa',#41,'Pile Cap-Rectangular:2000 x 2000 x 900mm:219179\$',#41,'Pile Cap-Rectangular:2000 x 2000 x 900mm',#1033,#1047,'219179\$',FLOOR.);  
#1052= IFCPROPERTYSET('2ORPjZcQj4QOesFTBoyqSa',#41,'Pset\_SlabCommon',\$(#203,#204,#686,#687));  
#1054= IFCRELEDEFINESBYPROPERTIES('0aSbra0tX09vvcSdin4\$wY',#41,\$,.(#1049),#1052);  
#1058= IFCAXIS2PLACEMENT3D(#6,\$,);  
#1059= IFCLOCALPLACEMENT(#127,#1058);  
#1060= IFCCARTESIANPOINT((0.,4.44089209850063E-16));  
#1062= IFCAXIS2PLACEMENT2D(#1060,#23);  
#1063= IFCRECTANGLEPROFILEDEF(.AREA.,2000 x 2000 x 900mm',#1062,8.,6.);  
#1064= IFCCARTESIANPOINT((168.,7.48,2.));  
#1066= IFCAXIS2PLACEMENT3D(#1064,#19,#13);  
#1067= IFCXTRUDEDAREASOLID(#1063,#1066,#19,3.);  
#1068= IFCSTYLELITEM(#1067,#150,\$);  
#1071= IFCSHAPEREPRESENTATION(#100,'Body','SweptSolid',(#1067));  
#1073= IFCPRODUCTDEFINITIONSHAPE(\$,.(#1071));  
#1075= IFCSLAB('2ORPjZcQj4QOesDYdoyqz1',#41,'Pile Cap-Rectangular:2000 x 2000 x 900mm:219278\$',#41,'Pile Cap-Rectangular:2000 x 2000 x 900mm',#1059,#1073,'219278\$',FLOOR.);  
#1078= IFCPROPERTYSET('2ORPjZcQj4QOesFTBoyqz1',#41,'Pset\_SlabCommon',\$(#203,#204,#686,#687));  
#1080= IFCRELEDEFINESBYPROPERTIES('3leCu7DBzCymf7BWBvVeF',#41,\$,.(#1075),#1078);  
#1084= IFCCARTESIANPOINT((0.,52.29,26.75));  
#1086= IFCAXIS2PLACEMENT3D(#1084,#19,#17);  
#1087= IFCLOCALPLACEMENT(#127,#1086);  
#1088= IFCCARTESIANPOINT((0.,0.));  
#1090= IFCAXIS2PLACEMENT2D(#1088,#23);  
#1091= IFCRECTANGLEPROFILEDEF(.AREA.,'beamFamily1 2',#1090,2.749999999999997,2.75);  
#1092= IFCCARTESIANPOINT((0.,0.,-1.375000000000001));  
#1094= IFCAXIS2PLACEMENT3D(#1092,#11,#21);  
#1095= IFCXTRUDEDAREASOLID(#1091,#1094,#19,52.29);  
#1096= IFCOLOURRGB(\$,0.752941176470588,0.752941176470588,0.752941176470588);  
#1097= IFCSURFACESTYLERENDERING(#1096,0,\$,\$,\$,IFCNORMALISED RATIO MEASURE(0.5),IFCSPECULAREXPONENT(128.),NOTDEFINED.);  
#1098= IFCSURFACESTYLE('Concrete - Cast-in-Place Concrete',BOTH,.(#1097));  
#1100= IFCPRESENTATIONSTYLEASSIGNMENT((#1098));  
#1102= IFCSTYLELITEM(#1095,#1100,\$);  
#1105= IFCSHAPEREPRESENTATION(#100,'Body','SweptSolid',(#1095));  
#1107= IFCCARTESIANPOINT((52.29,0.));  
#1109= IFCPOLYLINE((#9,#1107));  
#1111= IFCSHAPEREPRESENTATION(#98,'Axis','Curve2D',(#1109));  
#1114= IFCPRODUCTDEFINITIONSHAPE(\$,.(#1111,#1105));  
#1116= IFCBEAM('3U9JTh5dXBHgCvQkSJPbb',#41,'beamFamily1:beamFamily1 2:221519',#1087,#1114,'220896');  
#1119= IFCMATERIAL('Concrete - Cast-in-Place Concrete');  
#1120= IFCPRESENTATIONSTYLEASSIGNMENT((#1098));  
#1122= IFCSTYLELITEM(\$,.(#1120,\$);  
#1124= IFCSTYLELITEM(#95,'Style','Material',(#1122));  
#1126= IFCMATERIALDEFINITIONREPRESENTATION(\$,.(#1124),#1119);  
#1129= IFCPROPERTYSINGLEVALUE('Reference',IFCIDENTIFIER('beamFamily1 2'),\$);  
#1130= IFCPROPERTYSINGLEVALUE('Span',IFCPOSITIVELENGTHMEASURE(52.29),\$);  
#1131= IFCPROPERTYSINGLEVALUE('Slope',IFCPLANEANGLEMEASURE(0.),\$);  
#1132= IFCPROPERTYSET('3U9JTh5dXBHgCvOaASJPbb',#41,'Pset\_BeamCommon',\$(#203,#204,#1129,#1130,#1131));  
#1134= IFCRELEDEFINESBYPROPERTIES('0ju9AbHT5DT9le1Lay7F9g',#41,\$,.(#1116),#1132);  
#1138= IFCCARTESIANPOINT((45.,52.29,26.75));  
#1140= IFCAXIS2PLACEMENT3D(#1138,#19,#17);  
#1141= IFCLOCALPLACEMENT(#127,#1140);  
#1142= IFCCARTESIANPOINT((7.10542735760100E-15,0.));  
#1144= IFCAXIS2PLACEMENT2D(#1142,#23);  
#1145= IFCRECTANGLEPROFILEDEF(.AREA.,'beamFamily1',#1144,2.749999999999997,2.75);  
#1146= IFCCARTESIANPOINT((0.,0.,-1.375000000000001));  
#1148= IFCAXIS2PLACEMENT3D(#1146,#11,#21);  
#1149= IFCXTRUDEDAREASOLID(#1145,#1148,#19,52.29);  
#1150= IFCSTYLELITEM(#1149,#1100,\$);  
#1153= IFCSHAPEREPRESENTATION(#100,'Body','SweptSolid',(#1149));  
#1155= IFCCARTESIANPOINT((52.29,0.));  
#1157= IFCPOLYLINE((#9,#1155));  
#1159= IFCSHAPEREPRESENTATION(#98,'Axis','Curve2D',(#1157));  
#1161= IFCPRODUCTDEFINITIONSHAPE(\$,.(#1159,#1153));  
#1163= IFCBEAM('3U9JTh5dXBHgCvQkSJPX0',#41,'beamFamily1:beamFamily1:221125',#41,'beamFamily1:beamFamily1:220833',#1141,#1161,221125);  
#1166= IFCPROPERTYSINGLEVALUE('Reference',IFCIDENTIFIER('beamFamily1'),\$);  
#1167= IFCPROPERTYSINGLEVALUE('Span',IFCPOSITIVELENGTHMEASURE(52.29),\$);  
#1168= IFCPROPERTYSET('3U9JTh5dXBHgCvOaASJPX0',#41,'Pset\_BeamCommon',\$(#203,#204,#1131,#1166,#1167));  
#1170= IFCRELEDEFINESBYPROPERTIES('1dzqPt1H7M8bpXYBwXQZz',#41,\$,.(#1163),#1168);  
#1174= IFCCARTESIANPOINT((123.,52.29,26.75));  
#1176= IFCAXIS2PLACEMENT3D(#1174,#19,#17);  
#1177= IFCLOCALPLACEMENT(#127,#1176);  
#1178= IFCCARTESIANPOINT((0.,0.));  
#1180= IFCAXIS2PLACEMENT2D(#1178,#23);  
#1181= IFCRECTANGLEPROFILEDEF(.AREA.,'beamFamily1 2',#1180,2.749999999999997,2.75);  
#1182= IFCCARTESIANPOINT((0.,0.,-1.375000000000001));  
#1184= IFCAXIS2PLACEMENT3D(#1182,#11,#21);  
#1185= IFCXTRUDEDAREASOLID(#1181,#1184,#19,52.29);  
#1186= IFCSTYLELITEM(#1185,#1100,\$);  
#1189= IFCSHAPEREPRESENTATION(#100,'Body','SweptSolid',(#1185));  
#1191= IFCCARTESIANPOINT((52.29,0.));  
#1193= IFCPOLYLINE((#9,#1191));

#1195= IFCSHAPEREPRESENTATION(#98,'Axis','Curve2D',(1193));  
 #1197= IFCPRODUCTDEFINITIONSHAPE(S,S,(#1195,#1189));  
 #1199=  
 IFCBEAM(3U9Jth5dXBHGcVQQkSJQMq',#41,'beamFamily1.beamFamily1  
 2:221727',S,'beamFamily1.beamFamily1  
 2:221519',#1177,#1197,'221727');  
 #1202=  
 IFCPROPERTYSINGLEVALUE('Span',S,IFCPOSITIVELENGTHMEASUREMENT(52.29),S);  
 #1203=  
 IFCPROPERTYSET('3U9Jth5dXBHGcVQQkSJQMq',#41,'Pset\_BeamCommon',S,(#203,#204,#1129,#1131,#1202));  
 #1205=  
 IFCRELDEFINESBYPROPERTIES('2FKh4P6b2SetUjJNRgPMH',#41,S,S,(#1199),#1203);  
 #1209= IFCARTESIANPOINT((168.,52.29,26.75));  
 #1211= IFCAXIS2PLACEMENT3D(#1209,#19,#17);  
 #1212= IFCLOCALPLACEMENT(#127,#1211);  
 #1213= IFCARTESIANPOINT((7.10542735760100E-15,0.));  
 #1215= IFCAXIS2PLACEMENT2D(#1213,#23);  
 #1216=  
 IFCRECTANGLEPROFILEDEF(AREA,'beamFamily1',#1215,2.749999999999997,2.75);  
 #1217= IFCARTESIANPOINT((0.,0.,-1.375000000000001));  
 #1219= IFCAXIS2PLACEMENT3D(#1217,#11,#21);  
 #1220= IFCXTRUDEDAREASOLID(#1216,#1219,#19,52.29);  
 #1221= IFCSTYLEDITEM(#1220,(#1100),S);  
 #1224=  
 IFCSHAPEREPRESENTATION(#100,'Body','SweptSolid',(#1220));  
 #1226= IFCARTESIANPOINT((52.29,0.));  
 #1228= IFCPOLYLINE((#9,#1226));  
 #1230= IFCSHAPEREPRESENTATION(#98,'Axis','Curve2D',(1228));  
 #1232= IFCPRODUCTDEFINITIONSHAPE(S,S,(#1230,#1224));  
 #1234=  
 IFCBEAM(3U9Jth5dXBHGcVQQkSJQKX',#41,'beamFamily1.beamFamily1:221860',S,'beamFamily1.beamFamily1:220833',#1212,#1232,'221860');  
 #1237=  
 IFCPROPERTYSINGLEVALUE('Span',S,IFCPOSITIVELENGTHMEASUREMENT(52.29),S);  
 #1238=  
 IFCPROPERTYSET('3U9Jth5dXBHGcVQQkSJQKX',#41,'Pset\_BeamCommon',S,(#203,#204,#1131,#1166,#1237));  
 #1240=  
 IFCRELDEFINESBYPROPERTIES('3EB3XRpjfBGe0t8uFt17AX',#41,S,S,(#1234),#1238);  
 #1244= IFCARTESIANPOINT((0.,10.3125000000001,36.25));  
 #1246= IFCAXIS2PLACEMENT3D(#1244,S,S);  
 #1247= IFCLOCALPLACEMENT(#120,#1246);  
 #1249= IFCARTESIANPOINT((-1.29761904761941,-1.));  
 #1251= IFCARTESIANPOINT((-0.79761904761941,-1.));  
 #1253= IFCARTESIANPOINT((-0.797619047619253,-0.58333333332867));  
 #1255= IFCARTESIANPOINT((-0.547619047619171,-0.33333333332947));  
 #1257= IFCARTESIANPOINT((0.869047619047487,-0.33333333333468));  
 #1259= IFCARTESIANPOINT((1.11904761904725,-1.));  
 #1261= IFCARTESIANPOINT((1.45238095238059,-1.));  
 #1263= IFCARTESIANPOINT((1.45238095238131,1.));  
 #1265= IFCARTESIANPOINT((1.11904761904797,1.));  
 #1267=  
 IFCARTESIANPOINT((0.869047619047732,0.33333333333201));  
 #1269= IFCARTESIANPOINT((-0.547619047618931,0.3333333333371));  
 #1271= IFCARTESIANPOINT((-0.797619047618844,0.58333333333789));  
 #1273= IFCARTESIANPOINT((-0.797619047618685,1.));  
 #1275= IFCARTESIANPOINT((-1.29761904761869,1.));  
 #1277=  
 IFCPOLYLINE((#1249,#1251,#1253,#1255,#1257,#1259,#1261,#1263,#1265,#1267,#1269,#1271,#1273,#1275,#1277));  
 #1279= IFCARBITRARYCLOSEDPROFILEDEF(AREA,'i beam1',#1277);  
 #1280= IFCARTESIANPOINT((0.,0.,-0.805493063367081));  
 #1282= IFCAXIS2PLACEMENT3D(#1280,#11,#21);  
 #1283=  
 IFCXTRUDEDAREASOLID(#1279,#1282,#19,55.0833333333333);  
 #1284= IFCSTYLEDITEM(#1283,(#1100),S);  
 #1287=  
 IFCSHAPEREPRESENTATION(#100,'Body','SweptSolid',(#1283));  
 #1289= IFCARTESIANPOINT((55.0833333333333,0.));  
 #1291= IFCPOLYLINE((#9,#1289));  
 #1293= IFCSHAPEREPRESENTATION(#98,'Axis','Curve2D',(1291));  
 #1295= IFCPRODUCTDEFINITIONSHAPE(S,S,(#1293,#1287));  
 #1297= IFCBEAM('1EXFMHqKzCSuCNvcf\$XrK',#41,'i beam1:235910',S,'i beam1:222747',#1247,#1295,'235910');  
 #1300=  
 IFCPROPERTYSINGLEVALUE('Reference',S,IFCIDENTIFIER('i beam1'),S);  
 #1301=  
 IFCPROPERTYSINGLEVALUE('Span',S,IFCPOSITIVELENGTHMEASUREMENT(55.0833333333333),S);  
 #1302=  
 IFCPROPERTYSET('1EXFMHqKzCSuCNvcf\$XrK',#41,'Pset\_BeamCommon',S,(#203,#204,#1131,#1300,#1301));  
 #1304=  
 IFCRELDEFINESBYPROPERTIES('2hZrSgm2f5yukT9OWXKcqn',#41,S,S,(#1297),#1302);  
 #1308= IFCARTESIANPOINT((0.,16.6458333333333,36.25));  
 #1310= IFCAXIS2PLACEMENT3D(#1308,S,S);  
 #1311= IFCLOCALPLACEMENT(#120,#1310);  
 #1312= IFCARTESIANPOINT((-1.29761904761941,-1.));  
 #1314= IFCARTESIANPOINT((-0.797619047619406,-1.));

#1316= IFCARTESIANPOINT((-0.797619047619251,-0.58333333332871));  
 #1318= IFCARTESIANPOINT((-0.547619047619169,-0.33333333332953));  
 #1320= IFCARTESIANPOINT((0.869047619047488,-0.33333333333467));  
 #1322= IFCARTESIANPOINT((1.11904761904725,-1.));  
 #1324= IFCARTESIANPOINT((1.45238095238059,-1.));  
 #1326= IFCARTESIANPOINT((1.45238095238131,1.));  
 #1328= IFCARTESIANPOINT((1.11904761904796,1.));  
 #1330=  
 IFCARTESIANPOINT((0.869047619047732,0.33333333333201));  
 #1332= IFCARTESIANPOINT((-0.547619047618933,0.33333333333708));  
 #1334=  
 IFCARTESIANPOINT((-0.797619047618844,0.58333333333786));  
 #1336= IFCARTESIANPOINT((-0.797619047618689,1.));  
 #1338= IFCARTESIANPOINT((-1.29761904761869,1.));  
 #1340=  
 IFCPOLYLINE((#1312,#1314,#1316,#1318,#1320,#1322,#1324,#1326,#1328,#1330,#1332,#1334,#1336,#1338,#1340));  
 #1342= IFCARBITRARYCLOSEDPROFILEDEF(AREA,'i beam1',#1340);  
 #1343= IFCARTESIANPOINT((0.,0.,-0.805493063367081));  
 #1345= IFCAXIS2PLACEMENT3D(#1343,#11,#21);  
 #1346=  
 IFCXTRUDEDAREASOLID(#1342,#1345,#19,55.0833333333333);  
 #1347= IFCSTYLEDITEM(#1346,(#1100),S);  
 #1350=  
 IFCSHAPEREPRESENTATION(#100,'Body','SweptSolid',(#1346));  
 #1352= IFCARTESIANPOINT((55.0833333333333,0.));  
 #1354= IFCPOLYLINE((#9,#1352));  
 #1356= IFCSHAPEREPRESENTATION(#98,'Axis','Curve2D',(1354));  
 #1358= IFCPRODUCTDEFINITIONSHAPE(S,S,(#1356,#1350));  
 #1360= IFCBEAM('1EXFMHqKzCSuCNvcf\$XrPM',#41,'i beam1:236256',S,'i beam1:222747',#1311,#1358,'236256');  
 #1363=  
 IFCPROPERTYSINGLEVALUE('Span',S,IFCPOSITIVELENGTHMEASUREMENT(55.0833333333333),S);  
 #1364=  
 IFCPROPERTYSET('1EXFMHqKzCSuCNvcf\$XrPM',#41,'Pset\_BeamCommon',S,(#203,#204,#1131,#1300,#1363));  
 #1366=  
 IFCRELDEFINESBYPROPERTIES('2hkhF5inCdf3XoI8SX0iU',#41,S,S,(#1360),#1364);  
 #1370= IFCARTESIANPOINT((0.,22.9791666666668,36.25));  
 #1372= IFCAXIS2PLACEMENT3D(#1370,S,S);  
 #1373= IFCLOCALPLACEMENT(#120,#1372);  
 #1374= IFCARTESIANPOINT((-1.29761904761941,-1.));  
 #1376= IFCARTESIANPOINT((-0.797619047619406,-1.));  
 #1378= IFCARTESIANPOINT((-0.797619047619251,-0.58333333332868));  
 #1380= IFCARTESIANPOINT((-0.547619047619169,-0.33333333332949));  
 #1382= IFCARTESIANPOINT((0.869047619047488,-0.33333333333463));  
 #1384= IFCARTESIANPOINT((1.11904761904725,-1.));  
 #1386= IFCARTESIANPOINT((1.45238095238059,-1.));  
 #1388= IFCARTESIANPOINT((1.45238095238131,1.));  
 #1390= IFCARTESIANPOINT((1.11904761904796,1.));  
 #1392=  
 IFCARTESIANPOINT((0.869047619047732,0.33333333333205));  
 #1394= IFCARTESIANPOINT((-0.547619047618933,0.3333333333371));  
 #1396= IFCARTESIANPOINT((-0.797619047618844,0.5833333333379));  
 #1398= IFCARTESIANPOINT((-0.797619047618689,1.));  
 #1400= IFCARTESIANPOINT((-1.29761904761869,1.));  
 #1402=  
 IFCPOLYLINE((#1374,#1376,#1378,#1380,#1382,#1384,#1386,#1388,#1390,#1392,#1394,#1396,#1398,#1400,#1374));  
 #1404= IFCARBITRARYCLOSEDPROFILEDEF(AREA,'i beam1',#1402);  
 #1405= IFCARTESIANPOINT((0.,0.,-0.805493063367081));  
 #1407= IFCAXIS2PLACEMENT3D(#1405,#11,#21);  
 #1408=  
 IFCXTRUDEDAREASOLID(#1404,#1407,#19,55.0833333333333);  
 #1409= IFCSTYLEDITEM(#1408,(#1100),S);  
 #1412=  
 IFCSHAPEREPRESENTATION(#100,'Body','SweptSolid',(#1408));  
 #1414= IFCARTESIANPOINT((55.0833333333333,0.));  
 #1416= IFCPOLYLINE((#9,#1414));  
 #1418= IFCSHAPEREPRESENTATION(#98,'Axis','Curve2D',(1416));  
 #1420= IFCPRODUCTDEFINITIONSHAPE(S,S,(#1418,#1412));  
 #1422= IFCBEAM('1EXFMHqKzCSuCNvcf\$XrUz',#41,'i beam1:236299',S,'i beam1:222747',#1373,#1420,'236299');  
 #1425=  
 IFCPROPERTYSINGLEVALUE('Span',S,IFCPOSITIVELENGTHMEASUREMENT(55.0833333333333),S);  
 #1426=  
 IFCPROPERTYSET('1EXFMHqKzCSuCNvcf\$XrUz',#41,'Pset\_BeamCommon',S,(#203,#204,#1131,#1300,#1425));  
 #1428=  
 IFCRELDEFINESBYPROPERTIES('2U3eh2;KzF\$MkPyhmpk5S',#41,S,S,(#1422),#1426);  
 #1432= IFCARTESIANPOINT((0.,29.3125000000001,36.25));  
 #1434= IFCAXIS2PLACEMENT3D(#1432,S,S);  
 #1435= IFCLOCALPLACEMENT(#120,#1434);  
 #1436= IFCARTESIANPOINT((-1.29761904761941,-1.));  
 #1438= IFCARTESIANPOINT((-0.797619047619406,-1.));  
 #1440= IFCARTESIANPOINT((-0.797619047619251,-0.58333333332864));  
 #1442= IFCARTESIANPOINT((-0.547619047619169,-0.33333333332946));

Appendix

#1444= IFCCARTESIANPOINT((0.869047619047488,-0.33333333333346));  
#1446= IFCCARTESIANPOINT((1.11904761904725,-1.));  
#1448= IFCCARTESIANPOINT((1.45238095238059,-1.));  
#1450= IFCCARTESIANPOINT((1.4523809523813,1.));  
#1452= IFCCARTESIANPOINT((1.11904761904796,1.));  
#1454= IFCCARTESIANPOINT((0.869047619047732,0.3333333333333205));  
#1456= IFCCARTESIANPOINT((-0.547619047618933,0.333333333333715));  
#1458= IFCCARTESIANPOINT((-0.797619047618844,0.583333333333793));  
#1460= IFCCARTESIANPOINT((-0.797619047618689,1.));  
#1462= IFCCARTESIANPOINT((-1.29761904761869,1.));  
#1464= IFCPOLYLINE((#1436,#1438,#1440,#1442,#1444,#1446,#1448,#1450,#1452,#1454,#1456,#1458,#1460,#1462,#1436));  
#1466= IFCARBITRARYCLOSEDPROFILEDEF(.AREA.,i beam1',#1464);  
#1467= IFCCARTESIANPOINT((0.,0.,-0.805493063367081));  
#1469= IFAXIS2PLACEMENT3D(#1467,#11,#21);  
#1470= IFCEXTRUDEDAREASOLID(#1466,#1469,#19,55.08333333333333);  
#1471= IFCSTYLEDEDITEM(#1470,#1100,S);  
#1474= IFCSHAPEREPRESENTATION(#100,'Body','SweptSolid',(#1470));  
#1476= IFCCARTESIANPOINT((55.0833333333333,0.));  
#1478= IFCPOLYLINE((#9,#1476));  
#1480= IFCSHAPEREPRESENTATION(#98,'Axis','Curve2D',(#1478));  
#1482= IFCPRODUCTDEFINITIONSHAPE(S,S,(#1480,#1474));  
#1484= IFCBEAM('1EXFMHqKzCzSuCNvODSxRv',#41,i beam1:236381',S,i beam1:222747',#1435,#1482,'236381');  
#1487= IFCPROPERTYSINGLEVALUE('Span',S,IFCPOSITIVELENGTHMEASURE(55.0833333333333),S);  
#1488= IFCPROPERTYSET('1EXFMHqKzCzSuCNxci\$XrVh',#41,'Pset\_BeamCommon',S,(#203,#204,#1131,#1300,#1487));  
#1490= IFCRELDEFINESBYPROPERTIES(3v12\_Bh5B6g7ZD5oWFXNB',#41,S,S,(#1484),#1488);  
#1494= IFCCARTESIANPOINT((0.35.64583333333335,36.25));  
#1496= IFAXIS2PLACEMENT3D(#1494,S,S);  
#1497= IFLOCALPLACEMENT(#120,#1496);  
#1498= IFCCARTESIANPOINT((-1.29761904761941,-1.));  
#1500= IFCCARTESIANPOINT((-0.797619047619406,-1.));  
#1502= IFCCARTESIANPOINT((-0.797619047619251,-0.5833333333332868));  
#1504= IFCCARTESIANPOINT((-0.547619047619169,-0.3333333333332949));  
#1506= IFCCARTESIANPOINT((0.869047619047488,-0.33333333333346));  
#1508= IFCCARTESIANPOINT((1.11904761904725,-1.));  
#1510= IFCCARTESIANPOINT((1.45238095238059,-1.));  
#1512= IFCCARTESIANPOINT((1.4523809523813,1.));  
#1514= IFCCARTESIANPOINT((1.11904761904796,1.));  
#1516= IFCCARTESIANPOINT((0.869047619047732,0.3333333333333212));  
#1518= IFCCARTESIANPOINT((-0.547619047618933,0.333333333333715));  
#1520= IFCCARTESIANPOINT((-0.797619047618844,0.583333333333797));  
#1522= IFCCARTESIANPOINT((-0.797619047618689,1.));  
#1524= IFCCARTESIANPOINT((-1.29761904761869,1.));  
#1526= IFCPOLYLINE((#1498,#1500,#1502,#1504,#1506,#1508,#1510,#1512,#1514,#1516,#1518,#1520,#1522,#1524,#1498));  
#1528= IFCARBITRARYCLOSEDPROFILEDEF(.AREA.,i beam1',#1526);  
#1529= IFCCARTESIANPOINT((0.,0.,-0.805493063367081));  
#1531= IFAXIS2PLACEMENT3D(#1529,#11,#21);  
#1532= IFCEXTRUDEDAREASOLID(#1528,#1531,#19,55.08333333333333);  
#1533= IFCSTYLEDEDITEM(#1532,#1100,S);  
#1536= IFCSHAPEREPRESENTATION(#100,'Body','SweptSolid',(#1532));  
#1538= IFCCARTESIANPOINT((55.0833333333333,0.));  
#1540= IFCPOLYLINE((#9,#1538));  
#1542= IFCSHAPEREPRESENTATION(#98,'Axis','Curve2D',(#1540));  
#1544= IFCPRODUCTDEFINITIONSHAPE(S,S,(#1542,#1536));  
#1546= IFCBEAM('1EXFMHqKzCzSuCNvODSxR2o',#41,i beam1:236548',S,i beam1:222747',#1497,#1544,'236548');  
#1549= IFCPROPERTYSINGLEVALUE('Span',S,IFCPOSITIVELENGTHMEASURE(55.0833333333333),S);  
#1550= IFCPROPERTYSET('1EXFMHqKzCzSuCNxci\$Xr2o',#41,'Pset\_BeamCommon',S,(#203,#204,#1131,#1300,#1549));  
#1552= IFCRELDEFINESBYPROPERTIES('2n07ItXMFYwLbsngJHRX2',#41,S,S,(#1546),#1550);  
#1556= IFCCARTESIANPOINT((0.41.9791666666668,36.25));  
#1558= IFAXIS2PLACEMENT3D(#1556,S,S);  
#1559= IFLOCALPLACEMENT(#120,#1558);  
#1560= IFCCARTESIANPOINT((-1.29761904761941,-1.));  
#1562= IFCCARTESIANPOINT((-0.797619047619406,-1.));  
#1564= IFCCARTESIANPOINT((-0.797619047619251,-0.5833333333332875));  
#1566= IFCCARTESIANPOINT((-0.547619047619169,-0.3333333333332956));  
#1568= IFCCARTESIANPOINT((0.869047619047488,-0.333333333333467));  
#1570= IFCCARTESIANPOINT((1.11904761904725,-1.));  
#1572= IFCCARTESIANPOINT((1.45238095238059,-1.));  
#1574= IFCCARTESIANPOINT((1.4523809523813,1.));  
#1576= IFCCARTESIANPOINT((1.11904761904796,1.));  
#1578= IFCCARTESIANPOINT((0.869047619047732,0.333333333333205));  
#1580= IFCCARTESIANPOINT((-0.547619047618933,0.333333333333708));  
#1582= IFCCARTESIANPOINT((-0.797619047618844,0.583333333333793));  
#1584= IFCCARTESIANPOINT((-0.797619047618689,1.));  
#1586= IFCCARTESIANPOINT((-1.29761904761869,1.));  
#1588= IFCPOLYLINE((#1560,#1562,#1564,#1566,#1568,#1570,#1572,#1574,#1576,#1578,#1580,#1582,#1584,#1586,#1588));  
#1590= IFCARBITRARYCLOSEDPROFILEDEF(.AREA.,i beam1',#1588);  
#1591= IFCCARTESIANPOINT((0.,0.,-0.805493063367081));  
#1593= IFAXIS2PLACEMENT3D(#1591,#11,#21);  
#1594= IFCEXTRUDEDAREASOLID(#1590,#1593,#19,55.08333333333333);  
#1595= IFCSTYLEDEDITEM(#1594,#1100,S);  
#1598= IFCSHAPEREPRESENTATION(#100,'Body','SweptSolid',(#1594));  
#1600= IFCCARTESIANPOINT((55.0833333333333,0.));  
#1602= IFCPOLYLINE((#9,#1600));  
#1604= IFCSHAPEREPRESENTATION(#98,'Axis','Curve2D',(#1602));  
#1606= IFCPRODUCTDEFINITIONSHAPE(S,S,(#1604,#1598));  
#1608= IFCBEAM('1EXFMHqKzCzSuCNvODSxR2c',#41,i beam1:236602',S,i beam1:222747',#1559,#1606,'236602');  
#1611= IFCPROPERTYSINGLEVALUE('Span',S,IFCPOSITIVELENGTHMEASURE(55.0833333333333),S);  
#1612= IFCPROPERTYSET('1EXFMHqKzCzSuCNxci\$Xr2c',#41,'Pset\_BeamCommon',S,(#203,#204,#1131,#1300,#1611));  
#1614= IFCRELDEFINESBYPROPERTIES('0S\_WgDr1b2t8b3oH77HHCN',#41,S,S,(#1608),#1612);  
#1618= IFCCARTESIANPOINT((0.,48.3125000000001,36.25));  
#1620= IFAXIS2PLACEMENT3D(#1618,S,S);  
#1621= IFLOCALPLACEMENT(#120,#1620);  
#1622= IFCCARTESIANPOINT((-1.29761904761941,-1.));  
#1624= IFCCARTESIANPOINT((-0.797619047619399,-1.));  
#1626= IFCCARTESIANPOINT((-0.797619047619251,-0.5833333333332875));  
#1628= IFCCARTESIANPOINT((-0.547619047619169,-0.3333333333332956));  
#1630= IFCCARTESIANPOINT((0.869047619047488,-0.333333333333467));  
#1632= IFCCARTESIANPOINT((1.11904761904725,-1.));  
#1634= IFCCARTESIANPOINT((1.45238095238059,-1.));  
#1636= IFCCARTESIANPOINT((1.4523809523813,1.));  
#1638= IFCCARTESIANPOINT((1.11904761904796,1.));  
#1640= IFCCARTESIANPOINT((0.869047619047732,0.333333333333205));  
#1642= IFCCARTESIANPOINT((-0.54761904761894,0.333333333333708));  
#1644= IFCCARTESIANPOINT((-0.7976190476187,1.));  
#1646= IFCCARTESIANPOINT((-0.797619047618689,1.));  
#1648= IFCCARTESIANPOINT((-1.2976190476187,1.));  
#1650= IFCPOLYLINE((#1622,#1624,#1626,#1628,#1630,#1632,#1634,#1636,#1638,#1640,#1642,#1644,#1646,#1648,#1622));  
#1652= IFCARBITRARYCLOSEDPROFILEDEF(.AREA.,i beam1',#1650);  
#1653= IFCCARTESIANPOINT((0.,0.,-0.805493063367081));  
#1655= IFAXIS2PLACEMENT3D(#1653,#11,#21);  
#1656= IFCEXTRUDEDAREASOLID(#1652,#1655,#19,55.08333333333333);  
#1657= IFCSTYLEDEDITEM(#1656,#1100,S);  
#1660= IFCSHAPEREPRESENTATION(#100,'Body','SweptSolid',(#1656));  
#1662= IFCCARTESIANPOINT((55.0833333333333,0.));  
#1664= IFCPOLYLINE((#9,#1662));  
#1666= IFCSHAPEREPRESENTATION(#98,'Axis','Curve2D',(#1664));  
#1668= IFCPRODUCTDEFINITIONSHAPE(S,S,(#1666,#1660));  
#1670= IFCBEAM('1EXFMHqKzCzSuCNvODSxR0o',#41,i beam1:236676',S,i beam1:222747',#1621,#1668,'236676');  
#1673= IFCPROPERTYSINGLEVALUE('Span',S,IFCPOSITIVELENGTHMEASURE(55.0833333333333),S);  
#1674= IFCPROPERTYSET('1EXFMHqKzCzSuCNxci\$Xr0o',#41,'Pset\_BeamCommon',S,(#203,#204,#1131,#1300,#1673));  
#1676= IFCRELDEFINESBYPROPERTIES('3CiSf\_umnC8Jwz8FXM\_ZS',#41,S,S,(#1670),#1674);  
#1680= IFCCARTESIANPOINT((168.,10.3124999999996,36.25));  
#1682= IFAXIS2PLACEMENT3D(#1680,#19,#13);  
#1683= IFLOCALPLACEMENT(#120,#1682);  
#1684= IFCCARTESIANPOINT((-1.29761904761941,-1.));  
#1686= IFCCARTESIANPOINT((-0.797619047619406,-1.));  
#1688= IFCCARTESIANPOINT((-0.797619047619251,-0.5833333333332873));  
#1690= IFCCARTESIANPOINT((-0.547619047619169,-0.3333333333332953));  
#1692= IFCCARTESIANPOINT((0.869047619047488,-0.333333333333469));  
#1694= IFCCARTESIANPOINT((1.11904761904725,-1.));  
#1696= IFCCARTESIANPOINT((1.45238095238059,-1.));  
#1698= IFCCARTESIANPOINT((1.4523809523813,1.));  
#1700= IFCCARTESIANPOINT((1.11904761904796,1.));  
#1702= IFCCARTESIANPOINT((0.869047619047732,0.333333333333201));  
#1704= IFCCARTESIANPOINT((-0.547619047618933,0.333333333333704));

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<p>#1706= IFCARTESIANPOINT(-0.797619047618844,0.583333333333784); #1708= IFCARTESIANPOINT(-0.797619047618689,1.); #1710= IFCARTESIANPOINT(-1.29761904761869,1.); #1712= IFCPOLYLINE((#1684,#1686,#1688,#1690,#1692,#1694,#1696,#1698,#1700,#1702,#1704,#1706,#1708,#1710,#1684)); #1714= IFCARBITRARYCLOSEDPROFILEDEF(.AREA.,i beam1',#1712); #1715= IFCARTESIANPOINT((0.,0.,-0.805493063367081)); #1717= IFCAXIS2PLACEMENT3D(#1715,#11,#21); #1718= IFCXTRUDEDAREASOLID(#1714,#1717,#19,55.0833333333334); #1719= IFCSTYLEDITEM(#1718,(#1100),S); #1722= IFCSHAPEREPRESENTATION(#100,'Body','SweptSolid',(#1718)); #1724= IFCARTESIANPOINT((55.0833333333333,0.)); #1726= IFCPOLYLINE((#9,#1724)); #1728= IFCSHAPEREPRESENTATION(#98,'Axis','Curve2D',(#1726)); #1730= IFCPRODUCTDEFINITIONSHAPE(S,S,(#1728,#1722)); #1732= IFCBEAM('1EXFMHqKzCzCUCNvODSxRfB',#41,i beam1:i beam1:237395',S,i beam1:i beam1:222747',#1683,#1730,237395'); #1735= IFCPROPERTYSINGLEVALUE('Span',S,IFCPOSITIVELENGTHMEASURE(55.0833333333333),S); #1736= IFCPROPERTYSET('1EXFMHqKzCzCUCNxcfSxRfB',#41,'Pset_BeamCommon',S,(#203,#204,#1131,#1300,#1735)); #1738= IFCREDEFINESBYPROPERTIES('2z8wMZNpfcMPCISZCYsyNq',#41,S,S,(#1732),#1736); #1742= IFCARTESIANPOINT((168.,16.6458333333329,36.25)); #1744= IFCAXIS2PLACEMENT3D(#1742,#19,#13); #1745= IFCLOCALPLACEMENT(#120,#1744); #1746= IFCARTESIANPOINT((-1.29761904761941,-1.)); #1748= IFCARTESIANPOINT((-0.797619047619406,-1.)); #1750= IFCARTESIANPOINT((-0.797619047619251,-0.583333333332871)); #1752= IFCARTESIANPOINT((-0.547619047619169,-0.333333333332953)); #1754= IFCARTESIANPOINT((0.869047619047488,-0.333333333333467)); #1756= IFCARTESIANPOINT((1.1904761904725,-1.)); #1758= IFCARTESIANPOINT((1.45238095238059,-1.)); #1760= IFCARTESIANPOINT((1.4523809523813,1.)); #1762= IFCARTESIANPOINT((1.1904761904796,1.)); #1764= IFCARTESIANPOINT((0.869047619047732,0.33333333333201)); #1766= IFCARTESIANPOINT((-0.547619047618933,0.333333333333708)); #1768= IFCARTESIANPOINT((-0.797619047618844,0.583333333333786)); #1770= IFCARTESIANPOINT((-0.797619047618689,1.)); #1772= IFCARTESIANPOINT((-1.29761904761869,1.)); #1774= IFCPOLYLINE((#1746,#1748,#1750,#1752,#1754,#1756,#1758,#1760,#1762,#1764,#1766,#1768,#1770,#1772,#1746)); #1776= IFCARBITRARYCLOSEDPROFILEDEF(.AREA.,i beam1',#1774); #1777= IFCARTESIANPOINT((0.,0.,-0.805493063367081)); #1779= IFCAXIS2PLACEMENT3D(#1777,#11,#21); #1780= IFCXTRUDEDAREASOLID(#1776,#1779,#19,55.0833333333333); #1781= IFCSTYLEDITEM(#1780,(#1100),S); #1784= IFCSHAPEREPRESENTATION(#100,'Body','SweptSolid',(#1780)); #1786= IFCARTESIANPOINT((55.0833333333333,0.)); #1788= IFCPOLYLINE((#9,#1786)); #1790= IFCSHAPEREPRESENTATION(#98,'Axis','Curve2D',(#1788)); #1792= IFCPRODUCTDEFINITIONSHAPE(S,S,(#1790,#1784)); #1794= IFCBEAM('1EXFMHqKzCzCUCNvODSxRfC',#41,i beam1:i beam1:237442',S,i beam1:i beam1:222747',#1745,#1792,237442); #1797= IFCPROPERTYSINGLEVALUE('Span',S,IFCPOSITIVELENGTHMEASURE(55.0833333333333),S); #1798= IFCPROPERTYSET('1EXFMHqKzCzCUCNxcfSxRfC',#41,'Pset_BeamCommon',S,(#203,#204,#1131,#1300,#1797)); #1800= IFCREDEFINESBYPROPERTIES('01ApUK9cb3EwGSaLQEqgz',#41,S,S,(#1794),#1798); #1804= IFCARTESIANPOINT((168.,22.9791666666663,36.25)); #1806= IFCAXIS2PLACEMENT3D(#1804,#19,#13); #1807= IFCLOCALPLACEMENT(#120,#1806); #1808= IFCARTESIANPOINT((-1.29761904761941,-1.)); #1810= IFCARTESIANPOINT((-0.797619047619406,-1.)); #1812= IFCARTESIANPOINT((-0.797619047619251,-0.583333333332871)); #1814= IFCARTESIANPOINT((-0.547619047619169,-0.333333333332953)); #1816= IFCARTESIANPOINT((0.869047619047488,-0.333333333333467)); #1818= IFCARTESIANPOINT((1.1904761904725,-1.)); #1820= IFCARTESIANPOINT((1.45238095238059,-1.)); #1822= IFCARTESIANPOINT((1.4523809523813,1.)); #1824= IFCARTESIANPOINT((1.1904761904796,1.)); #1826= IFCARTESIANPOINT((0.869047619047732,0.33333333333201)); #1828= IFCARTESIANPOINT((-0.547619047618933,0.333333333333708)); #1830= IFCARTESIANPOINT((-0.797619047618844,0.583333333333786)); #1832= IFCARTESIANPOINT((-0.797619047618689,1.)); #1834= IFCARTESIANPOINT((-1.29761904761869,1.));</p>	<p>#1836= IFCPOLYLINE((#1808,#1810,#1812,#1814,#1816,#1818,#1820,#1822,#1824,#1826,#1828,#1830,#1832,#1834,#1808)); #1838= IFCARBITRARYCLOSEDPROFILEDEF(.AREA.,i beam1',#1836); #1839= IFCARTESIANPOINT((0.,0.,-0.805493063367081)); #1841= IFCAXIS2PLACEMENT3D(#1839,#11,#21); #1842= IFCXTRUDEDAREASOLID(#1838,#1841,#19,55.0833333333334); #1843= IFCSTYLEDITEM(#1842,(#1100),S); #1846= IFCSHAPEREPRESENTATION(#100,'Body','SweptSolid',(#1842)); #1848= IFCARTESIANPOINT((55.0833333333333,0.)); #1850= IFCPOLYLINE((#9,#1848)); #1852= IFCSHAPEREPRESENTATION(#98,'Axis','Curve2D',(#1850)); #1854= IFCPRODUCTDEFINITIONSHAPE(S,S,(#1852,#1846)); #1856= IFCBEAM('1EXFMHqKzCzCUCNvODSxRfD',#41,i beam1:i beam1:237486',S,i beam1:i beam1:222747',#1807,#1854,237486); #1859= IFCPROPERTYSINGLEVALUE('Span',S,IFCPOSITIVELENGTHMEASURE(55.0833333333333),S); #1860= IFCPROPERTYSET('1EXFMHqKzCzCUCNxcfSxRfD',#41,'Pset_BeamCommon',S,(#203,#204,#1131,#1300,#1859)); #1862= IFCREDEFINESBYPROPERTIES('0H88zk7FLBm9zoLsL2f_7',#41,S,S,(#1856),#1860); #1866= IFCARTESIANPOINT((168.,29.3124999999996,36.25)); #1868= IFCAXIS2PLACEMENT3D(#1866,#19,#13); #1869= IFCLOCALPLACEMENT(#120,#1868); #1870= IFCARTESIANPOINT((-1.29761904761941,-1.)); #1872= IFCARTESIANPOINT((-0.797619047619406,-1.)); #1874= IFCARTESIANPOINT((-0.797619047619251,-0.583333333332868)); #1876= IFCARTESIANPOINT((-0.547619047619169,-0.333333333332949)); #1878= IFCARTESIANPOINT((0.869047619047488,-0.333333333333463)); #1880= IFCARTESIANPOINT((1.1904761904725,-1.)); #1882= IFCARTESIANPOINT((1.45238095238059,-1.)); #1884= IFCARTESIANPOINT((1.4523809523813,1.)); #1886= IFCARTESIANPOINT((1.1904761904796,1.)); #1888= IFCARTESIANPOINT((0.869047619047732,0.33333333333205)); #1890= IFCARTESIANPOINT((-0.547619047618933,0.333333333333711)); #1892= IFCARTESIANPOINT((-0.797619047618844,0.58333333333379)); #1894= IFCARTESIANPOINT((-0.797619047618689,1.)); #1896= IFCARTESIANPOINT((-1.29761904761869,1.)); #1898= IFCPOLYLINE((#1870,#1872,#1874,#1876,#1878,#1880,#1882,#1884,#1886,#1888,#1890,#1892,#1894,#1896,#1870)); #1900= IFCARBITRARYCLOSEDPROFILEDEF(.AREA.,i beam1',#1898); #1901= IFCARTESIANPOINT((0.,0.,-0.805493063367081)); #1903= IFCAXIS2PLACEMENT3D(#1901,#11,#21); #1904= IFCXTRUDEDAREASOLID(#1900,#1903,#19,55.0833333333334); #1905= IFCSTYLEDITEM(#1904,(#1100),S); #1908= IFCSHAPEREPRESENTATION(#100,'Body','SweptSolid',(#1904)); #1910= IFCARTESIANPOINT((55.0833333333333,0.)); #1912= IFCPOLYLINE((#9,#1910)); #1914= IFCSHAPEREPRESENTATION(#98,'Axis','Curve2D',(#1912)); #1916= IFCPRODUCTDEFINITIONSHAPE(S,S,(#1914,#1908)); #1918= IFCBEAM('1EXFMHqKzCzCUCNvODSxRfE',#41,i beam1:i beam1:237530',S,i beam1:i beam1:222747',#1869,#1916,237530); #1921= IFCPROPERTYSINGLEVALUE('Span',S,IFCPOSITIVELENGTHMEASURE(55.0833333333333),S); #1922= IFCPROPERTYSET('1EXFMHqKzCzCUCNxcfSxRfE',#41,'Pset_BeamCommon',S,(#203,#204,#1131,#1300,#1921)); #1924= IFCREDEFINESBYPROPERTIES('1XRbPs3n6OBqhvHNd_4',#41,S,S,(#1918),#1922); #1928= IFCARTESIANPOINT((168.,35.6458333333329,36.25)); #1930= IFCAXIS2PLACEMENT3D(#1928,#19,#13); #1931= IFCLOCALPLACEMENT(#120,#1930); #1932= IFCARTESIANPOINT((-1.29761904761942,-1.)); #1934= IFCARTESIANPOINT((-0.79761904761942,-1.)); #1936= IFCARTESIANPOINT((-0.797619047619259,-0.583333333332863)); #1938= IFCARTESIANPOINT((-0.547619047619174,-0.333333333332949)); #1940= IFCARTESIANPOINT((0.869047619047483,-0.333333333333479)); #1942= IFCARTESIANPOINT((1.1904761904724,-1.)); #1944= IFCARTESIANPOINT((1.45238095238058,-1.)); #1946= IFCARTESIANPOINT((1.45238095238132,1.)); #1948= IFCARTESIANPOINT((1.1904761904798,1.)); #1950= IFCARTESIANPOINT((0.869047619047736,0.33333333333192)); #1952= IFCARTESIANPOINT((-0.547619047618928,0.33333333333716)); #1954= IFCARTESIANPOINT((-0.797619047618836,0.583333333333801)); #1956= IFCARTESIANPOINT((-0.797619047618674,1.)); #1958= IFCARTESIANPOINT((-1.29761904761867,1.)); #1960= IFCPOLYLINE((#1932,#1934,#1936,#1938,#1940,#1942,#1944,#1946,#1948,#1950,#1952,#1954,#1956,#1958,#1932)); #1962= IFCARBITRARYCLOSEDPROFILEDEF(.AREA.,i beam1',#1960);</p>
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Appendix

#1963= IFCCARTESIANPOINT((0.,0.,-0.805493063367081));  
#1965= IFCAxis2PLACEMENT3D(#1963,#11,#21);  
#1966=  
IFCETRUEDEDAREASOLID(#1962,#1965,#19.55.0833333333333333);  
#1967= IFCSTYLEDITEM(#1966,(#1100),S);  
#1970=  
IFCSHAPEREPRESENTATION(#100,'Body','SweptSolid',(#1966));  
#1972= IFCCARTESIANPOINT((55.08333333333333,0.));  
#1974= IFCPOLYLINE((#9,#1972));  
#1976= IFCSHAPEREPRESENTATION(#98,'Axis','Curve2D',(#1974));  
#1978= IFCPRODUCTDEFINITIONSHAPE(S,S,(#1976,#1970));  
#1980= IFCBEAM('1EXFMHqKzCzCuNvODSxso',#41,'i beam1:i beam1:237582',S,'i beam1:i beam1:222747',#1931,#1978,'237582');  
#1983=  
IFCPROPERTYSINGLEVALUE('Span',S,IFCPOSITIVELENGTHMEASURE(55.08333333333333),S);  
#1984=  
IFCPROPERTYSET('1EXFMHqKzCzCuNxcfSXso',#41,'Pset\_BeamCommon',S,(#203,#204,#1131,#1300,#1983));  
#1986=  
IFCRELDEFINESBYPROPERTIES('0EIMiRdYfiHwiA5QoIJ7JP',#41,S,S,(#1980,#1984);  
#1990= IFCCARTESIANPOINT((168.,48.31249999999999,36.25));  
#1992= IFCAxis2PLACEMENT3D(#1990,#19,#13);  
#1993= IFCLOCALPLACEMENT(#120,#1992);  
#1994= IFCCARTESIANPOINT((-1.29761904761941,-1.));  
#1996= IFCCARTESIANPOINT((-0.797619047619406,-1.));  
#1998= IFCCARTESIANPOINT((-0.797619047619251,-0.5833333333332882));  
#2000= IFCCARTESIANPOINT((-0.547619047619169,-0.333333333332964));  
#2002= IFCCARTESIANPOINT((0.869047619047488,-0.333333333333474));  
#2004= IFCCARTESIANPOINT((1.11904761904725,-1.));  
#2006= IFCCARTESIANPOINT((1.45238095238059,-1.));  
#2008= IFCCARTESIANPOINT((1.4523809523813,1.));  
#2010= IFCCARTESIANPOINT((1.11904761904796,1.));  
#2012=  
IFCCARTESIANPOINT((0.869047619047732,0.333333333333197));  
#2014= IFCCARTESIANPOINT((-0.547619047618933,0.333333333333701));  
#2016= IFCCARTESIANPOINT((-0.797619047618844,0.583333333333782));  
#2018= IFCCARTESIANPOINT((-0.797619047618689,1.));  
#2020= IFCCARTESIANPOINT((-1.29761904761869,1.));  
#2022=  
IFCPOLYLINE((#1994,#1996,#1998,#2000,#2002,#2004,#2006,#2008,#2010,#2012,#2014,#2016,#2018,#2020,#1994));  
#2024= IFCARBITRARYCLOSEDPROFILEDEF(.AREA.,'i beam1',#2022);  
#2025= IFCCARTESIANPOINT((0.,0.,-0.805493063367081));  
#2027= IFCAxis2PLACEMENT3D(#2025,#11,#21);  
#2028=  
IFCETRUEDEDAREASOLID(#2024,#2027,#19.55.0833333333333333);  
#2029= IFCSTYLEDITEM(#2028,(#1100),S);  
#2032=  
IFCSHAPEREPRESENTATION(#100,'Body','SweptSolid',(#2028));  
#2034= IFCCARTESIANPOINT((55.08333333333333,0.));  
#2036= IFCPOLYLINE((#9,#2034));  
#2038= IFCSHAPEREPRESENTATION(#98,'Axis','Curve2D',(#2036));  
#2040= IFCPRODUCTDEFINITIONSHAPE(S,S,(#2038,#2032));  
#2042= IFCBEAM('1EXFMHqKzCzCuNvODSxso3',#41,'i beam1:i beam1:237621',S,'i beam1:i beam1:222747',#1993,#2040,'237621');  
#2045=  
IFCPROPERTYSINGLEVALUE('Span',S,IFCPOSITIVELENGTHMEASURE(55.08333333333333),S);  
#2046=  
IFCPROPERTYSET('1EXFMHqKzCzCuNxcfSXso3',#41,'Pset\_BeamCommon',S,(#203,#204,#1131,#1300,#2045));  
#2048=  
IFCRELDEFINESBYPROPERTIES('2dxlp\_ttbBlvfcTshpQAKY',#41,S,S,(#2042),#2046);  
#2052= IFCCARTESIANPOINT((168.,48.31249999999999,36.25));  
#2054= IFCAxis2PLACEMENT3D(#2052,#19,#13);  
#2055= IFCLOCALPLACEMENT(#120,#2054);  
#2056= IFCCARTESIANPOINT((-1.29761904761941,-1.));  
#2058= IFCCARTESIANPOINT((-0.797619047619406,-1.));  
#2060= IFCCARTESIANPOINT((-0.797619047619251,-0.5833333333332875));  
#2062= IFCCARTESIANPOINT((-0.547619047619169,-0.333333333332949));  
#2064= IFCCARTESIANPOINT((0.869047619047488,-0.333333333333467));  
#2066= IFCCARTESIANPOINT((1.11904761904725,-1.));  
#2068= IFCCARTESIANPOINT((1.45238095238059,-1.));  
#2070= IFCCARTESIANPOINT((1.4523809523813,1.));  
#2072= IFCCARTESIANPOINT((1.11904761904796,1.));  
#2074=  
IFCCARTESIANPOINT((0.869047619047732,0.333333333333205));  
#2076= IFCCARTESIANPOINT((-0.547619047618933,0.333333333333708));  
#2078= IFCCARTESIANPOINT((-0.797619047618844,0.583333333333799));  
#2080= IFCCARTESIANPOINT((-0.797619047618689,1.));  
#2082= IFCCARTESIANPOINT((-1.29761904761869,1.));  
#2084=  
IFCPOLYLINE((#2056,#2058,#2060,#2062,#2064,#2066,#2068,#2070,#2072,#2074,#2076,#2078,#2080,#2082,#2056));  
#2086= IFCARBITRARYCLOSEDPROFILEDEF(.AREA.,'i beam1',#2084);  
#2087= IFCCARTESIANPOINT((0.,0.,-0.805493063367081));  
#2089= IFCAxis2PLACEMENT3D(#2087,#11,#21);  
#2090=  
IFCETRUEDEDAREASOLID(#2086,#2089,#19.55.0833333333333333);  
#2091= IFCSTYLEDITEM(#2090,(#1100),S);

#2094=  
IFCSHAPEREPRESENTATION(#100,'Body','SweptSolid',(#2090));  
#2096= IFCCARTESIANPOINT((55.08333333333333,0.));  
#2098= IFCPOLYLINE((#9,#2096));  
#2100= IFCSHAPEREPRESENTATION(#98,'Axis','Curve2D',(#2098));  
#2102= IFCPRODUCTDEFINITIONSHAPE(S,S,(#2100,#2094));  
#2104= IFCBEAM('1EXFMHqKzCzCuNvODSxsp5',#41,'i beam1:i beam1:237674',S,'i beam1:i beam1:222747',#2055,#2102,'237674');  
#2107=  
IFCPROPERTYSINGLEVALUE('Span',S,IFCPOSITIVELENGTHMEASURE(55.08333333333333),S);  
#2108=  
IFCPROPERTYSET('1EXFMHqKzCzCuNxcfSXsp5',#41,'Pset\_BeamCommon',S,(#203,#204,#1131,#1300,#2107));  
#2110=  
IFCRELDEFINESBYPROPERTIES('1cJ6X\_D3rE5wdCcqjMASm',#41,S,S,(#2104),#2108);  
#2114=  
IFCCARTESIANPOINT((55.08333333333333,41.97916666666666,36.25));  
#2116= IFCAxis2PLACEMENT3D(#2114,S,S);  
#2117= IFCLOCALPLACEMENT(#120,#2116);  
#2118= IFCCARTESIANPOINT((-1.29761904761942,-1.));  
#2120= IFCCARTESIANPOINT((-0.79761904761942,-1.));  
#2122= IFCCARTESIANPOINT((-0.797619047619259,-0.583333333332849));  
#2124= IFCCARTESIANPOINT((-0.547619047619174,-0.333333333332927));  
#2126= IFCCARTESIANPOINT((0.869047619047483,-0.333333333333465));  
#2128= IFCCARTESIANPOINT((1.11904761904724,-1.));  
#2130= IFCCARTESIANPOINT((1.45238095238058,-1.));  
#2132= IFCCARTESIANPOINT((1.45238095238132,1.));  
#2134= IFCCARTESIANPOINT((1.11904761904798,1.));  
#2136=  
IFCCARTESIANPOINT((0.869047619047736,0.333333333333206));  
#2138= IFCCARTESIANPOINT((-0.547619047618928,0.33333333333373));  
#2140= IFCCARTESIANPOINT((-0.797619047618836,0.583333333333815));  
#2142= IFCCARTESIANPOINT((-0.797619047618674,1.));  
#2144= IFCCARTESIANPOINT((-1.29761904761867,1.));  
#2146=  
IFCPOLYLINE((#2118,#2120,#2122,#2124,#2126,#2128,#2130,#2132,#2134,#2136,#2138,#2140,#2142,#2144,#2118));  
#2148= IFCARBITRARYCLOSEDPROFILEDEF(.AREA.,'i beam1',#2146);  
#2149= IFCCARTESIANPOINT((0.,0.,-0.805493063367081));  
#2151= IFCAxis2PLACEMENT3D(#2149,#11,#21);  
#2152=  
IFCETRUEDEDAREASOLID(#2148,#2151,#19.57.833333333333334);  
#2153= IFCSTYLEDITEM(#2152,(#1100),S);  
#2156=  
IFCSHAPEREPRESENTATION(#100,'Body','SweptSolid',(#2152));  
#2158= IFCCARTESIANPOINT((57.8333333333334,0.));  
#2160= IFCPOLYLINE((#9,#2158));  
#2162= IFCSHAPEREPRESENTATION(#98,'Axis','Curve2D',(#2160));  
#2164= IFCPRODUCTDEFINITIONSHAPE(S,S,(#2162,#2156));  
#2166= IFCBEAM('3FzJf985D4uedEjJntAbV',#41,'i beam1:i beam1:241314',S,'i beam1:i beam1:222747',#2117,#2164,'241314');  
#2169=  
IFCPROPERTYSINGLEVALUE('Span',S,IFCPOSITIVELENGTHMEASURE(57.8333333333334),S);  
#2170=  
IFCPROPERTYSET('3FzJf985D4uedEjJntAbV',#41,'Pset\_BeamCommon',S,(#203,#204,#1131,#1300,#2169));  
#2172=  
IFCRELDEFINESBYPROPERTIES('1OH7Ssu4b40gYsuE8KiF5R',#41,S,S,(#2166),#2170);  
#2176= IFCCARTESIANPOINT((0.,0.,3.97916666666666,36.25));  
#2178= IFCAxis2PLACEMENT3D(#2176,S,S);  
#2179= IFCLOCALPLACEMENT(#120,#2178);  
#2180= IFCCARTESIANPOINT((-1.29761904761941,-1.));  
#2182= IFCCARTESIANPOINT((-0.797619047619407,-1.));  
#2184= IFCCARTESIANPOINT((-0.797619047619252,-0.58333333333287));  
#2186= IFCCARTESIANPOINT((-0.54761904761917,-0.333333333332951));  
#2188= IFCCARTESIANPOINT((0.869047619047488,-0.333333333333467));  
#2190= IFCCARTESIANPOINT((1.11904761904725,-1.));  
#2192= IFCCARTESIANPOINT((1.45238095238059,-1.));  
#2194= IFCCARTESIANPOINT((1.45238095238131,1.));  
#2196= IFCCARTESIANPOINT((1.11904761904796,1.));  
#2198=  
IFCCARTESIANPOINT((0.869047619047732,0.333333333333201));  
#2200= IFCCARTESIANPOINT((-0.547619047618932,0.333333333333708));  
#2202= IFCCARTESIANPOINT((-0.797619047618843,0.583333333333787));  
#2204= IFCCARTESIANPOINT((-0.797619047618688,1.));  
#2206= IFCCARTESIANPOINT((-1.29761904761869,1.));  
#2208=  
IFCPOLYLINE((#2180,#2182,#2184,#2186,#2188,#2190,#2192,#2194,#2196,#2198,#2200,#2202,#2204,#2206,#2180));  
#2210= IFCARBITRARYCLOSEDPROFILEDEF(.AREA.,'i beam1',#2208);  
#2211= IFCCARTESIANPOINT((0.,0.,-0.805493063367081));  
#2213= IFCAxis2PLACEMENT3D(#2211,#11,#21);  
#2214=  
IFCETRUEDEDAREASOLID(#2210,#2213,#19.55.0833333333333333);  
#2215= IFCSTYLEDITEM(#2214,(#1100),S);  
#2218=  
IFCSHAPEREPRESENTATION(#100,'Body','SweptSolid',(#2214));  
#2220= IFCCARTESIANPOINT((55.08333333333333,0.));

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#2222= IFCPOLYLINE(#9,#2220);
#2224= IFCSHAPEPRESENTATION(#98,'Axis','Curve2D',(#2222));
#2226= IFCPRODUCTDEFINITIONSHAPE($,$,#2224,#2218);
#2228= IFCBEAM('3FJzF985D4uedEijINTAYT',#41,'i beam1:i
beam1:241504',S,'i beam1:i beam1:222747',#2179,#2226,'241504');
#2231=
IFCPROPERTYSET('Span',S,IFCPOSITIVELENGTHME
ASURE(55.08333333333333),S);
#2232=
IFCPROPERTYSET('3FJzF985D4uedEkJBNTAYT',#41,'Pset_BeamCo
mmon',S,(#203,#204,#1131,#1300,#2231));
#2234=
IFCRELDEFINESBYPROPERTIES('0ue8oCmXnCVhZy7f5l1Sw0',#41,
S,S,(#2228),#2232);
#2238= IFCCARTESIANPOINT((168.,3.97916666666625,36.25));
#2240= IFCAxis2PLACEMENT3D(#2238,#19,#13);
#2241= IFLOCALPLACEMENT(#120,#2240);
#2242= IFCCARTESIANPOINT((-1.29761904761941,-1.));
#2244= IFCCARTESIANPOINT((-0.797619047619406,-1.));
#2246= IFCCARTESIANPOINT((-0.797619047619251,-
0.583333333332871));
#2248= IFCCARTESIANPOINT((-0.547619047619169,-
0.33333333332951));
#2250= IFCCARTESIANPOINT((0.869047619047488,-
0.33333333333467));
#2252= IFCCARTESIANPOINT((1.11904761904725,-1.));
#2254= IFCCARTESIANPOINT((1.45238095238059,-1.));
#2256= IFCCARTESIANPOINT((1.4523809523813,1.));
#2258= IFCCARTESIANPOINT((1.11904761904796,1.));
#2260=
IFCCARTESIANPOINT((0.869047619047732,0.33333333333201));
#2262= IFCCARTESIANPOINT((-
0.547619047618933,0.33333333333707));
#2264= IFCCARTESIANPOINT((-
0.797619047618844,0.583333333333786));
#2266= IFCCARTESIANPOINT((-0.797619047618689,1.));
#2268= IFCCARTESIANPOINT((-1.29761904761869,1.));
#2270=
IFCPOLYLINE((#2242,#2244,#2246,#2248,#2250,#2252,#2254,#2256,
#2258,#2260,#2262,#2264,#2266,#2268,#2270));
#2272= IFCARBITRARYCLOSEDPROFILEDEF(.AREA.,'i
beam1',#2270);
#2273= IFCCARTESIANPOINT((0.,0.,-0.805493063367081));
#2275= IFCAxis2PLACEMENT3D(#2273,#11,#21);
#2276=
IFCEXTRUDEDAREASOLID(#2272,#2275,#19,55.08333333333334);
#2277= IFCSTYLEDITEM(#2276,(#1100),S);
#2280=
IFCSHAPEPRESENTATION(#100,'Body','SweptSolid',(#2276));
#2282= IFCCARTESIANPOINT((55.0833333333333,0.));
#2284= IFCPOLYLINE(#9,#2282);
#2286= IFCSHAPEPRESENTATION(#98,'Axis','Curve2D',(#2284));
#2288= IFCPRODUCTDEFINITIONSHAPE($,$,#2286,#2280);
#2290= IFCBEAM('3FJzF985D4uedEijINTAXQ',#41,'i beam1:i
beam1:241575',S,'i beam1:i beam1:222747',#2241,#2288,'241575');
#2293=
IFCPROPERTYSET('Span',S,IFCPOSITIVELENGTHME
ASURE(55.08333333333333),S);
#2294=
IFCPROPERTYSET('3FJzF985D4uedEkJBNTAXQ',#41,'Pset_BeamCo
mmon',S,(#203,#204,#1131,#1300,#2293));
#2296=
IFCRELDEFINESBYPROPERTIES('2r7gw3_RPAIfSnu9KI3OAN',#41,
S,S,(#2290),#2294);
#2300=
IFCCARTESIANPOINT((55.0833333333333,3.97916666666662,36.25)
);
#2302= IFCAxis2PLACEMENT3D(#2300,S,S);
#2303= IFLOCALPLACEMENT(#120,#2302);
#2304= IFCCARTESIANPOINT((-1.29761904761942,-1.));
#2306= IFCCARTESIANPOINT((-0.79761904761942,-1.));
#2308= IFCCARTESIANPOINT((-0.797619047619259,-
0.583333333332853));
#2310= IFCCARTESIANPOINT((-0.547619047619174,-
0.333333333332937));
#2312= IFCCARTESIANPOINT((0.869047619047483,-
0.33333333333471));
#2314= IFCCARTESIANPOINT((1.11904761904724,-1.));
#2316= IFCCARTESIANPOINT((1.45238095238058,-1.));
#2318= IFCCARTESIANPOINT((1.45238095238132,1.));
#2320= IFCCARTESIANPOINT((1.11904761904797,1.));
#2322=
IFCCARTESIANPOINT((0.869047619047736,0.33333333333197));
#2324= IFCCARTESIANPOINT((-
0.547619047618928,0.33333333333721));
#2326= IFCCARTESIANPOINT((-
0.797619047618836,0.58333333333804));
#2328= IFCCARTESIANPOINT((-0.797619047618675,1.));
#2330= IFCCARTESIANPOINT((-1.29761904761868,1.));
#2332=
IFCPOLYLINE((#2304,#2306,#2308,#2310,#2312,#2314,#2316,#2318,
#2320,#2322,#2324,#2326,#2328,#2330,#2304));
#2334= IFCARBITRARYCLOSEDPROFILEDEF(.AREA.,'i
beam1',#2332);
#2335= IFCCARTESIANPOINT((0.,0.,-0.805493063367081));
#2337= IFCAxis2PLACEMENT3D(#2335,#11,#21);
#2338=
IFCEXTRUDEDAREASOLID(#2334,#2337,#19,57.8333333333333);
#2339= IFCSTYLEDITEM(#2338,(#1100),S);
#2342=
IFCSHAPEPRESENTATION(#100,'Body','SweptSolid',(#2338));
#2344= IFCCARTESIANPOINT((57.8333333333333,0.));
#2346= IFCPOLYLINE(#9,#2344);
#2348= IFCSHAPEPRESENTATION(#98,'Axis','Curve2D',(#2346));
#2350= IFCPRODUCTDEFINITIONSHAPE($,$,#2348,#2342);
#2352= IFCBEAM('3FJzF985D4uedEijINTBVE',#41,'i beam1:i
beam1:241715',S,'i beam1:i beam1:222747',#2303,#2350,'241715');
#2355=
IFCPROPERTYSET('Span',S,IFCPOSITIVELENGTHME
ASURE(57.83333333333333),S);
#2356=
IFCPROPERTYSET('3FJzF985D4uedEkJBNTBVE',#41,'Pset_BeamCo
mmon',S,(#203,#204,#1131,#1300,#2355));
#2358=
IFCRELDEFINESBYPROPERTIES('34jbxCbIP5Avru9a5ckJTU',#41,S,
S,(#2352),#2356);
#2362= IFCCARTESIANPOINT((55.0833333333333,48.3125,36.25));
#2364= IFCAxis2PLACEMENT3D(#2362,S,S);
#2365= IFLOCALPLACEMENT(#120,#2364);
#2366= IFCCARTESIANPOINT((-1.29761904761942,-1.));
#2368= IFCCARTESIANPOINT((-0.797619047619413,-1.));
#2370= IFCCARTESIANPOINT((-0.797619047619259,-
0.583333333332863));
#2372= IFCCARTESIANPOINT((-0.547619047619174,-
0.333333333332949));
#2374= IFCCARTESIANPOINT((0.869047619047483,-
0.33333333333479));
#2376= IFCCARTESIANPOINT((1.11904761904724,-1.));
#2378= IFCCARTESIANPOINT((1.45238095238058,-1.));
#2380= IFCCARTESIANPOINT((1.45238095238132,1.));
#2382= IFCCARTESIANPOINT((1.11904761904798,1.));
#2384=
IFCCARTESIANPOINT((0.869047619047736,0.33333333333192));
#2386= IFCCARTESIANPOINT((-
0.547619047618935,0.33333333333716));
#2388= IFCCARTESIANPOINT((-
0.797619047618836,0.58333333333801));
#2390= IFCCARTESIANPOINT((-0.797619047618674,1.));
#2392= IFCCARTESIANPOINT((-1.29761904761868,1.));
#2394=
IFCPOLYLINE((#2366,#2368,#2370,#2372,#2374,#2376,#2378,#2380,
#2382,#2384,#2386,#2388,#2390,#2392,#2366));
#2396= IFCARBITRARYCLOSEDPROFILEDEF(.AREA.,'i
beam1',#2394);
#2397= IFCCARTESIANPOINT((0.,0.,-0.805493063367081));
#2399= IFCAxis2PLACEMENT3D(#2397,#11,#21);
#2400=
IFCEXTRUDEDAREASOLID(#2396,#2399,#19,57.83333333333334);
#2401= IFCSTYLEDITEM(#2400,(#1100),S);
#2404=
IFCSHAPEPRESENTATION(#100,'Body','SweptSolid',(#2400));
#2406= IFCCARTESIANPOINT((57.8333333333333,0.));
#2408= IFCPOLYLINE(#9,#2406);
#2410= IFCSHAPEPRESENTATION(#98,'Axis','Curve2D',(#2408));
#2412= IFCPRODUCTDEFINITIONSHAPE($,$,#2410,#2404);
#2414= IFCBEAM('3FJzF985D4uedEijINTBNW',#41,'i beam1:i
beam1:242205',S,'i beam1:i beam1:222747',#2365,#2412,'242205');
#2417=
IFCPROPERTYSET('Span',S,IFCPOSITIVELENGTHME
ASURE(57.83333333333333),S);
#2418=
IFCPROPERTYSET('3FJzF985D4uedEkJBNTBNW',#41,'Pset_BeamCo
mmon',S,(#203,#204,#1131,#1300,#2417));
#2420=
IFCRELDEFINESBYPROPERTIES('02KYLCLGr3bxuVJInuJiV5',#41,
S,S,(#2414),#2418);
#2424=
IFCCARTESIANPOINT((55.0833333333333,35.6458333333333,36.25)
);
#2426= IFCAxis2PLACEMENT3D(#2424,S,S);
#2427= IFLOCALPLACEMENT(#120,#2426);
#2428= IFCCARTESIANPOINT((-1.29761904761942,-1.));
#2430= IFCCARTESIANPOINT((-0.79761904761942,-1.));
#2432= IFCCARTESIANPOINT((-0.797619047619259,-
0.583333333332849));
#2434= IFCCARTESIANPOINT((-0.547619047619174,-
0.333333333332934));
#2436= IFCCARTESIANPOINT((0.869047619047483,-
0.33333333333465));
#2438= IFCCARTESIANPOINT((1.11904761904724,-1.));
#2440= IFCCARTESIANPOINT((1.45238095238058,-1.));
#2442= IFCCARTESIANPOINT((1.45238095238132,1.));
#2444= IFCCARTESIANPOINT((1.11904761904798,1.));
#2446=
IFCCARTESIANPOINT((0.869047619047736,0.33333333333206));
#2448= IFCCARTESIANPOINT((-
0.547619047618928,0.3333333333373));
#2450= IFCCARTESIANPOINT((-
0.797619047618836,0.58333333333815));
#2452= IFCCARTESIANPOINT((-0.797619047618674,1.));
#2454= IFCCARTESIANPOINT((-1.29761904761867,1.));
#2456=
IFCPOLYLINE((#2428,#2430,#2432,#2434,#2436,#2438,#2440,#2442,
#2444,#2446,#2448,#2450,#2452,#2454,#2428));
#2458= IFCARBITRARYCLOSEDPROFILEDEF(.AREA.,'i
beam1',#2456);
#2459= IFCCARTESIANPOINT((0.,0.,-0.805493063367081));
#2461= IFCAxis2PLACEMENT3D(#2459,#11,#21);
#2462=
IFCEXTRUDEDAREASOLID(#2458,#2461,#19,57.83333333333334);
#2463= IFCSTYLEDITEM(#2462,(#1100),S);
#2466=
IFCSHAPEPRESENTATION(#100,'Body','SweptSolid',(#2462));
#2468= IFCCARTESIANPOINT((57.8333333333333,0.));
#2470= IFCPOLYLINE(#9,#2468);
#2472= IFCSHAPEPRESENTATION(#98,'Axis','Curve2D',(#2470));
#2474= IFCPRODUCTDEFINITIONSHAPE($,$,#2472,#2466);
#2476= IFCBEAM('3FJzF985D4uedEijINTBLZ',#41,'i beam1:i
beam1:242304',S,'i beam1:i beam1:222747',#2427,#2474,'242304');

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## Appendix

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#2479=
IFCPROPERTYSET('Span',S,IFCPOSITIVELENGTHMEASUREMENT,S);
#2480=
IFCPROPERTYSET('3FJzF985D4uedEkJBNTBLZ',#41,'Pset_BeamCommon',S,(#203,#204,#1131,#1300,#2479));
#2482=
IFCRELDEFINESBYPROPERTIES('31hp7DlkHBFe_FrSxyIrbt',#41,S,(#2476),#2480);
#2486= IFCCARTESIANPOINT((55.0833333333333,29.3125,36.25));
#2488= IFCCARTESIANPOINT((55.0833333333333,29.3125,36.25));
#2489= IFLOCALPLACEMENT(#120,#2488);
#2490= IFCCARTESIANPOINT((-1.29761904761943,-1.));
#2492= IFCCARTESIANPOINT((-0.797619047619428,-1.));
#2494= IFCCARTESIANPOINT((-0.797619047619264,-0.58333333332843));
#2496= IFCCARTESIANPOINT((-0.547619047619177,-0.33333333332931));
#2498= IFCCARTESIANPOINT((0.869047619047481,-0.33333333333475));
#2500= IFCCARTESIANPOINT((1.11904761904723,-1.));
#2502= IFCCARTESIANPOINT((1.45238095238057,-1.));
#2504= IFCCARTESIANPOINT((1.45238095238133,1.));
#2506= IFCCARTESIANPOINT((1.11904761904798,1.));
#2508= IFCCARTESIANPOINT((0.869047619047739,0.33333333333193));
#2510= IFCCARTESIANPOINT((-0.547619047618925,0.3333333333373));
#2512= IFCCARTESIANPOINT((-0.797619047618831,0.58333333333814));
#2514= IFCCARTESIANPOINT((-0.797619047618667,1.));
#2516= IFCCARTESIANPOINT((-1.29761904761867,1.));
#2518= IFCPOLYLINE((#2490,#2492,#2494,#2496,#2498,#2500,#2502,#2504,#2506,#2508,#2510,#2512,#2514,#2516,#2490));
#2520= IFCARBITRARYCLOSEDPROFILEDEF('AREA',i,beam1',#2518);
#2521= IFCCARTESIANPOINT((0.,0.,-0.805493063367081));
#2523= IFLOCALPLACEMENT3D(#2521,#11,#21);
#2524= IFEXTRUDEDAREASOLID(#2520,#2523,#19,57.8333333333333);
#2525= IFSTYLELITEM(#2524,(#1100),S);
#2528= IFCSHAPEREPRESENTATION(#100,'Body','SweptSolid',(#2524));
#2530= IFCCARTESIANPOINT((57.8333333333334,0.));
#2532= IFCPOLYLINE((#9,#2530));
#2534= IFCSHAPEREPRESENTATION(#98,'Axis','Curve2D',(#2532));
#2536= IFPRODUCTDEFINITIONSHAPE(S,S,(#2534,#2528));
#2538= IFCBEAM('3FJzF985D4uedEijINTBLZ',#41,i,beam1:242335',S,i,beam1:222747',#2489,#2536,'242335');
#2541= IFCPROPERTYSET('Span',S,IFCPOSITIVELENGTHMEASUREMENT,S);
#2542= IFCPROPERTYSET('3FJzF985D4uedEkJBNTBLY',#41,'Pset_BeamCommon',S,(#203,#204,#1131,#1300,#2541));
#2544= IFCRELDEFINESBYPROPERTIES('1OXZZL0954b8vosxL3Quj7',#41,S,(#2538),#2542);
#2548= IFCCARTESIANPOINT((55.0833333333333,22.9791666666666,36.25));
#2550= IFLOCALPLACEMENT3D(#2548,S,S);
#2551= IFLOCALPLACEMENT(#120,#2550);
#2552= IFCCARTESIANPOINT((-1.29761904761943,-1.));
#2554= IFCCARTESIANPOINT((-0.797619047619428,-1.));
#2556= IFCCARTESIANPOINT((-0.797619047619264,-0.58333333332843));
#2558= IFCCARTESIANPOINT((-0.547619047619177,-0.33333333332927));
#2560= IFCCARTESIANPOINT((0.869047619047481,-0.33333333333471));
#2562= IFCCARTESIANPOINT((1.11904761904723,-1.));
#2564= IFCCARTESIANPOINT((1.45238095238057,-1.));
#2566= IFCCARTESIANPOINT((1.45238095238133,1.));
#2568= IFCCARTESIANPOINT((1.11904761904798,1.));
#2570= IFCCARTESIANPOINT((0.869047619047739,0.33333333333197));
#2572= IFCCARTESIANPOINT((-0.547619047618925,0.33333333333734));
#2574= IFCCARTESIANPOINT((-0.797619047618831,0.58333333333817));
#2576= IFCCARTESIANPOINT((-0.797619047618667,1.));
#2578= IFCCARTESIANPOINT((-1.29761904761867,1.));
#2580= IFCPOLYLINE((#2552,#2554,#2556,#2558,#2560,#2562,#2564,#2566,#2568,#2570,#2572,#2574,#2576,#2578,#2580));
#2582= IFCARBITRARYCLOSEDPROFILEDEF('AREA',i,beam1',#2580);
#2583= IFCCARTESIANPOINT((0.,0.,-0.805493063367081));
#2585= IFLOCALPLACEMENT3D(#2583,#11,#21);
#2586= IFEXTRUDEDAREASOLID(#2582,#2585,#19,57.8333333333334);
#2587= IFSTYLELITEM(#2586,(#1100),S);
#2590= IFCSHAPEREPRESENTATION(#100,'Body','SweptSolid',(#2586));
#2592= IFCCARTESIANPOINT((57.8333333333334,0.));
#2594= IFCPOLYLINE((#9,#2592));
#2596= IFCSHAPEREPRESENTATION(#98,'Axis','Curve2D',(#2594));
#2598= IFPRODUCTDEFINITIONSHAPE(S,S,(#2596,#2590));
#2600= IFCBEAM('3FJzF985D4uedEijINTBKI',#41,i,beam1:242386',S,i,beam1:222747',#2551,#2598,'242386');
#2603= IFCPROPERTYSET('Span',S,IFCPOSITIVELENGTHMEASUREMENT,S);
#2604= IFCPROPERTYSET('3FJzF985D4uedEkJBNTBKI',#41,'Pset_BeamCommon',S,(#203,#204,#1131,#1300,#2603));
#2606= IFCRELDEFINESBYPROPERTIES('3Rxt82c5rC6FOOCKS8Gvn9',#41,S,(#2600),#2604);
#2610= IFCCARTESIANPOINT((55.0833333333333,16.6458333333333,36.25));
#2612= IFLOCALPLACEMENT3D(#2610,S,S);
#2613= IFLOCALPLACEMENT(#120,#2612);
#2614= IFCCARTESIANPOINT((-1.29761904761943,-1.));
#2616= IFCCARTESIANPOINT((-0.797619047619428,-1.));
#2618= IFCCARTESIANPOINT((-0.797619047619264,-0.58333333332843));
#2620= IFCCARTESIANPOINT((-0.547619047619177,-0.33333333332931));
#2622= IFCCARTESIANPOINT((0.869047619047481,-0.33333333333475));
#2624= IFCCARTESIANPOINT((1.11904761904723,-1.));
#2626= IFCCARTESIANPOINT((1.45238095238057,-1.));
#2628= IFCCARTESIANPOINT((1.45238095238133,1.));
#2630= IFCCARTESIANPOINT((1.11904761904798,1.));
#2632= IFCCARTESIANPOINT((0.869047619047739,0.33333333333193));
#2634= IFCCARTESIANPOINT((-0.547619047618925,0.3333333333373));
#2636= IFCCARTESIANPOINT((-0.797619047618831,0.58333333333814));
#2638= IFCCARTESIANPOINT((-0.797619047618667,1.));
#2640= IFCCARTESIANPOINT((-1.29761904761867,1.));
#2642= IFCPOLYLINE((#2614,#2616,#2618,#2620,#2622,#2624,#2626,#2628,#2630,#2632,#2634,#2636,#2638,#2640,#2614));
#2644= IFCARBITRARYCLOSEDPROFILEDEF('AREA',i,beam1',#2642);
#2645= IFCCARTESIANPOINT((0.,0.,-0.805493063367081));
#2647= IFLOCALPLACEMENT3D(#2645,#11,#21);
#2648= IFEXTRUDEDAREASOLID(#2644,#2647,#19,57.8333333333333);
#2649= IFSTYLELITEM(#2648,(#1100),S);
#2652= IFCSHAPEREPRESENTATION(#100,'Body','SweptSolid',(#2648));
#2654= IFCCARTESIANPOINT((57.8333333333334,0.));
#2656= IFCPOLYLINE((#9,#2654));
#2658= IFCSHAPEREPRESENTATION(#98,'Axis','Curve2D',(#2656));
#2660= IFPRODUCTDEFINITIONSHAPE(S,S,(#2658,#2652));
#2662= IFCBEAM('3FJzF985D4uedEijINTBKE',#41,i,beam1:242419',S,i,beam1:222747',#2613,#2660,'242419');
#2665= IFCPROPERTYSET('Span',S,IFCPOSITIVELENGTHMEASUREMENT,S);
#2666= IFCPROPERTYSET('3FJzF985D4uedEkJBNTBKE',#41,'Pset_BeamCommon',S,(#203,#204,#1131,#1300,#2665));
#2668= IFCRELDEFINESBYPROPERTIES('2McJhVvn8wBfr1Ft1BxNE',#41,S,(#2662),#2666);
#2672= IFCCARTESIANPOINT((55.0833333333333,10.3125,36.25));
#2674= IFLOCALPLACEMENT3D(#2672,S,S);
#2675= IFLOCALPLACEMENT(#120,#2674);
#2676= IFCCARTESIANPOINT((-1.29761904761942,-1.));
#2678= IFCCARTESIANPOINT((-0.797619047619424,-1.));
#2680= IFCCARTESIANPOINT((-0.797619047619262,-0.58333333332848));
#2682= IFCCARTESIANPOINT((-0.547619047619175,-0.33333333332932));
#2684= IFCCARTESIANPOINT((0.869047619047482,-0.33333333333473));
#2686= IFCCARTESIANPOINT((1.11904761904723,-1.));
#2688= IFCCARTESIANPOINT((1.45238095238058,-1.));
#2690= IFCCARTESIANPOINT((1.45238095238132,1.));
#2692= IFCCARTESIANPOINT((1.11904761904798,1.));
#2694= IFCCARTESIANPOINT((0.869047619047738,0.33333333333196));
#2696= IFCCARTESIANPOINT((-0.547619047618927,0.33333333333725));
#2698= IFCCARTESIANPOINT((-0.797619047618833,0.58333333333809));
#2700= IFCCARTESIANPOINT((-0.797619047618671,1.));
#2702= IFCCARTESIANPOINT((-1.29761904761867,1.));
#2704= IFCPOLYLINE((#2676,#2678,#2680,#2682,#2684,#2686,#2688,#2690,#2692,#2694,#2696,#2698,#2700,#2702,#2676));
#2706= IFCARBITRARYCLOSEDPROFILEDEF('AREA',i,beam1',#2704);
#2707= IFCCARTESIANPOINT((0.,0.,-0.805493063367081));
#2709= IFLOCALPLACEMENT3D(#2707,#11,#21);
#2710= IFEXTRUDEDAREASOLID(#2706,#2709,#19,57.8333333333333);
#2711= IFSTYLELITEM(#2710,(#1100),S);
#2714= IFCSHAPEREPRESENTATION(#100,'Body','SweptSolid',(#2710));
#2716= IFCCARTESIANPOINT((57.8333333333334,0.));
#2718= IFCPOLYLINE((#9,#2716));
#2720= IFCSHAPEREPRESENTATION(#98,'Axis','Curve2D',(#2718));
#2722= IFPRODUCTDEFINITIONSHAPE(S,S,(#2720,#2714));
#2724= IFCBEAM('3FJzF985D4uedEijINTBJD',#41,i,beam1:242458',S,i,beam1:222747',#2675,#2722,'242458');
#2727= IFCPROPERTYSET('Span',S,IFCPOSITIVELENGTHMEASUREMENT,S);
#2728= IFCPROPERTYSET('3FJzF985D4uedEkJBNTBJD',#41,'Pset_BeamCommon',S,(#203,#204,#1131,#1300,#2727));
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#2730=
IFCRELDEFINESBYPROPERTIES('0GYZjXySPFFwYb4oH0tKj',#41
,S,$,(#2724,#2728);
#2736= IFCAxis2PLACEMENT3D(#6,$,S);
#2737= IFLOCALPLACEMENT(#120,#2736);
#2738= IFCCARTESIANPOINT((1.77635683940025E-15,0.));
#2740= IFCAxis2PLACEMENT2D(#2738,#23);
#2741= IFRECTANGLEPROFILEDEF(.AREA.,'Generic
150mm',#2740,52.29000000000005,168.);
#2742= IFCCARTESIANPOINT((84.,26.145,36.75));
#2744= IFCAxis2PLACEMENT3D(#2742,#21,#15);
#2745= IFEXTRUDEDAREASOLID(#2741,#2744,#19,0.5);
#2746= IFCSTYLEDITEM(#2745,(#1100),S);
#2749=
IFCSHAPEREPRESENTATION(#100,'Body','SweptSolid',(#2745));
#2751= IFCPRODUCTDEFINITIONSHAPE($,S,(#2749));
#2753= IFCSLAB('1HpmN5aLT6mhSsyK_BSLr',#41,'Floor:Generic
150mm',#2737,#2751,'245181',FLOOR.);
#2756= IFCMATERIALLAYER(#1119,0.5,S);
#2758= IFCMATERIALLAYERSET((#2756),'Floor:Generic 150mm');
#2761=
IFCMATERIALLAYERSETUSAGE(#2758,.AXIS3.,POSITIVE,0.);
#2762=
IFCPROPERTYSINGLEVALUE('Reference',S,IFCIDENTIFIER('Gener
ic 150mm'),S);
#2763=
IFCPROPERTYSET('1HpmN5aLT6mhSs_hi_BSLr',#41,'Pset_SlabCom
mon',S,(#203,#204,#687,#2762));
#2765=
IFCRELDEFINESBYPROPERTIES('0HDO8Vk0P96P_vBRZd1vek',#4
1,S,$,(#2753),#2763);
#2769= IFCAxis2PLACEMENT3D(#6,$,S);
#2770= IFLOCALPLACEMENT($,#2769);
#2771=
IFCSITE('0Nz5fpJrB9CfzRr61nz40q',#41,'Default',S,,"#2770,S,$,ELE
MENT,(-35,-18,-23,-549194),(149,7,35,603027),0.,S);
#2776=
IFCPROPERTYSINGLEVALUE('AboveGround',S,IFCLOGICAL(U.,
S);
#2777=
IFCPROPERTYSET('3Zu5Bv0LOHrPC12_o6FoQQ',#41,'Pset_Building
StoreyCommon',S,(#2776));
#2779=
IFCRELDEFINESBYPROPERTIES('3MNUYyADEAqH2mHWdqul',
#41,S,$,(#122),#2777);
#2783=
IFRELCONTAINEDINSPATIALSTRUCTURE('3Zu5Bv0LOHrPC10
066FoQQ',#41,S,$,(#1297,#1360,#1422,#1484,#1546,#1608,#1670,#173
2,#1794,#1856,#1918,#1980,#2042,#2104,#2166,#2228,#2290,#2352,#2
414,#2476,#2538,#2600,#2662,#2724,#2753),#122);

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#2811=
IFCPROPERTYSET('15Z0v90RiRiPC22_o6FoKR',#41,'Pset_BuildingS
toreyCommon',S,(#2776));
#2813=
IFCRELDEFINESBYPROPERTIES('0KZkRKIVf0IeZb5eUPxwF',#41,
S,$,(#128),#2811);
#2856=
IFCRELAGGREGATES('3VmEjv8i118ut4Vblq0FTB',#41,S,$,#103,(#2
771));
#2860=
IFCRELAGGREGATES('2NJCEvtCPDIBs_PcAedZMS',#41,S,$,#2771,(
#113));
#2864=
IFCRELAGGREGATES('27PCKGLxT4mxtV9cw6mgBW',#41,S,$,#11
3,(#122,#128));
#2869=
IFCPROPERTYSINGLEVALUE('NumberOfStores',S,IFCINTEGER(2
),S);
#2870=
IFCPROPERTYSET('27PCKGLxT4mxtVBOQ6mgBW',#41,'Pset_Build
ingCommon',S,(#2869));
#2872=
IFCRELDEFINESBYPROPERTIES('2bnMkG19zDux04LoxY5mTX',#
41,S,$,(#113),#2870);
#2876=
IFCRELASSOCIATESMATERIAL('0P9U$bVBX3x9DkTc7YbJcY',#4
1,S,$,(#2753),#2761);
#2879=
IFCRELASSOCIATESMATERIAL('1tq_KYDRz7gg1IeSiiYpQG',#41,S
,$,(#161,#193,#231,#243,#269,#281,#308,#320,#347,#359,#385,#397,#4
15,#433,#459,#471,#497,#509,#527,#545,#571,#583,#609,#621,#639,#6
57,#683,#711,#737,#763,#789,#815,#841,#867,#893,#919,#945,#971,#9
97,#1023,#1049,#1075),#164);
#2983= IFCPRESENTATIONLAYERASSIGNMENT('A-FLOR-____-
OTLN',S,(#2749),S);
#2985= IFCPRESENTATIONLAYERASSIGNMENT('S-BEAM-____-
OTLN',S,(#1105,#1111,#1153,#1159,#1189,#1195,#1224,#1230,#1287,#
1293,#1350,#1356,#1412,#1418,#1474,#1480,#1536,#1542,#1598,#160
4,#1660,#1666,#1722,#1728,#1784,#1790,#1846,#1852,#1908,#1914,#1
970,#1976,#2032,#2038,#2094,#2100,#2156,#2162,#2218,#2224,#2280,
#2286,#2342,#2348,#2404,#2410,#2466,#2472,#2528,#2534,#2590,#25
96,#2652,#2658,#2714,#2720),S);
#2987= IFCPRESENTATIONLAYERASSIGNMENT('S-COLS-____-
OTLN',S,(#155,#182,#227,#235,#265,#273,#304,#312,#343,#351,#381,#
389,#407,#425,#455,#463,#493,#501,#519,#537,#567,#575,#605,#613,#
631,#649),S);
#2989= IFCPRESENTATIONLAYERASSIGNMENT('S-FNDN-____-
OTLN',S,(#679,#707,#733,#759,#785,#811,#837,#863,#889,#915,#941,#
967,#993,#1019,#1045,#1071),S);
ENDSEC;

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END-ISO-10303-21;

## 2) Bridge 2

```

ISO-10303-21;
HEADER;
FILE_DESCRIPTION('ViewDefinition[CoordinationView_V2.0,
QuantityTakeOffAddOnView]',2,1);
FILE_NAME('out:ifc:/2017-06-28T19:22:04',('TY\Yi'),('Structural
Designer'),'IFC Database version:Work','Tekla structures 21.0 Service
Release 4, IFC Export Version: 4.0.0.0 Sep 30 2015',);
FILE_SCHEMA('IFC2X3');
ENDSEC;

DATA;
#1= IFCPERSON('TY\Yi','Undefined',S,$,S,$,S);
#2= IFCORGANIZATION('Tekla Corporation',S,$,S);
#3= IFCPERSONANDORGANIZATION(#1,#2,S);
#4= IFCAPLICATION(#2,21.0 Service Release 4,'Tekla
Structures','Multi material modeling');
#5= IFCOWNERHISTORY(#3,#4,S,NOCHANGE,S,$,S,1498648922);
#6= IFCCARTESIANPOINT((0.,0.,0.));
#7= IFCDIRECTION((1.,0.,0.));
#8= IFCDIRECTION((0.,1.,0.));
#9= IFCDIRECTION((0.,0.,1.));
#10= IFCAxis2PLACEMENT3D(#6,#9,#7);
#11=
IFCGEOMETRICREPRESENTATIONCONTEXT(S,'Model',3,1,E-
005,#10,S);
#12=
IFCGEOMETRICREPRESENTATIONSUBCONTEXT('Body','Model',
*,*,*,#11,S,MODEL_VIEW,S);
#13=
IFCGEOMETRICREPRESENTATIONSUBCONTEXT('Axis','Model',*
*,*,*,#11,S,GRAPH_VIEW,S);
#14=
IFCGEOMETRICREPRESENTATIONSUBCONTEXT('FootPrint','Mo
del',*,*,*,#11,S,MODEL_VIEW,S);
#15= IFCSIUNIT(*,LENGTHUNIT,.,MILLI,.,METRE.);
#16= IFCSIUNIT(*,AREAUNIT,.,SQUARE,.,METRE.);
#17= IFCSIUNIT(*,VOLUMEUNIT,.,CUBIC,.,METRE.);
#18= IFCSIUNIT(*,MASSUNIT,.,KILO,.,GRAM.);
#19= IFCSIUNIT(*,TIMEUNIT,.,SECOND.);
#20= IFCSIUNIT(*,PLANEANGLEUNIT,.,RADIAN.);
#21= IFCSIUNIT(*,SOLIDANGLEUNIT,.,STERADIAN.);
#22=
IFCSIUNIT(*,THERMODYNAMICTEMPERATUREUNIT,.,DEGR
EE,.,CELSIUS.);
#23= IFCSIUNIT(*,LUMINOUSINTENSITYUNIT,.,LUMEN.);
#24=
IFCUNITASSIGNMENT(#15,#16,#17,#18,#19,#20,#21,#22,#23);

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#25= IFCPROJECT('27oIuTemX47QSTXiX3MD6',#5,'Tekla
Corporation',S,$,S,(#1),#24);
#26= IFLOCALPLACEMENT($,#10);
#27=
IFCSITE('32A2_TpJrC1AE7nDaqL4e',#5,'Undefined',S,$,#26,S,$,ELE
MENT,.,S,$,0.,S);
#28= IFLOCALPLACEMENT(#26,#10);
#29=
IFCBUILDING('0oY11Pv0bA7R_GFqXkJD8O',#5,'Undefined',S,$,#28,S
,$,ELEMENT,.,S,$,S);
#30= IFLOCALPLACEMENT(#28,#10);
#31=
IFCBUILDINGSTOREY('0adMq4JILHAPA_SL_6JFg',#5,'Undefined',
S,$,#30,S,$,ELEMENT,0.);
#32= IFLOCALPLACEMENT(#30,#10);
#33=
IFCELEMENTASSEMBLY('1Ogjm000CKZ4qE3SvCJaq',#5,'SLAB',S
,$,#32,S,'A0(?)',NOTDEFINED,.,REINFORCEMENT,UNIT.);
#34= IFCPROPERTYSINGLEVALUE('Control number',S,$,S);
#35= IFCPROPERTYSINGLEVALUE('Cast unit rebar
weight',S,IFCMASSEASUREMENT(0.),S);
#36= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit
weight',S,IFCMASSEASUREMENT(55650.3),S);
#37= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit bottom
elevation',S,IFCLABEL(' +3.833'),S);
#38= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit top
elevation',S,IFCLABEL(' +6.260'),S);
#39= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit position
code',S,IFCLABEL('6-7/C-D'),S);
#40= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit
Mark',S,IFCLABEL('A0(?)'),S);
#41= IFCPROPERTYSET('3KRkaNljPBow8n8FP17SNe',#5,'Tekla
Assembly','Assembly Properties',(#34,#35,#36,#37,#38,#39,#40));
#42= IFCQUANTITYLENGTH('Width',S,$,49999.9999997923);
#43=
IFCELEMENTQUANTITY('0fwrme2QD57wLPVw_H7pC9',#5,'BaseQ
uantities',S,$,(#42));
#44=
IFCCARTESIANPOINT((8499.99999243501,135011.772929287,4421.
56617412381));
#45= IFCDIRECTION((-3.15859065085859E-010,-
0.999722430224732,0.0235597645479804));
#46=
IFCDIRECTION((0.0035750219985226,0.0235596139902597,0.999716
04158698));
#47= IFCAxis2PLACEMENT3D(#44,#45,#46);
#48= IFLOCALPLACEMENT(#32,#47);

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## Appendix

#49= IFCCOLOURRGB('Dark Cyan',0.2,0.6,0.698039215686274);  
#50=  
IFCSURFACESTYLE(0.00390625),IFCNORMALISED  
RATIO(0.00390625),IFCSPECULAREXONENT(10.),NO  
TDEFINED.);  
#51= IFCSURFACESTYLE('CONCRETE/C50',POSITIVE.,(#50));  
#52= IFCPRESENTATIONSTYLEASSIGNMENT(#51);  
#53= IFCCARTESIANPOINT((-6.99737665854627E-006-  
3.24465872836299E-007));  
#54= IFCCARTESIANPOINT((1249.99779573769-  
3.21553670801222E-007));  
#55=  
IFCCARTESIANPOINT((1249.40795198788,164.998946821557));  
#56=  
IFCCARTESIANPOINT((601.852104819747,322.153686199921));  
#57=  
IFCCARTESIANPOINT((361.138664878446,521.294433269532));  
#58= IFCCARTESIANPOINT((8.14091745698624,520.03240934301));  
#59= IFCPOLYLINE(#53,#54,#55,#56,#57,#58,#53);  
#60=  
IFCARBITRARYCLOSEDPROFILEDEF(.AREA.,'50000\*521',#59);  
#61= IFCCARTESIANPOINT((-9.09494701772928E-013,0.,-25000.));  
#62= IFCAxis2PLACEMENT3D(#61,#9,#7);  
#63= IFCEXTRUDEDAREASOLID(#60,#62,#9,50000.);  
#64= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#63));  
#65= IFCSTYLELITEM(#63,#52,\$);  
#66= IFCPRODUCTDEFINITIONSHAPE(\$,\$,#64);  
#67=  
IFCSLAB('1Ogimc000CJ4qE3SvCJaQ',#5,'SLAB','50000\*521','50000\*  
521',#48,#66,'X2'6DF751DD571F005F0041002D003100300028003F0  
029'X0',FLOOR.);  
#68=  
IFCSLABTYPE('2jaAwwYez7kfSXHHCv\_i7U',#5,'50000\*521',,\$,\$,\$,  
\$,\$,NOTDEFINED.);  
#69= IFCPROPERTYSINGLEVALUE('Bottom  
elevation',IFCLABEL(' +3.833'),\$);  
#70= IFCPROPERTYSINGLEVALUE('Top elevation',IFCLABEL(' +  
6.260'),\$);  
#71= IFCPROPERTYSINGLEVALUE('Initial GUID',,\$,\$);  
#72= IFCPROPERTYSINGLEVALUE('Preliminary  
mark',IFCLABEL(''),\$);  
#73= IFCPROPERTYSINGLEVALUE('Phase',IFCINTEGER(1),\$);  
#74= IFCPROPERTYSINGLEVALUE('Class',IFCLABEL('1'),\$);  
#75= IFCPROPERTYSET('3FdNcruKr1Yhs2PgO4z5ro',#5,'Tekla  
Common','Common Properties to Shared building  
elements',(#69,#70,#71,#72,#73,#74));  
#76=  
IFCPROPERTYSINGLEVALUE('Weight',IFCMASSMEASURE(556  
50.3),\$);  
#77=  
IFCPROPERTYSINGLEVALUE('Volume',IFCVOLUME(22.3),\$);  
#78= IFCPROPERTYSINGLEVALUE('Gross footprint  
area',IFCAREAMEASURE(0),\$);  
#79= IFCPROPERTYSINGLEVALUE('Area per  
tons',IFCAREAMEASURE(3),\$);  
#80= IFCPROPERTYSINGLEVALUE('Net surface  
area',IFCAREAMEASURE(164.2),\$);  
#81=  
IFCPROPERTYSINGLEVALUE('Height',IFCLENGTHMEASURE(5  
21.3),\$);  
#82=  
IFCPROPERTYSINGLEVALUE('Width',IFCLENGTHMEASURE(50  
000.),\$);  
#83=  
IFCPROPERTYSINGLEVALUE('Length',IFCLENGTHMEASURE(1  
250.),\$);  
#84= IFCPROPERTYSET('2kmm14o58GOUyT765Xzk',#5,'Tekla  
Quantity','Quantity Properties to Shared building  
elements',(#76,#77,#78,#79,#80,#81,#82,#83));  
#85=  
IFCPROPERTYSINGLEVALUE('LoadBearing',IFCBOOLEAN(T.),\$  
);  
#86=  
IFCPROPERTYSINGLEVALUE('Reference',IFCIDENTIFIER('X2'6  
DF751DD571F005F0041002D003100300028003F0029'X0'),\$);  
#87=  
IFCPROPERTYSET('3AH\$wZpNTD5v8IISB\_Fqzp',#5,'Pset\_SlabCom  
mon','Common Properties to slab elements',(#85,#86));  
#88= IFCQUANTITYLENGTH('Width',IFCQUANTITYLENGTH(49999.999998333));  
#89= IFCQUANTITYVOLUME('NetVolume',IFCQUANTITYVOLUME(22.2601183238689));  
#90= IFCQUANTITYAREA('NetArea',IFCQUANTITYAREA(164.2));  
#91= IFCQUANTITYWEIGHT('NetWeight',IFCQUANTITYWEIGHT(55650.2958096722));  
#92=  
IFCELEMENTQUANTITY('16f2usQjD1iRlWvvyINfwl',#5,'BaseQua  
ntities',IFCQUANTITY(88.99999999999999));  
#93= IFCMATERIAL('CONCRETE/C50');  
#94= IFCLOCALPLACEMENT(#30,#10);  
#95=  
IFCELEMENTASSEMBLY('1Ogimc000CJ4qE3SvCJaQ',#5,'SLAB',  
\$,\$,#94,'A0(?)',NOTDEFINED.,REINFORCEMENT\_UNIT.);  
#96= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit  
weight',IFCMASSMEASURE(55190.6),\$);  
#97= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit position  
code',IFCLABEL('1-2(C-D)'),\$);  
#98= IFCPROPERTYSET('0552Aqebz17uq1se3gbVok',#5,'Tekla  
Assembly','Assembly Properties',(#34,#35,#96,#37,#38,#97,#40));  
#99= IFCQUANTITYLENGTH('Width',IFCQUANTITYLENGTH(49999.9999996939));  
#100=  
IFCELEMENTQUANTITY('3WqXTSoarBge4vyW6l75',#5,'BaseQua  
ntities',IFCQUANTITY(99.99999999999999));  
#101=  
IFCCARTESIANPOINT((4.46877764611918,135041.222394817,5671.  
20900823692));  
#102=  
IFCDIRECTION((-0.00399996799817239,-  
0.0235595759892372,-0.999714432543224));  
#103= IFCAxis2PLACEMENT3D(#101,#45,#102);  
#104= IFCLOCALPLACEMENT(#94,#103);  
#105=  
IFCCARTESIANPOINT((1250.01001902297-  
1.38762665358172E-007));  
#106=  
IFCCARTESIANPOINT((1237.93006296806,519.955810408451));  
#107=  
IFCCARTESIANPOINT((887.932931620022,518.55584702924));  
#108=  
IFCCARTESIANPOINT((648.734811502651,317.597473005594));  
#109= IFCARTESIANPOINT((-0.65998546550145,164.998672345848));  
#110= IFCPOLYLINE((#53,#105,#106,#107,#108,#109,#53));  
#111=  
IFCARBITRARYCLOSEDPROFILEDEF(.AREA.,'50000\*520',#110);  
#112= IFCEXTRUDEDAREASOLID(#111,#62,#9,50000.);  
#113=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#112));  
#114= IFCSTYLELITEM(#112,#52,\$);  
#115= IFCPRODUCTDEFINITIONSHAPE(\$,\$,#113);  
#116=  
IFCSLAB('1Ogimc000CJ34qE3SvCJaQ',#5,'SLAB','50000\*520','50000\*  
520',#104,#115,'X2'6DF751DD571F005F0041002D003100300028003  
F0029'X0',FLOOR.);  
#117=  
IFCSLABTYPE('1j1BWZnz5BAemdMh14Rx',#5,'50000\*520',,\$,\$,\$,  
\$,\$,NOTDEFINED.);  
#118=  
IFCPROPERTYSINGLEVALUE('Weight',IFCMASSMEASURE(551  
90.6),\$);  
#119=  
IFCPROPERTYSINGLEVALUE('Volume',IFCVOLUME(22.1),\$);  
#120=  
IFCPROPERTYSINGLEVALUE('Height',IFCLENGTHMEASURE(5  
20.),\$);  
#121=  
IFCPROPERTYSINGLEVALUE('Length',IFCLENGTHMEASURE(1  
250.7),\$);  
#122= IFCPROPERTYSET('20thZ3GbzBqPJ\_dm1KQDWg',#5,'Tekla  
Quantity','Quantity Properties to Shared building  
elements',(#118,#119,#78,#79,#80,#120,#82,#121));  
#123= IFCQUANTITYLENGTH('Width',IFCQUANTITYLENGTH(49999.999999694));  
#124= IFCQUANTITYVOLUME('NetVolume',IFCQUANTITYVOLUME(22.0762493628123));  
#125= IFCQUANTITYWEIGHT('NetWeight',IFCQUANTITYWEIGHT(55190.6234070307));  
#126=  
IFCELEMENTQUANTITY('16X31L13v5aAT7k35sGYda',#5,'BaseQua  
ntities',IFCQUANTITY(123.124,#90,#125));  
#127= IFCLOCALPLACEMENT(#30,#10);  
#128=  
IFCELEMENTASSEMBLY('1Ogimc000CJ34qE3SvCJaQ',#5,'SLAB',  
\$,\$,#127,'A0(?)',NOTDEFINED.,REINFORCEMENT\_UNIT.);  
#129= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit  
weight',IFCMASSMEASURE(250603.4),\$);  
#130= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit bottom  
elevation',IFCLABEL(' +3.533'),\$);  
#131= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit top  
elevation',IFCLABEL(' +5.075'),\$);  
#132= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit position  
code',IFCLABEL('1-7(C-D)'),\$);  
#133= IFCPROPERTYSET('3it8nzNFvAlxCO19sbhb9F',#5,'Tekla  
Assembly','Assembly Properties',(#34,#35,#129,#130,#131,#132,#40));  
#134= IFCQUANTITYLENGTH('Width',IFCQUANTITYLENGTH(50000.0000003308));  
#135=  
IFCELEMENTQUANTITY('2Xu1dW2MH05w5xOfc5coPf',#5,'BaseQua  
ntities',IFCQUANTITY(134.99999999999999));  
#136=  
IFCCARTESIANPOINT((0.135011.779882244,4421.86121480967));  
#137= IFCDIRECTION((0.,-0.0235597650050714,-  
0.99972243021396));  
#138= IFCAxis2PLACEMENT3D(#136,#45,#137);  
#139= IFCLOCALPLACEMENT(#127,#138);  
#140= IFCCARTESIANPOINT((150.000004589147,0.));  
#141= IFCCARTESIANPOINT((300.000004589216,1560.));  
#142= IFCCARTESIANPOINT((300.000004589216,1940.));  
#143= IFCCARTESIANPOINT((136.000004589141,3500.));  
#144= IFCCARTESIANPOINT((136.000004589141,5500.));  
#145= IFCCARTESIANPOINT((300.000004589216,6560.));  
#146= IFCCARTESIANPOINT((300.000004589216,6940.));  
#147= IFCCARTESIANPOINT((150.000004589147,8500.));  
#148= IFCARTESIANPOINT((4.589078834399724E-  
006,8506.23828125));  
#149= IFCCARTESIANPOINT((-63.9999954109499,4250.));  
#150=  
IFCPOLYLINE((#53,#140,#141,#142,#143,#144,#145,#146,#147,#148,  
#149,#53));  
#151=  
IFCARBITRARYCLOSEDPROFILEDEF(.AREA.,'50000\*404',#150);  
#152= IFCEXTRUDEDAREASOLID(#151,#62,#9,50000.);  
#153=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#152));  
#154= IFCSTYLELITEM(#152,#52,\$);  
#155= IFCPRODUCTDEFINITIONSHAPE(\$,\$,#153);  
#156=  
IFCSLAB('1Ogimc000CJ4qE3SvCJaQ',#5,'SLAB','50000\*404','50000  
\*404',#139,#155,'X2'6DF751DD571F005F0041002D003100300028003  
F0029'X0',FLOOR.);  
#157=  
IFCSLABTYPE('051Res6g56XuV\$SARLkQ9Y',#5,'50000\*404',,\$,\$,\$,  
\$,\$,NOTDEFINED.);  
#158= IFCPROPERTYSINGLEVALUE('Bottom  
elevation',IFCLABEL(' +3.533'),\$);

#159= IFCPROPERTYINGLEVALUE('Top elevation',S,IFCLABEL(' +5.075'),S);  
 #160= IFCPROPERTYSET('0NEOaNs6rEefLhF0sRBQEm',#5,'Tekla Common','Common Properties to Shared building elements',(#158,#159,#71,#72,#73,#74));  
 #161= IFCPROPERTYINGLEVALUE('Weight',S,IFCMASSEASUREMENT(250603.4),S);  
 #162= IFCPROPERTYINGLEVALUE('Volume',S,IFCVOLUMEMEASUREMENT(100.2),S);  
 #163= IFCPROPERTYINGLEVALUE('Area per tons',S,IFCAREAMEASUREMENT(3.5),S);  
 #164= IFCPROPERTYINGLEVALUE('Net surface area',S,IFCAREAMEASUREMENT(871.4),S);  
 #165= IFCPROPERTYINGLEVALUE('Height',S,IFCLENGTHMEASUREMENT(404.4),S);  
 #166= IFCPROPERTYINGLEVALUE('Length',S,IFCLENGTHMEASUREMENT(8505.3),S);  
 #167= IFCPROPERTYSET('2u2qyE2an329YsVm9hzrnE',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#161,#162,#78,#163,#164,#165,#82,#166));  
 #168= IFCQUANTITYLENGTH('Width',S,\$,50000.0000003491);  
 #169= IFCQUANTITYVOLUME('NetVolume',S,\$,100.241374805404);  
 #170= IFCQUANTITYWEIGHT('NetWeight',S,\$,250603.437013509);  
 #171= IFCELEMENTQUANTITY('0YIi58NZTD69cDgFbEl862',#5,'BaseQuantities',S,\$,#168,#169,#90,#170);  
 #172= IFCLOCALPLACEMENT(#30,#10);  
 #173= IFCELEMENTASSEMBLY('1Ogimc000CGp4qE3SvCJaQ',#5,'SLAB',S,\$,#172,S,'A0(?)',NOTDEFINED,..,REINFORCEMENT\_UNIT);  
 #174= IFCPROPERTYINGLEVALUE('Assembly/Cast unit weight',S,IFCMASSEASUREMENT(66780.4),S);  
 #175= IFCPROPERTYINGLEVALUE('Assembly/Cast unit bottom elevation',S,IFCLABEL(' +2.443'),S);  
 #176= IFCPROPERTYINGLEVALUE('Assembly/Cast unit top elevation',S,IFCLABEL(' +5.106'),S);  
 #177= IFCPROPERTYINGLEVALUE('Assembly/Cast unit position code',S,IFCLABEL('6-7/D-E'),S);  
 #178= IFCPROPERTYSET('0adkk1u\_9CDvs4uFrIzIcA',#5,'Tekla Assembly','Assembly Properties',(#34,#35,#174,#175,#176,#177,#40));  
 #179= IFCQUANTITYLENGTH('Width',S,\$,59999.9999997507);  
 #180= IFCELEMENTQUANTITY('1NggJWpvdvA6eyC2Z0A1j9c',#5,'BaseQuantities',S,\$,#179);  
 #181= IFCARTESIANPOINT((8499.99999092169,190011.772929267,3149.56617416672));  
 #182= IFCAXIS2PLACEMENT3D(#181,#45,#46);  
 #183= IFCLOCALPLACEMENT(#172,#182);  
 #184= IFCARBITRARYCLOSEDPROFILEDEF(.AREA.,'60000\*521',#59);  
 #185= IFCARTESIANPOINT((-9.09494701772928E-013,1.81898940354586E-012,-30000.));  
 #186= IFCAXIS2PLACEMENT3D(#185,#9,#7);  
 #187= IFCXTRUDEDAREASOLID(#184,#186,#9,60000.);  
 #188= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#187));  
 #189= IFCSTYLEDITEM(#216,(#52),S);  
 #190= IFCPRODUCTDEFINITIONSHAPE(S,\$,(#188));  
 #191= IFCSLAB('1Ogimc000CGZ4qE3SvCJaQ',#5,'SLAB',60000\*521',60000\*521',#183,#190,'X2/6DF751DD571F005F0041002D003100300028003F0029'X0',FLOOR.);  
 #192= IFCSLABTYPE('1hh8KRj1f2dhdKAc\$56ge',#5,'60000\*521',S,\$,S,\$,S,NOTDEFINED.);  
 #193= IFCPROPERTYINGLEVALUE('Bottom elevation',S,IFCLABEL(' +2.443'),S);  
 #194= IFCPROPERTYINGLEVALUE('Top elevation',S,IFCLABEL(' +5.106'),S);  
 #195= IFCPROPERTYSET('0fuTVDA2bDHeAISgQaiKTJ',#5,'Tekla Common','Common Properties to Shared building elements',(#193,#194,#71,#72,#73,#74));  
 #196= IFCPROPERTYINGLEVALUE('Weight',S,IFCMASSEASUREMENT(66780.4),S);  
 #197= IFCPROPERTYINGLEVALUE('Volume',S,IFCVOLUMEMEASUREMENT(26.7),S);  
 #198= IFCPROPERTYINGLEVALUE('Net surface area',S,IFCAREAMEASUREMENT(196.9),S);  
 #199= IFCPROPERTYINGLEVALUE('Width',S,IFCLENGTHMEASUREMENT(6000.)),S);  
 #200= IFCPROPERTYSET('1Hsw9crsz0uOXM7SKIfcZT',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#196,#197,#78,#79,#198,#81,#199,#83));  
 #201= IFCQUANTITYLENGTH('Width',S,\$,59999.999999751);  
 #202= IFCQUANTITYVOLUME('NetVolume',S,\$,26.7121419886426);  
 #203= IFCQUANTITYWEIGHT('NetWeight',S,\$,66780.3549716065);  
 #204= IFCELEMENTQUANTITY('2iZzxqYN50TRe7aLlx50Go',#5,'BaseQuantities',S,\$,#201,#202,#90,#203);  
 #205= IFCLOCALPLACEMENT(#30,#10);  
 #206= IFCELEMENTASSEMBLY('1Ogimc000CFZ4qE3SvCJaQ',#5,'SLAB',S,\$,#205,S,'A0(?)',NOTDEFINED,..,REINFORCEMENT\_UNIT);  
 #207= IFCPROPERTYINGLEVALUE('Assembly/Cast unit weight',S,IFCMASSEASUREMENT(66228.7),S);  
 #208= IFCPROPERTYINGLEVALUE('Assembly/Cast unit position code',S,IFCLABEL('1-2/D-E'),S);  
 #209= IFCPROPERTYSET('3U8KP0TnDDQumPB7SHjQw',#5,'Tekla Assembly','Assembly Properties',(#34,#35,#207,#175,#176,#208,#40));  
 #210= IFCQUANTITYLENGTH('Width',S,\$,59999.9999996326);  
 #211= IFCELEMENTQUANTITY('2PuqGq\_n56XPDEdGevLQB',#5,'BaseQuantities',S,\$,#210);  
 #212= IFCARTESIANPOINT((4.46877917696389,190041.222394786,4399.20900822053));  
 #213= IFCAXIS2PLACEMENT3D(#212,#45,#102);  
 #214= IFCLOCALPLACEMENT(#205,#213);  
 #215= IFCARBITRARYCLOSEDPROFILEDEF(.AREA.,'60000\*520',#110);  
 #216= IFCXTRUDEDAREASOLID(#215,#186,#9,60000.);  
 #217= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#216));  
 #218= IFCSTYLEDITEM(#216,(#52),S);  
 #219= IFCPRODUCTDEFINITIONSHAPE(S,\$,(#217));  
 #220= IFCSLAB('1Ogimc000CFJ4qE3SvCJaQ',#5,'SLAB',60000\*520',60000\*520',#214,#219,'X2/6DF751DD571F005F0041002D003100300028003F0029'X0',FLOOR.);  
 #221= IFCSLABTYPE('1cWgIhrzP1ihDB1sqZ1cwg',#5,'60000\*520',S,\$,S,\$,S,NOTDEFINED.);  
 #222= IFCPROPERTYINGLEVALUE('Weight',S,IFCMASSEASUREMENT(66228.7),S);  
 #223= IFCPROPERTYINGLEVALUE('Volume',S,IFCVOLUMEMEASUREMENT(26.5),S);  
 #224= IFCPROPERTYSET('0JZxj6RzT80x0JZ69kjWHP',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#222,#223,#78,#79,#198,#120,#199,#121));  
 #225= IFCQUANTITYLENGTH('Width',S,\$,59999.999999618);  
 #226= IFCQUANTITYVOLUME('NetVolume',S,\$,26.4914992353747);  
 #227= IFCQUANTITYWEIGHT('NetWeight',S,\$,66228.7480884368);  
 #228= IFCELEMENTQUANTITY('1KSIIeBOXF2AD0xgk3WJf',#5,'BaseQuantities',S,\$,#225,#226,#90,#227);  
 #229= IFCLOCALPLACEMENT(#30,#10);  
 #230= IFCELEMENTASSEMBLY('1Ogimc000CEJ4qE3SvCJaQ',#5,'SLAB',S,\$,#229,S,'A0(?)',NOTDEFINED,..,REINFORCEMENT\_UNIT);  
 #231= IFCPROPERTYINGLEVALUE('Assembly/Cast unit weight',S,IFCMASSEASUREMENT(300724.1),S);  
 #232= IFCPROPERTYINGLEVALUE('Assembly/Cast unit bottom elevation',S,IFCLABEL(' +2.143'),S);  
 #233= IFCPROPERTYINGLEVALUE('Assembly/Cast unit top elevation',S,IFCLABEL(' +3.921'),S);  
 #234= IFCPROPERTYINGLEVALUE('Assembly/Cast unit position code',S,IFCLABEL('1-7/D-E'),S);  
 #235= IFCPROPERTYSET('3n2HcB8d9pBK3SNidX94S',#5,'Tekla Assembly','Assembly Properties',(#34,#35,#231,#232,#233,#234,#40));  
 #236= IFCQUANTITYLENGTH('Width',S,\$,60000.000000397);  
 #237= IFCELEMENTQUANTITY('32aUdQCz17HxrU5VeMB133',#5,'BaseQuantities',S,\$,#236);  
 #238= IFCARTESIANPOINT((0.,190011.779882213,149.86121474656));  
 #239= IFCAXIS2PLACEMENT3D(#238,#45,#137);  
 #240= IFCLOCALPLACEMENT(#229,#239);  
 #241= IFCARBITRARYCLOSEDPROFILEDEF(.AREA.,'60000\*404',#150);  
 #242= IFCXTRUDEDAREASOLID(#241,#186,#9,60000.);  
 #243= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#242));  
 #244= IFCSTYLEDITEM(#242,(#52),S);  
 #245= IFCPRODUCTDEFINITIONSHAPE(S,\$,(#243));  
 #246= IFCSLAB('1Ogimc000CE34qE3SvCJaQ',#5,'SLAB',60000\*404',60000\*404',#240,#245,'X2/6DF751DD571F005F0041002D003100300028003F0029'X0',FLOOR.);  
 #247= IFCSLABTYPE('3Q8VqNWCv7pflwCt\_NaJ4x',#5,'60000\*404',S,\$,S,\$,S,NOTDEFINED.);  
 #248= IFCPROPERTYINGLEVALUE('Bottom elevation',S,IFCLABEL(' +2.143'),S);  
 #249= IFCPROPERTYINGLEVALUE('Top elevation',S,IFCLABEL(' +3.921'),S);  
 #250= IFCPROPERTYSET('1ACMwO\$rij3o8yjG3MH19wU',#5,'Tekla Common','Common Properties to Shared building elements',(#248,#249,#71,#72,#73,#74));  
 #251= IFCPROPERTYINGLEVALUE('Weight',S,IFCMASSEASUREMENT(300724.1),S);  
 #252= IFCPROPERTYINGLEVALUE('Volume',S,IFCVOLUMEMEASUREMENT(120.3),S);  
 #253= IFCPROPERTYINGLEVALUE('Net surface area',S,IFCAREAMEASUREMENT(1044.8),S);  
 #254= IFCPROPERTYSET('0tz6PPAjz1kAiSlmWW45WF',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#251,#252,#78,#163,#253,#165,#199,#166));  
 #255= IFCQUANTITYLENGTH('Width',S,\$,60000.000000418);  
 #256= IFCQUANTITYVOLUME('NetVolume',S,\$,120.28964976643);  
 #257= IFCQUANTITYWEIGHT('NetWeight',S,\$,300724.124416074);  
 #258= IFCELEMENTQUANTITY('0O4yiNUQD4PBmLvemaKXyk',#5,'BaseQuantities',S,\$,#255,#256,#90,#257);  
 #259= IFCLOCALPLACEMENT(#30,#10);  
 #260= IFCELEMENTASSEMBLY('1Ogimc000CCZ4qE3SvDJKu',#5,'SLAB',S,\$,#259,S,'A0(?)',NOTDEFINED,..,REINFORCEMENT\_UNIT);

## Appendix

<pre> #261= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit position code',\$IFCLABEL('6-7/B-C'),\$); #262= IFCPROPERTYSET('ljP0pWun6i7f8DHqLsf_',#5,'Tekla Assembly','Assembly Properties',(#34,#35,#36,#37,#38,#261,#40)); #263= IFCQUANTITYLENGTH('Width',\$,\$,49999.9999997923); #264= IFCELEMENTQUANTITY('0RWVSIe50MRS3P57_QdVj',#5,'BaseQu antities',\$,\$(#263)); #265= IFCCARTESIANPOINT((8500.,84988.2270706143,4421.56617391626) ); #266= IFCDIRECTION((3.15844473716838E-010,- 0.999722430224732,-0.0235597645479926)); #267= IFCDIRECTION((0.00357502199852299,- 0.0235596139902719,0.99971604158698)); #268= IFCAXIS2PLACEMENT3D(#265,#266,#267); #269= IFCLOCALPLACEMENT(#259,#268); #270= IFCSHAPEPRESENTATION(#12,'Body','SweptSolid',(#63)); #271= IFCPRODUCTDEFINITIONSHAPE(\$,\$(#270)); #272= IFCSLAB('1Ogimc000CJ4qE3SuDJKu',#5,'SLAB','50000*521',50000 *521',#269,#271,'X2/6DF751DD571F005F0041002D003100300028003 F0029'X0',FLOOR.); #273= IFCQUANTITYLENGTH('Width',\$,\$,49999.999998275); #274= IFCQUANTITYVOLUME('NetVolume',\$,\$,22.260118323689); #275= IFCQUANTITYWEIGHT('NetWeight',\$,\$,55650.2958096722); #276= IFCELEMENTQUANTITY('35GmPhr3GRZUI0DMJ2RP',#5,'BaseQua ntities',\$,\$(#273,#274,#90,#275)); #277= IFCLOCALPLACEMENT(#30,#10); #278= IFCELEMENTASSEMBLY('1Ogimc000CA34qE3SuDJKu',#5,'SLAB', \$,\$,#277,\$,'A0(?)',NOTDEFINED,..REINFORCEMENT_UNIT.); #279= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit position code',\$IFCLABEL('1-2/B-C'),\$); #280= IFCPROPERTYSET('34KpStryH7ghjIMH6z5BiK',#5,'Tekla Assembly','Assembly Properties',(#34,#35,#96,#37,#38,#279,#40)); #281= IFCQUANTITYLENGTH('Width',\$,\$,49999.9999996939); #282= IFCELEMENTQUANTITY('0X3UpjoNz6zxAzifjSnRs',#5,'BaseQuanti ties',\$,\$(#281)); #283= IFCCARTESIANPOINT((4.4687699918677,84958.7776050282,5671.2 0900831185)); #284= IFCDIRECTION((- 0.00399996799817239,0.0235595759892373,-0.9997144325432244)); #285= IFCAXIS2PLACEMENT3D(#283,#266,#284); #286= IFCLOCALPLACEMENT(#277,#285); #287= IFCSHAPEPRESENTATION(#12,'Body','SweptSolid',(#112)); #288= IFCPRODUCTDEFINITIONSHAPE(\$,\$(#287)); #289= IFCSLAB('1Ogimc000C9p4qE3SuDJKu',#5,'SLAB','50000*520',50000 *520',#286,#288,'X2/6DF751DD571F005F0041002D003100300028003 F0029'X0',FLOOR.); #290= IFCQUANTITYLENGTH('Width',\$,\$,49999.999999694); #291= IFCQUANTITYVOLUME('NetVolume',\$,\$,22.0762493628123); #292= IFCQUANTITYWEIGHT('NetWeight',\$,\$,55190.6234070307); #293= IFCELEMENTQUANTITY('2HZc_SFgrlupNlrf6xLkJU',#5,'BaseQua ntities',\$,\$(#290,#291,#90,#292)); #294= IFCLOCALPLACEMENT(#30,#10); #295= IFCELEMENTASSEMBLY('1Ogimc000C7Z4qE3SuDJKu',#5,'SLAB',\$ ,\$,#294,\$,'A0(?)',NOTDEFINED,..REINFORCEMENT_UNIT.); #296= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit position code',\$IFCLABEL('1-7/B-C'),\$); #297= IFCPROPERTYSET('2DXu1Rqsv3D99UXGmKY8gQ',#5,'Tekla Assembly','Assembly Properties',(#34,#35,#129,#130,#131,#296,#40)); #298= IFCQUANTITYLENGTH('Width',\$,\$,50000.0000003309); #299= IFCELEMENTQUANTITY('2vms6SMgXBz99\$dmK2ryb',#5,'BaseQua ntities',\$,\$(#298)); #300= IFCCARTESIANPOINT((0.,84988.2201175832,4421.861215109)); #301= IFCDIRECTION((0.,0.0235597650049991,- 0.999722430213962)); #302= IFCAXIS2PLACEMENT3D(#300,#266,#301); #303= IFCLOCALPLACEMENT(#294,#302); #304= IFCSHAPEPRESENTATION(#12,'Body','SweptSolid',(#152)); #305= IFCPRODUCTDEFINITIONSHAPE(\$,\$(#304)); #306= IFCSLAB('1Ogimc000C7J4qE3SuDJKu',#5,'SLAB','50000*404',50000 *404',#303,#305,'X2/6DF751DD571F005F0041002D003100300028003 F0029'X0',FLOOR.); #307= IFCQUANTITYLENGTH('Width',\$,\$,50000.0000003285); #308= IFCQUANTITYVOLUME('NetVolume',\$,\$,100.24137480537); #309= IFCQUANTITYWEIGHT('NetWeight',\$,\$,250603.437013424); #310= IFCELEMENTQUANTITY('2eX_061S19whscU6SA1Gu9',#5,'BaseQua ntities',\$,\$(#307,#308,#90,#309)); #311= IFCLOCALPLACEMENT(#30,#10); #312= IFCELEMENTASSEMBLY('1Ogimc000AGZ4qE3SuD30p',#5,'Steel Assembly',\$,\$,#311,\$,'BE-0(?)',NOTDEFINED,..RIGID_FRAME.); #313= IFCPROPERTYSINGLEVALUE('Cast unit rebar weight',\$,\$); #314= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit weight',\$IFCMASSEASURE(476.)); #315= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit bottom elevation',\$IFCLABEL('0.212'),\$); #316= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit top elevation',\$IFCLABEL('4.676'),\$); #317= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit position code',\$IFCLABEL('3-5/B-C'),\$); </pre>	<pre> #318= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit Mark',\$IFCLABEL('BE-0(?)'),\$); #319= IFCPROPERTYSET('1AgkkNsOf3xR0HrIGcnwOV',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#314,#315,#316,#317,#318)); #320= IFCQUANTITYLENGTH('Width',\$,\$,200.000000008455); #321= IFCELEMENTQUANTITY('2hPlqzH7HDqBBw8SBaEdxh',#5,'BaseQ uantities',\$,\$(#320)); #322= IFCCARTESIANPOINT((6739.16720130978,107389.555219194,4502. 83126114003)); #323= IFCDIRECTION((-0.712203663103783,- 0.201067748029301,0.672560557098005)); #324= IFCDIRECTION((-0.693563962754693,0.349408024876417,- 0.62998655677718)); #325= IFCAXIS2PLACEMENT3D(#322,#323,#324); #326= IFCLOCALPLACEMENT(#311,#325); #327= IFCOLOURRGB('Light Green',0.301960784313725,0.898039215686275,0.301960784313725); #328= IFCSURFACESTYLE RENDERING(#327,0.,\$,\$,\$IFCNORMALISE DRATIO MEASURE(0.00390625),IFCSPECULAREXPONENT(10.),N OTDEFINED.); #329= IFCSURFACESTYLE('STEEL/Q235B',POSITIVE,(\$328)); #330= IFCPRESENTATIONSTYLE ASSIGNMENT(#329); #331= IFCDIRECTION((1.,0.)); #332= IFCAXIS2PLACEMENT2D(#53,#331); #333= IFCSHAPEPROFILEDEF('AREA','HN400*200*8*13',#332,200.,400., 8.,13.,13.); #334= IFCCARTESIANPOINT((7209.14043962843,2.91038304567337E- 011,-3.63797880709171E-012)); #335= IFCDIRECTION((0.,-1.,0.)); #336= IFCDIRECTION((-1.,0.,0.)); #337= IFCAXIS2PLACEMENT3D(#334,#336,#335); #338= IFCXTRUDEDAREASOLID(#333,#337,#9,7209.1); #339= IFCSHAPEPRESENTATION(#12,'Body','SweptSolid',(#338)); #340= IFCSTYLEITEM(#338,#330,\$); #341= IFCPRODUCTDEFINITIONSHAPE(\$,\$(#339)); #342= IFCMEMBER('1Ogimc000AGJ4qE3SuD30p',#5,'BEAM','HN400*200* 8*13','HN400*200*8*13',#326,#341,'P0(?)'); #343= IFCMEMBER('0hMKBotLTFBv86frEp_piO',#5,'HN400*200*8*1 3',\$,\$,\$,\$,NOTDEFINED.); #344= IFCPROPERTYSINGLEVALUE('Bottom elevation',\$IFCLABEL('0.212'),\$); #345= IFCPROPERTYSINGLEVALUE('Top elevation',\$IFCLABEL(' 4.676'),\$); #346= IFCPROPERTYSINGLEVALUE('Class',\$IFCLABEL('3'),\$); #347= IFCPROPERTYSET('05zbo5i8P8TRhuqaW_goC3',#5,'Tekla Common','Common Properties to Shared building elements',(#344,#345,#71,#72,#73,#346)); #348= IFCPROPERTYSINGLEVALUE('Weight',\$IFCMASSEASURE(476. )); #349= IFCPROPERTYSINGLEVALUE('Volume',\$IFCVOLUMEMEASURE(0.1)); #350= IFCPROPERTYSINGLEVALUE('Area per tons',\$IFCAREAMEASURE(24.)); #351= IFCPROPERTYSINGLEVALUE('Net surface area',\$IFCAREAMEASURE(11.4)); #352= IFCPROPERTYSINGLEVALUE('Height',\$IFLENGTHMEASURE(4 00.)); #353= IFCPROPERTYSINGLEVALUE('Width',\$IFLENGTHMEASURE(20 0.)); #354= IFCPROPERTYSINGLEVALUE('Length',\$IFLENGTHMEASURE(7 209.1)); #355= IFCPROPERTYSET('3X0UtN1ez5PwuZrvAeHjSB',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#348,#349,#78,#350,#351,#352,#353,#354)); #356= IFCPROPERTYSINGLEVALUE('Reference',\$IFIDENTIFIER('P0(?) ')); #357= IFCPROPERTYSET('2fPTau9NT1RQQR3xMx5GDx',#5,'Pset_Member Common','Common Properties to member elements',(#85,#356)); #358= IFCQUANTITYLENGTH('Length',\$,\$,7209.14043963271); #359= IFCQUANTITYAREA('OuterSurfaceArea',\$,\$,11.4192784563782); #360= IFCQUANTITYAREA('GrossSurfaceArea',\$,\$,11.4192784563782); #361= IFCQUANTITYAREA('CrossSectionArea',\$,\$,0.008412); #362= IFCQUANTITYVOLUME('NetVolume',\$,\$,0.0590572784816385); #363= IFCQUANTITYVOLUME('GrossVolume',\$,\$,0.0606432893781903); #364= IFCQUANTITYWEIGHT('NetWeight',\$,\$,463.599636080862); #365= IFCQUANTITYWEIGHT('GrossWeight',\$,\$,476.049821618794); #366= IFCELEMENTQUANTITY('2MwMMRem14RhXqQ4kfz9N',#5,'Base Quantities',\$,\$(#358,#359,#360,#361,#362,#363,#364,#365)); #367= IFCMATERIAL('STEEL/Q235B'); #368= IFCLOCALPLACEMENT(#30,#10); #369= IFCELEMENTASSEMBLY('1Ogimc000AFJ4qE3SuD30p',#5,'Steel Assembly',\$,\$,#368,\$,'BE-0(?)',NOTDEFINED,..RIGID_FRAME.); </pre>
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#370= IFCQUANTITYLENGTH('Width',S,S,200.00000006796);  
#371=  
IFCELEMENTQUANTITY('3IPWXVa2t5LeaDfBWT9Kno',#5,'BaseQuantities',S,S,(#370));  
#372=  
IFCCARTESIANPOINT((1760.83280121137,107389.555216775,4502.83126244825));  
#373= IFCDIRECTION((0.712203655536502,-0.201067846869145,0.672560535562301));  
#374= IFCDIRECTION((0.693563994897099,0.349407904948161,-0.629986587906532));  
#375= IFCAXIS2PLACEMENT3D(#372,#373,#374);  
#376= IFCLOCALPLACEMENT(#368,#375);  
#377= IFCARTESIANPOINT((7209.1400792202,0,-1.09139364212751E-011));  
#378= IFCAXIS2PLACEMENT3D(#377,#336,#335);  
#379= IFCEXTRUDEDAREASOLID(#333,#378,#9,7209.1);  
#380=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#379));  
#381= IFCSTYLEDITEM(#379,(#330,S));  
#382= IFCPRODUCTDEFINITIONSHAPE(S,S,(#380));  
#383=  
IFCMEMBER('1Ogimc000AF34qE3SuD30p',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#376,#382,'PO(?)');  
#384= IFCQUANTITYLENGTH('Length',S,S,7209.14007920504);  
#385=  
IFCQUANTITYAREA('OuterSurfaceArea',S,S,11.4192778854608);  
#386=  
IFCQUANTITYAREA('GrossSurfaceArea',S,S,11.4192778854608);  
#387=  
IFCQUANTITYVOLUME('NetVolume',S,S,0.0590572755290095);  
#388=  
IFCQUANTITYVOLUME('GrossVolume',S,S,0.0606432863462728);  
#389= IFCQUANTITYWEIGHT('NetWeight',S,S,463.599612902725);  
#390=  
IFCQUANTITYWEIGHT('GrossWeight',S,S,476.049797818242);  
#391=  
IFCELEMENTQUANTITY('3Hizo3pft3chsU2J0RMGHV',#5,'BaseQuantities',S,S,(#384,#385,#386,#361,#387,#388,#389,#390));  
#392= IFCLOCALPLACEMENT(#30,#10);  
#393=  
IFCELEMENTASSEMBLY('1Ogimc000ADp4qE3SuD30p',#5,'Steel Assembly',S,S,#392,S,'BE-0(?)',NOTDEFINED,..,RIGID\_FRAME.);  
#394= IFCPROPERTYSSINGLEVALUE('Assembly/Cast unit position code',S,IFCLABEL('3-5/C-D'),S);  
#395= IFCPROPERTYSET('2IXZNIHM90Zg3Wsd0s63QZ',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#314,#315,#316,#394,#318));  
#396= IFCQUANTITYLENGTH('Width',S,S,200.000000013126);  
#397=  
IFCELEMENTQUANTITY('2kzSgNgUb4QL6Uz6q0E09',#5,'BaseQuantities',S,S,(#396));  
#398=  
IFCCARTESIANPOINT((6739.16723302247,112610.444785616,4502.83126362925));  
#399= IFCDIRECTION((-0.712203645918111,0.201067949976878,0.672560514922669));  
#400= IFCDIRECTION((-0.693564028999041,-0.349407782999517,-0.629986617999129));  
#401= IFCAXIS2PLACEMENT3D(#398,#399,#400);  
#402= IFCLOCALPLACEMENT(#392,#401);  
#403=  
IFCCARTESIANPOINT((7209.13974479685,2.00093823310344E-013,4.0381664537124E-012));  
#404= IFCAXIS2PLACEMENT3D(#403,#336,#335);  
#405= IFCEXTRUDEDAREASOLID(#333,#404,#9,7209.1);  
#406=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#405));  
#407= IFCSTYLEDITEM(#405,(#330,S));  
#408= IFCPRODUCTDEFINITIONSHAPE(S,S,(#406));  
#409=  
IFCMEMBER('1Ogimc000AE34qE3SuD30p',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#402,#408,'PO(?)');  
#410= IFCQUANTITYLENGTH('Length',S,S,7209.13974479045);  
#411=  
IFCQUANTITYAREA('OuterSurfaceArea',S,S,11.4192773557481);  
#412=  
IFCQUANTITYAREA('GrossSurfaceArea',S,S,11.4192773557481);  
#413=  
IFCQUANTITYVOLUME('NetVolume',S,S,0.0590572727895325);  
#414=  
IFCQUANTITYVOLUME('GrossVolume',S,S,0.0606432835331773);  
#415= IFCQUANTITYWEIGHT('NetWeight',S,S,463.59959139783);  
#416=  
IFCQUANTITYWEIGHT('GrossWeight',S,S,476.049775735442);  
#417=  
IFCELEMENTQUANTITY('1nynQIRD5668U6z2l9wjsB',#5,'BaseQuantities',S,S,(#410,#411,#412,#361,#413,#414,#415,#416));  
#418= IFCLOCALPLACEMENT(#30,#10);  
#419=  
IFCELEMENTASSEMBLY('1Ogimc000ACp4qE3SuD30o',#5,'Steel Assembly',S,S,#418,S,'BE-0(?)',NOTDEFINED,..,RIGID\_FRAME.);  
#420= IFCQUANTITYLENGTH('Width',S,S,200.00000000681);  
#421=  
IFCELEMENTQUANTITY('215tem7Hf9Uf0PpRdbaiow',#5,'BaseQuantities',S,S,(#420));  
#422=  
IFCCARTESIANPOINT((1760.83280120676,112610.444783224,4502.8312624439));  
#423=  
IFCDIRECTION((0.712203655536502,0.201067846869145,0.672560535562301));  
#424= IFCDIRECTION((0.693563994897099,-0.349407904948161,-0.629986587906532));  
#425= IFCAXIS2PLACEMENT3D(#422,#423,#424);

#426= IFCLOCALPLACEMENT(#418,#425);  
#427=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#379));  
#428= IFCPRODUCTDEFINITIONSHAPE(S,S,(#427));  
#429=  
IFCMEMBER('1Ogimc000AD34qE3SuD30o',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#426,#428,'PO(?)');  
#430=  
IFCQUANTITYVOLUME('NetVolume',S,S,0.0590572755290039);  
#431= IFCQUANTITYWEIGHT('NetWeight',S,S,463.599612902681);  
#432=  
IFCELEMENTQUANTITY('2bVXt3StPew8f1c1B6TOB',#5,'BaseQuantities',S,S,(#384,#385,#386,#361,#430,#388,#431,#390));  
#433= IFCLOCALPLACEMENT(#30,#10);  
#434=  
IFCELEMENTASSEMBLY('1Ogimc000AC34qE3SuD30m',#5,'Steel Assembly',S,S,#433,S,'BE-0(?)',NOTDEFINED,..,RIGID\_FRAME.);  
#435= IFCPROPERTYSSINGLEVALUE('Assembly/Cast unit weight',S,IFCMASSMEASURE(418.9),S);  
#436= IFCPROPERTYSSINGLEVALUE('Assembly/Cast unit bottom elevation',S,IFCLABEL('-.228'),S);  
#437= IFCPROPERTYSSINGLEVALUE('Assembly/Cast unit top elevation',S,IFCLABEL('+.628'),S);  
#438= IFCPROPERTYSSINGLEVALUE('Assembly/Cast unit position code',S,IFCLABEL('3-5/D-E'),S);  
#439= IFCPROPERTYSET('3HxNvyj093thykiKPSbLzB',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#435,#436,#437,#438,#318));  
#440= IFCQUANTITYLENGTH('Width',S,S,200.000000020751);  
#441=  
IFCELEMENTQUANTITY('0WN6b7PNr0YhsOJnWfRozr',#5,'BaseQuantities',S,S,(#440));  
#442=  
IFCCARTESIANPOINT((6747.06402156794,161855.381756847,3441.07706079406));  
#443= IFCDIRECTION((-0.614761188322352,0.313261362164249,0.723834235379544));  
#444= IFCDIRECTION((-0.788166717313415,-0.278162829110612,-0.549016089218317));  
#445= IFCAXIS2PLACEMENT3D(#442,#443,#444);  
#446= IFCLOCALPLACEMENT(#433,#445);  
#447=  
IFCCARTESIANPOINT((6343.83530357717,2.89277536562722E-011,6.5716504123373E-012));  
#448= IFCAXIS2PLACEMENT3D(#447,#336,#335);  
#449= IFCEXTRUDEDAREASOLID(#333,#448,#9,6343.8);  
#450=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#449));  
#451= IFCSTYLEDITEM(#449,(#330,S));  
#452= IFCPRODUCTDEFINITIONSHAPE(S,S,(#450));  
#453=  
IFCMEMBER('1Ogimc000ABp4qE3SuD30m',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#446,#452,'PO(?)');  
#454= IFCPROPERTYSSINGLEVALUE('Bottom elevation',S,IFCLABEL('-.228'),S);  
#455= IFCPROPERTYSSINGLEVALUE('Top elevation',S,IFCLABEL('+.628'),S);  
#456= IFCPROPERTYSET('06lsFBDmFrNAZTVuSngHLW',#5,'Tekla Common','Common Properties to Shared building elements',(#454,#455,#71,#72,#73,#346));  
#457=  
IFCPROPERTYSSINGLEVALUE('Weight',S,IFCMASSMEASURE(418.9),S);  
#458= IFCPROPERTYSSINGLEVALUE('Net surface area',S,IFCAREAMEASURE(10.1),S);  
#459=  
IFCPROPERTYSSINGLEVALUE('Length',S,IFCLENGTHMEASURE(6343.8),S);  
#460= IFCPROPERTYSET('25y1FaNjv3a8cQqZGTiesx',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#457,#349,#78,#350,#458,#352,#353,#459));  
#461= IFCQUANTITYLENGTH('Length',S,S,6343.83530357951);  
#462=  
IFCQUANTITYAREA('OuterSurfaceArea',S,S,10.0486351208699);  
#463=  
IFCQUANTITYAREA('GrossSurfaceArea',S,S,10.0486351208699);  
#464=  
IFCQUANTITYVOLUME('NetVolume',S,S,0.0519686988062864);  
#465=  
IFCQUANTITYVOLUME('GrossVolume',S,S,0.0533643425737108);  
#466= IFCQUANTITYWEIGHT('NetWeight',S,S,407.954285629348);  
#467= IFCQUANTITYWEIGHT('GrossWeight',S,S,418.91008920363);  
#468=  
IFCELEMENTQUANTITY('2aLvbm7k52Qqd6b5HFA9uF',#5,'BaseQuantities',S,S,(#461,#462,#463,#361,#464,#465,#466,#467));  
#469= IFCLOCALPLACEMENT(#30,#10);  
#470=  
IFCELEMENTASSEMBLY('1Ogimc000AAp4qE3SuD30m',#5,'Steel Assembly',S,S,#469,S,'BE-0(?)',NOTDEFINED,..,RIGID\_FRAME.);  
#471= IFCPROPERTYSSINGLEVALUE('Assembly/Cast unit weight',S,IFCMASSMEASURE(419.1),S);  
#472= IFCPROPERTYSSINGLEVALUE('Assembly/Cast unit bottom elevation',S,IFCLABEL('-.084'),S);  
#473= IFCPROPERTYSSINGLEVALUE('Assembly/Cast unit top elevation',S,IFCLABEL('+.776'),S);  
#474= IFCPROPERTYSET('21SP39mmD8suXmEXDyqLi',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#471,#472,#473,#438,#318));  
#475= IFCQUANTITYLENGTH('Width',S,S,200.000000015367);  
#476=  
IFCELEMENTQUANTITY('1k\_lkNo\_T3buMvocVq7Xvd',#5,'BaseQuantities',S,S,(#475));  
#477=  
IFCCARTESIANPOINT((1875.93905303652,161918.015980816,3589.80826001687));

## Appendix

#478= IFCDIRECTION((0.615120698897987,0.313134491948081,0.723583661879999));  
#479= IFCDIRECTION((0.787893878763787,-0.278066519916635,-0.549456318835271));  
#480= IFCAXIS2PLACEMENT3D(#477,#478,#479);  
#481= IFCLOCALPLACEMENT(#469,#480);  
#482= IFCARTESIANPOINT((6346.03249029138,-2.91038304567337E-011,7.27595761418343E-012));  
#483= IFCAXIS2PLACEMENT3D(#482,#336,#335);  
#484= IFCXTRUDEDAREASOLID(#333,#483,#9,6346.);  
#485= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#484));  
#486= IFCSTYLEDITEM(#484,(#330),\$);  
#487= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#485));  
#488= IFCMEMBER('1Ogimc000AAZ4qE3SuD30m',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#481,#487,'P0(?)');  
#489= IFCPROPERTY SINGLEVALUE('Bottom elevation',\$.IFCLABEL(' -0.084'),\$);  
#490= IFCPROPERTY SINGLEVALUE('Top elevation',\$.IFCLABEL(' +3.776'),\$);  
#491= IFCPROPERTYSET('2yX2xKB7T4qAVATrhd2b4',#5,'Tekla Common','Common Properties to Shared building elements',(#489,#490,#71,#72,#73,#346));  
#492= IFCPROPERTY SINGLEVALUE('Weight',\$.IFCMASMEASURE(419.1),\$);  
#493= IFCPROPERTY SINGLEVALUE('Length',\$.IFCLENGTHMEASURE(6346.),\$);  
#494= IFCPROPERTYSET('2kjN9sXn7HxDysshXyq63',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#492,#349,#78,#350,#458,#352,#353,#493));  
#495= IFCQUANTITYLENGTH('Length',\$.S,6346.03249028142);  
#496= IFCQUANTITYAREA('OuterSurfaceArea',\$.S,10.0521154646058);  
#497= IFCQUANTITYAREA('GrossSurfaceArea',\$.S,10.0521154646058);  
#498= IFCQUANTITYVOLUME('NetVolume',\$.S,0.0519866981597989);  
#499= IFCQUANTITYVOLUME('GrossVolume',\$.S,0.0533828253082473);  
#500= IFCQUANTITYWEIGHT('NetWeight',\$.S,408.095580554422);  
#501= IFCQUANTITYWEIGHT('GrossWeight',\$.S,419.055178669742);  
#502= IFCLEMENTQUANTITY('1xxglqeYXDvx2TQOy8SihX',#5,'BaseQuantities',\$.S,(#495,#496,#497,#361,#498,#499,#500,#501));  
#503= IFCLOCALPLACEMENT(#30,#10);  
#504= IFCLEMENTASSEMBLY('1Ogimc000A734qE3SuD30m',#5,'Steel Assembly',\$.S,(#503,\$,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#505= IFCPROPERTY SINGLEVALUE('Assembly/Cast unit weight',\$.IFCMASMEASURE(466.8),\$);  
#506= IFCPROPERTY SINGLEVALUE('Assembly/Cast unit bottom elevation',\$.IFCLABEL(' -0.213'),\$);  
#507= IFCPROPERTY SINGLEVALUE('Assembly/Cast unit top elevation',\$.IFCLABEL(' +4.569'),\$);  
#508= IFCPROPERTYSET('1twu\$PzrFzPfkHeCUZAU0',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#505,#506,#507,#394,#318));  
#509= IFCQUANTITYLENGTH('Width',\$.S,200.00000001033);  
#510= IFCLEMENTQUANTITY('23zKNYROX5YOIKsaGWwAQx',#5,'BaseQuantities',\$.S,(#509));  
#511= IFCARTESIANPOINT((6742.200099849336,117081.076644015,4394.93293260891));  
#512= IFCDIRECTION((-0.702641524990444,-0.226513351996914,0.674526936990826));  
#513= IFCDIRECTION((-0.707255989937167,0.326247987971017,-0.627177179944281));  
#514= IFCAXIS2PLACEMENT3D(#511,#512,#513);  
#515= IFCLOCALPLACEMENT(#503,#514);  
#516= IFCARTESIANPOINT((7069.5760434556,1.47481353808114E-011,7.84880609778282E-013));  
#517= IFCAXIS2PLACEMENT3D(#516,#336,#335);  
#518= IFCXTRUDEDAREASOLID(#333,#517,#9,7069.6);  
#519= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#518));  
#520= IFCSTYLEDITEM(#518,(#330),\$);  
#521= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#519));  
#522= IFCMEMBER('1Ogimc000A6p4qE3SuD30m',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#515,#521,'P0(?)');  
#523= IFCPROPERTY SINGLEVALUE('Bottom elevation',\$.IFCLABEL(' -0.213'),\$);  
#524= IFCPROPERTY SINGLEVALUE('Top elevation',\$.IFCLABEL(' +4.569'),\$);  
#525= IFCPROPERTYSET('0Qr1ScIUX7kAGaTtB\_HS6M',#5,'Tekla Common','Common Properties to Shared building elements',(#523,#524,#71,#72,#73,#346));  
#526= IFCPROPERTY SINGLEVALUE('Weight',\$.IFCMASMEASURE(466.8),\$);  
#527= IFCPROPERTY SINGLEVALUE('Net surface area',\$.IFCAREAMEASURE(11.2),\$);  
#528= IFCPROPERTY SINGLEVALUE('Length',\$.IFCLENGTHMEASURE(7069.6),\$);  
#529= IFCPROPERTYSET('2RR1iHwHrAUwdPWA3Y4LiF',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#526,#349,#78,#350,#527,#352,#353,#528));  
#530= IFCQUANTITYLENGTH('Length',\$.S,7069.57604347014);  
#531= IFCQUANTITYAREA('OuterSurfaceArea',\$.S,11.1982084528567);  
#532= IFCQUANTITYAREA('GrossSurfaceArea',\$.S,11.1982084528567);  
#533= IFCQUANTITYVOLUME('NetVolume',\$.S,0.0579139669482299);  
#534= IFCQUANTITYVOLUME('GrossVolume',\$.S,0.0594692736776708);  
#535= IFCQUANTITYWEIGHT('NetWeight',\$.S,454.624640543605);  
#536= IFCQUANTITYWEIGHT('GrossWeight',\$.S,466.833798369716);  
#537= IFCLEMENTQUANTITY('3LMg0w\$29EE0w9d5XA2r1X',#5,'BaseQuantities',\$.S,(#530,#531,#532,#361,#533,#534,#535,#536));  
#538= IFCLOCALPLACEMENT(#30,#10);  
#539= IFCLEMENTASSEMBLY('1Ogimc000A5p4qE3SuD30m',#5,'Steel Assembly',\$.S,(#538,\$,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#540= IFCQUANTITYLENGTH('Width',\$.S,200.000000006126);  
#541= IFCLEMENTQUANTITY('244xS1SCzCrBHq1GrMakD',#5,'BaseQuantities',\$.S,(#540));  
#542= IFCARTESIANPOINT((1757.79991010474,117081.076643998,4394.93293266416));  
#543= IFCDIRECTION((0.7026415251496,-0.226513351048229,0.674526937143614));  
#544= IFCDIRECTION((0.707255989937167,0.326247987971016,-0.627177179944282));  
#545= IFCAXIS2PLACEMENT3D(#542,#543,#544);  
#546= IFCLOCALPLACEMENT(#538,#545);  
#547= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#518));  
#548= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#547));  
#549= IFCMEMBER('1Ogimc000A5Z4qE3SuD30m',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#546,#548,'P0(?)');  
#550= IFCQUANTITYLENGTH('Length',\$.S,7069.57603648229);  
#551= IFCQUANTITYAREA('OuterSurfaceArea',\$.S,11.1982084417879);  
#552= IFCQUANTITYAREA('GrossSurfaceArea',\$.S,11.1982084417879);  
#553= IFCQUANTITYVOLUME('NetVolume',\$.S,0.0579139668906959);  
#554= IFCQUANTITYVOLUME('GrossVolume',\$.S,0.059469273618889);  
#555= IFCQUANTITYWEIGHT('NetWeight',\$.S,454.624640091963);  
#556= IFCQUANTITYWEIGHT('GrossWeight',\$.S,466.833797908279);  
#557= IFCLEMENTQUANTITY('3t7zPvu17fa kt\_52S2JW',#5,'BaseQuantities',\$.S,(#550,#551,#552,#361,#553,#554,#555,#556));  
#558= IFCLOCALPLACEMENT(#30,#10);  
#559= IFCLEMENTASSEMBLY('1Ogimc000A4Z4qE3SuD30m',#5,'Steel Assembly',\$.S,(#558,\$,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#560= IFCPROPERTY SINGLEVALUE('Assembly/Cast unit weight',\$.IFCMASMEASURE(452.1),\$);  
#561= IFCPROPERTY SINGLEVALUE('Assembly/Cast unit bottom elevation',\$.IFCLABEL(' -0.218'),\$);  
#562= IFCPROPERTY SINGLEVALUE('Assembly/Cast unit top elevation',\$.IFCLABEL(' +4.261'),\$);  
#563= IFCPROPERTYSET('23qcl6F2v0AvC2cADKXZ5Y',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#560,#561,#562,#394,#318));  
#564= IFCQUANTITYLENGTH('Width',\$.S,200.000000009284);  
#565= IFCLEMENTQUANTITY('3J7ScXYnREZ9raUa4ZpaxG',#5,'BaseQuantities',\$.S,(#564));  
#566= IFCARTESIANPOINT((6742.52758385303,126184.268203802,4083.13702812245));  
#567= IFCDIRECTION((-0.679102103602447,-0.246504493855687,0.691415842595238));  
#568= IFCDIRECTION((-0.730230538639283,0.322755609840567,-0.602156272702549));  
#569= IFCAXIS2PLACEMENT3D(#566,#567,#568);  
#570= IFCLOCALPLACEMENT(#558,#569);  
#571= IFCARTESIANPOINT((6847.15268712805,1.47419618925262E-011,0.));  
#572= IFCAXIS2PLACEMENT3D(#571,#336,#335);  
#573= IFCXTRUDEDAREASOLID(#333,#572,#9,6847.2);  
#574= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#573));  
#575= IFCSTYLEDITEM(#573,(#330),\$);  
#576= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#574));  
#577= IFCMEMBER('1Ogimc000A4J4qE3SuD30m',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#570,#576,'P0(?)');  
#578= IFCPROPERTY SINGLEVALUE('Bottom elevation',\$.IFCLABEL(' -0.218'),\$);  
#579= IFCPROPERTY SINGLEVALUE('Top elevation',\$.IFCLABEL(' +4.261'),\$);  
#580= IFCPROPERTYSET('3qNH2KY\_90yfykH2LVIF7',#5,'Tekla Common','Common Properties to Shared building elements',(#578,#579,#71,#72,#73,#346));  
#581= IFCPROPERTY SINGLEVALUE('Weight',\$.IFCMASMEASURE(452.1),\$);  
#582= IFCPROPERTY SINGLEVALUE('Net surface area',\$.IFCAREAMEASURE(10.9),\$);

#583= IFCPROPERTYSINGLEVALUE('Length',S,IFCLENGTHMEASURE(6 847.2),S);  
#584= IFCPROPERTYSET('2eCSfLcX4COnGeRvhvuwJ',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#581,#349,#78,#350,#582,#352,#353,#583));  
#585= IFCQUANTITYLENGTH('Length',S,S,6847.15268713248);  
#586= IFCQUANTITYAREA('OuterSurfaceArea',S,S,10.8458898564178);  
#587= IFCQUANTITYAREA('GrossSurfaceArea',S,S,10.8458898564178);  
#588= IFCQUANTITYVOLUME('NetVolume',S,S,0.056091874812788);  
#589= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0575982484041584);  
#590= IFCQUANTITYWEIGHT('NetWeight',S,S,440.321217280386);  
#591= IFCQUANTITYWEIGHT('GrossWeight',S,S,452.146249972643);  
#592= IFCELEMENTQUANTITY('09p2MFjF982xHXEUJSGhl',#5,'BaseQu antities',S,S,(#585,#586,#587,#361,#588,#589,#590,#591));  
#593= IFLOCALPLACEMENT(#30,#10);  
#594= IFCELEMENTASSEMBLY('1Ogimc000A334qE3SuD30m',#5,'Steel Assembly',S,S,#593,S,'BE-0(?)',NOTDEFINED,..RIGID\_FRAME.);  
#595= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit weight',S,IFCMASMEASURE(456.2),S);  
#596= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit bottom elevation',S,IFCLABEL(' -0.216'),S);  
#597= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit top elevation',S,IFCLABEL(' +4.360'),S);  
#598= IFCPROPERTYSET('2ZnamPrmL4hQ9RzUSy4VjM',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#595,#596,#597,#394,#318));  
#599= IFCQUANTITYLENGTH('Width',S,S,200.000000008527);  
#600= IFCELEMENTQUANTITY('29jaSK5w19a8eFGXlByxqr',#5,'BaseQuant ities',S,S,(#599));  
#601= IFCCARTESIANPOINT((1757.05226099047,126184.082502995,4183. 48766793185));  
#602= IFCDIRECTION((0.68637924111649,- 0.243288062041297,0.685342583116314));  
#603= IFCDIRECTION((0.723816339061021,0.31992058802697,- 0.611343377051538));  
#604= IFCAXIS2PLACEMENT3D(#601,#602,#603);  
#605= IFLOCALPLACEMENT(#593,#604);  
#606= IFCCARTESIANPOINT((6907.82970277437,1.45519152283669E- 011,-3.83461579310484E-013));  
#607= IFCAXIS2PLACEMENT3D(#606,#336,#335);  
#608= IFCEXTRUDEDAREASOLID(#333,#607,#9,6907.8);  
#609= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#608));  
#610= IFCSTYLEDITEM(#608,(#330),S);  
#611= IFCPRODUCTDEFINITIONSHAPE(S,S,(#609));  
#612= IFCMEMBER('1Ogimc000A334qE3SuD30m',#5,'BEAM',HN400\*200\* 8\*13',HN400\*200\*8\*13',#605,#611,'PO(?)');  
#613= IFCPROPERTYSINGLEVALUE('Bottom elevation',S,IFCLABEL(' -0.216'),S);  
#614= IFCPROPERTYSINGLEVALUE('Top elevation',S,IFCLABEL(' +4.360'),S);  
#615= IFCPROPERTYSET('1oQRIC7aH3wRTqaSz6y2BG',#5,'Tekla Common','Common Properties to Shared building elements',(#613,#614,#71,#72,#73,#346));  
#616= IFCPROPERTYSINGLEVALUE('Weight',S,IFCMASMEASURE(456. 2),S);  
#617= IFCPROPERTYSINGLEVALUE('Length',S,IFCLENGTHMEASURE(6 907.8),S);  
#618= IFCPROPERTYSET('3f2TXFGT7\_8F6SXG\_2zbk',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#616,#349,#78,#350,#582,#352,#353,#617));  
#619= IFCQUANTITYLENGTH('Length',S,S,6907.82970276581);  
#620= IFCQUANTITYAREA('OuterSurfaceArea',S,S,10.942002249181);  
#621= IFCQUANTITYAREA('GrossSurfaceArea',S,S,10.942002249181);  
#622= IFCQUANTITYVOLUME('NetVolume',S,S,0.0565889409251104);  
#623= IFCQUANTITYVOLUME('GrossVolume',S,S,0.058108663459666);  
#624= IFCQUANTITYWEIGHT('NetWeight',S,S,444.223186262117);  
#625= IFCQUANTITYWEIGHT('GrossWeight',S,S,456.153008158378);  
#626= IFCELEMENTQUANTITY('2ey73 MBjFdenn80eA6E6L',#5,'BaseQua ntities',S,S,(#619,#620,#621,#361,#622,#623,#624,#625));  
#627= IFLOCALPLACEMENT(#30,#10);  
#628= IFCELEMENTASSEMBLY('1Ogimc000A234qE3SuD30m',#5,'Steel Assembly',S,S,#627,S,'BE-0(?)',NOTDEFINED,..RIGID\_FRAME.);  
#629= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit weight',S,IFCMASMEASURE(445.6),S);  
#630= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit bottom elevation',S,IFCLABEL(' -0.219'),S);  
#631= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit top elevation',S,IFCLABEL(' +4.161'),S);  
#632= IFCPROPERTYSET('2RoBGSLr10pBnYnHQDbcHf',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#629,#630,#631,#394,#318));  
#633= IFCQUANTITYLENGTH('Width',S,S,200.00000000175);

#634= IFCELEMENTQUANTITY('2fKgDA6er2Z9YzBKpLqK0',#5,'BaseQu antities',S,S,(#633));  
#635= IFCCARTESIANPOINT((1755.85346251203,134847.246522413,3982. 27512039199));  
#636= IFCDIRECTION((0.668991477697379,- 0.262572948881218,0.695345848685457));  
#637= IFCDIRECTION((0.740961594802683,0.309273957917639,- 0.596091883841261));  
#638= IFCAXIS2PLACEMENT3D(#635,#636,#637);  
#639= IFLOCALPLACEMENT(#627,#638);  
#640= IFCCARTESIANPOINT((6747.9880858857,5.61882880713491E- 013,3.74588587142327E-013));  
#641= IFCAXIS2PLACEMENT3D(#640,#336,#335);  
#642= IFCEXTRUDEDAREASOLID(#333,#641,#9,6748.);  
#643= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#642));  
#644= IFCSTYLEDITEM(#642,(#330),S);  
#645= IFCPRODUCTDEFINITIONSHAPE(S,S,(#643));  
#646= IFCMEMBER('1Ogimc000A1p4qE3SuD30m',#5,'BEAM',HN400\*200\* 8\*13',HN400\*200\*8\*13',#639,#645,'PO(?)');  
#647= IFCPROPERTYSINGLEVALUE('Bottom elevation',S,IFCLABEL(' -0.219'),S);  
#648= IFCPROPERTYSINGLEVALUE('Top elevation',S,IFCLABEL(' +4.161'),S);  
#649= IFCPROPERTYSET('0nzWoki0T4FvLcVl3181tX',#5,'Tekla Common','Common Properties to Shared building elements',(#647,#648,#71,#72,#73,#346));  
#650= IFCPROPERTYSINGLEVALUE('Weight',S,IFCMASMEASURE(445. 6),S);  
#651= IFCPROPERTYSINGLEVALUE('Net surface area',S,IFCAREAMEASURE(10.7),S);  
#652= IFCPROPERTYSINGLEVALUE('Length',S,IFCLENGTHMEASURE(6 748.),S);  
#653= IFCPROPERTYSET('3SjB8Wl7j3SBan7Z\_tFzf',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#650,#349,#78,#350,#651,#352,#353,#652));  
#654= IFCQUANTITYLENGTH('Length',S,S,6747.98808588167);  
#655= IFCQUANTITYAREA('OuterSurfaceArea',S,S,10.6888131280366);  
#656= IFCQUANTITYAREA('GrossSurfaceArea',S,S,10.6888131280366);  
#657= IFCQUANTITYVOLUME('NetVolume',S,S,0.0552795183993803);  
#658= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0567640757784366);  
#659= IFCQUANTITYWEIGHT('NetWeight',S,S,433.944219435136);  
#660= IFCQUANTITYWEIGHT('GrossWeight',S,S,445.597994860727);  
#661= IFCELEMENTQUANTITY('2UUIk9 aX08OXQemvQWRZm',#5,'Base Quantities',S,S,(#654,#655,#656,#361,#657,#658,#659,#660));  
#662= IFLOCALPLACEMENT(#30,#10);  
#663= IFCELEMENTASSEMBLY('1Ogimc000A0p4qE3SuD30m',#5,'Steel Assembly',S,S,#662,S,'BE-0(?)',NOTDEFINED,..RIGID\_FRAME.);  
#664= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit weight',S,IFCMASMEASURE(446.),S);  
#665= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit top elevation',S,IFCLABEL(' +4.165'),S);  
#666= IFCPROPERTYSET('16UDPjvw0rxkMyrHOgHs3',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#664,#630,#665,#394,#318));  
#667= IFCQUANTITYLENGTH('Width',S,S,200.000000015076);  
#668= IFCELEMENTQUANTITY('1LUaWyWivBmVq\_8e6e4xca',#5,'BaseQu antities',S,S,(#667));  
#669= IFCCARTESIANPOINT((6743.96236138797,134835.25937173,3986.2 7710648887));  
#670= IFCDIRECTION((-0.669568943896947,- 0.261188472959788,0.695311448892985));  
#671= IFCDIRECTION((0.740291927136545,0.31077088605732,- 0.596145384109958));  
#672= IFCAXIS2PLACEMENT3D(#669,#670,#671);  
#673= IFLOCALPLACEMENT(#662,#672);  
#674= IFCCARTESIANPOINT((6754.09227368505,1.874637188172E- 013,-3.74927437634401E-013));  
#675= IFCAXIS2PLACEMENT3D(#674,#336,#335);  
#676= IFCEXTRUDEDAREASOLID(#333,#675,#9,6754.1);  
#677= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#676));  
#678= IFCSTYLEDITEM(#676,(#330),S);  
#679= IFCPRODUCTDEFINITIONSHAPE(S,S,(#677));  
#680= IFCMEMBER('1Ogimc000A024qE3SuD30m',#5,'BEAM',HN400\*200\* 8\*13',HN400\*200\*8\*13',#673,#679,'PO(?)');  
#681= IFCPROPERTYSINGLEVALUE('Top elevation',S,IFCLABEL(' +4.165'),S);  
#682= IFCPROPERTYSET('18ldy5uAv3s8LksdSGSjr',#5,'Tekla Common','Common Properties to Shared building elements',(#647,#681,#71,#72,#73,#346));  
#683= IFCPROPERTYSINGLEVALUE('Weight',S,IFCMASMEASURE(446. ),S);  
#684= IFCPROPERTYSINGLEVALUE('Length',S,IFCLENGTHMEASURE(6 754.1),S);



## Appendix

#685= IFCPROPERTYSET('2pNSYEPLPB19ky37qkDFRC',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#683,#349,#78,#350,#651,#352,#353,#684);  
#686= IFCQUANTITYLENGTH('Length',\$.S,6754.09227366689);  
#687= IFCQUANTITYAREA('OuterSurfaceArea',\$.S,10.6984821614884);  
#688= IFCQUANTITYAREA('GrossSurfaceArea',\$.S,10.6984821614884);  
#689= IFCQUANTITYVOLUME('NetVolume',\$.S,0.0553295239059967);  
#690= IFCQUANTITYVOLUME('GrossVolume',\$.S,0.0568154242060859);  
#691= IFCQUANTITYWEIGHT('NetWeight',\$.S,434.336762662074);  
#692= IFCQUANTITYWEIGHT('GrossWeight',\$.S,446.001080017774);  
#693= IFCELEMENTQUANTITY('17PnlCwwH52AKnftGSqQa',#5,'BaseQuantities',\$.S,(#686,#687,#688,#361,#689,#690,#691,#692));  
#694= IFCLOCALPLACEMENT(#30,#10);  
#695= IFCELEMENTASSEMBLY('1Ogjm0009S24qE3SuD30m',#5,'Steel Assembly',\$.S,(#694,'BE-0(?)',NOTDEFINED,..RIGID\_FRAME.);  
#696= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit weight',\$.IFCMASSEASURE(435.8),S);  
#697= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit bottom elevation',\$.IFCLABEL(' -0.222'),S);  
#698= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit top elevation',\$.IFCLABEL(' +3.973'),S);  
#699= IFCPROPERTYSET('1tx5hJ\$EzAKufnrqH8A6ep',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#696,#697,#698,#394,#318));  
#700= IFCQUANTITYLENGTH('Width',\$.S,200.000000007305);  
#701= IFCELEMENTQUANTITY('1GCZXgMxD7Xgu5RCC7WCzZ',#5,'Base Quantities',\$.S,(#700));  
#702= IFCARTESIANPOINT((6745.36291668958,143050.603775001,3791.73184018564));  
#703= IFCDIRECTION((-0.650951636147963,-0.281479992063989,0.705004242160249));  
#704= IFCDIRECTION((-0.757701609111419,0.297651216043769,-0.580768478085401));  
#705= IFCAXIS2PLACEMENT3D(#702,#703,#704);  
#706= IFCLOCALPLACEMENT(#694,#705);  
#707= IFCARTESIANPOINT((6598.90373836913,0.,3.66312743381122E-013));  
#708= IFCAXIS2PLACEMENT3D(#707,#336,#335);  
#709= IFCXTRUDEDAREASOLID(#333,#708,#9,6598.9);  
#710= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#709));  
#711= IFCSTYLEDITEM(#709,(#330),S);  
#712= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#710));  
#713= IFCMEMBER('1Ogjm0009S4qE3SuD30m',#5,'BEAM',HN400\*200\*8\*13,'HN400\*200\*8\*13',#706,#712,'PO(?)');  
#714= IFCPROPERTYSINGLEVALUE('Bottom elevation',\$.IFCLABEL(' -0.222'),S);  
#715= IFCPROPERTYSINGLEVALUE('Top elevation',\$.IFCLABEL(' +3.973'),S);  
#716= IFCPROPERTYSET('2vcZQ2bfl8Dg0RACj4ck13',#5,'Tekla Common','Common Properties to Shared building elements',(#714,#715,#717,#73,#346));  
#717= IFCPROPERTYSINGLEVALUE('Weight',\$.IFCMASSEASURE(435.8),S);  
#718= IFCPROPERTYSINGLEVALUE('Net surface area',\$.IFCAREAMEASURE(10.5),S);  
#719= IFCPROPERTYSINGLEVALUE('Length',\$.IFCLENGTHMEASURE(6598.9),S);  
#720= IFCPROPERTYSET('0S0kpXQmb1TBzW7e4y9Q',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#717,#349,#78,#350,#718,#352,#353,#719));  
#721= IFCQUANTITYLENGTH('Length',\$.S,6598.90373836173);  
#722= IFCQUANTITYAREA('OuterSurfaceArea',\$.S,10.452663521565);  
#723= IFCQUANTITYAREA('GrossSurfaceArea',\$.S,10.452663521565);  
#724= IFCQUANTITYVOLUME('NetVolume',\$.S,0.0540582194249716);  
#725= IFCQUANTITYVOLUME('GrossVolume',\$.S,0.0555099782470989);  
#726= IFCQUANTITYWEIGHT('NetWeight',\$.S,424.357022486027);  
#727= IFCQUANTITYWEIGHT('GrossWeight',\$.S,435.753329239726);  
#728= IFCELEMENTQUANTITY('19m18yLZf7 ACXuUyrs7w',#5,'BaseQuantities',\$.S,(#721,#722,#723,#361,#724,#725,#726,#727));  
#729= IFCLOCALPLACEMENT(#30,#10);  
#730= IFCELEMENTASSEMBLY('1Ogjm0009 J4qE3SuD30m',#5,'Steel Assembly',\$.S,(#729,'BE-0(?)',NOTDEFINED,..RIGID\_FRAME.);  
#731= IFCQUANTITYLENGTH('Width',\$.S,200.000000002648);  
#732= IFCELEMENTQUANTITY('02cxa\$KczCx9LXyVz9YSz',#5,'BaseQuantities',\$.S,(#731));  
#733= IFCARTESIANPOINT((1754.63704928097,143050.603775021,3791.73184013396));  
#734= IFCDIRECTION((0.650951633711134,-0.281479993875085,0.705004243687148));  
#735= IFCDIRECTION((0.7577016110668824,0.297651215027037,-0.580768476052753));  
#736= IFCAXIS2PLACEMENT3D(#733,#734,#735);  
#737= IFCLOCALPLACEMENT(#729,#736);  
#738= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#709));  
#739= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#738));  
#740= IFCMEMBER('1Ogjm0009 34qE3SuD30m',#5,'BEAM',HN400\*200\*8\*13,'HN400\*200\*8\*13',#737,#739,'PO(?)');  
#741= IFCQUANTITYLENGTH('Length',\$.S,6598.90376408248);  
#742= IFCQUANTITYAREA('OuterSurfaceArea',\$.S,10.452663523066);  
#743= IFCQUANTITYAREA('GrossSurfaceArea',\$.S,10.452663523066);  
#744= IFCQUANTITYVOLUME('NetVolume',\$.S,0.0540582196354104);  
#745= IFCQUANTITYVOLUME('GrossVolume',\$.S,0.0555099784634618);  
#746= IFCQUANTITYWEIGHT('NetWeight',\$.S,424.357024137971);  
#747= IFCQUANTITYWEIGHT('GrossWeight',\$.S,435.75330938175);  
#748= IFCELEMENTQUANTITY('3rLzEI1iX1V8H CFxKCFoz',#5,'BaseQuantities',\$.S,(#742,#743,#744,#745,#746,#747));  
#749= IFCLOCALPLACEMENT(#30,#10);  
#750= IFCELEMENTASSEMBLY('1Ogjm0009234qE3SuD30m',#5,'Steel Assembly',\$.S,(#749,'BE-0(?)',NOTDEFINED,..RIGID\_FRAME.);  
#751= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit weight',\$.IFCMASSEASURE(423.2),S);  
#752= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit bottom elevation',\$.IFCLABEL(' -0.227'),S);  
#753= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit top elevation',\$.IFCLABEL(' +3.697'),S);  
#754= IFCPROPERTYSET('2SfwLjvNzEZuxASwQ57FzI',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#751,#752,#753,#394,#318));  
#755= IFCQUANTITYLENGTH('Width',\$.S,200.0000000024011);  
#756= IFCELEMENTQUANTITY('2V8EMB2Z9Ae9wQhOSME8',#5,'Base Quantities',\$.S,(#755));  
#757= IFCARTESIANPOINT((6745.82009343758,150807.703324382,3511.17589883479));  
#758= IFCDIRECTION((-0.624169643902962,-0.301488223953129,0.720775350887943));  
#759= IFCDIRECTION((-0.780169913187196,0.289869594069551,-0.554355955133014));  
#760= IFCAXIS2PLACEMENT3D(#757,#758,#759);  
#761= IFCLOCALPLACEMENT(#749,#760);  
#762= IFCARTESIANPOINT((6408.86031873182,2.91038304567337E-011,-3.5576321437313E-013));  
#763= IFCAXIS2PLACEMENT3D(#762,#336,#335);  
#764= IFCXTRUDEDAREASOLID(#333,#763,#9,6408.9);  
#765= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#764));  
#766= IFCSTYLEDITEM(#764,(#330),S);  
#767= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#765));  
#768= IFCMEMBER('1Ogjm0009p4qE3SuD30m',#5,'BEAM',HN400\*200\*8\*13,'HN400\*200\*8\*13',#761,#767,'PO(?)');  
#769= IFCPROPERTYSINGLEVALUE('Bottom elevation',\$.IFCLABEL(' -0.227'),S);  
#770= IFCPROPERTYSINGLEVALUE('Top elevation',\$.IFCLABEL(' +3.697'),S);  
#771= IFCPROPERTYSET('1TnHnDuCPBng4wrYI6Ivfy',#5,'Tekla Common','Common Properties to Shared building elements',(#769,#770,#717,#72,#73,#346));  
#772= IFCPROPERTYSINGLEVALUE('Weight',\$.IFCMASSEASURE(423.2),S);  
#773= IFCPROPERTYSINGLEVALUE('Length',\$.IFCLENGTHMEASURE(6408.9),S);  
#774= IFCPROPERTYSET('0opP8DeSL76fzP5REcmZ',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#772,#349,#78,#350,#458,#352,#353,#773));  
#775= IFCQUANTITYLENGTH('Length',\$.S,6408.86031872687);  
#776= IFCQUANTITYAREA('OuterSurfaceArea',\$.S,10.1516347448634);  
#777= IFCQUANTITYAREA('GrossSurfaceArea',\$.S,10.1516347448634);  
#778= IFCQUANTITYVOLUME('NetVolume',\$.S,0.0525013837301783);  
#779= IFCQUANTITYVOLUME('GrossVolume',\$.S,0.0539113330011304);  
#780= IFCQUANTITYWEIGHT('NetWeight',\$.S,412.1358622819);  
#781= IFCQUANTITYWEIGHT('GrossWeight',\$.S,423.203964058874);  
#782= IFCELEMENTQUANTITY('19XcVcF839HRpvoveREW',#5,'BaseQuantities',\$.S,(#775,#776,#777,#361,#778,#779,#780,#781));  
#783= IFCLOCALPLACEMENT(#30,#10);  
#784= IFCELEMENTASSEMBLY('1Ogjm0009xp4qE3SuD30m',#5,'Steel Assembly',\$.S,(#783,'BE-0(?)',NOTDEFINED,..RIGID\_FRAME.);  
#785= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit weight',\$.IFCMASSEASURE(426.9),S);  
#786= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit bottom elevation',\$.IFCLABEL(' -0.225'),S);  
#787= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit top elevation',\$.IFCLABEL(' +3.796'),S);  
#788= IFCPROPERTYSET('3D73BQYiv6zxCdDDdS0jCx',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#785,#786,#787,#394,#318));  
#789= IFCQUANTITYLENGTH('Width',\$.S,200.0000000017433);

#790=  
IFCELEMENTQUANTITY('1SEBeqYKPD\$Rjhpw1000Y',#5,'BaseQuantities',S,S,(#789));  
#791=  
IFCCARTESIANPOINT((1753.67986602999,150807.517535989,3611.53618520185));  
#792=  
IFCDIRECTION((0.632830598934262,-0.298270274969004,0.714535006925755));  
#793=  
IFCDIRECTION((0.773415342337877,0.287359954125536,-0.565024747246839));  
#794=  
IFCAXIS2PLACEMENT3D(#791,#792,#793);  
#795=  
IFCLOCALPLACEMENT(#783,#794);  
#796=  
IFCCARTESIANPOINT((6464.83167310898,-2.89243953323884E-011,7.27595761418343E-012));  
#797=  
IFCAXIS2PLACEMENT3D(#796,#336,#335);  
#798=  
IFCETRUDAREASOLID(#333,#797,#9,6464.8);  
#799=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#798));  
#800=  
IFCSTYLEDITEM(#798,(#330),S);  
#801=  
IFCPRODUCTDEFINITIONSHAPE(S,S,(#799));  
#802=  
IFCMEMBER('1Ogimc0009xZ4qE3SuD30m',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#795,#801,'PO(?)');  
#803=  
IFCPROPERTYSINGLEVALUE('Bottom elevation',S,IFCLABEL(' -0.225'),S);  
#804=  
IFCPROPERTYSINGLEVALUE('Top elevation',S,IFCLABEL(' +3.796'),S);  
#805=  
IFCPROPERTYSET('1MT84wa8T7QR\$FcN\_31AUU',#5,'Tekla Common','Common Properties to Shared building elements',(#803,#804,#71,#72,#73,#346));  
#806=  
IFCPROPERTYSINGLEVALUE('Weight',S,IFCMASSMEASURE(426.9),S);  
#807=  
IFCPROPERTYSINGLEVALUE('Net surface area',S,IFCAREAMEASURE(10.3),S);  
#808=  
IFCPROPERTYSINGLEVALUE('Length',S,IFCLENGTHMEASURE(6464.8),S);  
#809=  
IFCPROPERTYSET('3RACBrHMx6IPMKi\$4D\_tvq',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#806,#349,#78,#350,#807,#352,#353,#808));  
#810=  
IFCQUANTITYLENGTH('Length',S,S,6464.83167309942);  
#811=  
IFCQUANTITYAREA('OuterSurfaceArea',S,S,10.2402933701895);  
#812=  
IFCQUANTITYAREA('GrossSurfaceArea',S,S,10.2402933701895);  
#813=  
IFCQUANTITYVOLUME('NetVolume',S,S,0.052959901065744);  
#814=  
IFCQUANTITYVOLUME('GrossVolume',S,S,0.0543821640341123);  
#815=  
IFCQUANTITYWEIGHT('NetWeight',S,S,415.735223366091);  
#816=  
IFCQUANTITYWEIGHT('GrossWeight',S,S,426.899987667782);  
#817=  
IFCELEMENTQUANTITY('3XMSvsL4H3hvcLQwXvww\_H',#5,'BaseQuantities',S,S,(#818,#811,#812,#361,#813,#814,#815,#816));  
#818=  
IFCLOCALPLACEMENT(#30,#10);  
#819=  
IFCELEMENTASSEMBLY('1Ogimc0009wZ4qE3SuD30m',#5,'Steel Assembly',S,S,(#818,S,'BE-0?'),NOTDEFINED,,RIGID\_FRAME.);  
#820=  
IFCPROPERTYSET('0fbb\_Tyef0Eep524s05D9',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#435,#436,#437,#394,#318));  
#821=  
IFCCARTESIANPOINT((6747.06402156794,158144.618243153,3441.07706079406));  
#822=  
IFCDIRECTION((-0.614761188322352,-0.313261362164249,0.72383423379544));  
#823=  
IFCDIRECTION((-0.788166717313415,0.278162829110612,-0.549016089218317));  
#824=  
IFCAXIS2PLACEMENT3D(#821,#822,#823);  
#825=  
IFCLOCALPLACEMENT(#818,#824);  
#826=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#449));  
#827=  
IFCPRODUCTDEFINITIONSHAPE(S,S,(#826));  
#828=  
IFCMEMBER('1Ogimc0009wJ4qE3SuD30m',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#825,#827,'PO(?)');  
#829=  
IFCQUANTITYLENGTH('Length',S,S,6343.8353035795);  
#830=  
IFCQUANTITYAREA('OuterSurfaceArea',S,S,10.0486351208699);  
#831=  
IFCQUANTITYAREA('GrossSurfaceArea',S,S,10.0486351208699);  
#832=  
IFCQUANTITYVOLUME('NetVolume',S,S,0.0519686988063118);  
#833=  
IFCQUANTITYVOLUME('GrossVolume',S,S,0.0533643245737108);  
#834=  
IFCQUANTITYWEIGHT('NetWeight',S,S,407.954285629548);  
#835=  
IFCQUANTITYWEIGHT('GrossWeight',S,S,418.91008920363);  
#836=  
IFCELEMENTQUANTITY('04XA4lkO99Ywy7LzrDIWpg',#5,'BaseQuantities',S,S,(#829,#830,#831,#832,#833,#834,#835));  
#837=  
IFCLOCALPLACEMENT(#30,#10);  
#838=  
IFCELEMENTASSEMBLY('1Ogimc0009wJ4qE3SuD30m',#5,'Steel Assembly',S,S,(#837,S,'BE-0?'),NOTDEFINED,,RIGID\_FRAME.);  
#839=  
IFCPROPERTYSET('2loSHO01E\_wFH6Lld05q',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#471,#472,#473,#394,#318));  
#840=  
IFCCARTESIANPOINT((1875.93905303652,158081.984019184,3589.80826001687));  
#841=  
IFCDIRECTION((0.615120698897987,-0.313134491948081,0.72358366188));

#842=  
IFCDIRECTION((0.787893878763787,0.278066519916635,-0.549456318835271));  
#843=  
IFCAXIS2PLACEMENT3D(#840,#841,#842);  
#844=  
IFCLOCALPLACEMENT(#837,#843);  
#845=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#484));  
#846=  
IFCPRODUCTDEFINITIONSHAPE(S,S,(#845));  
#847=  
IFCMEMBER('1Ogimc0009v34qE3SuD30m',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#844,#846,'PO(?)');  
#848=  
IFCQUANTITYVOLUME('NetVolume',S,S,0.0519866981597828);  
#849=  
IFCQUANTITYWEIGHT('NetWeight',S,S,408.095580554295);  
#850=  
IFCELEMENTQUANTITY('2FGJIEy5TF7QxJrO0cPrwj',#5,'BaseQuantities',S,S,(#495,#496,#497,#361,#848,#499,#849,#501));  
#851=  
IFCLOCALPLACEMENT(#30,#10);  
#852=  
IFCELEMENTASSEMBLY('1Ogimc0009u34qE3SuD30m',#5,'Steel Assembly',S,S,(#851,S,'BE-0?'),NOTDEFINED,,RIGID\_FRAME.);  
#853=  
IFCPROPERTYSINGLEVALUE('Assembly/Cast unit weight',S,IFCMASSMEASURE(408),S);  
#854=  
IFCPROPERTYSINGLEVALUE('Assembly/Cast unit bottom elevation',S,IFCLABEL(' -0.233'),S);  
#855=  
IFCPROPERTYSINGLEVALUE('Assembly/Cast unit top elevation',S,IFCLABEL(' +3.370'),S);  
#856=  
IFCPROPERTYSET('0yTV9IP5AWR8V\_yNV2\_34',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#853,#854,#855,#438,#318));  
#857=  
IFCQUANTITYLENGTH('Width',S,S,200.000000006548);  
#858=  
IFCELEMENTQUANTITY('3SxjLn7r6igKJxOZOL6i',#5,'BaseQuantities',S,S,(#857));  
#859=  
IFCCARTESIANPOINT((6747.24603523231,165088.834698215,3179.71065827907));  
#860=  
IFCDIRECTION((-0.586938732245039,-0.330851747138134,0.7389452253085));  
#861=  
IFCDIRECTION((-0.8091628303458,0.270756179115709,-0.52148500022286));  
#862=  
IFCAXIS2PLACEMENT3D(#859,#860,#861);  
#863=  
IFCLOCALPLACEMENT(#851,#862);  
#864=  
IFCCARTESIANPOINT((6179.2260155054,1.71507974919422E-013,7.61897356402227E-012));  
#865=  
IFCAXIS2PLACEMENT3D(#864,#336,#335);  
#866=  
IFCETRUDAREASOLID(#333,#865,#9,6179.2);  
#867=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#866));  
#868=  
IFCSTYLEDITEM(#866,(#330),S);  
#869=  
IFCPRODUCTDEFINITIONSHAPE(S,S,(#867));  
#870=  
IFCMEMBER('1Ogimc0009tp4qE3SuD30m',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#863,#869,'PO(?)');  
#871=  
IFCPROPERTYSINGLEVALUE('Bottom elevation',S,IFCLABEL(' -0.233'),S);  
#872=  
IFCPROPERTYSINGLEVALUE('Top elevation',S,IFCLABEL(' +3.370'),S);  
#873=  
IFCPROPERTYSET('0U0bVDYcND1woQDZLzMKY4',#5,'Tekla Common','Common Properties to Shared building elements',(#871,#872,#71,#72,#73,#346));  
#874=  
IFCPROPERTYSINGLEVALUE('Weight',S,IFCMASSMEASURE(408),S);  
#875=  
IFCPROPERTYSINGLEVALUE('Net surface area',S,IFCAREAMEASURE(9.8),S);  
#876=  
IFCPROPERTYSINGLEVALUE('Length',S,IFCLENGTHMEASURE(6179.2),S);  
#877=  
IFCPROPERTYSET('3sAJClwH9OuY3XoKzC2Dx',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#874,#349,#78,#350,#875,#352,#353,#876));  
#878=  
IFCQUANTITYLENGTH('Length',S,S,6179.22601550828);  
#879=  
IFCQUANTITYAREA('OuterSurfaceArea',S,S,9.78789400856512);  
#880=  
IFCQUANTITYAREA('GrossSurfaceArea',S,S,9.78789400856512);  
#881=  
IFCQUANTITYVOLUME('NetVolume',S,S,0.0506202195190058);  
#882=  
IFCQUANTITYVOLUME('GrossVolume',S,S,0.0519796492424557);  
#883=  
IFCQUANTITYWEIGHT('NetWeight',S,S,397.368723224195);  
#884=  
IFCQUANTITYWEIGHT('GrossWeight',S,S,408.040246553277);  
#885=  
IFCELEMENTQUANTITY('1i7dxHG157r87H\$XaAtWxP',#5,'BaseQuantities',S,S,(#878,#879,#880,#361,#881,#882,#883,#884));  
#886=  
IFCLOCALPLACEMENT(#30,#10);  
#887=  
IFCELEMENTASSEMBLY('1Ogimc0009sp4qE3SuD30m',#5,'Steel Assembly',S,S,(#886,S,'BE-0?'),NOTDEFINED,,RIGID\_FRAME.);  
#888=  
IFCPROPERTYSINGLEVALUE('Assembly/Cast unit bottom elevation',S,IFCLABEL(' -0.085'),S);  
#889=  
IFCPROPERTYSINGLEVALUE('Assembly/Cast unit top elevation',S,IFCLABEL(' +3.518'),S);  
#890=  
IFCPROPERTYSET('0LMBolBgbDcATPjyNwWfe2',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#853,#888,#889,#438,#318));  
#891=  
IFCQUANTITYLENGTH('Width',S,S,200.000000003813);  
#892=  
IFCELEMENTQUANTITY('1S7tThNTvFR9KDK4obdRU3',#5,'BaseQuantities',S,S,(#891));

## Appendix

#893=  
IFCCARTESIANPOINT((1870.13960612142,165022.567329721,3327.18019483982));  
#894= IFCDIRECTION((0.586911484098647,-0.330852514055607,0.738966524124204));  
#895= IFCDIRECTION((0.809181404872417,0.270778173957309,-0.521444756917784));  
#896= IFCAXIS2PLACEMENT3D(#893,#894,#895);  
#897= IFCLOCALPLACEMENT(#886,#896);  
#898= IFCARTESIANPOINT((6179.08435756484,-1.71504043121741E-013,-3.43008086243481E-013));  
#899= IFCAXIS2PLACEMENT3D(#898,#336,#335);  
#900= IFCEXTRUDEDAREASOLID(#333,#899,#9,6179.1);  
#901=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#900));  
#902= IFCSTYLEDITEM(#900,#330,\$);  
#903= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#901));  
#904=  
IFCMEMBER('1Ogimc0009sZ4qE3SuD30m',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#897,#903,'PO(?)');  
#905= IFCPROPERTYSSINGLEVALUE('Bottom elevation',\$.IFCLABEL('-.085'),\$);  
#906= IFCPROPERTYSSINGLEVALUE('Top elevation',\$.IFCLABEL('+3.518'),\$);  
#907= IFCPROPERTYSET('1PN9nNSPD50f1GucCYx9h',#5,'Tekla Common','Common Properties to Shared building elements',(#905,#906,#71,#72,#73,#346));  
#908=  
IFCPROPERTYSSINGLEVALUE('Length',\$.IFLENGTHMEASURE(6179.1),\$);  
#909= IFCPROPERTYSET('1H8SoYZHz6lw35poYr9GPb',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#874,#349,#78,#350,#875,#352,#353,#908));  
#910= IFCQUANTITYLENGTH('Length',\$.S,6179.08435756823);  
#911=  
IFCQUANTITYAREA('OuterSurfaceArea',\$.S,\$,9.78766962238808);  
#912=  
IFCQUANTITYAREA('GrossSurfaceArea',\$.S,\$,9.78766962238808);  
#913=  
IFCQUANTITYVOLUME('NetVolume',\$.S,\$,0.050619059057056);  
#914=  
IFCQUANTITYVOLUME('GrossVolume',\$.S,\$,0.0519784576158639);  
#915= IFCQUANTITYWEIGHT('NetWeight',\$.S,\$,397.35961359789);  
#916=  
IFCQUANTITYWEIGHT('GrossWeight',\$.S,\$,408.030892284532);  
#917=  
IFCELEMENTQUANTITY('1mBzjuq9BpvFXdkT1GyVG',#5,'BaseQuantities',\$.S,\$,(#910,#911,#912,#361,#913,#914,#915,#916));  
#918= IFCLOCALPLACEMENT(#30,#10);  
#919=  
IFCELEMENTASSEMBLY('1Ogimc0009rZ4qE3SuD30m',#5,'Steel Assembly',\$.S,\$,(#918,\$,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#920= IFCPROPERTYSSINGLEVALUE('Assembly/Cast unit weight',\$.IFCMASSMEASURE(401.3),\$);  
#921= IFCPROPERTYSSINGLEVALUE('Assembly/Cast unit bottom elevation',\$.IFCLABEL('-.086'),\$);  
#922= IFCPROPERTYSSINGLEVALUE('Assembly/Cast unit top elevation',\$.IFCLABEL('+3.368'),\$);  
#923= IFCPROPERTYSET('1FSA14MST8cP1RCrMserAh',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#920,#921,#922,#438,#318));  
#924= IFCQUANTITYLENGTH('Width',\$.S,\$,200.0000001819);  
#925=  
IFCELEMENTQUANTITY('0Imj2Kdjn8vQLVRIo52gNH',#5,'BaseQuantities',\$.S,\$,(#924));  
#926=  
IFCCARTESIANPOINT((1865.61571197014,171597.194406959,3175.7707564438));  
#927= IFCDIRECTION((0.567891693160813,-0.344778815097631,0.747413268211649));  
#928= IFCDIRECTION((0.822850826906363,0.260292095970378,-0.505138140942517));  
#929= IFCAXIS2PLACEMENT3D(#926,#927,#928);  
#930= IFCLOCALPLACEMENT(#918,#929);  
#931= IFCARTESIANPOINT((6076.43687871771,-2.91038304567337E-011,-1.52265352414102E-011));  
#932= IFCAXIS2PLACEMENT3D(#931,#336,#335);  
#933= IFCEXTRUDEDAREASOLID(#333,#932,#9,6076.4);  
#934=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#933));  
#935= IFCSTYLEDITEM(#933,#330,\$);  
#936= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#934));  
#937=  
IFCMEMBER('1Ogimc0009rZ4qE3SuD30m',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#930,#936,'PO(?)');  
#938= IFCPROPERTYSSINGLEVALUE('Bottom elevation',\$.IFCLABEL('-.086'),\$);  
#939= IFCPROPERTYSSINGLEVALUE('Top elevation',\$.IFCLABEL('+3.368'),\$);  
#940= IFCPROPERTYSET('0WuYynVPXEWuRADc0F30Hj',#5,'Tekla Common','Common Properties to Shared building elements',(#938,#939,#71,#72,#73,#346));  
#941=  
IFCPROPERTYSSINGLEVALUE('Weight',\$.IFCMASSMEASURE(401.3),\$);  
#942= IFCPROPERTYSSINGLEVALUE('Net surface area',\$.IFCAREAMEASURE(9.6),\$);  
#943=  
IFCPROPERTYSSINGLEVALUE('Length',\$.IFLENGTHMEASURE(6076.4),\$);  
#944= IFCPROPERTYSET('212Eld0E9FhIQetUWX5H8',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#941,#349,#78,#350,#942,#352,#353,#943));  
#945= IFCQUANTITYLENGTH('Length',\$.S,\$,6076.43687872934);

#946=  
IFCQUANTITYAREA('OuterSurfaceArea',\$.S,\$,9.62507601590728);  
#947=  
IFCQUANTITYAREA('GrossSurfaceArea',\$.S,\$,9.62507601590728);  
#948=  
IFCQUANTITYVOLUME('NetVolume',\$.S,\$,0.0497781709098976);  
#949=  
IFCQUANTITYVOLUME('GrossVolume',\$.S,\$,0.051149870238712);  
#950= IFCQUANTITYWEIGHT('NetWeight',\$.S,\$,390.758641642697);  
#951=  
IFCQUANTITYWEIGHT('GrossWeight',\$.S,\$,401.252648137389);  
#952=  
IFCELEMENTQUANTITY('22LKLzTyn2wvylxQ7LxyBQ',#5,'BaseQuantities',\$.S,\$,(#945,#946,#947,#361,#948,#949,#950,#951));  
#953= IFCLOCALPLACEMENT(#30,#10);  
#954=  
IFCELEMENTASSEMBLY('1Ogimc0009qJ4qE3SuD30m',#5,'Steel Assembly',\$.S,\$,(#953,\$,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#955= IFCPROPERTYSSINGLEVALUE('Assembly/Cast unit bottom elevation',\$.IFCLABEL('-.0236'),\$);  
#956= IFCPROPERTYSSINGLEVALUE('Assembly/Cast unit top elevation',\$.IFCLABEL('+3.219'),\$);  
#957= IFCPROPERTYSET('1xFw\_2mIX5sOZe2IhJacB',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#920,#955,#956,#438,#318));  
#958= IFCQUANTITYLENGTH('Width',\$.S,\$,200.00000006665);  
#959=  
IFCELEMENTQUANTITY('3S07eHCJDCuRrCTsqhAkW',#5,'BaseQuantities',\$.S,\$,(#958));  
#960=  
IFCCARTESIANPOINT((6747.96040166976,171666.150167849,3026.28810725474));  
#961= IFCDIRECTION((-0.567891862718879,-0.344778701829336,0.747413191630011));  
#962= IFCDIRECTION((-0.822850708916727,0.260292173973656,-0.50513829294888));  
#963= IFCAXIS2PLACEMENT3D(#960,#961,#962);  
#964= IFCLOCALPLACEMENT(#953,#963);  
#965=  
IFCCARTESIANPOINT((6076.43505144532,1.68654952543848E-013,-3.37309905087697E-013));  
#966= IFCAXIS2PLACEMENT3D(#965,#336,#335);  
#967= IFCEXTRUDEDAREASOLID(#333,#966,#9,6076.4);  
#968=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#967));  
#969= IFCSTYLEDITEM(#967,#330,\$);  
#970= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#968));  
#971=  
IFCMEMBER('1Ogimc0009qJ4qE3SuD30m',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#964,#970,'PO(?)');  
#972= IFCPROPERTYSSINGLEVALUE('Bottom elevation',\$.IFCLABEL('-.0236'),\$);  
#973= IFCPROPERTYSSINGLEVALUE('Top elevation',\$.IFCLABEL('+3.219'),\$);  
#974= IFCPROPERTYSET('1EifoDXEj4BBPTCiAgeQbJ',#5,'Tekla Common','Common Properties to Shared building elements',(#972,#973,#71,#72,#73,#346));  
#975= IFCQUANTITYLENGTH('Length',\$.S,\$,6076.43505144768);  
#976=  
IFCQUANTITYAREA('OuterSurfaceArea',\$.S,\$,9.62507312149313);  
#977=  
IFCQUANTITYAREA('GrossSurfaceArea',\$.S,\$,9.62507312149313);  
#978=  
IFCQUANTITYVOLUME('NetVolume',\$.S,\$,0.049778155941448);  
#979=  
IFCQUANTITYVOLUME('GrossVolume',\$.S,\$,0.051149716527779);  
#980= IFCQUANTITYWEIGHT('NetWeight',\$.S,\$,390.758524140366);  
#981=  
IFCQUANTITYWEIGHT('GrossWeight',\$.S,\$,401.252527474307);  
#982=  
IFCELEMENTQUANTITY('3vqWdiC9H6f8JTR3gVMIRg',#5,'BaseQuantities',\$.S,\$,(#975,#976,#977,#361,#978,#979,#980,#981));  
#983= IFCLOCALPLACEMENT(#30,#10);  
#984=  
IFCELEMENTASSEMBLY('1Ogimc0009p34qE3SuD30m',#5,'Steel Assembly',\$.S,\$,(#983,\$,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#985= IFCPROPERTYSSINGLEVALUE('Assembly/Cast unit weight',\$.IFCMASSMEASURE(395.4),\$);  
#986= IFCPROPERTYSSINGLEVALUE('Assembly/Cast unit bottom elevation',\$.IFCLABEL('-.087'),\$);  
#987= IFCPROPERTYSSINGLEVALUE('Assembly/Cast unit top elevation',\$.IFCLABEL('+3.228'),\$);  
#988= IFCPROPERTYSET('1FXylhQb0FAHNLf9jVeAW',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#985,#986,#987,#438,#318));  
#989= IFCQUANTITYLENGTH('Width',\$.S,\$,200.00000015716);  
#990=  
IFCELEMENTQUANTITY('19ubxxQ2b0gg9pYQ5CU\_Qn',#5,'BaseQuantities',\$.S,\$,(#989));  
#991=  
IFCCARTESIANPOINT((1861.69115819566,177812.595606197,3033.35864999247));  
#992= IFCDIRECTION((0.549927559043891,-0.355887344028392,0.755595049060305));  
#993= IFCDIRECTION((0.835035798007077,0.252877549002144,-0.488639091004141));  
#994= IFCAXIS2PLACEMENT3D(#991,#992,#993);  
#995= IFCLOCALPLACEMENT(#983,#994);  
#996= IFCARTESIANPOINT((5987.78115027577,-2.927002476922E-011,6.64777249945268E-013));  
#997= IFCAXIS2PLACEMENT3D(#996,#336,#335);  
#998= IFCEXTRUDEDAREASOLID(#333,#997,#9,5987.8);  
#999=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#998));  
#1000= IFCSTYLEDITEM(#998,#330,\$);

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#1001= IFCPRODUCTDEFINITIONSHAPE($,$,(#999));
#1002=
IFCMEMBER('1Ogimc0009op4qE3SuD30m',#5,'BEAM','HN400*200*
8*13','HN400*200*8*13',#995,#1001,'PO(?)');
#1003= IFCPROPERTY SINGLEVALUE('Bottom
elevation',$,IFCLABEL(' -0.087'),$);
#1004= IFCPROPERTY SINGLEVALUE('Top elevation',$,IFCLABEL('
+3.228'),$);
#1005= IFCPROPERTYSET('2Kk83wyUz4qubad3B79hX6',#5,'Tekla
Common','Common Properties to Shared building
elements',(#1003,#1004,#71,#72,#73,#346));
#1006=
IFCPROPERTY SINGLEVALUE('Weight',$,IFCMASSMEASURE(395.
4),$);
#1007= IFCPROPERTY SINGLEVALUE('Net surface
area',$,IFCAREAMEASURE(9.5),$);
#1008=
IFCPROPERTY SINGLEVALUE('Length',$,IFLENGTHMEASURE(5
987.8),$);
#1009= IFCPROPERTYSET('1eOVvedHv93ObekhTHsEZK',#5,'Tekla
Quantity','Quantity Properties to Shared building
elements',(#1006,#349,#78,#350,#1007,#352,#353,#1008));
#1010= IFCQUANTITYLENGTH('Length',$,$,5987.78115028374);
#1011=
IFCQUANTITYAREA('OuterSurfaceArea',$,$,9.48464534204944);
#1012=
IFCQUANTITYAREA('GrossSurfaceArea',$,$,9.48464534204944);
#1013=
IFCQUANTITYVOLUME('NetVolume',$,$,0.0490519031826378);
#1014=
IFCQUANTITYVOLUME('GrossVolume',$,$,0.0503692150361868);
#1015= IFCQUANTITYWEIGHT('NetWeight',$,$,385.057439983707);
#1016=
IFCQUANTITYWEIGHT('GrossWeight',$,$,395.398338034066);
#1017=
IFCELEMENTQUANTITY('3ECsah57n1ye3WIWxTrbXp',#5,'BaseQu
antities',$,$,(#1010,#1011,#1012,#361,#1013,#1014,#1015,#1016));
#1018= IFCLOCALPLACEMENT(#30,#10);
#1019=
IFCELEMENTASSEMBLY('1Ogimc0009np4qE3SuD30m',#5,'Steel
Assembly',$,$,#1018,$,'BE-0(?)',..NOTDEFINED,..RIGID_FRAME.);
#1020= IFCPROPERTY SINGLEVALUE('Assembly/Cast unit
weight',$,IFCMASSMEASURE(398.7),$);
#1021= IFCPROPERTY SINGLEVALUE('Assembly/Cast unit top
elevation',$,IFCLABEL(' +3.176'),$);
#1022= IFCPROPERTYSET('2VYC52Rv92LgpW9HeEprRf',#5,'Tekla
Assembly','Assembly
Properties',(#34,#313,#1020,#955,#1021,#438,#318));
#1023= IFCQUANTITYLENGTH('Width',$,$,200.0000000015018);
#1024=
IFCELEMENTQUANTITY('2nK7iRiPB9x1lgfCeOWik',#5,'BaseQuan
tities',$,$,(#1023));
#1025=
IFCARTESIANPOINT((6748.88366491283,177883.591078748,2982.
59730109018));
#1026= IFCDIRECTION((-0.560337039893736,-
0.3527347029331,0.74940018085788));
#1027= IFCDIRECTION((-0.828189459817321,0.250804824944679,-
0.501197723889448));
#1028= IFCAXIS2PLACEMENT3D(#1025,#1026,#1027);
#1029= IFCLOCALPLACEMENT(#1018,#1028);
#1030= IFCARTESIANPOINT((6037.26592093665,0.-
7.27595761418343E-012));
#1031= IFCAXIS2PLACEMENT3D(#1030,#336,#335);
#1032= IFCEXTRUDEDAREASOLID(#333,#1031,#9,6037.3);
#1033=
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#1032));
#1034= IFCSTYLEDITEM(#1032,(#330),$);
#1035= IFCPRODUCTDEFINITIONSHAPE($,$,(#1033));
#1036=
IFCMEMBER('1Ogimc0009nZ4qE3SuD30m',#5,'BEAM','HN400*200*
8*13','HN400*200*8*13',#1029,#1035,'PO(?)');
#1037= IFCPROPERTY SINGLEVALUE('Top elevation',$,IFCLABEL('
+3.176'),$);
#1038= IFCPROPERTYSET('0jKcSSDy1F5A12WvUbWzv0',#5,'Tekla
Common','Common Properties to Shared building
elements',(#972,#1037,#71,#72,#73,#346));
#1039=
IFCPROPERTY SINGLEVALUE('Weight',$,IFCMASSMEASURE(398.
7),$);
#1040=
IFCPROPERTY SINGLEVALUE('Length',$,IFLENGTHMEASURE(6
037.3),$);
#1041= IFCPROPERTYSET('0mVFyRtdb3MwDaRfSroCvr',#5,'Tekla
Quantity','Quantity Properties to Shared building
elements',(#1039,#349,#78,#350,#942,#352,#353,#1040));
#1042= IFCQUANTITYLENGTH('Length',$,$,6037.26592096368);
#1043=
IFCQUANTITYAREA('OuterSurfaceArea',$,$,9.56302921880648);
#1044=
IFCQUANTITYAREA('GrossSurfaceArea',$,$,9.56302921880648);
#1045=
IFCQUANTITYVOLUME('NetVolume',$,$,0.0494572824246185);
#1046=
IFCQUANTITYVOLUME('GrossVolume',$,$,0.0507854809271465);
#1047= IFCQUANTITYWEIGHT('NetWeight',$,$,388.239667033255);
#1048= IFCQUANTITYWEIGHT('GrossWeight',$,$,398.6660252781);
#1049=
IFCELEMENTQUANTITY('1SrHtnd2bF0u8df9_2wbm',#5,'BaseQuant
ities',$,$,(#1042,#1043,#1044,#361,#1045,#1046,#1047,#1048));
#1050= IFCLOCALPLACEMENT(#30,#10);
#1051=
IFCELEMENTASSEMBLY('1Ogimc0009mZ4qE3SuD30m',#5,'Steel
Assembly',$,$,#1050,$,'BE-0(?)',..NOTDEFINED,..RIGID_FRAME.);
#1052= IFCPROPERTY SINGLEVALUE('Assembly/Cast unit
weight',$,IFCMASSMEASURE(393.1),$);
#1053= IFCPROPERTY SINGLEVALUE('Assembly/Cast unit bottom
elevation',$,IFCLABEL(' -0.239'),$);
#1054= IFCPROPERTY SINGLEVALUE('Assembly/Cast unit top
elevation',$,IFCLABEL(' +3.040'),$);
#1055= IFCPROPERTYSET('0GVDeJEv9h8CeBxlhcMKg2d',#5,'Tekla
Assembly','Assembly
Properties',(#34,#313,#1052,#1053,#1054,#438,#318));
#1056= IFCQUANTITYLENGTH('Width',$,$,200.000000008091);
#1057=
IFCELEMENTQUANTITY('15eaK0tcb67OnlkjYAPRdf',#5,'BaseQuan
tities',$,$,(#1056));
#1058=
IFCARTESIANPOINT((6749.00147374694,183774.610323917,2844.
61166569912));
#1059= IFCDIRECTION((-0.542604405962651,-
0.36355400397498,0.757237706947877));
#1060= IFCDIRECTION((-0.839954375845143,0.242944244955211,-
0.48523678791054));
#1061= IFCAXIS2PLACEMENT3D(#1058,#1059,#1060);
#1062= IFCLOCALPLACEMENT(#1050,#1061);
#1063= IFCARTESIANPOINT((5952.41514660879,0.-
1.48823406457615E-011));
#1064= IFCAXIS2PLACEMENT3D(#1063,#336,#335);
#1065= IFCEXTRUDEDAREASOLID(#333,#1064,#9,5952.4);
#1066=
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#1065));
#1067= IFCSTYLEDITEM(#1065,(#330),$);
#1068= IFCPRODUCTDEFINITIONSHAPE($,$,(#1066));
#1069=
IFCMEMBER('1Ogimc0009mJ4qE3SuD30m',#5,'BEAM','HN400*200*
8*13','HN400*200*8*13',#1062,#1068,'PO(?)');
#1070= IFCPROPERTY SINGLEVALUE('Bottom
elevation',$,IFCLABEL(' -0.239'),$);
#1071= IFCPROPERTY SINGLEVALUE('Top elevation',$,IFCLABEL('
+3.040'),$);
#1072= IFCPROPERTYSET('1JyAMieKDAIpmE0M42iuk',#5,'Tekla
Common','Common Properties to Shared building
elements',(#1070,#1071,#71,#72,#73,#346));
#1073=
IFCPROPERTY SINGLEVALUE('Weight',$,IFCMASSMEASURE(393.
1),$);
#1074=
IFCPROPERTY SINGLEVALUE('Length',$,IFLENGTHMEASURE(5
952.4),$);
#1075= IFCPROPERTYSET('38vqsHzkz80Bck1MGYnyLs',#5,'Tekla
Quantity','Quantity Properties to Shared building
elements',(#1073,#349,#78,#350,#1007,#352,#353,#1074));
#1076= IFCQUANTITYLENGTH('Length',$,$,5952.4151466259);
#1077=
IFCQUANTITYAREA('OuterSurfaceArea',$,$,9.42862559225543);
#1078=
IFCQUANTITYAREA('GrossSurfaceArea',$,$,9.42862559225543);
#1079=
IFCQUANTITYVOLUME('NetVolume',$,$,0.0487621848811449);
#1080=
IFCQUANTITYVOLUME('GrossVolume',$,$,0.050077162134171);
#1081= IFCQUANTITYWEIGHT('NetWeight',$,$,382.783151316988);
#1082=
IFCQUANTITYWEIGHT('GrossWeight',$,$,393.062972275324);
#1083=
IFCELEMENTQUANTITY('1nDAYAL_b3BufBoxU_50c',#5,'BaseQu
antities',$,$,(#1076,#1077,#1078,#361,#1079,#1080,#1081,#1082));
#1084= IFCLOCALPLACEMENT(#30,#10);
#1085=
IFCELEMENTASSEMBLY('1Ogimc0009I4qE3SuD30m',#5,'Steel
Assembly',$,$,#1084,$,'BE-0(?)',..NOTDEFINED,..RIGID_FRAME.);
#1086= IFCPROPERTY SINGLEVALUE('Assembly/Cast unit
weight',$,IFCMASSMEASURE(389.9),$);
#1087= IFCPROPERTY SINGLEVALUE('Assembly/Cast unit bottom
elevation',$,IFCLABEL(' -0.088'),$);
#1088= IFCPROPERTY SINGLEVALUE('Assembly/Cast unit top
elevation',$,IFCLABEL(' +3.094'),$);
#1089= IFCPROPERTYSET('1ZPzTv0vvD5wTayaajRYdo',#5,'Tekla
Assembly','Assembly
Properties',(#34,#313,#1086,#1087,#1088,#438,#318));
#1090= IFCQUANTITYLENGTH('Width',$,$,200.000000023167);
#1091=
IFCELEMENTQUANTITY('2nH_E8nP3q8uPvx7br4h2',#5,'BaseQuant
ities',$,$,(#1090));
#1092=
IFCARTESIANPOINT((1857.48679149802,183701.450530505,2896.
93488029834));
#1093= IFCDIRECTION((0.531751132116679,-
0.366704188080467,0.763392934167507));
#1094= IFCDIRECTION((0.846788317590432,0.244897069881551,-
0.472202255771609));
#1095= IFCAXIS2PLACEMENT3D(#1092,#1093,#1094);
#1096= IFCLOCALPLACEMENT(#1084,#1095);
#1097= IFCARTESIANPOINT((5904.95020387804,-
1.6389529189026E-013,0));
#1098= IFCAXIS2PLACEMENT3D(#1097,#336,#335);
#1099= IFCEXTRUDEDAREASOLID(#333,#1098,#9,5905.);
#1100=
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#1099));
#1101= IFCSTYLEDITEM(#1099,(#330),$);
#1102= IFCPRODUCTDEFINITIONSHAPE($,$,(#1100));
#1103=
IFCMEMBER('1Ogimc0009I34qE3SuD30m',#5,'BEAM','HN400*200*8
*13','HN400*200*8*13',#1096,#1102,'PO(?)');
#1104= IFCPROPERTY SINGLEVALUE('Bottom
elevation',$,IFCLABEL(' -0.088'),$);
#1105= IFCPROPERTY SINGLEVALUE('Top elevation',$,IFCLABEL('
+3.094'),$);

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## Appendix

#1106= IFCPROPERTYSET('1tXdZmqmr9Bu3eOvL06TNX',#5,'Tekla Common','Common Properties to Shared building elements',( #1104,#1105,#71,#72,#73,#346));

#1107= IFCPROPERTYSINGLEVALUE('Weight',IFCMASMEASURE(389.9),\$);

#1108= IFCPROPERTYSINGLEVALUE('Volume',IFCVOLUMEMEASURE(0),\$);

#1109= IFCPROPERTYSINGLEVALUE('Length',IFCLENGTHMEASURE(5905),\$);

#1110= IFCPROPERTYSET('0JyMB2uj58jxeg8wdkOC4S',#5,'Tekla Quantity','Quantity Properties to Shared building elements',( #1107,#1108,#78,#350,#1007,#352,#353,#1109));

#1111= IFCQUANTITYLENGTH('Length',\$.S,5904.95020387074);

#1112= IFCQUANTITYAREA('OuterSurfaceArea',\$.S,9.35344112293125);

#1113= IFCQUANTITYAREA('GrossSurfaceArea',\$.S,9.35344112293125);

#1114= IFCQUANTITYVOLUME('NetVolume',\$.S,0.0483733520704041);

#1115= IFCQUANTITYVOLUME('GrossVolume',\$.S,0.0496724411149606);

#1116= IFCQUANTITYWEIGHT('NetWeight',\$.S,379.730813752672);

#1117= IFCQUANTITYWEIGHT('GrossWeight',\$.S,389.928662752441);

#1118= IFCELEMENTQUANTITY('3BkJhJL3n6Mh\_SUUFYnHew',#5,'BaseQuantities',\$.S,( #1111,#1112,#1113,#361,#1114,#1115,#1116,#1117));

#1119= IFCLOCALPLACEMENT('#30,#10);

#1120= IFCELEMENTASSEMBLY('1Ogjm0009k34qE3SuD30m',#5,'Steel Assembly',\$.S,#1119,\$,BE-0(?),.NOTDEFINED,..RIGID\_FRAME.);

#1121= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit weight',IFCMASMEASURE(387.8),\$);

#1122= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit bottom elevation',IFCLABEL(' -0.241'),\$);

#1123= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit top elevation',IFCLABEL(' +2.913'),\$);

#1124= IFCPROPERTYSET('1Auisg9ub2vxDEXGtbA6aK',#5,'Tekla Assembly','Assembly Properties',( #34,#313,#1121,#1122,#1123,#438,#318));

#1125= IFCARTESIANPOINT((6747.57375635942,189345.535760671,2716.05366348626));

#1126= IFCDIRECTION((-0.525222882089137,-0.373876894063438,0.764432464129734));

#1127= IFCDIRECTION((-0.850957112399276,0.234552017110053,-0.469954619220507));

#1128= IFCAXIS2PLACEMENT3D(#1125,#1126,#1127);

#1129= IFCLOCALPLACEMENT(#1119,#1128);

#1130= IFCARTESIANPOINT((5873.30793078127,3.26034084773345E-013,-1.42258811435935E-011));

#1131= IFCAXIS2PLACEMENT3D(#1130,#336,#335);

#1132= IFCEXTRUDEDAREASOLID(#333,#1131,#9,5873.3);

#1133= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',( #1132));

#1134= IFCSTYLEDITEM(#1132,(#330),\$);

#1135= IFCPRODUCTDEFINITIONSHAPE(\$,\$,( #1133));

#1136= IFCMEMBER('1Ogjm0009jp4qE3SuD30m',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#1129,#1135,'P0(?)');

#1137= IFCPROPERTYSINGLEVALUE('Bottom elevation',IFCLABEL(' -0.241'),\$);

#1138= IFCPROPERTYSINGLEVALUE('Top elevation',IFCLABEL(' +2.913'),\$);

#1139= IFCPROPERTYSET('3DAxaiUFj15eH0837LwU2',#5,'Tekla Common','Common Properties to Shared building elements',( #1137,#1138,#71,#72,#73,#346));

#1140= IFCPROPERTYSINGLEVALUE('Weight',IFCMASMEASURE(387.8),\$);

#1141= IFCPROPERTYSINGLEVALUE('Net surface area',IFCAREAMEASURE(9.3),\$);

#1142= IFCPROPERTYSINGLEVALUE('Length',IFCLENGTHMEASURE(5873.3),\$);

#1143= IFCPROPERTYSET('234Qr8KZj7ixrz9NqkABIN',#5,'Tekla Quantity','Quantity Properties to Shared building elements',( #1140,#1108,#78,#350,#1141,#352,#353,#1142));

#1144= IFCQUANTITYLENGTH('Length',\$.S,5873.30793080311);

#1145= IFCQUANTITYAREA('OuterSurfaceArea',\$.S,9.30331976239212);

#1146= IFCQUANTITYAREA('GrossSurfaceArea',\$.S,9.30331976239212);

#1147= IFCQUANTITYVOLUME('NetVolume',\$.S,0.0481141385690031);

#1148= IFCQUANTITYVOLUME('GrossVolume',\$.S,0.0494062663139157);

#1149= IFCQUANTITYWEIGHT('NetWeight',\$.S,377.695987766674);

#1150= IFCQUANTITYWEIGHT('GrossWeight',\$.S,387.839190564239);

#1151= IFCELEMENTQUANTITY('3D\_dsm0JH5zQs2bZuT82Sq',#5,'BaseQuantities',\$.S,( #1144,#1145,#1146,#361,#1147,#1148,#1149,#1150));

#1152= IFCLOCALPLACEMENT('#30,#10);

#1153= IFCELEMENTASSEMBLY('1Ogjm0009jp4qE3SuD30m',#5,'Steel Assembly',\$.S,#1152,\$,BE-0(?),.NOTDEFINED,..RIGID\_FRAME.);

#1154= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit weight',IFCMASMEASURE(385),\$);

#1155= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit bottom elevation',IFCLABEL(' -0.089'),\$);

#1156= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit top elevation',IFCLABEL(' +2.968'),\$);

#1157= IFCPROPERTYSET('2eULSIMi58kBMNuQ55ybzK',#5,'Tekla Assembly','Assembly Properties',( #34,#313,#1154,#1155,#1156,#438,#318));

#1158= IFCQUANTITYLENGTH('Width',\$.S,200.00000007363);

#1159= IFCELEMENTQUANTITY('1Dm9WOOa1cMuShvMahXMYu',#5,'BaseQuantities',\$.S,( #1158));

#1160= IFCARTESIANPOINT((1851.67464005784,189270.289803264,2769.82232434422));

#1161= IFCDIRECTION((0.51370265201829,-0.377139012013427,0.77063344027438));

#1162= IFCDIRECTION((0.857909898967764,0.23627301899112,-0.456251756982856));

#1163= IFCAXIS2PLACEMENT3D(#1160,#1161,#1162);

#1164= IFCLOCALPLACEMENT(#1152,#1163);

#1165= IFCARTESIANPOINT((5830.52701544841,-2.92656600901899E-011,0.));

#1166= IFCAXIS2PLACEMENT3D(#1165,#336,#335);

#1167= IFCEXTRUDEDAREASOLID(#333,#1166,#9,5830.5);

#1168= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',( #1167));

#1169= IFCSTYLEDITEM(#1167,(#330),\$);

#1170= IFCPRODUCTDEFINITIONSHAPE(\$,\$,( #1168));

#1171= IFCMEMBER('1Ogjm0009Z4qE3SuD30m',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#1164,#1170,'P0(?)');

#1172= IFCPROPERTYSINGLEVALUE('Bottom elevation',IFCLABEL(' -0.089'),\$);

#1173= IFCPROPERTYSINGLEVALUE('Top elevation',IFCLABEL(' +2.968'),\$);

#1174= IFCPROPERTYSET('3dRsa1FOTANAM7j\_o\_XI9B',#5,'Tekla Common','Common Properties to Shared building elements',( #1172,#1173,#71,#72,#73,#346));

#1175= IFCPROPERTYSINGLEVALUE('Weight',IFCMASMEASURE(385.)),

#1176= IFCPROPERTYSINGLEVALUE('Length',IFCLENGTHMEASURE(5830.5),\$);

#1177= IFCPROPERTYSET('2r11fqkRr4RuARNxgBISnp',#5,'Tekla Quantity','Quantity Properties to Shared building elements',( #1175,#1108,#78,#350,#1141,#352,#353,#1176));

#1178= IFCQUANTITYLENGTH('Length',\$.S,5830.52701545136);

#1179= IFCQUANTITYAREA('OuterSurfaceArea',\$.S,9.23555479247495);

#1180= IFCQUANTITYAREA('GrossSurfaceArea',\$.S,9.23555479247495);

#1181= IFCQUANTITYVOLUME('NetVolume',\$.S,0.0477636773101766);

#1182= IFCQUANTITYVOLUME('GrossVolume',\$.S,0.049046392539768);

#1183= IFCQUANTITYWEIGHT('NetWeight',\$.S,374.944866884886);

#1184= IFCQUANTITYWEIGHT('GrossWeight',\$.S,385.014187043718);

#1185= IFCELEMENTQUANTITY('0c3cdbyhP8dhTjNBXCcxLb',#5,'BaseQuantities',\$.S,( #1178,#1179,#180,#361,#181,#182,#183,#184));

#1186= IFCLOCALPLACEMENT('#30,#10);

#1187= IFCELEMENTASSEMBLY('1Ogjm0009hZ4qE3SuD30m',#5,'Steel Assembly',\$.S,#1186,\$,BE-0(?),.NOTDEFINED,..RIGID\_FRAME.);

#1188= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit weight',IFCMASMEASURE(380.3),\$);

#1189= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit bottom elevation',IFCLABEL(' -0.090'),\$);

#1190= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit top elevation',IFCLABEL(' +2.849'),\$);

#1191= IFCPROPERTYSET('0U2Z93OY55RApPPr2qx9',#5,'Tekla Assembly','Assembly Properties',( #34,#313,#1188,#1189,#1190,#438,#318));

#1192= IFCQUANTITYLENGTH('Width',\$.S,200.00000005733);

#1193= IFCELEMENTQUANTITY('3tpJG4Gg98AXrRsbZx4xe',#5,'BaseQuantities',\$.S,( #1192));

#1194= IFCARTESIANPOINT((1851.01921190968,194538.622654789,2649.05390167123));

#1195= IFCDIRECTION((0.496444080195156,-0.386343466151866,0.773555775305585));

#1196= IFCDIRECTION((0.868037630344748,0.228516975090756,-0.440784147175061));

#1197= IFCAXIS2PLACEMENT3D(#1194,#1195,#1196);

#1198= IFCLOCALPLACEMENT(#1186,#1197);

#1199= IFCARTESIANPOINT((5758.97163975418,-1.5984357281546E-013,0.));

#1200= IFCAXIS2PLACEMENT3D(#1199,#336,#335);

#1201= IFCEXTRUDEDAREASOLID(#333,#1200,#9,5759);

#1202= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',( #1201));

#1203= IFCSTYLEDITEM(#1201,(#330),\$);

#1204= IFCPRODUCTDEFINITIONSHAPE(\$,\$,( #1202));

#1205= IFCMEMBER('1Ogjm0009hJ4qE3SuD30m',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#1198,#1204,'P0(?)');

#1206= IFCPROPERTYSINGLEVALUE('Bottom elevation',IFCLABEL(' -0.090'),\$);

#1207= IFCPROPERTYSINGLEVALUE('Top elevation',IFCLABEL(' +2.849'),\$);

#1208= IFCPROPERTYSET('0zJk2vRPFLOXNctmTELEx',#5,'Tekla Common','Common Properties to Shared building elements',( #1206,#1207,#71,#72,#73,#346));

#1209= IFCPROPERTYSET('Weight',S,IFCMASSEASUREMENT(380.3),S);  
#1210= IFCPROPERTYSET('Net surface area',S,IFCAREASUREMENT(9.1),S);  
#1211= IFCPROPERTYSET('Length',S,IFLENGTHMEASUREMENT(5759),S);  
#1212= IFCPROPERTYSET('0ZPkfm0PH5shyug5Liq482',#5,'Tekla Quantity',Quantity Properties to Shared building elements',(#1209,#1108,#78,#350,#1210,#352,#353,#1211));  
#1213= IFCQUANTITYLENGTH('Length',S,S,5758.97163976626);  
#1214= IFCQUANTITYAREA('OuterSurfaceArea',S,S,9.12221107738976);  
#1215= IFCQUANTITYAREA('GrossSurfaceArea',S,S,9.12221107738976);  
#1216= IFCQUANTITYVOLUME('NetVolume',S,S,0.0471774956726024);  
#1217= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0484444694337138);  
#1218= IFCQUANTITYWEIGHT('NetWeight',S,S,370.343341029929);  
#1219= IFCQUANTITYWEIGHT('GrossWeight',S,S,380.289085054653);  
#1220= IFCLEMENTQUANTITY('2QwQnwhj9QhX9p4\_DAJ8w',#5,'BaseQ unities',S,S,(#1213,#1214,#1215,#361,#1216,#1217,#1218,#1219));  
#1221= IFCLOCALPLACEMENT('#30,#10);  
#1222= IFCLEMENTASSEMBLY('1Ogimc0009gJ4qE3SuD30m',#5,'Steel Assembly',S,S,#1221,S,'BE-0(?)',NOTDEFINED,,RIGID\_FRAME.);  
#1223= IFCPROPERTYSET('Assembly/Cast unit weight',S,IFCMASSEASUREMENT(383.4),S);  
#1224= IFCPROPERTYSET('Assembly/Cast unit bottom elevation',S,IFCLABEL(' -0.243'),S);  
#1225= IFCPROPERTYSET('Assembly/Cast unit top elevation',S,IFCLABEL(' +2.793'),S);  
#1226= IFCPROPERTYSET('1GScocxdr54Q\$Ur7Kbg5R9',#5,'Tekla Assembly',Assembly Properties',(#34,#313,#1223,#1224,#1225,#438,#318));  
#1227= IFCQUANTITYLENGTH('Width',S,S,200.00000020111);  
#1228= IFCLEMENTQUANTITY('0HQOwcHRj5Pxwe\_YvMyAJv',#5,'BaseQ unities',S,S,(#1227));  
#1229= IFCARTESIANPOINT((6750.93240489339,194615.717009304,2593.92554721357));  
#1230= IFCDIRECTION((-0.507876345972238,-0.383373748979035,0.771418294957832));  
#1231= IFCDIRECTION((-0.861429749979225,0.226687082994534,-0.454479649989039));  
#1232= IFCAXIS2PLACEMENT3D(#1229,#1230,#1231);  
#1233= IFCLOCALPLACEMENT(#1221,#1232);  
#1234= IFCARTESIANPOINT((5805.45994016804,2.91038304567337E-011,0));  
#1235= IFCAXIS2PLACEMENT3D(#1234,#336,#335);  
#1236= IFCXTRUDEDAREASOLID(#333,#1235,#9,5805.5);  
#1237= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#1236));  
#1238= IFCSTYLEDELETEDITEM(#1236,(#330),S);  
#1239= IFCPRODUCTDEFINITIONSHAPE(S,S,(#1237));  
#1240= IFCMEMBER('1Ogimc0009g34qE3SuD30m',#5,'BEAM',HN400\*200\*8\*13,'HN400\*200\*8\*13',#1233,#1239,'PO(?)');  
#1241= IFCPROPERTYSET('Bottom elevation',S,IFCLABEL(' -0.243'),S);  
#1242= IFCPROPERTYSET('Top elevation',S,IFCLABEL(' +2.793'),S);  
#1243= IFCPROPERTYSET('0168yiMrftvQLR8dKuqgX',#5,'Tekla Common','Common Properties to Shared building elements',(#1241,#1242,#71,#72,#73,#346));  
#1244= IFCPROPERTYSET('Weight',S,IFCMASSEASUREMENT(383.4),S);  
#1245= IFCPROPERTYSET('Length',S,IFLENGTHMEASUREMENT(5805.5),S);  
#1246= IFCPROPERTYSET('3c0NfKYQn6L9UIC2IcOwh',#5,'Tekla Quantity',Quantity Properties to Shared building elements',(#1244,#1108,#78,#350,#1141,#352,#353,#1245));  
#1247= IFCQUANTITYLENGTH('Length',S,S,5805.45994016366);  
#1248= IFCQUANTITYAREA('OuterSurfaceArea',S,S,9.19584854521924);  
#1249= IFCQUANTITYAREA('GrossSurfaceArea',S,S,9.19584854521924);  
#1250= IFCQUANTITYVOLUME('NetVolume',S,S,0.0475583278304361);  
#1251= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0488355290166567);  
#1252= IFCQUANTITYWEIGHT('NetWeight',S,S,373.332873468923);  
#1253= IFCQUANTITYWEIGHT('GrossWeight',S,S,383.358902780755);  
#1254= IFCLEMENTQUANTITY('3jMNWQ60P5DxFR9R5JJDa0',#5,'BaseQ unities',S,S,(#1247,#1248,#1249,#361,#1250,#1251,#1252,#1253));  
#1255= IFCLOCALPLACEMENT('#30,#10);  
#1256= IFCLEMENTASSEMBLY('1Ogimc0009f34qE3SuD30m',#5,'Steel Assembly',S,S,#1255,S,'BE-0(?)',NOTDEFINED,,RIGID\_FRAME.);  
#1257= IFCPROPERTYSET('Assembly/Cast unit weight',S,IFCMASSEASUREMENT(379.1),S);  
#1258= IFCPROPERTYSET('Assembly/Cast unit bottom elevation',S,IFCLABEL(' -0.245'),S);  
#1259= IFCPROPERTYSET('Assembly/Cast unit top elevation',S,IFCLABEL(' +2.679'),S);

#1260= IFCPROPERTYSET('3DGXL3vTcmwb9eN9QIGCP',#5,'Tekla Assembly',Assembly Properties',(#34,#313,#1257,#1258,#1259,#438,#318));  
#1261= IFCQUANTITYLENGTH('Width',S,S,200.0000001039);  
#1262= IFCLEMENTQUANTITY('2weHfBof6BQsHMDJyEE1W',#5,'BaseQ unities',S,S,(#1261));  
#1263= IFCARTESIANPOINT((6749.61579930323,199599.443767074,2479.01868039122));  
#1264= IFCDIRECTION((-0.491443182985549,-0.391745827988494,0.777829546977127));  
#1265= IFCDIRECTION((-0.870908428843726,0.219568321960602,-0.439668352921107));  
#1266= IFCAXIS2PLACEMENT3D(#1263,#1264,#1265);  
#1267= IFCLOCALPLACEMENT(#1255,#1266);  
#1268= IFCARTESIANPOINT((5740.52389882394,0.29422493547028E-011));  
#1269= IFCAXIS2PLACEMENT3D(#1268,#336,#335);  
#1270= IFCXTRUDEDAREASOLID(#333,#1269,#9,5740.5);  
#1271= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#1270));  
#1272= IFCSTYLEDELETEDITEM(#1270,(#330),S);  
#1273= IFCPRODUCTDEFINITIONSHAPE(S,S,(#1271));  
#1274= IFCMEMBER('1Ogimc0009ep4qE3SuD30m',#5,'BEAM',HN400\*200\*8\*13,'HN400\*200\*8\*13',#1267,#1273,'PO(?)');  
#1275= IFCPROPERTYSET('Bottom elevation',S,IFCLABEL(' -0.245'),S);  
#1276= IFCPROPERTYSET('Top elevation',S,IFCLABEL(' +2.679'),S);  
#1277= IFCPROPERTYSET('1\$2GBYMs92sfGdISLkQJv',#5,'Tekla Common','Common Properties to Shared building elements',(#1275,#1276,#71,#72,#73,#346));  
#1278= IFCPROPERTYSET('Weight',S,IFCMASSEASUREMENT(379.1),S);  
#1279= IFCPROPERTYSET('Length',S,IFLENGTHMEASUREMENT(5740.5),S);  
#1280= IFCPROPERTYSET('0EIAJGmer91OXRD9fWGD2',#5,'Tekla Quantity',Quantity Properties to Shared building elements',(#1278,#1108,#78,#350,#1210,#352,#353,#1279));  
#1281= IFCQUANTITYLENGTH('Length',S,S,5740.52389881256);  
#1282= IFCQUANTITYAREA('OuterSurfaceArea',S,S,9.09298985571909);  
#1283= IFCQUANTITYAREA('GrossSurfaceArea',S,S,9.09298985571909);  
#1284= IFCQUANTITYVOLUME('NetVolume',S,S,0.0470263717785858);  
#1285= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0482892870368112);  
#1286= IFCQUANTITYWEIGHT('NetWeight',S,S,369.157018461899);  
#1287= IFCQUANTITYWEIGHT('GrossWeight',S,S,379.070903238968);  
#1288= IFCLEMENTQUANTITY('25Y8COA17gw9e1tTfauw',#5,'BaseQuantities',S,S,(#1281,#1282,#1283,#361,#1284,#1285,#1286,#1287));  
#1289= IFCLOCALPLACEMENT('#30,#10);  
#1290= IFCLEMENTASSEMBLY('1Ogimc0009dp4qE3SuD30m',#5,'Steel Assembly',S,S,#1289,S,'BE-0(?)',NOTDEFINED,,RIGID\_FRAME.);  
#1291= IFCPROPERTYSET('Assembly/Cast unit weight',S,IFCMASSEASUREMENT(379.2),S);  
#1292= IFCPROPERTYSET('Assembly/Cast unit top elevation',S,IFCLABEL(' +2.839'),S);  
#1293= IFCPROPERTYSET('2veSupogX8ZQ20\_ciyhhoU',#5,'Tekla Assembly',Assembly Properties',(#34,#313,#1291,#1189,#1292,#438,#318));  
#1294= IFCQUANTITYLENGTH('Width',S,S,200.00000013999);  
#1295= IFCLEMENTQUANTITY('2swNBwZ3L7Buvgr8AOzHfz',#5,'BaseQuantities',S,S,(#1294));  
#1296= IFCARTESIANPOINT((1847.664397984,199521.104467343,2638.55494490315));  
#1297= IFCDIRECTION((0.491836002050202,-0.391666522039992,0.777621169079373));  
#1298= IFCDIRECTION((0.870686131080176,0.219465803020208,-0.440159542040531));  
#1299= IFCAXIS2PLACEMENT3D(#1296,#1297,#1298);  
#1300= IFCLOCALPLACEMENT(#1289,#1299);  
#1301= IFCARTESIANPOINT((5743.20547160662,1.59405973743271E-013,-3.18811947486542E-013));  
#1302= IFCAXIS2PLACEMENT3D(#1301,#336,#335);  
#1303= IFCXTRUDEDAREASOLID(#333,#1302,#9,5743.2);  
#1304= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#1303));  
#1305= IFCSTYLEDELETEDITEM(#1303,(#330),S);  
#1306= IFCPRODUCTDEFINITIONSHAPE(S,S,(#1304));  
#1307= IFCMEMBER('1Ogimc0009dZ4qE3SuD30m',#5,'BEAM',HN400\*200\*8\*13,'HN400\*200\*8\*13',#1300,#1306,'PO(?)');  
#1308= IFCPROPERTYSET('Top elevation',S,IFCLABEL(' +2.839'),S);  
#1309= IFCPROPERTYSET('18kA08T080PPiUJCS8z6Y',#5,'Tekla Common','Common Properties to Shared building elements',(#1206,#1308,#71,#72,#73,#346));  
#1310= IFCPROPERTYSET('Weight',S,IFCMASSEASUREMENT(379.2),S);

## Appendix

#1311= IFCPROPERTYSINGLEVALUE('Length',S,IFLENGTHMEASURE(5743.2),S);  
 #1312= IFCPROPERTYSET('3XfQL7PhT1fBfP3vfil8S',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#1310,#1108,#78,#350,#1210,#352,#353,#1311));  
 #1313= IFCQUANTITYLENGTH('Length',S,S,5743.2054715932);  
 #1314= IFCQUANTITYAREA('OuterSurfaceArea',S,S,9.09723746700362);  
 #1315= IFCQUANTITYAREA('GrossSurfaceArea',S,S,9.09723746700362);  
 #1316= IFCQUANTITYVOLUME('NetVolume',S,S,0.0470483392235113);  
 #1317= IFCQUANTITYVOLUME('GrossVolume',S,S,0.048311844427042);  
 #1318= IFCQUANTITYWEIGHT('NetWeight',S,S,369.329462904564);  
 #1319= IFCQUANTITYWEIGHT('GrossWeight',S,S,379.247978752279);  
 #1320= IFCELEMENTQUANTITY('0etXkCfGj5MAJyHypxq\_4n',#5,'BaseQuantities',S,S,(#1313,#1314,#1315,#361,#1316,#1317,#1318,#1319));  
 #1321= IFLOCALPLACEMENT(#30,#10);  
 #1322= IFCELEMENTASSEMBLY('1Ogimc0009cZ4qE3SuD30m',#5,'Steel Assembly',S,S,#1321,S,'BE-0(?)',NOTDEFINED,..RIGID\_FRAME.);  
 #1323= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit weight',S,IFCMASSMEASURE(375.6),S);  
 #1324= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit bottom elevation',S,IFCLABEL(' -0.247'),S);  
 #1325= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit top elevation',S,IFCLABEL(' +2.571'),S);  
 #1326= IFCPROPERTYSET('1uwuCG62D2S8spE1rsZpao',#5,'Tekla Assembly','Assembly Properties',(#34,#1313,#1323,#1324,#1325,#438,#318));  
 #1327= IFCQUANTITYLENGTH('Width',S,S,200.000000004307);  
 #1328= IFCELEMENTQUANTITY('0S0jKs08nFHQBQ3AS7g60K',#5,'BaseQuantities',S,S,(#1327));  
 #1329= IFCCARTESIANPOINT((6749.85630022609,204286.943032068,2369.27870559693));  
 #1330= IFCDIRECTION((-0.476724520864445,-0.397348338887005,0.784122457777038));  
 #1331= IFCDIRECTION((-0.879051572166947,0.2169463190412,-0.42450280108062));  
 #1332= IFCAXIS2PLACEMENT3D(#1329,#1330,#1331);  
 #1333= IFLOCALPLACEMENT(#1321,#1332);  
 #1334= IFCCARTESIANPOINT((5687.94841870676,0,-3.15744564866424E-013));  
 #1335= IFCAXIS2PLACEMENT3D(#1334,#336,#335);  
 #1336= IFCEXTRUDEDAREASOLID(#333,#1335,#9,5687.9);  
 #1337= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#1336));  
 #1338= IFCSTYLEEDITITEM(#1336,(#330),S);  
 #1339= IFCPRODUCTDEFINITIONSHAPE(S,S,(#1337));  
 #1340= IFCMEMBER('1Ogimc0009cJ4qE3SuD30m',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#1333,#1339,'P0(?)');  
 #1341= IFCPROPERTYSINGLEVALUE('Bottom elevation',S,IFCLABEL(' -0.247'),S);  
 #1342= IFCPROPERTYSINGLEVALUE('Top elevation',S,IFCLABEL(' +2.571'),S);  
 #1343= IFCPROPERTYSET('3J\_UhUx3f9DuOzG7NKiUSC',#5,'Tekla Common','Common Properties to Shared building elements',(#1341,#1342,#71,#72,#73,#346));  
 #1344= IFCPROPERTYSINGLEVALUE('Weight',S,IFCMASSMEASURE(375.6),S);  
 #1345= IFCPROPERTYSINGLEVALUE('Length',S,IFLENGTHMEASURE(5687.9),S);  
 #1346= IFCPROPERTYSET('1SsQSPwEH2m8DAj86Hdvhd',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#1344,#1108,#78,#350,#1210,#352,#353,#1345));  
 #1347= IFCQUANTITYLENGTH('Length',S,S,5687.94841870085);  
 #1348= IFCQUANTITYAREA('OuterSurfaceArea',S,S,9.00971029522214);  
 #1349= IFCQUANTITYAREA('GrossSurfaceArea',S,S,9.00971029522214);  
 #1350= IFCQUANTITYVOLUME('NetVolume',S,S,0.046595673446216);  
 #1351= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0478470220981116);  
 #1352= IFCQUANTITYWEIGHT('NetWeight',S,S,365.776036552795);  
 #1353= IFCQUANTITYWEIGHT('GrossWeight',S,S,375.599123470176);  
 #1354= IFCELEMENTQUANTITY('0z9jYdCvA68AZYU3NB98S',#5,'BaseQuantities',S,S,(#1347,#1348,#1349,#361,#1350,#1351,#1352,#1353));  
 #1355= IFLOCALPLACEMENT(#30,#10);  
 #1356= IFCELEMENTASSEMBLY('1Ogimc0009bJ4qE3SuD30m',#5,'Steel Assembly',S,S,#1355,S,'BE-0(?)',NOTDEFINED,..RIGID\_FRAME.);  
 #1357= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit bottom elevation',S,IFCLABEL(' -0.091'),S);  
 #1358= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit top elevation',S,IFCLABEL(' +2.729'),S);  
 #1359= IFCPROPERTYSET('0egPgbYCT7C9eWv4FP1903',#5,'Tekla Assembly','Assembly Properties',(#34,#1313,#1323,#1357,#1358,#438,#318));  
 #1360= IFCQUANTITYLENGTH('Width',S,S,200.000000002998);  
 #1361= IFCELEMENTQUANTITY('3AaBqGRw5CEOFD5AQo05n4',#5,'BaseQuantities',S,S,(#1360));

#1362= IFCCARTESIANPOINT((1845.50111648438,204207.476452271,2526.82299771688));  
 #1363= IFCDIRECTION((0.476812473868021,-0.397326632890012,0.784079977782971));  
 #1364= IFCDIRECTION((0.87900394957382,0.216934565894818,-0.424607407794132));  
 #1365= IFCAXIS2PLACEMENT3D(#1362,#1363,#1364);  
 #1366= IFLOCALPLACEMENT(#1355,#1365);  
 #1367= IFCCARTESIANPOINT((5688.25657948205,-5.80497800778545E-011,-6.31523342451651E-013));  
 #1368= IFCAXIS2PLACEMENT3D(#1367,#336,#335);  
 #1369= IFCEXTRUDEDAREASOLID(#333,#1368,#9,5688.3);  
 #1370= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#1369));  
 #1371= IFCSTYLEEDITITEM(#1369,(#330),S);  
 #1372= IFCPRODUCTDEFINITIONSHAPE(S,S,(#1370));  
 #1373= IFCMEMBER('1Ogimc0009b34qE3SuD30m',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#1366,#1372,'P0(?)');  
 #1374= IFCPROPERTYSINGLEVALUE('Bottom elevation',S,IFCLABEL(' -0.091'),S);  
 #1375= IFCPROPERTYSINGLEVALUE('Top elevation',S,IFCLABEL(' +2.729'),S);  
 #1376= IFCPROPERTYSET('1OGSDSRd7ufyThJhZVIC1',#5,'Tekla Common','Common Properties to Shared building elements',(#1374,#1375,#71,#72,#73,#346));  
 #1377= IFCPROPERTYSINGLEVALUE('Length',S,IFLENGTHMEASURE(5688.3),S);  
 #1378= IFCPROPERTYSET('2Ff8B9m19A9qJJSkiz4C',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#1344,#1108,#78,#350,#1210,#352,#353,#1377));  
 #1379= IFCQUANTITYLENGTH('Length',S,S,5688.25657947918);  
 #1380= IFCQUANTITYAREA('OuterSurfaceArea',S,S,9.01019842189502);  
 #1381= IFCQUANTITYAREA('GrossSurfaceArea',S,S,9.01019842189502);  
 #1382= IFCQUANTITYVOLUME('NetVolume',S,S,0.046598197892869);  
 #1383= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0478496143465789);  
 #1384= IFCQUANTITYWEIGHT('NetWeight',S,S,365.795853509402);  
 #1385= IFCQUANTITYWEIGHT('GrossWeight',S,S,375.619472620644);  
 #1386= IFCELEMENTQUANTITY('12l16Lc39AQxfv5V8WtX9X',#5,'BaseQuantities',S,S,(#1379,#1380,#1381,#361,#1382,#1383,#1384,#1385));  
 #1387= IFLOCALPLACEMENT(#30,#10);  
 #1388= IFCELEMENTASSEMBLY('1Ogimc0009a34qE3SuD30m',#5,'Steel Assembly',S,S,#1387,S,'BE-0(?)',NOTDEFINED,..RIGID\_FRAME.);  
 #1389= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit weight',S,IFCMASSMEASURE(370.9),S);  
 #1390= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit bottom elevation',S,IFCLABEL(' -0.249'),S);  
 #1391= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit top elevation',S,IFCLABEL(' +2.471'),S);  
 #1392= IFCPROPERTYSET('3xmWm2pXE1wEk30sZCo4',#5,'Tekla Assembly','Assembly Properties',(#34,#1313,#1389,#1390,#1391,#438,#318));  
 #1393= IFCQUANTITYLENGTH('Width',S,S,200.000000014901);  
 #1394= IFCELEMENTQUANTITY('10nzG\_uGv94BFa8FgOhh7E',#5,'BaseQuantities',S,S,(#1393));  
 #1395= IFCCARTESIANPOINT((6751.66914876882,208844.473880134,2267.65985243065));  
 #1396= IFCDIRECTION((-0.455056639941743,-0.412512512947184,0.789149466898971));  
 #1397= IFCDIRECTION((-0.890306041964186,0.194158851992189,-0.411895000983431));  
 #1398= IFCAXIS2PLACEMENT3D(#1395,#1396,#1397);  
 #1399= IFLOCALPLACEMENT(#1387,#1398);  
 #1400= IFCCARTESIANPOINT((5616.04635259208,5.83635375126677E-011,-1.51754216251678E-011));  
 #1401= IFCAXIS2PLACEMENT3D(#1400,#336,#335);  
 #1402= IFCEXTRUDEDAREASOLID(#333,#1401,#9,5616.);  
 #1403= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#1402));  
 #1404= IFCSTYLEEDITITEM(#1402,(#330),S);  
 #1405= IFCPRODUCTDEFINITIONSHAPE(S,S,(#1403));  
 #1406= IFCMEMBER('1Ogimc0009Zp4qE3SuD30m',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#1399,#1405,'P0(?)');  
 #1407= IFCPROPERTYSINGLEVALUE('Bottom elevation',S,IFCLABEL(' -0.249'),S);  
 #1408= IFCPROPERTYSINGLEVALUE('Top elevation',S,IFCLABEL(' +2.471'),S);  
 #1409= IFCPROPERTYSET('3EAPahtU5969Kkm2HOHr6X',#5,'Tekla Common','Common Properties to Shared building elements',(#1407,#1408,#71,#72,#73,#346));  
 #1410= IFCPROPERTYSINGLEVALUE('Weight',S,IFCMASSMEASURE(370.9),S);  
 #1411= IFCPROPERTYSINGLEVALUE('Net surface area',S,IFCAREAMEASURE(8.9),S);  
 #1412= IFCPROPERTYSINGLEVALUE('Length',S,IFLENGTHMEASURE(5616.),S);  
 #1413= IFCPROPERTYSET('1dCuYBB0v688i\_TiS1X1r',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#1410,#1108,#78,#350,#1411,#352,#353,#1412));  
 #1414= IFCQUANTITYLENGTH('Length',S,S,5616.04635258648);

#1415= IFCQUANTITYAREA('OuterSurfaceArea',S,S,8.89581742249698);  
#1416= IFCQUANTITYAREA('GrossSurfaceArea',S,S,8.89581742249698);  
#1417= IFCQUANTITYVOLUME('NetVolume',S,S,0.0460066517210295);  
#1418= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0472421819179574);  
#1419= IFCQUANTITYWEIGHT('NetWeight',S,S,361.152216010082);  
#1420= IFCQUANTITYWEIGHT('GrossWeight',S,S,370.851128055966);  
#1421= IFCELEMENTQUANTITY('OfBR2yHjrCTBF7r1bHFgub',#5,'BaseQuantities',S,S,#1414,#1415,#1416,#361,#1417,#1418,#1419,#1420);  
#1422= IFCLOCALPLACEMENT(#30,#10);  
#1423= IFCELEMENTASSEMBLY('IOgjm0009Yp4qE3SuD30m',#5,'Steel Assembly',S,S,#1422,S,'BE-0(?)',NOTDEFINED,,RIGID\_FRAME.);  
#1424= IFCQUANTITYLENGTH('Width',S,S,200.000000015978);  
#1425= IFCELEMENTQUANTITY('OvsodsOb4ExuF19Tsfcs',#5,'BaseQuantities',S,S,#1424);  
#1426= IFCARTESIANPOINT((1748.33085123118,208844.473880134,2267.65985243066));  
#1427= IFCDIRECTION((0.455056639941743,-0.412512512947183,0.789149466898972));  
#1428= IFCDIRECTION((0.890306041964186,0.194158851992189,-0.411895000983431));  
#1429= IFCAXIS2PLACEMENT3D(#1426,#1427,#1428);  
#1430= IFCLOCALPLACEMENT(#1422,#1429);  
#1431= IFCSHAPEPRESENTATION(#12,'Body','SweptSolid',(#1402));  
#1432= IFCPRODUCTDEFINITIONSHAPE(S,S,#1431);  
#1433= IFCMEMBER('IOgjm0009YZ4qE3SuD30m',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#1430,#1432,'PO(?)');  
#1434= IFCQUANTITYLENGTH('Length',S,S,5616.04635258531);  
#1435= IFCQUANTITYAREA('OuterSurfaceArea',S,S,8.89581742249514);  
#1436= IFCQUANTITYAREA('GrossSurfaceArea',S,S,8.89581742249514);  
#1437= IFCQUANTITYVOLUME('NetVolume',S,S,0.0460066517210276);  
#1438= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0472421819179476);  
#1439= IFCQUANTITYWEIGHT('NetWeight',S,S,361.152216010067);  
#1440= IFCQUANTITYWEIGHT('GrossWeight',S,S,370.851128055889);  
#1441= IFCELEMENTQUANTITY('3JBvEpwXzChvTCeqKmqPX',#5,'BaseQuantities',S,S,#1434,#1435,#1436,#361,#1437,#1438,#1439,#1440);  
#1442= IFCLOCALPLACEMENT(#30,#10);  
#1443= IFCELEMENTASSEMBLY('IOgjm0009XZ4qE3SuD30m',#5,'Steel Assembly',S,S,#1442,S,'BE-0(?)',NOTDEFINED,,RIGID\_FRAME.);  
#1444= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit weight',S,IFCMASSEASUREMENT(367.3),S);  
#1445= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit bottom elevation',S,IFCLABEL(' -0.251'),S);  
#1446= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit top elevation',S,IFCLABEL(' +2.374'),S);  
#1447= IFCPROPERTYSET('2kRgR2siPEq9kOgSRfmNwq',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#1444,#1445,#1446,#438,#318));  
#1448= IFCQUANTITYLENGTH('Width',S,S,200.000000010652);  
#1449= IFCELEMENTQUANTITY('IZWcTkFRr9xxWU\_K8uyfqt',#5,'BaseQuantities',S,S,#1448);  
#1450= IFCARTESIANPOINT((6752.31105223864,213095.009524889,2168.96346210801));  
#1451= IFCDIRECTION((-0.437327458925049,-0.421525902927759,0.794393231863853));  
#1452= IFCDIRECTION((-0.899005337794703,0.182218398958387,-0.39822839890906));  
#1453= IFCAXIS2PLACEMENT3D(#1450,#1451,#1452);  
#1454= IFCLOCALPLACEMENT(#1442,#1453);  
#1455= IFCARTESIANPOINT((5561.70223860386,1.54368247035182E-013,-3.08736494070364E-013));  
#1456= IFCAXIS2PLACEMENT3D(#1455,#336,#335);  
#1457= IFCEXTRUDEDAREASOLID(#333,#1456,#9,5561.7);  
#1458= IFCSHAPEPRESENTATION(#12,'Body','SweptSolid',(#1457));  
#1459= IFCSTYLEEDITITEM(#1457,(#330),S);  
#1460= IFCPRODUCTDEFINITIONSHAPE(S,S,#1458);  
#1461= IFCMEMBER('IOgjm0009XJ4qE3SuD30m',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#1454,#1460,'PO(?)');  
#1462= IFCPROPERTYSINGLEVALUE('Bottom elevation',S,IFCLABEL(' -0.251'),S);  
#1463= IFCPROPERTYSINGLEVALUE('Top elevation',S,IFCLABEL(' +2.374'),S);  
#1464= IFCPROPERTYSET('2UKbxwbX5AmQpbN29u0sS9',#5,'Tekla Common','Common Properties to Shared building elements',(#1462,#1463,#71,#72,#73,#346));  
#1465= IFCPROPERTYSINGLEVALUE('Weight',S,IFCMASSEASUREMENT(367.3),S);  
#1466= IFCPROPERTYSINGLEVALUE('Length',S,IFLENGTHMEASURE(561.7),S);  
#1467= IFCPROPERTYSET('02JL7TWj4Mg4to7130Ubl',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#1465,#1108,#78,#350,#1411,#352,#353,#1466));  
#1468= IFCQUANTITYLENGTH('Length',S,S,5561.70223860288);  
#1469= IFCQUANTITYAREA('OuterSurfaceArea',S,S,8.80973634594697);  
#1470= IFCQUANTITYAREA('GrossSurfaceArea',S,S,8.80973634594697);  
#1471= IFCQUANTITYVOLUME('NetVolume',S,S,0.0455614647390633);  
#1472= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0467850392311275);  
#1473= IFCQUANTITYWEIGHT('NetWeight',S,S,357.657498201647);  
#1474= IFCQUANTITYWEIGHT('GrossWeight',S,S,367.262557964351);  
#1475= IFCELEMENTQUANTITY('28nNpKsmzInxv0DfOu0mlm',#5,'BaseQuantities',S,S,#1468,#1469,#1470,#361,#1471,#1472,#1473,#1474);  
#1476= IFCLOCALPLACEMENT(#30,#10);  
#1477= IFCELEMENTASSEMBLY('IOgjm0009WJ4qE3SuD30m',#5,'Steel Assembly',S,S,#1476,S,'BE-0(?)',NOTDEFINED,,RIGID\_FRAME.);  
#1478= IFCQUANTITYLENGTH('Width',S,S,200.000000008469);  
#1479= IFCELEMENTQUANTITY('1T40rUypT1FREzFvIbCVz',#5,'BaseQuantities',S,S,#1478);  
#1480= IFCARTESIANPOINT((1747.68894776135,213095.009524889,2168.96346210799));  
#1481= IFCDIRECTION((0.437327458925049,-0.421525902927759,0.794393231863853));  
#1482= IFCDIRECTION((0.899005337794703,0.182218398958387,-0.39822839890906));  
#1483= IFCAXIS2PLACEMENT3D(#1480,#1481,#1482);  
#1484= IFCLOCALPLACEMENT(#1476,#1483);  
#1485= IFCSHAPEPRESENTATION(#12,'Body','SweptSolid',(#1457));  
#1486= IFCPRODUCTDEFINITIONSHAPE(S,S,#1485);  
#1487= IFCMEMBER('IOgjm0009W34qE3SuD30m',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#1484,#1486,'PO(?)');  
#1488= IFCQUANTITYVOLUME('NetVolume',S,S,0.0455614647390296);  
#1489= IFCQUANTITYWEIGHT('NetWeight',S,S,357.657498201382);  
#1490= IFCELEMENTQUANTITY('2kuUv9Bb9AL8ycZyefFBru',#5,'BaseQuantities',S,S,#1468,#1469,#1470,#361,#1488,#1472,#1489,#1474);  
#1491= IFCLOCALPLACEMENT(#30,#10);  
#1492= IFCELEMENTASSEMBLY('IOgjm0009V34qE3SuD30m',#5,'Steel Assembly',S,S,#1491,S,'BE-0(?)',NOTDEFINED,,RIGID\_FRAME.);  
#1493= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit weight',S,IFCMASSEASUREMENT(364.3),S);  
#1494= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit bottom elevation',S,IFCLABEL(' -0.160'),S);  
#1495= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit top elevation',S,IFCLABEL(' +2.372'),S);  
#1496= IFCPROPERTYSET('05n4o\_jBH3fOPbj6E4EiS',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#1493,#1494,#1495,#438,#318));  
#1497= IFCARTESIANPOINT((6747.68261939456,217219.589840289,2165.61850682627));  
#1498= IFCDIRECTION((-0.422050340825583,-0.427269286823429,0.799571426669568));  
#1499= IFCDIRECTION((-0.906276163600706,0.176303157922326,-0.384162350830743));  
#1500= IFCAXIS2PLACEMENT3D(#1497,#1498,#1499);  
#1501= IFCLOCALPLACEMENT(#1491,#1500);  
#1502= IFCARTESIANPOINT((5517.08210013956,-2.89507006673256E-011,0));  
#1503= IFCAXIS2PLACEMENT3D(#1502,#336,#335);  
#1504= IFCEXTRUDEDAREASOLID(#333,#1503,#9,5517.1);  
#1505= IFCSHAPEPRESENTATION(#12,'Body','SweptSolid',(#1504));  
#1506= IFCSTYLEEDITITEM(#1504,(#330),S);  
#1507= IFCPRODUCTDEFINITIONSHAPE(S,S,#1505);  
#1508= IFCMEMBER('IOgjm0009Up4qE3SuD30m',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#1501,#1507,'PO(?)');  
#1509= IFCPROPERTYSINGLEVALUE('Bottom elevation',S,IFCLABEL(' -0.160'),S);  
#1510= IFCPROPERTYSINGLEVALUE('Top elevation',S,IFCLABEL(' +2.372'),S);  
#1511= IFCPROPERTYSET('0G5cWxQ4T36uZDa2Js6KE2',#5,'Tekla Common','Common Properties to Shared building elements',(#1509,#1510,#71,#72,#73,#346));  
#1512= IFCPROPERTYSINGLEVALUE('Weight',S,IFCMASSEASUREMENT(364.3),S);  
#1513= IFCPROPERTYSINGLEVALUE('Length',S,IFLENGTHMEASURE(551.7),S);  
#1514= IFCPROPERTYSET('1uv380GOTASRi3n74S8n2g',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#1512,#1108,#78,#350,#1411,#352,#353,#1513));  
#1515= IFCQUANTITYLENGTH('Length',S,S,5517.08210015128);  
#1516= IFCQUANTITYAREA('OuterSurfaceArea',S,S,8.73905804663962);  
#1517= IFCQUANTITYAREA('GrossSurfaceArea',S,S,8.73905804663962);  
#1518= IFCQUANTITYVOLUME('NetVolume',S,S,0.0451959365644186);  
#1519= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0464096946264725);



## Appendix

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#1520= IFCQUANTITYWEIGHT('NetWeight',S,$,354.788102030686);
#1521=
IFCQUANTITYWEIGHT('GrossWeight',S,$,364.31610281781);
#1522=
IFCELEMENTQUANTITY('1ODSSe2KT9heWfntai9pJH',#5,'BaseQuantities',S,$,#1515,#1516,#1517,#361,#1518,#1519,#1520,#1521));
#1523= IFCLOCALPLACEMENT(#30,#10);
#1524=
IFCELEMENTASSEMBLY('1Ogimc0009Tp4qE3SuD30m',#5,'Steel Assembly',S,$,#1523,'BE-0(?)',NOTDEFINED,,RIGID_FRAME.);
#1525= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit weight',S,IFCMASSMEASURE(361.8),S);
#1526= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit bottom elevation',S,IFCLABEL('0.161'),S);
#1527= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit top elevation',S,IFCLABEL('2.273'),S);
#1528= IFCPROPERTYSET('17h9qojaH9mOE1ltnMoAY',#5,'Tekla Assembly',Assembly Properties',(#34,#313,#1525,#1526,#1527,#438,#318));
#1529= IFCQUANTITYLENGTH('Width',S,$,200.000000012893);
#1530=
IFCELEMENTQUANTITY('1SVioCGzH7AwaWiiUrmFQ',#5,'BaseQuantities',S,$,#1529));
#1531=
IFCCARTESIANPOINT((11751.55090902955,217219.44078381,2065.93561763307));
#1532= IFCDIRECTION((0.408779959976806,-0.429849973975622,0.805063937954321));
#1533= IFCDIRECTION((0.912501185102687,0.177516702019977,-0.368550414041474));
#1534= IFCAXIS2PLACEMENT3D(#1531,#1532,#1533);
#1535= IFCLOCALPLACEMENT(#1523,#1534);
#1536=
IFCCARTESIANPOINT((5479.44493882827,2.89517453084024E-011,-3.04170296662647E-013));
#1537= IFCAXIS2PLACEMENT3D(#1536,#336,#335);
#1538= IFCEXTRUDEDAREASOLID(#333,#1537,#9,5479.4);
#1539=
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#1538));
#1540= IFCSTYLEDITEM(#1538,(#330),S);
#1541= IFCPRODUCTDEFINITIONSHAPE(S,$,#1539));
#1542=
IFCMEMBER('1Ogimc0009TZ4qE3SuD30m',#5,'BEAM','HN400*200*8*13','HN400*200*8*13',#1535,#1541,'P0(?)');
#1543= IFCPROPERTYSINGLEVALUE('Bottom elevation',S,IFCLABEL('0.161'),S);
#1544= IFCPROPERTYSINGLEVALUE('Top elevation',S,IFCLABEL('2.273'),S);
#1545= IFCPROPERTYSET('2Has2gDTXEEP0TDZOE9PQA',#5,'Tekla Common',Common Properties to Shared building elements',(#1543,#1544,#71,#72,#73,#346));
#1546= IFCPROPERTYSINGLEVALUE('Weight',S,IFCMASSMEASURE(361.8),S);
#1547= IFCPROPERTYSINGLEVALUE('Net surface area',S,IFCAREAMEASURE(8.7),S);
#1548=
IFCPROPERTYSINGLEVALUE('Length',S,IFLENGTHMEASURE(5479.4),S);
#1549= IFCPROPERTYSET('0JQsxFQUPDQezwuQEB2sf_',#5,'Tekla Quantity',Quantity Properties to Shared building elements',(#1546,#1108,#78,#350,#1547,#352,#353,#1548));
#1550= IFCQUANTITYLENGTH('Length',S,$,5479.44493882203);
#1551=
IFCQUANTITYAREA('OuterSurfaceArea',S,$,8.6794407830941);
#1552=
IFCQUANTITYAREA('GrossSurfaceArea',S,$,8.6794407830941);
#1553=
IFCQUANTITYVOLUME('NetVolume',S,$,0.044887612937968);
#1554=
IFCQUANTITYVOLUME('GrossVolume',S,$,0.0460930908253709);
#1555= IFCQUANTITYWEIGHT('NetWeight',S,$,352.367761563049);
#1556=
IFCQUANTITYWEIGHT('GrossWeight',S,$,361.830762979162);
#1557=
IFCELEMENTQUANTITY('3YjQ9F9L0HxgTB8Afc9',#5,'BaseQuantities',S,$,#1550,#1551,#1552,#361,#1553,#1554,#1555,#1556));
#1558= IFCLOCALPLACEMENT(#30,#10);
#1559=
IFCELEMENTASSEMBLY('1Ogimc0009SZ4qE3SuD30m',#5,'Steel Assembly',S,$,#1558,'BE-0(?)',NOTDEFINED,,RIGID_FRAME.);
#1560= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit weight',S,IFCMASSMEASURE(201.5),S);
#1561= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit bottom elevation',S,IFCLABEL('0.068'),S);
#1562= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit top elevation',S,IFCLABEL('2.010'),S);
#1563= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit position code',S,IFCLABEL('4-5/E'),S);
#1564= IFCPROPERTYSET('3DteSxkSn5ahCy1clhCffC',#5,'Tekla Assembly',Assembly Properties',(#34,#313,#1560,#1561,#1562,#1563,#318));
#1565= IFCQUANTITYLENGTH('Width',S,$,200.);
#1566=
IFCELEMENTQUANTITY('1oMXhzbT3AQOpEOHU8Gs',#5,'BaseQuantities',S,$,#1565));
#1567= IFCCARTESIANPOINT((6750.,219900.,1846.));
#1568= IFCDIRECTION((-0.573462343893529,0.,0.8192319208479));
#1569= IFCDIRECTION((-0.8192319208479,0.,-0.57346234389353));
#1570= IFCAXIS2PLACEMENT3D(#1567,#1568,#1569);
#1571= IFCLOCALPLACEMENT(#1558,#1570);
#1572= IFCCARTESIANPOINT((3051.63890393343,0.,0.));
#1573= IFCAXIS2PLACEMENT3D(#1572,#336,#335);
#1574= IFCEXTRUDEDAREASOLID(#333,#1573,#9,3051.6);

#1575=
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#1574));
#1576= IFCSTYLEDITEM(#1574,(#330),S);
#1577= IFCPRODUCTDEFINITIONSHAPE(S,$,#1575));
#1578=
IFCMEMBER('1Ogimc0009Sj4qE3SuD30m',#5,'BEAM','HN400*200*8*13','HN400*200*8*13',#1571,#1577,'P0(?)');
#1579= IFCPROPERTYSINGLEVALUE('Bottom elevation',S,IFCLABEL('0.068'),S);
#1580= IFCPROPERTYSINGLEVALUE('Top elevation',S,IFCLABEL('2.010'),S);
#1581= IFCPROPERTYSET('2D0kSohXX8YxJKFUomQdbP',#5,'Tekla Common',Common Properties to Shared building elements',(#1579,#1580,#71,#72,#73,#346));
#1582=
IFCPROPERTYSINGLEVALUE('Weight',S,IFCMASSMEASURE(201.5),S);
#1583= IFCPROPERTYSINGLEVALUE('Net surface area',S,IFCAREAMEASURE(4.9),S);
#1584=
IFCPROPERTYSINGLEVALUE('Length',S,IFLENGTHMEASURE(3051.6),S);
#1585= IFCPROPERTYSET('3EDtdZ9B9Xxueq5aB1OgGR',#5,'Tekla Quantity',Quantity Properties to Shared building elements',(#1582,#1108,#78,#350,#1583,#352,#353,#1584));
#1586= IFCQUANTITYLENGTH('Length',S,$,3051.63890393444);
#1587=
IFCQUANTITYAREA('OuterSurfaceArea',S,$,4.83379602383215);
#1588=
IFCQUANTITYAREA('GrossSurfaceArea',S,$,4.83379602383215);
#1589=
IFCQUANTITYVOLUME('NetVolume',S,$,0.0249990259010345);
#1590=
IFCQUANTITYVOLUME('GrossVolume',S,$,0.0256703864598965);
#1591= IFCQUANTITYWEIGHT('NetWeight',S,$,196.24235323121);
#1592=
IFCQUANTITYWEIGHT('GrossWeight',S,$,201.512533710187);
#1593=
IFCELEMENTQUANTITY('1fnGlqNV18rAOZxSgjoJl',#5,'BaseQuantities',S,$,#1586,#1587,#1588,#361,#1589,#1590,#1591,#1592));
#1594= IFCLOCALPLACEMENT(#30,#10);
#1595=
IFCELEMENTASSEMBLY('1Ogimc0009RJ4qE3SuD30m',#5,'Steel Assembly',S,$,#1594,'BE-0(?)',NOTDEFINED,,RIGID_FRAME.);
#1596= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit weight',S,IFCMASSMEASURE(191.5),S);
#1597= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit bottom elevation',S,IFCLABEL('0.063'),S);
#1598= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit top elevation',S,IFCLABEL('2.005'),S);
#1599= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit position code',S,IFCLABEL('3-4/E'),S);
#1600= IFCPROPERTYSET('0aYLKsx5r3e9EvETmY1yKM',#5,'Tekla Assembly',Assembly Properties',(#34,#313,#1596,#1597,#1598,#1599,#318));
#1601= IFCCARTESIANPOINT((4250.,219900.,96.));
#1602=
IFCDIRECTION((0.603359715343524,0.,0.797469155454041));
#1603= IFCDIRECTION((-0.797469155454041,0.,0.603359715343524));
#1604= IFCAXIS2PLACEMENT3D(#1601,#1602,#1603);
#1605= IFCLOCALPLACEMENT(#1594,#1604);
#1606= IFCCARTESIANPOINT((2900.42565841637,-2.91038304567337E-011,0.));
#1607= IFCAXIS2PLACEMENT3D(#1606,#336,#335);
#1608= IFCEXTRUDEDAREASOLID(#333,#1607,#9,2900.4);
#1609=
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#1608));
#1610= IFCSTYLEDITEM(#1608,(#330),S);
#1611= IFCPRODUCTDEFINITIONSHAPE(S,$,#1609));
#1612=
IFCMEMBER('1Ogimc0009R34qE3SuD30m',#5,'BEAM','HN400*200*8*13','HN400*200*8*13',#1605,#1611,'P0(?)');
#1613= IFCPROPERTYSINGLEVALUE('Bottom elevation',S,IFCLABEL('0.063'),S);
#1614= IFCPROPERTYSINGLEVALUE('Top elevation',S,IFCLABEL('2.005'),S);
#1615= IFCPROPERTYSET('2KV5ca8KL1weEGkaKEeDK',#5,'Tekla Common',Common Properties to Shared building elements',(#1613,#1614,#71,#72,#73,#346));
#1616=
IFCPROPERTYSINGLEVALUE('Weight',S,IFCMASSMEASURE(191.5),S);
#1617= IFCPROPERTYSINGLEVALUE('Net surface area',S,IFCAREAMEASURE(4.6),S);
#1618=
IFCPROPERTYSINGLEVALUE('Length',S,IFLENGTHMEASURE(2900.4),S);
#1619= IFCPROPERTYSET('3kElF2H5DA9mGHLg27M8C',#5,'Tekla Quantity',Quantity Properties to Shared building elements',(#1616,#1108,#78,#350,#1617,#352,#353,#1618));
#1620= IFCQUANTITYLENGTH('Length',S,$,2900.42565841558);
#1621=
IFCQUANTITYAREA('OuterSurfaceArea',S,$,4.59427424293027);
#1622=
IFCQUANTITYAREA('GrossSurfaceArea',S,$,4.59427424293027);
#1623=
IFCQUANTITYVOLUME('NetVolume',S,$,0.0237602869937416);
#1624=
IFCQUANTITYVOLUME('GrossVolume',S,$,0.0243983806385918);
#1625= IFCQUANTITYWEIGHT('NetWeight',S,$,186.518252900872);
#1626=
IFCQUANTITYWEIGHT('GrossWeight',S,$,191.527288012946);

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#1627=  
IFCELEMENTQUANTITY('18y2UmnjbAnQlcbxfyX2nU',#5,'BaseQuantities',\$.S,(#1620,#1621,#1622,#361,#1623,#1624,#1625,#1626));  
#1628= IFLOCALPLACEMENT(#30,#10);  
#1629=  
IFCELEMENTASSEMBLY('1Ogimc0009Q34qE3SuD30m',#5,'Steel Assembly',\$.S,(#1628,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#1630= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit weight',\$.IFCMASMEASURE(304.2),\$.S);  
#1631= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit bottom elevation',\$.IFCLABEL(' +0.096'),\$.S);  
#1632= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit top elevation',\$.IFCLABEL(' +0.296'),\$.S);  
#1633= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit position code',\$.IFCLABEL('3-5/E'),\$.S);  
#1634= IFCPROPERTYSET('16R0H\_SelAsx4evuEXOi2S',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#1630,#1631,#1632,#1633,#318));  
#1635= IFCCARTESIANPOINT((1943.76953679383,220000.,196.));  
#1636= IFCAXIS2PLACEMENT3D(#1635,#8,#7);  
#1637= IFLOCALPLACEMENT(#1628,#1636);  
#1638= IFCCARTESIANPOINT((4606.23046320617,0.,0.));  
#1639= IFCAXIS2PLACEMENT3D(#1638,#336,#335);  
#1640= IFCEXTRUDEDAREASOLID(#333,#1639,#9,4606.2);  
#1641=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#1640));  
#1642= IFCSTYLEDITEM(#1640,(#330),\$.S);  
#1643= IFCPRODUCTDEFINITIONSHAPE(\$.S,(#1641));  
#1644=  
IFCBEAM('1Ogimc0009Pp4qE3SuD30m',#5,'BEAM',HN400\*200\*8\*13',HN400\*200\*8\*13',#1637,#1643,P0(?));  
#1645=  
IFCBEAMTYPE('3 o0S0c5z1hPKUERmBkKBM',#5,'HN400\*200\*8\*13',\$.S,\$.S,\$.S,..NOTDEFINED.);  
#1646= IFCPROPERTYSINGLEVALUE('Bottom elevation',\$.IFCLABEL(' +0.096'),\$.S);  
#1647= IFCPROPERTYSINGLEVALUE('Top elevation',\$.IFCLABEL(' +0.296'),\$.S);  
#1648= IFCPROPERTYSET('0o01wlzCz4J064BtwODnYa',#5,'Tekla Common','Common Properties to Shared building elements',(#1646,#1647,#71,#72,#73,#346));  
#1649=  
IFCPROPERTYSINGLEVALUE('Weight',\$.IFCMASMEASURE(304.2),\$.S);  
#1650= IFCPROPERTYSINGLEVALUE('Gross footprint area',\$.IFCAREAMEASURE(0.1),\$.S);  
#1651= IFCPROPERTYSINGLEVALUE('Net surface area',\$.IFCAREAMEASURE(7.3),\$.S);  
#1652=  
IFCPROPERTYSINGLEVALUE('Length',\$.IFLENGTHMEASURE(4606.2),\$.S);  
#1653= IFCPROPERTYSET('0zOoOgP\_n9n8vmmU5uWCMJ',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#1649,#1108,#1650,#350,#1651,#352,#353,#1652));  
#1654=  
IFCPROPERTYSET('11ZkJ0ar2gwBhnsaeH\_b',#5,'Pset\_BeamCommon','Common Properties to beam elements',(#85,#356));  
#1655= IFCQUANTITYLENGTH('Length',\$.S,4606.23046320617);  
#1656=  
IFCQUANTITYAREA('OuterSurfaceArea',\$.S,7.29626905371857);  
#1657=  
IFCQUANTITYVOLUME('NetVolume',\$.S,0.0377342399545849);  
#1658= IFCQUANTITYWEIGHT('NetWeight',\$.S,296.213783643492);  
#1659=  
IFCELEMENTQUANTITY('3L\_DeLFHH2GO42BX6EmZTy',#5,'BaseQuantities',\$.S,(#1655,#1656,#1657,#1658));  
#1660= IFLOCALPLACEMENT(#30,#10);  
#1661=  
IFCELEMENTASSEMBLY('1Ogimc0009Op4qE3SuD30m',#5,'Steel Assembly',\$.S,(#1660,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#1662= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit weight',\$.IFCMASMEASURE(330.6),\$.S);  
#1663= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit bottom elevation',\$.IFCLABEL(' +1.846'),\$.S);  
#1664= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit top elevation',\$.IFCLABEL(' +2.046'),\$.S);  
#1665= IFCPROPERTYSET('1UhpD96f2XqAqShQCCZQ',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#1662,#1663,#1664,#1633,#318));  
#1666= IFCCARTESIANPOINT((1743.76953679383,220000.,194.));  
#1667= IFCAXIS2PLACEMENT3D(#1666,#8,#7);  
#1668= IFLOCALPLACEMENT(#1660,#1667);  
#1669= IFCCARTESIANPOINT((5006.23046320617,0.,0.));  
#1670= IFCAXIS2PLACEMENT3D(#1669,#336,#335);  
#1671= IFCEXTRUDEDAREASOLID(#333,#1670,#9,5006.2);  
#1672=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#1671));  
#1673= IFCSTYLEDITEM(#1671,(#330),\$.S);  
#1674= IFCPRODUCTDEFINITIONSHAPE(\$.S,(#1672));  
#1675=  
IFCBEAM('1Ogimc0009OZ4qE3SuD30m',#5,'BEAM',HN400\*200\*8\*13',HN400\*200\*8\*13',#1668,#1674,P0(?));  
#1676= IFCPROPERTYSINGLEVALUE('Bottom elevation',\$.IFCLABEL(' +1.846'),\$.S);  
#1677= IFCPROPERTYSINGLEVALUE('Top elevation',\$.IFCLABEL(' +2.046'),\$.S);  
#1678= IFCPROPERTYSET('2jqvRTFwB9qQfd2z7Celqf',#5,'Tekla Common','Common Properties to Shared building elements',(#1676,#1677,#71,#72,#73,#346));  
#1679=  
IFCPROPERTYSINGLEVALUE('Weight',\$.IFCMASMEASURE(330.6),\$.S);  
#1680= IFCPROPERTYSINGLEVALUE('Net surface area',\$.IFCAREAMEASURE(7.9),\$.S);

#1681=  
IFCPROPERTYSINGLEVALUE('Length',\$.IFLENGTHMEASURE(5006.2),\$.S);  
#1682= IFCPROPERTYSET('3WRsShj9LBBB8\_RdR3CxP9',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#1679,#1108,#1650,#350,#1680,#352,#353,#1681));  
#1683= IFCQUANTITYLENGTH('Length',\$.S,5006.23046320617);  
#1684=  
IFCQUANTITYAREA('OuterSurfaceArea',\$.S,7.92986905371857);  
#1685=  
IFCQUANTITYVOLUME('NetVolume',\$.S,0.0410110399545849);  
#1686= IFCQUANTITYWEIGHT('NetWeight',\$.S,321.936663643492);  
#1687=  
IFCELEMENTQUANTITY('2FOPWAQT5A\_uGR5qAB5z6Y',#5,'BaseQuantities',\$.S,(#1683,#1684,#1685,#1686));  
#1688= IFLOCALPLACEMENT(#30,#10);  
#1689=  
IFCELEMENTASSEMBLY('1Ogimc0009N24qE3SuCpau',#5,'Steel Assembly',\$.S,(#1688,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#1690= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit position code',\$.IFCLABEL('3-5/A-B'),\$.S);  
#1691= IFCPROPERTYSET('0fho9Sij59R8TVQHvxkAre',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#435,#436,#437,#1690,#318));  
#1692= IFCQUANTITYLENGTH('Width',\$.S,200.000000008295);  
#1693=  
IFCELEMENTQUANTITY('1na4kutT7a9PUS079tSDH',#5,'BaseQuantities',\$.S,(#1692));  
#1694=  
IFCCARTESIANPOINT((6747.06402156794,58144.6182431527,3441.07706079406));  
#1695= IFCAXIS2PLACEMENT3D(#1694,#822,#823);  
#1696= IFLOCALPLACEMENT(#1688,#1695);  
#1697=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#449));  
#1698= IFCPRODUCTDEFINITIONSHAPE(\$.S,(#1697));  
#1699=  
IFCMEMBER('1Ogimc0009N4qE3SuCpau',#5,'BEAM',HN400\*200\*8\*13',HN400\*200\*8\*13',#1696,#1698,P0(?));  
#1700= IFCQUANTITYLENGTH('Length',\$.S,6343.83530357949);  
#1701=  
IFCQUANTITYAREA('OuterSurfaceArea',\$.S,10.0486351208699);  
#1702=  
IFCQUANTITYAREA('GrossSurfaceArea',\$.S,10.0486351208699);  
#1703=  
IFCQUANTITYVOLUME('NetVolume',\$.S,0.0519686988068164);  
#1704=  
IFCQUANTITYVOLUME('GrossVolume',\$.S,0.0533643245737107);  
#1705= IFCQUANTITYWEIGHT('NetWeight',\$.S,407.954285633509);  
#1706=  
IFCQUANTITYWEIGHT('GrossWeight',\$.S,418.910089203629);  
#1707=  
IFCELEMENTQUANTITY('0sByTIp09D9g9FSEQxY7n',#5,'BaseQuantities',\$.S,(#1700,#1701,#1702,#361,#1703,#1704,#1705,#1706));  
#1708= IFLOCALPLACEMENT(#30,#10);  
#1709=  
IFCELEMENTASSEMBLY('1Ogimc0009M4qE3SuCpau',#5,'Steel Assembly',\$.S,(#1708,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#1710= IFCPROPERTYSET('0GcCu4SM513A8y\_784WAH',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#471,#472,#473,#1690,#318));  
#1711= IFCQUANTITYLENGTH('Width',\$.S,200.000000002954);  
#1712=  
IFCELEMENTQUANTITY('28RmiRN11Y0u2W1vi3YNM',#5,'BaseQuantities',\$.S,(#1711));  
#1713=  
IFCCARTESIANPOINT((1875.93905303652,58081.9840191839,3589.80826001687));  
#1714= IFCAXIS2PLACEMENT3D(#1713,#841,#842);  
#1715= IFLOCALPLACEMENT(#1708,#1714);  
#1716=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#484));  
#1717= IFCPRODUCTDEFINITIONSHAPE(\$.S,(#1716));  
#1718=  
IFCMEMBER('1Ogimc0009M34qE3SuCpau',#5,'BEAM',HN400\*200\*8\*13',HN400\*200\*8\*13',#1715,#1717,P0(?));  
#1719= IFCQUANTITYLENGTH('Length',\$.S,6346.03249029234);  
#1720=  
IFCQUANTITYAREA('OuterSurfaceArea',\$.S,10.0521154646231);  
#1721=  
IFCQUANTITYAREA('GrossSurfaceArea',\$.S,10.0521154646231);  
#1722=  
IFCQUANTITYVOLUME('NetVolume',\$.S,0.0519866981604638);  
#1723=  
IFCQUANTITYVOLUME('GrossVolume',\$.S,0.0533828253083392);  
#1724= IFCQUANTITYWEIGHT('NetWeight',\$.S,408.095580559641);  
#1725=  
IFCQUANTITYWEIGHT('GrossWeight',\$.S,419.055178670463);  
#1726=  
IFCELEMENTQUANTITY('0FEZALzSxGjhdQZ1J7V4u4',#5,'BaseQuantities',\$.S,(#1719,#1720,#1721,#361,#1722,#1723,#1724,#1725));  
#1727= IFLOCALPLACEMENT(#30,#10);  
#1728=  
IFCELEMENTASSEMBLY('1Ogimc0009I34qE3SuCpau',#5,'Steel Assembly',\$.S,(#1727,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#1729= IFCPROPERTYSET('2FLM4CJTb5LeekuVA58Jhp',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#505,#506,#507,#317,#318));  
#1730= IFCQUANTITYLENGTH('Width',\$.S,200.000000001048);  
#1731=  
IFCELEMENTQUANTITY('2bPDO9hTnBT9zgf2fptcz',#5,'BaseQuantities',\$.S,(#1730));  
#1732=  
IFCCARTESIANPOINT((6742.20009982999,102918.923355991,4394.9329326275));

## Appendix

#1733= IFCDIRECTION((-0.702641524990444,0.226513351996914,0.674526936990826));  
#1734= IFCDIRECTION((-0.707255989937167,-0.326247987971017,-0.627177179944281));  
#1735= IFCAXIS2PLACEMENT3D(#1732,#1733,#1734);  
#1736= IFCLOCALPLACEMENT(#1727,#1735);  
#1737= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#518));  
#1738= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#1737));  
#1739= IFCMEMBER('1Ogimc0009J4qE3SuCpa',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#1736,#1738,'PO(?));  
#1740= IFCQUANTITYVOLUME('NetVolume',S,\$,0.0579139669482613);  
#1741= IFCQUANTITYWEIGHT('NetWeight',S,\$,454.624640543851);  
#1742= IFCELEMENTQUANTITY('07Lyq4WF914ew76HVUMiFL',#5,'BaseQuantities',S,\$,(#530,#531,#532,#361,#1740,#534,#1741,#536));  
#1743= IFCLOCALPLACEMENT(#30,#10);  
#1744= IFCELEMENTASSEMBLY('1Ogimc0009H34qE3SuCpa',#5,'Steel Assembly',S,\$,#1743,S,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#1745= IFCQUANTITYLENGTH('Width',S,\$,200.00000006141);  
#1746= IFCELEMENTQUANTITY('0303SK;Uz1R93vz46VeTlu',#5,'BaseQuantities',S,\$,(#1745));  
#1747= IFCARTESIANPOINT((1757.79991009256,102918.923355999,4394.93293265247));  
#1748= IFCDIRECTION((0.702641525149601,0.226513351048229,0.674526937143614));  
#1749= IFCDIRECTION((0.707255989937167,-0.326247987971016,-0.627177179944281));  
#1750= IFCAXIS2PLACEMENT3D(#1747,#1748,#1749);  
#1751= IFCLOCALPLACEMENT(#1743,#1750);  
#1752= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#518));  
#1753= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#1752));  
#1754= IFCMEMBER('1Ogimc0009HJ4qE3SuCpa',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#1751,#1751,#1753,'PO(?));  
#1755= IFCQUANTITYLENGTH('Length',S,\$,7069.5760364823);  
#1756= IFCQUANTITYAREA('OuterSurfaceArea',S,\$,11.198208441788);  
#1757= IFCQUANTITYAREA('GrossSurfaceArea',S,\$,11.198208441788);  
#1758= IFCQUANTITYVOLUME('NetVolume',S,\$,0.0579139668907196);  
#1759= IFCQUANTITYVOLUME('GrossVolume',S,\$,0.0594692736188891);  
#1760= IFCQUANTITYWEIGHT('NetWeight',S,\$,454.624640092149);  
#1761= IFCQUANTITYWEIGHT('GrossWeight',S,\$,466.833797908279);  
#1762= IFCELEMENTQUANTITY('2JnTBYn15B1BqHb t VeH',#5,'BaseQuantities',S,\$,(#1755,#1756,#1757,#361,#1758,#1759,#1760,#1761));  
#1763= IFCLOCALPLACEMENT(#30,#10);  
#1764= IFCELEMENTASSEMBLY('1Ogimc0009G34qE3SuCpan',#5,'Steel Assembly',S,\$,#1763,S,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#1765= IFCPROPERTYSET('11yLsqX079IEAXQSOoF1',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#560,#561,#562,#317,#318));  
#1766= IFCQUANTITYLENGTH('Width',S,\$,200.000000009299);  
#1767= IFCELEMENTQUANTITY('0cM5XH4NDDc8YzSXx748h1',#5,'BaseQuantities',S,\$,(#1766));  
#1768= IFCARTESIANPOINT((6742.52758385207,93815.7317961985,4083.13702812343));  
#1769= IFCDIRECTION((-0.679102103602446,0.246504493855687,0.691415842595238));  
#1770= IFCDIRECTION((-0.730230538639283,-0.322755609840567,-0.602156272702549));  
#1771= IFCAXIS2PLACEMENT3D(#1768,#1769,#1770);  
#1772= IFCLOCALPLACEMENT(#1763,#1771);  
#1773= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#573));  
#1774= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#1773));  
#1775= IFCMEMBER('1Ogimc0009GJ4qE3SuCpan',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#1772,#1774,'PO(?));  
#1776= IFCQUANTITYVOLUME('NetVolume',S,\$,0.0560918748128085);  
#1777= IFCQUANTITYWEIGHT('NetWeight',S,\$,440.321217280546);  
#1778= IFCELEMENTQUANTITY('25M2AHIFXBsUCyZ820YHr1',#5,'BaseQuantities',S,\$,(#585,#586,#587,#361,#1776,#589,#1777,#591));  
#1779= IFCLOCALPLACEMENT(#30,#10);  
#1780= IFCELEMENTASSEMBLY('1Ogimc0009F34qE3SuCpan',#5,'Steel Assembly',S,\$,#1779,S,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#1781= IFCPROPERTYSET('31GgAS10b3tffSHN5rOo93',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#595,#596,#597,#317,#318));  
#1782= IFCARTESIANPOINT((1757.05226098378,93815.9174970025,4183.48766792517));  
#1783= IFCDIRECTION((0.68637924111649,0.243288062041297,0.685342583116314));  
#1784= IFCDIRECTION((0.72381633906102,-0.31992058802697,-0.611343377051539));  
#1785= IFCAXIS2PLACEMENT3D(#1782,#1783,#1784);

#1786= IFCLOCALPLACEMENT(#1779,#1785);  
#1787= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#608));  
#1788= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#1787));  
#1789= IFCMEMBER('1Ogimc0009FJ4qE3SuCpan',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#1786,#1788,'PO(?));  
#1790= IFCQUANTITYVOLUME('NetVolume',S,\$,0.0565889409250911);  
#1791= IFCQUANTITYWEIGHT('NetWeight',S,\$,444.223186261965);  
#1792= IFCELEMENTQUANTITY('2bAcYavAv5a9CdeW5sS3iJ',#5,'BaseQuantities',S,\$,(#619,#620,#621,#361,#1790,#623,#1791,#625));  
#1793= IFCLOCALPLACEMENT(#30,#10);  
#1794= IFCELEMENTASSEMBLY('1Ogimc0009E34qE3SuCpan',#5,'Steel Assembly',S,\$,#1793,S,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#1795= IFCPROPERTYSET('0o5Di0ybb3Ve4uGc4BM5b1',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#629,#630,#631,#317,#318));  
#1796= IFCQUANTITYLENGTH('Width',S,\$,200.00000002095);  
#1797= IFCELEMENTQUANTITY('1j5\_SoPw96YwC11AZ7I14K',#5,'BaseQuantities',S,\$,(#1796));  
#1798= IFCARTESIANPOINT((1755.8534625083,85152.7534775857,3982.27512038812));  
#1799= IFCDIRECTION((0.668991477697379,0.262572948881218,0.695345848685457));  
#1800= IFCDIRECTION((0.740961594802682,-0.309273957917641,-0.596091883841261));  
#1801= IFCAXIS2PLACEMENT3D(#1798,#1799,#1800);  
#1802= IFCLOCALPLACEMENT(#1793,#1801);  
#1803= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#642));  
#1804= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#1803));  
#1805= IFCMEMBER('1Ogimc0009EJ4qE3SuCpan',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#1802,#1804,'PO(?));  
#1806= IFCQUANTITYLENGTH('Length',S,\$,6747.98808588168);  
#1807= IFCQUANTITYAREA('OuterSurfaceArea',S,\$,10.6888131280366);  
#1808= IFCQUANTITYAREA('GrossSurfaceArea',S,\$,10.6888131280366);  
#1809= IFCQUANTITYVOLUME('NetVolume',S,\$,0.0552795183995504);  
#1810= IFCQUANTITYVOLUME('GrossVolume',S,\$,0.0567640757784367);  
#1811= IFCQUANTITYWEIGHT('NetWeight',S,\$,433.94421943647);  
#1812= IFCQUANTITYWEIGHT('GrossWeight',S,\$,445.597994860728);  
#1813= IFCELEMENTQUANTITY('2EVu2IKUTDgHFNc8PrLUr',#5,'BaseQuantities',S,\$,(#1806,#1807,#1808,#361,#1809,#1810,#1811,#1812));  
#1814= IFCLOCALPLACEMENT(#30,#10);  
#1815= IFCELEMENTASSEMBLY('1Ogimc0009D34qE3SuCpan',#5,'Steel Assembly',S,\$,#1814,S,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#1816= IFCPROPERTYSET('2YfZKiD18M9tOjUnGxx',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#664,#630,#665,#317,#318));  
#1817= IFCQUANTITYLENGTH('Width',S,\$,200.000000015105);  
#1818= IFCELEMENTQUANTITY('2XzHB9rp17H8h3CYdPkm8M',#5,'BaseQuantities',S,\$,(#1817));  
#1819= IFCARTESIANPOINT((6743.96236141077,85164.7406282608,3986.2771064652));  
#1820= IFCDIRECTION((-0.669568943896944,0.261188472959802,0.695311448892982));  
#1821= IFCDIRECTION((-0.740291927136545,-0.310770886057321,-0.596145384109957));  
#1822= IFCAXIS2PLACEMENT3D(#1819,#1820,#1821);  
#1823= IFCLOCALPLACEMENT(#1814,#1822);  
#1824= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#676));  
#1825= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#1824));  
#1826= IFCMEMBER('1Ogimc0009DJ4qE3SuCpan',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#1823,#1825,'PO(?));  
#1827= IFCQUANTITYLENGTH('Length',S,\$,6754.09227369648);  
#1828= IFCQUANTITYAREA('OuterSurfaceArea',S,\$,10.6984821615352);  
#1829= IFCQUANTITYAREA('GrossSurfaceArea',S,\$,10.6984821615352);  
#1830= IFCQUANTITYVOLUME('NetVolume',S,\$,0.0553295239064928);  
#1831= IFCQUANTITYVOLUME('GrossVolume',S,\$,0.0568154242063348);  
#1832= IFCQUANTITYWEIGHT('NetWeight',S,\$,434.336762665969);  
#1833= IFCQUANTITYWEIGHT('GrossWeight',S,\$,446.001080019728);  
#1834= IFCELEMENTQUANTITY('2ZhaLszRb6vfkH1pvGp64Q',#5,'BaseQuantities',S,\$,(#1827,#1828,#1829,#361,#1830,#1831,#1832,#1833));  
#1835= IFCLOCALPLACEMENT(#30,#10);  
#1836= IFCELEMENTASSEMBLY('1Ogimc0009C34qE3SuCpan',#5,'Steel Assembly',S,\$,#1835,S,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#1837= IFCPROPERTYSET('3pu5dB4MfDNwX4RbZ\_qeSb',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#696,#697,#698,#317,#318));  
#1838= IFCQUANTITYLENGTH('Width',S,\$,200.000000007261);

#1839=	IFCELEMENTQUANTITY('3mtlupbFfADPT9m60gWITn',#5,'BaseQuantities',\$.S,(#1838));	#1893=	IFCELEMENTASSEMBLY('1Ogjmce0009934qE3SuCpam',#5,'Steel Assembly',\$.S,#1892,\$,'BE-0(?)',NOTDEFINED,..RIGID_FRAME.);
#1840=	IFCCARTESIANPOINT((6745.36291669027,76949.3962249982,3791.73184018489));	#1894=	IFCPROPERTYSET('2sTdxJBrmFHVr7fJnhFxt1',#5,'Tekla Assembly',Assembly Properties',(#34,#313,#785,#786,#787,#317,#318));
#1841=	IFCDIRECTION((0.650951636147966,0.281479992063976,0.705004242160252));	#1895=	IFCQUANTITYLENGTH('Width',\$.S,\$,200.000000010565);
#1842=	IFCDIRECTION((-0.757701609111419,-0.297651216043769,-0.580768478085401));	#1896=	IFCELEMENTQUANTITY('0n3JwPs8j8gwidHgsvTYGm',#5,'BaseQuantities',\$.S,(#1895));
#1843=	IFCAXIS2PLACEMENT3D(#1840,#1841,#1842);	#1897=	IFCCARTESIANPOINT((1753.67986605424,69192.4824640228,3611.53618522923));
#1844=	IFCLOCALPLACEMENT(#1835,#1843);	#1898=	IFCDIRECTION((0.632830598934259,0.298270274969017,0.714535006925772));
#1845=	IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#709));	#1899=	IFCDIRECTION((0.773415342337877,-0.287359954125536,-0.56502474246839));
#1846=	IFCPRODUCTDEFINITIONSHAPE(\$.S,(#1845));	#1900=	IFCAXIS2PLACEMENT3D(#1897,#1898,#1899);
#1847=	IFCMEMBER('1Ogjmce0009CJ4qE3SuCpam',#5,'BEAM','HN400*200*8*13','HN400*200*8*13',#1844,#1846,'P0(?)');	#1901=	IFCLOCALPLACEMENT(#1892,#1900);
#1848=	IFCQUANTITYLENGTH('Length',\$.S,\$,6598.90373836175);	#1902=	IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#798));
#1849=	IFCQUANTITYAREA('OuterSurfaceArea',\$.S,\$,10.452663521565);	#1903=	IFCPRODUCTDEFINITIONSHAPE(\$.S,(#1902));
#1850=	IFCQUANTITYAREA('GrossSurfaceArea',\$.S,\$,10.452663521565);	#1904=	IFCMEMBER('1Ogjmce00099J4qE3SuCpam',#5,'BEAM','HN400*200*8*13','HN400*200*8*13',#1901,#1903,'P0(?)');
#1851=	IFCQUANTITYVOLUME('NetVolume',\$.S,\$,0.0540582194247551);	#1905=	IFCQUANTITYLENGTH('Length',\$.S,\$,6464.83167309942);
#1852=	IFCQUANTITYVOLUME('GrossVolume',\$.S,\$,0.055509978247099);	#1906=	IFCQUANTITYAREA('OuterSurfaceArea',\$.S,\$,10.2402933701895);
#1853=	IFCQUANTITYWEIGHT('NetWeight',\$.S,\$,424.357022484328);	#1907=	IFCQUANTITYAREA('GrossSurfaceArea',\$.S,\$,10.2402933701895);
#1854=	IFCQUANTITYWEIGHT('GrossWeight',\$.S,\$,435.753329239727);	#1908=	IFCQUANTITYVOLUME('NetVolume',\$.S,\$,0.0529599010663442);
#1855=	IFCELEMENTQUANTITY('0HyEZwdCTErAwpqxrObly',#5,'BaseQuantities',\$.S,(#1848,#1849,#1850,#361,#1851,#1852,#1853,#1854));	#1909=	IFCQUANTITYVOLUME('GrossVolume',\$.S,\$,0.0543821640341123);
#1856=	IFCLOCALPLACEMENT(#30,#10);	#1910=	IFCQUANTITYWEIGHT('NetWeight',\$.S,\$,415.735223370802);
#1857=	IFCELEMENTASSEMBLY('1Ogjmce0009B34qE3SuCpam',#5,'Steel Assembly',\$.S,#1856,\$,'BE-0(?)',NOTDEFINED,..RIGID_FRAME.);	#1911=	IFCQUANTITYWEIGHT('GrossWeight',\$.S,\$,426.899987667782);
#1858=	IFCQUANTITYLENGTH('Width',\$.S,\$,200.000000006228);	#1912=	IFCELEMENTQUANTITY('0jFbbgEVTeg3uUC3d17E',#5,'BaseQuantities',\$.S,(#1905,#1906,#1907,#361,#1908,#1909,#1910,#1911));
#1859=	IFCELEMENTQUANTITY('2S2s715f5PeT7RHkUmJn',#5,'BaseQuantities',\$.S,(#1858));	#1913=	IFCLOCALPLACEMENT(#30,#10);
#1860=	IFCCARTESIANPOINT((1754.63704925343,76949.3962249676,3791.73184010413));	#1914=	IFCELEMENTASSEMBLY('1Ogjmce0009834qE3SuCpWv',#5,'Steel Assembly',\$.S,#1913,\$,'BE-0(?)',NOTDEFINED,..RIGID_FRAME.);
#1861=	IFCDIRECTION((0.650951633711134,0.281479993875085,0.705004243687148));	#1915=	IFCPROPERTYSET('3W2S1Jp5CMQStWYzqHBB',#5,'Tekla Assembly',Assembly Properties',(#34,#313,#435,#436,#437,#317,#318));
#1862=	IFCDIRECTION((0.757701611494712,-0.297651214801507,-0.580768475612704));	#1916=	IFCQUANTITYLENGTH('Width',\$.S,\$,200.000000008287);
#1863=	IFCAXIS2PLACEMENT3D(#1860,#1861,#1862);	#1917=	IFCELEMENTQUANTITY('2uSGiHeVH5Q950QJcmm8Y',#5,'BaseQuantities',\$.S,(#1916));
#1864=	IFCLOCALPLACEMENT(#1856,#1863);	#1918=	IFCCARTESIANPOINT((6747.06402156554,61855.3817568485,3441.07706079689));
#1865=	IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#709));	#1919=	IFCAXIS2PLACEMENT3D(#1918,#443,#444);
#1866=	IFCPRODUCTDEFINITIONSHAPE(\$.S,(#1865));	#1920=	IFCLOCALPLACEMENT(#1913,#1919);
#1867=	IFCMEMBER('1Ogjmce0009BJ4qE3SuCpam',#5,'BEAM','HN400*200*8*13','HN400*200*8*13',#1864,#1866,'P0(?)');	#1921=	IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#449));
#1868=	IFCQUANTITYLENGTH('Length',\$.S,\$,6598.90376409407);	#1922=	IFCPRODUCTDEFINITIONSHAPE(\$.S,(#1921));
#1869=	IFCQUANTITYAREA('OuterSurfaceArea',\$.S,\$,10.452663562325);	#1923=	IFCMEMBER('1Ogjmce00098J4qE3SuCpWv',#5,'BEAM','HN400*200*8*13','HN400*200*8*13',#1920,#1922,'P0(?)');
#1870=	IFCQUANTITYAREA('GrossSurfaceArea',\$.S,\$,10.452663562325);	#1924=	IFCQUANTITYLENGTH('Length',\$.S,\$,6343.83530357949);
#1871=	IFCQUANTITYVOLUME('NetVolume',\$.S,\$,0.0540582196356532);	#1925=	IFCQUANTITYAREA('OuterSurfaceArea',\$.S,\$,10.0486351208699);
#1872=	IFCQUANTITYVOLUME('GrossVolume',\$.S,\$,0.0555099784635593);	#1926=	IFCQUANTITYAREA('GrossSurfaceArea',\$.S,\$,10.0486351208699);
#1873=	IFCQUANTITYWEIGHT('NetWeight',\$.S,\$,424.357024139878);	#1927=	IFCQUANTITYVOLUME('NetVolume',\$.S,\$,0.0519686988068048);
#1874=	IFCQUANTITYWEIGHT('GrossWeight',\$.S,\$,435.7533093894);	#1928=	IFCQUANTITYVOLUME('GrossVolume',\$.S,\$,0.0533643425737106);
#1875=	IFCELEMENTQUANTITY('2VwZR8Cdb9YART9E27dXcP',#5,'BaseQuantities',\$.S,(#1868,#1869,#1870,#361,#1871,#1872,#1873,#1874));	#1929=	IFCQUANTITYWEIGHT('NetWeight',\$.S,\$,407.954285633418);
#1876=	IFCLOCALPLACEMENT(#30,#10);	#1930=	IFCQUANTITYWEIGHT('GrossWeight',\$.S,\$,418.910089203629);
#1877=	IFCELEMENTASSEMBLY('1Ogjmce0009A34qE3SuCpam',#5,'Steel Assembly',\$.S,#1876,\$,'BE-0(?)',NOTDEFINED,..RIGID_FRAME.);	#1931=	IFCELEMENTQUANTITY('3C9aNdiaT7QAYwYwEITXai',#5,'BaseQuantities',\$.S,(#1924,#1925,#1926,#361,#1927,#1928,#1929,#1930));
#1878=	IFCPROPERTYSET('2LvdVrF9B1QPBE1aVZRYJ',#5,'Tekla Assembly',Assembly Properties',(#34,#313,#751,#752,#753,#317,#318));	#1932=	IFCLOCALPLACEMENT(#30,#10);
#1879=	IFCQUANTITYLENGTH('Width',\$.S,\$,200.000000002576);	#1933=	IFCELEMENTASSEMBLY('1Ogjmce0009734qE3SuCpWu',#5,'Steel Assembly',\$.S,#1932,\$,'BE-0(?)',NOTDEFINED,..RIGID_FRAME.);
#1880=	IFCELEMENTQUANTITY('2CGzetdW17h9z0XUOrgSpX',#5,'BaseQuantities',\$.S,(#1879));	#1934=	IFCPROPERTYSET('2MMf7Ssar9SvGciwHQVCA',#5,'Tekla Assembly',Assembly Properties',(#34,#313,#471,#472,#473,#317,#318));
#1881=	IFCCARTESIANPOINT((6745.82009345994,69192.2966756069,3511.17589880896));	#1935=	IFCQUANTITYLENGTH('Width',\$.S,\$,200.000000002961);
#1882=	IFCDIRECTION((0.624169643902962,0.301488223953129,0.720775350887943));	#1936=	IFCELEMENTQUANTITY('21NKcwwUH7iugI91_tjb0',#5,'BaseQuantities',\$.S,(#1935));
#1883=	IFCDIRECTION((-0.780169913187196,-0.289869594069552,-0.554355955133014));	#1937=	IFCCARTESIANPOINT((1875.93905303399,61918.0159808229,3589.8082600098));
#1884=	IFCAXIS2PLACEMENT3D(#1881,#1882,#1883);	#1938=	IFCAXIS2PLACEMENT3D(#1937,#478,#479);
#1885=	IFCLOCALPLACEMENT(#1876,#1884);	#1939=	IFCLOCALPLACEMENT(#1932,#1938);
#1886=	IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#764));	#1940=	IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#484));
#1887=	IFCPRODUCTDEFINITIONSHAPE(\$.S,(#1886));	#1941=	IFCPRODUCTDEFINITIONSHAPE(\$.S,(#1940));
#1888=	IFCMEMBER('1Ogjmce0009AJ4qE3SuCpam',#5,'BEAM','HN400*200*8*13','HN400*200*8*13',#1885,#1887,'P0(?)');	#1942=	IFCMEMBER('1Ogjmce00097J4qE3SuCpWu',#5,'BEAM','HN400*200*8*13','HN400*200*8*13',#1939,#1941,'P0(?)');
#1889=	IFCQUANTITYVOLUME('NetVolume',\$.S,\$,0.0525013837311125);	#1943=	IFCQUANTITYLENGTH('Length',\$.S,\$,6346.03249029235);
#1890=	IFCQUANTITYWEIGHT('NetWeight',\$.S,\$,412.135862289233);	#1944=	IFCQUANTITYAREA('OuterSurfaceArea',\$.S,\$,10.0521154646231);
#1891=	IFCELEMENTQUANTITY('32XIwG0sDFtumV2VvnedHI',#5,'BaseQuantities',\$.S,(#775,#776,#777,#361,#1889,#779,#1890,#781));	#1945=	IFCQUANTITYAREA('GrossSurfaceArea',\$.S,\$,10.0521154646231);
#1892=	IFCLOCALPLACEMENT(#30,#10);		

## Appendix

#1946=  
IFCQUANTITYVOLUME('NetVolume',S,S,0.0519866981604632);  
#1947=  
IFCQUANTITYVOLUME('GrossVolume',S,S,0.0533828253083392);  
#1948= IFCQUANTITYWEIGHT('NetWeight',S,S,408.095580559637);  
#1949=  
IFCQUANTITYWEIGHT('GrossWeight',S,S,419.055178670463);  
#1950=  
IFCELEMENTQUANTITY('3uk8rJqNxA5Qef6CjR3Xtq',#5,'BaseQuantities',S,S,(#1943,#1944,#1945,#361,#1946,#1947,#1948,#1949));  
#1951= IFCLOCALPLACEMENT(#30,#10);  
#1952=  
IFCELEMENTASSEMBLY('1Ogimc0009634qE3SuCpWu',#5,'Steel Assembly',S,S,#1951,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#1953=  
IFCPROPERTYSET('1miYVWVWfEYRfwgMxj9ZC',#5,'Tekla Assembly',Assembly Properties',(#34,#313,#853,#854,#855,#1690,#318));  
#1954= IFCQUANTITYLENGTH('Width',S,S,200.000000006286);  
#1955=  
IFCELEMENTQUANTITY('1CxPlzPbf0yOchocJfP3W',#5,'BaseQuantities',S,S,(#1954));  
#1956=  
IFCCARTESIANPOINT((6747.24603523399,54911.1653017849,3179.71065827808));  
#1957= IFCDIRECTION((-0.586938732245041,0.330851747138128,0.738945225308502));  
#1958= IFCDIRECTION((-0.8091628303458,-0.270756179115709,-0.52148500022286));  
#1959= IFCAXIS2PLACEMENT3D(#1956,#1957,#1958);  
#1960= IFCLOCALPLACEMENT(#1951,#1959);  
#1961=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#866));  
#1962= IFCPRODUCTDEFINITIONSHAPE(S,S,(#1961));  
#1963=  
IFCMEMBER('1Ogimc000964qE3SuCpWu',#5,'BEAM',HN400\*200\*8\*13,'HN400\*200\*8\*13',#1960,#1962,'P0(?)');  
#1964= IFCQUANTITYLENGTH('Length',S,S,6179.22601550827);  
#1965=  
IFCQUANTITYAREA('OuterSurfaceArea',S,S,9.7878940085651);  
#1966=  
IFCQUANTITYAREA('GrossSurfaceArea',S,S,9.7878940085651);  
#1967=  
IFCQUANTITYVOLUME('NetVolume',S,S,0.0506202195191138);  
#1968=  
IFCQUANTITYVOLUME('GrossVolume',S,S,0.0519796492424556);  
#1969= IFCQUANTITYWEIGHT('NetWeight',S,S,397.368723225044);  
#1970=  
IFCQUANTITYWEIGHT('GrossWeight',S,S,408.040246553276);  
#1971=  
IFCELEMENTQUANTITY('2XVPEQ98b3A8R9MrY2EPAy',#5,'BaseQuantities',S,S,(#1964,#1965,#1966,#361,#1967,#1968,#1969,#1970));  
#1972= IFCLOCALPLACEMENT(#30,#10);  
#1973=  
IFCELEMENTASSEMBLY('1Ogimc0009534qE3SuCpWu',#5,'Steel Assembly',S,S,#1972,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#1974= IFCPROPERTYSET('26T7E7kUfBZPJGC3CniRBX',#5,'Tekla Assembly',Assembly Properties',(#34,#313,#853,#888,#889,#1690,#318));  
#1975= IFCQUANTITYLENGTH('Width',S,S,200.000000003769);  
#1976=  
IFCELEMENTQUANTITY('0o7uX1SbrAyAYhBKsSa0D8',#5,'BaseQuantities',S,S,(#1975));  
#1977=  
IFCCARTESIANPOINT((1870.13960614415,54977.4326702162,3327.18019490787));  
#1978=  
IFCDIRECTION((-0.586911484098647,0.330852514055607,0.738966524124204));  
#1979= IFCDIRECTION((-0.809181404872417,-0.270778173957307,-0.521444756917784));  
#1980= IFCAXIS2PLACEMENT3D(#1977,#1978,#1979);  
#1981= IFCLOCALPLACEMENT(#1972,#1980);  
#1982=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#900));  
#1983= IFCPRODUCTDEFINITIONSHAPE(S,S,(#1982));  
#1984=  
IFCMEMBER('1Ogimc000954qE3SuCpWu',#5,'BEAM',HN400\*200\*8\*13,'HN400\*200\*8\*13',#1981,#1983,'P0(?)');  
#1985= IFCQUANTITYLENGTH('Length',S,S,6179.08435756825);  
#1986=  
IFCQUANTITYAREA('OuterSurfaceArea',S,S,9.7876696223881);  
#1987=  
IFCQUANTITYAREA('GrossSurfaceArea',S,S,9.7876696223881);  
#1988=  
IFCQUANTITYVOLUME('NetVolume',S,S,0.0506190590571416);  
#1989=  
IFCQUANTITYVOLUME('GrossVolume',S,S,0.0519784576158641);  
#1990= IFCQUANTITYWEIGHT('NetWeight',S,S,397.359613598562);  
#1991=  
IFCQUANTITYWEIGHT('GrossWeight',S,S,408.030892284533);  
#1992=  
IFCELEMENTQUANTITY('1Qk19XOorDecC7stW9voCq',#5,'BaseQuantities',S,S,(#1985,#1986,#1987,#361,#1988,#1989,#1990,#1991));  
#1993= IFCLOCALPLACEMENT(#30,#10);  
#1994=  
IFCELEMENTASSEMBLY('1Ogimc0009434qE3SuCpWu',#5,'Steel Assembly',S,S,#1993,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#1995= IFCPROPERTYSET('26SJYf8xPB1w78IDSU7GpO',#5,'Tekla Assembly',Assembly Properties',(#34,#313,#920,#921,#922,#1690,#318));  
#1996= IFCQUANTITYLENGTH('Width',S,S,200.000000001433);  
#1997=  
IFCELEMENTQUANTITY('1YLjyY2wn4IRqCSYhkJa\_c',#5,'BaseQuantities',S,S,(#1996));  
#1998=  
IFCCARTESIANPOINT((1865.61571198253,48402.8055930072,3175.77075648166));  
#1999=  
IFCDIRECTION((0.567891692736363,0.344778814839939,0.747413268653023));  
#2000= IFCDIRECTION((-0.822850826906363,-0.26029209597038,-0.505138140942517));  
#2001= IFCAXIS2PLACEMENT3D(#1998,#1999,#2000);  
#2002= IFCLOCALPLACEMENT(#1993,#2001);  
#2003=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#933));  
#2004= IFCPRODUCTDEFINITIONSHAPE(S,S,(#2003));  
#2005=  
IFCMEMBER('1Ogimc000944qE3SuCpWu',#5,'BEAM',HN400\*200\*8\*13,'HN400\*200\*8\*13',#2002,#2004,'P0(?)');  
#2006= IFCQUANTITYLENGTH('Length',S,S,6076.43687871648);  
#2007=  
IFCQUANTITYAREA('OuterSurfaceArea',S,S,9.6250760158869);  
#2008=  
IFCQUANTITYAREA('GrossSurfaceArea',S,S,9.6250760158869);  
#2009=  
IFCQUANTITYVOLUME('NetVolume',S,S,0.0497781709103921);  
#2010=  
IFCQUANTITYVOLUME('GrossVolume',S,S,0.051114987023763);  
#2011= IFCQUANTITYWEIGHT('NetWeight',S,S,390.758641646578);  
#2012=  
IFCQUANTITYWEIGHT('GrossWeight',S,S,401.25264813654);  
#2013=  
IFCELEMENTQUANTITY('3PrPB42MvC2QvW4TzYhDv',#5,'BaseQuantities',S,S,(#2006,#2007,#2008,#361,#2009,#2010,#2011,#2012));  
#2014= IFCLOCALPLACEMENT(#30,#10);  
#2015=  
IFCELEMENTASSEMBLY('1Ogimc0009334qE3SuCpWu',#5,'Steel Assembly',S,S,#2014,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#2016= IFCPROPERTYSET('3Mo8UurSjEwQIISFe3wDAG',#5,'Tekla Assembly',Assembly Properties',(#34,#313,#920,#955,#956,#1690,#318));  
#2017= IFCQUANTITYLENGTH('Width',S,S,200.000000006628);  
#2018=  
IFCELEMENTQUANTITY('2JALKtsXL2iAOB0SdybD',#5,'BaseQuantities',S,S,(#2017));  
#2019=  
IFCCARTESIANPOINT((6747.96040169672,48333.8498321343,3026.28810721926));  
#2020= IFCDIRECTION((-0.56789186271888,0.34477870182933,0.747413191630013));  
#2021= IFCDIRECTION((-0.822850708916726,-0.260292173973658,-0.505138292948879));  
#2022= IFCAXIS2PLACEMENT3D(#2019,#2020,#2021);  
#2023= IFCLOCALPLACEMENT(#2014,#2022);  
#2024=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#967));  
#2025= IFCPRODUCTDEFINITIONSHAPE(S,S,(#2024));  
#2026=  
IFCMEMBER('1Ogimc000934qE3SuCpWu',#5,'BEAM',HN400\*200\*8\*13,'HN400\*200\*8\*13',#2023,#2025,'P0(?)');  
#2027=  
IFCQUANTITYVOLUME('NetVolume',S,S,0.0497781559412838);  
#2028= IFCQUANTITYWEIGHT('NetWeight',S,S,390.758524139078);  
#2029=  
IFCELEMENTQUANTITY('3IKTSIV7j3IP\_ej4p9YIbx',#5,'BaseQuantities',S,S,(#975,#976,#977,#361,#2027,#979,#2028,#981));  
#2030= IFCLOCALPLACEMENT(#30,#10);  
#2031=  
IFCELEMENTASSEMBLY('1Ogimc0009234qE3SuCpWu',#5,'Steel Assembly',S,S,#2030,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#2032= IFCPROPERTYSET('1Mb7F54WvACR\_Qj2EF1bhN',#5,'Tekla Assembly',Assembly Properties',(#34,#313,#985,#986,#987,#1690,#318));  
#2033= IFCQUANTITYLENGTH('Width',S,S,200.000000004977);  
#2034=  
IFCELEMENTQUANTITY('1rQIBtmRz6BoipTJfBCne',#5,'BaseQuantities',S,S,(#2033));  
#2035=  
IFCCARTESIANPOINT((1861.69115822574,42187.4043937184,3033.35865008744));  
#2036=  
IFCDIRECTION((0.549927559043888,0.355887344028405,0.755595049060302));  
#2037= IFCDIRECTION((-0.830535798007077,-0.252877549002144,-0.488639091004141));  
#2038= IFCAXIS2PLACEMENT3D(#2035,#2036,#2037);  
#2039= IFCLOCALPLACEMENT(#2030,#2038);  
#2040=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#998));  
#2041= IFCPRODUCTDEFINITIONSHAPE(S,S,(#2040));  
#2042=  
IFCMEMBER('1Ogimc000924qE3SuCpWu',#5,'BEAM',HN400\*200\*8\*13,'HN400\*200\*8\*13',#2039,#2041,'P0(?)');  
#2043= IFCQUANTITYLENGTH('Length',S,S,5987.78115027231);  
#2044=  
IFCQUANTITYAREA('OuterSurfaceArea',S,S,9.48464534203133);  
#2045=  
IFCQUANTITYAREA('GrossSurfaceArea',S,S,9.48464534203133);  
#2046=  
IFCQUANTITYVOLUME('NetVolume',S,S,0.0490519031828874);  
#2047=  
IFCQUANTITYVOLUME('GrossVolume',S,S,0.0503692150360906);  
#2048= IFCQUANTITYWEIGHT('NetWeight',S,S,385.057439985666);  
#2049=  
IFCQUANTITYWEIGHT('GrossWeight',S,S,395.398338033312);  
#2050=  
IFCELEMENTQUANTITY('1tR13sZx9PQCvntZQkM1e',#5,'BaseQuantities',S,S,(#2043,#2044,#2045,#361,#2046,#2047,#2048,#2049));

#2051= IFCLOCALPLACEMENT(#30,#10);  
#2052=  
IFCELEMENTASSEMBLY('1Ogimc0009134qE3SuCpWu',#5,'Steel Assembly',S,S,#2051,S,'BE-0?'),NOTDEFINED,,RIGID\_FRAME.);  
#2053= IFCPROPERTYSET('0bwKq7eBzDTBhlcYpiaVXx',#5,'Tekla Assembly',Assembly Properties',(#34,#313,#1020,#955,#1021,#1690,#318));  
#2054= IFCQUANTITYLENGTH('Width',S,S,200.0000000011717);  
#2055=  
IFCELEMENTQUANTITY('2qrQZnho9B0utl3llUm0Y',#5,'BaseQuant ities',S,S,(#2054));  
#2056=  
IFCCARTESIANPOINT((6748.88366489879,42116.4089212605,2982.59730110895));  
#2057=  
IFCDIRECTION((-0.560337039893734,0.352734702933107,0.749400180857878));  
#2058= IFCDIRECTION((-0.828189459817321,-0.250804824944678,-0.501197723889448));  
#2059= IFCAxis2PLACEMENT3D(#2056,#2057,#2058);  
#2060= IFCLOCALPLACEMENT(#2051,#2059);  
#2061=  
IFCCHAPEREPRESENTATION(#12,'Body','SweptSolid',(#1032));  
#2062= IFCPRODUCTDEFINITIONSHAPE(S,S,(#2061));  
#2063=  
IFCMEMBER('1Ogimc00091J4qE3SuCpWu',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#2060,#2062,'P0(?));  
#2064= IFCQUANTITYLENGTH('Length',S,S,6037.26592093762);  
#2065=  
IFCQUANTITYAREA('OuterSurfaceArea',S,S,9.56302921876519);  
#2066=  
IFCQUANTITYAREA('GrossSurfaceArea',S,S,9.56302921876519);  
#2067=  
IFCQUANTITYVOLUME('NetVolume',S,S,0.0494572824244188);  
#2068=  
IFCQUANTITYVOLUME('GrossVolume',S,S,0.0507854809269273);  
#2069= IFCQUANTITYWEIGHT('NetWeight',S,S,388.239667031688);  
#2070=  
IFCQUANTITYWEIGHT('GrossWeight',S,S,398.666025276379);  
#2071=  
IFCELEMENTQUANTITY('3LsSQYxjT35fZmEjJpLe\_Vb',#5,'BaseQuant ities',S,S,(#2064,#2065,#2066,#361,#2067,#2068,#2069,#2070));  
#2072= IFCLOCALPLACEMENT(#30,#10);  
#2073=  
IFCELEMENTASSEMBLY('1Ogimc0009034qE3SuCpWu',#5,'Steel Assembly',S,S,#2072,S,'BE-0?'),NOTDEFINED,,RIGID\_FRAME.);  
#2074= IFCPROPERTYSET('3GkqySaB52z8DbT2orGSDt',#5,'Tekla Assembly',Assembly Properties',(#34,#313,#1052,#1053,#1054,#1690,#318));  
#2075= IFCQUANTITYLENGTH('Width',S,S,200.0000000003762);  
#2076=  
IFCELEMENTQUANTITY('0JVgFYy2XEuWdlyvNFEmO',#5,'BaseQuant ities',S,S,(#2075));  
#2077=  
IFCCARTESIANPOINT((6749.00147373616,36225.3896760899,2844.61166571417));  
#2078=  
IFCDIRECTION((-0.542604405962652,0.363554003974974,0.757237706947879));  
#2079= IFCDIRECTION((-0.839954375845143,-0.24294424495521,-0.48523678791054));  
#2080= IFCAxis2PLACEMENT3D(#2077,#2078,#2079);  
#2081= IFCLOCALPLACEMENT(#2072,#2080);  
#2082=  
IFCCHAPEREPRESENTATION(#12,'Body','SweptSolid',(#1065));  
#2083= IFCPRODUCTDEFINITIONSHAPE(S,S,(#2082));  
#2084=  
IFCMEMBER('1Ogimc00090J4qE3SuCpWu',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#2081,#2083,'P0(?));  
#2085= IFCPROPERTYSET('0yLPltobT0xqDGQRtroPU',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#1073,#349,#78,#350,#1141,#352,#353,#1074));  
#2086= IFCQUANTITYLENGTH('Length',S,S,5952.41514661301);  
#2087=  
IFCQUANTITYAREA('OuterSurfaceArea',S,S,9.428625592235);  
#2088=  
IFCQUANTITYAREA('GrossSurfaceArea',S,S,9.428625592235);  
#2089=  
IFCQUANTITYVOLUME('NetVolume',S,S,0.0487621848809583);  
#2090=  
IFCQUANTITYVOLUME('GrossVolume',S,S,0.0500717162133086);  
#2091= IFCQUANTITYWEIGHT('NetWeight',S,S,382.783151315523);  
#2092=  
IFCQUANTITYWEIGHT('GrossWeight',S,S,393.062972274473);  
#2093=  
IFCELEMENTQUANTITY('3kT2Cdx7zDdO7UzaUxT2ta',#5,'BaseQuant ities',S,S,(#2086,#2087,#2088,#361,#2089,#2090,#2091,#2092));  
#2094= IFCLOCALPLACEMENT(#30,#10);  
#2095=  
IFCELEMENTASSEMBLY('1Ogimc0008S34qE3SuCpWu',#5,'Steel Assembly',S,S,#2094,S,'BE-0?'),NOTDEFINED,,RIGID\_FRAME.);  
#2096= IFCPROPERTYSET('0BLfLlBwT3vxiCYpFgVbuU',#5,'Tekla Assembly',Assembly Properties',(#34,#313,#1086,#1087,#1088,#1690,#318));  
#2097= IFCQUANTITYLENGTH('Width',S,S,200.000000001932);  
#2098=  
IFCELEMENTQUANTITY('3rJ8fcmgH0pBavX2UzQVb',#5,'BaseQuant ities',S,S,(#2097));  
#2099=  
IFCCARTESIANPOINT((1857.48679152392,36298.5494694212,2896.93488038282));  
#2100=  
IFCDIRECTION((0.531751132116679,0.366704188080467,0.763392934167507));  
#2101= IFCDIRECTION((0.846788317590432,-0.24489706988155,-0.472202255771609));  
#2102= IFCAxis2PLACEMENT3D(#2099,#2100,#2101);  
#2103= IFCLOCALPLACEMENT(#2094,#2102);  
#2104=  
IFCCHAPEREPRESENTATION(#12,'Body','SweptSolid',(#1099));  
#2105= IFCPRODUCTDEFINITIONSHAPE(S,S,(#2104));  
#2106=  
IFCMEMBER('1Ogimc0008S34qE3SuCpWu',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#2103,#2105,'P0(?));  
#2107= IFCPROPERTYSET('2twmdYzkH8Lfr9tLdFL',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#1107,#1108,#78,#350,#1141,#352,#353,#1109));  
#2108= IFCQUANTITYLENGTH('Length',S,S,5904.9502038795);  
#2109=  
IFCQUANTITYAREA('OuterSurfaceArea',S,S,9.35344112294512);  
#2110=  
IFCQUANTITYAREA('GrossSurfaceArea',S,S,9.35344112294512);  
#2111=  
IFCQUANTITYVOLUME('NetVolume',S,S,0.0483733520700591);  
#2112=  
IFCQUANTITYVOLUME('GrossVolume',S,S,0.0496724411150343);  
#2113= IFCQUANTITYWEIGHT('NetWeight',S,S,379.730813749964);  
#2114=  
IFCQUANTITYWEIGHT('GrossWeight',S,S,389.92866275302);  
#2115=  
IFCELEMENTQUANTITY('1eWkWSkdP87fTamLETNIW9',#5,'BaseQuant ities',S,S,(#2108,#2109,#2110,#361,#2111,#2112,#2113,#2114));  
#2116= IFCLOCALPLACEMENT(#30,#10);  
#2117=  
IFCELEMENTASSEMBLY('1Ogimc0008\_34qE3SuCpWu',#5,'Steel Assembly',S,S,#2116,S,'BE-0?'),NOTDEFINED,,RIGID\_FRAME.);  
#2118=  
IFCPROPERTYSET('1WwMg\_wQP0B9PLjON0jc7Q',#5,'Tekla Assembly',Assembly Properties',(#34,#313,#1121,#1122,#1123,#1690,#318));  
#2119= IFCQUANTITYLENGTH('Width',S,S,200.000000001906);  
#2120=  
IFCELEMENTQUANTITY('30Y7BcaKXB1vbpUouDDVv',#5,'BaseQuant ities',S,S,(#2119));  
#2121=  
IFCCARTESIANPOINT((6747.57375637101,30654.4642393203,2716.05366346938));  
#2122=  
IFCDIRECTION((-0.525222882089134,0.373876894063451,0.76443246412973));  
#2123= IFCDIRECTION((-0.850957112399276,-0.234552017110054,-0.469954619220507));  
#2124= IFCAxis2PLACEMENT3D(#2121,#2122,#2123);  
#2125= IFCLOCALPLACEMENT(#2116,#2124);  
#2126=  
IFCCHAPEREPRESENTATION(#12,'Body','SweptSolid',(#1132));  
#2127= IFCPRODUCTDEFINITIONSHAPE(S,S,(#2126));  
#2128=  
IFCMEMBER('1Ogimc0008\_J4qE3SuCpWu',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#2125,#2127,'P0(?));  
#2129= IFCQUANTITYLENGTH('Length',S,S,5873.30793078448);  
#2130=  
IFCQUANTITYAREA('OuterSurfaceArea',S,S,9.30331976236261);  
#2131=  
IFCQUANTITYAREA('GrossSurfaceArea',S,S,9.30331976236261);  
#2132=  
IFCQUANTITYVOLUME('NetVolume',S,S,0.048114138568957);  
#2133=  
IFCQUANTITYVOLUME('GrossVolume',S,S,0.049406266313759);  
#2134= IFCQUANTITYWEIGHT('NetWeight',S,S,377.695987766313);  
#2135=  
IFCQUANTITYWEIGHT('GrossWeight',S,S,387.839190563008);  
#2136=  
IFCELEMENTQUANTITY('2cmvca5dFX8X06daptMBk',#5,'BaseQuant ities',S,S,(#2129,#2130,#2131,#361,#2132,#2133,#2134,#2135));  
#2137= IFCLOCALPLACEMENT(#30,#10);  
#2138=  
IFCELEMENTASSEMBLY('1Ogimc0008z34qE3SuCpWu',#5,'Steel Assembly',S,S,#2137,S,'BE-0?'),NOTDEFINED,,RIGID\_FRAME.);  
#2139= IFCPROPERTYSET('187bPoGUP5ABENxS0Eulxk',#5,'Tekla Assembly',Assembly Properties',(#34,#313,#1154,#1155,#1156,#1690,#318));  
#2140= IFCQUANTITYLENGTH('Width',S,S,200.00000000303);  
#2141=  
IFCELEMENTQUANTITY('09wHeOrSL22fcaCo7JvGCq',#5,'BaseQuant ities',S,S,(#2140));  
#2142=  
IFCCARTESIANPOINT((1851.67464004481,30729.7101967734,2769.82232430043));  
#2143=  
IFCDIRECTION((0.51370265201829,0.377139012013427,0.770633344027438));  
#2144= IFCDIRECTION((0.857909898967763,-0.236273018991122,-0.456251756982856));  
#2145= IFCAxis2PLACEMENT3D(#2142,#2143,#2144);  
#2146= IFCLOCALPLACEMENT(#2137,#2145);  
#2147=  
IFCCHAPEREPRESENTATION(#12,'Body','SweptSolid',(#1167));  
#2148= IFCPRODUCTDEFINITIONSHAPE(S,S,(#2147));  
#2149=  
IFCMEMBER('1Ogimc0008zJ4qE3SuCpWu',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#2146,#2148,'P0(?));  
#2150= IFCQUANTITYLENGTH('Length',S,S,5830.52701545135);  
#2151=  
IFCQUANTITYAREA('OuterSurfaceArea',S,S,9.23555479247493);  
#2152=  
IFCQUANTITYAREA('GrossSurfaceArea',S,S,9.23555479247493);  
#2153=  
IFCQUANTITYVOLUME('NetVolume',S,S,0.0477636773106144);  
#2154=  
IFCQUANTITYVOLUME('GrossVolume',S,S,0.049046392539767);  
#2155= IFCQUANTITYWEIGHT('NetWeight',S,S,374.944866888323);

## Appendix

#2156= IFCQUANTITYWEIGHT('GrossWeight',S,S,385.014187043717);  
 #2157= IFCELEMENTQUANTITY('2N5huSln1DCgNOy2NuI85M',#5,'BaseQuantities',S,S,#2150,#2151,#2152,#361,#2153,#2154,#2155,#2156);  
 #2158= IFCLOCALPLACEMENT(#30,#10);  
 #2159= IFCLEMENTASSEMBLY('1Ogjm0008y34qE3SuCpWt',#5,'Steel Assembly',S,S,#2158,S,'BE-0(?)',NOTDEFINED,,RIGID\_FRAME.);  
 #2160= IFCPROPERTYSET('3NrT55yP99r8zMTHBfSd28',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#1188,#1189,#1190,#1690,#318));  
 #2161= IFCQUANTITYLENGTH('Width',S,S,200.000000000997);  
 #2162= IFCLEMENTQUANTITY('22wEhiVof30xSn7zdQzF5w',#5,'BaseQuantities',S,S,#2161);  
 #2163= IFCARTESIANPOINT((1851.01921191187,25461.3773452044,2649.05390167883));  
 #2164= IFCDIRECTION((0.496444080195155,0.386343466151872,0.777355775305583));  
 #2165= IFCDIRECTION((0.868037630344748,-0.228516975090757,-0.440784147175061));  
 #2166= IFCAXIS2PLACEMENT3D(#2163,#2164,#2165);  
 #2167= IFCLOCALPLACEMENT(#2158,#2166);  
 #2168= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#1201));  
 #2169= IFCPRODUCTDEFINITIONSHAPE(S,S,#2168);  
 #2170= IFCMEMBER('1Ogjm0008yJ4qE3SuCpWt',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#2167,#2169,P0(?));  
 #2171= IFCQUANTITYLENGTH('Length',S,S,5758.97163975451);  
 #2172= IFCQUANTITYAREA('OuterSurfaceArea',S,S,9.12221107737114);  
 #2173= IFCQUANTITYAREA('GrossSurfaceArea',S,S,9.12221107737114);  
 #2174= IFCQUANTITYVOLUME('NetVolume',S,S,0.0471774956728063);  
 #2175= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0484444694336149);  
 #2176= IFCQUANTITYWEIGHT('NetWeight',S,S,370.34334103153);  
 #2177= IFCQUANTITYWEIGHT('GrossWeight',S,S,380.289085053877);  
 #2178= IFCLEMENTQUANTITY('1bQyMN3KzEaAjAIYZmyQh',#5,'BaseQuantities',S,S,#2171,#2172,#2173,#361,#2174,#2175,#2176,#2177);  
 #2179= IFCLOCALPLACEMENT(#30,#10);  
 #2180= IFCLEMENTASSEMBLY('1Ogjm0008x34qE3SuCpWt',#5,'Steel Assembly',S,S,#2179,S,'BE-0(?)',NOTDEFINED,,RIGID\_FRAME.);  
 #2181= IFCPROPERTYSET('2JJ1JbXju9X6v65kILC',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#1223,#1224,#1225,#1690,#318));  
 #2182= IFCQUANTITYLENGTH('Width',S,S,200.000000001248);  
 #2183= IFCLEMENTQUANTITY('2V84RhWbF0pQHzRwPt2',#5,'BaseQuantities',S,S,#2182);  
 #2184= IFCARTESIANPOINT((6750.93240490994,25384.282990684,2593.92554718844));  
 #2185= IFCDIRECTION((-0.507876345972236,0.383373748979041,0.771418294957829));  
 #2186= IFCDIRECTION((-0.861429749979225,-0.226687082994533,-0.454479649989039));  
 #2187= IFCAXIS2PLACEMENT3D(#2184,#2185,#2186);  
 #2188= IFCLOCALPLACEMENT(#2179,#2187);  
 #2189= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#1236));  
 #2190= IFCPRODUCTDEFINITIONSHAPE(S,S,#2189);  
 #2191= IFCMEMBER('1Ogjm0008xJ4qE3SuCpWt',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#2188,#2190,P0(?));  
 #2192= IFCQUANTITYLENGTH('Length',S,S,5805.45994016789);  
 #2193= IFCQUANTITYAREA('OuterSurfaceArea',S,S,9.1958485422594);  
 #2194= IFCQUANTITYAREA('GrossSurfaceArea',S,S,9.1958485422594);  
 #2195= IFCQUANTITYVOLUME('NetVolume',S,S,0.0475583278298583);  
 #2196= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0488355290166923);  
 #2197= IFCQUANTITYWEIGHT('NetWeight',S,S,373.332873464388);  
 #2198= IFCQUANTITYWEIGHT('GrossWeight',S,S,383.358902781034);  
 #2199= IFCLEMENTQUANTITY('1kPX43GK9AyAU1VlsyS4cB',#5,'BaseQuantities',S,S,#2192,#2193,#2194,#361,#2195,#2196,#2197,#2198);  
 #2200= IFCLOCALPLACEMENT(#30,#10);  
 #2201= IFCLEMENTASSEMBLY('1Ogjm0008w34qE3SuCpWt',#5,'Steel Assembly',S,S,#2200,S,'BE-0(?)',NOTDEFINED,,RIGID\_FRAME.);  
 #2202= IFCPROPERTYSET('1vel4HMSv0CvaeTQKGmEBB',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#1257,#1258,#1259,#1690,#318));  
 #2203= IFCQUANTITYLENGTH('Width',S,S,200.000000001499);  
 #2204= IFCLEMENTQUANTITY('2jQwAu8XEcvSseeST6Pal',#5,'BaseQuantities',S,S,#2203);  
 #2205= IFCARTESIANPOINT((6749.61579929161,20400.5562329356,2479.01868040961));  
 #2206= IFCDIRECTION((-0.491443182985552,0.391745827988482,0.777829546977131));

#2207= IFCDIRECTION((-0.870908428843726,-0.219568321960601,-0.439668352921107));  
 #2208= IFCAXIS2PLACEMENT3D(#2205,#2206,#2207);  
 #2209= IFCLOCALPLACEMENT(#2200,#2208);  
 #2210= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#1270));  
 #2211= IFCPRODUCTDEFINITIONSHAPE(S,S,#2210);  
 #2212= IFCMEMBER('1Ogjm0008wJ4qE3SuCpWt',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#2209,#2211,P0(?));  
 #2213= IFCQUANTITYLENGTH('Length',S,S,5740.52389882663);  
 #2214= IFCQUANTITYAREA('OuterSurfaceArea',S,S,9.09298985574138);  
 #2215= IFCQUANTITYAREA('GrossSurfaceArea',S,S,9.09298985574138);  
 #2216= IFCQUANTITYVOLUME('NetVolume',S,S,0.047026371779202);  
 #2217= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0482892870369296);  
 #2218= IFCQUANTITYWEIGHT('NetWeight',S,S,369.157018466736);  
 #2219= IFCQUANTITYWEIGHT('GrossWeight',S,S,379.070903239897);  
 #2220= IFCLEMENTQUANTITY('1wGkbRgi94fubnLxxpNrnZ',#5,'BaseQuantities',S,S,#2213,#2214,#2215,#361,#2216,#2217,#2218,#2219);  
 #2221= IFCLOCALPLACEMENT(#30,#10);  
 #2222= IFCLEMENTASSEMBLY('1Ogjm0008v34qE3SuCpWs',#5,'Steel Assembly',S,S,#2221,S,'BE-0(?)',NOTDEFINED,,RIGID\_FRAME.);  
 #2223= IFCPROPERTYSET('014sBRN2T2TuV2iyaUzy6h',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#1291,#1189,#1292,#1690,#318));  
 #2224= IFCQUANTITYLENGTH('Width',S,S,200.000000002365);  
 #2225= IFCLEMENTQUANTITY('0JukPdbd51Ze7EqbkYVvtO',#5,'BaseQuantities',S,S,#2224);  
 #2226= IFCARTESIANPOINT((1847.66439800804,20478.8955325888,2638.55494498449));  
 #2227= IFCDIRECTION((0.491836002050205,0.39166652203998,0.777621169079377));  
 #2228= IFCDIRECTION((0.870686131080175,-0.219465803020209,-0.440159542040531));  
 #2229= IFCAXIS2PLACEMENT3D(#2226,#2227,#2228);  
 #2230= IFCLOCALPLACEMENT(#2221,#2229);  
 #2231= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#1303));  
 #2232= IFCPRODUCTDEFINITIONSHAPE(S,S,#2231);  
 #2233= IFCMEMBER('1Ogjm0008vJ4qE3SuCpWs',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#2230,#2232,P0(?));  
 #2234= IFCQUANTITYLENGTH('Length',S,S,5743.20547160671);  
 #2235= IFCQUANTITYAREA('OuterSurfaceArea',S,S,9.09723746702502);  
 #2236= IFCQUANTITYAREA('GrossSurfaceArea',S,S,9.09723746702502);  
 #2237= IFCQUANTITYVOLUME('NetVolume',S,S,0.047048339223423);  
 #2238= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0483118444271556);  
 #2239= IFCQUANTITYWEIGHT('NetWeight',S,S,369.329462903871);  
 #2240= IFCQUANTITYWEIGHT('GrossWeight',S,S,379.247978753172);  
 #2241= IFCLEMENTQUANTITY('142uk7ZcT3IQc8TrmjVC2S',#5,'BaseQuantities',S,S,#2234,#2235,#2236,#361,#2237,#2238,#2239,#2240);  
 #2242= IFCLOCALPLACEMENT(#30,#10);  
 #2243= IFCLEMENTASSEMBLY('1Ogjm0008u34qE3SuCpWs',#5,'Steel Assembly',S,S,#2242,S,'BE-0(?)',NOTDEFINED,,RIGID\_FRAME.);  
 #2244= IFCPROPERTYSET('3fgArnrj2GR89124e3Ces',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#1323,#1324,#1325,#1690,#318));  
 #2245= IFCQUANTITYLENGTH('Width',S,S,200.000000001428);  
 #2246= IFCLEMENTQUANTITY('0s7P16bSP1KbfcJuhSb3Ap',#5,'BaseQuantities',S,S,#2245);  
 #2247= IFCARTESIANPOINT((6749.85630024046,15713.0569679197,2369.2787055733));  
 #2248= IFCDIRECTION((-0.476724520864444,0.397348338887014,0.78412245777035));  
 #2249= IFCDIRECTION((-0.879051572166947,-0.216946319041202,-0.42450280108062));  
 #2250= IFCAXIS2PLACEMENT3D(#2247,#2248,#2249);  
 #2251= IFCLOCALPLACEMENT(#2242,#2250);  
 #2252= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#1336));  
 #2253= IFCPRODUCTDEFINITIONSHAPE(S,S,#2252);  
 #2254= IFCMEMBER('1Ogjm0008uJ4qE3SuCpWs',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#2251,#2253,P0(?));  
 #2255= IFCPROPERTYSET('2Y\_ElgeHLEWhcElsydxinL',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#1344,#1108,#78,#350,#1411,#352,#353,#1345));  
 #2256= IFCQUANTITYLENGTH('Length',S,S,5687.94841870643);  
 #2257= IFCQUANTITYAREA('OuterSurfaceArea',S,S,9.00971029523098);  
 #2258= IFCQUANTITYAREA('GrossSurfaceArea',S,S,9.00971029523098);  
 #2259= IFCQUANTITYVOLUME('NetVolume',S,S,0.046595673446073);  
 #2260= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0478470220981585);

#2261= IFCQUANTITYWEIGHT('NetWeight',S,S,365.776036551673);  
#2262=  
IFCQUANTITYWEIGHT('GrossWeight',S,S,375.599123470544);  
#2263=  
IFCELEMENTQUANTITY('3SqboEDn74xEp9kcol8Y',#5,'BaseQuantities',S,S,#2256,#2257,#2258,#361,#2259,#2260,#2261,#2262);  
#2264= IFCLOCALPLACEMENT(#30,#10);  
#2265=  
IFCELEMENTASSEMBLY('1Ogjm0008t34qE3SuCpW',#5,'Steel Assembly',S,S,#2264,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#2266= IFCPROPERTYSET('3jpyjMvaDAsw4H5kNANwmr',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#1323,#1357,#1358,#1690,#318));  
#2267= IFCQUANTITYLENGTH('Width',S,S,200.000000000751);  
#2268=  
IFCELEMENTQUANTITY('20ps\_6Mp19Qu6Vff46eY5',#5,'BaseQuantities',S,S,#2267);  
#2269=  
IFCCARTESIANPOINT((1845.50111649363,15792.5235477023,2526.82299774986));  
#2270=  
IFCDIRECTION((0.476812473868019,0.397326632890021,0.78407997782967));  
#2271= IFCDIRECTION((0.87900394957382,-0.21693456589482,-0.424607407794131));  
#2272= IFCAXIS2PLACEMENT3D(#2269,#2270,#2271);  
#2273= IFCLOCALPLACEMENT(#2264,#2272);  
#2274=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#1369));  
#2275= IFCPRODUCTDEFINITIONSHAPE(S,S,(#2274));  
#2276=  
IFCMEMBER('1Ogjm0008t4qE3SuCpW',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#2273,#2275,'P0(?)');  
#2277= IFCPROPERTYSET('3XjopSTYr4WPHgE47rqyTK',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#1344,#1108,#78,#350,#1411,#352,#353,#1377));  
#2278= IFCQUANTITYLENGTH('Length',S,S,5688.25657948251);  
#2279=  
IFCQUANTITYAREA('OuterSurfaceArea',S,S,9.01019842190029);  
#2280=  
IFCQUANTITYAREA('GrossSurfaceArea',S,S,9.01019842190029);  
#2281=  
IFCQUANTITYVOLUME('NetVolume',S,S,0.0465981978991419);  
#2282=  
IFCQUANTITYVOLUME('GrossVolume',S,S,0.0478496143466069);  
#2283= IFCQUANTITYWEIGHT('NetWeight',S,S,365.795853508264);  
#2284=  
IFCQUANTITYWEIGHT('GrossWeight',S,S,375.619472620864);  
#2285=  
IFCELEMENTQUANTITY('3U2xpkch93mzp2FfPvvaU',#5,'BaseQuantities',S,S,#2278,#2279,#2280,#361,#2281,#2282,#2283,#2284);  
#2286= IFCLOCALPLACEMENT(#30,#10);  
#2287=  
IFCELEMENTASSEMBLY('1Ogjm0008s34qE3SuCpW',#5,'Steel Assembly',S,S,#2286,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#2288= IFCPROPERTYSET('2KDNd6zSf6PeyBGo8U4rSG',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#1389,#1390,#1391,#1690,#318));  
#2289= IFCQUANTITYLENGTH('Width',S,S,200.000000000924);  
#2290=  
IFCELEMENTQUANTITY('249Y5tQaj3IRNP2enJMRP',#5,'BaseQuantities',S,S,(#2289));  
#2291=  
IFCCARTESIANPOINT((6751.66914875831,11155.5261198758,2267.65985244888));  
#2292= IFCDIRECTION((-0.455056639941741,0.412512512947188,0.78914946689897));  
#2293= IFCDIRECTION((-0.890306041964186,-0.19415885199219,-0.411895000983431));  
#2294= IFCAXIS2PLACEMENT3D(#2291,#2292,#2293);  
#2295= IFCLOCALPLACEMENT(#2286,#2294);  
#2296=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#1402));  
#2297= IFCPRODUCTDEFINITIONSHAPE(S,S,(#2296));  
#2298=  
IFCMEMBER('1Ogjm0008s4qE3SuCpW',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#2295,#2297,'P0(?)');  
#2299= IFCQUANTITYLENGTH('Length',S,S,5616.04635259378);  
#2300=  
IFCQUANTITYAREA('OuterSurfaceArea',S,S,8.89581742250855);  
#2301=  
IFCQUANTITYAREA('GrossSurfaceArea',S,S,8.89581742250855);  
#2302=  
IFCQUANTITYVOLUME('NetVolume',S,S,0.0460066517204534);  
#2303=  
IFCQUANTITYVOLUME('GrossVolume',S,S,0.0472421819180189);  
#2304= IFCQUANTITYWEIGHT('NetWeight',S,S,361.152216005559);  
#2305=  
IFCQUANTITYWEIGHT('GrossWeight',S,S,370.851128056448);  
#2306=  
IFCELEMENTQUANTITY('1IM\_vouVfEYBPed5H4TAA',#5,'BaseQuantities',S,S,(#2299,#2300,#2301,#361,#2302,#2303,#2304,#2305));  
#2307= IFCLOCALPLACEMENT(#30,#10);  
#2308=  
IFCELEMENTASSEMBLY('1Ogjm0008r34qE3SuCpW',#5,'Steel Assembly',S,S,#2307,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#2309= IFCQUANTITYLENGTH('Width',S,S,200.000000000373);  
#2310=  
IFCELEMENTQUANTITY('1VBUv1FiLFuuaY777OJIoH',#5,'BaseQuantities',S,S,(#2309));  
#2311=  
IFCCARTESIANPOINT((1748.33085124169,11155.5261198758,2267.65985244888));  
#2312=  
IFCDIRECTION((0.455056639941742,0.412512512947188,0.78914946689897));  
#2313= IFCDIRECTION((-0.890306041964186,-0.19415885199219,-0.411895000983431));  
#2314= IFCAXIS2PLACEMENT3D(#2311,#2312,#2313);  
#2315= IFCLOCALPLACEMENT(#2307,#2314);  
#2316=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#1402));  
#2317= IFCPRODUCTDEFINITIONSHAPE(S,S,(#2316));  
#2318=  
IFCMEMBER('1Ogjm0008r4qE3SuCpW',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#2315,#2317,'P0(?)');  
#2319= IFCQUANTITYLENGTH('Length',S,S,5616.04635259268);  
#2320=  
IFCQUANTITYAREA('OuterSurfaceArea',S,S,8.89581742250681);  
#2321=  
IFCQUANTITYAREA('GrossSurfaceArea',S,S,8.89581742250681);  
#2322=  
IFCQUANTITYVOLUME('NetVolume',S,S,0.0460066517204534);  
#2323=  
IFCQUANTITYVOLUME('GrossVolume',S,S,0.0472421819180097);  
#2324= IFCQUANTITYWEIGHT('NetWeight',S,S,361.152216005559);  
#2325=  
IFCQUANTITYWEIGHT('GrossWeight',S,S,370.851128056376);  
#2326=  
IFCELEMENTQUANTITY('1UJEdoqsEdBiXA3CikB2j',#5,'BaseQuantities',S,S,(#2319,#2320,#2321,#361,#2322,#2323,#2324,#2325));  
#2327= IFCLOCALPLACEMENT(#30,#10);  
#2328=  
IFCELEMENTASSEMBLY('1Ogjm0008q34qE3SuCpW',#5,'Steel Assembly',S,S,#2327,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#2329= IFCPROPERTYSET('05Oat4Lgz5TPudrbpG7r\_',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#1444,#1445,#1446,#1690,#318));  
#2330= IFCQUANTITYLENGTH('Width',S,S,200.0000000002209);  
#2331=  
IFCELEMENTQUANTITY('1Hl2pWR5z2V9eMLSTWomHV',#5,'BaseQuantities',S,S,(#2330));  
#2332=  
IFCCARTESIANPOINT((6752.31105224096,6904.99047510855,2168.96346210381));  
#2333= IFCDIRECTION((-0.437327458925049,0.421525902927757,0.794393231863854);  
#2334= IFCDIRECTION((-0.899005337794703,-0.182218398958389,-0.398228398990906);  
#2335= IFCAXIS2PLACEMENT3D(#2332,#2333,#2334);  
#2336= IFCLOCALPLACEMENT(#2327,#2335);  
#2337=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#1457));  
#2338= IFCPRODUCTDEFINITIONSHAPE(S,S,(#2337));  
#2339=  
IFCMEMBER('1Ogjm0008q4qE3SuCpW',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#2336,#2338,'P0(?)');  
#2340= IFCPROPERTYSET('0Pgr9Nv1rAY83rxuuYk6S',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#1465,#1108,#78,#350,#1547,#352,#353,#1466));  
#2341= IFCQUANTITYLENGTH('Length',S,S,5561.70223860349);  
#2342=  
IFCQUANTITYAREA('OuterSurfaceArea',S,S,8.80973634594793);  
#2343=  
IFCQUANTITYAREA('GrossSurfaceArea',S,S,8.80973634594793);  
#2344=  
IFCQUANTITYVOLUME('NetVolume',S,S,0.0455614647386379);  
#2345=  
IFCQUANTITYVOLUME('GrossVolume',S,S,0.0467850392311326);  
#2346= IFCQUANTITYWEIGHT('NetWeight',S,S,357.657498198308);  
#2347=  
IFCQUANTITYWEIGHT('GrossWeight',S,S,367.262557964391);  
#2348=  
IFCELEMENTQUANTITY('3w6aB8Yf8sQvqu\_v6J10\_',#5,'BaseQuantities',S,S,(#2341,#2342,#2343,#361,#2344,#2345,#2346,#2347));  
#2349= IFCLOCALPLACEMENT(#30,#10);  
#2350=  
IFCELEMENTASSEMBLY('1Ogjm0008p34qE3SuCpW',#5,'Steel Assembly',S,S,#2349,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#2351= IFCQUANTITYLENGTH('Width',S,S,200.000000000133);  
#2352=  
IFCELEMENTQUANTITY('0RslKoxPfl4LQwvc7MyP27c',#5,'BaseQuantities',S,S,(#2351));  
#2353=  
IFCCARTESIANPOINT((1747.68894775904,6904.99047510855,2168.96346210381));  
#2354=  
IFCDIRECTION((0.437327458925049,0.421525902927757,0.794393231863854);  
#2355= IFCDIRECTION((-0.899005337794703,-0.182218398958389,-0.398228398990906);  
#2356= IFCAXIS2PLACEMENT3D(#2353,#2354,#2355);  
#2357= IFCLOCALPLACEMENT(#2349,#2356);  
#2358=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#1457));  
#2359= IFCPRODUCTDEFINITIONSHAPE(S,S,(#2358));  
#2360=  
IFCMEMBER('1Ogjm0008p4qE3SuCpW',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#2357,#2359,'P0(?)');  
#2361= IFCQUANTITYLENGTH('Length',S,S,5561.70223860349);  
#2362=  
IFCQUANTITYAREA('OuterSurfaceArea',S,S,8.80973634594793);  
#2363=  
IFCQUANTITYAREA('GrossSurfaceArea',S,S,8.80973634594793);  
#2364=  
IFCQUANTITYVOLUME('NetVolume',S,S,0.0455614647386327);  
#2365=  
IFCQUANTITYVOLUME('GrossVolume',S,S,0.0467850392311326);



## Appendix

#2366= IFCQUANTITYWEIGHT('NetWeight',S,S,357.657498198267);  
#2367=  
IFCQUANTITYWEIGHT('GrossWeight',S,S,367.262557964391);  
#2368=  
IFCELEMENTQUANTITY('1WCYAIWWHBCBIVSftiF6z',#5,'Base Quantities',S,S,#2361,#2362,#2363,#361,#2364,#2365,#2366,#2367);  
#2369= IFCLOCALPLACEMENT(#30,#10);  
#2370=  
IFCELEMENTASSEMBLY('1Ogjm0008o34qE3SuCpSs',#5,'Steel Assembly',S,S,#2369,S,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#2371= IFCPROPERTYSET('2CLKqqQIT9DuWrF5sG1z9U',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#1493,#1494,#1495,#1690,#318));  
#2372= IFCQUANTITYLENGTH('Width',S,S,200.00000000012);  
#2373=  
IFCELEMENTQUANTITY('3hGegSDVPCjOdo60QPNDG8',#5,'Base Quantities',S,S,#2372);  
#2374=  
IFCCARTESIANPOINT((6747.68261937635,2780.41015972926,2165.61850686076));  
#2375= IFCDIRECTION((-0.422050340825583,0.427269286823427,0.799571426669569));  
#2376= IFCDIRECTION((-0.906276163600706,-0.176303157922323,-0.384162350830743));  
#2377= IFCAXIS2PLACEMENT3D(#2374,#2375,#2376);  
#2378= IFCLOCALPLACEMENT(#2369,#2377);  
#2379=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#1504));  
#2380= IFCPRODUCTDEFINITIONSHAPE(S,S,#2379));  
#2381=  
IFCMEMBER('1Ogjm0008oJ4qE3SuCpSs',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#2378,#2380,'P0(?)');  
#2382= IFCPROPERTYSET('1FXDxWASSDg9ecbyHui4SD',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#1512,#1108,#78,#350,#1547,#352,#353,#1513));  
#2383= IFCQUANTITYLENGTH('Length',S,S,5517.08210013821);  
#2384=  
IFCQUANTITYAREA('OuterSurfaceArea',S,S,8.73905804661893);  
#2385=  
IFCQUANTITYAREA('GrossSurfaceArea',S,S,8.73905804661893);  
#2386=  
IFCQUANTITYVOLUME('NetVolume',S,S,0.0451959365643206);  
#2387=  
IFCQUANTITYVOLUME('GrossVolume',S,S,0.046096946263626);  
#2388= IFCQUANTITYWEIGHT('NetWeight',S,S,354.788102029917);  
#2389=  
IFCQUANTITYWEIGHT('GrossWeight',S,S,364.316102816947);  
#2390=  
IFCELEMENTQUANTITY('1SHp62YyVbPfb5LALmXYh3',#5,'Base Quantities',S,S,#2383,#2384,#2385,#361,#2386,#2387,#2388,#2389);  
#2391= IFCLOCALPLACEMENT(#30,#10);  
#2392=  
IFCELEMENTASSEMBLY('1Ogjm0008nJ4qE3SuCpOu',#5,'Steel Assembly',S,S,#2391,S,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#2393= IFCPROPERTYSET('0tE6BkReT8KwgDpLsWq118',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#1525,#1526,#1527,#1690,#318));  
#2394= IFCQUANTITYLENGTH('Width',S,S,200.000000000192);  
#2395=  
IFCELEMENTQUANTITY('1VMel8GNXC7Odl0zBYoNaj',#5,'Base Quantities',S,S,#2394);  
#2396=  
IFCCARTESIANPOINT((11751.55090903645,2780.55921619728,2065.93561764667));  
#2397=  
IFCDIRECTION((-0.408779959976808,0.429849973975613,0.805063937954325));  
#2398= IFCDIRECTION((-0.912501185102687,-0.177516702019977,-0.368550414041474));  
#2399= IFCAXIS2PLACEMENT3D(#2396,#2397,#2398);  
#2400= IFCLOCALPLACEMENT(#2391,#2399);  
#2401=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#1538));  
#2402= IFCPRODUCTDEFINITIONSHAPE(S,S,#2401));  
#2403=  
IFCMEMBER('1Ogjm0008n34qE3SuCpOu',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#2400,#2402,'P0(?)');  
#2404= IFCQUANTITYLENGTH('Length',S,S,5479.44493882873);  
#2405=  
IFCQUANTITYAREA('OuterSurfaceArea',S,S,8.67944078310471);  
#2406=  
IFCQUANTITYAREA('GrossSurfaceArea',S,S,8.67944078310471);  
#2407=  
IFCQUANTITYVOLUME('NetVolume',S,S,0.0448876129388754);  
#2408=  
IFCQUANTITYVOLUME('GrossVolume',S,S,0.0460930908254273);  
#2409= IFCQUANTITYWEIGHT('NetWeight',S,S,352.367761570172);  
#2410=  
IFCQUANTITYWEIGHT('GrossWeight',S,S,361.830762979604);  
#2411=  
IFCELEMENTQUANTITY('19rddaKo56g8\_g2NzrC2IT',#5,'Base Quantities',S,S,#2404,#2405,#2406,#361,#2407,#2408,#2409,#2410);  
#2412= IFCLOCALPLACEMENT(#30,#10);  
#2413=  
IFCELEMENTASSEMBLY('1Ogjm0008eJ4qE3SsE3am',#5,'Steel Assembly',S,S,#2412,S,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#2414= IFCPROPERTYSET('3Zpoo0OKX75Bt0fDwuj6jG',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#2414,#2415,#2416,#394,#318));  
#2415= IFCPROPERTYSET('3Zpoo0OKX75Bt0fDwuj6jG',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#2414,#2415,#2416,#394,#318));  
#2416= IFCPROPERTYSET('3Zpoo0OKX75Bt0fDwuj6jG',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#2414,#2415,#2416,#394,#318));  
#2417= IFCPROPERTYSET('1v7SCA6WfAQv8JnvHQXm54',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#2414,#2415,#2416,#394,#318));

#2418=  
IFCCARTESIANPOINT((1750.00000913591,112518.930530949,4541.66156306614));  
#2419= IFCAXIS2PLACEMENT3D(#2418,#8,#7);  
#2420= IFCLOCALPLACEMENT(#2412,#2419);  
#2421= IFCARTESIANPOINT((5000,0,0));  
#2422= IFCAXIS2PLACEMENT3D(#2421,#336,#335);  
#2423= IFCXTRUDEDAREASOLID(#333,#2422,#9,5000);  
#2424=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
#2425= IFCSTYLEDITEM(#2423,#330,S);  
#2426= IFCPRODUCTDEFINITIONSHAPE(S,S,#2424);  
#2427=  
IFCBEAM('1Ogjm0008e34qE3SsE3am',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#2420,#2426,'P0(?)');  
#2428= IFCPROPERTYSET('Bottom elevation',S,IFCLABEL(' +4.442'),S);  
#2429= IFCPROPERTYSET('Top elevation',S,IFCLABEL(' +4.642'),S);  
#2430= IFCPROPERTYSET('0UhxXnlEXOLBYv8PL17cDx',#5,'Tekla Common','Common Properties to Shared building elements',(#2428,#2429,#71,#72,#73,#346));  
#2431=  
IFCPROPERTYSET('Weight',S,IFCMASSMEASURE(330.2),S);  
#2432=  
IFCPROPERTYSET('Length',S,IFCLENGTHMEASURE(5000),S);  
#2433= IFCPROPERTYSET('2T\_IoeTTzFDvaEnzPeFX\_I',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#2431,#1108,#1650,#350,#1680,#352,#353,#2432));  
#2434= IFCQUANTITYLENGTH('Length',S,S,5000);  
#2435=  
IFCQUANTITYAREA('OuterSurfaceArea',S,S,7.92000000000001);  
#2436=  
IFCQUANTITYVOLUME('NetVolume',S,S,0.040960000000001);  
#2437= IFCQUANTITYWEIGHT('NetWeight',S,S,321.536000000001);  
#2438=  
IFCELEMENTQUANTITY('3Cjlas07vFcfXTEEhwYfr',#5,'Base Quantities',S,S,#2434,#2435,#2436,#2437);  
#2439= IFCLOCALPLACEMENT(#30,#10);  
#2440=  
IFCELEMENTASSEMBLY('1Ogjm0008d34qE3SsE3am',#5,'Steel Assembly',S,S,#2439,S,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#2441= IFCPROPERTYSET('Assembly/Cast unit bottom elevation',S,IFCLABEL(' +4.334'),S);  
#2442= IFCPROPERTYSET('Assembly/Cast unit top elevation',S,IFCLABEL(' +4.534'),S);  
#2443= IFCPROPERTYSET('2r9yJq0pLDRhSq0biOShq',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#2441,#2442,#394,#318));  
#2444=  
IFCCARTESIANPOINT((1750.00000494086,117172.851038676,4433.87676350798));  
#2445= IFCAXIS2PLACEMENT3D(#2444,#8,#7);  
#2446= IFCLOCALPLACEMENT(#2439,#2445);  
#2447=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
#2448= IFCPRODUCTDEFINITIONSHAPE(S,S,#2447);  
#2449=  
IFCBEAM('1Ogjm0008cp4qE3SsE3am',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#2446,#2448,'P0(?)');  
#2450= IFCPROPERTYSET('Bottom elevation',S,IFCLABEL(' +4.334'),S);  
#2451= IFCPROPERTYSET('Top elevation',S,IFCLABEL(' +4.534'),S);  
#2452= IFCPROPERTYSET('3FS7oyvYTEXfnsABpyL9Ew',#5,'Tekla Common','Common Properties to Shared building elements',(#2450,#2451,#71,#72,#73,#346));  
#2453= IFCQUANTITYLENGTH('Length',S,S,5000);  
#2454= IFCQUANTITYAREA('OuterSurfaceArea',S,S,7.92);  
#2455= IFCQUANTITYVOLUME('NetVolume',S,S,0.04096);  
#2456= IFCQUANTITYWEIGHT('NetWeight',S,S,321.536);  
#2457=  
IFCELEMENTQUANTITY('0FxpfrYTH7J9JvaYmT7L7J',#5,'Base Quantities',S,S,#2453,#2454,#2455,#2456);  
#2458= IFCLOCALPLACEMENT(#30,#10);  
#2459=  
IFCELEMENTASSEMBLY('1Ogjm0008bp4qE3SsE3am',#5,'Steel Assembly',S,S,#2458,S,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#2460= IFCPROPERTYSET('Assembly/Cast unit bottom elevation',S,IFCLABEL(' +4.227'),S);  
#2461= IFCPROPERTYSET('Assembly/Cast unit top elevation',S,IFCLABEL(' +4.427'),S);  
#2462= IFCPROPERTYSET('3Zpoo0OKX75Bt0fDwuj6jG',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#2414,#2460,#2461,#394,#318));  
#2463=  
IFCCARTESIANPOINT((1750.00000001178,121770.898039406,4327.38599648065));  
#2464= IFCAXIS2PLACEMENT3D(#2463,#8,#7);  
#2465= IFCLOCALPLACEMENT(#2458,#2464);  
#2466=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
#2467= IFCPRODUCTDEFINITIONSHAPE(S,S,#2466);  
#2468=  
IFCBEAM('1Ogjm0008bZ4qE3SsE3am',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#2465,#2467,'P0(?)');  
#2469= IFCPROPERTYSET('Bottom elevation',S,IFCLABEL(' +4.227'),S);  
#2470= IFCPROPERTYSET('Top elevation',S,IFCLABEL(' +4.427'),S);  
#2471= IFCPROPERTYSET('30eCOJIEDDFaUGSSxXHJA',#5,'Tekla Common','Common Properties to Shared building elements',(#2469,#2470,#71,#72,#73,#346));

#2472= IFCQUANTITYLENGTH('Length',S,S,5000.);  
#2473= IFCQUANTITYAREA('OuterSurfaceArea',S,S,7.92);  
#2474= IFCQUANTITYVOLUME('NetVolume',S,S,0.04096);  
#2475= IFCQUANTITYWEIGHT('NetWeight',S,S,321.536);  
#2476=  
IFCELEMENTQUANTITY('1g9r2Sqr68Qmls0HTuqwY',#5,'BaseQuantities',S,S,(#2472,#2473,#2474,#2475));  
#2477= IFCLOCALPLACEMENT(#30,#10);  
#2478=  
IFCELEMENTASSEMBLY('1Ogimc0008aZ4qE3SsE3am',#5,'Steel Assembly',S,S,#2477,S,'BE-0(?)',,NOTDEFINED,,RIGID\_FRAME.);  
#2479= IFCPROPERTY SINGLEVALUE('Assembly/Cast unit bottom elevation',S,IFCLABEL(' +4.123'),S);  
#2480= IFCPROPERTY SINGLEVALUE('Assembly/Cast unit top elevation',S,IFCLABEL(' +4.323'),S);  
#2481= IFCPROPERTYSET('3U6W4GLxf57vAOu3F1E3Nj',#5,'Tekla Assembly',Assembly Properties',(#34,#313,#2414,#2479,#2480,#394,#318));  
#2482=  
IFCCARTESIANPOINT((1749.99999531975,126275.650059269,4223.05594041124));  
#2483= IFCAXIS2PLACEMENT3D(#2482,#8,#7);  
#2484= IFCLOCALPLACEMENT(#2477,#2483);  
#2485=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
#2486= IFCPRODUCTDEFINITIONSHAPE(S,S,(#2485));  
#2487=  
IFCBEAM('1Ogimc0008aJ4qE3SsE3am',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#2484,#2486,'PO(?)');  
#2488= IFCPROPERTY SINGLEVALUE('Bottom elevation',S,IFCLABEL(' +4.123'),S);  
#2489= IFCPROPERTY SINGLEVALUE('Top elevation',S,IFCLABEL(' +4.323'),S);  
#2490= IFCPROPERTYSET('3wbH4CeGz6lBfWpZV13ZWO',#5,'Tekla Common',Common Properties to Shared building elements',(#2488,#2489,#71,#72,#73,#346));  
#2491= IFCLOCALPLACEMENT(#30,#10);  
#2492=  
IFCELEMENTASSEMBLY('1Ogimc0008ZJ4qE3SsE3am',#5,'Steel Assembly',S,S,#2491,S,'BE-0(?)',,NOTDEFINED,,RIGID\_FRAME.);  
#2493= IFCPROPERTY SINGLEVALUE('Assembly/Cast unit bottom elevation',S,IFCLABEL(' +4.021'),S);  
#2494= IFCPROPERTY SINGLEVALUE('Assembly/Cast unit top elevation',S,IFCLABEL(' +4.221'),S);  
#2495= IFCPROPERTYSET('1SlvcSMAX8\_wT1Hc2Nh7i8',#5,'Tekla Assembly',Assembly Properties',(#34,#313,#2414,#2493,#2494,#394,#318));  
#2496=  
IFCCARTESIANPOINT((1749.99999087766,130667.122455378,4121.34944066764));  
#2497= IFCAXIS2PLACEMENT3D(#2496,#8,#7);  
#2498= IFCLOCALPLACEMENT(#2491,#2497);  
#2499=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
#2500= IFCPRODUCTDEFINITIONSHAPE(S,S,(#2499));  
#2501=  
IFCBEAM('1Ogimc0008Z34qE3SsE3am',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#2498,#2500,'PO(?)');  
#2502= IFCPROPERTY SINGLEVALUE('Bottom elevation',S,IFCLABEL(' +4.021'),S);  
#2503= IFCPROPERTY SINGLEVALUE('Top elevation',S,IFCLABEL(' +4.221'),S);  
#2504= IFCPROPERTYSET('0oe03MUCT25pgqBejD2NSB',#5,'Tekla Common',Common Properties to Shared building elements',(#2502,#2503,#71,#72,#73,#346));  
#2505= IFCQUANTITYLENGTH('Length',S,S,5000.);  
#2506= IFCQUANTITYAREA('OuterSurfaceArea',S,S,7.92);  
#2507=  
IFCELEMENTQUANTITY('3MJVQYmQ96zgfQj\_qVfRr',#5,'BaseQuantities',S,S,(#2505,#2506,#2474,#2475));  
#2508= IFCLOCALPLACEMENT(#30,#10);  
#2509=  
IFCELEMENTASSEMBLY('1Ogimc0008Y34qE3SsE3am',#5,'Steel Assembly',S,S,#2508,S,'BE-0(?)',,NOTDEFINED,,RIGID\_FRAME.);  
#2510= IFCPROPERTY SINGLEVALUE('Assembly/Cast unit bottom elevation',S,IFCLABEL(' +3.922'),S);  
#2511= IFCPROPERTY SINGLEVALUE('Assembly/Cast unit top elevation',S,IFCLABEL(' +4.122'),S);  
#2512= IFCPROPERTYSET('0DgKESrNL4Gu5JL6W\_BH6J',#5,'Tekla Assembly',Assembly Properties',(#34,#313,#2414,#2510,#2511,#394,#318));  
#2513=  
IFCCARTESIANPOINT((1749.9999866347,134938.647018342,4022.42093168165));  
#2514= IFCAXIS2PLACEMENT3D(#2513,#8,#7);  
#2515= IFCLOCALPLACEMENT(#2508,#2514);  
#2516=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
#2517= IFCPRODUCTDEFINITIONSHAPE(S,S,(#2516));  
#2518=  
IFCBEAM('1Ogimc0008Xp4qE3SsE3am',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#2515,#2517,'PO(?)');  
#2519= IFCPROPERTY SINGLEVALUE('Bottom elevation',S,IFCLABEL(' +3.922'),S);  
#2520= IFCPROPERTY SINGLEVALUE('Top elevation',S,IFCLABEL(' +4.122'),S);  
#2521= IFCPROPERTYSET('0bjJ52IzHEYrWvnu\_Q1W9p',#5,'Tekla Common',Common Properties to Shared building elements',(#2519,#2520,#71,#72,#73,#346));  
#2522= IFCLOCALPLACEMENT(#30,#10);  
#2523=  
IFCELEMENTASSEMBLY('1Ogimc0008Wp4qE3SsE3am',#5,'Steel Assembly',S,S,#2522,S,'BE-0(?)',,NOTDEFINED,,RIGID\_FRAME.);  
#2524= IFCPROPERTY SINGLEVALUE('Assembly/Cast unit bottom elevation',S,IFCLABEL(' +3.826'),S);  
#2525= IFCPROPERTY SINGLEVALUE('Assembly/Cast unit top elevation',S,IFCLABEL(' +4.026'),S);  
#2526= IFCPROPERTYSET('0K6oLnZAD1jfbCBQPCT3yL',#5,'Tekla Assembly',Assembly Properties',(#34,#313,#2414,#2524,#2525,#394,#318));  
#2527=  
IFCCARTESIANPOINT((1749.9999825745,130906.881957061,3926.11621213358));  
#2528= IFCAXIS2PLACEMENT3D(#2527,#8,#7);  
#2529= IFCLOCALPLACEMENT(#2522,#2528);  
#2530=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
#2531= IFCPRODUCTDEFINITIONSHAPE(S,S,(#2530));  
#2532=  
IFCBEAM('1Ogimc0008WZ4qE3SsE3am',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#2529,#2531,'PO(?)');  
#2533= IFCPROPERTY SINGLEVALUE('Bottom elevation',S,IFCLABEL(' +3.826'),S);  
#2534= IFCPROPERTY SINGLEVALUE('Top elevation',S,IFCLABEL(' +4.026'),S);  
#2535= IFCPROPERTYSET('2p7P3KKu10IRjCxCX1VaSke',#5,'Tekla Common',Common Properties to Shared building elements',(#2533,#2534,#71,#72,#73,#346));  
#2536= IFCQUANTITYLENGTH('Length',S,S,5000.);  
#2537= IFCQUANTITYAREA('OuterSurfaceArea',S,S,7.92);  
#2538=  
IFCELEMENTQUANTITY('08YV8HIE17xPG3petr3wS5',#5,'BaseQuantities',S,S,(#2536,#2537,#2455,#2456));  
#2539= IFCLOCALPLACEMENT(#30,#10);  
#2540=  
IFCELEMENTASSEMBLY('1Ogimc0008VZ4qE3SsE3am',#5,'Steel Assembly',S,S,#2539,S,'BE-0(?)',,NOTDEFINED,,RIGID\_FRAME.);  
#2541= IFCPROPERTY SINGLEVALUE('Assembly/Cast unit bottom elevation',S,IFCLABEL(' +3.732'),S);  
#2542= IFCPROPERTY SINGLEVALUE('Assembly/Cast unit top elevation',S,IFCLABEL(' +3.932'),S);  
#2543= IFCPROPERTYSET('3BJfHTYD83fRDobPjes37',#5,'Tekla Assembly',Assembly Properties',(#34,#313,#2414,#2541,#2542,#394,#318));  
#2544=  
IFCCARTESIANPOINT((1749.99998302457,143141.827278978,3832.43527908227));  
#2545= IFCAXIS2PLACEMENT3D(#2544,#8,#7);  
#2546= IFCLOCALPLACEMENT(#2539,#2545);  
#2547=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
#2548= IFCPRODUCTDEFINITIONSHAPE(S,S,(#2547));  
#2549=  
IFCBEAM('1Ogimc0008VJ4qE3SsE3am',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#2546,#2548,'PO(?)');  
#2550= IFCPROPERTY SINGLEVALUE('Bottom elevation',S,IFCLABEL(' +3.732'),S);  
#2551= IFCPROPERTY SINGLEVALUE('Top elevation',S,IFCLABEL(' +3.932'),S);  
#2552= IFCPROPERTYSET('1aQudRatv1EBcHBGBCr8yX',#5,'Tekla Common',Common Properties to Shared building elements',(#2550,#2551,#71,#72,#73,#346));  
#2553= IFCLOCALPLACEMENT(#30,#10);  
#2554=  
IFCELEMENTASSEMBLY('1Ogimc0008UJ4qE3SsE3am',#5,'Steel Assembly',S,S,#2553,S,'BE-0(?)',,NOTDEFINED,,RIGID\_FRAME.);  
#2555= IFCPROPERTY SINGLEVALUE('Assembly/Cast unit bottom elevation',S,IFCLABEL(' +3.641'),S);  
#2556= IFCPROPERTY SINGLEVALUE('Assembly/Cast unit top elevation',S,IFCLABEL(' +3.841'),S);  
#2557= IFCPROPERTYSET('27dvBjCS90UxuVFnpr7Go3',#5,'Tekla Assembly',Assembly Properties',(#34,#313,#2414,#2555,#2556,#394,#318));  
#2558=  
IFCCARTESIANPOINT((1749.99996693266,147073.492973682,3741.3779005336));  
#2559= IFCAXIS2PLACEMENT3D(#2558,#8,#7);  
#2560= IFCLOCALPLACEMENT(#2553,#2559);  
#2561=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
#2562= IFCPRODUCTDEFINITIONSHAPE(S,S,(#2561));  
#2563=  
IFCBEAM('1Ogimc0008U34qE3SsE3am',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#2560,#2562,'PO(?)');  
#2564= IFCPROPERTY SINGLEVALUE('Bottom elevation',S,IFCLABEL(' +3.641'),S);  
#2565= IFCPROPERTY SINGLEVALUE('Top elevation',S,IFCLABEL(' +3.841'),S);  
#2566=  
IFCPROPERTYSET('0vAXwPKc95aBlzMTwwSONk',#5,'Tekla Common',Common Properties to Shared building elements',(#2564,#2565,#71,#72,#73,#346));  
#2567= IFCLOCALPLACEMENT(#30,#10);  
#2568=  
IFCELEMENTASSEMBLY('1Ogimc0008T34qE3SsE3am',#5,'Steel Assembly',S,S,#2567,S,'BE-0(?)',,NOTDEFINED,,RIGID\_FRAME.);  
#2569= IFCPROPERTY SINGLEVALUE('Assembly/Cast unit bottom elevation',S,IFCLABEL(' +3.553'),S);  
#2570= IFCPROPERTY SINGLEVALUE('Assembly/Cast unit top elevation',S,IFCLABEL(' +3.753'),S);  
#2571= IFCPROPERTYSET('3doxyE9EHE6Q8c036ilSeM',#5,'Tekla Assembly',Assembly Properties',(#34,#313,#2414,#2569,#2570,#394,#318));  
#2572=  
IFCCARTESIANPOINT((1750.,150898.537264601,3652.78988308847));  
#2573= IFCAXIS2PLACEMENT3D(#2572,#8,#7);  
#2574= IFCLOCALPLACEMENT(#2567,#2573);  
#2575=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));

## Appendix

#2576= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#2575));  
 #2577=  
 IFCBEAM('10gimc0008Sp4qE3SsE3am',#5,'BEAM','HN400\*200\*8\*13',  
 'HN400\*200\*8\*13',#2574,#2576,'P0(?)');  
 #2578=  
 IFCPROPERTYSET('Bottom elevation',\$,IFCLABEL(' +3.553'),\$);  
 #2579= IFCPROPERTYSET('Top elevation',\$,IFCLABEL(' +3.753'),\$);  
 #2580= IFCPROPERTYSET('10GIHPYXv0mwgdsRNE\_CGP',#5,'Tekla Common',  
 'Common Properties to Shared building elements',(#2578,#2579,#71,  
 #72,#73,#346));  
 #2581= IFCLOCALPLACEMENT(#30,#10);  
 #2582=  
 IFCELEMENTASSEMBLY('10gimc0008Rp4qE3SsE3am',#5,'Steel Assembly',  
 \$,\$,#2581,\$,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
 #2583= IFCPROPERTYSET('Assembly/Cast unit bottom elevation',\$,IFCLABEL(' +3.467'),\$);  
 #2584= IFCPROPERTYSET('Assembly/Cast unit top elevation',\$,IFCLABEL(' +3.667'),\$);  
 #2585= IFCPROPERTYSET('34pg57XNH9hwtOwTo9TJu',#5,'Tekla Assembly',  
 'Assembly Properties',(#34,#313,#2414,#2583,#2584,#394,#318));  
 #2586=  
 IFCCARTESIANPOINT((1749.99985095535,154616.960140659,3566.67117618352));  
 #2587= IFCAXIS2PLACEMENT3D(#2586,#8,#7);  
 #2588= IFCLOCALPLACEMENT(#2581,#2587);  
 #2589=  
 IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
 #2590= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#2589));  
 #2591=  
 IFCBEAM('10gimc0008RZ4qE3SsE3am',#5,'BEAM','HN400\*200\*8\*13',  
 'HN400\*200\*8\*13',#2588,#2590,'P0(?)');  
 #2592=  
 IFCPROPERTYSET('Bottom elevation',\$,IFCLABEL(' +3.467'),\$);  
 #2593= IFCPROPERTYSET('Top elevation',\$,IFCLABEL(' +3.667'),\$);  
 #2594= IFCPROPERTYSET('28t2XnyMDCUuCPx4raL00e',#5,'Tekla Common',  
 'Common Properties to Shared building elements',(#2592,#2593,#71,  
 #72,#73,#346));  
 #2595= IFCLOCALPLACEMENT(#30,#10);  
 #2596=  
 IFCELEMENTASSEMBLY('10gimc0008QZ4qE3SsE3am',#5,'Steel Assembly',  
 \$,\$,#2595,\$,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
 #2597= IFCPROPERTYSET('Assembly/Cast unit bottom elevation',\$,IFCLABEL(' +3.383'),\$);  
 #2598= IFCPROPERTYSET('Assembly/Cast unit top elevation',\$,IFCLABEL(' +3.583'),\$);  
 #2599= IFCPROPERTYSET('2ne3T18bHFyH5I9vVNZGN',#5,'Tekla Assembly',  
 'Assembly Properties',(#34,#313,#2414,#2597,#2598,#394,#318));  
 #2600=  
 IFCCARTESIANPOINT((1749.99984661386,158235.419826823,3482.86764985811));  
 #2601= IFCAXIS2PLACEMENT3D(#2600,#8,#7);  
 #2602= IFCLOCALPLACEMENT(#2595,#2601);  
 #2603=  
 IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
 #2604= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#2603));  
 #2605=  
 IFCBEAM('10gimc0008QJ4qE3SsE3am',#5,'BEAM','HN400\*200\*8\*13',  
 'HN400\*200\*8\*13',#2602,#2604,'P0(?)');  
 #2606=  
 IFCPROPERTYSET('Bottom elevation',\$,IFCLABEL(' +3.383'),\$);  
 #2607= IFCPROPERTYSET('Top elevation',\$,IFCLABEL(' +3.583'),\$);  
 #2608= IFCPROPERTYSET('3CraOdeXb93whnYvxAUqLm',#5,'Tekla Common',  
 'Common Properties to Shared building elements',(#2606,#2607,#71,  
 #72,#73,#346));  
 #2609= IFCLOCALPLACEMENT(#30,#10);  
 #2610=  
 IFCELEMENTASSEMBLY('10gimc0008PJ4qE3SsE3am',#5,'Steel Assembly',  
 \$,\$,#2609,\$,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
 #2611= IFCPROPERTYSET('Assembly/Cast unit bottom elevation',\$,IFCLABEL(' +3.301'),\$);  
 #2612= IFCPROPERTYSET('Assembly/Cast unit top elevation',\$,IFCLABEL(' +3.501'),\$);  
 #2613= IFCPROPERTYSET('1de5ImS017WuWnWi80qUL',#5,'Tekla Assembly',  
 'Assembly Properties',(#34,#313,#2414,#2611,#2612,#438,#318));  
 #2614=  
 IFCCARTESIANPOINT((1750.00020116018,161753.926317223,3401.37912605121));  
 #2615= IFCAXIS2PLACEMENT3D(#2614,#8,#7);  
 #2616= IFCLOCALPLACEMENT(#2609,#2615);  
 #2617=  
 IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
 #2618= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#2617));  
 #2619=  
 IFCBEAM('10gimc0008P34qE3SsE3am',#5,'BEAM','HN400\*200\*8\*13',  
 'HN400\*200\*8\*13',#2616,#2618,'P0(?)');  
 #2620=  
 IFCPROPERTYSET('Bottom elevation',\$,IFCLABEL(' +3.301'),\$);  
 #2621= IFCPROPERTYSET('Top elevation',\$,IFCLABEL(' +3.501'),\$);  
 #2622= IFCPROPERTYSET('16nP\_duMnDWh0htFXwGYxJ',#5,'Tekla Common',  
 'Common Properties to Shared building elements',(#2620,#2621,#71,  
 #72,#73,#346));  
 #2623= IFCLOCALPLACEMENT(#30,#10);  
 #2624=  
 IFCELEMENTASSEMBLY('10gimc0008O34qE3SsE3am',#5,'Steel Assembly',  
 \$,\$,#2623,\$,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
 #2625= IFCPROPERTYSET('Assembly/Cast unit bottom elevation',\$,IFCLABEL(' +3.222'),\$);

#2626= IFCPROPERTYSET('Assembly/Cast unit top elevation',\$,IFCLABEL(' +3.422'),\$);  
 #2627= IFCPROPERTYSET('3STd0SHML3\_RH\_L4E0OuH',#5,'Tekla Assembly',  
 'Assembly Properties',(#34,#313,#2414,#2625,#2626,#438,#318));  
 #2628=  
 IFCCARTESIANPOINT((1749.99983956321,165179.137821158,3322.05114223058));  
 #2629= IFCAXIS2PLACEMENT3D(#2628,#8,#7);  
 #2630= IFCLOCALPLACEMENT(#2623,#2629);  
 #2631=  
 IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
 #2632= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#2631));  
 #2633=  
 IFCBEAM('10gimc0008Np4qE3SsE3am',#5,'BEAM','HN400\*200\*8\*13',  
 'HN400\*200\*8\*13',#2630,#2632,'P0(?)');  
 #2634=  
 IFCPROPERTYSET('Bottom elevation',\$,IFCLABEL(' +3.222'),\$);  
 #2635= IFCPROPERTYSET('Top elevation',\$,IFCLABEL(' +3.422'),\$);  
 #2636= IFCPROPERTYSET('0Tq6PyD98xUjOF7Oy8g',#5,'Tekla Common',  
 'Common Properties to Shared building elements',(#2634,#2635,#71,  
 #72,#73,#346));  
 #2637= IFCLOCALPLACEMENT(#30,#10);  
 #2638=  
 IFCELEMENTASSEMBLY('10gimc0008Mp4qE3SsE3am',#5,'Steel Assembly',  
 \$,\$,#2637,\$,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
 #2639= IFCPROPERTYSET('Assembly/Cast unit bottom elevation',\$,IFCLABEL(' +3.145'),\$);  
 #2640= IFCPROPERTYSET('Assembly/Cast unit top elevation',\$,IFCLABEL(' +3.345'),\$);  
 #2641= IFCPROPERTYSET('37hds8ozPBFvXnUzsj\_Mp',#5,'Tekla Assembly',  
 'Assembly Properties',(#34,#313,#2414,#2639,#2640,#438,#318));  
 #2642=  
 IFCCARTESIANPOINT((1750.00019395751,168511.058193185,3245.05028286502));  
 #2643= IFCAXIS2PLACEMENT3D(#2642,#8,#7);  
 #2644= IFCLOCALPLACEMENT(#2637,#2643);  
 #2645=  
 IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
 #2646= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#2645));  
 #2647=  
 IFCBEAM('10gimc0008MZ4qE3SsE3am',#5,'BEAM','HN400\*200\*8\*13',  
 'HN400\*200\*8\*13',#2644,#2646,'P0(?)');  
 #2648=  
 IFCPROPERTYSET('Bottom elevation',\$,IFCLABEL(' +3.145'),\$);  
 #2649= IFCPROPERTYSET('Top elevation',\$,IFCLABEL(' +3.345'),\$);  
 #2650= IFCPROPERTYSET('1z\_IqAeyD5Cfh6xMeuSV0',#5,'Tekla Common',  
 'Common Properties to Shared building elements',(#2648,#2649,#71,  
 #72,#73,#346));  
 #2651= IFCLOCALPLACEMENT(#30,#10);  
 #2652=  
 IFCELEMENTASSEMBLY('10gimc0008LZ4qE3SsE3am',#5,'Steel Assembly',  
 \$,\$,#2651,\$,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
 #2653= IFCPROPERTYSET('Assembly/Cast unit bottom elevation',\$,IFCLABEL(' +3.069'),\$);  
 #2654= IFCPROPERTYSET('Assembly/Cast unit top elevation',\$,IFCLABEL(' +3.269'),\$);  
 #2655= IFCPROPERTYSET('3GHQyhcWz3UukJ54m2D23',#5,'Tekla Assembly',  
 'Assembly Properties',(#34,#313,#2414,#2653,#2654,#438,#318));  
 #2656=  
 IFCCARTESIANPOINT((1749.9988966964,171756.337507908,3169.44002795252));  
 #2657= IFCAXIS2PLACEMENT3D(#2656,#8,#7);  
 #2658= IFCLOCALPLACEMENT(#2651,#2657);  
 #2659=  
 IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
 #2660= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#2659));  
 #2661=  
 IFCBEAM('10gimc0008LJ4qE3SsE3am',#5,'BEAM','HN400\*200\*8\*13',  
 'HN400\*200\*8\*13',#2658,#2660,'P0(?)');  
 #2662=  
 IFCPROPERTYSET('Bottom elevation',\$,IFCLABEL(' +3.069'),\$);  
 #2663= IFCPROPERTYSET('Top elevation',\$,IFCLABEL(' +3.269'),\$);  
 #2664=  
 IFCPROPERTYSET('0wGDW9UvHEdOwuRv106pmD',#5,'Tekla Common',  
 'Common Properties to Shared building elements',(#2662,#2663,#71,  
 #72,#73,#346));  
 #2665= IFCLOCALPLACEMENT(#30,#10);  
 #2666=  
 IFCELEMENTASSEMBLY('10gimc0008KJ4qE3SsE3am',#5,'Steel Assembly',  
 \$,\$,#2665,\$,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
 #2667= IFCPROPERTYSET('Assembly/Cast unit bottom elevation',\$,IFCLABEL(' +2.997'),\$);  
 #2668= IFCPROPERTYSET('Assembly/Cast unit top elevation',\$,IFCLABEL(' +3.197'),\$);  
 #2669= IFCPROPERTYSET('1KHen8cwT62wg7\_M5Sp6kN',#5,'Tekla Assembly',  
 'Assembly Properties',(#34,#313,#2414,#2667,#2668,#438,#318));  
 #2670=  
 IFCCARTESIANPOINT((1750.00355091606,174908.372594999,3096.90183786272));  
 #2671= IFCAXIS2PLACEMENT3D(#2670,#8,#7);  
 #2672= IFCLOCALPLACEMENT(#2665,#2671);  
 #2673=  
 IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
 #2674= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#2673));  
 #2675=  
 IFCBEAM('10gimc0008K34qE3SsE3am',#5,'BEAM','HN400\*200\*8\*13',  
 'HN400\*200\*8\*13',#2672,#2674,'P0(?)');

#2676= IFCPROPERTYSET('Bottom elevation',S,IFCLABEL(' +2.997'),S);  
 #2677= IFCPROPERTYSET('Top elevation',S,IFCLABEL(' +3.197'),S);  
 #2678= IFCPROPERTYSET('0K03Gno8b03w1XNXIRtV15',#5,'Tekla Common','Common Properties to Shared building elements',(#2676,#2677,#71,#72,#73,#346));  
 #2679= IFCLOCALPLACEMENT(#30,#10);  
 #2680= IFCLEMENTASSEMBLY('1Ogjm0008J34qE3SsE3am',#5,'Steel Assembly',S,S,#2679,S,'BE-0(?)',NOTDEFINED,,RIGID\_FRAME.);  
 #2681= IFCPROPERTYSET('Assembly/Cast unit bottom elevation',S,IFCLABEL(' +2.926'),S);  
 #2682= IFCPROPERTYSET('Assembly/Cast unit top elevation',S,IFCLABEL(' +3.126'),S);  
 #2683= IFCPROPERTYSET('2hvxXndFDVraUeg28b3ms',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#2414,#2681,#2682,#438,#318));  
 #2684= IFCARTESIANPOINT((1749.9883908497,177973.739576748,3025.86394071534));  
 #2685= IFCAXIS2PLACEMENT3D(#2684,#8,#7);  
 #2686= IFCLOCALPLACEMENT(#2679,#2685);  
 #2687= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
 #2688= IFCPRODUCTDEFINITIONSHAPE(S,S,(#2687));  
 #2689= IFCBEAM('1Ogjm0008Ip4qE3SsE3am',#5,'BEAM','HN400\*200\*8\*13',#HN400\*200\*8\*13',#2686,#2688,'P0(?)');  
 #2690= IFCPROPERTYSET('Bottom elevation',S,IFCLABEL(' +2.926'),S);  
 #2691= IFCPROPERTYSET('Top elevation',S,IFCLABEL(' +3.126'),S);  
 #2692= IFCPROPERTYSET('3DiY0CBXr1aAra2B517Kh5',#5,'Tekla Common','Common Properties to Shared building elements',(#2690,#2691,#71,#72,#73,#346));  
 #2693= IFCQUANTITYLENGTH('Length',S,S,5000);  
 #2694= IFCQUANTITYAREA('OuterSurfaceArea',S,S,7.92);  
 #2695= IFCQUANTITYVOLUME('NetVolume',S,S,0.0409599999999999);  
 #2696= IFCQUANTITYWEIGHT('NetWeight',S,S,321.536);  
 #2697= IFCELEMENTQUANTITY('3ZMfjI04X8Fff2hxRbsDGc',#5,'BaseQuantities',S,S,(#2693,#2694,#2695,#2696));  
 #2698= IFCLOCALPLACEMENT(#30,#10);  
 #2699= IFCLEMENTASSEMBLY('1Ogjm0008Hp4qE3SsE3am',#5,'Steel Assembly',S,S,#2698,S,'BE-0(?)',NOTDEFINED,,RIGID\_FRAME.);  
 #2700= IFCPROPERTYSET('Assembly/Cast unit bottom elevation',S,IFCLABEL(' +2.857'),S);  
 #2701= IFCPROPERTYSET('Assembly/Cast unit top elevation',S,IFCLABEL(' +3.057'),S);  
 #2702= IFCPROPERTYSET('0XeRclY5j9w8UAWggmV\$Krn',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#2414,#2700,#2701,#438,#318));  
 #2703= IFCARTESIANPOINT((1750.05238087554,180959.147186235,2957.07556104816));  
 #2704= IFCAXIS2PLACEMENT3D(#2703,#8,#7);  
 #2705= IFCLOCALPLACEMENT(#2698,#2704);  
 #2706= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
 #2707= IFCPRODUCTDEFINITIONSHAPE(S,S,(#2706));  
 #2708= IFCBEAM('1Ogjm0008HZ4qE3SsE3am',#5,'BEAM','HN400\*200\*8\*13',#HN400\*200\*8\*13',#2705,#2707,'P0(?)');  
 #2709= IFCPROPERTYSET('Bottom elevation',S,IFCLABEL(' +2.857'),S);  
 #2710= IFCPROPERTYSET('Top elevation',S,IFCLABEL(' +3.057'),S);  
 #2711= IFCPROPERTYSET('3SXSSPQX561vtoNSZWA WXt',#5,'Tekla Common','Common Properties to Shared building elements',(#2709,#2710,#71,#72,#73,#346));  
 #2712= IFCLOCALPLACEMENT(#30,#10);  
 #2713= IFCLEMENTASSEMBLY('1Ogjm0008GZ4qE3SsE3am',#5,'Steel Assembly',S,S,#2712,S,'BE-0(?)',NOTDEFINED,,RIGID\_FRAME.);  
 #2714= IFCPROPERTYSET('Assembly/Cast unit bottom elevation',S,IFCLABEL(' +2.788'),S);  
 #2715= IFCPROPERTYSET('Assembly/Cast unit top elevation',S,IFCLABEL(' +2.988'),S);  
 #2716= IFCPROPERTYSET('2IGLzpoZ9Q8nrLstLrvzy',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#2414,#2714,#2715,#438,#318));  
 #2717= IFCARTESIANPOINT((1749.75715031381,183864.543998378,2888.33080511019));  
 #2718= IFCAXIS2PLACEMENT3D(#2717,#8,#7);  
 #2719= IFCLOCALPLACEMENT(#2712,#2718);  
 #2720= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
 #2721= IFCPRODUCTDEFINITIONSHAPE(S,S,(#2720));  
 #2722= IFCBEAM('1Ogjm0008GJ4qE3SsE3am',#5,'BEAM','HN400\*200\*8\*13',#HN400\*200\*8\*13',#2719,#2721,'P0(?)');  
 #2723= IFCPROPERTYSET('Bottom elevation',S,IFCLABEL(' +2.788'),S);  
 #2724= IFCPROPERTYSET('Top elevation',S,IFCLABEL(' +2.988'),S);  
 #2725= IFCPROPERTYSET('1IGmTLew9DjvxiqJbM5y9J',#5,'Tekla Common','Common Properties to Shared building elements',(#2723,#2724,#71,#72,#73,#346));  
 #2726= IFCLOCALPLACEMENT(#30,#10);

#2727= IFCLEMENTASSEMBLY('1Ogjm0008FJ4qE3SsE3am',#5,'Steel Assembly',S,S,#2726,S,'BE-0(?)',NOTDEFINED,,RIGID\_FRAME.);  
 #2728= IFCPROPERTYSET('Assembly/Cast unit bottom elevation',S,IFCLABEL(' +2.728'),S);  
 #2729= IFCPROPERTYSET('Assembly/Cast unit top elevation',S,IFCLABEL(' +2.928'),S);  
 #2730= IFCPROPERTYSET('22teso\_r6CeWrkeYstnk',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#2414,#2728,#2729,#438,#318));  
 #2731= IFCARTESIANPOINT((1750.68213947492,186690.120783834,2827.57733493062));  
 #2732= IFCAXIS2PLACEMENT3D(#2731,#8,#7);  
 #2733= IFCLOCALPLACEMENT(#2726,#2732);  
 #2734= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
 #2735= IFCPRODUCTDEFINITIONSHAPE(S,S,(#2734));  
 #2736= IFCBEAM('1Ogjm0008F34qE3SsE3am',#5,'BEAM','HN400\*200\*8\*13',#HN400\*200\*8\*13',#2733,#2735,'P0(?)');  
 #2737= IFCPROPERTYSET('Bottom elevation',S,IFCLABEL(' +2.728'),S);  
 #2738= IFCPROPERTYSET('Top elevation',S,IFCLABEL(' +2.928'),S);  
 #2739= IFCPROPERTYSET('0tGo\$Sm2KnDf9g11Dm71jMX',#5,'Tekla Common','Common Properties to Shared building elements',(#2737,#2738,#71,#72,#73,#346));  
 #2740= IFCLOCALPLACEMENT(#30,#10);  
 #2741= IFCLEMENTASSEMBLY('1Ogjm0008E34qE3SsE3am',#5,'Steel Assembly',S,S,#2740,S,'BE-0(?)',NOTDEFINED,,RIGID\_FRAME.);  
 #2742= IFCPROPERTYSET('Assembly/Cast unit bottom elevation',S,IFCLABEL(' +2.660'),S);  
 #2743= IFCPROPERTYSET('Assembly/Cast unit top elevation',S,IFCLABEL(' +2.860'),S);  
 #2744= IFCPROPERTYSET('0nkRnEg\_PEvuCPolFAPnv',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#2414,#2742,#2743,#438,#318));  
 #2745= IFCARTESIANPOINT((1747.93315667172,189435.268776854,2760.18819235112));  
 #2746= IFCAXIS2PLACEMENT3D(#2745,#8,#7);  
 #2747= IFCLOCALPLACEMENT(#2740,#2746);  
 #2748= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
 #2749= IFCPRODUCTDEFINITIONSHAPE(S,S,(#2748));  
 #2750= IFCBEAM('1Ogjm0008Dp4qE3SsE3am',#5,'BEAM','HN400\*200\*8\*13',#HN400\*200\*8\*13',#2747,#2749,'P0(?)');  
 #2751= IFCPROPERTYSET('Bottom elevation',S,IFCLABEL(' +2.660'),S);  
 #2752= IFCPROPERTYSET('Top elevation',S,IFCLABEL(' +2.860'),S);  
 #2753= IFCPROPERTYSET('3G0kOdHpbEXRDvDo0C5Aaj',#5,'Tekla Common','Common Properties to Shared building elements',(#2751,#2752,#71,#72,#73,#346));  
 #2754= IFCLOCALPLACEMENT(#30,#10);  
 #2755= IFCLEMENTASSEMBLY('1Ogjm0008Cp4qE3SsE3am',#5,'Steel Assembly',S,S,#2754,S,'BE-0(?)',NOTDEFINED,,RIGID\_FRAME.);  
 #2756= IFCPROPERTYSET('Assembly/Cast unit bottom elevation',S,IFCLABEL(' +2.599'),S);  
 #2757= IFCPROPERTYSET('Assembly/Cast unit top elevation',S,IFCLABEL(' +2.799'),S);  
 #2758= IFCPROPERTYSET('0ecqGmKsX4JfCwHH\_5Ww',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#2414,#2756,#2757,#438,#318));  
 #2759= IFCARTESIANPOINT((1750.50774325417,192107.48741649,2698.77350669794));  
 #2760= IFCAXIS2PLACEMENT3D(#2759,#8,#7);  
 #2761= IFCLOCALPLACEMENT(#2754,#2760);  
 #2762= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
 #2763= IFCPRODUCTDEFINITIONSHAPE(S,S,(#2762));  
 #2764= IFCBEAM('1Ogjm0008CZ4qE3SsE3am',#5,'BEAM','HN400\*200\*8\*13',#HN400\*200\*8\*13',#2761,#2763,'P0(?)');  
 #2765= IFCPROPERTYSET('Bottom elevation',S,IFCLABEL(' +2.599'),S);  
 #2766= IFCPROPERTYSET('Top elevation',S,IFCLABEL(' +2.799'),S);  
 #2767= IFCPROPERTYSET('2n0I7r58H1VQ66CSc3pdiS',#5,'Tekla Common','Common Properties to Shared building elements',(#2765,#2766,#71,#72,#73,#346));  
 #2768= IFCLOCALPLACEMENT(#30,#10);  
 #2769= IFCLEMENTASSEMBLY('1Ogjm0008BZ4qE3SsE3am',#5,'Steel Assembly',S,S,#2768,S,'BE-0(?)',NOTDEFINED,,RIGID\_FRAME.);  
 #2770= IFCPROPERTYSET('Assembly/Cast unit bottom elevation',S,IFCLABEL(' +2.538'),S);  
 #2771= IFCPROPERTYSET('Assembly/Cast unit top elevation',S,IFCLABEL(' +2.738'),S);  
 #2772= IFCPROPERTYSET('2rTO2z4jb9QZxgpvJSFK',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#2414,#2770,#2771,#438,#318));  
 #2773= IFCARTESIANPOINT((1750.99590443808,194705.251222604,2638.4634032072));  
 #2774= IFCAXIS2PLACEMENT3D(#2773,#8,#7);  
 #2775= IFCLOCALPLACEMENT(#2768,#2774);  
 #2776= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
 #2777= IFCPRODUCTDEFINITIONSHAPE(S,S,(#2776));

## Appendix

#2778= IFCBEAM('1Ogimc0008Bj4qE3SsE3am',#5,'BEAM','HN400\*200\*8\*13',#2777,'P0(?)');  
 #2779= IFCPROPERTYSET('Bottom elevation',IFCLABEL(' +2.538'),\$);  
 #2780= IFCPROPERTYSET('Top elevation',IFCLABEL(' +2.738'),\$);  
 #2781= IFCPROPERTYSET('07skIbhFr39uXnayLQ\_3Hb',#5,'Tekla Common','Common Properties to Shared building elements',#2779,#2780,#71,#72,#73,#346);  
 #2782= IFCLOCALPLACEMENT(#30,#10);  
 #2783= IFCELEMENTASSEMBLY('1Ogimc0008AJ4qE3SsE3am',#5,'Steel Assembly',,\$,#2782,\$,'BE-0(?)',.NOTDEFINED,,RIGID\_FRAME.);  
 #2784= IFCPROPERTYSET('Assembly/Cast unit bottom elevation',IFCLABEL(' +2.480'),\$);  
 #2785= IFCPROPERTYSET('Assembly/Cast unit top elevation',IFCLABEL(' +2.680'),\$);  
 #2786= IFCPROPERTYSET('3AnfQABgD1pB9GM3SxiBb',#5,'Tekla Assembly','Assembly Properties',(#34,#13,#2414,#2784,#2785,#438,#318));  
 #2787= IFCCARTESIANPOINT((1751.75645675721,197235.891389645,2580.08602983896));  
 #2788= IFCAXIS2PLACEMENT3D(#2787,#8,#7);  
 #2789= IFCLOCALPLACEMENT(#2782,#2788);  
 #2790= IFCSHAPEREPRESENTATION('#12,'Body','SweptSolid',(#2423));  
 #2791= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#2790));  
 #2792= IFCBEAM('1Ogimc0008A34qE3SsE3am',#5,'BEAM','HN400\*200\*8\*13',#2789,#2791,'P0(?)');  
 #2793= IFCPROPERTYSET('Bottom elevation',IFCLABEL(' +2.480'),\$);  
 #2794= IFCPROPERTYSET('Top elevation',IFCLABEL(' +2.680'),\$);  
 #2795= IFCPROPERTYSET('0S220XUj4KPFsGUxk6FrX',#5,'Tekla Common','Common Properties to Shared building elements',(#2793,#2794,#71,#72,#73,#346);  
 #2796= IFCLOCALPLACEMENT(#30,#10);  
 #2797= IFCELEMENTASSEMBLY('1Ogimc0008934qE3SsE3am',#5,'Steel Assembly',,\$,#2796,\$,'BE-0(?)',.NOTDEFINED,,RIGID\_FRAME.);  
 #2798= IFCPROPERTYSET('Assembly/Cast unit bottom elevation',IFCLABEL(' +2.424'),\$);  
 #2799= IFCPROPERTYSET('Assembly/Cast unit top elevation',IFCLABEL(' +2.624'),\$);  
 #2800= IFCPROPERTYSET('0A8yolvDf1SgT5LYm6S\_nr',#5,'Tekla Assembly','Assembly Properties',(#34,#13,#2414,#2798,#2799,#438,#318));  
 #2801= IFCCARTESIANPOINT((1749.47064789814,199688.792799423,2523.92669024691));  
 #2802= IFCAXIS2PLACEMENT3D(#2801,#8,#7);  
 #2803= IFCLOCALPLACEMENT(#2796,#2802);  
 #2804= IFCSHAPEREPRESENTATION('#12,'Body','SweptSolid',(#2423));  
 #2805= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#2804));  
 #2806= IFCBEAM('1Ogimc00088p4qE3SsE3am',#5,'BEAM','HN400\*200\*8\*13',#2803,#2805,'P0(?)');  
 #2807= IFCPROPERTYSET('Bottom elevation',IFCLABEL(' +2.424'),\$);  
 #2808= IFCPROPERTYSET('Top elevation',IFCLABEL(' +2.624'),\$);  
 #2809= IFCPROPERTYSET('1fFSD2rif9ywdJ0TvaghU',#5,'Tekla Common','Common Properties to Shared building elements',(#2807,#2808,#71,#72,#73,#346);  
 #2810= IFCQUANTITYLENGTH('Length',,\$,\$,4999.99999994356);  
 #2811= IFCQUANTITYAREA('OuterSurfaceArea',,\$,\$,7.9199999991061);  
 #2812= IFCQUANTITYVOLUME('NetVolume',,\$,\$,0.040959999995377);  
 #2813= IFCQUANTITYWEIGHT('NetWeight',,\$,\$,321.535999996371);  
 #2814= IFCELEMENTQUANTITY('07wuDgXdbBTufhBdUaTmqT',#5,'BaseQ quantities',,\$,(#2810,#2811,#2812,#2813));  
 #2815= IFCLOCALPLACEMENT(#30,#10);  
 #2816= IFCELEMENTASSEMBLY('1Ogimc00087p4qE3SsE3am',#5,'Steel Assembly',,\$,#2815,\$,'BE-0(?)',.NOTDEFINED,,RIGID\_FRAME.);  
 #2817= IFCPROPERTYSET('Assembly/Cast unit bottom elevation',IFCLABEL(' +2.369'),\$);  
 #2818= IFCPROPERTYSET('Assembly/Cast unit top elevation',IFCLABEL(' +2.569'),\$);  
 #2819= IFCPROPERTYSET('3yCCPJEWbEzOvUwr51\_SV1',#5,'Tekla Assembly','Assembly Properties',(#34,#13,#2414,#2817,#2818,#438,#318));  
 #2820= IFCCARTESIANPOINT((1749.96348202122,202064.336330443,2468.64131380218));  
 #2821= IFCAXIS2PLACEMENT3D(#2820,#8,#7);  
 #2822= IFCLOCALPLACEMENT(#2815,#2821);  
 #2823= IFCSHAPEREPRESENTATION('#12,'Body','SweptSolid',(#2423));  
 #2824= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#2823));  
 #2825= IFCBEAM('1Ogimc000874qE3SsE3am',#5,'BEAM','HN400\*200\*8\*13',#2822,#2824,'P0(?)');  
 #2826= IFCPROPERTYSET('Bottom elevation',IFCLABEL(' +2.369'),\$);  
 #2827= IFCPROPERTYSET('Top elevation',IFCLABEL(' +2.569'),\$);

#2828= IFCPROPERTYSET('26r0wnvHv9ye50kQUdMNdV',#5,'Tekla Common','Common Properties to Shared building elements',(#2826,#2827,#71,#72,#73,#346);  
 #2829= IFCLOCALPLACEMENT(#30,#10);  
 #2830= IFCELEMENTASSEMBLY('1Ogimc00086Z4qE3SsE3am',#5,'Steel Assembly',,\$,#2829,\$,'BE-0(?)',.NOTDEFINED,,RIGID\_FRAME.);  
 #2831= IFCPROPERTYSET('Assembly/Cast unit bottom elevation',IFCLABEL(' +2.315'),\$);  
 #2832= IFCPROPERTYSET('Assembly/Cast unit top elevation',IFCLABEL(' +2.515'),\$);  
 #2833= IFCPROPERTYSET('0aCdC0ntD0L09to40AeUHQ',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#2414,#2831,#2832,#438,#318));  
 #2834= IFCCARTESIANPOINT((1750.08334296136,204376.108529449,2414.55003678245));  
 #2835= IFCAXIS2PLACEMENT3D(#2834,#8,#7);  
 #2836= IFCLOCALPLACEMENT(#2829,#2835);  
 #2837= IFCSHAPEREPRESENTATION('#12,'Body','SweptSolid',(#2423));  
 #2838= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#2837));  
 #2839= IFCBEAM('1Ogimc00086J4qE3SsE3am',#5,'BEAM','HN400\*200\*8\*13',#2836,#2838,'P0(?)');  
 #2840= IFCPROPERTYSET('Bottom elevation',IFCLABEL(' +2.315'),\$);  
 #2841= IFCPROPERTYSET('Top elevation',IFCLABEL(' +2.515'),\$);  
 #2842= IFCPROPERTYSET('3qamdmpZL2MvONj7Qsld4u',#5,'Tekla Common','Common Properties to Shared building elements',(#2840,#2841,#71,#72,#73,#346);  
 #2843= IFCLOCALPLACEMENT(#30,#10);  
 #2844= IFCELEMENTASSEMBLY('1Ogimc00085J4qE3SsE3am',#5,'Steel Assembly',,\$,#2843,\$,'BE-0(?)',.NOTDEFINED,,RIGID\_FRAME.);  
 #2845= IFCPROPERTYSET('Assembly/Cast unit bottom elevation',IFCLABEL(' +2.265'),\$);  
 #2846= IFCPROPERTYSET('Assembly/Cast unit top elevation',IFCLABEL(' +2.465'),\$);  
 #2847= IFCPROPERTYSET('0S\_nMQfxL7XPCNtrAj47p',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#2414,#2845,#2846,#438,#318));  
 #2848= IFCCARTESIANPOINT((1750.67820488569,206561.928761764,2365.30072361333));  
 #2849= IFCAXIS2PLACEMENT3D(#2848,#8,#7);  
 #2850= IFCLOCALPLACEMENT(#2843,#2849);  
 #2851= IFCSHAPEREPRESENTATION('#12,'Body','SweptSolid',(#2423));  
 #2852= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#2851));  
 #2853= IFCBEAM('1Ogimc0008534qE3SsE3am',#5,'BEAM','HN400\*200\*8\*13',#2850,#2852,'P0(?)');  
 #2854= IFCPROPERTYSET('Bottom elevation',IFCLABEL(' +2.265'),\$);  
 #2855= IFCPROPERTYSET('Top elevation',IFCLABEL(' +2.465'),\$);  
 #2856= IFCPROPERTYSET('3wSeHER31Cj9OTJ3zV8SL',#5,'Tekla Common','Common Properties to Shared building elements',(#2854,#2855,#71,#72,#73,#346);  
 #2857= IFCLOCALPLACEMENT(#30,#10);  
 #2858= IFCELEMENTASSEMBLY('1Ogimc0008434qE3SsE3am',#5,'Steel Assembly',,\$,#2857,\$,'BE-0(?)',.NOTDEFINED,,RIGID\_FRAME.);  
 #2859= IFCPROPERTYSET('Assembly/Cast unit bottom elevation',IFCLABEL(' +2.209'),\$);  
 #2860= IFCPROPERTYSET('Assembly/Cast unit top elevation',IFCLABEL(' +2.409'),\$);  
 #2861= IFCPROPERTYSET('2Aor9JZUj6WhNmEv2Gnd1e',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#2414,#2859,#2860,#438,#318));  
 #2862= IFCCARTESIANPOINT((1750.,208933.475889495,2309.22141816303));  
 #2863= IFCAXIS2PLACEMENT3D(#2862,#8,#7);  
 #2864= IFCLOCALPLACEMENT(#2857,#2863);  
 #2865= IFCSHAPEREPRESENTATION('#12,'Body','SweptSolid',(#2423));  
 #2866= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#2865));  
 #2867= IFCBEAM('1Ogimc00083p4qE3SsE3am',#5,'BEAM','HN400\*200\*8\*13',#2864,#2866,'P0(?)');  
 #2868= IFCPROPERTYSET('Bottom elevation',IFCLABEL(' +2.209'),\$);  
 #2869= IFCPROPERTYSET('Top elevation',IFCLABEL(' +2.409'),\$);  
 #2870= IFCPROPERTYSET('3\_GzbcBDP3z8D3F28gLS4Q',#5,'Tekla Common','Common Properties to Shared building elements',(#2868,#2869,#71,#72,#73,#346);  
 #2871= IFCLOCALPLACEMENT(#30,#10);  
 #2872= IFCELEMENTASSEMBLY('1Ogimc00082p4qE3SsE3am',#5,'Steel Assembly',,\$,#2871,\$,'BE-0(?)',.NOTDEFINED,,RIGID\_FRAME.);  
 #2873= IFCPROPERTYSET('Assembly/Cast unit bottom elevation',IFCLABEL(' +2.160'),\$);  
 #2874= IFCPROPERTYSET('Assembly/Cast unit top elevation',IFCLABEL(' +2.360'),\$);  
 #2875= IFCPROPERTYSET('0V\_jZy\_FD8nPn6LjsjdkI',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#2414,#2873,#2874,#438,#318));  
 #2876= IFCCARTESIANPOINT((1750.,211064.853329813,2259.88119505358));  
 #2877= IFCAXIS2PLACEMENT3D(#2876,#8,#7);

#2878= IFLOCALPLACEMENT(#2871,#2877);  
#2879=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
#2880= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#2879));  
#2881=  
IFCBEAM('1Ogimc0082Z4qE3SsE3am',#5,'BEAM','HN400\*200\*8\*13',  
'HN400\*200\*8\*13',#2878,#2880,'PO(?));  
#2882= IFCPROPERTYSSINGLEVALUE('Bottom elevation',\$,IFCLABEL(' +2.160'),\$);  
#2883= IFCPROPERTYSSINGLEVALUE('Top elevation',\$,IFCLABEL(' +2.360'),\$);  
#2884= IFCPROPERTYSET('3zCjyN4jvCpOBHIDGg9a18',#5,'Tekla Common',  
'Common Properties to Shared building elements',(#2882,#2883,#71,#72,#73,#346));  
#2885= IFLOCALPLACEMENT(#30,#10);  
#2886=  
IFCELEMENTASSEMBLY('1Ogimc0081Z4qE3SsE3am',#5,'Steel Assembly',  
\$,S,#2885,\$,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#2887= IFCPROPERTYSSINGLEVALUE('Assembly/Cast unit bottom elevation',  
\$,IFCLABEL(' +2.111'),\$);  
#2888= IFCPROPERTYSSINGLEVALUE('Assembly/Cast unit top elevation',  
\$,IFCLABEL(' +2.311'),\$);  
#2889= IFCPROPERTYSET('119CvmI3rE4hWT49aUr\_Kj',#5,'Tekla Assembly',  
'Assembly Properties',(#34,#313,#2414,#2887,#2888,#438,#318));  
#2890=  
IFCCARTESIANPOINT((1750.,213183.841521838,2210.8277672966));  
#2891= IFCAxis2PLACEMENT3D(#2890,#8,#7);  
#2892= IFLOCALPLACEMENT(#2885,#2891);  
#2893=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
#2894= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#2893));  
#2895=  
IFCBEAM('1Ogimc0081J4qE3SsE3am',#5,'BEAM','HN400\*200\*8\*13',  
'HN400\*200\*8\*13',#2892,#2894,'PO(?));  
#2896= IFCPROPERTYSSINGLEVALUE('Bottom elevation',\$,IFCLABEL(' +2.111'),\$);  
#2897= IFCPROPERTYSSINGLEVALUE('Top elevation',\$,IFCLABEL(' +2.311'),\$);  
#2898= IFCPROPERTYSET('0iESGGC\_b1zwafzqEPxD7',#5,'Tekla Common',  
'Common Properties to Shared building elements',(#2896,#2897,#71,#72,#73,#346));  
#2899= IFLOCALPLACEMENT(#30,#10);  
#2900=  
IFCELEMENTASSEMBLY('1Ogimc0080J4qE3SsE3am',#5,'Steel Assembly',  
\$,S,#2899,\$,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#2901= IFCPROPERTYSSINGLEVALUE('Assembly/Cast unit bottom elevation',  
\$,IFCLABEL(' +2.065'),\$);  
#2902= IFCPROPERTYSSINGLEVALUE('Assembly/Cast unit top elevation',  
\$,IFCLABEL(' +2.265'),\$);  
#2903= IFCPROPERTYSET('3g6o8jByb9TPI8vornQLwx',#5,'Tekla Assembly',  
'Assembly Properties',(#34,#313,#2414,#2901,#2902,#438,#318));  
#2904=  
IFCCARTESIANPOINT((1750.,215160.094009197,2165.07861192124));  
#2905= IFCAxis2PLACEMENT3D(#2904,#8,#7);  
#2906= IFLOCALPLACEMENT(#2899,#2905);  
#2907=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
#2908= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#2907));  
#2909=  
IFCBEAM('1Ogimc008034qE3SsE3am',#5,'BEAM','HN400\*200\*8\*13',  
'HN400\*200\*8\*13',#2906,#2908,'PO(?));  
#2910= IFCPROPERTYSSINGLEVALUE('Bottom elevation',\$,IFCLABEL(' +2.065'),\$);  
#2911= IFCPROPERTYSSINGLEVALUE('Top elevation',\$,IFCLABEL(' +2.265'),\$);  
#2912= IFCPROPERTYSET('1DhRJRWRf4zBKqEUJhOrEt',#5,'Tekla Common',  
'Common Properties to Shared building elements',(#2910,#2911,#71,#72,#73,#346));  
#2913= IFLOCALPLACEMENT(#30,#10);  
#2914=  
IFCELEMENTASSEMBLY('1Ogimc0007S34qE3SsE3am',#5,'Steel Assembly',  
\$,S,#2913,\$,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#2915= IFCPROPERTYSSINGLEVALUE('Assembly/Cast unit bottom elevation',  
\$,IFCLABEL(' +2.019'),\$);  
#2916= IFCPROPERTYSSINGLEVALUE('Assembly/Cast unit top elevation',  
\$,IFCLABEL(' +2.219'),\$);  
#2917= IFCPROPERTYSET('0dNz4JG492T8CxmKMTQph2',#5,'Tekla Assembly',  
'Assembly Properties',(#34,#313,#2414,#2915,#2916,#438,#318));  
#2918=  
IFCCARTESIANPOINT((1750.,217130.913002672,2119.45522902424));  
#2919= IFCAxis2PLACEMENT3D(#2918,#8,#7);  
#2920= IFLOCALPLACEMENT(#2913,#2919);  
#2921=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
#2922= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#2921));  
#2923=  
IFCBEAM('1Ogimc0007\_p4qE3SsE3am',#5,'BEAM','HN400\*200\*8\*13',  
'HN400\*200\*8\*13',#2920,#2922,'PO(?));  
#2924= IFCPROPERTYSSINGLEVALUE('Bottom elevation',\$,IFCLABEL(' +2.019'),\$);  
#2925= IFCPROPERTYSSINGLEVALUE('Top elevation',\$,IFCLABEL(' +2.219'),\$);  
#2926= IFCPROPERTYSET('0cZzgp557QPX0e3XbMiS6',#5,'Tekla Common',  
'Common Properties to Shared building elements',(#2924,#2925,#71,#72,#73,#346));  
#2927= IFLOCALPLACEMENT(#30,#10);  
#2928=  
IFCELEMENTASSEMBLY('1Ogimc0007zp4qE3SsE3am',#5,'Steel Assembly',  
\$,S,#2927,\$,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#2929= IFCPROPERTYSSINGLEVALUE('Assembly/Cast unit bottom elevation',  
\$,IFCLABEL(' +1.981'),\$);  
#2930= IFCPROPERTYSSINGLEVALUE('Assembly/Cast unit top elevation',  
\$,IFCLABEL(' +2.181'),\$);  
#2931= IFCPROPERTYSET('2Txr7f50z4tAsQjqOvohFW',#5,'Tekla Assembly',  
'Assembly Properties',(#34,#313,#2414,#2929,#2930,#438,#318));  
#2932=  
IFCCARTESIANPOINT((1750.,218990.774073264,2081.03035306207));  
#2933= IFCAxis2PLACEMENT3D(#2932,#8,#7);  
#2934= IFLOCALPLACEMENT(#2927,#2933);  
#2935=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
#2936= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#2935));  
#2937=  
IFCBEAM('1Ogimc0007z4qE3SsE3am',#5,'BEAM','HN400\*200\*8\*13',  
'HN400\*200\*8\*13',#2934,#2936,'PO(?));  
#2938= IFCPROPERTYSSINGLEVALUE('Bottom elevation',\$,IFCLABEL(' +1.981'),\$);  
#2939= IFCPROPERTYSSINGLEVALUE('Top elevation',\$,IFCLABEL(' +2.181'),\$);  
#2940= IFCPROPERTYSET('11A\_7wo3n4RbtVLYmaJp4o',#5,'Tekla Common',  
'Common Properties to Shared building elements',(#2938,#2939,#71,#72,#73,#346));  
#2941= IFLOCALPLACEMENT(#30,#10);  
#2942=  
IFCELEMENTASSEMBLY('1Ogimc0007yJ4qE3SsE3Wu',#5,'Steel Assembly',  
\$,S,#2941,\$,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#2943= IFCPROPERTYSET('0RwQsGsa1209R0FRLVawPS',#5,'Tekla Assembly',  
'Assembly Properties',(#34,#313,#2414,#2415,#2416,#317,#318));  
#2944=  
IFCCARTESIANPOINT((1750.00000913591,107481.069469051,4541.66156306614));  
#2945= IFCAxis2PLACEMENT3D(#2944,#335,#7);  
#2946= IFLOCALPLACEMENT(#2941,#2945);  
#2947=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
#2948= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#2947));  
#2949=  
IFCBEAM('1Ogimc0007yZ4qE3SsE3Wu',#5,'BEAM','HN400\*200\*8\*13',  
'HN400\*200\*8\*13',#2946,#2948,'PO(?));  
#2950= IFLOCALPLACEMENT(#30,#10);  
#2951=  
IFCELEMENTASSEMBLY('1Ogimc0007xJ4qE3SsE3Wu',#5,'Steel Assembly',  
\$,S,#2950,\$,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#2952= IFCPROPERTYSET('1W5P42exP8JR6CCVAnmi94',#5,'Tekla Assembly',  
'Assembly Properties',(#34,#313,#2414,#2441,#2442,#317,#318));  
#2953=  
IFCCARTESIANPOINT((1750.00000494086,102827.148961324,4433.87676350798));  
#2954= IFCAxis2PLACEMENT3D(#2953,#335,#7);  
#2955= IFLOCALPLACEMENT(#2950,#2954);  
#2956=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
#2957= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#2956));  
#2958=  
IFCBEAM('1Ogimc0007xZ4qE3SsE3Wu',#5,'BEAM','HN400\*200\*8\*13',  
'HN400\*200\*8\*13',#2955,#2957,'PO(?));  
#2959= IFLOCALPLACEMENT(#30,#10);  
#2960=  
IFCELEMENTASSEMBLY('1Ogimc0007yJ4qE3SsE3Wu',#5,'Steel Assembly',  
\$,S,#2959,\$,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#2961= IFCPROPERTYSET('3tdq66ZMj0UhfEbN2DD9H2',#5,'Tekla Assembly',  
'Assembly Properties',(#34,#313,#2414,#2460,#2461,#317,#318));  
#2962=  
IFCCARTESIANPOINT((1750.00000001178,98229.1019605938,4327.38599648065));  
#2963= IFCAxis2PLACEMENT3D(#2962,#335,#7);  
#2964= IFLOCALPLACEMENT(#2959,#2963);  
#2965=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
#2966= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#2965));  
#2967=  
IFCBEAM('1Ogimc0007wZ4qE3SsE3Wu',#5,'BEAM','HN400\*200\*8\*13',  
'HN400\*200\*8\*13',#2964,#2966,'PO(?));  
#2968= IFLOCALPLACEMENT(#30,#10);  
#2969=  
IFCELEMENTASSEMBLY('1Ogimc0007vJ4qE3SsE3Wu',#5,'Steel Assembly',  
\$,S,#2968,\$,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#2970= IFCPROPERTYSET('2S7bg9H2IEIQo20zS\_YqmH',#5,'Tekla Assembly',  
'Assembly Properties',(#34,#313,#2414,#2479,#2480,#317,#318));  
#2971=  
IFCCARTESIANPOINT((1749.99999531975,93724.3499407314,4223.05594041124));  
#2972= IFCAxis2PLACEMENT3D(#2971,#335,#7);  
#2973= IFLOCALPLACEMENT(#2968,#2972);  
#2974=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
#2975= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#2974));  
#2976=  
IFCBEAM('1Ogimc0007vZ4qE3SsE3Wu',#5,'BEAM','HN400\*200\*8\*13',  
'HN400\*200\*8\*13',#2973,#2975,'PO(?));  
#2977= IFLOCALPLACEMENT(#30,#10);  
#2978=  
IFCELEMENTASSEMBLY('1Ogimc0007uJ4qE3SsE3Wu',#5,'Steel Assembly',  
\$,S,#2977,\$,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#2979= IFCPROPERTYSET('3NV5v1w2PBxBFMKEN6PFmf',#5,'Tekla Assembly',  
'Assembly Properties',(#34,#313,#2414,#2493,#2494,#317,#318));

## Appendix

<p>#2980= IFCCARTESIANPOINT((1749.99999087766,89332.8775446221,4121.34944066764)); #2981= IFCAxis2PLACEMENT3D(#2980,#335,#7); #2982= IFCLocalPLACEMENT(#2977,#2981); #2983= IFCShaperRepresentation(#12,'Body','SweptSolid',(#2423)); #2984= IFCProductDefinitionShape(\$,\$,(#2983)); #2985= IFCBeam('IOgmic0007uZ4qE3SsE3Wu',#5,'BEAM','HN400*200*8*13','HN400*200*8*13',#2982,#2984,'PO(?)); #2986= IFCLocalPLACEMENT(#30,#10); #2987= IFCElementAssembly('IOgmic0007d4qE3SsE3Wu',#5,'Steel Assembly',S,\$,#2986,S,'BE-0(?)',..NOTDEFINED,..RIGID_FRAME.); #2988= IFCPropertySet('223QbXR_b4bP\$ukHfemuv3',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#2414,#2510,#2511,#317,#318)); #2989= IFCCARTESIANPOINT((1749.9999866347,85061.3529816583,4022.42093168165)); #2990= IFCAxis2PLACEMENT3D(#2989,#335,#7); #2991= IFCLocalPLACEMENT(#2986,#2990); #2992= IFCShaperRepresentation(#12,'Body','SweptSolid',(#2423)); #2993= IFCProductDefinitionShape(\$,\$,(#2992)); #2994= IFCBeam('IOgmic0007z4qE3SsE3Wu',#5,'BEAM','HN400*200*8*13','HN400*200*8*13',#2991,#2993,'PO(?)); #2995= IFCLocalPLACEMENT(#30,#10); #2996= IFCElementAssembly('IOgmic0007sJ4qE3SsE3Wu',#5,'Steel Assembly',S,\$,#2995,S,'BE-0(?)',..NOTDEFINED,..RIGID_FRAME.); #2997= IFCPropertySet('1b14PeUf9qP8JS0VEd7rk',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#2414,#2524,#2525,#317,#318)); #2998= IFCCARTESIANPOINT((1749.9999825745,80903.1180429386,3926.11621213358)); #2999= IFCAxis2PLACEMENT3D(#2998,#335,#7); #3000= IFCLocalPLACEMENT(#2995,#2999); #3001= IFCShaperRepresentation(#12,'Body','SweptSolid',(#2423)); #3002= IFCProductDefinitionShape(\$,\$,(#3001)); #3003= IFCBeam('IOgmic0007sZ4qE3SsE3Wu',#5,'BEAM','HN400*200*8*13','HN400*200*8*13',#3000,#3002,'PO(?)); #3004= IFCLocalPLACEMENT(#30,#10); #3005= IFCElementAssembly('IOgmic0007rJ4qE3SsE3Wu',#5,'Steel Assembly',S,\$,#3004,S,'BE-0(?)',..NOTDEFINED,..RIGID_FRAME.); #3006= IFCPropertySet('0T2nH9H0r2pvCftXy8p6ed',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#2414,#2541,#2542,#317,#318)); #3007= IFCCARTESIANPOINT((1749.99998302457,76858.1727210218,3832.43527908227)); #3008= IFCAxis2PLACEMENT3D(#3007,#335,#7); #3009= IFCLocalPLACEMENT(#3004,#3008); #3010= IFCShaperRepresentation(#12,'Body','SweptSolid',(#2423)); #3011= IFCProductDefinitionShape(\$,\$,(#3010)); #3012= IFCBeam('IOgmic0007rZ4qE3SsE3Wu',#5,'BEAM','HN400*200*8*13','HN400*200*8*13',#3009,#3011,'PO(?)); #3013= IFCLocalPLACEMENT(#30,#10); #3014= IFCElementAssembly('IOgmic0007qJ4qE3SsE3Wu',#5,'Steel Assembly',S,\$,#3013,S,'BE-0(?)',..NOTDEFINED,..RIGID_FRAME.); #3015= IFCPropertySet('1sWUcHu7XFYRiHicZyCgG3',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#2414,#2555,#2556,#317,#318)); #3016= IFCCARTESIANPOINT((1749.99996693266,72926.5070263184,3741.3779005336)); #3017= IFCAxis2PLACEMENT3D(#3016,#335,#7); #3018= IFCLocalPLACEMENT(#3013,#3017); #3019= IFCShaperRepresentation(#12,'Body','SweptSolid',(#2423)); #3020= IFCProductDefinitionShape(\$,\$,(#3019)); #3021= IFCBeam('IOgmic0007qZ4qE3SsE3Wu',#5,'BEAM','HN400*200*8*13','HN400*200*8*13',#3018,#3020,'PO(?)); #3022= IFCLocalPLACEMENT(#30,#10); #3023= IFCElementAssembly('IOgmic0007pJ4qE3SsE3Wu',#5,'Steel Assembly',S,\$,#3022,S,'BE-0(?)',..NOTDEFINED,..RIGID_FRAME.); #3024= IFCPropertySet('1QZJdk4d5pRIGCMYx9p2t',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#2414,#2569,#2570,#317,#318)); #3025= IFCCARTESIANPOINT((1750..69101.462735399,3652.78988308847)); #3026= IFCAxis2PLACEMENT3D(#3025,#335,#7); #3027= IFCLocalPLACEMENT(#3022,#3026); #3028= IFCShaperRepresentation(#12,'Body','SweptSolid',(#2423)); #3029= IFCProductDefinitionShape(\$,\$,(#3028)); #3030= IFCBeam('IOgmic0007pZ4qE3SsE3Wu',#5,'BEAM','HN400*200*8*13','HN400*200*8*13',#3027,#3029,'PO(?)); #3031= IFCLocalPLACEMENT(#30,#10); #3032= IFCElementAssembly('IOgmic0007oJ4qE3SsE3Wu',#5,'Steel Assembly',S,\$,#3031,S,'BE-0(?)',..NOTDEFINED,..RIGID_FRAME.);</p>	<p>#3033= IFCPropertySet('1qOTED6QbCbhJkeniXmNr5',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#2414,#2583,#2584,#317,#318)); #3034= IFCCARTESIANPOINT((1749.99985095535,65383.0398593407,3566.67117618352)); #3035= IFCAxis2PLACEMENT3D(#3034,#335,#7); #3036= IFCLocalPLACEMENT(#3031,#3035); #3037= IFCShaperRepresentation(#12,'Body','SweptSolid',(#2423)); #3038= IFCProductDefinitionShape(\$,\$,(#3037)); #3039= IFCBeam('IOgmic0007oZ4qE3SsE3Wu',#5,'BEAM','HN400*200*8*13','HN400*200*8*13',#3036,#3038,'PO(?)); #3040= IFCQuantityVolume('NetVolume',S,\$,0.0409599999999997); #3041= IFCQuantityWeight('NetWeight',S,\$,321.5359999999998); #3042= IFCElementQuantity('0iHa9GmAj46BhwJ2q0i0Bd',#5,'BaseQuantities',S,\$,(#2505,#2506,#3040,#3041)); #3043= IFCLocalPLACEMENT(#30,#10); #3044= IFCElementAssembly('IOgmic0007nJ4qE3SsE3Wu',#5,'Steel Assembly',S,\$,#3043,S,'BE-0(?)',..NOTDEFINED,..RIGID_FRAME.); #3045= IFCPropertySet('235HTDCXzEcPzGf6yPGyiU',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#2414,#2597,#2598,#317,#318)); #3046= IFCCARTESIANPOINT((1749.99984661386,61764.5801731773,3482.86764985811)); #3047= IFCAxis2PLACEMENT3D(#3046,#335,#7); #3048= IFCLocalPLACEMENT(#3043,#3047); #3049= IFCShaperRepresentation(#12,'Body','SweptSolid',(#2423)); #3050= IFCProductDefinitionShape(\$,\$,(#3049)); #3051= IFCBeam('IOgmic0007nZ4qE3SsE3Wu',#5,'BEAM','HN400*200*8*13','HN400*200*8*13',#3048,#3050,'PO(?)); #3052= IFCLocalPLACEMENT(#30,#10); #3053= IFCElementAssembly('IOgmic0007mJ4qE3SsE3Wu',#5,'Steel Assembly',S,\$,#3052,S,'BE-0(?)',..NOTDEFINED,..RIGID_FRAME.); #3054= IFCPropertySet('2wS_zNcL7QhBFwpPkKclz',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#2414,#2611,#2612,#1690,#318)); #3055= IFCCARTESIANPOINT((1750.00020116018,58246.0736827772,3401.37912605121)); #3056= IFCAxis2PLACEMENT3D(#3055,#335,#7); #3057= IFCLocalPLACEMENT(#3052,#3056); #3058= IFCShaperRepresentation(#12,'Body','SweptSolid',(#2423)); #3059= IFCProductDefinitionShape(\$,\$,(#3058)); #3060= IFCBeam('IOgmic0007mZ4qE3SsE3Wu',#5,'BEAM','HN400*200*8*13','HN400*200*8*13',#3057,#3059,'PO(?)); #3061= IFCLocalPLACEMENT(#30,#10); #3062= IFCElementAssembly('IOgmic0007lJ4qE3SsE3Wu',#5,'Steel Assembly',S,\$,#3061,S,'BE-0(?)',..NOTDEFINED,..RIGID_FRAME.); #3063= IFCPropertySet('3iRPyepPecO6MFHVZwtW_',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#2414,#2625,#2626,#1690,#318)); #3064= IFCCARTESIANPOINT((1749.99983956321,54820.8621788424,3322.05114223058)); #3065= IFCAxis2PLACEMENT3D(#3064,#335,#7); #3066= IFCLocalPLACEMENT(#3061,#3065); #3067= IFCShaperRepresentation(#12,'Body','SweptSolid',(#2423)); #3068= IFCProductDefinitionShape(\$,\$,(#3067)); #3069= IFCBeam('IOgmic0007lZ4qE3SsE3Wu',#5,'BEAM','HN400*200*8*13','HN400*200*8*13',#3066,#3068,'PO(?)); #3070= IFCLocalPLACEMENT(#30,#10); #3071= IFCElementAssembly('IOgmic0007kJ4qE3SsE3Wu',#5,'Steel Assembly',S,\$,#3070,S,'BE-0(?)',..NOTDEFINED,..RIGID_FRAME.); #3072= IFCPropertySet('02tft42b0jBUvW05Xs31Ce',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#2414,#2639,#2640,#1690,#318)); #3073= IFCCARTESIANPOINT((1750.00019395751,51488.9418068148,3245.05028286502)); #3074= IFCAxis2PLACEMENT3D(#3073,#335,#7); #3075= IFCLocalPLACEMENT(#3070,#3074); #3076= IFCShaperRepresentation(#12,'Body','SweptSolid',(#2423)); #3077= IFCProductDefinitionShape(\$,\$,(#3076)); #3078= IFCBeam('IOgmic0007kZ4qE3SsE3Wu',#5,'BEAM','HN400*200*8*13','HN400*200*8*13',#3075,#3077,'PO(?)); #3079= IFCLocalPLACEMENT(#30,#10); #3080= IFCElementAssembly('IOgmic0007jJ4qE3SsE3Wu',#5,'Steel Assembly',S,\$,#3079,S,'BE-0(?)',..NOTDEFINED,..RIGID_FRAME.); #3081= IFCPropertySet('2ieIKZLunDCxEOUoXpd3zp',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#2414,#2653,#2654,#1690,#318)); #3082= IFCCARTESIANPOINT((1749.998886964,48243.6624920925,3169.44002795252)); #3083= IFCAxis2PLACEMENT3D(#3082,#335,#7); #3084= IFCLocalPLACEMENT(#3079,#3083);</p>
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#3085=  
 IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
 #3086= IFCPRODUCTDEFINITIONSHAPE(S,S,(#3085));  
 #3087=  
 IFCBEAM('1Ogimc0007jZ4qE3SsE3Wt',#5,'BEAM','HN400\*200\*8\*13',  
 'HN400\*200\*8\*13',#3084,#3086,'PO(?));  
 #3088= IFCLOCALPLACEMENT(#30,#10);  
 #3089=  
 IFCELEMENTASSEMBLY('1Ogimc0007j4qE3SsE3Wt',#5,'Steel  
 Assembly',S,S,#3088,S,'BE-0(?),..NOTDEFINED,..RIGID\_FRAME.);  
 #3090= IFCPROPERTYSET('3GsaOPFM94zOxV9izycOpS',#5,'Tekla  
 Assembly','Assembly  
 Properties',(#34,#313,#2414,#2667,#2668,#1690,#318));  
 #3091=  
 IFCCARTESIANPOINT((1750.00355091606,45091.6274050006,3096.  
 90183786272));  
 #3092= IFCAXIS2PLACEMENT3D(#3091,#335,#7);  
 #3093= IFCLOCALPLACEMENT(#3088,#3092);  
 #3094=  
 IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
 #3095= IFCPRODUCTDEFINITIONSHAPE(S,S,(#3094));  
 #3096=  
 IFCBEAM('1Ogimc0007iZ4qE3SsE3Wt',#5,'BEAM','HN400\*200\*8\*13',  
 'HN400\*200\*8\*13',#3093,#3095,'PO(?));  
 #3097= IFCLOCALPLACEMENT(#30,#10);  
 #3098=  
 IFCELEMENTASSEMBLY('1Ogimc0007hJ4qE3SsE3Wt',#5,'Steel  
 Assembly',S,S,#3097,S,'BE-0(?),..NOTDEFINED,..RIGID\_FRAME.);  
 #3099= IFCPROPERTYSET('2FR1og\_TFUv701JD8pSsw',#5,'Tekla  
 Assembly','Assembly  
 Properties',(#34,#313,#2414,#2681,#2682,#1690,#318));  
 #3100=  
 IFCCARTESIANPOINT((1749.9883908497,42026.2604232524,3025.8  
 6394071534));  
 #3101= IFCAXIS2PLACEMENT3D(#3100,#335,#7);  
 #3102= IFCLOCALPLACEMENT(#3097,#3101);  
 #3103=  
 IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
 #3104= IFCPRODUCTDEFINITIONSHAPE(S,S,(#3103));  
 #3105=  
 IFCBEAM('1Ogimc0007hZ4qE3SsE3Wt',#5,'BEAM','HN400\*200\*8\*1  
 3','HN400\*200\*8\*13',#3102,#3104,'PO(?));  
 #3106= IFCLOCALPLACEMENT(#30,#10);  
 #3107=  
 IFCELEMENTASSEMBLY('1Ogimc0007gJ4qE3SsE3Wt',#5,'Steel  
 Assembly',S,S,#3106,S,'BE-0(?),..NOTDEFINED,..RIGID\_FRAME.);  
 #3108=  
 IFCPROPERTYSET('299gYQfwX57umsZMMHaDWO',#5,'Tekla  
 Assembly','Assembly  
 Properties',(#34,#313,#2414,#2700,#2701,#1690,#318));  
 #3109=  
 IFCCARTESIANPOINT((1750.05238087554,39040.852813765,2957.0  
 7556104816));  
 #3110= IFCAXIS2PLACEMENT3D(#3109,#335,#7);  
 #3111= IFCLOCALPLACEMENT(#3106,#3110);  
 #3112=  
 IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
 #3113= IFCPRODUCTDEFINITIONSHAPE(S,S,(#3112));  
 #3114=  
 IFCBEAM('1Ogimc0007Z4qE3SsE3Wt',#5,'BEAM','HN400\*200\*8\*1  
 3','HN400\*200\*8\*13',#3111,#3113,'PO(?));  
 #3115= IFCLOCALPLACEMENT(#30,#10);  
 #3116=  
 IFCELEMENTASSEMBLY('1Ogimc0007fJ4qE3SsE3Wt',#5,'Steel  
 Assembly',S,S,#3115,S,'BE-0(?),..NOTDEFINED,..RIGID\_FRAME.);  
 #3117= IFCPROPERTYSET('1dJ5iQkbDcwmYvCdL9v83',#5,'Tekla  
 Assembly','Assembly  
 Properties',(#34,#313,#2414,#2714,#2715,#1690,#318));  
 #3118=  
 IFCCARTESIANPOINT((1749.75715031381,36135.4560016215,2888.  
 33080511019));  
 #3119= IFCAXIS2PLACEMENT3D(#3118,#335,#7);  
 #3120= IFCLOCALPLACEMENT(#3115,#3119);  
 #3121=  
 IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
 #3122= IFCPRODUCTDEFINITIONSHAPE(S,S,(#3121));  
 #3123=  
 IFCBEAM('1Ogimc0007Z4qE3SsE3Wt',#5,'BEAM','HN400\*200\*8\*13',  
 'HN400\*200\*8\*13',#3120,#3122,'PO(?));  
 #3124= IFCLOCALPLACEMENT(#30,#10);  
 #3125=  
 IFCELEMENTASSEMBLY('1Ogimc0007eJ4qE3SsE3Wt',#5,'Steel  
 Assembly',S,S,#3124,S,'BE-0(?),..NOTDEFINED,..RIGID\_FRAME.);  
 #3126= IFCPROPERTYSET('3Xb88zWUjAewd6kbgJ0BCw',#5,'Tekla  
 Assembly','Assembly  
 Properties',(#34,#313,#2414,#2728,#2729,#1690,#318));  
 #3127=  
 IFCCARTESIANPOINT((1750.68213947492,33309.8792161665,2827.  
 57733493062));  
 #3128= IFCAXIS2PLACEMENT3D(#3127,#335,#7);  
 #3129= IFCLOCALPLACEMENT(#3124,#3128);  
 #3130=  
 IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
 #3131= IFCPRODUCTDEFINITIONSHAPE(S,S,(#3130));  
 #3132=  
 IFCBEAM('1Ogimc0007eZ4qE3SsE3Wt',#5,'BEAM','HN400\*200\*8\*13',  
 'HN400\*200\*8\*13',#3129,#3131,'PO(?));  
 #3133= IFCLOCALPLACEMENT(#30,#10);  
 #3134=  
 IFCELEMENTASSEMBLY('1Ogimc0007dJ4qE3SsE3Wt',#5,'Steel  
 Assembly',S,S,#3133,S,'BE-0(?),..NOTDEFINED,..RIGID\_FRAME.);  
 #3135= IFCPROPERTYSET('2GsmvTQor7sOih87fMT8Mj',#5,'Tekla  
 Assembly','Assembly  
 Properties',(#34,#313,#2414,#2742,#2743,#1690,#318));

#3136=  
 IFCCARTESIANPOINT((1747.93315667172,30564.7312231456,2760.  
 18819235112));  
 #3137= IFCAXIS2PLACEMENT3D(#3136,#335,#7);  
 #3138= IFCLOCALPLACEMENT(#3133,#3137);  
 #3139=  
 IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
 #3140= IFCPRODUCTDEFINITIONSHAPE(S,S,(#3139));  
 #3141=  
 IFCBEAM('1Ogimc0007dZ4qE3SsE3Wt',#5,'BEAM','HN400\*200\*8\*1  
 3','HN400\*200\*8\*13',#3138,#3140,'PO(?));  
 #3142= IFCLOCALPLACEMENT(#30,#10);  
 #3143=  
 IFCELEMENTASSEMBLY('1Ogimc0007cJ4qE3SsE3Wt',#5,'Steel  
 Assembly',S,S,#3142,S,'BE-0(?),..NOTDEFINED,..RIGID\_FRAME.);  
 #3144= IFCPROPERTYSET('1QGmyDYHfUOlqfa70V5zI',#5,'Tekla  
 Assembly','Assembly  
 Properties',(#34,#313,#2414,#2756,#2757,#1690,#318));  
 #3145=  
 IFCCARTESIANPOINT((1750.50774325417,27892.5125835098,2698.  
 77350669794));  
 #3146= IFCAXIS2PLACEMENT3D(#3145,#335,#7);  
 #3147= IFCLOCALPLACEMENT(#3142,#3146);  
 #3148=  
 IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
 #3149= IFCPRODUCTDEFINITIONSHAPE(S,S,(#3148));  
 #3150=  
 IFCBEAM('1Ogimc0007cZ4qE3SsE3Wt',#5,'BEAM','HN400\*200\*8\*13',  
 'HN400\*200\*8\*13',#3147,#3149,'PO(?));  
 #3151= IFCLOCALPLACEMENT(#30,#10);  
 #3152=  
 IFCELEMENTASSEMBLY('1Ogimc0007bJ4qE3SsE3Wt',#5,'Steel  
 Assembly',S,S,#3151,S,'BE-0(?),..NOTDEFINED,..RIGID\_FRAME.);  
 #3153= IFCPROPERTYSET('1z8aYkC4D7RgtUKR7DInta',#5,'Tekla  
 Assembly','Assembly  
 Properties',(#34,#313,#2414,#2770,#2771,#1690,#318));  
 #3154=  
 IFCCARTESIANPOINT((1750.99590443808,25294.748773962,2638.  
 4634032072));  
 #3155= IFCAXIS2PLACEMENT3D(#3154,#335,#7);  
 #3156= IFCLOCALPLACEMENT(#3151,#3155);  
 #3157=  
 IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
 #3158= IFCPRODUCTDEFINITIONSHAPE(S,S,(#3157));  
 #3159=  
 IFCBEAM('1Ogimc0007bZ4qE3SsE3Wt',#5,'BEAM','HN400\*200\*8\*1  
 3','HN400\*200\*8\*13',#3156,#3158,'PO(?));  
 #3160= IFCLOCALPLACEMENT(#30,#10);  
 #3161=  
 IFCELEMENTASSEMBLY('1Ogimc0007aJ4qE3SsE3Wt',#5,'Steel  
 Assembly',S,S,#3160,S,'BE-0(?),..NOTDEFINED,..RIGID\_FRAME.);  
 #3162= IFCPROPERTYSET('121mIm9eL4qwEXwPsQmHY',#5,'Tekla  
 Assembly','Assembly  
 Properties',(#34,#313,#2414,#2784,#2785,#1690,#318));  
 #3163=  
 IFCCARTESIANPOINT((1751.75645675721,22764.1086103547,2580.  
 08602983896));  
 #3164= IFCAXIS2PLACEMENT3D(#3163,#335,#7);  
 #3165= IFCLOCALPLACEMENT(#3160,#3164);  
 #3166=  
 IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
 #3167= IFCPRODUCTDEFINITIONSHAPE(S,S,(#3166));  
 #3168=  
 IFCBEAM('1Ogimc0007aZ4qE3SsE3Wt',#5,'BEAM','HN400\*200\*8\*13',  
 'HN400\*200\*8\*13',#3165,#3167,'PO(?));  
 #3169= IFCLOCALPLACEMENT(#30,#10);  
 #3170=  
 IFCELEMENTASSEMBLY('1Ogimc0007ZJ4qE3SsE3Wt',#5,'Steel  
 Assembly',S,S,#3169,S,'BE-0(?),..NOTDEFINED,..RIGID\_FRAME.);  
 #3171= IFCPROPERTYSET('1hPBuJlivBaRX9hbPhg62I',#5,'Tekla  
 Assembly','Assembly  
 Properties',(#34,#313,#2414,#2798,#2799,#1690,#318));  
 #3172=  
 IFCCARTESIANPOINT((1749.47064789814,20311.2072005765,2523.  
 92669024691));  
 #3173= IFCAXIS2PLACEMENT3D(#3172,#335,#7);  
 #3174= IFCLOCALPLACEMENT(#3169,#3173);  
 #3175=  
 IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
 #3176= IFCPRODUCTDEFINITIONSHAPE(S,S,(#3175));  
 #3177=  
 IFCBEAM('1Ogimc0007Z4qE3SsE3Wt',#5,'BEAM','HN400\*200\*8\*1  
 3','HN400\*200\*8\*13',#3174,#3176,'PO(?));  
 #3178= IFCLOCALPLACEMENT(#30,#10);  
 #3179=  
 IFCELEMENTASSEMBLY('1Ogimc0007YJ4qE3SsE3Wt',#5,'Steel  
 Assembly',S,S,#3178,S,'BE-0(?),..NOTDEFINED,..RIGID\_FRAME.);  
 #3180= IFCPROPERTYSET('135lmj6cv38eG376xQXkHg',#5,'Tekla  
 Assembly','Assembly  
 Properties',(#34,#313,#2414,#2817,#2818,#1690,#318));  
 #3181=  
 IFCCARTESIANPOINT((1749.96348202122,17935.6636695572,2468.  
 6413380218));  
 #3182= IFCAXIS2PLACEMENT3D(#3181,#335,#7);  
 #3183= IFCLOCALPLACEMENT(#3178,#3182);  
 #3184=  
 IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
 #3185= IFCPRODUCTDEFINITIONSHAPE(S,S,(#3184));  
 #3186=  
 IFCBEAM('1Ogimc0007Y4qE3SsE3Wt',#5,'BEAM','HN400\*200\*8\*1  
 3','HN400\*200\*8\*13',#3183,#3185,'PO(?));  
 #3187= IFCLOCALPLACEMENT(#30,#10);  
 #3188=  
 IFCELEMENTASSEMBLY('1Ogimc0007XJ4qE3SsE3Wt',#5,'Steel  
 Assembly',S,S,#3187,S,'BE-0(?),..NOTDEFINED,..RIGID\_FRAME.);



## Appendix

#3189= IFCPROPERTYSET('00S28P8Sj9OOpInruvB0ok',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#2414,#2831,#2832,#1690,#318));  
#3190= IFCCARTESIANPOINT((1750.08334296136,15623.8914705514,2414.55003678245));  
#3191= IFCAxis2PLACEMENT3D(#3190,#335,#7);  
#3192= IFLOCALPLACEMENT(#3187,#3191);  
#3193= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
#3194= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#3193));  
#3195= IFCBEAM('1Ogimc0007XZ4qE3SsE3Wt',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#3192,#3194,'P0(?));  
#3196= IFLOCALPLACEMENT(#30,#10);  
#3197= IFCELEMENTASSEMBLY('1Ogimc0007WJ4qE3SsE3Wt',#5,'Steel Assembly',S,\$,#3196,S,'BE-0(?),..NOTDEFINED,..RIGID\_FRAME.);  
#3198= IFCPROPERTYSET('1jQkjwVxr9me2w2q60CSKj',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#2414,#2845,#2846,#1690,#318));  
#3199= IFCCARTESIANPOINT((1750.67820488569,13438.0712382358,2365.30072361333));  
#3200= IFCAxis2PLACEMENT3D(#3199,#335,#7);  
#3201= IFLOCALPLACEMENT(#3196,#3200);  
#3202= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
#3203= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#3202));  
#3204= IFCBEAM('1Ogimc0007WZ4qE3SsE3Wt',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#3201,#3203,'P0(?));  
#3205= IFLOCALPLACEMENT(#30,#10);  
#3206= IFCELEMENTASSEMBLY('1Ogimc0007VJ4qE3SsE3Wt',#5,'Steel Assembly',S,\$,#3205,S,'BE-0(?),..NOTDEFINED,..RIGID\_FRAME.);  
#3207= IFCPROPERTYSET('00SmkC7A96qg62fS22hNGs',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#2414,#2859,#2860,#1690,#318));  
#3208= IFCCARTESIANPOINT((1750.,11066.5241105046,2309.22141816303));  
#3209= IFCAxis2PLACEMENT3D(#3208,#335,#7);  
#3210= IFLOCALPLACEMENT(#3205,#3209);  
#3211= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
#3212= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#3211));  
#3213= IFCBEAM('1Ogimc0007VZ4qE3SsE3Wt',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#3210,#3212,'P0(?));  
#3214= IFLOCALPLACEMENT(#30,#10);  
#3215= IFCELEMENTASSEMBLY('1Ogimc0007UJ4qE3SsE3Wt',#5,'Steel Assembly',S,\$,#3214,S,'BE-0(?),..NOTDEFINED,..RIGID\_FRAME.);  
#3216= IFCPROPERTYSET('0ftrkWWHW15MQRuPclRjBCS',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#2414,#2873,#2874,#1690,#318));  
#3217= IFCCARTESIANPOINT((1750.,8935.14667018714,2259.88119505358));  
#3218= IFCAxis2PLACEMENT3D(#3217,#335,#7);  
#3219= IFLOCALPLACEMENT(#3214,#3218);  
#3220= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
#3221= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#3220));  
#3222= IFCBEAM('1Ogimc0007UZ4qE3SsE3Wt',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#3219,#3221,'P0(?));  
#3223= IFLOCALPLACEMENT(#30,#10);  
#3224= IFCELEMENTASSEMBLY('1Ogimc0007TJ4qE3SsE3Wt',#5,'Steel Assembly',S,\$,#3223,S,'BE-0(?),..NOTDEFINED,..RIGID\_FRAME.);  
#3225= IFCPROPERTYSET('2wOvQPf93BIL1FGSiuePJ',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#2414,#2887,#2888,#1690,#318));  
#3226= IFCCARTESIANPOINT((1750.,6816.1584781624,2210.82777672966));  
#3227= IFCAxis2PLACEMENT3D(#3226,#335,#7);  
#3228= IFLOCALPLACEMENT(#3223,#3227);  
#3229= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
#3230= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#3229));  
#3231= IFCBEAM('1Ogimc0007TZ4qE3SsE3Wt',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#3228,#3230,'P0(?));  
#3232= IFLOCALPLACEMENT(#30,#10);  
#3233= IFCELEMENTASSEMBLY('1Ogimc0007SJ4qE3SsE3Wt',#5,'Steel Assembly',S,\$,#3232,S,'BE-0(?),..NOTDEFINED,..RIGID\_FRAME.);  
#3234= IFCPROPERTYSET('3yjtYog1b8QxCglo3r0ql',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#2414,#2901,#2902,#1690,#318));  
#3235= IFCCARTESIANPOINT((1750.,4839.90599080314,2165.07861192124));  
#3236= IFCAxis2PLACEMENT3D(#3235,#335,#7);  
#3237= IFLOCALPLACEMENT(#3232,#3236);  
#3238= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
#3239= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#3238));  
#3240= IFCBEAM('1Ogimc0007SZ4qE3SsE3Wt',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#3237,#3239,'P0(?));  
#3241= IFLOCALPLACEMENT(#30,#10);  
#3242= IFCELEMENTASSEMBLY('1Ogimc0007RJ4qE3SsE3Wt',#5,'Steel Assembly',S,\$,#3241,S,'BE-0(?),..NOTDEFINED,..RIGID\_FRAME.);  
#3243= IFCPROPERTYSET('1InOXMZ5E96n8b22bXwU7vT',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#2414,#2915,#2916,#1690,#318));  
#3244= IFCCARTESIANPOINT((1750.,2869.08699732754,2119.45522902424));  
#3245= IFCAxis2PLACEMENT3D(#3244,#335,#7);  
#3246= IFLOCALPLACEMENT(#3241,#3245);  
#3247= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
#3248= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#3247));  
#3249= IFCBEAM('1Ogimc0007RZ4qE3SsE3Wt',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#3246,#3248,'P0(?));  
#3250= IFLOCALPLACEMENT(#30,#10);  
#3251= IFCELEMENTASSEMBLY('1Ogimc0007QJ4qE3SsE3Wt',#5,'Steel Assembly',S,\$,#3250,S,'BE-0(?),..NOTDEFINED,..RIGID\_FRAME.);  
#3252= IFCPROPERTYSET('2ARQXICe96Pvlg8PMHzAoC',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#2414,#2929,#2930,#1690,#318));  
#3253= IFCCARTESIANPOINT((1750.,1009.22592673586,2081.03035306207));  
#3254= IFCAxis2PLACEMENT3D(#3253,#335,#7);  
#3255= IFLOCALPLACEMENT(#3250,#3254);  
#3256= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
#3257= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#3256));  
#3258= IFCBEAM('1Ogimc0007QZ4qE3SsE3Wt',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#3255,#3257,'P0(?));  
#3259= IFQUANTITYVOLUME('NetVolume',S,\$,0.04096);  
#3260= IFQUANTITYWEIGHT('NetWeight',S,\$,321.536);  
#3261= IFCELEMENTQUANTITY('3wS4SwHr02QKTzryEU8RR',#5,'BaseQuantities',S,\$,(#2472,#2473,#3259,#3260));  
#3262= IFLOCALPLACEMENT(#30,#10);  
#3263= IFCELEMENTASSEMBLY('1Ogimc0007GJ4qE3SsE3Gv',#5,'Steel Assembly',S,\$,#3262,S,'BE-0(?),..NOTDEFINED,..RIGID\_FRAME.);  
#3264= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit bottom elevation',S,IFLABEL(''+0.000),S);  
#3265= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit top elevation',S,IFLABEL(''+0.200),S);  
#3266= IFCPROPERTYSET('2\_QGEXyq9EBel5LdtyCsEV',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#2414,#3264,#3265,#394,#318));  
#3267= IFCCARTESIANPOINT((1750.,114849.557,100.));  
#3268= IFCAxis2PLACEMENT3D(#3267,#8,#7);  
#3269= IFLOCALPLACEMENT(#3262,#3268);  
#3270= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
#3271= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#3270));  
#3272= IFCBEAM('1Ogimc0007634qE3SsE3Gv',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#3269,#3271,'P0(?));  
#3273= IFCPROPERTYSINGLEVALUE('Bottom elevation',S,IFLABEL(''+0.000),S);  
#3274= IFCPROPERTYSINGLEVALUE('Top elevation',S,IFLABEL(''+0.200),S);  
#3275= IFCPROPERTYSET('3h0exSgmL8Qu9dUT7qo3Ij',#5,'Tekla Common','Common Properties to Shared building elements',(#3273,#3274,#71,#72,#73,#346));  
#3276= IFLOCALPLACEMENT(#30,#10);  
#3277= IFCELEMENTASSEMBLY('1Ogimc0007534qE3SsE3Gv',#5,'Steel Assembly',S,\$,#3276,S,'BE-0(?),..NOTDEFINED,..RIGID\_FRAME.);  
#3278= IFCCARTESIANPOINT((1750.,119479.286,100.));  
#3279= IFCAxis2PLACEMENT3D(#3278,#8,#7);  
#3280= IFLOCALPLACEMENT(#3276,#3279);  
#3281= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
#3282= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#3281));  
#3283= IFCBEAM('1Ogimc00074p4qE3SsE3Gv',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#3280,#3282,'P0(?));  
#3284= IFLOCALPLACEMENT(#30,#10);  
#3285= IFCELEMENTASSEMBLY('1Ogimc00073p4qE3SsE3Gv',#5,'Steel Assembly',S,\$,#3284,S,'BE-0(?),..NOTDEFINED,..RIGID\_FRAME.);  
#3286= IFCCARTESIANPOINT((1750.,124035.738,100.));  
#3287= IFCAxis2PLACEMENT3D(#3286,#8,#7);  
#3288= IFLOCALPLACEMENT(#3284,#3287);  
#3289= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
#3290= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#3289));  
#3291= IFCBEAM('1Ogimc00073Z4qE3SsE3Gv',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#3288,#3290,'P0(?));  
#3292= IFLOCALPLACEMENT(#30,#10);  
#3293= IFCELEMENTASSEMBLY('1Ogimc00072Z4qE3SsE3Gv',#5,'Steel Assembly',S,\$,#3292,S,'BE-0(?),..NOTDEFINED,..RIGID\_FRAME.);  
#3294= IFCCARTESIANPOINT((1750.,128485.607,100.));  
#3295= IFCAxis2PLACEMENT3D(#3294,#8,#7);  
#3296= IFLOCALPLACEMENT(#3292,#3295);  
#3297= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
#3298= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#3297));

#3299=  
IFCBEAM('1Ogmic00072J4qE3SsE3Gv',#5,'BEAM','HN400\*200\*8\*13',  
'HN400\*200\*8\*13',#3296,#3298,'P0(?)');  
#3300= IFCLOCALPLACEMENT(#30,#10);  
#3301=  
IFCELEMENTASSEMBLY('1Ogmic00071J4qE3SsE3Gv',#5,'Steel  
Assembly',S,S,#3300,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#3302= IFCCARTESIANPOINT((1750.,132815.569,100.));  
#3303= IFCAXIS2PLACEMENT3D(#3302,#8,#7);  
#3304= IFCLOCALPLACEMENT(#3300,#3303);  
#3305=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
#3306= IFCPRODUCTDEFINITIONSHAPE(S,S,(#3305));  
#3307=  
IFCBEAM('1Ogmic0007134qE3SsE3Gv',#5,'BEAM','HN400\*200\*8\*13',  
'HN400\*200\*8\*13',#3304,#3306,'P0(?)');  
#3308= IFCLOCALPLACEMENT(#30,#10);  
#3309=  
IFCELEMENTASSEMBLY('1Ogmic0007034qE3SsE3Gv',#5,'Steel  
Assembly',S,S,#3308,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#3310= IFCCARTESIANPOINT((1750.,137025.624,100.));  
#3311= IFCAXIS2PLACEMENT3D(#3310,#8,#7);  
#3312= IFCLOCALPLACEMENT(#3308,#3311);  
#3313=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
#3314= IFCPRODUCTDEFINITIONSHAPE(S,S,(#3313));  
#3315=  
IFCBEAM('1Ogmic0006p4qE3SsE3Gv',#5,'BEAM','HN400\*200\*8\*13',  
'HN400\*200\*8\*13',#3312,#3314,'P0(?)');  
#3316= IFCLOCALPLACEMENT(#30,#10);  
#3317=  
IFCELEMENTASSEMBLY('1Ogmic0006\_p4qE3SsE3Gv',#5,'Steel  
Assembly',S,S,#3316,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#3318= IFCCARTESIANPOINT((1750.,141122.434,100.));  
#3319= IFCAXIS2PLACEMENT3D(#3318,#8,#7);  
#3320= IFCLOCALPLACEMENT(#3316,#3319);  
#3321=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
#3322= IFCPRODUCTDEFINITIONSHAPE(S,S,(#3321));  
#3323=  
IFCBEAM('1Ogmic0006\_Z4qE3SsE3Gv',#5,'BEAM','HN400\*200\*8\*13',  
'HN400\*200\*8\*13',#3320,#3322,'P0(?)');  
#3324= IFCLOCALPLACEMENT(#30,#10);  
#3325=  
IFCELEMENTASSEMBLY('1Ogmic0006z4qE3SsE3Gv',#5,'Steel  
Assembly',S,S,#3324,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#3326= IFCPROPERTYSET('Assembly/Cast unit bottom  
elevation',S,IFCLABEL('0.000'),S);  
#3327= IFCPROPERTYSET('IF\_0yXOP45eCRxDE4c0JH',#5,'Tekla  
Assembly',Assembly  
Properties',(#34,#313,#2414,#3326,#3265,#394,#318));  
#3328=  
IFCCARTESIANPOINT((1749.99999858692,145105.999998502,99.99  
99994668651));  
#3329= IFCAXIS2PLACEMENT3D(#3328,#8,#7);  
#3330= IFCLOCALPLACEMENT(#3324,#3329);  
#3331=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
#3332= IFCPRODUCTDEFINITIONSHAPE(S,S,(#3331));  
#3333=  
IFCBEAM('1Ogmic0006z4qE3SsE3Gv',#5,'BEAM','HN400\*200\*8\*13',  
'HN400\*200\*8\*13',#3330,#3332,'P0(?)');  
#3334= IFCPROPERTYSET('Bottom  
elevation',S,IFCLABEL('0.000'),S);  
#3335= IFCPROPERTYSET('3zV5i6YUP0iefv9IzjUql',#5,'Tekla  
Common',Common  
Properties  
to  
Shared  
building  
elements',(#3334,#3274,#71,#72,#73,#346));  
#3336= IFCQUANTITYLENGTH('Length',S,S,5000.00000140323);  
#3337=  
IFCQUANTITYAREA('OuterSurfaceArea',S,S,7.92000000222271);  
#3338=  
IFCQUANTITYVOLUME('NetVolume',S,S,0.0409600000114908);  
#3339= IFCQUANTITYWEIGHT('NetWeight',S,S,321.536000090203);  
#3340=  
IFCELEMENTQUANTITY('1ogFheMRH7VOH19IengJ3',#5,'BaseQua  
ntities',S,S,(#3336,#3337,#3338,#3339));  
#3341= IFCLOCALPLACEMENT(#30,#10);  
#3342=  
IFCELEMENTASSEMBLY('1Ogmic0006yJ4qE3SsE3Gv',#5,'Steel  
Assembly',S,S,#3341,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#3343= IFCCARTESIANPOINT((1750.,148984.447,100.));  
#3344= IFCAXIS2PLACEMENT3D(#3343,#8,#7);  
#3345= IFCLOCALPLACEMENT(#3341,#3344);  
#3346=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
#3347= IFCPRODUCTDEFINITIONSHAPE(S,S,(#3346));  
#3348=  
IFCBEAM('1Ogmic0006y34qE3SsE3Gv',#5,'BEAM','HN400\*200\*8\*13',  
'HN400\*200\*8\*13',#3345,#3347,'P0(?)');  
#3349= IFCLOCALPLACEMENT(#30,#10);  
#3350=  
IFCELEMENTASSEMBLY('1Ogmic0006x34qE3SsE3Gv',#5,'Steel  
Assembly',S,S,#3349,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#3351= IFCCARTESIANPOINT((1750.,152756.271,100.));  
#3352= IFCAXIS2PLACEMENT3D(#3351,#8,#7);  
#3353= IFCLOCALPLACEMENT(#3349,#3352);  
#3354=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
#3355= IFCPRODUCTDEFINITIONSHAPE(S,S,(#3354));  
#3356=  
IFCBEAM('1Ogmic0006wp4qE3SsE3Gv',#5,'BEAM','HN400\*200\*8\*13',  
'HN400\*200\*8\*13',#3353,#3355,'P0(?)');  
#3357= IFCLOCALPLACEMENT(#30,#10);

#3358=  
IFCELEMENTASSEMBLY('1Ogmic0006vp4qE3SsE3Gv',#5,'Steel  
Assembly',S,S,#3357,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#3359= IFCCARTESIANPOINT((1750.,156428.135,100.));  
#3360= IFCAXIS2PLACEMENT3D(#3359,#8,#7);  
#3361= IFCLOCALPLACEMENT(#3357,#3360);  
#3362=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
#3363= IFCPRODUCTDEFINITIONSHAPE(S,S,(#3362));  
#3364=  
IFCBEAM('1Ogmic0006vZ4qE3SsE3Gv',#5,'BEAM','HN400\*200\*8\*13',  
'HN400\*200\*8\*13',#3361,#3363,'P0(?)');  
#3365= IFCLOCALPLACEMENT(#30,#10);  
#3366=  
IFCELEMENTASSEMBLY('1Ogmic0006uZ4qE3SsE3Gv',#5,'Steel  
Assembly',S,S,#3365,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#3367= IFCPROPERTYSET('Assembly/Cast unit position  
code',S,IFCLABEL('3-5/D'),S);  
#3368= IFCPROPERTYSET('2cwM46f4H5Cv\_yLdL\_JLd6',#5,'Tekla  
Assembly',Assembly  
Properties',(#34,#313,#2414,#3264,#3265,#3367,#318));  
#3369= IFCCARTESIANPOINT((1750.,160000.039,100.));  
#3370= IFCDIRECTION((7.79999999985113E-  
006,0.99999999996958,0.));  
#3371= IFCDIRECTION((0.99999999996958,-7.79999999971381E-  
006,0.));  
#3372= IFCAXIS2PLACEMENT3D(#3369,#3370,#3371);  
#3373= IFCLOCALPLACEMENT(#3365,#3372);  
#3374=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
#3375= IFCPRODUCTDEFINITIONSHAPE(S,S,(#3374));  
#3376=  
IFCBEAM('1Ogmic0006uJ4qE3SsE3Gv',#5,'BEAM','HN400\*200\*8\*13',  
'HN400\*200\*8\*13',#3373,#3375,'P0(?)');  
#3377= IFCQUANTITYLENGTH('Length',S,S,5000.00000015234);  
#3378=  
IFCQUANTITYAREA('OuterSurfaceArea',S,S,7.9200000002413);  
#3379=  
IFCQUANTITYVOLUME('NetVolume',S,S,0.040960000001265);  
#3380= IFCQUANTITYWEIGHT('NetWeight',S,S,321.53600000993);  
#3381=  
IFCELEMENTQUANTITY('0q9c54IP53tRoEqNryrgj',#5,'BaseQuanti  
ties',S,S,(#3377,#3378,#3379,#3380));  
#3382= IFCLOCALPLACEMENT(#30,#10);  
#3383=  
IFCELEMENTASSEMBLY('1Ogmic0006uJ4qE3SsE3Gv',#5,'Steel  
Assembly',S,S,#3382,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#3384= IFCPROPERTYSET('2pzoVx7ob1u3SxaQs7Mb',#5,'Tekla  
Assembly',Assembly  
Properties',(#34,#313,#2414,#3264,#3265,#438,#318));  
#3385= IFCCARTESIANPOINT((1750.,163472.809,100.));  
#3386= IFCAXIS2PLACEMENT3D(#3385,#8,#7);  
#3387= IFCLOCALPLACEMENT(#3382,#3386);  
#3388=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
#3389= IFCPRODUCTDEFINITIONSHAPE(S,S,(#3388));  
#3390=  
IFCBEAM('1Ogmic0006G34qE3SsE3Gv',#5,'BEAM','HN400\*200\*8\*13',  
'HN400\*200\*8\*13',#3387,#3389,'P0(?)');  
#3391= IFCLOCALPLACEMENT(#30,#10);  
#3392=  
IFCELEMENTASSEMBLY('1Ogmic0006s34qE3SsE3Gv',#5,'Steel  
Assembly',S,S,#3391,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#3393= IFCCARTESIANPOINT((1750.,166852.299,100.));  
#3394= IFCAXIS2PLACEMENT3D(#3393,#8,#7);  
#3395= IFCLOCALPLACEMENT(#3391,#3394);  
#3396=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
#3397= IFCPRODUCTDEFINITIONSHAPE(S,S,(#3396));  
#3398=  
IFCBEAM('1Ogmic0006p4qE3SsE3Gv',#5,'BEAM','HN400\*200\*8\*13',  
'HN400\*200\*8\*13',#3395,#3397,'P0(?)');  
#3399= IFCLOCALPLACEMENT(#30,#10);  
#3400=  
IFCELEMENTASSEMBLY('1Ogmic0006p4qE3SsE3Gv',#5,'Steel  
Assembly',S,S,#3399,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#3401= IFCCARTESIANPOINT((1750.,170138.469,100.));  
#3402= IFCAXIS2PLACEMENT3D(#3401,#8,#7);  
#3403= IFCLOCALPLACEMENT(#3399,#3402);  
#3404=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
#3405= IFCPRODUCTDEFINITIONSHAPE(S,S,(#3404));  
#3406=  
IFCBEAM('1Ogmic0006qZ4qE3SsE3Gv',#5,'BEAM','HN400\*200\*8\*13',  
'HN400\*200\*8\*13',#3403,#3405,'P0(?)');  
#3407= IFCLOCALPLACEMENT(#30,#10);  
#3408=  
IFCELEMENTASSEMBLY('1Ogmic0006pZ4qE3SsE3Gv',#5,'Steel  
Assembly',S,S,#3407,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#3409= IFCCARTESIANPOINT((1750.,173337.986,100.));  
#3410= IFCAXIS2PLACEMENT3D(#3409,#8,#7);  
#3411= IFCLOCALPLACEMENT(#3407,#3410);  
#3412=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
#3413= IFCPRODUCTDEFINITIONSHAPE(S,S,(#3412));  
#3414=  
IFCBEAM('1Ogmic0006pJ4qE3SsE3Gv',#5,'BEAM','HN400\*200\*8\*13',  
'HN400\*200\*8\*13',#3411,#3413,'P0(?)');  
#3415= IFCLOCALPLACEMENT(#30,#10);  
#3416=  
IFCELEMENTASSEMBLY('1Ogmic0006oJ4qE3SsE3Gv',#5,'Steel  
Assembly',S,S,#3415,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#3417= IFCCARTESIANPOINT((1750.,176456.354,100.));  
#3418= IFCAXIS2PLACEMENT3D(#3417,#8,#7);  
#3419= IFCLOCALPLACEMENT(#3415,#3418);

## Appendix

#3420=	#3484=
IFC SHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));	IFC SHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));
#3421= IFCPRODUCTDEFINITIONSHAPE(S,S,(#3420));	#3485= IFCPRODUCTDEFINITIONSHAPE(S,S,(#3484));
#3422=	#3486=
IFCBEAM('1Ogjm000634qE3SsE3Gv',#5,'BEAM','HN400*200*8*13	IFCBEAM('1Ogjm000634qE3SsE3Gv',#5,'BEAM','HN400*200*8*13
','HN400*200*8*13',#3419,#3421,'P0(?)');	','HN400*200*8*13',#3483,#3485,'P0(?)');
#3423= IFCLOCALPLACEMENT(#30,#10);	#3487= IFCLOCALPLACEMENT(#30,#10);
#3424=	#3488=
IFCELEMENTASSEMBLY('1Ogjm000634qE3SsE3Gv',#5,'Steel	IFCELEMENTASSEMBLY('1Ogjm000634qE3SsE3Gv',#5,'Steel
Assembly',S,S,#3423,S,'BE-0(?)',..NOTDEFINED,..RIGID_FRAME.);	Assembly',S,S,#3487,S,'BE-0(?)',..NOTDEFINED,..RIGID_FRAME.);
#3425= IFCCARTESIANPOINT((1750.,179487.915,100.));	#3489= IFCCARTESIANPOINT((1750.,200949.23,100.));
#3426= IFCAxis2PLACEMENT3D(#3425,#8,#7);	#3490= IFCAxis2PLACEMENT3D(#3489,#8,#7);
#3427= IFCLOCALPLACEMENT(#3423,#3426);	#3491= IFCLOCALPLACEMENT(#3487,#3490);
#3428=	#3492=
IFC SHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));	IFC SHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));
#3429= IFCPRODUCTDEFINITIONSHAPE(S,S,(#3428));	#3493= IFCPRODUCTDEFINITIONSHAPE(S,S,(#3492));
#3430=	#3494=
IFCBEAM('1Ogjm0006mp4qE3SsE3Gv',#5,'BEAM','HN400*200*8*1	IFCBEAM('1Ogjm0006cp4qE3SsE3Gv',#5,'BEAM','HN400*200*8*13
3','HN400*200*8*13',#3427,#3429,'P0(?)');	3','HN400*200*8*13',#3491,#3493,'P0(?)');
#3431= IFCLOCALPLACEMENT(#30,#10);	#3495= IFCLOCALPLACEMENT(#30,#10);
#3432=	#3496=
IFCELEMENTASSEMBLY('1Ogjm0006lp4qE3SsE3Gv',#5,'Steel	IFCELEMENTASSEMBLY('1Ogjm0006bp4qE3SsE3Gv',#5,'Steel
Assembly',S,S,#3431,S,'BE-0(?)',..NOTDEFINED,..RIGID_FRAME.);	Assembly',S,S,#3495,S,'BE-0(?)',..NOTDEFINED,..RIGID_FRAME.);
#3433= IFCCARTESIANPOINT((1750.,182439.347,100.));	#3497= IFCCARTESIANPOINT((1750.,20313.046,100.));
#3434= IFCAxis2PLACEMENT3D(#3433,#8,#7);	#3498= IFCAxis2PLACEMENT3D(#3497,#8,#7);
#3435= IFCLOCALPLACEMENT(#3431,#3434);	#3499= IFCLOCALPLACEMENT(#3495,#3498);
#3436=	#3500=
IFC SHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));	IFC SHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));
#3437= IFCPRODUCTDEFINITIONSHAPE(S,S,(#3436));	#3501= IFCPRODUCTDEFINITIONSHAPE(S,S,(#3500));
#3438=	#3502=
IFCBEAM('1Ogjm0006lZ4qE3SsE3Gv',#5,'BEAM','HN400*200*8*13	IFCBEAM('1Ogjm0006bZ4qE3SsE3Gv',#5,'BEAM','HN400*200*8*1
3','HN400*200*8*13',#3435,#3437,'P0(?)');	3','HN400*200*8*13',#3499,#3501,'P0(?)');
#3439= IFCLOCALPLACEMENT(#30,#10);	#3503= IFCLOCALPLACEMENT(#30,#10);
#3440=	#3504=
IFCELEMENTASSEMBLY('1Ogjm0006kZ4qE3SsE3Gv',#5,'Steel	IFCELEMENTASSEMBLY('1Ogjm0006aZ4qE3SsE3Gv',#5,'Steel
Assembly',S,S,#3439,S,'BE-0(?)',..NOTDEFINED,..RIGID_FRAME.);	Assembly',S,S,#3503,S,'BE-0(?)',..NOTDEFINED,..RIGID_FRAME.);
#3441= IFCCARTESIANPOINT((1750.,18510.649,100.));	#3505= IFCCARTESIANPOINT((1750.,205610.088,100.));
#3442= IFCAxis2PLACEMENT3D(#3441,#8,#7);	#3506= IFCAxis2PLACEMENT3D(#3505,#8,#7);
#3443= IFCLOCALPLACEMENT(#3439,#3442);	#3507= IFCLOCALPLACEMENT(#3503,#3506);
#3444=	#3508=
IFC SHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));	IFC SHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));
#3445= IFCPRODUCTDEFINITIONSHAPE(S,S,(#3444));	#3509= IFCPRODUCTDEFINITIONSHAPE(S,S,(#3508));
#3446=	#3510=
IFCBEAM('1Ogjm0006k4qE3SsE3Gv',#5,'BEAM','HN400*200*8*13	IFCBEAM('1Ogjm0006a4qE3SsE3Gv',#5,'BEAM','HN400*200*8*13
','HN400*200*8*13',#3443,#3445,'P0(?)');	','HN400*200*8*13',#3507,#3509,'P0(?)');
#3447= IFCLOCALPLACEMENT(#30,#10);	#3511= IFCLOCALPLACEMENT(#30,#10);
#3448=	#3512=
IFCELEMENTASSEMBLY('1Ogjm0006j4qE3SsE3Gv',#5,'Steel	IFCELEMENTASSEMBLY('1Ogjm0006Z4qE3SsE3Gv',#5,'Steel
Assembly',S,S,#3447,S,'BE-0(?)',..NOTDEFINED,..RIGID_FRAME.);	Assembly',S,S,#3511,S,'BE-0(?)',..NOTDEFINED,..RIGID_FRAME.);
#3449= IFCCARTESIANPOINT((1750.,188101.822,100.));	#3513= IFCCARTESIANPOINT((1750.,207847.033,100.));
#3450= IFCAxis2PLACEMENT3D(#3449,#8,#7);	#3514= IFCAxis2PLACEMENT3D(#3513,#8,#7);
#3451= IFCLOCALPLACEMENT(#3447,#3450);	#3515= IFCLOCALPLACEMENT(#3511,#3514);
#3452=	#3516=
IFC SHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));	IFC SHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));
#3453= IFCPRODUCTDEFINITIONSHAPE(S,S,(#3452));	#3517= IFCPRODUCTDEFINITIONSHAPE(S,S,(#3516));
#3454=	#3518=
IFCBEAM('1Ogjm0006j34qE3SsE3Gv',#5,'BEAM','HN400*200*8*13	IFCBEAM('1Ogjm0006Z34qE3SsE3Gv',#5,'BEAM','HN400*200*8*1
3','HN400*200*8*13',#3451,#3453,'P0(?)');	3','HN400*200*8*13',#3515,#3517,'P0(?)');
#3455= IFCLOCALPLACEMENT(#30,#10);	#3519= IFCLOCALPLACEMENT(#30,#10);
#3456=	#3520=
IFCELEMENTASSEMBLY('1Ogjm0006i34qE3SsE3Gv',#5,'Steel	IFCELEMENTASSEMBLY('1Ogjm0006Y34qE3SsE3Gv',#5,'Steel
Assembly',S,S,#3455,S,'BE-0(?)',..NOTDEFINED,..RIGID_FRAME.);	Assembly',S,S,#3519,S,'BE-0(?)',..NOTDEFINED,..RIGID_FRAME.);
#3457= IFCCARTESIANPOINT((1750.,190812.865,100.));	#3521= IFCCARTESIANPOINT((1750.,210023.881,100.));
#3458= IFCAxis2PLACEMENT3D(#3457,#8,#7);	#3522= IFCAxis2PLACEMENT3D(#3521,#8,#7);
#3459= IFCLOCALPLACEMENT(#3455,#3458);	#3523= IFCLOCALPLACEMENT(#3519,#3522);
#3460=	#3524=
IFC SHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));	IFC SHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));
#3461= IFCPRODUCTDEFINITIONSHAPE(S,S,(#3460));	#3525= IFCPRODUCTDEFINITIONSHAPE(S,S,(#3524));
#3462=	#3526=
IFCBEAM('1Ogjm0006hp4qE3SsE3Gv',#5,'BEAM','HN400*200*8*13	IFCBEAM('1Ogjm0006Xp4qE3SsE3Gv',#5,'BEAM','HN400*200*8*1
3','HN400*200*8*13',#3459,#3461,'P0(?)');	3','HN400*200*8*13',#3523,#3525,'P0(?)');
#3463= IFCLOCALPLACEMENT(#30,#10);	#3527= IFCLOCALPLACEMENT(#30,#10);
#3464=	#3528=
IFCELEMENTASSEMBLY('1Ogjm0006gp4qE3SsE3Gv',#5,'Steel	IFCELEMENTASSEMBLY('1Ogjm0006Wp4qE3SsE3Gv',#5,'Steel
Assembly',S,S,#3463,S,'BE-0(?)',..NOTDEFINED,..RIGID_FRAME.);	Assembly',S,S,#3527,S,'BE-0(?)',..NOTDEFINED,..RIGID_FRAME.);
#3465= IFCCARTESIANPOINT((1750.,193450.457,100.));	#3529= IFCCARTESIANPOINT((1750.,212140.632,100.));
#3466= IFCAxis2PLACEMENT3D(#3465,#8,#7);	#3530= IFCAxis2PLACEMENT3D(#3529,#8,#7);
#3467= IFCLOCALPLACEMENT(#3463,#3466);	#3531= IFCLOCALPLACEMENT(#3527,#3530);
#3468=	#3532=
IFC SHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));	IFC SHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));
#3469= IFCPRODUCTDEFINITIONSHAPE(S,S,(#3468));	#3533= IFCPRODUCTDEFINITIONSHAPE(S,S,(#3532));
#3470=	#3534=
IFCBEAM('1Ogjm0006gZ4qE3SsE3Gv',#5,'BEAM','HN400*200*8*1	IFCBEAM('1Ogjm0006WZ4qE3SsE3Gv',#5,'BEAM','HN400*200*8*1
3','HN400*200*8*13',#3467,#3469,'P0(?)');	3','HN400*200*8*13',#3531,#3533,'P0(?)');
#3471= IFCLOCALPLACEMENT(#30,#10);	#3535= IFCLOCALPLACEMENT(#30,#10);
#3472=	#3536=
IFCELEMENTASSEMBLY('1Ogjm0006fZ4qE3SsE3Gv',#5,'Steel	IFCELEMENTASSEMBLY('1Ogjm0006VZ4qE3SsE3Gv',#5,'Steel
Assembly',S,S,#3471,S,'BE-0(?)',..NOTDEFINED,..RIGID_FRAME.);	Assembly',S,S,#3535,S,'BE-0(?)',..NOTDEFINED,..RIGID_FRAME.);
#3473= IFCCARTESIANPOINT((1750.,196021.274,100.));	#3537= IFCCARTESIANPOINT((1750.,214197.286,100.));
#3474= IFCAxis2PLACEMENT3D(#3473,#8,#7);	#3538= IFCAxis2PLACEMENT3D(#3537,#8,#7);
#3475= IFCLOCALPLACEMENT(#3471,#3474);	#3539= IFCLOCALPLACEMENT(#3535,#3538);
#3476=	#3540=
IFC SHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));	IFC SHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));
#3477= IFCPRODUCTDEFINITIONSHAPE(S,S,(#3476));	#3541= IFCPRODUCTDEFINITIONSHAPE(S,S,(#3540));
#3478=	#3542=
IFCBEAM('1Ogjm0006fJ4qE3SsE3Gv',#5,'BEAM','HN400*200*8*13	IFCBEAM('1Ogjm0006VJ4qE3SsE3Gv',#5,'BEAM','HN400*200*8*1
3','HN400*200*8*13',#3475,#3477,'P0(?)');	3','HN400*200*8*13',#3539,#3541,'P0(?)');
#3479= IFCLOCALPLACEMENT(#30,#10);	#3543= IFCLOCALPLACEMENT(#30,#10);
#3480=	#3544=
IFCELEMENTASSEMBLY('1Ogjm0006eJ4qE3SsE3Gv',#5,'Steel	IFCELEMENTASSEMBLY('1Ogjm0006UJ4qE3SsE3Gv',#5,'Steel
Assembly',S,S,#3479,S,'BE-0(?)',..NOTDEFINED,..RIGID_FRAME.);	Assembly',S,S,#3543,S,'BE-0(?)',..NOTDEFINED,..RIGID_FRAME.);
#3481= IFCCARTESIANPOINT((1750.,198518.639,100.));	#3545= IFCCARTESIANPOINT((1750.,216200.52,100.));
#3482= IFCAxis2PLACEMENT3D(#3481,#8,#7);	#3546= IFCAxis2PLACEMENT3D(#3545,#8,#7);
#3483= IFCLOCALPLACEMENT(#3479,#3482);	#3547= IFCLOCALPLACEMENT(#3543,#3546);

#3548= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
#3549= IFCPRODUCTDEFINITIONSHAPE(\$,\$,#3548);  
#3550= IFCBEAM('1Ogjm0006U34qE3SsE3Gv',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#3547,#3549,'P0(?)');  
#3551= IFCLOCALPLACEMENT(#30,#10);  
#3552= ICELEMENTASSEMBLY('1Ogjm0006T34qE3SsE3Gv',#5,'Steel Assembly',S,\$,#3551,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#3553= IFCCARTESIANPOINT((1750.,218103.592,100.));  
#3554= IFCAxis2PLACEMENT3D(#3553,#8,#7);  
#3555= IFCLOCALPLACEMENT(#3551,#3554);  
#3556= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
#3557= IFCPRODUCTDEFINITIONSHAPE(\$,\$,#3556);  
#3558= IFCBEAM('1Ogjm0006Sp4qE3SsE3Gv',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#3555,#3557,'P0(?)');  
#3559= IFCLOCALPLACEMENT(#30,#10);  
#3560= ICELEMENTASSEMBLY('1Ogjm0006RZ4qE3SsE3Gt',#5,'Steel Assembly',S,\$,#3559,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#3561= IFCPROPERTYSET('Assembly/Cast unit position code',IFCLABEL('3-5/C'),S);  
#3562= IFCPROPERTYSET('337JcDU92eRaQHUV64gNy',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#2414,#3264,#3265,#3561,#318));  
#3563= IFCCARTESIANPOINT((1750.,110000.,100.));  
#3564= IFCAxis2PLACEMENT3D(#3563,#335,#7);  
#3565= IFCLOCALPLACEMENT(#3559,#3564);  
#3566= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
#3567= IFCPRODUCTDEFINITIONSHAPE(\$,\$,#3566);  
#3568= IFCBEAM('1Ogjm0006Rp4qE3SsE3Gt',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#3565,#3567,'P0(?)');  
#3569= IFCLOCALPLACEMENT(#30,#10);  
#3570= ICELEMENTASSEMBLY('1Ogjm0006QZ4qE3SsE3Gt',#5,'Steel Assembly',S,\$,#3569,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#3571= IFCPROPERTYSET('2MQISE7hL2kOnSxPYMHFr',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#2414,#3264,#3265,#317,#318));  
#3572= IFCCARTESIANPOINT((1750.,105150.443,100.));  
#3573= IFCAxis2PLACEMENT3D(#3572,#335,#7);  
#3574= IFCLOCALPLACEMENT(#3569,#3573);  
#3575= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
#3576= IFCPRODUCTDEFINITIONSHAPE(\$,\$,#3575);  
#3577= IFCBEAM('1Ogjm0006Qp4qE3SsE3Gt',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#3574,#3576,'P0(?)');  
#3578= IFCLOCALPLACEMENT(#30,#10);  
#3579= ICELEMENTASSEMBLY('1Ogjm0006PZ4qE3SsE3Gt',#5,'Steel Assembly',S,\$,#3578,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#3580= IFCCARTESIANPOINT((1750.,100520.714,100.));  
#3581= IFCAxis2PLACEMENT3D(#3580,#335,#7);  
#3582= IFCLOCALPLACEMENT(#3578,#3581);  
#3583= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
#3584= IFCPRODUCTDEFINITIONSHAPE(\$,\$,#3583);  
#3585= IFCBEAM('1Ogjm0006Pp4qE3SsE3Gt',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#3582,#3584,'P0(?)');  
#3586= IFCLOCALPLACEMENT(#30,#10);  
#3587= ICELEMENTASSEMBLY('1Ogjm0006OZ4qE3SsE3Gt',#5,'Steel Assembly',S,\$,#3586,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#3588= IFCCARTESIANPOINT((1750.,95964.262,100.));  
#3589= IFCAxis2PLACEMENT3D(#3588,#335,#7);  
#3590= IFCLOCALPLACEMENT(#3586,#3589);  
#3591= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
#3592= IFCPRODUCTDEFINITIONSHAPE(\$,\$,#3591);  
#3593= IFCBEAM('1Ogjm0006Op4qE3SsE3Gt',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#3590,#3592,'P0(?)');  
#3594= IFCLOCALPLACEMENT(#30,#10);  
#3595= ICELEMENTASSEMBLY('1Ogjm0006NZ4qE3SsE3Gt',#5,'Steel Assembly',S,\$,#3594,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#3596= IFCCARTESIANPOINT((1750.,91514.393,100.));  
#3597= IFCAxis2PLACEMENT3D(#3596,#335,#7);  
#3598= IFCLOCALPLACEMENT(#3594,#3597);  
#3599= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
#3600= IFCPRODUCTDEFINITIONSHAPE(\$,\$,#3599);  
#3601= IFCBEAM('1Ogjm0006Np4qE3SsE3Gt',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#3598,#3600,'P0(?)');  
#3602= IFCLOCALPLACEMENT(#30,#10);  
#3603= ICELEMENTASSEMBLY('1Ogjm0006Mz4qE3SsE3Gt',#5,'Steel Assembly',S,\$,#3602,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#3604= IFCCARTESIANPOINT((1750.,87184.4309999999,100.));  
#3605= IFCAxis2PLACEMENT3D(#3604,#335,#7);  
#3606= IFCLOCALPLACEMENT(#3602,#3605);  
#3607= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
#3608= IFCPRODUCTDEFINITIONSHAPE(\$,\$,#3607);  
#3609= IFCBEAM('1Ogjm0006Mp4qE3SsE3Gt',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#3606,#3608,'P0(?)');  
#3610= IFCLOCALPLACEMENT(#30,#10);  
#3611= ICELEMENTASSEMBLY('1Ogjm0006Lz4qE3SsE3Gt',#5,'Steel Assembly',S,\$,#3610,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#3612= IFCCARTESIANPOINT((1750.,82974.376,100.));  
#3613= IFCAxis2PLACEMENT3D(#3612,#335,#7);  
#3614= IFCLOCALPLACEMENT(#3610,#3613);  
#3615= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
#3616= IFCPRODUCTDEFINITIONSHAPE(\$,\$,#3615);  
#3617= IFCBEAM('1Ogjm0006Lp4qE3SsE3Gt',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#3614,#3616,'P0(?)');  
#3618= IFCLOCALPLACEMENT(#30,#10);  
#3619= ICELEMENTASSEMBLY('1Ogjm0006Kz4qE3SsE3Gt',#5,'Steel Assembly',S,\$,#3618,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#3620= IFCCARTESIANPOINT((1750.,78877.566,100.));  
#3621= IFCAxis2PLACEMENT3D(#3620,#335,#7);  
#3622= IFCLOCALPLACEMENT(#3618,#3621);  
#3623= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
#3624= IFCPRODUCTDEFINITIONSHAPE(\$,\$,#3623);  
#3625= IFCBEAM('1Ogjm0006Kp4qE3SsE3Gt',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#3622,#3624,'P0(?)');  
#3626= IFCLOCALPLACEMENT(#30,#10);  
#3627= ICELEMENTASSEMBLY('1Ogjm0006Jz4qE3SsE3Gt',#5,'Steel Assembly',S,\$,#3626,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#3628= IFCPROPERTYSET('0HwRKKZO5BQSRXwPvCt',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#2414,#3326,#3265,#317,#318));  
#3629= IFCCARTESIANPOINT((1749.99999858692,74894.0000014976,99.999994668651));  
#3630= IFCAxis2PLACEMENT3D(#3629,#335,#7);  
#3631= IFCLOCALPLACEMENT(#3626,#3630);  
#3632= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
#3633= IFCPRODUCTDEFINITIONSHAPE(\$,\$,#3632);  
#3634= IFCBEAM('1Ogjm0006Jp4qE3SsE3Gt',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#3631,#3633,'P0(?)');  
#3635= IFCQUANTITYVOLUME('NetVolume',S,\$,0.0409600000114908);  
#3636= IFCQUANTITYWEIGHT('NetWeight',S,\$,321.536000090203);  
#3637= ICELEMENTQUANTITY('1kfyNsRw972vbWl6Mnqsp',#5,'BaseQuantities',S,\$,#3336,#3337,#3635,#3636);  
#3638= IFCLOCALPLACEMENT(#30,#10);  
#3639= ICELEMENTASSEMBLY('1Ogjm0006Iz4qE3SsE3Gt',#5,'Steel Assembly',S,\$,#3638,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#3640= IFCCARTESIANPOINT((1750.,71015.5529999999,100.));  
#3641= IFCAxis2PLACEMENT3D(#3640,#335,#7);  
#3642= IFCLOCALPLACEMENT(#3638,#3641);  
#3643= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
#3644= IFCPRODUCTDEFINITIONSHAPE(\$,\$,#3643);  
#3645= IFCBEAM('1Ogjm0006Ip4qE3SsE3Gt',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#3642,#3644,'P0(?)');  
#3646= IFCLOCALPLACEMENT(#30,#10);  
#3647= ICELEMENTASSEMBLY('1Ogjm0006Hz4qE3SsE3Gt',#5,'Steel Assembly',S,\$,#3646,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#3648= IFCCARTESIANPOINT((1750.,67243.7289999999,100.));  
#3649= IFCAxis2PLACEMENT3D(#3648,#335,#7);  
#3650= IFCLOCALPLACEMENT(#3646,#3649);  
#3651= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
#3652= IFCPRODUCTDEFINITIONSHAPE(\$,\$,#3651);  
#3653= IFCBEAM('1Ogjm0006Hp4qE3SsE3Gt',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#3650,#3652,'P0(?)');  
#3654= IFCLOCALPLACEMENT(#30,#10);  
#3655= ICELEMENTASSEMBLY('1Ogjm0006Gz4qE3SsE3Gt',#5,'Steel Assembly',S,\$,#3654,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#3656= IFCCARTESIANPOINT((1750.,63571.8649999999,100.));  
#3657= IFCAxis2PLACEMENT3D(#3656,#335,#7);  
#3658= IFCLOCALPLACEMENT(#3654,#3657);  
#3659= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
#3660= IFCPRODUCTDEFINITIONSHAPE(\$,\$,#3659);  
#3661= IFCBEAM('1Ogjm0006Gp4qE3SsE3Gt',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#3658,#3660,'P0(?)');  
#3662= IFCLOCALPLACEMENT(#30,#10);  
#3663= ICELEMENTASSEMBLY('1Ogjm0006Fz4qE3SsE3Gt',#5,'Steel Assembly',S,\$,#3662,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#3664= IFCPROPERTYSET('38b7oZGMfB1R84H5yCfigXE',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#2414,#3264,#3265,#3664,#318));  
#3666= IFCCARTESIANPOINT((1750.,59999.9609999999,100.));  
#3667= IFCDIRECTION((7.79999999985113E-006,-0.9999999996958,0.));  
#3668= IFCDIRECTION((0.9999999996958,7.799999999169E-006,0.));  
#3669= IFCAxis2PLACEMENT3D(#3666,#3667,#3668);

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#3670= IFLOCALPLACEMENT(#3662,#3669);  
#3671=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
#3672= IFCPRODUCTDEFINITIONSHAPE(\$,\$,#3671));  
#3673=  
IFCBEAM('1Ogjm0006Fp4qE3SsE3G',#5,'BEAM','HN400\*200\*8\*13',  
'HN400\*200\*8\*13',#3670,#3672,'P0(?)');  
#3674=  
IFCQUANTITYVOLUME('NetVolume',S,\$,0.0409600000013072);  
#3675= IFCQUANTITYWEIGHT('NetWeight',S,\$,321.536000010262);  
#3676=  
IFCELEMENTQUANTITY('2LssGBnaL8j8qWp1dMs\$W',#5,'BaseQuantities',S,\$,#3377,#3378,#3674,#3675));  
#3677= IFLOCALPLACEMENT(#30,#10);  
#3678=  
IFCELEMENTASSEMBLY('1Ogjm0006EZ4qE3SsE3G',#5,'Steel Assembly',S,\$,#3677,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#3679= IFCPROPERTYSET('304x0GwgnBKQ1UstGDR9AX',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#2414,#3264,#3265,#1690,#318));  
#3680= IFCCARTESIANPOINT((1750.,56527.191,100.));  
#3681= IFCAXIS2PLACEMENT3D(#3680,#335,#7);  
#3682= IFLOCALPLACEMENT(#3677,#3681);  
#3683=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
#3684= IFCPRODUCTDEFINITIONSHAPE(\$,\$,#3683));  
#3685=  
IFCBEAM('1Ogjm0006Ep4qE3SsE3G',#5,'BEAM','HN400\*200\*8\*13',  
'HN400\*200\*8\*13',#3682,#3684,'P0(?)');  
#3686= IFLOCALPLACEMENT(#30,#10);  
#3687=  
IFCELEMENTASSEMBLY('1Ogjm0006DZ4qE3SsE3G',#5,'Steel Assembly',S,\$,#3686,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#3688= IFCCARTESIANPOINT((1750.,53147.701,100.));  
#3689= IFCAXIS2PLACEMENT3D(#3688,#335,#7);  
#3690= IFLOCALPLACEMENT(#3686,#3689);  
#3691=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
#3692= IFCPRODUCTDEFINITIONSHAPE(\$,\$,#3691));  
#3693=  
IFCBEAM('1Ogjm0006Dp4qE3SsE3G',#5,'BEAM','HN400\*200\*8\*13',  
'HN400\*200\*8\*13',#3690,#3692,'P0(?)');  
#3694= IFLOCALPLACEMENT(#30,#10);  
#3695=  
IFCELEMENTASSEMBLY('1Ogjm0006BZ4qE3SsE3G',#5,'Steel Assembly',S,\$,#3694,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#3696= IFCCARTESIANPOINT((1750.,49861.531,100.));  
#3697= IFCAXIS2PLACEMENT3D(#3696,#335,#7);  
#3698= IFLOCALPLACEMENT(#3694,#3697);  
#3699=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
#3700= IFCPRODUCTDEFINITIONSHAPE(\$,\$,#3699));  
#3701=  
IFCBEAM('1Ogjm0006Bp4qE3SsE3G',#5,'BEAM','HN400\*200\*8\*13',  
'HN400\*200\*8\*13',#3698,#3700,'P0(?)');  
#3702= IFLOCALPLACEMENT(#30,#10);  
#3703=  
IFCELEMENTASSEMBLY('1Ogjm0006AZ4qE3SsE3G',#5,'Steel Assembly',S,\$,#3702,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#3704= IFCCARTESIANPOINT((1750.,46662.014,100.));  
#3705= IFCAXIS2PLACEMENT3D(#3704,#335,#7);  
#3706= IFLOCALPLACEMENT(#3702,#3705);  
#3707=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
#3708= IFCPRODUCTDEFINITIONSHAPE(\$,\$,#3707));  
#3709=  
IFCBEAM('1Ogjm0006Ap4qE3SsE3G',#5,'BEAM','HN400\*200\*8\*13',  
'HN400\*200\*8\*13',#3706,#3708,'P0(?)');  
#3710= IFLOCALPLACEMENT(#30,#10);  
#3711=  
IFCELEMENTASSEMBLY('1Ogjm0006Z4qE3SsE3G',#5,'Steel Assembly',S,\$,#3710,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#3712= IFCCARTESIANPOINT((1750.,43543.646,100.));  
#3713= IFCAXIS2PLACEMENT3D(#3712,#335,#7);  
#3714= IFLOCALPLACEMENT(#3710,#3713);  
#3715=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
#3716= IFCPRODUCTDEFINITIONSHAPE(\$,\$,#3715));  
#3717=  
IFCBEAM('1Ogjm0006P4qE3SsE3G',#5,'BEAM','HN400\*200\*8\*13',  
'HN400\*200\*8\*13',#3714,#3716,'P0(?)');  
#3718= IFLOCALPLACEMENT(#30,#10);  
#3719=  
IFCELEMENTASSEMBLY('1Ogjm0006Z4qE3SsE3G',#5,'Steel Assembly',S,\$,#3718,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#3720= IFCCARTESIANPOINT((1750.,40512.085,100.));  
#3721= IFCAXIS2PLACEMENT3D(#3720,#335,#7);  
#3722= IFLOCALPLACEMENT(#3718,#3721);  
#3723=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
#3724= IFCPRODUCTDEFINITIONSHAPE(\$,\$,#3723));  
#3725=  
IFCBEAM('1Ogjm0006P4qE3SsE3G',#5,'BEAM','HN400\*200\*8\*13',  
'HN400\*200\*8\*13',#3722,#3724,'P0(?)');  
#3726= IFLOCALPLACEMENT(#30,#10);  
#3727=  
IFCELEMENTASSEMBLY('1Ogjm0006Z4qE3SsE3G',#5,'Steel Assembly',S,\$,#3726,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#3728= IFCCARTESIANPOINT((1750.,37560.653,100.));  
#3729= IFCAXIS2PLACEMENT3D(#3728,#335,#7);  
#3730= IFLOCALPLACEMENT(#3726,#3729);  
#3731=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
#3732= IFCPRODUCTDEFINITIONSHAPE(\$,\$,#3731));

#3733=  
IFCBEAM('1Ogjm00067p4qE3SsE3G',#5,'BEAM','HN400\*200\*8\*13',  
'HN400\*200\*8\*13',#3732,#3732,'P0(?)');  
#3734= IFLOCALPLACEMENT(#30,#10);  
#3735=  
IFCELEMENTASSEMBLY('1Ogjm0006Z4qE3SsE3G',#5,'Steel Assembly',S,\$,#3734,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#3736= IFCCARTESIANPOINT((1750.,34689.351,100.));  
#3737= IFCAXIS2PLACEMENT3D(#3736,#335,#7);  
#3738= IFLOCALPLACEMENT(#3734,#3737);  
#3739=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
#3740= IFCPRODUCTDEFINITIONSHAPE(\$,\$,#3739));  
#3741=  
IFCBEAM('1Ogjm00066p4qE3SsE3G',#5,'BEAM','HN400\*200\*8\*13',  
'HN400\*200\*8\*13',#3738,#3740,'P0(?)');  
#3742= IFLOCALPLACEMENT(#30,#10);  
#3743=  
IFCELEMENTASSEMBLY('1Ogjm0006Z4qE3SsE3G',#5,'Steel Assembly',S,\$,#3742,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#3744= IFCCARTESIANPOINT((1750.,31898.178,100.));  
#3745= IFCAXIS2PLACEMENT3D(#3744,#335,#7);  
#3746= IFLOCALPLACEMENT(#3742,#3745);  
#3747=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
#3748= IFCPRODUCTDEFINITIONSHAPE(\$,\$,#3747));  
#3749=  
IFCBEAM('1Ogjm00065p4qE3SsE3G',#5,'BEAM','HN400\*200\*8\*13',  
'HN400\*200\*8\*13',#3746,#3748,'P0(?)');  
#3750= IFLOCALPLACEMENT(#30,#10);  
#3751=  
IFCELEMENTASSEMBLY('1Ogjm0006Z4qE3SsE3G',#5,'Steel Assembly',S,\$,#3750,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#3752= IFCCARTESIANPOINT((1750.,29187.135,100.));  
#3753= IFCAXIS2PLACEMENT3D(#3752,#335,#7);  
#3754= IFLOCALPLACEMENT(#3750,#3753);  
#3755=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
#3756= IFCPRODUCTDEFINITIONSHAPE(\$,\$,#3755));  
#3757=  
IFCBEAM('1Ogjm00064p4qE3SsE3G',#5,'BEAM','HN400\*200\*8\*13',  
'HN400\*200\*8\*13',#3754,#3756,'P0(?)');  
#3758= IFLOCALPLACEMENT(#30,#10);  
#3759=  
IFCELEMENTASSEMBLY('1Ogjm0006Z4qE3SsE3G',#5,'Steel Assembly',S,\$,#3758,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#3760= IFCCARTESIANPOINT((1750.,26549.543,100.));  
#3761= IFCAXIS2PLACEMENT3D(#3760,#335,#7);  
#3762= IFLOCALPLACEMENT(#3758,#3761);  
#3763=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
#3764= IFCPRODUCTDEFINITIONSHAPE(\$,\$,#3763));  
#3765=  
IFCBEAM('1Ogjm00063p4qE3SsE3G',#5,'BEAM','HN400\*200\*8\*13',  
'HN400\*200\*8\*13',#3762,#3764,'P0(?)');  
#3766= IFLOCALPLACEMENT(#30,#10);  
#3767=  
IFCELEMENTASSEMBLY('1Ogjm0006Z4qE3SsE3G',#5,'Steel Assembly',S,\$,#3766,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#3768= IFCCARTESIANPOINT((1750.,23978.726,100.));  
#3769= IFCAXIS2PLACEMENT3D(#3768,#335,#7);  
#3770= IFLOCALPLACEMENT(#3766,#3769);  
#3771=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
#3772= IFCPRODUCTDEFINITIONSHAPE(\$,\$,#3771));  
#3773=  
IFCBEAM('1Ogjm00062p4qE3SsE3G',#5,'BEAM','HN400\*200\*8\*13',  
'HN400\*200\*8\*13',#3770,#3772,'P0(?)');  
#3774= IFLOCALPLACEMENT(#30,#10);  
#3775=  
IFCELEMENTASSEMBLY('1Ogjm0006Z4qE3SsE3G',#5,'Steel Assembly',S,\$,#3774,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#3776= IFCCARTESIANPOINT((1750.,21481.361,100.));  
#3777= IFCAXIS2PLACEMENT3D(#3776,#335,#7);  
#3778= IFLOCALPLACEMENT(#3774,#3777);  
#3779=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
#3780= IFCPRODUCTDEFINITIONSHAPE(\$,\$,#3779));  
#3781=  
IFCBEAM('1Ogjm00061p4qE3SsE3G',#5,'BEAM','HN400\*200\*8\*13',  
'HN400\*200\*8\*13',#3778,#3780,'P0(?)');  
#3782= IFLOCALPLACEMENT(#30,#10);  
#3783=  
IFCELEMENTASSEMBLY('1Ogjm0006Z4qE3SsE3G',#5,'Steel Assembly',S,\$,#3782,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#3784= IFCCARTESIANPOINT((1750.,19050.77,100.));  
#3785= IFCAXIS2PLACEMENT3D(#3784,#335,#7);  
#3786= IFLOCALPLACEMENT(#3782,#3785);  
#3787=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
#3788= IFCPRODUCTDEFINITIONSHAPE(\$,\$,#3787));  
#3789=  
IFCBEAM('1Ogjm00060p4qE3SsE3G',#5,'BEAM','HN400\*200\*8\*13',  
'HN400\*200\*8\*13',#3786,#3788,'P0(?)');  
#3790= IFLOCALPLACEMENT(#30,#10);  
#3791=  
IFCELEMENTASSEMBLY('1Ogjm0005Z4qE3SsE3G',#5,'Steel Assembly',S,\$,#3790,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#3792= IFCCARTESIANPOINT((1750.,16686.954,100.));  
#3793= IFCAXIS2PLACEMENT3D(#3792,#335,#7);  
#3794= IFLOCALPLACEMENT(#3790,#3793);  
#3795=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
#3796= IFCPRODUCTDEFINITIONSHAPE(\$,\$,#3795));

#3797=  
IFCBEAM('1Ogjm0005Sp4qE3SsE3Gr',#5,'BEAM','HN400\*200\*8\*13',  
',HN400\*200\*8\*13',#3794,#3796,'PO(?)');  
#3798= IFCLOCALPLACEMENT(#30,#10);  
#3799=  
IFCELEMENTASSEMBLY('1Ogjm0005\_Z4qE3SsE3Gr',#5,'Steel  
Assembly',S,S,#3798,S,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#3800= IFCCARTESIANPOINT((1750.,14389.912,100.));  
#3801= IFCAxis2PLACEMENT3D(#3800,#335,#7);  
#3802= IFCLOCALPLACEMENT(#3798,#3801);  
#3803=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
#3804= IFCPRODUCTDEFINITIONSHAPE(S,S,(#3803));  
#3805=  
IFCBEAM('1Ogjm0005\_p4qE3SsE3Gr',#5,'BEAM','HN400\*200\*8\*13',  
',HN400\*200\*8\*13',#3802,#3804,'PO(?)');  
#3806= IFCLOCALPLACEMENT(#30,#10);  
#3807=  
IFCELEMENTASSEMBLY('1Ogjm0005zZ4qE3SsE3Gr',#5,'Steel  
Assembly',S,S,#3806,S,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#3808= IFCCARTESIANPOINT((1750.,12152.967,100.));  
#3809= IFCAxis2PLACEMENT3D(#3808,#335,#7);  
#3810= IFCLOCALPLACEMENT(#3806,#3809);  
#3811=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
#3812= IFCPRODUCTDEFINITIONSHAPE(S,S,(#3811));  
#3813=  
IFCBEAM('1Ogjm0005yp4qE3SsE3Gr',#5,'BEAM','HN400\*200\*8\*13',  
',HN400\*200\*8\*13',#3810,#3812,'PO(?)');  
#3814= IFCLOCALPLACEMENT(#30,#10);  
#3815=  
IFCELEMENTASSEMBLY('1Ogjm0005yZ4qE3SsE3Gr',#5,'Steel  
Assembly',S,S,#3814,S,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#3816= IFCCARTESIANPOINT((1750.,9976.11899999996,100.));  
#3817= IFCAxis2PLACEMENT3D(#3816,#335,#7);  
#3818= IFCLOCALPLACEMENT(#3814,#3817);  
#3819=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
#3820= IFCPRODUCTDEFINITIONSHAPE(S,S,(#3819));  
#3821=  
IFCBEAM('1Ogjm0005yp4qE3SsE3Gr',#5,'BEAM','HN400\*200\*8\*13',  
',HN400\*200\*8\*13',#3818,#3820,'PO(?)');  
#3822= IFCLOCALPLACEMENT(#30,#10);  
#3823=  
IFCELEMENTASSEMBLY('1Ogjm0005xZ4qE3SsE3Gr',#5,'Steel  
Assembly',S,S,#3822,S,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#3824= IFCCARTESIANPOINT((1750.,7859.36799999995,100.));  
#3825= IFCAxis2PLACEMENT3D(#3824,#335,#7);  
#3826= IFCLOCALPLACEMENT(#3822,#3825);  
#3827=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
#3828= IFCPRODUCTDEFINITIONSHAPE(S,S,(#3827));  
#3829=  
IFCBEAM('1Ogjm0005xp4qE3SsE3Gr',#5,'BEAM','HN400\*200\*8\*13',  
',HN400\*200\*8\*13',#3826,#3828,'PO(?)');  
#3830= IFCLOCALPLACEMENT(#30,#10);  
#3831=  
IFCELEMENTASSEMBLY('1Ogjm0005wZ4qE3SsE3Gr',#5,'Steel  
Assembly',S,S,#3830,S,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#3832= IFCCARTESIANPOINT((1750.,5802.71399999995,100.));  
#3833= IFCAxis2PLACEMENT3D(#3832,#335,#7);  
#3834= IFCLOCALPLACEMENT(#3830,#3833);  
#3835=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
#3836= IFCPRODUCTDEFINITIONSHAPE(S,S,(#3835));  
#3837=  
IFCBEAM('1Ogjm0005wp4qE3SsE3Gr',#5,'BEAM','HN400\*200\*8\*13',  
',HN400\*200\*8\*13',#3834,#3836,'PO(?)');  
#3838= IFCLOCALPLACEMENT(#30,#10);  
#3839=  
IFCELEMENTASSEMBLY('1Ogjm0005vZ4qE3SsE3Gr',#5,'Steel  
Assembly',S,S,#3838,S,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#3840= IFCCARTESIANPOINT((1750.,3799.47999999995,100.));  
#3841= IFCAxis2PLACEMENT3D(#3840,#335,#7);  
#3842= IFCLOCALPLACEMENT(#3838,#3841);  
#3843=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
#3844= IFCPRODUCTDEFINITIONSHAPE(S,S,(#3843));  
#3845=  
IFCBEAM('1Ogjm0005vp4qE3SsE3Gr',#5,'BEAM','HN400\*200\*8\*13',  
',HN400\*200\*8\*13',#3842,#3844,'PO(?)');  
#3846= IFCLOCALPLACEMENT(#30,#10);  
#3847=  
IFCELEMENTASSEMBLY('1Ogjm0005uZ4qE3SsE3Cv',#5,'Steel  
Assembly',S,S,#3846,S,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#3848= IFCCARTESIANPOINT((1750.,1896.40799999995,100.));  
#3849= IFCAxis2PLACEMENT3D(#3848,#335,#7);  
#3850= IFCLOCALPLACEMENT(#3846,#3849);  
#3851=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#2423));  
#3852= IFCPRODUCTDEFINITIONSHAPE(S,S,(#3851));  
#3853=  
IFCBEAM('1Ogjm0005up4qE3SsE3Cv',#5,'BEAM','HN400\*200\*8\*13',  
',HN400\*200\*8\*13',#3850,#3852,'PO(?)');  
#3854= IFCQUANTITYVOLUME('NetVolume',S,S,0.04096);  
#3855= IFCQUANTITYWEIGHT('NetWeight',S,S,321.536);  
#3856=  
IFCELEMENTQUANTITY('0nqk9vkvXFOPYk\_XuVWYSS',#5,'BaseQ  
uantities',S,S,(#2472,#2473,#3854,#3855));  
#3857= IFCLOCALPLACEMENT(#30,#10);  
#3858=  
IFCELEMENTASSEMBLY('1Ogjm0005bj4qE3SsE3C3u',#5,'Steel  
Assembly',S,S,#3857,S,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#3859= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit  
weight',IFCMASSEMEASURE(146.2),S);  
#3860= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit top  
elevation',IFCLABEL(' +2.070'),S);  
#3861= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit position  
code',IFCLABEL('3/A-B'),S);  
#3862=  
IFCPROPERTYSET('1TMEYdxDf65wuCXiRYdaWY',#5,'Tekla  
Assembly',Assembly  
Properties',(#34,#313,#3859,#3326,#3860,#3861,#318));  
#3863= IFCQUANTITYLENGTH('Width',S,S,200.00000000018);  
#3864=  
IFCELEMENTQUANTITY('0RqIfnkxL5BwMWY7C6XzXD',#5,'Base  
Quantities',S,S,(#3863));  
#3865=  
IFCCARTESIANPOINT((1750.00000000104,899.759867474757,2025.  
70500196721));  
#3866= IFCDIRECTION((0.,-0.446746488930393,-  
0.894660591860604));  
#3867= IFCAxis2PLACEMENT3D(#3865,#7,#3866);  
#3868= IFCLOCALPLACEMENT(#3857,#3867);  
#3869=  
IFCCARTESIANPOINT((2214.29143604787,1.22917866776532E-  
013,0.));  
#3870= IFCAxis2PLACEMENT3D(#3869,#336,#335);  
#3871= IFCEXTRUDEDAREASOLID(#333,#3870,#9,2214.3);  
#3872=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#3871));  
#3873= IFCSTYLEDITEM(#3871,(#330),S);  
#3874= IFCPRODUCTDEFINITIONSHAPE(S,S,(#3872));  
#3875=  
IFCMEMBER('1Ogjm0005b34qE3SsE3C3u',#5,'BEAM','HN400\*200\*8  
\*13',HN400\*200\*8\*13',#3868,#3874,'PO(?)');  
#3876= IFCPROPERTYSINGLEVALUE('Top elevation',IFCLABEL(' +  
2.070'),S);  
#3877= IFCPROPERTYSET('2rJaKqG92GfLGBV6wmNHE',#5,'Tekla  
Common',Common Properties to Shared building  
elements',(#3334,#3876,#71,#72,#73,#346));  
#3878=  
IFCPROPERTYSINGLEVALUE('Weight',IFCMASSEMEASURE(146.  
2),S);  
#3879= IFCPROPERTYSINGLEVALUE('Net surface  
area',IFCAREAMEASURE(3.5),S);  
#3880=  
IFCPROPERTYSINGLEVALUE('Length',IFCLENGTHMEASURE(2  
214.3),S);  
#3881= IFCPROPERTYSET('36\_8IW\_Iz8CxmzujEPDSSb',#5,'Tekla  
Quantity',Quantity Properties to Shared building  
elements',(#3878,#1108,#78,#350,#3879,#352,#353,#3880));  
#3882= IFCQUANTITYLENGTH('Length',S,S,2214.29143604802);  
#3883=  
IFCQUANTITYAREA('OuterSurfaceArea',S,S,3.50743763470007);  
#3884=  
IFCQUANTITYAREA('GrossSurfaceArea',S,S,3.50743763470007);  
#3885=  
IFCQUANTITYVOLUME('NetVolume',S,S,0.0181394754441057);  
#3886=  
IFCQUANTITYVOLUME('GrossVolume',S,S,0.018626619560036);  
#3887= IFCQUANTITYWEIGHT('NetWeight',S,S,142.39488223623);  
#3888=  
IFCQUANTITYWEIGHT('GrossWeight',S,S,146.218963546282);  
#3889=  
IFCELEMENTQUANTITY('1XlrsCWQPAJg\_SwiFryV5y',#5,'BaseQua  
ntities',S,S,(#3882,#3883,#3884,#361,#3885,#3886,#3887,#3888));  
#3890= IFCLOCALPLACEMENT(#30,#10);  
#3891=  
IFCELEMENTASSEMBLY('1Ogjm0005a34qE3SsE3C3u',#5,'Steel  
Assembly',S,S,#3890,S,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#3892= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit  
weight',IFCMASSEMEASURE(143.3),S);  
#3893= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit top  
elevation',IFCLABEL(' +2.063'),S);  
#3894= IFCPROPERTYSET('05n25UyQ10SOb6fws1wxY',#5,'Tekla  
Assembly',Assembly  
Properties',(#34,#313,#3892,#3264,#3893,#3861,#318));  
#3895= IFCQUANTITYLENGTH('Width',S,S,200.000000000079);  
#3896=  
IFCELEMENTQUANTITY('0NBoGj7T1EuuRG0LFzAS',#5,'BaseQua  
ntities',S,S,(#3895));  
#3897=  
IFCCARTESIANPOINT((1750.00000000211,1987.66003333931,40.87  
54186508547));  
#3898= IFCDIRECTION((0.,-  
0.408718897808826,0.912660321573113));  
#3899= IFCAxis2PLACEMENT3D(#3897,#7,#3898);  
#3900= IFCLOCALPLACEMENT(#3890,#3899);  
#3901= IFCCARTESIANPOINT((2170.60693597108,-  
1.20492889886308E-013,0.));  
#3902= IFCAxis2PLACEMENT3D(#3901,#336,#335);  
#3903= IFCEXTRUDEDAREASOLID(#333,#3902,#9,2170.6);  
#3904=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#3903));  
#3905= IFCSTYLEDITEM(#3903,(#330),S);  
#3906= IFCPRODUCTDEFINITIONSHAPE(S,S,(#3904));  
#3907=  
IFCMEMBER('1Ogjm0005Zp4qE3SsE3C3u',#5,'BEAM','HN400\*200\*8  
\*13',HN400\*200\*8\*13',#3900,#3906,'PO(?)');  
#3908= IFCPROPERTYSINGLEVALUE('Top elevation',IFCLABEL(' +  
2.063'),S);  
#3909= IFCPROPERTYSET('1qiCwDtWDA28ZcE2GOpYtb',#5,'Tekla  
Common',Common Properties to Shared building  
elements',(#3273,#3908,#71,#72,#73,#346));  
#3910=  
IFCPROPERTYSINGLEVALUE('Weight',IFCMASSEMEASURE(143.  
3),S);

## Appendix

#3911= IFCPROPERTYSINGLEVALUE('Length',S,IFLENGTHMEASURE(2170.6),S);

#3912= IFCPROPERTYSET('0FWRCzdkz9tA5LjweGGgn',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#3910,#1108,#78,#350,#3879,#352,#353,#3911));

#3913= IFCQUANTITYLENGTH('Length',S,\$,2170.60693597102);

#3914= IFCQUANTITYAREA('OuterSurfaceArea',S,\$,3.4382413865781);

#3915= IFCQUANTITYAREA('GrossSurfaceArea',S,\$,3.4382413865781);

#3916= IFCQUANTITYVOLUME('NetVolume',S,\$,0.0177816120194754);

#3917= IFCQUANTITYVOLUME('GrossVolume',S,\$,0.0182591455453882);

#3918= IFCQUANTITYWEIGHT('NetWeight',S,\$,139.585654352882);

#3919= IFCQUANTITYWEIGHT('GrossWeight',S,\$,143.334292531298);

#3920= IFCELEMENTQUANTITY('0e6u2IOvDCmv3FBPuWBPS',#5,'BaseQuantities',S,\$,(#3913,#3914,#3915,#361,#3916,#3917,#3918,#3919));

#3921= IFCLOCALPLACEMENT(#30,#10);

#3922= IFCELEMENTASSEMBLY('1Ogimc0005Yp4qE3SsC34u',#5,'Steel Assembly',S,\$,#3921,S,'BE-0(?)',NOTDEFINED,,RIGID\_FRAME.);

#3923= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit weight',S,IFCMASSEASURE(148.),S);

#3924= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit top elevation',S,IFCLABEL(' +2.106'),S);

#3925= IFCPROPERTYSET('2n5rlkhehb4sAvIoLzirDQz',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#3923,#3264,#3924,#3861,#318));

#3926= IFCQUANTITYLENGTH('Width',S,\$,200.00000000034);

#3927= IFCELEMENTQUANTITY('07cieAcblDp8TjYp5v4Mn',#5,'BaseQuantities',S,\$,(#3926));

#3928= IFCARTESIANPOINT((1749.9999999918,2778.99318662038,2062.84998842482));

#3929= IFCDIRECTION((0,-0.433947588856273,-0.900938116701601));

#3930= IFCAXIS2PLACEMENT3D(#3928,#7,#3929);

#3931= IFCLOCALPLACEMENT(#3921,#3930);

#3932= IFCARTESIANPOINT((2241.49879271282,0,0.));

#3933= IFCAXIS2PLACEMENT3D(#3932,#336,#335);

#3934= IFCEXTRUDEDAREASOLID(#333,#3933,#9,2241.5);

#3935= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#3934));

#3936= IFCSTYLEDITEM(#3934,(#330),S);

#3937= IFCPRODUCTDEFINITIONSHAPE(S,\$,(#3935));

#3938= IFCMEMBER('1Ogimc0005Yz4qE3SsC34u',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#3931,#3937,'P0(?)');

#3939= IFCPROPERTYSINGLEVALUE('Top elevation',S,IFCLABEL(' +2.106'),S);

#3940= IFCPROPERTYSET('330w5L2r9nQg0W1GKfgMw',#5,'Tekla Common','Common Properties to Shared building elements',(#3273,#3939,#71,#72,#73,#346));

#3941= IFCPROPERTYSINGLEVALUE('Weight',S,IFCMASSEASURE(148.),S);

#3942= IFCPROPERTYSINGLEVALUE('Net surface area',S,IFCAREAMEASURE(3.6),S);

#3943= IFCPROPERTYSINGLEVALUE('Length',S,IFLENGTHMEASURE(2241.5),S);

#3944= IFCPROPERTYSET('0W94aP56TB48LP0UtiEm',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#3941,#1108,#78,#350,#3942,#352,#353,#3943));

#3945= IFCQUANTITYLENGTH('Length',S,\$,2241.49879271296);

#3946= IFCQUANTITYAREA('OuterSurfaceArea',S,\$,3.55053408765733);

#3947= IFCQUANTITYAREA('GrossSurfaceArea',S,\$,3.55053408765733);

#3948= IFCQUANTITYVOLUME('NetVolume',S,\$,0.0183623581099051);

#3949= IFCQUANTITYVOLUME('GrossVolume',S,\$,0.0188554878443014);

#3950= IFCQUANTITYWEIGHT('NetWeight',S,\$,144.144511162755);

#3951= IFCQUANTITYWEIGHT('GrossWeight',S,\$,148.015579577766);

#3952= IFCELEMENTQUANTITY('3OI2AZpVbAmhNsvVjM\$AVH',#5,'BaseQuantities',S,\$,(#3945,#3946,#3947,#361,#3948,#3949,#3950,#3951));

#3953= IFCLOCALPLACEMENT(#30,#10);

#3954= IFCELEMENTASSEMBLY('1Ogimc0005XZ4qE3SsC34u',#5,'Steel Assembly',S,\$,#3953,S,'BE-0(?)',NOTDEFINED,,RIGID\_FRAME.);

#3955= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit weight',S,IFCMASSEASURE(146.8),S);

#3956= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit top elevation',S,IFCLABEL(' +2.103'),S);

#3957= IFCPROPERTYSET('2T2hePINrFaQUW\_Nj\$Uie',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#3955,#3326,#3956,#3861,#318));

#3958= IFCQUANTITYLENGTH('Width',S,\$,200.000000000136);

#3959= IFCELEMENTQUANTITY('0Ni50mouvFehKuFLgtB4IS',#5,'BaseQuantities',S,\$,(#3958));

#3960= IFCARTESIANPOINT((1750.,3890.29062848754,41.8425462160333));

#3961= IFCDIRECTION((0,-0.41843602594287,0.908246272875996));

#3962= IFCAXIS2PLACEMENT3D(#3960,#7,#3961);

#3963= IFCLOCALPLACEMENT(#3953,#3962);

#3964= IFCARTESIANPOINT((2223.46773745399,0,0.));

#3965= IFCAXIS2PLACEMENT3D(#3964,#336,#335);

#3966= IFCEXTRUDEDAREASOLID(#333,#3965,#9,2223.5);

#3967= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#3966));

#3968= IFCSTYLEDITEM(#3966,(#330),S);

#3969= IFCPRODUCTDEFINITIONSHAPE(S,\$,(#3967));

#3970= IFCMEMBER('1Ogimc0005XJ4qE3SsC34u',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#3963,#3969,'P0(?)');

#3971= IFCPROPERTYSINGLEVALUE('Top elevation',S,IFCLABEL(' +2.103'),S);

#3972= IFCPROPERTYSET('1bqOHArz9Dh8f3ZRMasIQx',#5,'Tekla Common','Common Properties to Shared building elements',(#3334,#3971,#71,#72,#73,#346));

#3973= IFCPROPERTYSINGLEVALUE('Weight',S,IFCMASSEASURE(146.8),S);

#3974= IFCPROPERTYSINGLEVALUE('Length',S,IFLENGTHMEASURE(2223.5),S);

#3975= IFCPROPERTYSET('0FJfKd\$D7SQWzPozgMEZs',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#3973,#1108,#78,#350,#3879,#352,#353,#3974));

#3976= IFCQUANTITYLENGTH('Length',S,\$,2223.46773745394);

#3977= IFCQUANTITYAREA('OuterSurfaceArea',S,\$,3.52197289612704);

#3978= IFCQUANTITYAREA('GrossSurfaceArea',S,\$,3.52197289612704);

#3979= IFCQUANTITYVOLUME('NetVolume',S,\$,0.0182146477052243);

#3980= IFCQUANTITYVOLUME('GrossVolume',S,\$,0.0187038106074625);

#3981= IFCQUANTITYWEIGHT('NetWeight',S,\$,142.984984486011);

#3982= IFCQUANTITYWEIGHT('GrossWeight',S,\$,146.824913268581);

#3983= IFCLEMENTQUANTITY('3D3APBQkX1CAea9ThhEriO',#5,'BaseQuantities',S,\$,(#3976,#3977,#3978,#361,#3979,#3980,#3981,#3982));

#3984= IFCLOCALPLACEMENT(#30,#10);

#3985= IFCLEMENTASSEMBLY('1Ogimc0005WJ4qE3SsC34u',#5,'Steel Assembly',S,\$,#3984,S,'BE-0(?)',NOTDEFINED,,RIGID\_FRAME.);

#3986= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit weight',S,IFCMASSEASURE(152.7),S);

#3987= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit top elevation',S,IFCLABEL(' +2.155'),S);

#3988= IFCPROPERTYSET('2qU7k74EL0DxkfuaI84Vlv',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#3986,#3326,#3987,#3861,#318));

#3989= IFCQUANTITYLENGTH('Width',S,\$,200.000000000362);

#3990= IFCLEMENTQUANTITY('3ugEPuhjPDNuCa6MwGM506',#5,'BaseQuantities',S,\$,(#3989));

#3991= IFCARTESIANPOINT((1750.,4750.60034812393,2110.07308031077));

#3992= IFCDIRECTION((0,-0.449944683895193,-0.893056426791978));

#3993= IFCAXIS2PLACEMENT3D(#3991,#7,#3992);

#3994= IFCLOCALPLACEMENT(#3984,#3993);

#3995= IFCARTESIANPOINT((2312.37311177863,-1.28362493511038E-013,0.));

#3996= IFCAXIS2PLACEMENT3D(#3995,#336,#335);

#3997= IFCEXTRUDEDAREASOLID(#333,#3996,#9,2312.4);

#3998= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#3997));

#3999= IFCSTYLEDITEM(#3997,(#330),S);

#4000= IFCPRODUCTDEFINITIONSHAPE(S,\$,(#3998));

#4001= IFCMEMBER('1Ogimc0005W34qE3SsC34u',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#3994,#4000,'P0(?)');

#4002= IFCPROPERTYSINGLEVALUE('Top elevation',S,IFCLABEL(' +2.155'),S);

#4003= IFCPROPERTYSET('1XuvLEWljFD8j\_JzLgygq4',#5,'Tekla Common','Common Properties to Shared building elements',(#3334,#4002,#71,#72,#73,#346));

#4004= IFCPROPERTYSINGLEVALUE('Weight',S,IFCMASSEASURE(152.7),S);

#4005= IFCPROPERTYSINGLEVALUE('Net surface area',S,IFCAREAMEASURE(3.7),S);

#4006= IFCPROPERTYSINGLEVALUE('Length',S,IFLENGTHMEASURE(2312.4),S);

#4007= IFCPROPERTYSET('19SPtYsY95jg9T\_EmPHSPg',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#4004,#1108,#78,#350,#4005,#352,#353,#4006));

#4008= IFCQUANTITYLENGTH('Length',S,\$,2312.37311177913);

#4009= IFCQUANTITYAREA('OuterSurfaceArea',S,\$,3.66279900905815);

#4010= IFCQUANTITYAREA('GrossSurfaceArea',S,\$,3.66279900905815);

#4011= IFCQUANTITYVOLUME('NetVolume',S,\$,0.0189429605316979);

#4012= IFCQUANTITYVOLUME('GrossVolume',S,\$,0.0194516826162861);

#4013= IFCQUANTITYWEIGHT('NetWeight',S,\$,148.702240173828);

#4014= IFCQUANTITYWEIGHT('GrossWeight',S,\$,152.695708537846);

#4015= IFCLEMENTQUANTITY('2\$ta0kFsv2qfmWNf6hOVw',#5,'BaseQuantities',S,\$,(#4008,#4009,#4010,#361,#4011,#4012,#4013,#4014));

#4016= IFCLOCALPLACEMENT(#30,#10);

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#4017=
IFCELEMENTASSEMBLY('1Ogjm0005V34qE3SsC34u',#5,'Steel
Assembly',S,S,#4016,S,'BE-0(?)',..NOTDEFINED,..RIGID_FRAME.);
#4018= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit
weight',S,IFCMASMEASURE(150.5),S);
#4019= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit top
elevation',S,IFCLABEL(' +2.150'),S);
#4020= IFCPROPERTYSET('1Evvmv_abB4eXda8q_LRx',#5,'Tekla
Assembly','Assembly
Properties',(#34,#313,#4018,#3264,#4019,#3861,#318));
#4021= IFCQUANTITYLENGTH('Width',S,S,200.00000000136);
#4022=
IFCELEMENTQUANTITY('18mN5Z35P2jgai14y5LNHu',#5,'BaseQuan
tities',S,S,(#4021));
#4023=
IFCCARTESIANPOINT((1750.,5893.33359952539,42.2562431362395)
);
#4024= IFCDIRECTION((0,-
0.422557789184839,0.906335983396456));
#4025= IFCAXIS2PLACEMENT3D(#4023,#7,#4024);
#4026= IFCLOCALPLACEMENT(#4016,#4025);
#4027= IFCARTESIANPOINT((2278.49074221834,0.,0.));
#4028= IFCAXIS2PLACEMENT3D(#4027,#336,#335);
#4029= IFCXTRUDEDAREASOLID(#333,#4028,#9,2278.5);
#4030=
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4029));
#4031= IFCSTYLEDITEM(#4029,(#330),S);
#4032= IFCPRODUCTDEFINITIONSHAPE(S,S,(#4030));
#4033=
IFCMEMBER('1Ogjm0005Up4qE3SsC34u',#5,'BEAM',HN400*200*8
*13,'HN400*200*8*13',#4026,#4032,'PO(?)');
#4034= IFCPROPERTYSINGLEVALUE('Top elevation',S,IFCLABEL('
+2.150'),S);
#4035= IFCPROPERTYSET('1pAKolbPHE_eEZIGbBpx2',#5,'Tekla
Common','Common Properties to Shared building
elements',(#3273,#4034,#71,#72,#73,#346));
#4036=
IFCPROPERTYSINGLEVALUE('Weight',S,IFCMASMEASURE(150.
5),S);
#4037=
IFCPROPERTYSINGLEVALUE('Length',S,IFCLENGTHMEASURE(2
278.5),S);
#4038= IFCPROPERTYSET('3G2Sff3tFJ8Q9PLvybzp',#5,'Tekla
Quantity','Quantity Properties to Shared building
elements',(#4036,#1108,#78,#350,#3942,#352,#353,#4037));
#4039= IFCQUANTITYLENGTH('Length',S,S,2278.4907422183);
#4040=
IFCQUANTITYAREA('OuterSurfaceArea',S,S,3.60912933567379);
#4041=
IFCQUANTITYAREA('GrossSurfaceArea',S,S,3.60912933567379);
#4042=
IFCQUANTITYVOLUME('NetVolume',S,S,0.0186653961602495);
#4043=
IFCQUANTITYVOLUME('GrossVolume',S,S,0.0191666641235403);
#4044= IFCQUANTITYWEIGHT('NetWeight',S,S,146.523359857959);
#4045=
IFCQUANTITYWEIGHT('GrossWeight',S,S,150.458313369792);
#4046=
IFCELEMENTQUANTITY('1TMQXNivL2Kg0gNAoveVsU',#5,'BaseQ
uantities',S,S,(#4039,#4040,#4041,#361,#4042,#4043,#4044,#4045));
#4047= IFCLOCALPLACEMENT(#30,#10);
#4048=
IFCELEMENTASSEMBLY('1Ogjm0005Tp4qE3SsC34u',#5,'Steel
Assembly',S,S,#4047,S,'BE-0(?)',..NOTDEFINED,..RIGID_FRAME.);
#4049= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit
weight',S,IFCMASMEASURE(154.6),S);
#4050= IFCPROPERTYSET('1b_U7SEWP4z9aOldkh3prf',#5,'Tekla
Assembly','Assembly
Properties',(#34,#313,#4049,#3264,#4050,#3861,#318));
#4052= IFCQUANTITYLENGTH('Width',S,S,200.00000000829);
#4053=
IFCELEMENTQUANTITY('1U3XvVfk5E5x2VnB_ePpL_',#5,'BaseQu
antities',S,S,(#4052));
#4054=
IFCCARTESIANPOINT((1750.,6726.01052746136,2154.10995533016)
);
#4055= IFCDIRECTION((0,-0.432821786004936,-
0.90147950701028));
#4056= IFCAXIS2PLACEMENT3D(#4054,#7,#4055);
#4057= IFCLOCALPLACEMENT(#4047,#4056);
#4058= IFCARTESIANPOINT((2341.51447306738,0.,0.));
#4059= IFCAXIS2PLACEMENT3D(#4058,#336,#335);
#4060= IFCXTRUDEDAREASOLID(#333,#4059,#9,2341.5);
#4061=
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4060));
#4062= IFCSTYLEDITEM(#4060,(#330),S);
#4063= IFCPRODUCTDEFINITIONSHAPE(S,S,(#4061));
#4064=
IFCMEMBER('1Ogjm0005TZ4qE3SsC34u',#5,'BEAM',HN400*200*8
*13,'HN400*200*8*13',#4057,#4063,'PO(?)');
#4065= IFCPROPERTYSINGLEVALUE('Top elevation',S,IFCLABEL('
+2.197'),S);
#4066= IFCPROPERTYSET('0Q0pZu35DA5fGbsSfsvX',#5,'Tekla
Common','Common Properties to Shared building
elements',(#3273,#4065,#71,#72,#73,#346));
#4067=
IFCPROPERTYSINGLEVALUE('Weight',S,IFCMASMEASURE(154.
6),S);
#4068=
IFCPROPERTYSINGLEVALUE('Length',S,IFCLENGTHMEASURE(2
341.5),S);
#4069= IFCPROPERTYSET('1KDJLAP595mvKBYbazThAa',#5,'Tekla
Quantity','Quantity Properties to Shared building
elements',(#4067,#1108,#78,#350,#4005,#352,#353,#4068));
#4070= IFCQUANTITYLENGTH('Length',S,S,2341.51447306707);
#4071=
IFCQUANTITYAREA('OuterSurfaceArea',S,S,3.70895892533823);
#4072=
IFCQUANTITYAREA('GrossSurfaceArea',S,S,3.70895892533823);
#4073=
IFCQUANTITYVOLUME('NetVolume',S,S,0.0191816865633696);
#4074=
IFCQUANTITYVOLUME('GrossVolume',S,S,0.0196968197474402);
#4075= IFCQUANTITYWEIGHT('NetWeight',S,S,150.576239522451);
#4076=
IFCQUANTITYWEIGHT('GrossWeight',S,S,154.620035017405);
#4077=
IFCELEMENTQUANTITY('1vXNYKW2XBOf0I_vidXGVI',#5,'BaseQ
uantities',S,S,(#4070,#4071,#4072,#361,#4073,#4074,#4075,#4076));
#4078= IFCLOCALPLACEMENT(#30,#10);
#4079=
IFCELEMENTASSEMBLY('1Ogjm0005SZ4qE3SsC34u',#5,'Steel
Assembly',S,S,#4078,S,'BE-0(?)',..NOTDEFINED,..RIGID_FRAME.);
#4080= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit
weight',S,IFCMASMEASURE(155.5),S);
#4081= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit top
elevation',S,IFCLABEL(' +2.199'),S);
#4082= IFCPROPERTYSET('0H6wDgs97hgEALxEdP_E4',#5,'Tekla
Assembly','Assembly
Properties',(#34,#313,#4080,#3326,#4081,#3861,#318));
#4083= IFCQUANTITYLENGTH('Width',S,S,200.000000000332);
#4084=
IFCELEMENTQUANTITY('0Pb8F9L515xujNllucBxn',#5,'BaseQuant
ities',S,S,(#4083));
#4085=
IFCCARTESIANPOINT((1750.,7949.00332984165,44.3055297355585)
);
#4086= IFCDIRECTION((0,-
0.443057317851705,0.896493286699936));
#4087= IFCAXIS2PLACEMENT3D(#4085,#7,#4086);
#4088= IFCLOCALPLACEMENT(#4078,#4087);
#4089= IFCARTESIANPOINT((2354.53852276762,0.,0.));
#4090= IFCAXIS2PLACEMENT3D(#4089,#336,#335);
#4091= IFCXTRUDEDAREASOLID(#333,#4090,#9,2354.5);
#4092=
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4091));
#4093= IFCSTYLEDITEM(#4091,(#330),S);
#4094= IFCPRODUCTDEFINITIONSHAPE(S,S,(#4092));
#4095=
IFCMEMBER('1Ogjm0005SJ4qE3SsC34u',#5,'BEAM',HN400*200*8
*13,'HN400*200*8*13',#4088,#4094,'PO(?)');
#4096= IFCPROPERTYSINGLEVALUE('Top elevation',S,IFCLABEL('
+2.199'),S);
#4097= IFCPROPERTYSET('1b_NenJO17IAOeYqky59Jz',#5,'Tekla
Common','Common Properties to Shared building
elements',(#3334,#4096,#71,#72,#73,#346));
#4098=
IFCPROPERTYSINGLEVALUE('Weight',S,IFCMASMEASURE(155.
5),S);
#4099=
IFCPROPERTYSINGLEVALUE('Length',S,IFCLENGTHMEASURE(2
354.5),S);
#4100= IFCPROPERTYSET('3rIgc6mqP6Sw6pTWvap5NT',#5,'Tekla
Quantity','Quantity Properties to Shared building
elements',(#4098,#1108,#78,#350,#4005,#352,#353,#4099));
#4101= IFCQUANTITYLENGTH('Length',S,S,2354.53852276746);
#4102=
IFCQUANTITYAREA('OuterSurfaceArea',S,S,3.72958902006366);
#4103=
IFCQUANTITYAREA('GrossSurfaceArea',S,S,3.72958902006366);
#4104=
IFCQUANTITYVOLUME('NetVolume',S,S,0.0192883795785165);
#4105=
IFCQUANTITYVOLUME('GrossVolume',S,S,0.0198063780535199);
#4106= IFCQUANTITYWEIGHT('NetWeight',S,S,151.413779691355);
#4107=
IFCQUANTITYWEIGHT('GrossWeight',S,S,155.480067720131);
#4108=
IFCELEMENTQUANTITY('2jctY85tb0fRcRZibQY_9m',#5,'BaseQuant
ities',S,S,(#4101,#4102,#4103,#361,#4104,#4105,#4106,#4107));
#4109= IFCLOCALPLACEMENT(#30,#10);
#4110=
IFCELEMENTASSEMBLY('1Ogjm0005RJ4qE3SsC34u',#5,'Steel
Assembly',S,S,#4109,S,'BE-0(?)',..NOTDEFINED,..RIGID_FRAME.);
#4111= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit
weight',S,IFCMASMEASURE(159.3),S);
#4112= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit top
elevation',S,IFCLABEL(' +2.249'),S);
#4113= IFCPROPERTYSET('3OJne4qQf6QxNwydASRro9',#5,'Tekla
Assembly','Assembly
Properties',(#34,#313,#4111,#3326,#4112,#3861,#318));
#4114= IFCQUANTITYLENGTH('Width',S,S,200.000000001);
#4115=
IFCELEMENTQUANTITY('3IQByaMof7egnZvqovYrjr',#5,'BaseQuant
ities',S,S,(#4114));
#4116=
IFCCARTESIANPOINT((1750.,8845.63529453942,2204.46497720565)
);
#4117= IFCDIRECTION((0,-0.445837822065509,-
0.895113756131523));
#4118= IFCAXIS2PLACEMENT3D(#4116,#7,#4117);
#4119= IFCLOCALPLACEMENT(#4109,#4118);
#4120= IFCARTESIANPOINT((2412.96861070511,0.,0.));
#4121= IFCAXIS2PLACEMENT3D(#4120,#336,#335);
#4122= IFCXTRUDEDAREASOLID(#333,#4121,#9,2413.);

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## Appendix

<pre> #4123= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4122)); #4124= IFCSTYLEEDITITEM(#4122,(#330),S); #4125= IFCPRODUCTDEFINITIONSHAPE(S,S,(#4123)); #4126= IFCMEMBER('1Ogimc0005R34qE3SsC34u',#5,'BEAM','HN400*200*8 *13','HN400*200*8*13',#4119,#4125,'P0(?)'); #4127= IFCPROPERTYSINGLEVALUE('Top elevation',S,IFCLABEL(' +2.249'),S); #4128= IFCPROPERTYSET('0IssElxpbA1QVDgWB1NSR1',#5,'Tekla Common','Common Properties to Shared building elements',(#3334,#4127,#71,#72,#73,#346)); #4129= IFCPROPERTYSINGLEVALUE('Weight',S,IFCMASSMEASURE(159. 3),S); #4130= IFCPROPERTYSINGLEVALUE('Net surface area',S,IFCAREAMEASURE(3.8),S); #4131= IFCPROPERTYSINGLEVALUE('Length',S,IFLENGTHMEASURE(2 413.),S); #4132= IFCPROPERTYSET('1Vzk7AxNnAgg4BLNmp7mF_',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#4129,#1108,#78,#350,#4130,#352,#353,#4131)); #4133= IFCQUANTITYLENGTH('Length',S,S,2412.9686107061); #4134= IFCQUANTITYAREA('OuterSurfaceArea',S,S,3.82214227935847); #4135= IFCQUANTITYAREA('GrossSurfaceArea',S,S,3.82214227935847); #4136= IFCQUANTITYVOLUME('NetVolume',S,S,0.0197670388588911); #4137= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0202978919532598); #4138= IFCQUANTITYWEIGHT('NetWeight',S,S,155.171255042295); #4139= IFCQUANTITYWEIGHT('GrossWeight',S,S,159.338451833089); #4140= IFCELEMENTQUANTITY('3ISSZok_D8cR8UkTcaUkav',#5,'BaseQua ntities',S,S,(#4133,#4134,#4135,#361,#4136,#4137,#4138,#4139)); #4141= IFCLOCALPLACEMENT(#30,#10); #4142= IFCELEMENTASSEMBLY('1Ogimc0005Q34qE3SsC34u',#5,'Steel Assembly',S,S,#4141,S,'BE-0(?)',NOTDEFINED,,RIGID_FRAME.); #4143= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit weight',S,IFCMASSMEASURE(158.3),S); #4144= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit top elevation',S,IFCLABEL(' +2.247'),S); #4145= IFCPROPERTYSET('2miqOMw8fBt9aJslGd8B19',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#4143,#3264,#4144,#3861,#318)); #4146= IFCQUANTITYLENGTH('Width',S,S,200.00000000046); #4147= IFCELEMENTQUANTITY('2oZEN7AKz8FvlzZcQhLg1',#5,'BaseQua ntities',S,S,(#4146)); #4148= IFCCARTESIANPOINT((1750.,10066.1886053216,43.416099773258) ); #4149= IFCDIRECTION((0,- 0.434159448205744,0.900836041426898)); #4150= IFCAXIS2PLACEMENT3D(#4148,#7,#4149); #4151= IFCLOCALPLACEMENT(#4141,#4150); #4152= IFCCARTESIANPOINT((2397.64062556217,1.81898940354586E- 012,0.)); #4153= IFCAXIS2PLACEMENT3D(#4152,#336,#335); #4154= IFCEXTRUDEDAREASOLID(#333,#4153,#9,2397.6); #4155= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4154)); #4156= IFCSTYLEEDITITEM(#4154,(#330),S); #4157= IFCPRODUCTDEFINITIONSHAPE(S,S,(#4155)); #4158= IFCMEMBER('1Ogimc0005Pp4qE3SsC34u',#5,'BEAM','HN400*200*8 *13','HN400*200*8*13',#4151,#4157,'P0(?)'); #4159= IFCPROPERTYSINGLEVALUE('Top elevation',S,IFCLABEL(' +2.247'),S); #4160= IFCPROPERTYSET('1bYC5anPz8Fu3swfVYw11g',#5,'Tekla Common','Common Properties to Shared building elements',(#3273,#4159,#71,#72,#73,#346)); #4161= IFCPROPERTYSINGLEVALUE('Weight',S,IFCMASSMEASURE(158. 3),S); #4162= IFCPROPERTYSINGLEVALUE('Length',S,IFLENGTHMEASURE(2 397.6),S); #4163= IFCPROPERTYSET('2HM16ez4v3Kv7vzvDJKD1',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#4161,#1108,#78,#350,#4130,#352,#353,#4162)); #4164= IFCQUANTITYLENGTH('Length',S,S,2397.64062556325); #4165= IFCQUANTITYAREA('OuterSurfaceArea',S,S,3.79786275089219); #4166= IFCQUANTITYAREA('GrossSurfaceArea',S,S,3.79786275089219); #4167= IFCQUANTITYVOLUME('NetVolume',S,S,0.0196414720046029); #4168= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0201689529422381); #4169= IFCQUANTITYWEIGHT('NetWeight',S,S,154.18555236133); #4170= IFCQUANTITYWEIGHT('GrossWeight',S,S,158.326280596569); #4171= IFCELEMENTQUANTITY('1tEKyS6_j2A8uCchvR9MZ',#5,'BaseQua ntities',S,S,(#4164,#4165,#4166,#361,#4167,#4168,#4169,#4170)); #4172= IFCLOCALPLACEMENT(#30,#10); </pre>	<pre> #4173= IFCELEMENTASSEMBLY('1Ogimc0005Op4qE3SsC34u',#5,'Steel Assembly',S,S,#4172,S,'BE-0(?)',NOTDEFINED,,RIGID_FRAME.); #4174= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit weight',S,IFCMASSMEASURE(162.7),S); #4175= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit top elevation',S,IFCLABEL(' +2.298'),S); #4176= IFCPROPERTYSET('3JhotFF_fOPgH3o5h_aXf',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#4174,#3264,#4175,#3861,#318)); #4177= IFCQUANTITYLENGTH('Width',S,S,200.000000000053); #4178= IFCELEMENTQUANTITY('1q_SAnUc1FLgrZBVjB3nzF',#5,'BaseQua ntities',S,S,(#4177)); #4179= IFCCARTESIANPOINT((1750.,10976.852164616,2253.48135752825)); #4180= IFCDIRECTION((0,-0.442599398195128,- 0.896719450395334)); #4181= IFCAXIS2PLACEMENT3D(#4179,#7,#4180); #4182= IFCLOCALPLACEMENT(#4172,#4181); #4183= IFCCARTESIANPOINT((2463.67056237623,0.,0.)); #4184= IFCAXIS2PLACEMENT3D(#4183,#336,#335); #4185= IFCEXTRUDEDAREASOLID(#333,#4184,#9,2463.7); #4186= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4185)); #4187= IFCSTYLEEDITITEM(#4185,(#330),S); #4188= IFCPRODUCTDEFINITIONSHAPE(S,S,(#4186)); #4189= IFCMEMBER('1Ogimc0005OZ4qE3SsC34u',#5,'BEAM','HN400*200* 8*13','HN400*200*8*13',#4182,#4188,'P0(?)'); #4190= IFCPROPERTYSINGLEVALUE('Top elevation',S,IFCLABEL(' +2.298'),S); #4191= IFCPROPERTYSET('1Cc1gVrET4zPZyJfw2yJcY',#5,'Tekla Common','Common Properties to Shared building elements',(#3273,#4190,#71,#72,#73,#346)); #4192= IFCPROPERTYSINGLEVALUE('Weight',S,IFCMASSMEASURE(162. 7),S); #4193= IFCPROPERTYSINGLEVALUE('Net surface area',S,IFCAREAMEASURE(3.9),S); #4194= IFCPROPERTYSINGLEVALUE('Length',S,IFLENGTHMEASURE(2 463.7),S); #4195= IFCPROPERTYSET('03IHSjAADDRAJv3tGO6OQ',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#4192,#1108,#78,#350,#4193,#352,#353,#4194)); #4196= IFCQUANTITYLENGTH('Length',S,S,2463.67056237591); #4197= IFCQUANTITYAREA('OuterSurfaceArea',S,S,3.90245417080344); #4198= IFCQUANTITYAREA('GrossSurfaceArea',S,S,3.90245417080344); #4199= IFCQUANTITYVOLUME('NetVolume',S,S,0.0201823892469711); #4200= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0207243967707061); #4201= IFCQUANTITYWEIGHT('NetWeight',S,S,158.43175588723); #4202= IFCQUANTITYWEIGHT('GrossWeight',S,S,162.686514650043); #4203= IFCELEMENTQUANTITY('3HilFySafmQ918DG7iEX',#5,'BaseQua ntities',S,S,(#4196,#4197,#4198,#361,#4199,#4200,#4201,#4202)); #4204= IFCLOCALPLACEMENT(#30,#10); #4205= IFCELEMENTASSEMBLY('1Ogimc0005Nz4qE3SsC34u',#5,'Steel Assembly',S,S,#4204,S,'BE-0(?)',NOTDEFINED,,RIGID_FRAME.); #4206= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit top elevation',S,IFCLABEL(' +2.297'),S); #4207= IFCPROPERTYSET('04F5IB4zEP8SiwnQlsoy',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#4174,#3326,#4206,#3861,#318)); #4208= IFCQUANTITYLENGTH('Width',S,S,200.000000000315); #4209= IFCELEMENTQUANTITY('1HWhNaSoX1rep3tSMkqu',#5,'BaseQua ntities',S,S,(#4208)); #4210= IFCCARTESIANPOINT((1750.,12242.6891801525,44.1294388218557) ); #4211= IFCDIRECTION((0,- 0.441295612954756,0.897361789907998)); #4212= IFCAXIS2PLACEMENT3D(#4210,#7,#4211); #4213= IFCLOCALPLACEMENT(#4204,#4212); #4214= IFCCARTESIANPOINT((2461.90729924387,0.,0.)); #4215= IFCAXIS2PLACEMENT3D(#4214,#336,#335); #4216= IFCEXTRUDEDAREASOLID(#333,#4215,#9,2461.9); #4217= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4216)); #4218= IFCSTYLEEDITITEM(#4216,(#330),S); #4219= IFCPRODUCTDEFINITIONSHAPE(S,S,(#4217)); #4220= IFCMEMBER('1Ogimc0005N4qE3SsC34u',#5,'BEAM','HN400*200*8 *13','HN400*200*8*13',#4213,#4219,'P0(?)'); #4221= IFCPROPERTYSINGLEVALUE('Top elevation',S,IFCLABEL(' +2.297'),S); #4222= IFCPROPERTYSET('2Lc1S1Wu0f3jAH_XJzEoRe',#5,'Tekla Common','Common Properties to Shared building elements',(#3334,#4221,#71,#72,#73,#346)); #4223= IFCPROPERTYSINGLEVALUE('Length',S,IFLENGTHMEASURE(2 461.9),S); #4224= IFCPROPERTYSET('3vrDzKvMTC4u505DYlcqua',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#4192,#1108,#78,#350,#4193,#352,#353,#4223)); #4225= IFCQUANTITYLENGTH('Length',S,S,2461.90729924363); #4226= IFCQUANTITYAREA('OuterSurfaceArea',S,S,3.89966116200191); </pre>
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#4227= IFCQUANTITYAREA('GrossSurfaceArea',S,S,3.89966116200191);  
#4228= IFCQUANTITYVOLUME('NetVolume',S,S,0.0201679445954078);  
#4229= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0207095642012374);  
#4230= IFCQUANTITYWEIGHT('NetWeight',S,S,158.318365073951);  
#4231= IFCQUANTITYWEIGHT('GrossWeight',S,S,162.570078979714);  
#4232= IFCLEMENTQUANTITY('01TjdR9fUfUf1khUmopu4',#5,'BaseQuantities',S,S,#4225,#4226,#4227,#361,#4228,#4229,#4230,#4231);  
#4233= IFCLOCALPLACEMENT('#30,#10);  
#4234= IFCLEMENTASSEMBLY('1Ogimc0005MJ4qE3SsC34u',#5,'Steel Assembly',S,S,#4233,S,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#4235= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit weight',S,IFCMASSMEASURE(172.)),S);  
#4236= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit top elevation',S,IFCLABEL(' +2.364'),S);  
#4237= IFCPROPERTYSET('0oGdopz7jCRwy7SRog1Shu',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#4235,#3326,#4236,#3861,#318));  
#4238= IFCQUANTITYLENGTH('Width',S,S,200.000000001361);  
#4239= IFCLEMENTQUANTITY('30EndWsiH7kOiOGBilrtCc',#5,'BaseQuantities',S,S,#4238);  
#4240= IFCARTESIANPOINT((1750.63230217308,13351.0928878033,2314.64405667366));  
#4241= IFCDIRECTION((0.999999860747348,-0.000527735999866671,0.));  
#4242= IFCDIRECTION((-0.000260402999942928,-0.493433264891793,-0.869783619809262));  
#4243= IFCAXIS2PLACEMENT3D(#4240,#4241,#4242);  
#4244= IFCLOCALPLACEMENT(#4233,#4243);  
#4245= IFCARTESIANPOINT((2604.44183345688,1.67441383905582E-012,-7.84653749150549E-017));  
#4246= IFCAXIS2PLACEMENT3D(#4245,#336,#335);  
#4247= IFCXTRUDEDAREASOLID(#333,#4246,#9,2604.4);  
#4248= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4247));  
#4249= IFCSTYLEDITEM(#4247,#330,S);  
#4250= IFCPRODUCTDEFINITIONSHAPE(S,S,#4248);  
#4251= IFCMEMBER('1Ogimc0005M34qE3SsC34u',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#4244,#4250,'P0(?)');  
#4252= IFCPROPERTYSINGLEVALUE('Top elevation',S,IFCLABEL(' +2.364'),S);  
#4253= IFCPROPERTYSET('1CcD6pBBX4XfzbyEj6r8f',#5,'Tekla Common','Common Properties to Shared building elements',(#3334,#4252,#71,#72,#73,#346));  
#4254= IFCPROPERTYSINGLEVALUE('Weight',S,IFCMASSMEASURE(172.)),S);  
#4255= IFCPROPERTYSINGLEVALUE('Net surface area',S,IFCAREAMEASURE(4.1),S);  
#4256= IFCPROPERTYSINGLEVALUE('Length',S,IFCLENGTHMEASURE(2604.4),S);  
#4257= IFCPROPERTYSET('1iLn1KDAX4lhGZxerc5\_Bb',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#4254,#1108,#78,#350,#4255,#352,#353,#4256));  
#4258= IFCQUANTITYLENGTH('Length',S,S,2604.44183345716);  
#4259= IFCQUANTITYAREA('OuterSurfaceArea',S,S,4.12543586419615);  
#4260= IFCQUANTITYAREA('GrossSurfaceArea',S,S,4.12543586419615);  
#4261= IFCQUANTITYVOLUME('NetVolume',S,S,0.021335587499668);  
#4262= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0219085647030417);  
#4263= IFCQUANTITYWEIGHT('NetWeight',S,S,167.484361872394);  
#4264= IFCQUANTITYWEIGHT('GrossWeight',S,S,171.982232918877);  
#4265= IFCLEMENTQUANTITY('30GaUGruD1hAWFwvGQM46Z',#5,'BaseQuantities',S,S,#4258,#4259,#4260,#361,#4261,#4262,#4263,#4264);  
#4266= IFCLOCALPLACEMENT('#30,#10);  
#4267= IFCLEMENTASSEMBLY('1Ogimc0005L34qE3SsC34u',#5,'Steel Assembly',S,S,#4266,S,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#4268= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit weight',S,IFCMASSMEASURE(162.5)),S);  
#4269= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit top elevation',S,IFCLABEL(' +2.343'),S);  
#4270= IFCPROPERTYSET('365zufsB5FcvjMiwRlcuj8',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#4268,#3264,#4269,#3861,#318));  
#4271= IFCQUANTITYLENGTH('Width',S,S,200.00000000051);  
#4272= IFCLEMENTQUANTITY('3K16ORiG59Yb\_ObrBd45py',#5,'BaseQuantities',S,S,#4271);  
#4273= IFCARTESIANPOINT((1749.93509604671,14491.944606083,39.0822647173485));  
#4274= IFCDIRECTION((0.999999751402862,0.0007051200002846,0.));  
#4275= IFCDIRECTION((0.000275576999992742,-0.390821896989734,0.920466277975822));  
#4276= IFCAXIS2PLACEMENT3D(#4273,#4274,#4275);  
#4277= IFCLOCALPLACEMENT(#4266,#4276);  
#4278= IFCARTESIANPOINT((2461.03601241323,-3.63797880709171E-012,2.27458875467947E-013));  
#4279= IFCAXIS2PLACEMENT3D(#4278,#336,#335);  
#4280= IFCXTRUDEDAREASOLID(#333,#4279,#9,2461.0);  
#4281= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4280));  
#4282= IFCSTYLEDITEM(#4280,#330,S);  
#4283= IFCPRODUCTDEFINITIONSHAPE(S,S,#4281);  
#4284= IFCMEMBER('1Ogimc0005Kp4qE3SsC34u',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#4277,#4283,'P0(?)');  
#4285= IFCPROPERTYSINGLEVALUE('Top elevation',S,IFCLABEL(' +2.343'),S);  
#4286= IFCPROPERTYSET('3xY5hCH71099YBHrtzF',#5,'Tekla Common','Common Properties to Shared building elements',(#3273,#4285,#71,#72,#73,#346));  
#4287= IFCPROPERTYSINGLEVALUE('Weight',S,IFCMASSMEASURE(162.5)),S);  
#4288= IFCPROPERTYSINGLEVALUE('Length',S,IFCLENGTHMEASURE(2461.0)),S);  
#4289= IFCPROPERTYSET('3vgztcXND70LJbip6hw0P',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#4287,#1108,#78,#350,#4193,#352,#353,#4288));  
#4290= IFCQUANTITYLENGTH('Length',S,S,2461.03601241358);  
#4291= IFCQUANTITYAREA('OuterSurfaceArea',S,S,3.89828104366312);  
#4292= IFCQUANTITYAREA('GrossSurfaceArea',S,S,3.89828104366312);  
#4293= IFCQUANTITYVOLUME('NetVolume',S,S,0.0201608070136939);  
#4294= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0207022349364231);  
#4295= IFCQUANTITYWEIGHT('NetWeight',S,S,158.262335057497);  
#4296= IFCQUANTITYWEIGHT('GrossWeight',S,S,162.512544250921);  
#4297= IFCLEMENTQUANTITY('240OB1J4r7UuXUJGDEIOC',#5,'BaseQuantities',S,S,#4290,#4291,#4292,#361,#4293,#4294,#4295,#4296);  
#4298= IFCLOCALPLACEMENT('#30,#10);  
#4299= IFCLEMENTASSEMBLY('1Ogimc0005Jp4qE3SsC34u',#5,'Steel Assembly',S,S,#4298,S,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#4300= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit weight',S,IFCMASSMEASURE(173.2)),S);  
#4301= IFCPROPERTYSET('3RJuF5XDDhOp5RM9S3GNX',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#4300,#3264,#2860,#3861,#318));  
#4302= IFCQUANTITYLENGTH('Width',S,S,199.999999999975);  
#4303= IFCLEMENTQUANTITY('3xAVRbDH0295XOabSghAu',#5,'BaseQuantities',S,S,#4302);  
#4304= IFCARTESIANPOINT((1750.07738229346,15535.6493205426,2361.59600239503));  
#4305= IFCDIRECTION((0.999999997719309,-6.75379999803738E-005,0.));  
#4306= IFCDIRECTION((-3.1773999994273E-005,-0.4704596529149,-0.882421505840381));  
#4307= IFCAXIS2PLACEMENT3D(#4304,#4305,#4306);  
#4308= IFCLOCALPLACEMENT(#4298,#4307);  
#4309= IFCARTESIANPOINT((2622.95281352217,-1.81898940354586E-012,3.11593071455619E-017));  
#4310= IFCAXIS2PLACEMENT3D(#4309,#336,#335);  
#4311= IFCXTRUDEDAREASOLID(#333,#4310,#9,2623.0);  
#4312= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4311));  
#4313= IFCSTYLEDITEM(#4311,#330,S);  
#4314= IFCPRODUCTDEFINITIONSHAPE(S,S,#4312);  
#4315= IFCMEMBER('1Ogimc0005JZ4qE3SsC34u',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#4308,#4314,'P0(?)');  
#4316= IFCPROPERTYSET('2S4vLBvjf15gA3wF6NK15v',#5,'Tekla Common','Common Properties to Shared building elements',(#3273,#2869,#71,#72,#73,#346));  
#4317= IFCPROPERTYSINGLEVALUE('Weight',S,IFCMASSMEASURE(173.2)),S);  
#4318= IFCPROPERTYSINGLEVALUE('Length',S,IFCLENGTHMEASURE(2623.0)),S);  
#4319= IFCPROPERTYSET('3GWQpZaJ1VwV85fqWkgH3',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#4317,#1108,#78,#350,#4255,#352,#353,#4318));  
#4320= IFCQUANTITYLENGTH('Length',S,S,2622.95281352275);  
#4321= IFCQUANTITYAREA('OuterSurfaceArea',S,S,4.15475725662004);  
#4322= IFCQUANTITYAREA('GrossSurfaceArea',S,S,4.15475725662004);  
#4323= IFCQUANTITYVOLUME('NetVolume',S,S,0.0214872294483693);  
#4324= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0220642790673534);  
#4325= IFCQUANTITYWEIGHT('NetWeight',S,S,168.674751169699);  
#4326= IFCQUANTITYWEIGHT('GrossWeight',S,S,173.204590678724);  
#4327= IFCLEMENTQUANTITY('1VdxMKYU1JRECRWrtIDT9V',#5,'BaseQuantities',S,S,#4320,#4321,#4322,#361,#4323,#4324,#4325,#4326);  
#4328= IFCLOCALPLACEMENT('#30,#10);  
#4329= IFCLEMENTASSEMBLY('1Ogimc0005IZ4qE3SsC34u',#5,'Steel Assembly',S,S,#4328,S,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#4330= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit weight',S,IFCMASSMEASURE(168.2)),S);

## Appendix

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#4331= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit top
elevation',S,IFCLABEL(' +2.398'),S);
#4332= IFCPROPERTYSET('2oh5A1XD93nxFtA6irlgCP',#5,'Tekla
Assembly','Assembly
Properties',(#34,#313,#4330,#3326,#4331,#3861,#318));
#4333= IFCQUANTITYLENGTH('Width',S,S,200.000000001246);
#4334=
IFCELEMENTQUANTITY('3RwI9622LcRvDekujjP7Qq',#5,'BaseQua
ntities',S,S,(#4333));
#4335=
IFCCARTESIANPOINT((1.749.99287559688,16777.8135443695,41.73
71619515433));
#4336= IFCDIRECTION((0.99999999626798,7.83989999960704E-
005,0.));
#4337= IFCDIRECTION((3.27219999864706E-005,-
0.417372625826894,0.9087354346231));
#4338= IFCAXIS2PLACEMENT3D(#4335,#4336,#4337);
#4339= IFCLOCALPLACEMENT(#4328,#4338);
#4340=
IFCCARTESIANPOINT((2547.0010845359,0.2.27377891209897E-
013));
#4341= IFCAXIS2PLACEMENT3D(#4340,#336,#335);
#4342= IFCEXTRUDEDAREASOLID(#333,#4341,#9,2547.);
#4343=
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4342));
#4344= IFCSTYLEDITEM(#4342,(#330),S);
#4345= IFCPRODUCTDEFINITIONSHAPE(S,S,(#4343));
#4346=
IFCMEMBER('IOgimc0005IU4qE3SsC34u',#5,'BEAM','HN400*200*8*
13','HN400*200*8*13',#4339,#4345,'PO(?)');
#4347= IFCPROPERTYSINGLEVALUE('Top elevation',S,IFCLABEL('
+2.398'),S);
#4348= IFCPROPERTYSET('3$ib70nHP1bQf856K2D5c7',#5,'Tekla
Common','Common
Properties
to
Shared
building
elements',(#3334,#4347,#71,#72,#73,#346));
#4349=
IFCPROPERTYSINGLEVALUE('Weight',S,IFCMASSMEASURE(168.
2),S);
#4350=
IFCPROPERTYSINGLEVALUE('Length',S,IFLENGTHMEASURE(2
547.),S);
#4351= IFCPROPERTYSET('IOChrStebBChqBfO9dvQRL',#5,'Tekla
Quantity','Quantity
Properties
to
Shared
building
elements',(#4349,#1108,#78,#350,#4255,#352,#353,#4350));
#4352= IFCQUANTITYLENGTH('Length',S,S,2547.00108453585);
#4353=
IFCQUANTITYAREA('OuterSurfaceArea',S,S,4.03444971790478);
#4354=
IFCQUANTITYAREA('GrossSurfaceArea',S,S,4.03444971790478);
#4355=
IFCQUANTITYVOLUME('NetVolume',S,S,0.0208650328844918);
#4356=
IFCQUANTITYVOLUME('GrossVolume',S,S,0.0214253731231155);
#4357= IFCQUANTITYWEIGHT('NetWeight',S,S,163.79050814326);
#4358=
IFCQUANTITYWEIGHT('GrossWeight',S,S,168.189179016457);
#4359=
IFCELEMENTQUANTITY('31thmfA1BjwmMbuBvkXL1',#5,'BaseQu
antities',S,S,(#4352,#4353,#4354,#361,#4355,#4356,#4357,#4358));
#4360= IFCLOCALPLACEMENT(#30,#10);
#4361=
IFCELEMENTASSEMBLY('IOgimc0005HI4qE3SsC34u',#5,'Steel
Assembly',S,S,#4360,'BE-0(?)',NOTDEFINED,..RIGID_FRAME.);
#4362= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit
weight',S,IFCMASSMEASURE(176.5),S);
#4363= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit top
elevation',S,IFCLABEL(' +2.461'),S);
#4364= IFCPROPERTYSET('3PbTh3jz5839$ZeoAwguph',#5,'Tekla
Assembly','Assembly
Properties',(#34,#313,#4362,#3326,#4363,#3861,#318));
#4365= IFCQUANTITYLENGTH('Width',S,S,200.00000000269);
#4366=
IFCELEMENTQUANTITY('0HH83myQv5ZvRTqSGlzHPX',#5,'BaseQ
uantities',S,S,(#4365));
#4367=
IFCCARTESIANPOINT((1.749.96609435561,17847.0498845699,2414.
9834879358));
#4368= IFCDIRECTION((0.99999999565465,2.9479999982481E-
005,0.));
#4369= IFCDIRECTION((1.36620000039728E-005,-
0.46342174113422,-0.886137850256651));
#4370= IFCAXIS2PLACEMENT3D(#4367,#4368,#4369);
#4371= IFCLOCALPLACEMENT(#4360,#4370);
#4372=
IFCCARTESIANPOINT((2672.99429081602,0.-
2.27365548179669E-013));
#4373= IFCAXIS2PLACEMENT3D(#4372,#336,#335);
#4374= IFCEXTRUDEDAREASOLID(#333,#4373,#9,2673.);
#4375=
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4374));
#4376= IFCSTYLEDITEM(#4374,(#330),S);
#4377= IFCPRODUCTDEFINITIONSHAPE(S,S,(#4375));
#4378=
IFCMEMBER('IOgimc0005H34qE3SsC34u',#5,'BEAM','HN400*200*8
*13','HN400*200*8*13',#4371,#4377,'PO(?)');
#4379= IFCPROPERTYSINGLEVALUE('Top elevation',S,IFCLABEL('
+2.461'),S);
#4380= IFCPROPERTYSET('0BOeA481rCpBxIS7S1fjT',#5,'Tekla
Common','Common
Properties
to
Shared
building
elements',(#3334,#4379,#71,#72,#73,#346));
#4381=
IFCPROPERTYSINGLEVALUE('Weight',S,IFCMASSMEASURE(176.
5),S);
#4382= IFCPROPERTYSINGLEVALUE('Net
surface
area',S,IFCAREAMEASURE(4.3),S);
#4383=
IFCPROPERTYSINGLEVALUE('Length',S,IFLENGTHMEASURE(2
673.),S);
#4384= IFCPROPERTYSET('1XJzKc$V5APAZNeSBLIq1',#5,'Tekla
Quantity','Quantity
Properties
to
Shared
building
elements',(#4381,#1108,#78,#350,#4382,#352,#353,#4383));
#4385= IFCQUANTITYLENGTH('Length',S,S,2672.99429081458);
#4386=
IFCQUANTITYAREA('OuterSurfaceArea',S,S,4.23402295665029);
#4387=
IFCQUANTITYAREA('GrossSurfaceArea',S,S,4.23402295665029);
#4388=
IFCQUANTITYVOLUME('NetVolume',S,S,0.0218971692303791);
#4389=
IFCQUANTITYVOLUME('GrossVolume',S,S,0.0224852279743322);
#4390= IFCQUANTITYWEIGHT('NetWeight',S,S,171.892778458476);
#4391=
IFCQUANTITYWEIGHT('GrossWeight',S,S,176.509039598508);
#4392=
IFCELEMENTQUANTITY('3EUxEm7VfADetMGxhMPgJB',#5,'Base
Quantities',S,S,(#4385,#4386,#4387,#361,#4388,#4389,#4390,#4391));
#4393= IFCLOCALPLACEMENT(#30,#10);
#4394=
IFCELEMENTASSEMBLY('IOgimc0005G34qE3SsC34u',#5,'Steel
Assembly',S,S,#4393,'BE-0(?)',NOTDEFINED,..RIGID_FRAME.);
#4395= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit
weight',S,IFCMASSMEASURE(172.6),S);
#4396= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit top
elevation',S,IFCLABEL(' +2.453'),S);
#4397= IFCPROPERTYSET('2et9Ab1en7JwMrX$iyngZ',#5,'Tekla
Assembly','Assembly
Properties',(#34,#313,#4395,#3264,#4396,#3861,#318));
#4398= IFCQUANTITYLENGTH('Width',S,S,200.00000001386);
#4399=
IFCELEMENTQUANTITY('0mx8FNrDceO8efDjYxDe',#5,'BaseQua
ntities',S,S,(#4398));
#4400=
IFCCARTESIANPOINT((1750.1670029036,19141.3781446023,42.280
0608015516));
#4401= IFCDIRECTION((0.999998301957869,-
0.00184284599992191,0.));
#4402= IFCDIRECTION((-0.000779155000154336,-
0.422799380083744,0.906222973179497));
#4403= IFCAXIS2PLACEMENT3D(#4400,#4401,#4402);
#4404= IFCLOCALPLACEMENT(#4393,#4403);
#4405=
IFCCARTESIANPOINT((2613.75106707421,3.63797880709171E-
012,-2.27621388009997E-013));
#4406= IFCAXIS2PLACEMENT3D(#4405,#336,#335);
#4407= IFCEXTRUDEDAREASOLID(#333,#4406,#9,2613.8);
#4408=
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4407));
#4409= IFCSTYLEDITEM(#4407,(#330),S);
#4410= IFCPRODUCTDEFINITIONSHAPE(S,S,(#4408));
#4411=
IFCMEMBER('IOgimc0005Fp4qE3SsC34u',#5,'BEAM','HN400*200*8
*13','HN400*200*8*13',#4404,#4410,'PO(?)');
#4412= IFCPROPERTYSINGLEVALUE('Top elevation',S,IFCLABEL('
+2.453'),S);
#4413= IFCPROPERTYSET('2vvuBaXTn0WhQMca5Po9g8',#5,'Tekla
Common','Common
Properties
to
Shared
building
elements',(#3273,#4412,#71,#72,#73,#346));
#4414=
IFCPROPERTYSINGLEVALUE('Weight',S,IFCMASSMEASURE(172.
6),S);
#4415=
IFCPROPERTYSINGLEVALUE('Length',S,IFLENGTHMEASURE(2
613.8),S);
#4416= IFCPROPERTYSET('0P_OHlAPl2oQJGUFglY0la',#5,'Tekla
Quantity','Quantity
Properties
to
Shared
building
elements',(#4414,#1108,#78,#350,#4255,#352,#353,#4415));
#4417= IFCQUANTITYLENGTH('Length',S,S,2613.75106707589);
#4418=
IFCQUANTITYAREA('OuterSurfaceArea',S,S,4.14018169024821);
#4419=
IFCQUANTITYAREA('GrossSurfaceArea',S,S,4.14018169024821);
#4420=
IFCQUANTITYVOLUME('NetVolume',S,S,0.0214118487415034);
#4421=
IFCQUANTITYVOLUME('GrossVolume',S,S,0.0219868739762424);
#4422= IFCQUANTITYWEIGHT('NetWeight',S,S,168.083012620801);
#4423=
IFCQUANTITYWEIGHT('GrossWeight',S,S,172.596960713503);
#4424=
IFCELEMENTQUANTITY('1Cs$cmRnb2euydBgr7Hktx',#5,'BaseQuan
tities',S,S,(#4417,#4418,#4419,#361,#4420,#4421,#4422,#4423));
#4425= IFCLOCALPLACEMENT(#30,#10);
#4426=
IFCELEMENTASSEMBLY('IOgimc0005Ep4qE3SsC34u',#5,'Steel
Assembly',S,S,#4425,'BE-0(?)',NOTDEFINED,..RIGID_FRAME.);
#4427= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit
weight',S,IFCMASSMEASURE(180.3),S);
#4428= IFCPROPERTYSET('2_p8hKlZ3UBI_7LvIn$U',#5,'Tekla
Assembly','Assembly
Properties',(#34,#313,#4427,#3264,#2832,#3861,#318));
#4429= IFCQUANTITYLENGTH('Width',S,S,200.00000001077);
#4430=
IFCELEMENTQUANTITY('0Kphr6HvIEJvVPUKNYDLH',#5,'BaseQ
uantities',S,S,(#4429));
#4431=
IFCCARTESIANPOINT((1749.50812596327,20221.9670915497,2469.
06497759867));
#4432=
IFCDIRECTION((0.999999911812596,0.000419969999920307,0.));

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#4433= IFCDIRECTION((0.000193756000035468,-0.461355421084487,-0.887215384162475));  
 #4434= IFCAxis2PLACEMENT3D(#4431,#4432,#4433);  
 #4435= IFLOCALPLACEMENT(#4425,#4434);  
 #4436= IFCCARTESIANPOINT((2730.93706848454,-3.63797880709171E-012,-2.2728528320611E-013));  
 #4437= IFCAxis2PLACEMENT3D(#4436,#336,#335);  
 #4438= IFCEXTRUDEDAREASOLID(#333,#4437,#9,2730.9);  
 #4439= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4438));  
 #4440= IFCSTYLEDITEM(#4438,(#330),S);  
 #4441= IFCPRODUCTDEFINITIONSHAPE(S,S,(#4439));  
 #4442= IFCMEMBER('1Ogimc0005EZ4qE3SsC34u',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#4435,#4441,'PO(?));  
 #4443= IFCPROPERTYSET('0jvfw5Sn19BSVvpZoiwF',#5,'Tekla Common','Common Properties to Shared building elements',(#3273,#2841,#71,#72,#73,#346));  
 #4444= IFCPROPERTYSINGLEVALUE('Weight',S,IFCMASSMEASURE(180.3),S);  
 #4445= IFCPROPERTYSINGLEVALUE('Length',S,IFLENGTHMEASURE(2730.9),S);  
 #4446= IFCPROPERTYSET('2CeqKq8T5Qv02pWgZKRm6',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#4444,#1108,#78,#350,#4382,#352,#353,#4445));  
 #4447= IFCQUANTITYLENGTH('Length',S,S,2730.93706848492);  
 #4448= IFCQUANTITYAREA('OuterSurfaceArea',S,S,4.32580431648011);  
 #4449= IFCQUANTITYAREA('GrossSurfaceArea',S,S,4.32580431648011);  
 #4450= IFCQUANTITYVOLUME('NetVolume',S,S,0.0223718364650009);  
 #4451= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0229726426200952);  
 #4452= IFCQUANTITYWEIGHT('NetWeight',S,S,175.618916250257);  
 #4453= IFCQUANTITYWEIGHT('GrossWeight',S,S,180.335244567747);  
 #4454= IFCELEMENTQUANTITY('18C1vrZi56dgY9qkY8Xeo',#5,'BaseQuantities',S,S,(#4447,#4448,#4449,#361,#4450,#4451,#4452,#4453));  
 #4455= IFLOCALPLACEMENT(#30,#10);  
 #4456= IFCELEMENTASSEMBLY('1Ogimc0005DZ4qE3SsC34u',#5,'Steel Assembly',S,S,(#4455,S,'BE-0(?),'..NOTDEFINED..RIGID\_FRAME.);  
 #4457= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit weight',S,IFCMASSMEASURE(177.7),S);  
 #4458= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit top elevation',S,IFCLABEL(' +2.510'),S);  
 #4459= IFCPROPERTYSET('0LMLPvqhTffu4IVLHJYq',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#4457,#3326,#4458,#3861,#318));  
 #4460= IFCQUANTITYLENGTH('Width',S,S,200.0000000006);  
 #4461= IFCELEMENTQUANTITY('3TOVJCHYH2yvVM2rZnmTuB',#5,'BaseQuantities',S,S,(#4460));  
 #4462= IFCCARTESIANPOINT((1750.04073969584,21571.4026160538,43.4738052602664));  
 #4463= IFCDIRECTION((0.99999897674353,-0.000452383999852848,0.));  
 #4464= IFCDIRECTION((-0.000196669000003791,-0.434739483008292,0.900556241017177));  
 #4465= IFCAxis2PLACEMENT3D(#4462,#4463,#4464);  
 #4466= IFLOCALPLACEMENT(#4455,#4465);  
 #4467= IFCCARTESIANPOINT((2690.48113695203,1.49351705278191E-013,1.06725420068888E-016));  
 #4468= IFCAxis2PLACEMENT3D(#4467,#336,#335);  
 #4469= IFCEXTRUDEDAREASOLID(#333,#4468,#9,2690.5);  
 #4470= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4469));  
 #4471= IFCSTYLEDITEM(#4469,(#330),S);  
 #4472= IFCPRODUCTDEFINITIONSHAPE(S,S,(#4470));  
 #4473= IFCMEMBER('1Ogimc0005Dj4qE3SsC34u',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#4466,#4472,'PO(?));  
 #4474= IFCPROPERTYSINGLEVALUE('Top elevation',S,IFCLABEL(' +2.510'),S);  
 #4475= IFCPROPERTYSET('24wbjS0Xn5oP0Bs9QI96SD',#5,'Tekla Common','Common Properties to Shared building elements',(#3334,#4474,#71,#72,#73,#346));  
 #4476= IFCPROPERTYSINGLEVALUE('Weight',S,IFCMASSMEASURE(177.7),S);  
 #4477= IFCPROPERTYSINGLEVALUE('Length',S,IFLENGTHMEASURE(2690.5),S);  
 #4478= IFCPROPERTYSET('1jL26A8rLFBhAIO3ClYaA3',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#4476,#1108,#78,#350,#4382,#352,#353,#4477));  
 #4479= IFCQUANTITYLENGTH('Length',S,S,2690.48113695121);  
 #4480= IFCQUANTITYAREA('OuterSurfaceArea',S,S,4.26172212093072);  
 #4481= IFCQUANTITYAREA('GrossSurfaceArea',S,S,4.26172212093072);  
 #4482= IFCQUANTITYVOLUME('NetVolume',S,S,0.0220404214738901);  
 #4483= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0226323273240336);  
 #4484= IFCQUANTITYWEIGHT('NetWeight',S,S,173.017308570037);  
 #4485= IFCQUANTITYWEIGHT('GrossWeight',S,S,177.663769493664);

#4486= IFCELEMENTQUANTITY('3hNehnZmT14QUXBTOyaOpM',#5,'BaseQuantities',S,S,(#4479,#4480,#4481,#361,#4482,#4483,#4484,#4485));  
 #4487= IFLOCALPLACEMENT(#30,#10);  
 #4488= IFCELEMENTASSEMBLY('1Ogimc0005CJ4qE3SsC34u',#5,'Steel Assembly',S,S,(#4487,S,'BE-0(?),'..NOTDEFINED..RIGID\_FRAME.);  
 #4489= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit weight',S,IFCMASSMEASURE(184.4),S);  
 #4490= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit top elevation',S,IFCLABEL(' +2.572'),S);  
 #4491= IFCPROPERTYSET('1OxaOyFonFuOp1c8Ngcqg',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#4489,#3326,#4490,#3861,#318));  
 #4492= IFCCARTESIANPOINT((1751.63483458107,22675.2863393944,2526.02718085123));  
 #4493= IFCDIRECTION((0.999999062541179,-0.00136927599937301,0.));  
 #4494= IFCDIRECTION((-0.000629060999937375,-0.459411077954236,-0.888223544911519));  
 #4495= IFCAxis2PLACEMENT3D(#4492,#4493,#4494);  
 #4496= IFLOCALPLACEMENT(#4487,#4495);  
 #4497= IFCCARTESIANPOINT((2792.18693491594,1.54997511210061E-013,1.41462668345198E-016));  
 #4498= IFCAxis2PLACEMENT3D(#4497,#336,#335);  
 #4499= IFCEXTRUDEDAREASOLID(#333,#4498,#9,2792.2);  
 #4500= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4499));  
 #4501= IFCSTYLEDITEM(#4499,(#330),S);  
 #4502= IFCPRODUCTDEFINITIONSHAPE(S,S,(#4500));  
 #4503= IFCMEMBER('1Ogimc0005C34qE3SsC34u',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#4496,#4502,'PO(?));  
 #4504= IFCPROPERTYSINGLEVALUE('Top elevation',S,IFCLABEL(' +2.572'),S);  
 #4505= IFCPROPERTYSET('0dHsC8CL5YPhLRqLXxdyM',#5,'Tekla Common','Common Properties to Shared building elements',(#3334,#4504,#71,#72,#73,#346));  
 #4506= IFCPROPERTYSINGLEVALUE('Weight',S,IFCMASSMEASURE(184.4),S);  
 #4507= IFCPROPERTYSINGLEVALUE('Net surface area',S,IFCAREAMEASURE(4.4),S);  
 #4508= IFCPROPERTYSINGLEVALUE('Length',S,IFLENGTHMEASURE(2792.2),S);  
 #4509= IFCPROPERTYSET('0SYmlqSjD2BasBYquKwlyf',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#4506,#1108,#78,#350,#4507,#352,#353,#4508));  
 #4510= IFCQUANTITYLENGTH('Length',S,S,2792.18693491593);  
 #4511= IFCQUANTITYAREA('OuterSurfaceArea',S,S,4.42282410490684);  
 #4512= IFCQUANTITYAREA('GrossSurfaceArea',S,S,4.42282410490684);  
 #4513= IFCQUANTITYVOLUME('NetVolume',S,S,0.0228735953708153);  
 #4514= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0234878764965128);  
 #4515= IFCQUANTITYWEIGHT('NetWeight',S,S,179.557273660901);  
 #4516= IFCQUANTITYWEIGHT('GrossWeight',S,S,184.379830497626);  
 #4517= IFCELEMENTQUANTITY('1wk7OyRX14OfAeBoD\_QxXC',#5,'BaseQuantities',S,S,(#4510,#4511,#4512,#361,#4513,#4514,#4515,#4516));  
 #4518= IFLOCALPLACEMENT(#30,#10);  
 #4519= IFCELEMENTASSEMBLY('1Ogimc0005B34qE3SsC34u',#5,'Steel Assembly',S,S,(#4518,S,'BE-0(?),'..NOTDEFINED..RIGID\_FRAME.);  
 #4520= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit weight',S,IFCMASSMEASURE(182.4),S);  
 #4521= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit top elevation',S,IFCLABEL(' +2.568'),S);  
 #4522= IFCPROPERTYSET('2jgClZV099rQsm2IMRQTgU',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#4520,#3264,#4521,#3861,#318));  
 #4523= IFCQUANTITYLENGTH('Width',S,S,200.00000001226);  
 #4524= IFCELEMENTQUANTITY('3PED6\_yQvATxmdr3zOkVWt',#5,'BaseQuantities',S,S,(#4523));  
 #4525= IFCCARTESIANPOINT((1749.87012716774,24068.5200564826,43.9829783662765));  
 #4526= IFCDIRECTION((0.999998954376602,0.0014461140005431,0.));  
 #4527= IFCDIRECTION((0.000636043000041539,-0.43982863602875,0.898081492058706));  
 #4528= IFCAxis2PLACEMENT3D(#4525,#4526,#4527);  
 #4529= IFLOCALPLACEMENT(#4518,#4528);  
 #4530= IFCCARTESIANPOINT((2761.5377702294,3.63797880709171E-012,2.27417044433983E-013));  
 #4531= IFCAxis2PLACEMENT3D(#4530,#336,#335);  
 #4532= IFCEXTRUDEDAREASOLID(#333,#4531,#9,2761.5);  
 #4533= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4532));  
 #4534= IFCSTYLEDITEM(#4532,(#330),S);  
 #4535= IFCPRODUCTDEFINITIONSHAPE(S,S,(#4533));  
 #4536= IFCMEMBER('1Ogimc0005Ap4qE3SsC34u',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#4529,#4535,'PO(?));  
 #4537= IFCPROPERTYSINGLEVALUE('Top elevation',S,IFCLABEL(' +2.568'),S);

## Appendix

#4538= IFCPROPERTYSET('3R4K\_U04nEzWjdrSGldBUB',#5,'Tekla Common','Common Properties to Shared building elements',(#3273,#4537,#71,#72,#73,#346));  
#4539= IFCPROPERTYSINGLEVALUE('Weight',S,IFCMASMEASURE(182.4),S);  
#4540= IFCPROPERTYSINGLEVALUE('Length',S,IFCLENGTHMEASURE(2761.5),S);  
#4541= IFCPROPERTYSET('3o9TqRj5rEFhesKfJkUPB',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#4539,#1108,#78,#350,#4507,#352,#353,#4540));  
#4542= IFCQUANTITYLENGTH('Length',S,S,2761.53777023137);  
#4543= IFCQUANTITYAREA('OuterSurfaceArea',S,S,4.37427582804648);  
#4544= IFCQUANTITYAREA('GrossSurfaceArea',S,S,4.37427582804648);  
#4545= IFCQUANTITYVOLUME('NetVolume',S,S,0.0226225174137519);  
#4546= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0232300557231862);  
#4547= IFCQUANTITYWEIGHT('NetWeight',S,S,177.586761697953);  
#4548= IFCQUANTITYWEIGHT('GrossWeight',S,S,182.355937427012);  
#4549= IFCLEMENTQUANTITY('2kjbTXd5T6kBAB\_mOg1sJ',#5,'BaseQuantities',S,S,(#4542,#4543,#4544,#361,#4545,#4546,#4547,#4548));  
#4550= IFCLOCALPLACEMENT('#30,#10);  
#4551= IFCLEMENTASSEMBLY('1Ogimc00059p4qE3SsC34u',#5,'Steel Assembly',S,S,#4550,S,'BE-0(?)',NOTDEFINED,,RIGID\_FRAME.);  
#4552= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit weight',S,IFCMASMEASURE(188.8),S);  
#4553= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit top elevation',S,IFCLABEL(' +2.631'),S);  
#4554= IFCPROPERTYSET('2ZTPKRhPnDCecorOierDOA',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#4552,#3264,#4553,#3861,#318));  
#4555= IFCQUANTITYLENGTH('Width',S,S,200.000000002015);  
#4556= IFCLEMENTQUANTITY('3499oD50fDwErWq55aLAp',#5,'BaseQuantities',S,S,(#4555));  
#4557= IFCARTESIANPOINT((1750.92872209742,25215.9704461565,2584.48952110396));  
#4558= IFCDIRECTION((0.999999713668462,-0.000756744999747883,0.));  
#4559= IFCDIRECTION((-0.00034829999990851,-0.460261052879052,-0.887783555766706));  
#4560= IFCAXIS2PLACEMENT3D(#4557,#4558,#4559);  
#4561= IFCLOCALPLACEMENT(#4550,#4560);  
#4562= IFCARTESIANPOINT((2859.32682329357,-3.63797880709171E-012,2.27345712071307E-013));  
#4563= IFCAXIS2PLACEMENT3D(#4562,#336,#335);  
#4564= IFCEXTRUDEDAREASOLID(#333,#4563,#9,2859.3);  
#4565= IFCSHAPEREPRESENTATION('#12,'Body','SweptSolid',(#4564));  
#4566= IFCSTYLEDITEM(#4564,(#330),S);  
#4567= IFCPRODUCTDEFINITIONSHAPE(S,S,(#4565));  
#4568= IFCMEMBER('1Ogimc00059Z4qE3SsC34u',#5,'BEAM',HN400\*200\*8\*13',HN400\*200\*8\*13',#4561,#4567,'PO(?)');  
#4569= IFCPROPERTYSINGLEVALUE('Top elevation',S,IFCLABEL(' +2.631'),S);  
#4570= IFCPROPERTYSET('3THhtOoPr848oQjnY9sv1',#5,'Tekla Common','Common Properties to Shared building elements',(#3273,#4569,#71,#72,#73,#346));  
#4571= IFCPROPERTYSINGLEVALUE('Weight',S,IFCMASMEASURE(188.8),S);  
#4572= IFCPROPERTYSINGLEVALUE('Length',S,IFCLENGTHMEASURE(2859.3),S);  
#4573= IFCPROPERTYSET('3RT\_LW4dJofm0Sa9PPI1L',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#4571,#1108,#78,#350,#4507,#352,#353,#4572));  
#4574= IFCQUANTITYLENGTH('Length',S,S,2859.32682329307);  
#4575= IFCQUANTITYAREA('OuterSurfaceArea',S,S,4.52917368809622);  
#4576= IFCQUANTITYAREA('GrossSurfaceArea',S,S,4.52917368809622);  
#4577= IFCQUANTITYVOLUME('NetVolume',S,S,0.0234236053363874);  
#4578= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0240526572375413);  
#4579= IFCQUANTITYWEIGHT('NetWeight',S,S,183.875301890641);  
#4580= IFCQUANTITYWEIGHT('GrossWeight',S,S,188.813359314699);  
#4581= IFCLEMENTQUANTITY('1uTaxRpOr4kOp1dTuF9W7',#5,'BaseQuantities',S,S,(#4574,#4575,#361,#4577,#4578,#4579,#4580));  
#4582= IFCLOCALPLACEMENT('#30,#10);  
#4583= IFCLEMENTASSEMBLY('1Ogimc00058Z4qE3SsC34u',#5,'Steel Assembly',S,S,#4582,S,'BE-0(?)',NOTDEFINED,,RIGID\_FRAME.);  
#4584= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit weight',S,IFCMASMEASURE(187.),S);  
#4585= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit top elevation',S,IFCLABEL(' +2.627'),S);  
#4586= IFCPROPERTYSET('1inN3LMirF9B\_xT02PTvp3',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#4584,#3326,#4585,#3861,#318));  
#4587= IFCQUANTITYLENGTH('Width',S,S,200.000000000531);

#4588= IFCLEMENTQUANTITY('11CxTX4m5BIxc4Eq\_uYTsL',#5,'BaseQuantities',S,S,(#4587));  
#4589= IFCARTESIANPOINT((1749.92884908046,26639.1748969041,44.3125484189383));  
#4590= IFCDIRECTION((0.99999968502963,0.00079368800025083,0.));  
#4591= IFCDIRECTION((0.000351703999931962,-0.443126062914264,0.896459239826553));  
#4592= IFCAXIS2PLACEMENT3D(#4589,#4590,#4591);  
#4593= IFCLOCALPLACEMENT(#4582,#4592);  
#4594= IFCARTESIANPOINT((2831.65520780237,3.63797880709171E-012,-2.27229274674228E-013));  
#4595= IFCAXIS2PLACEMENT3D(#4594,#336,#335);  
#4596= IFCEXTRUDEDAREASOLID(#333,#4595,#9,2831.7);  
#4597= IFCSHAPEREPRESENTATION('#12,'Body','SweptSolid',(#4596));  
#4598= IFCSTYLEDITEM(#4596,(#330),S);  
#4599= IFCPRODUCTDEFINITIONSHAPE(S,S,(#4597));  
#4600= IFCMEMBER('1Ogimc00058J4qE3SsC34u',#5,'BEAM',HN400\*200\*8\*13',HN400\*200\*8\*13',#4593,#4599,'PO(?)');  
#4601= IFCPROPERTYSINGLEVALUE('Top elevation',S,IFCLABEL(' +2.627'),S);  
#4602= IFCPROPERTYSET('12AF9uD2DAQOB\_tCvT8u9r',#5,'Tekla Common','Common Properties to Shared building elements',(#3334,#4601,#71,#72,#73,#346));  
#4603= IFCPROPERTYSINGLEVALUE('Weight',S,IFCMASMEASURE(187.)),S);  
#4604= IFCPROPERTYSINGLEVALUE('Length',S,IFCLENGTHMEASURE(2831.7),S);  
#4605= IFCPROPERTYSET('066vSYOT4LRzGcYLAyuri',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#4603,#1108,#78,#350,#4507,#352,#353,#4604));  
#4606= IFCQUANTITYLENGTH('Length',S,S,2831.65520780158);  
#4607= IFCQUANTITYAREA('OuterSurfaceArea',S,S,4.48534184915771);  
#4608= IFCQUANTITYAREA('GrossSurfaceArea',S,S,4.48534184915771);  
#4609= IFCQUANTITYVOLUME('NetVolume',S,S,0.0231969194623);  
#4610= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0238198836080269);  
#4611= IFCQUANTITYWEIGHT('NetWeight',S,S,182.095817779055);  
#4612= IFCQUANTITYWEIGHT('GrossWeight',S,S,186.986086323011);  
#4613= IFCLEMENTQUANTITY('3ayqpbFhZA\_9XDfnxTsKv',#5,'BaseQuantities',S,S,(#4606,#4607,#4608,#361,#4609,#4610,#4611,#4612));  
#4614= IFCLOCALPLACEMENT('#30,#10);  
#4615= IFCLEMENTASSEMBLY('1Ogimc00057J4qE3SsC34u',#5,'Steel Assembly',S,S,#4614,S,'BE-0(?)',NOTDEFINED,,RIGID\_FRAME.);  
#4616= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit weight',S,IFCMASMEASURE(193.2),S);  
#4617= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit top elevation',S,IFCLABEL(' +2.691'),S);  
#4618= IFCPROPERTYSET('318u\_vrBX3S9WhThAA0S2',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#4616,#3326,#4617,#3861,#318));  
#4619= IFCQUANTITYLENGTH('Width',S,S,200.000000001161);  
#4620= IFCLEMENTQUANTITY('3r905lct81uIsAQ0GotK9',#5,'BaseQuantities',S,S,(#4619));  
#4621= IFCARTESIANPOINT((1750.47415594403,27803.6739586112,2644.68317450372));  
#4622= IFCDIRECTION((0.999999928531157,-0.000378070999821925,0.));  
#4623= IFCDIRECTION((-0.000173571000093169,-0.45909664524651,-0.888386312477015));  
#4624= IFCAXIS2PLACEMENT3D(#4621,#4622,#4623);  
#4625= IFCLOCALPLACEMENT(#4614,#4624);  
#4626= IFCARTESIANPOINT((2925.27422177296,3.63797880709171E-012,-2.27389832397152E-013));  
#4627= IFCAXIS2PLACEMENT3D(#4626,#336,#335);  
#4628= IFCEXTRUDEDAREASOLID(#333,#4627,#9,2925.3);  
#4629= IFCSHAPEREPRESENTATION('#12,'Body','SweptSolid',(#4628));  
#4630= IFCSTYLEDITEM(#4628,(#330),S);  
#4631= IFCPRODUCTDEFINITIONSHAPE(S,S,(#4629));  
#4632= IFCMEMBER('1Ogimc0005734qE3SsC34u',#5,'BEAM',HN400\*200\*8\*13',HN400\*200\*8\*13',#4625,#4631,'PO(?)');  
#4633= IFCPROPERTYSINGLEVALUE('Top elevation',S,IFCLABEL(' +2.691'),S);  
#4634= IFCPROPERTYSET('2ZTRP8OfC59jZyXoOdCTW',#5,'Tekla Common','Common Properties to Shared building elements',(#3334,#4633,#71,#72,#73,#346));  
#4635= IFCPROPERTYSINGLEVALUE('Weight',S,IFCMASMEASURE(193.2),S);  
#4636= IFCPROPERTYSINGLEVALUE('Length',S,IFCLENGTHMEASURE(2925.3),S);  
#4637= IFCPROPERTYSET('2Td8n0S811kPnjf6u\_e7LK',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#4635,#1108,#78,#350,#1617,#352,#353,#4636));  
#4638= IFCQUANTITYLENGTH('Length',S,S,2925.27422177136);  
#4639= IFCQUANTITYAREA('OuterSurfaceArea',S,S,4.63363436728584);

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#4640=
IFCQUANTITYAREA('GrossSurfaceArea',S,S,4.63363436728584);
#4641=
IFCQUANTITYVOLUME('NetVolume',S,S,0.0239638464247584);
#4642=
IFCQUANTITYVOLUME('GrossVolume',S,S,0.0246074067535407);
#4643= IFCQUANTITYWEIGHT('NetWeight',S,S,188.116194434354);
#4644=
IFCQUANTITYWEIGHT('GrossWeight',S,S,193.168143015295);
#4645=
IFCELEMENTQUANTITY('3hcteQkvDCmgVyQLjaT12Y',#5,'BaseQu
antities',S,S,(#4638,#4639,#4640,#361,#4641,#4642,#4643,#4644));
#4646= IFCLOCALPLACEMENT(#30,#10);
#4647=
IFCELEMENTASSEMBLY('1Ogjmce005634qE3SsC34u',#5,'Steel
Assembly',S,S,#4646,S,'BE-0(?)',NOTDEFINED..RIGID_FRAME.);
#4648= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit
weight',S,IFCMASSEASURE(191.7),S);
#4649= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit top
elevation',S,IFCLABEL(' +2.688'),S);
#4650= IFCPROPERTYSET('1$xtth7X0aeYZM7_Z02jX',#5,'Tekla
Assembly','Assembly
Properties',(#34,#313,#4648,#3264,#4649,#3861,#318));
#4651= IFCQUANTITYLENGTH('Width',S,S,200.000000001975);
#4652=
IFCELEMENTQUANTITY('3InfxiLr1F9wK8vv62F9og',#5,'BaseQuant
ities',S,S,(#4651));
#4653=
IFCCARTESIANPOINT((1750.17231276309,29276.6292554454,44.58
97689499072));
#4654= IFCDIRECTION((0.999998146991353,-
0.00192510099998408,0.));
#4655= IFCDIRECTION((-0.000858397000025359,-
0.445896329013177,0.895084201026452));
#4656= IFCAXIS2PLACEMENT3D(#4653,#4654,#4655);
#4657= IFCLOCALPLACEMENT(#4646,#4656);
#4658= IFCARTESIANPOINT((2903.38434026772,-
1.61170207195067E-013,2.80683936925418E-016));
#4659= IFCAXIS2PLACEMENT3D(#4658,#336,#335);
#4660= IFCXTRUDEDAREASOLID(#333,#4659,#9,2903.4);
#4661=
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4660));
#4662= IFCSTYLELITEM(#4660,(#330),S);
#4663= IFCPRODUCTDEFINITIONSHAPE(S,S,(#4661));
#4664=
IFCMEMBER('1Ogjmce00055p4qE3SsC34u',#5,'BEAM',HN400*200*8
*13,'HN400*200*8*13',#4657,#4663,'PO(?)');
#4665= IFCPROPERTYSINGLEVALUE('Top elevation',S,IFCLABEL('
+2.688'),S);
#4666= IFCPROPERTYSET('3K0Dg5dqr23e95GiQ6GwH',#5,'Tekla
Common','Common Properties to Shared building
elements',(#3273,#4665,#71,#72,#73,#346));
#4667=
IFCPROPERTYSINGLEVALUE('Weight',S,IFCMASSEASURE(191.
7),S);
#4668=
IFCPROPERTYSINGLEVALUE('Length',S,IFLENGTHMEASURE(2
903.4),S);
#4669= IFCPROPERTYSET('2YhZda08H6fX9RP3TeN15S',#5,'Tekla
Quantity','Quantity Properties to Shared building
elements',(#4667,#1108,#78,#350,#1617,#352,#353,#4668));
#4670= IFCQUANTITYLENGTH('Length',S,S,2903.3843402671);
#4671=
IFCQUANTITYAREA('OuterSurfaceArea',S,S,4.59896079498308);
#4672=
IFCQUANTITYAREA('GrossSurfaceArea',S,S,4.59896079498308);
#4673=
IFCQUANTITYVOLUME('NetVolume',S,S,0.0237845245154941);
#4674=
IFCQUANTITYVOLUME('GrossVolume',S,S,0.0244232690703268);
#4675= IFCQUANTITYWEIGHT('NetWeight',S,S,186.708517446629);
#4676=
IFCQUANTITYWEIGHT('GrossWeight',S,S,191.722662202065);
#4677=
IFCELEMENTQUANTITY('3nMaaQNVXAzRo5KS4Y1944',#5,'BaseQ
uantities',S,S,(#4670,#4671,#4672,#361,#4673,#4675,#4676));
#4678= IFCLOCALPLACEMENT(#30,#10);
#4679=
IFCELEMENTASSEMBLY('1Ogjmce00054p4qE3SsC34u',#5,'Steel
Assembly',S,S,#4678,S,'BE-0(?)',NOTDEFINED..RIGID_FRAME.);
#4680= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit
weight',S,IFCMASSEASURE(197.8),S);
#4681= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit top
elevation',S,IFCLABEL(' +2.752'),S);
#4682= IFCPROPERTYSET('0u6yv4gbH9ovfg5ymGiSux',#5,'Tekla
Assembly','Assembly
Properties',(#34,#313,#4680,#3264,#4681,#3861,#318));
#4683= IFCQUANTITYLENGTH('Width',S,S,200.000000001241);
#4684=
IFCELEMENTQUANTITY('2c37Lp3LJOckWuBnNcp6S',#5,'BaseQu
antities',S,S,(#4683));
#4685=
IFCCARTESIANPOINT((1748.06638297871,30475.9320776942,2706.
17399470221));
#4686=
IFCDIRECTION((0.99999887453582,0.00150030899930269,0.));
#4687= IFCDIRECTION((0.000689928999935288,-
0.459857505956886,-0.887992453916748));
#4688= IFCAXIS2PLACEMENT3D(#4685,#4686,#4687);
#4689= IFCLOCALPLACEMENT(#4678,#4688);
#4690=
IFCCARTESIANPOINT((2995.73282019074,0.,2.27725921573452E-
013));
#4691= IFCAXIS2PLACEMENT3D(#4690,#336,#335);
#4692= IFCXTRUDEDAREASOLID(#333,#4691,#9,2995.7);

#4693=
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4692));
#4694= IFCSTYLELITEM(#4692,(#330),S);
#4695= IFCPRODUCTDEFINITIONSHAPE(S,S,(#4693));
#4696=
IFCMEMBER('1Ogjmce00054Z4qE3SsC34u',#5,'BEAM',HN400*200*8
*13,'HN400*200*8*13',#4689,#4695,'PO(?)');
#4697= IFCPROPERTYSINGLEVALUE('Top elevation',S,IFCLABEL('
+2.752'),S);
#4698= IFCPROPERTYSET('31ErwHtm18uBxywdsrM8Au',#5,'Tekla
Common','Common Properties to Shared building
elements',(#3273,#4697,#71,#72,#73,#346));
#4699=
IFCPROPERTYSINGLEVALUE('Weight',S,IFCMASSEASURE(197.
8),S);
#4700=
IFCPROPERTYSINGLEVALUE('Length',S,IFLENGTHMEASURE(2
995.7),S);
#4701= IFCPROPERTYSET('09K2KtI8jDswMCck9dTdEz',#5,'Tekla
Quantity','Quantity Properties to Shared building
elements',(#4699,#1108,#78,#350,#1583,#352,#353,#4700));
#4702= IFCQUANTITYLENGTH('Length',S,S,2995.73282019167);
#4703=
IFCQUANTITYAREA('OuterSurfaceArea',S,S,4.745240781836);
#4704=
IFCQUANTITYAREA('GrossSurfaceArea',S,S,4.745240781836);
#4705=
IFCQUANTITYVOLUME('NetVolume',S,S,0.0245410432630378);
#4706=
IFCQUANTITYVOLUME('GrossVolume',S,S,0.0252001044834523);
#4707= IFCQUANTITYWEIGHT('NetWeight',S,S,192.647189614847);
#4708=
IFCQUANTITYWEIGHT('GrossWeight',S,S,197.820820195101);
#4709=
IFCELEMENTQUANTITY('00QLrYp0z0DeWeMf9xUd8S',#5,'BaseQu
antities',S,S,(#4702,#4703,#4704,#361,#4705,#4706,#4707,#4708));
#4710= IFCLOCALPLACEMENT(#30,#10);
#4711=
IFCELEMENTASSEMBLY('1Ogjmce00053Z4qE3SsC34u',#5,'Steel
Assembly',S,S,#4710,S,'BE-0(?)',NOTDEFINED..RIGID_FRAME.);
#4712= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit
weight',S,IFCMASSEASURE(196.5),S);
#4713= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit top
elevation',S,IFCLABEL(' +2.750'),S);
#4714= IFCPROPERTYSET('0qZY7iWdb1oA74HDM06jYD',#5,'Tekla
Assembly','Assembly
Properties',(#34,#313,#4712,#3326,#4713,#3861,#318));
#4715= IFCQUANTITYLENGTH('Width',S,S,200.000000000589);
#4716=
IFCELEMENTQUANTITY('1kBWb36PjFNumaAbdX653S',#5,'BaseQu
antities',S,S,(#4715));
#4717=
IFCCARTESIANPOINT((1750.13856789268,31987.561667477,44.811
0128026418));
#4718= IFCDIRECTION((0.999998798726029,-
0.00155001499957605,0.));
#4719= IFCDIRECTION((-0.000694579000060904,-
0.448110838039279,0.893977737078361));
#4720= IFCAXIS2PLACEMENT3D(#4717,#4718,#4719);
#4721= IFCLOCALPLACEMENT(#4710,#4720);
#4722=
IFCCARTESIANPOINT((2975.6762427786,1.65183214177903E-
013,5.94457955004355E-017));
#4723= IFCAXIS2PLACEMENT3D(#4722,#336,#335);
#4724= IFCXTRUDEDAREASOLID(#333,#4723,#9,2975.7);
#4725=
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4724));
#4726= IFCSTYLELITEM(#4724,(#330),S);
#4727= IFCPRODUCTDEFINITIONSHAPE(S,S,(#4725));
#4728=
IFCMEMBER('1Ogjmce00053J4qE3SsC34u',#5,'BEAM',HN400*200*8
*13,'HN400*200*8*13',#4721,#4727,'PO(?)');
#4729= IFCPROPERTYSINGLEVALUE('Top elevation',S,IFCLABEL('
+2.750'),S);
#4730= IFCPROPERTYSET('19Yf30qDDHfHnCg42exHZ',#5,'Tekla
Common','Common Properties to Shared building
elements',(#3334,#4729,#71,#72,#73,#346));
#4731=
IFCPROPERTYSINGLEVALUE('Weight',S,IFCMASSEASURE(196.
5),S);
#4732=
IFCPROPERTYSINGLEVALUE('Length',S,IFLENGTHMEASURE(2
975.7),S);
#4733= IFCPROPERTYSET('3bo0LBoKD0M9qwfT2w0fzX',#5,'Tekla
Quantity','Quantity Properties to Shared building
elements',(#4731,#1108,#78,#350,#1617,#352,#353,#4732));
#4734= IFCQUANTITYLENGTH('Length',S,S,2975.6762427272);
#4735=
IFCQUANTITYAREA('OuterSurfaceArea',S,S,4.71347117568708);
#4736=
IFCQUANTITYAREA('GrossSurfaceArea',S,S,4.71347117568708);
#4737=
IFCQUANTITYVOLUME('NetVolume',S,S,0.0243767398177004);
#4738=
IFCQUANTITYVOLUME('GrossVolume',S,S,0.0250313885920958);
#4739= IFCQUANTITYWEIGHT('NetWeight',S,S,191.357407568948);
#4740=
IFCQUANTITYWEIGHT('GrossWeight',S,S,196.496400447952);
#4741=
IFCELEMENTQUANTITY('2xE1wi519Es98ewOILdYoB',#5,'BaseQua
ntities',S,S,(#4734,#4735,#4736,#361,#4737,#4738,#4739,#4740));
#4742= IFCLOCALPLACEMENT(#30,#10);
#4743=
IFCELEMENTASSEMBLY('1Ogjmce00052J4qE3SsC34u',#5,'Steel
Assembly',S,S,#4742,S,'BE-0(?)',NOTDEFINED..RIGID_FRAME.);

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## Appendix

#4744= IFCPROPERTYINGLEVALUE('Assembly/Cast unit weight',S,IFCMASSEASUREMENT(202.8),S);  
 #4745= IFCPROPERTYINGLEVALUE('Assembly/Cast unit top elevation',S,IFCLABEL(' +2.820'),S);  
 #4746= IFCPROPERTYSET('2UWogx2GH0decpYay9sgW',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#4744,#3326,#4745,#3861,#318));  
 #4747= IFCQUANTITYLENGTH('Width',S,S,200.000000003649);  
 #4748= IFCLEMENTQUANTITY('3XAH5HNaTB\_IC\_Vtsc6SGN',#5,'BaseQuantities',S,S,(#4747));  
 #4749= IFCARTESIANPOINT((1750.63922592706,33221.0694155539,2773.54272976058));  
 #4750= IFCDIRECTION((0.99999988325984,-0.000483198000127275,0.));  
 #4751= IFCDIRECTION((-0.000222103999973571,-0.459653896945241,-0.888098105894201));  
 #4752= IFCAXIS2PLACEMENT3D(#4749,#4750,#4751);  
 #4753= IFCLOCALPLACEMENT(#4742,#4752);  
 #4754= IFCARTESIANPOINT((3071.25692680683,3.63797880709171E-012,-4.98828833333623E-017));  
 #4755= IFCAXIS2PLACEMENT3D(#4754,#336,#335);  
 #4756= IFCXTRUDEDAREASOLID(#333,#4755,#9,3071.3);  
 #4757= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4756));  
 #4758= IFCSTYLELITEM(#4756,(#330),S);  
 #4759= IFCPRODUCTDEFINITIONSHAPE(S,S,(#4757));  
 #4760= IFCMEMBER('1Ogimc0005234qE3SsC34u',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#4753,#4759,'PO(?));  
 #4761= IFCPROPERTYINGLEVALUE('Top elevation',S,IFCLABEL(' +2.820'),S);  
 #4762= IFCPROPERTYSET('1Tnufwqx9iRjtfugMaPfl',#5,'Tekla Common','Common Properties to Shared building elements',(#3334,#4761,#71,#72,#73,#346));  
 #4763= IFCPROPERTYINGLEVALUE('Weight',S,IFCMASSEASUREMENT(202.8),S);  
 #4764= IFCPROPERTYINGLEVALUE('Length',S,IFCLENGTHMEASURE(3071.3),S);  
 #4765= IFCPROPERTYSET('38A\_FS8ejAquLZV1OesdPl',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#4763,#1108,#78,#350,#1583,#352,#353,#4764));  
 #4766= IFCQUANTITYLENGTH('Length',S,S,3071.25692680249);  
 #4767= IFCQUANTITYAREA('OuterSurfaceArea',S,S,4.86487097205515);  
 #4768= IFCQUANTITYAREA('GrossSurfaceArea',S,S,4.86487097205515);  
 #4769= IFCQUANTITYVOLUME('NetVolume',S,S,0.0251597367443038);  
 #4770= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0258354132682626);  
 #4771= IFCQUANTITYWEIGHT('NetWeight',S,S,197.503933442785);  
 #4772= IFCQUANTITYWEIGHT('GrossWeight',S,S,202.807994155861);  
 #4773= IFCLEMENTQUANTITY('24m7prkI967fiw9OLd3pOa',#5,'BaseQuantities',S,S,(#4766,#4767,#4768,#361,#4769,#4770,#4771,#4772));  
 #4774= IFCLOCALPLACEMENT(#30,#10);  
 #4775= IFCLEMENTASSEMBLY('1Ogimc0005134qE3SsC34u',#5,'Steel Assembly',S,S,(#4774,S,'BE-0(?),'NOTDEFINED..RIGID\_FRAME.);  
 #4776= IFCPROPERTYINGLEVALUE('Assembly/Cast unit weight',S,IFCMASSEASUREMENT(201.8),S);  
 #4777= IFCPROPERTYINGLEVALUE('Assembly/Cast unit top elevation',S,IFCLABEL(' +2.818'),S);  
 #4778= IFCPROPERTYSET('1HWc4yWSX1pua7LLoPmBS',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#4776,#3264,#4777,#3861,#318));  
 #4779= IFCQUANTITYLENGTH('Width',S,S,200.000000004082);  
 #4780= IFCLEMENTQUANTITY('3csaGhbeD21B5YaHG7HSV',#5,'BaseQuantities',S,S,(#4779));  
 #4781= IFCARTESIANPOINT((1749.95587265295,34778.5737111104,45.1310766642335));  
 #4782= IFCDIRECTION((0.99999987735857,0.000494497999869403,0.));  
 #4783= IFCDIRECTION((0.000223172000120834,-0.451309999244421,0.89236720848329));  
 #4784= IFCAXIS2PLACEMENT3D(#4781,#4782,#4783);  
 #4785= IFCLOCALPLACEMENT(#4774,#4784);  
 #4786= IFCARTESIANPOINT((3056.56375287349,-1.69673372733742E-013,-1.08831976791082E-017));  
 #4787= IFCAXIS2PLACEMENT3D(#4786,#336,#335);  
 #4788= IFCXTRUDEDAREASOLID(#333,#4787,#9,3056.6);  
 #4789= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4788));  
 #4790= IFCSTYLELITEM(#4788,(#330),S);  
 #4791= IFCPRODUCTDEFINITIONSHAPE(S,S,(#4789));  
 #4792= IFCMEMBER('1Ogimc00050p4qE3SsC34u',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#4785,#4791,'PO(?));  
 #4793= IFCPROPERTYINGLEVALUE('Top elevation',S,IFCLABEL(' +2.818'),S);  
 #4794= IFCPROPERTYSET('3Ioaogyn10Igi\_ajv8Um\_Y',#5,'Tekla Common','Common Properties to Shared building elements',(#3273,#4793,#71,#72,#73,#346));  
 #4795= IFCPROPERTYINGLEVALUE('Weight',S,IFCMASSEASUREMENT(201.8),S);

#4796= IFCPROPERTYINGLEVALUE('Length',S,IFCLENGTHMEASURE(3056.6),S);  
 #4797= IFCPROPERTYSET('0Q19Qqt1f619Vsn5jKtZWA',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#4795,#1108,#78,#350,#1583,#352,#353,#4796));  
 #4798= IFCQUANTITYLENGTH('Length',S,S,3056.56375287806);  
 #4799= IFCQUANTITYAREA('OuterSurfaceArea',S,S,4.84159698455885);  
 #4800= IFCQUANTITYAREA('GrossSurfaceArea',S,S,4.84159698455885);  
 #4801= IFCQUANTITYVOLUME('NetVolume',S,S,0.0250393702635025);  
 #4802= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0257118142892102);  
 #4803= IFCQUANTITYWEIGHT('NetWeight',S,S,196.559056568495);  
 #4804= IFCQUANTITYWEIGHT('GrossWeight',S,S,201.8377421703);  
 #4805= IFCLEMENTQUANTITY('3pVfMkU4jBMhPIAaOoJWu',#5,'BaseQuantities',S,S,(#4798,#4799,#4800,#361,#4801,#4802,#4803,#4804));  
 #4806= IFCLOCALPLACEMENT(#30,#10);  
 #4807= IFCLEMENTASSEMBLY('1Ogimc0004Sp4qE3SsC34u',#5,'Steel Assembly',S,S,(#4806,S,'BE-0(?),'NOTDEFINED..RIGID\_FRAME.);  
 #4808= IFCPROPERTYINGLEVALUE('Assembly/Cast unit weight',S,IFCMASSEASUREMENT(207.4),S);  
 #4809= IFCPROPERTYINGLEVALUE('Assembly/Cast unit top elevation',S,IFCLABEL(' +2.880'),S);  
 #4810= IFCPROPERTYSET('2SAGdizG9Bfch6eQAZ\_s',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#4808,#3264,#4809,#3861,#318));  
 #4811= IFCQUANTITYLENGTH('Width',S,S,200.00000004784);  
 #4812= IFCLEMENTQUANTITY('0g7S830CvAN9idbpJsaJt0',#5,'BaseQuantities',S,S,(#4811));  
 #4813= IFCARTESIANPOINT((1749.77205927355,36046.684686051,2834.37049775297));  
 #4814= IFCDIRECTION((0.999999985899589,0.00016793099998729,0.));  
 #4815= IFCDIRECTION((7.73149999869067E-005,-0.460396919921936,-0.88771316884948));  
 #4816= IFCAXIS2PLACEMENT3D(#4813,#4814,#4815);  
 #4817= IFCLOCALPLACEMENT(#4806,#4816);  
 #4818= IFCARTESIANPOINT((3141.02666407846,-1.74362006171073E-013,-2.27455376093145E-013));  
 #4819= IFCAXIS2PLACEMENT3D(#4818,#336,#335);  
 #4820= IFCXTRUDEDAREASOLID(#333,#4819,#9,3141.);  
 #4821= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4820));  
 #4822= IFCSTYLELITEM(#4820,(#330),S);  
 #4823= IFCPRODUCTDEFINITIONSHAPE(S,S,(#4821));  
 #4824= IFCMEMBER('1Ogimc0004Z4qE3SsC34u',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#4817,#4823,'PO(?));  
 #4825= IFCPROPERTYINGLEVALUE('Top elevation',S,IFCLABEL(' +2.880'),S);  
 #4826= IFCPROPERTYSET('008DvM89LDx9MEo\_Tw3AXf',#5,'Tekla Common','Common Properties to Shared building elements',(#3273,#4825,#71,#72,#73,#346));  
 #4827= IFCPROPERTYINGLEVALUE('Weight',S,IFCMASSEASUREMENT(207.4),S);  
 #4828= IFCPROPERTYINGLEVALUE('Length',S,IFCLENGTHMEASURE(3141.),S);  
 #4829= IFCPROPERTYSET('25gDZ9S1PDWf6omJoqelb',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#4827,#1108,#78,#350,#1583,#352,#353,#4828));  
 #4830= IFCQUANTITYLENGTH('Length',S,S,3141.02666408108);  
 #4831= IFCQUANTITYAREA('OuterSurfaceArea',S,S,4.97538623590442);  
 #4832= IFCQUANTITYAREA('GrossSurfaceArea',S,S,4.97538623590442);  
 #4833= IFCQUANTITYVOLUME('NetVolume',S,S,0.025731290432214);  
 #4834= IFCQUANTITYVOLUME('GrossVolume',S,S,0.02642231629825);  
 #4835= IFCQUANTITYWEIGHT('NetWeight',S,S,201.99062989288);  
 #4836= IFCQUANTITYWEIGHT('GrossWeight',S,S,207.415182941263);  
 #4837= IFCLEMENTQUANTITY('2SWdMtDDBW9lfr6wvNP',#5,'BaseQuantities',S,S,(#4830,#4831,#4832,#361,#4833,#4834,#4835,#4836));  
 #4838= IFCLOCALPLACEMENT(#30,#10);  
 #4839= IFCLEMENTASSEMBLY('1Ogimc0004\_Z4qE3SsC34u',#5,'Steel Assembly',S,S,(#4838,S,'BE-0(?),'NOTDEFINED..RIGID\_FRAME.);  
 #4840= IFCPROPERTYINGLEVALUE('Assembly/Cast unit weight',S,IFCMASSEASUREMENT(206.8),S);  
 #4841= IFCPROPERTYINGLEVALUE('Assembly/Cast unit top elevation',S,IFCLABEL(' +2.879'),S);  
 #4842= IFCPROPERTYSET('2KzPrRlyDFIRYS710rmHN',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#4840,#3264,#4841,#3861,#318));  
 #4843= IFCQUANTITYLENGTH('Width',S,S,200.00000005326);  
 #4844= IFCLEMENTQUANTITY('0AWnOmymv8x9t5RobKfckl',#5,'BaseQuantities',S,S,(#4843));  
 #4845= IFCARTESIANPOINT((1750.01517273946,37649.6820003511,45.5119820758106));  
 #4846= IFCDIRECTION((0.999999985482261,-0.0001703980000842,0.));

#4847=	IFCDIRECTION((-7.75519999682928E-005,-0.455120204813889,0.890430004635879));	#4899=	IFCQUANTITYVOLUME('GrossVolume',\$.S,0.0270677115043447);
#4848=	IFCAXIS2PLACEMENT3D(#4845,#4846,#4847);	#4900=	IFCQUANTITYWEIGHT('NetWeight',\$.S,206.924481366142);
#4849=	IFCLOCALPLACEMENT(#4838,#4848);	#4901=	IFCQUANTITYWEIGHT('GrossWeight',\$.S,212.481535309106);
#4850=	IFCCARTESIANPOINT((3131.44304398771,7.27595761418343E-012,-4.54779550034421E-013));	#4902=	IFCELEMENTQUANTITY('0FKSRNBZfY8xrCstCRKs7',#.5,'BaseQuantities',\$.S,(#4895,#4896,#4897,#361,#4898,#4899,#4900,#4901));
#4851=	IFCAXIS2PLACEMENT3D(#4850,#336,#335);	#4903=	IFCLOCALPLACEMENT(#30,#10);
#4852=	IFCEXTRUDEDAREASOLID(#333,#4851,#9,3131.4);	#4904=	IFCELEMENTASSEMBLY('1OgjmC0004y34qE3SsC34u',#.5,'SteelAssembly',\$.S,#4903,'BE-0(?)',.NOTDEFINED,..RIGID_FRAME.);
#4853=	IFCCHAPEREREPRESENTATION(#12,'Body','SweptSolid',(#4852));	#4905=	IFCPROPERTYSET('Assembly/Cast unit weight',\$.IFCMASSEASURE(212.2),\$.S);
#4854=	IFCSTYLELITEM(#4852,(#330),\$.S);	#4906=	IFCPROPERTYSET('1m7hcQzaflWQ4DNgvCvvh',#.5,'TeklaAssembly',\$.S,AssemblyProperties',(#34,#313,#4905,#3264,#4873,#3861,#318));
#4855=	IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#4853));	#4907=	IFCQUANTITYLENGTH('Width',\$.S,200.00000000251);
#4856=	IFCMEMBER('1OgjmC0004_J4qE3SsC34u',#.5,'BEAM','HN400*200*8*13','HN400*200*8*13',#4849,#4855,'P0(?)');	#4908=	IFCELEMENTQUANTITY('3TfBh2d7T9Q90knjkPVoBq',#.5,'BaseQuantities',\$.S,(#4907));
#4857=	IFCPROPERTYSINGLEVALUE('Top elevation',\$.IFCLABEL('+2.879'),\$.S);	#4909=	IFCCARTESIANPOINT((1749.99683464118,40600.9761655472,45.780764860019));
#4858=	IFCPROPERTYSET('3YaAsYTKD7LvKyWc0Amzs',#.5,'TeklaCommon','Common Properties to Shared building elements',(#3334,#4857,#71,#72,#73,#346));	#4910=	IFCDIRECTION((0.999999999366178,3.56040000100027E-005,0.));
#4859=	IFCPROPERTYSINGLEVALUE('Weight',\$.IFCMASSEASURE(206.8),\$.S);	#4911=	IFCDIRECTION((1.6300000006355E-005,-0.457806917179039,0.889051644347691));
#4860=	IFCPROPERTYSINGLEVALUE('Length',\$.IFLENGTHMEASURE(3131.4),\$.S);	#4912=	IFCAXIS2PLACEMENT3D(#4909,#4910,#4911);
#4861=	IFCPROPERTYSET('3tJkIeJATACWuUGJLVwR_H',#.5,'TeklaQuantity','Quantity Properties to Shared building elements',(#4859,#1108,#78,#350,#1583,#352,#353,#4860));	#4913=	IFCLOCALPLACEMENT(#4903,#4912);
#4862=	IFCQUANTITYLENGTH('Length',\$.S,3131.44304399258);	#4914=	IFCCARTESIANPOINT((3213.62157620527,7.09756578086666E-012,2.27369039795424E-013));
#4863=	IFCQUANTITYAREA('OuterSurfaceArea',\$.S,4.96020578168424);	#4915=	IFCAXIS2PLACEMENT3D(#4914,#336,#335);
#4864=	IFCQUANTITYAREA('GrossSurfaceArea',\$.S,4.96020578168424);	#4916=	IFCAXIS2PLACEMENT3D(#333,#4915,#9,3213.6);
#4865=	IFCQUANTITYVOLUME('NetVolume',\$.S,0.0256527814164567);	#4917=	IFCCHAPEREREPRESENTATION(#12,'Body','SweptSolid',(#4916));
#4866=	IFCQUANTITYVOLUME('GrossVolume',\$.S,0.0263416988860656);	#4918=	IFCSTYLELITEM(#4916,(#330),\$.S);
#4867=	IFCQUANTITYWEIGHT('NetWeight',\$.S,201.374334119185);	#4919=	IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#4917));
#4868=	IFCQUANTITYWEIGHT('GrossWeight',\$.S,206.782336255615);	#4920=	IFCMEMBER('1OgjmC0004xp4qE3SsC34u',#.5,'BEAM','HN400*200*8*13','HN400*200*8*13',#4913,#4919,'P0(?)');
#4869=	IFCELEMENTQUANTITY('0VpTkiRej0LxaRpYe_Zhu4',#.5,'BaseQuantities',\$.S,(#4862,#4863,#4864,#361,#4865,#4866,#4867,#4868));	#4921=	IFCPROPERTYSET('3PhuKvAdXCKu14okniBLrK',#.5,'TeklaCommon','Common Properties to Shared building elements',(#3273,#4889,#71,#72,#73,#346));
#4870=	IFCLOCALPLACEMENT(#30,#10);	#4922=	IFCPROPERTYSINGLEVALUE('Weight',\$.IFCMASSEASURE(212.2),\$.S);
#4871=	IFCELEMENTASSEMBLY('1OgjmC0004zJ4qE3SsC34u',#.5,'SteelAssembly',\$.S,#4870,'BE-0(?)',.NOTDEFINED,..RIGID_FRAME.);	#4923=	IFCPROPERTYSINGLEVALUE('Length',\$.IFLENGTHMEASURE(3213.6),\$.S);
#4872=	IFCPROPERTYSINGLEVALUE('Assembly/Cast unit weight',\$.IFCMASSEASURE(212.5),\$.S);	#4924=	IFCPROPERTYSET('0qP9te8P55hoRlusGRFxB',#.5,'TeklaQuantity','Quantity Properties to Shared building elements',(#4922,#1108,#78,#350,#4892,#352,#353,#4923));
#4873=	IFCPROPERTYSINGLEVALUE('Assembly/Cast unit top elevation',\$.IFCLABEL('+2.949'),\$.S);	#4925=	IFCQUANTITYLENGTH('Length',\$.S,3213.62157620217);
#4874=	IFCPROPERTYSET('0eAIQ6Po12eOoXpm5f03hM',#.5,'TeklaAssembly',\$.S,AssemblyProperties',(#34,#313,#4872,#3326,#4873,#3861,#318));	#4926=	IFCQUANTITYAREA('OuterSurfaceArea',\$.S,5.09037657670423);
#4875=	IFCQUANTITYLENGTH('Width',\$.S,200.000000000909);	#4927=	IFCQUANTITYAREA('GrossSurfaceArea',\$.S,5.09037657670423);
#4876=	IFCELEMENTQUANTITY('05A1nrr19AE8m9l33QQG11',#.5,'BaseQuantities',\$.S,(#4875));	#4928=	IFCQUANTITYVOLUME('NetVolume',\$.S,0.026325987952201);
#4877=	IFCCARTESIANPOINT((1750.04923882473,38952.0617095284,2903.07708057291));	#4929=	IFCQUANTITYVOLUME('GrossVolume',\$.S,0.0270329846990126);
#4878=	IFCDIRECTION((0.99999999937388,-3.53870000167691E-005,0.));	#4930=	IFCQUANTITYWEIGHT('NetWeight',\$.S,206.659005424778);
#4879=	IFCDIRECTION((-1.62789999985728E-005,-0.460015194959232,-0.887911042921313));	#4931=	IFCQUANTITYWEIGHT('GrossWeight',\$.S,212.208929887249);
#4880=	IFCAXIS2PLACEMENT3D(#4877,#4878,#4879);	#4932=	IFCELEMENTQUANTITY('2kckNSzYfD5uoKShR_pR6Q',#.5,'BaseQuantities',\$.S,(#4925,#4926,#4927,#361,#4928,#4929,#4930,#4931));
#4881=	IFCLOCALPLACEMENT(#4870,#4880);	#4933=	IFCLOCALPLACEMENT(#30,#10);
#4882=	IFCCARTESIANPOINT((3217.74982220424,0.,2.27368360274029E-013));	#4934=	IFCELEMENTASSEMBLY('1OgjmC0004wp4qE3SsC34u',#.5,'SteelAssembly',\$.S,#4933,'BE-0(?)',.NOTDEFINED,..RIGID_FRAME.);
#4883=	IFCAXIS2PLACEMENT3D(#4882,#336,#335);	#4935=	IFCPROPERTYSINGLEVALUE('Assembly/Cast unit weight',\$.IFCMASSEASURE(217.5),\$.S);
#4884=	IFCAXIS2PLACEMENT3D(#333,#4883,#9,3217.7);	#4936=	IFCPROPERTYSINGLEVALUE('Assembly/Cast unit top elevation',\$.IFCLABEL('+3.018'),\$.S);
#4885=	IFCCHAPEREREPRESENTATION(#12,'Body','SweptSolid',(#4884));	#4937=	IFCPROPERTYSET('3V4QqPfnP2sea2AixV7fIm',#.5,'TeklaAssembly',\$.S,AssemblyProperties',(#34,#313,#4935,#3264,#4936,#3861,#318));
#4886=	IFCSTYLELITEM(#4884,(#330),\$.S);	#4938=	IFCQUANTITYLENGTH('Width',\$.S,200.000000002896);
#4887=	IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#4885));	#4939=	IFCELEMENTQUANTITY('2GNYNqoZHfPAbeAS0vns0',#.5,'BaseQuantities',\$.S,(#4938));
#4888=	IFCMEMBER('1OgjmC0004z34qE3SsC34u',#.5,'BEAM','HN400*200*8*13','HN400*200*8*13',#4881,#4887,'P0(?)');	#4940=	IFCCARTESIANPOINT((1749.98907176908,41937.4487130418,2971.82566532534));
#4889=	IFCPROPERTYSINGLEVALUE('Top elevation',\$.IFCLABEL('+2.949'),\$.S);	#4941=	IFCDIRECTION((3.52400000050212E-006,-0.45961724606942,-0.888117102134141));
#4890=	IFCPROPERTYSET('0AcwONSgb4XvUcN3AbJw17',#.5,'TeklaCommon','Common Properties to Shared building elements',(#3334,#4889,#71,#72,#73,#346));	#4942=	IFCAXIS2PLACEMENT3D(#4940,#3668,#4941);
#4891=	IFCPROPERTYSINGLEVALUE('Weight',\$.IFCMASSEASURE(212.5),\$.S);	#4943=	IFCLOCALPLACEMENT(#4933,#4942);
#4892=	IFCPROPERTYSINGLEVALUE('Net surface area',\$.IFCAREAMEASURE(5.1),\$.S);	#4944=	IFCCARTESIANPOINT((3294.45736338858,0.,-1.96953158321309E-018));
#4893=	IFCPROPERTYSINGLEVALUE('Length',\$.IFLENGTHMEASURE(3217.7),\$.S);	#4945=	IFCAXIS2PLACEMENT3D(#4944,#336,#335);
#4894=	IFCPROPERTYSET('0r6gy4GxL8DB9DUjblmwc',#.5,'TeklaQuantity','Quantity Properties to Shared building elements',(#4891,#1108,#78,#350,#4892,#352,#353,#4893));	#4946=	IFCAXIS2PLACEMENT3D(#333,#4945,#9,3294.5);
#4895=	IFCQUANTITYLENGTH('Length',\$.S,3217.74982219979);	#4947=	IFCCHAPEREREPRESENTATION(#12,'Body','SweptSolid',(#4946));
#4896=	IFCQUANTITYAREA('OuterSurfaceArea',\$.S,5.09691571836447);	#4948=	IFCSTYLELITEM(#4946,(#330),\$.S);
#4897=	IFCQUANTITYAREA('GrossSurfaceArea',\$.S,5.09691571836447);	#4949=	IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#4947));
#4898=	IFCQUANTITYVOLUME('NetVolume',\$.S,0.0263598065434575);	#4950=	IFCMEMBER('1OgjmC0004wZ4qE3SsC34u',#.5,'BEAM','HN400*200*8*13','HN400*200*8*13',#4943,#4949,'P0(?)');
		#4951=	IFCPROPERTYSINGLEVALUE('Top elevation',\$.IFCLABEL('+3.018'),\$.S);



## Appendix

#4952= IFCPROPERTYSET('1e5A81kQ93zuYIRQU5dmoy',#5,'Tekla Common','Common Properties to Shared building elements',(#3273,#4951,#71,#72,#73,#346));  
 #4953= IFCPROPERTYSINGLEVALUE('Weight',IFCMASMEASURE(217.5),S);  
 #4954= IFCPROPERTYSINGLEVALUE('Length',IFCLENGTHMEASURE(3294.5),S);  
 #4955= IFCPROPERTYSET('308aULgLb3SeVnQ6dm7u1',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#4953,#1108,#78,#350,#4892,#352,#353,#4954));  
 #4956= IFCQUANTITYLENGTH('Length',S,S,3294.45736338349);  
 #4957= IFCQUANTITYAREA('OuterSurfaceArea',S,S,21842046359945);  
 #4958= IFCQUANTITYAREA('GrossSurfaceArea',S,S,21842046359945);  
 #4959= IFCQUANTITYVOLUME('NetVolume',S,S,0.0269881947207871);  
 #4960= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0277129753407819);  
 #4961= IFCQUANTITYWEIGHT('NetWeight',S,S,211.857328558179);  
 #4962= IFCQUANTITYWEIGHT('GrossWeight',S,S,217.546856425138);  
 #4963= IFCLEMENTQUANTITY('0MELQsnSHIHvymUgyrBETC',#5,'Base Quantities',S,S,(#4956,#4957,#4958,#361,#4959,#4960,#4961,#4962));  
 #4964= IFCLOCALPLACEMENT('#30,#10);  
 #4965= IFCLEMENTASSEMBLY('1Ogimc0004vZ4qE3SsC34u',#5,'Steel Assembly',S,S,#4964,S,'BE-0(?)',NOTDEFINED,,RIGID\_FRAME.);  
 #4966= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit weight',IFCMASMEASURE(217.6),S);  
 #4967= IFCPROPERTYSET('1ai9qxW7525v8c9GmXmbuT',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#4966,#3326,#4936,#3861,#318));  
 #4968= IFCQUANTITYLENGTH('Width',S,S,200.000000003449);  
 #4969= IFCLEMENTQUANTITY('0cUJq0ugX1bQCrXcKy6i8S',#5,'Base Quantities',S,S,(#4968));  
 #4970= IFCARTESIANPOINT((1750.00067918092,43632.4042684376,46.037851499047));  
 #4971= IFCDIRECTION((-3.5219999992738E-006,-0.460378600901159,0.887722672809412));  
 #4972= IFCAXIS2PLACEMENT3D(#4970,#3371,#4971);  
 #4973= IFCLOCALPLACEMENT('#4964,#4972);  
 #4974= IFCARTESIANPOINT((3295.92116949623,7.27595761418343E-012,9.81305557956993E-019));  
 #4975= IFCAXIS2PLACEMENT3D(#4974,#336,#335);  
 #4976= IFCXTRUDEDAREASOLID(#333,#4975,#9,3295.9);  
 #4977= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4976));  
 #4978= IFCSTYLEDITEM('#4976,(#330),S);  
 #4979= IFCPRODUCTDEFINITIONSHAPE(S,S,(#4977));  
 #4980= IFCMEMBER('1Ogimc0004vJ4qE3SsC34u',#5,'BEAM',HN400\*200\*8\*13',HN400\*200\*8\*13',#4973,#4979,'PO(?));  
 #4981= IFCPROPERTYSET('1UnNd9F1104w7rAS4lvAyg',#5,'Tekla Common','Common Properties to Shared building elements',(#3334,#4951,#71,#72,#73,#346));  
 #4982= IFCPROPERTYSINGLEVALUE('Weight',IFCMASMEASURE(217.6),S);  
 #4983= IFCPROPERTYSINGLEVALUE('Length',IFCLENGTHMEASURE(3295.9),S);  
 #4984= IFCPROPERTYSET('29saCdQOv12eSrZRa9MZG0',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#4982,#1108,#78,#350,#4892,#352,#353,#4983));  
 #4985= IFCQUANTITYLENGTH('Length',S,S,3295.92116949921);  
 #4986= IFCQUANTITYAREA('OuterSurfaceArea',S,S,22073913248675);  
 #4987= IFCQUANTITYAREA('GrossSurfaceArea',S,S,22073913248675);  
 #4988= IFCQUANTITYVOLUME('NetVolume',S,S,0.0270001862205877);  
 #4989= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0277252888778274);  
 #4990= IFCQUANTITYWEIGHT('NetWeight',S,S,211.951461831613);  
 #4991= IFCQUANTITYWEIGHT('GrossWeight',S,S,217.643517690945);  
 #4992= IFCLEMENTQUANTITY('0Cr7AcEtJ4YgAPVFD5I4mj',#5,'Base Quantities',S,S,(#4985,#4986,#4987,#361,#4988,#4989,#4990,#4991));  
 #4993= IFCLOCALPLACEMENT('#30,#10);  
 #4994= IFCLEMENTASSEMBLY('1Ogimc0004vJ4qE3SsC34u',#5,'Steel Assembly',S,S,#4993,S,'BE-0(?)',NOTDEFINED,,RIGID\_FRAME.);  
 #4995= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit weight',IFCMASMEASURE(222.7),S);  
 #4996= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit top elevation',IFCLABEL(' +3.089'),S);  
 #4997= IFCPROPERTYSET('35bNfNjPfy9vHIQALrwhO',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#4995,#3326,#4996,#3861,#318));  
 #4998= IFCQUANTITYLENGTH('Width',S,S,200.000000003194);  
 #4999= IFCLEMENTQUANTITY('0P\_bHTQBPCYA2ymf0ucM6Q',#5,'Base Quantities',S,S,(#4998));  
 #5000= IFCARTESIANPOINT((1750.00334709996,45002.7799318925,3042.79439196714));

#5001= IFCDIRECTION((0.99999999997369,-2.29399999806752E-006,0));  
 #5002= IFCDIRECTION((-1.05300000007609E-006,-0.458925541043879,-0.88847473108495));  
 #5003= IFCAXIS2PLACEMENT3D(#5000,#5001,#5002);  
 #5004= IFCLOCALPLACEMENT('#4993,#5003);  
 #5005= IFCARTESIANPOINT((3373.08619042339,-7.46320151181609E-012,2.27373471849365E-013));  
 #5006= IFCAXIS2PLACEMENT3D(#5005,#336,#335);  
 #5007= IFCXTRUDEDAREASOLID(#333,#5006,#9,3373.1);  
 #5008= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5007));  
 #5009= IFCSTYLEDITEM('#5007,(#330),S);  
 #5010= IFCPRODUCTDEFINITIONSHAPE(S,S,(#5008));  
 #5011= IFCMEMBER('1Ogimc0004u34qE3SsC34u',#5,'BEAM',HN400\*200\*8\*13',HN400\*200\*8\*13',#5004,#5010,'PO(?));  
 #5012= IFCPROPERTYSINGLEVALUE('Top elevation',IFCLABEL(' +3.089'),S);  
 #5013= IFCPROPERTYSET('2ngV\_MJrBafogZHPsv81E',#5,'Tekla Common','Common Properties to Shared building elements',(#3334,#5012,#71,#72,#73,#346));  
 #5014= IFCPROPERTYSINGLEVALUE('Weight',IFCMASMEASURE(222.7),S);  
 #5015= IFCPROPERTYSINGLEVALUE('Net surface area',IFCAREAMEASURE(5.4),S);  
 #5016= IFCPROPERTYSINGLEVALUE('Length',IFCLENGTHMEASURE(3373.1),S);  
 #5017= IFCPROPERTYSET('0H1DYmsqfIFEGacim8K6QDH',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#5014,#1108,#78,#350,#5015,#352,#353,#5016));  
 #5018= IFCQUANTITYLENGTH('Length',S,S,3373.08619042773);  
 #5019= IFCQUANTITYAREA('OuterSurfaceArea',S,S,34296852563753);  
 #5020= IFCQUANTITYAREA('GrossSurfaceArea',S,S,34296852563753);  
 #5021= IFCQUANTITYVOLUME('NetVolume',S,S,0.02763232207191);  
 #5022= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0283744010338781);  
 #5023= IFCQUANTITYWEIGHT('NetWeight',S,S,216.913728264494);  
 #5024= IFCQUANTITYWEIGHT('GrossWeight',S,S,222.739048115943);  
 #5025= IFCLEMENTQUANTITY('24fStUblCehl76gfFwB1n',#5,'Base Quantities',S,S,(#5018,#5019,#5020,#361,#5021,#5022,#5023,#5024));  
 #5026= IFCLOCALPLACEMENT('#30,#10);  
 #5027= IFCLEMENTASSEMBLY('1Ogimc0004u34qE3SsC34u',#5,'Steel Assembly',S,S,#5026,S,'BE-0(?)',NOTDEFINED,,RIGID\_FRAME.);  
 #5028= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit weight',IFCMASMEASURE(224.7),S);  
 #5029= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit bottom elevation',IFCLABEL(' -0.029'),S);  
 #5030= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit top elevation',IFCLABEL(' +3.088'),S);  
 #5031= IFCPROPERTYSET('1XtrDuiZb1uwG45iHMwkwOh',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#5028,#5029,#5030,#3861,#318));  
 #5032= IFCQUANTITYLENGTH('Width',S,S,200.000000001914);  
 #5033= IFCLEMENTQUANTITY('2gM21Lgp17HBkjTovWyJLn',#5,'Base Quantities',S,S,(#5032));  
 #5034= IFCARTESIANPOINT((1749.99980681068,46736.0443321952,16.8194048175952));  
 #5035= IFCDIRECTION((0.99999999997408,2.27699999958851E-006,0));  
 #5036= IFCDIRECTION((1.0409999998002E-006,-0.457197744900768,0.889365066806971));  
 #5037= IFCAXIS2PLACEMENT3D(#5034,#5035,#5036);  
 #5038= IFCLOCALPLACEMENT('#5026,#5037);  
 #5039= IFCARTESIANPOINT((3402.20492303722,-7.27595761418343E-012,-2.02888967371383E-019));  
 #5040= IFCAXIS2PLACEMENT3D(#5039,#336,#335);  
 #5041= IFCXTRUDEDAREASOLID(#333,#5040,#9,3402.2);  
 #5042= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5041));  
 #5043= IFCSTYLEDITEM('#5041,(#330),S);  
 #5044= IFCPRODUCTDEFINITIONSHAPE(S,S,(#5042));  
 #5045= IFCMEMBER('1Ogimc0004sp4qE3SsC34u',#5,'BEAM',HN400\*200\*8\*13',HN400\*200\*8\*13',#5038,#5044,'PO(?));  
 #5046= IFCPROPERTYSINGLEVALUE('Bottom elevation',IFCLABEL(' -0.029'),S);  
 #5047= IFCPROPERTYSINGLEVALUE('Top elevation',IFCLABEL(' +3.088'),S);  
 #5048= IFCPROPERTYSET('13Xu38AKD63PdK8 JVSYTL',#5,'Tekla Common','Common Properties to Shared building elements',(#5046,#5047,#71,#72,#73,#346));  
 #5049= IFCPROPERTYSINGLEVALUE('Weight',IFCMASMEASURE(224.7),S);  
 #5050= IFCPROPERTYSINGLEVALUE('Length',IFCLENGTHMEASURE(3402.2),S);  
 #5051= IFCPROPERTYSET('1eu2SDYX54APkw0QpnsPN',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#5049,#1108,#78,#350,#5051,#352,#353,#5050));  
 #5052= IFCQUANTITYLENGTH('Length',S,S,3402.20492303827);  
 #5053= IFCQUANTITYAREA('OuterSurfaceArea',S,S,38909259809262);

#5054= IFCQUANTITYAREA('GrossSurfaceArea',S,S,5.38909259809262);  
#5055= IFCQUANTITYVOLUME('NetVolume',S,S,0.0278708627294889);  
#5056= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0286193478125979);  
#5057= IFCQUANTITYWEIGHT('NetWeight',S,S,218.786272426488);  
#5058= IFCQUANTITYWEIGHT('GrossWeight',S,S,224.661880328894);  
#5059= IFCELEMENTQUANTITY('3iQgc\$Raz7IOOVBNxZBPV',#5,'BaseQu  
antities',S,S,(#5052,#5053,#5054,#361,#5055,#5056,#5057,#5058));  
#5060= IFCLOCALPLACEMENT(#30,#10);  
#5061= IFCELEMENTASSEMBLY('1Ogimc0004rp4qE3SsC34u',#5,'Steel  
Assembly',S,S,#5060,S,'BE-0(?)',NOTDEFINED,,RIGID\_FRAME.);  
#5062= IFCPROPERTYSET('Assembly/Cast unit  
weight',S,IFCMASSEASUREMENT(228.1),S);  
#5063= IFCPROPERTYSET('Assembly/Cast unit top  
elevation',S,IFCLABEL(' +3.161'),S);  
#5064= IFCPROPERTYSET('OpENgPTRj2NB2QZIEKvdvY',#5,'Tekla  
Assembly','Assembly  
Properties',(#34,#313,#5062,#3264,#5063,#3861,#318));  
#5065= IFCQUANTITYLENGTH('Width',S,S,200.00000002743);  
#5066= IFCELEMENTQUANTITY('0kuNfWu4LE8gOQpa3DJvY',#5,'BaseQ  
uantities',S,S,(#5065));  
#5067= IFCCARTESIANPOINT((1749.99895274577,48154.7701746034,3115.  
24566052664));  
#5068= IFCDIRECTION((3.2100000010427E-007,-  
0.458056329986182,-0.888923167973187));  
#5069= IFACXIS2PLACEMENT3D(#5067,#7,#5068);  
#5070= IFCLOCALPLACEMENT(#5060,#5069);  
#5071= IFCCARTESIANPOINT((3452.98686639312,-  
7.27595761418343E-012,2.27373589398888E-013));  
#5072= IFACXIS2PLACEMENT3D(#5071,#336,#335);  
#5073= IFEXTRUDEDAREASOLID(#333,#5072,#9,345.3);  
#5074= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5073));  
#5075= IFCSTYLELITEM(#5073,(#330,S));  
#5076= IFCPRODUCTDEFINITIONSHAPE(S,S,(#5074));  
#5077= IFCMEMBER('1Ogimc0004rZ4qE3SsC34u',#5,'BEAM',HN400\*200\*8  
\*13,'HN400\*200\*8\*13',#5070,#5076,'PO(?)');  
#5078= IFCPROPERTYSET('Top elevation',S,IFCLABEL(' +3.161'),S);  
#5079= IFCPROPERTYSET('3QKJNgH11FgvLA03p931s',#5,'Tekla  
Common','Common Properties to Shared building  
elements',(#3273,#5078,#71,#72,#73,#346));  
#5080= IFCPROPERTYSET('Weight',S,IFCMASSEASUREMENT(228.  
),S);  
#5081= IFCPROPERTYSET('Length',S,IFLENGTHMEASURE(3  
453.1),S);  
#5082= IFCPROPERTYSET('3bYsjd2g918vO4iXrcy1u',#5,'Tekla  
Quantity','Quantity Properties to Shared building  
elements',(#5080,#1108,#78,#350,#5015,#352,#353,#5081));  
#5083= IFCQUANTITYLENGTH('Length',S,S,3452.98686639921);  
#5084= IFCQUANTITYAREA('OuterSurfaceArea',S,S,5.46953119637634);  
#5085= IFCQUANTITYAREA('GrossSurfaceArea',S,S,5.46953119637634);  
#5086= IFCQUANTITYVOLUME('NetVolume',S,S,0.0282868684095026);  
#5087= IFCQUANTITYVOLUME('GrossVolume',S,S,0.029046525201501);  
#5088= IFCQUANTITYWEIGHT('NetWeight',S,S,222.051917014596);  
#5089= IFCQUANTITYWEIGHT('GrossWeight',S,S,228.015225333178);  
#5090= IFCELEMENTQUANTITY('1xWw6JWznA9A8bPbmSzLz3',#5,'BaseQ  
uantities',S,S,(#5083,#5084,#5085,#361,#5086,#5087,#5088,#5089));  
#5091= IFCLOCALPLACEMENT(#30,#10);  
#5092= IFCELEMENTASSEMBLY('1Ogimc0004qZ4qE3SsC34u',#5,'Steel  
Assembly',S,S,#5091,S,'BE-0(?)',NOTDEFINED,,RIGID\_FRAME.);  
#5093= IFCPROPERTYSET('Assembly/Cast unit  
weight',S,IFCMASSEASUREMENT(229.1),S);  
#5094= IFCPROPERTYSET('Assembly/Cast unit top  
elevation',S,IFCLABEL(' +3.163'),S);  
#5095= IFCPROPERTYSET('3wa5PHuZvCxfHdUvSjgG7K',#5,'Tekla  
Assembly','Assembly  
Properties',(#34,#313,#5093,#3326,#5094,#3861,#318));  
#5096= IFCQUANTITYLENGTH('Width',S,S,200.00000001703);  
#5097= IFCELEMENTQUANTITY('03T65swx13jvc9O05HULzT',#5,'BaseQu  
antities',S,S,(#5096));  
#5098= IFCCARTESIANPOINT((1750.00006067285,49949.9946095687,46.62  
82080089161));  
#5099= IFCDIRECTION((-3.1999999902294E-007,-  
0.466282079889176,0.884636095789745));  
#5100= IFACXIS2PLACEMENT3D(#5098,#7,#5099);  
#5101= IFCLOCALPLACEMENT(#5091,#5100);  
#5102= IFCCARTESIANPOINT((3469.72053541421,-  
1.92608181371579E-013,1.17673507872741E-019));  
#5103= IFACXIS2PLACEMENT3D(#5102,#336,#335);  
#5104= IFEXTRUDEDAREASOLID(#333,#5103,#9,346.9);  
#5105= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5104));  
#5106= IFCSTYLELITEM(#5104,(#330,S));  
#5107= IFCPRODUCTDEFINITIONSHAPE(S,S,(#5105));

#5108= IFCMEMBER('1Ogimc0004qJ4qE3SsC34u',#5,'BEAM',HN400\*200\*8  
\*13,'HN400\*200\*8\*13',#5101,#5107,'PO(?)');  
#5109= IFCPROPERTYSET('Top elevation',S,IFCLABEL(' +3.163'),S);  
#5110= IFCPROPERTYSET('2oM0maCP0OucBiXjdI5rh',#5,'Tekla  
Common','Common Properties to Shared building  
elements',(#3334,#5109,#71,#72,#73,#346));  
#5111= IFCPROPERTYSET('Weight',S,IFCMASSEASUREMENT(229.  
1),S);  
#5112= IFCPROPERTYSET('Length',S,IFLENGTHMEASURE(3  
469.7),S);  
#5113= IFCPROPERTYSET('0fclcf4\_56Sug7e4q0WLhR',#5,'Tekla  
Quantity','Quantity Properties to Shared building  
elements',(#5111,#1108,#78,#350,#5015,#352,#353,#5112));  
#5114= IFCQUANTITYLENGTH('Length',S,S,3469.72053541793);  
#5115= IFCQUANTITYAREA('OuterSurfaceArea',S,S,5.496037328102);  
#5116= IFCQUANTITYAREA('GrossSurfaceArea',S,S,5.496037328102);  
#5117= IFCQUANTITYVOLUME('NetVolume',S,S,0.0284239506261656);  
#5118= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0291872891439356);  
#5119= IFCQUANTITYWEIGHT('NetWeight',S,S,223.1280124154);  
#5120= IFCQUANTITYWEIGHT('GrossWeight',S,S,229.120219779895);  
#5121= IFCELEMENTQUANTITY('12JiqXwoz4e9GYk0USSBg',#5,'BaseQu  
antities',S,S,(#5114,#5115,#5116,#361,#5117,#5118,#5119,#5120));  
#5122= IFCLOCALPLACEMENT(#30,#10);  
#5123= IFCELEMENTASSEMBLY('1Ogimc0004pJ4qE3SsC34u',#5,'Steel  
Assembly',S,S,#5122,S,'BE-0(?)',NOTDEFINED,,RIGID\_FRAME.);  
#5124= IFCPROPERTYSET('Assembly/Cast unit  
weight',S,IFCMASSEASUREMENT(233.8),S);  
#5125= IFCPROPERTYSET('Assembly/Cast unit top  
elevation',S,IFCLABEL(' +3.237'),S);  
#5126= IFCPROPERTYSET('1my2jmLzB6Qh4yPPSinn0R',#5,'Tekla  
Assembly','Assembly  
Properties',(#34,#313,#5124,#3326,#5125,#3861,#318));  
#5127= IFCQUANTITYLENGTH('Width',S,S,200.000000000749);  
#5128= IFCELEMENTQUANTITY('3N5OE0tA9A7AE3p3oJyIkz',#5,'BaseQu  
antities',S,S,(#5127));  
#5129= IFCCARTESIANPOINT((1750.00018338863,51400.127656873,3191.0  
0729288661));  
#5130= IFCDIRECTION((-5.5000000038792E-008,-  
0.459570100216002,-0.888141499417436));  
#5131= IFACXIS2PLACEMENT3D(#5129,#7,#5130);  
#5132= IFCLOCALPLACEMENT(#5122,#5131);  
#5133= IFCCARTESIANPOINT((3541.15902153455,0,1.02521233100322E-  
020));  
#5134= IFACXIS2PLACEMENT3D(#5133,#336,#335);  
#5135= IFEXTRUDEDAREASOLID(#333,#5134,#9,354.2);  
#5136= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5135));  
#5137= IFCSTYLELITEM(#5135,(#330,S));  
#5138= IFCPRODUCTDEFINITIONSHAPE(S,S,(#5136));  
#5139= IFCMEMBER('1Ogimc0004p34qE3SsC34u',#5,'BEAM',HN400\*200\*8  
\*13,'HN400\*200\*8\*13',#5132,#5138,'PO(?)');  
#5140= IFCPROPERTYSET('Top elevation',S,IFCLABEL(' +3.237'),S);  
#5141= IFCPROPERTYSET('2qwJWv20r3oeE565afBJ1H',#5,'Tekla  
Common','Common Properties to Shared building  
elements',(#3334,#5140,#71,#72,#73,#346));  
#5142= IFCPROPERTYSET('Weight',S,IFCMASSEASUREMENT(233.  
8),S);  
#5143= IFCPROPERTYSET('Net surface  
area',S,IFCAREAMEASUREMENT(5.6),S);  
#5144= IFCPROPERTYSET('Length',S,IFLENGTHMEASURE(3  
541.2),S);  
#5145= IFCPROPERTYSET('20hQPtYcLDI9Ck4eLRuts5',#5,'Tekla  
Quantity','Quantity Properties to Shared building  
elements',(#5142,#1108,#78,#350,#5143,#352,#353,#5144));  
#5146= IFCQUANTITYLENGTH('Length',S,S,3541.15902153873);  
#5147= IFCQUANTITYAREA('OuterSurfaceArea',S,S,5.60919589011735);  
#5148= IFCQUANTITYAREA('GrossSurfaceArea',S,S,5.60919589011735);  
#5149= IFCQUANTITYVOLUME('NetVolume',S,S,0.029009174704441);  
#5150= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0297882296891838);  
#5151= IFCQUANTITYWEIGHT('NetWeight',S,S,227.722021429862);  
#5152= IFCQUANTITYWEIGHT('GrossWeight',S,S,233.837603060093);  
#5153= IFCELEMENTQUANTITY('0YKJIM9z5AgvHbdhxrqBe',#5,'BaseQu  
antities',S,S,(#5146,#5147,#5148,#361,#5149,#5150,#5151,#5152));  
#5154= IFCLOCALPLACEMENT(#30,#10);  
#5155= IFCELEMENTASSEMBLY('1Ogimc0004o34qE3SsC34u',#5,'Steel  
Assembly',S,S,#5154,S,'BE-0(?)',NOTDEFINED,,RIGID\_FRAME.);  
#5156= IFCPROPERTYSET('Assembly/Cast unit  
weight',S,IFCMASSEASUREMENT(234.9),S);  
#5157= IFCPROPERTYSET('Assembly/Cast unit bottom  
elevation',S,IFCLABEL(' -0.002'),S);

## Appendix

#5158= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit top elevation',S,IFCLABEL(' +3.238'),S);  
#5159= IFCPROPERTYSET('29onmkt5C7UgoJXEUYz9',#5,'Tekla Assembly','Assembly Properties',(#34,#13,#5156,#5157,#5158,#3861,#318));  
#5160= IFCQUANTITYLENGTH('Width',S,S,200.000000003296);  
#5161= IFCLEMENTQUANTITY('1P4HXoH5n52xAKYEfcvM9h',#5,'BaseQuantities',S,S,(#5160));  
#5162= IFCARTESIANPOINT((1749.99440454699,53236.1654878943,44.5675798224274));  
#5163= IFCDIRECTION((0.9999999999994509,3.1400000139182E-006,0.));  
#5164= IFCDIRECTION((1.54499999956667E-006,-0.466271538874781,0.884641651762428));  
#5165= IFCAXIS2PLACEMENT3D(#5162,#5163,#5164);  
#5166= IFCLOCALPLACEMENT(#5154,#5165);  
#5167= IFCARTESIANPOINT((3557.49681427477,-7.0784768705215E-012,2.27374323755151E-013));  
#5168= IFCAXIS2PLACEMENT3D(#5167,#336,#335);  
#5169= IFCXTRUDEDAREASOLID(#333,#5168,#9,3557.5);  
#5170= IFCSHAPEPRESENTATION(#12,'Body','SweptSolid',(#5169));  
#5171= IFCSTYLEDITEM(#5169,(#330),S);  
#5172= IFCPRODUCTDEFINITIONSHAPE(S,S,(#5170));  
#5173= IFCMEMBER('1Ogimc0004mp4qE3SsC34u',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#5166,#5172,'P0(?)');  
#5174= IFCPROPERTYSINGLEVALUE('Bottom elevation',S,IFCLABEL(' -0.002'),S);  
#5175= IFCPROPERTYSINGLEVALUE('Top elevation',S,IFCLABEL(' +3.238'),S);  
#5176= IFCPROPERTYSET('1U9cbhhHBkAIURb5\_KNK8',#5,'Tekla Common','Common Properties to Shared building elements',(#5174,#5175,#71,#72,#73,#346));  
#5177= IFCPROPERTYSINGLEVALUE('Weight',S,IFCMASMEASURE(234.9),S);  
#5178= IFCPROPERTYSINGLEVALUE('Length',S,IFCLENGTHMEASURE(3557.5),S);  
#5179= IFCPROPERTYSET('0VgPRdZn5BdPW2whVWmix',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#5177,#1108,#78,#350,#5143,#352,#353,#5178));  
#5180= IFCQUANTITYLENGTH('Length',S,S,3557.49681427842);  
#5181= IFCQUANTITYAREA('OuterSurfaceArea',S,S,5.63507495381701);  
#5182= IFCQUANTITYAREA('GrossSurfaceArea',S,S,5.63507495381701);  
#5183= IFCQUANTITYVOLUME('NetVolume',S,S,0.0291430139025118);  
#5184= IFCQUANTITYVOLUME('GrossVolume',S,S,0.02992566320171);  
#5185= IFCQUANTITYWEIGHT('NetWeight',S,S,228.772659134718);  
#5186= IFCQUANTITYWEIGHT('GrossWeight',S,S,234.916456133424);  
#5187= IFCLEMENTQUANTITY('2a1vZ9KaT4OQKpJIGrO7c',#5,'BaseQuantities',S,S,(#5180,#5181,#5182,#361,#5183,#5184,#5185,#5186));  
#5188= IFCLOCALPLACEMENT(#30,#10);  
#5189= IFCLEMENTASSEMBLY('1Ogimc0004mp4qE3SsC34u',#5,'Steel Assembly',S,S,#5188,S,'BE-0(?)',NOTDEFINED,,RIGID\_FRAME.);  
#5190= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit weight',S,IFCMASMEASURE(239.9),S);  
#5191= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit top elevation',S,IFCLABEL(' +3.314'),S);  
#5192= IFCPROPERTYSET('1ArDNCOSr6oQyd8sY\_YoPR',#5,'Tekla Assembly','Assembly Properties',(#34,#13,#5190,#5191,#5192,#3861,#318));  
#5193= IFCQUANTITYLENGTH('Width',S,S,200.000000004569);  
#5194= IFCLEMENTQUANTITY('2aUUsF9YDAhAEIUsEMOeMI',#5,'BaseQuantities',S,S,(#5193));  
#5195= IFCARTESIANPOINT((1749.99956745326,54732.1024778628,3268.11322557476));  
#5196= IFCDIRECTION((-1.41600000028608E-006,-0.460620834103128,-0.887597007198725));  
#5197= IFCAXIS2PLACEMENT3D(#5195,#5001,#5196);  
#5198= IFCLOCALPLACEMENT(#5188,#5197);  
#5199= IFCARTESIANPOINT((3632.40377163646,-6.87267978398282E-012,-2.4524880861375E-019));  
#5200= IFCAXIS2PLACEMENT3D(#5199,#336,#335);  
#5201= IFCXTRUDEDAREASOLID(#333,#5200,#9,3632.4);  
#5202= IFCSHAPEPRESENTATION(#12,'Body','SweptSolid',(#5201));  
#5203= IFCSTYLEDITEM(#5201,(#330),S);  
#5204= IFCPRODUCTDEFINITIONSHAPE(S,S,(#5202));  
#5205= IFCMEMBER('1Ogimc0004mZ4qE3SsC34u',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#5198,#5204,'P0(?)');  
#5206= IFCPROPERTYSINGLEVALUE('Top elevation',S,IFCLABEL(' +3.314'),S);  
#5207= IFCPROPERTYSET('3RqhJ9MqD8SewC5m\_t5god',#5,'Tekla Common','Common Properties to Shared building elements',(#5174,#5206,#71,#72,#73,#346));  
#5208= IFCPROPERTYSINGLEVALUE('Weight',S,IFCMASMEASURE(239.9),S);  
#5209= IFCPROPERTYSINGLEVALUE('Net surface area',S,IFCAREMEASURE(5.8),S);

#5210= IFCPROPERTYSINGLEVALUE('Length',S,IFCLENGTHMEASURE(3632.4),S);  
#5211= IFCPROPERTYSET('0j1sm2g01B4vqzuVoWhPBX',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#5208,#1108,#78,#350,#5209,#352,#353,#5210));  
#5212= IFCQUANTITYLENGTH('Length',S,S,3632.40377164226);  
#5213= IFCQUANTITYAREA('OuterSurfaceArea',S,S,5.75372757428134);  
#5214= IFCQUANTITYAREA('GrossSurfaceArea',S,S,5.75372757428134);  
#5215= IFCQUANTITYVOLUME('NetVolume',S,S,0.0297566516973392);  
#5216= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0305557805270547);  
#5217= IFCQUANTITYWEIGHT('NetWeight',S,S,233.589715824113);  
#5218= IFCQUANTITYWEIGHT('GrossWeight',S,S,239.862877137379);  
#5219= IFCLEMENTQUANTITY('3DDrtMvAD4FvQV8Xeg\_Kk',#5,'BaseQuantities',S,S,(#5212,#5213,#5214,#361,#5215,#5216,#5217,#5218));  
#5220= IFCLOCALPLACEMENT(#30,#10);  
#5221= IFCLEMENTASSEMBLY('1Ogimc0004I4qE3SsC34u',#5,'Steel Assembly',S,S,#5220,S,'BE-0(?)',NOTDEFINED,,RIGID\_FRAME.);  
#5222= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit weight',S,IFCMASMEASURE(240.6),S);  
#5223= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit top elevation',S,IFCLABEL(' +3.315'),S);  
#5224= IFCPROPERTYSET('3oARpLkHf0A89sZhVazNJ4',#5,'Tekla Assembly','Assembly Properties',(#34,#13,#5222,#3326,#5223,#3861,#318));  
#5225= IFCQUANTITYLENGTH('Width',S,S,200.000000003027);  
#5226= IFCLEMENTQUANTITY('0bV8YyZzDoxUVsXiPr78D',#5,'BaseQuantities',S,S,(#5225));  
#5227= IFCARTESIANPOINT((1746.84419017988,56611.6088889807,46.7145869200574));  
#5228= IFCDIRECTION((0.999998447333185,0.00176219500059011,0.));  
#5229= IFCDIRECTION((0.000823201999710617,-0.467145143835784,0.884180262689183));  
#5230= IFCAXIS2PLACEMENT3D(#5227,#5228,#5229);  
#5231= IFCLOCALPLACEMENT(#520,#5230);  
#5232= IFCARTESIANPOINT((3644.11113682678,-2.02288804419902E-013,3.81823002159809E-016));  
#5233= IFCAXIS2PLACEMENT3D(#5232,#336,#335);  
#5234= IFCXTRUDEDAREASOLID(#333,#5233,#9,3644.1);  
#5235= IFCSHAPEPRESENTATION(#12,'Body','SweptSolid',(#5234));  
#5236= IFCSTYLEDITEM(#5234,(#330),S);  
#5237= IFCPRODUCTDEFINITIONSHAPE(S,S,(#5235));  
#5238= IFCMEMBER('1Ogimc0004I4qE3SsC34u',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#5231,#5237,'P0(?)');  
#5239= IFCPROPERTYSINGLEVALUE('Top elevation',S,IFCLABEL(' +3.315'),S);  
#5240= IFCPROPERTYSET('0B8OzE0z1Dav21581pDeMw',#5,'Tekla Common','Common Properties to Shared building elements',(#3334,#5239,#71,#72,#73,#346));  
#5241= IFCPROPERTYSINGLEVALUE('Weight',S,IFCMASMEASURE(240.6),S);  
#5242= IFCPROPERTYSINGLEVALUE('Length',S,IFCLENGTHMEASURE(3644.1),S);  
#5243= IFCPROPERTYSET('3Mhj8zhSH807b6DyMKvDN',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#5241,#1108,#78,#350,#5209,#352,#353,#5242));  
#5244= IFCQUANTITYLENGTH('Length',S,S,3644.1111368233);  
#5245= IFCQUANTITYAREA('OuterSurfaceArea',S,S,5.7722720407281);  
#5246= IFCQUANTITYAREA('GrossSurfaceArea',S,S,5.7722720407281);  
#5247= IFCQUANTITYVOLUME('NetVolume',S,S,0.0298525584328014);  
#5248= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0306542628829576);  
#5249= IFCQUANTITYWEIGHT('NetWeight',S,S,234.342583697491);  
#5250= IFCQUANTITYWEIGHT('GrossWeight',S,S,240.635963631217);  
#5251= IFCLEMENTQUANTITY('0vhUaSVoL0iWgv4ezegEdY',#5,'BaseQuantities',S,S,(#5244,#5245,#5246,#361,#5247,#5248,#5249,#5250));  
#5252= IFCLOCALPLACEMENT(#30,#10);  
#5253= IFCLEMENTASSEMBLY('1Ogimc0004k4qE3SsC34u',#5,'Steel Assembly',S,S,#5252,S,'BE-0(?)',NOTDEFINED,,RIGID\_FRAME.);  
#5254= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit weight',S,IFCMASMEASURE(245.9),S);  
#5255= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit top elevation',S,IFCLABEL(' +3.394'),S);  
#5256= IFCPROPERTYSET('0DPgKuRSLF9eClgSsUvEPb',#5,'Tekla Assembly','Assembly Properties',(#34,#13,#5254,#3264,#5255,#3861,#318));  
#5257= IFCQUANTITYLENGTH('Width',S,S,200.000000005071);  
#5258= IFCLEMENTQUANTITY('2ALgygWk9D2hXUrfqW59uX',#5,'BaseQuantities',S,S,(#5257));  
#5259= IFCARTESIANPOINT((1749.84548202843,58157.42003367,3347.64464652608));  
#5260= IFCDIRECTION((0.999998484155401,-0.00174117400027308,0.));

#5261= IFCDIRECTION((-0.00080564999829825,-0.462655362902251,-0.886537853812694));  
 #5262= IFCAxis2PLACEMENT3D(#5259,#5260,#5261);  
 #5263= IFCLocalPLACEMENT(#5252,#5262);  
 #5264= IFCCARTESIANPOINT((3723.90081913428,-2.06718021541168E-013,1.0353272030305E-015));  
 #5265= IFCAxis2PLACEMENT3D(#5264,#336,#335);  
 #5266= IFCEXTRUDEDAREASOLID(#333,#5265,#9,3723.9);  
 #5267= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5266));  
 #5268= IFCSTYLEDITEM(#5266,(#330),S);  
 #5269= IFCPRODUCTDEFINITIONSHAPE(S,(#5267));  
 #5270= IFCMEMBER('1Ogjm0004k34qE3SsC34u',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#5263,#5269,'P0(?)');  
 #5271= IFCPROPERTYSINGLEVALUE('Top elevation',S,IFCLABEL(' +3.394'),S);  
 #5272= IFCPROPERTYSET('0Fvc5W6P916xvIL9N0w7kt',#5,'Tekla Common','Common Properties to Shared building elements',(#3273,#5271,#71,#72,#73,#346));  
 #5273= IFCPROPERTYSINGLEVALUE('Weight',S,IFCMASSMEASURE(245.9),S);  
 #5274= IFCPROPERTYSINGLEVALUE('Length',S,IFLENGTHMEASURE(3723.9),S);  
 #5275= IFCPROPERTYSET('3A0UH\$br26uJ5oXyADUZU',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#5273,#1108,#78,#350,#5209,#352,#353,#5274));  
 #5276= IFCQUANTITYLENGTH('Length',S,S,3723.90081912831);  
 #5277= IFCQUANTITYAREA('OuterSurfaceArea',S,S,5.89865889749924);  
 #5278= IFCQUANTITYAREA('GrossSurfaceArea',S,S,5.89865889749924);  
 #5279= IFCQUANTITYVOLUME('NetVolume',S,S,0.0305061955101957);  
 #5280= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0313254536905073);  
 #5281= IFCQUANTITYWEIGHT('NetWeight',S,S,239.473634755036);  
 #5282= IFCQUANTITYWEIGHT('GrossWeight',S,S,245.904811470483);  
 #5283= IFCELEMENTQUANTITY('0so6VfdLX3Zx5d1n\$NpZND',#5,'BaseQuantities',S,S,(#5276,#5277,#5278,#361,#5279,#5280,#5281,#5282));  
 #5284= IFCLocalPLACEMENT(#30,#10);  
 #5285= IFCELEMENTASSEMBLY('1Ogjm0004j34qE3SsC34u',#5,'Steel Assembly',S,S,#5284,S,'BE-0(?)',,NOTDEFINED,,RIGID\_FRAME.);  
 #5286= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit weight',S,IFCMASSMEASURE(246.9),S);  
 #5287= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit top elevation',S,IFCLABEL(' +3.395'),S);  
 #5288= IFCPROPERTYSET('3bqznujFTBDg8jZcZ5B7Bo',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#5286,#3326,#5287,#3861,#318));  
 #5289= IFCQUANTITYLENGTH('Width',S,S,200.00000001222);  
 #5290= IFCELEMENTQUANTITY('3FS2hTwrLDM92khoYm6Mv',#5,'BaseQuantities',S,S,(#5289));  
 #5291= IFCCARTESIANPOINT((1749.99984746617,60088.3108110853,46.9169555164756));  
 #5292= IFCDIRECTION((-9.99999986963883E-010,-0.469169558171104,0.883108105322067));  
 #5293= IFCAxis2PLACEMENT3D(#5291,#7,#5292);  
 #5294= IFCLocalPLACEMENT(#5284,#5293);  
 #5295= IFCCARTESIANPOINT((3738.36342403894,-7.27595761418343E-012,-1.93268859190148E-022));  
 #5296= IFCAxis2PLACEMENT3D(#5295,#336,#335);  
 #5297= IFCEXTRUDEDAREASOLID(#333,#5296,#9,3738.4);  
 #5298= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5297));  
 #5299= IFCSTYLEDITEM(#5297,(#330),S);  
 #5300= IFCPRODUCTDEFINITIONSHAPE(S,(#5298));  
 #5301= IFCMEMBER('1Ogjm0004ip4qE3SsC34u',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#5294,#5300,'P0(?)');  
 #5302= IFCPROPERTYSINGLEVALUE('Top elevation',S,IFCLABEL(' +3.395'),S);  
 #5303= IFCPROPERTYSET('0JsUgA4\$LA9gkVtngzxtR',#5,'Tekla Common','Common Properties to Shared building elements',(#3334,#5302,#71,#72,#73,#346));  
 #5304= IFCPROPERTYSINGLEVALUE('Weight',S,IFCMASSMEASURE(246.9),S);  
 #5305= IFCPROPERTYSINGLEVALUE('Length',S,IFLENGTHMEASURE(3738.4),S);  
 #5306= IFCPROPERTYSET('2dvfBaqg56PALpT9zbSvM',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#5304,#1108,#78,#350,#5209,#352,#353,#5305));  
 #5307= IFCQUANTITYLENGTH('Length',S,S,3738.36342403954);  
 #5308= IFCQUANTITYAREA('OuterSurfaceArea',S,S,5.92156766367863);  
 #5309= IFCQUANTITYAREA('GrossSurfaceArea',S,S,5.92156766367863);  
 #5310= IFCQUANTITYVOLUME('NetVolume',S,S,0.0306246731697148);  
 #5311= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0314471131230206);  
 #5312= IFCQUANTITYWEIGHT('NetWeight',S,S,240.403684382262);  
 #5313= IFCQUANTITYWEIGHT('GrossWeight',S,S,246.859838015712);

#5314= IFCELEMENTQUANTITY('0db9CR7aP4nP4Pk9H9Y0gPY',#5,'BaseQuantities',S,S,(#5307,#5308,#5309,#361,#5310,#5311,#5312,#5313));  
 #5315= IFCLocalPLACEMENT(#30,#10);  
 #5316= IFCELEMENTASSEMBLY('1Ogjm0004hp4qE3SsC34u',#5,'Steel Assembly',S,S,#5315,S,'BE-0(?)',,NOTDEFINED,,RIGID\_FRAME.);  
 #5317= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit weight',S,IFCMASSMEASURE(251.9),S);  
 #5318= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit top elevation',S,IFCLABEL(' +3.475'),S);  
 #5319= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit position code',S,IFCLABEL('3/B-C'),S);  
 #5320= IFCPROPERTYSET('0TDO2pNZ15EQYQeGm1QN68',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#5317,#3326,#5318,#5319,#318));  
 #5321= IFCQUANTITYLENGTH('Width',S,S,200.000000005515);  
 #5322= IFCELEMENTQUANTITY('0AaonHWyv1su5XOWnD2LW8',#5,'BaseQuantities',S,S,(#5321));  
 #5323= IFCCARTESIANPOINT((1749.99984728577,61675.917451185,3429.11612816652));  
 #5324= IFCDIRECTION((0,-0.462484783005034,-0.88662721900965));  
 #5325= IFCAxis2PLACEMENT3D(#5323,#7,#5324);  
 #5326= IFCLocalPLACEMENT(#5315,#5325);  
 #5327= IFCCARTESIANPOINT((3815.43401513409,-2.11799134626994E-013,0.0));  
 #5328= IFCAxis2PLACEMENT3D(#5327,#336,#335);  
 #5329= IFCEXTRUDEDAREASOLID(#333,#5328,#9,3815.4);  
 #5330= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5329));  
 #5331= IFCSTYLEDITEM(#5329,(#330),S);  
 #5332= IFCPRODUCTDEFINITIONSHAPE(S,(#5330));  
 #5333= IFCMEMBER('1Ogjm0004hZ4qE3SsC34u',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#5326,#5332,'P0(?)');  
 #5334= IFCPROPERTYSINGLEVALUE('Top elevation',S,IFCLABEL(' +3.475'),S);  
 #5335= IFCPROPERTYSET('0KQbisoGn5WpWzQjkGmpW',#5,'Tekla Common','Common Properties to Shared building elements',(#3334,#5334,#71,#72,#73,#346));  
 #5336= IFCPROPERTYSINGLEVALUE('Weight',S,IFCMASSMEASURE(251.9),S);  
 #5337= IFCPROPERTYSINGLEVALUE('Net surface area',S,IFCAREAMEASURE(6.1),S);  
 #5338= IFCPROPERTYSINGLEVALUE('Length',S,IFLENGTHMEASURE(3815.4),S);  
 #5339= IFCPROPERTYSET('30tMaxi3LBlQopmvzFkOjV',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#5336,#1108,#78,#350,#5337,#352,#353,#5338));  
 #5340= IFCQUANTITYLENGTH('Length',S,S,3815.43401513556);  
 #5341= IFCQUANTITYAREA('OuterSurfaceArea',S,S,6.04364747997473);  
 #5342= IFCQUANTITYAREA('GrossSurfaceArea',S,S,6.04364747997473);  
 #5343= IFCQUANTITYVOLUME('NetVolume',S,S,0.0312560354519086);  
 #5344= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0320954309353203);  
 #5345= IFCQUANTITYWEIGHT('NetWeight',S,S,245.359878297482);  
 #5346= IFCQUANTITYWEIGHT('GrossWeight',S,S,251.949132842265);  
 #5347= IFCELEMENTQUANTITY('3zfHk7V2jAhRwLWzdf1PK',#5,'BaseQuantities',S,S,(#5340,#5341,#5342,#361,#5344,#5345,#5346));  
 #5348= IFCLocalPLACEMENT(#30,#10);  
 #5349= IFCELEMENTASSEMBLY('1Ogjm0004gZ4qE3SsC34u',#5,'Steel Assembly',S,S,#5348,S,'BE-0(?)',,NOTDEFINED,,RIGID\_FRAME.);  
 #5350= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit weight',S,IFCMASSMEASURE(253.3),S);  
 #5351= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit top elevation',S,IFCLABEL(' +3.477'),S);  
 #5352= IFCPROPERTYSET('2GB7B8ygv458\_L\_Y5YxCdi',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#5350,#3326,#5351,#5319,#318));  
 #5353= IFCQUANTITYLENGTH('Width',S,S,200.000000002983);  
 #5354= IFCELEMENTQUANTITY('1oIWodHFjFng8\$W0UJUAk2',#5,'BaseQuantities',S,S,(#5353));  
 #5355= IFCCARTESIANPOINT((1750.00000745035,63660.6106453893,47.1326607758537));  
 #5356= IFCDIRECTION((-3.99999999526433E-008,-0.471326607751451,0.881958745534908));  
 #5357= IFCAxis2PLACEMENT3D(#5355,#7,#5356);  
 #5358= IFCLocalPLACEMENT(#5348,#5357);  
 #5359= IFCCARTESIANPOINT((3835.6302570655,7.27595761418343E-012,1.50706051814402E-020));  
 #5360= IFCAxis2PLACEMENT3D(#5359,#336,#335);  
 #5361= IFCEXTRUDEDAREASOLID(#333,#5360,#9,3835.6);  
 #5362= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5361));  
 #5363= IFCSTYLEDITEM(#5361,(#330),S);  
 #5364= IFCPRODUCTDEFINITIONSHAPE(S,(#5362));  
 #5365= IFCMEMBER('1Ogjm0004gJ4qE3SsC34u',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#5358,#5364,'P0(?)');

#5366= IFCPROPERTYSINGLEVALUE('Top elevation',S,IFCLABEL(' +3.477'),S);  
 #5367= IFCPROPERTYSET('0GSJ0dOxP34RhNga7SG309',#5,'Tekla Common','Common Properties to Shared building elements',(#3334,#5366,#71,#72,#73,#346));  
 #5368= IFCPROPERTYSINGLEVALUE('Weight',S,IFCMASSMEASURE(253.3),S);  
 #5369= IFCPROPERTYSINGLEVALUE('Length',S,IFCLENGTHMEASURE(3835.6),S);  
 #5370= IFCPROPERTYSET('0ls1ZrCYL7T9UwD5YvqvgL',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#5368,#1108,#78,#350,#5337,#352,#353,#5369));  
 #5371= IFCQUANTITYLENGTH('Length',S,S,3835.63025706743);  
 #5372= IFCQUANTITYAREA('OuterSurfaceArea',S,S,6.0756383271948);  
 #5373= IFCQUANTITYAREA('GrossSurfaceArea',S,S,6.0756383271948);  
 #5374= IFCQUANTITYVOLUME('NetVolume',S,S,0.0314214830659263);  
 #5375= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0322653217224512);  
 #5376= IFCQUANTITYWEIGHT('NetWeight',S,S,246.658642067521);  
 #5377= IFCQUANTITYWEIGHT('GrossWeight',S,S,253.282775521242);  
 #5378= IFCLEMENTQUANTITY('3TEeMfGuL3PB7dbOKNNsUv',#5,'BaseQ uantities',S,S,(#5371,#5372,#5373,#361,#5374,#5375,#5376,#5377));  
 #5379= IFCLOCALPLACEMENT('#30,#10);  
 #5380= IFCLEMENTASSEMBLY('1Ogimc0004f4qE3SsC34u',#5,'Steel Assembly',S,S,#5379,S,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
 #5381= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit weight',S,IFCMASSMEASURE(258.3),S);  
 #5382= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit top elevation',S,IFCLABEL(' +3.559'),S);  
 #5383= IFCPROPERTYSET('3MUP6FI0zD5UpzmeEinwZK',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#5381,#3326,#5382,#5319,#318));  
 #5384= IFCQUANTITYLENGTH('Width',S,S,200.00000000895);  
 #5385= IFCLEMENTQUANTITY('3YNArWYg5CS9rvKlyYOMkd',#5,'Base Quantities',S,S,(#5384));  
 #5386= IFCARTESIANPOINT((1749.9998582422,65294.40158925,3512.96650206196));  
 #5387= IFCDIRECTION((3.8000000267888E-008,-0.46295326410355,-0.886382691198259));  
 #5388= IFCAXIS2PLACEMENT3D(#5386,#7,#5387);  
 #5389= IFCLOCALPLACEMENT(#5379,#5388);  
 #5390= IFCARTESIANPOINT((3911.03212043265,-2.17105895507643E-013,-4.14501024215173E-021));  
 #5391= IFCAXIS2PLACEMENT3D(#5390,#336,#335);  
 #5392= IFCEXTRUDEDAREASOLID(#333,#5391,#9,#3911.);  
 #5393= IFCSHAPEREPRESENTATION('#12,'Body','SweptSolid',(#5392));  
 #5394= IFCSTYLEDITEM(#5392,(#330),S);  
 #5395= IFCPRODUCTDEFINITIONSHAPE(S,S,(#5393));  
 #5396= IFCMEMBER('1Ogimc0004f34qE3SsC34u',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#5389,#5395,'PO(?)');  
 #5397= IFCPROPERTYSINGLEVALUE('Top elevation',S,IFCLABEL(' +3.559'),S);  
 #5398= IFCPROPERTYSET('3Ee\_AC4xP6K980ABg6oVTa',#5,'Tekla Common','Common Properties to Shared building elements',(#3334,#5397,#71,#72,#73,#346));  
 #5399= IFCPROPERTYSINGLEVALUE('Weight',S,IFCMASSMEASURE(258.3),S);  
 #5400= IFCPROPERTYSINGLEVALUE('Length',S,IFCLENGTHMEASURE(3911.),S);  
 #5401= IFCPROPERTYSET('2EapicWrHCLwohyRduWYP3',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#5399,#1108,#78,#350,#5337,#352,#353,#5400));  
 #5402= IFCQUANTITYLENGTH('Length',S,S,3911.0321204354);  
 #5403= IFCQUANTITYAREA('OuterSurfaceArea',S,S,6.19507487876967);  
 #5404= IFCQUANTITYAREA('GrossSurfaceArea',S,S,6.19507487876967);  
 #5405= IFCQUANTITYVOLUME('NetVolume',S,S,0.0320391751306107);  
 #5406= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0328996021971026);  
 #5407= IFCQUANTITYWEIGHT('NetWeight',S,S,251.507524775294);  
 #5408= IFCQUANTITYWEIGHT('GrossWeight',S,S,258.261877247255);  
 #5409= IFCLEMENTQUANTITY('1P2uXutgLCSOvrDrW6M8F9',#5,'BaseQ uantities',S,S,(#5402,#5403,#5404,#361,#5405,#5406,#5407,#5408));  
 #5410= IFCLOCALPLACEMENT('#30,#10);  
 #5411= IFCLEMENTASSEMBLY('1Ogimc0004e34qE3SsC34u',#5,'Steel Assembly',S,S,#5410,S,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
 #5412= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit weight',S,IFCMASSMEASURE(260.),S);  
 #5413= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit top elevation',S,IFCLABEL(' +3.561'),S);  
 #5414= IFCPROPERTYSET('2eDa4PC6T5Uu0TTd0KKbms',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#5412,#3326,#5413,#5319,#318));  
 #5415= IFCQUANTITYLENGTH('Width',S,S,200.00000002619);

#5416= IFCLEMENTQUANTITY('1pyQaQ6FTCRRKKD8bVx2yk',#5,'BaseQ uantities',S,S,(#5415));  
 #5417= IFCARTESIANPOINT((1736.38626502796,67336.3384228256,47.3827079919616));  
 #5418= IFCDIRECTION((0.999975713666913,0.00696936699767641,0.));  
 #5419= IFCDIRECTION((0.00330227500095943,-0.473815572137662,0.880617907255853));  
 #5420= IFCAXIS2PLACEMENT3D(#5417,#5418,#5419);  
 #5421= IFCLOCALPLACEMENT(#5410,#5420);  
 #5422= IFCARTESIANPOINT((3936.63488737542,7.27595761418343E-012,-4.5477811963954E-013));  
 #5423= IFCAXIS2PLACEMENT3D(#5422,#336,#335);  
 #5424= IFCEXTRUDEDAREASOLID(#333,#5423,#9,3936.6);  
 #5425= IFCSHAPEREPRESENTATION('#12,'Body','SweptSolid',(#5424));  
 #5426= IFCSTYLEDITEM(#5424,(#330),S);  
 #5427= IFCPRODUCTDEFINITIONSHAPE(S,S,(#5425));  
 #5428= IFCMEMBER('1Ogimc0004dp4qE3SsC34u',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#5421,#5427,'PO(?)');  
 #5429= IFCPROPERTYSINGLEVALUE('Top elevation',S,IFCLABEL(' +3.561'),S);  
 #5430= IFCPROPERTYSET('3HQIhIEOrDiv5ZzF4vbDnL',#5,'Tekla Common','Common Properties to Shared building elements',(#3334,#5429,#71,#72,#73,#346));  
 #5431= IFCPROPERTYSINGLEVALUE('Weight',S,IFCMASSMEASURE(260.)),S);  
 #5432= IFCPROPERTYSINGLEVALUE('Net surface area',S,IFCAREAMEASURE(6.3),S);  
 #5433= IFCPROPERTYSINGLEVALUE('Length',S,IFCLENGTHMEASURE(3936.6),S);  
 #5434= IFCPROPERTYSET('34Z9T1xr8jQ175YaJhg2n',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#5431,#1108,#78,#350,#5432,#352,#353,#5433));  
 #5435= IFCQUANTITYLENGTH('Length',S,S,3936.63488738529);  
 #5436= IFCQUANTITYAREA('OuterSurfaceArea',S,S,6.2356296616183);  
 #5437= IFCQUANTITYAREA('GrossSurfaceArea',S,S,6.2356296616183);  
 #5438= IFCQUANTITYVOLUME('NetVolume',S,S,0.0322489129974894);  
 #5439= IFCQUANTITYVOLUME('GrossVolume',S,S,0.033114972672685);  
 #5440= IFCQUANTITYWEIGHT('NetWeight',S,S,253.153967030292);  
 #5441= IFCQUANTITYWEIGHT('GrossWeight',S,S,259.952535480578);  
 #5442= IFCLEMENTQUANTITY('0oU9XmVD5FOi03kpu4SEY',#5,'BaseQ uantities',S,S,(#5435,#5436,#5437,#361,#5438,#5439,#5440,#5441));  
 #5443= IFCLOCALPLACEMENT('#30,#10);  
 #5444= IFCLEMENTASSEMBLY('1Ogimc0004cp4qE3SsC34u',#5,'Steel Assembly',S,S,#5443,S,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
 #5445= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit weight',S,IFCMASSMEASURE(264.6),S);  
 #5446= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit top elevation',S,IFCLABEL(' +3.645'),S);  
 #5447= IFCPROPERTYSET('2Ew4qDjZH0svexFGaiZnC',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#5445,#3326,#5446,#5319,#318));  
 #5448= IFCQUANTITYLENGTH('Width',S,S,200.000000007494);  
 #5449= IFCLEMENTQUANTITY('1BUEZZkXXA0iRSCwVBoMQ',#5,'Bas eQuantities',S,S,(#5448));  
 #5450= IFCARTESIANPOINT((1749.37805121446,69012.8023409912,3599.03863920331));  
 #5451= IFCDIRECTION((0.99997539612108,-0.00701478100085468,0.));  
 #5452= IFCDIRECTION((-0.00324424899896404,-0.46247617285232,-0.886625774716878));  
 #5453= IFCAXIS2PLACEMENT3D(#5450,#5451,#5452);  
 #5454= IFCLOCALPLACEMENT(#5443,#5453);  
 #5455= IFCARTESIANPOINT((4007.0906680283,-7.27595761418343E-012,-2.27175072182856E-013));  
 #5456= IFCAXIS2PLACEMENT3D(#5455,#336,#335);  
 #5457= IFCEXTRUDEDAREASOLID(#333,#5456,#9,4007.1);  
 #5458= IFCSHAPEREPRESENTATION('#12,'Body','SweptSolid',(#5457));  
 #5459= IFCSTYLEDITEM(#5457,(#330),S);  
 #5460= IFCPRODUCTDEFINITIONSHAPE(S,S,(#5458));  
 #5461= IFCMEMBER('1Ogimc0004cZ4qE3SsC34u',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#5454,#5460,'PO(?)');  
 #5462= IFCPROPERTYSINGLEVALUE('Top elevation',S,IFCLABEL(' +3.645'),S);  
 #5463= IFCPROPERTYSET('0c2oOww\_z50hVUWiMRcShZ',#5,'Tekla Common','Common Properties to Shared building elements',(#3334,#5462,#71,#72,#73,#346));  
 #5464= IFCPROPERTYSINGLEVALUE('Weight',S,IFCMASSMEASURE(264.6),S);  
 #5465= IFCPROPERTYSINGLEVALUE('Length',S,IFCLENGTHMEASURE(4007.1),S);  
 #5466= IFCPROPERTYSET('2wKAU\_r\_rz0HhZ8DnOAMJO',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#5464,#1108,#78,#350,#5432,#352,#353,#5465));  
 #5467= IFCQUANTITYLENGTH('Length',S,S,4007.09066879566);

#5468= IFCQUANTITYAREA('OuterSurfaceArea',S,S,6.34723164788432);  
#5469= IFCQUANTITYAREA('GrossSurfaceArea',S,S,6.34723164788432);  
#5470= IFCQUANTITYVOLUME('NetVolume',S,S,0.0328260869063275);  
#5471= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0337076468573251);  
#5472= IFCQUANTITYWEIGHT('NetWeight',S,S,257.684782214671);  
#5473= IFCQUANTITYWEIGHT('GrossWeight',S,S,264.605027830002);  
#5474= IFCELEMENTQUANTITY('0Vvcxvm25FBQM2fJvNME6',#5,'BaseQuantities',S,S,(#5467,#5468,#5469,#361,#5470,#5471,#5472,#5473));  
#5475= IFCLOCALPLACEMENT(#30,#10);  
#5476= IFCELEMENTASSEMBLY('IOgimc0004bJ4qE3SsC34u',#5,'Steel Assembly',S,S,#5475,S,'BE-0(?)',.NOTDEFINED,.,RIGID\_FRAME.);  
#5477= IFCPROPERTYSET('Assembly/Cast unit weight',S,IFCMASSMEASURE(266.6),S);  
#5478= IFCPROPERTYSET('Assembly/Cast unit top elevation',S,IFCLABEL(' +3.648'),S);  
#5479= IFCPROPERTYSET('1XZSUu1PBGeQO1KS6NK7w',#5,'Tekla Assembly',Assembly Properties',(#34,#313,#5477,#3326,#5478,#5319,#318));  
#5480= IFCARTESIANPOINT((1750.00000000959,71108.0909386425,47.5174320518101));  
#5481= IFCDIRECTION((0,-0.475174320916497,0.879891677845373));  
#5482= IFCAXIS2PLACEMENT3D(#5480,#7,#5481);  
#5483= IFCLOCALPLACEMENT(#5475,#5482);  
#5484= IFCARTESIANPOINT((4037.75825204284,0,0));  
#5485= IFCAXIS2PLACEMENT3D(#5484,#336,#335);  
#5486= IFCEXTRUDEDAREASOLID(#333,#5485,#9,4037.8);  
#5487= IFCSHAPEPRESENTATION(#12,'Body','SweptSolid',(#5486));  
#5488= IFCSTYLEDITEM(#5486,(#330),S);  
#5489= IFCPRODUCTDEFINITIONSHAPE(S,S,(#5487));  
#5490= IFCMEMBER('IOgimc0004bJ4qE3SsC34u',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#5483,#5489,'PO(?)');  
#5491= IFCPROPERTYSET('Top elevation',S,IFCLABEL(' +3.648'),S);  
#5492= IFCPROPERTYSET('1fQ8ml3SD16Rnev9DsG0j',#5,'Tekla Common',Common Properties to Shared building elements',(#3334,#5491,#71,#72,#73,#346));  
#5493= IFCPROPERTYSET('Weight',S,IFCMASSMEASURE(266.6),S);  
#5494= IFCPROPERTYSET('Length',S,IFCLENGTHMEASURE(4037.8),S);  
#5495= IFCPROPERTYSET('295LNreez3XeXT6GOsUoO',#5,'Tekla Quantity',Quantity Properties to Shared building elements',(#5493,#1108,#78,#350,#5432,#352,#353,#5494));  
#5496= IFCQUANTITYLENGTH('Length',S,S,4037.75825204998);  
#5497= IFCQUANTITYAREA('OuterSurfaceArea',S,S,6.39580907124717);  
#5498= IFCQUANTITYAREA('GrossSurfaceArea',S,S,6.39580907124717);  
#5499= IFCQUANTITYVOLUME('NetVolume',S,S,0.0330773156008507);  
#5500= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0339656224162444);  
#5501= IFCQUANTITYWEIGHT('NetWeight',S,S,259.656927466678);  
#5502= IFCQUANTITYWEIGHT('GrossWeight',S,S,266.630135967519);  
#5503= IFCELEMENTQUANTITY('15PpG34a5E9Ihmfb8EQ1y',#5,'BaseQuantities',S,S,(#5496,#5497,#5498,#361,#5499,#5500,#5501,#5502));  
#5504= IFCLOCALPLACEMENT(#30,#10);  
#5505= IFCELEMENTASSEMBLY('IOgimc0004aJ4qE3SsC34u',#5,'Steel Assembly',S,S,#5504,S,'BE-0(?)',.NOTDEFINED,.,RIGID\_FRAME.);  
#5506= IFCPROPERTYSET('Assembly/Cast unit weight',S,IFCMASSMEASURE(271.4),S);  
#5507= IFCPROPERTYSET('Assembly/Cast unit top elevation',S,IFCLABEL(' +3.734'),S);  
#5508= IFCPROPERTYSET('2ZiyZ531r9eRN \_UFhVUfv',#5,'Tekla Assembly',Assembly Properties',(#34,#313,#5506,#3326,#5507,#5319,#318));  
#5509= IFCQUANTITYLENGTH('Width',S,S,200.000000007662);  
#5510= IFCELEMENTQUANTITY('3B9P0exNvFbBYGT7ohUDUV',#5,'BaseQuantities',S,S,(#5509));  
#5511= IFCARTESIANPOINT((1749.99996743218,72837.9140419774,3687.75982843768));  
#5512= IFCDIRECTION((8.00000001983681E-009,-0.46381928423619,-0.885929834451142));  
#5513= IFCAXIS2PLACEMENT3D(#5511,#7,#5512);  
#5514= IFCLOCALPLACEMENT(#5504,#5513);  
#5515= IFCARTESIANPOINT((4110.23284077061,-2.281637568197E-013,-1.14746791015042E-020));  
#5516= IFCAXIS2PLACEMENT3D(#5515,#336,#335);  
#5517= IFCEXTRUDEDAREASOLID(#333,#5516,#9,4110.2);  
#5518= IFCSHAPEPRESENTATION(#12,'Body','SweptSolid',(#5517));  
#5519= IFCSTYLEDITEM(#5517,(#330),S);  
#5520= IFCPRODUCTDEFINITIONSHAPE(S,S,(#5518));  
#5521= IFCMEMBER('IOgimc0004a34qE3SsC34u',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#5514,#5520,'PO(?)');  
#5522= IFCPROPERTYSET('Top elevation',S,IFCLABEL(' +3.734'),S);  
#5523= IFCPROPERTYSET('37al83zBbAme8LxaFodUpl',#5,'Tekla Common',Common Properties to Shared building elements',(#3334,#5522,#71,#72,#73,#346));  
#5524= IFCPROPERTYSET('Weight',S,IFCMASSMEASURE(271.4),S);  
#5525= IFCPROPERTYSET('Net surface area',S,IFCAREAMEASURE(6.5),S);  
#5526= IFCPROPERTYSET('Length',S,IFCLENGTHMEASURE(4110.2),S);  
#5527= IFCPROPERTYSET('37d8BVSKvAJBpR 85ovJ',#5,'Tekla Quantity',Quantity Properties to Shared building elements',(#5524,#1108,#78,#350,#5525,#352,#353,#5526));  
#5528= IFCQUANTITYLENGTH('Length',S,S,4110.23284077677);  
#5529= IFCQUANTITYAREA('OuterSurfaceArea',S,S,6.5106088197904);  
#5530= IFCQUANTITYAREA('GrossSurfaceArea',S,S,6.5106088197904);  
#5531= IFCQUANTITYVOLUME('NetVolume',S,S,0.0336710274315037);  
#5532= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0345752786566142);  
#5533= IFCQUANTITYWEIGHT('NetWeight',S,S,264.317565337304);  
#5534= IFCQUANTITYWEIGHT('GrossWeight',S,S,271.415937454422);  
#5535= IFCLEMENTQUANTITY('2YQ02s\_vb7Egshx9CPN(LZ',#5,'BaseQuantities',S,S,(#5528,#5529,#5530,#361,#5531,#5532,#5533,#5534));  
#5536= IFCLOCALPLACEMENT(#30,#10);  
#5537= IFCLEMENTASSEMBLY('IOgimc0004Z34qE3SsC34u',#5,'Steel Assembly',S,S,#5536,S,'BE-0(?)',.NOTDEFINED,.,RIGID\_FRAME.);  
#5538= IFCPROPERTYSET('Assembly/Cast unit weight',S,IFCMASSMEASURE(273.3),S);  
#5539= IFCPROPERTYSET('Assembly/Cast unit top elevation',S,IFCLABEL(' +3.736'),S);  
#5540= IFCPROPERTYSET('1PmY1xr4n54GsuYZjduV',#5,'Tekla Assembly',Assembly Properties',(#34,#313,#5538,#3264,#5539,#5319,#318));  
#5541= IFCQUANTITYLENGTH('Width',S,S,200.000000004933);  
#5542= IFCLEMENTQUANTITY('2k2S0z0iz0hP01vmHSAdB',#5,'BaseQuantities',S,S,(#5541));  
#5543= IFCARTESIANPOINT((1750.00000152729,74981.9789320803,47.5363817550437));  
#5544= IFCDIRECTION((-8.00000003055517E-009,-0.475363817223289,0.879789316413255));  
#5545= IFCAXIS2PLACEMENT3D(#5543,#7,#5544);  
#5546= IFCLOCALPLACEMENT(#5536,#5545);  
#5547= IFCARTESIANPOINT((4138.92034441116,0,-2.27373679562293E-013));  
#5548= IFCAXIS2PLACEMENT3D(#5547,#336,#335);  
#5549= IFCEXTRUDEDAREASOLID(#333,#5548,#9,4138.9);  
#5550= IFCSHAPEPRESENTATION(#12,'Body','SweptSolid',(#5549));  
#5551= IFCSTYLEDITEM(#5549,(#330),S);  
#5552= IFCPRODUCTDEFINITIONSHAPE(S,S,(#5550));  
#5553= IFCMEMBER('IOgimc0004Yp4qE3SsC34u',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#5546,#5552,'PO(?)');  
#5554= IFCPROPERTYSET('Top elevation',S,IFCLABEL(' +3.736'),S);  
#5555= IFCPROPERTYSET('1bnMutZ5CAfgPbPGrm7p1',#5,'Tekla Common',Common Properties to Shared building elements',(#3273,#5554,#71,#72,#73,#346));  
#5556= IFCPROPERTYSET('Weight',S,IFCMASSMEASURE(273.3),S);  
#5557= IFCPROPERTYSET('Net surface area',S,IFCAREAMEASURE(6.6),S);  
#5558= IFCPROPERTYSET('Length',S,IFCLENGTHMEASURE(4138.9),S);  
#5559= IFCPROPERTYSET('3OQMP00Ob5ZenqXhcVYw',#5,'Tekla Quantity',Quantity Properties to Shared building elements',(#5556,#1108,#78,#350,#5557,#352,#353,#5558));  
#5560= IFCQUANTITYLENGTH('Length',S,S,4138.92034441706);  
#5561= IFCQUANTITYAREA('OuterSurfaceArea',S,S,6.55604982555662);  
#5562= IFCQUANTITYAREA('GrossSurfaceArea',S,S,6.55604982555662);  
#5563= IFCQUANTITYVOLUME('NetVolume',S,S,0.0339060354615371);  
#5564= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0348165979372363);  
#5565= IFCQUANTITYWEIGHT('NetWeight',S,S,266.162378373066);  
#5566= IFCQUANTITYWEIGHT('GrossWeight',S,S,273.310293807305);  
#5567= IFCLEMENTQUANTITY('3Xs6tpG2D8Q8zxSwyO2x4',#5,'BaseQuantities',S,S,(#5560,#5561,#5562,#361,#5563,#5564,#5565,#5566));  
#5568= IFCLOCALPLACEMENT(#30,#10);  
#5569= IFCLEMENTASSEMBLY('IOgimc0004Xp4qE3SsC34u',#5,'Steel Assembly',S,S,#5568,S,'BE-0(?)',.NOTDEFINED,.,RIGID\_FRAME.);  
#5570= IFCPROPERTYSET('Assembly/Cast unit weight',S,IFCMASSMEASURE(278.5),S);  
#5571= IFCPROPERTYSET('Assembly/Cast unit top elevation',S,IFCLABEL(' +3.826'),S);

## Appendix

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#5572= IFCPROPERTYSET('37vYCKeB957e5O2Sa8s0O',#5,'Tekla
Assembly','Assembly
Properties',(#34,#313,#5570,#3326,#5571,#5319,#318));
#5573= IFCQUANTITYLENGTH('Width',$.S,200.000000010783);
#5574=
IFCELEMENTQUANTITY('0y9fmxkLzAUwQWecRDZrAO',#5,'Base
Quantities',$.S,(#5573));
#5575=
IFCCARTESIANPOINT((1749.99998251364,76769.678292098,3779.0
0496765743));
#5576= IFCDIRECTION((3.99999998153984E-009,-
0.465696878041631,-0.884944302079107));
#5577= IFCAXIS2PLACEMENT3D(#5575,#7,#5576);
#5578= IFCLOCALPLACEMENT(#5568,#5577);
#5579= IFCCARTESIANPOINT((4217.70643825027,0.-
2.18050312197544E-021));
#5580= IFCAXIS2PLACEMENT3D(#5579,#336,#335);
#5581= IFCEXTRUDEDAREASOLID(#333,#5580,#9,4217.7);
#5582=
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5581));
#5583= IFCSTYLEDITEM(#5581,(#330),$.S);
#5584= IFCPRODUCTDEFINITIONSHAPE($.S,(#5582));
#5585=
IFCMEMBER('1Ogimc0004XZ4qE3SsC34u',#5,'BEAM','HN400*200*
8*13','HN400*200*8*13',#5578,#5584,'PO(?)');
#5586= IFCPROPERTYSINGLEVALUE('Top elevation',$.IFCLABEL('
+3.826'),$.S);
#5587= IFCPROPERTYSET('1naWN40Z0bfzSkVhJ4r64',#5,'Tekla
Common','Common Properties to Shared building
elements',(#3334,#5586,#71,#72,#73,#346));
#5588=
IFCPROPERTYSINGLEVALUE('Weight',$.IFCMASSMEASURE(278.
5),$.S);
#5589=
IFCPROPERTYSINGLEVALUE('Length',$.IFCLENGTHMEASURE(4
217.7),$.S);
#5590= IFCPROPERTYSET('1TN8uttZL57BZxjsq1nGLX',#5,'Tekla
Quantity','Quantity Properties to Shared building
elements',(#5588,#1108,#78,#350,#5557,#352,#353,#5589));
#5591= IFCQUANTITYLENGTH('Length',$.S,4217.70643826215);
#5592=
IFCQUANTITYAREA('OuterSurfaceArea',$.S,6.68084699820724);
#5593=
IFCQUANTITYAREA('GrossSurfaceArea',$.S,6.68084699820724);
#5594=
IFCQUANTITYVOLUME('NetVolume',$.S,0.0345514511420561);
#5595=
IFCQUANTITYVOLUME('GrossVolume',$.S,0.0354793465586612);
#5596= IFCQUANTITYWEIGHT('NetWeight',$.S,271.22889146514);
#5597=
IFCQUANTITYWEIGHT('GrossWeight',$.S,278.51287048549);
#5598=
IFCELEMENTQUANTITY('1A34lyFIXAyvbPM_M9Mh5w',#5,'BaseQ
uantities',$.S,(#5591,#5592,#5593,#361,#5594,#5595,#5596,#5597));
#5599= IFCLOCALPLACEMENT(#30,#10);
#5600=
IFCELEMENTASSEMBLY('1Ogimc0004WZ4qE3SsC34u',#5,'Steel
Assembly',$.S,(#5599,'BE-0(?)',.NOTDEFINED.,RIGID_FRAME.);
#5601= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit
weight',$.IFCMASSMEASURE(280.2),$.S);
#5602= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit top
elevation',$.IFCLABEL(' +3.828'),$.S);
#5603= IFCPROPERTYSET('1hlMzIKuLATP5BVIZyWpG',#5,'Tekla
Assembly','Assembly
Properties',(#34,#313,#5601,#3326,#5602,#5319,#318));
#5604= IFCQUANTITYLENGTH('Width',$.S,200.000000012951);
#5605=
IFCELEMENTQUANTITY('3WAjWossf5_vhkJdYrB_1',#5,'BaseQuan
tities',$.S,(#5604));
#5606=
IFCCARTESIANPOINT((1750.00000079753,78965.5173136682,47.58
56132983629));
#5607= IFCDIRECTION((-3.9999999824956E-009,-
0.475856134002732,0.879523132005051));
#5608= IFCAXIS2PLACEMENT3D(#5606,#7,#5607);
#5609= IFCLOCALPLACEMENT(#5599,#5608);
#5610= IFCCARTESIANPOINT((4243.70336990287,-
2.35572859547276E-013,-8.775772882524E-022));
#5611= IFCAXIS2PLACEMENT3D(#5610,#336,#335);
#5612= IFCEXTRUDEDAREASOLID(#333,#5611,#9,4243.7);
#5613=
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5612));
#5614= IFCSTYLEDITEM(#5612,(#330),$.S);
#5615= IFCPRODUCTDEFINITIONSHAPE($.S,(#5613));
#5616=
IFCMEMBER('1Ogimc0004WJ4qE3SsC34u',#5,'BEAM','HN400*200*
8*13','HN400*200*8*13',#5609,#5615,'PO(?)');
#5617= IFCPROPERTYSINGLEVALUE('Top elevation',$.IFCLABEL('
+3.828'),$.S);
#5618= IFCPROPERTYSET('1ixlHEz54RxcVpM4iATN',#5,'Tekla
Common','Common Properties to Shared building
elements',(#3334,#5617,#71,#72,#73,#346));
#5619=
IFCPROPERTYSINGLEVALUE('Weight',$.IFCMASSMEASURE(280.
2),$.S);
#5620=
IFCPROPERTYSINGLEVALUE('Length',$.IFCLENGTHMEASURE(4
243.7),$.S);
#5621= IFCPROPERTYSET('1_MPKDSkf819dLpjb3gbt',#5,'Tekla
Quantity','Quantity Properties to Shared building
elements',(#5619,#1108,#78,#350,#5557,#352,#353,#5620));
#5622= IFCQUANTITYLENGTH('Length',$.S,4243.70336989527);
#5623=
IFCQUANTITYAREA('OuterSurfaceArea',$.S,6.7220261379141);
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#5624=
IFCQUANTITYAREA('GrossSurfaceArea',$.S,6.7220261379141);
#5625=
IFCQUANTITYVOLUME('NetVolume',$.S,0.0347644180063363);
#5626=
IFCQUANTITYVOLUME('GrossVolume',$.S,0.035698032747559);
#5627= IFCQUANTITYWEIGHT('NetWeight',$.S,272.90068134974);
#5628=
IFCQUANTITYWEIGHT('GrossWeight',$.S,280.229557068338);
#5629=
IFCELEMENTQUANTITY('31ShXt7TT8Zwc_hfTTQqXb',#5,'BaseQua
ntities',$.S,(#5622,#5623,#5624,#361,#5625,#5626,#5627,#5628));
#5630= IFCLOCALPLACEMENT(#30,#10);
#5631=
IFCELEMENTASSEMBLY('1Ogimc0004VJ4qE3SsC34u',#5,'Steel
Assembly',$.S,(#5630,'BE-0(?)',.NOTDEFINED.,RIGID_FRAME.);
#5632= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit
weight',$.IFCMASSMEASURE(285.9),$.S);
#5633= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit top
elevation',$.IFCLABEL(' +3.920'),$.S);
#5634= IFCPROPERTYSET('1IFQogzOPAGen4gPR4so8H',#5,'Tekla
Assembly','Assembly
Properties',(#34,#313,#5632,#3264,#5633,#5319,#318));
#5635= IFCQUANTITYLENGTH('Width',$.S,200.00000005486);
#5636=
IFCELEMENTQUANTITY('0vcTnQeinEiO6gDITNzPc',#5,'BaseQuan
tities',$.S,(#5635));
#5637=
IFCCARTESIANPOINT((1749.99998252711,80814.73888889691,3872.
9043002239));
#5638= IFCDIRECTION((3.99999999120339E-009,-
0.467880883832064,-0.88379153568278));
#5639= IFCAXIS2PLACEMENT3D(#5637,#7,#5638);
#5640= IFCLOCALPLACEMENT(#5630,#5639);
#5641=
IFCCARTESIANPOINT((4329.20667023427,0.-3.35722108626847E-
022));
#5642= IFCAXIS2PLACEMENT3D(#5641,#336,#335);
#5643= IFCEXTRUDEDAREASOLID(#333,#5642,#9,4329.2);
#5644=
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5643));
#5645= IFCSTYLEDITEM(#5643,(#330),$.S);
#5646= IFCPRODUCTDEFINITIONSHAPE($.S,(#5644));
#5647=
IFCMEMBER('1Ogimc0004V34qE3SsC34u',#5,'BEAM','HN400*200*8
*13','HN400*200*8*13',#5640,#5646,'PO(?)');
#5648= IFCPROPERTYSINGLEVALUE('Top elevation',$.IFCLABEL('
+3.920'),$.S);
#5649= IFCPROPERTYSET('2O8tOtD9nFivilyXXcZmDf',#5,'Tekla
Common','Common Properties to Shared building
elements',(#3273,#5648,#71,#72,#73,#346));
#5650=
IFCPROPERTYSINGLEVALUE('Weight',$.IFCMASSMEASURE(285.
9),$.S);
#5651= IFCPROPERTYSINGLEVALUE('Net surface
area',$.IFCAREAMEASURE(6.9),$.S);
#5652=
IFCPROPERTYSINGLEVALUE('Length',$.IFCLENGTHMEASURE(4
329.2),$.S);
#5653= IFCPROPERTYSET('19d3mhDbj5GRG_UXMPOg2J',#5,'Tekla
Quantity','Quantity Properties to Shared building
elements',(#5650,#1108,#78,#350,#5651,#352,#353,#5652));
#5654= IFCQUANTITYLENGTH('Length',$.S,4329.20667024262);
#5655=
IFCQUANTITYAREA('OuterSurfaceArea',$.S,6.8574633656643);
#5656=
IFCQUANTITYAREA('GrossSurfaceArea',$.S,6.8574633656643);
#5657=
IFCQUANTITYVOLUME('NetVolume',$.S,0.0354648610427032);
#5658=
IFCQUANTITYVOLUME('GrossVolume',$.S,0.0364172865100809);
#5659= IFCQUANTITYWEIGHT('NetWeight',$.S,278.39915918522);
#5660=
IFCQUANTITYWEIGHT('GrossWeight',$.S,285.875699104135);
#5661=
IFCELEMENTQUANTITY('3wQMgTxFrBD9GkXt2r1Hi',#5,'BaseQu
antities',$.S,(#5654,#5655,#5656,#361,#5657,#5658,#5659,#5660));
#5662= IFCLOCALPLACEMENT(#30,#10);
#5663=
IFCELEMENTASSEMBLY('1Ogimc0004U34qE3SsC34u',#5,'Steel
Assembly',$.S,(#5662,'BE-0(?)',.NOTDEFINED.,RIGID_FRAME.);
#5664= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit
weight',$.IFCMASSMEASURE(287.3),$.S);
#5665= IFCPROPERTYSET('3YcY_Ayb13RwjHHB129S1O',#5,'Tekla
Assembly','Assembly
Properties',(#34,#313,#5664,#3264,#233,#5319,#318));
#5666= IFCQUANTITYLENGTH('Width',$.S,200.000000004758);
#5667=
IFCELEMENTQUANTITY('2OUHJunL12cQtnpuG_rCfW',#5,'BaseQu
antities',$.S,(#5666));
#5668=
IFCCARTESIANPOINT((1750.00000077387,83062.3159633242,47.60
65863693669));
#5669= IFCDIRECTION((-4.00000000327951E-009,-
0.476065861871528,0.879409628762683));
#5670= IFCAXIS2PLACEMENT3D(#5668,#7,#5669);
#5671= IFCLOCALPLACEMENT(#5662,#5670);
#5672= IFCCARTESIANPOINT((4350.77816617006,0.,0.));
#5673= IFCAXIS2PLACEMENT3D(#5672,#336,#335);
#5674= IFCEXTRUDEDAREASOLID(#333,#5673,#9,4350.8);
#5675=
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5674));
#5676= IFCSTYLEDITEM(#5674,(#330),$.S);
#5677= IFCPRODUCTDEFINITIONSHAPE($.S,(#5675));
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#5678= IFCMEMBER('1Ogimc0004Tp4qE3SsC34u',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#5671,#5677,'PO(?)');  
#5679= IFCPROPERTYSET('33NBwV0qP5LOURvELBO2wI',#5,'Tekla Common','Common Properties to Shared building elements',(#3273,#249,#71,#72,#73,#346));  
#5680= IFCPROPERTYSET('Weight',#5,IFCMASMEASURE(287.3),\$);  
#5681= IFCPROPERTYSET('Length',#5,IFCLENGTHMEASURE(4350.8),\$);  
#5682= IFCPROPERTYSET('18v1fA3jBXOfIkRwHEMJT',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#5680,#1108,#78,#350,#5651,#352,#353,#5681));  
#5683= IFCQUANTITYLENGTH('Length',#5,\$,4350.77816618043);  
#5684= IFCQUANTITYAREA('OuterSurfaceArea',#5,\$,6.89163261522979);  
#5685= IFCQUANTITYAREA('GrossSurfaceArea',#5,\$,6.89163261522979);  
#5686= IFCQUANTITYVOLUME('NetVolume',#5,\$,0.0356415747372569);  
#5687= IFCQUANTITYVOLUME('GrossVolume',#5,\$,0.0365987459339097);  
#5688= IFCQUANTITYWEIGHT('NetWeight',#5,\$,279.786361687467);  
#5689= IFCQUANTITYWEIGHT('GrossWeight',#5,\$,287.300155581191);  
#5690= IFCELEMENTQUANTITY('0PE3SuScbEWPdOvddlCpN',#5,'BaseQuantities',#5,(\$,#5683,#5684,#5685,#361,#5686,#5687,#5688,#5689));  
#5691= IFCLOCALPLACEMENT(#30,#10);  
#5692= IFCELEMENTASSEMBLY('1Ogimc0004Sp4qE3SsC34u',#5,'Steel Assembly',#5,(\$,#5691,\$,'BE-0(?)',NOTDEFINED,..RIGID\_FRAME.);  
#5693= IFCPROPERTYSET('Assembly/Cast unit weight',#5,IFCMASMEASURE(293.4),\$);  
#5694= IFCPROPERTYSET('Assembly/Cast unit top elevation',#5,IFCLABEL(' +4.016'),\$);  
#5695= IFCPROPERTYSET('0g4YoaQPC39p52NqpNbn1',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#5693,#3326,#5694,#5319,#318));  
#5696= IFCQUANTITYLENGTH('Width',#5,\$,200.00000008353);  
#5697= IFCELEMENTQUANTITY('0hn5ZwFqTDxx\_YtnqzMMKT',#5,'BaseQuantities',#5,(\$,#5696));  
#5698= IFCARTESIANPOINT((1749.9999873883,84973.0711934907,3969.39247271504));  
#5699= IFCDIRECTION((3.0000000138571E-009,-0.469715400048866,-0.882817899091842));  
#5700= IFCAXIS2PLACEMENT3D(#5698,#7,#5699);  
#5701= IFCLOCALPLACEMENT(#5691,#5700);  
#5702= IFCARTESIANPOINT((4443.06910512908,2.4663988102575E-013,2.29701288999757E-021));  
#5703= IFCAXIS2PLACEMENT3D(#5702,#336,#335);  
#5704= IFCXTRUDEDAREASOLID(#333,#5703,#9,4443.1);  
#5705= IFCSHAPEPRESENTATION(#12,'Body','SweptSolid',(#5704));  
#5706= IFCSTYLEDITEM(#5704,#330,\$);  
#5707= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(\$5705));  
#5708= IFCMEMBER('1Ogimc0004S4qE3SsC34u',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#5701,#5707,'PO(?)');  
#5709= IFCPROPERTYSET('Top elevation',#5,IFCLABEL(' +4.016'),\$);  
#5710= IFCPROPERTYSET('2n871tOBXD4RsvHRVeksqo',#5,'Tekla Common','Common Properties to Shared building elements',(#3334,#5709,#71,#72,#73,#346));  
#5711= IFCPROPERTYSET('Weight',#5,IFCMASMEASURE(293.4),\$);  
#5712= IFCPROPERTYSET('Net surface area',#5,IFCAREAMEASURE(7.1),\$);  
#5713= IFCPROPERTYSET('Length',#5,IFCLENGTHMEASURE(4443.1),\$);  
#5714= IFCPROPERTYSET('2c9cNaxHv8PRzPPhKn8W3I',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#5711,#1108,#78,#350,#5712,#352,#353,#5713));  
#5715= IFCQUANTITYLENGTH('Length',#5,\$,4443.06910512444);  
#5716= IFCQUANTITYAREA('OuterSurfaceArea',#5,\$,7.03782146251712);  
#5717= IFCQUANTITYAREA('GrossSurfaceArea',#5,\$,7.03782146251712);  
#5718= IFCQUANTITYVOLUME('NetVolume',#5,\$,0.0363976221092834);  
#5719= IFCQUANTITYVOLUME('GrossVolume',#5,\$,0.0373750973123068);  
#5720= IFCQUANTITYWEIGHT('NetWeight',#5,\$,285.721333557875);  
#5721= IFCQUANTITYWEIGHT('GrossWeight',#5,\$,293.394513901609);  
#5722= IFCELEMENTQUANTITY('1op4dWw3z1iRDTR9OyqjAX',#5,'BaseQuantities',#5,(\$,#5715,#5716,#5717,#361,#5718,#5719,#5720,#5721));  
#5723= IFCLOCALPLACEMENT(#30,#10);  
#5724= IFCELEMENTASSEMBLY('1Ogimc0004RZ4qE3SsC34u',#5,'Steel Assembly',#5,(\$,#5723,\$,'BE-0(?)',NOTDEFINED,..RIGID\_FRAME.);  
#5725= IFCPROPERTYSET('Assembly/Cast unit weight',#5,IFCMASMEASURE(294.5),\$);  
#5726= IFCPROPERTYSET('Assembly/Cast unit top elevation',#5,IFCLABEL(' +4.018'),\$);  
#5727= IFCPROPERTYSET('201ZG\_vt9078WbFfHxQ5JC',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#5725,#3326,#5726,#5319,#318));  
#5728= IFCQUANTITYLENGTH('Width',#5,\$,200.000000006476);  
#5729= IFCLEMENTQUANTITY('3j05q1IQPljAyUm74dWPT3',#5,'BaseQuantities',#5,(\$,#5728));  
#5730= IFCARTESIANPOINT((1750.00000054543,87272.3739126578,47.6011366162178));  
#5731= IFCDIRECTION((-2.9999999789121E-009,-0.476011376919656,0.879439121851566));  
#5732= IFCAXIS2PLACEMENT3D(#5730,#7,#5731);  
#5733= IFCLOCALPLACEMENT(#5723,#5732);  
#5734= IFCARTESIANPOINT((4460.13923568732,0.-1.72937845549108E-021));  
#5735= IFCAXIS2PLACEMENT3D(#5734,#336,#335);  
#5736= IFCXTRUDEDAREASOLID(#333,#5735,#9,4460.1);  
#5737= IFCSHAPEPRESENTATION(#12,'Body','SweptSolid',(#5736));  
#5738= IFCSTYLEDITEM(#5736,#330,\$);  
#5739= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(\$5737));  
#5740= IFCMEMBER('1Ogimc0004R4qE3SsC34u',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#5733,#5739,'PO(?)');  
#5741= IFCPROPERTYSET('Top elevation',#5,IFCLABEL(' +4.018'),\$);  
#5742= IFCPROPERTYSET('0ue7EEGj9r8dBNSbRmneo',#5,'Tekla Common','Common Properties to Shared building elements',(#3334,#5741,#71,#72,#73,#346));  
#5743= IFCPROPERTYSET('Weight',#5,IFCMASMEASURE(294.5),\$);  
#5744= IFCPROPERTYSET('Length',#5,IFCLENGTHMEASURE(4460.1),\$);  
#5745= IFCPROPERTYSET('2VGSmob696gAQdzeEnOPu',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#5743,#1108,#78,#350,#5712,#352,#353,#5744));  
#5746= IFCQUANTITYLENGTH('Length',#5,\$,4460.13923567877);  
#5747= IFCQUANTITYAREA('OuterSurfaceArea',#5,\$,7.06486054931517);  
#5748= IFCQUANTITYAREA('GrossSurfaceArea',#5,\$,7.06486054931517);  
#5749= IFCQUANTITYVOLUME('NetVolume',#5,\$,0.0365374606187762);  
#5750= IFCQUANTITYVOLUME('GrossVolume',#5,\$,0.0375186912505298);  
#5751= IFCQUANTITYWEIGHT('NetWeight',#5,\$,286.819065857394);  
#5752= IFCQUANTITYWEIGHT('GrossWeight',#5,\$,294.521726316659);  
#5753= IFCLEMENTQUANTITY('0lla7mlODCRAlDyfaHwkwa',#5,'BaseQuantities',#5,(\$,#5746,#5747,#5748,#361,#5749,#5750,#5751,#5752));  
#5754= IFCLOCALPLACEMENT(#30,#10);  
#5755= IFCELEMENTASSEMBLY('1Ogimc0004Q4qE3SsC34u',#5,'Steel Assembly',#5,(\$,#5754,\$,'BE-0(?)',NOTDEFINED,..RIGID\_FRAME.);  
#5756= IFCPROPERTYSET('Assembly/Cast unit weight',#5,IFCMASMEASURE(301.1),\$);  
#5757= IFCPROPERTYSET('Assembly/Cast unit top elevation',#5,IFCLABEL(' +4.116'),\$);  
#5758= IFCPROPERTYSET('0lsBZRAbz0jwKkKvA68E0V',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#5756,#3326,#5757,#5319,#318));  
#5759= IFCQUANTITYLENGTH('Width',#5,\$,200.000000012151);  
#5760= IFCLEMENTQUANTITY('0T2c05TEX4rhOS9Fct9U',#5,'BaseQuantities',#5,(\$,#5759));  
#5761= IFCARTESIANPOINT((1749.99999104284,89244.6762240463,4068.47190896121));  
#5762= IFCDIRECTION((2.00000002484511E-009,-0.471224681997065,-0.882013207994509));  
#5763= IFCAXIS2PLACEMENT3D(#5761,#7,#5762);  
#5764= IFCLOCALPLACEMENT(#5754,#5763);  
#5765= IFCARTESIANPOINT((4559.28483254491,0.,2.0035307609375E-021));  
#5766= IFCAXIS2PLACEMENT3D(#5765,#336,#335);  
#5767= IFCXTRUDEDAREASOLID(#333,#5766,#9,4559.3);  
#5768= IFCSHAPEPRESENTATION(#12,'Body','SweptSolid',(#5767));  
#5769= IFCSTYLEDITEM(#5767,#330,\$);  
#5770= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(\$5768));  
#5771= IFCMEMBER('1Ogimc0004Q34qE3SsC34u',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#5764,#5770,'PO(?)');  
#5772= IFCPROPERTYSET('Top elevation',#5,IFCLABEL(' +4.116'),\$);  
#5773= IFCPROPERTYSET('2bxiB880D4Luo0SptPwoS3',#5,'Tekla Common','Common Properties to Shared building elements',(#3334,#5772,#71,#72,#73,#346));  
#5774= IFCPROPERTYSET('Weight',#5,IFCMASMEASURE(301.1),\$);  
#5775= IFCPROPERTYSET('Length',#5,IFCLENGTHMEASURE(4559.3),\$);  
#5776= IFCPROPERTYSET('1eeyYzsrLr6jgGuzz9OhHyz',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#5774,#1108,#78,#350,#5712,#352,#353,#5775));  
#5777= IFCQUANTITYLENGTH('Length',#5,\$,4559.28483254752);  
#5778= IFCQUANTITYAREA('OuterSurfaceArea',#5,\$,7.22190717475527);



## Appendix

#5779= IFCQUANTITYAREA('GrossSurfaceArea',S,S,7.22190717475527);  
#5780= IFCQUANTITYVOLUME('NetVolume',S,S,0.0373496613484055);  
#5781= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0383527040113897);  
#5782= IFCQUANTITYWEIGHT('NetWeight',S,S,293.194841584983);  
#5783= IFCQUANTITYWEIGHT('GrossWeight',S,S,301.06872648941);  
#5784= IFCLEMENTQUANTITY('0ixBJ9xpr378FbjwTskHV2',#5,'BaseQuantities',S,S,#5777,#5778,#5779,#361,#5780,#5781,#5782,#5783);  
#5785= IFCLOCALPLACEMENT(#30,#10);  
#5786= IFCLEMENTASSEMBLY('1Ogjm0004P34qE3SsC34u',#5,'Steel Assembly',S,S,#5785,S,'BE-0(?)',NOTDEFINED,,RIGID\_FRAME.);  
#5787= IFCPROPERTYSET('Assembly/Cast unit weight',S,IFCMASSMEASURE(302.1),S);  
#5788= IFCPROPERTYSET('Assembly/Cast unit top elevation',S,IFCLABEL(' +4.117'),S);  
#5789= IFCPROPERTYSET('1uA6dqujTFWew3UdvpBFeK',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#5787,#3264,#5788,#5319,#318));  
#5790= IFCQUANTITYLENGTH('Width',S,S,200.00000010201);  
#5791= IFCLEMENTQUANTITY('1Dq1UqArPEwR9FKhVg14Fe',#5,'BaseQuantities',S,S,#5790);  
#5792= IFCARTESIANPOINT((1750.00000037636,91602.2911223397,47.6837975769933));  
#5793= IFCDIRECTION((-1.99999997750314E-009,-0.476837956924889,0.878991218861541));  
#5794= IFCAXIS2PLACEMENT3D(#5792,#7,#5793);  
#5795= IFCLOCALPLACEMENT(#5785,#5794);  
#5796= IFCARTESIANPOINT((4574.95974076855,0,-2.36519875048398E-022));  
#5797= IFCAXIS2PLACEMENT3D(#5796,#336,#335);  
#5798= IFCXTRUDEDAREASOLID(#333,#5797,#9,4575.);  
#5799= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5798));  
#5800= IFCSTYLEDITEM(#5798,(#330),S);  
#5801= IFCPRODUCTDEFINITIONSHAPE(S,S,(#5799));  
#5802= IFCMEMBER('1Ogjm0004Op4qE3SsC34u',#5,'BEAM',HN400\*200\*8\*13,'HN400\*200\*8\*13',#5795,#5801,'P0(?)');  
#5803= IFCPROPERTYSET('Top elevation',S,IFCLABEL(' +4.117'),S);  
#5804= IFCPROPERTYSET('3EzOqfSmDjOcKDL8TZJuw',#5,'Tekla Common','Common Properties to Shared building elements',(#3273,#5803,#71,#72,#73,#346));  
#5805= IFCPROPERTYSET('Weight',S,IFCMASSMEASURE(302.1),S);  
#5806= IFCPROPERTYSET('Length',S,IFLENGTHMEASURE(4575.),S);  
#5807= IFCPROPERTYSET('2wJPvyP8bQfLTVUx76Yg',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#5805,#1108,#78,#350,#1651,#352,#353,#5806));  
#5808= IFCQUANTITYLENGTH('Length',S,S,4574.9597407774);  
#5809= IFCQUANTITYAREA('OuterSurfaceArea',S,S,7.2467362293914);  
#5810= IFCQUANTITYAREA('GrossSurfaceArea',S,S,7.2467362293914);  
#5811= IFCQUANTITYVOLUME('NetVolume',S,S,0.0374780701965912);  
#5812= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0384845613394195);  
#5813= IFCQUANTITYWEIGHT('NetWeight',S,S,294.202851043241);  
#5814= IFCQUANTITYWEIGHT('GrossWeight',S,S,302.103806514443);  
#5815= IFCLEMENTQUANTITY('0uu9z8DzTC\$wtXbfs2pgpF',#5,'BaseQuantities',S,S,#5808,#5809,#5810,#361,#5811,#5812,#5813,#5814);  
#5816= IFCLOCALPLACEMENT(#30,#10);  
#5817= IFCLEMENTASSEMBLY('1Ogjm0004Np4qE3SsC34u',#5,'Steel Assembly',S,S,#5816,S,'BE-0(?)',NOTDEFINED,,RIGID\_FRAME.);  
#5818= IFCPROPERTYSET('Assembly/Cast unit weight',S,IFCMASSMEASURE(308.9),S);  
#5819= IFCPROPERTYSET('Assembly/Cast unit top elevation',S,IFCLABEL(' +4.218'),S);  
#5820= IFCPROPERTYSET('3w0YIEC8b2wf7ZnxCkKWyC',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#5818,#3264,#5819,#5319,#318));  
#5821= IFCQUANTITYLENGTH('Width',S,S,200.00000010914);  
#5822= IFCLEMENTQUANTITY('2Jvr30FzAWgdYbjLmLzR',#5,'BaseQuantities',S,S,#5821);  
#5823= IFCARTESIANPOINT((1749.99999541542,93636.212428439,4170.2976469538));  
#5824= IFCDIRECTION((9.99999993096075E-010,-0.472417061163836,-0.881375130305663));  
#5825= IFCAXIS2PLACEMENT3D(#5823,#7,#5824);  
#5826= IFCLOCALPLACEMENT(#5816,#5825);  
#5827= IFCARTESIANPOINT((4677.98080127095,0,-8.46460786654571E-022));  
#5828= IFCAXIS2PLACEMENT3D(#5827,#336,#335);  
#5829= IFCXTRUDEDAREASOLID(#333,#5828,#9,4678.);  
#5830= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5829));  
#5831= IFCSTYLEDITEM(#5829,(#330),S);  
#5832= IFCPRODUCTDEFINITIONSHAPE(S,S,(#5830));  
#5833= IFCMEMBER('1Ogjm0004NZ4qE3SsC34u',#5,'BEAM',HN400\*200\*8\*13,'HN400\*200\*8\*13',#5826,#5832,'P0(?)');  
#5834= IFCPROPERTYSET('Top elevation',S,IFCLABEL(' +4.218'),S);  
#5835= IFCPROPERTYSET('3ECQdIuj5ZR6e4o4x8UgD',#5,'Tekla Common','Common Properties to Shared building elements',(#3273,#5834,#71,#72,#73,#346));  
#5836= IFCPROPERTYSET('Weight',S,IFCMASSMEASURE(308.9),S);  
#5837= IFCPROPERTYSET('Length',S,IFLENGTHMEASURE(4678.),S);  
#5838= IFCPROPERTYSET('2gSfXhBL96ExqKQcZkVrKe',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#5836,#1108,#78,#350,#1651,#352,#353,#5837));  
#5839= IFCQUANTITYLENGTH('Length',S,S,4677.98080126225);  
#5840= IFCQUANTITYAREA('OuterSurfaceArea',S,S,7.40992158919941);  
#5841= IFCQUANTITYAREA('GrossSurfaceArea',S,S,7.40992158919941);  
#5842= IFCQUANTITYVOLUME('NetVolume',S,S,0.0383220187240566);  
#5843= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0393511745002181);  
#5844= IFCQUANTITYWEIGHT('NetWeight',S,S,300.827846983844);  
#5845= IFCQUANTITYWEIGHT('GrossWeight',S,S,308.906719826712);  
#5846= IFCLEMENTQUANTITY('08usWu\$RzF7O124Gm0Ub2',#5,'BaseQuantities',S,S,(#5839,#5840,#5841,#361,#5842,#5843,#5844,#5845));  
#5847= IFCLOCALPLACEMENT(#30,#10);  
#5848= IFCLEMENTASSEMBLY('1Ogjm0004MZ4qE3SsC34u',#5,'Steel Assembly',S,S,#5847,S,'BE-0(?)',NOTDEFINED,,RIGID\_FRAME.);  
#5849= IFCPROPERTYSET('Assembly/Cast unit weight',S,IFCMASSMEASURE(309.8),S);  
#5850= IFCPROPERTYSET('Assembly/Cast unit top elevation',S,IFCLABEL(' +4.219'),S);  
#5851= IFCPROPERTYSET('3UImQz0Lb1rPrRJOZ57m5g',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#5849,#3326,#5850,#5319,#318));  
#5852= IFCQUANTITYLENGTH('Width',S,S,200.00000004904);  
#5853= IFCLEMENTQUANTITY('1KooRfCufCePkZXvMezEO',#5,'BaseQuantities',S,S,(#5852));  
#5854= IFCARTESIANPOINT((1750.00000018732,96052.1313206982,47.736843285967));  
#5855= IFCDIRECTION((-1.00000001127717E-009,-0.477368497206917,0.878703202380878));  
#5856= IFCAXIS2PLACEMENT3D(#5854,#7,#5855);  
#5857= IFCLOCALPLACEMENT(#5847,#5856);  
#5858= IFCARTESIANPOINT((4692.20544056913,0,-1.06129334351103E-021));  
#5859= IFCAXIS2PLACEMENT3D(#5858,#336,#335);  
#5860= IFCXTRUDEDAREASOLID(#333,#5859,#9,4692.2);  
#5861= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5860));  
#5862= IFCSTYLEDITEM(#5860,(#330),S);  
#5863= IFCPRODUCTDEFINITIONSHAPE(S,S,(#5861));  
#5864= IFCMEMBER('1Ogjm0004MJ4qE3SsC34u',#5,'BEAM',HN400\*200\*8\*13,'HN400\*200\*8\*13',#5857,#5863,'P0(?)');  
#5865= IFCPROPERTYSET('Top elevation',S,IFCLABEL(' +4.219'),S);  
#5866= IFCPROPERTYSET('3RQhmdfV29hKQA7jEn0',#5,'Tekla Common','Common Properties to Shared building elements',(#3334,#5865,#71,#72,#73,#346));  
#5867= IFCPROPERTYSET('Weight',S,IFCMASSMEASURE(309.8),S);  
#5868= IFCPROPERTYSET('Length',S,IFLENGTHMEASURE(4692.2),S);  
#5869= IFCPROPERTYSET('2VL63DdmH9gQ7B2yEnYnnp',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#5867,#1108,#78,#350,#1651,#352,#353,#5868));  
#5870= IFCQUANTITYLENGTH('Length',S,S,4692.20544055982);  
#5871= IFCQUANTITYAREA('OuterSurfaceArea',S,S,7.43245341784676);  
#5872= IFCQUANTITYAREA('GrossSurfaceArea',S,S,7.43245341784676);  
#5873= IFCQUANTITYVOLUME('NetVolume',S,S,0.038438546969128);  
#5874= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0394708321659892);  
#5875= IFCQUANTITYWEIGHT('NetWeight',S,S,301.742593707655);  
#5876= IFCQUANTITYWEIGHT('GrossWeight',S,S,309.846032503016);  
#5877= IFCLEMENTQUANTITY('2hQyU5t1rKax\$3rv4oz3S',#5,'BaseQuantities',S,S,(#5870,#5871,#5872,#361,#5873,#5874,#5875,#5876));  
#5878= IFCLOCALPLACEMENT(#30,#10);  
#5879= IFCLEMENTASSEMBLY('1Ogjm0004LJ4qE3SsC34u',#5,'Steel Assembly',S,S,#5878,S,'BE-0(?)',NOTDEFINED,,RIGID\_FRAME.);  
#5880= IFCPROPERTYSET('Assembly/Cast unit weight',S,IFCMASSMEASURE(316.7),S);  
#5881= IFCPROPERTYSET('Assembly/Cast unit top elevation',S,IFCLABEL(' +4.322'),S);

#5882= IFCPROPERTYSET('23REhldqr4H9D8uFQk\_ham',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#5880,#3326,#5881,#5319,#318));  
#5883= IFCQUANTITYLENGTH('Width',\$.S,200.00000000105);  
#5884= IFCLEMENTQUANTITY('0TfBPgubBeQ3C0WtSWbL',#5,'BaseQuantities',\$.S,(#5883));  
#5885= IFCARTESIANPOINT((1749.9999997,98140.955438977,4274.6108906372));  
#5886= IFCDIRECTION((0,-0.472248937089963,-0.881465224167919));  
#5887= IFCAXIS2PLACEMENT3D(#5885,#7,#5886);  
#5888= IFCLOCALPLACEMENT(#5878,#5887);  
#5889= IFCARTESIANPOINT((4795.86248762378,-2.662238478348E-013,0));  
#5890= IFCAXIS2PLACEMENT3D(#5889,#336,#335);  
#5891= IFCEXTRUDEDAREASOLID(#333,#5890,#9,4795.9);  
#5892= IFCSHAPEPRESENTATION(#12,'Body','SweptSolid',(#5891));  
#5893= IFCSTYLEDITEM(#5891,(#330),\$.S);  
#5894= IFCPRODUCTDEFINITIONSHAPE(\$,\$.S,(#5892));  
#5895= IFCMEMBER('1Ogimc0004L34qE3SsC34u',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#5888,#5894,'P0(?)');  
#5896= IFCPROPERTYSINGLEVALUE('Top elevation',\$.IFCLABEL(' +4.322'),\$.S);  
#5897= IFCPROPERTYSET('0z5KR5Gpn2derRlquwltha',#5,'Tekla Common','Common Properties to Shared building elements',(#3334,#5896,#71,#72,#73,#346));  
#5898= IFCPROPERTYSINGLEVALUE('Weight',\$.IFCMASMEASURE(316.7),\$.S);  
#5899= IFCPROPERTYSINGLEVALUE('Net surface area',\$.IFCAREAMEASURE(7.6),\$.S);  
#5900= IFCPROPERTYSINGLEVALUE('Length',\$.IFLENGTHMEASURE(4795.9),\$.S);  
#5901= IFCPROPERTYSET('1Tk\_sF23zFYhg79A18sB0e',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#5898,#1108,#78,#350,#5899,#352,#353,#5900));  
#5902= IFCQUANTITYLENGTH('Length',\$.S,4795.86248762613);  
#5903= IFCQUANTITYAREA('OuterSurfaceArea',\$.S,7.59664618039979);  
#5904= IFCQUANTITYAREA('GrossSurfaceArea',\$.S,7.59664618039979);  
#5905= IFCQUANTITYVOLUME('NetVolume',\$.S,0.0392877054987323);  
#5906= IFCQUANTITYVOLUME('GrossVolume',\$.S,0.040342795245911);  
#5907= IFCQUANTITYWEIGHT('NetWeight',\$.S,308.408488165048);  
#5908= IFCQUANTITYWEIGHT('GrossWeight',\$.S,316.690942680402);  
#5909= IFCLEMENTQUANTITY('0TLN09qdHDpOfh9Y1Abxbb',#5,'BaseQuantities',\$.S,(#5902,#5903,#5904,#361,#5905,#5906,#5907,#5908));  
#5910= IFCLOCALPLACEMENT(#30,#10);  
#5911= IFCLEMENTASSEMBLY('1Ogimc0004K34qE3SsC34u',#5,'Steel Assembly',\$.S,(#5910),\$.S,'BE-0(?)',NOTDEFINED,,RIGID\_FRAME.);  
#5912= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit weight',\$.IFCMASMEASURE(317.5),\$.S);  
#5913= IFCPROPERTYSET('1IM8EnoXjCOOXskdSmGdA8',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#5912,#3264,#2480,#5319,#318));  
#5914= IFCQUANTITYLENGTH('Width',\$.S,200.000000011481);  
#5915= IFCLEMENTQUANTITY('3qdSPhs4D3wwtwHP8o1y',#5,'BaseQuantities',\$.S,(#5914));  
#5916= IFCARTESIANPOINT((1750.00000001182,100608.626716198,47.6569296947326));  
#5917= IFCDIRECTION((0,-0.476568839208773,0.879137157385128));  
#5918= IFCAXIS2PLACEMENT3D(#5916,#7,#5917);  
#5919= IFCLOCALPLACEMENT(#5910,#5918);  
#5920= IFCARTESIANPOINT((4808.56248106844,0,0));  
#5921= IFCAXIS2PLACEMENT3D(#5920,#336,#335);  
#5922= IFCEXTRUDEDAREASOLID(#333,#5921,#9,4808.6);  
#5923= IFCSHAPEPRESENTATION(#12,'Body','SweptSolid',(#5922));  
#5924= IFCSTYLEDITEM(#5922,(#330),\$.S);  
#5925= IFCPRODUCTDEFINITIONSHAPE(\$,\$.S,(#5923));  
#5926= IFCMEMBER('1Ogimc0004Jp4qE3SsC34u',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#5919,#5925,'P0(?)');  
#5927= IFCPROPERTYSET('1FMuvdZTf1mhwnjVooDdV',#5,'Tekla Common','Common Properties to Shared building elements',(#3273,#2489,#71,#72,#73,#346));  
#5928= IFCPROPERTYSINGLEVALUE('Weight',\$.IFCMASMEASURE(317.5),\$.S);  
#5929= IFCPROPERTYSINGLEVALUE('Length',\$.IFLENGTHMEASURE(4808.6),\$.S);  
#5930= IFCPROPERTYSET('0xu3L5SnP0JRbnzcyV77K',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#5928,#1108,#78,#350,#5899,#352,#353,#5929));  
#5931= IFCQUANTITYLENGTH('Length',\$.S,4808.56248106505);  
#5932= IFCQUANTITYAREA('OuterSurfaceArea',\$.S,7.61676297000704);  
#5933= IFCQUANTITYAREA('GrossSurfaceArea',\$.S,7.61676297000704);  
#5934= IFCQUANTITYVOLUME('NetVolume',\$.S,0.0393917438450638);  
#5935= IFCQUANTITYVOLUME('GrossVolume',\$.S,0.0404496275907192);  
#5936= IFCQUANTITYWEIGHT('NetWeight',\$.S,309.225189183751);  
#5937= IFCQUANTITYWEIGHT('GrossWeight',\$.S,317.529576587146);  
#5938= IFCLEMENTQUANTITY('01ONChyUr8hwOBMB3w9ZZE',#5,'BaseQuantities',\$.S,(#5931,#5932,#5933,#361,#5934,#5935,#5936,#5937));  
#5939= IFCLOCALPLACEMENT(#30,#10);  
#5940= IFCLEMENTASSEMBLY('1Ogimc0004Ip4qE3SsC34u',#5,'Steel Assembly',\$.S,(#5939),\$.S,'BE-0(?)',NOTDEFINED,,RIGID\_FRAME.);  
#5941= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit weight',\$.IFCMASMEASURE(322.6),\$.S);  
#5942= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit top elevation',\$.IFCLABEL(' +4.426'),\$.S);  
#5943= IFCPROPERTYSET('0jQifb4D308LhGSzSL',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#5941,#3264,#5942,#5319,#318));  
#5944= IFCQUANTITYLENGTH('Width',\$.S,200.000000005559);  
#5945= IFCLEMENTQUANTITY('1vJv58N1T4\_w45vKWvNhUl',#5,'BaseQuantities',\$.S,(#5944));  
#5946= IFCARTESIANPOINT((1750.00000412773,102738.450919514,4380.05746391692));  
#5947= IFCDIRECTION((-1.00000000386984E-009,-0.461806991080116,-0.886980441153879));  
#5948= IFCAXIS2PLACEMENT3D(#5946,#7,#5947);  
#5949= IFCLOCALPLACEMENT(#5939,#5948);  
#5950= IFCARTESIANPOINT((4886.10178691486,-1.42806820931421E-011,-1.38933048000198E-021));  
#5951= IFCAXIS2PLACEMENT3D(#5950,#336,#335);  
#5952= IFCEXTRUDEDAREASOLID(#333,#5951,#9,4886.1);  
#5953= IFCSHAPEPRESENTATION(#12,'Body','SweptSolid',(#5952));  
#5954= IFCSTYLEDITEM(#5952,(#330),\$.S);  
#5955= IFCPRODUCTDEFINITIONSHAPE(\$,\$.S,(#5953));  
#5956= IFCMEMBER('1Ogimc0004IZ4qE3SsC34u',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#5949,#5955,'P0(?)');  
#5957= IFCPROPERTYSINGLEVALUE('Top elevation',\$.IFCLABEL(' +4.426'),\$.S);  
#5958= IFCPROPERTYSET('3fWtF2Mc5EBAqjdU3fjPs',#5,'Tekla Common','Common Properties to Shared building elements',(#3273,#5957,#71,#72,#73,#346));  
#5959= IFCPROPERTYSINGLEVALUE('Weight',\$.IFCMASMEASURE(322.6),\$.S);  
#5960= IFCPROPERTYSINGLEVALUE('Length',\$.IFLENGTHMEASURE(4886.1),\$.S);  
#5961= IFCPROPERTYSET('3SvU9nrDA3vIbZnJYe4Wt',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#5959,#1108,#78,#350,#1680,#352,#353,#5960));  
#5962= IFCQUANTITYLENGTH('Length',\$.S,4886.10178691499);  
#5963= IFCQUANTITYAREA('OuterSurfaceArea',\$.S,7.73958523047335);  
#5964= IFCQUANTITYAREA('GrossSurfaceArea',\$.S,7.73958523047335);  
#5965= IFCQUANTITYVOLUME('NetVolume',\$.S,0.0400269458383155);  
#5966= IFCQUANTITYVOLUME('GrossVolume',\$.S,0.0411018882315289);  
#5967= IFCQUANTITYWEIGHT('NetWeight',\$.S,314.211524830777);  
#5968= IFCQUANTITYWEIGHT('GrossWeight',\$.S,322.649822617502);  
#5969= IFCLEMENTQUANTITY('0Kq5iBBB981PMeSGU6EII',#5,'BaseQuantities',\$.S,(#5962,#5963,#5964,#361,#5965,#5966,#5967,#5968));  
#5970= IFCLOCALPLACEMENT(#30,#10);  
#5971= IFCLEMENTASSEMBLY('1Ogimc0004HZ4qE3SsC34u',#5,'Steel Assembly',\$.S,(#5970),\$.S,'BE-0(?)',NOTDEFINED,,RIGID\_FRAME.);  
#5972= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit weight',\$.IFCMASMEASURE(324.7),\$.S);  
#5973= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit top elevation',\$.IFCLABEL(' +4.428'),\$.S);  
#5974= IFCPROPERTYSET('3vzLcKoSHFgheBfSluPbXS',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#5972,#3326,#5973,#5319,#318));  
#5975= IFCQUANTITYLENGTH('Width',\$.S,200.000000004628);  
#5976= IFCLEMENTQUANTITY('3QXMFQAlrE7vYfI7gH38Ng',#5,'BaseQuantities',\$.S,(#5975));  
#5977= IFCARTESIANPOINT((1749.99999983745,105238.576675674,47.2469771723622));  
#5978= IFCDIRECTION((1.00000000811169E-009,-0.472470001987992,0.881346751977601));  
#5979= IFCAXIS2PLACEMENT3D(#5977,#7,#5978);  
#5980= IFCLOCALPLACEMENT(#5970,#5979);  
#5981= IFCARTESIANPOINT((4917.33449611531,0,-7.9443823449703E-022));  
#5982= IFCAXIS2PLACEMENT3D(#5981,#336,#335);  
#5983= IFCEXTRUDEDAREASOLID(#333,#5982,#9,4917.3);  
#5984= IFCSHAPEPRESENTATION(#12,'Body','SweptSolid',(#5983));  
#5985= IFCSTYLEDITEM(#5983,(#330),\$.S);  
#5986= IFCPRODUCTDEFINITIONSHAPE(\$,\$.S,(#5984));  
#5987= IFCMEMBER('1Ogimc0004HJ4qE3SsC34u',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#5980,#5986,'P0(?)');  
#5988= IFCPROPERTYSINGLEVALUE('Top elevation',\$.IFCLABEL(' +4.428'),\$.S);

## Appendix

#5989= IFCPROPERTYSET('3yoDopGJD5uvX1 d51aQfS',#5,'Tekla Common','Common Properties to Shared building elements',(#3334,#5988,#71,#72,#73,#346));  
#5990= IFCPROPERTYSINGLEVALUE('Weight',S,IFCMASMEASURE(324.7),S);  
#5991= IFCPROPERTYSINGLEVALUE('Length',S,IFCLENGTHMEASURE(4917.3),S);  
#5992= IFCPROPERTYSET('2K6jYCeT4\_PDzfxFqaE9f',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#5990,#1108,#78,#350,#1680,#352,#353,#5991));  
#5993= IFCQUANTITYLENGTH('Length',S,4917.33449611305);  
#5994= IFCQUANTITYAREA('OuterSurfaceArea',S,S,7.78905784184307);  
#5995= IFCQUANTITYAREA('GrossSurfaceArea',S,S,7.78905784184307);  
#5996= IFCQUANTITYVOLUME('NetVolume',S,S,0.0402828041922208);  
#5997= IFCQUANTITYVOLUME('GrossVolume',S,S,0.041364617781303);  
#5998= IFCQUANTITYWEIGHT('NetWeight',S,S,316.220012908933);  
#5999= IFCQUANTITYWEIGHT('GrossWeight',S,S,324.712249583228);  
#6000= IFCELEMENTQUANTITY('0eR3ur43bBlhDm7sP1T6Un',#5,'BaseQuantities',S,S,(#5993,#5994,#5995,#361,#5996,#5997,#5998,#5999));  
#6001= IFCLOCALPLACEMENT('#30,#10);  
#6002= IFCELEMENTASSEMBLY('1Ogimc0004GJ4qE3SsC34u',#5,'Steel Assembly',S,S,#6001,S,'BE-0?'),NOTDEFINED,,RIGID\_FRAME.);  
#6003= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit weight',S,IFCMASMEASURE(331.1),S);  
#6004= IFCPROPERTYSET('2IbN\_sgUD6PwCHPFK2MnOo',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#6003,#3326,#2442,#5319,#318));  
#6005= IFCQUANTITYLENGTH('Width',S,S,200.000000008484);  
#6006= IFCELEMENTQUANTITY('1NYwSH3yn3YQ6oukwRntJ',#5,'BaseQuantities',S,S,(#6005));  
#6007= IFCARTESIANPOINT((1750.0000086078,107389.940944858,4488.02674512784));  
#6008= IFCDIRECTION((-2.00000000090924E-009,-0.464244206885588,-0.88570240781722));  
#6009= IFCAXIS2PLACEMENT3D('#6007,#7,#6008);  
#6010= IFCLOCALPLACEMENT('#6001,#6009);  
#6011= IFCARTESIANPOINT(5014.75221653284,0,-2.27373675508046E-013);  
#6012= IFCAXIS2PLACEMENT3D('#6011,#336,#335);  
#6013= IFCINTRUDEDAREASOLID(#333,#6012,#9,5014.8);  
#6014= IFCSHAPEPRESENTATION(#12,'Body','SweptSolid',(#6013));  
#6015= IFCSTYLEEDITITEM('#6013,(#330),S);  
#6016= IFCPRODUCTDEFINITIONSHAPE(S,S,(#6014));  
#6017= IFCMEMBER('1Ogimc0004G34qE3SsC34u',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#6010,#6016,'PO(?)');  
#6018= IFCPROPERTYSET('36h2X15nbBOROeAMXlvKm',#5,'Tekla Common','Common Properties to Shared building elements',(#3334,#2451,#71,#72,#73,#346));  
#6019= IFCPROPERTYSINGLEVALUE('Weight',S,IFCMASMEASURE(331.1),S);  
#6020= IFCPROPERTYSINGLEVALUE('Length',S,IFCLENGTHMEASURE(5014.8),S);  
#6021= IFCPROPERTYSET('0pnDbllAvEQOnPtqWozeU',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#6019,#1108,#78,#350,#1680,#352,#353,#6020));  
#6022= IFCQUANTITYLENGTH('Length',S,S,5014.752216537);  
#6023= IFCQUANTITYAREA('OuterSurfaceArea',S,S,7.94336751099461);  
#6024= IFCQUANTITYAREA('GrossSurfaceArea',S,S,7.94336751099461);  
#6025= IFCQUANTITYVOLUME('NetVolume',S,S,0.0410808501579848);  
#6026= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0421840956455093);  
#6027= IFCQUANTITYWEIGHT('NetWeight',S,S,322.48467374018);  
#6028= IFCQUANTITYWEIGHT('GrossWeight',S,S,331.145150817248);  
#6029= IFCELEMENTQUANTITY('0dmaUoQ1vEozx4c\_H5eTXb',#5,'BaseQuantities',S,S,(#6022,#6023,#6024,#361,#6025,#6026,#6027,#6028));  
#6030= IFCLOCALPLACEMENT('#30,#10);  
#6031= IFCELEMENTASSEMBLY('1Ogimc0004F34qE3SsC34u',#5,'Steel Assembly',S,S,#6030,S,'BE-0?'),NOTDEFINED,,RIGID\_FRAME.);  
#6032= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit weight',S,IFCMASMEASURE(337.3),S);  
#6033= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit top elevation',S,IFCLABEL(' +4.540'),S);  
#6034= IFCPROPERTYSET('3qFsgEr9nE2w\_kyC2b7LbA',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#6032,#3264,#6033,#5319,#318));  
#6035= IFCQUANTITYLENGTH('Width',S,S,200.000000012049);  
#6036= IFCELEMENTQUANTITY('1IqAl18yP3s9CHexRQNKz',#5,'BaseQuantities',S,S,(#6035));  
#6037= IFCARTESIANPOINT((1750.00000863866,107565.475385841,4490.97146389616));  
#6038= IFCDIRECTION((-2.00000000565517E-009,0.493691395196642,-0.869637169346385));

#6039= IFCAXIS2PLACEMENT3D('#6037,#336,#6038);  
#6040= IFCLOCALPLACEMENT('#6030,#6039);  
#6041= IFCARTESIANPOINT((5107.42005110044,-2.83518766858195E-013,1.98035570926635E-022));  
#6042= IFCAXIS2PLACEMENT3D('#6041,#336,#335);  
#6043= IFCINTRUDEDAREASOLID(#333,#6042,#9,5107.4);  
#6044= IFCSHAPEPRESENTATION(#12,'Body','SweptSolid',(#6043));  
#6045= IFCSTYLEEDITITEM('#6043,(#330),S);  
#6046= IFCPRODUCTDEFINITIONSHAPE(S,S,(#6044));  
#6047= IFCMEMBER('1Ogimc0004Ep4qE3SsC34u',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#6040,#6046,'PO(?)');  
#6048= IFCPROPERTYSINGLEVALUE('Top elevation',S,IFCLABEL(' +4.540'),S);  
#6049= IFCPROPERTYSET('0nNalEWtvAqfQwN4rF13N',#5,'Tekla Common','Common Properties to Shared building elements',(#3273,#6048,#71,#72,#73,#346));  
#6050= IFCPROPERTYSINGLEVALUE('Weight',S,IFCMASMEASURE(337.3),S);  
#6051= IFCPROPERTYSINGLEVALUE('Net surface area',S,IFCAREAMEASURE(8.1),S);  
#6052= IFCPROPERTYSINGLEVALUE('Length',S,IFCLENGTHMEASURE(5107.4),S);  
#6053= IFCPROPERTYSET('3zRPhrkX7dRegU9KrB\_H',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#6050,#1108,#78,#350,#6051,#352,#353,#6052));  
#6054= IFCQUANTITYLENGTH('Length',S,S,5107.42005110303);  
#6055= IFCQUANTITYAREA('OuterSurfaceArea',S,S,8.0901533609472);  
#6056= IFCQUANTITYAREA('GrossSurfaceArea',S,S,8.0901533609472);  
#6057= IFCQUANTITYVOLUME('NetVolume',S,S,0.0418399850588044);  
#6058= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0429636174698787);  
#6059= IFCQUANTITYWEIGHT('NetWeight',S,S,328.443882711615);  
#6060= IFCQUANTITYWEIGHT('GrossWeight',S,S,337.264397138548);  
#6061= IFCELEMENTQUANTITY('2A1MS00fSBiNHqX6lxcF',#5,'BaseQuantities',S,S,(#6054,#6055,#6056,#361,#6057,#6058,#6059,#6060));  
#6062= IFCLOCALPLACEMENT('#30,#10);  
#6063= IFCELEMENTASSEMBLY('1Ogimc0004Dp4qE3SsC34u',#5,'Steel Assembly',S,S,#6062,S,'BE-0?'),NOTDEFINED,,RIGID\_FRAME.);  
#6064= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit position code',S,IFCLABEL('5A-B'),S);  
#6065= IFCPROPERTYSET('2rXFThFyJc\_vWDzpjQzyfj',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#3859,#3326,#3860,#6064,#318));  
#6066= IFCARTESIANPOINT((6750.00000000104,899.759867474757,2025.70500196721));  
#6067= IFCAXIS2PLACEMENT3D('#6066,#7,#3866);  
#6068= IFCLOCALPLACEMENT('#6062,#6067);  
#6069= IFCSHAPEPRESENTATION(#12,'Body','SweptSolid',(#3871));  
#6070= IFCPRODUCTDEFINITIONSHAPE(S,S,(#6069));  
#6071= IFCMEMBER('1Ogimc0004DZ4qE3SsC34u',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#6068,#6070,'PO(?)');  
#6072= IFCLOCALPLACEMENT('#30,#10);  
#6073= IFCELEMENTASSEMBLY('1Ogimc0004CZ4qE3SsC34u',#5,'Steel Assembly',S,S,#6072,S,'BE-0?'),NOTDEFINED,,RIGID\_FRAME.);  
#6074= IFCPROPERTYSET('0evWyWdTB8QeIw6yWARO',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#3892,#3264,#3893,#6064,#318));  
#6075= IFCARTESIANPOINT((6750.00000000211,1987.66003333931,40.8754186508547));  
#6076= IFCAXIS2PLACEMENT3D('#6075,#7,#3898);  
#6077= IFCLOCALPLACEMENT('#6072,#6076);  
#6078= IFCSHAPEPRESENTATION(#12,'Body','SweptSolid',(#3903));  
#6079= IFCPRODUCTDEFINITIONSHAPE(S,S,(#6078));  
#6080= IFCMEMBER('1Ogimc0004CJ4qE3SsC34u',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#6077,#6079,'PO(?)');  
#6081= IFCLOCALPLACEMENT('#30,#10);  
#6082= IFCELEMENTASSEMBLY('1Ogimc0004BJ4qE3SsC34u',#5,'Steel Assembly',S,S,#6081,S,'BE-0?'),NOTDEFINED,,RIGID\_FRAME.);  
#6083= IFCPROPERTYSET('16zLWVdSzeJx2gyFBw1lM',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#3923,#3264,#3924,#6064,#318));  
#6084= IFCARTESIANPOINT((6749.99999999918,2778.99318662038,2062.84998842482));  
#6085= IFCAXIS2PLACEMENT3D('#6084,#7,#3929);  
#6086= IFCLOCALPLACEMENT('#6081,#6085);  
#6087= IFCSHAPEPRESENTATION(#12,'Body','SweptSolid',(#3934));  
#6088= IFCPRODUCTDEFINITIONSHAPE(S,S,(#6087));  
#6089= IFCMEMBER('1Ogimc0004B34qE3SsC34u',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#6086,#6088,'PO(?)');  
#6090= IFCLOCALPLACEMENT('#30,#10);  
#6091= IFCELEMENTASSEMBLY('1Ogimc0004A34qE3SsC34u',#5,'Steel Assembly',S,S,#6090,S,'BE-0?'),NOTDEFINED,,RIGID\_FRAME.);

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#6092= IFCPROPERTYSET('0AJSdbebL6Hgi6HEAF9Tf7',#5,'Tekla
Assembly','Assembly
Properties',(#34,#313,#3955,#3326,#3956,#6064,#318));
#6093=
IFCCARTESIANPOINT((6750.,3890.29062848754,41.8425462160333)
);
#6094= IFCAXIS2PLACEMENT3D(#6093,#7,#3961);
#6095= IFCLOCALPLACEMENT(#6090,#6094);
#6096=
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#3966));
#6097= IFCPRODUCTDEFINITIONSHAPE($,$,(#6096));
#6098=
IFCMEMBER('1Ogjm00049p4qE3SsC34u',#5,'BEAM','HN400*200*8
*13','HN400*200*8*13',#6095,#6097,'PO(?));
#6099= IFCLOCALPLACEMENT(#30,#10);
#6100=
IFCELEMENTASSEMBLY('1Ogjm00048p4qE3SsC34u',#5,'Steel
Assembly',S,$,#6099,S,'BE-0(?)',.NOTDEFINED,..RIGID_FRAME.);
#6101= IFCPROPERTYSET('0YznjSygr87vrdyAZqoECg',#5,'Tekla
Assembly','Assembly
Properties',(#34,#313,#3986,#3326,#3987,#6064,#318));
#6102=
IFCCARTESIANPOINT((6750.,4750.60034812393,2110.07308031077)
);
#6103= IFCAXIS2PLACEMENT3D(#6102,#7,#3992);
#6104= IFCLOCALPLACEMENT(#6099,#6103);
#6105=
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#3997));
#6106= IFCPRODUCTDEFINITIONSHAPE($,$,(#6105));
#6107=
IFCMEMBER('1Ogjm00048Z4qE3SsC34u',#5,'BEAM','HN400*200*8
*13','HN400*200*8*13',#6104,#6106,'PO(?));
#6108= IFCLOCALPLACEMENT(#30,#10);
#6109=
IFCELEMENTASSEMBLY('1Ogjm00047Z4qE3SsC34u',#5,'Steel
Assembly',S,$,#6108,S,'BE-0(?)',.NOTDEFINED,..RIGID_FRAME.);
#6110= IFCPROPERTYSET('337G4Bmlb8KOL_DqluVYZQ',#5,'Tekla
Assembly','Assembly
Properties',(#34,#313,#4018,#3264,#4019,#6064,#318));
#6111=
IFCCARTESIANPOINT((6750.,5893.33359952539,42.2562431362395)
);
#6112= IFCAXIS2PLACEMENT3D(#6111,#7,#4024);
#6113= IFCLOCALPLACEMENT(#6108,#6112);
#6114=
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4029));
#6115= IFCPRODUCTDEFINITIONSHAPE($,$,(#6114));
#6116=
IFCMEMBER('1Ogjm00047J4qE3SsC34u',#5,'BEAM','HN400*200*8
*13','HN400*200*8*13',#6113,#6115,'PO(?));
#6117= IFCLOCALPLACEMENT(#30,#10);
#6118=
IFCELEMENTASSEMBLY('1Ogjm00046J4qE3SsC34u',#5,'Steel
Assembly',S,$,#6117,S,'BE-0(?)',.NOTDEFINED,..RIGID_FRAME.);
#6119= IFCPROPERTYSET('2Jf2GSAknBBxh33gddkshY',#5,'Tekla
Assembly','Assembly
Properties',(#34,#313,#4049,#3264,#4050,#6064,#318));
#6120=
IFCCARTESIANPOINT((6750.,6726.01052746136,2154.10995533016)
);
#6121= IFCAXIS2PLACEMENT3D(#6120,#7,#4055);
#6122= IFCLOCALPLACEMENT(#6117,#6121);
#6123=
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4060));
#6124= IFCPRODUCTDEFINITIONSHAPE($,$,(#6123));
#6125=
IFCMEMBER('1Ogjm0004634qE3SsC34u',#5,'BEAM','HN400*200*8
*13','HN400*200*8*13',#6122,#6124,'PO(?));
#6126= IFCLOCALPLACEMENT(#30,#10);
#6127=
IFCELEMENTASSEMBLY('1Ogjm0004534qE3SsC34u',#5,'Steel
Assembly',S,$,#6126,S,'BE-0(?)',.NOTDEFINED,..RIGID_FRAME.);
#6128= IFCPROPERTYSET('0Wsf10k0T2XgUp_VLalb9q',#5,'Tekla
Assembly','Assembly
Properties',(#34,#313,#4080,#3326,#4081,#6064,#318));
#6129=
IFCCARTESIANPOINT((6750.,7949.003329884165,44.3055297355585)
);
#6130= IFCAXIS2PLACEMENT3D(#6129,#7,#4086);
#6131= IFCLOCALPLACEMENT(#6126,#6130);
#6132=
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4091));
#6133= IFCPRODUCTDEFINITIONSHAPE($,$,(#6132));
#6134=
IFCMEMBER('1Ogjm00044p4qE3SsC34u',#5,'BEAM','HN400*200*8
*13','HN400*200*8*13',#6131,#6133,'PO(?));
#6135= IFCLOCALPLACEMENT(#30,#10);
#6136=
IFCELEMENTASSEMBLY('1Ogjm00043p4qE3SsC34u',#5,'Steel
Assembly',S,$,#6135,S,'BE-0(?)',.NOTDEFINED,..RIGID_FRAME.);
#6137= IFCPROPERTYSET('3UCIxcyPz89hS2hb5Jkr1r',#5,'Tekla
Assembly','Assembly
Properties',(#34,#313,#4111,#3326,#4112,#6064,#318));
#6138=
IFCCARTESIANPOINT((6750.,8845.63529453942,2204.46497720565)
);
#6139= IFCAXIS2PLACEMENT3D(#6138,#7,#4117);
#6140= IFCLOCALPLACEMENT(#6135,#6139);
#6141=
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4122));
#6142= IFCPRODUCTDEFINITIONSHAPE($,$,(#6141));
#6143=
IFCMEMBER('1Ogjm00043Z4qE3SsC34u',#5,'BEAM','HN400*200*8
*13','HN400*200*8*13',#6140,#6142,'PO(?));
#6144= IFCLOCALPLACEMENT(#30,#10);
#6145=
IFCELEMENTASSEMBLY('1Ogjm00042Z4qE3SsC34u',#5,'Steel
Assembly',S,$,#6144,S,'BE-0(?)',.NOTDEFINED,..RIGID_FRAME.);
#6146= IFCPROPERTYSET('13MIKKlmf2NxnZK4_Pe4sV',#5,'Tekla
Assembly','Assembly
Properties',(#34,#313,#4143,#3264,#4144,#6064,#318));
#6147=
IFCCARTESIANPOINT((6750.,10066.1886053216,43.4160499773258)
);
#6148= IFCAXIS2PLACEMENT3D(#6147,#7,#4149);
#6149= IFCLOCALPLACEMENT(#6144,#6148);
#6150=
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4154));
#6151= IFCPRODUCTDEFINITIONSHAPE($,$,(#6150));
#6152=
IFCMEMBER('1Ogjm00042J4qE3SsC34u',#5,'BEAM','HN400*200*8
*13','HN400*200*8*13',#6149,#6151,'PO(?));
#6153= IFCLOCALPLACEMENT(#30,#10);
#6154=
IFCELEMENTASSEMBLY('1Ogjm00041J4qE3SsC34u',#5,'Steel
Assembly',S,$,#6153,S,'BE-0(?)',.NOTDEFINED,..RIGID_FRAME.);
#6155= IFCPROPERTYSET('0h8hkBRX978e09fDRhtYB',#5,'Tekla
Assembly','Assembly
Properties',(#34,#313,#4174,#3264,#4175,#6064,#318));
#6156=
IFCCARTESIANPOINT((6750.,10976.852164616,2253.48135752825));
#6157= IFCAXIS2PLACEMENT3D(#6156,#7,#4180);
#6158= IFCLOCALPLACEMENT(#6153,#6157);
#6159=
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4185));
#6160= IFCPRODUCTDEFINITIONSHAPE($,$,(#6159));
#6161=
IFCMEMBER('1Ogjm0004134qE3SsC34u',#5,'BEAM','HN400*200*8
*13','HN400*200*8*13',#6158,#6160,'PO(?));
#6162= IFCLOCALPLACEMENT(#30,#10);
#6163=
IFCELEMENTASSEMBLY('1Ogjm0004034qE3SsC34u',#5,'Steel
Assembly',S,$,#6162,S,'BE-0(?)',.NOTDEFINED,..RIGID_FRAME.);
#6164=
IFCPROPERTYSET('2ZbeKicYrB68WDqYbDaVmM',#5,'Tekla
Assembly','Assembly
Properties',(#34,#313,#4174,#3326,#4206,#6064,#318));
#6165=
IFCCARTESIANPOINT((6750.,12242.6891801525,44.1294388218557)
);
#6166= IFCAXIS2PLACEMENT3D(#6165,#7,#4211);
#6167= IFCLOCALPLACEMENT(#6162,#6166);
#6168=
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4216));
#6169= IFCPRODUCTDEFINITIONSHAPE($,$,(#6168));
#6170=
IFCMEMBER('1Ogjm0003Sp4qE3SsC34u',#5,'BEAM','HN400*200*8
*13','HN400*200*8*13',#6167,#6169,'PO(?));
#6171= IFCLOCALPLACEMENT(#30,#10);
#6172=
IFCELEMENTASSEMBLY('1Ogjm0003_p4qE3SsC34u',#5,'Steel
Assembly',S,$,#6171,S,'BE-0(?)',.NOTDEFINED,..RIGID_FRAME.);
#6173= IFCPROPERTYSET('0uv0fC9IP07w3y3r3ce4R32',#5,'Tekla
Assembly','Assembly
Properties',(#34,#313,#4235,#3326,#4236,#6064,#318));
#6174= IFCQUANTITYLENGTH('Width',S,$,200.00000001452);
#6175=
IFCELEMENTQUANTITY('2knDrpOZXEbfqCmcel28',#5,'BaseQua
ntities',S,$,(#6174));
#6176=
IFCCARTESIANPOINT((6750.63230217308,13351.0928878033,2314.
64405667366));
#6177= IFCAXIS2PLACEMENT3D(#6176,#4241,#4242);
#6178= IFCLOCALPLACEMENT(#6171,#6177);
#6179=
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4247));
#6180= IFCPRODUCTDEFINITIONSHAPE($,$,(#6179));
#6181=
IFCMEMBER('1Ogjm0003_Z4qE3SsC34u',#5,'BEAM','HN400*200*8
*13','HN400*200*8*13',#6178,#6180,'PO(?));
#6182= IFCQUANTITYLENGTH('Length',S,$,2604.44183345725);
#6183=
IFCQUANTITYAREA('OuterSurfaceArea',S,$,4.12543586419629);
#6184=
IFCQUANTITYAREA('GrossSurfaceArea',S,$,4.12543586419629);
#6185=
IFCQUANTITYVOLUME('NetVolume',S,$,0.0213355874996683);
#6186=
IFCQUANTITYVOLUME('GrossVolume',S,$,0.0219085647030424);
#6187= IFCQUANTITYWEIGHT('NetWeight',S,$,167.484361872396);
#6188=
IFCQUANTITYWEIGHT('GrossWeight',S,$,171.982232918883);
#6189=
IFCELEMENTQUANTITY('1CqBXnjdb5iOwpQ_Dse5WE',#5,'BaseQu
antities',S,$,(#6182,#6183,#6184,#6185,#6186,#6187,#6188));
#6190= IFCLOCALPLACEMENT(#30,#10);
#6191=
IFCELEMENTASSEMBLY('1Ogjm0003zZ4qE3SsC34u',#5,'Steel
Assembly',S,$,#6190,S,'BE-0(?)',.NOTDEFINED,..RIGID_FRAME.);
#6192= IFCPROPERTYSET('0L8KUXh51ACAwwqC8pIdN',#5,'Tekla
Assembly','Assembly
Properties',(#34,#313,#4268,#3264,#4269,#6064,#318));
#6193= IFCQUANTITYLENGTH('Width',S,$,200.000000000142);
#6194=
IFCELEMENTQUANTITY('3Xh2Fav190vh4c8bhuyO5s',#5,'BaseQua
ntities',S,$,(#6193));
#6195=
IFCCARTESIANPOINT((6749.93509604671,14491.944606083,39.082
2647173485));
#6196= IFCAXIS2PLACEMENT3D(#6195,#4274,#4275);

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## Appendix

#6197= IFCLOCALPLACEMENT(#6190,#6196);  
 #6198=  
 IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4280));  
 #6199= IFCPRODUCTDEFINITIONSHAPE(S,\$,(#6198));  
 #6200=  
 IFCMEMBER('1Ogimc0003zJ4qE3SsC34u',#5,'BEAM','HN400\*200\*8  
 \*13','HN400\*200\*8\*13',#6197,#6199,'P0(?)');  
 #6201= IFCQUANTITYLENGTH('Length',S,\$,2461.03601241361);  
 #6202=  
 IFCQUANTITYAREA('OuterSurfaceArea',S,\$,3.89828104366316);  
 #6203=  
 IFCQUANTITYAREA('GrossSurfaceArea',S,\$,3.89828104366316);  
 #6204=  
 IFCQUANTITYVOLUME('NetVolume',S,\$,0.0201608070136852);  
 #6205=  
 IFCQUANTITYVOLUME('GrossVolume',S,\$,0.0207022349364233);  
 #6206= IFCQUANTITYWEIGHT('NetWeight',S,\$,158.262335057429);  
 #6207=  
 IFCQUANTITYWEIGHT('GrossWeight',S,\$,162.512544250923);  
 #6208=  
 IFCELEMENTQUANTITY('2q3SYUJn488cpia6f5y2R',#5,'BaseQuantities',S,\$,(#6201,#6202,#6203,#361,#6204,#6205,#6206,#6207));  
 #6209= IFCLOCALPLACEMENT(#30,#10);  
 #6210=  
 IFCELEMENTASSEMBLY('1Ogimc0003yJ4qE3SsC34u',#5,'Steel  
 Assembly',S,\$,#6209,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
 #6211= IFCPROPERTYSET('0vQP3gfdzDk84kdQ7b8Roa',#5,'Tekla  
 Assembly','Assembly  
 Properties',(#34,#313,#4300,#3264,#2860,#6064,#318));  
 #6212= IFCQUANTITYLENGTH('Width',S,\$,200.000000000151);  
 #6213=  
 IFCELEMENTQUANTITY('1NWQASz5n6mOckLd4p1VwB',#5,'Base  
 Quantities',S,\$,(#6212));  
 #6214=  
 IFCARTESIANPOINT((6750.07738229346,15535.6493205426,2361.  
 59600239503));  
 #6215= IFCAXIS2PLACEMENT3D(#6214,#4305,#4306);  
 #6216= IFCLOCALPLACEMENT(#6209,#6215);  
 #6217=  
 IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4311));  
 #6218= IFCPRODUCTDEFINITIONSHAPE(S,\$,(#6217));  
 #6219=  
 IFCMEMBER('1Ogimc0003y34qE3SsC34u',#5,'BEAM','HN400\*200\*8  
 \*13','HN400\*200\*8\*13',#6216,#6218,'P0(?)');  
 #6220= IFCQUANTITYLENGTH('Length',S,\$,2622.9528135229);  
 #6221=  
 IFCQUANTITYAREA('OuterSurfaceArea',S,\$,4.15475725662027);  
 #6222=  
 IFCQUANTITYAREA('GrossSurfaceArea',S,\$,4.15475725662027);  
 #6223=  
 IFCQUANTITYVOLUME('NetVolume',S,\$,0.0214872294483638);  
 #6224=  
 IFCQUANTITYVOLUME('GrossVolume',S,\$,0.0220642790673546);  
 #6225= IFCQUANTITYWEIGHT('NetWeight',S,\$,168.674751169656);  
 #6226=  
 IFCQUANTITYWEIGHT('GrossWeight',S,\$,173.204590678734);  
 #6227=  
 IFCELEMENTQUANTITY('2Guu2pJ5z16f4tKEX6L18h',#5,'BaseQuan  
 tities',S,\$,(#6220,#6221,#6222,#361,#6223,#6224,#6225,#6226));  
 #6228= IFCLOCALPLACEMENT(#30,#10);  
 #6229=  
 IFCELEMENTASSEMBLY('1Ogimc0003x34qE3SsC34u',#5,'Steel  
 Assembly',S,\$,#6228,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
 #6230= IFCPROPERTYSET('1DImRR1Wb4sI9GnmL8HfCd',#5,'Tekla  
 Assembly','Assembly  
 Properties',(#34,#313,#4330,#3326,#4331,#6064,#318));  
 #6231= IFCQUANTITYLENGTH('Width',S,\$,200.0000000001337);  
 #6232=  
 IFCELEMENTQUANTITY('3av9FTFe11vz\_0B0P0WJl',#5,'BaseQuan  
 tities',S,\$,(#6231));  
 #6233=  
 IFCARTESIANPOINT((6749.99287559688,16777.8135443695,41.73  
 71619515433));  
 #6234= IFCAXIS2PLACEMENT3D(#6233,#4336,#4337);  
 #6235= IFCLOCALPLACEMENT(#6228,#6234);  
 #6236=  
 IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4342));  
 #6237= IFCPRODUCTDEFINITIONSHAPE(S,\$,(#6236));  
 #6238=  
 IFCMEMBER('1Ogimc0003wp4qE3SsC34u',#5,'BEAM','HN400\*200\*8  
 \*13','HN400\*200\*8\*13',#6235,#6237,'P0(?)');  
 #6239= IFCQUANTITYLENGTH('Length',S,\$,2547.00108453601);  
 #6240=  
 IFCQUANTITYAREA('OuterSurfaceArea',S,\$,4.03444971790503);  
 #6241=  
 IFCQUANTITYAREA('GrossSurfaceArea',S,\$,4.03444971790503);  
 #6242=  
 IFCQUANTITYVOLUME('NetVolume',S,\$,0.0208650328844916);  
 #6243=  
 IFCQUANTITYVOLUME('GrossVolume',S,\$,0.0214253731231169);  
 #6244= IFCQUANTITYWEIGHT('NetWeight',S,\$,163.790508143259);  
 #6245=  
 IFCQUANTITYWEIGHT('GrossWeight',S,\$,168.189179016468);  
 #6246=  
 IFCELEMENTQUANTITY('3Ho1nZFn7oQQQtH0Bu9uT',#5,'BaseQu  
 antities',S,\$,(#6239,#6240,#6241,#361,#6242,#6243,#6244,#6245));  
 #6247= IFCLOCALPLACEMENT(#30,#10);  
 #6248=  
 IFCELEMENTASSEMBLY('1Ogimc0003vp4qE3SsC34u',#5,'Steel  
 Assembly',S,\$,#6247,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
 #6249= IFCPROPERTYSET('2V5yQqpX5wBR7CEXrQp\_',#5,'Tekla  
 Assembly','Assembly  
 Properties',(#34,#313,#4362,#3326,#4363,#6064,#318));  
 #6250= IFCQUANTITYLENGTH('Width',S,\$,200.000000002781);

#6251=  
 IFCELEMENTQUANTITY('1pvHnUkD5JuiN0Qbls0In',#5,'BaseQuant  
 ities',S,\$,(#6250));  
 #6252=  
 IFCARTESIANPOINT((6749.96609435561,17847.0498845699,2414.  
 9834879358));  
 #6253= IFCAXIS2PLACEMENT3D(#6252,#4368,#4369);  
 #6254= IFCLOCALPLACEMENT(#6247,#6253);  
 #6255=  
 IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4374));  
 #6256= IFCPRODUCTDEFINITIONSHAPE(S,\$,(#6255));  
 #6257=  
 IFCMEMBER('1Ogimc0003vZ4qE3SsC34u',#5,'BEAM','HN400\*200\*8  
 \*13','HN400\*200\*8\*13',#6254,#6256,'P0(?)');  
 #6258= IFCQUANTITYLENGTH('Length',S,\$,2672.99429081458);  
 #6259=  
 IFCQUANTITYAREA('OuterSurfaceArea',S,\$,4.2340229566503);  
 #6260=  
 IFCQUANTITYAREA('GrossSurfaceArea',S,\$,4.2340229566503);  
 #6261=  
 IFCQUANTITYVOLUME('NetVolume',S,\$,0.0218971692303741);  
 #6262=  
 IFCQUANTITYVOLUME('GrossVolume',S,\$,0.0224852279743323);  
 #6263= IFCQUANTITYWEIGHT('NetWeight',S,\$,171.892778458437);  
 #6264=  
 IFCQUANTITYWEIGHT('GrossWeight',S,\$,176.509039598508);  
 #6265=  
 IFCELEMENTQUANTITY('3Kh6snC116ROQM67fHklu',#5,'BaseQua  
 ntities',S,\$,(#6258,#6259,#6260,#361,#6261,#6262,#6263,#6264));  
 #6266= IFCLOCALPLACEMENT(#30,#10);  
 #6267=  
 IFCELEMENTASSEMBLY('1Ogimc0003uZ4qE3SsC34u',#5,'Steel  
 Assembly',S,\$,#6266,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
 #6268= IFCPROPERTYSET('0oEX0dGTCJrTm2S3ISURC',#5,'Tekla  
 Assembly','Assembly  
 Properties',(#34,#313,#4395,#3264,#4396,#6064,#318));  
 #6269= IFCQUANTITYLENGTH('Width',S,\$,200.000000001477);  
 #6270=  
 IFCELEMENTQUANTITY('0q3Mey0S9818ep0JvKl0\_0',#5,'BaseQuanti  
 ties',S,\$,(#6269));  
 #6271=  
 IFCARTESIANPOINT((6750.1670029036,19141.3781446023,42.280  
 0608015516));  
 #6272= IFCAXIS2PLACEMENT3D(#6271,#4401,#4402);  
 #6273= IFCLOCALPLACEMENT(#6266,#6272);  
 #6274=  
 IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4407));  
 #6275= IFCPRODUCTDEFINITIONSHAPE(S,\$,(#6274));  
 #6276=  
 IFCMEMBER('1Ogimc0003uJ4qE3SsC34u',#5,'BEAM','HN400\*200\*8  
 \*13','HN400\*200\*8\*13',#6273,#6275,'P0(?)');  
 #6277= IFCQUANTITYLENGTH('Length',S,\$,2613.75106707606);  
 #6278=  
 IFCQUANTITYAREA('OuterSurfaceArea',S,\$,4.14018169024849);  
 #6279=  
 IFCQUANTITYAREA('GrossSurfaceArea',S,\$,4.14018169024849);  
 #6280=  
 IFCQUANTITYVOLUME('NetVolume',S,\$,0.0214118487414965);  
 #6281=  
 IFCQUANTITYVOLUME('GrossVolume',S,\$,0.0219868739762439);  
 #6282= IFCQUANTITYWEIGHT('NetWeight',S,\$,168.083012620747);  
 #6283=  
 IFCQUANTITYWEIGHT('GrossWeight',S,\$,172.596960713514);  
 #6284=  
 IFCELEMENTQUANTITY('26x22JcP8quFA\_kc0pu6B',#5,'BaseQuant  
 ities',S,\$,(#6277,#6278,#6279,#361,#6280,#6281,#6282,#6283));  
 #6285= IFCLOCALPLACEMENT(#30,#10);  
 #6286=  
 IFCELEMENTASSEMBLY('1Ogimc0003uJ4qE3SsC34u',#5,'Steel  
 Assembly',S,\$,#6285,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
 #6287= IFCPROPERTYSET('26RrjCP7v1JQ45b\_IscJg',#5,'Tekla  
 Assembly','Assembly  
 Properties',(#34,#313,#4427,#3264,#2832,#6064,#318));  
 #6288=  
 IFCARTESIANPOINT((6749.50812596327,20221.9670915497,2469.  
 06497759867));  
 #6289= IFCAXIS2PLACEMENT3D(#6288,#4432,#4433);  
 #6290= IFCLOCALPLACEMENT(#6285,#6289);  
 #6291=  
 IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4438));  
 #6292= IFCPRODUCTDEFINITIONSHAPE(S,\$,(#6291));  
 #6293=  
 IFCMEMBER('1Ogimc0003i34qE3SsC34u',#5,'BEAM','HN400\*200\*8\*  
 13','HN400\*200\*8\*13',#6290,#6292,'P0(?)');  
 #6294=  
 IFCQUANTITYVOLUME('NetVolume',S,\$,0.0223718364650061);  
 #6295= IFCQUANTITYWEIGHT('NetWeight',S,\$,175.618916250298);  
 #6296=  
 IFCELEMENTQUANTITY('3N0xKRJUL0e97QsA2Ju7V',#5,'BaseQu  
 antities',S,\$,(#4447,#4448,#4449,#361,#6294,#4451,#6295,#4453));  
 #6297= IFCLOCALPLACEMENT(#30,#10);  
 #6298=  
 IFCELEMENTASSEMBLY('1Ogimc0003s34qE3SsC34u',#5,'Steel  
 Assembly',S,\$,#6297,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
 #6299= IFCPROPERTYSET('2NBdIreeX70A16nERiG620',#5,'Tekla  
 Assembly','Assembly  
 Properties',(#34,#313,#4457,#3326,#4458,#6064,#318));  
 #6300= IFCQUANTITYLENGTH('Width',S,\$,200.000000000695);  
 #6301=  
 IFCELEMENTQUANTITY('28FyEZCMjChOEJxOUkah5a',#5,'BaseQu  
 antities',S,\$,(#6300));  
 #6302=  
 IFCARTESIANPOINT((6750.04073969584,21571.4026160538,43.47  
 38052602664));  
 #6303= IFCAXIS2PLACEMENT3D(#6302,#4463,#4464);

#6304= IFCLOCALPLACEMENT(#6297,#6303);  
#6305=  
IFC SHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4469));  
#6306= IFCPRODUCTDEFINITIONSHAPE(S,\$,(#6305));  
#6307=  
IFCMEMBER('1Ogjm0003rp4qE3SsC34u',#5,'BEAM','HN400\*200\*8  
\*13','HN400\*200\*8\*13',#6304,#6306,'P0(?)');  
#6308= IFCQUANTITYLENGTH('Length',S,\$,2690.4811369513);  
#6309=  
IFCQUANTITYAREA('OuterSurfaceArea',S,\$,4.26172212093087);  
#6310=  
IFCQUANTITYAREA('GrossSurfaceArea',S,\$,4.26172212093087);  
#6311=  
IFCQUANTITYVOLUME('NetVolume',S,\$,0.0220404214738947);  
#6312=  
IFCQUANTITYVOLUME('GrossVolume',S,\$,0.0226323273240344);  
#6313= IFCQUANTITYWEIGHT('NetWeight',S,\$,173.017308570074);  
#6314=  
IFCQUANTITYWEIGHT('GrossWeight',S,\$,177.66376949367);  
#6315=  
IFCELEMENTQUANTITY('2jupv\_4TbEo9hFkS6Vmuty',#5,'BaseQuant  
ities',S,\$,(#6308,#6309,#6310,#361,#6311,#6312,#6313,#6314));  
#6316= IFCLOCALPLACEMENT(#30,#10);  
#6317=  
IFCELEMENTASSEMBLY('1Ogjm0003qp4qE3SsC34u',#5,'Steel  
Assembly',S,\$,#6316,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#6318= IFCPROPERTYSET('1OPxGwzYb46fwanwa9ykIQ',#5,'Tekla  
Assembly','Assembly  
Properties',(#34,#313,#4489,#3326,#4490,#6064,#318));  
#6319= IFCQUANTITYLENGTH('Width',S,\$,200.000000001015);  
#6320=  
IFCELEMENTQUANTITY('19tX\_L17Y8xaVsQEXsb',#5,'BaseQuant  
ities',S,\$,(#6319));  
#6321=  
IFCCARTESIANPOINT((6751.63483458107,22675.2863393944,2526.  
02718085123));  
#6322= IFCAXIS2PLACEMENT3D(#6321,#4493,#4494);  
#6323= IFCLOCALPLACEMENT(#6316,#6322);  
#6324=  
IFC SHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4499));  
#6325= IFCPRODUCTDEFINITIONSHAPE(S,\$,(#6324));  
#6326=  
IFCMEMBER('1Ogjm0003qZ4qE3SsC34u',#5,'BEAM','HN400\*200\*8  
\*13','HN400\*200\*8\*13',#6323,#6325,'P0(?)');  
#6327=  
IFCQUANTITYVOLUME('NetVolume',S,\$,0.0228735953708108);  
#6328= IFCQUANTITYWEIGHT('NetWeight',S,\$,179.557723660865);  
#6329=  
IFCELEMENTQUANTITY('2\_wwNFepz7bwXSTQqXj9',#5,'BaseQu  
antities',S,\$,(#4510,#4511,#4512,#361,#6327,#4514,#6328,#4516));  
#6330= IFCLOCALPLACEMENT(#30,#10);  
#6331=  
IFCELEMENTASSEMBLY('1Ogjm0003pZ4qE3SsC34u',#5,'Steel  
Assembly',S,\$,#6330,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#6332= IFCPROPERTYSET('0hgFOYdBJ0rRnR36ieImr',#5,'Tekla  
Assembly','Assembly  
Properties',(#34,#313,#4520,#3264,#4521,#6064,#318));  
#6333=  
IFCCARTESIANPOINT((6749.87012716774,24068.5200564826,43.98  
29783662765));  
#6334= IFCAXIS2PLACEMENT3D(#6333,#4526,#4527);  
#6335= IFCLOCALPLACEMENT(#6330,#6334);  
#6336=  
IFC SHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4532));  
#6337= IFCPRODUCTDEFINITIONSHAPE(S,\$,(#6336));  
#6338=  
IFCMEMBER('1Ogjm0003pJ4qE3SsC34u',#5,'BEAM','HN400\*200\*8  
\*13','HN400\*200\*8\*13',#6335,#6337,'P0(?)');  
#6339= IFCQUANTITYLENGTH('Length',S,\$,2761.53777023145);  
#6340=  
IFCQUANTITYAREA('OuterSurfaceArea',S,\$,4.37427582804662);  
#6341=  
IFCQUANTITYAREA('GrossSurfaceArea',S,\$,4.37427582804662);  
#6342=  
IFCQUANTITYVOLUME('NetVolume',S,\$,0.022622517413754);  
#6343=  
IFCQUANTITYVOLUME('GrossVolume',S,\$,0.023230055723187);  
#6344= IFCQUANTITYWEIGHT('NetWeight',S,\$,177.586761697969);  
#6345=  
IFCQUANTITYWEIGHT('GrossWeight',S,\$,182.355937427018);  
#6346=  
IFCELEMENTQUANTITY('1yrtowlfr5lx4pZ3wSIQBb',#5,'BaseQuant  
ities',S,\$,(#6339,#6340,#6341,#361,#6342,#6343,#6344,#6345));  
#6347= IFCLOCALPLACEMENT(#30,#10);  
#6348=  
IFCELEMENTASSEMBLY('1Ogjm0003oJ4qE3SsC34u',#5,'Steel  
Assembly',S,\$,#6347,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#6349= IFCPROPERTYSET('0hxOFY\_HddOeuXlVZlBSg',#5,'Tekla  
Assembly','Assembly  
Properties',(#34,#313,#4552,#3264,#4553,#6064,#318));  
#6350= IFCQUANTITYLENGTH('Width',S,\$,200.000000002103);  
#6351=  
IFCELEMENTQUANTITY('1vjuFzU619vxhziFgScI9',#5,'BaseQuant  
ities',S,\$,(#6350));  
#6352=  
IFCCARTESIANPOINT((6750.92872209742,25215.9704461565,2584.  
48952110396));  
#6353= IFCAXIS2PLACEMENT3D(#6352,#4558,#4559);  
#6354= IFCLOCALPLACEMENT(#6347,#6353);  
#6355=  
IFC SHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4564));  
#6356= IFCPRODUCTDEFINITIONSHAPE(S,\$,(#6355));  
#6357=  
IFCMEMBER('1Ogjm0003o34qE3SsC34u',#5,'BEAM','HN400\*200\*8  
\*13','HN400\*200\*8\*13',#6354,#6356,'P0(?)');

#6358= IFCQUANTITYLENGTH('Length',S,\$,2859.32682329308);  
#6359=  
IFCQUANTITYAREA('OuterSurfaceArea',S,\$,4.52917368809624);  
#6360=  
IFCQUANTITYAREA('GrossSurfaceArea',S,\$,4.52917368809624);  
#6361=  
IFCQUANTITYVOLUME('NetVolume',S,\$,0.023423605336383);  
#6362=  
IFCQUANTITYVOLUME('GrossVolume',S,\$,0.0240526572375414);  
#6363= IFCQUANTITYWEIGHT('NetWeight',S,\$,183.875301890607);  
#6364= IFCQUANTITYWEIGHT('GrossWeight',S,\$,188.8133593147);  
#6365=  
IFCELEMENTQUANTITY('08vo5RrXhXE8uMBSykPo3VQ',#5,'BaseQ  
uantities',S,\$,(#6358,#6359,#6360,#361,#6361,#6362,#6363,#6364));  
#6366= IFCLOCALPLACEMENT(#30,#10);  
#6367=  
IFCELEMENTASSEMBLY('1Ogjm0003n34qE3SsC34u',#5,'Steel  
Assembly',S,\$,#6366,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#6368= IFCPROPERTYSET('2N7zDlWSh0PvkGjCCxNoWd',#5,'Tekla  
Assembly','Assembly  
Properties',(#34,#313,#4584,#3326,#4585,#6064,#318));  
#6369=  
IFCCARTESIANPOINT((6749.92884908046,26639.1748969041,44.31  
25484189382));  
#6370= IFCAXIS2PLACEMENT3D(#6369,#4590,#4591);  
#6371= IFCLOCALPLACEMENT(#6366,#6370);  
#6372=  
IFC SHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4596));  
#6373= IFCPRODUCTDEFINITIONSHAPE(S,\$,(#6372));  
#6374=  
IFCMEMBER('1Ogjm0003mp4qE3SsC34u',#5,'BEAM','HN400\*200\*8  
\*13','HN400\*200\*8\*13',#6371,#6373,'P0(?)');  
#6375= IFCQUANTITYLENGTH('Length',S,\$,2831.65520780173);  
#6376=  
IFCQUANTITYAREA('OuterSurfaceArea',S,\$,4.48534184915794);  
#6377=  
IFCQUANTITYAREA('GrossSurfaceArea',S,\$,4.48534184915794);  
#6378=  
IFCQUANTITYVOLUME('NetVolume',S,\$,0.0231969194622899);  
#6379=  
IFCQUANTITYVOLUME('GrossVolume',S,\$,0.0238198836080282);  
#6380= IFCQUANTITYWEIGHT('NetWeight',S,\$,182.095817778976);  
#6381=  
IFCQUANTITYWEIGHT('GrossWeight',S,\$,186.986086323021);  
#6382=  
IFCELEMENTQUANTITY('1ZwrlAcxT9\_OVQR5raFL',#5,'BaseQu  
antities',S,\$,(#6375,#6376,#6377,#361,#6378,#6379,#6380,#6381));  
#6383= IFCLOCALPLACEMENT(#30,#10);  
#6384=  
IFCELEMENTASSEMBLY('1Ogjm0003lp4qE3SsC34u',#5,'Steel  
Assembly',S,\$,#6383,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#6385= IFCPROPERTYSET('3nhSmh1ZH0zBLkUNwsmhf',#5,'Tekla  
Assembly','Assembly  
Properties',(#34,#313,#4616,#3326,#4617,#6064,#318));  
#6386= IFCQUANTITYLENGTH('Width',S,\$,200.000000001288);  
#6387=  
IFCELEMENTQUANTITY('3szMLS9xH4SeWX4yzf5MRS',#5,'BaseQ  
uantities',S,\$,(#6386));  
#6388=  
IFCCARTESIANPOINT((6750.47415594403,27803.6739586112,2644.  
68317450372));  
#6389= IFCAXIS2PLACEMENT3D(#6388,#4622,#4623);  
#6390= IFCLOCALPLACEMENT(#6383,#6389);  
#6391=  
IFC SHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4628));  
#6392= IFCPRODUCTDEFINITIONSHAPE(S,\$,(#6391));  
#6393=  
IFCMEMBER('1Ogjm0003IZ4qE3SsC34u',#5,'BEAM','HN400\*200\*8  
\*13','HN400\*200\*8\*13',#6390,#6392,'P0(?)');  
#6394= IFCQUANTITYLENGTH('Length',S,\$,2925.27422177138);  
#6395=  
IFCQUANTITYAREA('OuterSurfaceArea',S,\$,4.63363436728587);  
#6396=  
IFCQUANTITYAREA('GrossSurfaceArea',S,\$,4.63363436728587);  
#6397=  
IFCQUANTITYVOLUME('NetVolume',S,\$,0.0239638464247528);  
#6398=  
IFCQUANTITYVOLUME('GrossVolume',S,\$,0.0246074067535409);  
#6399= IFCQUANTITYWEIGHT('NetWeight',S,\$,188.116194434309);  
#6400=  
IFCQUANTITYWEIGHT('GrossWeight',S,\$,193.168143015296);  
#6401=  
IFCELEMENTQUANTITY('0jqYPSHFj6igORlIvPegE',#5,'BaseQuant  
ities',S,\$,(#6394,#6395,#6396,#361,#6397,#6398,#6399,#6400));  
#6402= IFCLOCALPLACEMENT(#30,#10);  
#6403=  
IFCELEMENTASSEMBLY('1Ogjm0003kZ4qE3SsC34u',#5,'Steel  
Assembly',S,\$,#6402,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#6404= IFCPROPERTYSET('0lu8MAG93aftQj0TS9oo',#5,'Tekla  
Assembly','Assembly  
Properties',(#34,#313,#4648,#3264,#4649,#6064,#318));  
#6405=  
IFCCARTESIANPOINT((6750.17231276309,29276.6292554454,44.58  
97689499072));  
#6406= IFCAXIS2PLACEMENT3D(#6405,#4654,#4655);  
#6407= IFCLOCALPLACEMENT(#6402,#6406);  
#6408=  
IFC SHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4660));  
#6409= IFCPRODUCTDEFINITIONSHAPE(S,\$,(#6408));  
#6410=  
IFCMEMBER('1Ogjm0003k4qE3SsC34u',#5,'BEAM','HN400\*200\*8  
\*13','HN400\*200\*8\*13',#6407,#6409,'P0(?)');  
#6411= IFCQUANTITYLENGTH('Length',S,\$,2903.38434026717);  
#6412=  
IFCQUANTITYAREA('OuterSurfaceArea',S,\$,4.59896079498319);

## Appendix

#6413=	IFCQUANTITYAREA('GrossSurfaceArea',S,\$,4.59896079498319);	#6466=	IFCQUANTITYVOLUME('NetVolume',S,\$,0.0251597367443082);
#6414=	IFCQUANTITYVOLUME('NetVolume',S,\$,0.0237845245155046);	#6467=	IFCQUANTITYVOLUME('GrossVolume',S,\$,0.0258354132682639);
#6415=	IFCQUANTITYVOLUME('GrossVolume',S,\$,0.0244232690703274);	#6468=	IFCQUANTITYWEIGHT('NetWeight',S,\$,197.50393344282);
#6416=	IFCQUANTITYWEIGHT('NetWeight',S,\$,186.708517446711);	#6469=	IFCQUANTITYWEIGHT('GrossWeight',S,\$,202.807994155872);
#6417=	IFCQUANTITYWEIGHT('GrossWeight',S,\$,191.72266220207);	#6470=	IFCELEMENTQUANTITY('1jS QiBz5AI9p\$CqOoOdkg',#5,'BaseQuantities',S,\$(#6463,#6464,#6465,#361,#6466,#6467,#6468,#6469));
#6418=	IFCELEMENTQUANTITY('1j1V7rT4L6Fh4aVZq1Fr\$F',#5,'BaseQuantities',S,\$(#6411,#6412,#6413,#361,#6414,#6415,#6416,#6417));	#6471=	IFCLOCALPLACEMENT(#30,#10);
#6419=	IFCLOCALPLACEMENT(#30,#10);	#6472=	IFCELEMENTASSEMBLY('1Ogimc0003j4qE3SsC34u',#5,'SteelAssembly',S,\$(#6471,S,'BE-0(?)',NOTDEFINED,,RIGID_FRAME.);
#6420=	IFCELEMENTASSEMBLY('1Ogimc0003j4qE3SsC34u',#5,'SteelAssembly',S,\$(#6471,S,'BE-0(?)',NOTDEFINED,,RIGID_FRAME.);	#6473=	IFCPROPERTYSET('180qXASNTEmvjiMgwn_Ir',#5,'TeklaAssembly',AssemblyProperties',(#34,#313,#4776,#3264,#4777,#6064,#318));
#6421=	IFCPROPERTYSET('20GY85ccbBS8GybPAQ45Q',#5,'TeklaAssembly',AssemblyProperties',(#34,#313,#4680,#3264,#4681,#6064,#318));	#6474=	IFCQUANTITYLENGTH('Width',S,\$,200.0000000000041);
#6422=	IFCQUANTITYLENGTH('Width',S,\$,200.00000000001328);	#6475=	IFCELEMENTQUANTITY('1oNuy7TL15x9sCDnazqUin',#5,'BaseQuantities',S,\$(#6474));
#6423=	IFCELEMENTQUANTITY('3xmP1PeGH2WeE0cKBJzk4',#5,'BaseQuantities',S,\$(#6422));	#6476=	IFCCARTESIANPOINT((6749.95587265295,34778.5737111104,45.1310766642335));
#6424=	IFCCARTESIANPOINT((6748.06638297871,30475.9320776942,2706.17399470221));	#6477=	IFCAXIS2PLACEMENT3D(#6476,#4782,#4783);
#6425=	IFCAXIS2PLACEMENT3D(#6424,#4686,#4687);	#6478=	IFCLOCALPLACEMENT(#6471,#6477);
#6426=	IFCLOCALPLACEMENT(#6419,#6425);	#6479=	IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4788));
#6427=	IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4692));	#6480=	IFCPRODUCTDEFINITIONSHAPE(S,\$(#6479));
#6428=	IFCPRODUCTDEFINITIONSHAPE(S,\$(#6427));	#6481=	IFCMEMBER('1Ogimc0003j4qE3SsC34u',#5,'BEAM',HN400*200*8*13',HN400*200*8*13',#6478,#6480,P0(?));
#6429=	IFCMEMBER('1Ogimc0003j4qE3SsC34u',#5,'BEAM',HN400*200*8*13',HN400*200*8*13',#6426,#6428,P0(?));	#6482=	IFCQUANTITYVOLUME('NetVolume',S,\$,0.0250393702634969);
#6430=	IFCQUANTITYLENGTH('Length',S,\$,2995.73282019174);	#6483=	IFCQUANTITYWEIGHT('NetWeight',S,\$,196.55905656845);
#6431=	IFCQUANTITYAREA('OuterSurfaceArea',S,\$,4.74524078718372);	#6484=	IFCELEMENTQUANTITY('3dYwNzhOPAvgdA956BnkT7',#5,'BaseQuantities',S,\$(#4798,#4799,#4800,#361,#6482,#4802,#6483,#4804));
#6432=	IFCQUANTITYAREA('GrossSurfaceArea',S,\$,4.74524078718372);	#6485=	IFCLOCALPLACEMENT(#30,#10);
#6433=	IFCQUANTITYVOLUME('NetVolume',S,\$,0.0245410432630309);	#6486=	IFCELEMENTASSEMBLY('1Ogimc0003eJ4qE3SsC34u',#5,'SteelAssembly',S,\$(#6485,S,'BE-0(?)',NOTDEFINED,,RIGID_FRAME.);
#6434=	IFCQUANTITYVOLUME('GrossVolume',S,\$,0.0252001044834529);	#6487=	IFCPROPERTYSET('3_FXH6SA5Cs8dLyWXTntS',#5,'TeklaAssembly',AssemblyProperties',(#34,#313,#4808,#3264,#4809,#6064,#318));
#6435=	IFCQUANTITYWEIGHT('NetWeight',S,\$,192.647189614793);	#6488=	IFCQUANTITYLENGTH('Width',S,\$,200.0000000004871);
#6436=	IFCQUANTITYWEIGHT('GrossWeight',S,\$,197.820820195105);	#6489=	IFCELEMENTQUANTITY('3msFD3Yil34vPrJ\$QxqBPS',#5,'BaseQuantities',S,\$(#6488));
#6437=	IFCELEMENTQUANTITY('3E3vPYXnFN4xo5uAFxHm',#5,'BaseQuantities',S,\$(#6430,#6431,#6432,#361,#6433,#6434,#6435,#6436));	#6490=	IFCCARTESIANPOINT((6749.77205927355,36046.684686051,2834.37049775297));
#6438=	IFCLOCALPLACEMENT(#30,#10);	#6491=	IFCAXIS2PLACEMENT3D(#6490,#4814,#4815);
#6439=	IFCELEMENTASSEMBLY('1Ogimc0003i34qE3SsC34u',#5,'SteelAssembly',S,\$(#6438,S,'BE-0(?)',NOTDEFINED,,RIGID_FRAME.);	#6492=	IFCLOCALPLACEMENT(#6485,#6491);
#6440=	IFCPROPERTYSET('00S0IpALb73PCjyGbycjE',#5,'TeklaAssembly',AssemblyProperties',(#34,#313,#4712,#3326,#4713,#6064,#318));	#6493=	IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4820));
#6441=	IFCQUANTITYLENGTH('Width',S,\$,200.000000000604);	#6494=	IFCPRODUCTDEFINITIONSHAPE(S,\$(#6493));
#6442=	IFCELEMENTQUANTITY('07WtrMZhPzB8hzpqY5b_fuV',#5,'BaseQuantities',S,\$(#6441));	#6495=	IFCMEMBER('1Ogimc0003eJ4qE3SsC34u',#5,'BEAM',HN400*200*8*13',HN400*200*8*13',#6492,#6494,P0(?));
#6443=	IFCCARTESIANPOINT((6750.13856789268,31987.561667477,44.8110128026418));	#6496=	IFCQUANTITYLENGTH('Length',S,\$,31141.02666408125);
#6444=	IFCAXIS2PLACEMENT3D(#6443,#4718,#4719);	#6497=	IFCQUANTITYAREA('OuterSurfaceArea',S,\$,4.9753862359047);
#6445=	IFCLOCALPLACEMENT(#6438,#6444);	#6498=	IFCQUANTITYAREA('GrossSurfaceArea',S,\$,4.9753862359047);
#6446=	IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4724));	#6499=	IFCQUANTITYVOLUME('NetVolume',S,\$,0.0257312904322009);
#6447=	IFCPRODUCTDEFINITIONSHAPE(S,\$(#6446));	#6500=	IFCQUANTITYVOLUME('GrossVolume',S,\$,0.0264223162982515);
#6448=	IFCMEMBER('1Ogimc0003hp4qE3SsC34u',#5,'BEAM',HN400*200*8*13',HN400*200*8*13',#6445,#6447,P0(?));	#6501=	IFCQUANTITYWEIGHT('NetWeight',S,\$,201.990629892777);
#6449=	IFCQUANTITYVOLUME('NetVolume',S,\$,0.0243767398177103);	#6502=	IFCQUANTITYWEIGHT('GrossWeight',S,\$,207.415182941274);
#6450=	IFCQUANTITYWEIGHT('NetWeight',S,\$,191.357407569026);	#6503=	IFCELEMENTQUANTITY('0hh18Ex8bEhUSzmM2HrRup',#5,'BaseQuantities',S,\$(#6496,#6497,#6498,#361,#6499,#6500,#6501,#6502));
#6451=	IFCELEMENTQUANTITY('1JzOHW6jj4ZhgZ4KgHg0o3',#5,'BaseQuantities',S,\$(#4734,#4735,#4736,#361,#6449,#4738,#6450,#4740));	#6504=	IFCLOCALPLACEMENT(#30,#10);
#6452=	IFCLOCALPLACEMENT(#30,#10);	#6505=	IFCELEMENTASSEMBLY('1Ogimc0003d34qE3SsC34u',#5,'SteelAssembly',S,\$(#6504,S,'BE-0(?)',NOTDEFINED,,RIGID_FRAME.);
#6453=	IFCELEMENTASSEMBLY('1Ogimc0003gp4qE3SsC34u',#5,'SteelAssembly',S,\$(#6452,S,'BE-0(?)',NOTDEFINED,,RIGID_FRAME.);	#6506=	IFCPROPERTYSET('2h9ZA4a5zBivAHOj8WAIIE',#5,'TeklaAssembly',AssemblyProperties',(#34,#313,#4840,#3326,#4841,#6064,#318));
#6454=	IFCPROPERTYSET('0jDQT1U6T7u8Eu015gBkY',#5,'TeklaAssembly',AssemblyProperties',(#34,#313,#4744,#3326,#4745,#6064,#318));	#6507=	IFCQUANTITYLENGTH('Width',S,\$,200.0000000005421);
#6455=	IFCQUANTITYLENGTH('Width',S,\$,200.000000000374);	#6508=	IFCELEMENTQUANTITY('1IQIYfeU5EUeBorshhpajnj',#5,'BaseQuantities',S,\$(#6507));
#6456=	IFCELEMENTQUANTITY('1YIfquGATCwwzoWDJPo1w6',#5,'BaseQuantities',S,\$(#6455));	#6509=	IFCCARTESIANPOINT((6750.01517273946,37649.6820003511,45.5119820758106));
#6457=	IFCCARTESIANPOINT((6750.63922592706,33221.0694155539,2773.54272976058));	#6510=	IFCAXIS2PLACEMENT3D(#6509,#4846,#4847);
#6458=	IFCAXIS2PLACEMENT3D(#6457,#4750,#4751);	#6511=	IFCLOCALPLACEMENT(#6504,#6510);
#6459=	IFCLOCALPLACEMENT(#6452,#6458);	#6512=	IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4852));
#6460=	IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4756));	#6513=	IFCPRODUCTDEFINITIONSHAPE(S,\$(#6512));
#6461=	IFCPRODUCTDEFINITIONSHAPE(S,\$(#6460));	#6514=	IFCMEMBER('1Ogimc0003cp4qE3SsC34u',#5,'BEAM',HN400*200*8*13',HN400*200*8*13',#6511,#6513,P0(?));
#6462=	IFCMEMBER('1Ogimc0003gZ4qE3SsC34u',#5,'BEAM',HN400*200*8*13',HN400*200*8*13',#6459,#6461,P0(?));	#6515=	IFCQUANTITYLENGTH('Length',S,\$,31311.44304399267);
#6463=	IFCQUANTITYLENGTH('Length',S,\$,3071.25692680265);	#6516=	IFCQUANTITYAREA('OuterSurfaceArea',S,\$,4.96020578168439);
#6464=	IFCQUANTITYAREA('OuterSurfaceArea',S,\$,4.8648709720554);	#6517=	IFCQUANTITYAREA('GrossSurfaceArea',S,\$,4.96020578168439);
#6465=	IFCQUANTITYAREA('GrossSurfaceArea',S,\$,4.8648709720554);	#6518=	IFCQUANTITYVOLUME('NetVolume',S,\$,0.0256527814164682);

#6519= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0263416988860663);  
 #6520= IFCQUANTITYWEIGHT('NetWeight',S,S,201.374334119275);  
 #6521= IFCQUANTITYWEIGHT('GrossWeight',S,S,206.782336255621);  
 #6522= IFCELEMENTQUANTITY('3QIDFPQ4TF18AKyDOM6S2G',#5,'Base Quantities',S,S,#6515,#6516,#6517,#361,#6518,#6519,#6520,#6521);  
 #6523= IFCLOCALPLACEMENT(#30,#10);  
 #6524= IFCELEMENTASSEMBLY('1Ogjm0003bp4qE3SsC34u',#5,'Steel Assembly',S,S,#6523,S,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
 #6525= IFCPROPERTYSET('1ECfiiJTDWuciri7rikUv',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#4872,#3326,#4873,#6064,#318));  
 #6526= IFCCARTESIANPOINT((6750.04923882473,38952.0617095284,2903.07708057291));  
 #6527= IFCAxis2PLACEMENT3D(#6526,#4878,#4879);  
 #6528= IFCLOCALPLACEMENT(#6523,#6527);  
 #6529= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4884));  
 #6530= IFCPRODUCTDEFINITIONSHAPE(S,S,(#6529));  
 #6531= IFCMEMBER('1Ogjm0003bZ4qE3SsC34u',#5,'BEAM','HN400\*200\*8 \*13','HN400\*200\*8\*13',#6528,#6530,'PO(?));  
 #6532= IFCQUANTITYLENGTH('Length',S,S,3217.74982219986);  
 #6533= IFCQUANTITYAREA('OuterSurfaceArea',S,S,5.09691571836458);  
 #6534= IFCQUANTITYAREA('GrossSurfaceArea',S,S,5.09691571836458);  
 #6535= IFCQUANTITYVOLUME('NetVolume',S,S,0.026359806543697);  
 #6536= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0270677115043452);  
 #6537= IFCQUANTITYWEIGHT('NetWeight',S,S,206.924481366237);  
 #6538= IFCQUANTITYWEIGHT('GrossWeight',S,S,212.48153530911);  
 #6539= IFCELEMENTQUANTITY('3jfhguT152L9E8Cx2BDpiv',#5,'BaseQuant ities',S,S,#6532,#6533,#6534,#361,#6535,#6536,#6537,#6538);  
 #6540= IFCLOCALPLACEMENT(#30,#10);  
 #6541= IFCELEMENTASSEMBLY('1Ogjm0003aZ4qE3SsC34u',#5,'Steel Assembly',S,S,#6540,S,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
 #6542= IFCPROPERTYSET('2CWz8uErE7QQbLG3gWqcQ',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#4905,#3264,#4873,#6064,#318));  
 #6543= IFCQUANTITYLENGTH('Width',S,S,200.000000002605);  
 #6544= IFCELEMENTQUANTITY('1OKaM008XDaeKUlflcMSY2B',#5,'BaseQ uantities',S,S,(#6543));  
 #6545= IFCCARTESIANPOINT((6749.99683464118,40600.9761655472,45.78 07064860019));  
 #6546= IFCAxis2PLACEMENT3D(#6545,#4910,#4911);  
 #6547= IFCLOCALPLACEMENT(#6540,#6546);  
 #6548= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4916));  
 #6549= IFCPRODUCTDEFINITIONSHAPE(S,S,(#6548));  
 #6550= IFCMEMBER('1Ogjm0003aJ4qE3SsC34u',#5,'BEAM','HN400\*200\*8 \*13','HN400\*200\*8\*13',#6547,#6549,'PO(?));  
 #6551= IFCQUANTITYLENGTH('Length',S,S,3213.62157620232);  
 #6552= IFCQUANTITYAREA('OuterSurfaceArea',S,S,5.09037657670448);  
 #6553= IFCQUANTITYAREA('GrossSurfaceArea',S,S,5.09037657670448);  
 #6554= IFCQUANTITYVOLUME('NetVolume',S,S,0.0263259879522049);  
 #6555= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0270329846990139);  
 #6556= IFCQUANTITYWEIGHT('NetWeight',S,S,206.659005424809);  
 #6557= IFCQUANTITYWEIGHT('GrossWeight',S,S,212.208929887259);  
 #6558= IFCELEMENTQUANTITY('1HFP nDkPEmPK3oGD1MmAw',#5,'Bas eQuantities',S,S,(#6551,#6552,#6553,#361,#6554,#6555,#6556,#6557));  
 #6559= IFCLOCALPLACEMENT(#30,#10);  
 #6560= IFCELEMENTASSEMBLY('1Ogjm0003Z14qE3SsC34u',#5,'Steel Assembly',S,S,#6559,S,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
 #6561= IFCPROPERTYSET('2OaaaWgDfDpQv0Jg11Zq9r',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#4935,#3264,#4936,#6064,#318));  
 #6562= IFCCARTESIANPOINT((6749.98907176908,41937.44871130418,2971. 82566532354));  
 #6563= IFCAxis2PLACEMENT3D(#6562,#3668,#4941);  
 #6564= IFCLOCALPLACEMENT(#6559,#6563);  
 #6565= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4946));  
 #6566= IFCPRODUCTDEFINITIONSHAPE(S,S,(#6565));  
 #6567= IFCMEMBER('1Ogjm0003Z34qE3SsC34u',#5,'BEAM','HN400\*200\*8 \*13','HN400\*200\*8\*13',#6564,#6566,'PO(?));  
 #6568= IFCQUANTITYVOLUME('NetVolume',S,S,0.0269881947207938);  
 #6569= IFCQUANTITYWEIGHT('NetWeight',S,S,211.857328558232);  
 #6570= IFCELEMENTQUANTITY('3xrgsJfIPF98WEDTnEmbqg',#5,'BaseQua ntities',S,S,(#4956,#4957,#4958,#361,#6568,#4960,#6569,#4962));  
 #6571= IFCLOCALPLACEMENT(#30,#10);

#6572= IFCELEMENTASSEMBLY('1Ogjm0003Y34qE3SsC34u',#5,'Steel Assembly',S,S,#6571,S,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
 #6573= IFCPROPERTYSET('09cZ9SOG18rQeMWDbsVccp',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#4966,#3326,#4936,#6064,#318));  
 #6574= IFCQUANTITYLENGTH('Width',S,S,200.000000003522);  
 #6575= IFCELEMENTQUANTITY('3rOJuuOif7agHeatmJHCsh',#5,'BaseQuant ities',S,S,(#6574));  
 #6576= IFCCARTESIANPOINT((6750.00067918092,43632.4042684376,46.03 7851499047));  
 #6577= IFCAxis2PLACEMENT3D(#6576,#3371,#4971);  
 #6578= IFCLOCALPLACEMENT(#6571,#6577);  
 #6579= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4976));  
 #6580= IFCPRODUCTDEFINITIONSHAPE(S,S,(#6579));  
 #6581= IFCMEMBER('1Ogjm0003Xp4qE3SsC34u',#5,'BEAM','HN400\*200\*8 \*13','HN400\*200\*8\*13',#6578,#6580,'PO(?));  
 #6582= IFCQUANTITYVOLUME('NetVolume',S,S,0.0270001862205945);  
 #6583= IFCQUANTITYWEIGHT('NetWeight',S,S,211.951461831667);  
 #6584= IFCELEMENTQUANTITY('0ZAcR3RD6k8xfpkmhHqfo',#5,'BaseQua ntities',S,S,(#4985,#4986,#4987,#361,#6582,#4989,#6583,#4991));  
 #6585= IFCLOCALPLACEMENT(#30,#10);  
 #6586= IFCELEMENTASSEMBLY('1Ogjm0003Wp4qE3SsC34u',#5,'Steel Assembly',S,S,#6585,S,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
 #6587= IFCPROPERTYSET('3MxndGQLL1gxyMpiXgbdH2',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#4995,#3326,#4996,#6064,#318));  
 #6588= IFCQUANTITYLENGTH('Width',S,S,200.000000003281);  
 #6589= IFCELEMENTQUANTITY('33mIVf0qb73eQJGcMeQ\_Fn',#5,'BaseQua ntities',S,S,(#6588));  
 #6590= IFCCARTESIANPOINT((6750.00334709996,45002.7799318925,3042. 79439196714));  
 #6591= IFCAxis2PLACEMENT3D(#6590,#5001,#5002);  
 #6592= IFCLOCALPLACEMENT(#6585,#6591);  
 #6593= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5007));  
 #6594= IFCPRODUCTDEFINITIONSHAPE(S,S,(#6593));  
 #6595= IFCMEMBER('1Ogjm0003WZ4qE3SsC34u',#5,'BEAM','HN400\*200\* 8\*13','HN400\*200\*8\*13',#6592,#6594,'PO(?));  
 #6596= IFCQUANTITYLENGTH('Length',S,S,3373.08619042782);  
 #6597= IFCQUANTITYAREA('OuterSurfaceArea',S,S,5.34296852563767);  
 #6598= IFCQUANTITYAREA('GrossSurfaceArea',S,S,5.34296852563767);  
 #6599= IFCQUANTITYVOLUME('NetVolume',S,S,0.0276323220719146);  
 #6600= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0283744010338789);  
 #6601= IFCQUANTITYWEIGHT('NetWeight',S,S,216.91372826453);  
 #6602= IFCQUANTITYWEIGHT('GrossWeight',S,S,222.739048115949);  
 #6603= IFCELEMENTQUANTITY('1xj1XqWfZ9hw1UYw68yTZb',#5,'BaseQ uantities',S,S,(#6596,#6597,#6598,#361,#6599,#6600,#6601,#6602));  
 #6604= IFCLOCALPLACEMENT(#30,#10);  
 #6605= IFCELEMENTASSEMBLY('1Ogjm0003VZ4qE3SsC34u',#5,'Steel Assembly',S,S,#6604,S,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
 #6606= IFCPROPERTYSET('0SIRLURY1FohA5RV0vqDCw',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#5028,#5029,#5030,#6064,#318));  
 #6607= IFCQUANTITYLENGTH('Width',S,S,200.000000002001);  
 #6608= IFCELEMENTQUANTITY('2kzotDUXFWel9KzJcON8s',#5,'BaseQua ntities',S,S,(#6607));  
 #6609= IFCCARTESIANPOINT((6749.99980681068,46736.0443321952,16.81 94048175952));  
 #6610= IFCAxis2PLACEMENT3D(#6609,#5035,#5036);  
 #6611= IFCLOCALPLACEMENT(#6604,#6610);  
 #6612= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5041));  
 #6613= IFCPRODUCTDEFINITIONSHAPE(S,S,(#6612));  
 #6614= IFCMEMBER('1Ogjm0003VJ4qE3SsC34u',#5,'BEAM','HN400\*200\*8 \*13','HN400\*200\*8\*13',#6611,#6613,'PO(?));  
 #6615= IFCQUANTITYLENGTH('Length',S,S,3402.20492303837);  
 #6616= IFCQUANTITYAREA('OuterSurfaceArea',S,S,5.38909259809279);  
 #6617= IFCQUANTITYAREA('GrossSurfaceArea',S,S,5.38909259809279);  
 #6618= IFCQUANTITYVOLUME('NetVolume',S,S,0.027870862729489);  
 #6619= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0286193478125988);  
 #6620= IFCQUANTITYWEIGHT('NetWeight',S,S,218.786272426489);  
 #6621= IFCQUANTITYWEIGHT('GrossWeight',S,S,224.661880328901);  
 #6622= IFCELEMENTQUANTITY('0LlBq1wT4ZvwW4sOF8NfL',#5,'BaseQ uantities',S,S,(#6615,#6616,#6617,#361,#6618,#6619,#6620,#6621));  
 #6623= IFCLOCALPLACEMENT(#30,#10);



## Appendix

#6624= IFCELEMENTASSEMBLY('1Ogjm0003UJ4qE3SsC34u',#5,'Steel Assembly',S,S,#6623,S,'BE-0(?)',NOTDEFINED,,RIGID\_FRAME.);  
#6625= IFCPROPERTYSET('2S\_hrWwOD9xg6b2RniZAmk',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#5062,#3264,#5063,#6064,#318));  
#6626= IFCQUANTITYLENGTH('Width',S,S,200.000000002838);  
#6627= IFCELEMENTQUANTITY('3TfDxKcXXAGAmAN62T6V2S',#5,'Base Quantities',S,S,(#6626));  
#6628= IFCCARTESIANPOINT((6749.99895274577,48154.7701746304,3115.24566052664));  
#6629= IFCAxis2PLACEMENT3D(#6628,#7,#5068);  
#6630= IFLOCALPLACEMENT(#6623,#6629);  
#6631= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5073));  
#6632= IFCPRODUCTDEFINITIONSHAPE(S,S,(#6631));  
#6633= IFCMEMBER('1Ogjm0003U34qE3SsC34u',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#6630,#6632,'PO(?)');  
#6634= IFCQUANTITYLENGTH('Length',S,S,3452.98686639927);  
#6635= IFCQUANTITYAREA('OuterSurfaceArea',S,S,5.46953119637645);  
#6636= IFCQUANTITYAREA('GrossSurfaceArea',S,S,5.46953119637645);  
#6637= IFCQUANTITYVOLUME('NetVolume',S,S,0.0282868684095137);  
#6638= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0290465252501507);  
#6639= IFCQUANTITYWEIGHT('NetWeight',S,S,222.051917014683);  
#6640= IFCQUANTITYWEIGHT('GrossWeight',S,S,228.015225333183);  
#6641= IFCELEMENTQUANTITY('1s6062vWf62v1QEHuWjdX',#5,'BaseQuantities',S,S,(#6634,#6635,#6636,#361,#6637,#6638,#6639,#6640));  
#6642= IFLOCALPLACEMENT(#30,#10);  
#6643= IFCELEMENTASSEMBLY('1Ogjm0003T34qE3SsC34u',#5,'Steel Assembly',S,S,#6642,S,'BE-0(?)',NOTDEFINED,,RIGID\_FRAME.);  
#6644= IFCPROPERTYSET('1beQTs9fr3DAup4paqeqNo',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#5093,#3326,#5094,#6064,#318));  
#6645= IFCCARTESIANPOINT((6750.00006067285,49949.9946095687,46.6282080089161));  
#6646= IFCAxis2PLACEMENT3D(#6645,#7,#5099);  
#6647= IFLOCALPLACEMENT(#6642,#6646);  
#6648= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5104));  
#6649= IFCPRODUCTDEFINITIONSHAPE(S,S,(#6648));  
#6650= IFCMEMBER('1Ogjm0003Sp4qE3SsC34u',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#6647,#6649,'PO(?)');  
#6651= IFCQUANTITYLENGTH('Length',S,S,3469.72053541802);  
#6652= IFCQUANTITYAREA('OuterSurfaceArea',S,S,5.49603732810215);  
#6653= IFCQUANTITYAREA('GrossSurfaceArea',S,S,5.49603732810215);  
#6654= IFCQUANTITYVOLUME('NetVolume',S,S,0.0284239506261721);  
#6655= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0291872891439364);  
#6656= IFCQUANTITYWEIGHT('NetWeight',S,S,223.128012415451);  
#6657= IFCQUANTITYWEIGHT('GrossWeight',S,S,229.120219779901);  
#6658= IFCELEMENTQUANTITY('0hjevAOD1FguriYkG4LsgU',#5,'BaseQuantities',S,S,(#6651,#6652,#6653,#361,#6654,#6655,#6656,#6657));  
#6659= IFLOCALPLACEMENT(#30,#10);  
#6660= IFCELEMENTASSEMBLY('1Ogjm0003Rp4qE3SsC34u',#5,'Steel Assembly',S,S,#6659,S,'BE-0(?)',NOTDEFINED,,RIGID\_FRAME.);  
#6661= IFCPROPERTYSET('1Ftz\_Yc2zBUA9Wt3ZfGLLD',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#5124,#3326,#5125,#6064,#318));  
#6662= IFCCARTESIANPOINT((6750.00018338863,51400.127656873,3191.00729288661));  
#6663= IFCAxis2PLACEMENT3D(#6662,#7,#5130);  
#6664= IFLOCALPLACEMENT(#6659,#6663);  
#6665= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5135));  
#6666= IFCPRODUCTDEFINITIONSHAPE(S,S,(#6665));  
#6667= IFCMEMBER('1Ogjm0003RZ4qE3SsC34u',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#6664,#6666,'PO(?)');  
#6668= IFCQUANTITYLENGTH('Length',S,S,3541.15902153874);  
#6669= IFCQUANTITYAREA('OuterSurfaceArea',S,S,5.60919589011737);  
#6670= IFCQUANTITYAREA('GrossSurfaceArea',S,S,5.60919589011737);  
#6671= IFCQUANTITYVOLUME('NetVolume',S,S,0.029009174704441);  
#6672= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0297882296891839);  
#6673= IFCQUANTITYWEIGHT('NetWeight',S,S,227.722021429862);  
#6674= IFCQUANTITYWEIGHT('GrossWeight',S,S,233.837603060094);  
#6675= IFCELEMENTQUANTITY('0jT WZE0jzAHR19KbDBkdl',#5,'BaseQuantities',S,S,(#6668,#6669,#6670,#361,#6671,#6672,#6673,#6674));  
#6676= IFLOCALPLACEMENT(#30,#10);  
#6677= IFCELEMENTASSEMBLY('1Ogjm0003QZ4qE3SsC34u',#5,'Steel Assembly',S,S,#6676,S,'BE-0(?)',NOTDEFINED,,RIGID\_FRAME.);  
#6678= IFCPROPERTYSET('0lgrKzWfvFhQIARPTp5cSX',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#5156,#5157,#5158,#6064,#318));  
#6679= IFCCARTESIANPOINT((6749.99440454699,53236.1654878943,44.5675798224274));  
#6680= IFCAxis2PLACEMENT3D(#6679,#5163,#5164);  
#6681= IFLOCALPLACEMENT(#6676,#6680);  
#6682= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5169));  
#6683= IFCPRODUCTDEFINITIONSHAPE(S,S,(#6682));  
#6684= IFCMEMBER('1Ogjm0003QJ4qE3SsC34u',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#6681,#6683,'PO(?)');  
#6685= IFCQUANTITYLENGTH('Length',S,S,3557.49681427856);  
#6686= IFCQUANTITYAREA('OuterSurfaceArea',S,S,5.63507495381724);  
#6687= IFCQUANTITYAREA('GrossSurfaceArea',S,S,5.63507495381724);  
#6688= IFCQUANTITYVOLUME('NetVolume',S,S,0.0291430139025146);  
#6689= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0299256632017113);  
#6690= IFCQUANTITYWEIGHT('NetWeight',S,S,228.77265913474);  
#6691= IFCQUANTITYWEIGHT('GrossWeight',S,S,234.916456133433);  
#6692= IFCELEMENTQUANTITY('3ZMUUWh1L1ofncX3p\_P\_BA',#5,'BaseQuantities',S,S,(#6685,#6686,#6687,#361,#6688,#6689,#6690,#6691));  
#6693= IFLOCALPLACEMENT(#30,#10);  
#6694= IFCELEMENTASSEMBLY('1Ogjm0003PJ4qE3SsC34u',#5,'Steel Assembly',S,S,#6693,S,'BE-0(?)',NOTDEFINED,,RIGID\_FRAME.);  
#6695= IFCPROPERTYSET('2xTb4HrK12cwY0QuOd3GO',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#5190,#5157,#5191,#6064,#318));  
#6696= IFCCARTESIANPOINT((6749.99956745326,54732.1024778628,3268.11322557476));  
#6697= IFCAxis2PLACEMENT3D(#6696,#5001,#5196);  
#6698= IFLOCALPLACEMENT(#6693,#6697);  
#6699= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5201));  
#6700= IFCPRODUCTDEFINITIONSHAPE(S,S,(#6699));  
#6701= IFCMEMBER('1Ogjm0003P34qE3SsC34u',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#6698,#6700,'PO(?)');  
#6702= IFCQUANTITYLENGTH('Length',S,S,3632.40377164241);  
#6703= IFCQUANTITYAREA('OuterSurfaceArea',S,S,5.75372757428158);  
#6704= IFCQUANTITYAREA('GrossSurfaceArea',S,S,5.75372757428158);  
#6705= IFCQUANTITYVOLUME('NetVolume',S,S,0.0297566516973454);  
#6706= IFCQUANTITYVOLUME('GrossVolume',S,S,0.03055780527056);  
#6707= IFCQUANTITYWEIGHT('NetWeight',S,S,233.589715824162);  
#6708= IFCQUANTITYWEIGHT('GrossWeight',S,S,239.862877137389);  
#6709= IFCELEMENTQUANTITY('3Ad6yCgdr4WQSD18mbDo6D',#5,'BaseQuantities',S,S,(#6702,#6703,#6704,#361,#6705,#6706,#6707,#6708));  
#6710= IFLOCALPLACEMENT(#30,#10);  
#6711= IFCELEMENTASSEMBLY('1Ogjm0003O34qE3SsC34u',#5,'Steel Assembly',S,S,#6710,S,'BE-0(?)',NOTDEFINED,,RIGID\_FRAME.);  
#6712= IFCPROPERTYSET('0\_ysv913n1Tu7dgS6BAe7K',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#5222,#3326,#5223,#6064,#318));  
#6713= IFCQUANTITYLENGTH('Width',S,S,200.000000003158);  
#6714= IFCELEMENTQUANTITY('1ovOt4rj9pOpDwthHLPw',#5,'BaseQuantities',S,S,(#6713));  
#6715= IFCCARTESIANPOINT((6746.84419017988,56611.6088889807,46.7145869200574));  
#6716= IFCAxis2PLACEMENT3D(#6715,#5228,#5229);  
#6717= IFLOCALPLACEMENT(#6710,#6716);  
#6718= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5234));  
#6719= IFCPRODUCTDEFINITIONSHAPE(S,S,(#6718));  
#6720= IFCMEMBER('1Ogjm0003Np4qE3SsC34u',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#6717,#6719,'PO(?)');  
#6721= IFCQUANTITYLENGTH('Length',S,S,3644.1113682339);  
#6722= IFCQUANTITYAREA('OuterSurfaceArea',S,S,5.77227204072824);  
#6723= IFCQUANTITYAREA('GrossSurfaceArea',S,S,5.77227204072824);  
#6724= IFCQUANTITYVOLUME('NetVolume',S,S,0.0298525584328007);  
#6725= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0306542628829583);  
#6726= IFCQUANTITYWEIGHT('NetWeight',S,S,234.342583697485);  
#6727= IFCQUANTITYWEIGHT('GrossWeight',S,S,240.635963631223);  
#6728= IFCELEMENTQUANTITY('2g4v7Dpd9B8eDp5PPb0MWB',#5,'BaseQuantities',S,S,(#6721,#6722,#6723,#361,#6724,#6725,#6726,#6727));  
#6729= IFLOCALPLACEMENT(#30,#10);

#6730=	#6783=
IFCELEMENTASSEMBLY('1Ogjm0003Mp4qE3SsC34u',#5,'Steel Assembly',S,S,#6729,S,'BE-0?'),..NOTDEFINED,..RIGID_FRAME.);	IFCMEMBER('1Ogjm0003Ip4qE3SsC34u',#5,'BEAM',HN400*200*8*13',HN400*200*8*13',#6780,#6782,'PO(?)');
#6731= IFCPROPERTYSET('1y_0qOToj9NetLEPTD5Mts',#5,'Tekla Assembly',Assembly Properties',(#34,#313,#5254,#3264,#5255,#6064,#318));	#6784= IFCQUANTITYLENGTH('Length',S,S,3835.63025706758);
#6732=	#6785=
IFCCARTESIANPOINT((6749.84548202844,58157.42003367,3347.64464652608));	IFCQUANTITYAREA('OuterSurfaceArea',S,S,6.07563832719505);
#6733= IFCAXIS2PLACEMENT3D(#6732,#5260,#5261);	#6786=
#6734= IFCLOCALPLACEMENT(#6729,#6733);	IFCQUANTITYAREA('GrossSurfaceArea',S,S,6.07563832719505);
#6735=	#6787=
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5266));	IFCQUANTITYVOLUME('NetVolume',S,S,0.0314214830659269);
#6736= IFCPRODUCTDEFINITIONSHAPE(S,S,(#6735));	#6788=
#6737=	IFCQUANTITYVOLUME('GrossVolume',S,S,0.0322653217224525);
IFCMEMBER('1Ogjm0003MZ4qE3SsC34u',#5,'BEAM',HN400*200*8*13',HN400*200*8*13',#6734,#6736,'PO(?)');	#6789= IFCQUANTITYWEIGHT('NetWeight',S,S,246.658642067526);
#6738= IFCQUANTITYLENGTH('Length',S,S,3723.90081912839);	#6790=
#6739=	IFCQUANTITYWEIGHT('GrossWeight',S,S,253.282775521252);
IFCQUANTITYAREA('OuterSurfaceArea',S,S,5.89865889749936);	#6791=
#6740=	IFCELEMENTQUANTITY('2p8U3v2r05urJTOpLgyoX',#5,'BaseQuantities',S,S,(#6784,#6785,#6786,#361,#6787,#6788,#6789,#6790));
IFCQUANTITYAREA('GrossSurfaceArea',S,S,5.89865889749936);	#6792= IFCLOCALPLACEMENT(#30,#10);
#6741=	#6793=
IFCQUANTITYVOLUME('NetVolume',S,S,0.0305061955101963);	IFCELEMENTASSEMBLY('1Ogjm0003Hp4qE3SsC34u',#5,'Steel Assembly',S,S,#6792,S,'BE-0?'),..NOTDEFINED,..RIGID_FRAME.);
#6742=	#6794= IFCPROPERTYSET('3p20vEadHE3ezgUktmLÜFK',#5,'Tekla Assembly',Assembly Properties',(#34,#313,#5381,#3326,#5382,#6765,#318));
IFCQUANTITYVOLUME('GrossVolume',S,S,0.031325453690508);	#6795= IFCQUANTITYLENGTH('Width',S,S,200.000000000968);
#6743= IFCQUANTITYWEIGHT('NetWeight',S,S,239.473634755041);	#6796=
#6744=	IFCELEMENTQUANTITY('0Dighhasf5awd7SM9sdAJe',#5,'BaseQuantities',S,S,(#6795));
IFCQUANTITYWEIGHT('GrossWeight',S,S,245.904811470488);	#6797=
#6745=	IFCCARTESIANPOINT((6749.9998582422,65294.40158925,3512.96650206196));
IFCELEMENTQUANTITY('2wQB_60frFkQN7HMhdSgZ',#5,'BaseQuantities',S,S,(#6738,#6739,#6740,#361,#6741,#6742,#6743,#6744));	#6798= IFCAXIS2PLACEMENT3D(#6797,#7,#5387);
#6746= IFCLOCALPLACEMENT(#30,#10);	#6799= IFCLOCALPLACEMENT(#6792,#6798);
#6747=	#6800=
IFCELEMENTASSEMBLY('1Ogjm0003LZ4qE3SsC34u',#5,'Steel Assembly',S,S,#6746,S,'BE-0?'),..NOTDEFINED,..RIGID_FRAME.);	IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5392));
#6748= IFCPROPERTYSET('3Fv1OdZDEleNuGUwX0SJ6',#5,'Tekla Assembly',Assembly Properties',(#34,#313,#5286,#3326,#5287,#6064,#318));	#6801= IFCPRODUCTDEFINITIONSHAPE(S,S,(#6800));
#6749=	#6802=
IFCCARTESIANPOINT((6749.99984746617,60088.3108110853,46.9169555164756));	IFCMEMBER('1Ogjm0003HZ4qE3SsC34u',#5,'BEAM',HN400*200*8*13',HN400*200*8*13',#6799,#6801,'PO(?)');
#6750= IFCAXIS2PLACEMENT3D(#6749,#7,#5292);	#6803= IFCQUANTITYLENGTH('Length',S,S,3911.03212043555);
#6751= IFCLOCALPLACEMENT(#6746,#6750);	#6804=
#6752=	IFCQUANTITYAREA('OuterSurfaceArea',S,S,6.1950748787699);
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5297));	#6805=
#6753= IFCPRODUCTDEFINITIONSHAPE(S,S,(#6752));	IFCQUANTITYAREA('GrossSurfaceArea',S,S,6.1950748787699);
#6754=	#6806=
IFCMEMBER('1Ogjm0003LJ4qE3SsC34u',#5,'BEAM',HN400*200*8*13',HN400*200*8*13',#6751,#6753,'PO(?)');	IFCQUANTITYVOLUME('NetVolume',S,S,0.0320391751306109);
#6755= IFCQUANTITYLENGTH('Length',S,S,3738.36342403972);	#6807=
#6756=	IFCQUANTITYVOLUME('GrossVolume',S,S,0.0328996021971038);
IFCQUANTITYAREA('OuterSurfaceArea',S,S,5.92156766367891);	#6808= IFCQUANTITYWEIGHT('NetWeight',S,S,251.507524775296);
#6757=	#6809=
IFCQUANTITYAREA('GrossSurfaceArea',S,S,5.92156766367891);	IFCQUANTITYWEIGHT('GrossWeight',S,S,258.261877247265);
#6758=	#6810=
IFCQUANTITYVOLUME('NetVolume',S,S,0.0306246731697146);	IFCELEMENTQUANTITY('2OZGSv1w13vR17ZVlgW4Oj',#5,'BaseQuantities',S,S,(#6803,#6804,#6805,#361,#6806,#6807,#6808,#6809));
#6759=	#6811= IFCLOCALPLACEMENT(#30,#10);
IFCQUANTITYVOLUME('GrossVolume',S,S,0.031447113120221);	#6812=
#6760= IFCQUANTITYWEIGHT('NetWeight',S,S,240.40368438226);	IFCELEMENTASSEMBLY('1Ogjm0003GZ4qE3SsC34u',#5,'Steel Assembly',S,S,#6811,S,'BE-0?'),..NOTDEFINED,..RIGID_FRAME.);
#6761=	#6813= IFCPROPERTYSET('1InZvojFv3Dvkq9h7HqZj',#5,'Tekla Assembly',Assembly Properties',(#34,#313,#5412,#3326,#5413,#6765,#318));
IFCQUANTITYWEIGHT('GrossWeight',S,S,246.859838015724);	#6814= IFCQUANTITYLENGTH('Width',S,S,200.000000002772);
#6762=	#6815=
IFCELEMENTQUANTITY('04Og2YCOH1fRvzdyP36ngw',#5,'BaseQuantities',S,S,(#6755,#6756,#6757,#361,#6758,#6759,#6760,#6761));	IFCELEMENTQUANTITY('1AA6N3QenCWRVbi8Vish1',#5,'BaseQuantities',S,S,(#6814));
#6763= IFCLOCALPLACEMENT(#30,#10);	#6816=
#6764=	IFCCARTESIANPOINT((6736.38626502796,67336.3384228256,47.3827079919616));
IFCELEMENTASSEMBLY('1Ogjm0003KJ4qE3SsC34u',#5,'Steel Assembly',S,S,#6763,S,'BE-0?'),..NOTDEFINED,..RIGID_FRAME.);	#6817= IFCAXIS2PLACEMENT3D(#6816,#5418,#5419);
#6765= IFCPROPERTYSET('SINGLEVALUE(Assembly/Cast unit position code',S,IFCLABEL('5B-C'),S);	#6818= IFCLOCALPLACEMENT(#6811,#6817);
#6766= IFCPROPERTYSET('2ce9g9mH3K93WTvBSPKn_',#5,'Tekla Assembly',Assembly Properties',(#34,#313,#5317,#3326,#5318,#6765,#318));	#6819=
#6767=	IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5424));
IFCCARTESIANPOINT((6749.99984728578,61675.917451185,3429.11612816652));	#6820= IFCPRODUCTDEFINITIONSHAPE(S,S,(#6819));
#6768= IFCAXIS2PLACEMENT3D(#6767,#7,#5324);	#6821=
#6769= IFCLOCALPLACEMENT(#6763,#6768);	IFCMEMBER('1Ogjm0003GJ4qE3SsC34u',#5,'BEAM',HN400*200*8*13',HN400*200*8*13',#6818,#6820,'PO(?)');
#6770=	#6822= IFCQUANTITYLENGTH('Length',S,S,3936.63488738538);
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5329));	#6823=
#6771= IFCPRODUCTDEFINITIONSHAPE(S,S,(#6770));	IFCQUANTITYAREA('OuterSurfaceArea',S,S,6.23562966161844);
#6772=	#6824=
IFCMEMBER('1Ogjm0003K34qE3SsC34u',#5,'BEAM',HN400*200*8*13',HN400*200*8*13',#6769,#6771,'PO(?)');	IFCQUANTITYAREA('GrossSurfaceArea',S,S,6.23562966161844);
#6773= IFCLOCALPLACEMENT(#30,#10);	#6825=
#6774=	IFCQUANTITYVOLUME('NetVolume',S,S,0.0322489129974968);
IFCELEMENTASSEMBLY('1Ogjm0003J34qE3SsC34u',#5,'Steel Assembly',S,S,#6773,S,'BE-0?'),..NOTDEFINED,..RIGID_FRAME.);	#6826=
#6775= IFCPROPERTYSET('1bww6HPxz7fBS7NvD8EPg',#5,'Tekla Assembly',Assembly Properties',(#34,#313,#5350,#3326,#5351,#6765,#318));	IFCQUANTITYVOLUME('GrossVolume',S,S,0.0331149726726858);
#6776= IFCQUANTITYLENGTH('Width',S,S,200.000000003041);	#6827= IFCQUANTITYWEIGHT('NetWeight',S,S,253.15396703035);
#6777=	#6828=
IFCELEMENTQUANTITY('0ieT74EYv3NgOwWQ8L_V2x',#5,'BaseQuantities',S,S,(#6776));	IFCQUANTITYWEIGHT('GrossWeight',S,S,259.952553480584);
#6778=	#6829=
IFCCARTESIANPOINT((6750.00000745035,63660.6106453893,47.1326607758573));	IFCELEMENTQUANTITY('1eNmRdrPDGeEgn3IRN94r',#5,'BaseQuantities',S,S,(#6822,#6823,#6824,#361,#6825,#6826,#6827,#6828));
#6779= IFCAXIS2PLACEMENT3D(#6778,#7,#5356);	#6830= IFCLOCALPLACEMENT(#30,#10);
#6780= IFCLOCALPLACEMENT(#6773,#6779);	#6831=
#6781=	IFCELEMENTASSEMBLY('1Ogjm0003FJ4qE3SsC34u',#5,'Steel Assembly',S,S,#6830,S,'BE-0?'),..NOTDEFINED,..RIGID_FRAME.);
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5361));	#6832= IFCPROPERTYSET('3gUD_xak167Qq9_cx2wGg',#5,'Tekla Assembly',Assembly Properties',(#34,#313,#5445,#3326,#5446,#6765,#318));
#6782= IFCPRODUCTDEFINITIONSHAPE(S,S,(#6781));	#6833= IFCQUANTITYLENGTH('Width',S,S,200.000000007574);
	#6834=
	IFCELEMENTQUANTITY('32JA004T19QfEn_JuE6L',#5,'BaseQuantities',S,S,(#6833));

## Appendix

<p>#6835= IFCCARTESIANPOINT((6749.37805121446,69012.8023409912,3599.03863920331));  #6836= IFCAXIS2PLACEMENT3D(#6835,#5451,#5452);  #6837= IFCLLOCALPLACEMENT(#6830,#6836);  #6838=  IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5457));  #6839= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#6838));  #6840=  IFCMEMBER('1Ogimc0003F34qE3SsC34u',#5,'BEAM',HN400*200*8*13',HN400*200*8*13',#6837,#6839,'PO(?));  #6841= IFCQUANTITYLENGTH('Length',S,\$,4007.09068679575);  #6842=  IFCQUANTITYAREA('OuterSurfaceArea',S,\$,6.34723164788447);  #6843=  IFCQUANTITYAREA('GrossSurfaceArea',S,\$,6.34723164788447);  #6844=  IFCQUANTITYVOLUME('NetVolume',S,\$,0.0328260869063333);  #6845=  IFCQUANTITYVOLUME('GrossVolume',S,\$,0.0337076468573259);  #6846= IFCQUANTITYWEIGHT('NetWeight',S,\$,257.684782214717);  #6847=  IFCQUANTITYWEIGHT('GrossWeight',S,\$,264.605027830008);  #6848=  IFCELEMENTQUANTITY('3iqDiyatET3ovuo_ZLYOor8',#5,'BaseQuantities',S,\$,(#6841,#6842,#6843,#361,#6844,#6845,#6846,#6847));  #6849= IFCLLOCALPLACEMENT(#30,#10);  #6850=  IFCELEMENTASSEMBLY('1Ogimc0003E34qE3SsC34u',#5,'Steel Assembly',S,\$,#6849,S,'BE-0(?)',..NOTDEFINED,..RIGID_FRAME.);  #6851= IFCPROPERTYSET('04X9IOJET41vMzIRpz5NyX',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#5477,#3326,#5478,#6765,#318));  #6852=  IFCCARTESIANPOINT((6750.00000000959,71108.0909386425,47.5174320518101));  #6853= IFCAXIS2PLACEMENT3D(#6852,#7,#5481);  #6854= IFCLLOCALPLACEMENT(#6849,#6853);  #6855=  IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5486));  #6856= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#6855));  #6857=  IFCMEMBER('1Ogimc0003Dp4qE3SsC34u',#5,'BEAM',HN400*200*8*13',HN400*200*8*13',#6854,#6856,'PO(?));  #6858= IFCLLOCALPLACEMENT(#30,#10);  #6859=  IFCELEMENTASSEMBLY('1Ogimc0003Cp4qE3SsC34u',#5,'Steel Assembly',S,\$,#6858,S,'BE-0(?)',..NOTDEFINED,..RIGID_FRAME.);  #6860= IFCPROPERTYSET('2ieBWde9D3LOdPGaDEYfMk',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#5506,#3326,#5507,#6765,#318));  #6861= IFCQUANTITYLENGTH('Width',S,\$,200.000000007756);  #6862=  IFCELEMENTQUANTITY('1T61MrNHz43w9jV1BmZyOy',#5,'BaseQuantities',S,\$,(#6861));  #6863=  IFCCARTESIANPOINT((6749.99996743218,72837.9140419774,3687.75982843768));  #6864= IFCAXIS2PLACEMENT3D(#6863,#7,#5512);  #6865= IFCLLOCALPLACEMENT(#6858,#6864);  #6866=  IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5517));  #6867= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#6866));  #6868=  IFCMEMBER('1Ogimc0003CZ4qE3SsC34u',#5,'BEAM',HN400*200*8*13',HN400*200*8*13',#6865,#6867,'PO(?));  #6869=  IFCQUANTITYVOLUME('NetVolume',S,\$,0.0336710274315038);  #6870= IFCQUANTITYWEIGHT('NetWeight',S,\$,264.317565337305);  #6871=  IFCELEMENTQUANTITY('1BM7caOfD8GR3gKIR2TTRo',#5,'BaseQuantities',S,\$,(#5528,#5529,#5530,#361,#6869,#5532,#6870,#5534));  #6872= IFCLLOCALPLACEMENT(#30,#10);  #6873=  IFCELEMENTASSEMBLY('1Ogimc0003BZ4qE3SsC34u',#5,'Steel Assembly',S,\$,#6872,S,'BE-0(?)',..NOTDEFINED,..RIGID_FRAME.);  #6874= IFCPROPERTYSET('2iohF_cM1D8xd_H3SvJQgr',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#5538,#3264,#5539,#6765,#318));  #6875= IFCQUANTITYLENGTH('Width',S,\$,200.000000005006);  #6876=  IFCELEMENTQUANTITY('39v3UxBUnBhvHbOnWwapSk',#5,'BaseQuantities',S,\$,(#6875));  #6877=  IFCCARTESIANPOINT((6750.0000152729,74981.9789320803,47.536317550437));  #6878= IFCAXIS2PLACEMENT3D(#6877,#7,#5544);  #6879= IFCLLOCALPLACEMENT(#6872,#6878);  #6880=  IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5549));  #6881= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#6880));  #6882=  IFCMEMBER('1Ogimc0003BJ4qE3SsC34u',#5,'BEAM',HN400*200*8*13',HN400*200*8*13',#6879,#6881,'PO(?));  #6883=  IFCQUANTITYVOLUME('NetVolume',S,\$,0.033906035461537);  #6884= IFCQUANTITYWEIGHT('NetWeight',S,\$,266.162378373066);  #6885=  IFCELEMENTQUANTITY('0ZONzADu19DRrwyG7KUR55',#5,'BaseQuantities',S,\$,(#5560,#5561,#5562,#361,#6883,#5564,#6884,#5566));  #6886= IFCLLOCALPLACEMENT(#30,#10);  #6887=  IFCELEMENTASSEMBLY('1Ogimc0003AJ4qE3SsC34u',#5,'Steel Assembly',S,\$,#6886,S,'BE-0(?)',..NOTDEFINED,..RIGID_FRAME.);</p>	<p>#6888= IFCPROPERTYSET('1b12CSWyp18e0VKgveWGYL',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#5570,#3326,#5571,#6765,#318));  #6889=  IFCCARTESIANPOINT((6749.99998251364,76769.678292098,3779.00496765743));  #6890= IFCAXIS2PLACEMENT3D(#6889,#7,#5576);  #6891= IFCLLOCALPLACEMENT(#6886,#6890);  #6892=  IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5581));  #6893= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#6892));  #6894=  IFCMEMBER('1Ogimc0003A34qE3SsC34u',#5,'BEAM',HN400*200*8*13',HN400*200*8*13',#6891,#6893,'PO(?));  #6895=  IFCQUANTITYVOLUME('NetVolume',S,\$,0.0345514511420561);  #6896= IFCQUANTITYWEIGHT('NetWeight',S,\$,271.22889146514);  #6897=  IFCELEMENTQUANTITY('0lxfpdqr14Ve8Zap_UoF0j',#5,'BaseQuantities',S,\$,(#5591,#5592,#5593,#361,#6895,#5595,#6896,#5597));  #6898= IFCLLOCALPLACEMENT(#30,#10);  #6899=  IFCELEMENTASSEMBLY('1Ogimc0003934qE3SsC34u',#5,'Steel Assembly',S,\$,#6898,S,'BE-0(?)',..NOTDEFINED,..RIGID_FRAME.);  #6900= IFCPROPERTYSET('2d69WL2Hf2M0jhWYeuqmf',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#5601,#3326,#5602,#6765,#318));  #6901= IFCQUANTITYLENGTH('Width',S,\$,200.000000013111);  #6902=  IFCELEMENTQUANTITY('3PwZAOHLj0lGtK9xCiWbpP',#5,'BaseQuantities',S,\$,(#6901));  #6903=  IFCCARTESIANPOINT((6750.00000079753,78965.5173136682,47.5856132983629));  #6904= IFCAXIS2PLACEMENT3D(#6903,#7,#5607);  #6905= IFCLLOCALPLACEMENT(#6898,#6904);  #6906=  IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5612));  #6907= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#6906));  #6908=  IFCMEMBER('1Ogimc00038p4qE3SsC34u',#5,'BEAM',HN400*200*8*13',HN400*200*8*13',#6905,#6907,'PO(?));  #6909=  IFCQUANTITYVOLUME('NetVolume',S,\$,0.0347644180063364);  #6910= IFCQUANTITYWEIGHT('NetWeight',S,\$,272.90068134974);  #6911=  IFCELEMENTQUANTITY('11cBum16DChetjMr51Zvc',#5,'BaseQuantities',S,\$,(#5622,#5623,#5624,#361,#6909,#5626,#6910,#5628));  #6912= IFCLLOCALPLACEMENT(#30,#10);  #6913=  IFCELEMENTASSEMBLY('1Ogimc00037p4qE3SsC34u',#5,'Steel Assembly',S,\$,#6912,S,'BE-0(?)',..NOTDEFINED,..RIGID_FRAME.);  #6914= IFCPROPERTYSET('3wulNpPnn5ngnNQKjxkEub',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#5632,#3264,#5633,#6765,#318));  #6915= IFCQUANTITYLENGTH('Width',S,\$,200.000000005573);  #6916=  IFCELEMENTQUANTITY('1OGNoMrAD4OwUAF14HCuU',#5,'BaseQuantities',S,\$,(#6915));  #6917=  IFCCARTESIANPOINT((6749.99998252711,80814.7388889691,3872.9043002239));  #6918= IFCAXIS2PLACEMENT3D(#6917,#7,#5638);  #6919= IFCLLOCALPLACEMENT(#6912,#6918);  #6920=  IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5643));  #6921= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#6920));  #6922=  IFCMEMBER('1Ogimc00037Z4qE3SsC34u',#5,'BEAM',HN400*200*8*13',HN400*200*8*13',#6919,#6921,'PO(?));  #6923=  IFCQUANTITYVOLUME('NetVolume',S,\$,0.0354648610427031);  #6924= IFCQUANTITYWEIGHT('NetWeight',S,\$,278.399159185219);  #6925=  IFCELEMENTQUANTITY('2OoLrQpP7gvUBt7GtMTwx',#5,'BaseQuantities',S,\$,(#5654,#5655,#5656,#361,#6923,#5658,#6924,#5660));  #6926= IFCLLOCALPLACEMENT(#30,#10);  #6927=  IFCELEMENTASSEMBLY('1Ogimc00036Z4qE3SsC34u',#5,'Steel Assembly',S,\$,#6926,S,'BE-0(?)',..NOTDEFINED,..RIGID_FRAME.);  #6928= IFCPROPERTYSET('3c_9hX495nPYQFTQ_QGLn',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#5664,#3264,#233,#6765,#318));  #6929= IFCQUANTITYLENGTH('Width',S,\$,200.000000004831);  #6930=  IFCELEMENTQUANTITY('1WRFuYo55tPH8NyRtW_Kd',#5,'BaseQuantities',S,\$,(#6929));  #6931=  IFCCARTESIANPOINT((6750.0000077387,83062.3159633242,47.6065863693669));  #6932= IFCAXIS2PLACEMENT3D(#6931,#7,#5669);  #6933= IFCLLOCALPLACEMENT(#6926,#6932);  #6934=  IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5674));  #6935= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#6934));  #6936=  IFCMEMBER('1Ogimc00036J4qE3SsC34u',#5,'BEAM',HN400*200*8*13',HN400*200*8*13',#6933,#6935,'PO(?));  #6937=  IFCQUANTITYVOLUME('NetVolume',S,\$,0.0356415747372568);  #6938= IFCQUANTITYWEIGHT('NetWeight',S,\$,279.786361687466);  #6939=  IFCELEMENTQUANTITY('0r9fvZonH6AJU2SYZZFN_',#5,'BaseQuantities',S,\$,(#5683,#5684,#5685,#361,#6937,#5687,#6938,#5689));  #6940= IFCLLOCALPLACEMENT(#30,#10);</p>
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#6941= IFCELEMENTASSEMBLY('1Ogimc00035J4qE3SsC34u',#5,'Steel Assembly',S,S,#6940,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#6942= IFCPROPERTYSET('3COV50Rof0at5ESGsjEsxa',#5,'Tekla Assembly',Assembly Properties',(#34,#313,#5693,#3326,#5694,#6765,#318));  
#6943= IFCCARTESIANPOINT((6749.9999873883,84973.0711934907,3969.39247271504));  
#6944= IFCAxis2PLACEMENT3D(#6943,#7,#5699);  
#6945= IFLOCALPLACEMENT(#6940,#6944);  
#6946= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5704));  
#6947= IFCPRODUCTDEFINITIONSHAPE(S,S,(#6946));  
#6948= IFCMEMBER('1Ogimc0003534qE3SsC34u',#5,'BEAM',HN400\*200\*8\*13,'HN400\*200\*8\*13',#6945,#6947,'P0(?)');  
#6949= IFCQUANTITYLENGTH('Length',S,S,4443.0691051246);  
#6950= IFCQUANTITYAREA('OuterSurfaceArea',S,S,7.03782146251737);  
#6951= IFCQUANTITYAREA('GrossSurfaceArea',S,S,7.03782146251737);  
#6952= IFCQUANTITYVOLUME('NetVolume',S,S,0.0363976221092835);  
#6953= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0373750973123082);  
#6954= IFCQUANTITYWEIGHT('NetWeight',S,S,285.721333557875);  
#6955= IFCQUANTITYWEIGHT('GrossWeight',S,S,293.394513901619);  
#6956= IFCELEMENTQUANTITY('0S73gyTIP9whx9kw8yN6fx',#5,'BaseQuantities',S,S,#6949,#6950,#6951,#361,#6952,#6953,#6954,#6955);  
#6957= IFLOCALPLACEMENT(#30,#10);  
#6958= IFCELEMENTASSEMBLY('1Ogimc0003434qE3SsC34u',#5,'Steel Assembly',S,S,#6957,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#6959= IFCPROPERTYSET('3ZJMouc3nAVPBdc7dZVU8F',#5,'Tekla Assembly',Assembly Properties',(#34,#313,#5725,#3326,#5726,#6765,#318));  
#6960= IFCQUANTITYLENGTH('Width',S,S,200.000000006563);  
#6961= IFCELEMENTQUANTITY('0cftGeaN57W8FzsWKJBIKN',#5,'BaseQuantities',S,S,(#6960));  
#6962= IFCCARTESIANPOINT((6750.00000054543,87272.3739126578,47.6011366162178));  
#6963= IFCAxis2PLACEMENT3D(#6962,#7,#5731);  
#6964= IFLOCALPLACEMENT(#6957,#6963);  
#6965= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5736));  
#6966= IFCPRODUCTDEFINITIONSHAPE(S,S,(#6965));  
#6967= IFCMEMBER('1Ogimc00033p4qE3SsC34u',#5,'BEAM',HN400\*200\*8\*13,'HN400\*200\*8\*13',#6964,#6966,'P0(?)');  
#6968= IFCQUANTITYLENGTH('Length',S,S,4460.13923567892);  
#6969= IFCQUANTITYAREA('OuterSurfaceArea',S,S,7.06486054931541);  
#6970= IFCQUANTITYAREA('GrossSurfaceArea',S,S,7.06486054931541);  
#6971= IFCQUANTITYVOLUME('NetVolume',S,S,0.0365374606187764);  
#6972= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0375186912505311);  
#6973= IFCQUANTITYWEIGHT('NetWeight',S,S,286.819065857395);  
#6974= IFCQUANTITYWEIGHT('GrossWeight',S,S,294.521726316669);  
#6975= IFCELEMENTQUANTITY('36pPe4FNz1Rhk 00KgWsj5',#5,'BaseQuantities',S,S,(#6968,#6969,#6970,#361,#6971,#6972,#6973,#6974));  
#6976= IFLOCALPLACEMENT(#30,#10);  
#6977= IFCELEMENTASSEMBLY('1Ogimc00032p4qE3SsC34u',#5,'Steel Assembly',S,S,#6976,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#6978= IFCPROPERTYSET('2I6yvWn554Qe0I VV7KBN4',#5,'Tekla Assembly',Assembly Properties',(#34,#313,#5756,#3326,#5757,#6765,#318));  
#6979= IFCQUANTITYLENGTH('Width',S,S,200.000000012165);  
#6980= IFCELEMENTQUANTITY('2k20VSZb4Uh7VMa10ISSw',#5,'BaseQuantities',S,S,(#6979));  
#6981= IFCCARTESIANPOINT((6749.99999104284,89244.6762240463,4068.47190896121));  
#6982= IFCAxis2PLACEMENT3D(#6981,#7,#5762);  
#6983= IFLOCALPLACEMENT(#6976,#6982);  
#6984= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5767));  
#6985= IFCPRODUCTDEFINITIONSHAPE(S,S,(#6984));  
#6986= IFCMEMBER('1Ogimc00032Z4qE3SsC34u',#5,'BEAM',HN400\*200\*8\*13,'HN400\*200\*8\*13',#6983,#6985,'P0(?)');  
#6987= IFCQUANTITYVOLUME('NetVolume',S,S,0.0373496613484051);  
#6988= IFCQUANTITYWEIGHT('NetWeight',S,S,293.19484158498);  
#6989= IFCELEMENTQUANTITY('0rel\_jSt50I03qtnx3qGmh',#5,'BaseQuantities',S,S,(#5777,#5778,#5779,#361,#6987,#5781,#6988,#5783));  
#6990= IFLOCALPLACEMENT(#30,#10);  
#6991= IFCELEMENTASSEMBLY('1Ogimc00031Z4qE3SsC34u',#5,'Steel Assembly',S,S,#6990,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#6992= IFCPROPERTYSET('1p0FUW25bFyPl1hbalpahR',#5,'Tekla Assembly',Assembly Properties',(#34,#313,#5787,#3264,#5788,#6765,#318));  
#6993= IFCQUANTITYLENGTH('Width',S,S,200.000000010215);

#6994= IFCELEMENTQUANTITY('3FjpcwxfLAHBK2HWmWtrg',#5,'BaseQuantities',S,S,(#6993));  
#6995= IFCCARTESIANPOINT((6750.00000037636,91602.2911223397,47.6837975769933));  
#6996= IFCAxis2PLACEMENT3D(#6995,#7,#5793);  
#6997= IFLOCALPLACEMENT(#6990,#6996);  
#6998= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5798));  
#6999= IFCPRODUCTDEFINITIONSHAPE(S,S,(#6998));  
#7000= IFCMEMBER('1Ogimc00031J4qE3SsC34u',#5,'BEAM',HN400\*200\*8\*13,'HN400\*200\*8\*13',#6997,#6999,'P0(?)');  
#7001= IFCQUANTITYVOLUME('NetVolume',S,S,0.037478070196591);  
#7002= IFCQUANTITYWEIGHT('NetWeight',S,S,294.202851043239);  
#7003= IFCELEMENTQUANTITY('2LxMmsR7b56B\_xep06qEkO',#5,'BaseQuantities',S,S,(#5808,#5809,#5810,#361,#7001,#5812,#7002,#5814));  
#7004= IFLOCALPLACEMENT(#30,#10);  
#7005= IFCELEMENTASSEMBLY('1Ogimc00030J4qE3SsC34u',#5,'Steel Assembly',S,S,#7004,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#7006= IFCPROPERTYSET('0FobylSeLDj943\_EI\_T5BM',#5,'Tekla Assembly',Assembly Properties',(#34,#313,#5818,#3264,#5819,#6765,#318));  
#7007= IFCQUANTITYLENGTH('Width',S,S,200.000000010958);  
#7008= IFCELEMENTQUANTITY('3YbXfZjSzAMQy5KYzoc1BH',#5,'BaseQuantities',S,S,(#7007));  
#7009= IFCCARTESIANPOINT((6749.99999541542,93636.212428439,4170.2976469538));  
#7010= IFCAxis2PLACEMENT3D(#7009,#7,#5824);  
#7011= IFLOCALPLACEMENT(#7004,#7010);  
#7012= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5829));  
#7013= IFCPRODUCTDEFINITIONSHAPE(S,S,(#7012));  
#7014= IFCMEMBER('1Ogimc0003034qE3SsC34u',#5,'BEAM',HN400\*200\*8\*13,'HN400\*200\*8\*13',#7011,#7013,'P0(?)');  
#7015= IFCQUANTITYLENGTH('Length',S,S,4677.98080126243);  
#7016= IFCQUANTITYAREA('OuterSurfaceArea',S,S,7.40992158919968);  
#7017= IFCQUANTITYAREA('GrossSurfaceArea',S,S,7.40992158919968);  
#7018= IFCQUANTITYVOLUME('NetVolume',S,S,0.0383220187240562);  
#7019= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0393511745002195);  
#7020= IFCQUANTITYWEIGHT('NetWeight',S,S,300.827846983841);  
#7021= IFCQUANTITYWEIGHT('GrossWeight',S,S,308.906719826723);  
#7022= IFCELEMENTQUANTITY('2XxEeJsn3Igew5D5KeGly',#5,'BaseQuantities',S,S,(#7015,#7016,#7017,#361,#7018,#7019,#7020,#7021));  
#7023= IFLOCALPLACEMENT(#30,#10);  
#7024= IFCELEMENTASSEMBLY('1Ogimc000234qE3SsC34u',#5,'Steel Assembly',S,S,#7023,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#7025= IFCPROPERTYSET('2T77N6Alv3V8LfdRpGJlj',#5,'Tekla Assembly',Assembly Properties',(#34,#313,#5849,#3326,#5850,#6765,#318));  
#7026= IFCCARTESIANPOINT((6750.00000018732,96052.1313206982,47.736843285967));  
#7027= IFCAxis2PLACEMENT3D(#7026,#7,#5855);  
#7028= IFLOCALPLACEMENT(#7023,#7027);  
#7029= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5860));  
#7030= IFCPRODUCTDEFINITIONSHAPE(S,S,(#7029));  
#7031= IFCMEMBER('1Ogimc0002\_p4qE3SsC34u',#5,'BEAM',HN400\*200\*8\*13,'HN400\*200\*8\*13',#7028,#7030,'P0(?)');  
#7032= IFCQUANTITYLENGTH('Length',S,S,4692.20544055999);  
#7033= IFCQUANTITYAREA('OuterSurfaceArea',S,S,7.43245341784703);  
#7034= IFCQUANTITYAREA('GrossSurfaceArea',S,S,7.43245341784703);  
#7035= IFCQUANTITYVOLUME('NetVolume',S,S,0.0384385469691281);  
#7036= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0394708321659906);  
#7037= IFCQUANTITYWEIGHT('NetWeight',S,S,301.742593707655);  
#7038= IFCQUANTITYWEIGHT('GrossWeight',S,S,309.846032503027);  
#7039= IFCELEMENTQUANTITY('240B4DhbBewqp\$ beF6AT',#5,'BaseQuantities',S,S,(#7032,#7033,#7034,#361,#7035,#7036,#7037,#7038));  
#7040= IFLOCALPLACEMENT(#30,#10);  
#7041= IFCELEMENTASSEMBLY('1Ogimc0002zp4qE3SsC34u',#5,'Steel Assembly',S,S,#7040,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#7042= IFCPROPERTYSET('0h0Sf4b0P6KRix0GgAkPR',#5,'Tekla Assembly',Assembly Properties',(#34,#313,#5880,#3326,#5881,#6765,#318));  
#7043= IFCCARTESIANPOINT((6749.99999798140,955438977,4274.6108906372));  
#7044= IFCAxis2PLACEMENT3D(#7043,#7,#5886);  
#7045= IFLOCALPLACEMENT(#7040,#7044);  
#7046= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5891));  
#7047= IFCPRODUCTDEFINITIONSHAPE(S,S,(#7046));

## Appendix

#7048=  
IFC MEMBER('1Ogjm0002zZ4qE3SsC34u',#5,'BEAM','HN400\*200\*8  
\*13','HN400\*200\*8\*13',#7045,#7047,'PO(?));  
#7049= IFC LOCAL PLACEMENT(#30,#10);  
#7050=  
IFCELEMENT ASSEMBLY('1Ogjm0002yZ4qE3SsC34u',#5,'Steel  
Assembly',S,S,#7049,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#7051= IFC PROPERTY SET('3t9WQRhJrCFwBycoEzOSZt',#5,'Tekla  
Assembly','Assembly  
Properties',(#34,#313,#5912,#3264,#2480,#6765,#318));  
#7052=  
IFC CARTESIAN POINT((6750.00000001182,100608.626716198,47.65  
69296947326));  
#7053= IFC AXIS2 PLACEMENT 3D(#7052,#7,5917);  
#7054= IFC LOCAL PLACEMENT(#7049,#7053);  
#7055=  
IFC SHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5922));  
#7056= IFC PRODUCT DEFINITION SHAPE(S,S,(#7055));  
#7057=  
IFC MEMBER('1Ogjm0002yJ4qE3SsC34u',#5,'BEAM','HN400\*200\*8  
\*13','HN400\*200\*8\*13',#7054,#7056,'PO(?));  
#7058= IFC LOCAL PLACEMENT(#30,#10);  
#7059=  
IFCELEMENT ASSEMBLY('1Ogjm0002xJ4qE3SsC34u',#5,'Steel  
Assembly',S,S,#7058,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#7060= IFC PROPERTY SET('30XnoZi6P8TQDIWFKZ92a',#5,'Tekla  
Assembly','Assembly  
Properties',(#34,#313,#5941,#3264,#5942,#6765,#318));  
#7061= IFC QUANTITY LENGTH('Width',S,S,200.000000005719);  
#7062=  
IFCELEMENT QUANTITY('01m7M5G8DCW9C3\_DwSH4Js',#5,'Base  
Quantities',S,S,(#7061));  
#7063=  
IFC CARTESIAN POINT((6750.000000412773,102738.450919514,4380.  
0574639162));  
#7064= IFC AXIS2 PLACEMENT 3D(#7063,#7,5947);  
#7065= IFC LOCAL PLACEMENT(#7058,#7064);  
#7066=  
IFC SHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5952));  
#7067= IFC PRODUCT DEFINITION SHAPE(S,S,(#7066));  
#7068=  
IFC MEMBER('1Ogjm0002x34qE3SsC34u',#5,'BEAM','HN400\*200\*8  
\*13','HN400\*200\*8\*13',#7065,#7067,'PO(?));  
#7069= IFC QUANTITY LENGTH('Length',S,S,4886.10178691516);  
#7070=  
IFC QUANTITY AREA('OuterSurfaceArea',S,S,7.73958523047362);  
#7071=  
IFC QUANTITY AREA('GrossSurfaceArea',S,S,7.73958523047362);  
#7072=  
IFC QUANTITY VOLUME('NetVolume',S,S,0.0400269458383151);  
#7073=  
IFC QUANTITY VOLUME('GrossVolume',S,S,0.0411018882315303);  
#7074= IFC QUANTITY WEIGHT('NetWeight',S,S,314.211524830774);  
#7075=  
IFC QUANTITY WEIGHT('GrossWeight',S,S,322.649822617513);  
#7076=  
IFCELEMENT QUANTITY('2g\_ZIjarr2xQr6EsnSqAYK',#5,'BaseQuan  
tities',S,S,(#7069,#7070,#7071,#361,#7072,#7073,#7074,#7075));  
#7077= IFC LOCAL PLACEMENT(#30,#10);  
#7078=  
IFCELEMENT ASSEMBLY('1Ogjm0002w34qE3SsC34u',#5,'Steel  
Assembly',S,S,#7077,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#7079= IFC PROPERTY SET('03k2lTmtP14PgoabhHQsZa',#5,'Tekla  
Assembly','Assembly  
Properties',(#34,#313,#5972,#3326,#5973,#6765,#318));  
#7080=  
IFC CARTESIAN POINT((6749.99999983745,105238.576675674,47.24  
69771723622));  
#7081= IFC AXIS2 PLACEMENT 3D(#7080,#7,5978);  
#7082= IFC LOCAL PLACEMENT(#7077,#7081);  
#7083=  
IFC SHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5983));  
#7084= IFC PRODUCT DEFINITION SHAPE(S,S,(#7083));  
#7085=  
IFC MEMBER('1Ogjm0002vp4qE3SsC34u',#5,'BEAM','HN400\*200\*8  
\*13','HN400\*200\*8\*13',#7082,#7084,'PO(?));  
#7086= IFC QUANTITY LENGTH('Length',S,S,4917.33449611322);  
#7087=  
IFC QUANTITY AREA('OuterSurfaceArea',S,S,7.78905784184334);  
#7088=  
IFC QUANTITY AREA('GrossSurfaceArea',S,S,7.78905784184334);  
#7089=  
IFC QUANTITY VOLUME('NetVolume',S,S,0.0402828041922207);  
#7090=  
IFC QUANTITY VOLUME('GrossVolume',S,S,0.0413646177813044);  
#7091= IFC QUANTITY WEIGHT('NetWeight',S,S,316.220012908933);  
#7092=  
IFC QUANTITY WEIGHT('GrossWeight',S,S,324.712249583239);  
#7093=  
IFCELEMENT QUANTITY('0EW3dE9jPEOOkYVIBH7jr2',#5,'BaseQu  
antities',S,S,(#7086,#7087,#7088,#361,#7089,#7090,#7091,#7092));  
#7094= IFC LOCAL PLACEMENT(#30,#10);  
#7095=  
IFCELEMENT ASSEMBLY('1Ogjm0002up4qE3SsC34u',#5,'Steel  
Assembly',S,S,#7094,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#7096= IFC PROPERTY SET('2rxzqMH4LEjxHfePhNlq8V',#5,'Tekla  
Assembly','Assembly  
Properties',(#34,#313,#6003,#3326,#2442,#6765,#318));  
#7097= IFC QUANTITY LENGTH('Width',S,S,200.000000008586);  
#7098=  
IFCELEMENT QUANTITY('3ggEH94bD1WPiT7DcOVYtS',#5,'BaseQu  
antities',S,S,(#7097));  
#7099=  
IFC CARTESIAN POINT((6750.0000086078,107389.940944858,4488.0  
2674512784));  
#7100= IFC AXIS2 PLACEMENT 3D(#7099,#7,6008);  
#7101= IFC LOCAL PLACEMENT(#7094,#7100);  
#7102=  
IFC SHAPEREPRESENTATION(#12,'Body','SweptSolid',(#6013));  
#7103= IFC PRODUCT DEFINITION SHAPE(S,S,(#7102));  
#7104=  
IFC MEMBER('1Ogjm0002uZ4qE3SsC34u',#5,'BEAM','HN400\*200\*8  
\*13','HN400\*200\*8\*13',#7101,#7103,'PO(?));  
#7105=  
IFC QUANTITY VOLUME('NetVolume',S,S,0.0410808501579848);  
#7106= IFC QUANTITY WEIGHT('NetWeight',S,S,322.484673740181);  
#7107=  
IFCELEMENT QUANTITY('3yJwN4uvvFvQLONyYVRjxD',#5,'BaseQ  
uantities',S,S,(#6022,#6023,#6024,#361,#7105,#6026,#7106,#6028));  
#7108= IFC LOCAL PLACEMENT(#30,#10);  
#7109=  
IFCELEMENT ASSEMBLY('1Ogjm0002iZ4qE3SsC34u',#5,'Steel  
Assembly',S,S,#7108,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#7110= IFC PROPERTY SET('2dhu38IRP00BVQH0c9pbTq',#5,'Tekla  
Assembly','Assembly  
Properties',(#34,#313,#6032,#3264,#6033,#6765,#318));  
#7111= IFC QUANTITY LENGTH('Width',S,S,200.000000012136);  
#7112=  
IFCELEMENT QUANTITY('3PSPrWtenAn8jzmzKMinL16',#5,'BaseQua  
ntities',S,S,(#7111));  
#7113=  
IFC CARTESIAN POINT((6750.00000863866,107565.475385841,4490.  
97146389616));  
#7114= IFC AXIS2 PLACEMENT 3D(#7113,#336,#6038);  
#7115= IFC LOCAL PLACEMENT(#7108,#7114);  
#7116=  
IFC SHAPEREPRESENTATION(#12,'Body','SweptSolid',(#6043));  
#7117= IFC PRODUCT DEFINITION SHAPE(S,S,(#7116));  
#7118=  
IFC MEMBER('1Ogjm0002j4qE3SsC34u',#5,'BEAM','HN400\*200\*8\*  
13','HN400\*200\*8\*13',#7115,#7117,'PO(?));  
#7119= IFC QUANTITY LENGTH('Length',S,S,5107.42005110302);  
#7120=  
IFC QUANTITY AREA('OuterSurfaceArea',S,S,8.09015336094719);  
#7121=  
IFC QUANTITY AREA('GrossSurfaceArea',S,S,8.09015336094719);  
#7122=  
IFC QUANTITY VOLUME('NetVolume',S,S,0.0418399850588135);  
#7123=  
IFC QUANTITY VOLUME('GrossVolume',S,S,0.0429636174698786);  
#7124= IFC QUANTITY WEIGHT('NetWeight',S,S,328.443882711686);  
#7125=  
IFC QUANTITY WEIGHT('GrossWeight',S,S,337.264397138547);  
#7126=  
IFCELEMENT QUANTITY('0KZcQQRi97b8ZtQKOcc9SQ',#5,'BaseQu  
antities',S,S,(#7119,#7120,#7121,#361,#7122,#7123,#7124,#7125));  
#7127= IFC LOCAL PLACEMENT(#30,#10);  
#7128=  
IFCELEMENT ASSEMBLY('1Ogjm0002sJ4qE3SsC34r',#5,'Steel  
Assembly',S,S,#7127,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#7129= IFC PROPERTY SET('1svTwHv5rACvC98ehn4Hav',#5,'Tekla  
Assembly','Assembly  
Properties',(#34,#313,#3859,#3326,#3860,#7129,#318));  
#7131= IFC QUANTITY LENGTH('Width',S,S,200.000000011467);  
#7132=  
IFCELEMENT QUANTITY('12ELM59796HwoRyWykbixf',#5,'BaseQu  
antities',S,S,(#7131));  
#7133=  
IFC CARTESIAN POINT((1750.00000000104,219100.240132525,2025.  
70500196721));  
#7134= IFC DIRECTION((0.0,0.44674648893039,-0.894660591860606));  
#7135= IFC AXIS2 PLACEMENT 3D(#7133,#7,7134);  
#7136= IFC LOCAL PLACEMENT(#7127,#7135);  
#7137=  
IFC SHAPEREPRESENTATION(#12,'Body','SweptSolid',(#3871));  
#7138= IFC PRODUCT DEFINITION SHAPE(S,S,(#7137));  
#7139=  
IFC MEMBER('1Ogjm0002s34qE3SsC34r',#5,'BEAM','HN400\*200\*8\*  
13','HN400\*200\*8\*13',#7136,#7138,'PO(?));  
#7140= IFC QUANTITY LENGTH('Length',S,S,2214.29143603686);  
#7141=  
IFC QUANTITY AREA('OuterSurfaceArea',S,S,3.50743763468239);  
#7142=  
IFC QUANTITY AREA('GrossSurfaceArea',S,S,3.50743763468239);  
#7143=  
IFC QUANTITY VOLUME('NetVolume',S,S,0.0181394754437619);  
#7144=  
IFC QUANTITY VOLUME('GrossVolume',S,S,0.0186266195599421);  
#7145= IFC QUANTITY WEIGHT('NetWeight',S,S,142.394882233531);  
#7146=  
IFC QUANTITY WEIGHT('GrossWeight',S,S,146.218963545545);  
#7147=  
IFCELEMENT QUANTITY('3bnvYnbfP9dgEBXA9ogfog',#5,'BaseQua  
ntities',S,S,(#7140,#7141,#7142,#361,#7143,#7144,#7145,#7146));  
#7148= IFC LOCAL PLACEMENT(#30,#10);  
#7149=  
IFCELEMENT ASSEMBLY('1Ogjm0002rJ4qE3SsC34r',#5,'Steel  
Assembly',S,S,#7148,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#7150= IFC PROPERTY SET('1nAs82DN9mhhK9FKGuYI',#5,'Tekla  
Assembly','Assembly  
Properties',(#34,#313,#3892,#3264,#3893,#7129,#318));  
#7151= IFC QUANTITY LENGTH('Width',S,S,200.000000002241);  
#7152=  
IFCELEMENT QUANTITY('2dj4txVRTFBw9kS1GrpVQ',#5,'BaseQua  
ntities',S,S,(#7151));  
#7153=  
IFC CARTESIAN POINT((1750.00000000211,218012.339966661,40.87  
54186508547));

#7154=  
IFCDIRECTION((0,0.408718897808826,0.912660321573113));  
#7155= IFCAXIS2PLACEMENT3D(#7153,#7,7154);  
#7156= IFCLOCALPLACEMENT(#7148,#7155);  
#7157=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#3903));  
#7158= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#7157));  
#7159=  
IFCMEMBER('1Ogimc0002r34qE3SsC34r',#5,'BEAM','HN400\*200\*8\*  
13','HN400\*200\*8\*13',#7156,#7158,'P0(?)');  
#7160= IFCQUANTITYLENGTH('Length',S,\$,2170.60693597827);  
#7161=  
IFCQUANTITYAREA('OuterSurfaceArea',S,\$,3.43824138658958);  
#7162=  
IFCQUANTITYAREA('GrossSurfaceArea',S,\$,3.43824138658958);  
#7163=  
IFCQUANTITYVOLUME('NetVolume',S,\$,0.0177816120194569);  
#7164=  
IFCQUANTITYVOLUME('GrossVolume',S,\$,0.0182591455454492);  
#7165= IFCQUANTITYWEIGHT('NetWeight',S,\$,139.585654352737);  
#7166=  
IFCQUANTITYWEIGHT('GrossWeight',S,\$,143.334292531776);  
#7167=  
IFCELEMENTQUANTITY('OZ\_MB9QH1EhwHVBH8bcm6',#5,'BaseQ  
uantities',S,\$,#7160,#7161,#7162,#361,#7163,#7164,#7165,#7166);  
#7168= IFCLOCALPLACEMENT(#30,#10);  
#7169=  
IFCELEMENTASSEMBLY('1Ogimc0002qJ4qE3SsC34r',#5,'Steel  
Assembly',S,\$,#7168,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#7170= IFCPROPERTYSET('07CzBHseHAKh5tFRDbQpN8',#5,'Tekla  
Assembly','Assembly  
Properties',(#34,#313,#3923,#3264,#3924,#7129,#318));  
#7171= IFCQUANTITYLENGTH('Width',S,\$,200.000000012282);  
#7172=  
IFCELEMENTQUANTITY('14rTST5Bf5A321oZWOM',#5,'BaseQu  
antities',S,\$,(#7171));  
#7173=  
IFCCARTESIANPOINT((1749.99999999918,217221.00681338,2062.8  
4998842482));  
#7174= IFCDIRECTION((0,0.433947588856273,-  
0.900938116701601));  
#7175= IFCAXIS2PLACEMENT3D(#7173,#7,7174);  
#7176= IFCLOCALPLACEMENT(#7168,#7175);  
#7177=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#3934));  
#7178= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#7177));  
#7179=  
IFCMEMBER('1Ogimc0002q34qE3SsC34r',#5,'BEAM','HN400\*200\*8  
\*13','HN400\*200\*8\*13',#7176,#7178,'P0(?)');  
#7180= IFCQUANTITYLENGTH('Length',S,\$,2241.4987927287);  
#7181=  
IFCQUANTITYAREA('OuterSurfaceArea',S,\$,3.55053408768226);  
#7182=  
IFCQUANTITYAREA('GrossSurfaceArea',S,\$,3.55053408768226);  
#7183=  
IFCQUANTITYVOLUME('NetVolume',S,\$,0.0183623581102154);  
#7184=  
IFCQUANTITYVOLUME('GrossVolume',S,\$,0.0188554878444338);  
#7185= IFCQUANTITYWEIGHT('NetWeight',S,\$,144.144511165191);  
#7186=  
IFCQUANTITYWEIGHT('GrossWeight',S,\$,148.015579578806);  
#7187=  
IFCELEMENTQUANTITY('1\_FWXg1OzEQA3L2lpPanB3',#5,'BaseQ  
uantities',S,\$,#7180,#7181,#7182,#361,#7183,#7184,#7185,#7186);  
#7188= IFCLOCALPLACEMENT(#30,#10);  
#7189=  
IFCELEMENTASSEMBLY('1Ogimc0002pJ4qE3SsC34r',#5,'Steel  
Assembly',S,\$,#7188,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#7190= IFCPROPERTYSET('1hycOKWbPefgpdxaM8PZs',#5,'Tekla  
Assembly','Assembly  
Properties',(#34,#313,#3955,#3326,#3956,#7129,#318));  
#7191= IFCQUANTITYLENGTH('Width',S,\$,200.000000008731);  
#7192=  
IFCELEMENTQUANTITY('1NqhfXGp3HR1NSRtBjxQ7',#5,'BaseQu  
antities',S,\$,(#7191));  
#7193=  
IFCCARTESIANPOINT((1750.,216109.709371512,41.8425462160333)  
);  
#7194=  
IFCDIRECTION((0,0.418436025942868,0.908246272875997));  
#7195= IFCAXIS2PLACEMENT3D(#7193,#7,7194);  
#7196= IFCLOCALPLACEMENT(#7188,#7195);  
#7197=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#3966));  
#7198= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#7197));  
#7199=  
IFCMEMBER('1Ogimc0002p34qE3SsC34r',#5,'BEAM','HN400\*200\*8  
\*13','HN400\*200\*8\*13',#7196,#7198,'P0(?)');  
#7200= IFCQUANTITYLENGTH('Length',S,\$,2223.46773745086);  
#7201=  
IFCQUANTITYAREA('OuterSurfaceArea',S,\$,3.52197289612216);  
#7202=  
IFCQUANTITYAREA('GrossSurfaceArea',S,\$,3.52197289612216);  
#7203=  
IFCQUANTITYVOLUME('NetVolume',S,\$,0.0182146477053221);  
#7204=  
IFCQUANTITYVOLUME('GrossVolume',S,\$,0.0187038106074366);  
#7205= IFCQUANTITYWEIGHT('NetWeight',S,\$,142.984984486779);  
#7206=  
IFCQUANTITYWEIGHT('GrossWeight',S,\$,146.824913268378);  
#7207=  
IFCELEMENTQUANTITY('1OVZPGGut6rPiYL5G7gyAP',#5,'BaseQu  
antities',S,\$,#7201,#7202,#361,#7203,#7204,#7205,#7206);  
#7208= IFCLOCALPLACEMENT(#30,#10);

#7209=  
IFCELEMENTASSEMBLY('1Ogimc0002oJ4qE3SsC34r',#5,'Steel  
Assembly',S,\$,#7208,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#7210= IFCPROPERTYSET('3koi3mEzH9LeTiGIL1d\_AQ',#5,'Tekla  
Assembly','Assembly  
Properties',(#34,#313,#3986,#3326,#3987,#7129,#318));  
#7211= IFCQUANTITYLENGTH('Width',S,\$,200.000000011321);  
#7212=  
IFCELEMENTQUANTITY('14nzFSiPP7oBU0cbgkhlB',#5,'BaseQuant  
ities',S,\$,(#7211));  
#7213=  
IFCCARTESIANPOINT((1750.,215249.399651876,2110.07308031077)  
);  
#7214= IFCDIRECTION((0,0.449944683895195,-  
0.893056426791977));  
#7215= IFCAXIS2PLACEMENT3D(#7213,#7,7214);  
#7216= IFCLOCALPLACEMENT(#7208,#7215);  
#7217=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#3997));  
#7218= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#7217));  
#7219=  
IFCMEMBER('1Ogimc0002o34qE3SsC34r',#5,'BEAM','HN400\*200\*8  
\*13','HN400\*200\*8\*13',#7216,#7218,'P0(?)');  
#7220= IFCQUANTITYLENGTH('Length',S,\$,2312.3731117891);  
#7221=  
IFCQUANTITYAREA('OuterSurfaceArea',S,\$,3.66279900907394);  
#7222=  
IFCQUANTITYAREA('GrossSurfaceArea',S,\$,3.66279900907394);  
#7223=  
IFCQUANTITYVOLUME('NetVolume',S,\$,0.0189429605315654);  
#7224=  
IFCQUANTITYVOLUME('GrossVolume',S,\$,0.0194516826163699);  
#7225= IFCQUANTITYWEIGHT('NetWeight',S,\$,148.702240172788);  
#7226=  
IFCQUANTITYWEIGHT('GrossWeight',S,\$,152.695708538504);  
#7227=  
IFCELEMENTQUANTITY('2NQdchV9uBu8FdquC6YG3',#5,'BaseQu  
antities',S,\$,#7220,#7221,#7222,#361,#7223,#7224,#7225,#7226);  
#7228= IFCLOCALPLACEMENT(#30,#10);  
#7229=  
IFCELEMENTASSEMBLY('1Ogimc0002nJ4qE3SsC34r',#5,'Steel  
Assembly',S,\$,#7228,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#7230= IFCPROPERTYSET('3dGmJBPMH70gtr48Dun716',#5,'Tekla  
Assembly','Assembly  
Properties',(#34,#313,#4018,#3264,#4019,#7129,#318));  
#7231= IFCQUANTITYLENGTH('Width',S,\$,200.000000000204);  
#7232=  
IFCELEMENTQUANTITY('0BuqP5bjH9Z8ucqohLhdK',#5,'BaseQuan  
tities',S,\$,(#7231));  
#7233=  
IFCCARTESIANPOINT((1750.,214106.666400475,42.2562431362395)  
);  
#7234= IFCDIRECTION((0,0.42255778918484,0.906335983396456));  
#7235= IFCAXIS2PLACEMENT3D(#7233,#7,7234);  
#7236= IFCLOCALPLACEMENT(#7228,#7235);  
#7237=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4029));  
#7238= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#7237));  
#7239=  
IFCMEMBER('1Ogimc0002n34qE3SsC34r',#5,'BEAM','HN400\*200\*8  
\*13','HN400\*200\*8\*13',#7236,#7238,'P0(?)');  
#7240= IFCQUANTITYLENGTH('Length',S,\$,2278.49074222663);  
#7241=  
IFCQUANTITYAREA('OuterSurfaceArea',S,\$,3.60912933568698);  
#7242=  
IFCQUANTITYAREA('GrossSurfaceArea',S,\$,3.60912933568698);  
#7243=  
IFCQUANTITYVOLUME('NetVolume',S,\$,0.0186653961603223);  
#7244=  
IFCQUANTITYVOLUME('GrossVolume',S,\$,0.0191666641236104);  
#7245= IFCQUANTITYWEIGHT('NetWeight',S,\$,146.52335985853);  
#7246=  
IFCQUANTITYWEIGHT('GrossWeight',S,\$,150.458313370341);  
#7247=  
IFCELEMENTQUANTITY('0DCYhAEHbDTPke3P53t5J',#5,'BaseQua  
ntities',S,\$,#7240,#7241,#7242,#361,#7243,#7244,#7245,#7246);  
#7248= IFCLOCALPLACEMENT(#30,#10);  
#7249=  
IFCELEMENTASSEMBLY('1Ogimc0002mJ4qE3SsC34r',#5,'Steel  
Assembly',S,\$,#7248,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#7250= IFCPROPERTYSET('0GAQc5f19EeLYuZtcCYLw',#5,'Tekla  
Assembly','Assembly  
Properties',(#34,#313,#4049,#3264,#4050,#7129,#318));  
#7251= IFCQUANTITYLENGTH('Width',S,\$,200.000000000844);  
#7252=  
IFCELEMENTQUANTITY('1K13fvKPr3x8JgJ9xR9bjf',#5,'BaseQuant  
ities',S,\$,(#7251));  
#7253=  
IFCCARTESIANPOINT((1750.,213273.989472539,2154.10995533016)  
);  
#7254= IFCDIRECTION((0,0.432821786004933,-  
0.901479507010282));  
#7255= IFCAXIS2PLACEMENT3D(#7253,#7,7254);  
#7256= IFCLOCALPLACEMENT(#7248,#7255);  
#7257=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4060));  
#7258= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#7257));  
#7259=  
IFCMEMBER('1Ogimc0002m34qE3SsC34r',#5,'BEAM','HN400\*200\*8  
\*13','HN400\*200\*8\*13',#7256,#7258,'P0(?)');  
#7260= IFCQUANTITYLENGTH('Length',S,\$,2341.51447306474);  
#7261=  
IFCQUANTITYAREA('OuterSurfaceArea',S,\$,3.70895892533456);  
#7262=  
IFCQUANTITYAREA('GrossSurfaceArea',S,\$,3.70895892533456);

## Appendix

#7263= IFCQUANTITYVOLUME('NetVolume',S,S,0.0191816865633586);  
#7264= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0196968197474206);  
#7265= IFCQUANTITYWEIGHT('NetWeight',S,S,150.576239522365);  
#7266= IFCQUANTITYWEIGHT('GrossWeight',S,S,154.620035017252);  
#7267= IFCLEMENTQUANTITY('1Ks498ICH9wPYBcmqNX1Ik',#5,'BaseQuantities',S,S,#7260,#7261,#7262,#361,#7263,#7264,#7265,#7266);  
#7268= IFCLOCALPLACEMENT(#30,#10);  
#7269= IFCLEMENTASSEMBLY('1Ogimc000214qE3SsC34r',#5,'Steel Assembly',S,S,#7268,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#7270= IFCPROPERTYSET('1Wpmmchz5zAu8RDlyufC4',#5,'Tekla Assembly',Assembly Properties',(#34,#313,#4080,#3326,#4081,#7129,#318));  
#7271= IFCARTESIANPOINT((1750..212050.996670158,44.3055297355585));  
#7272= IFCDIRECTION((0..0.443057317851703,0.896493286699937));  
#7273= IFCAXIS2PLACEMENT3D(#7271,#7,7272);  
#7274= IFCLOCALPLACEMENT(#7268,#7273);  
#7275= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4091));  
#7276= IFCPRODUCTDEFINITIONSHAPE(S,S,#7275);  
#7277= IFCMEMBER('1Ogimc0002134qE3SsC34r',#5,'BEAM',HN400\*200\*8\*13,'HN400\*200\*8\*13',#7274,#7276,'PO(?)');  
#7278= IFCQUANTITYLENGTH('Length',S,S,2354.53852275724);  
#7279= IFCQUANTITYAREA('OuterSurfaceArea',S,S,3.72958902004747);  
#7280= IFCQUANTITYAREA('GrossSurfaceArea',S,S,3.72958902004747);  
#7281= IFCQUANTITYVOLUME('NetVolume',S,S,0.0192883795785773);  
#7282= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0198063780534339);  
#7283= IFCQUANTITYWEIGHT('NetWeight',S,S,151.413779691832);  
#7284= IFCQUANTITYWEIGHT('GrossWeight',S,S,155.480067719456);  
#7285= IFCLEMENTQUANTITY('21goo5EUX4pw22RZqzmz1i',#5,'BaseQuantities',S,S,#7278,#7279,#7280,#361,#7281,#7282,#7283,#7284);  
#7286= IFCLOCALPLACEMENT(#30,#10);  
#7287= IFCLEMENTASSEMBLY('1Ogimc0002k4qE3SsC34r',#5,'Steel Assembly',S,S,#7286,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#7288= IFCPROPERTYSET('2rT1foiv2nx5Jcyx9bNss',#5,'Tekla Assembly',Assembly Properties',(#34,#313,#4111,#3326,#4112,#7129,#318));  
#7289= IFCQUANTITYLENGTH('Width',S,S,200.000000007567);  
#7290= IFCLEMENTQUANTITY('1BnkDMeul3XBEar1uQxNqv',#5,'BaseQuantities',S,S,#7289);  
#7291= IFCARTESIANPOINT((1750..211154.364705461,2204.46497720565));  
#7292= IFCDIRECTION((0..0.445837822065507,-0.895113756131524));  
#7293= IFCAXIS2PLACEMENT3D(#7291,#7,7292);  
#7294= IFCLOCALPLACEMENT(#7286,#7293);  
#7295= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4122));  
#7296= IFCPRODUCTDEFINITIONSHAPE(S,S,#7295);  
#7297= IFCMEMBER('1Ogimc0002k34qE3SsC34r',#5,'BEAM',HN400\*200\*8\*13,'HN400\*200\*8\*13',#7294,#7296,'PO(?)');  
#7298= IFCQUANTITYLENGTH('Length',S,S,2412.96861071524);  
#7299= IFCQUANTITYAREA('OuterSurfaceArea',S,S,3.82214227937294);  
#7300= IFCQUANTITYAREA('GrossSurfaceArea',S,S,3.82214227937294);  
#7301= IFCQUANTITYVOLUME('NetVolume',S,S,0.0197670388588264);  
#7302= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0202978919533366);  
#7303= IFCQUANTITYWEIGHT('NetWeight',S,S,155.171255041788);  
#7304= IFCQUANTITYWEIGHT('GrossWeight',S,S,159.338451833692);  
#7305= IFCLEMENTQUANTITY('1ucSgldj6j9x1c9rTASy',#5,'BaseQuantities',S,S,#7298,#7299,#7300,#361,#7301,#7302,#7303,#7304);  
#7306= IFCLOCALPLACEMENT(#30,#10);  
#7307= IFCLEMENTASSEMBLY('1Ogimc0002j4qE3SsC34r',#5,'Steel Assembly',S,S,#7306,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#7308= IFCPROPERTYSET('2jMyJBpbUBxFTZ7IS01m',#5,'Tekla Assembly',Assembly Properties',(#34,#313,#4143,#3264,#4144,#7129,#318));  
#7309= IFCQUANTITYLENGTH('Width',S,S,200.000000003784);  
#7310= IFCLEMENTQUANTITY('3wbOVGzUvB29dprVrk49AEH',#5,'BaseQuantities',S,S,#7309);  
#7311= IFCARTESIANPOINT((1750..209933.811394678,43.4160499773258));  
#7312= IFCDIRECTION((0..0.434159448205747,0.900836041426897));  
#7313= IFCAXIS2PLACEMENT3D(#7311,#7,7312);  
#7314= IFCLOCALPLACEMENT(#7306,#7313);  
#7315= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4154));  
#7316= IFCPRODUCTDEFINITIONSHAPE(S,S,#7315);  
#7317= IFCMEMBER('1Ogimc0002j34qE3SsC34r',#5,'BEAM',HN400\*200\*8\*13,'HN400\*200\*8\*13',#7314,#7316,'PO(?)');  
#7318= IFCQUANTITYLENGTH('Length',S,S,2397.6406255354);  
#7319= IFCQUANTITYAREA('OuterSurfaceArea',S,S,3.79786275087681);  
#7320= IFCQUANTITYAREA('GrossSurfaceArea',S,S,3.79786275087681);  
#7321= IFCQUANTITYVOLUME('NetVolume',S,S,0.0196414720046055);  
#7322= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0201689529421564);  
#7323= IFCQUANTITYWEIGHT('NetWeight',S,S,154.18555236153);  
#7324= IFCQUANTITYWEIGHT('GrossWeight',S,S,158.326280595928);  
#7325= IFCLEMENTQUANTITY('2Ff8PeHpP0ChOaFhRSA7N',#5,'BaseQuantities',S,S,#7318,#7319,#7320,#361,#7321,#7322,#7323,#7324);  
#7326= IFCLOCALPLACEMENT(#30,#10);  
#7327= IFCLEMENTASSEMBLY('1Ogimc0002i4qE3SsC34r',#5,'Steel Assembly',S,S,#7326,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#7328= IFCPROPERTYSET('1hVhC94R8C07kNCpz2sZM',#5,'Tekla Assembly',Assembly Properties',(#34,#313,#4174,#3264,#4175,#7129,#318));  
#7329= IFCARTESIANPOINT((1750..209023.147835384,2253.48135752825));  
#7330= IFCDIRECTION((0..0.442599398195126,-0.896719450395335));  
#7331= IFCAXIS2PLACEMENT3D(#7329,#7,7330);  
#7332= IFCLOCALPLACEMENT(#7326,#7331);  
#7333= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4185));  
#7334= IFCPRODUCTDEFINITIONSHAPE(S,S,#7333);  
#7335= IFCMEMBER('1Ogimc0002i34qE3SsC34r',#5,'BEAM',HN400\*200\*8\*13,'HN400\*200\*8\*13',#7332,#7334,'PO(?)');  
#7336= IFCQUANTITYLENGTH('Length',S,S,2463.67056238277);  
#7337= IFCQUANTITYAREA('OuterSurfaceArea',S,S,3.90245417081431);  
#7338= IFCQUANTITYAREA('GrossSurfaceArea',S,S,3.90245417081431);  
#7339= IFCQUANTITYVOLUME('NetVolume',S,S,0.0201823892469773);  
#7340= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0207243967707639);  
#7341= IFCQUANTITYWEIGHT('NetWeight',S,S,158.431755588772);  
#7342= IFCQUANTITYWEIGHT('GrossWeight',S,S,162.686514650497);  
#7343= IFCLEMENTQUANTITY('2mGP8maJ9BTB UwXKlyNFj',#5,'BaseQuantities',S,S,#7336,#7337,#7338,#361,#7339,#7340,#7341,#7342);  
#7344= IFCLOCALPLACEMENT(#30,#10);  
#7345= IFCLEMENTASSEMBLY('1Ogimc0002h4qE3SsC34r',#5,'Steel Assembly',S,S,#7344,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#7346= IFCPROPERTYSET('3D05ErUqj33g4PQV1uaMI',#5,'Tekla Assembly',Assembly Properties',(#34,#313,#4174,#3326,#4206,#7129,#318));  
#7347= IFCQUANTITYLENGTH('Width',S,S,200.000000011816);  
#7348= IFCLEMENTQUANTITY('3smU7enyXF28Nlc2jOplX6',#5,'BaseQuantities',S,S,#7347);  
#7349= IFCARTESIANPOINT((1750..207757.310819847,44.1294388218557));  
#7350= IFCDIRECTION((0..0.441295612954756,0.897361789907998));  
#7351= IFCAXIS2PLACEMENT3D(#7349,#7,7350);  
#7352= IFCLOCALPLACEMENT(#7344,#7351);  
#7353= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4216));  
#7354= IFCPRODUCTDEFINITIONSHAPE(S,S,#7353);  
#7355= IFCMEMBER('1Ogimc0002h34qE3SsC34r',#5,'BEAM',HN400\*200\*8\*13,'HN400\*200\*8\*13',#7352,#7354,'PO(?)');  
#7356= IFCQUANTITYLENGTH('Length',S,S,2461.90729924198);  
#7357= IFCQUANTITYAREA('OuterSurfaceArea',S,S,3.8996611619993);  
#7358= IFCQUANTITYAREA('GrossSurfaceArea',S,S,3.8996611619993);  
#7359= IFCQUANTITYVOLUME('NetVolume',S,S,0.0201679445955625);  
#7360= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0207095642012236);  
#7361= IFCQUANTITYWEIGHT('NetWeight',S,S,158.318365075166);  
#7362= IFCQUANTITYWEIGHT('GrossWeight',S,S,162.570078979605);  
#7363= IFCLEMENTQUANTITY('1VOW5nQD9OwJvZCdFsw9',#5,'BaseQuantities',S,S,#7356,#7357,#7358,#361,#7359,#7360,#7361,#7362);  
#7364= IFCLOCALPLACEMENT(#30,#10);  
#7365= IFCLEMENTASSEMBLY('1Ogimc0002gJ4qE3SsC34r',#5,'Steel Assembly',S,S,#7364,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#7366= IFCPROPERTYSET('2B\_SC3hsj7n9Kv4re6S4L',#5,'Tekla Assembly',Assembly Properties',(#34,#313,#4235,#3326,#4236,#7129,#318));  
#7367= IFCQUANTITYLENGTH('Width',S,S,200.00000000911);  
#7368= IFCLEMENTQUANTITY('02PZdsklrF1xd0Y1MTYEmo',#5,'BaseQuantities',S,S,#7367);

#7369= IFCCARTESIANPOINT((1750.63230217308,206648.907112197,2314.64405667366));  
#7370= IFCDIRECTION((0.99999860747348,0.000527735999855757,0.0));  
#7371= IFCDIRECTION((0.000260402999942929,0.493433264891794,-0.869783619809262));  
#7372= IFCAxis2PLACEMENT3D(#7369,#7370,#7371);  
#7373= IFLOCALPLACEMENT(#7364,#7372);  
#7374= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4247));  
#7375= IFCPRODUCTDEFINITIONSHAPE(S,\$,#7374);  
#7376= IFCMEMBER('IOgjm0002g34qE3SsC34r',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#7373,#7375,'P0(?));  
#7377= IFCQUANTITYLENGTH('Length',S,\$,2604.44183346776);  
#7378= IFCQUANTITYAREA('OuterSurfaceArea',S,\$,4.12543586421293);  
#7379= IFCQUANTITYAREA('GrossSurfaceArea',S,\$,4.12543586421293);  
#7380= IFCQUANTITYVOLUME('NetVolume',S,\$,0.0213355874998625);  
#7381= IFCQUANTITYVOLUME('GrossVolume',S,\$,0.0219085647031308);  
#7382= IFCQUANTITYWEIGHT('NetWeight',S,\$,167.484361873921);  
#7383= IFCQUANTITYWEIGHT('GrossWeight',S,\$,171.982232919577);  
#7384= IFCELEMENTQUANTITY('3K8\_rRgJTBfqlUNeD4iR',#5,'BaseQuantities',S,\$,#7377,#7378,#7379,#7380,#7381,#7382,#7383);  
#7385= IFLOCALPLACEMENT(#30,#10);  
#7386= IFCELEMENTASSEMBLY('IOgjm0002f4qE3SsC34r',#5,'Steel Assembly',S,\$,#7385,S,'BE-0(?)',NOTDEFINED,..RIGID\_FRAME.);  
#7387= IFCPROPERTYSET('2oTf1w0v72OhdpxFHtALs',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#4268,#3264,#4269,#7129,#318));  
#7388= IFCQUANTITYLENGTH('Width',S,\$,200.000000009983);  
#7389= IFCELEMENTQUANTITY('3H9rrkcxX7FuzA57KYoQ5h',#5,'BaseQuantities',S,\$,#7388);  
#7390= IFCCARTESIANPOINT((1749.93509604671,205508.055393917,39.0822647173485));  
#7391= IFCDIRECTION((0.999999751402862,-0.00070512000028278,0.0));  
#7392= IFCDIRECTION((0.000275576999992741,0.390821896989734,0.920466277975822));  
#7393= IFCAxis2PLACEMENT3D(#7390,#7391,#7392);  
#7394= IFLOCALPLACEMENT(#7385,#7393);  
#7395= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4280));  
#7396= IFCPRODUCTDEFINITIONSHAPE(S,\$,#7395);  
#7397= IFCMEMBER('IOgjm0002f34qE3SsC34r',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#7394,#7396,'P0(?));  
#7398= IFCQUANTITYLENGTH('Length',S,\$,2461.03601241208);  
#7399= IFCQUANTITYAREA('OuterSurfaceArea',S,\$,3.89828104366073);  
#7400= IFCQUANTITYAREA('GrossSurfaceArea',S,\$,3.89828104366073);  
#7401= IFCQUANTITYVOLUME('NetVolume',S,\$,0.0201608070134617);  
#7402= IFCQUANTITYVOLUME('GrossVolume',S,\$,0.0207022349364104);  
#7403= IFCQUANTITYWEIGHT('NetWeight',S,\$,158.262335055674);  
#7404= IFCQUANTITYWEIGHT('GrossWeight',S,\$,162.512544250822);  
#7405= IFCELEMENTQUANTITY('3Efr7p9y53sOCMDXrPKGmc',#5,'BaseQuantities',S,\$,#7398,#7399,#7400,#361,#7401,#7402,#7403,#7404);  
#7406= IFLOCALPLACEMENT(#30,#10);  
#7407= IFCELEMENTASSEMBLY('IOgjm0002cJ4qE3SsC34r',#5,'Steel Assembly',S,\$,#7406,S,'BE-0(?)',NOTDEFINED,..RIGID\_FRAME.);  
#7408= IFCPROPERTYSET('124sOSrGX44PcL0\_6rVfcb',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#4300,#3264,#2860,#7129,#318));  
#7409= IFCQUANTITYLENGTH('Width',S,\$,200.000000007654);  
#7410= IFCELEMENTQUANTITY('3SmvXIDEnBoeWzqLKfUEsA',#5,'BaseQuantities',S,\$,#7409);  
#7411= IFCCARTESIANPOINT((1750.07738229346,204464.350679457,2361.59600239503));  
#7412= IFCDIRECTION((0.999999997719309,6.75379999840118E-005,0.0));  
#7413= IFCDIRECTION((-3.17739999942472E-005,0.470459652914901,-0.88242150584038));  
#7414= IFCAxis2PLACEMENT3D(#7411,#7412,#7413);  
#7415= IFLOCALPLACEMENT(#7406,#7414);  
#7416= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4311));  
#7417= IFCPRODUCTDEFINITIONSHAPE(S,\$,#7416);  
#7418= IFCMEMBER('IOgjm0002e34qE3SsC34r',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#7415,#7417,'P0(?));  
#7419= IFCQUANTITYLENGTH('Length',S,\$,2622.95281352791);  
#7420= IFCQUANTITYAREA('OuterSurfaceArea',S,\$,4.15475725662821);  
#7421= IFCQUANTITYAREA('GrossSurfaceArea',S,\$,4.15475725662821);  
#7422= IFCQUANTITYVOLUME('NetVolume',S,\$,0.0214872294485215);  
#7423= IFCQUANTITYVOLUME('GrossVolume',S,\$,0.0220642790673968);  
#7424= IFCQUANTITYWEIGHT('NetWeight',S,\$,168.674751170894);  
#7425= IFCQUANTITYWEIGHT('GrossWeight',S,\$,173.204590679065);  
#7426= IFCELEMENTQUANTITY('1kFH17Hb0TPsQPTWdsY7',#5,'BaseQuantities',S,\$,#7419,#7420,#7421,#361,#7422,#7423,#7424,#7425);  
#7427= IFLOCALPLACEMENT(#30,#10);  
#7428= IFCELEMENTASSEMBLY('IOgjm0002dJ4qE3SsC34r',#5,'Steel Assembly',S,\$,#7427,S,'BE-0(?)',NOTDEFINED,..RIGID\_FRAME.);  
#7429= IFCPROPERTYSET('3QEasAeZa1wQdJBoz167i',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#4330,#3326,#4331,#7129,#318));  
#7430= IFCQUANTITYLENGTH('Width',S,\$,200.000000010885);  
#7431= IFCELEMENTQUANTITY('3d29\_22hfp9NrtkCOBvJQ',#5,'BaseQuantities',S,\$,#7430);  
#7432= IFCCARTESIANPOINT((1749.99287559688,203222.18645563,41.7371619515433));  
#7433= IFCDIRECTION((0.99999996926798,-7.83989999851565E-005,0.0));  
#7434= IFCDIRECTION((3.27219999864706E-005,0.417372625826897,0.908735434623099));  
#7435= IFCAxis2PLACEMENT3D(#7432,#7433,#7434);  
#7436= IFLOCALPLACEMENT(#7427,#7435);  
#7437= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4342));  
#7438= IFCPRODUCTDEFINITIONSHAPE(S,\$,#7437);  
#7439= IFCMEMBER('IOgjm0002d34qE3SsC34r',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#7436,#7438,'P0(?));  
#7440= IFCQUANTITYLENGTH('Length',S,\$,2547.00108452626);  
#7441= IFCQUANTITYAREA('OuterSurfaceArea',S,\$,4.03444971788959);  
#7442= IFCQUANTITYAREA('GrossSurfaceArea',S,\$,4.03444971788959);  
#7443= IFCQUANTITYVOLUME('NetVolume',S,\$,0.0208650328841792);  
#7444= IFCQUANTITYVOLUME('GrossVolume',S,\$,0.0214253731230349);  
#7445= IFCQUANTITYWEIGHT('NetWeight',S,\$,163.790508140807);  
#7446= IFCQUANTITYWEIGHT('GrossWeight',S,\$,168.189179015824);  
#7447= IFCELEMENTQUANTITY('3HckhZjBr41gTnNTAfEDFY',#5,'BaseQuantities',S,\$,#7440,#7441,#7442,#361,#7443,#7444,#7445,#7446);  
#7448= IFLOCALPLACEMENT(#30,#10);  
#7449= IFCELEMENTASSEMBLY('IOgjm0002cJ4qE3SsC34r',#5,'Steel Assembly',S,\$,#7448,S,'BE-0(?)',NOTDEFINED,..RIGID\_FRAME.);  
#7450= IFCPROPERTYSET('1CauhWY4j6O8KgxMH06jP',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#4362,#3326,#4363,#7129,#318));  
#7451= IFCQUANTITYLENGTH('Width',S,\$,200.000000018161);  
#7452= IFCELEMENTQUANTITY('2euBaMqdrC0AtJHx7IFHg',#5,'BaseQuantities',S,\$,#7451);  
#7453= IFCCARTESIANPOINT((1749.9660943556,202152.95011543,2414.9834879358));  
#7454= IFCDIRECTION((0.99999999565465,-2.94799999846101E-005,0.0));  
#7455= IFCDIRECTION((1.36620000039728E-005,0.463421741134219,-0.886137850256651));  
#7456= IFCAxis2PLACEMENT3D(#7453,#7454,#7455);  
#7457= IFLOCALPLACEMENT(#7448,#7456);  
#7458= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4374));  
#7459= IFCPRODUCTDEFINITIONSHAPE(S,\$,#7458);  
#7460= IFCMEMBER('IOgjm0002c34qE3SsC34r',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#7457,#7459,'P0(?));  
#7461= IFCQUANTITYLENGTH('Length',S,\$,2672.99429080298);  
#7462= IFCQUANTITYAREA('OuterSurfaceArea',S,\$,4.23402295663192);  
#7463= IFCQUANTITYAREA('GrossSurfaceArea',S,\$,4.23402295663192);  
#7464= IFCQUANTITYVOLUME('NetVolume',S,\$,0.0218971692304717);  
#7465= IFCQUANTITYVOLUME('GrossVolume',S,\$,0.0224852279742346);  
#7466= IFCQUANTITYWEIGHT('NetWeight',S,\$,171.892778459203);  
#7467= IFCQUANTITYWEIGHT('GrossWeight',S,\$,176.509039597742);  
#7468= IFCELEMENTQUANTITY('1gzds7ySH49wK4Ndp6zV72',#5,'BaseQuantities',S,\$,#7461,#7462,#7463,#361,#7464,#7465,#7466,#7467);  
#7469= IFLOCALPLACEMENT(#30,#10);  
#7470= IFCELEMENTASSEMBLY('IOgjm0002bJ4qE3SsC34r',#5,'Steel Assembly',S,\$,#7469,S,'BE-0(?)',NOTDEFINED,..RIGID\_FRAME.);  
#7471= IFCPROPERTYSET('1z\_vZcIH6vvuL\_yM84pJ2',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#4395,#3264,#4396,#7129,#318));  
#7472= IFCQUANTITYLENGTH('Width',S,\$,200.000000015483);  
#7473= IFCELEMENTQUANTITY('3UXsN3Oa98yQbdt\$AKujX',#5,'BaseQuantities',S,\$,#7472);  
#7474= IFCCARTESIANPOINT((1750.1670029036,200858.621855398,42.280608015516));



## Appendix

#7475= IFCDIRECTION((0.999998301957869,0.00184284599993646,0.));  
#7476= IFCDIRECTION((-0.0000779155000154336,0.422799380083745,0.906222973179497));  
#7477= IFCAXIS2PLACEMENT3D(#7474,#7475,#7476);  
#7478= IFCLOCALPLACEMENT(#7469,#7477);  
#7479= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4407));  
#7480= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#7479));  
#7481= IFCMEMBER('1Ogimc0002b34qE3SsC34r',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#7478,#7480,'P0(?)');  
#7482= IFCQUANTITYLENGTH('Length',S,\$,2613.75106708061);  
#7483= IFCQUANTITYAREA('OuterSurfaceArea',S,\$,4.14018169025568);  
#7484= IFCQUANTITYAREA('GrossSurfaceArea',S,\$,4.14018169025568);  
#7485= IFCQUANTITYVOLUME('NetVolume',S,\$,0.0214118487417443);  
#7486= IFCQUANTITYVOLUME('GrossVolume',S,\$,0.0219868739762821);  
#7487= IFCQUANTITYWEIGHT('NetWeight',S,\$,168.083012622693);  
#7488= IFCQUANTITYWEIGHT('GrossWeight',S,\$,172.596960713814);  
#7489= IFCLEMENTQUANTITY('3dIQNf4\_DFZPaC4xIDtZM',#5,'BaseQuantities',S,\$,(#7482,#7483,#7484,#361,#7485,#7486,#7487,#7488));  
#7490= IFCLOCALPLACEMENT(#30,#10);  
#7491= IFCLEMENTASSEMBLY('1Ogimc0002aJ4qE3SsC34r',#5,'Steel Assembly',S,\$,(#7490,S,'BE-0(?)',,NOTDEFINED,,RIGID\_FRAME.);  
#7492= IFCPROPERTYSET('1na\_Lf82b6SO58wGN6Brf',#5,'Tekla Assembly',Assembly Properties',(#34,#313,#4427,#3264,#2832,#7129,#318));  
#7493= IFCQUANTITYLENGTH('Width',S,\$,200.000000195);  
#7494= IFCLEMENTQUANTITY('2\_G4wA6pTF28giFIE\_UEAV',#5,'BaseQuantities',S,\$,(#7493));  
#7495= IFCARTESIANPOINT((1749.50812596327,199778.03290845,2469.06497759867));  
#7496= IFCDIRECTION((0.999999911812596,-0.000419969999909393,0.));  
#7497= IFCDIRECTION((0.000193756000035468,0.46135542108449,-0.887215384162473));  
#7498= IFCAXIS2PLACEMENT3D(#7495,#7496,#7497);  
#7499= IFCLOCALPLACEMENT(#7490,#7498);  
#7500= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4438));  
#7501= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#7500));  
#7502= IFCMEMBER('1Ogimc0002a34qE3SsC34r',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#7499,#7501,'P0(?)');  
#7503= IFCQUANTITYLENGTH('Length',S,\$,2730.937068481);  
#7504= IFCQUANTITYAREA('OuterSurfaceArea',S,\$,4.3258043164739);  
#7505= IFCQUANTITYAREA('GrossSurfaceArea',S,\$,4.3258043164739);  
#7506= IFCQUANTITYVOLUME('NetVolume',S,\$,0.0223718364652805);  
#7507= IFCQUANTITYVOLUME('GrossVolume',S,\$,0.0229726426200622);  
#7508= IFCQUANTITYWEIGHT('NetWeight',S,\$,175.618916252452);  
#7509= IFCQUANTITYWEIGHT('GrossWeight',S,\$,180.335244567488);  
#7510= IFCLEMENTQUANTITY('1MXBnNkTj8\$g\$PzEpohrh',#5,'BaseQuantities',S,\$,(#7503,#7504,#7505,#361,#7506,#7507,#7508,#7509));  
#7511= IFCLOCALPLACEMENT(#30,#10);  
#7512= IFCLEMENTASSEMBLY('1Ogimc0002ZJ4qE3SsC34r',#5,'Steel Assembly',S,\$,(#7511,S,'BE-0(?)',,NOTDEFINED,,RIGID\_FRAME.);  
#7513= IFCPROPERTYSET('2gkYTwIDQhxjli\$gts',#5,'Tekla Assembly',Assembly Properties',(#34,#313,#4457,#3326,#4458,#7129,#318));  
#7514= IFCARTESIANPOINT((1750.04073969584,198428.597383946,43.4738052602664));  
#7515= IFCDIRECTION((0.99999897674353,0.000452383999856486,0.));  
#7516= IFCDIRECTION((-0.00019666900003791,0.43473948300829,0.900556241017178));  
#7517= IFCAXIS2PLACEMENT3D(#7514,#7515,#7516);  
#7518= IFCLOCALPLACEMENT(#7511,#7517);  
#7519= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4469));  
#7520= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#7519));  
#7521= IFCMEMBER('1Ogimc0002Z34qE3SsC34r',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#7518,#7520,'P0(?)');  
#7522= IFCQUANTITYLENGTH('Length',S,\$,2690.48113694045);  
#7523= IFCQUANTITYAREA('OuterSurfaceArea',S,\$,4.26172212091367);  
#7524= IFCQUANTITYAREA('GrossSurfaceArea',S,\$,4.26172212091367);  
#7525= IFCQUANTITYVOLUME('NetVolume',S,\$,0.0220404214739558);  
#7526= IFCQUANTITYVOLUME('GrossVolume',S,\$,0.0226323273239431);  
#7527= IFCQUANTITYWEIGHT('NetWeight',S,\$,173.017038570553);  
#7528= IFCQUANTITYWEIGHT('GrossWeight',S,\$,177.663769492953);  
#7529= IFCLEMENTQUANTITY('0ykBjyBL8YgLiDfP9Pct',#5,'BaseQuantities',S,\$,(#7522,#7523,#7524,#361,#7525,#7526,#7527,#7528));  
#7530= IFCLOCALPLACEMENT(#30,#10);  
#7531= IFCLEMENTASSEMBLY('1Ogimc0002YJ4qE3SsC34r',#5,'Steel Assembly',S,\$,(#7530,S,'BE-0(?)',,NOTDEFINED,,RIGID\_FRAME.);  
#7532= IFCPROPERTYSET('1ZgDOW1TP7EgBkZ\_qI7v0',#5,'Tekla Assembly',Assembly Properties',(#34,#313,#4489,#3326,#4490,#7129,#318));  
#7533= IFCQUANTITYLENGTH('Width',S,\$,200.00000000099);  
#7534= IFCLEMENTQUANTITY('25X4TE1T7yRICOd6sotWu',#5,'BaseQuantities',S,\$,(#7533));  
#7535= IFCARTESIANPOINT((1751.63483458107,197324.713660606,2526.02718085123));  
#7536= IFCDIRECTION((0.999999062541179,0.00136927599938392,0.));  
#7537= IFCDIRECTION((-0.000629060999937376,0.459411077954233,-0.888223544911521));  
#7538= IFCAXIS2PLACEMENT3D(#7535,#7536,#7537);  
#7539= IFCLOCALPLACEMENT(#7530,#7538);  
#7540= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4499));  
#7541= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#7540));  
#7542= IFCMEMBER('1Ogimc0002Y34qE3SsC34r',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#7539,#7541,'P0(?)');  
#7543= IFCQUANTITYLENGTH('Length',S,\$,2792.18693492126);  
#7544= IFCQUANTITYAREA('OuterSurfaceArea',S,\$,4.42282410491528);  
#7545= IFCQUANTITYAREA('GrossSurfaceArea',S,\$,4.42282410491528);  
#7546= IFCQUANTITYVOLUME('NetVolume',S,\$,0.0228735953708844);  
#7547= IFCQUANTITYVOLUME('GrossVolume',S,\$,0.0234878764965577);  
#7548= IFCQUANTITYWEIGHT('NetWeight',S,\$,179.557723661442);  
#7549= IFCQUANTITYWEIGHT('GrossWeight',S,\$,184.379830497978);  
#7550= IFCLEMENTQUANTITY('0WHcAdBSv1CB1SdieAzQ\_a',#5,'BaseQuantities',S,\$,(#7543,#7544,#7545,#361,#7546,#7547,#7548,#7549));  
#7551= IFCLOCALPLACEMENT(#30,#10);  
#7552= IFCLEMENTASSEMBLY('1Ogimc0002XJ4qE3SsC34r',#5,'Steel Assembly',S,\$,(#7551,S,'BE-0(?)',,NOTDEFINED,,RIGID\_FRAME.);  
#7553= IFCPROPERTYSET('1gW9wEXT2U8nco\_AIFhKA',#5,'Tekla Assembly',Assembly Properties',(#34,#313,#4520,#3264,#4521,#7129,#318));  
#7554= IFCQUANTITYLENGTH('Width',S,\$,200.000000016444);  
#7555= IFCLEMENTQUANTITY('0KatESpIX9Mh3ke1\_2EMs3',#5,'BaseQuantities',S,\$,(#7554));  
#7556= IFCARTESIANPOINT((1749.87012716775,195931.479943517,43.9829783662765));  
#7557= IFCDIRECTION((0.999998954376602,-0.00144611400053582,0.));  
#7558= IFCDIRECTION((0.000636043000041542,0.439828636028751,0.898081492058706));  
#7559= IFCAXIS2PLACEMENT3D(#7556,#7557,#7558);  
#7560= IFCLOCALPLACEMENT(#7551,#7559);  
#7561= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4532));  
#7562= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#7561));  
#7563= IFCMEMBER('1Ogimc0002X34qE3SsC34r',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#7560,#7562,'P0(?)');  
#7564= IFCQUANTITYLENGTH('Length',S,\$,2761.5377702415);  
#7565= IFCQUANTITYAREA('OuterSurfaceArea',S,\$,4.37427582806253);  
#7566= IFCQUANTITYAREA('GrossSurfaceArea',S,\$,4.37427582806253);  
#7567= IFCQUANTITYVOLUME('NetVolume',S,\$,0.0226225174140498);  
#7568= IFCQUANTITYVOLUME('GrossVolume',S,\$,0.0232300557232715);  
#7569= IFCQUANTITYWEIGHT('NetWeight',S,\$,177.586761700291);  
#7570= IFCQUANTITYWEIGHT('GrossWeight',S,\$,182.355937427681);  
#7571= IFCLEMENTQUANTITY('2rQYIpaeb5hQV8Nee3gInB',#5,'BaseQuantities',S,\$,(#7564,#7565,#7566,#361,#7567,#7568,#7569,#7570));  
#7572= IFCLOCALPLACEMENT(#30,#10);  
#7573= IFCLEMENTASSEMBLY('1Ogimc0002WJ4qE3SsC34r',#5,'Steel Assembly',S,\$,(#7572,S,'BE-0(?)',,NOTDEFINED,,RIGID\_FRAME.);  
#7574= IFCPROPERTYSET('1pQnBp2rHAo9QlBGL5y26',#5,'Tekla Assembly',Assembly Properties',(#34,#313,#4552,#3264,#4553,#7129,#318));  
#7575= IFCQUANTITYLENGTH('Width',S,\$,200.00000010303);  
#7576= IFCLEMENTQUANTITY('2xPx16pw94uuZSXU1TrQWa',#5,'BaseQuantities',S,\$,(#7575));  
#7577= IFCARTESIANPOINT((1750.92872209742,194784.029553843,2584.48952110396));  
#7578= IFCDIRECTION((0.999999713668462,0.000756744999740607,0.));  
#7579= IFCDIRECTION((-0.0003482999990851,0.460261052879053,-0.88778355766706));  
#7580= IFCAXIS2PLACEMENT3D(#7577,#7578,#7579);  
#7581= IFCLOCALPLACEMENT(#7572,#7580);  
#7582= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4564));

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#7583= IFCPRODUCTDEFINITIONSHAPE($,$,(#7582));
#7584=
IFCMEMBER('1Ogimc0002W34qE3SsC34r',#5,'BEAM','HN400*200*8
*13','HN400*200*8*13',#7581,#7583,'PO(?));
#7585= IFCQUANTITYLENGTH('Length',,$,$,2859.32682329818);
#7586=
IFCQUANTITYAREA('OuterSurfaceArea',,$,$,4.52917368810432);
#7587=
IFCQUANTITYAREA('GrossSurfaceArea',,$,$,4.52917368810432);
#7588=
IFCQUANTITYVOLUME('NetVolume',,$,$,0.0234236053362634);
#7589=
IFCQUANTITYVOLUME('GrossVolume',,$,$,0.0240526572375843);
#7590= IFCQUANTITYWEIGHT('NetWeight',,$,$,183.875301889668);
#7591=
IFCQUANTITYWEIGHT('GrossWeight',,$,$,188.813359315037);
#7592=
IFCELEMENTQUANTITY('2yEINpmyzEMRjO8UM1HqzZ',#5,'BaseQ
uantities',,$,$,#7585,#7586,#7587,#361,#7588,#7589,#7590,#7591));
#7593= IFCLOCALPLACEMENT(#30,#10);
#7594=
IFCELEMENTASSEMBLY('1Ogimc0002VJ4qE3SsC34r',#5,'Steel
Assembly',,$,$,'BE-0(?)',,NOTDEFINED,,RIGID_FRAME.);
#7595= IFCPROPERTYSET('3Fu5CAgQ5CbRmoradimKX5',#5,'Tekla
Assembly',,Assembly
Properties',(#34,#313,#4584,#3326,#4585,#7129,#318));
#7596= IFCQUANTITYLENGTH('Width',,$,$,200.000000008382);
#7597=
IFCELEMENTQUANTITY('1VdD5K5mH6d8aCwLy2NmJg',#5,'BaseQ
uantities',,$,$,#7596);
#7598=
IFCCARTESIANPOINT((1749.92884908046,193360.825103096,44.31
25484189382));
#7599= IFCDIRECTION((0.99999968502963,-
0.000793688000028721,0.));
#7600=
IFCDIRECTION((0.000351703999931962,0.443126062914261,0.89645
9239826554));
#7601= IFCAXIS2PLACEMENT3D(#7598,#7599,#7600);
#7602= IFCLOCALPLACEMENT(#7593,#7601);
#7603=
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4596));
#7604= IFCPRODUCTDEFINITIONSHAPE($,$,(#7603));
#7605=
IFCMEMBER('1Ogimc0002V34qE3SsC34r',#5,'BEAM','HN400*200*8
*13','HN400*200*8*13',#7602,#7604,'PO(?));
#7606= IFCQUANTITYLENGTH('Length',,$,$,2831.65520781175);
#7607=
IFCQUANTITYAREA('OuterSurfaceArea',,$,$,4.48534184917382);
#7608=
IFCQUANTITYAREA('GrossSurfaceArea',,$,$,4.48534184917382);
#7609=
IFCQUANTITYVOLUME('NetVolume',,$,$,0.0231969194622335);
#7610=
IFCQUANTITYVOLUME('GrossVolume',,$,$,0.0238198836081125);
#7611= IFCQUANTITYWEIGHT('NetWeight',,$,$,182.095817778533);
#7612=
IFCQUANTITYWEIGHT('GrossWeight',,$,$,186.986086323683);
#7613=
IFCELEMENTQUANTITY('3wkgjY7TX1TvHuMJT89OEy',#5,'BaseQ
uantities',,$,$,#7606,#7607,#7608,#361,#7609,#7610,#7611,#7612));
#7614= IFCLOCALPLACEMENT(#30,#10);
#7615=
IFCELEMENTASSEMBLY('1Ogimc0002UJ4qE3SsC34r',#5,'Steel
Assembly',,$,$,'BE-0(?)',,NOTDEFINED,,RIGID_FRAME.);
#7616= IFCPROPERTYSET('0trEvhAtERwfo3Od8gTvi',#5,'Tekla
Assembly',,Assembly
Properties',(#34,#313,#4616,#3326,#4617,#7129,#318));
#7617= IFCQUANTITYLENGTH('Width',,$,$,200.000000006752);
#7618=
IFCELEMENTQUANTITY('0yKdTJS8vBShWhbvHk38eH',#5,'BaseQu
antities',,$,$,#7617));
#7619=
IFCCARTESIANPOINT((1750.47415594403,192196.326041389,2644.
68317450372));
#7620=
IFCDIRECTION((0.99999928531157,0.000378070999836477,0.));
#7621= IFCDIRECTION((-
0.000173571000093171,0.459096645246507,-0.888386312477016));
#7622= IFCAXIS2PLACEMENT3D(#7619,#7620,#7621);
#7623= IFCLOCALPLACEMENT(#7614,#7622);
#7624=
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4628));
#7625= IFCPRODUCTDEFINITIONSHAPE($,$,(#7624));
#7626=
IFCMEMBER('1Ogimc0002U34qE3SsC34r',#5,'BEAM','HN400*200*8
*13','HN400*200*8*13',#7623,#7625,'PO(?));
#7627= IFCQUANTITYLENGTH('Length',,$,$,2925.27422176285);
#7628=
IFCQUANTITYAREA('OuterSurfaceArea',,$,$,4.63363436727236);
#7629=
IFCQUANTITYAREA('GrossSurfaceArea',,$,$,4.63363436727236);
#7630=
IFCQUANTITYVOLUME('NetVolume',,$,$,0.0239638464247526);
#7631=
IFCQUANTITYVOLUME('GrossVolume',,$,$,0.0246074067534691);
#7632= IFCQUANTITYWEIGHT('NetWeight',,$,$,188.116194434308);
#7633=
IFCQUANTITYWEIGHT('GrossWeight',,$,$,193.168143014733);
#7634=
IFCELEMENTQUANTITY('0VgnGppdHDePgiWgeF9Ht4',#5,'BaseQua
ntities',,$,$,#7627,#7628,#7629,#361,#7630,#7631,#7632,#7633));
#7635= IFCLOCALPLACEMENT(#30,#10);
#7636=
IFCELEMENTASSEMBLY('1Ogimc0002TJ4qE3SsC34r',#5,'Steel
Assembly',,$,$,'BE-0(?)',,NOTDEFINED,,RIGID_FRAME.);
#7637= IFCPROPERTYSET('11gL7ZNPb3SeST6DKzZPU7',#5,'Tekla
Assembly',,Assembly
Properties',(#34,#313,#4648,#3264,#4649,#7129,#318));
#7638= IFCQUANTITYLENGTH('Width',,$,$,200.000000018044);
#7639=
IFCELEMENTQUANTITY('1OpX14QU18lGx6Lh9Nid6r',#5,'BaseQuant
ities',,$,$,#7638));
#7640=
IFCCARTESIANPOINT((1750.17231276309,190723.370744555,44.58
97689499072));
#7641=
IFCDIRECTION((0.999998146991353,0.00192510099998408,0.));
#7642= IFCDIRECTION((-
0.000858397000025359,0.445896329013177,0.895084201026452));
#7643= IFCAXIS2PLACEMENT3D(#7640,#7641,#7642);
#7644= IFCLOCALPLACEMENT(#7635,#7643);
#7645=
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4660));
#7646= IFCPRODUCTDEFINITIONSHAPE($,$,(#7645));
#7647=
IFCMEMBER('1Ogimc0002T34qE3SsC34r',#5,'BEAM','HN400*200*8
*13','HN400*200*8*13',#7644,#7646,'PO(?));
#7648= IFCQUANTITYLENGTH('Length',,$,$,2903.38434026307);
#7649=
IFCQUANTITYAREA('OuterSurfaceArea',,$,$,4.59896079497671);
#7650=
IFCQUANTITYAREA('GrossSurfaceArea',,$,$,4.59896079497671);
#7651=
IFCQUANTITYVOLUME('NetVolume',,$,$,0.023784524515673);
#7652=
IFCQUANTITYVOLUME('GrossVolume',,$,$,0.024423269070293);
#7653= IFCQUANTITYWEIGHT('NetWeight',,$,$,186.708517448033);
#7654= IFCQUANTITYWEIGHT('GrossWeight',,$,$,191.7226622018);
#7655=
IFCELEMENTQUANTITY('11q_xmcHD12wrrUoCySqT',#5,'BaseQua
ntities',,$,$,#7648,#7649,#7650,#7651,#7652,#7653,#7654));
#7656= IFCLOCALPLACEMENT(#30,#10);
#7657=
IFCELEMENTASSEMBLY('1Ogimc0002S4qE3SsC34r',#5,'Steel
Assembly',,$,$,'BE-0(?)',,NOTDEFINED,,RIGID_FRAME.);
#7658= IFCPROPERTYSET('29yQUvJXCrh7czA2GM9vo',#5,'Tekla
Assembly',,Assembly
Properties',(#34,#313,#4680,#3264,#4681,#7129,#318));
#7659= IFCQUANTITYLENGTH('Width',,$,$,200.000000003609);
#7660=
IFCELEMENTQUANTITY('3BYT1UbjPEq9Wky2bx2IK_',#5,'BaseQua
ntities',,$,$,#7659));
#7661=
IFCCARTESIANPOINT((1748.06638297871,189524.067922306,2706.
17399470221));
#7662= IFCDIRECTION((0.99999887453582,-
0.00150030899929905,0.));
#7663=
IFCDIRECTION((0.000689928999935288,0.459857505956888,-
0.887992453916747));
#7664= IFCAXIS2PLACEMENT3D(#7661,#7662,#7663);
#7665= IFCLOCALPLACEMENT(#7656,#7664);
#7666=
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4692));
#7667= IFCPRODUCTDEFINITIONSHAPE($,$,(#7666));
#7668=
IFCMEMBER('1Ogimc0002S34qE3SsC34r',#5,'BEAM','HN400*200*8
*13','HN400*200*8*13',#7665,#7667,'PO(?));
#7669= IFCQUANTITYLENGTH('Length',,$,$,2995.73282018286);
#7670=
IFCQUANTITYAREA('OuterSurfaceArea',,$,$,4.7452407816966);
#7671=
IFCQUANTITYAREA('GrossSurfaceArea',,$,$,4.7452407816966);
#7672=
IFCQUANTITYVOLUME('NetVolume',,$,$,0.0245410432628533);
#7673=
IFCQUANTITYVOLUME('GrossVolume',,$,$,0.0252001044833783);
#7674= IFCQUANTITYWEIGHT('NetWeight',,$,$,192.647189613398);
#7675=
IFCQUANTITYWEIGHT('GrossWeight',,$,$,197.820820194519);
#7676=
IFCELEMENTQUANTITY('3yEbbNAM99JxtXbBNDZu5c',#5,'BaseQu
antities',,$,$,#7669,#7670,#7671,#361,#7672,#7673,#7674,#7675));
#7677= IFCLOCALPLACEMENT(#30,#10);
#7678=
IFCELEMENTASSEMBLY('1Ogimc0002R4qE3SsC34r',#5,'Steel
Assembly',,$,$,'BE-0(?)',,NOTDEFINED,,RIGID_FRAME.);
#7679= IFCPROPERTYSET('3X4oQij9LA0Rnp2eHjVci',#5,'Tekla
Assembly',,Assembly
Properties',(#34,#313,#4712,#3326,#4713,#7129,#318));
#7680=
IFCCARTESIANPOINT((1750.13856789268,188012.438332523,44.81
10128026418));
#7681=
IFCDIRECTION((0.999998798726029,0.0015500149995615,0.));
#7682= IFCDIRECTION((-
0.000694579000060904,0.448110838039279,0.893977737078361));
#7683= IFCAXIS2PLACEMENT3D(#7680,#7681,#7682);
#7684= IFCLOCALPLACEMENT(#7677,#7683);
#7685=
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4724));
#7686= IFCPRODUCTDEFINITIONSHAPE($,$,(#7685));
#7687=
IFCMEMBER('1Ogimc0002R34qE3SsC34r',#5,'BEAM','HN400*200*8
*13','HN400*200*8*13',#7684,#7686,'PO(?));
#7688= IFCQUANTITYLENGTH('Length',,$,$,2975.67624728249);

```

## Appendix

#7689= IFCCQUANTITYAREA('OuterSurfaceArea',S,S,4.71347117569547);  
#7690= IFCCQUANTITYAREA('GrossSurfaceArea',S,S,4.71347117569547);  
#7691= IFCCQUANTITYVOLUME('NetVolume',S,S,0.0243767398174447);  
#7692= IFCCQUANTITYVOLUME('GrossVolume',S,S,0.0250313885921403);  
#7693= IFCCQUANTITYWEIGHT('NetWeight',S,S,191.357407566941);  
#7694= IFCCQUANTITYWEIGHT('GrossWeight',S,S,196.496400448302);  
#7695= IFCELEMENTQUANTITY('0knE0NvaD8OORNrvM8Xi1E',#5,'BaseQuantities',S,S,(#7688,#7689,#7690,#361,#7691,#7692,#7693,#7694));  
#7696= IFCCLOCALPLACEMENT(#30,#10);  
#7697= IFCELEMENTASSEMBLY('1Ogimc0002QJ4qE3SsC34r',#5,'Steel Assembly',S,S,(#7696,S,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#7698= IFCCPROPERTYSET('0teD\_VIOP7AOWxTddAFmhN',#5,'Tekla Assembly',Assembly Properties',(#34,#313,#4744,#3326,#4745,#7129,#318));  
#7699= IFCCQUANTITYLENGTH('Width',S,S,200.000000012631);  
#7700= IFCELEMENTQUANTITY('3bd\_q5x896WwIhnD8CiAQz',#5,'BaseQuantities',S,S,(#7699));  
#7701= IFCCARTESIANPOINT((11750.63922592706,186778.930584446,2773.54272976058));  
#7702= IFCDIRECTION((0.9999988325984,0.000483198000127275,0.));  
#7703= IFCDIRECTION(-0.0002210399997357,0.459653896945243,-0.888098105894199);  
#7704= IFCCAXIS2PLACEMENT3D(#7701,#7702,#7703);  
#7705= IFCCLOCALPLACEMENT(#7696,#7704);  
#7706= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4756));  
#7707= IFCCPRODUCTDEFINITIONSHAPE(S,S,(#7706));  
#7708= IFCCMEMBER('1Ogimc0002Q34qE3SsC34r',#5,'BEAM',HN400\*200\*8\*13',HN400\*200\*8\*13',#7705,#7707,'PO(?)');  
#7709= IFCCQUANTITYLENGTH('Length',S,S,3071.25692681284);  
#7710= IFCCQUANTITYAREA('OuterSurfaceArea',S,S,4.86487097207154);  
#7711= IFCCQUANTITYAREA('GrossSurfaceArea',S,S,4.86487097207154);  
#7712= IFCCQUANTITYVOLUME('NetVolume',S,S,0.0251597367442342);  
#7713= IFCCQUANTITYVOLUME('GrossVolume',S,S,0.0258354132683496);  
#7714= IFCCQUANTITYWEIGHT('NetWeight',S,S,197.503933442239);  
#7715= IFCCQUANTITYWEIGHT('GrossWeight',S,S,202.807994156545);  
#7716= IFCELEMENTQUANTITY('04b1\_k5afCifrV1rHitjR',#5,'BaseQuantities',S,S,(#7709,#7710,#7711,#361,#7712,#7713,#7714,#7715));  
#7717= IFCCLOCALPLACEMENT(#30,#10);  
#7718= IFCELEMENTASSEMBLY('1Ogimc0002PJ4qE3SsC34r',#5,'Steel Assembly',S,S,(#7717,S,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#7719= IFCCPROPERTYSET('1WUcy86KnEjQ2WtTJ7sR2l',#5,'Tekla Assembly',Assembly Properties',(#34,#313,#4776,#3264,#4777,#7129,#318));  
#7720= IFCCQUANTITYLENGTH('Width',S,S,200.000000006054);  
#7721= IFCELEMENTQUANTITY('1PGH\_ooKf40xqz3oJbnNb',#5,'BaseQuantities',S,S,(#7720));  
#7722= IFCCARTESIANPOINT((1749.95587265295,185221.42628889,45.1310766642335));  
#7723= IFCDIRECTION((0.99999877735857,-0.000494497999854851,0.));  
#7724= IFCDIRECTION((0.000223172000120834,0.451309999244421,0.89236720848329));  
#7725= IFCCAXIS2PLACEMENT3D(#7722,#7723,#7724);  
#7726= IFCCLOCALPLACEMENT(#7717,#7725);  
#7727= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4788));  
#7728= IFCCPRODUCTDEFINITIONSHAPE(S,S,(#7727));  
#7729= IFCCMEMBER('1Ogimc0002P34qE3SsC34r',#5,'BEAM',HN400\*200\*8\*13',HN400\*200\*8\*13',#7726,#7728,'PO(?)');  
#7730= IFCCQUANTITYLENGTH('Length',S,S,3056.56375287805);  
#7731= IFCCQUANTITYAREA('OuterSurfaceArea',S,S,4.84159698455883);  
#7732= IFCCQUANTITYAREA('GrossSurfaceArea',S,S,4.84159698455883);  
#7733= IFCCQUANTITYVOLUME('NetVolume',S,S,0.0250393702636965);  
#7734= IFCCQUANTITYVOLUME('GrossVolume',S,S,0.0257118142892102);  
#7735= IFCCQUANTITYWEIGHT('NetWeight',S,S,196.559056570018);  
#7736= IFCCQUANTITYWEIGHT('GrossWeight',S,S,201.8377421703);  
#7737= IFCELEMENTQUANTITY('0 B1mZxSv0WeUAANTSlgNv',#5,'BaseQuantities',S,S,(#7730,#7731,#7732,#361,#7733,#7734,#7735,#7736));  
#7738= IFCCLOCALPLACEMENT(#30,#10);  
#7739= IFCELEMENTASSEMBLY('1Ogimc0002QJ4qE3SsC34r',#5,'Steel Assembly',S,S,(#7738,S,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#7740= IFCCPROPERTYSET('1Zx3qOxh52dBL7A3pjGXGi',#5,'Tekla Assembly',Assembly Properties',(#34,#313,#4808,#3264,#4809,#7129,#318));  
#7741= IFCCQUANTITYLENGTH('Width',S,S,200.000000014639);  
#7742= IFCELEMENTQUANTITY('24BSisP4X1afWcdHAg641J',#5,'BaseQuantities',S,S,(#7741));  
#7743= IFCCARTESIANPOINT((1749.77205927355,183953.315313949,2834.37049775297));  
#7744= IFCDIRECTION((0.99999985899589,-0.000167930999986729,0.));  
#7745= IFCDIRECTION((7.73149999869068E-005,0.460396919921935,-0.887713168849481));  
#7746= IFCCAXIS2PLACEMENT3D(#7743,#7744,#7745);  
#7747= IFCCLOCALPLACEMENT(#7738,#7746);  
#7748= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4820));  
#7749= IFCCPRODUCTDEFINITIONSHAPE(S,S,(#7748));  
#7750= IFCCMEMBER('1Ogimc0002O34qE3SsC34r',#5,'BEAM',HN400\*200\*8\*13',HN400\*200\*8\*13',#7747,#7749,'PO(?)');  
#7751= IFCCQUANTITYLENGTH('Length',S,S,3141.02666408109);  
#7752= IFCCQUANTITYAREA('OuterSurfaceArea',S,S,4.97538623590444);  
#7753= IFCCQUANTITYAREA('GrossSurfaceArea',S,S,4.97538623590444);  
#7754= IFCCQUANTITYVOLUME('NetVolume',S,S,0.0257312904318589);  
#7755= IFCCQUANTITYVOLUME('GrossVolume',S,S,0.0264223162982501);  
#7756= IFCCQUANTITYWEIGHT('NetWeight',S,S,201.990629890092);  
#7757= IFCCQUANTITYWEIGHT('GrossWeight',S,S,207.415182941263);  
#7758= IFCELEMENTQUANTITY('2Qc0k5vLCSRRkUNSi29e',#5,'BaseQuantities',S,S,(#7751,#7752,#7753,#361,#7754,#7755,#7756,#7757));  
#7759= IFCCLOCALPLACEMENT(#30,#10);  
#7760= IFCELEMENTASSEMBLY('1Ogimc0002Nj4qE3SsC34r',#5,'Steel Assembly',S,S,(#7759,S,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#7761= IFCCPROPERTYSET('3NsaiAWH9AeAEZ2y200M',#5,'Tekla Assembly',Assembly Properties',(#34,#313,#4840,#3326,#4841,#7129,#318));  
#7762= IFCCARTESIANPOINT((1750.01517273946,182350.317999649,45.5119820758106));  
#7763= IFCDIRECTION((0.99999985482261,0.000170398000069648,0.));  
#7764= IFCDIRECTION((-7.75519999682928E-005,0.455120204813889,0.890430004635879));  
#7765= IFCCAXIS2PLACEMENT3D(#7762,#7763,#7764);  
#7766= IFCCLOCALPLACEMENT(#7759,#7765);  
#7767= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4852));  
#7768= IFCCPRODUCTDEFINITIONSHAPE(S,S,(#7767));  
#7769= IFCCMEMBER('1Ogimc0002N34qE3SsC34r',#5,'BEAM',HN400\*200\*8\*13',HN400\*200\*8\*13',#7766,#7768,'PO(?)');  
#7770= IFCCQUANTITYLENGTH('Length',S,S,3131.44304397333);  
#7771= IFCCQUANTITYAREA('OuterSurfaceArea',S,S,4.96020578165375);  
#7772= IFCCQUANTITYAREA('GrossSurfaceArea',S,S,4.96020578165375);  
#7773= IFCCQUANTITYVOLUME('NetVolume',S,S,0.0256527814161205);  
#7774= IFCCQUANTITYVOLUME('GrossVolume',S,S,0.0263416988859036);  
#7775= IFCCQUANTITYWEIGHT('NetWeight',S,S,201.374334116546);  
#7776= IFCCQUANTITYWEIGHT('GrossWeight',S,S,206.782336254343);  
#7777= IFCELEMENTQUANTITY('2ZiJSHv03RbjpKhoJ0Hw',#5,'BaseQuantities',S,S,(#7770,#7771,#7772,#361,#7773,#7774,#7775,#7776));  
#7778= IFCCLOCALPLACEMENT(#30,#10);  
#7779= IFCELEMENTASSEMBLY('1Ogimc0002Mj4qE3SsC34r',#5,'Steel Assembly',S,S,(#7778,S,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#7780= IFCCPROPERTYSET('1KrVUe2bBgV7bA0EBrom',#5,'Tekla Assembly',Assembly Properties',(#34,#313,#4872,#3326,#4873,#7129,#318));  
#7781= IFCCQUANTITYLENGTH('Width',S,S,200.000000013009);  
#7782= IFCELEMENTQUANTITY('2stBjxRCD24vfpEuAg499',#5,'BaseQuantities',S,S,(#7781));  
#7783= IFCCARTESIANPOINT((1750.04923882473,181047.938290472,2903.07708057291));  
#7784= IFCDIRECTION((-1.6278999985728E-005,0.460015194959234,-0.887911042921312));  
#7785= IFCCAXIS2PLACEMENT3D(#7783,#4910,#7784);  
#7786= IFCCLOCALPLACEMENT(#7778,#7785);  
#7787= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4884));  
#7788= IFCCPRODUCTDEFINITIONSHAPE(S,S,(#7787));  
#7789= IFCCMEMBER('1Ogimc0002M34qE3SsC34r',#5,'BEAM',HN400\*200\*8\*13',HN400\*200\*8\*13',#7786,#7788,'PO(?)');  
#7790= IFCCQUANTITYLENGTH('Length',S,S,3217.74982219982);  
#7791= IFCCQUANTITYAREA('OuterSurfaceArea',S,S,5.09691571836452);  
#7792= IFCCQUANTITYAREA('GrossSurfaceArea',S,S,5.09691571836452);  
#7793= IFCCQUANTITYVOLUME('NetVolume',S,S,0.0263598065436327);  
#7794= IFCCQUANTITYVOLUME('GrossVolume',S,S,0.0270677115043449);  
#7795= IFCCQUANTITYWEIGHT('NetWeight',S,S,206.924481367517);

#7796= IFCQUANTITYWEIGHT('GrossWeight',S,S,212.481535309108);  
#7797= IFCELEMENTQUANTITY('2S8lcAU058IAMqlxeRo4sY',#5,'BaseQuantities',S,S,(#7790,#7791,#7792,#361,#7793,#7794,#7795,#7796));  
#7798= IFCLOCALPLACEMENT(#30,#10);  
#7799= IFCELEMENTASSEMBLY('1Ogimc0002LJ4qE3SsC34r',#5,'Steel Assembly',S,S,#7798,S,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#7800= IFCPROPERTYSET('ONMQ8Swo1BjP\_MlkQDV9P2',#5,'Tekla Assembly',Assembly Properties,(#34,#313,#4905,#3264,#4873,#7129,#318));  
#7801= IFCQUANTITYLENGTH('Width',S,S,200.000000002474);  
#7802= IFCELEMENTQUANTITY('33WbZdjSz6fOSgPB8yuuif',#5,'BaseQuantities',S,S,(#7801));  
#7803= IFCARTESIANPOINT((1749.99683464118,179399.023834453,45.7807064860019));  
#7804= IFCDIRECTION((1.630000000063549E-005,0.457806917179041,0.889051644347691));  
#7805= IFCAXIS2PLACEMENT3D(#7803,#4878,#7804);  
#7806= IFCLOCALPLACEMENT(#7798,#7805);  
#7807= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4916));  
#7808= IFCPRODUCTDEFINITIONSHAPE(S,S,(#7807));  
#7809= IFCMEMBER('1Ogimc0002L34qE3SsC34r',#5,'BEAM',HN400\*200\*8\*13',HN400\*200\*8\*13',#7806,#7808,'PO(?)');  
#7810= IFCQUANTITYLENGTH('Length',S,S,3213.62157619279);  
#7811= IFCQUANTITYAREA('OuterSurfaceArea',S,S,5.09037657668938);  
#7812= IFCQUANTITYAREA('GrossSurfaceArea',S,S,5.09037657668938);  
#7813= IFCQUANTITYVOLUME('NetVolume',S,S,0.026325985720857);  
#7814= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0270329846989337);  
#7815= IFCQUANTITYWEIGHT('NetWeight',S,S,206.659005423873);  
#7816= IFCQUANTITYWEIGHT('GrossWeight',S,S,212.20892988663);  
#7817= IFCELEMENTQUANTITY('2SuaC9GK97YBA4\_MzUNOip',#5,'BaseQuantities',S,S,(#7810,#7811,#7812,#361,#7813,#7814,#7815,#7816));  
#7818= IFCLOCALPLACEMENT(#30,#10);  
#7819= IFCELEMENTASSEMBLY('1Ogimc0002KJ4qE3SsC34r',#5,'Steel Assembly',S,S,#7818,S,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#7820= IFCPROPERTYSET('OmzjSSUy99fg7Q95Y44N6E',#5,'Tekla Assembly',Assembly Properties,(#34,#313,#4935,#3264,#4936,#7129,#318));  
#7821= IFCQUANTITYLENGTH('Width',S,S,200.00000020984);  
#7822= IFCELEMENTQUANTITY('2TZbr6fSnD9uFwXxA57fA\_',#5,'BaseQuantities',S,S,(#7821));  
#7823= IFCARTESIANPOINT((1749.98907176908,178062.551286958,2971.82566532354));  
#7824= IFCDIRECTION((3.524000000050213E-006,0.459617246069419,-0.888117102134141));  
#7825= IFCAXIS2PLACEMENT3D(#7823,#3371,#7824);  
#7826= IFCLOCALPLACEMENT(#7818,#7825);  
#7827= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4946));  
#7828= IFCPRODUCTDEFINITIONSHAPE(S,S,(#7827));  
#7829= IFCMEMBER('1Ogimc0002K34qE3SsC34r',#5,'BEAM',HN400\*200\*8\*13',HN400\*200\*8\*13',#7826,#7828,'PO(?)');  
#7830= IFCQUANTITYLENGTH('Length',S,S,3294.45736337375);  
#7831= IFCQUANTITYAREA('OuterSurfaceArea',S,S,5.21842046358401);  
#7832= IFCQUANTITYAREA('GrossSurfaceArea',S,S,5.21842046358401);  
#7833= IFCQUANTITYVOLUME('NetVolume',S,S,0.0269881947210679);  
#7834= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0277129753406999);  
#7835= IFCQUANTITYWEIGHT('NetWeight',S,S,211.857328560383);  
#7836= IFCQUANTITYWEIGHT('GrossWeight',S,S,217.546856424495);  
#7837= IFCELEMENTQUANTITY('3oFNAPj0TEShzNHBaA\_atZ',#5,'BaseQuantities',S,S,(#7830,#7831,#7832,#361,#7833,#7834,#7835,#7836));  
#7838= IFCLOCALPLACEMENT(#30,#10);  
#7839= IFCELEMENTASSEMBLY('1Ogimc0002JJ4qE3SsC34r',#5,'Steel Assembly',S,S,#7838,S,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#7840= IFCPROPERTYSET('0sRR9r8r0w91AfsV0EpBq',#5,'Tekla Assembly',Assembly Properties,(#34,#313,#4966,#3326,#4936,#7129,#318));  
#7841= IFCQUANTITYLENGTH('Width',S,S,200.000000007101);  
#7842= IFCELEMENTQUANTITY('1t10LMzoL6pAavFEGT\_wU',#5,'BaseQuantities',S,S,(#7841));  
#7843= IFCARTESIANPOINT((1750.00067918092,176367.595731562,46.037851499047));  
#7844= IFCDIRECTION((-3.52199999927383E-006,0.460378600901158,0.887722672809413));  
#7845= IFCAXIS2PLACEMENT3D(#7843,#3668,#7844);  
#7846= IFCLOCALPLACEMENT(#7838,#7845);  
#7847= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4976));  
#7848= IFCPRODUCTDEFINITIONSHAPE(S,S,(#7847));

#7849= IFCMEMBER('1Ogimc0002J34qE3SsC34r',#5,'BEAM',HN400\*200\*8\*13',HN400\*200\*8\*13',#7846,#7848,'PO(?)');  
#7850= IFCQUANTITYLENGTH('Length',S,S,3295.92116948882);  
#7851= IFCQUANTITYAREA('OuterSurfaceArea',S,S,5.22073913247029);  
#7852= IFCQUANTITYAREA('GrossSurfaceArea',S,S,5.22073913247029);  
#7853= IFCQUANTITYVOLUME('NetVolume',S,S,0.0270001862203689);  
#7854= IFCQUANTITYVOLUME('GrossVolume',S,S,0.02772528887774);  
#7855= IFCQUANTITYWEIGHT('NetWeight',S,S,211.951461829896);  
#7856= IFCQUANTITYWEIGHT('GrossWeight',S,S,217.643517690259);  
#7857= IFCLEMENTQUANTITY('3Oz4vVeIHAogQI3cJY36XB',#5,'BaseQuantities',S,S,(#7850,#7851,#7852,#361,#7853,#7854,#7855,#7856));  
#7858= IFCLOCALPLACEMENT(#30,#10);  
#7859= IFCLEMENTASSEMBLY('1Ogimc0002JJ4qE3SsC34r',#5,'Steel Assembly',S,S,#7858,S,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#7860= IFCPROPERTYSET('1oQCEcyRX9f9sh37QFRcif',#5,'Tekla Assembly',Assembly Properties,(#34,#313,#4995,#3326,#4996,#7129,#318));  
#7861= IFCQUANTITYLENGTH('Width',S,S,200.000000021188);  
#7862= IFCLEMENTQUANTITY('1XCZPT7L45hm7AE9yEojs',#5,'BaseQuantities',S,S,(#7861));  
#7863= IFCARTESIANPOINT((1750.00334709996,174997.220068108,3042.79439196714));  
#7864= IFCDIRECTION((-1.05300000007609E-006,0.458925541043881,-0.888474731084949));  
#7865= IFCAXIS2PLACEMENT3D(#7863,#5035,#7864);  
#7866= IFCLOCALPLACEMENT(#7858,#7865);  
#7867= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5007));  
#7868= IFCPRODUCTDEFINITIONSHAPE(S,S,(#7867));  
#7869= IFCMEMBER('1Ogimc0002J34qE3SsC34r',#5,'BEAM',HN400\*200\*8\*13',HN400\*200\*8\*13',#7866,#7868,'PO(?)');  
#7870= IFCQUANTITYLENGTH('Length',S,S,3373.0861904403);  
#7871= IFCQUANTITYAREA('OuterSurfaceArea',S,S,5.34296852565743);  
#7872= IFCQUANTITYAREA('GrossSurfaceArea',S,S,5.34296852565743);  
#7873= IFCQUANTITYVOLUME('NetVolume',S,S,0.0276323220724029);  
#7874= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0283744010339838);  
#7875= IFCQUANTITYWEIGHT('NetWeight',S,S,216.913728268363);  
#7876= IFCQUANTITYWEIGHT('GrossWeight',S,S,222.739048116773);  
#7877= IFCLEMENTQUANTITY('026PWQ535CDRgCgCjhnqny',#5,'BaseQuantities',S,S,(#7870,#7871,#7872,#361,#7873,#7874,#7875,#7876));  
#7878= IFCLOCALPLACEMENT(#30,#10);  
#7879= IFCLEMENTASSEMBLY('1Ogimc0002HJ4qE3SsC34r',#5,'Steel Assembly',S,S,#7878,S,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#7880= IFCPROPERTYSET('3yleCF4IT7Dw5AAAwJjId',#5,'Tekla Assembly',Assembly Properties,(#34,#313,#5028,#5029,#5030,#7129,#318));  
#7881= IFCQUANTITYLENGTH('Width',S,S,200.000000001892);  
#7882= IFCLEMENTQUANTITY('1k7S1tNyL7SO0yVNYs\_oq3',#5,'BaseQuantities',S,S,(#7881));  
#7883= IFCARTESIANPOINT((1749.99980681068,173263.955667805,16.8194048175952));  
#7884= IFCDIRECTION((1.04099999980019E-006,0.457197744900771,0.88935606680697));  
#7885= IFCAXIS2PLACEMENT3D(#7883,#5001,#7884);  
#7886= IFCLOCALPLACEMENT(#7878,#7885);  
#7887= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5041));  
#7888= IFCPRODUCTDEFINITIONSHAPE(S,S,(#7887));  
#7889= IFCMEMBER('1Ogimc0002H34qE3SsC34r',#5,'BEAM',HN400\*200\*8\*13',HN400\*200\*8\*13',#7886,#7888,'PO(?)');  
#7890= IFCQUANTITYLENGTH('Length',S,S,3402.2049230281);  
#7891= IFCQUANTITYAREA('OuterSurfaceArea',S,S,5.38909259807651);  
#7892= IFCQUANTITYAREA('GrossSurfaceArea',S,S,5.38909259807651);  
#7893= IFCQUANTITYVOLUME('NetVolume',S,S,0.0278708627293855);  
#7894= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0286193478125124);  
#7895= IFCQUANTITYWEIGHT('NetWeight',S,S,218.786272425676);  
#7896= IFCQUANTITYWEIGHT('GrossWeight',S,S,224.661880328222);  
#7897= IFCLEMENTQUANTITY('11WW4J3t8vfv060gCDHbP',#5,'BaseQuantities',S,S,(#7890,#7891,#7892,#361,#7893,#7894,#7895,#7896));  
#7898= IFCLOCALPLACEMENT(#30,#10);  
#7899= IFCLEMENTASSEMBLY('1Ogimc0002GJ4qE3SsC34r',#5,'Steel Assembly',S,S,#7898,S,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#7900= IFCPROPERTYSET('3TtcZ91vD0YhKafEsecnuH',#5,'Tekla Assembly',Assembly Properties,(#34,#313,#5062,#3264,#5063,#7129,#318));  
#7901= IFCQUANTITYLENGTH('Width',S,S,200.000000009575);

## Appendix

#7902= IFCELEMENTQUANTITY('3X7Sbdh7L7wPe\_qk32dbz',#5,'BaseQuantities',S,S,(#7901));

#7903= IFCCARTESIANPOINT((1749.99895274577,171845.229825397,3115.24566052664));

#7904= IFCDIRECTION((3.21000000010426E-007,0.458056329986185,-0.888923167973185));

#7905= IFCAxis2PLACEMENT3D(#7903,#7,7904);

#7906= IFLOCALPLACEMENT(#7898,#7905);

#7907= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5073));

#7908= IFCPRODUCTDEFINITIONSHAPE(S,S,(#7907));

#7909= IFCMEMBER('1Ogimc0002G34qE3SsC34r',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#7906,#7908,'P0(?));

#7910= IFCQUANTITYLENGTH('Length',S,S,3452.98686638777);

#7911= IFCQUANTITYAREA('OuterSurfaceArea',S,S,5.46953119635823);

#7912= IFCQUANTITYAREA('GrossSurfaceArea',S,S,5.46953119635823);

#7913= IFCQUANTITYVOLUME('NetVolume',S,S,0.0282868684095726);

#7914= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0290465255200539);

#7915= IFCQUANTITYWEIGHT('NetWeight',S,S,222.051917015145);

#7916= IFCQUANTITYWEIGHT('GrossWeight',S,S,228.015225332423);

#7917= IFCELEMENTQUANTITY('1\$6xbOmbHAvQmOEcDqFOA',#5,'BaseQuantities',S,S,(#7910,#7911,#7912,#361,#7913,#7914,#7915,#7916));

#7918= IFLOCALPLACEMENT(#30,#10);

#7919= IFCELEMENTASSEMBLY('1Ogimc0002FJ4qE3SsC34r',#5,'SteelAssembly',S,S,#7918,S,'BE-0(?)',NOTDEFINED,..RIGID\_FRAME.);

#7920= IFCPROPERTYSET('1GARqxwRn2MOC7v5WjJ819',#5,'TeklaAssembly','AssemblyProperties',(#34,#313,#5093,#3326,#5094,#7129,#318));

#7921= IFCQUANTITYLENGTH('Width',S,S,200.000000009197);

#7922= IFCELEMENTQUANTITY('0sbdv7FGD76BwCA8ufFeS0S',#5,'BaseQuantities',S,S,(#7921));

#7923= IFCCARTESIANPOINT((1750.00006067285,170050.005390431,46.6282080089161));

#7924= IFCDIRECTION((-3.19999999902294E-007,0.466282079889176,0.884636095789744));

#7925= IFCAxis2PLACEMENT3D(#7923,#7,7924);

#7926= IFLOCALPLACEMENT(#7918,#7925);

#7927= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5104));

#7928= IFCPRODUCTDEFINITIONSHAPE(S,S,(#7927));

#7929= IFCMEMBER('1Ogimc0002F34qE3SsC34r',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#7926,#7928,'P0(?));

#7930= IFCQUANTITYLENGTH('Length',S,S,3469.720535431);

#7931= IFCQUANTITYAREA('OuterSurfaceArea',S,S,5.4960373281227);

#7932= IFCQUANTITYAREA('GrossSurfaceArea',S,S,5.4960373281227);

#7933= IFCQUANTITYVOLUME('NetVolume',S,S,0.0284239506260925);

#7934= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0291872891440456);

#7935= IFCQUANTITYWEIGHT('NetWeight',S,S,223.128012414826);

#7936= IFCQUANTITYWEIGHT('GrossWeight',S,S,229.120219780758);

#7937= IFCELEMENTQUANTITY('16UCH7YH99evSL9uldNTZw',#5,'BaseQuantities',S,S,(#7930,#7931,#7932,#361,#7933,#7934,#7935,#7936));

#7938= IFLOCALPLACEMENT(#30,#10);

#7939= IFCELEMENTASSEMBLY('1Ogimc0002EJ4qE3SsC34r',#5,'SteelAssembly',S,S,#7938,S,'BE-0(?)',NOTDEFINED,..RIGID\_FRAME.);

#7940= IFCPROPERTYSET('011PzRXMX2uxwmNW3H91nE',#5,'TeklaAssembly','AssemblyProperties',(#34,#313,#5124,#3326,#5125,#7129,#318));

#7941= IFCQUANTITYLENGTH('Width',S,S,200.000000013883);

#7942= IFCELEMENTQUANTITY('3g0g\_Sv0j82xAuralbAHAW',#5,'BaseQuantities',S,S,(#7941));

#7943= IFCCARTESIANPOINT((1750.00018338863,168599.872343127,3191.00729288661));

#7944= IFCDIRECTION((-5.50000000387921E-008,0.459570100216001,-0.888141499417436));

#7945= IFCAxis2PLACEMENT3D(#7943,#7,7944);

#7946= IFLOCALPLACEMENT(#7938,#7945);

#7947= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5135));

#7948= IFCPRODUCTDEFINITIONSHAPE(S,S,(#7947));

#7949= IFCMEMBER('1Ogimc0002E34qE3SsC34r',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#7946,#7948,'P0(?));

#7950= IFCQUANTITYLENGTH('Length',S,S,3541.15902152746);

#7951= IFCQUANTITYAREA('OuterSurfaceArea',S,S,5.6091958900995);

#7952= IFCQUANTITYAREA('GrossSurfaceArea',S,S,5.6091958900995);

#7953= IFCQUANTITYVOLUME('NetVolume',S,S,0.0290091747045415);

#7954= IFCQUANTITYVOLUME('GrossVolume',S,S,0.029788229689089);

#7955= IFCQUANTITYWEIGHT('NetWeight',S,S,227.722021430651);

#7956= IFCQUANTITYWEIGHT('GrossWeight',S,S,233.837603059349);

#7957= IFCELEMENTQUANTITY('1zq94hZ1n6cAsnTEWthkV',#5,'BaseQuantities',S,S,(#7950,#7951,#7952,#361,#7953,#7954,#7955,#7956));

#7958= IFLOCALPLACEMENT(#30,#10);

#7959= IFCELEMENTASSEMBLY('1Ogimc0002D4qE3SsC34r',#5,'SteelAssembly',S,S,#7958,S,'BE-0(?)',NOTDEFINED,..RIGID\_FRAME.);

#7960= IFCPROPERTYSET('2pAnYrSH9wAgWJ0B1AQ',#5,'TeklaAssembly','AssemblyProperties',(#34,#313,#5157,#5158,#7129,#318));

#7961= IFCQUANTITYLENGTH('Width',S,S,200.000000009401);

#7962= IFCELEMENTQUANTITY('3axrK3uZXB19KdPvWxtZg',#5,'BaseQuantities',S,S,(#7961));

#7963= IFCCARTESIANPOINT((1749.99440454699,166763.834512106,44.5675798224274));

#7964= IFCDIRECTION((0.999999999994509,-3.31400000139182E-006,0.));

#7965= IFCDIRECTION((1.54499999956667E-006,0.466271538874781,0.884641651762428));

#7966= IFCAxis2PLACEMENT3D(#7963,#7964,#7965);

#7967= IFLOCALPLACEMENT(#7958,#7966);

#7968= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5169));

#7969= IFCPRODUCTDEFINITIONSHAPE(S,S,(#7968));

#7970= IFCMEMBER('1Ogimc0002D34qE3SsC34r',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#7967,#7969,'P0(?));

#7971= IFCQUANTITYLENGTH('Length',S,S,3557.49681426694);

#7972= IFCQUANTITYAREA('OuterSurfaceArea',S,S,5.63507495379883);

#7973= IFCQUANTITYAREA('GrossSurfaceArea',S,S,5.63507495379883);

#7974= IFCQUANTITYVOLUME('NetVolume',S,S,0.0291430139026202);

#7975= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0299256632016135);

#7976= IFCQUANTITYWEIGHT('NetWeight',S,S,228.772659135569);

#7977= IFCQUANTITYWEIGHT('GrossWeight',S,S,234.916456132666);

#7978= IFCELEMENTQUANTITY('3c6BS2f9Y1nvl8a9JU1ITz',#5,'BaseQuantities',S,S,(#7971,#7972,#7973,#361,#7974,#7975,#7976,#7977));

#7979= IFLOCALPLACEMENT(#30,#10);

#7980= IFCELEMENTASSEMBLY('1Ogimc0002C4qE3SsC34r',#5,'SteelAssembly',S,S,#7979,S,'BE-0(?)',NOTDEFINED,..RIGID\_FRAME.);

#7981= IFCPROPERTYSET('00Ty7f6M94SPYMKasQr2S3',#5,'TeklaAssembly','AssemblyProperties',(#34,#313,#5190,#5191,#7129,#318));

#7982= IFCQUANTITYLENGTH('Width',S,S,200.000000017957);

#7983= IFCELEMENTQUANTITY('0SSpswJ1n6rZHU5BZKCFK',#5,'BaseQuantities',S,S,(#7982));

#7984= IFCCARTESIANPOINT((1749.99956745326,165267.897522137,3268.11322557476));

#7985= IFCDIRECTION((-1.41600000028608E-006,0.460620834103128,-0.887597007198725));

#7986= IFCAxis2PLACEMENT3D(#7984,#5035,#7985);

#7987= IFLOCALPLACEMENT(#7979,#7986);

#7988= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5201));

#7989= IFCPRODUCTDEFINITIONSHAPE(S,S,(#7988));

#7990= IFCMEMBER('1Ogimc0002C34qE3SsC34r',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#7987,#7989,'P0(?));

#7991= IFCQUANTITYLENGTH('Length',S,S,3632.40377165572);

#7992= IFCQUANTITYAREA('OuterSurfaceArea',S,S,5.75372757430266);

#7993= IFCQUANTITYAREA('GrossSurfaceArea',S,S,5.75372757430266);

#7994= IFCQUANTITYVOLUME('NetVolume',S,S,0.0297566516970785);

#7995= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0305557805271679);

#7996= IFCQUANTITYWEIGHT('NetWeight',S,S,233.589715822066);

#7997= IFCQUANTITYWEIGHT('GrossWeight',S,S,239.862877138268);

#7998= IFCELEMENTQUANTITY('35eJTBjuD7oheFbJbenUn',#5,'BaseQuantities',S,S,(#7991,#7992,#7993,#361,#7994,#7995,#7996,#7997));

#7999= IFLOCALPLACEMENT(#30,#10);

#8000= IFCELEMENTASSEMBLY('1Ogimc0002BJ4qE3SsC34r',#5,'SteelAssembly',S,S,#7999,S,'BE-0(?)',NOTDEFINED,..RIGID\_FRAME.);

#8001= IFCPROPERTYSET('2QUQx3nyzB1xSyaRDQTBfM',#5,'TeklaAssembly','AssemblyProperties',(#34,#313,#5222,#3326,#5223,#7129,#318));

#8002= IFCQUANTITYLENGTH('Width',S,S,200.000000010099);

#8003= IFCELEMENTQUANTITY('2ZVWaaHiEYvDdv56c7JH2MNV',#5,'BaseQuantities',S,S,(#8002));

#8004= IFCCARTESIANPOINT((1746.84419017988,163388.39111019,46.7145869200574));

#8005= IFCDIRECTION((0.999998447333185,-0.00176219500057556,0.));

#8006= IFCDIRECTION((0.000823201999710616,0.467145143835785,0.884180262689182));

#8007= IFCAxis2PLACEMENT3D(#8004,#8005,#8006);

#8008= IFCLOCALPLACEMENT(#7999,#8007);  
#8009=  
IFC SHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5234));  
#8010= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#8009));  
#8011=  
IFCMEMBER('1Ogjm0002B34qE3SsC34r',#5,'BEAM','HN400\*200\*8  
\*13','HN400\*200\*8\*13',#8008,#8010,'PO(?)');  
#8012= IFCQUANTITYLENGTH('Length',\$,\$,3644.11113682331);  
#8013=  
IFCQUANTITYAREA('OuterSurfaceArea',\$,\$,5.77227204072812);  
#8014=  
IFCQUANTITYAREA('GrossSurfaceArea',\$,\$,5.77227204072812);  
#8015=  
IFCQUANTITYVOLUME('NetVolume',\$,\$,0.0298525584329849);  
#8016=  
IFCQUANTITYVOLUME('GrossVolume',\$,\$,0.0306542628829577);  
#8017= IFCQUANTITYWEIGHT('NetWeight',\$,\$,234.342583698931);  
#8018=  
IFCQUANTITYWEIGHT('GrossWeight',\$,\$,240.635963631218);  
#8019=  
IFCELEMENTQUANTITY('0ix9VleSHDnBcf8riSR2m',#5,'BaseQuant  
ities',\$,\$,(#8012,#8013,#8014,#361,#8015,#8016,#8017,#8018));  
#8020= IFCLOCALPLACEMENT(#30,#10);  
#8021=  
IFCELEMENTASSEMBLY('1Ogjm0002AJ4qE3SsC34r',#5,'Steel  
Assembly',\$,\$,#8020,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#8022= IFCPROPERTYSET('0cSZLY4MzAS8o4AscKi8Zj',#5,'Tekla  
Assembly','Assembly  
Properties',(#34,#313,#5254,#3264,#5255,#7129,#318));  
#8023= IFCQUANTITYLENGTH('Width',\$,\$,200.00000000748);  
#8024=  
IFCELEMENTQUANTITY('0jXi9EhrBGAhtgm2Qy1dm',#5,'BaseQua  
ntities',\$,\$,(#8023));  
#8025=  
IFCCARTESIANPOINT((1749.84548202844,161842.57996633,3347.6  
4464652608));  
#8026=  
IFCDIRECTION((0.999998484155402,0.00174117400026581,0.));  
#8027= IFC DIRECTION((-  
0.000805564999829826,0.46265536290225,-0.886537853812695));  
#8028= IFCAXIS2PLACEMENT3D(#8025,#8026,#8027);  
#8029= IFCLOCALPLACEMENT(#8020,#8028);  
#8030=  
IFC SHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5266));  
#8031= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#8030));  
#8032=  
IFCMEMBER('1Ogjm0002A34qE3SsC34r',#5,'BEAM','HN400\*200\*8  
\*13','HN400\*200\*8\*13',#8029,#8031,'PO(?)');  
#8033= IFCQUANTITYLENGTH('Length',\$,\$,3723.90081914088);  
#8034=  
IFCQUANTITYAREA('OuterSurfaceArea',\$,\$,5.89865889751915);  
#8035=  
IFCQUANTITYAREA('GrossSurfaceArea',\$,\$,5.89865889751915);  
#8036=  
IFCQUANTITYVOLUME('NetVolume',\$,\$,0.0305061955104795);  
#8037=  
IFCQUANTITYVOLUME('GrossVolume',\$,\$,0.0313254536906131);  
#8038= IFCQUANTITYWEIGHT('NetWeight',\$,\$,239.473634757264);  
#8039=  
IFCQUANTITYWEIGHT('GrossWeight',\$,\$,245.904811471313);  
#8040=  
IFCELEMENTQUANTITY('0vNknLF4f4Qx3WltSJPPi',#5,'BaseQuan  
tities',\$,\$,(#8033,#8034,#8035,#361,#8036,#8037,#8038,#8039));  
#8041= IFCLOCALPLACEMENT(#30,#10);  
#8042=  
IFCELEMENTASSEMBLY('1Ogjm00029J4qE3SsC34r',#5,'Steel  
Assembly',\$,\$,#8041,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#8043=  
IFCPROPERTYSET('0FsbB8fYD5UODNMSL.esPFK',#5,'Tekla  
Assembly','Assembly  
Properties',(#34,#313,#5286,#3326,#5287,#7129,#318));  
#8044= IFCQUANTITYLENGTH('Width',\$,\$,200.000000026659);  
#8045=  
IFCELEMENTQUANTITY('00fl6SOP51jeBa6x53aUvk',#5,'BaseQuanti  
ties',\$,\$,(#8044));  
#8046=  
IFCCARTESIANPOINT((1749.99984746616,159911.689188915,46.91  
69555164756));  
#8047= IFC DIRECTION((-9.9999986963882E-  
010,0.469169558171106,0.883108105322066));  
#8048= IFCAXIS2PLACEMENT3D(#8046,#7,#8047);  
#8049= IFCLOCALPLACEMENT(#8041,#8048);  
#8050=  
IFC SHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5297));  
#8051= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#8050));  
#8052=  
IFCMEMBER('1Ogjm0002934qE3SsC34r',#5,'BEAM','HN400\*200\*8  
\*13','HN400\*200\*8\*13',#8049,#8051,'PO(?)');  
#8053= IFCQUANTITYLENGTH('Length',\$,\$,3738.36342403958);  
#8054=  
IFCQUANTITYAREA('OuterSurfaceArea',\$,\$,5.92156766367869);  
#8055=  
IFCQUANTITYAREA('GrossSurfaceArea',\$,\$,5.92156766367869);  
#8056=  
IFCQUANTITYVOLUME('NetVolume',\$,\$,0.0306246731700834);  
#8057=  
IFCQUANTITYVOLUME('GrossVolume',\$,\$,0.0314471131230209);  
#8058= IFCQUANTITYWEIGHT('NetWeight',\$,\$,240.403684385155);  
#8059=  
IFCQUANTITYWEIGHT('GrossWeight',\$,\$,246.859838015714);  
#8060=  
IFCELEMENTQUANTITY('2JA4C9rk54UP9Sg4eQ2DQe',#5,'BaseQu  
antities',\$,\$,(#8053,#8054,#8055,#361,#8056,#8057,#8058,#8059));  
#8061= IFCLOCALPLACEMENT(#30,#10);

#8062=  
IFCELEMENTASSEMBLY('1Ogjm0002J4qE3SsC34q',#5,'Steel  
Assembly',\$,\$,#8061,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#8063= IFCPROPERTYSET('0cSZLY4MzAS8o4AscKi8Zj',#5,'Tekla  
Assembly','Assembly  
Properties',(#34,#313,#5317,#3326,#5318,#8063,#318));  
#8065=  
IFCCARTESIANPOINT((1749.99984728577,158324.082548815,3429.  
11612816652));  
#8066= IFC DIRECTION((0.,0.462484783005032,-  
0.886627219009651));  
#8067= IFCAXIS2PLACEMENT3D(#8065,#7,#8066);  
#8068= IFCLOCALPLACEMENT(#8061,#8067);  
#8069=  
IFC SHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5329));  
#8070= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#8069));  
#8071=  
IFCMEMBER('1Ogjm0002834qE3SsC34q',#5,'BEAM','HN400\*200\*8  
\*13','HN400\*200\*8\*13',#8068,#8070,'PO(?)');  
#8072= IFCQUANTITYLENGTH('Length',\$,\$,3815.43401512387);  
#8073=  
IFCQUANTITYAREA('OuterSurfaceArea',\$,\$,6.04364747995621);  
#8074=  
IFCQUANTITYAREA('GrossSurfaceArea',\$,\$,6.04364747995621);  
#8075=  
IFCQUANTITYVOLUME('NetVolume',\$,\$,0.0312560354517855);  
#8076=  
IFCQUANTITYVOLUME('GrossVolume',\$,\$,0.032095430935222);  
#8077= IFCQUANTITYWEIGHT('NetWeight',\$,\$,245.359878296516);  
#8078=  
IFCQUANTITYWEIGHT('GrossWeight',\$,\$,251.949132841493);  
#8079=  
IFCELEMENTQUANTITY('2iOufiVj5Uf53MzjRatMZ',#5,'BaseQuant  
ities',\$,\$,(#8072,#8073,#8074,#361,#8075,#8076,#8077,#8078));  
#8080= IFCLOCALPLACEMENT(#30,#10);  
#8081=  
IFCELEMENTASSEMBLY('1Ogjm00027J4qE3SsC34q',#5,'Steel  
Assembly',\$,\$,#8080,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#8082= IFCPROPERTYSET('31V6lIXSDFnQOpJl\_eN5CU',#5,'Tekla  
Assembly','Assembly  
Properties',(#34,#313,#5350,#3326,#5351,#8063,#318));  
#8083= IFCQUANTITYLENGTH('Width',\$,\$,200.000000002969);  
#8084=  
IFCELEMENTQUANTITY('39LxVUke59ghrsOVDblrm5',#5,'BaseQua  
ntities',\$,\$,(#8083));  
#8085=  
IFCCARTESIANPOINT((1750.00000745035,156339.389354611,47.13  
26607758537));  
#8086= IFC DIRECTION((-3.99999999526434E-  
008,0.47132660775145,0.881958745534909));  
#8087= IFCAXIS2PLACEMENT3D(#8085,#7,#8086);  
#8088= IFCLOCALPLACEMENT(#8080,#8087);  
#8089=  
IFC SHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5361));  
#8090= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#8089));  
#8091=  
IFCMEMBER('1Ogjm0002734qE3SsC34q',#5,'BEAM','HN400\*200\*8  
\*13','HN400\*200\*8\*13',#8088,#8090,'PO(?)');  
#8092= IFCQUANTITYLENGTH('Length',\$,\$,3835.63025705518);  
#8093=  
IFCQUANTITYAREA('OuterSurfaceArea',\$,\$,6.0756383271754);  
#8094=  
IFCQUANTITYAREA('GrossSurfaceArea',\$,\$,6.0756383271754);  
#8095=  
IFCQUANTITYVOLUME('NetVolume',\$,\$,0.0314214830658403);  
#8096=  
IFCQUANTITYVOLUME('GrossVolume',\$,\$,0.0322653217223482);  
#8097= IFCQUANTITYWEIGHT('NetWeight',\$,\$,246.658642066847);  
#8098=  
IFCQUANTITYWEIGHT('GrossWeight',\$,\$,253.282775520433);  
#8099=  
IFCELEMENTQUANTITY('05EWTx7WPD\$P00GjnwMZTj',#5,'Base  
Quantities',\$,\$,(#8092,#8093,#8094,#361,#8095,#8096,#8097,#8098));  
#8100= IFCLOCALPLACEMENT(#30,#10);  
#8101=  
IFCELEMENTASSEMBLY('1Ogjm00026J4qE3SsC34q',#5,'Steel  
Assembly',\$,\$,#8100,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#8102= IFCPROPERTYSET('21E1F7SnjCTBoinglxmZS9',#5,'Tekla  
Assembly','Assembly  
Properties',(#34,#313,#5381,#3326,#5382,#8063,#318));  
#8103= IFCQUANTITYLENGTH('Width',\$,\$,200.000000022963);  
#8104=  
IFCELEMENTQUANTITY('0nCoqg0v9nB9W9sEkVXIm',#5,'BaseQ  
uantities',\$,\$,(#8103));  
#8105=  
IFCCARTESIANPOINT((1749.9998582422,154705.59841075,3512.96  
650206196));  
#8106= IFC DIRECTION((3.80000000267888E-  
008,0.46295326410355,-0.886382691198259));  
#8107= IFCAXIS2PLACEMENT3D(#8105,#7,#8106);  
#8108= IFCLOCALPLACEMENT(#8100,#8107);  
#8109=  
IFC SHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5392));  
#8110= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#8109));  
#8111=  
IFCMEMBER('1Ogjm0002634qE3SsC34q',#5,'BEAM','HN400\*200\*8  
\*13','HN400\*200\*8\*13',#8108,#8110,'PO(?)');  
#8112= IFCQUANTITYLENGTH('Length',\$,\$,3911.03212042313);  
#8113=  
IFCQUANTITYAREA('OuterSurfaceArea',\$,\$,6.19507487875024);  
#8114=  
IFCQUANTITYAREA('GrossSurfaceArea',\$,\$,6.19507487875024);

## Appendix

#8115= IFCQUANTITYVOLUME('NetVolume',S,S,0.0320391751300942);  
#8116= IFCQUANTITYVOLUME('GrossVolume',S,S,0.032899602196994);  
#8117= IFCQUANTITYWEIGHT('NetWeight',S,S,251.507524771239);  
#8118= IFCQUANTITYWEIGHT('GrossWeight',S,S,258.261877246445);  
#8119= IFCLEMENTQUANTITY('0y2k4nqQHCeFMH4HNeAdr',#5,'BaseQuantities',S,S,(#8112,#8113,#8114,#3361,#8115,#8116,#8117,#8118));  
#8120= IFCLOCALPLACEMENT(#30,#10);  
#8121= IFCLEMENTASSEMBLY('1Ogimc00025J4qE3SsC34q',#5,'Steel Assembly',S,S,#8120,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#8122= IFCPROPERTYSET('209B6c75D6H9vX7nblpkSA',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#5412,#3326,#5413,#8063,#318));  
#8123= IFCQUANTITYLENGTH('Width',S,S,200.000000022381);  
#8124= IFCLEMENTQUANTITY('1dMvV0QrrCIPtLg2C\_9v1',#5,'BaseQuantities',S,S,(#8123));  
#8125= IFCARTESIANPOINT((1736.38626502796,152663.661577147,47.3827079919616));  
#8126= IFCDIRECTION((0.999975713666913,-0.00696936699769096,0.));  
#8127= IFCDIRECTION((0.0033022750095943,0.473815572137663,0.880617907255852));  
#8128= IFCAXIS2PLACEMENT3D(#8125,#8126,#8127);  
#8129= IFCLOCALPLACEMENT(#8120,#8128);  
#8130= IFCSHAPEPRESENTATION(#12,'Body','SweptSolid',(#5424));  
#8131= IFCPRODUCTDEFINITIONSHAPE(S,S,(#8130));  
#8132= IFCMEMBER('1Ogimc0002534qE3SsC34q',#5,'BEAM',HN400\*200\*8\*13,'HN400\*200\*8\*13',#8129,#8131,'P0(?)');  
#8133= IFCQUANTITYLENGTH('Length',S,S,3936.63488735908);  
#8134= IFCQUANTITYAREA('OuterSurfaceArea',S,S,6.23562966157678);  
#8135= IFCQUANTITYAREA('GrossSurfaceArea',S,S,6.23562966157678);  
#8136= IFCQUANTITYVOLUME('NetVolume',S,S,0.0322489129968267);  
#8137= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0331149726724645);  
#8138= IFCQUANTITYWEIGHT('NetWeight',S,S,253.15396702509);  
#8139= IFCQUANTITYWEIGHT('GrossWeight',S,S,259.952535478847);  
#8140= IFCLEMENTQUANTITY('2iv8fId50OgTM8TUsAZq\$',#5,'BaseQuantities',S,S,(#8133,#8134,#8135,#361,#8136,#8137,#8138,#8139));  
#8141= IFCLOCALPLACEMENT(#30,#10);  
#8142= IFCLEMENTASSEMBLY('1Ogimc00024J4qE3SsC34q',#5,'Steel Assembly',S,S,#8141,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#8143= IFCPROPERTYSET('1GXds\_ec51xO7CIRfCpD',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#5445,#3326,#5446,#8063,#318));  
#8144= IFCARTESIANPOINT((1749.37805121446,150987.197659009,3599.03863920331));  
#8145= IFCDIRECTION((0.99997539612108,0.00701478100085468,0.));  
#8146= IFCDIRECTION((-0.00324424899896404,0.46247617285232,-0.886625774716878));  
#8147= IFCAXIS2PLACEMENT3D(#8144,#8145,#8146);  
#8148= IFCLOCALPLACEMENT(#8141,#8147);  
#8149= IFCSHAPEPRESENTATION(#12,'Body','SweptSolid',(#5457));  
#8150= IFCPRODUCTDEFINITIONSHAPE(S,S,(#8149));  
#8151= IFCMEMBER('1Ogimc0002434qE3SsC34q',#5,'BEAM',HN400\*200\*8\*13,'HN400\*200\*8\*13',#8148,#8150,'P0(?)');  
#8152= IFCQUANTITYLENGTH('Length',S,S,4007.09068682381);  
#8153= IFCQUANTITYAREA('OuterSurfaceArea',S,S,6.34723164792891);  
#8154= IFCQUANTITYAREA('GrossSurfaceArea',S,S,6.34723164792891);  
#8155= IFCQUANTITYVOLUME('NetVolume',S,S,0.0328260869061432);  
#8156= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0337076468575619);  
#8157= IFCQUANTITYWEIGHT('NetWeight',S,S,257.684782213224);  
#8158= IFCQUANTITYWEIGHT('GrossWeight',S,S,264.605027831861);  
#8159= IFCLEMENTQUANTITY('0DQpg2l8T6dwwCQfHYDTh',#5,'BaseQuantities',S,S,(#8152,#8153,#8154,#361,#8155,#8156,#8157,#8158));  
#8160= IFCLOCALPLACEMENT(#30,#10);  
#8161= IFCLEMENTASSEMBLY('1Ogimc00023J4qE3SsC34q',#5,'Steel Assembly',S,S,#8160,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#8162= IFCPROPERTYSET('3z3SiLR\_D8iHmXbbEt2WLO',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#5477,#3326,#5478,#8063,#318));  
#8163= IFCQUANTITYLENGTH('Width',S,S,200.000000003187);  
#8164= IFCLEMENTQUANTITY('3T3i4U5\_fBnxwHZVPwRiFh',#5,'BaseQuantities',S,S,(#8163));  
#8165= IFCARTESIANPOINT((1750.00000000959,148891.909061357,47.5174320518101));  
#8166= IFCDIRECTION((0.0475174320916496,0.879891677845373));  
#8167= IFCAXIS2PLACEMENT3D(#8165,#7,#8166);  
#8168= IFCLOCALPLACEMENT(#8160,#8167);  
#8169= IFCSHAPEPRESENTATION(#12,'Body','SweptSolid',(#5486));  
#8170= IFCPRODUCTDEFINITIONSHAPE(S,S,(#8169));  
#8171= IFCMEMBER('1Ogimc000234qE3SsC34q',#5,'BEAM',HN400\*200\*8\*13,'HN400\*200\*8\*13',#8168,#8170,'P0(?)');  
#8172= IFCQUANTITYLENGTH('Length',S,S,4037.75825204999);  
#8173= IFCQUANTITYAREA('OuterSurfaceArea',S,S,6.39580907124718);  
#8174= IFCQUANTITYAREA('GrossSurfaceArea',S,S,6.39580907124718);  
#8175= IFCQUANTITYVOLUME('NetVolume',S,S,0.0330773156008726);  
#8176= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0339656224162445);  
#8177= IFCQUANTITYWEIGHT('NetWeight',S,S,259.65692746685);  
#8178= IFCQUANTITYWEIGHT('GrossWeight',S,S,266.630135967519);  
#8179= IFCLEMENTQUANTITY('1LS2mAe69F9RNQteRNatp3',#5,'BaseQuantities',S,S,(#8172,#8173,#8174,#361,#8175,#8176,#8177,#8178));  
#8180= IFCLOCALPLACEMENT(#30,#10);  
#8181= IFCLEMENTASSEMBLY('1Ogimc00022J4qE3SsC34q',#5,'Steel Assembly',S,S,#8180,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#8182= IFCPROPERTYSET('3Z\_OgF6j4Lvl2yD0sqBC',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#5506,#3326,#5507,#8063,#318));  
#8183= IFCARTESIANPOINT((1749.99996743218,147162.085958023,3687.75982843768));  
#8184= IFCDIRECTION((8.0000000198368E-009,0.463819284236189,-0.885929834451143));  
#8185= IFCAXIS2PLACEMENT3D(#8183,#7,#8184);  
#8186= IFCLOCALPLACEMENT(#8180,#8185);  
#8187= IFCSHAPEPRESENTATION(#12,'Body','SweptSolid',(#5517));  
#8188= IFCPRODUCTDEFINITIONSHAPE(S,S,(#8187));  
#8189= IFCMEMBER('1Ogimc0002234qE3SsC34q',#5,'BEAM',HN400\*200\*8\*13,'HN400\*200\*8\*13',#8186,#8188,'P0(?)');  
#8190= IFCQUANTITYLENGTH('Length',S,S,4110.23284075043);  
#8191= IFCQUANTITYAREA('OuterSurfaceArea',S,S,6.51060881974868);  
#8192= IFCQUANTITYAREA('GrossSurfaceArea',S,S,6.51060881974868);  
#8193= IFCQUANTITYVOLUME('NetVolume',S,S,0.033671027431278);  
#8194= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0345752786563926);  
#8195= IFCQUANTITYWEIGHT('NetWeight',S,S,264.317563535533);  
#8196= IFCQUANTITYWEIGHT('GrossWeight',S,S,271.415937452682);  
#8197= IFCLEMENTQUANTITY('2SiGzOzPHz0URVSWXAPxyL',#5,'BaseQuantities',S,S,(#8190,#8191,#8192,#361,#8193,#8194,#8195,#8196));  
#8198= IFCLOCALPLACEMENT(#30,#10);  
#8199= IFCLEMENTASSEMBLY('1Ogimc00021J4qE3SsC34q',#5,'Steel Assembly',S,S,#8198,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#8200= IFCPROPERTYSET('1NdOs0iEKRAy7mAglli',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#5538,#3264,#5539,#8063,#318));  
#8201= IFCQUANTITYLENGTH('Width',S,S,200.000000004948);  
#8202= IFCLEMENTQUANTITY('19onV7Bj14ihk07PtfgaC',#5,'BaseQuantities',S,S,(#8201));  
#8203= IFCARTESIANPOINT((1750.00000152729,145018.02106792,47.5363817550437));  
#8204= IFCDIRECTION((-8.00000003055519E-009,0.475363817223287,0.879789316413257));  
#8205= IFCAXIS2PLACEMENT3D(#8203,#7,#8204);  
#8206= IFCLOCALPLACEMENT(#8198,#8205);  
#8207= IFCSHAPEPRESENTATION(#12,'Body','SweptSolid',(#5549));  
#8208= IFCPRODUCTDEFINITIONSHAPE(S,S,(#8207));  
#8209= IFCMEMBER('1Ogimc0002134qE3SsC34q',#5,'BEAM',HN400\*200\*8\*13,'HN400\*200\*8\*13',#8206,#8208,'P0(?)');  
#8210= IFCQUANTITYLENGTH('Length',S,S,4138.92034439005);  
#8211= IFCQUANTITYAREA('OuterSurfaceArea',S,S,6.55604982551384);  
#8212= IFCQUANTITYAREA('GrossSurfaceArea',S,S,6.55604982551384);  
#8213= IFCQUANTITYVOLUME('NetVolume',S,S,0.0339060354612876);  
#8214= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0348165979370091);  
#8215= IFCQUANTITYWEIGHT('NetWeight',S,S,266.162378371108);  
#8216= IFCQUANTITYWEIGHT('GrossWeight',S,S,273.310293805521);  
#8217= IFCLEMENTQUANTITY('2MwOjC9Uz7k900AgYUMGO6',#5,'BaseQuantities',S,S,(#8210,#8211,#8212,#361,#8213,#8214,#8215,#8216));  
#8218= IFCLOCALPLACEMENT(#30,#10);  
#8219= IFCLEMENTASSEMBLY('1Ogimc00020J4qE3SsC34q',#5,'Steel Assembly',S,S,#8218,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#8220= IFCPROPERTYSET('0Y1AuU2Htax0NvJ1StrXp',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#5570,#3326,#5571,#8063,#318));  
#8221= IFCQUANTITYLENGTH('Width',S,S,200.00000001851);

#8222= IFCELEMENTQUANTITY('3IHkwcOC51chNbX9SNrscY',#5,'BaseQuantities',S,S,(#8221));

#8223= IFCCARTESIANPOINT((1749.99998251364,143230.321707902,3779.00496765743));

#8224= IFCDIRECTION((3.99999998153983E-009,0.465696878041631,-0.884944302079107));

#8225= IFCAXIS2PLACEMENT3D(#8223,#7,#8224);

#8226= IFLOCALPLACEMENT(#8218,#8225);

#8227= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5581));

#8228= IFCPRODUCTDEFINITIONSHAPE(S,S,(#8227));

#8229= IFCMEMBER('1Ogimc0002034qE3SsC34q',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#8226,#8228,'PO(?));

#8230= IFCQUANTITYLENGTH('Length',S,S,4217.7064382341);

#8231= IFCQUANTITYAREA('OuterSurfaceArea',S,S,6.68084699816281);

#8232= IFCQUANTITYAREA('GrossSurfaceArea',S,S,6.68084699816281);

#8233= IFCQUANTITYVOLUME('NetVolume',S,S,0.0345514511422929);

#8234= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0354793465584252);

#8235= IFCQUANTITYWEIGHT('NetWeight',S,S,271.228891467);

#8236= IFCQUANTITYWEIGHT('GrossWeight',S,S,278.512870483638);

#8237= IFCELEMENTQUANTITY('3ZY8WFeun8FycxgLvF278',#5,'BaseQuantities',S,S,(#8230,#8231,#8232,#361,#8233,#8234,#8235,#8236));

#8238= IFLOCALPLACEMENT(#30,#10);

#8239= IFCELEMENTASSEMBLY('1Ogimc00015J4qE3SsC34q',#5,'Steel Assembly',S,S,(#8238,'BE-0(?)',NOTDEFINED,..RIGID\_FRAME.);

#8240= IFCPROPERTYSET('2ML3kSDQjFBa1S34n9DS',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#5601,#3326,#5602,#8063,#318));

#8241= IFCQUANTITYLENGTH('Width',S,S,200.000000016007);

#8242= IFCELEMENTQUANTITY('35vbxcsVz3\_wrt1QdihOHA',#5,'BaseQuantities',S,S,(#8241));

#8243= IFCCARTESIANPOINT((1750.00000079753,141034.482686332,47.5856132983629));

#8244= IFCDIRECTION((-3.9999999824956E-009,0.475856134002732,0.879523132005051));

#8245= IFCAXIS2PLACEMENT3D(#8243,#7,#8244);

#8246= IFLOCALPLACEMENT(#8238,#8245);

#8247= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5612));

#8248= IFCPRODUCTDEFINITIONSHAPE(S,S,(#8247));

#8249= IFCMEMBER('1Ogimc0001534qE3SsC34q',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#8246,#8248,'PO(?));

#8250= IFCQUANTITYLENGTH('Length',S,S,4243.70336989524);

#8251= IFCQUANTITYAREA('OuterSurfaceArea',S,S,6.72202613791407);

#8252= IFCQUANTITYAREA('GrossSurfaceArea',S,S,6.72202613791407);

#8253= IFCQUANTITYVOLUME('NetVolume',S,S,0.0347644180059046);

#8254= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0356980327475588);

#8255= IFCQUANTITYWEIGHT('NetWeight',S,S,272.900681346351);

#8256= IFCQUANTITYWEIGHT('GrossWeight',S,S,280.229557068337);

#8257= IFCELEMENTQUANTITY('0Uj0jMcS5BOxcY57RI8eyt',#5,'BaseQuantities',S,S,(#8250,#8251,#8252,#361,#8253,#8254,#8255,#8256));

#8258= IFLOCALPLACEMENT(#30,#10);

#8259= IFCELEMENTASSEMBLY('1Ogimc0001J4qE3SsC34q',#5,'Steel Assembly',S,S,(#8258,'BE-0(?)',NOTDEFINED,..RIGID\_FRAME.);

#8260= IFCPROPERTYSET('3Mq8r47PHCXOJ4QpYcnXaP',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#5632,#3264,#5633,#8063,#318));

#8261= IFCCARTESIANPOINT((1749.99998252711,139185.261111031,3872.9043002239));

#8262= IFCDIRECTION((3.99999999120338E-009,0.467880883832064,-0.88379153568278));

#8263= IFCAXIS2PLACEMENT3D(#8261,#7,#8262);

#8264= IFLOCALPLACEMENT(#8258,#8263);

#8265= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5643));

#8266= IFCPRODUCTDEFINITIONSHAPE(S,S,(#8265));

#8267= IFCMEMBER('1Ogimc000134qE3SsC34q',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#8264,#8266,'PO(?));

#8268= IFCQUANTITYLENGTH('Length',S,S,4329.20667024262);

#8269= IFCQUANTITYAREA('OuterSurfaceArea',S,S,6.85746336566432);

#8270= IFCQUANTITYAREA('GrossSurfaceArea',S,S,6.85746336566432);

#8271= IFCQUANTITYVOLUME('NetVolume',S,S,0.0354648610426924);

#8272= IFCQUANTITYVOLUME('GrossVolume',S,S,0.036417286510081);

#8273= IFCQUANTITYWEIGHT('NetWeight',S,S,278.399159185136);

#8274= IFCQUANTITYWEIGHT('GrossWeight',S,S,285.875699104135);

#8275= IFCELEMENTQUANTITY('13ZwFA3Xz38Apat0TNb91R',#5,'BaseQuantities',S,S,(#8268,#8269,#8270,#361,#8271,#8272,#8273,#8274));

#8276= IFLOCALPLACEMENT(#30,#10);

#8277= IFCELEMENTASSEMBLY('1Ogimc0001z4qE3SsC34q',#5,'Steel Assembly',S,S,(#8276,'BE-0(?)',NOTDEFINED,..RIGID\_FRAME.);

#8278= IFCPROPERTYSET('33usPin5P3eBjc1r81Nj25',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#5664,#3264,#233,#8063,#318));

#8279= IFCQUANTITYLENGTH('Width',S,S,200.000000027139);

#8280= IFCELEMENTQUANTITY('3PZ8mxcXAo99XG4B5UxfF',#5,'BaseQuantities',S,S,(#8279));

#8281= IFCCARTESIANPOINT((1750.00000077388,136937.684036676,47.6065863693669));

#8282= IFCDIRECTION((-4.0000000032795E-009,0.47606586187153,0.879409628762681));

#8283= IFCAXIS2PLACEMENT3D(#8281,#7,#8282);

#8284= IFLOCALPLACEMENT(#8276,#8283);

#8285= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5674));

#8286= IFCPRODUCTDEFINITIONSHAPE(S,S,(#8285));

#8287= IFCMEMBER('1Ogimc0001z4qE3SsC34q',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#8284,#8286,'PO(?));

#8288= IFCQUANTITYLENGTH('Length',S,S,4350.77816618044);

#8289= IFCQUANTITYAREA('OuterSurfaceArea',S,S,6.89163261522982);

#8290= IFCQUANTITYAREA('GrossSurfaceArea',S,S,6.89163261522982);

#8291= IFCQUANTITYVOLUME('NetVolume',S,S,0.0356415747376907);

#8292= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0365987459339099);

#8293= IFCQUANTITYWEIGHT('NetWeight',S,S,279.78631690872);

#8294= IFCQUANTITYWEIGHT('GrossWeight',S,S,287.300155581192);

#8295= IFCELEMENTQUANTITY('1tOP4hZTH86xIbI5s7gSna',#5,'BaseQuantities',S,S,(#8288,#8289,#8290,#361,#8291,#8292,#8293,#8294));

#8296= IFLOCALPLACEMENT(#30,#10);

#8297= IFCELEMENTASSEMBLY('1Ogimc0001yJ4qE3SsC34q',#5,'Steel Assembly',S,S,(#8296,'BE-0(?)',NOTDEFINED,..RIGID\_FRAME.);

#8298= IFCPROPERTYSET('2dkaSzOgT0xLY2\_fkGbrt',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#5693,#3326,#5694,#8063,#318));

#8299= IFCQUANTITYLENGTH('Width',S,S,200.00000002062);

#8300= IFCELEMENTQUANTITY('3sDQfSHHPBA920UyxW4fuY',#5,'BaseQuantities',S,S,(#8299));

#8301= IFCCARTESIANPOINT((1749.9999873883,135026.928806509,3969.39247271504));

#8302= IFCDIRECTION((3.0000000138571E-009,0.469715400048866,-0.882817899091842));

#8303= IFCAXIS2PLACEMENT3D(#8301,#7,#8302);

#8304= IFLOCALPLACEMENT(#8296,#8303);

#8305= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5704));

#8306= IFCPRODUCTDEFINITIONSHAPE(S,S,(#8305));

#8307= IFCMEMBER('1Ogimc0001y34qE3SsC34q',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#8304,#8306,'PO(?));

#8308= IFCQUANTITYVOLUME('NetVolume',S,S,0.0363976221088153);

#8309= IFCQUANTITYWEIGHT('NetWeight',S,S,285.7213335542);

#8310= IFCELEMENTQUANTITY('0ShK5Jkd1ADB7YeSsyLeL8',#5,'BaseQuantities',S,S,(#5715,#5716,#5717,#361,#8308,#5719,#8309,#5721));

#8311= IFLOCALPLACEMENT(#30,#10);

#8312= IFCELEMENTASSEMBLY('1Ogimc0001xJ4qE3SsC34q',#5,'Steel Assembly',S,S,(#8311,'BE-0(?)',NOTDEFINED,..RIGID\_FRAME.);

#8313= IFCPROPERTYSET('0FJmVRPuv2n9wHqJukFvm7',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#5725,#3326,#5726,#8063,#318));

#8314= IFCQUANTITYLENGTH('Width',S,S,200.000000022905);

#8315= IFCELEMENTQUANTITY('1aV7uk8u124OFVW0jA\_mjl',#5,'BaseQuantities',S,S,(#8314));

#8316= IFCCARTESIANPOINT((1750.00000054543,132727.626087342,47.6011366162178));

#8317= IFCDIRECTION((-2.9999999789121E-009,0.476011376919656,0.879439121851566));

#8318= IFCAXIS2PLACEMENT3D(#8316,#7,#8317);

#8319= IFLOCALPLACEMENT(#8311,#8318);

#8320= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5736));

#8321= IFCPRODUCTDEFINITIONSHAPE(S,S,(#8320));

#8322= IFCMEMBER('1Ogimc0001x34qE3SsC34q',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#8319,#8321,'PO(?));

#8323= IFCQUANTITYLENGTH('Length',S,S,4460.13923567878);

#8324= IFCQUANTITYAREA('OuterSurfaceArea',S,S,7.06486054931518);

#8325= IFCQUANTITYAREA('GrossSurfaceArea',S,S,7.06486054931518);

#8326= IFCQUANTITYVOLUME('NetVolume',S,S,0.0365374606182895);

#8327= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0375186912505299);

#8328= IFCQUANTITYWEIGHT('NetWeight',S,S,286.819065853573);

#8329= IFCQUANTITYWEIGHT('GrossWeight',S,S,294.52172631666);



Appendix

#8330= IFCELEMENTQUANTITY('2EGPWtVf512g3zV2PdjWA',#5,'BaseQuantities',S,S,#8323,#8324,#8325,#361,#8326,#8327,#8328,#8329);  
#8331= IFLOCALPLACEMENT(#30,#10);  
#8332= IFCELEMENTASSEMBLY('1Ogjm0001wJ4qE3SsC34q',#5,'Steel Assembly',S,S,#8331,S,'BE-0(?)',NOTDEFINED,..RIGID\_FRAME.);  
#8333= IFCPROPERTYSET('13gWutaaH4S851C2j9BUmT',#5,'Tekla Assembly',Assembly Properties',(#34,#313,#5756,#3326,#5757,#8063,#318));  
#8334= IFCCARTESIANPOINT((1749.99999104284,130755.323775954,4068.47190896121));  
#8335= IFCDIRECTION((2.00000002484511E-009,0.471224681997065,-0.882013207994509));  
#8336= IFCAXIS2PLACEMENT3D(#8334,#7,#8335);  
#8337= IFLOCALPLACEMENT(#8331,#8336);  
#8338= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5767));  
#8339= IFCPRODUCTDEFINITIONSHAPE(S,S,(#8338));  
#8340= IFCMEMBER('1Ogjm0001w34qE3SsC34q',#5,'BEAM',HN400\*200\*8\*13',HN400\*200\*8\*13',#8337,#8339,'PO(?));  
#8341= IFCQUANTITYLENGTH('Length',S,S,4559.28483254751);  
#8342= IFCQUANTITYAREA('OuterSurfaceArea',S,S,7.22190717475526);  
#8343= IFCQUANTITYAREA('GrossSurfaceArea',S,S,7.22190717475526);  
#8344= IFCQUANTITYVOLUME('NetVolume',S,S,0.037349661348423);  
#8345= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0383527040113897);  
#8346= IFCQUANTITYWEIGHT('NetWeight',S,S,293.19484158512);  
#8347= IFCQUANTITYWEIGHT('GrossWeight',S,S,301.068726489409);  
#8348= IFCELEMENTQUANTITY('0JXQOPPTBwxBzoBgHWVh',#5,'Base Quantities',S,S,#8341,#8342,#8343,#361,#8344,#8345,#8346,#8347);  
#8349= IFLOCALPLACEMENT(#30,#10);  
#8350= IFCELEMENTASSEMBLY('1Ogjm0001vJ4qE3SsC34q',#5,'Steel Assembly',S,S,#8349,S,'BE-0(?)',NOTDEFINED,..RIGID\_FRAME.);  
#8351= IFCPROPERTYSET('1PyYFA1Wb6ch8\_17FsLPKx',#5,'Tekla Assembly',Assembly Properties',(#34,#313,#5787,#3264,#5788,#8063,#318));  
#8352= IFCCARTESIANPOINT((1750.00000037636,128397.70887766,47.6837975769933));  
#8353= IFCDIRECTION((-1.99999997750314E-009,0.476837956924888,0.878991218861541));  
#8354= IFCAXIS2PLACEMENT3D(#8352,#7,#8353);  
#8355= IFLOCALPLACEMENT(#8349,#8354);  
#8356= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5798));  
#8357= IFCPRODUCTDEFINITIONSHAPE(S,S,(#8356));  
#8358= IFCMEMBER('1Ogjm0001v34qE3SsC34q',#5,'BEAM',HN400\*200\*8\*13',HN400\*200\*8\*13',#8355,#8357,'PO(?));  
#8359= IFCQUANTITYLENGTH('Length',S,S,4574.95974077741);  
#8360= IFCQUANTITYAREA('OuterSurfaceArea',S,S,7.24673622939141);  
#8361= IFCQUANTITYAREA('GrossSurfaceArea',S,S,7.24673622939141);  
#8362= IFCQUANTITYVOLUME('NetVolume',S,S,0.0374780701965872);  
#8363= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0384845613394195);  
#8364= IFCQUANTITYWEIGHT('NetWeight',S,S,294.20285104321);  
#8365= IFCQUANTITYWEIGHT('GrossWeight',S,S,302.103806514443);  
#8366= IFCELEMENTQUANTITY('2CbPKOC0T4fuVpmTcIVmL',#5,'BaseQuantities',S,S,#8359,#8360,#8361,#361,#8362,#8363,#8364,#8365);  
#8367= IFLOCALPLACEMENT(#30,#10);  
#8368= IFCELEMENTASSEMBLY('1Ogjm0001uJ4qE3SsC34q',#5,'Steel Assembly',S,S,#8367,S,'BE-0(?)',NOTDEFINED,..RIGID\_FRAME.);  
#8369= IFCPROPERTYSET('3vi2a3CmXOPgpDzIAyGiD',#5,'Tekla Assembly',Assembly Properties',(#34,#313,#5818,#3264,#5819,#8063,#318));  
#8370= IFCCARTESIANPOINT((1749.99999541542,126363.787571561,4170.2976469538));  
#8371= IFCDIRECTION((9.99999993096074E-010,0.472417061163836,-0.881375130305663));  
#8372= IFCAXIS2PLACEMENT3D(#8370,#7,#8371);  
#8373= IFLOCALPLACEMENT(#8367,#8372);  
#8374= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5829));  
#8375= IFCPRODUCTDEFINITIONSHAPE(S,S,(#8374));  
#8376= IFCMEMBER('1Ogjm0001u34qE3SsC34q',#5,'BEAM',HN400\*200\*8\*13',HN400\*200\*8\*13',#8373,#8375,'PO(?));  
#8377= IFCQUANTITYVOLUME('NetVolume',S,S,0.0383220187240603);  
#8378= IFCQUANTITYWEIGHT('NetWeight',S,S,300.827846983873);  
#8379= IFCELEMENTQUANTITY('1bkpLiPzn06hbS2s\_scmzh',#5,'BaseQuantities',S,S,#8379,#5840,#5841,#361,#8377,#5843,#8378,#5845);  
#8380= IFLOCALPLACEMENT(#30,#10);  
#8381= IFCELEMENTASSEMBLY('1Ogjm0001tJ4qE3SsC34q',#5,'Steel Assembly',S,S,#8380,S,'BE-0(?)',NOTDEFINED,..RIGID\_FRAME.);

#8382= IFCPROPERTYSET('2kh0CIF1543EXW1fBfGHWCW',#5,'Tekla Assembly',Assembly Properties',(#34,#313,#5849,#3326,#5850,#8063,#318));  
#8383= IFCCARTESIANPOINT((1750.00000018732,123947.868679302,47.736843285967));  
#8384= IFCDIRECTION((-1.00000001127717E-009,0.477368497206917,0.878703202380878));  
#8385= IFCAXIS2PLACEMENT3D(#8383,#7,#8384);  
#8386= IFLOCALPLACEMENT(#8380,#8385);  
#8387= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5860));  
#8388= IFCPRODUCTDEFINITIONSHAPE(S,S,(#8387));  
#8389= IFCMEMBER('1Ogjm0001s34qE3SsC34q',#5,'BEAM',HN400\*200\*8\*13',HN400\*200\*8\*13',#8386,#8388,'PO(?));  
#8390= IFCQUANTITYVOLUME('NetVolume',S,S,0.0384385469691279);  
#8391= IFCQUANTITYWEIGHT('NetWeight',S,S,301.742593707654);  
#8392= IFCELEMENTQUANTITY('0KiDndah5AIPDUCkdhGVIZ',#5,'BaseQuantities',S,S,#8390,#5871,#5872,#361,#8390,#5874,#8391,#5876);  
#8393= IFLOCALPLACEMENT(#30,#10);  
#8394= IFCELEMENTASSEMBLY('1Ogjm0001sJ4qE3SsC34q',#5,'Steel Assembly',S,S,#8393,S,'BE-0(?)',NOTDEFINED,..RIGID\_FRAME.);  
#8395= IFCPROPERTYSET('1k00FbjtrDBviSXshSynuW',#5,'Tekla Assembly',Assembly Properties',(#34,#313,#5880,#3326,#5881,#8063,#318));  
#8396= IFCCARTESIANPOINT((1749.9999997,121859.044561023,4274.6108906372));  
#8397= IFCDIRECTION((0.0,0.472248937089963,-0.881465224167919));  
#8398= IFCAXIS2PLACEMENT3D(#8396,#7,#8397);  
#8399= IFLOCALPLACEMENT(#8393,#8398);  
#8400= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5891));  
#8401= IFCPRODUCTDEFINITIONSHAPE(S,S,(#8400));  
#8402= IFCMEMBER('1Ogjm0001s34qE3SsC34q',#5,'BEAM',HN400\*200\*8\*13',HN400\*200\*8\*13',#8399,#8401,'PO(?));  
#8403= IFCQUANTITYVOLUME('NetVolume',S,S,0.0392877054987324);  
#8404= IFCQUANTITYWEIGHT('NetWeight',S,S,308.408488165049);  
#8405= IFCELEMENTQUANTITY('1lavVfAP1EzOXWRBqzjQL',#5,'BaseQuantities',S,S,#5902,#5903,#5904,#361,#8403,#5906,#8404,#5908);  
#8406= IFLOCALPLACEMENT(#30,#10);  
#8407= IFCELEMENTASSEMBLY('1Ogjm0001tJ4qE3SsC34q',#5,'Steel Assembly',S,S,#8406,S,'BE-0(?)',NOTDEFINED,..RIGID\_FRAME.);  
#8408= IFCPROPERTYSET('0TH0aL53rARBHvBCIsM5b',#5,'Tekla Assembly',Assembly Properties',(#34,#313,#5912,#3264,#2480,#8063,#318));  
#8409= IFCCARTESIANPOINT((1750.00000001182,119391.373283802,47.6569296947326));  
#8410= IFCDIRECTION((0.0,0.476568839208773,0.879137157385128));  
#8411= IFCAXIS2PLACEMENT3D(#8409,#7,#8410);  
#8412= IFLOCALPLACEMENT(#8406,#8411);  
#8413= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5922));  
#8414= IFCPRODUCTDEFINITIONSHAPE(S,S,(#8413));  
#8415= IFCMEMBER('1Ogjm0001r34qE3SsC34q',#5,'BEAM',HN400\*200\*8\*13',HN400\*200\*8\*13',#8412,#8414,'PO(?));  
#8416= IFCQUANTITYVOLUME('NetVolume',S,S,0.0393917438450638);  
#8417= IFCQUANTITYWEIGHT('NetWeight',S,S,309.225189183751);  
#8418= IFCELEMENTQUANTITY('1meEpy8rBo9mp13pXnLO8',#5,'BaseQuantities',S,S,#5931,#5932,#5933,#361,#8416,#5935,#8417,#5937);  
#8419= IFLOCALPLACEMENT(#30,#10);  
#8420= IFCELEMENTASSEMBLY('1Ogjm0001qJ4qE3SsC34q',#5,'Steel Assembly',S,S,#8419,S,'BE-0(?)',NOTDEFINED,..RIGID\_FRAME.);  
#8421= IFCPROPERTYSET('34xSzx8WL44bBIWX\_I0Hllh',#5,'Tekla Assembly',Assembly Properties',(#34,#313,#5941,#3264,#5942,#8063,#318));  
#8422= IFCCARTESIANPOINT((1750.00000412773,117261.549808486,4380.05746391692));  
#8423= IFCDIRECTION((-1.00000000386984E-009,0.461806991080116,-0.886980441153879));  
#8424= IFCAXIS2PLACEMENT3D(#8422,#7,#8423);  
#8425= IFLOCALPLACEMENT(#8419,#8424);  
#8426= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5952));  
#8427= IFCPRODUCTDEFINITIONSHAPE(S,S,(#8426));  
#8428= IFCMEMBER('1Ogjm0001q34qE3SsC34q',#5,'BEAM',HN400\*200\*8\*13',HN400\*200\*8\*13',#8425,#8427,'PO(?));  
#8429= IFCQUANTITYVOLUME('NetVolume',S,S,0.040026945838316);  
#8430= IFCQUANTITYWEIGHT('NetWeight',S,S,314.211524830781);  
#8431= IFCELEMENTQUANTITY('0KPx8CH4vEzyW\_Fvqt\_YQl',#5,'BaseQuantities',S,S,#5962,#5963,#5964,#361,#8429,#5966,#8430,#5968);  
#8432= IFLOCALPLACEMENT(#30,#10);  
#8433= IFCELEMENTASSEMBLY('1Ogjm0001pJ4qE3SsC34q',#5,'Steel Assembly',S,S,#8432,S,'BE-0(?)',NOTDEFINED,..RIGID\_FRAME.);

#8434= IFCPROPERTYSET('2IRPzYctHBNBspAVdyWZj',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#5972,#3326,#5973,#8063,#318));  
#8435= IFCCARTESIANPOINT((1749.99999983745,114761.423324326,47.24 69771723622));  
#8436= IFCDIRECTION((1.00000000811169E-009,0.472470001987992,0.881346751977601));  
#8437= IFCAxis2PLACEMENT3D(#8435,#7,#8436);  
#8438= IFLOCALPLACEMENT(#8432,#8437);  
#8439= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5983));  
#8440= IFCPRODUCTDEFINITIONSHAPE(\$,\$,#8439));  
#8441= IFCMEMBER('1Ogimc0001p34qE3SsC34q',#5,'BEAM','HN400\*200\*8 \*13','HN400\*200\*8\*13',#8438,#8440,'P0(?)');  
#8442= IFCQUANTITYVOLUME('NetVolume',S,\$,0.0402828041922163);  
#8443= IFCQUANTITYWEIGHT('NetWeight',S,\$,316.220012908898);  
#8444= IFCELEMENTQUANTITY('1Irf1o1uz5oBLCXJQ4EDB',#5,'BaseQuant ities',S,\$,#5993,#5994,#5995,#361,#8442,#5997,#8443,#5999));  
#8445= IFLOCALPLACEMENT(#30,#10);  
#8446= IFCELEMENTASSEMBLY('1Ogimc0001oJ4qE3SsC34q',#5,'Steel Assembly',S,\$,#8445,'BE-0(?)',NOTDEFINED,..RIGID\_FRAME.);  
#8447= IFCPROPERTYSET('2LQDRHBbDDNqXJRA9ph1wL',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#6003,#3326,#2442,#8063,#318));  
#8448= IFCCARTESIANPOINT((1750.0000086078,112610.059055142,4488.0 2674512784));  
#8449= IFCDIRECTION((-2.00000000090924E-009,0.464244206885588,-0.885707240781722));  
#8450= IFCAxis2PLACEMENT3D(#8448,#7,#8449);  
#8451= IFLOCALPLACEMENT(#8445,#8450);  
#8452= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#6013));  
#8453= IFCPRODUCTDEFINITIONSHAPE(\$,\$,#8452));  
#8454= IFCMEMBER('1Ogimc0001o34qE3SsC34q',#5,'BEAM','HN400\*200\*8 \*13','HN400\*200\*8\*13',#8451,#8453,'P0(?)');  
#8455= IFCQUANTITYVOLUME('NetVolume',S,\$,0.0410808501579849);  
#8456= IFCQUANTITYWEIGHT('NetWeight',S,\$,322.484673740182);  
#8457= IFCELEMENTQUANTITY('0RjAmJ4Sn4jeeXr\_qQLq6\_',#5,'BaseQuant ities',S,\$,#6022,#6023,#6024,#361,#8455,#6026,#8456,#6028));  
#8458= IFLOCALPLACEMENT(#30,#10);  
#8459= IFCELEMENTASSEMBLY('1Ogimc0001nJ4qE3SsC34q',#5,'Steel Assembly',S,\$,#8458,'BE-0(?)',NOTDEFINED,..RIGID\_FRAME.);  
#8460= IFCPROPERTYSET('0sPtt\_DES9POsGo0yLqE6',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#6032,#3264,#6033,#8063,#318));  
#8461= IFCQUANTITYLENGTH('Width',S,\$,200.000000019892);  
#8462= IFCELEMENTQUANTITY('2Z\_AqepcPfhA0DNhjkPakZ',#5,'BaseQu antities',S,\$,#8461));  
#8463= IFCCARTESIANPOINT((1750.00000863866,112434.524597354,4490. 97143429341));  
#8464= IFCDIRECTION((-1.999999991483E-009,-0.493691099213206,-0.869637337375562));  
#8465= IFCAxis2PLACEMENT3D(#8463,#336,#8464);  
#8466= IFLOCALPLACEMENT(#8458,#8465);  
#8467= IFCCARTESIANPOINT((5107.41906411052,0,- 6.27112520080492E-022));  
#8468= IFCAxis2PLACEMENT3D(#8467,#336,#335);  
#8469= IFCEXTRUDEDAREASOLID(#333,#8468,#9,5107.4);  
#8470= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#8469));  
#8471= IFCSTYLEDITEM(#8469,(#330,S));  
#8472= IFCPRODUCTDEFINITIONSHAPE(\$,\$,#8470));  
#8473= IFCMEMBER('1Ogimc0001n34qE3SsC34q',#5,'BEAM','HN400\*200\*8 \*13','HN400\*200\*8\*13',#8466,#8472,'P0(?)');  
#8474= IFCQUANTITYLENGTH('Length',S,\$,5107.41906410702);  
#8475= IFCQUANTITYAREA('OuterSurfaceArea',S,\$,8.09015179754553);  
#8476= IFCQUANTITYAREA('GrossSurfaceArea',S,\$,8.09015179754553);  
#8477= IFCQUANTITYVOLUME('NetVolume',S,\$,0.0418399769733899);  
#8478= IFCQUANTITYVOLUME('GrossVolume',S,\$,0.0429636091672683);  
#8479= IFCQUANTITYWEIGHT('NetWeight',S,\$,328.443819241111);  
#8480= IFCQUANTITYWEIGHT('GrossWeight',S,\$,337.264331963056);  
#8481= IFCELEMENTQUANTITY('12M8rflZP57eCghmUGXZBX',#5,'BaseQ uantities',S,\$,#8474,#8475,#8476,#361,#8477,#8478,#8479,#8480));  
#8482= IFLOCALPLACEMENT(#30,#10);  
#8483= IFCELEMENTASSEMBLY('1Ogimc0001hJ4qE3SrEJa',#5,'Steel Assembly',S,\$,#8482,'BE-0(?)',NOTDEFINED,..RIGID\_FRAME.);  
#8484= IFCPROPERTYSET('1dbQis8C50fR\_55zmV580S',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#3859,#3326,#3860,#8484,#318));  
#8485= IFCCARTESIANPOINT((6750.0000000104,219100.240132525,2025. 70500196721));

#8487= IFCAxis2PLACEMENT3D(#8486,#7,#7134);  
#8488= IFLOCALPLACEMENT(#8482,#8487);  
#8489= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#3871));  
#8490= IFCPRODUCTDEFINITIONSHAPE(\$,\$,#8489));  
#8491= IFCMEMBER('1Ogimc0001hZ4qE3SrEJa',#5,'BEAM','HN400\*200\*8 \*13','HN400\*200\*8\*13',#8488,#8490,'P0(?)');  
#8492= IFLOCALPLACEMENT(#30,#10);  
#8493= IFCELEMENTASSEMBLY('1Ogimc0001gJ4qE3SrEJa',#5,'Steel Assembly',S,\$,#8492,'BE-0(?)',NOTDEFINED,..RIGID\_FRAME.);  
#8494= IFCPROPERTYSET('3WRqShUq9AfA\_9GD0vpld',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#3892,#3264,#3893,#8484,#318));  
#8495= IFCCARTESIANPOINT((6750.00000000211,218012.339966661,40.87 54186508547));  
#8496= IFCAxis2PLACEMENT3D(#8495,#7,#7154);  
#8497= IFLOCALPLACEMENT(#8492,#8496);  
#8498= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#3903));  
#8499= IFCPRODUCTDEFINITIONSHAPE(\$,\$,#8498));  
#8500= IFCMEMBER('1Ogimc0001gZ4qE3SrEJa',#5,'BEAM','HN400\*200\*8 \*13','HN400\*200\*8\*13',#8497,#8499,'P0(?)');  
#8501= IFLOCALPLACEMENT(#30,#10);  
#8502= IFCELEMENTASSEMBLY('1Ogimc0001bZ4qE3SrEJa',#5,'Steel Assembly',S,\$,#8501,'BE-0(?)',NOTDEFINED,..RIGID\_FRAME.);  
#8503= IFCPROPERTYSET('2aJdVOYsr3v9oalkGOAWYL',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#3923,#3264,#3924,#8484,#318));  
#8504= IFCCARTESIANPOINT((6749.9999999918,217221.00681338,2062.8 499884282));  
#8505= IFCAxis2PLACEMENT3D(#8504,#7,#7174);  
#8506= IFLOCALPLACEMENT(#8501,#8505);  
#8507= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#3934));  
#8508= IFCPRODUCTDEFINITIONSHAPE(\$,\$,#8507));  
#8509= IFCMEMBER('1Ogimc0001bp4qE3SrEJa',#5,'BEAM','HN400\*200\*8 \*13','HN400\*200\*8\*13',#8506,#8508,'P0(?)');  
#8510= IFCQUANTITYVOLUME('NetVolume',S,\$,0.0183623581102032);  
#8511= IFCQUANTITYWEIGHT('NetWeight',S,\$,144.144511165095);  
#8512= IFCELEMENTQUANTITY('3\_rsTPvFbBoxYfFCB9iUk',#5,'BaseQua ntities',S,\$,#7180,#7181,#7182,#361,#8510,#7184,#8511,#7186));  
#8513= IFLOCALPLACEMENT(#30,#10);  
#8514= IFCELEMENTASSEMBLY('1Ogimc0001aZ4qE3SrEJa',#5,'Steel Assembly',S,\$,#8513,'BE-0(?)',NOTDEFINED,..RIGID\_FRAME.);  
#8515= IFCPROPERTYSET('0Z8XnyS2j49RSDckQNFvA',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#3955,#3326,#3956,#8484,#318));  
#8516= IFCCARTESIANPOINT((6750.,216109.709371512,41.8425462160333) );  
#8517= IFCAxis2PLACEMENT3D(#8516,#7,#7194);  
#8518= IFLOCALPLACEMENT(#8513,#8517);  
#8519= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#3966));  
#8520= IFCPRODUCTDEFINITIONSHAPE(\$,\$,#8519));  
#8521= IFCMEMBER('1Ogimc0001ap4qE3SrEJa',#5,'BEAM','HN400\*200\*8 \*13','HN400\*200\*8\*13',#8518,#8520,'P0(?)');  
#8522= IFCQUANTITYLENGTH('Length',S,\$,2223.46773745088);  
#8523= IFCQUANTITYAREA('OuterSurfaceArea',S,\$,3.52197289612219);  
#8524= IFCQUANTITYAREA('GrossSurfaceArea',S,\$,3.52197289612219);  
#8525= IFCQUANTITYVOLUME('NetVolume',S,\$,0.0182146477053222);  
#8526= IFCQUANTITYVOLUME('GrossVolume',S,\$,0.0187038106074368);  
#8527= IFCQUANTITYWEIGHT('NetWeight',S,\$,142.984984486779);  
#8528= IFCQUANTITYWEIGHT('GrossWeight',S,\$,146.824913268379);  
#8529= IFCELEMENTQUANTITY('316EVyMC153fi\_7f2FUpSd',#5,'BaseQuan tities',S,\$,#8522,#8523,#8524,#361,#8525,#8526,#8527,#8528));  
#8530= IFLOCALPLACEMENT(#30,#10);  
#8531= IFCELEMENTASSEMBLY('1Ogimc0001ZZ4qE3SrEJa',#5,'Steel Assembly',S,\$,#8530,'BE-0(?)',NOTDEFINED,..RIGID\_FRAME.);  
#8532= IFCPROPERTYSET('1dbQis8C50fR\_55zmV580S',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#3986,#3326,#3987,#8484,#318));  
#8533= IFCCARTESIANPOINT((6750.,215249.399651876,2110.07308031077) );  
#8534= IFCAxis2PLACEMENT3D(#8533,#7,#7214);  
#8535= IFLOCALPLACEMENT(#8530,#8534);  
#8536= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#3997));  
#8537= IFCPRODUCTDEFINITIONSHAPE(\$,\$,#8536));  
#8538= IFCMEMBER('1Ogimc0001Zp4qE3SrEJa',#5,'BEAM','HN400\*200\*8 \*13','HN400\*200\*8\*13',#8535,#8537,'P0(?)');  
#8539= IFLOCALPLACEMENT(#30,#10);  
#8540= IFCELEMENTASSEMBLY('1Ogimc0001Yz4qE3SrEJa',#5,'Steel Assembly',S,\$,#8539,'BE-0(?)',NOTDEFINED,..RIGID\_FRAME.);

## Appendix

#8541= IFCPROPERTYSET('3S\_ScU\_YTAMv4n1yspWce',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#4018,#3264,#4019,#8484,#318));  
#8542= IFCARTESIANPOINT((6750.,214106.666400475,42.2562431362395));  
#8543= IFCAXIS2PLACEMENT3D(#8542,#7,#7234);  
#8544= IFCLOCALPLACEMENT(#8539,#8543);  
#8545= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4029));  
#8546= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#8545));  
#8547= IFCMEMBER('1Ogimc0001Yp4qE3SrEJar',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#8544,#8546,'P0(?)');  
#8548= IFCLOCALPLACEMENT(#30,#10);  
#8549= IFCLEMENTASSEMBLY('1Ogimc0001XZ4qE3SrEJar',#5,'Steel Assembly',S,S,#8548,S,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#8550= IFCPROPERTYSET('3ULEu6pB11ARhsxR4qYIXu',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#4049,#3264,#4050,#8484,#318));  
#8551= IFCARTESIANPOINT((6750.,213273.989472539,2154.10995533016));  
#8552= IFCAXIS2PLACEMENT3D(#8551,#7,#7254);  
#8553= IFCLOCALPLACEMENT(#8548,#8552);  
#8554= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4060));  
#8555= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#8554));  
#8556= IFCMEMBER('1Ogimc0001Xp4qE3SrEJar',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#8553,#8555,'P0(?)');  
#8557= IFCQUANTITYVOLUME('NetVolume',S,S,0.0191816865633586);  
#8558= IFCQUANTITYWEIGHT('NetWeight',S,S,150.576239522365);  
#8559= IFCLEMENTQUANTITY('0V0sj2CYDAQPURCR0wMuj',#5,'BaseQuantities',S,S,(#7260,#7261,#7262,#361,#8557,#7264,#8558,#7266));  
#8560= IFCLOCALPLACEMENT(#30,#10);  
#8561= IFCLEMENTASSEMBLY('1Ogimc0001WZ4qE3SrEJar',#5,'Steel Assembly',S,S,#8560,S,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#8562= IFCPROPERTYSET('3ruQfVhr3DecLmCcnXIFf',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#4080,#3326,#4081,#8484,#318));  
#8563= IFCARTESIANPOINT((6750.,212050.996670158,44.3055297355585));  
#8564= IFCAXIS2PLACEMENT3D(#8563,#7,#7272);  
#8565= IFCLOCALPLACEMENT(#8560,#8564);  
#8566= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4091));  
#8567= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#8566));  
#8568= IFCMEMBER('1Ogimc0001Wp4qE3SrEJar',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#8565,#8567,'P0(?)');  
#8569= IFCQUANTITYLENGTH('Length',S,S,2354.53852275726);  
#8570= IFCQUANTITYAREA('OuterSurfaceArea',S,S,3.72958902004749);  
#8571= IFCQUANTITYAREA('GrossSurfaceArea',S,S,3.72958902004749);  
#8572= IFCQUANTITYVOLUME('NetVolume',S,S,0.0192883795785775);  
#8573= IFCQUANTITYVOLUME('GrossVolume',S,S,0.019806378053434);  
#8574= IFCQUANTITYWEIGHT('NetWeight',S,S,151.413779691833);  
#8575= IFCQUANTITYWEIGHT('GrossWeight',S,S,155.480067719457);  
#8576= IFCLEMENTQUANTITY('123vr5QZr2WusZ24931F59',#5,'BaseQuantities',S,S,(#8569,#8570,#8571,#361,#8572,#8573,#8574,#8575));  
#8577= IFCLOCALPLACEMENT(#30,#10);  
#8578= IFCLEMENTASSEMBLY('1Ogimc0001VZ4qE3SrEJar',#5,'Steel Assembly',S,S,#8577,S,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#8579= IFCPROPERTYSET('1gmm8AJFj5pCnFsmqpc7T',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#4111,#3326,#4112,#8484,#318));  
#8580= IFCARTESIANPOINT((6750.,211154.364705461,2204.46497720565));  
#8581= IFCAXIS2PLACEMENT3D(#8580,#7,#7292);  
#8582= IFCLOCALPLACEMENT(#8577,#8581);  
#8583= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4122));  
#8584= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#8583));  
#8585= IFCMEMBER('1Ogimc0001Vp4qE3SrEJar',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#8582,#8584,'P0(?)');  
#8586= IFCQUANTITYVOLUME('NetVolume',S,S,0.0197670388588264);  
#8587= IFCQUANTITYWEIGHT('NetWeight',S,S,155.171255041787);  
#8588= IFCLEMENTQUANTITY('1pxKY8Fy11qhKZWxLx7Hs',#5,'BaseQuantities',S,S,(#7298,#7299,#7300,#361,#8586,#7302,#8587,#7304));  
#8589= IFCLOCALPLACEMENT(#30,#10);  
#8590= IFCLEMENTASSEMBLY('1Ogimc0001UZ4qE3SrEJar',#5,'Steel Assembly',S,S,#8589,S,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#8591= IFCPROPERTYSET('3DX3kVwVXBPOjeWJDJRk1oV',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#4143,#3264,#4144,#8484,#318));

#8592= IFCARTESIANPOINT((6750.,209933.811394678,43.4160499773258));  
#8593= IFCAXIS2PLACEMENT3D(#8592,#7,#7312);  
#8594= IFCLOCALPLACEMENT(#8589,#8593);  
#8595= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4154));  
#8596= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#8595));  
#8597= IFCMEMBER('1Ogimc0001Up4qE3SrEJar',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#8594,#8596,'P0(?)');  
#8598= IFCQUANTITYVOLUME('NetVolume',S,S,0.0196414720046056);  
#8599= IFCQUANTITYWEIGHT('NetWeight',S,S,154.18555236154);  
#8600= IFCLEMENTQUANTITY('0cUvwjdhz3QeSSuPg1LhES',#5,'BaseQuantities',S,S,(#7318,#7319,#7320,#361,#8598,#7322,#8599,#7324));  
#8601= IFCLOCALPLACEMENT(#30,#10);  
#8602= IFCLEMENTASSEMBLY('1Ogimc0001TZ4qE3SrEJar',#5,'Steel Assembly',S,S,#8601,S,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#8603= IFCPROPERTYSET('2pLnyW3eX1sBNkBJTqZRxO',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#4174,#3264,#4175,#8484,#318));  
#8604= IFCARTESIANPOINT((6750.,209023.147835384,2253.48135752825));  
#8605= IFCAXIS2PLACEMENT3D(#8604,#7,#7330);  
#8606= IFCLOCALPLACEMENT(#8601,#8605);  
#8607= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4185));  
#8608= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#8607));  
#8609= IFCMEMBER('1Ogimc0001Tp4qE3SrEJar',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#8606,#8608,'P0(?)');  
#8610= IFCQUANTITYVOLUME('NetVolume',S,S,0.0201823892469773);  
#8611= IFCQUANTITYWEIGHT('NetWeight',S,S,158.431755588772);  
#8612= IFCLEMENTQUANTITY('233wM4OpD9yem7tROeiLjO',#5,'BaseQuantities',S,S,(#7336,#7337,#7338,#361,#8610,#7340,#8611,#7342));  
#8613= IFCLOCALPLACEMENT(#30,#10);  
#8614= IFCLEMENTASSEMBLY('1Ogimc0001SZ4qE3SrEJar',#5,'Steel Assembly',S,S,#8613,S,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#8615= IFCPROPERTYSET('1hxY3C6W53aQp6wAb10Yrd',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#4174,#3326,#4206,#8484,#318));  
#8616= IFCARTESIANPOINT((6750.,207757.310819847,44.1294388218557));  
#8617= IFCAXIS2PLACEMENT3D(#8616,#7,#7350);  
#8618= IFCLOCALPLACEMENT(#8613,#8617);  
#8619= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4216));  
#8620= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#8619));  
#8621= IFCMEMBER('1Ogimc0001Sp4qE3SrEJar',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#8618,#8620,'P0(?)');  
#8622= IFCLOCALPLACEMENT(#30,#10);  
#8623= IFCLEMENTASSEMBLY('1Ogimc0001RZ4qE3SrEJar',#5,'Steel Assembly',S,S,#8622,S,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#8624= IFCPROPERTYSET('3uBWSQ9Mr0AwmvcsEoDYF',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#4235,#3326,#4236,#8484,#318));  
#8625= IFCQUANTITYLENGTH('Width',S,S,200.000000009168);  
#8626= IFCLEMENTQUANTITY('115LIdrT9oOpDyhyvxpM',#5,'BaseQuantities',S,S,(#8625));  
#8627= IFCARTESIANPOINT((6750.63230217308,206648.907112197,2314.64405667366));  
#8628= IFCAXIS2PLACEMENT3D(#8627,#7370,#7371);  
#8629= IFCLOCALPLACEMENT(#8622,#8628);  
#8630= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4247));  
#8631= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#8630));  
#8632= IFCMEMBER('1Ogimc0001Rp4qE3SrEJar',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#8629,#8631,'P0(?)');  
#8633= IFCQUANTITYLENGTH('Length',S,S,2604.44183346783);  
#8634= IFCQUANTITYAREA('OuterSurfaceArea',S,S,4.12543586421305);  
#8635= IFCQUANTITYAREA('GrossSurfaceArea',S,S,4.12543586421305);  
#8636= IFCQUANTITYVOLUME('NetVolume',S,S,0.021335587499872);  
#8637= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0219085647031314);  
#8638= IFCQUANTITYWEIGHT('NetWeight',S,S,167.484361873995);  
#8639= IFCQUANTITYWEIGHT('GrossWeight',S,S,171.982232919582);  
#8640= IFCLEMENTQUANTITY('2RIZ9hjMDAER7tax\_FB2d',#5,'BaseQuantities',S,S,(#8633,#8634,#8635,#361,#8636,#8637,#8638,#8639));  
#8641= IFCLOCALPLACEMENT(#30,#10);  
#8642= IFCLEMENTASSEMBLY('1Ogimc0001QZ4qE3SrEJar',#5,'Steel Assembly',S,S,#8641,S,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#8643= IFCPROPERTYSET('05BEQHHGD2AgxQksLQC2JK',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#4268,#3264,#4269,#8484,#318));

#8644= IFCQUANTITYLENGTH('Width',S,,200.00000001007);	#8699=
#8645=	IFCELEMENTASSEMBLY('1Ogjm0001NZ4qE3SrEJar',#5,'Steel
IFCELEMENTQUANTITY('01hLjLrvf5GP6uX8tuFm',#5,'BaseQuantities',S,,#8644);	Assembly',S,,#8698,S,'BE-0(?)',NOTDEFINED..RIGID_FRAME.);
#8646=	#8700= IFCPROPERTYSET('1bDa0lJAr9nezXeNXJuxHQ',#5,'Tekla
IFCCARTESIANPOINT((6749.93509604671,205508.055393917,39.0822647173485));	Assembly',Assembly
#8647= IFCAXIS2PLACEMENT3D(#8646,#7391,#7392);	Properties',(#34,#313,#4362,#3326,#4363,#8484,#318));
#8648= IFCLOCALPLACEMENT(#8641,#8647);	#8701= IFCQUANTITYLENGTH('Width',S,,200.000000018248);
#8649=	#8702=
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4280));	IFCELEMENTQUANTITY('31YxQnEfPDMvKhm0Zig2_s',#5,'BaseQuantities',S,,#8701));
#8650= IFCPRODUCTDEFINITIONSHAPE(S,,#8649);	#8703=
#8651=	IFCCARTESIANPOINT((6749.9660943556,202152.95011543,2414.9834879358));
IFCMEMBER('1Ogjm0001Op4qE3SrEJar',#5,'BEAM','HN400*200*8*13','HN400*200*8*13',#8648,#8650,'P0(?)');	#8704= IFCAXIS2PLACEMENT3D(#8703,#7454,#7455);
#8652= IFCQUANTITYLENGTH('Length',S,,2461.03601241211);	#8705= IFCLOCALPLACEMENT(#8698,#8704);
#8653=	#8706=
IFCQUANTITYAREA('OuterSurfaceArea',S,,3.89828104366078);	IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4374));
#8654=	#8707= IFCPRODUCTDEFINITIONSHAPE(S,,#8706);
IFCQUANTITYAREA('GrossSurfaceArea',S,,3.89828104366078);	#8708=
#8655=	IFCMEMBER('1Ogjm0001Np4qE3SrEJar',#5,'BEAM','HN400*200*8*13','HN400*200*8*13',#8705,#8707,'P0(?)');
IFCQUANTITYVOLUME('NetVolume',S,,0.0201608070134484);	#8709= IFCQUANTITYLENGTH('Length',S,,2672.99429080301);
#8656=	#8710=
IFCQUANTITYVOLUME('GrossVolume',S,,0.0207022349364106);	IFCQUANTITYAREA('OuterSurfaceArea',S,,4.23402295663196);
#8657= IFCQUANTITYWEIGHT('NetWeight',S,,158.26233505557);	#8711=
#8658=	IFCQUANTITYAREA('GrossSurfaceArea',S,,4.23402295663196);
IFCQUANTITYWEIGHT('GrossWeight',S,,162.512544250824);	#8712=
#8659=	IFCQUANTITYVOLUME('NetVolume',S,,0.0218971692304663);
IFCELEMENTQUANTITY('1ygSswuKz4YfAF8q3mkv',#5,'BaseQuantities',S,,#8652,#8653,#8654,#361,#8655,#8656,#8657,#8658));	#8713=
#8660= IFCLOCALPLACEMENT(#30,#10);	IFCQUANTITYVOLUME('GrossVolume',S,,0.0224852279742349);
#8661=	#8714= IFCQUANTITYWEIGHT('NetWeight',S,,171.89277845916);
IFCELEMENTASSEMBLY('1Ogjm0001PZ4qE3SrEJar',#5,'Steel	#8715=
Assembly',S,,#8660,S,'BE-0(?)',NOTDEFINED..RIGID_FRAME.);	IFCQUANTITYWEIGHT('GrossWeight',S,,176.509039597744);
#8662= IFCPROPERTYSET('1SP87QOILBbvigaSeMLVke',#5,'Tekla	#8716=
Assembly',Assembly	IFCELEMENTQUANTITY('0r2HV4wDLcaxQyzBW9Eel',#5,'BaseQuantities',S,,#8709,#8710,#8711,#361,#8712,#8713,#8714,#8715));
Properties',(#34,#313,#4300,#3264,#2860,#8484,#318));	#8717= IFCLOCALPLACEMENT(#30,#10);
#8663= IFCQUANTITYLENGTH('Width',S,,200.000000007829);	#8718=
#8664=	IFCELEMENTASSEMBLY('1Ogjm0001MZ4qE3SrEJar',#5,'Steel
IFCELEMENTQUANTITY('23aN25o1fLHe7xDbVzY2K',#5,'BaseQuantities',S,,#8663);	Assembly',S,,#8717,S,'BE-0(?)',NOTDEFINED..RIGID_FRAME.);
#8665=	#8719= IFCPROPERTYSET('3WY_76F_56ABJyJBzg5TDF',#5,'Tekla
IFCCARTESIANPOINT((6750.07738229346,204464.350679457,2361.59600239503));	Assembly',Assembly
#8666= IFCAXIS2PLACEMENT3D(#8665,#7412,#7413);	Properties',(#34,#313,#4395,#3264,#4396,#8484,#318));
#8667= IFCLOCALPLACEMENT(#8660,#8666);	#8720= IFCQUANTITYLENGTH('Width',S,,200.000000015571);
#8668=	#8721=
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4311));	IFCELEMENTQUANTITY('0iQkDwRuzBrfh1MteO3Dlh',#5,'BaseQuantities',S,,#8720));
#8669= IFCPRODUCTDEFINITIONSHAPE(S,,#8668);	#8722=
#8670=	IFCCARTESIANPOINT((6750.1670029036,200858.621855398,42.280608015516));
IFCMEMBER('1Ogjm0001Pp4qE3SrEJar',#5,'BEAM','HN400*200*8*13','HN400*200*8*13',#8667,#8669,'P0(?)');	#8723= IFCAXIS2PLACEMENT3D(#8722,#7475,#7476);
#8671= IFCQUANTITYLENGTH('Length',S,,2622.95281352804);	#8724= IFCLOCALPLACEMENT(#8717,#8723);
#8672=	#8725=
IFCQUANTITYAREA('OuterSurfaceArea',S,,4.15475725662842);	IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4407));
#8673=	#8726= IFCPRODUCTDEFINITIONSHAPE(S,,#8725);
IFCQUANTITYAREA('GrossSurfaceArea',S,,4.15475725662842);	#8727=
#8674=	IFCMEMBER('1Ogjm0001Mp4qE3SrEJar',#5,'BEAM','HN400*200*8*13','HN400*200*8*13',#8724,#8726,'P0(?)');
IFCQUANTITYVOLUME('NetVolume',S,,0.0214872294485252);	#8728= IFCQUANTITYLENGTH('Length',S,,2613.75106708075);
#8675=	#8729=
IFCQUANTITYVOLUME('GrossVolume',S,,0.0220642790673979);	IFCQUANTITYAREA('OuterSurfaceArea',S,,4.14018169025591);
#8676= IFCQUANTITYWEIGHT('NetWeight',S,,168.674751170923);	#8730=
#8677=	IFCQUANTITYAREA('GrossSurfaceArea',S,,4.14018169025591);
IFCQUANTITYWEIGHT('GrossWeight',S,,173.204590679073);	#8731=
#8678=	IFCQUANTITYVOLUME('NetVolume',S,,0.0214118487417345);
IFCELEMENTQUANTITY('0s5jBlAe9E7h2sgsB3Z3h0',#5,'BaseQuantities',S,,#8671,#8672,#8673,#361,#8674,#8675,#8676,#8677));	#8732=
#8679= IFCLOCALPLACEMENT(#30,#10);	IFCQUANTITYVOLUME('GrossVolume',S,,0.0219868739762833);
#8680=	#8733= IFCQUANTITYWEIGHT('NetWeight',S,,168.083012622616);
IFCELEMENTASSEMBLY('1Ogjm0001OZ4qE3SrEJar',#5,'Steel	#8734=
Assembly',S,,#8679,S,'BE-0(?)',NOTDEFINED..RIGID_FRAME.);	IFCQUANTITYWEIGHT('GrossWeight',S,,172.596960713824);
#8681= IFCPROPERTYSET('34w6RTDIvFEx6xTomUCaOx',#5,'Tekla	#8735=
Assembly',Assembly	IFCELEMENTQUANTITY('2biq1lm3n13hZexzba7xbq',#5,'BaseQuantities',S,,#8728,#8729,#8730,#361,#8731,#8732,#8733,#8734));
Properties',(#34,#313,#4330,#3326,#4331,#8484,#318));	#8736= IFCLOCALPLACEMENT(#30,#10);
#8682= IFCQUANTITYLENGTH('Width',S,,200.000000010943);	#8737=
#8683=	IFCELEMENTASSEMBLY('1Ogjm0001LZ4qE3SrEJar',#5,'Steel
IFCELEMENTQUANTITY('2fckWfF_zEW9x0E6Exm5f7',#5,'BaseQuantities',S,,#8682);	Assembly',S,,#8736,S,'BE-0(?)',NOTDEFINED..RIGID_FRAME.);
#8684=	#8738= IFCPROPERTYSET('2Fq8ts385DFuQNWUYwh0s5',#5,'Tekla
IFCCARTESIANPOINT((6749.99287559688,203222.18645563,41.7371619515433));	Assembly',Assembly
#8685= IFCAXIS2PLACEMENT3D(#8684,#7433,#7434);	Properties',(#34,#313,#4427,#3264,#2832,#8484,#318));
#8686= IFCLOCALPLACEMENT(#8679,#8685);	#8739=
#8687=	IFCCARTESIANPOINT((6749.50812596327,199778.03290845,2469.06497759867));
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4342));	#8740= IFCAXIS2PLACEMENT3D(#8739,#7496,#7497);
#8688= IFCPRODUCTDEFINITIONSHAPE(S,,#8687);	#8741= IFCLOCALPLACEMENT(#8736,#8740);
#8689=	#8742=
IFCMEMBER('1Ogjm0001Op4qE3SrEJar',#5,'BEAM','HN400*200*8*13','HN400*200*8*13',#8686,#8688,'P0(?)');	IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4438));
#8690= IFCQUANTITYLENGTH('Length',S,,2547.00108452639);	#8743= IFCPRODUCTDEFINITIONSHAPE(S,,#8742);
#8691=	#8744=
IFCQUANTITYAREA('OuterSurfaceArea',S,,4.0344497178898);	IFCMEMBER('1Ogjm0001Lp4qE3SrEJar',#5,'BEAM','HN400*200*8*13','HN400*200*8*13',#8741,#8743,'P0(?)');
#8692=	#8745= IFCQUANTITYLENGTH('Length',S,,2730.93706848098);
IFCQUANTITYAREA('GrossSurfaceArea',S,,4.0344497178898);	#8746=
#8693=	IFCQUANTITYAREA('OuterSurfaceArea',S,,4.32580431647388);
IFCQUANTITYVOLUME('NetVolume',S,,0.0208650328841785);	#8747=
#8694=	IFCQUANTITYAREA('GrossSurfaceArea',S,,4.32580431647388);
IFCQUANTITYVOLUME('GrossVolume',S,,0.021425373123036);	#8748=
#8695= IFCQUANTITYWEIGHT('NetWeight',S,,163.790508140801);	IFCQUANTITYVOLUME('NetVolume',S,,0.0223718364652858);
#8696=	#8749=
IFCQUANTITYWEIGHT('GrossWeight',S,,168.189179015833);	IFCQUANTITYVOLUME('GrossVolume',S,,0.022972642620062);
#8697=	#8750= IFCQUANTITYWEIGHT('NetWeight',S,,175.618916252494);
IFCELEMENTQUANTITY('0Sm6WlyhD4xv0lmbcZIE3',#5,'BaseQuantities',S,,#8690,#8691,#8692,#361,#8693,#8694,#8695,#8696));	#8751=
#8698= IFCLOCALPLACEMENT(#30,#10);	IFCQUANTITYWEIGHT('GrossWeight',S,,180.335244567487);

## Appendix

#8752= IFCELEMENTQUANTITY('ITEv5MQ9v70RZfmhUhwZ0p',#5,'BaseQ uantities',S,S,(#8753,#8746,#8747,#361,#8748,#8749,#8750,#8751)); #8753= IFCLOCALPLACEMENT(#30,#10); #8754= IFCELEMENTASSEMBLY('IOgimc0001KZ4qE3SrEJar',#5,'Steel Assembly',S,S,(#8753,S,'BE-0(?)',..NOTDEFINED,..RIGID_FRAME.); #8755= IFCPROPERTYSET('2pmXD9jXzChvZi44IbrqS5',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#4457,#3326,#4458,#8484,#318)); #8756= IFCCARTESIANPOINT((6750.04073969584,198428.597383946,43.47 38052602664); #8757= IFCAXIS2PLACEMENT3D(#8756,#7515,#7516); #8758= IFCLOCALPLACEMENT(#8753,#8757); #8759= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4469)); #8760= IFCPRODUCTDEFINITIONSHAPE(S,S,(#8759)); #8761= IFCMEMBER('IOgimc0001Kp4qE3SrEJar',#5,'BEAM','HN400*200*8* 13','HN400*200*8*13',#8758,#8760,'P0(?)'); #8762= IFCQUANTITYLENGTH('Length',S,S,2690.48113694054); #8763= IFCQUANTITYAREA('OuterSurfaceArea',S,S,4.26172212091381); #8764= IFCQUANTITYAREA('GrossSurfaceArea',S,S,4.26172212091381); #8765= IFCQUANTITYVOLUME('NetVolume',S,S,0.0220404214739469); #8766= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0226323273239438); #8767= IFCQUANTITYWEIGHT('NetWeight',S,S,173.017308570483); #8768= IFCQUANTITYWEIGHT('GrossWeight',S,S,177.663769492599); #8769= IFCELEMENTQUANTITY('0L1WjWd7LDoxpL6VqX1P7o',#5,'BaseQ uantities',S,S,(#8762,#8763,#8764,#361,#8765,#8766,#8767,#8768)); #8770= IFCLOCALPLACEMENT(#30,#10); #8771= IFCELEMENTASSEMBLY('IOgimc0001JZ4qE3SrEJar',#5,'Steel Assembly',S,S,(#8770,S,'BE-0(?)',..NOTDEFINED,..RIGID_FRAME.); #8772= IFCPROPERTYSET('2NeQ58DYvFKBR7bPUmnT7',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#4489,#3326,#4490,#8484,#318)); #8773= IFCCARTESIANPOINT((6751.63483458107,197324.713660606,2526. 02718085123); #8774= IFCAXIS2PLACEMENT3D(#8773,#7536,#7537); #8775= IFCLOCALPLACEMENT(#8770,#8774); #8776= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4499)); #8777= IFCPRODUCTDEFINITIONSHAPE(S,S,(#8776)); #8778= IFCMEMBER('IOgimc0001Ip4qE3SrEJar',#5,'BEAM','HN400*200*8* 13','HN400*200*8*13',#8775,#8777,'P0(?)'); #8779= IFCQUANTITYVOLUME('NetVolume',S,S,0.0228735953708691); #8780= IFCQUANTITYWEIGHT('NetWeight',S,S,179.557723661323); #8781= IFCELEMENTQUANTITY('3JVuVzhaX2ZP6HStOLJzK',#5,'BaseQ uantities',S,S,(#7543,#7544,#7545,#361,#8779,#7547,#8780,#7549)); #8782= IFCLOCALPLACEMENT(#30,#10); #8783= IFCELEMENTASSEMBLY('IOgimc0001IZ4qE3SrEJar',#5,'Steel Assembly',S,S,(#8782,S,'BE-0(?)',..NOTDEFINED,..RIGID_FRAME.); #8784= IFCPROPERTYSET('1ReCExGn96BBO7Fn7pgOH',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#4520,#3264,#4521,#8484,#318)); #8785= IFCQUANTITYLENGTH('Width',S,S,200.000000016589); #8786= IFCELEMENTQUANTITY('0BKPx21JDAsATmxhLgTQA',#5,'Base Quantities',S,S,(#8785)); #8787= IFCCARTESIANPOINT((6749.87012716775,195931.479943517,43.98 29783662765); #8788= IFCAXIS2PLACEMENT3D(#8787,#7557,#7558); #8789= IFCLOCALPLACEMENT(#8782,#8788); #8790= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4532)); #8791= IFCPRODUCTDEFINITIONSHAPE(S,S,(#8790)); #8792= IFCMEMBER('IOgimc0001Ip4qE3SrEJar',#5,'BEAM','HN400*200*8* 13','HN400*200*8*13',#8789,#8791,'P0(?)'); #8793= IFCQUANTITYLENGTH('Length',S,S,2761.53777024159); #8794= IFCQUANTITYAREA('OuterSurfaceArea',S,S,4.37427582806267); #8795= IFCQUANTITYAREA('GrossSurfaceArea',S,S,4.37427582806267); #8796= IFCQUANTITYVOLUME('NetVolume',S,S,0.0226225174140493); #8797= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0232300557232722); #8798= IFCQUANTITYWEIGHT('NetWeight',S,S,177.586761700287); #8799= IFCQUANTITYWEIGHT('GrossWeight',S,S,182.355937427687); #8800= IFCELEMENTQUANTITY('0gGKqsGL13iQmT5Wta8ydY',#5,'BaseQ uantities',S,S,(#8793,#8794,#8795,#361,#8796,#8797,#8798,#8799)); #8801= IFCLOCALPLACEMENT(#30,#10); #8802= IFCELEMENTASSEMBLY('IOgimc0001HZ4qE3SrEJar',#5,'Steel Assembly',S,S,(#8801,S,'BE-0(?)',..NOTDEFINED,..RIGID_FRAME.); #8803= IFCPROPERTYSET('25xmdf0fH3UOSnBSEjMMZU',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#4552,#3264,#4553,#8484,#318)); #8804= IFCQUANTITYLENGTH('Width',S,S,200.000000010419);	#8805= IFCELEMENTQUANTITY('0UIZ9U2Wf0RRDcnZQmibfS',#5,'BaseQ uantities',S,S,(#8804)); #8806= IFCCARTESIANPOINT((6750.92872209742,194784.029553843,2584. 48952110396); #8807= IFCAXIS2PLACEMENT3D(#8806,#7578,#7579); #8808= IFCLOCALPLACEMENT(#8801,#8807); #8809= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4564)); #8810= IFCPRODUCTDEFINITIONSHAPE(S,S,(#8809)); #8811= IFCMEMBER('IOgimc0001Hp4qE3SrEJar',#5,'BEAM','HN400*200*8* 13','HN400*200*8*13',#8808,#8810,'P0(?)'); #8812= IFCQUANTITYLENGTH('Length',S,S,2859.32682329821); #8813= IFCQUANTITYAREA('OuterSurfaceArea',S,S,4.52917368810436); #8814= IFCQUANTITYAREA('GrossSurfaceArea',S,S,4.52917368810436); #8815= IFCQUANTITYVOLUME('NetVolume',S,S,0.0234236053362699); #8816= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0240526572375845); #8817= IFCQUANTITYWEIGHT('NetWeight',S,S,183.875301889719); #8818= IFCQUANTITYWEIGHT('GrossWeight',S,S,188.813359315039); #8819= IFCELEMENTQUANTITY('3RlqQw2rEpwFYsYkFogS',#5,'BaseQ uantities',S,S,(#8812,#8813,#8814,#361,#8815,#8816,#8817,#8818)); #8820= IFCLOCALPLACEMENT(#30,#10); #8821= IFCELEMENTASSEMBLY('IOgimc0001GZ4qE3SrEJar',#5,'Steel Assembly',S,S,(#8820,S,'BE-0(?)',..NOTDEFINED,..RIGID_FRAME.); #8822= IFCPROPERTYSET('0F6W5qX0LDY9VKWLSrctW2',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#4584,#3326,#4585,#8484,#318)); #8823= IFCQUANTITYLENGTH('Width',S,S,200.0000000008411); #8824= IFCELEMENTQUANTITY('38ZbKrqFz7TfuzEGRANu3',#5,'BaseQ uantities',S,S,(#8823)); #8825= IFCCARTESIANPOINT((6749.92884908046,193360.825103096,44.31 25484189382); #8826= IFCAXIS2PLACEMENT3D(#8825,#7599,#7600); #8827= IFCLOCALPLACEMENT(#8820,#8826); #8828= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4596)); #8829= IFCPRODUCTDEFINITIONSHAPE(S,S,(#8828)); #8830= IFCMEMBER('IOgimc0001Gp4qE3SrEJar',#5,'BEAM','HN400*200*8* 13','HN400*200*8*13',#8827,#8829,'P0(?)'); #8831= IFCQUANTITYLENGTH('Length',S,S,2831.65520781193); #8832= IFCQUANTITYAREA('OuterSurfaceArea',S,S,4.48534184917409); #8833= IFCQUANTITYAREA('GrossSurfaceArea',S,S,4.48534184917409); #8834= IFCQUANTITYVOLUME('NetVolume',S,S,0.0231969194622225); #8835= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0238198836081139); #8836= IFCQUANTITYWEIGHT('NetWeight',S,S,182.095817778446); #8837= IFCQUANTITYWEIGHT('GrossWeight',S,S,186.986086323694); #8838= IFCELEMENTQUANTITY('0Qx6wIp29rDhKwH_XsqMv',#5,'BaseQ uantities',S,S,(#8831,#8832,#8833,#361,#8834,#8835,#8836,#8837)); #8839= IFCLOCALPLACEMENT(#30,#10); #8840= IFCELEMENTASSEMBLY('IOgimc0001FZ4qE3SrEJar',#5,'Steel Assembly',S,S,(#8839,S,'BE-0(?)',..NOTDEFINED,..RIGID_FRAME.); #8841= IFCPROPERTYSET('2usDKWYUPOsqocxFHRg9iV',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#4616,#3326,#4617,#8484,#318)); #8842= IFCQUANTITYLENGTH('Width',S,S,200.000000006839); #8843= IFCELEMENTQUANTITY('1aVl8mFnHALApenaubFMer',#5,'BaseQ uantities',S,S,(#8842)); #8844= IFCCARTESIANPOINT((6750.47415594403,192196.326041389,2644. 68317450372); #8845= IFCAXIS2PLACEMENT3D(#8844,#7620,#7621); #8846= IFCLOCALPLACEMENT(#8839,#8845); #8847= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4628)); #8848= IFCPRODUCTDEFINITIONSHAPE(S,S,(#8847)); #8849= IFCMEMBER('IOgimc0001Fp4qE3SrEJar',#5,'BEAM','HN400*200*8* 13','HN400*200*8*13',#8846,#8848,'P0(?)'); #8850= IFCQUANTITYLENGTH('Length',S,S,2925.27422176288); #8851= IFCQUANTITYAREA('OuterSurfaceArea',S,S,4.63363436727241); #8852= IFCQUANTITYAREA('GrossSurfaceArea',S,S,4.63363436727241); #8853= IFCQUANTITYVOLUME('NetVolume',S,S,0.023963846247473); #8854= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0246074067534694); #8855= IFCQUANTITYWEIGHT('NetWeight',S,S,188.116194434267); #8856= IFCQUANTITYWEIGHT('GrossWeight',S,S,193.168143014735); #8857= IFCELEMENTQUANTITY('3geHRXHFz919jgSR8Sic6',#5,'BaseQ uantities',S,S,(#8850,#8851,#8852,#361,#8853,#8854,#8855,#8856)); #8858= IFCLOCALPLACEMENT(#30,#10);
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#8859= IFCELEMENTASSEMBLY('1Ogjm0001EZ4qE3SrEJar',#5,'Steel Assembly',S,S,#8858,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#8860= IFCPROPERTYSET('1qOgNTgqf0UxcuZS9\_Z\_DfB',#5,'Tekla Assembly',Assembly Properties',(#34,#313,#4648,#3264,#4649,#8484,#318));  
#8861= IFCCARTESIANPOINT((6750.17231276309,190723.370744555,44.58 97689499072));  
#8862= IFCAxis2PLACEMENT3D(#8861,#7641,#7642);  
#8863= IFLOCALPLACEMENT(#8858,#8862);  
#8864= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4660));  
#8865= IFCPRODUCTDEFINITIONSHAPE(S,S,(#8864));  
#8866= IFCMEMBER('1Ogjm0001Ep4qE3SrEJar',#5,'BEAM',HN400\*200\*8\* 13',HN400\*200\*8\*13',#8863,#8865,'P0(?)');  
#8867= IFCQUANTITYLENGTH('Length',S,S,2903.38434026315);  
#8868= IFCQUANTITYAREA('OuterSurfaceArea',S,S,4.59896079497682);  
#8869= IFCQUANTITYAREA('GrossSurfaceArea',S,S,4.59896079497682);  
#8870= IFCQUANTITYVOLUME('NetVolume',S,S,0.0237845245156836);  
#8871= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0244232690702936);  
#8872= IFCQUANTITYWEIGHT('NetWeight',S,S,186.708517448117);  
#8873= IFCQUANTITYWEIGHT('GrossWeight',S,S,191.722662201805);  
#8874= IFCELEMENTQUANTITY('1oRej03vz2pxPTekNiGzj',#5,'BaseQuantities',S,S,(#8867,#8868,#8869,#361,#8870,#8871,#8872,#8873));  
#8875= IFLOCALPLACEMENT(#30,#10);  
#8876= IFCELEMENTASSEMBLY('1Ogjm0001DZ4qE3SrEJar',#5,'Steel Assembly',S,S,#8875,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#8877= IFCPROPERTYSET('3URlra54zOMOSF9TA5yo6H',#5,'Tekla Assembly',Assembly Properties',(#34,#313,#4680,#3264,#4681,#8484,#318));  
#8878= IFCQUANTITYLENGTH('Width',S,S,200.000000003725);  
#8879= IFCELEMENTQUANTITY('3xE7M\$z3f12OTQ2qxrqlig',#5,'BaseQuantities',S,S,(#8878));  
#8880= IFCCARTESIANPOINT((6748.06638297871,189524.067922306,2706. 17399470221));  
#8881= IFCAxis2PLACEMENT3D(#8880,#7662,#7663);  
#8882= IFLOCALPLACEMENT(#8875,#8881);  
#8883= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4692));  
#8884= IFCPRODUCTDEFINITIONSHAPE(S,S,(#8883));  
#8885= IFCMEMBER('1Ogjm0001Dp4qE3SrEJar',#5,'BEAM',HN400\*200\*8\* 13',HN400\*200\*8\*13',#8882,#8884,'P0(?)');  
#8886= IFCQUANTITYLENGTH('Length',S,S,2995.73282018295);  
#8887= IFCQUANTITYAREA('OuterSurfaceArea',S,S,4.74524078716979);  
#8888= IFCQUANTITYAREA('GrossSurfaceArea',S,S,4.74524078716979);  
#8889= IFCQUANTITYVOLUME('NetVolume',S,S,0.0245410432628642);  
#8890= IFCQUANTITYVOLUME('GrossVolume',S,S,0.025200104483379);  
#8891= IFCQUANTITYWEIGHT('NetWeight',S,S,192.647189613484);  
#8892= IFCQUANTITYWEIGHT('GrossWeight',S,S,197.820820194525);  
#8893= IFCELEMENTQUANTITY('1ZYOTTfHDleg40RwLT04',#5,'BaseQuantities',S,S,(#8886,#8887,#8888,#361,#8889,#8890,#8891,#8892));  
#8894= IFLOCALPLACEMENT(#30,#10);  
#8895= IFCELEMENTASSEMBLY('1Ogjm0001CZ4qE3SrEJar',#5,'Steel Assembly',S,S,#8894,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#8896= IFCPROPERTYSET('3QbGYmHdPFRgKKMO2bdfcJ',#5,'Tekla Assembly',Assembly Properties',(#34,#313,#4712,#3326,#4713,#8484,#318));  
#8897= IFCQUANTITYLENGTH('Width',S,S,200.000000016473);  
#8898= IFCELEMENTQUANTITY('0deaxbSxL2\_RaL7kS\_x1Dj',#5,'BaseQuantities',S,S,(#8897));  
#8899= IFCCARTESIANPOINT((6750.13856789268,188012.438332523,44.81 10128026418));  
#8900= IFCAxis2PLACEMENT3D(#8899,#7681,#7682);  
#8901= IFLOCALPLACEMENT(#8894,#8900);  
#8902= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4724));  
#8903= IFCPRODUCTDEFINITIONSHAPE(S,S,(#8902));  
#8904= IFCMEMBER('1Ogjm0001Cp4qE3SrEJar',#5,'BEAM',HN400\*200\*8\* 13',HN400\*200\*8\*13',#8901,#8903,'P0(?)');  
#8905= IFCQUANTITYLENGTH('Length',S,S,2975.67624728251);  
#8906= IFCQUANTITYAREA('OuterSurfaceArea',S,S,4.71347117569549);  
#8907= IFCQUANTITYAREA('GrossSurfaceArea',S,S,4.71347117569549);  
#8908= IFCQUANTITYVOLUME('NetVolume',S,S,0.0243767398174399);  
#8909= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0250313885921404);  
#8910= IFCQUANTITYWEIGHT('NetWeight',S,S,191.357407566904);  
#8911= IFCQUANTITYWEIGHT('GrossWeight',S,S,196.496400448303);

#8912= IFCELEMENTQUANTITY('0wogLJ9q7fWRFQ00wfkKXl',#5,'BaseQuantities',S,S,(#8905,#8906,#8907,#361,#8908,#8909,#8910,#8911));  
#8913= IFLOCALPLACEMENT(#30,#10);  
#8914= IFCELEMENTASSEMBLY('1Ogjm0001BZ4qE3SrEJar',#5,'Steel Assembly',S,S,#8913,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#8915= IFCPROPERTYSET('3CWqHxobjEiv7KmEJfYmb',#5,'Tekla Assembly',Assembly Properties',(#34,#313,#4744,#3326,#4745,#8484,#318));  
#8916= IFCQUANTITYLENGTH('Width',S,S,200.000000012689);  
#8917= IFCELEMENTQUANTITY('26GP16Sbj0hAI76cwJ9Tez',#5,'BaseQuantities',S,S,(#8916));  
#8918= IFCCARTESIANPOINT((6750.63922592706,186778.930584446,2773. 54272976058));  
#8919= IFCAxis2PLACEMENT3D(#8918,#7702,#7703);  
#8920= IFLOCALPLACEMENT(#8913,#8919);  
#8921= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4756));  
#8922= IFCPRODUCTDEFINITIONSHAPE(S,S,(#8921));  
#8923= IFCMEMBER('1Ogjm0001Bp4qE3SrEJar',#5,'BEAM',HN400\*200\*8\* 13',HN400\*200\*8\*13',#8920,#8922,'P0(?)');  
#8924= IFCQUANTITYLENGTH('Length',S,S,3071.25692681297);  
#8925= IFCQUANTITYAREA('OuterSurfaceArea',S,S,4.86487097207175);  
#8926= IFCQUANTITYAREA('GrossSurfaceArea',S,S,4.86487097207175);  
#8927= IFCQUANTITYVOLUME('NetVolume',S,S,0.025159736744244);  
#8928= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0258354132683507);  
#8929= IFCQUANTITYWEIGHT('NetWeight',S,S,197.503933442316);  
#8930= IFCQUANTITYWEIGHT('GrossWeight',S,S,202.807994156553);  
#8931= IFCELEMENTQUANTITY('2mVjArxPDEBQ2gNBCJSeq1',#5,'BaseQuantities',S,S,(#8924,#8925,#8926,#361,#8927,#8928,#8929,#8930));  
#8932= IFLOCALPLACEMENT(#30,#10);  
#8933= IFCELEMENTASSEMBLY('1Ogjm0001AZ4qE3SrEJar',#5,'Steel Assembly',S,S,#8932,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#8934= IFCPROPERTYSET('2rV1u3vpDAQOWPugD8Lfn',#5,'Tekla Assembly',Assembly Properties',(#34,#313,#4776,#3264,#4777,#8484,#318));  
#8935= IFCCARTESIANPOINT((6749.95587265295,185221.42628889,45.131 0766642335));  
#8936= IFCAxis2PLACEMENT3D(#8935,#7723,#7724);  
#8937= IFLOCALPLACEMENT(#8932,#8936);  
#8938= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4788));  
#8939= IFCPRODUCTDEFINITIONSHAPE(S,S,(#8938));  
#8940= IFCMEMBER('1Ogjm0001Ap4qE3SrEJar',#5,'BEAM',HN400\*200\*8\* 13',HN400\*200\*8\*13',#8937,#8939,'P0(?)');  
#8941= IFCQUANTITYLENGTH('Length',S,S,3056.56375287804);  
#8942= IFCQUANTITYAREA('OuterSurfaceArea',S,S,4.84159698455881);  
#8943= IFCQUANTITYAREA('GrossSurfaceArea',S,S,4.84159698455881);  
#8944= IFCQUANTITYVOLUME('NetVolume',S,S,0.0250393702636748);  
#8945= IFCQUANTITYVOLUME('GrossVolume',S,S,0.02571181428921);  
#8946= IFCQUANTITYWEIGHT('NetWeight',S,S,196.559056569847);  
#8947= IFCQUANTITYWEIGHT('GrossWeight',S,S,201.837742170299);  
#8948= IFCELEMENTQUANTITY('0S9vYGGBP1BhyLzHoboze',#5,'BaseQuantities',S,S,(#8941,#8942,#8943,#361,#8944,#8945,#8946,#8947));  
#8949= IFLOCALPLACEMENT(#30,#10);  
#8950= IFCELEMENTASSEMBLY('1Ogjm00019Z4qE3SrEJar',#5,'Steel Assembly',S,S,#8949,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#8951= IFCPROPERTYSET('1O1CuY7ID6RxbILPL13Q3r',#5,'Tekla Assembly',Assembly Properties',(#34,#313,#4808,#3264,#4809,#8484,#318));  
#8952= IFCQUANTITYLENGTH('Width',S,S,200.000000014727);  
#8953= IFCELEMENTQUANTITY('2a6aelZMP3Q9xIAwW\$FH4',#5,'BaseQuantities',S,S,(#8952));  
#8954= IFCCARTESIANPOINT((6749.77205927355,183953.315313949,2834. 37049775297));  
#8955= IFCAxis2PLACEMENT3D(#8954,#7744,#7745);  
#8956= IFLOCALPLACEMENT(#8949,#8955);  
#8957= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4820));  
#8958= IFCPRODUCTDEFINITIONSHAPE(S,S,(#8957));  
#8959= IFCMEMBER('1Ogjm00019p4qE3SrEJar',#5,'BEAM',HN400\*200\*8\* 13',HN400\*200\*8\*13',#8956,#8958,'P0(?)');  
#8960= IFCQUANTITYLENGTH('Length',S,S,3141.02666408126);  
#8961= IFCQUANTITYAREA('OuterSurfaceArea',S,S,4.97538623590472);  
#8962= IFCQUANTITYAREA('GrossSurfaceArea',S,S,4.97538623590472);  
#8963= IFCQUANTITYVOLUME('NetVolume',S,S,0.025731290431842);  
#8964= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0264223162982516);  
#8965= IFCQUANTITYWEIGHT('NetWeight',S,S,201.990629889959);

## Appendix

<p>#8966= IFCQUANTITYWEIGHT('GrossWeight',\$.\$.207.415182941275);            #8967= IFCLEMENTQUANTITY('1X9bhqkKbFPQR9OL3JW44',#.5,'BaseQuantities',\$.\$.#8960,#8961,#8962,#361,#8963,#8964,#8965,#8966);            #8968= IFCLOCALPLACEMENT(#30,#10);            #8969= IFCLEMENTASSEMBLY('1Ogimc00018Z4qE3SrEJar',#.5,'Steel Assembly',\$.\$.#8968,\$,'BE-0(?)',.NOTDEFINED,..RIGID_FRAME.);            #8970= IFCPROPERTYSET('1UHR\$pevbASfjWUxCLdv66',#.5,'Tekla Assembly','Assembly Properties',(#34,#313,#4840,#3326,#4841,#8484,#318));            #8971= IFCQUANTITYLENGTH('Width',\$.\$.200.000000005064);            #8972= IFCLEMENTQUANTITY('19QglvqPECA4eicim7oel',#.5,'BaseQuantities',\$.\$.#8971));            #8973= IFCARTESIANPOINT((6750.01517273946,182350.317999649,45.5119820758106));            #8974= IFCAXIS2PLACEMENT3D(#8973,#7763,#7764);            #8975= IFCLOCALPLACEMENT(#8968,#8974);            #8976= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4852));            #8977= IFCPRODUCTDEFINITIONSHAPE(\$,\$,#8976);            #8978= IFCMEMBER('1Ogimc00018p4qE3SrEJar',#.5,'BEAM','HN400*200*8*13','HN400*200*8*13',#.8975,#8977,'P0(?)');            #8979= IFCQUANTITYLENGTH('Length',\$.\$.3131.44304397341);            #8980= IFCQUANTITYAREA('OuterSurfaceArea',\$.\$.4.96020578165389);            #8981= IFCQUANTITYAREA('GrossSurfaceArea',\$.\$.4.96020578165389);            #8982= IFCQUANTITYVOLUME('NetVolume',\$.\$.0.0256527814161206);            #8983= IFCQUANTITYVOLUME('GrossVolume',\$.\$.0.0263416988859044);            #8984= IFCQUANTITYWEIGHT('NetWeight',\$.\$.201.374334116547);            #8985= IFCQUANTITYWEIGHT('GrossWeight',\$.\$.206.782336254349);            #8986= IFCLEMENTQUANTITY('0kScD_OR599AxQRg9QU7Gm',#.5,'BaseQuantities',\$.\$.#8979,#8980,#8981,#361,#8982,#8983,#8984,#8985);            #8987= IFCLOCALPLACEMENT(#30,#10);            #8988= IFCLEMENTASSEMBLY('1Ogimc00017Z4qE3SrEJar',#.5,'Steel Assembly',\$.\$.#8987,\$,'BE-0(?)',.NOTDEFINED,..RIGID_FRAME.);            #8989= IFCPROPERTYSET('1cl9f6TC19UvQWvvrHVjP1',#.5,'Tekla Assembly','Assembly Properties',(#34,#313,#4872,#3326,#4873,#8484,#318));            #8990= IFCARTESIANPOINT((6750.04923882473,181047.938290472,2903.07708057291));            #8991= IFCAXIS2PLACEMENT3D(#8990,#4910,#7784);            #8992= IFCLOCALPLACEMENT(#8987,#8991);            #8993= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4884));            #8994= IFCPRODUCTDEFINITIONSHAPE(\$,\$,#8993);            #8995= IFCMEMBER('1Ogimc00017p4qE3SrEJar',#.5,'BEAM','HN400*200*8*13','HN400*200*8*13',#.8992,#8994,'P0(?)');            #8996= IFCQUANTITYLENGTH('Length',\$.\$.3217.74982219987);            #8997= IFCQUANTITYAREA('OuterSurfaceArea',\$.\$.5.09691571836459);            #8998= IFCQUANTITYAREA('GrossSurfaceArea',\$.\$.5.09691571836459);            #8999= IFCQUANTITYVOLUME('NetVolume',\$.\$.0.0263598065436515);            #9000= IFCQUANTITYVOLUME('GrossVolume',\$.\$.0.0270677115043453);            #9001= IFCQUANTITYWEIGHT('NetWeight',\$.\$.206.924481367664);            #9002= IFCQUANTITYWEIGHT('GrossWeight',\$.\$.212.481535309111);            #9003= IFCLEMENTQUANTITY('3u259V0qb9HgS8zr_UcgJ',#.5,'BaseQuantities',\$.\$.#8996,#8997,#8998,#361,#8999,#9000,#9001,#9002);            #9004= IFCLOCALPLACEMENT(#30,#10);            #9005= IFCLEMENTASSEMBLY('1Ogimc00016Z4qE3SrEJar',#.5,'Steel Assembly',\$.\$.#9004,\$,'BE-0(?)',.NOTDEFINED,..RIGID_FRAME.);            #9006= IFCPROPERTYSET('0iB55zrIB5CF9mplr3lIE9X',#.5,'Tekla Assembly','Assembly Properties',(#34,#313,#4905,#3264,#4873,#8484,#318));            #9007= IFCQUANTITYLENGTH('Width',\$.\$.200.000000002561);            #9008= IFCLEMENTQUANTITY('3nYTDvDmPFwgYgSom\$FzJ',#.5,'BaseQuantities',\$.\$.#9007);            #9009= IFCARTESIANPOINT((6749.99683464118,179399.023834453,45.780764860019));            #9010= IFCAXIS2PLACEMENT3D(#9009,#4878,#7804);            #9011= IFCLOCALPLACEMENT(#9004,#9010);            #9012= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4916));            #9013= IFCPRODUCTDEFINITIONSHAPE(\$,\$,#9012);            #9014= IFCMEMBER('1Ogimc00016p4qE3SrEJar',#.5,'BEAM','HN400*200*8*13','HN400*200*8*13',#.9011,#9013,'P0(?)');            #9015= IFCQUANTITYLENGTH('Length',\$.\$.3213.62157619293);            #9016= IFCQUANTITYAREA('OuterSurfaceArea',\$.\$.5.09037657668961);            #9017= IFCQUANTITYAREA('GrossSurfaceArea',\$.\$.5.09037657668961);            #9018= IFCQUANTITYVOLUME('NetVolume',\$.\$.0.0263259879520785);</p>	<p>#9019= IFCQUANTITYVOLUME('GrossVolume',\$.\$.0.027032984698935);            #9020= IFCQUANTITYWEIGHT('NetWeight',\$.\$.206.659005423816);            #9021= IFCQUANTITYWEIGHT('GrossWeight',\$.\$.212.20892988664);            #9022= IFCLEMENTQUANTITY('2OamnnJpvFZATmZnFqZzl',#.5,'BaseQuantities',\$.\$.#9015,#9016,#9017,#361,#9018,#9019,#9020,#9021);            #9023= IFCLOCALPLACEMENT(#30,#10);            #9024= IFCLEMENTASSEMBLY('1Ogimc00015Z4qE3SrEJar',#.5,'Steel Assembly',\$.\$.#9023,\$,'BE-0(?)',.NOTDEFINED,..RIGID_FRAME.);            #9025= IFCPROPERTYSET('1ikaom9ajEFA5P8WxahiyO',#.5,'Tekla Assembly','Assembly Properties',(#34,#313,#4935,#3264,#4936,#8484,#318));            #9026= IFCARTESIANPOINT((6749.98907176908,178062.551286958,2971.82566532354));            #9027= IFCAXIS2PLACEMENT3D(#9026,#3371,#7824);            #9028= IFCLOCALPLACEMENT(#9023,#9027);            #9029= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4946));            #9030= IFCPRODUCTDEFINITIONSHAPE(\$,\$,#9029);            #9031= IFCMEMBER('1Ogimc00015p4qE3SrEJar',#.5,'BEAM','HN400*200*8*13','HN400*200*8*13',#.9028,#9030,'P0(?)');            #9032= IFCQUANTITYLENGTH('Length',\$.\$.3294.45736337376);            #9033= IFCQUANTITYAREA('OuterSurfaceArea',\$.\$.5.21842046358404);            #9034= IFCQUANTITYAREA('GrossSurfaceArea',\$.\$.5.21842046358404);            #9035= IFCQUANTITYVOLUME('NetVolume',\$.\$.0.0269881947210747);            #9036= IFCQUANTITYVOLUME('GrossVolume',\$.\$.0.0277129753407001);            #9037= IFCQUANTITYWEIGHT('NetWeight',\$.\$.211.857328560437);            #9038= IFCQUANTITYWEIGHT('GrossWeight',\$.\$.217.546856244496);            #9039= IFCLEMENTQUANTITY('0JjfyBSWL08wuUjvilt8n',#.5,'BaseQuantities',\$.\$.#9032,#9033,#9034,#361,#9035,#9036,#9037,#9038);            #9040= IFCLOCALPLACEMENT(#30,#10);            #9041= IFCLEMENTASSEMBLY('1Ogimc00014Z4qE3SrEJar',#.5,'Steel Assembly',\$.\$.#9040,\$,'BE-0(?)',.NOTDEFINED,..RIGID_FRAME.);            #9042= IFCPROPERTYSET('3bp1q6dKj0H89xcEizuRy1',#.5,'Tekla Assembly','Assembly Properties',(#34,#313,#4966,#3326,#4936,#8484,#318));            #9043= IFCQUANTITYLENGTH('Width',\$.\$.200.000000000713);            #9044= IFCLEMENTQUANTITY('0uUdGxM5A19_oHdiB3Jz3',#.5,'BaseQuantities',\$.\$.#9043);            #9045= IFCARTESIANPOINT((6750.00067918092,176367.595731562,46.037851499047));            #9046= IFCAXIS2PLACEMENT3D(#9045,#3668,#7844);            #9047= IFCLOCALPLACEMENT(#9040,#9046);            #9048= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#4976));            #9049= IFCPRODUCTDEFINITIONSHAPE(\$,\$,#9048);            #9050= IFCMEMBER('1Ogimc00014p4qE3SrEJar',#.5,'BEAM','HN400*200*8*13','HN400*200*8*13',#.9047,#9049,'P0(?)');            #9051= IFCQUANTITYVOLUME('NetVolume',\$.\$.0.027000186220357);            #9052= IFCQUANTITYWEIGHT('NetWeight',\$.\$.211.951461829803);            #9053= IFCLEMENTQUANTITY('3w7Xl4wL4Xafqpk6B5K66',#.5,'BaseQuantities',\$.\$.#7850,#7851,#7852,#361,#9051,#7854,#9052,#7856);            #9054= IFCLOCALPLACEMENT(#30,#10);            #9055= IFCLEMENTASSEMBLY('1Ogimc00013Z4qE3SrEJar',#.5,'Steel Assembly',\$.\$.#9054,\$,'BE-0(?)',.NOTDEFINED,..RIGID_FRAME.);            #9056= IFCPROPERTYSET('1Y7ykyIY2W0VzeRhtzVy',#.5,'Tekla Assembly','Assembly Properties',(#34,#313,#4995,#3326,#4996,#8484,#318));            #9057= IFCQUANTITYLENGTH('Width',\$.\$.200.000000021246);            #9058= IFCLEMENTQUANTITY('08UfUILmD0JBrPebTZ5lvp',#.5,'BaseQuantities',\$.\$.#9057);            #9059= IFCARTESIANPOINT((6750.00334709996,174997.220068108,3042.79439196714));            #9060= IFCAXIS2PLACEMENT3D(#9059,#5035,#7864);            #9061= IFCLOCALPLACEMENT(#9054,#9060);            #9062= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5007));            #9063= IFCPRODUCTDEFINITIONSHAPE(\$,\$,#9062);            #9064= IFCMEMBER('1Ogimc00013p4qE3SrEJar',#.5,'BEAM','HN400*200*8*13','HN400*200*8*13',#.9061,#9063,'P0(?)');            #9065= IFCQUANTITYLENGTH('Length',\$.\$.3373.08619044404);            #9066= IFCQUANTITYAREA('OuterSurfaceArea',\$.\$.5.3429685256576);            #9067= IFCQUANTITYAREA('GrossSurfaceArea',\$.\$.5.3429685256576);            #9068= IFCQUANTITYVOLUME('NetVolume',\$.\$.0.0276323220723857);            #9069= IFCQUANTITYVOLUME('GrossVolume',\$.\$.0.0283744010339847);            #9070= IFCQUANTITYWEIGHT('NetWeight',\$.\$.216.913728268228);            #9071= IFCQUANTITYWEIGHT('GrossWeight',\$.\$.222.73904811678);</p>
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#9072=	#9126=
IFCELEMENTQUANTITY('1L4qGUApH3M9Pm0ZISfObj',#5,'BaseQuantities',\$.\$(#9065,#9066,#9067,#361,#9068,#9069,#9070,#9071));	IFCQUANTITYWEIGHT('GrossWeight',\$.\$.229.120219780763);
#9073= IFCLOCALPLACEMENT(#30,#10);	#9127=
#9074=	IFCELEMENTQUANTITY('1eEYJ6Z4B283G3OJSgDjo',#5,'BaseQuantities',\$.\$(#9120,#9121,#9122,#361,#9123,#9124,#9125,#9126));
IFCELEMENTASSEMBLY('1Ogimc0001Z24qE3SrEJa',#5,'SteelAssembly',\$.\$.#9073,\$.BE-0(?),.NOTDEFINED,..RIGID_FRAME.);	#9128= IFCLOCALPLACEMENT(#30,#10);
#9075= IFCPROPERTYSET('27sqh1GJDErWJmDFwch2Jy',#5,'TeklaAssembly','AssemblyProperties',(#34,#313,#5028,#5029,#5030,#8484,#318));	#9129=
#9076= IFCQUANTITYLENGTH('Width',\$.\$.200.000000001979);	IFCELEMENTASSEMBLY('1Ogimc0000S24qE3SrEJa',#5,'SteelAssembly',\$.\$.#9128,\$.BE-0(?),.NOTDEFINED,..RIGID_FRAME.);
#9077=	#9130= IFCPROPERTYSET('1q2ExEUz28ewIAGMXAXSI',#5,'TeklaAssembly','AssemblyProperties',(#34,#313,#5124,#3326,#5125,#8484,#318));
IFCELEMENTQUANTITY('1dCyurLK103O2fzkeSyOc2',#5,'BaseQuantities',\$.\$(#9076));	#9131= IFCQUANTITYLENGTH('Width',\$.\$.200.000000013853);
#9078=	#9132=
IFCCARTESIANPOINT((6749.99980681068,173263.955667805,16.8194048175952));	IFCELEMENTQUANTITY('2Pc319GA57SeuFFnBysRCm',#5,'BaseQuantities',\$.\$(#9131));
#9079= IFCAxis2PLACEMENT3D(#9078,#5001,#7884);	#9133=
#9080= IFCLOCALPLACEMENT(#9073,#9079);	IFCCARTESIANPOINT((6750.00018338863,168599.872343127,3191.00729288661));
#9081=	#9134= IFCAxis2PLACEMENT3D(#9133,#7,7944);
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5041));	#9135= IFCLOCALPLACEMENT(#9128,#9134);
#9082= IFCPRODUCTDEFINITIONSHAPE(S,\$(#9081));	#9136=
#9083=	IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5135));
IFCMEMBER('1Ogimc00012p4qE3SrEJa',#5,'BEAM','HN400*200*8*13','HN400*200*8*13',#9080,#9082,'P0(?)');	#9137= IFCPRODUCTDEFINITIONSHAPE(S,\$(#9136));
#9084= IFCQUANTITYLENGTH('Length',\$.\$.3402.20492302817);	#9138=
#9085=	IFCMEMBER('1Ogimc0000Sp4qE3SrEJa',#5,'BEAM','HN400*200*8*13','HN400*200*8*13',#9135,#9137,'P0(?)');
IFCQUANTITYAREA('OuterSurfaceArea',\$.\$.5.38909259807662);	#9139= IFCQUANTITYLENGTH('Length',\$.\$.3541.15902152749);
#9086=	#9140=
IFCQUANTITYAREA('GrossSurfaceArea',\$.\$.5.38909259807662);	IFCQUANTITYAREA('OuterSurfaceArea',\$.\$.5.60919589009955);
#9087=	#9141=
IFCQUANTITYVOLUME('NetVolume',\$.\$.0.0278708627293854);	IFCQUANTITYAREA('GrossSurfaceArea',\$.\$.5.60919589009955);
#9088=	#9142=
IFCQUANTITYVOLUME('GrossVolume',\$.\$.0.028619347812513);	IFCQUANTITYVOLUME('NetVolume',\$.\$.0.0290091747045347);
#9089= IFCQUANTITYWEIGHT('NetWeight',\$.\$.218.786272425676);	#9143=
#9090=	IFCQUANTITYVOLUME('GrossVolume',\$.\$.0.0297882296890893);
IFCQUANTITYWEIGHT('GrossWeight',\$.\$.224.661880328227);	#9144= IFCQUANTITYWEIGHT('NetWeight',\$.\$.227.722021430598);
#9091=	#9145=
IFCELEMENTQUANTITY('3FSNMNBL75PdyzmpDV0K',#5,'BaseQuantities',\$.\$(#9084,#9085,#9086,#361,#9087,#9088,#9089,#9090));	#9146=
#9092= IFCLOCALPLACEMENT(#30,#10);	IFCQUANTITYWEIGHT('GrossWeight',\$.\$.233.837603059351);
#9093=	#9147=
IFCELEMENTASSEMBLY('1Ogimc00011Z4qE3SrEJa',#5,'SteelAssembly',\$.\$.#9092,\$.BE-0(?),.NOTDEFINED,..RIGID_FRAME.);	#9148=
#9094= IFCPROPERTYSET('2jUT_qp0DAux9MLUel_SMB',#5,'TeklaAssembly','AssemblyProperties',(#34,#313,#5062,#3264,#5063,#8484,#318));	IFCELEMENTASSEMBLY('1Ogimc0000_Z4qE3SrEJa',#5,'SteelAssembly',\$.\$.#9147,\$.BE-0(?),.NOTDEFINED,..RIGID_FRAME.);
#9095= IFCQUANTITYLENGTH('Width',\$.\$.200.000000009662);	#9149= IFCPROPERTYSET('1OyDXnPqj73hnyPZ6eNM',#5,'TeklaAssembly','AssemblyProperties',(#34,#313,#5156,#5157,#5158,#8484,#318));
#9096=	#9150=
IFCELEMENTQUANTITY('2bNodLL6z9r92t_uFJ9rKG',#5,'BaseQuantities',\$.\$(#9095));	IFCCARTESIANPOINT((6749.99440454699,166763.834512106,44.5675798224274));
#9097=	#9151= IFCAxis2PLACEMENT3D(#9150,#7964,#7965);
IFCCARTESIANPOINT((6749.99895274577,171845.229825397,3115.24566052664));	#9152= IFCLOCALPLACEMENT(#9147,#9151);
#9098= IFCAxis2PLACEMENT3D(#9097,#7,#7904);	#9153=
#9099= IFCLOCALPLACEMENT(#9092,#9098);	IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5169));
#9100=	#9154= IFCPRODUCTDEFINITIONSHAPE(S,\$(#9153));
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5073));	#9155=
#9101= IFCPRODUCTDEFINITIONSHAPE(S,\$(#9100));	IFCMEMBER('1Ogimc0000_p4qE3SrEJa',#5,'BEAM','HN400*200*8*13','HN400*200*8*13',#9152,#9154,'P0(?)');
#9102=	#9156= IFCQUANTITYLENGTH('Length',\$.\$.3557.4968142671);
IFCMEMBER('1Ogimc00011p4qE3SrEJa',#5,'BEAM','HN400*200*8*13','HN400*200*8*13',#9099,#9101,'P0(?)');	#9157=
#9103= IFCQUANTITYLENGTH('Length',\$.\$.3452.98686638784);	IFCQUANTITYAREA('OuterSurfaceArea',\$.\$.5.63507495379908);
#9104=	#9158=
IFCQUANTITYAREA('OuterSurfaceArea',\$.\$.5.46953119635835);	IFCQUANTITYAREA('GrossSurfaceArea',\$.\$.5.63507495379908);
#9105=	#9159=
IFCQUANTITYAREA('GrossSurfaceArea',\$.\$.5.46953119635835);	IFCQUANTITYVOLUME('NetVolume',\$.\$.0.0291430139026199);
#9106=	#9160=
IFCQUANTITYVOLUME('NetVolume',\$.\$.0.0282868684095723);	IFCQUANTITYVOLUME('GrossVolume',\$.\$.0.0299256632016148);
#9107=	#9161= IFCQUANTITYWEIGHT('NetWeight',\$.\$.228.772659135566);
IFCQUANTITYVOLUME('GrossVolume',\$.\$.0.0290465255200545);	#9162=
#9108= IFCQUANTITYWEIGHT('NetWeight',\$.\$.222.051917015143);	IFCQUANTITYWEIGHT('GrossWeight',\$.\$.234.916456132676);
#9109=	#9163=
IFCQUANTITYWEIGHT('GrossWeight',\$.\$.228.015225332428);	IFCELEMENTQUANTITY('2N4bU3XbbCtvmMkWaUSI2',#5,'BaseQuantities',\$.\$(#9156,#9157,#9158,#361,#9159,#9160,#9161,#9162));
#9110=	#9164= IFCLOCALPLACEMENT(#30,#10);
IFCELEMENTQUANTITY('25YWXqy5zFBuHX4CgNuL',#5,'BaseQuantities',\$.\$(#9103,#9104,#9105,#361,#9106,#9107,#9108,#9109));	#9165=
#9111= IFCLOCALPLACEMENT(#30,#10);	IFCELEMENTASSEMBLY('1Ogimc0000Z4qE3SrEJa',#5,'SteelAssembly',\$.\$.#9164,\$.BE-0(?),.NOTDEFINED,..RIGID_FRAME.);
#9112=	#9166= IFCPROPERTYSET('22wbPcQmTDeRENAof3_wB9',#5,'TeklaAssembly','AssemblyProperties',(#34,#313,#5190,#5157,#5191,#8484,#318));
IFCELEMENTASSEMBLY('1Ogimc00010Z4qE3SrEJa',#5,'SteelAssembly',\$.\$.#9111,\$.BE-0(?),.NOTDEFINED,..RIGID_FRAME.);	#9167=
#9113= IFCPROPERTYSET('11GASKMFz2meFKzYIR8_X0',#5,'TeklaAssembly','AssemblyProperties',(#34,#313,#5093,#3326,#5094,#8484,#318));	IFCCARTESIANPOINT((6749.99956745326,165267.897522137,3268.11322557476));
#9114=	#9168= IFCAxis2PLACEMENT3D(#9167,#5035,#7985);
IFCCARTESIANPOINT((6750.00006067285,170050.005390431,46.6282080089161));	#9169= IFCLOCALPLACEMENT(#9164,#9168);
#9115= IFCAxis2PLACEMENT3D(#9114,#7,7924);	#9170=
#9116= IFCLOCALPLACEMENT(#9111,#9115);	IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5201));
#9117=	#9171= IFCPRODUCTDEFINITIONSHAPE(S,\$(#9170));
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5104));	#9172=
#9118= IFCPRODUCTDEFINITIONSHAPE(S,\$(#9117));	IFCMEMBER('1Ogimc0000zp4qE3SrEJa',#5,'BEAM','HN400*200*8*13','HN400*200*8*13',#9169,#9171,'P0(?)');
#9119=	#9173= IFCQUANTITYLENGTH('Length',\$.\$.3632.4037716559);
IFCMEMBER('1Ogimc00010p4qE3SrEJa',#5,'BEAM','HN400*200*8*13','HN400*200*8*13',#9116,#9118,'P0(?)');	#9174=
#9120= IFCQUANTITYLENGTH('Length',\$.\$.3469.72053543109);	IFCQUANTITYAREA('OuterSurfaceArea',\$.\$.5.75372757430294);
#9121=	#9175=
IFCQUANTITYAREA('OuterSurfaceArea',\$.\$.5.49603732812284);	IFCQUANTITYAREA('GrossSurfaceArea',\$.\$.5.75372757430294);
#9122=	#9176=
IFCQUANTITYAREA('GrossSurfaceArea',\$.\$.5.49603732812284);	IFCQUANTITYVOLUME('NetVolume',\$.\$.0.0297566516970851);
#9123=	#9177=
IFCQUANTITYVOLUME('NetVolume',\$.\$.0.028423950626087);	IFCQUANTITYVOLUME('GrossVolume',\$.\$.0.0305557805271694);
#9124=	#9178= IFCQUANTITYWEIGHT('NetWeight',\$.\$.233.589715822118);
IFCQUANTITYVOLUME('GrossVolume',\$.\$.0.0291872891440463);	#9179=
#9125= IFCQUANTITYWEIGHT('NetWeight',\$.\$.223.128012414783);	IFCQUANTITYWEIGHT('GrossWeight',\$.\$.239.86287713828);



## Appendix

#9180=  
 IFCELEMENTQUANTITY('1YkTOS\$DHLFIUOX\$M4n8jib',#5,'BaseQuantities',S,\$,(#9173,#9174,#9175,#361,#9176,#9177,#9178,#9179));  
 #9181= IFLOCALPLACEMENT(#30,#10);  
 #9182=  
 IFCELEMENTASSEMBLY('1Ogjm0000yZ4qE3SrEJa',#5,'Steel Assembly',S,\$,#9181,S,'BE-0(?)',...NOTDEFINED...RIGID\_FRAME.);  
 #9183= IFCPROPERTYSET('0MuVbwj2v5ce9n5ACs7yGe',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#5222,#3326,#5223,#8484,#318));  
 #9184= IFCQUANTITYLENGTH('Width',S,\$,200.000000010186);  
 #9185=  
 IFCELEMENTQUANTITY('2ciRuRhEbC0Q3vGyFGzKjN',#5,'BaseQuantities',S,\$,(#9184));  
 #9186=  
 IFCCARTESIANPOINT((6746.84419017988,163388.391111019,46.7145869200574));  
 #9187= IFCAxis2PLACEMENT3D(#9186,#8005,#8006);  
 #9188= IFLOCALPLACEMENT(#9181,#9187);  
 #9189=  
 IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5234));  
 #9190= IFCPRODUCTDEFINITIONSHAPE(S,\$,(#9189));  
 #9191=  
 IFCMEMBER('1Ogjm0000vp4qE3SrEJa',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#9188,#9190,'P0(?)');  
 #9192= IFCQUANTITYLENGTH('Length',S,\$,3644.11113682338);  
 #9193=  
 IFCQUANTITYAREA('OuterSurfaceArea',S,\$,5.77227204072824);  
 #9194=  
 IFCQUANTITYAREA('GrossSurfaceArea',S,\$,5.77227204072824);  
 #9195=  
 IFCQUANTITYVOLUME('NetVolume',S,\$,0.0298525584329854);  
 #9196=  
 IFCQUANTITYVOLUME('GrossVolume',S,\$,0.0306542628829583);  
 #9197= IFCQUANTITYWEIGHT('NetWeight',S,\$,234.342583698936);  
 #9198=  
 IFCQUANTITYWEIGHT('GrossWeight',S,\$,240.635963631223);  
 #9199=  
 IFCELEMENTQUANTITY('1h\_R2FrfrBjvuxLnJuE84',#5,'BaseQuantities',S,\$,(#9192,#9193,#9194,#361,#9195,#9196,#9197,#9198));  
 #9200= IFLOCALPLACEMENT(#30,#10);  
 #9201=  
 IFCELEMENTASSEMBLY('1Ogjm0000xZ4qE3SrEJa',#5,'Steel Assembly',S,\$,#9200,S,'BE-0(?)',...NOTDEFINED...RIGID\_FRAME.);  
 #9202= IFCPROPERTYSET('1oagwiUcX3cP4Rz\_NHrF\_I',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#5254,#3264,#5255,#8484,#318));  
 #9203=  
 IFCCARTESIANPOINT((6749.84548202844,161842.57996633,3347.64464652608));  
 #9204= IFCAxis2PLACEMENT3D(#9203,#8026,#8027);  
 #9205= IFLOCALPLACEMENT(#9200,#9204);  
 #9206=  
 IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5266));  
 #9207= IFCPRODUCTDEFINITIONSHAPE(S,\$,(#9206));  
 #9208=  
 IFCMEMBER('1Ogjm0000xp4qE3SrEJa',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#9205,#9207,'P0(?)');  
 #9209= IFCQUANTITYLENGTH('Length',S,\$,3723.90081914098);  
 #9210=  
 IFCQUANTITYAREA('OuterSurfaceArea',S,\$,5.89865889751932);  
 #9211=  
 IFCQUANTITYAREA('GrossSurfaceArea',S,\$,5.89865889751932);  
 #9212=  
 IFCQUANTITYVOLUME('NetVolume',S,\$,0.0305061955104796);  
 #9213=  
 IFCQUANTITYVOLUME('GrossVolume',S,\$,0.0313254536906139);  
 #9214= IFCQUANTITYWEIGHT('NetWeight',S,\$,239.473634757265);  
 #9215=  
 IFCQUANTITYWEIGHT('GrossWeight',S,\$,245.904811471319);  
 #9216=  
 IFCELEMENTQUANTITY('0S8anTu1A4gsi9GxINyE',#5,'BaseQuantities',S,\$,(#9209,#9210,#9211,#361,#9212,#9213,#9214,#9215));  
 #9217= IFLOCALPLACEMENT(#30,#10);  
 #9218=  
 IFCELEMENTASSEMBLY('1Ogjm0000wZ4qE3SrEJa',#5,'Steel Assembly',S,\$,#9217,S,'BE-0(?)',...NOTDEFINED...RIGID\_FRAME.);  
 #9219= IFCPROPERTYSET('3BPMHyZjn3fAA0rkkOE4w',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#5286,#3326,#5287,#8484,#318));  
 #9220=  
 IFCCARTESIANPOINT((6749.99984746616,159911.689188915,46.9169555164756));  
 #9221= IFCAxis2PLACEMENT3D(#9220,#7,#8047);  
 #9222= IFLOCALPLACEMENT(#9217,#9221);  
 #9223=  
 IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5297));  
 #9224= IFCPRODUCTDEFINITIONSHAPE(S,\$,(#9223));  
 #9225=  
 IFCMEMBER('1Ogjm0000wp4qE3SrEJa',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#9222,#9224,'P0(?)');  
 #9226= IFCQUANTITYLENGTH('Length',S,\$,3738.36342403974);  
 #9227=  
 IFCQUANTITYAREA('OuterSurfaceArea',S,\$,5.92156766367894);  
 #9228=  
 IFCQUANTITYAREA('GrossSurfaceArea',S,\$,5.92156766367894);  
 #9229=  
 IFCQUANTITYVOLUME('NetVolume',S,\$,0.0306246731700762);  
 #9230=  
 IFCQUANTITYVOLUME('GrossVolume',S,\$,0.0314471131230223);  
 #9231= IFCQUANTITYWEIGHT('NetWeight',S,\$,240.403684385098);  
 #9232=  
 IFCQUANTITYWEIGHT('GrossWeight',S,\$,246.859838015725);

#9233=  
 IFCELEMENTQUANTITY('2n\_WdUXQL6bx74xS0ocyk6',#5,'BaseQuantities',S,\$,(#9226,#9227,#9228,#361,#9229,#9230,#9231,#9232));  
 #9234= IFLOCALPLACEMENT(#30,#10);  
 #9235=  
 IFCELEMENTASSEMBLY('1Ogjm0000vZ4qE3SrEJa',#5,'Steel Assembly',S,\$,#9234,S,'BE-0(?)',...NOTDEFINED...RIGID\_FRAME.);  
 #9236= IFCPROPERTYSET('Assembly/Cast unit position code',S,IFCLABEL('5/C-D'),S);  
 #9237= IFCPROPERTYSET('2iMo\$dvcb2RP4Z95MVU37k',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#5317,#3326,#5318,#9236,#318));  
 #9238=  
 IFCCARTESIANPOINT((6749.99984728577,158324.082548815,3429.11612816652));  
 #9239= IFCAxis2PLACEMENT3D(#9238,#7,#8066);  
 #9240= IFLOCALPLACEMENT(#9234,#9239);  
 #9241=  
 IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5329));  
 #9242= IFCPRODUCTDEFINITIONSHAPE(S,\$,(#9241));  
 #9243=  
 IFCMEMBER('1Ogjm0000vp4qE3SrEJa',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#9240,#9242,'P0(?)');  
 #9244= IFLOCALPLACEMENT(#30,#10);  
 #9245=  
 IFCELEMENTASSEMBLY('1Ogjm0000uZ4qE3SrEJa',#5,'Steel Assembly',S,\$,#9244,S,'BE-0(?)',...NOTDEFINED...RIGID\_FRAME.);  
 #9246= IFCPROPERTYSET('28PhBpZqv9Ag8GiSSClb92',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#5350,#3326,#5351,#9236,#318));  
 #9247=  
 IFCCARTESIANPOINT((6750.00000745035,156339.389354611,47.1326607758537));  
 #9248= IFCAxis2PLACEMENT3D(#9247,#7,#8086);  
 #9249= IFLOCALPLACEMENT(#9244,#9248);  
 #9250=  
 IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5361));  
 #9251= IFCPRODUCTDEFINITIONSHAPE(S,\$,(#9250));  
 #9252=  
 IFCMEMBER('1Ogjm0000up4qE3SrEJa',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#9249,#9251,'P0(?)');  
 #9253= IFCQUANTITYLENGTH('Length',S,\$,3835.63025705538);  
 #9254=  
 IFCQUANTITYAREA('OuterSurfaceArea',S,\$,6.07563832717573);  
 #9255=  
 IFCQUANTITYAREA('GrossSurfaceArea',S,\$,6.07563832717573);  
 #9256=  
 IFCQUANTITYVOLUME('NetVolume',S,\$,0.0314214830658476);  
 #9257=  
 IFCQUANTITYVOLUME('GrossVolume',S,\$,0.0322653217223499);  
 #9258= IFCQUANTITYWEIGHT('NetWeight',S,\$,246.658642066904);  
 #9259=  
 IFCQUANTITYWEIGHT('GrossWeight',S,\$,253.282775520447);  
 #9260=  
 IFCELEMENTQUANTITY('1PiUfAcq9558WBs8XsonE4',#5,'BaseQuantities',S,\$,(#9253,#9254,#9255,#361,#9256,#9257,#9258,#9259));  
 #9261= IFLOCALPLACEMENT(#30,#10);  
 #9262=  
 IFCELEMENTASSEMBLY('1Ogjm0000tZ4qE3SrEJa',#5,'Steel Assembly',S,\$,#9261,S,'BE-0(?)',...NOTDEFINED...RIGID\_FRAME.);  
 #9263= IFCPROPERTYSET('35AdlRo151B0gubMfsP',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#5381,#3326,#5382,#9236,#318));  
 #9264= IFCQUANTITYLENGTH('Width',S,\$,200.00000002305);  
 #9265=  
 IFCELEMENTQUANTITY('1c34Zh7DFIQPRONs69q',#5,'BaseQuantities',S,\$,(#9264));  
 #9266=  
 IFCCARTESIANPOINT((6749.9998582422,154705.59841075,3512.96650206196));  
 #9267= IFCAxis2PLACEMENT3D(#9266,#7,#8106);  
 #9268= IFLOCALPLACEMENT(#9261,#9267);  
 #9269=  
 IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5392));  
 #9270= IFCPRODUCTDEFINITIONSHAPE(S,\$,(#9269));  
 #9271=  
 IFCMEMBER('1Ogjm0000tp4qE3SrEJa',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#9268,#9270,'P0(?)');  
 #9272= IFCQUANTITYLENGTH('Length',S,\$,3911.03212042326);  
 #9273=  
 IFCQUANTITYAREA('OuterSurfaceArea',S,\$,6.19507487875045);  
 #9274=  
 IFCQUANTITYAREA('GrossSurfaceArea',S,\$,6.19507487875045);  
 #9275=  
 IFCQUANTITYVOLUME('NetVolume',S,\$,0.0320391751300874);  
 #9276=  
 IFCQUANTITYVOLUME('GrossVolume',S,\$,0.0328996021970005);  
 #9277= IFCQUANTITYWEIGHT('NetWeight',S,\$,251.507524771186);  
 #9278=  
 IFCQUANTITYWEIGHT('GrossWeight',S,\$,258.261877246454);  
 #9279=  
 IFCELEMENTQUANTITY('1uzZnPXX;5RgnY6h0HMpDA',#5,'BaseQuantities',S,\$,(#9272,#9273,#9274,#361,#9275,#9276,#9277,#9278));  
 #9280= IFLOCALPLACEMENT(#30,#10);  
 #9281=  
 IFCELEMENTASSEMBLY('1Ogjm0000sZ4qE3SrEJa',#5,'Steel Assembly',S,\$,#9280,S,'BE-0(?)',...NOTDEFINED...RIGID\_FRAME.);  
 #9282= IFCPROPERTYSET('34YZF8wSv4yxJAawqFOSA',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#5412,#3326,#5413,#9236,#318));  
 #9283= IFCQUANTITYLENGTH('Width',S,\$,200.00000022497);  
 #9284=  
 IFCELEMENTQUANTITY('0Si1GN83r4lgk9EbiVZXu',#5,'BaseQuantities',S,\$,(#9283));

#9285=	IFCCARTESIANPOINT((6736.38626502796,152663.661577147,47.3827079919616));	#9339=	IFCQUANTITYVOLUME('NetVolume',\$.\$.0.0336710274312701);
#9286=	IFCAXIS2PLACEMENT3D(#9285,#8126,#8127);	#9340=	IFCQUANTITYVOLUME('GrossVolume',\$.\$.0.0345752786563928);
#9287=	IFCLOCALPLACEMENT(#9280,#9286);	#9341=	IFCQUANTITYWEIGHT('NetWeight',\$.\$.264.317565335471);
#9288=	IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5424));	#9342=	IFCQUANTITYWEIGHT('GrossWeight',\$.\$.271.415937452683);
#9289=	IFCPRODUCTDEFINITIONSHAPE(\$.\$.(#9288));	#9343=	IFCELEMENTQUANTITY('1PLEVYl6nCrxDPREq4qZTZ',#.5,'BaseQuantities',\$.\$.(#9336,#9337,#9338,#361,#9339,#9340,#9341,#9342));
#9290=	IFCMEMBER('1Ogimc0000p4qE3SrEJaq',#.5,'BEAM','HN400*200*8*13','HN400*200*8*13',#9287,#9289,'P0(?));	#9344=	IFCLOCALPLACEMENT(#30,#10);
#9291=	IFCQUANTITYLENGTH('Length',\$.\$.3936.63488735918);	#9345=	IFCELEMENTASSEMBLY('1Ogimc0000z4qE3SrEJaq',#.5,'SteelAssembly',\$.\$.#9344,\$,'BE-0(?)',.NOTDEFINED,..RIGID_FRAME.);
#9292=	IFCQUANTITYAREA('OuterSurfaceArea',\$.\$.6.23562966157694);	#9346=	IFCPROPERTYSET('1gU8yCnfnFiQuGPuM_axu',#.5,'TeklaAssembly','AssemblyProperties',(#34,#313,#5538,#3264,#5539,#9236,#318));
#9293=	IFCQUANTITYAREA('GrossSurfaceArea',\$.\$.6.23562966157694);	#9347=	IFCQUANTITYLENGTH('Width',\$.\$.200.000000004991);
#9294=	IFCQUANTITYVOLUME('NetVolume',\$.\$.0.0322489129968513);	#9348=	IFCELEMENTQUANTITY('1zbVsk59gvL8NnOLr2r9',#.5,'BaseQuantities',\$.\$.(#9347));
#9295=	IFCQUANTITYVOLUME('GrossVolume',\$.\$.0.0331149726724654);	#9349=	IFCCARTESIANPOINT((6750.00000152729,145018.02106792,47.5363817550437));
#9296=	IFCQUANTITYWEIGHT('NetWeight',\$.\$.253.153967025283);	#9350=	IFCAXIS2PLACEMENT3D(#9349,#7,#8204);
#9297=	IFCQUANTITYWEIGHT('GrossWeight',\$.\$.259.952535478853);	#9351=	IFCLOCALPLACEMENT(#9344,#9350);
#9298=	IFCELEMENTQUANTITY('1XtbqQbvDAHf2NpfEtqmP',#.5,'BaseQuantities',\$.\$.(#9291,#9292,#9293,#361,#9294,#9295,#9296,#9297));	#9352=	IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5549));
#9299=	IFCLOCALPLACEMENT(#30,#10);	#9353=	IFCPRODUCTDEFINITIONSHAPE(\$.\$.(#9352));
#9300=	IFCELEMENTASSEMBLY('1Ogimc0000rZ4qE3SrEJaq',#.5,'SteelAssembly',\$.\$.#9299,\$,'BE-0(?)',.NOTDEFINED,..RIGID_FRAME.);	#9354=	IFCMEMBER('1Ogimc0000p4qE3SrEJaq',#.5,'BEAM','HN400*200*8*13','HN400*200*8*13',#9351,#9353,'P0(?));
#9301=	IFCPROPERTYSET('1jkoWS2yn4r93qrhRCSPhi',#.5,'TeklaAssembly','AssemblyProperties',(#34,#313,#5445,#3326,#5446,#9236,#318));	#9355=	IFCQUANTITYVOLUME('NetVolume',\$.\$.0.0339060354612838);
#9302=	IFCCARTESIANPOINT((6749.37805121446,150987.197659009,3599.03863920331));	#9356=	IFCQUANTITYWEIGHT('NetWeight',\$.\$.266.162378371078);
#9303=	IFCAXIS2PLACEMENT3D(#9302,#8145,#8146);	#9357=	IFCELEMENTQUANTITY('1Fdc8YXu56SP9N6ZYmCXI',#.5,'BaseQuantities',\$.\$.(#8210,#8211,#8212,#361,#9355,#8214,#9356,#8216));
#9304=	IFCLOCALPLACEMENT(#9299,#9303);	#9358=	IFCLOCALPLACEMENT(#30,#10);
#9305=	IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5457));	#9359=	IFCELEMENTASSEMBLY('1Ogimc0000z4qE3SrEJaq',#.5,'SteelAssembly',\$.\$.#9358,\$,'BE-0(?)',.NOTDEFINED,..RIGID_FRAME.);
#9306=	IFCPRODUCTDEFINITIONSHAPE(\$.\$.(#9305));	#9360=	IFCPROPERTYSET('1U18cXsYL69uSvSao6pLT_',#.5,'TeklaAssembly','AssemblyProperties',(#34,#313,#5570,#3326,#5571,#9236,#318));
#9307=	IFCMEMBER('1Ogimc0000rp4qE3SrEJaq',#.5,'BEAM','HN400*200*8*13','HN400*200*8*13',#9304,#9306,'P0(?));	#9361=	IFCQUANTITYLENGTH('Width',\$.\$.200.000000018525);
#9308=	IFCQUANTITYLENGTH('Length',\$.\$.4007.09068682384);	#9362=	IFCELEMENTQUANTITY('207bZcV6HC3A7wgq04x6il',#.5,'BaseQuantities',\$.\$.(#9361));
#9309=	IFCQUANTITYAREA('OuterSurfaceArea',\$.\$.6.34723164792896);	#9363=	IFCCARTESIANPOINT((6749.99998251364,143230.321707902,3779.00496765743));
#9310=	IFCQUANTITYAREA('GrossSurfaceArea',\$.\$.6.34723164792896);	#9364=	IFCAXIS2PLACEMENT3D(#9363,#7,#8224);
#9311=	IFCQUANTITYVOLUME('NetVolume',\$.\$.0.0328260869061285);	#9365=	IFCLOCALPLACEMENT(#9358,#9364);
#9312=	IFCQUANTITYVOLUME('GrossVolume',\$.\$.0.0337076468575621);	#9366=	IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5581));
#9313=	IFCQUANTITYWEIGHT('NetWeight',\$.\$.257.684782213109);	#9367=	IFCPRODUCTDEFINITIONSHAPE(\$.\$.(#9366));
#9314=	IFCQUANTITYWEIGHT('GrossWeight',\$.\$.264.605027831863);	#9368=	IFCMEMBER('1Ogimc0000p4qE3SrEJaq',#.5,'BEAM','HN400*200*8*13','HN400*200*8*13',#9365,#9367,'P0(?));
#9315=	IFCELEMENTQUANTITY('1h9nSaS1r2nRd857uDOQ6H',#.5,'BaseQuantities',\$.\$.(#9308,#9309,#9310,#361,#9311,#9312,#9313,#9314));	#9369=	IFCQUANTITYVOLUME('NetVolume',\$.\$.0.0345514511422893);
#9316=	IFCLOCALPLACEMENT(#30,#10);	#9370=	IFCQUANTITYWEIGHT('NetWeight',\$.\$.271.228891466971);
#9317=	IFCELEMENTASSEMBLY('1Ogimc0000qZ4qE3SrEJaq',#.5,'SteelAssembly',\$.\$.#9316,\$,'BE-0(?)',.NOTDEFINED,..RIGID_FRAME.);	#9371=	IFCELEMENTQUANTITY('3SFnV51sT0wUn1XScrwed',#.5,'BaseQuantities',\$.\$.(#8230,#8231,#8232,#361,#9369,#8234,#9370,#8236));
#9318=	IFCPROPERTYSET('2_b6u17yT7yxxKGUyHKA7i',#.5,'TeklaAssembly','AssemblyProperties',(#34,#313,#5477,#3326,#5478,#9236,#318));	#9372=	IFCLOCALPLACEMENT(#30,#10);
#9319=	IFCCARTESIANPOINT((6750.00000000959,148891.909061357,47.5174320518101));	#9373=	IFCELEMENTASSEMBLY('1Ogimc0000mZ4qE3SrEJaq',#.5,'SteelAssembly',\$.\$.#9372,\$,'BE-0(?)',.NOTDEFINED,..RIGID_FRAME.);
#9320=	IFCAXIS2PLACEMENT3D(#9319,#7,#8166);	#9374=	IFCPROPERTYSET('0wBxHrj9CvSODulgWRXP',#.5,'TeklaAssembly','AssemblyProperties',(#34,#313,#5601,#3326,#5602,#9236,#318));
#9321=	IFCLOCALPLACEMENT(#9316,#9320);	#9375=	IFCQUANTITYLENGTH('Width',\$.\$.200.000000016138);
#9322=	IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5486));	#9376=	IFCELEMENTQUANTITY('3lfuHKvcX9YObsCHahMm0l',#.5,'BaseQuantities',\$.\$.(#9375));
#9323=	IFCPRODUCTDEFINITIONSHAPE(\$.\$.(#9322));	#9377=	IFCCARTESIANPOINT((6750.00000079753,141034.482686332,47.5856132983629));
#9324=	IFCMEMBER('1Ogimc0000qp4qE3SrEJaq',#.5,'BEAM','HN400*200*8*13','HN400*200*8*13',#9321,#9323,'P0(?));	#9378=	IFCAXIS2PLACEMENT3D(#9377,#7,#8244);
#9325=	IFCLOCALPLACEMENT(#30,#10);	#9379=	IFCLOCALPLACEMENT(#9372,#9378);
#9326=	IFCELEMENTASSEMBLY('1Ogimc0000pZ4qE3SrEJaq',#.5,'SteelAssembly',\$.\$.#9325,\$,'BE-0(?)',.NOTDEFINED,..RIGID_FRAME.);	#9380=	IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5612));
#9327=	IFCPROPERTYSET('1IT_UD_g52SwpzrRFSxK0U',#.5,'TeklaAssembly','AssemblyProperties',(#34,#313,#5506,#3326,#5507,#9236,#318));	#9381=	IFCPRODUCTDEFINITIONSHAPE(\$.\$.(#9380));
#9328=	IFCQUANTITYLENGTH('Width',\$.\$.200.000000007742);	#9382=	IFCMEMBER('1Ogimc0000mp4qE3SrEJaq',#.5,'BEAM','HN400*200*8*13','HN400*200*8*13',#9379,#9381,'P0(?));
#9329=	IFCELEMENTQUANTITY('0hgGyLST7KQ5WvnTzATnW',#.5,'BaseQuantities',\$.\$.(#9328));	#9383=	IFCQUANTITYLENGTH('Length',\$.\$.4243.70336989526);
#9330=	IFCCARTESIANPOINT((6749.99996743218,147162.085958023,3687.75982843768));	#9384=	IFCQUANTITYAREA('OuterSurfaceArea',\$.\$.6.72202613791409);
#9331=	IFCAXIS2PLACEMENT3D(#9330,#7,#8184);	#9385=	IFCQUANTITYAREA('GrossSurfaceArea',\$.\$.6.72202613791409);
#9332=	IFCLOCALPLACEMENT(#9325,#9331);	#9386=	IFCQUANTITYVOLUME('NetVolume',\$.\$.0.0347644180059046);
#9333=	IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5517));	#9387=	IFCQUANTITYVOLUME('GrossVolume',\$.\$.0.0356980327475589);
#9334=	IFCPRODUCTDEFINITIONSHAPE(\$.\$.(#9333));	#9388=	IFCQUANTITYWEIGHT('NetWeight',\$.\$.272.900681346351);
#9335=	IFCMEMBER('1Ogimc0000pp4qE3SrEJaq',#.5,'BEAM','HN400*200*8*13','HN400*200*8*13',#9332,#9334,'P0(?));	#9389=	IFCQUANTITYWEIGHT('GrossWeight',\$.\$.280.229557068338);
#9336=	IFCQUANTITYLENGTH('Length',\$.\$.4110.23284075045);	#9390=	IFCELEMENTQUANTITY('0FOS1174r5sR9Gto5PDkPm',#.5,'BaseQuantities',\$.\$.(#9383,#9384,#9385,#361,#9386,#9387,#9388,#9389));
#9337=	IFCQUANTITYAREA('OuterSurfaceArea',\$.\$.6.51060881974871);	#9391=	IFCLOCALPLACEMENT(#30,#10);
#9338=	IFCQUANTITYAREA('GrossSurfaceArea',\$.\$.6.51060881974871);		

## Appendix

#9392=  
IFCELEMENTASSEMBLY('1Ogjm0000Iz4qE3SrEJap',#5,'Steel  
Assembly',S,S,#9391,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#9393= IFCPROPERTYSET('3kSnIjOjX3ke8bTWxThKs7',#5,'Tekla  
Assembly','Assembly  
Properties',(#34,#313,#5632,#3264,#5633,#9236,#318));  
#9394=  
IFCCARTESIANPOINT((6749.99998252711,139185.261111031,3872.  
9043002239));  
#9395= IFCAxis2PLACEMENT3D(#9394,#7,#8262);  
#9396= IFLOCALPLACEMENT(#9391,#9395);  
#9397=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5643));  
#9398= IFCPRODUCTDEFINITIONSHAPE(S,S,(#9397));  
#9399=  
IFCMEMBER('1Ogjm0000lp4qE3SrEJap',#5,'BEAM',HN400\*200\*8\*  
13',HN400\*200\*8\*13',#9396,#9398,'PO(?)');  
#9400=  
IFCQUANTITYVOLUME('NetVolume',S,S,0.0354648610426884);  
#9401= IFCQUANTITYWEIGHT('NetWeight',S,S,278.399159185104);  
#9402=  
IFCELEMENTQUANTITY('0Wdpt1lbT8qQ0TMNM66yzX',#5,'BaseQu  
antities',S,S,(#8268,#8269,#8270,#361,#9400,#8272,#9401,#8274));  
#9403= IFLOCALPLACEMENT(#30,#10);  
#9404=  
IFCELEMENTASSEMBLY('1Ogjm0000kZ4qE3SrEJap',#5,'Steel  
Assembly',S,S,#9403,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#9405= IFCPROPERTYSET('2SCcRSQ17dBHPsZnOjoN',#5,'Tekla  
Assembly','Assembly  
Properties',(#34,#313,#5664,#3264,#233,#9236,#318));  
#9406= IFCQUANTITYLENGTH('Width',S,S,200.000000027241);  
#9407=  
IFCELEMENTQUANTITY('3IB4xuvWj8A9i8X4UfdtK',#5,'BaseQuant  
ities',S,S,(#9406));  
#9408=  
IFCCARTESIANPOINT((6750.00000077388,136937.684036676,47.60  
65863693669));  
#9409= IFCAxis2PLACEMENT3D(#9408,#7,#8282);  
#9410= IFLOCALPLACEMENT(#9403,#9409);  
#9411=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5674));  
#9412= IFCPRODUCTDEFINITIONSHAPE(S,S,(#9411));  
#9413=  
IFCMEMBER('1Ogjm0000kp4qE3SrEJap',#5,'BEAM',HN400\*200\*8\*  
13',HN400\*200\*8\*13',#9410,#9412,'PO(?)');  
#9414=  
IFCQUANTITYVOLUME('NetVolume',S,S,0.0356415747376907);  
#9415= IFCQUANTITYWEIGHT('NetWeight',S,S,279.786361690872);  
#9416=  
IFCELEMENTQUANTITY('16uYvIQBDFEPwz8zcM4w',#5,'BaseQu  
antities',S,S,(#8288,#8289,#8290,#361,#9414,#8292,#9415,#8294));  
#9417= IFLOCALPLACEMENT(#30,#10);  
#9418=  
IFCELEMENTASSEMBLY('1Ogjm0000jZ4qE3SrEJap',#5,'Steel  
Assembly',S,S,#9417,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#9419= IFCPROPERTYSET('1oqOLrc19Nqawz98XSEvr',#5,'Tekla  
Assembly','Assembly  
Properties',(#34,#313,#5693,#3326,#5694,#9236,#318));  
#9420=  
IFCCARTESIANPOINT((6749.9999873883,135026.928806509,3969.3  
9247271504));  
#9421= IFCAxis2PLACEMENT3D(#9420,#7,#8302);  
#9422= IFLOCALPLACEMENT(#9417,#9421);  
#9423=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5704));  
#9424= IFCPRODUCTDEFINITIONSHAPE(S,S,(#9423));  
#9425=  
IFCMEMBER('1Ogjm0000jp4qE3SrEJap',#5,'BEAM',HN400\*200\*8\*  
13',HN400\*200\*8\*13',#9422,#9424,'PO(?)');  
#9426= IFCQUANTITYLENGTH('Length',S,S,4443.06910512461);  
#9427=  
IFCQUANTITYAREA('OuterSurfaceArea',S,S,7.03782146251738);  
#9428=  
IFCQUANTITYAREA('GrossSurfaceArea',S,S,7.03782146251738);  
#9429=  
IFCQUANTITYVOLUME('NetVolume',S,S,0.0363976221088153);  
#9430=  
IFCQUANTITYVOLUME('GrossVolume',S,S,0.0373750973123082);  
#9431= IFCQUANTITYWEIGHT('NetWeight',S,S,285.7213335542);  
#9432=  
IFCQUANTITYWEIGHT('GrossWeight',S,S,293.39451390162);  
#9433=  
IFCELEMENTQUANTITY('0GgmIxeZj1YeYj4PiqyulX',#5,'BaseQua  
ntities',S,S,(#9426,#9427,#9428,#361,#9429,#9430,#9431,#9432));  
#9434= IFLOCALPLACEMENT(#30,#10);  
#9435=  
IFCELEMENTASSEMBLY('1Ogjm0000iZ4qE3SrEJap',#5,'Steel  
Assembly',S,S,#9434,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#9436= IFCPROPERTYSET('3sOEjY0n1we9rBnO4URFG',#5,'Tekla  
Assembly','Assembly  
Properties',(#34,#313,#5725,#3326,#5726,#9236,#318));  
#9437= IFCQUANTITYLENGTH('Width',S,S,200.000000022992);  
#9438=  
IFCELEMENTQUANTITY('3C2oI3wif48gMkT0U6mNpJQ',#5,'BaseQua  
ntities',S,S,(#9437));  
#9439=  
IFCCARTESIANPOINT((6750.00000054543,132727.626087342,47.60  
11366162178));  
#9440= IFCAxis2PLACEMENT3D(#9439,#7,#8317);  
#9441= IFLOCALPLACEMENT(#9434,#9440);  
#9442=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5736));  
#9443= IFCPRODUCTDEFINITIONSHAPE(S,S,(#9442));

#9444=  
IFCMEMBER('1Ogjm0000ip4qE3SrEJap',#5,'BEAM',HN400\*200\*8\*  
13',HN400\*200\*8\*13',#9441,#9443,'PO(?)');  
#9445= IFCQUANTITYLENGTH('Length',S,S,4460.13923567893);  
#9446=  
IFCQUANTITYAREA('OuterSurfaceArea',S,S,7.06486054931542);  
#9447=  
IFCQUANTITYAREA('GrossSurfaceArea',S,S,7.06486054931542);  
#9448=  
IFCQUANTITYVOLUME('NetVolume',S,S,0.0365374606182853);  
#9449=  
IFCQUANTITYVOLUME('GrossVolume',S,S,0.0375186912505312);  
#9450= IFCQUANTITYWEIGHT('NetWeight',S,S,286.81906585354);  
#9451=  
IFCQUANTITYWEIGHT('GrossWeight',S,S,294.52172631667);  
#9452=  
IFCELEMENTQUANTITY('1qrIeXrT8kf4e9cTgWsmG',#5,'BaseQua  
ntities',S,S,(#9445,#9446,#9447,#361,#9448,#9449,#9450,#9451));  
#9453= IFLOCALPLACEMENT(#30,#10);  
#9454=  
IFCELEMENTASSEMBLY('1Ogjm0000hZ4qE3SrEJap',#5,'Steel  
Assembly',S,S,#9453,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#9455= IFCPROPERTYSET('2TyHnjx4j6W8sblEckQrfl',#5,'Tekla  
Assembly','Assembly  
Properties',(#34,#313,#5756,#3326,#5757,#9236,#318));  
#9456=  
IFCCARTESIANPOINT((6749.99999104284,130755.323775954,4068.  
47190896121));  
#9457= IFCAxis2PLACEMENT3D(#9456,#7,#8335);  
#9458= IFLOCALPLACEMENT(#9453,#9457);  
#9459=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5767));  
#9460= IFCPRODUCTDEFINITIONSHAPE(S,S,(#9459));  
#9461=  
IFCMEMBER('1Ogjm0000hp4qE3SrEJap',#5,'BEAM',HN400\*200\*8\*  
13',HN400\*200\*8\*13',#9458,#9460,'PO(?)');  
#9462=  
IFCQUANTITYVOLUME('NetVolume',S,S,0.0373496613484233);  
#9463= IFCQUANTITYWEIGHT('NetWeight',S,S,293.194841585123);  
#9464=  
IFCELEMENTQUANTITY('0pZ90fMHX6ygvovw\$YsCyi',#5,'BaseQua  
ntities',S,S,(#5777,#5778,#5779,#361,#9462,#5781,#9463,#5783));  
#9465= IFLOCALPLACEMENT(#30,#10);  
#9466=  
IFCELEMENTASSEMBLY('1Ogjm0000gZ4qE3SrEJap',#5,'Steel  
Assembly',S,S,#9465,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#9467= IFCPROPERTYSET('2HkrCz5DD6wvx8Tt2IFIT',#5,'Tekla  
Assembly','Assembly  
Properties',(#34,#313,#5787,#3264,#5788,#9236,#318));  
#9468=  
IFCCARTESIANPOINT((6750.00000037636,128397.70887766,47.683  
7975769933));  
#9469= IFCAxis2PLACEMENT3D(#9468,#7,#8353);  
#9470= IFLOCALPLACEMENT(#9465,#9469);  
#9471=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5798));  
#9472= IFCPRODUCTDEFINITIONSHAPE(S,S,(#9471));  
#9473=  
IFCMEMBER('1Ogjm0000gp4qE3SrEJap',#5,'BEAM',HN400\*200\*8\*  
13',HN400\*200\*8\*13',#9470,#9472,'PO(?)');  
#9474=  
IFCQUANTITYVOLUME('NetVolume',S,S,0.0374780701965873);  
#9475= IFCQUANTITYWEIGHT('NetWeight',S,S,294.202851043211);  
#9476=  
IFCELEMENTQUANTITY('0PsL8MFP9cflCwa8gFTMS',#5,'BaseQu  
antities',S,S,(#5808,#5809,#5810,#361,#9474,#5812,#9475,#5814));  
#9477= IFLOCALPLACEMENT(#30,#10);  
#9478=  
IFCELEMENTASSEMBLY('1Ogjm0000fZ4qE3SrEJap',#5,'Steel  
Assembly',S,S,#9477,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#9479= IFCPROPERTYSET('2vzh9tv1XB7flvvMXtltw',#5,'Tekla  
Assembly','Assembly  
Properties',(#34,#313,#5818,#3264,#5819,#9236,#318));  
#9480=  
IFCCARTESIANPOINT((6749.99999541542,126363.787571561,4170.  
2976469538));  
#9481= IFCAxis2PLACEMENT3D(#9480,#7,#8371);  
#9482= IFLOCALPLACEMENT(#9477,#9481);  
#9483=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5829));  
#9484= IFCPRODUCTDEFINITIONSHAPE(S,S,(#9483));  
#9485=  
IFCMEMBER('1Ogjm0000fp4qE3SrEJap',#5,'BEAM',HN400\*200\*8\*  
13',HN400\*200\*8\*13',#9482,#9484,'PO(?)');  
#9486=  
IFCQUANTITYVOLUME('NetVolume',S,S,0.0383220187240604);  
#9487= IFCQUANTITYWEIGHT('NetWeight',S,S,300.827846983874);  
#9488=  
IFCELEMENTQUANTITY('1EpduFJG9CD0tHgu5Iq0q1',#5,'BaseQua  
ntities',S,S,(#7015,#7016,#7017,#361,#9486,#7019,#9487,#7021));  
#9489= IFLOCALPLACEMENT(#30,#10);  
#9490=  
IFCELEMENTASSEMBLY('1Ogjm0000eZ4qE3SrEJap',#5,'Steel  
Assembly',S,S,#9489,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#9491= IFCPROPERTYSET('2e58OculvDhuHhbs7KwUZ',#5,'Tekla  
Assembly','Assembly  
Properties',(#34,#313,#5849,#3326,#5850,#9236,#318));  
#9492=  
IFCCARTESIANPOINT((6750.00000018732,123947.868679302,47.73  
6843285967));  
#9493= IFCAxis2PLACEMENT3D(#9492,#7,#8384);  
#9494= IFLOCALPLACEMENT(#9489,#9493);  
#9495=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5860));  
#9496= IFCPRODUCTDEFINITIONSHAPE(S,S,(#9495));

#9497=  
IFCMEMBER('1Ogimc0000ep4qE3SrEJap',#5,'BEAM',HN400\*200\*8\*13,'HN400\*200\*8\*13',#9494,#9496,'PO(?)');  
#9498=  
IFCQUANTITYVOLUME('NetVolume',S,S,0.0384385469691276);  
#9499= IFCQUANTITYWEIGHT('NetWeight',S,S,301.742593707651);  
#9500=  
IFCELEMENTQUANTITY('3ikocd2nT0u98JVqKSiVvH',#5,'BaseQuantities',S,S,(#7032,#7033,#7034,#361,#9498,#7036,#9499,#7038));  
#9501= IFCLOCALPLACEMENT(#30,#10);  
#9502=  
IFCELEMENTASSEMBLY('1Ogimc0000dZ4qE3SrEJap',#5,'Steel Assembly',S,S,#9501,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#9503= IFCPROPERTYSET('2UPTtkrhDFihp5UJHs8QRN',#5,'Tekla Assembly',Assembly Properties',(#34,#313,#5880,#3326,#5881,#9236,#318));  
#9504=  
IFCCARTESIANPOINT((6749.9999997,121859.044561023,4274.6108906372));  
#9505= IFCAXIS2PLACEMENT3D(#9504,#7,#8397);  
#9506= IFCLOCALPLACEMENT(#9501,#9505);  
#9507=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5891));  
#9508= IFCPRODUCTDEFINITIONSHAPE(S,S,(#9507));  
#9509=  
IFCMEMBER('1Ogimc0000dp4qE3SrEJap',#5,'BEAM',HN400\*200\*8\*13,'HN400\*200\*8\*13',#9506,#9508,'PO(?)');  
#9510= IFCQUANTITYLENGTH('Length',S,S,4795.86248762614);  
#9511=  
IFCQUANTITYAREA('OuterSurfaceArea',S,S,7.5966461803998);  
#9512=  
IFCQUANTITYAREA('GrossSurfaceArea',S,S,7.5966461803998);  
#9513=  
IFCQUANTITYVOLUME('NetVolume',S,S,0.0392877054987325);  
#9514=  
IFCQUANTITYVOLUME('GrossVolume',S,S,0.0403427952459111);  
#9515= IFCQUANTITYWEIGHT('NetWeight',S,S,308.40848816505);  
#9516=  
IFCQUANTITYWEIGHT('GrossWeight',S,S,316.690942680402);  
#9517=  
IFCELEMENTQUANTITY('33BMOR7RvBK9ewpCZrlSW',#5,'BaseQuantities',S,S,#9510,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#9518= IFCLOCALPLACEMENT(#30,#10);  
#9519=  
IFCELEMENTASSEMBLY('1Ogimc0000cZ4qE3SrEJap',#5,'Steel Assembly',S,S,#9510,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#9520= IFCPROPERTYSET('0NVSrjxTrBc8JMZhSNQTA',#5,'Tekla Assembly',Assembly Properties',(#34,#313,#5912,#3264,#2480,#9236,#318));  
#9521=  
IFCCARTESIANPOINT((6750.0000001182,119391.373283802,47.6569296947326));  
#9522= IFCAXIS2PLACEMENT3D(#9521,#7,#8410);  
#9523= IFCLOCALPLACEMENT(#9518,#9522);  
#9524=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5922));  
#9525= IFCPRODUCTDEFINITIONSHAPE(S,S,(#9524));  
#9526=  
IFCMEMBER('1Ogimc0000ep4qE3SrEJap',#5,'BEAM',HN400\*200\*8\*13,'HN400\*200\*8\*13',#9523,#9525,'PO(?)');  
#9527=  
IFCQUANTITYVOLUME('NetVolume',S,S,0.0393917438450638);  
#9528= IFCQUANTITYWEIGHT('NetWeight',S,S,309.225189183751);  
#9529=  
IFCELEMENTQUANTITY('1hO55CMB16jOpvtl4spWI',#5,'BaseQuantities',S,S,(#5931,#5932,#5933,#361,#9527,#5935,#9528,#5937));  
#9530= IFCLOCALPLACEMENT(#30,#10);  
#9531=  
IFCELEMENTASSEMBLY('1Ogimc0000bZ4qE3SrEJap',#5,'Steel Assembly',S,S,#9530,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#9532= IFCPROPERTYSET('2Y9WxrkBT5Zfu0Bpj12LFz',#5,'Tekla Assembly',Assembly Properties',(#34,#313,#5941,#3264,#5942,#9236,#318));  
#9533=  
IFCCARTESIANPOINT((6750.00000412773,117261.549080486,4380.05746391692));  
#9534= IFCAXIS2PLACEMENT3D(#9533,#7,#8423);  
#9535= IFCLOCALPLACEMENT(#9530,#9534);  
#9536=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5952));  
#9537= IFCPRODUCTDEFINITIONSHAPE(S,S,(#9536));  
#9538=  
IFCMEMBER('1Ogimc0000bp4qE3SrEJap',#5,'BEAM',HN400\*200\*8\*13,'HN400\*200\*8\*13',#9535,#9537,'PO(?)');  
#9539=  
IFCQUANTITYVOLUME('NetVolume',S,S,0.0400269458383163);  
#9540= IFCQUANTITYWEIGHT('NetWeight',S,S,314.211524830783);  
#9541=  
IFCELEMENTQUANTITY('3DS3Vm6ob1WBxm1RmKWizh',#5,'BaseQuantities',S,S,(#7069,#7070,#7071,#361,#9539,#7073,#9540,#7075));  
#9542= IFCLOCALPLACEMENT(#30,#10);  
#9543=  
IFCELEMENTASSEMBLY('1Ogimc0000aZ4qE3SrEJap',#5,'Steel Assembly',S,S,#9542,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#9544=  
IFCPROPERTYSET('1hwkMAqcv6MhhKRVXJBaW4',#5,'Tekla Assembly',Assembly Properties',(#34,#313,#5972,#3326,#5973,#9236,#318));  
#9545=  
IFCCARTESIANPOINT((6749.99999983745,114761.423324326,47.2469771723622));  
#9546= IFCAXIS2PLACEMENT3D(#9545,#7,#8436);  
#9547= IFCLOCALPLACEMENT(#9542,#9546);  
#9548=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#5983));  
#9549= IFCPRODUCTDEFINITIONSHAPE(S,S,(#9548));  
#9550=  
IFCMEMBER('1Ogimc0000ap4qE3SrEJap',#5,'BEAM',HN400\*200\*8\*13,'HN400\*200\*8\*13',#9547,#9549,'PO(?)');  
#9551=  
IFCQUANTITYVOLUME('NetVolume',S,S,0.0402828041922162);  
#9552= IFCQUANTITYWEIGHT('NetWeight',S,S,316.220012908897);  
#9553=  
IFCELEMENTQUANTITY('0MPhXWteH0rPrkx9JIMVY',#5,'BaseQuantities',S,S,(#7086,#7087,#7088,#361,#9551,#7090,#9552,#7092));  
#9554= IFCLOCALPLACEMENT(#30,#10);  
#9555=  
IFCELEMENTASSEMBLY('1Ogimc0000ZZ4qE3SrEJap',#5,'Steel Assembly',S,S,#9554,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#9556= IFCPROPERTYSET('1bmi\_YRLrFzAalCs47mEI9',#5,'Tekla Assembly',Assembly Properties',(#34,#313,#6003,#3326,#2442,#9236,#318));  
#9557=  
IFCCARTESIANPOINT((6750.0000086078,112610.059055142,4488.02674512784));  
#9558= IFCAXIS2PLACEMENT3D(#9557,#7,#8449);  
#9559= IFCLOCALPLACEMENT(#9554,#9558);  
#9560=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#6013));  
#9561= IFCPRODUCTDEFINITIONSHAPE(S,S,(#9560));  
#9562=  
IFCMEMBER('1Ogimc0000Zp4qE3SrEJap',#5,'BEAM',HN400\*200\*8\*13,'HN400\*200\*8\*13',#9559,#9561,'PO(?)');  
#9563= IFCQUANTITYLENGTH('Length',S,S,5014.75221652834);  
#9564=  
IFCQUANTITYAREA('OuterSurfaceArea',S,S,7.9433675109809);  
#9565=  
IFCQUANTITYAREA('GrossSurfaceArea',S,S,7.9433675109809);  
#9566=  
IFCQUANTITYVOLUME('NetVolume',S,S,0.0410808501577887);  
#9567=  
IFCQUANTITYVOLUME('GrossVolume',S,S,0.0421840956454364);  
#9568= IFCQUANTITYWEIGHT('NetWeight',S,S,322.484673738642);  
#9569=  
IFCQUANTITYWEIGHT('GrossWeight',S,S,331.145150816676);  
#9570=  
IFCELEMENTQUANTITY('3UWbe3Zvz60vMRwyez5AXE',#5,'BaseQuantities',S,S,(#9563,#9564,#9565,#361,#9566,#9567,#9568,#9569));  
#9571= IFCLOCALPLACEMENT(#30,#10);  
#9572=  
IFCELEMENTASSEMBLY('1Ogimc0000Y4qE3SrEJap',#5,'Steel Assembly',S,S,#9571,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#9573= IFCPROPERTYSET('3eRZZkTX30u7ycQEVlke3',#5,'Tekla Assembly',Assembly Properties',(#34,#313,#6032,#3264,#6033,#9236,#318));  
#9574= IFCQUANTITYLENGTH('Width',S,S,200.00000019994);  
#9575=  
IFCELEMENTQUANTITY('0M3woQFw5B8eMX9e5pnJL',#5,'BaseQuantities',S,S,(#9574));  
#9576=  
IFCCARTESIANPOINT((6750.00000863866,112434.524597354,4490.97143429341));  
#9577= IFCAXIS2PLACEMENT3D(#9576,#336,#8464);  
#9578= IFCLOCALPLACEMENT(#9571,#9577);  
#9579=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#8469));  
#9580= IFCPRODUCTDEFINITIONSHAPE(S,S,(#9579));  
#9581=  
IFCMEMBER('1Ogimc0000Yp4qE3SrEJap',#5,'BEAM',HN400\*200\*8\*13,'HN400\*200\*8\*13',#9578,#9580,'PO(?)');  
#9582=  
IFCQUANTITYVOLUME('NetVolume',S,S,0.0418399769733857);  
#9583= IFCQUANTITYWEIGHT('NetWeight',S,S,328.443819241078);  
#9584=  
IFCELEMENTQUANTITY('2SyeHRdJf56P7EnNoNlck',#5,'BaseQuantities',S,S,(#8474,#8475,#8476,#361,#9582,#8478,#9583,#8480));  
#9585= IFCLOCALPLACEMENT(#30,#10);  
#9586=  
IFCELEMENTASSEMBLY('1OelSH002dnJ4qE3SrC3Ws',#5,'Steel Assembly',S,S,#9585,S,'BE-0(?)',..NOTDEFINED,..RIGID\_FRAME.);  
#9587= IFCPROPERTYSET('SINGLEVALUE(Assembly/Cast unit weight',S,IFCMASSEASURE(230.7),S);  
#9588= IFCPROPERTYSET('SINGLEVALUE(Assembly/Cast unit bottom elevation',S,IFCLABEL(' -1.377'),S);  
#9589= IFCPROPERTYSET('SINGLEVALUE(Assembly/Cast unit top elevation',S,IFCLABEL(' -0.002'),S);  
#9590= IFCPROPERTYSET('2s\_xmTN5ESwOUl\_jc45tY',#5,'Tekla Assembly',Assembly Properties',(#34,#313,#9587,#9588,#9589,#6064,#318));  
#9591= IFCQUANTITYLENGTH('Width',S,S,200.000000007425);  
#9592=  
IFCELEMENTQUANTITY('3NMDs0gd526OmYxFgja88T',#5,'BaseQuantities',S,S,(#9591));  
#9593=  
IFCCARTESIANPOINT((6749.99464285535,53181.6650670652,-96.1151010384513));  
#9594=  
IFCDIRECTION((1.518000005467E-006,-0.94055269261805,-0.339640671094539));  
#9595= IFCAXIS2PLACEMENT3D(#9593,#336,#9594);  
#9596= IFCLOCALPLACEMENT(#9585,#9595);  
#9597=  
IFCCARTESIANPOINT((3493.86166539555,0,-9.09495047950107E-013));  
#9598= IFCAXIS2PLACEMENT3D(#9597,#336,#335);  
#9599= IFCEXTRUDEDAREASOLID(#333,#9598,#9,3493,9);  
#9600=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#9599));  
#9601= IFCSTYLEDITEM(#9599,(#330),S);  
#9602= IFCPRODUCTDEFINITIONSHAPE(S,S,(#9600));

## Appendix

#9603= IFCBEAM('1OelSH002dn34qE3SrC3Ws',#5,'BEAM','HN400\*200\*8\*13',#9596,'#9602','PO(?)');  
 #9604= IFCPROPERTYSET('Bottom elevation',IFCLABEL(' -1.377'),\$);  
 #9605= IFCPROPERTYSET('Top elevation',IFCLABEL(' -0.002'),\$);  
 #9606= IFCPROPERTYSET('0kHXGD3G8lhWY8u6VaBfh',#5,'Tekla Common','Common Properties to Shared building elements',#9604,#9605,#71,#72,#73,#346);  
 #9607= IFCPROPERTYSET('Weight',IFCMASMEASURE(230.7),\$);  
 #9608= IFCPROPERTYSET('Length',IFCLENGTHMEASURE(3493.9),\$);  
 #9609= IFCPROPERTYSET('028UADvMv6lFka4VQ37HDy',#5,'Tekla Quantity','Quantity Properties to Shared building elements',#9607,#1108,#78,#350,#5143,#352,#353,#9608);  
 #9610= IFCQUANTITYLENGTH('Length',\$.S,3493.8616653977);  
 #9611= IFCQUANTITYAREA('OuterSurfaceArea',\$.S,5.53427687798996);  
 #9612= IFCQUANTITYVOLUME('NetVolume',\$.S,0.028621714762968);  
 #9613= IFCQUANTITYWEIGHT('NetWeight',\$.S,224.680460889299);  
 #9614= IFCELEMENTQUANTITY('3wZu4b\$TBLQW41T5Rcz0d',#5,'BaseQuantities',\$.S,#9610,#9611,#9612,#9613);  
 #9615= IFCLOCALPLACEMENT('#30,#10);  
 #9616= IFCELEMENTASSEMBLY('1OelSH002dm34qE3SrC3Ws',#5,'Steel Assembly',\$.S,#9615,\$,'BE-0(?)',NOTDEFINED,..RIGID\_FRAME.);  
 #9617= IFCPROPERTYSET('Assembly/Cast unit weight',IFCMASMEASURE(282.8),\$);  
 #9618= IFCPROPERTYSET('Assembly/Cast unit bottom elevation',IFCLABEL(' -2.683'),\$);  
 #9619= IFCPROPERTYSET('Assembly/Cast unit top elevation',IFCLABEL(' +0.100'),\$);  
 #9620= IFCPROPERTYSET('2amNMKPGTcrtg9BdgmYt',#5,'Tekla Assembly','Assembly Properties',#34,#313,#9617,#9618,#9619,#6064,#318);  
 #9621= IFCQUANTITYLENGTH('Width',\$.S,200.00000009597);  
 #9622= IFCELEMENTQUANTITY('3z1rmoU1H3ofN6R0MQ9St',#5,'BaseQuantities',\$.S,#9621);  
 #9623= IFCARTESIANPOINT((6750.23550184662,56592.4847085536,20.9871794197568));  
 #9624= IFCDIRECTION((0.999992618883713,-0.00384215799955268,0.));  
 #9625= IFCDIRECTION((-0.00303579699877288,-0.79012237468061,-0.612941609752231));  
 #9626= IFCAXIS2PLACEMENT3D('#9623,#9624,#9625);  
 #9627= IFCLOCALPLACEMENT('#9615,#9626);  
 #9628= IFCARTESIANPOINT((4282.2353959104,-7.27595761418343E-012,-9.11103773191327E-013));  
 #9629= IFCAXIS2PLACEMENT3D('#9628,#336,#335);  
 #9630= IFCEXTRUDEDAREASOLID('#333,#9629,#94282.2);  
 #9631= IFCSHAPEREPRESENTATION('#12,'Body','SweptSolid',#9630);  
 #9632= IFCSTYLEDITEM('#9630,#330,\$);  
 #9633= IFCPRODUCTDEFINITIONSHAPE(\$,\$,#9631);  
 #9634= IFCMEMBER('1OelSH002dlp4qE3SrC3Ws',#5,'BEAM','HN400\*200\*8\*13',#9640,'#9627,#9633','PO(?)');  
 #9635= IFCPROPERTYSET('Bottom elevation',IFCLABEL(' -2.683'),\$);  
 #9636= IFCPROPERTYSET('Top elevation',IFCLABEL(' +0.100'),\$);  
 #9637= IFCPROPERTYSET('0LITAFwJH03QRGI6wuXOpO',#5,'Tekla Common','Common Properties to Shared building elements',#9635,#9636,#71,#72,#73,#346);  
 #9638= IFCPROPERTYSET('Weight',IFCMASMEASURE(282.8),\$);  
 #9639= IFCPROPERTYSET('Length',IFCLENGTHMEASURE(4282.2),\$);  
 #9640= IFCPROPERTYSET('0tqkEJxa909BwW1A5aT2IP',#5,'Tekla Quantity','Quantity Properties to Shared building elements',#9638,#1108,#78,#350,#5651,#352,#353,#9639);  
 #9641= IFCQUANTITYLENGTH('Length',\$.S,4282.23539591269);  
 #9642= IFCQUANTITYAREA('OuterSurfaceArea',\$.S,6.7830608671257);  
 #9643= IFCQUANTITYAREA('GrossSurfaceArea',\$.S,6.7830608671257);  
 #9644= IFCQUANTITYVOLUME('NetVolume',\$.S,0.0350800723632402);  
 #9645= IFCQUANTITYVOLUME('GrossVolume',\$.S,0.0360221641504176);  
 #9646= IFCQUANTITYWEIGHT('NetWeight',\$.S,275.378568051436);  
 #9647= IFCQUANTITYWEIGHT('GrossWeight',\$.S,282.773988580778);  
 #9648= IFCELEMENTQUANTITY('1XUbooa3H25RIIyfuRW9S',#5,'BaseQuantities',\$.S,#9641,#9642,#9643,#361,#9644,#9645,#9646,#9647);  
 #9649= IFCLOCALPLACEMENT('#30,#10);  
 #9650= IFCELEMENTASSEMBLY('1OelSH002dkp4qE3SrC3Ws',#5,'Steel Assembly',\$.S,#9649,\$,'BE-0(?)',NOTDEFINED,..RIGID\_FRAME.);  
 #9651= IFCPROPERTYSET('Assembly/Cast unit weight',IFCMASMEASURE(349.1),\$);  
 #9652= IFCPROPERTYSET('Assembly/Cast unit bottom elevation',IFCLABEL(' -4.017'),\$);

#9653= IFCPROPERTYSET('1hfQ0V0qLDpwPbayMdVvVb',#5,'Tekla Assembly','Assembly Properties',#34,#313,#9651,#9652,#9619,#6064,#318);  
 #9654= IFCQUANTITYLENGTH('Width',\$.S,200.0000000478);  
 #9655= IFCELEMENTQUANTITY('1sszmwaFP9ofaEvFrHXRr',#5,'BaseQuantities',\$.S,#9654);  
 #9656= IFCARTESIANPOINT((6749.99999822778,56602.5811078975,-3951.37240285307));  
 #9657= IFCDIRECTION((0.0.656987947190317,0.75390107921839));  
 #9658= IFCAXIS2PLACEMENT3D('#9656,#336,#9657);  
 #9659= IFCLOCALPLACEMENT('#9649,#9658);  
 #9660= IFCARTESIANPOINT((5286.73286082993,0.,0.));  
 #9661= IFCAXIS2PLACEMENT3D('#9660,#336,#335);  
 #9662= IFCEXTRUDEDAREASOLID('#333,#9661,#9.5286.7);  
 #9663= IFCSHAPEREPRESENTATION('#12,'Body','SweptSolid',#9662);  
 #9664= IFCSTYLEDITEM('#9662,#330,\$);  
 #9665= IFCPRODUCTDEFINITIONSHAPE(\$,\$,#9663);  
 #9666= IFCMEMBER('1OelSH002dkZ4qE3SrC3Ws',#5,'BEAM','HN400\*200\*8\*13',#9659,#9665,'PO(?)');  
 #9667= IFCPROPERTYSET('Bottom elevation',IFCLABEL(' -4.017'),\$);  
 #9668= IFCPROPERTYSET('3ey77KpVL9NvQW\_0NarMMU',#5,'Tekla Common','Common Properties to Shared building elements',#9667,#9636,#71,#72,#73,#346);  
 #9669= IFCPROPERTYSET('Weight',IFCMASMEASURE(349.1),\$);  
 #9670= IFCPROPERTYSET('Net surface area',IFCAREAMEASURE(8.4),\$);  
 #9671= IFCPROPERTYSET('Length',IFCLENGTHMEASURE(5286.7),\$);  
 #9672= IFCPROPERTYSET('2\_1IED5\_P64PURCKzh9EA',#5,'Tekla Quantity','Quantity Properties to Shared building elements',#9669,#1108,#78,#350,#9670,#352,#353,#9671);  
 #9673= IFCQUANTITYLENGTH('Length',\$.S,5286.73286084169);  
 #9674= IFCQUANTITYAREA('OuterSurfaceArea',\$.S,8.37418485157324);  
 #9675= IFCQUANTITYAREA('GrossSurfaceArea',\$.S,8.37418485157324);  
 #9676= IFCQUANTITYVOLUME('NetVolume',\$.S,0.0433089155959599);  
 #9677= IFCQUANTITYVOLUME('GrossVolume',\$.S,0.0444719968254003);  
 #9678= IFCQUANTITYWEIGHT('NetWeight',\$.S,339.974987428285);  
 #9679= IFCQUANTITYWEIGHT('GrossWeight',\$.S,349.105175079393);  
 #9680= IFCELEMENTQUANTITY('1FBR1w\_9X4rBSPiDwoEV2',#5,'BaseQuantities',\$.S,#9673,#9674,#9675,#361,#9676,#9677,#9678,#9679);  
 #9681= IFCLOCALPLACEMENT('#30,#10);  
 #9682= IFCELEMENTASSEMBLY('1OelSH002djZ4qE3SrC3Ws',#5,'Steel Assembly',\$.S,#9681,\$,'BE-0(?)',NOTDEFINED,..RIGID\_FRAME.);  
 #9683= IFCPROPERTYSET('Assembly/Cast unit weight',IFCMASMEASURE(256.6),\$);  
 #9684= IFCPROPERTYSET('Assembly/Cast unit bottom elevation',IFCLABEL(' -3.886'),\$);  
 #9685= IFCPROPERTYSET('Assembly/Cast unit top elevation',IFCLABEL(' +0.000'),\$);  
 #9686= IFCPROPERTYSET('2etuaj0IPBzxh\_UV8q\_X3R',#5,'Tekla Assembly','Assembly Properties',#34,#313,#9683,#9684,#9685,#6064,#318);  
 #9687= IFCARTESIANPOINT((6750.,56527.191,0.));  
 #9688= IFCDIRECTION((0.,0.,-1.));  
 #9689= IFCAXIS2PLACEMENT3D('#9687,#7,#9688);  
 #9690= IFCLOCALPLACEMENT('#9681,#9689);  
 #9691= IFCARTESIANPOINT((3885.67360820643,0.,0.));  
 #9692= IFCAXIS2PLACEMENT3D('#9691,#336,#335);  
 #9693= IFCEXTRUDEDAREASOLID('#333,#9692,#9.3885.7);  
 #9694= IFCSHAPEREPRESENTATION('#12,'Body','SweptSolid',#9693);  
 #9695= IFCSTYLEDITEM('#9693,#330,\$);  
 #9696= IFCPRODUCTDEFINITIONSHAPE(\$,\$,#9694);  
 #9697= IFCBEAM('1OelSH002dj4qE3SrC3Ws',#5,'BEAM','HN400\*200\*8\*13',#9690,'#9696','PO(?)');  
 #9698= IFCPROPERTYSET('Bottom elevation',IFCLABEL(' -3.886'),\$);  
 #9699= IFCPROPERTYSET('Top elevation',IFCLABEL(' +0.000'),\$);  
 #9700= IFCPROPERTYSET('0ZGINSMLDRvEnNjSPRKj',#5,'Tekla Common','Common Properties to Shared building elements',#9698,#9699,#71,#72,#73,#346);  
 #9701= IFCPROPERTYSET('Weight',IFCMASMEASURE(256.6),\$);  
 #9702= IFCPROPERTYSET('Length',IFCLENGTHMEASURE(3885.7),\$);  
 #9703= IFCPROPERTYSET('0baYOZygr9iP0iDPHF34D',#5,'Tekla Quantity','Quantity Properties to Shared building elements',#9701,#1108,#78,#350,#5337,#352,#353,#9702);  
 #9704= IFCQUANTITYLENGTH('Length',\$.S,3885.67360820643);  
 #9705= IFCQUANTITYAREA('OuterSurfaceArea',\$.S,6.15490699539898);  
 #9706= IFCQUANTITYVOLUME('NetVolume',\$.S,0.031831438198427);  
 #9707= IFCQUANTITYWEIGHT('NetWeight',\$.S,249.876789857652);

#9708= IFCELEMENTQUANTITY('0SNs\$T\$Wj6z9Mma2E16u1a',#5,'BaseQuantities',\$.S,(#9704,#9705,#9706,#9707));  
#9709= IFLOCALPLACEMENT(#30,#10);  
#9710= IFCELEMENTASSEMBLY('1OeISH002di4qE3SrC3Ws',#5,'Steel Assembly',\$.S,(#9709,\$,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#9711= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit weight',\$.IFCMASMEASURE(166.7),\$.S);  
#9712= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit bottom elevation',\$.IFCLABEL(' -2.525'),\$.S);  
#9713= IFCPROPERTYSET('19ZJpGmJnEme5yNkUXP6KR',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#9711,#9712,#9685,#6064,#318));  
#9714= IFCCARTESIANPOINT((6549.999999999991,53147.7010000001,1.26485395356304E-011));  
#9715= IFCAxis2PLACEMENT3D(#9714,#7,#9688);  
#9716= IFLOCALPLACEMENT(#9709,#9715);  
#9717= IFCCARTESIANPOINT((2524.76025656011,0.,0.));  
#9718= IFCAxis2PLACEMENT3D(#9717,#336,#335);  
#9719= IFEXTRUDEDAREASOLID(#333,#9718,#9,2524.8);  
#9720= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#9719));  
#9721= IFCSTYLEDITEM(#9719,#330),\$.S);  
#9722= IFCPRODUCTDEFINITIONSHAPE(\$,(#9720));  
#9723= IFCELEMENTQUANTITY('1OeISH002di34qE3SrC3Ws',#5,'BEAM',HN400\*200\*8\*13',HN400\*200\*8\*13',#9716,#9722,'PO(?)');  
#9724= IFCPROPERTYSINGLEVALUE('Bottom elevation',\$.IFCLABEL(' -2.525'),\$.S);  
#9725= IFCPROPERTYSET('0B1dOVXD0HosiXyH3LBlF',#5,'Tekla Common','Common Properties to Shared building elements',(#9724,#9699,#71,#72,#73,#346));  
#9726= IFCPROPERTYSINGLEVALUE('Weight',\$.IFCMASMEASURE(166.7),\$.S);  
#9727= IFCPROPERTYSINGLEVALUE('Length',\$.IFLENGTHMEASURE(2524.8),\$.S);  
#9728= IFCPROPERTYSET('3mQQ23D9AahlfWS0Y4MW',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#9726,#1108,#78,#350,#4193,#352,#353,#9727));  
#9729= IFCQUANTITYLENGTH('Length',\$.S,2524.76025656011);  
#9730= IFCQUANTITYAREA('OuterSurfaceArea',\$.S,3.99922024639121);  
#9731= IFCQUANTITYVOLUME('NetVolume',\$.S,0.0206828360217404);  
#9732= IFCQUANTITYWEIGHT('NetWeight',\$.S,162.360262770662);  
#9733= IFCELEMENTQUANTITY('3ui3sjnynC39c655aaVWz',#5,'BaseQuantities',\$.S,(#9729,#9730,#9731,#9732));  
#9734= IFLOCALPLACEMENT(#30,#10);  
#9735= IFCELEMENTASSEMBLY('1OeISH002dh34qE3SrC3Ws',#5,'Steel Assembly',\$.S,(#9734,\$,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#9736= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit weight',\$.IFCMASMEASURE(71.4),\$.S);  
#9737= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit bottom elevation',\$.IFCLABEL(' -1.081'),\$.S);  
#9738= IFCPROPERTYSET('2cKiuLbfXDIRbqYajE4n',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#9736,#9737,#9685,#6064,#318));  
#9739= IFCCARTESIANPOINT((6750.49861.5310000002,0.));  
#9740= IFCAxis2PLACEMENT3D(#9739,#7,#9688);  
#9741= IFLOCALPLACEMENT(#9734,#9740);  
#9742= IFCCARTESIANPOINT((1080.81763826659,0.,0.));  
#9743= IFCAxis2PLACEMENT3D(#9742,#336,#335);  
#9744= IFEXTRUDEDAREASOLID(#333,#9743,#9,1080.8);  
#9745= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#9744));  
#9746= IFCSTYLEDITEM(#9744,#330),\$.S);  
#9747= IFCPRODUCTDEFINITIONSHAPE(\$,(#9745));  
#9748= IFCELEMENTQUANTITY('1OeISH002dgp4qE3SrC3Ws',#5,'BEAM',HN400\*200\*8\*13',HN400\*200\*8\*13',#9741,#9747,'PO(?)');  
#9749= IFCPROPERTYSINGLEVALUE('Bottom elevation',\$.IFCLABEL(' -1.081'),\$.S);  
#9750= IFCPROPERTYSET('1Q5P2oB0H9d8judsbfyge9',#5,'Tekla Common','Common Properties to Shared building elements',(#9749,#9699,#71,#72,#73,#346));  
#9751= IFCPROPERTYSINGLEVALUE('Weight',\$.IFCMASMEASURE(71.4),\$.S);  
#9752= IFCPROPERTYSINGLEVALUE('Net surface area',\$.IFCAREAMEASURE(1.7),\$.S);  
#9753= IFCPROPERTYSINGLEVALUE('Length',\$.IFLENGTHMEASURE(1080.8),\$.S);  
#9754= IFCPROPERTYSET('3X9ie6lITFvht5\_8EGPpkN',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#9751,#1108,#78,#350,#9752,#352,#353,#9753));  
#9755= IFCQUANTITYLENGTH('Length',\$.S,1080.81763826659);  
#9756= IFCQUANTITYAREA('OuterSurfaceArea',\$.S,1.71201513901427);  
#9757= IFCQUANTITYVOLUME('NetVolume',\$.S,0.00885405809267987);  
#9758= IFCQUANTITYWEIGHT('NetWeight',\$.S,69.504356027537);  
#9759= IFCELEMENTQUANTITY('22yYRA\_jrCYer\_nO\_Ylivh',#5,'BaseQuantities',\$.S,(#9755,#9756,#9757,#9758));  
#9760= IFLOCALPLACEMENT(#30,#10);  
#9761= IFCELEMENTASSEMBLY('1OeISH002dip4qE3SrC3Ws',#5,'Steel Assembly',\$.S,(#9760,\$,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#9762= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit weight',\$.IFCMASMEASURE(357.2),\$.S);  
#9763= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit bottom elevation',\$.IFCLABEL(' -4.094'),\$.S);  
#9764= IFCPROPERTYSET('1YDerGyAj6hPSAbq\_RC9EA',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#9762,#9763,#9619,#6765,#318));  
#9765= IFCQUANTITYLENGTH('Width',\$.S,200.000000003274);  
#9766= IFCELEMENTQUANTITY('1wqHRsUNz1gzwUAMS9M8e',#5,'BaseQuantities',\$.S,(#9765));  
#9767= IFCCARTESIANPOINT((6750.00000000095,63497.32136971,-4027.75275780819));  
#9768= IFCDIRECTION((0.-0.660377249041817,0.75093401104755));  
#9769= IFCAxis2PLACEMENT3D(#9767,#7,#9768);  
#9770= IFLOCALPLACEMENT(#9760,#9769);  
#9771= IFCCARTESIANPOINT((5408.884098804,7.27595761418343E-012,0.));  
#9772= IFCAxis2PLACEMENT3D(#9771,#336,#335);  
#9773= IFEXTRUDEDAREASOLID(#333,#9772,#9,5408.9);  
#9774= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#9773));  
#9775= IFCSTYLEDITEM(#9773,#330),\$.S);  
#9776= IFCPRODUCTDEFINITIONSHAPE(\$,(#9774));  
#9777= IFCELEMENTQUANTITY('1OeISH002dZ4qE3SrC3Ws',#5,'BEAM',HN400\*200\*8\*13',HN400\*200\*8\*13',#9770,#9776,'PO(?)');  
#9778= IFCPROPERTYSINGLEVALUE('Bottom elevation',\$.IFCLABEL(' -4.094'),\$.S);  
#9779= IFCPROPERTYSET('3EUipnbnzA6wdcZvfeF4a',#5,'Tekla Common','Common Properties to Shared building elements',(#9778,#9636,#71,#72,#73,#346));  
#9780= IFCPROPERTYSINGLEVALUE('Weight',\$.IFCMASMEASURE(357.2),\$.S);  
#9781= IFCPROPERTYSINGLEVALUE('Net surface area',\$.IFCAREAMEASURE(8.6),\$.S);  
#9782= IFCPROPERTYSINGLEVALUE('Length',\$.IFLENGTHMEASURE(5408.9),\$.S);  
#9783= IFCPROPERTYSET('0sUyCEfZzC\_8KceaH4q\_jM',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#9780,#1108,#78,#350,#9781,#352,#353,#9782));  
#9784= IFCQUANTITYLENGTH('Length',\$.S,5408.88409880431);  
#9785= IFCQUANTITYAREA('OuterSurfaceArea',\$.S,8.56767241250603);  
#9786= IFCQUANTITYAREA('GrossSurfaceArea',\$.S,8.56767241250603);  
#9787= IFCQUANTITYVOLUME('NetVolume',\$.S,0.0443095785374309);  
#9788= IFCQUANTITYVOLUME('GrossVolume',\$.S,0.0454995330391418);  
#9789= IFCQUANTITYWEIGHT('NetWeight',\$.S,347.830191518833);  
#9790= IFCQUANTITYWEIGHT('GrossWeight',\$.S,357.17133457264);  
#9791= IFCELEMENTQUANTITY('0Zqc4LTWjDCAtzkkCsJLOj',#5,'BaseQuantities',\$.S,(#9784,#9785,#9786,#361,#9787,#9788,#9789,#9790));  
#9792= IFLOCALPLACEMENT(#30,#10);  
#9793= IFCELEMENTASSEMBLY('1OeISH002deZ4qE3SrC3Ws',#5,'Steel Assembly',\$.S,(#9792,\$,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#9794= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit weight',\$.IFCMASMEASURE(302.5),\$.S);  
#9795= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit bottom elevation',\$.IFCLABEL(' -2.801'),\$.S);  
#9796= IFCPROPERTYSET('0ugnKPF5SDWJwJwXM129Jo3',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#9794,#9795,#9619,#6765,#318));  
#9797= IFCQUANTITYLENGTH('Width',\$.S,200.000000023036);  
#9798= IFCELEMENTQUANTITY('09KWe7OpP0VQIS4JXUuul',#5,'BaseQuantities',\$.S,(#9797));  
#9799= IFCCARTESIANPOINT((6750.00000000018,67184.4684615894,-2720.4721810371));  
#9800= IFCDIRECTION((0.-0.801419173195561,0.598103092145948));  
#9801= IFCAxis2PLACEMENT3D(#9799,#7,#9800);  
#9802= IFLOCALPLACEMENT(#9792,#9801);  
#9803= IFCCARTESIANPOINT((4581.70221531147,0.,0.));  
#9804= IFCAxis2PLACEMENT3D(#9803,#336,#335);  
#9805= IFEXTRUDEDAREASOLID(#333,#9804,#9,4581.7);  
#9806= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#9805));  
#9807= IFCSTYLEDITEM(#9805,#330),\$.S);  
#9808= IFCPRODUCTDEFINITIONSHAPE(\$,(#9806));  
#9809= IFCELEMENTQUANTITY('1OeISH002deJ4qE3SrC3Ws',#5,'BEAM',HN400\*200\*8\*13',HN400\*200\*8\*13',#9802,#9808,'PO(?)');  
#9810= IFCPROPERTYSINGLEVALUE('Bottom elevation',\$.IFCLABEL(' -2.801'),\$.S);  
#9811= IFCPROPERTYSET('12G4HNumfBKBbLz29vGG',#5,'Tekla Common','Common Properties to Shared building elements',(#9810,#9636,#71,#72,#73,#346));  
#9812= IFCPROPERTYSINGLEVALUE('Weight',\$.IFCMASMEASURE(302.5),\$.S);  
#9813= IFCPROPERTYSINGLEVALUE('Length',\$.IFLENGTHMEASURE(4581.7),\$.S);  
#9814= IFCPROPERTYSET('38KRi03zj9QP02jEcGA00',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#9812,#1108,#78,#350,#1651,#352,#353,#9813));

## Appendix

#9815= IFCQUANTITYLENGTH('Length',\$.S,4581.70221530064);  
 #9816=  
 IFCQUANTITYAREA('OuterSurfaceArea',\$.S,7.25741630903621);  
 #9817=  
 IFCQUANTITYAREA('GrossSurfaceArea',\$.S,7.25741630903621);  
 #9818=  
 IFCQUANTITYVOLUME('NetVolume',\$.S,0.0375333045475875);  
 #9819=  
 IFCQUANTITYVOLUME('GrossVolume',\$.S,0.038541279035109);  
 #9820= IFCQUANTITYWEIGHT('NetWeight',\$.S,294.636440698562);  
 #9821=  
 IFCQUANTITYWEIGHT('GrossWeight',\$.S,302.549040425606);  
 #9822=  
 IFCELEMENTQUANTITY('3ZJKGHFyPEp9N8tHh1L&C',#.5,'BaseQu  
 antities',\$.S,(#9815,#9816,#9817,#361,#9818,#9819,#9820,#9821));  
 #9823= IFCLOCALPLACEMENT(#30,#10);  
 #9824=  
 IFCELEMENTASSEMBLY('1OelSH002ddJ4qE3SrC3Ws',#.5,'Steel  
 Assembly',\$.S,(#9823,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
 #9825= IFCPROPERTYSET('Assembly/Cast unit  
 weight',\$.IFCMASMEASURE(268.2),\$.S);  
 #9826= IFCPROPERTYSET('Assembly/Cast unit bottom  
 elevation',\$.IFCLABEL(' -4.062'),\$.S);  
 #9827= IFCPROPERTYSET('Assembly/Cast unit top  
 elevation',\$.IFCLABEL(' -0.000'),\$.S);  
 #9828= IFCPROPERTYSET('13mmrBltn4beZWS7yq8IHc',#.5,'Tekla  
 Assembly',\$.S,Assembly  
 Properties',(#34,#313,#9825,#9826,#9827,#6765,#318));  
 #9829=  
 IFCARTESIANPOINT((6749.99999999991,63572.4147708364,-  
 3.02309288713332E-011));  
 #9830= IFCAXIS2PLACEMENT3D(#9829,#7,#96888);  
 #9831= IFCLOCALPLACEMENT(#9823,#9830);  
 #9832= IFCARTESIANPOINT((4061.71503293102,0,0));  
 #9833= IFCAXIS2PLACEMENT3D(#9832,#336,#335);  
 #9834= IFCSTRUDEDAREASOLID(#333,#9833,#9,4061.7);  
 #9835=  
 IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#9834));  
 #9836= IFCSTYLEDITEM(#9834,(#330),\$.S);  
 #9837= IFCPRODUCTDEFINITIONSHAPE(\$,(#9835));  
 #9838=  
 IFCBEAM('1OelSH002dd34qE3SrC3Ws',#.5,'BEAM','HN400\*200\*8\*13  
 ','HN400\*200\*8\*13',#9831,#9837,'PO(?)');  
 #9839= IFCPROPERTYSET('Bottom  
 elevation',\$.IFCLABEL(' -4.062'),\$.S);  
 #9840= IFCPROPERTYSET('Top elevation',\$.IFCLABEL(' -  
 0.000'),\$.S);  
 #9841= IFCPROPERTYSET('1j4YLG55XAVfioeOHfXR',#.5,'Tekla  
 Common',\$.S,Common Properties to Shared building  
 elements',(#9839,#9840,#71,#72,#73,#346));  
 #9842=  
 IFCPROPERTYSET('Weight',\$.IFCMASMEASURE(268.  
 2),\$.S);  
 #9843=  
 IFCPROPERTYSET('Length',\$.IFLENGTHMEASURE(4  
 061.7),\$.S);  
 #9844= IFCPROPERTYSET('222u1IzO10nehSsEV ISOR\_',#.5,'Tekla  
 Quantity',\$.S,Quantity Properties to Shared building  
 elements',(#9842,#1108,#78,#350,#5525,#352,#353,#9843));  
 #9845= IFCQUANTITYLENGTH('Length',\$.S,4061.71503293102);  
 #9846=  
 IFCQUANTITYAREA('OuterSurfaceArea',\$.S,6.43375661216273);  
 #9847=  
 IFCQUANTITYVOLUME('NetVolume',\$.S,0.033273569549771);  
 #9848= IFCQUANTITYWEIGHT('NetWeight',\$.S,261.197520965702);  
 #9849=  
 IFCELEMENTQUANTITY('2f7mv9NYD2su75Prr7MBd8',#.5,'BaseQua  
 ntities',\$.S,(#9845,#9846,#9847,#9848));  
 #9850= IFCLOCALPLACEMENT(#30,#10);  
 #9851=  
 IFCELEMENTASSEMBLY('1OelSH002dc34qE3SrC3Ws',#.5,'Steel  
 Assembly',\$.S,(#9850,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
 #9852= IFCPROPERTYSET('Assembly/Cast unit  
 weight',\$.IFCMASMEASURE(263.1),\$.S);  
 #9853= IFCPROPERTYSET('Assembly/Cast unit bottom  
 elevation',\$.IFCLABEL(' -1.372'),\$.S);  
 #9854= IFCPROPERTYSET('22GWLiX8jC9g7Q4RwxDKI',#.5,'Tekla  
 Assembly',\$.S,Assembly  
 Properties',(#34,#313,#9852,#9853,#9619,#6765,#318));  
 #9855= IFCQUANTITYLENGTH('Width',\$.S,200.000000021289);  
 #9856=  
 IFCELEMENTQUANTITY('0BXpZ3Y8z4fhnNzux8YE2',#.5,'BaseQu  
 antities',\$.S,(#9855));  
 #9857=  
 IFCARTESIANPOINT((6749.99999999996,70983.8990406227,-  
 1277.64653050601));  
 #9858= IFCDIRECTION((0,-0.946730382267326,0.32202730209093));  
 #9859= IFCAXIS2PLACEMENT3D(#9857,#7,#9858);  
 #9860= IFCLOCALPLACEMENT(#9850,#9859);  
 #9861= IFCARTESIANPOINT((3984.05192280387,0,0));  
 #9862= IFCAXIS2PLACEMENT3D(#9861,#336,#335);  
 #9863= IFCSTRUDEDAREASOLID(#333,#9862,#9,3984.1);  
 #9864=  
 IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#9863));  
 #9865= IFCSTYLEDITEM(#9863,(#330),\$.S);  
 #9866= IFCPRODUCTDEFINITIONSHAPE(\$,(#9864));  
 #9867=  
 IFCBEAM('1OelSH002dbp4qE3SrC3Ws',#.5,'BEAM','HN400\*200\*8\*13  
 ','HN400\*200\*8\*13',#9860,#9866,'PO(?)');  
 #9868= IFCPROPERTYSET('Bottom  
 elevation',\$.IFCLABEL(' -1.372'),\$.S);  
 #9869= IFCPROPERTYSET('0t5sUP4C16ce1RqIbEYvKH',#.5,'Tekla  
 Common',\$.S,Common Properties to Shared building  
 elements',(#9868,#9636,#71,#72,#73,#346));

#9870=  
 IFCPROPERTYSET('Weight',\$.IFCMASMEASURE(263.  
 1),\$.S);  
 #9871=  
 IFCPROPERTYSET('Length',\$.IFLENGTHMEASURE(3  
 984.1),\$.S);  
 #9872= IFCPROPERTYSET('3yc2POO\_n2gBdS\_pESXjyA',#.5,'Tekla  
 Quantity',\$.S,Quantity Properties to Shared building  
 elements',(#9870,#1108,#78,#350,#5432,#352,#353,#9871));  
 #9873= IFCQUANTITYLENGTH('Length',\$.S,3984.051922777);  
 #9874=  
 IFCQUANTITYAREA('OuterSurfaceArea',\$.S,6.31073824567987);  
 #9875=  
 IFCQUANTITYVOLUME('NetVolume',\$.S,0.032637353351339);  
 #9876= IFCQUANTITYWEIGHT('NetWeight',\$.S,256.203223808011);  
 #9877=  
 IFCELEMENTQUANTITY('1Uz2Kc3Sf6nxHUh37IRezg',#.5,'BaseQua  
 ntities',\$.S,(#9873,#9874,#9875,#9876));  
 #9878= IFCLOCALPLACEMENT(#30,#10);  
 #9879=  
 IFCELEMENTASSEMBLY('1OelSH002dap4qE3SrC3Ws',#.5,'Steel  
 Assembly',\$.S,(#9878,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
 #9880= IFCPROPERTYSET('Assembly/Cast unit  
 weight',\$.IFCMASMEASURE(181.),\$.S);  
 #9881= IFCPROPERTYSET('Assembly/Cast unit bottom  
 elevation',\$.IFCLABEL(' -2.740'),\$.S);  
 #9882= IFCPROPERTYSET('30rVyr0GLDF91pUvSbb0a',#.5,'Tekla  
 Assembly',\$.S,Assembly  
 Properties',(#34,#313,#9880,#9881,#9685,#6765,#318));  
 #9883= IFCARTESIANPOINT((6750.,67244.2787708364,0));  
 #9884= IFCAXIS2PLACEMENT3D(#9883,#7,#96888);  
 #9885= IFCLOCALPLACEMENT(#9878,#9884);  
 #9886= IFCARTESIANPOINT((2740.33026374092,0,0));  
 #9887= IFCAXIS2PLACEMENT3D(#9886,#336,#335);  
 #9888= IFCSTRUDEDAREASOLID(#333,#9887,#9,2740.3);  
 #9889=  
 IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#9888));  
 #9890= IFCSTYLEDITEM(#9888,(#330),\$.S);  
 #9891= IFCPRODUCTDEFINITIONSHAPE(\$,(#9889));  
 #9892=  
 IFCBEAM('1OelSH002daZ4qE3SrC3Ws',#.5,'BEAM','HN400\*200\*8\*1  
 3','HN400\*200\*8\*13',#9885,#9891,'PO(?)');  
 #9893= IFCPROPERTYSET('Bottom  
 elevation',\$.IFCLABEL(' -2.740'),\$.S);  
 #9894= IFCPROPERTYSET('3DgzkFeJr43QYVgW79\_Ra2',#.5,'Tekla  
 Common',\$.S,Common Properties to Shared building  
 elements',(#9893,#9699,#71,#72,#73,#346));  
 #9895=  
 IFCPROPERTYSET('Weight',\$.IFCMASMEASURE(181.  
 ),\$.S);  
 #9896=  
 IFCPROPERTYSET('Length',\$.IFLENGTHMEASURE(2  
 740.3),\$.S);  
 #9897= IFCPROPERTYSET('2fxgnHSv53ZwWEHrKjuo4F',#.5,'Tekla  
 Quantity',\$.S,Quantity Properties to Shared building  
 elements',(#9895,#1108,#78,#350,#4507,#352,#353,#9896));  
 #9898= IFCQUANTITYLENGTH('Length',\$.S,2740.33026374092);  
 #9899=  
 IFCQUANTITYAREA('OuterSurfaceArea',\$.S,4.3406831776562);  
 #9900=  
 IFCQUANTITYVOLUME('NetVolume',\$.S,0.0224487855205656);  
 #9901= IFCQUANTITYWEIGHT('NetWeight',\$.S,176.22296633644);  
 #9902=  
 IFCELEMENTQUANTITY('0zxnQ5UC9Eevb\_X2tnTnT\_',#.5,'BaseQua  
 ntities',\$.S,(#9898,#9899,#9900,#9901));  
 #9903= IFCLOCALPLACEMENT(#30,#10);  
 #9904=  
 IFCELEMENTASSEMBLY('1OelSH002dZ4qE3SrC3Ws',#.5,'Steel  
 Assembly',\$.S,(#9903,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
 #9905= IFCPROPERTYSET('Assembly/Cast unit  
 weight',\$.IFCMASMEASURE(97.9),\$.S);  
 #9906= IFCPROPERTYSET('Assembly/Cast unit bottom  
 elevation',\$.IFCLABEL(' -1.483'),\$.S);  
 #9907= IFCPROPERTYSET('3RZ5v6IP9LgtwUwFpwN7\_',#.5,'Tekla  
 Assembly',\$.S,Assembly  
 Properties',(#34,#313,#9905,#9906,#9685,#6765,#318));  
 #9908= IFCARTESIANPOINT((6750.,71016.1017708364,0));  
 #9909= IFCAXIS2PLACEMENT3D(#9908,#7,#96888);  
 #9910= IFCLOCALPLACEMENT(#9903,#9909);  
 #9911= IFCARTESIANPOINT((1482.97349228092,0,0));  
 #9912= IFCAXIS2PLACEMENT3D(#9911,#336,#335);  
 #9913= IFCSTRUDEDAREASOLID(#333,#9912,#9,1483.);  
 #9914=  
 IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#9913));  
 #9915= IFCSTYLEDITEM(#9913,(#330),\$.S);  
 #9916= IFCPRODUCTDEFINITIONSHAPE(\$,(#9914));  
 #9917=  
 IFCBEAM('1OelSH002dZ4qE3SrC3Ws',#.5,'BEAM','HN400\*200\*8\*13  
 ','HN400\*200\*8\*13',#9910,#9916,'PO(?)');  
 #9918= IFCPROPERTYSET('Bottom  
 elevation',\$.IFCLABEL(' -1.483'),\$.S);  
 #9919= IFCPROPERTYSET('0CtyCdWrl7t0c0mbZJCL0',#.5,'Tekla  
 Common',\$.S,Common Properties to Shared building  
 elements',(#9918,#9699,#71,#72,#73,#346));  
 #9920=  
 IFCPROPERTYSET('Weight',\$.IFCMASMEASURE(97.9  
 ),\$.S);  
 #9921= IFCPROPERTYSET('Net surface  
 area',\$.IFCAREAMEASURE(2.4),\$.S);  
 #9922=  
 IFCPROPERTYSET('Length',\$.IFLENGTHMEASURE(1  
 483.),\$.S);  
 #9923= IFCPROPERTYSET('3YyDBHZuz3WxZa3qpvIGfO',#.5,'Tekla  
 Quantity',\$.S,Quantity Properties to Shared building  
 elements',(#9920,#1108,#78,#350,#9921,#352,#353,#9922));

#9924= IFCQUANTITYLENGTH('Length',\$.S,1482.97349228092);  
#9925=  
IFCQUANTITYAREA('OuterSurfaceArea',\$.S,2.34903001177297);  
#9926=  
IFCQUANTITYVOLUME('NetVolume',\$.S,0.0121485188487653);  
#9927= IFCQUANTITYWEIGHT('NetWeight',\$.S,95.3658729628073);  
#9928=  
IFCELEMENTQUANTITY('OSSW7h7jT41cVgJ5thAF',#.5,'BaseQuantities',\$.S,(#9924,#9925,#9926,#9927));  
#9929= IFCLOCALPLACEMENT(#30,#10);  
#9930=  
IFCELEMENTASSEMBLY('1OelSH002dYJ4qE3SrC3Wr',#.5,'Steel Assembly',\$.S,#9929,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#9931= IFCPROPERTYSET('1ciJO1IT1z84Q4lr6dr3r',#.5,'Tekla Assembly',Assembly Properties',(#34,#313,#9587,#9588,#9589,#3861,#318));  
#9932= IFCQUANTITYLENGTH('Width',\$.S,200.000000007338);  
#9933=  
IFCELEMENTQUANTITY('3iVkeTNTz9ZPFuBnrFfVgA',#.5,'BaseQuantities',\$.S,(#9932));  
#9934=  
IFCCARTESIANPOINT((1749.99464285535,53181.6650670652,-96.1151010384513));  
#9935= IFCAXIS2PLACEMENT3D(#9934,#5035,#9594);  
#9936= IFCLOCALPLACEMENT(#9929,#9935);  
#9937=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#9599));  
#9938= IFCPRODUCTDEFINITIONSHAPE(\$.S,(#9937));  
#9939=  
IFCBEAM('1OelSH002dY34qE3SrC3Wr',#.5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#.9936,#9938,'PO(?)');  
#9940= IFCQUANTITYLENGTH('Length',\$.S,3493.86166539761);  
#9941=  
IFCQUANTITYAREA('OuterSurfaceArea',\$.S,5.53427687798982);  
#9942=  
IFCQUANTITYVOLUME('NetVolume',\$.S,0.0286217147629531);  
#9943= IFCQUANTITYWEIGHT('NetWeight',\$.S,224.680460889181);  
#9944=  
IFCELEMENTQUANTITY('00Z8MASHL4C8YBLZUF4x',#.5,'BaseQuantities',\$.S,(#9940,#9941,#9942,#9943));  
#9945= IFCLOCALPLACEMENT(#30,#10);  
#9946=  
IFCELEMENTASSEMBLY('1OelSH002dX34qE3SrC3Wr',#.5,'Steel Assembly',\$.S,#9945,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#9947= IFCPROPERTYSET('0j5i7ZebCW8WB6MPwQ6FK',#.5,'Tekla Assembly',Assembly Properties',(#34,#313,#9617,#9618,#9619,#3861,#318));  
#9948= IFCQUANTITYLENGTH('Width',\$.S,200.000000009444);  
#9949=  
IFCELEMENTQUANTITY('3k6SJLMItoSv\_ZBiTh0h4J',#.5,'BaseQuantities',\$.S,(#9948));  
#9950=  
IFCCARTESIANPOINT((1750.23550184662,56592.4847085536,20.9871794197568));  
#9951= IFCAXIS2PLACEMENT3D(#9950,#9624,#9625);  
#9952= IFCLOCALPLACEMENT(#9945,#9951);  
#9953=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#9630));  
#9954= IFCPRODUCTDEFINITIONSHAPE(\$.S,(#9953));  
#9955=  
IFCMEMBER('1OelSH002dWp4qE3SrC3Wr',#.5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#.9952,#9954,'PO(?)');  
#9956= IFCQUANTITYLENGTH('Length',\$.S,4282.2353959126);  
#9957=  
IFCQUANTITYAREA('OuterSurfaceArea',\$.S,6.78306086712556);  
#9958=  
IFCQUANTITYAREA('GrossSurfaceArea',\$.S,6.78306086712556);  
#9959=  
IFCQUANTITYVOLUME('NetVolume',\$.S,0.035080072363254);  
#9960=  
IFCQUANTITYVOLUME('GrossVolume',\$.S,0.0360221641504168);  
#9961= IFCQUANTITYWEIGHT('NetWeight',\$.S,275.378568051544);  
#9962=  
IFCQUANTITYWEIGHT('GrossWeight',\$.S,282.773988580772);  
#9963=  
IFCELEMENTQUANTITY('3xIhfrKKnEGf5i4BiRPy9M',#.5,'BaseQuantities',\$.S,(#9956,#9957,#9958,#361,#9959,#9960,#9961,#9962));  
#9964= IFCLOCALPLACEMENT(#30,#10);  
#9965=  
IFCELEMENTASSEMBLY('1OelSH002dVp4qE3SrC3Wr',#.5,'Steel Assembly',\$.S,#9964,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#9966= IFCPROPERTYSET('00wih1Drt53g\_UehNnePce',#.5,'Tekla Assembly',Assembly Properties',(#34,#313,#9651,#9652,#9619,#3861,#318));  
#9967= IFCQUANTITYLENGTH('Width',\$.S,200.000000004788);  
#9968=  
IFCELEMENTQUANTITY('1XAxia\_m17Ju0qKQrmyeR',#.5,'BaseQuantities',\$.S,(#9967));  
#9969=  
IFCCARTESIANPOINT((1749.99999822778,56602.5811078975,-3951.37240285307));  
#9970= IFCAXIS2PLACEMENT3D(#9969,#336,#9657);  
#9971= IFCLOCALPLACEMENT(#9964,#9970);  
#9972=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#9662));  
#9973= IFCPRODUCTDEFINITIONSHAPE(\$.S,(#9972));  
#9974=  
IFCMEMBER('1OelSH002dVZ4qE3SrC3Wr',#.5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#.9971,#9973,'PO(?)');  
#9975=  
IFCQUANTITYVOLUME('NetVolume',\$.S,0.04330891559596);  
#9976= IFCQUANTITYWEIGHT('NetWeight',\$.S,339.974987428286);  
#9977=  
IFCELEMENTQUANTITY('3LvrAZM793GAOrkZkYb48M',#.5,'BaseQuantities',\$.S,(#9673,#9674,#9675,#361,#9975,#9677,#9976,#9679));  
#9978= IFCLOCALPLACEMENT(#30,#10);  
#9979=  
IFCELEMENTASSEMBLY('1OelSH002dUJ4qE3SrC3Wr',#.5,'Steel Assembly',\$.S,#9978,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#9980= IFCPROPERTYSET('0HM2PNj5P7q88AAQLqSc29',#.5,'Tekla Assembly',Assembly Properties',(#34,#313,#9683,#9684,#9685,#3861,#318));  
#9981= IFCARTESIANPOINT((1750.,56527.191,0.));  
#9982= IFCAXIS2PLACEMENT3D(#9981,#7,#9688);  
#9983= IFCLOCALPLACEMENT(#9978,#9982);  
#9984=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#9693));  
#9985= IFCPRODUCTDEFINITIONSHAPE(\$.S,(#9984));  
#9986=  
IFCBEAM('1OelSH002dUJ4qE3SrC3Wr',#.5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#.9983,#9985,'PO(?)');  
#9987= IFCLOCALPLACEMENT(#30,#10);  
#9988=  
IFCELEMENTASSEMBLY('1OelSH002dUJ4qE3SrC3Wr',#.5,'Steel Assembly',\$.S,#9987,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#9989= IFCPROPERTYSET('3nB44YnwnEywMKCgIb4O\_q',#.5,'Tekla Assembly',Assembly Properties',(#34,#313,#9711,#9712,#9685,#3861,#318));  
#9990=  
IFCCARTESIANPOINT((1549.99999999991,53147.7010000001,1.26485395356304E-011));  
#9991= IFCAXIS2PLACEMENT3D(#9990,#7,#9688);  
#9992= IFCLOCALPLACEMENT(#9987,#9991);  
#9993=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#9719));  
#9994= IFCPRODUCTDEFINITIONSHAPE(\$.S,(#9993));  
#9995=  
IFCBEAM('1OelSH002dUJ4qE3SrC3Wr',#.5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#.9992,#9994,'PO(?)');  
#9996= IFCLOCALPLACEMENT(#30,#10);  
#9997=  
IFCELEMENTASSEMBLY('1OelSH002dS34qE3SrC3Wr',#.5,'Steel Assembly',\$.S,#9996,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#9998= IFCPROPERTYSET('3DCq11USv9xeSdkskEy9jq',#.5,'Tekla Assembly',Assembly Properties',(#34,#313,#9736,#9737,#9685,#3861,#318));  
#9999= IFCARTESIANPOINT((1750.,49861.531000002,0.));  
#10000= IFCAXIS2PLACEMENT3D(#9999,#7,#9688);  
#10001= IFCLOCALPLACEMENT(#9996,#10000);  
#10002=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#9744));  
#10003= IFCPRODUCTDEFINITIONSHAPE(\$.S,(#10002));  
#10004=  
IFCBEAM('1OelSH002dRp4qE3SrC3Wr',#.5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#.10001,#10003,'PO(?)');  
#10005= IFCLOCALPLACEMENT(#30,#10);  
#10006=  
IFCELEMENTASSEMBLY('1OelSH002dQp4qE3SrC3Wr',#.5,'Steel Assembly',\$.S,#10005,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#10007= IFCPROPERTYSET('2jAzoPAdf1A8VIGerS3RQ',#.5,'Tekla Assembly',Assembly Properties',(#34,#313,#9762,#9763,#9619,#5319,#318));  
#10008=  
IFCCARTESIANPOINT((1750.00000000095,63497.32136971,-4027.75275780819));  
#10009= IFCAXIS2PLACEMENT3D(#10008,#7,#9768);  
#10010= IFCLOCALPLACEMENT(#10005,#10009);  
#10011=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#9773));  
#10012= IFCPRODUCTDEFINITIONSHAPE(\$.S,(#10011));  
#10013=  
IFCMEMBER('1OelSH002dQZ4qE3SrC3Wr',#.5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#.10010,#10012,'PO(?)');  
#10014= IFCLOCALPLACEMENT(#30,#10);  
#10015=  
IFCELEMENTASSEMBLY('1OelSH002dPZ4qE3SrC3Wr',#.5,'Steel Assembly',\$.S,#10014,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#10016= IFCPROPERTYSET('3sdoIC05zEXPINozuwysj',#.5,'Tekla Assembly',Assembly Properties',(#34,#313,#9794,#9795,#9619,#5319,#318));  
#10017=  
IFCCARTESIANPOINT((1750.00000000018,67184.4684615894,-2720.4721810371));  
#10018= IFCAXIS2PLACEMENT3D(#10017,#7,#9800);  
#10019= IFCLOCALPLACEMENT(#10014,#10018);  
#10020=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#9805));  
#10021= IFCPRODUCTDEFINITIONSHAPE(\$.S,(#10020));  
#10022=  
IFCMEMBER('1OelSH002dPj4qE3SrC3Wr',#.5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#.10019,#10021,'PO(?)');  
#10023= IFCLOCALPLACEMENT(#30,#10);  
#10024=  
IFCELEMENTASSEMBLY('1OelSH002dOj4qE3SrC3Wr',#.5,'Steel Assembly',\$.S,#10023,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#10025= IFCPROPERTYSET('SINGLEVALUE(Assembly/Cast unit weight',\$.S,IFCMASSEASURE(261.6),\$);  
#10026= IFCPROPERTYSET('SINGLEVALUE(Assembly/Cast unit bottom elevation',\$.S,IFCLABEL(' -3.962'),\$);  
#10027= IFCPROPERTYSET('2OZFS\_D92LOgzP6yzt3H3',#.5,'Tekla Assembly',Assembly Properties',(#34,#313,#10025,#10026,#9827,#5319,#318));  
#10028=  
IFCCARTESIANPOINT((1749.99999999991,63572.4147708364,-3.02309288713332E-011));  
#10029= IFCAXIS2PLACEMENT3D(#10028,#7,#9688);  
#10030= IFCLOCALPLACEMENT(#10023,#10029);  
#10031= IFCARTESIANPOINT((3961.71503293102,0.0,0.));  
#10032= IFCAXIS2PLACEMENT3D(#10031,#336,#335);  
#10033= IFCXTRUDEDAREASOLID(#333,#10032,#9,3961.7);



## Appendix

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#10034=
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#10033));
#10035= IFCSTYLEDITEM(#10033,(#330),S);
#10036= IFCPRODUCTDEFINITIONSHAPE(S,S,(#10034));
#10037=
IFCBEAM('1OeISH002d034qE3SrC3Wr',#5,'BEAM','HN400*200*8*1
3','HN400*200*8*13',#10030,#10036,'P0(?)');
#10038=
IFCPROPERTYSET('Bottom
elevation',S,IFCLABEL(' -3.962'),S);
#10039=
IFCPROPERTYSET('3vVwjJdF5OpfV1fDIW$Ja',#5,'Tekla
Common','Common Properties to Shared building
elements',(#10038,#9840,#71,#72,#73,#346));
#10040=
IFCPROPERTYSINGLEVALUE('Weight',S,IFCMASSMEASURE(261.
6),S);
#10041=
IFCPROPERTYSINGLEVALUE('Length',S,IFLENGTHMEASURE(3
961.7),S);
#10042= IFCPROPERTYSET('2HJOkwQqnE3OqZ3md9g0g_',#5,'Tekla
Quantity','Quantity Properties to Shared building
elements',(#10040,#1108,#78,#350,#5432,#352,#353,#10041));
#10043= IFCQUANTITYLENGTH('Length',S,S,3961.71503293102);
#10044=
IFCQUANTITYAREA('OuterSurfaceArea',S,S,6.27535661216273);
#10045=
IFCQUANTITYVOLUME('NetVolume',S,S,0.0324543695497709);
#10046=
IFCQUANTITYWEIGHT('NetWeight',S,S,254.766800965702);
#10047=
IFCELEMENTQUANTITY('2rUHfWwSj3S8Hx1N5LbOt',#5,'BaseQ
uantities',S,S,(#10043,#10044,#10045,#10046));
#10048= IFCLocalPLACEMENT(#30,#10);
#10049=
IFCELEMENTASSEMBLY('1OeISH002dN34qE3SrC3Wr',#5,'Steel
Assembly',S,S,#10048,S,'BE-0(?)',.NOTDEFINED,..RIGID_FRAME.);
#10050= IFCPROPERTYSET('1mqw2Kv4D2yZrIdXmNk8j',#5,'Tekla
Assembly','Assembly
Properties',(#34,#313,#9852,#9853,#9619,#5319,#318));
#10051=
IFCCARTESIANPOINT((1749.99999999968,70983.8990406227,-
1277.64653050601));
#10052= IFCAxis2PLACEMENT3D(#10051,#7,#9858);
#10053= IFCLocalPLACEMENT(#10048,#10052);
#10054=
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#9863));
#10055= IFCPRODUCTDEFINITIONSHAPE(S,S,(#10054));
#10056=
IFCBEAM('1OeISH002dMp4qE3SrC3Wr',#5,'BEAM','HN400*200*8*1
3','HN400*200*8*13',#10053,#10055,'P0(?)');
#10057= IFCLocalPLACEMENT(#30,#10);
#10058=
IFCELEMENTASSEMBLY('1OeISH002dLp4qE3SrC3Wr',#5,'Steel
Assembly',S,S,#10057,S,'BE-0(?)',.NOTDEFINED,..RIGID_FRAME.);
#10059=
IFCPROPERTYSINGLEVALUE('Assembly/Cast unit
weight',S,IFCMASSMEASURE(174.4),S);
#10060= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit bottom
elevation',S,IFCLABEL(' -2.640'),S);
#10061=
IFCPROPERTYSET('0ZpGOIHyt7nfwpXuXww82n',#5,'Tekla
Assembly','Assembly
Properties',(#34,#313,#10059,#10060,#9685,#5319,#318));
#10062= IFCCARTESIANPOINT((1750.67244.2787708364,0.));
#10063= IFCAxis2PLACEMENT3D(#10062,#7,#9688);
#10064= IFCLocalPLACEMENT(#10057,#10063);
#10065= IFCCARTESIANPOINT((2640.33026374092,0.,0.));
#10066= IFCAxis2PLACEMENT3D(#10065,#336,#335);
#10067= IFCEXTRUDEDAREASOLID(#333,#10066,#9,2640.3);
#10068=
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#10067));
#10069= IFCSTYLEDITEM(#10067,(#330),S);
#10070= IFCPRODUCTDEFINITIONSHAPE(S,S,(#10068));
#10071=
IFCBEAM('1OeISH002dLZ4qE3SrC3Wr',#5,'BEAM','HN400*200*8*1
3','HN400*200*8*13',#10064,#10070,'P0(?)');
#10072=
IFCPROPERTYSET('Bottom
elevation',S,IFCLABEL(' -2.640'),S);
#10073=
IFCPROPERTYSET('1k46EEhWd2SvSAXMqSrWkz',#5,'Tekla
Common','Common Properties to Shared building
elements',(#10072,#9699,#71,#72,#73,#346));
#10074=
IFCPROPERTYSINGLEVALUE('Weight',S,IFCMASSMEASURE(174.
4),S);
#10075=
IFCPROPERTYSINGLEVALUE('Length',S,IFLENGTHMEASURE(2
640.3),S);
#10076= IFCPROPERTYSET('1WqN$4dDj9oPPFzcnjOo7',#5,'Tekla
Quantity','Quantity Properties to Shared building
elements',(#10074,#1108,#78,#350,#4255,#352,#353,#10075));
#10077= IFCQUANTITYLENGTH('Length',S,S,2640.33026374092);
#10078=
IFCQUANTITYAREA('OuterSurfaceArea',S,S,4.18228313776562);
#10079=
IFCQUANTITYVOLUME('NetVolume',S,S,0.0216295855205656);
#10080= IFCQUANTITYWEIGHT('NetWeight',S,S,169.79224633644);
#10081=
IFCELEMENTQUANTITY('1nxOpNmnPD6At5EdPaW6d1',#5,'BaseQ
uantities',S,S,(#10077,#10078,#10079,#10080));
#10082= IFCLocalPLACEMENT(#30,#10);
#10083=
IFCELEMENTASSEMBLY('1OeISH002dKZ4qE3SrC3Wr',#5,'Steel
Assembly',S,S,#10082,S,'BE-0(?)',.NOTDEFINED,..RIGID_FRAME.);
#10084=
IFCPROPERTYSINGLEVALUE('Assembly/Cast unit
weight',S,IFCMASSMEASURE(94.6),S);
#10085= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit bottom
elevation',S,IFCLABEL(' -1.433'),S);
#10086=
IFCPROPERTYSET('27ki2kMLAYwJ3UDhLBXYs',#5,'Tekla
Assembly','Assembly
Properties',(#34,#313,#10084,#10085,#9685,#5319,#318));
#10087= IFCCARTESIANPOINT((1750.71016.1017708364,0.));
#10088= IFCAxis2PLACEMENT3D(#10087,#7,#9688);
#10089= IFCLocalPLACEMENT(#10082,#10088);
#10090= IFCCARTESIANPOINT((1432.97349228092,0.,0.));
#10091= IFCAxis2PLACEMENT3D(#10090,#336,#335);
#10092= IFCEXTRUDEDAREASOLID(#333,#10091,#9,1433.);
#10093=
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#10092));
#10094= IFCSTYLEDITEM(#10092,(#330),S);
#10095= IFCPRODUCTDEFINITIONSHAPE(S,S,(#10093));
#10096=
IFCBEAM('1OeISH002dKJ4qE3SrC3Wr',#5,'BEAM','HN400*200*8*1
3','HN400*200*8*13',#10089,#10095,'P0(?)');
#10097=
IFCPROPERTYSET('Bottom
elevation',S,IFCLABEL(' -1.433'),S);
#10098= IFCPROPERTYSET('1CSqSdJSX17B19MuKbFdn',#5,'Tekla
Common','Common Properties to Shared building
elements',(#10097,#9699,#71,#72,#73,#346));
#10099=
IFCPROPERTYSINGLEVALUE('Weight',S,IFCMASSMEASURE(94.6
),S);
#10100=
IFCPROPERTYSINGLEVALUE('Net surface
area',S,IFCAREAMEASURE(2.3),S);
#10101=
IFCPROPERTYSINGLEVALUE('Length',S,IFLENGTHMEASURE(1
433.),S);
#10102= IFCPROPERTYSET('37Qa05cHj8ZgpthdP9Ls7',#5,'Tekla
Quantity','Quantity Properties to Shared building
elements',(#10099,#1108,#78,#350,#10100,#352,#353,#10101));
#10103= IFCQUANTITYLENGTH('Length',S,S,1432.97349228092);
#10104=
IFCQUANTITYAREA('OuterSurfaceArea',S,S,2.26983001177297);
#10105=
IFCQUANTITYVOLUME('NetVolume',S,S,0.0117389188487653);
#10106=
IFCQUANTITYWEIGHT('NetWeight',S,S,92.1505129628073);
#10107=
IFCELEMENTQUANTITY('2X40906trDfzQpULrOUr',#5,'BaseQuan
tities',S,S,(#10103,#10104,#10105,#10106));
#10108= IFCLocalPLACEMENT(#30,#10);
#10109=
IFCELEMENTASSEMBLY('1OeISH002dJ34qE3SrC3Wr',#5,'Steel
Assembly',S,S,#10108,S,'BE-0(?)',.NOTDEFINED,..RIGID_FRAME.);
#10110=
IFCPROPERTYSET('2oX4m9hADASBWrFd_w0Bj',#5,'Tekla
Assembly','Assembly
Properties',(#34,#313,#9587,#9589,#7129,#318));
#10111= IFCQUANTITYLENGTH('Width',S,S,200.000000007334);
#10112=
IFCELEMENTQUANTITY('1xXwoAZh942f25NnSkaqIz',#5,'BaseQua
ntities',S,S,(#10111));
#10113=
IFCCARTESIANPOINT((1749.99464285535,166818.334923935,-
96.1151010384513));
#10114=
IFCDIRECTION((1.51800000041655E-
006,0.940555269261805,-0.339640671094539));
#10115= IFCAxis2PLACEMENT3D(#10113,#5001,#10114);
#10116= IFCLocalPLACEMENT(#10108,#10115);
#10117=
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#9599));
#10118= IFCPRODUCTDEFINITIONSHAPE(S,S,(#10117));
#10119=
IFCBEAM('1OeISH002dlp4qE3SrC3Wr',#5,'BEAM','HN400*200*8*13
','HN400*200*8*13',#10116,#10118,'P0(?)');
#10120= IFCQUANTITYLENGTH('Length',S,S,3493.86166535068);
#10121=
IFCQUANTITYAREA('OuterSurfaceArea',S,S,5.53427687791547);
#10122=
IFCQUANTITYVOLUME('NetVolume',S,S,0.0286217147625693);
#10123=
IFCQUANTITYWEIGHT('NetWeight',S,S,224.680460886169);
#10124=
IFCELEMENTQUANTITY('2vfZukdybBiQVCsmpHP3pe',#5,'BaseQu
antities',S,S,(#10120,#10121,#10122,#10123));
#10125= IFCLocalPLACEMENT(#30,#10);
#10126=
IFCELEMENTASSEMBLY('1OeISH002dl34qE3SrC3Wr',#5,'Steel
Assembly',S,S,#10125,S,'BE-0(?)',.NOTDEFINED,..RIGID_FRAME.);
#10127= IFCPROPERTYSET('0w6sviNE51Vg_twQwt59r5',#5,'Tekla
Assembly','Assembly
Properties',(#34,#313,#9617,#9618,#9619,#7129,#318));
#10128= IFCQUANTITYLENGTH('Width',S,S,200.000000015396);
#10129=
IFCELEMENTQUANTITY('3CiteZfUTCswPksfIzwYYO',#5,'BaseQua
ntities',S,S,(#10128));
#10130=
IFCCARTESIANPOINT((1750.23550184662,163407.515291446,20.98
71794197568));
#10131=
IFCDIRECTION((0.999992618883713,0.00384215799956723,0.));
#10132=
IFCDIRECTION((-0.00303579699877283,0.79012237468061,-0.612941609752231));
#10133= IFCAxis2PLACEMENT3D(#10130,#10131,#10132);
#10134= IFCLocalPLACEMENT(#10125,#10133);
#10135=
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#9630));
#10136= IFCPRODUCTDEFINITIONSHAPE(S,S,(#10135));

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#10137=
IFCMEMBER('1OeISH002dHp4qE3SrC3Wp',#5,'BEAM','HN400*200*
8*13','HN400*200*8*13',#10134,#10136,'PO(?));
#10138= IFCQUANTITYLENGTH('Length',S,S,4282.23539593813);
#10139=
IFCQUANTITYAREA('OuterSurfaceArea',S,S,6.783060867166);
#10140=
IFCQUANTITYAREA('GrossSurfaceArea',S,S,6.783060867166);
#10141=
IFCQUANTITYVOLUME('NetVolume',S,S,0.035080072363154);
#10142=
IFCQUANTITYVOLUME('GrossVolume',S,S,0.0360221641506315);
#10143=
IFCQUANTITYWEIGHT('NetWeight',S,S,275.378568054381);
#10144=
IFCQUANTITYWEIGHT('GrossWeight',S,S,282.773988582458);
#10145=
IFCELEMENTQUANTITY('0PU6hTKaF4LepBR_xkMc1',#5,'BaseQua
ntities',S,S,(#10138,#10139,#10140,#361,#10141,#10142,#10143,#10144
));
#10146= IFCLOCALPLACEMENT(#30,#10);
#10147=
IFCELEMENTASSEMBLY('1OeISH002dH34qE3SrC3Wp',#5,'Steel
Assembly',S,S,#10146,S,'BE-0(?)',NOTDEFINED,..RIGID_FRAME.);
#10148= IFCPROPERTYSET('0eMwtyrw93yxt8gFFAOxj',#5,'Tekla
Assembly',Assembly
Properties',(#34,#313,#9651,#9652,#9619,#7129,#318));
#10149= IFCQUANTITYLENGTH('Width',S,S,200.000000028973);
#10150=
IFCELEMENTQUANTITY('1fY9FMC4z8PBO4yCZOSFW9',#5,'Base
Quantities',S,S,(#10149));
#10151=
IFCCARTESIANPOINT((1749.99999822778,163397.418892102,-
3951.37240285307));
#10152= IFCDIRECTION((0,-
0.656987947190316,0.753901079218391));
#10153= IFCAxis2PLACEMENT3D(#10151,#336,#10152);
#10154= IFCLOCALPLACEMENT(#10146,#10153);
#10155=
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#9662));
#10156= IFCPRODUCTDEFINITIONSHAPE(S,S,(#10155));
#10157=
IFCMEMBER('1OeISH002dGp4qE3SrC3Wp',#5,'BEAM','HN400*200*
8*13','HN400*200*8*13',#10154,#10156,'PO(?));
#10158= IFCQUANTITYLENGTH('Length',S,S,5286.73286079237);
#10159=
IFCQUANTITYAREA('OuterSurfaceArea',S,S,8.37418485149511);
#10160=
IFCQUANTITYAREA('GrossSurfaceArea',S,S,8.37418485149511);
#10161=
IFCQUANTITYVOLUME('NetVolume',S,S,0.0433089155953043);
#10162=
IFCQUANTITYVOLUME('GrossVolume',S,S,0.0444719968249854);
#10163=
IFCQUANTITYWEIGHT('NetWeight',S,S,339.974987423139);
#10164=
IFCQUANTITYWEIGHT('GrossWeight',S,S,349.105175076136);
#10165=
IFCELEMENTQUANTITY('0jmeTDr05100sOSM90hTK',#5,'BaseQua
ntities',S,S,(#10158,#10159,#10160,#361,#10161,#10162,#10163,#10164
));
#10166= IFCLOCALPLACEMENT(#30,#10);
#10167=
IFCELEMENTASSEMBLY('1OeISH002dG34qE3SrC3Wp',#5,'Steel
Assembly',S,S,#10166,S,'BE-0(?)',NOTDEFINED,..RIGID_FRAME.);
#10168= IFCPROPERTYSET('2hh8J7kGrDvEzm6drvG21',#5,'Tekla
Assembly',Assembly
Properties',(#34,#313,#9683,#9684,#9685,#7129,#318));
#10169= IFCCARTESIANPOINT((1750.163472.809,0.));
#10170= IFCAxis2PLACEMENT3D(#10169,#7,#9688);
#10171= IFCLOCALPLACEMENT(#10166,#10170);
#10172=
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#9693));
#10173= IFCPRODUCTDEFINITIONSHAPE(S,S,(#10172));
#10174=
IFCBEAM('1OeISH002dFp4qE3SrC3Wp',#5,'BEAM','HN400*200*8*1
3','HN400*200*8*13',#10171,#10173,'PO(?));
#10175= IFCLOCALPLACEMENT(#30,#10);
#10176=
IFCELEMENTASSEMBLY('1OeISH002dF34qE3SrC3Wp',#5,'Steel
Assembly',S,S,#10175,S,'BE-0(?)',NOTDEFINED,..RIGID_FRAME.);
#10177= IFCPROPERTYSET('2EMH8rZ0jDx9E2ceYp2RC0',#5,'Tekla
Assembly',Assembly
Properties',(#34,#313,#9711,#9712,#9685,#7129,#318));
#10178=
IFCCARTESIANPOINT((1549.99999999991,166852.299,1.264853953
56304E-011));
#10179= IFCAxis2PLACEMENT3D(#10178,#7,#9688);
#10180= IFCLOCALPLACEMENT(#10175,#10179);
#10181=
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#9719));
#10182= IFCPRODUCTDEFINITIONSHAPE(S,S,(#10181));
#10183=
IFCBEAM('1OeISH002dEp4qE3SrC3Wp',#5,'BEAM','HN400*200*8*1
3','HN400*200*8*13',#10180,#10182,'PO(?));
#10184= IFCLOCALPLACEMENT(#30,#10);
#10185=
IFCELEMENTASSEMBLY('1OeISH002dE34qE3SrC3Wp',#5,'Steel
Assembly',S,S,#10184,S,'BE-0(?)',NOTDEFINED,..RIGID_FRAME.);
#10186= IFCPROPERTYSET('1yTYSuyZj3SOyowpxBmIm',#5,'Tekla
Assembly',Assembly
Properties',(#34,#313,#9736,#9737,#9685,#7129,#318));
#10187= IFCCARTESIANPOINT((1750.170138.469,0.));
#10188= IFCAxis2PLACEMENT3D(#10187,#7,#9688);
#10189= IFCLOCALPLACEMENT(#10184,#10188);

#10190=
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#9744));
#10191= IFCPRODUCTDEFINITIONSHAPE(S,S,(#10190));
#10192=
IFCBEAM('1OeISH002dDp4qE3SrC3Wp',#5,'BEAM','HN400*200*8*1
3','HN400*200*8*13',#10189,#10191,'PO(?));
#10193= IFCLOCALPLACEMENT(#30,#10);
#10194=
IFCELEMENTASSEMBLY('1OeISH002dD34qE3SrC3Wp',#5,'Steel
Assembly',S,S,#10193,S,'BE-0(?)',NOTDEFINED,..RIGID_FRAME.);
#10195=
IFCPROPERTYSET('1_WhrS2BL4_xjqGnuHKNA3',#5,'Tekla
Assembly',Assembly
Properties',(#34,#313,#9762,#9763,#9619,#8063,#318));
#10196= IFCQUANTITYLENGTH('Width',S,S,200.000000021813);
#10197=
IFCELEMENTQUANTITY('1PZfakoSj2KeynLlXlvz3',#5,'BaseQuantit
ies',S,S,(#10196));
#10198=
IFCCARTESIANPOINT((1750.00000000095,156502.67863029,-
4027.75275780819));
#10199=
IFCDIRECTION((0.,0.660377249041817,0.75093401104755));
#10200= IFCAxis2PLACEMENT3D(#10198,#7,#10199);
#10201= IFCLOCALPLACEMENT(#10193,#10200);
#10202=
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#9773));
#10203= IFCPRODUCTDEFINITIONSHAPE(S,S,(#10202));
#10204=
IFCMEMBER('1OeISH002dCp4qE3SrC3Wp',#5,'BEAM','HN400*200*
8*13','HN400*200*8*13',#10201,#10203,'PO(?));
#10205= IFCQUANTITYLENGTH('Length',S,S,5408.884098794);
#10206=
IFCQUANTITYAREA('OuterSurfaceArea',S,S,8.56767241246656);
#10207=
IFCQUANTITYAREA('GrossSurfaceArea',S,S,8.56767241246656);
#10208=
IFCQUANTITYVOLUME('NetVolume',S,S,0.0443095785369628);
#10209=
IFCQUANTITYVOLUME('GrossVolume',S,S,0.0454995330389323);
#10210=
IFCQUANTITYWEIGHT('NetWeight',S,S,347.830191515158);
#10211=
IFCQUANTITYWEIGHT('GrossWeight',S,S,357.171334355618);
#10212=
IFCELEMENTQUANTITY('0KpW5n0t5AdRezA7TJ8A2',#5,'BaseQua
ntities',S,S,(#10205,#10206,#10207,#361,#10208,#10209,#10210,#10211
));
#10213= IFCLOCALPLACEMENT(#30,#10);
#10214=
IFCELEMENTASSEMBLY('1OeISH002dC34qE3SrC3Wp',#5,'Steel
Assembly',S,S,#10213,S,'BE-0(?)',NOTDEFINED,..RIGID_FRAME.);
#10215= IFCPROPERTYSET('2dlB8Uv_j9afknbA237HVm',#5,'Tekla
Assembly',Assembly
Properties',(#34,#313,#9794,#9795,#9619,#8063,#318));
#10216=
IFCCARTESIANPOINT((1750.00000000018,152815.531538411,-
2720.4721810371));
#10217=
IFCDIRECTION((0.,0.80141917319556,0.598103092145948));
#10218= IFCAxis2PLACEMENT3D(#10216,#7,#10217);
#10219= IFCLOCALPLACEMENT(#10213,#10218);
#10220=
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#9805));
#10221= IFCPRODUCTDEFINITIONSHAPE(S,S,(#10220));
#10222=
IFCMEMBER('1OeISH002dBp4qE3SrC3Wp',#5,'BEAM','HN400*200*
8*13','HN400*200*8*13',#10219,#10221,'PO(?));
#10223= IFCQUANTITYLENGTH('Length',S,S,4581.70221530195);
#10224=
IFCQUANTITYAREA('OuterSurfaceArea',S,S,7.25741630903829);
#10225=
IFCQUANTITYAREA('GrossSurfaceArea',S,S,7.25741630903829);
#10226=
IFCQUANTITYVOLUME('NetVolume',S,S,0.0375333045476061);
#10227=
IFCQUANTITYVOLUME('GrossVolume',S,S,0.03854127903512);
#10228=
IFCQUANTITYWEIGHT('NetWeight',S,S,294.636440698708);
#10229=
IFCQUANTITYWEIGHT('GrossWeight',S,S,302.549040425692);
#10230=
IFCELEMENTQUANTITY('3seTe_jTHFWRPXDp1yOlo',#5,'BaseQua
ntities',S,S,(#10223,#10224,#10225,#361,#10226,#10227,#10228,#10229
));
#10231= IFCLOCALPLACEMENT(#30,#10);
#10232=
IFCELEMENTASSEMBLY('1OeISH002dB34qE3SrC3Wp',#5,'Steel
Assembly',S,S,#10231,S,'BE-0(?)',NOTDEFINED,..RIGID_FRAME.);
#10233=
IFCPROPERTYSET('3PEUodmHBoZArCqQgUiX',#5,'Tekla
Assembly',Assembly
Properties',(#34,#313,#10025,#10026,#9827,#8063,#318));
#10234=
IFCCARTESIANPOINT((1749.99999999991,156427.585229164,-
3.02309288713332E-011));
#10235= IFCAxis2PLACEMENT3D(#10234,#7,#9688);
#10236= IFCLOCALPLACEMENT(#10231,#10235);
#10237=
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#10033));
#10238= IFCPRODUCTDEFINITIONSHAPE(S,S,(#10237));
#10239=
IFCBEAM('1OeISH002dAp4qE3SrC3Wp',#5,'BEAM','HN400*200*8*1
3','HN400*200*8*13',#10236,#10238,'PO(?));
#10240= IFCLOCALPLACEMENT(#30,#10);

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## Appendix

#10241=  
IFCELEMENTASSEMBLY('1OeI\$H002dA34qE3SrC3Wp',#5,'Steel  
Assembly',S,S,#10240,S,'BE-0(?)',NOTDEFINED,,RIGID\_FRAME.);  
#10242= IFCPROPERTYSET('0RkcZozJP8SvmjjiWvWOML',#5,'Tekla  
Assembly',Assembly  
Properties',(#34,#313,#9852,#9853,#9619,#8063,#318));  
#10243= IFCQUANTITYLENGTH('Width',S,S,200.000000021304);  
#10244=  
IFCELEMENTQUANTITY('0rSOCX6qPAjwK18SNpa\_Np',#5,'BaseQu  
antities',S,S,(#10243));  
#10245=  
IFCCARTESIANPOINT((1749.99999999968,149016.100959377,-  
1277.64653050601));  
#10246=  
IFCDIRECTION((0.,0.946730382267326,0.32202730209093));  
#10247= IFCAXIS2PLACEMENT3D(#10245,#7,#10246);  
#10248= IFCLOCALPLACEMENT(#10240,#10247);  
#10249=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#9863));  
#10250= IFCPRODUCTDEFINITIONSHAPE(S,S,(#10249));  
#10251=  
IFCBEAM('1OeI\$H002d9p4qE3SrC3Wp',#5,'BEAM','HN400\*200\*8\*1  
3','HN400\*200\*8\*13',#10248,#10250,'P0(?)');  
#10252= IFCQUANTITYLENGTH('Length',S,S,3984.05192283264);  
#10253=  
IFCQUANTITYAREA('OuterSurfaceArea',S,S,6.31073824576691);  
#10254=  
IFCQUANTITYVOLUME('NetVolume',S,S,0.0326373533517821);  
#10255=  
IFCQUANTITYWEIGHT('NetWeight',S,S,256.203223811489);  
#10256=  
IFCELEMENTQUANTITY('3G\$9hp4kTfRtkmcg66WGP',#5,'BaseQu  
antities',S,S,(#10252,#10253,#10254,#10255));  
#10257= IFCLOCALPLACEMENT(#30,#10);  
#10258=  
IFCELEMENTASSEMBLY('1OeI\$H002d934qE3SrC3Wp',#5,'Steel  
Assembly',S,S,#10257,S,'BE-0(?)',NOTDEFINED,,RIGID\_FRAME.);  
#10259= IFCPROPERTYSET('1BXM9UckH0owIzqJ3sRNZr',#5,'Tekla  
Assembly',Assembly  
Properties',(#34,#313,#10059,#10060,#9685,#8063,#318));  
#10260= IFCARTESIANPOINT((1750.,152755.721229164,0.));  
#10261= IFCAXIS2PLACEMENT3D(#10260,#7,#9688);  
#10262= IFCLOCALPLACEMENT(#10257,#10261);  
#10263=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#10067));  
#10264= IFCPRODUCTDEFINITIONSHAPE(S,S,(#10263));  
#10265=  
IFCBEAM('1OeI\$H002d8p4qE3SrC3Wp',#5,'BEAM','HN400\*200\*8\*1  
3','HN400\*200\*8\*13',#10262,#10264,'P0(?)');  
#10266= IFCLOCALPLACEMENT(#30,#10);  
#10267=  
IFCELEMENTASSEMBLY('1OeI\$H002d834qE3SrC3Wp',#5,'Steel  
Assembly',S,S,#10266,S,'BE-0(?)',NOTDEFINED,,RIGID\_FRAME.);  
#10268= IFCPROPERTYSET('2Wqem9af57ceSewwTIE',#5,'Tekla  
Assembly',Assembly  
Properties',(#34,#313,#10084,#10085,#9685,#8063,#318));  
#10269= IFCARTESIANPOINT((1750.,148983.898229164,0.));  
#10270= IFCAXIS2PLACEMENT3D(#10269,#7,#9688);  
#10271= IFCLOCALPLACEMENT(#10266,#10270);  
#10272=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#10092));  
#10273= IFCPRODUCTDEFINITIONSHAPE(S,S,(#10272));  
#10274=  
IFCBEAM('1OeI\$H002d7p4qE3SrC3Wp',#5,'BEAM','HN400\*200\*8\*1  
3','HN400\*200\*8\*13',#10271,#10273,'P0(?)');  
#10275= IFCLOCALPLACEMENT(#30,#10);  
#10276=  
IFCELEMENTASSEMBLY('1OeI\$H002d6p4qE3SrC3Su',#5,'Steel  
Assembly',S,S,#10275,S,'BE-0(?)',NOTDEFINED,,RIGID\_FRAME.);  
#10277= IFCPROPERTYSET('1WKIVfuM98huHIKIZLOawZ',#5,'Tekla  
Assembly',Assembly  
Properties',(#34,#313,#9587,#9588,#9589,#8484,#318));  
#10278= IFCQUANTITYLENGTH('Width',S,S,200.000000007429);  
#10279=  
IFCELEMENTQUANTITY('32\_V\$39ezBGxV0e8nNiUdY',#5,'BaseQu  
antities',S,S,(#10278));  
#10280=  
IFCCARTESIANPOINT((6749.99464285535,166818.334932935,-  
96.1151010384513));  
#10281= IFCAXIS2PLACEMENT3D(#10280,#5001,#10114);  
#10282= IFCLOCALPLACEMENT(#10275,#10281);  
#10283=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#9599));  
#10284= IFCPRODUCTDEFINITIONSHAPE(S,S,(#10283));  
#10285=  
IFCBEAM('1OeI\$H002d734qE3SrC3Su',#5,'BEAM','HN400\*200\*8\*13'  
,#10282,#10284,'P0(?)');  
#10286= IFCQUANTITYLENGTH('Length',S,S,3493.86166553076);  
#10287=  
IFCQUANTITYAREA('OuterSurfaceArea',S,S,5.53427687791561);  
#10288=  
IFCQUANTITYVOLUME('NetVolume',S,S,0.0286217147625855);  
#10289=  
IFCQUANTITYWEIGHT('NetWeight',S,S,224.680460886296);  
#10290=  
IFCELEMENTQUANTITY('2M\_8VszFLDLxWokCoGWRBn',#5,'Base  
Quantities',S,S,(#10286,#10287,#10288,#10289));  
#10291= IFCLOCALPLACEMENT(#30,#10);  
#10292=  
IFCELEMENTASSEMBLY('1OeI\$H002d5p4qE3SrC3Su',#5,'Steel  
Assembly',S,S,#10291,S,'BE-0(?)',NOTDEFINED,,RIGID\_FRAME.);  
#10293= IFCPROPERTYSET('0KCrGXicT7Xh5rUQDXi2No',#5,'Tekla  
Assembly',Assembly  
Properties',(#34,#313,#9617,#9618,#9619,#8484,#318));  
#10294= IFCQUANTITYLENGTH('Width',S,S,200.000000015527);  
#10295=  
IFCELEMENTQUANTITY('0Ew4WLx3n33uAIZTU1PUov',#5,'BaseQu  
antities',S,S,(#10294));  
#10296=  
IFCCARTESIANPOINT((6750.23550184662,163407.515291446,20.98  
71794197568));  
#10297= IFCAXIS2PLACEMENT3D(#10296,#10131,#10132);  
#10298= IFCLOCALPLACEMENT(#10291,#10297);  
#10299=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#9630));  
#10300= IFCPRODUCTDEFINITIONSHAPE(S,S,(#10299));  
#10301=  
IFCMEMBER('1OeI\$H002d634qE3SrC3Su',#5,'BEAM','HN400\*200\*8  
\*13','HN400\*200\*8\*13',#10298,#10300,'P0(?)');  
#10302= IFCQUANTITYLENGTH('Length',S,S,4282.23539593822);  
#10303=  
IFCQUANTITYAREA('OuterSurfaceArea',S,S,6.78306086716613);  
#10304=  
IFCQUANTITYAREA('GrossSurfaceArea',S,S,6.78306086716613);  
#10305=  
IFCQUANTITYVOLUME('NetVolume',S,S,0.0350800723636271);  
#10306=  
IFCQUANTITYVOLUME('GrossVolume',S,S,0.0360221641506323);  
#10307=  
IFCQUANTITYWEIGHT('NetWeight',S,S,275.378568054472);  
#10308=  
IFCQUANTITYWEIGHT('GrossWeight',S,S,282.773988582463);  
#10309=  
IFCELEMENTQUANTITY('0a2KE1gbP9Chyzvlytkar',#5,'BaseQuanti  
ties',S,S,(#10302,#10303,#10304,#361,#10305,#10306,#10307,#10308));  
#10310= IFCLOCALPLACEMENT(#30,#10);  
#10311=  
IFCELEMENTASSEMBLY('1OeI\$H002d4p4qE3SrC3Su',#5,'Steel  
Assembly',S,S,#10310,S,'BE-0(?)',NOTDEFINED,,RIGID\_FRAME.);  
#10312= IFCPROPERTYSET('2ZRv7B0zb4juGoknAaxqC',#5,'Tekla  
Assembly',Assembly  
Properties',(#34,#313,#9651,#9652,#9619,#8484,#318));  
#10313=  
IFCCARTESIANPOINT((6749.99999822778,163397.41889102,-  
3951.37240285307));  
#10314= IFCAXIS2PLACEMENT3D(#10313,#336,#10152);  
#10315= IFCLOCALPLACEMENT(#10310,#10314);  
#10316=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#9662));  
#10317= IFCPRODUCTDEFINITIONSHAPE(S,S,(#10316));  
#10318=  
IFCMEMBER('1OeI\$H002d534qE3SrC3Su',#5,'BEAM','HN400\*200\*8  
\*13','HN400\*200\*8\*13',#10315,#10317,'P0(?)');  
#10319=  
IFCQUANTITYVOLUME('NetVolume',S,S,0.0433089155952993);  
#10320= IFCQUANTITYWEIGHT('NetWeight',S,S,339.9749874231);  
#10321=  
IFCELEMENTQUANTITY('2B3xybHX11vLZCrJ4qMo',#5,'BaseQua  
ntities',S,S,(#10158,#10159,#10160,#361,#10319,#10162,#10320,#10164  
));  
#10322= IFCLOCALPLACEMENT(#30,#10);  
#10323=  
IFCELEMENTASSEMBLY('1OeI\$H002d3p4qE3SrC3Su',#5,'Steel  
Assembly',S,S,#10322,S,'BE-0(?)',NOTDEFINED,,RIGID\_FRAME.);  
#10324=  
IFCPROPERTYSET('2fTWws9RH8mwbLnJ0LkTO8',#5,'Tekla  
Assembly',Assembly  
Properties',(#34,#313,#9683,#9684,#9685,#8484,#318));  
#10325= IFCARTESIANPOINT((6750.,163472.809,0.));  
#10326= IFCAXIS2PLACEMENT3D(#10325,#7,#9688);  
#10327= IFCLOCALPLACEMENT(#10322,#10326);  
#10328=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#9693));  
#10329= IFCPRODUCTDEFINITIONSHAPE(S,S,(#10328));  
#10330=  
IFCBEAM('1OeI\$H002d434qE3SrC3Su',#5,'BEAM','HN400\*200\*8\*13'  
,#10327,#10329,'P0(?)');  
#10331= IFCLOCALPLACEMENT(#30,#10);  
#10332=  
IFCELEMENTASSEMBLY('1OeI\$H002d2p4qE3SrC3Su',#5,'Steel  
Assembly',S,S,#10331,S,'BE-0(?)',NOTDEFINED,,RIGID\_FRAME.);  
#10333= IFCPROPERTYSET('0PcEo7H75C\_getV8Vh\$Ej',#5,'Tekla  
Assembly',Assembly  
Properties',(#34,#313,#9711,#9712,#9685,#8484,#318));  
#10334=  
IFCCARTESIANPOINT((6549.99999999991,166852.299,1.264853953  
56304E-011));  
#10335= IFCAXIS2PLACEMENT3D(#10334,#7,#9688);  
#10336= IFCLOCALPLACEMENT(#10331,#10335);  
#10337=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#9719));  
#10338= IFCPRODUCTDEFINITIONSHAPE(S,S,(#10337));  
#10339=  
IFCBEAM('1OeI\$H002d334qE3SrC3Su',#5,'BEAM','HN400\*200\*8\*13'  
,#10336,#10338,'P0(?)');  
#10340= IFCLOCALPLACEMENT(#30,#10);  
#10341=  
IFCELEMENTASSEMBLY('1OeI\$H002d1p4qE3SrC3Su',#5,'Steel  
Assembly',S,S,#10340,S,'BE-0(?)',NOTDEFINED,,RIGID\_FRAME.);  
#10342=  
IFCPROPERTYSET('1ebG6OGOD2C8UzRPdYx3P',#5,'Tekla  
Assembly',Assembly  
Properties',(#34,#313,#9736,#9737,#9685,#8484,#318));  
#10343= IFCARTESIANPOINT((6750.,170138.469,0.));  
#10344= IFCAXIS2PLACEMENT3D(#10343,#7,#9688);  
#10345= IFCLOCALPLACEMENT(#10340,#10344);  
#10346=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#9744));  
#10347= IFCPRODUCTDEFINITIONSHAPE(S,S,(#10346));

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#10348=
IFCBEAM('1OelSH002d234qE3SrC3Su',#5,'BEAM','HN400*200*8*13',
'HN400*200*8*13',#10345,#10347,'PO(?));
#10349= IFLOCALPLACEMENT(#30,#10);
#10350=
IFCELEMENTASSEMBLY('1OelSH002c J4qE3SqEJWo',#5,'Steel
Assembly',$.S,#10349,$,'BE-0(?)',NOTDEFINED,..RIGID_FRAME.);
#10351= IFCPROPERTYSET('2NC12MwnH5euqjSiGBMaq',#5,'Tekla
Assembly','Assembly
Properties',(#34,#313,#9762,#9763,#9619,#9236,#318));
#10352=
IFCCARTESIANPOINT((6750.00000000095,156502.67863029,-
4027.75275780819));
#10353= IFCAxis2PLACEMENT3D(#10352,#7,#10199);
#10354= IFLOCALPLACEMENT(#10349,#10353);
#10355=
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#9773));
#10356= IFCPRODUCTDEFINITIONSHAPE($.S,(#10355));
#10357=
IFCMEMBER('1OelSH002c Z4qE3SqEJWo',#5,'BEAM','HN400*200*
8*13','HN400*200*8*13',#10354,#10356,'PO(?));
#10358=
IFCQUANTITYVOLUME('NetVolume',$.S,$,0.0443095785369638);
#10359=
IFCQUANTITYWEIGHT('NetWeight',$.S,$,347.830191515166);
#10360=
IFCELEMENTQUANTITY('3Xpayup9FEFABAmXoWfM1G',#5,'BaseQ
uantities',$.S,(#10205,#10206,#10207,#361,#10358,#10209,#10359,#102
11));
#10361= IFLOCALPLACEMENT(#30,#10);
#10362=
IFCELEMENTASSEMBLY('1OelSH002czJ4qE3SqEJWo',#5,'Steel
Assembly',$.S,#10361,$,'BE-0(?)',NOTDEFINED,..RIGID_FRAME.);
#10363= IFCPROPERTYSET('10sEve7HD6LI3oHb5OMdbU',#5,'Tekla
Assembly','Assembly
Properties',(#34,#313,#9794,#9795,#9619,#9236,#318));
#10364=
IFCCARTESIANPOINT((6750.00000000018,152815.531538411,-
2720.4721810371));
#10365= IFCAxis2PLACEMENT3D(#10364,#7,#10217);
#10366= IFLOCALPLACEMENT(#10361,#10365);
#10367=
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#9805));
#10368= IFCPRODUCTDEFINITIONSHAPE($.S,(#10367));
#10369=
IFCMEMBER('1OelSH002czZ4qE3SqEJWo',#5,'BEAM','HN400*200*
8*13','HN400*200*8*13',#10366,#10368,'PO(?));
#10370=
IFCQUANTITYVOLUME('NetVolume',$.S,$,0.0375333045476186);
#10371=
IFCQUANTITYWEIGHT('NetWeight',$.S,$,294.636440698806);
#10372=
IFCELEMENTQUANTITY('1g3La7VLTAVxRfBmqVoinO',#5,'BaseQ
uantities',$.S,(#10223,#10224,#10225,#361,#10370,#10227,#10371,#102
29));
#10373= IFLOCALPLACEMENT(#30,#10);
#10374=
IFCELEMENTASSEMBLY('1OelSH002cyJ4qE3SqEJWm',#5,'Steel
Assembly',$.S,#10373,$,'BE-0(?)',NOTDEFINED,..RIGID_FRAME.);
#10375=
IFCPROPERTYSET('1MIakVWNn0J9sP5mR0cZG',#5,'Tekla
Assembly','Assembly
Properties',(#34,#313,#9825,#9826,#9827,#9236,#318));
#10376=
IFCCARTESIANPOINT((6749.99999999991,156427.585229164,-
3.02309288713332E-011));
#10377= IFCAxis2PLACEMENT3D(#10376,#7,#9688);
#10378= IFLOCALPLACEMENT(#10373,#10377);
#10379=
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#9834));
#10380= IFCPRODUCTDEFINITIONSHAPE($.S,(#10379));
#10381=
IFCBEAM('1OelSH002cyZ4qE3SqEJWm',#5,'BEAM','HN400*200*8*1
3','HN400*200*8*13',#10378,#10380,'PO(?));
#10382= IFLOCALPLACEMENT(#30,#10);
#10383=
IFCELEMENTASSEMBLY('1OelSH002cx34qE3SqEJSu',#5,'Steel
Assembly',$.S,#10382,$,'BE-0(?)',NOTDEFINED,..RIGID_FRAME.);
#10384=
IFCPROPERTYSET('3DvSxsFtLAsPnMAXG7nXo0',#5,'Tekla
Assembly','Assembly
Properties',(#34,#313,#9852,#9853,#9619,#9236,#318));
#10385=
IFCCARTESIANPOINT((6749.99999999968,149016.100959377,-
1277.64653050601));
#10386= IFCAxis2PLACEMENT3D(#10385,#7,#10246);
#10387= IFLOCALPLACEMENT(#10382,#10386);
#10388=
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#9863));
#10389= IFCPRODUCTDEFINITIONSHAPE($.S,(#10388));
#10390=
IFCBEAM('1OelSH002cxJ4qE3SqEJSu',#5,'BEAM','HN400*200*8*13',
'HN400*200*8*13',#10387,#10389,'PO(?));
#10391=
IFCQUANTITYVOLUME('NetVolume',$.S,$,0.0326373533517871);
#10392=
IFCQUANTITYWEIGHT('NetWeight',$.S,$,256.203223811529);
#10393=
IFCELEMENTQUANTITY('2iPY2M1H9hfcKXk7UT2CN',#5,'BaseQ
uantities',$.S,(#10252,#10253,#10391,#10392));
#10394= IFLOCALPLACEMENT(#30,#10);
#10395=
IFCELEMENTASSEMBLY('1OelSH002cw34qE3SqEJSu',#5,'Steel
Assembly',$.S,#10394,$,'BE-0(?)',NOTDEFINED,..RIGID_FRAME.);
#10396= IFCPROPERTYSET('3lb8WCvD2v8x1C40AQ1n',#5,'Tekla
Assembly','Assembly
Properties',(#34,#313,#9880,#9881,#9685,#9236,#318));
#10397= IFCCARTESIANPOINT((6750.,152755.721229164,0.));
#10398= IFCAxis2PLACEMENT3D(#10397,#7,#9688);
#10399= IFLOCALPLACEMENT(#10394,#10398);
#10400=
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#9888));
#10401= IFCPRODUCTDEFINITIONSHAPE($.S,(#10400));
#10402=
IFCBEAM('1OelSH002cwJ4qE3SqEJSu',#5,'BEAM','HN400*200*8*13',
'HN400*200*8*13',#10399,#10401,'PO(?));
#10403= IFLOCALPLACEMENT(#30,#10);
#10404=
IFCELEMENTASSEMBLY('1OelSH002cw34qE3SqEJSu',#5,'Steel
Assembly',$.S,#10403,$,'BE-0(?)',NOTDEFINED,..RIGID_FRAME.);
#10405= IFCPROPERTYSET('0DAE4QSQXCJALSq33qI4J',#5,'Tekla
Assembly','Assembly
Properties',(#34,#313,#9905,#9906,#9685,#9236,#318));
#10406= IFCCARTESIANPOINT((6750.,148983.898229164,0.));
#10407= IFCAxis2PLACEMENT3D(#10406,#7,#9688);
#10408= IFLOCALPLACEMENT(#10403,#10407);
#10409=
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#9913));
#10410= IFCPRODUCTDEFINITIONSHAPE($.S,(#10409));
#10411=
IFCBEAM('1OelSH002cwJ4qE3SqEJSu',#5,'BEAM','HN400*200*8*13',
'HN400*200*8*13',#10408,#10410,'PO(?));
#10412= IFLOCALPLACEMENT(#30,#10);
#10413=
IFCELEMENTASSEMBLY('1OelSH002cs34qE3SqEJSn',#5,'Steel
Assembly',$.S,#10412,$,'BE-0(?)',NOTDEFINED,..RIGID_FRAME.);
#10414= IFCPROPERTYSET('SINGLEVALUE'(Assembly/Cast unit
weight',$.IFCMASSMEASURE(879.1),$.S);
#10415= IFCPROPERTYSET('SINGLEVALUE'(Assembly/Cast unit bottom
elevation',$.IFCLABEL(' -5.000'),$.S);
#10416= IFCPROPERTYSET('SINGLEVALUE'(Assembly/Cast unit top
elevation',$.IFCLABEL(' +0.185'),$.S);
#10417=
IFCPROPERTYSET('3FVBpmZijA9vQYpwMVYyay',#5,'Tekla
Assembly','Assembly
Properties',(#34,#313,#10414,#10415,#10416,#3861,#318));
#10418= IFCQUANTITYLENGTH('Width',$.S,$,200.00000033015);
#10419=
IFCELEMENTQUANTITY('2Cz_1q4KD68gy9leTAWLN1',#5,'BaseQ
uantities',$.S,(#10418));
#10420=
IFCCARTESIANPOINT((1749.9999999996,59037.5583052763,-
4907.32112589822));
#10421= IFCDIRECTION((0,-
0.926788740932731,0.375583052927239));
#10422= IFCAxis2PLACEMENT3D(#10420,#7,#10421);
#10423= IFLOCALPLACEMENT(#10412,#10422);
#10424=
IFCCARTESIANPOINT((13312.6347503779,2.15997944526227E-
012,0.));
#10425= IFCAxis2PLACEMENT3D(#10424,#336,#335);
#10426= IFCEXTRUDEDAREASOLID(#333,#10425,#9,13312.6);
#10427=
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#10426));
#10428= IFCSTYLEDITEM(#10426,(#330),$.S);
#10429= IFCPRODUCTDEFINITIONSHAPE($.S,(#10427));
#10430=
IFCMEMBER('1OelSH002crp4qE3SqEJSn',#5,'BEAM','HN400*200*8*
13','HN400*200*8*13',#10423,#10429,'PO(?));
#10431= IFCPROPERTYSET('SINGLEVALUE'(Bottom
elevation',$.IFCLABEL(' -5.000'),$.S);
#10432= IFCPROPERTYSET('SINGLEVALUE'(Top
elevation',$.IFCLABEL(' +0.185'),$.S);
#10433= IFCPROPERTYSET('1XZwKltPfygJ9_n4XBAHk',#5,'Tekla
Common','Common Properties to Shared building
elements',(#10431,#10432,#71,#72,#73,#346));
#10434=
IFCPROPERTYSET('SINGLEVALUE'(Weight',$.IFCMASSMEASURE(879.
1),$.S);
#10435= IFCPROPERTYSET('SINGLEVALUE'(Net
surface
area',$.IFCAREAMEASURE(21.1),$.S);
#10436=
IFCPROPERTYSET('SINGLEVALUE'(Length',$.IFLENGTHMEASURE(1
3312.6),$.S);
#10437= IFCPROPERTYSET('1hLH_D4uvB2fXDu3NFepF',#5,'Tekla
Quantity','Quantity Properties to Shared building
elements',(#10434,#349,#78,#350,#10435,#352,#353,#10436));
#10438= IFCQUANTITYLENGTH('Length',$.S,$,13312.6347503391);
#10439=
IFCQUANTITYAREA('OuterSurfaceArea',$.S,$,21.0872134445372);
#10440=
IFCQUANTITYAREA('GrossSurfaceArea',$.S,$,21.0872134445372);
#10441=
IFCQUANTITYVOLUME('NetVolume',$.S,$,0.109057103874615);
#10442=
IFCQUANTITYVOLUME('GrossVolume',$.S,$,0.111985883519853);
#10443=
IFCQUANTITYWEIGHT('NetWeight',$.S,$,856.098265415725);
#10444=
IFCQUANTITYWEIGHT('GrossWeight',$.S,$,879.089185630843);
#10445=
IFCELEMENTQUANTITY('1dSleWtm2eOv_0VyfeeSY',#5,'BaseQua
ntities',$.S,(#10438,#10439,#10440,#361,#10441,#10442,#10443,#10444
));
#10446= IFLOCALPLACEMENT(#30,#10);
#10447=
IFCELEMENTASSEMBLY('1OelSH002cqp4qE3SqEJSn',#5,'Steel
Assembly',$.S,#10446,$,'BE-0(?)',NOTDEFINED,..RIGID_FRAME.);

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## Appendix

#10448= IFCPROPERTYSET('3HhZ5zxb3agV5XOJdPLD\_',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#10414,#10415,#10416,#6064,#318));  
#10449= IFCCARTESIANPOINT((6749.9999999996,59037.5583052763,-4907.32112589822));  
#10450= IFCAXIS2PLACEMENT3D(#10449,#7,#10421);  
#10451= IFCLOCALPLACEMENT(#10446,#10450);  
#10452= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#10426));  
#10453= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#10452));  
#10454= IFCMEMBER('1Oel\$H002cqZ4qE3SqEJSn',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#10451,#10453,'P0(?)');  
#10455= IFCLOCALPLACEMENT(#30,#10);  
#10456= IFCELEMENTASSEMBLY('1Oel\$H002cpZ4qE3SqEJSn',#5,'Steel Assembly',\$,\$,#10455,\$,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#10457= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit weight',\$,IFCMASMEASURE(975.1),\$);  
#10458= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit top elevation',\$,IFCLABEL(' +0.188')\$);  
#10459= IFCPROPERTYSET('0uZpz9rcrDfvdcJuaE2Z2',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#10457,#10415,#10458,#5319,#318));  
#10460= IFCQUANTITYLENGTH('Width',\$,\$,200.000000076452);  
#10461= IFCELEMENTQUANTITY('2DESIOcE9FWpYfv1p7PMK',#5,'BaseQuantities',\$,\$,(#10460));  
#10462= IFCCARTESIANPOINT((1750.00000000026,74860.1390850072,94.0927117646993));  
#10463= IFCDIRECTION((0,-0.940927117736361,-0.338609153905125));  
#10464= IFCAXIS2PLACEMENT3D(#10462,#7,#10463);  
#10465= IFCLOCALPLACEMENT(#10455,#10464);  
#10466= IFCCARTESIANPOINT((14766.2871437542,2.8182852083306E-012,0.));  
#10467= IFCAXIS2PLACEMENT3D(#10466,#336,#335);  
#10468= IFCEXTRUDEDAREASOLID(#333,#10467,#9,14766.3);  
#10469= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#10468));  
#10470= IFCSTYLEDITEM(#10468,(#330,\$));  
#10471= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#10469));  
#10472= IFCBEAM('1Oel\$H002cpJ4qE3SqEJSn',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#10465,#10471,'P0(?)');  
#10473= IFCPROPERTYSINGLEVALUE('Top elevation',\$,IFCLABEL(' +0.188')\$);  
#10474= IFCPROPERTYSET('2wdIntcNH6WObDdoxFuDI',#5,'Tekla Common','Common Properties to Shared building elements',(#10431,#10473,#71,#72,#73,#346));  
#10475= IFCPROPERTYSINGLEVALUE('Weight',\$,IFCMASMEASURE(975.1),\$);  
#10476= IFCPROPERTYSINGLEVALUE('Net surface area',\$,IFCAREAMEASURE(23.4),\$);  
#10477= IFCPROPERTYSINGLEVALUE('Length',\$,IFCLENGTHMEASURE(14766.3),\$);  
#10478= IFCPROPERTYSET('3ufvP4RDPBWRq7bKxvLqkU',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#10475,#349,#78,#350,#10476,#352,#353,#10477));  
#10479= IFCQUANTITYLENGTH('Length',\$,\$,14766.2871438445);  
#10480= IFCQUANTITYAREA('OuterSurfaceArea',\$,\$,23.3897988358497);  
#10481= IFCQUANTITYVOLUME('NetVolume',\$,\$,0.120965424282167);  
#10482= IFCQUANTITYWEIGHT('NetWeight',\$,\$,949.578580615007);  
#10483= IFCELEMENTQUANTITY('3Ygo62t1b1QRR8lqR1dMH1',#5,'BaseQuantities',\$,\$,(#10479,#10480,#10481,#10482));  
#10484= IFCLOCALPLACEMENT(#30,#10);  
#10485= IFCELEMENTASSEMBLY('1Oel\$H002coJ4qE3SqEJSn',#5,'Steel Assembly',\$,\$,#10484,\$,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#10486= IFCPROPERTYSET('3wyneaxvE696ut4IPLkt3',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#10457,#10415,#10458,#6765,#318));  
#10487= IFCCARTESIANPOINT((6750.00000000026,74860.1390850072,94.0927117646993));  
#10488= IFCAXIS2PLACEMENT3D(#10487,#7,#10463);  
#10489= IFCLOCALPLACEMENT(#10484,#10488);  
#10490= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#10468));  
#10491= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#10490));  
#10492= IFCBEAM('1Oel\$H002co34qE3SqEJSn',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#10489,#10491,'P0(?)');  
#10493= IFCLOCALPLACEMENT(#30,#10);  
#10494= IFCELEMENTASSEMBLY('1Oel\$H002ceJ4qE3SqEJGv',#5,'Steel Assembly',\$,\$,#10493,\$,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#10495= IFCPROPERTYSET('0A\_OetXTTBswGRZ9pVZQXN',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#10414,#10415,#10416,#7129,#318));  
#10496= IFCQUANTITYLENGTH('Width',\$,\$,200.000000147054);  
#10497= IFCELEMENTQUANTITY('0BE8nfAQzCEPBMzErYHHEK',#5,'BaseQuantities',\$,\$,(#10496));

#10498= IFCCARTESIANPOINT((1749.9999999996,160962.441694724,-4907.32112589822));  
#10499= IFCDIRECTION((0,0.926788740932731,0.375583052972739));  
#10500= IFCAXIS2PLACEMENT3D(#10498,#7,#10499);  
#10501= IFCLOCALPLACEMENT(#10493,#10500);  
#10502= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#10426));  
#10503= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#10502));  
#10504= IFCMEMBER('1Oel\$H002ce34qE3SqEJGv',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#10501,#10503,'P0(?)');  
#10505= IFCQUANTITYLENGTH('Length',\$,\$,13312.634750429);  
#10506= IFCQUANTITYAREA('OuterSurfaceArea',\$,\$,21.0872134446796);  
#10507= IFCQUANTITYAREA('GrossSurfaceArea',\$,\$,21.0872134446796);  
#10508= IFCQUANTITYVOLUME('NetVolume',\$,\$,0.109057103875921);  
#10509= IFCQUANTITYVOLUME('GrossVolume',\$,\$,0.111985883520609);  
#10510= IFCQUANTITYWEIGHT('NetWeight',\$,\$,856.098265425978);  
#10511= IFCQUANTITYWEIGHT('GrossWeight',\$,\$,879.08918563678);  
#10512= IFCELEMENTQUANTITY('0PT2iDyOf4kPPH42mLEKbk',#5,'BaseQuantities',\$,\$,(#10505,#10506,#10507,#361,#10508,#10509,#10510,#10511));  
#10513= IFCLOCALPLACEMENT(#30,#10);  
#10514= IFCELEMENTASSEMBLY('1Oel\$H002ce34qE3SqEJGv',#5,'Steel Assembly',\$,\$,#10513,\$,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#10515= IFCPROPERTYSET('31819msL99ZODZKEdgBSC',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#10414,#10415,#10416,#8484,#318));  
#10516= IFCCARTESIANPOINT((6749.9999999996,160962.441694724,-4907.32112589822));  
#10517= IFCAXIS2PLACEMENT3D(#10516,#7,#10499);  
#10518= IFCLOCALPLACEMENT(#10513,#10517);  
#10519= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#10426));  
#10520= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#10519));  
#10521= IFCMEMBER('1Oel\$H002ce34qE3SqEJGv',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#10518,#10520,'P0(?)');  
#10522= IFCQUANTITYVOLUME('NetVolume',\$,\$,0.109057103875939);  
#10523= IFCQUANTITYWEIGHT('NetWeight',\$,\$,856.09826542612);  
#10524= IFCELEMENTQUANTITY('3hn3ro6dX3mRaCEpMlt2mX',#5,'BaseQuantities',\$,\$,(#10505,#10506,#10507,#361,#10522,#10509,#10523,#10511));  
#10525= IFCLOCALPLACEMENT(#30,#10);  
#10526= IFCELEMENTASSEMBLY('1Oel\$H002cap4qE3SqEJGv',#5,'Steel Assembly',\$,\$,#10525,\$,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#10527= IFCPROPERTYSET('3aqC513DD4Chw9PpxLjir',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#10457,#10415,#10458,#8063,#318));  
#10528= IFCQUANTITYLENGTH('Width',\$,\$,200.000000076448);  
#10529= IFCELEMENTQUANTITY('1H3PI67zTErOBaOdOtVJzG',#5,'BaseQuantities',\$,\$,(#10528));  
#10530= IFCCARTESIANPOINT((1750.00000000026,145139.860914993,94.0927117646993));  
#10531= IFCDIRECTION((0,-0.940927117736361,-0.338609153905125));  
#10532= IFCAXIS2PLACEMENT3D(#10530,#7,#10531);  
#10533= IFCLOCALPLACEMENT(#10525,#10532);  
#10534= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#10468));  
#10535= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#10534));  
#10536= IFCBEAM('1Oel\$H002caZ4qE3SqEJGv',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#10533,#10535,'P0(?)');  
#10537= IFCQUANTITYLENGTH('Length',\$,\$,14766.2871438445);  
#10538= IFCQUANTITYAREA('OuterSurfaceArea',\$,\$,23.3897988358497);  
#10539= IFCQUANTITYVOLUME('NetVolume',\$,\$,0.120965424282188);  
#10540= IFCQUANTITYWEIGHT('NetWeight',\$,\$,949.578580615172);  
#10541= IFCELEMENTQUANTITY('28RYWLiGrDhfeGRxcmqM9',#5,'BaseQuantities',\$,\$,(#10537,#10538,#10539,#10540));  
#10542= IFCLOCALPLACEMENT(#30,#10);  
#10543= IFCELEMENTASSEMBLY('1Oel\$H002cXZ4qE3SqEJGv',#5,'Steel Assembly',\$,\$,#10542,\$,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#10544= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit bottom elevation',\$,IFCLABEL(' -0.188')\$);  
#10545= IFCPROPERTYSET('0LEgWqzqT92w8yh5FdfFY',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#10457,#10544,#9685,#9236,#318));  
#10546= IFCCARTESIANPOINT((6750.00000000026,145072.139084158,-94.0927117633982));  
#10547= IFCAXIS2PLACEMENT3D(#10546,#7,#10531);  
#10548= IFCLOCALPLACEMENT(#10542,#10547);  
#10549= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#10468));

#10550= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#10549));  
#10551=  
IFCBEAM('1Oel\$H002cXp4qE3SqEJ8o',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#10548,#10550,'P0(?)');  
#10552= IFCPROPERTY SINGLEVALUE('Bottom elevation',\$,IFCLABEL(' -5.188'),\$);  
#10553= IFCPROPERTYSET('3y\$oSruoEL6uxIdaQGMELia',#5,'Tekla Common','Common Properties to Shared building elements',(#10552,#9699,#71,#72,#73,#346));  
#10554=  
IFCQUANTITYVOLUME('NetVolume',\$,\$,0.120965424282146);  
#10555=  
IFCQUANTITYWEIGHT('NetWeight',\$,\$,949.578580614847);  
#10556=  
IFCELEMENTQUANTITY('1OsGCsF25B9QtlCp4iXHX',#5,'BaseQuantities',\$,\$,(#10537,#10538,#10554,#10555));  
#10557= IFCLOCALPLACEMENT(#30,#10);  
#10558=  
IFCELEMENTASSEMBLY('1Oel\$H002c5J4qE3SqEJ8o',#5,'Steel Assembly',\$,\$,#10557,\$,'BE-0(?)',NOTDEFINED...RIGID\_FRAME.);  
#10559= IFCPROPERTY SINGLEVALUE('Assembly/Cast unit weight',\$,IFCMASSEASURE(3302.6),\$);  
#10560= IFCPROPERTY SINGLEVALUE('Assembly/Cast unit bottom elevation',\$,IFCLABEL(' +3.342'),\$);  
#10561= IFCPROPERTY SINGLEVALUE('Assembly/Cast unit top elevation',\$,IFCLABEL(' +4.700'),\$);  
#10562= IFCPROPERTYSET('0keqP2qkj9hQvyfHMuTZY6',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#10559,#10560,#10561,#8063,#318));  
#10563= IFCQUANTITYLENGTH('Width',\$,\$,200.000000035596);  
#10564=  
IFCELEMENTQUANTITY('333nT1iYzDfPGU4ILN1dSt',#5,'BaseQuantities',\$,\$,(#10563));  
#10565=  
IFCCARTESIANPOINT((1750.,160002.315379115,3441.97319150434));  
#10566= IFCDIRECTION((0.,-0.999731915046368,0.0231537910010739));  
#10567= IFCAXIS2PLACEMENT3D(#10565,#7,#10566);  
#10568= IFCLOCALPLACEMENT(#10557,#10567);  
#10569=  
IFCCARTESIANPOINT((50013.4078420394,1.73518865394377E-013,0.));  
#10570= IFCAXIS2PLACEMENT3D(#10569,#336,#335);  
#10571= IFCXTRUDEDAREASOLID(#333,#10570,#9,50013.4);  
#10572=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#10571));  
#10573= IFCSTYLEDITEM(#10571,(#330),\$);  
#10574= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#10572));  
#10575=  
IFCBEAM('1Oel\$H002c534qE3SqEJ8o',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#10568,#10574,'P0(?)');  
#10576= IFCPROPERTY SINGLEVALUE('Bottom elevation',\$,IFCLABEL(' +3.342'),\$);  
#10577= IFCPROPERTY SINGLEVALUE('Top elevation',\$,IFCLABEL(' +4.700'),\$);  
#10578= IFCPROPERTYSET('2Nqt4ttl9B9x6ZKohes7MS',#5,'Tekla Common','Common Properties to Shared building elements',(#10576,#10577,#71,#72,#73,#346));  
#10579=  
IFCPROPERTY SINGLEVALUE('Weight',\$,IFCMASSEASURE(3302.6),\$);  
#10580=  
IFCPROPERTY SINGLEVALUE('Volume',\$,IFCVOLUMEMEASURE(0.4),\$);  
#10581= IFCPROPERTY SINGLEVALUE('Net surface area',\$,IFCAREAMEASURE(79.2),\$);  
#10582=  
IFCPROPERTY SINGLEVALUE('Length',\$,IFCLENGTHMEASURE(50013.4),\$);  
#10583= IFCPROPERTYSET('0xllooFs1FifFIVXzGrioJ',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#10579,#10580,#78,#350,#10581,#352,#353,#10582));  
#10584= IFCQUANTITYLENGTH('Length',\$,\$,50013.4078418464);  
#10585=  
IFCQUANTITYAREA('OuterSurfaceArea',\$,\$,79.2212380014848);  
#10586=  
IFCQUANTITYVOLUME('NetVolume',\$,\$,0.409709837040494);  
#10587=  
IFCQUANTITYWEIGHT('NetWeight',\$,\$,3216.22222076788);  
#10588=  
IFCELEMENTQUANTITY('2YZv\_wZQ9BNx8XLGuhZiS',#5,'BaseQuantities',\$,\$,(#10584,#10585,#10586,#10587));  
#10589= IFCLOCALPLACEMENT(#30,#10);  
#10590=  
IFCELEMENTASSEMBLY('1Oel\$H002c434qE3SqEJ8o',#5,'Steel Assembly',\$,\$,#10589,\$,'BE-0(?)',NOTDEFINED...RIGID\_FRAME.);  
#10591= IFCPROPERTY SINGLEVALUE('Assembly/Cast unit weight',\$,IFCMASSEASURE(3983.2),\$);  
#10592= IFCPROPERTY SINGLEVALUE('Assembly/Cast unit bottom elevation',\$,IFCLABEL(' +1.946'),\$);  
#10593= IFCPROPERTY SINGLEVALUE('Assembly/Cast unit top elevation',\$,IFCLABEL(' +3.544'),\$);  
#10594= IFCPROPERTYSET('01TpdkPqr2jBQTEFgMVRTI',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#10591,#10592,#10593,#7129,#318));  
#10595= IFCQUANTITYLENGTH('Width',\$,\$,200.000000275162);  
#10596=  
IFCELEMENTQUANTITY('1yDnM1ZAHCTBoYsp4b4yZ',#5,'BaseQuantities',\$,\$,(#10595));  
#10597=  
IFCCARTESIANPOINT((1750.,220306.31763148,2045.97313931407));  
#10598= IFCDIRECTION((0.,-0.999731393136614,0.0231763150031671));  
#10599= IFCAXIS2PLACEMENT3D(#10597,#7,#10598);

#10600= IFCLOCALPLACEMENT(#10589,#10599);  
#10601= IFCARTESIANPOINT((60320.2024200952,0.,0.));  
#10602= IFCAXIS2PLACEMENT3D(#10601,#336,#335);  
#10603= IFCXTRUDEDAREASOLID(#333,#10602,#9,60320.2);  
#10604=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#10603));  
#10605= IFCSTYLEDITEM(#10603,(#330),\$);  
#10606= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#10604));  
#10607=  
IFCBEAM('1Oel\$H002c3p4qE3SqEJ8o',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#10600,#10606,'P0(?)');  
#10608= IFCPROPERTY SINGLEVALUE('Bottom elevation',\$,IFCLABEL(' +1.946'),\$);  
#10609= IFCPROPERTY SINGLEVALUE('Top elevation',\$,IFCLABEL(' +3.544'),\$);  
#10610=  
IFCPROPERTYSET('212agxhAH1KhX553C53WDM',#5,'Tekla Common','Common Properties to Shared building elements',(#10608,#10609,#71,#72,#73,#346));  
#10611=  
IFCPROPERTY SINGLEVALUE('Weight',\$,IFCMASSEASURE(3983.2),\$);  
#10612= IFCPROPERTY SINGLEVALUE('Net surface area',\$,IFCAREAMEASURE(95.6),\$);  
#10613=  
IFCPROPERTY SINGLEVALUE('Length',\$,IFCLENGTHMEASURE(60320.2),\$);  
#10614= IFCPROPERTYSET('2h28kNvjf4r36iVJgLLSv',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#10611,#10580,#78,#350,#10612,#352,#353,#10613));  
#10615= IFCQUANTITYLENGTH('Length',\$,\$,60320.2024193052);  
#10616=  
IFCQUANTITYAREA('OuterSurfaceArea',\$,\$,95.5472006321794);  
#10617=  
IFCQUANTITYVOLUME('NetVolume',\$,\$,0.494143098219027);  
#10618=  
IFCQUANTITYWEIGHT('NetWeight',\$,\$,3879.02332101936);  
#10619=  
IFCELEMENTQUANTITY('2Gz\_n6ffDwbTkV3FKrGij',#5,'BaseQuantities',\$,\$,(#10615,#10616,#10617,#10618));  
#10620= IFCLOCALPLACEMENT(#30,#10);  
#10621=  
IFCELEMENTASSEMBLY('1Oel\$H002c2p4qE3SqEJ8o',#5,'Steel Assembly',\$,\$,#10620,\$,'BE-0(?)',NOTDEFINED...RIGID\_FRAME.);  
#10622= IFCPROPERTYSET('0rsLC8SOj6PA17sAT\_iBSR',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#10559,#10560,#10561,#9236,#318));  
#10623= IFCQUANTITYLENGTH('Width',\$,\$,200.000000035763);  
#10624=  
IFCELEMENTQUANTITY('3GPImvPn10bAhF1gHM7yu',#5,'BaseQuantities',\$,\$,(#10623));  
#10625=  
IFCCARTESIANPOINT((6749.99996145437,160002.308659717,3441.97334843979));  
#10626= IFCAXIS2PLACEMENT3D(#10625,#7,#10566);  
#10627= IFCLOCALPLACEMENT(#10620,#10626);  
#10628= IFCARTESIANPOINT((50013.4011209455,0.,-9.09494706166995E-013));  
#10629= IFCAXIS2PLACEMENT3D(#10628,#336,#335);  
#10630= IFCXTRUDEDAREASOLID(#333,#10629,#9,50013.4);  
#10631=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#10630));  
#10632= IFCSTYLEDITEM(#10630,(#330),\$);  
#10633= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#10631));  
#10634=  
IFCBEAM('1Oel\$H002c2Z4qE3SqEJ8o',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#10627,#10633,'P0(?)');  
#10635= IFCQUANTITYLENGTH('Length',\$,\$,50013.4011207527);  
#10636=  
IFCQUANTITYAREA('OuterSurfaceArea',\$,\$,79.2212273752723);  
#10637=  
IFCQUANTITYVOLUME('NetVolume',\$,\$,0.409709781981285);  
#10638=  
IFCQUANTITYWEIGHT('NetWeight',\$,\$,3216.22178855309);  
#10639=  
IFCELEMENTQUANTITY('2t7dh4VKj2B8jS1gKXAbQ',#5,'BaseQuantities',\$,\$,(#10635,#10636,#10637,#10638));  
#10640= IFCLOCALPLACEMENT(#30,#10);  
#10641=  
IFCELEMENTASSEMBLY('1Oel\$H002c1Z4qE3SqEJ8o',#5,'Steel Assembly',\$,\$,#10640,\$,'BE-0(?)',NOTDEFINED...RIGID\_FRAME.);  
#10642= IFCPROPERTY SINGLEVALUE('Assembly/Cast unit top elevation',\$,IFCLABEL(' +3.542'),\$);  
#10643= IFCPROPERTYSET('2qTmhm\$4L9DxsWE1fkUfAv',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#10591,#10592,#10642,#8484,#318));  
#10644= IFCQUANTITYLENGTH('Width',\$,\$,200.000000184027);  
#10645=  
IFCELEMENTQUANTITY('1SfYz\_SWHFCr7C54ge7N7u',#5,'BaseQuantities',\$,\$,(#10644));  
#10646=  
IFCCARTESIANPOINT((6750.0000000003,220306.31432529,2045.9732159054));  
#10647= IFCDIRECTION((0.,-0.999732159050875,0.0231432530011777));  
#10648= IFCAXIS2PLACEMENT3D(#10646,#7,#10647);  
#10649= IFCLOCALPLACEMENT(#10640,#10648);  
#10650= IFCARTESIANPOINT((60319.9561541535,0.,0.));  
#10651= IFCAXIS2PLACEMENT3D(#10650,#336,#335);  
#10652= IFCXTRUDEDAREASOLID(#333,#10651,#9,60320.);  
#10653=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#10652));  
#10654= IFCSTYLEDITEM(#10652,(#330),\$);  
#10655= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#10653));

## Appendix

#10656=  
IFCBEAM('1OeISH002c1J4qE3SqEJ8o',#5,'BEAM','HN400\*200\*8\*13',  
'HN400\*200\*8\*13',#10649,#10655,'P0(?)');  
#10657= IFCPROPERTYSET('3IR\_eHx119GwjnFqSZ0Kyd',#5,'Tekla  
Common',Common Properties to Shared building  
elements',(#10608,#10657,#71,#72,#73,#346));  
#10659=  
IFCPROPERTYSET('Length',S,IFLENGTHMEASURE(6  
0320.)),S);  
#10660= IFCPROPERTYSET('3ITQWg0s5Bjwk\_DMIS8dFE',#5,'Tekla  
Quantity',Quantity Properties to Shared building  
elements',(#10611,#10580,#78,#350,#10612,#352,#353,#10659));  
#10661= IFCQUANTITYLENGTH('Length',S,S,60319.9561540414);  
#10662=  
IFCQUANTITYAREA('OuterSurfaceArea',S,S,95.5468105480015);  
#10663=  
IFCQUANTITYVOLUME('NetVolume',S,S,0.494141080813842);  
#10664=  
IFCQUANTITYWEIGHT('NetWeight',S,S,3879.00748438866);  
#10665=  
IFCELEMENTQUANTITY('0vOzSTFD3CRnqPgwDyzc',#5,'BaseQ  
uantities',S,S,(#10661,#10662,#10663,#10664));  
#10666= IFCLOCALPLACEMENT(#30,#10);  
#10667=  
IFCELEMENTASSEMBLY('1OeISH002c034qE3SqEJ4u',#5,'Steel  
Assembly',S,S,#10666,S,'BE-0(?)',NOTDEFINED,..RIGID\_FRAME.);  
#10668= IFCPROPERTYSET('03tXpLh7C8ap7GtOJzX8',#5,'Tekla  
Assembly',Assembly  
Properties',(#34,#313,#10559,#10560,#10561,#5319,#318));  
#10669= IFCQUANTITYLENGTH('Width',S,S,200.00000035597);  
#10670=  
IFCELEMENTQUANTITY('0g3JomVyL3ugoxgayQ9A8A',#5,'BaseQu  
antities',S,S,(#10669));  
#10671=  
IFCCARTESIANPOINT((1750.,59997.6846208849,3441.97319150434)  
);  
#10672=  
IFCDIRECTION((0.,0.999731915046368,0.0231537910010739));  
#10673= IFCAxis2PLACEMENT3D(#10671,#7,#10672);  
#10674= IFCLOCALPLACEMENT(#10666,#10673);  
#10675=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#10571));  
#10676= IFCPRODUCTDEFINITIONSHAPE(S,S,(#10675));  
#10677=  
IFCBEAM('1OeISH002c034qE3SqEJ4u',#5,'BEAM','HN400\*200\*8\*13',  
'HN400\*200\*8\*13',#10674,#10676,'P0(?)');  
#10678= IFCQUANTITYLENGTH('Length',S,S,50013.4078427189);  
#10679=  
IFCQUANTITYAREA('OuterSurfaceArea',S,S,79.2212380228667);  
#10680=  
IFCQUANTITYVOLUME('NetVolume',S,S,0.409709837047636);  
#10681=  
IFCQUANTITYWEIGHT('NetWeight',S,S,3216.22222082394);  
#10682=  
IFCELEMENTQUANTITY('1jGDw2o99ZeAS7JMkMgP2',#5,'BaseQu  
antities',S,S,(#10678,#10679,#10680,#10681));  
#10683= IFCLOCALPLACEMENT(#30,#10);  
#10684=  
IFCELEMENTASSEMBLY('1OeISH002b534qE3SqEJ4t',#5,'Steel  
Assembly',S,S,#10683,S,'BE-0(?)',NOTDEFINED,..RIGID\_FRAME.);  
#10685=  
IFCPROPERTYSET('1aOY2SKz131P4YSS2GG2OA',#5,'Tekla  
Assembly',Assembly  
Properties',(#34,#313,#10591,#10592,#10593,#3861,#318));  
#10686= IFCQUANTITYLENGTH('Width',S,S,200.000000000091);  
#10687=  
IFCELEMENTQUANTITY('1XGcShgrBMvjN8KRuWgC',#5,'BaseQ  
uantities',S,S,(#10686));  
#10688= IFCARTESIANPOINT((1750.,  
306.317631479917,2045.97313931407));  
#10689=  
IFCDIRECTION((0.,0.999731393136614,0.023176315003167));  
#10690= IFCAxis2PLACEMENT3D(#10688,#7,#10689);  
#10691= IFCLOCALPLACEMENT(#10683,#10690);  
#10692=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#10603));  
#10693= IFCPRODUCTDEFINITIONSHAPE(S,S,(#10692));  
#10694=  
IFCBEAM('1OeISH002b534qE3SqEJ4t',#5,'BEAM','HN400\*200\*8\*13',  
'HN400\*200\*8\*13',#10691,#10693,'P0(?)');  
#10695= IFCQUANTITYLENGTH('Length',S,S,60320.2024200935);  
#10696=  
IFCQUANTITYAREA('OuterSurfaceArea',S,S,95.5472006334281);  
#10697=  
IFCQUANTITYVOLUME('NetVolume',S,S,0.494143098225448);  
#10698=  
IFCQUANTITYWEIGHT('NetWeight',S,S,3879.02332106976);  
#10699=  
IFCELEMENTQUANTITY('3LSM0RhdLFrRX5c3QFjcMA',#5,'BaseQ  
uantities',S,S,(#10695,#10696,#10697,#10698));  
#10700= IFCLOCALPLACEMENT(#30,#10);  
#10701=  
IFCELEMENTASSEMBLY('1OeISH002b534qE3SqEJ0r',#5,'Steel  
Assembly',S,S,#10700,S,'BE-0(?)',NOTDEFINED,..RIGID\_FRAME.);  
#10702= IFCPROPERTYSET('2CexqEX2P6k81EesBJRuL',#5,'Tekla  
Assembly',Assembly  
Properties',(#34,#313,#10559,#10560,#10561,#6765,#318));  
#10703= IFCQUANTITYLENGTH('Width',S,S,200.00000035762);  
#10704=  
IFCELEMENTQUANTITY('0N\_dh\_nLEiAe9vSz0raa',#5,'BaseQuant  
ities',S,S,(#10703));

#10705=  
IFCCARTESIANPOINT((6749.99996145437,59997.6913402827,3441.  
97334843979));  
#10706= IFCAxis2PLACEMENT3D(#10705,#7,#10672);  
#10707= IFCLOCALPLACEMENT(#10700,#10706);  
#10708=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#10630));  
#10709= IFCPRODUCTDEFINITIONSHAPE(S,S,(#10708));  
#10710=  
IFCBEAM('1OeISH002bz4qE3SqEJ0r',#5,'BEAM','HN400\*200\*8\*13',  
'HN400\*200\*8\*13',#10707,#10709,'P0(?)');  
#10711= IFCQUANTITYLENGTH('Length',S,S,50013.4011213618);  
#10712=  
IFCQUANTITYAREA('OuterSurfaceArea',S,S,79.2212273762371);  
#10713=  
IFCQUANTITYVOLUME('NetVolume',S,S,0.409709781986281);  
#10714= IFCQUANTITYWEIGHT('NetWeight',S,S,3216.2217885923);  
#10715=  
IFCELEMENTQUANTITY('36tVE0eCrAv8OqTqa7Bkgr',#5,'BaseQua  
ntities',S,S,(#10711,#10712,#10713,#10714));  
#10716= IFCLOCALPLACEMENT(#30,#10);  
#10717=  
IFCELEMENTASSEMBLY('1OeISH002Yj34qE3SoDJam',#5,'Steel  
Assembly',S,S,#10716,S,'BE-0(?)',NOTDEFINED,..RIGID\_FRAME.);  
#10718= IFCPROPERTYSET('Assembly/Cast unit  
weight',S,IFCMASSEASUREMENT(125.5),S);  
#10719= IFCPROPERTYSET('Assembly/Cast unit top  
elevation',S,IFCLABEL(' +1.996'),S);  
#10720= IFCPROPERTYSET('Assembly/Cast unit position  
code',S,IFCLABEL('5/E'),S);  
#10721= IFCPROPERTYSET('3eN9kTnNDFd889Nwt8vx8S',#5,'Tekla  
Assembly',Assembly  
Properties',(#34,#313,#10718,#1631,#10719,#10720,#318));  
#10722= IFCCARTESIANPOINT((6750.,219900.,96.));  
#10723= IFCAxis2PLACEMENT3D(#10722,#9,#7);  
#10724= IFCLOCALPLACEMENT(#10716,#10723);  
#10725= IFCCARTESIANPOINT((0.,0.,1900.));  
#10726= IFCAxis2PLACEMENT3D(#10725,#9688,#335);  
#10727= IFCEXTRUDEDAREASOLID(#333,#10726,#9,1900.);  
#10728=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#10727));  
#10729= IFCSTYLEDITEM(#10727,(#330),S);  
#10730= IFCPRODUCTDEFINITIONSHAPE(S,S,(#10728));  
#10731=  
IFCCOLUMN('1OeISH002Ykp4qE3SoDJam',#5,'BEAM','HN400\*200\*  
8\*13','HN400\*200\*8\*13',#10724,#10730,'P0(?)');  
#10732=  
IFCCOLUMNTYPE('06Ze5sd10nwEn\_EEYZ5AP',#5,'HN400\*200\*8\*  
13',S,S,S,S,S,NOTDEFINED.);  
#10733= IFCPROPERTYSET('Top  
elevation',S,IFCLABEL(' +1.996'),S);  
#10734= IFCPROPERTYSET('3wd\_SzVcDFBug\_nNSfKB8Y',#5,'Tekla  
Common',Common Properties to Shared building  
elements',(#1646,#10733,#71,#72,#73,#346));  
#10735=  
IFCPROPERTYSET('Weight',S,IFCMASSEASUREMENT(125.  
5),S);  
#10736= IFCPROPERTYSET('Net surface  
area',S,IFCAREAMEASURE(3.,S));  
#10737=  
IFCPROPERTYSET('Length',S,IFLENGTHMEASURE(1  
900.)),S);  
#10738= IFCPROPERTYSET('2DmckF6aEzIq0GpKh1MQ',#5,'Tekla  
Quantity',Quantity Properties to Shared building  
elements',(#10735,#1108,#78,#350,#10736,#352,#353,#10737));  
#10739=  
IFCPROPERTYSET('2wGFvpPj3fzqoggtiXehP',#5,'Pset\_ColumnCom  
mon',Common Properties to column elements',(#85,#356));  
#10740= IFCQUANTITYLENGTH('Length',S,S,1900.);  
#10741= IFCQUANTITYAREA('OuterSurfaceArea',S,S,3.0096);  
#10742= IFCQUANTITYVOLUME('NetVolume',S,S,0.0155648);  
#10743= IFCQUANTITYWEIGHT('NetWeight',S,S,122.18368);  
#10744=  
IFCELEMENTQUANTITY('0T2BgB\_S91Uuetds0Qlj6S',#5,'BaseQuant  
ities',S,S,(#10740,#10741,#10742,#10743));  
#10745= IFCLOCALPLACEMENT(#30,#10);  
#10746=  
IFCELEMENTASSEMBLY('1OeISH002Yjp4qE3SoDJam',#5,'Steel  
Assembly',S,S,#10745,S,'BE-0(?)',NOTDEFINED,..RIGID\_FRAME.);  
#10747= IFCPROPERTYSET('Assembly/Cast unit  
weight',S,IFCMASSEASUREMENT(125.7),S);  
#10748= IFCPROPERTYSET('Assembly/Cast unit top  
elevation',S,IFCLABEL(' +2.000'),S);  
#10749= IFCPROPERTYSET('Assembly/Cast unit position  
code',S,IFCLABEL('3/E'),S);  
#10750= IFCPROPERTYSET('0DSE1eCjzEswgaolB8Hfgn',#5,'Tekla  
Assembly',Assembly  
Properties',(#34,#313,#10747,#1631,#10748,#10749,#318));  
#10751= IFCCARTESIANPOINT((1750.,219900.,96.));  
#10752= IFCAxis2PLACEMENT3D(#10751,#9,#7);  
#10753= IFCLOCALPLACEMENT(#10745,#10752);  
#10754= IFCCARTESIANPOINT((0.,0.,1904.));  
#10755= IFCAxis2PLACEMENT3D(#10754,#9688,#335);  
#10756= IFCEXTRUDEDAREASOLID(#333,#10755,#9,1904.);  
#10757=  
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#10756));  
#10758= IFCSTYLEDITEM(#10756,(#330),S);  
#10759= IFCPRODUCTDEFINITIONSHAPE(S,S,(#10757));  
#10760=  
IFCCOLUMN('1OeISH002Yjz4qE3SoDJam',#5,'BEAM','HN400\*200\*  
8\*13','HN400\*200\*8\*13',#10753,#10759,'P0(?)');  
#10761= IFCPROPERTYSET('Top  
elevation',S,IFCLABEL(' +2.000'),S);

#10762= IFCPROPERTYSET('3PLQVMveLAQfwlulcj8L\_Q',#5,'Tekla Common','Common Properties to Shared building elements',(#1646,#10761,#71,#72,#73,#346));  
#10763= IFCPROPERTYSINGLEVALUE('Weight',S,IFCMASMEASURE(125.7),S);  
#10764= IFCPROPERTYSINGLEVALUE('Length',S,IFCLENGTHMEASURE(1904.),S);  
#10765= IFCPROPERTYSET('0wgbLn57z0AuweEenbZAw',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#10763,#1108,#78,#350,#10736,#352,#353,#10764));  
#10766= IFCQUANTITYLENGTH('Length',S,S,1904.);  
#10767= IFCQUANTITYAREA('OuterSurfaceArea',S,S,3.015936);  
#10768= IFCQUANTITYVOLUME('NetVolume',S,S,0.015597568);  
#10769= IFCQUANTITYWEIGHT('NetWeight',S,S,122.4409088);  
#10770= IFCELEMENTQUANTITY('01hl80ff19hQ9Bt3Y07G6y',#5,'BaseQuantities',S,S,(#10766,#10767,#10768,#10769));  
#10771= IFCLOCALPLACEMENT(#30,#10);  
#10772= IFCELEMENTASSEMBLY('1OelSH002Yj4qE3SoDJWt',#5,'Steel Assembly',S,S,#10771,S,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#10773= IFCPROPERTYSET('2NAENyHOOn7bflly4YsuHJFK',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#10591,#10592,#10642,#6064,#318));  
#10774= IFCQUANTITYLENGTH('Width',S,S,200.000000001048);  
#10775= IFCELEMENTQUANTITY('1so\_ZAW4rFFAYqeJP\_6OJM',#5,'BaseQuantities',S,S,(#10774));  
#10776= IFCARTESIANPOINT((6749.999999999999,-306.314325289991,2045.9732159054));  
#10777= IFCDIRECTION((0.,0.999732159050875,0.0231432530011777));  
#10778= IFCAXIS2PLACEMENT3D(#10776,#7,#10777);  
#10779= IFCLOCALPLACEMENT(#10771,#10778);  
#10780= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#10652));  
#10781= IFCPRODUCTDEFINITIONSHAPE(S,S,(#10780));  
#10782= IFCBEAM('1OelSH002YiZ4qE3SoDJWt',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#10779,#10781,'PO(?)');  
#10783= IFCQUANTITYLENGTH('Length',S,S,60319.9561541545);  
#10784= IFCQUANTITYAREA('OuterSurfaceArea',S,S,95.5468105481807);  
#10785= IFCQUANTITYVOLUME('NetVolume',S,S,0.494141080814816);  
#10786= IFCQUANTITYWEIGHT('NetWeight',S,S,3879.00748439631);  
#10787= IFCELEMENTQUANTITY('2ANLhjq7H6ce\_pUKVHJ3Q',#5,'BaseQuantities',S,S,(#10783,#10784,#10785,#10786));  
#10788= IFCLOCALPLACEMENT(#30,#10);  
#10789= IFCELEMENTASSEMBLY('1OelSH002LrJ4qE3SoDJKt',#5,'Steel Assembly',S,S,#10788,S,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#10790= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit position code',S,IFCLABEL('4-5/A'),S);  
#10791= IFCPROPERTYSET('3Xng4BxQqOHB548dszEIB',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#1560,#1561,#1562,#10790,#318));  
#10792= IFCARTESIANPOINT((6750.,100.,1846.));  
#10793= IFCAXIS2PLACEMENT3D(#10792,#1568,#1569);  
#10794= IFCLOCALPLACEMENT(#10788,#10793);  
#10795= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#1574));  
#10796= IFCPRODUCTDEFINITIONSHAPE(S,S,(#10795));  
#10797= IFCMEMBER('1OelSH002LrZ4qE3SoDJKt',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#10794,#10796,'PO(?)');  
#10798= IFCQUANTITYVOLUME('NetVolume',S,S,0.0249990259010342);  
#10799= IFCQUANTITYWEIGHT('NetWeight',S,S,196.24235323119);  
#10800= IFCELEMENTQUANTITY('0R\_B5YiGH6jvF6eUaoOhTQ',#5,'BaseQuantities',S,S,(#1586,#1587,#1588,#361,#10798,#1590,#10799,#1592));  
#10801= IFCLOCALPLACEMENT(#30,#10);  
#10802= IFCELEMENTASSEMBLY('1OelSH002LqJ4qE3SoDJKs',#5,'Steel Assembly',S,S,#10801,S,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#10803= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit position code',S,IFCLABEL('3-4/A'),S);  
#10804= IFCPROPERTYSET('3K2JOkegb7WxYCYqRrdv',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#1596,#1597,#1598,#10803,#318));  
#10805= IFCARTESIANPOINT((4250.,100.,96.));  
#10806= IFCAXIS2PLACEMENT3D(#10805,#1602,#1603);  
#10807= IFCLOCALPLACEMENT(#10801,#10806);  
#10808= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#1608));  
#10809= IFCPRODUCTDEFINITIONSHAPE(S,S,(#10808));  
#10810= IFCMEMBER('1OelSH002LqZ4qE3SoDJKs',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#10807,#10809,'PO(?)');  
#10811= IFCQUANTITYLENGTH('Length',S,S,2900.42565841558);  
#10812= IFCQUANTITYAREA('OuterSurfaceArea',S,S,4.59427424293027);  
#10813= IFCQUANTITYAREA('GrossSurfaceArea',S,S,4.59427424293027);  
#10814= IFCQUANTITYVOLUME('NetVolume',S,S,0.0237602869937412);  
#10815= IFCQUANTITYVOLUME('GrossVolume',S,S,0.0243983806385918);

#10816= IFCQUANTITYWEIGHT('NetWeight',S,S,186.518252900869);  
#10817= IFCQUANTITYWEIGHT('GrossWeight',S,S,191.527288012946);  
#10818= IFCLEMENTQUANTITY('2vSkf1ivv7XP8onGjee4kI',#5,'BaseQuantities',S,S,(#10811,#10812,#10813,#361,#10814,#10815,#10816,#10817));  
#10819= IFCLOCALPLACEMENT(#30,#10);  
#10820= IFCLEMENTASSEMBLY('1OelSH002LpJ4qE3SoDJKq',#5,'Steel Assembly',S,S,#10819,S,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#10821= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit position code',S,IFCLABEL('3-5/A'),S);  
#10822= IFCPROPERTYSET('2fW2W5VqfBxOTOP\_4YieUc',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#1630,#1631,#1632,#10821,#318));  
#10823= IFCARTESIANPOINT((1943.76953679383,0.,196.));  
#10824= IFCAXIS2PLACEMENT3D(#10823,#335,#7);  
#10825= IFCLOCALPLACEMENT(#10819,#10824);  
#10826= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#1640));  
#10827= IFCPRODUCTDEFINITIONSHAPE(S,S,(#10826));  
#10828= IFCBEAM('1OelSH002LpJ4qE3SoDJKq',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#10825,#10827,'PO(?)');  
#10829= IFCLOCALPLACEMENT(#30,#10);  
#10830= IFCLEMENTASSEMBLY('1OelSH002LmJ4qE3SoDJGs',#5,'Steel Assembly',S,S,#10829,S,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#10831= IFCPROPERTYSET('3K9YcRD895QuKsZgtB05N5',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#1662,#1663,#1664,#10821,#318));  
#10832= IFCARTESIANPOINT((1743.76953679383,0.,1946.));  
#10833= IFCAXIS2PLACEMENT3D(#10832,#335,#7);  
#10834= IFCLOCALPLACEMENT(#10829,#10833);  
#10835= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#1671));  
#10836= IFCPRODUCTDEFINITIONSHAPE(S,S,(#10835));  
#10837= IFCBEAM('1OelSH002LmJ4qE3SoDJGs',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#10834,#10836,'PO(?)');  
#10838= IFCLOCALPLACEMENT(#30,#10);  
#10839= IFCLEMENTASSEMBLY('1OelSH002KjZ4qE3SoDJGo',#5,'Steel Assembly',S,S,#10838,S,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#10840= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit position code',S,IFCLABEL('5/A'),S);  
#10841= IFCPROPERTYSET('0DFG1ysjA50TNmyvtEZDK',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#10718,#1631,#10719,#10840,#318));  
#10842= IFCARTESIANPOINT((6750.,100.,96.));  
#10843= IFCAXIS2PLACEMENT3D(#10842,#9,#7);  
#10844= IFCLOCALPLACEMENT(#10838,#10843);  
#10845= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#10727));  
#10846= IFCPRODUCTDEFINITIONSHAPE(S,S,(#10845));  
#10847= IFCCOLUMN('1OelSH002KjZ4qE3SoDJGo',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#10844,#10846,'PO(?)');  
#10848= IFCLOCALPLACEMENT(#30,#10);  
#10849= IFCLEMENTASSEMBLY('1OelSH002Kc34qE3SoDJ8u',#5,'Steel Assembly',S,S,#10848,S,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#10850= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit weight',S,IFCMASMEASURE(4114.2),S);  
#10851= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit position code',S,IFCLABEL('3/A'),S);  
#10852= IFCPROPERTYSET('1tXUZYgP1dx0NoddZPNVx',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#10850,#3264,#10748,#10851,#318));  
#10853= IFCQUANTITYLENGTH('Width',S,S,60400.);  
#10854= IFCLEMENTQUANTITY('0k309UYo94bvtBeKbGaKBX',#5,'BaseQuantities',S,S,(#10853));  
#10855= IFCARTESIANPOINT((1750.,100.,96.));  
#10856= IFCAXIS2PLACEMENT3D(#10855,#9,#7);  
#10857= IFCLOCALPLACEMENT(#10848,#10856);  
#10858= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#10756));  
#10859= IFCPRODUCTDEFINITIONSHAPE(S,S,(#10858));  
#10860= IFCCOLUMN('1OelSH002KcJ4qE3SoDJ8u',#5,'BEAM','HN400\*200\*8\*13','HN400\*200\*8\*13',#10857,#10859,'PO(?)');  
#10861= IFCLOCALPLACEMENT(#30,#10);  
#10862= IFCLEMENTASSEMBLY('1OelSH002KYZ4qE3SoDJ4v',#5,'Steel Assembly',S,S,#10861,S,'BE-0(?)',.NOTDEFINED,..RIGID\_FRAME.);  
#10863= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit weight',S,IFCMASMEASURE(3962.1),S);  
#10864= IFCPROPERTYSET('2Civ7Rdz5YQYluOGbD1u3',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#10863,#3264,#3265,#7129,#318));  
#10865= IFCARTESIANPOINT((1750.,160000.,100.));  
#10866= IFCAXIS2PLACEMENT3D(#10865,#7,#8);  
#10867= IFCLOCALPLACEMENT(#10861,#10866);  
#10868= IFCARTESIANPOINT((60000.,0.,0.));  
#10869= IFCAXIS2PLACEMENT3D(#10868,#336,#335);  
#10870= IFCAXIS2PLACEMENT3D(#10869,#9,60000.);  
#10871= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#10870));  
#10872= IFCSTYLEDITEDIT(#10870,(#330),S);  
#10873= IFCPRODUCTDEFINITIONSHAPE(S,S,(#10871));



## Appendix

#10874=	#10930=
IFCBEAM('1OelSH002Kp4qE3SoDj4v',#5,'BEAM','HN400*200*8*13','HN400*200*8*13',#10867,#10873,'PO(?)');	IFCPROPERTYSET('3WjBtW5dD8rBq4bPtAkSHD',#5,'Pset_PlateCommon','Common Properties to plate elements',(#85,#356));
#10875=	#10931= IFCQUANTITYAREA('NetArea',\$.S,\$,95.6736);
IFCPROPERTYSINGLEVALUE('Weight',\$.IFCMASSMEASURE(3962.1),\$.S);	#10932= IFCQUANTITYAREA('GrossArea',\$.S,\$,95.6736);
#10876=	#10933=
IFCPROPERTYSINGLEVALUE('Gross footprint area',\$.IFCAREAMEASURE(1.6),\$.S);	IFCQUANTITYVOLUME('NetVolume',\$.S,\$,0.494796800000001);
#10877=	#10934= IFCQUANTITYVOLUME('GrossVolume',\$.S,\$,0.5080848);
IFCPROPERTYSINGLEVALUE('Net surface area',\$.IFCAREAMEASURE(95.1),\$.S);	#10935=
#10878=	IFCELEMENTQUANTITY('0jREDPFPErfoUCHDlqS1S',#5,'BaseQuantities',\$.S,(\$10931,#10932,#361,#10933,#10934));
IFCPROPERTYSINGLEVALUE('Length',\$.IFCLENGTHMEASURE(6000.0),\$.S);	#10936= IFCLOCALPLACEMENT(#30,#10);
#10879=	#10937=
IFCPROPERTYSET('1IDogAiSnC7OBBNtBNKfql',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#10875,#10580,#10876,#350,#10877,#352,#353,#10878));	IFCELEMENTASSEMBLY('1OelSH002KR34qE3SoDj4s',#5,'Steel Assembly',\$.S,(\$10936,\$,BE-0(?),.NOTDEFINED,..RIGID_FRAME.);
#10880=	#10938= IFCPROPERTYSET('1InTeave57aAoPP22dTXpY',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#10887,#3264,#3265,#9236,#318));
IFCQUANTITYLENGTH('Length',\$.S,60000.);	#10939= IFCCARTESIANPOINT((6750.,110000.,100.));
#10881=	#10940= IFCAXIS2PLACEMENT3D(#10939,#7,#8);
IFCQUANTITYAREA('OuterSurfaceArea',\$.S,\$,95.04);	#10941= IFCLOCALPLACEMENT(#10936,#10940);
#10882=	#10942=
IFCQUANTITYVOLUME('NetVolume',\$.S,\$,0.49152);	IFCCHAPTERPRESENTATION(#12,'Body','SweptSolid',(#10893));
#10883=	#10943= IFCPRODUCTDEFINITIONSHAPE(\$.S,(\$10942));
IFCQUANTITYWEIGHT('NetWeight',\$.S,\$,3858.432);	#10944=
#10884=	IFCBEAM('1OelSH002KR4qE3SoDj4s',#5,'BEAM','HN400*200*8*13','HN400*200*8*13',#10941,#10943,'PO(?)');
IFCELEMENTQUANTITY('07xujB1cT2buKSeFg3zJGQ',#5,'BaseQuantities',\$.S,(\$10880,#10881,#10882,#10883));	#10945= IFCQUANTITYLENGTH('Length',\$.S,\$,49999.99999995753);
#10885=	#10946=
IFCLOCALPLACEMENT(#30,#10);	IFCQUANTITYAREA('OuterSurfaceArea',\$.S,\$,79.199999993273);
#10886=	#10947=
IFCELEMENTASSEMBLY('1OelSH002KXZ4qE3SoDj4v',#5,'Steel Assembly',\$.S,(\$10885,\$,BE-0(?),.NOTDEFINED,..RIGID_FRAME.);	IFCQUANTITYVOLUME('NetVolume',\$.S,\$,0.40959999996522);
#10887=	#10948= IFCQUANTITYWEIGHT('NetWeight',\$.S,\$,3215.3599999727);
IFCPROPERTYSINGLEVALUE('Assembly/Cast unit weight',\$.IFCMASSMEASURE(3301.7),\$.S);	#10949=
#10888=	IFCELEMENTQUANTITY('0aXSuOvwf42whB880VcPnH',#5,'BaseQuantities',\$.S,(\$10945,#10946,#10947,#10948));
IFCPROPERTYSET('1Ps4L7kn12VhCqy0trA_Lc',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#10887,#3264,#3265,#8063,#318));	#10950= IFCLOCALPLACEMENT(#30,#10);
#10889=	#10951=
IFCAXIS2PLACEMENT3D(#3563,#7,#8);	IFCELEMENTASSEMBLY('1OelSH002KM34qE3SoDj4n',#5,'Steel Assembly',\$.S,(\$10950,\$,BE-0(?),.NOTDEFINED,..RIGID_FRAME.);
#10890=	#10952= IFCPROPERTYSET('2fmOUdyFXDyuhroB_ml5Yn',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#10863,#3264,#3265,#8484,#318));
IFCLOCALPLACEMENT(#10885,#10889);	#10953= IFCCARTESIANPOINT((6750.,160000.,100.));
#10891=	#10954= IFCAXIS2PLACEMENT3D(#10953,#7,#8);
IFCCARTESIANPOINT((50000.0,0.0,0.));	#10955= IFCLOCALPLACEMENT(#10950,#10954);
#10892=	#10956=
IFCAXIS2PLACEMENT3D(#10891,#336,#335);	IFCCHAPTERPRESENTATION(#12,'Body','SweptSolid',(#10870));
#10893=	#10957= IFCPRODUCTDEFINITIONSHAPE(\$.S,(\$10956));
IFCEXTRUDEDAREASOLID(#333,#10892,#9,50000.);	#10958=
#10894=	IFCBEAM('1OelSH002KMj4qE3SoDj4n',#5,'BEAM','HN400*200*8*13','HN400*200*8*13',#10955,#10957,'PO(?)');
IFCCHAPTERPRESENTATION(#12,'Body','SweptSolid',(#10893));	#10959= IFCLOCALPLACEMENT(#30,#10);
#10895=	#10960=
IFCSTYLEDITEM(#10893,(\$330),\$.S);	IFCELEMENTASSEMBLY('1OelSH002KK34qE3SoDj4n',#5,'Steel Assembly',\$.S,(\$10959,\$,BE-0(?),.NOTDEFINED,..RIGID_FRAME.);
#10896=	#10961=
IFCPRODUCTDEFINITIONSHAPE(\$.S,(\$10894));	IFCPROPERTYSET('3uuJHCKDDECgUlahDvmc8S',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#10863,#3264,#3265,#6765,#318));
#10897=	#10962= IFCCARTESIANPOINT((6750.,60000.,100.));
IFCBEAM('1OelSH002KXp4qE3SoDj4v',#5,'BEAM','HN400*200*8*13','HN400*200*8*13',#10890,#10896,'PO(?)');	#10963= IFCAXIS2PLACEMENT3D(#10962,#7,#8);
#10898=	#10964= IFCLOCALPLACEMENT(#10959,#10963);
IFCPROPERTYSINGLEVALUE('Weight',\$.IFCMASSMEASURE(3301.7),\$.S);	#10965=
#10899=	IFCCHAPTERPRESENTATION(#12,'Body','SweptSolid',(#10893));
IFCPROPERTYSINGLEVALUE('Gross footprint area',\$.IFCAREAMEASURE(1.3),\$.S);	#10966= IFCPRODUCTDEFINITIONSHAPE(\$.S,(\$10965));
#10900=	#10967=
IFCPROPERTYSINGLEVALUE('Length',\$.IFCLENGTHMEASURE(5000.0),\$.S);	IFCBEAM('1OelSH002KKj4qE3SoDj4n',#5,'BEAM','HN400*200*8*13','HN400*200*8*13',#10964,#10967,'PO(?)');
#10901=	#10968= IFCLOCALPLACEMENT(#30,#10);
IFCPROPERTYSET('3dyNVYnAj6UweuPcPag91p',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#10898,#10580,#10899,#350,#10581,#352,#353,#10900));	#10969=
#10902=	IFCELEMENTASSEMBLY('1OelSH002KJ34qE3SoDj4n',#5,'Steel Assembly',\$.S,(\$10968,\$,BE-0(?),.NOTDEFINED,..RIGID_FRAME.);
IFCQUANTITYLENGTH('Length',\$.S,\$,50000.);	#10970=
#10903=	IFCPROPERTYSET('1j8TYF9dP7nAviNLGuQel',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#10970,#3264,#3265,#6064,#318));
IFCQUANTITYAREA('OuterSurfaceArea',\$.S,\$,79.2);	#10972= IFCCARTESIANPOINT((6750.,-400.,100.));
#10904=	#10973= IFCAXIS2PLACEMENT3D(#10972,#7,#8);
IFCQUANTITYVOLUME('NetVolume',\$.S,\$,0.4096);	#10974= IFCLOCALPLACEMENT(#10968,#10973);
#10905=	#10975=
IFCQUANTITYWEIGHT('NetWeight',\$.S,\$,3215.36);	IFCCHAPTERPRESENTATION(#12,'Body','SweptSolid',(#10921));
#10906=	#10976= IFCPRODUCTDEFINITIONSHAPE(\$.S,(\$10975));
IFCELEMENTQUANTITY('2nFaLn1kjaOp9Sv1buQT',#5,'BaseQuantities',\$.S,(\$10902,#10903,#10904,#10905));	#10977=
#10907=	IFCBEAM('1OelSH002KJ4qE3SoDj4n',#5,'BEAM','HN400*200*8*13','HN400*200*8*13',#10974,#10976,'PO(?)');
IFCLOCALPLACEMENT(#30,#10);	#10978= IFCQUANTITYLENGTH('Length',\$.S,\$,60400.);
#10908=	#10979= IFCQUANTITYAREA('OuterSurfaceArea',\$.S,\$,95.6736);
IFCELEMENTASSEMBLY('1OelSH002KUZ4qE3SoDj4u',#5,'Steel Assembly',\$.S,(\$10907,\$,BE-0(?),.NOTDEFINED,..RIGID_FRAME.);	#10980=
#10909=	IFCQUANTITYWEIGHT('NetWeight',\$.S,\$,3884.15488000001);
IFCPROPERTYSET('1_rjXP0PTBjxQwgPVsLKEH',#5,'Tekla Assembly','Assembly Properties',(#34,#313,#10887,#3264,#3265,#5319,#318));	#10981=
#10910=	IFCELEMENTQUANTITY('0xDTULSSD0ShmvXPfSzxPq',#5,'BaseQuantities',\$.S,(\$10978,#10979,#10933,#10980));
IFCCARTESIANPOINT((1750.,60000.,100.));	#10982= IFCLOCALPLACEMENT(#30,#10);
#10911=	#10983=
IFCAXIS2PLACEMENT3D(#10910,#7,#8);	IFCELEMENTASSEMBLY('1OelSH002KF34qE3SnDpGs',#5,'SLAB',\$.S,(\$10982,\$,A0(?),.NOTDEFINED,..REINFORCEMENT_UNIT.);
#10912=	#10984= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit position code',\$.IFCLABEL('6-7/A-B'),\$.S);
IFCLOCALPLACEMENT(#10907,#10911);	#10985= IFCPROPERTYSET('1msoft_5X3uPQCiykNKIM9',#5,'Tekla Assembly','Assembly Properties',(#34,#35,#174,#175,#176,#10984,#40));
#10913=	#10986= IFCQUANTITYLENGTH('Width',\$.S,\$,59999.999999969);
IFCCHAPTERPRESENTATION(#12,'Body','SweptSolid',(#10893));	
#10914=	
IFCPRODUCTDEFINITIONSHAPE(\$.S,(\$10913));	
#10915=	
IFCBEAM('1OelSH002KUp4qE3SoDj4u',#5,'BEAM','HN400*200*8*13','HN400*200*8*13',#10912,#10914,'PO(?)');	
#10916=	
IFCCARTESIANPOINT((1750.,-400.,100.));	
#10917=	
IFCAXIS2PLACEMENT3D(#10916,#7,#8);	
#10918=	
IFCLOCALPLACEMENT(#10848,#10917);	
#10919=	
IFCCARTESIANPOINT((60400.0,0.0,0.));	
#10920=	
IFCAXIS2PLACEMENT3D(#10919,#336,#335);	
#10921=	
IFCEXTRUDEDAREASOLID(#333,#10920,#9,60400.);	
#10922=	
IFCCHAPTERPRESENTATION(#12,'Body','SweptSolid',(#10921));	
#10923=	
IFCSTYLEDITEM(#10921,(\$330),\$.S);	
#10924=	
IFCPRODUCTDEFINITIONSHAPE(\$.S,(\$10922));	
#10925=	
IFCDISCRETEACCESSORY('1OelSH002Ktp4qE3SoDj4u',#5,'BEAM','HN400*200*8*13','HN400*200*8*13',#10918,#10924,'PO(?)');	
#10926=	
IFCDISCRETEACCESSORYTYPE('1CBSOclDzYr4C4i44VjaUf',#5,'BEAM',\$.S,\$,\$.S,\$,\$.S);	
#10927=	
IFCPROPERTYSINGLEVALUE('Weight',\$.IFCMASSMEASURE(3988.5),\$.S);	
#10928=	
IFCPROPERTYSINGLEVALUE('Length',\$.IFCLENGTHMEASURE(6040.0),\$.S);	
#10929=	
IFCPROPERTYSET('0PEN97Uyfs5P1cOSIA7aZi',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#10927,#10580,#10876,#350,#10612,#352,#353,#10928));	

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#10987=
IFCELEMENTQUANTITY('1ndYXRxb5Bwex_10McUdj',#5,'BaseQ
uantities',S,S,(#10986));
#10988=
IFCCARTESIANPOINT((8500.,29988.2270706159,3149.56617391366
);
#10989= IFCAxis2PLACEMENT3D(#10988,#266,#267);
#10990= IFLOCALPLACEMENT(#10982,#10989);
#10991=
IFCSHAPEREREPRERSENTATION(#12,'Body','SweptSolid',(#187));
#10992= IFCPRODUCTDEFINITIONSHAPE(S,S,(#10991));
#10993=
IFCSLAB('1OelSH002KFJ4qE3SnDpGs',#5,'SLAB','60000*521','60000
*521',#10990,#10992,'X2'6DF751DD571F005F0041002D00310030002
8003F0029'X0',FLOOR.);
#10994= IFCQUANTITYLENGTH('Width',S,S,59999.9999999692);
#10995=
IFCQUANTITYVOLUME('NetVolume',S,S,26.7121419887352);
#10996=
IFCQUANTITYWEIGHT('NetWeight',S,S,66780.3549718381);
#10997=
IFCELEMENTQUANTITY('3hyo2itfPCfxGF5OlPQA_Y',#5,'BaseQuan
tities',S,S,(#10994,#10995,#90,#10996));
#10998= IFLOCALPLACEMENT(#30,#10);
#10999=
IFCELEMENTASSEMBLY('1OelSH002JSZ4qE3SnDp4n',#5,'SLAB',S
,S,#10998,S,'AO(?)',NOTDEFINED,,REINFORCEMENT_UNIT.);
#11000= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit position
code',S,IFCLABEL('1-2A-B'),S);
#11001=
IFCPROPERTYSET('1M_wyslmLBoW2kYnZ8HJUN',#5,'Tekla
Assembly','Assembly
Properties',(#34,#35,#207,#175,#176,#11000,#40));
#11002= IFCQUANTITYLENGTH('Width',S,S,60000.000000688);
#11003=
IFCELEMENTQUANTITY('0eSZTYa8jBCxjRL28ecDd0',#5,'BaseQua
ntities',S,S,(#11002));
#11004=
IFCCARTESIANPOINT((4.4687699918677,29958.7776050282,4399.2
0900831185));
#11005= IFCAxis2PLACEMENT3D(#11004,#266,#284);
#11006= IFLOCALPLACEMENT(#10998,#11005);
#11007=
IFCSHAPEREREPRERSENTATION(#12,'Body','SweptSolid',(#216));
#11008= IFCPRODUCTDEFINITIONSHAPE(S,S,(#11007));
#11009=
IFCSLAB('1OelSH002JSp4qE3SnDp4n',#5,'SLAB','60000*520','60000*
520',#11006,#11008,'X2'6DF751DD571F005F0041002D003100300028
003F0029'X0',FLOOR.);
#11010= IFCQUANTITYLENGTH('Width',S,S,60000.000000684);
#11011=
IFCQUANTITYVOLUME('NetVolume',S,S,26.4914992355674);
#11012=
IFCQUANTITYWEIGHT('NetWeight',S,S,66228.7480889185);
#11013=
IFCELEMENTQUANTITY('3IQYt5C4r84rgwL3gLEIUx',#5,'BaseQua
ntities',S,S,(#11010,#11011,#90,#11012));
#11014= IFLOCALPLACEMENT(#30,#10);
#11015=
IFCELEMENTASSEMBLY('1OelSH002Jp4qE3SnDZWu',#5,'SLAB',S
,S,#11014,S,'AO(?)',NOTDEFINED,,REINFORCEMENT_UNIT.);
#11016= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit position
code',S,IFCLABEL('1-7A-B'),S);
#11017= IFCPROPERTYSET('2rcQbT0CTCX9vuljwsiaNj',#5,'Tekla
Assembly','Assembly
Properties',(#34,#35,#231,#232,#233,#11016,#40));
#11018= IFCQUANTITYLENGTH('Width',S,S,59999.999999969);
#11019=
IFCELEMENTQUANTITY('29PBvpCwDErA_WVjoFT8ZN',#5,'BaseQ
uantities',S,S,(#11018));
#11020=
IFCCARTESIANPOINT((0.,29988.2201175832,3149.861215109));
#11021= IFCAxis2PLACEMENT3D(#11020,#266,#301);
#11022= IFLOCALPLACEMENT(#11014,#11021);
#11023=
IFCSHAPEREREPRERSENTATION(#12,'Body','SweptSolid',(#242));
#11024= IFCPRODUCTDEFINITIONSHAPE(S,S,(#11023));
#11025=
IFCSLAB('1OelSH002JpZ4qE3SnDZWu',#5,'SLAB','60000*404','60000
*404',#11022,#11024,'X2'6DF751DD571F005F0041002D00310030002
8003F0029'X0',FLOOR.);
#11026= IFCQUANTITYLENGTH('Width',S,S,59999.9999999623);
#11027=
IFCQUANTITYVOLUME('NetVolume',S,S,120.289649765523);
#11028=
IFCQUANTITYWEIGHT('NetWeight',S,S,300724.124413807);
#11029=
IFCELEMENTQUANTITY('0nyw52CKbBVFFI0fWDqu1',#5,'BaseQu
antities',S,S,(#11026,#11027,#90,#11028));
#11030= IFLOCALPLACEMENT(#30,#10);
#11031=
IFCELEMENTASSEMBLY('1OelSH002JYp4qE3SnDZKn',#5,'SLAB',S
,S,#11030,S,'AO(?)',NOTDEFINED,,REINFORCEMENT_UNIT.);
#11032= IFCPROPERTYSINGLEVALUE('Cast unit rebar
weight',S,IFCMASSEASURE(778.1),S);
#11033= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit
weight',S,IFCMASSEASURE(532500.),S);
#11034= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit bottom
elevation',S,IFCLABEL(' -15.000'),S);
#11035= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit position
code',S,IFCLABEL('2-6/C-E'),S);
#11036= IFCPROPERTYSET('3f2sSzGMfBFOeAmZizan3s',#5,'Tekla
Assembly','Assembly
Properties',(#34,#11032,#11033,#11034,#9685,#11035,#40));
#11037= IFCQUANTITYLENGTH('Width',S,S,15000.);

#11038=
IFCELEMENTQUANTITY('3OxbnaWnFwAB6NOhFxn_k',#5,'BaseQ
uantities',S,S,(#11037));
#11039= IFCCARTESIANPOINT((700.,161000.,-7500.));
#11040= IFCAxis2PLACEMENT3D(#11039,#9,#335);
#11041= IFLOCALPLACEMENT(#11030,#11040);
#11042= IFCCARTESIANPOINT((2000.,0.));
#11043= IFCCARTESIANPOINT((2000.,7100.));
#11044= IFCCARTESIANPOINT((0.,7100.));
#11045= IFCPOLYLINE((#53,#11042,#11043,#11044,#53));
#11046=
IFCARBITRARYCLOSEDPROFILEDEF('AREA_',15000*2000',#1104
5);
#11047= IFCCARTESIANPOINT((0.,-7500.));
#11048= IFCAxis2PLACEMENT3D(#11047,#9,#7);
#11049= IFEXTRUDEDAREASOLID(#11046,#11048,#9,15000.);
#11050=
IFCSHAPEREREPRERSENTATION(#12,'Body','SweptSolid',(#11049));
#11051= IFCSTYLEDITEM(#11049,(#52),S);
#11052= IFCPRODUCTDEFINITIONSHAPE(S,S,(#11050));
#11053=
IFCSLAB('1OelSH002JYZ4qE3SnDZKn',#5,'SLAB',15000*2000',1500
0*2000',#11041,#11052,'X2'6DF751DD571F005F0041002D003100300
028003F0029'X0',FLOOR.);
#11054=
IFCSLABTYPE('3kqmhitedBOxCH3Pdj6wI',#5,'15000*2000',S,S,S,S,
S,'AO(?)',NOTDEFINED.);
#11055= IFCPROPERTYSINGLEVALUE('Bottom
elevation',S,IFCLABEL(' -15.000'),S);
#11056= IFCPROPERTYSET('0Kb7783p2phLz0mNYJnb2',#5,'Tekla
Common','Common Properties to Shared building
elements',(#11055,#9699,#71,#72,#73,#74));
#11057=
IFCPROPERTYSINGLEVALUE('Weight',S,IFCMASSEASURE(532
500.),S);
#11058=
IFCPROPERTYSINGLEVALUE('Volume',S,IFCVOLUMEMEASURE(2
213.),S);
#11059= IFCPROPERTYSINGLEVALUE('Gross footprint
area',S,IFCAREAMEASURE(14.2),S);
#11060= IFCPROPERTYSINGLEVALUE('Area per
tons',S,IFCAREAMEASURE(0.6),S);
#11061= IFCPROPERTYSINGLEVALUE('Net surface
area',S,IFCAREAMEASURE(301.4),S);
#11062=
IFCPROPERTYSINGLEVALUE('Height',S,IFCLENGTHMEASURE(2
000.),S);
#11063=
IFCPROPERTYSINGLEVALUE('Width',S,IFCLENGTHMEASURE(15
000.),S);
#11064=
IFCPROPERTYSINGLEVALUE('Length',S,IFCLENGTHMEASURE(7
100.),S);
#11065= IFCPROPERTYSET('1Q11QvWnARgykFpbPbSWS',#5,'Tekla
Quantity','Quantity Properties to Shared building
elements',(#11057,#11058,#11059,#11060,#11061,#11062,#11063,#110
64));
#11066= IFCQUANTITYVOLUME('NetVolume',S,S,213.);
#11067= IFCQUANTITYAREA('NetArea',S,S,14.2);
#11068= IFCQUANTITYWEIGHT('NetWeight',S,S,532500.);
#11069=
IFCELEMENTQUANTITY('3GwGNeiS$A19gE_uplI9IP',#5,'BaseQuant
ities',S,S,(#11037,#11066,#11067,#11068));
#11070= IFCCARTESIANPOINT((755.,160975.,-40.));
#11071= IFCAxis2PLACEMENT3D(#11070,#9,#335);
#11072= IFLOCALPLACEMENT(#11030,#11071);
#11073= IFCCOLORRGB('Light Blue',0.2,0.4,0.8);
#11074=
IFCSURFACESTYLERENDERING(#11073,0.,S,S,S,IFCNORMALIS
EDRATIOMEASURE(0.00390625),IFCSPECULAREXPONENT(10.),
NOTDEFINED.);
#11075= IFCSURFACESTYLE('Undefined',POSITIVE,(#11074));
#11076= IFCPRESENTATIONSTYLEASSIGNMENT(#11075);
#11077= IFVECTOR(#7,1.);
#11078= IFCLINE(#6,#11077);
#11079=
IFCTRIMMEDCURVE(#11078,(IFCPARAMETERVALUE(0.)),(IFCP
ARAMETERVALUE(1950.)),T.,PARAMETER.);
#11080= IFCSWEPTDISKSOLID(#11079,S,S,0.,1950.);
#11081= IFCSTYLEDITEM(#11080,(#11076),S);
#11082=
IFCCARTESIANTRANSFORMATIONOPERATOR3D(S,S,#6,S,S);
#11083=
IFCSHAPEREREPRERSENTATION(#12,'Body','AdvancedSweptSolid',(#11
080));
#11084= IFCREPRESENTATIONMAP(#10,#11083);
#11085= IFCMAPPEDITEM(#11084,#11082);
#11086= IFCCARTESIANPOINT((0.,200.,0.));
#11087=
IFCCARTESIANTRANSFORMATIONOPERATOR3D(S,S,#11086,S,S
);
#11088=
IFCSHAPEREREPRERSENTATION(#12,'Body','AdvancedSweptSolid',(#11
080));
#11089= IFCREPRESENTATIONMAP(#10,#11088);
#11090= IFCMAPPEDITEM(#11089,#11087);
#11091= IFCCARTESIANPOINT((0.,400.,0.));
#11092=
IFCCARTESIANTRANSFORMATIONOPERATOR3D(S,S,#11091,S,S
);
#11093=
IFCSHAPEREREPRERSENTATION(#12,'Body','AdvancedSweptSolid',(#11
080));
#11094= IFCREPRESENTATIONMAP(#10,#11093);
#11095= IFCMAPPEDITEM(#11094,#11092);

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#11212=
IFCCARTESIANTRANSFORMATIONOPERATOR3D($,$,#11211,$$
);
#11213=
IFCSHAPEREREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11
080));
#11214= IFCREPRESENTATIONMAP(#10,#11213);
#11215= IFCMAPPEDITEM(#11214,#11212);
#11216= IFCCARTESIANPOINT((0.,5400.,0.));
#11217=
IFCCARTESIANTRANSFORMATIONOPERATOR3D($,$,#11216,$$
);
#11218=
IFCSHAPEREREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11
080));
#11219= IFCREPRESENTATIONMAP(#10,#11218);
#11220= IFCMAPPEDITEM(#11219,#11217);
#11221= IFCCARTESIANPOINT((0.,5600.,0.));
#11222=
IFCCARTESIANTRANSFORMATIONOPERATOR3D($,$,#11221,$$
);
#11223=
IFCSHAPEREREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11
080));
#11224= IFCREPRESENTATIONMAP(#10,#11223);
#11225= IFCMAPPEDITEM(#11224,#11222);
#11226= IFCCARTESIANPOINT((0.,5800.,0.));
#11227=
IFCCARTESIANTRANSFORMATIONOPERATOR3D($,$,#11226,$$
);
#11228=
IFCSHAPEREREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11
080));
#11229= IFCREPRESENTATIONMAP(#10,#11228);
#11230= IFCMAPPEDITEM(#11229,#11227);
#11231= IFCCARTESIANPOINT((0.,6000.,0.));
#11232=
IFCCARTESIANTRANSFORMATIONOPERATOR3D($,$,#11231,$$
);
#11233=
IFCSHAPEREREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11
080));
#11234= IFCREPRESENTATIONMAP(#10,#11233);
#11235= IFCMAPPEDITEM(#11234,#11232);
#11236= IFCCARTESIANPOINT((0.,6200.,0.));
#11237=
IFCCARTESIANTRANSFORMATIONOPERATOR3D($,$,#11236,$$
);
#11238=
IFCSHAPEREREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11
080));
#11239= IFCREPRESENTATIONMAP(#10,#11238);
#11240= IFCMAPPEDITEM(#11239,#11237);
#11241= IFCCARTESIANPOINT((0.,6400.,0.));
#11242=
IFCCARTESIANTRANSFORMATIONOPERATOR3D($,$,#11241,$$
);
#11243=
IFCSHAPEREREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11
080));
#11244= IFCREPRESENTATIONMAP(#10,#11243);
#11245= IFCMAPPEDITEM(#11244,#11242);
#11246= IFCCARTESIANPOINT((0.,6600.,0.));
#11247=
IFCCARTESIANTRANSFORMATIONOPERATOR3D($,$,#11246,$$
);
#11248=
IFCSHAPEREREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11
080));
#11249= IFCREPRESENTATIONMAP(#10,#11248);
#11250= IFCMAPPEDITEM(#11249,#11247);
#11251= IFCCARTESIANPOINT((0.,6800.,0.));
#11252=
IFCCARTESIANTRANSFORMATIONOPERATOR3D($,$,#11251,$$
);
#11253=
IFCSHAPEREREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11
080));
#11254= IFCREPRESENTATIONMAP(#10,#11253);
#11255= IFCMAPPEDITEM(#11254,#11252);
#11256= IFCCARTESIANPOINT((0.,7000.,0.));
#11257=
IFCCARTESIANTRANSFORMATIONOPERATOR3D($,$,#11256,$$
);
#11258=
IFCSHAPEREREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11
080));
#11259= IFCREPRESENTATIONMAP(#10,#11258);
#11260= IFCMAPPEDITEM(#11259,#11257);
#11261=
IFCSHAPEREREPRESENTATION(#12,'Body','MappedRepresentation',(#
11085,#11090,#11095,#11100,#11105,#11110,#11115,#11120,#11125,#
11130,#11135,#11140,#11145,#11150,#11155,#11160,#11165,#11170,#
11175,#11180,#11185,#11190,#11195,#11200,#11205,#11210,#11215,#
11220,#11225,#11230,#11235,#11240,#11245,#11250,#11255,#11260));
#11262= IFCPRODUCTDEFINITIONSHAPE($,$(#11261));
#11263=
IFCREINFORCINGBAR('IOgimc000Ct34qE3SvCZ8m',5,'TOP_BAR',
$$,#11072,#11262,'ID58aad6-0000-0cdc-3134-
383739323230',$$,10.,0.,$$,NOTDEFINED,$);
#11264= IFCPROPERTYSINGLEVALUE('TD',$,$,$);
#11265= IFCPROPERTYSINGLEVALUE('v',$,$,$);
#11266= IFCPROPERTYSINGLEVALUE('u',$,$,$);
#11267= IFCPROPERTYSINGLEVALUE('t',$,$,$);
#11268= IFCPROPERTYSINGLEVALUE('s',$,$,$);

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#11269= IFCPROPERTYSINGLEVALUE('y',$,$,$);
#11270= IFCPROPERTYSINGLEVALUE('x',$,$,$);
#11271= IFCPROPERTYSINGLEVALUE('r',$,$,$);
#11272= IFCPROPERTYSINGLEVALUE('o',$,$,$);
#11273= IFCPROPERTYSINGLEVALUE('k2',$,$,$);
#11274= IFCPROPERTYSINGLEVALUE('k1',$,$,$);
#11275= IFCPROPERTYSINGLEVALUE('j',$,$,$);
#11276= IFCPROPERTYSINGLEVALUE('i',$,$,$);
#11277= IFCPROPERTYSINGLEVALUE('h2',$,$,$);
#11278= IFCPROPERTYSINGLEVALUE('h1',$,$,$);
#11279= IFCPROPERTYSINGLEVALUE('g',$,$,$);
#11280= IFCPROPERTYSINGLEVALUE('f',$,$,$);
#11281= IFCPROPERTYSINGLEVALUE('e',$,$,$);
#11282= IFCPROPERTYSINGLEVALUE('d',$,$,$);
#11283= IFCPROPERTYSINGLEVALUE('c',$,$,$);
#11284= IFCPROPERTYSINGLEVALUE('b',$,$,$);
#11285=
IFCPROPERTYSINGLEVALUE('a',$,$,IFCLENGTHMEASURE(1950.),
$);
#11286=
IFCPROPERTYSINGLEVALUE('Center-to-center
distance',$,$,IFCLABEL('36*200'),$);
#11287=
IFCPROPERTYSINGLEVALUE('Length',$,$,IFCLENGTHMEASURE(1
950.),$);
#11288=
IFCPROPERTYSINGLEVALUE('Total
Weight',$,$,IFCMASSMEASURE(27.7),$);
#11289=
IFCPROPERTYSINGLEVALUE('Weight',$,$,IFCMASSMEASURE(0.8),
$);
#11290=
IFCPROPERTYSINGLEVALUE('Cast
unit
mark',$,$,IFCLABEL('A0(?)'),$);
#11291=
IFCPROPERTYSINGLEVALUE('Total
Number',$,$,IFCINTEGER(36),$);
#11292=
IFCPROPERTYSINGLEVALUE('Grade',$,$,IFCLABEL('Undefined'),$);
#11293=
IFCPROPERTYSINGLEVALUE('Name',$,$,IFCLABEL('TOP_BAR'),$);
#11294=
IFCPROPERTYSINGLEVALUE('Size',$,$,IFCIDENTIFIER('8'),$);
#11295=
IFCPROPERTYSINGLEVALUE('Rebar
Mark',$,$,IFCIDENTIFIER('0(?)'),$);
#11296=
IFCPROPERTYSINGLEVALUE('Shape',$,$,IFCIDENTIFIER('1'),$);
#11297= IFCPROPERTYSET('3ZBIQmUgLFcxnjtGJQE1vO',5,'Tekla
Reinforcement','Reinforcement
Properties',(#11264,#11265,#11266,#11267,#11268,#11269,#11270,#11
271,#11272,#11273,#11274,#11275,#11276,#11277,#11278,#11279,#11
280,#11281,#11282,#11283,#11284,#11285,#11286,#11287,#11288,#11
289,#11290,#73,#11291,#11292,#11293,#11294,#11295,#11296));
#11298= IFCMATERIAL('Undefined');
#11299= IFCCARTESIANPOINT((725.,160945.,-30.));
#11300= IFCAxis2PLACEMENT3D(#11299,#9688,#7);
#11301= IFCLocalPLACEMENT(#11300,#11300);
#11302=
IFCCOLORRGB('Dark
Red',0.698039215686274,0.2,0.301960784313725);
#11303=
IFCSURFACESTYLERENDERING(#11302,0.,$$,$,$,IFCNORMALIS
EDRATIOMEASURE(0.00390625),IFCSPECULAREXPONENT(10.),
NOTDEFINED,$);
#11304= IFCSURFACESTYLE('Undefined',POSITIVE,.(#11303));
#11305= IFCPRESENTATIONSTYLEASSIGNMENT(#11304);
#11306=
IFCTRIMMEDCURVE(#11078,(IFCPARAMETERVALUE(0.)),(IFCP
ARAMETERVALUE(7050.)),T.,PARAMETER,$);
#11307= IFCSWEPDISKSOLID(#11306.5.,$.,0.,7050.);
#11308= IFCSTYLEDITEM(#11307,(#11305),$);
#11309=
IFCSHAPEREREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11
307));
#11310= IFCREPRESENTATIONMAP(#10,#11309);
#11311= IFCMAPPEDITEM(#11310,#11082);
#11312=
IFCSHAPEREREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11
307));
#11313= IFCREPRESENTATIONMAP(#10,#11312);
#11314= IFCMAPPEDITEM(#11313,#11087);
#11315=
IFCSHAPEREREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11
307));
#11316= IFCREPRESENTATIONMAP(#10,#11315);
#11317= IFCMAPPEDITEM(#11316,#11092);
#11318=
IFCSHAPEREREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11
307));
#11319= IFCREPRESENTATIONMAP(#10,#11318);
#11320= IFCMAPPEDITEM(#11319,#11097);
#11321=
IFCSHAPEREREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11
307));
#11322= IFCREPRESENTATIONMAP(#10,#11321);
#11323= IFCMAPPEDITEM(#11322,#11102);
#11324=
IFCSHAPEREREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11
307));
#11325= IFCREPRESENTATIONMAP(#10,#11324);
#11326= IFCMAPPEDITEM(#11325,#11107);
#11327=
IFCSHAPEREREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11
307));
#11328= IFCREPRESENTATIONMAP(#10,#11327);
#11329= IFCMAPPEDITEM(#11328,#11112);
#11330=
IFCSHAPEREREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11
307));
#11331= IFCREPRESENTATIONMAP(#10,#11330);

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## Appendix

#11332= IFCMAPPEDITEM(#11331,#11117);	#11390= IFCMAPPEDITEM(#11389,#11137);
#11333=	#11391=
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11307));	IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));
#11334= IFCREPRESENTATIONMAP(#10,#11333);	#11392= IFCREPRESENTATIONMAP(#10,#11391);
#11335= IFCMAPPEDITEM(#11334,#11122);	#11393= IFCMAPPEDITEM(#11392,#11142);
#11336=	#11394=
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11307));	IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));
#11337= IFCREPRESENTATIONMAP(#10,#11336);	#11395= IFCREPRESENTATIONMAP(#10,#11394);
#11338= IFCMAPPEDITEM(#11337,#11127);	#11396= IFCMAPPEDITEM(#11395,#11147);
#11339=	#11397=
IFCSHAPEREPRESENTATION(#12,'Body','MappedRepresentation',(#11311,#11314,#11317,#11320,#11323,#11326,#11329,#11332,#11335,#11338));	IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));
#11340= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#11339));	#11398= IFCREPRESENTATIONMAP(#10,#11397);
#11341=	#11399= IFCMAPPEDITEM(#11398,#11152);
IFCREINFORCINGBAR('IOgimc000CtZ4qE3SvCZ8m',#5,'TOP_BAR', \$,\$,#11301,#11340,'ID58aad26-0000-0cde-3134-383739323230', \$,10,,0,, \$,,NOTDEFINED,, \$);	#11400=
#11342=	IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));
IFCPROPERTYSINGLEVALUE('a', \$,\$,IFCLENGTHMEASURE(7050., \$));	#11401= IFCREPRESENTATIONMAP(#10,#11400);
#11343= IFCPROPERTYSINGLEVALUE('Center-to-center distance', \$,IFCLABEL('10*200'), \$);	#11402= IFCMAPPEDITEM(#11401,#11157);
#11344=	#11403=
IFCPROPERTYSINGLEVALUE('Length', \$,IFCLENGTHMEASURE(7050., \$));	IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));
#11345=	#11404= IFCREPRESENTATIONMAP(#10,#11403);
IFCPROPERTYSINGLEVALUE('Weight', \$,IFCMASSMEASURE(2.8, \$));	#11405= IFCMAPPEDITEM(#11404,#11162);
#11346= IFCPROPERTYSINGLEVALUE('Total Number', \$,IFCINTEGER(10), \$);	#11406=
#11347= IFCPROPERTYSET('1Qy9XrYy9i9OSDgf5Zqwu',#5,'Tekla Reinforcement', 'Reinforcement Properties',(#11264,#11265,#11267,#11268,#11269,#11270,#11271,#11272,#11273,#11274,#11275,#11276,#11277,#11278,#11279,#11280,#11281,#11282,#11283,#11284,#11342,#11343,#11344,#11288,#11345,#11290,#73,#11346,#11292,#11293,#11294,#11295,#11296));	#11407= IFCREPRESENTATIONMAP(#10,#11406);
#11348= IFCARTESIANPOINT((755.,160975.,-14960.));	#11408= IFCMAPPEDITEM(#11407,#11167);
#11349= IFCAXIS2PLACEMENT3D(#11348,#9,#335);	#11409=
#11350= IFCLOCALPLACEMENT(#11030,#11349);	IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));
#11351= IFCSURFACESTYLE('Undefined', 'POSITIVE', (#328));	#11410= IFCREPRESENTATIONMAP(#10,#11409);
#11352= IFCPRESENTATIONSTYLEASSIGNMENT((#11351));	#11411= IFCMAPPEDITEM(#11410,#11172);
#11353= IFCWEPTDISKSOLID(#11079,\$,\$,0.,1950.);	#11412=
#11354= IFCSTYLEDITEM(#11353,(#11352,\$));	IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));
#11355=	#11413= IFCREPRESENTATIONMAP(#10,#11412);
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));	#11414= IFCMAPPEDITEM(#11413,#11177);
#11356= IFCREPRESENTATIONMAP(#10,#11355);	#11415=
#11357= IFCMAPPEDITEM(#11356,#11082);	IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));
#11358=	#11416= IFCREPRESENTATIONMAP(#10,#11415);
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));	#11417= IFCMAPPEDITEM(#11416,#11182);
#11359= IFCREPRESENTATIONMAP(#10,#11358);	#11418=
#11360= IFCMAPPEDITEM(#11359,#11087);	IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));
#11361=	#11419= IFCREPRESENTATIONMAP(#10,#11418);
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));	#11420= IFCMAPPEDITEM(#11419,#11187);
#11362= IFCREPRESENTATIONMAP(#10,#11361);	#11421=
#11363= IFCMAPPEDITEM(#11362,#11092);	IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));
#11364=	#11422= IFCREPRESENTATIONMAP(#10,#11421);
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));	#11423= IFCMAPPEDITEM(#11422,#11192);
#11365= IFCREPRESENTATIONMAP(#10,#11364);	#11424=
#11366= IFCMAPPEDITEM(#11365,#11097);	IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));
#11367=	#11425= IFCREPRESENTATIONMAP(#10,#11424);
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));	#11426= IFCMAPPEDITEM(#11425,#11197);
#11368= IFCREPRESENTATIONMAP(#10,#11367);	#11427=
#11369= IFCMAPPEDITEM(#11368,#11102);	IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));
#11370=	#11428= IFCREPRESENTATIONMAP(#10,#11427);
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));	#11429= IFCMAPPEDITEM(#11428,#11202);
#11371= IFCREPRESENTATIONMAP(#10,#11370);	#11430=
#11372= IFCMAPPEDITEM(#11371,#11107);	IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));
#11373=	#11431= IFCREPRESENTATIONMAP(#10,#11430);
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));	#11432= IFCMAPPEDITEM(#11431,#11207);
#11374= IFCREPRESENTATIONMAP(#10,#11373);	#11433=
#11375= IFCMAPPEDITEM(#11374,#11112);	IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));
#11376=	#11434= IFCREPRESENTATIONMAP(#10,#11433);
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));	#11435= IFCMAPPEDITEM(#11434,#11212);
#11377= IFCREPRESENTATIONMAP(#10,#11376);	#11436=
#11378= IFCMAPPEDITEM(#11377,#11117);	IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));
#11379=	#11437= IFCREPRESENTATIONMAP(#10,#11436);
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));	#11438= IFCMAPPEDITEM(#11437,#11217);
#11380= IFCREPRESENTATIONMAP(#10,#11379);	#11439=
#11381= IFCMAPPEDITEM(#11380,#11122);	IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));
#11382=	#11440= IFCREPRESENTATIONMAP(#10,#11439);
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));	#11441= IFCMAPPEDITEM(#11440,#11222);
#11383= IFCREPRESENTATIONMAP(#10,#11382);	#11442=
#11384= IFCMAPPEDITEM(#11383,#11127);	IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));
#11385=	#11443= IFCREPRESENTATIONMAP(#10,#11442);
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));	#11444= IFCMAPPEDITEM(#11443,#11227);
#11386= IFCREPRESENTATIONMAP(#10,#11385);	#11445=
#11387= IFCMAPPEDITEM(#11386,#11132);	IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));
#11388=	#11446= IFCREPRESENTATIONMAP(#10,#11445);
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));	#11447= IFCMAPPEDITEM(#11446,#11232);
#11389= IFCREPRESENTATIONMAP(#10,#11388);	#11448=
	IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));
	#11449= IFCREPRESENTATIONMAP(#10,#11448);
	#11450= IFCMAPPEDITEM(#11449,#11237);
	#11451=
	IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));
	#11452= IFCREPRESENTATIONMAP(#10,#11451);

#11453= IFCMAPPEDITEM(#11452,#11242);  
#11454=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));  
#11455= IFCREPRESENTATIONMAP(#10,#11454);  
#11456= IFCMAPPEDITEM(#11455,#11247);  
#11457=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));  
#11458= IFCREPRESENTATIONMAP(#10,#11457);  
#11459= IFCMAPPEDITEM(#11458,#11252);  
#11460=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));  
#11461= IFCREPRESENTATIONMAP(#10,#11460);  
#11462= IFCMAPPEDITEM(#11461,#11257);  
#11463=  
IFCSHAPEREPRESENTATION(#12,'Body','MappedRepresentation',(#11357,#11360,#11363,#11366,#11369,#11372,#11375,#11378,#11381,#11384,#11387,#11390,#11393,#11396,#11399,#11402,#11405,#11408,#11411,#11414,#11417,#11420,#11423,#11426,#11429,#11432,#11435,#11438,#11441,#11444,#11447,#11450,#11453,#11456,#11459,#11462));  
#11464= IFCPRODUCTDEFINITIONSHAPE(\$,\$,#11463));  
#11465=  
IFCREINFORCINGBAR('1Ogjmce000Cu34qE3SvCZ8m',#5,'BOTTOM\_BAR',\$,\$,#11350,#11464,'ID58aad626-0000-0ce2-3134-38379323230',\$,10,0,\$,NOTDEFINED,\$);  
#11466=  
IFCPROPERTYSINGLEVALUE('Name',\$,IFCLABEL('BOTTOM\_BAR'),\$);  
#11467=  
IFCPROPERTYSET('2sJ2vR\_CXEKbt\_nFQmRWde',#5,'Tekla Reinforcement','Reinforcement Properties',(#11264,#11265,#11266,#11267,#11268,#11269,#11270,#11271,#11272,#11273,#11274,#11275,#11276,#11277,#11278,#11279,#11280,#11281,#11282,#11283,#11284,#11285,#11286,#11287,#11288,#11289,#11290,#73,#11291,#11292,#11466,#11294,#11295,#11296));  
#11468= IFCARTESIANPOINT((725,-160945,-14970));  
#11469= IFCAxis2Placement3D(#11468,#9688,#7);  
#11470= IFCLocalPlacement(#11030,#11469);  
#11471= IFCCOLORRGB('Light Orange',0.898039215686275,0.4,0);  
#11472=  
IFCSURFACESTYLELERENDERING(#11471,0,\$,\$,\$,IFCNORMALISEDTRIANGULARINDEX(0.00390625),IFCSPECULAREXPONENT(10),NOTDEFINED.);  
#11473= IFCSURFACESTYLE('Undefined',POSITIVE,(#11472));  
#11474= IFCPRESENTATIONSTYLEASSIGNMENT(#11473);  
#11475= IFCWEPTDISKSOLID(#11306,\$,\$,0,7050);  
#11476= IFCSTYLELIDITEM(#11475,(#11474),\$);  
#11477=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11475));  
#11478= IFCREPRESENTATIONMAP(#10,#11477);  
#11479= IFCMAPPEDITEM(#11478,#11082);  
#11480=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11475));  
#11481= IFCREPRESENTATIONMAP(#10,#11480);  
#11482= IFCMAPPEDITEM(#11481,#11087);  
#11483=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11475));  
#11484= IFCREPRESENTATIONMAP(#10,#11483);  
#11485= IFCMAPPEDITEM(#11484,#11092);  
#11486=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11475));  
#11487= IFCREPRESENTATIONMAP(#10,#11486);  
#11488= IFCMAPPEDITEM(#11487,#11097);  
#11489=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11475));  
#11490= IFCREPRESENTATIONMAP(#10,#11489);  
#11491= IFCMAPPEDITEM(#11490,#11102);  
#11492=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11475));  
#11493= IFCREPRESENTATIONMAP(#10,#11492);  
#11494= IFCMAPPEDITEM(#11493,#11107);  
#11495=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11475));  
#11496= IFCREPRESENTATIONMAP(#10,#11495);  
#11497= IFCMAPPEDITEM(#11496,#11112);  
#11498=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11475));  
#11499= IFCREPRESENTATIONMAP(#10,#11498);  
#11500= IFCMAPPEDITEM(#11499,#11117);  
#11501=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11475));  
#11502= IFCREPRESENTATIONMAP(#10,#11501);  
#11503= IFCMAPPEDITEM(#11502,#11122);  
#11504=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11475));  
#11505= IFCREPRESENTATIONMAP(#10,#11504);  
#11506= IFCMAPPEDITEM(#11505,#11127);  
#11507=  
IFCSHAPEREPRESENTATION(#12,'Body','MappedRepresentation',(#11479,#11482,#11485,#11488,#11491,#11494,#11497,#11500,#11503,#11506));  
#11508= IFCPRODUCTDEFINITIONSHAPE(\$,\$,#11507));

#11509=  
IFCREINFORCINGBAR('1Ogjmce000Cu34qE3SvCZ8m',#5,'BOTTOM\_BAR',\$,\$,#11470,#11508,'ID58aad626-0000-0ce2-3134-38379323230',\$,10,0,\$,NOTDEFINED,\$);  
#11510=  
IFCPROPERTYSET('0hTB8zBxICJPGVOBV6WIZs',#5,'Tekla Reinforcement','Reinforcement Properties',(#11264,#11265,#11266,#11267,#11268,#11269,#11270,#11271,#11272,#11273,#11274,#11275,#11276,#11277,#11278,#11279,#11280,#11281,#11282,#11283,#11284,#11342,#11343,#11344,#11288,#11345,#11290,#73,#11346,#11292,#11466,#11294,#11295,#11296));  
#11511= IFCLocalPlacement(#11030,#11071);  
#11512=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
#11513= IFCREPRESENTATIONMAP(#10,#11512);  
#11514= IFCMAPPEDITEM(#11513,#11082);  
#11515=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
#11516= IFCREPRESENTATIONMAP(#10,#11515);  
#11517= IFCMAPPEDITEM(#11516,#11087);  
#11518=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
#11519= IFCREPRESENTATIONMAP(#10,#11518);  
#11520= IFCMAPPEDITEM(#11519,#11092);  
#11521=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
#11522= IFCREPRESENTATIONMAP(#10,#11521);  
#11523= IFCMAPPEDITEM(#11522,#11097);  
#11524=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
#11525= IFCREPRESENTATIONMAP(#10,#11524);  
#11526= IFCMAPPEDITEM(#11525,#11102);  
#11527=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
#11528= IFCREPRESENTATIONMAP(#10,#11527);  
#11529= IFCMAPPEDITEM(#11528,#11107);  
#11530=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
#11531= IFCREPRESENTATIONMAP(#10,#11530);  
#11532= IFCMAPPEDITEM(#11531,#11102);  
#11533=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
#11534= IFCREPRESENTATIONMAP(#10,#11533);  
#11535= IFCMAPPEDITEM(#11534,#11117);  
#11536=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
#11537= IFCREPRESENTATIONMAP(#10,#11536);  
#11538= IFCMAPPEDITEM(#11537,#11122);  
#11539=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
#11540= IFCREPRESENTATIONMAP(#10,#11539);  
#11541= IFCMAPPEDITEM(#11540,#11127);  
#11542=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
#11543= IFCREPRESENTATIONMAP(#10,#11542);  
#11544= IFCMAPPEDITEM(#11543,#11132);  
#11545=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
#11546= IFCREPRESENTATIONMAP(#10,#11545);  
#11547= IFCMAPPEDITEM(#11546,#11137);  
#11548=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
#11549= IFCREPRESENTATIONMAP(#10,#11548);  
#11550= IFCMAPPEDITEM(#11549,#11142);  
#11551=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
#11552= IFCREPRESENTATIONMAP(#10,#11551);  
#11553= IFCMAPPEDITEM(#11552,#11147);  
#11554=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
#11555= IFCREPRESENTATIONMAP(#10,#11554);  
#11556= IFCMAPPEDITEM(#11555,#11152);  
#11557=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
#11558= IFCREPRESENTATIONMAP(#10,#11557);  
#11559= IFCMAPPEDITEM(#11558,#11157);  
#11560=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
#11561= IFCREPRESENTATIONMAP(#10,#11560);  
#11562= IFCMAPPEDITEM(#11561,#11162);  
#11563=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
#11564= IFCREPRESENTATIONMAP(#10,#11563);  
#11565= IFCMAPPEDITEM(#11564,#11167);  
#11566=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));

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#11567= IFCREPRESENTATIONMAP(#10,#11566);  
#11568= IFCMAPPEDITEM(#11567,#11172);  
#11569=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
#11570= IFCREPRESENTATIONMAP(#10,#11569);  
#11571= IFCMAPPEDITEM(#11570,#11177);  
#11572=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
#11573= IFCREPRESENTATIONMAP(#10,#11572);  
#11574= IFCMAPPEDITEM(#11573,#11182);  
#11575=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
#11576= IFCREPRESENTATIONMAP(#10,#11575);  
#11577= IFCMAPPEDITEM(#11576,#11187);  
#11578=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
#11579= IFCREPRESENTATIONMAP(#10,#11578);  
#11580= IFCMAPPEDITEM(#11579,#11192);  
#11581=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
#11582= IFCREPRESENTATIONMAP(#10,#11581);  
#11583= IFCMAPPEDITEM(#11582,#11197);  
#11584=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
#11585= IFCREPRESENTATIONMAP(#10,#11584);  
#11586= IFCMAPPEDITEM(#11585,#11202);  
#11587=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
#11588= IFCREPRESENTATIONMAP(#10,#11587);  
#11589= IFCMAPPEDITEM(#11588,#11207);  
#11590=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
#11591= IFCREPRESENTATIONMAP(#10,#11590);  
#11592= IFCMAPPEDITEM(#11591,#11212);  
#11593=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
#11594= IFCREPRESENTATIONMAP(#10,#11593);  
#11595= IFCMAPPEDITEM(#11594,#11217);  
#11596=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
#11597= IFCREPRESENTATIONMAP(#10,#11596);  
#11598= IFCMAPPEDITEM(#11597,#11222);  
#11599=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
#11600= IFCREPRESENTATIONMAP(#10,#11599);  
#11601= IFCMAPPEDITEM(#11600,#11227);  
#11602=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
#11603= IFCREPRESENTATIONMAP(#10,#11602);  
#11604= IFCMAPPEDITEM(#11603,#11232);  
#11605=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
#11606= IFCREPRESENTATIONMAP(#10,#11605);  
#11607= IFCMAPPEDITEM(#11606,#11237);  
#11608=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
#11609= IFCREPRESENTATIONMAP(#10,#11608);  
#11610= IFCMAPPEDITEM(#11609,#11242);  
#11611=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
#11612= IFCREPRESENTATIONMAP(#10,#11611);  
#11613= IFCMAPPEDITEM(#11612,#11247);  
#11614=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
#11615= IFCREPRESENTATIONMAP(#10,#11614);  
#11616= IFCMAPPEDITEM(#11615,#11252);  
#11617=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
#11618= IFCREPRESENTATIONMAP(#10,#11617);  
#11619= IFCMAPPEDITEM(#11618,#11257);  
#11620=  
IFCSHAPEREPRESENTATION(#12,'Body','MappedRepresentation',(#11514,#11517,#11520,#11523,#11526,#11529,#11532,#11535,#11538,#11541,#11544,#11547,#11550,#11553,#11556,#11559,#11562,#11565,#11568,#11571,#11574,#11577,#11580,#11583,#11586,#11589,#11592,#11595,#11598,#11601,#11604,#11607,#11610,#11613,#11616,#11619));  
#11621= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#11620));  
#11622=  
IFCREINFORCINGBAR('10gjm000Cvp4qE3SvCZ8m',#5,'TOP\_BAR',\$.\$.#11511,#11621,1D58aad26-0000-0ce7-3134-383739323230',\$.0.,\$.NOTDEFINED,.\$);  
#11623= IFCLOCALPLACEMENT(#11030,#11300);  
#11624=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11307));  
#11625= IFCREPRESENTATIONMAP(#10,#11624);  
#11626= IFCMAPPEDITEM(#11625,#11082);

#11627=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11307));  
#11628= IFCREPRESENTATIONMAP(#10,#11627);  
#11629= IFCMAPPEDITEM(#11628,#11087);  
#11630=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11307));  
#11631= IFCREPRESENTATIONMAP(#10,#11630);  
#11632= IFCMAPPEDITEM(#11631,#11092);  
#11633=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11307));  
#11634= IFCREPRESENTATIONMAP(#10,#11633);  
#11635= IFCMAPPEDITEM(#11634,#11097);  
#11636=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11307));  
#11637= IFCREPRESENTATIONMAP(#10,#11636);  
#11638= IFCMAPPEDITEM(#11637,#11102);  
#11639=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11307));  
#11640= IFCREPRESENTATIONMAP(#10,#11639);  
#11641= IFCMAPPEDITEM(#11640,#11107);  
#11642=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11307));  
#11643= IFCREPRESENTATIONMAP(#10,#11642);  
#11644= IFCMAPPEDITEM(#11643,#11112);  
#11645=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11307));  
#11646= IFCREPRESENTATIONMAP(#10,#11645);  
#11647= IFCMAPPEDITEM(#11646,#11117);  
#11648=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11307));  
#11649= IFCREPRESENTATIONMAP(#10,#11648);  
#11650= IFCMAPPEDITEM(#11649,#11122);  
#11651=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11307));  
#11652= IFCREPRESENTATIONMAP(#10,#11651);  
#11653= IFCMAPPEDITEM(#11652,#11127);  
#11654=  
IFCSHAPEREPRESENTATION(#12,'Body','MappedRepresentation',(#11626,#11629,#11632,#11635,#11638,#11641,#11644,#11647,#11650,#11653));  
#11655= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#11654));  
#11656=  
IFCREINFORCINGBAR('10gjm000Cw14qE3SvCZ8m',#5,'TOP\_BAR',\$.\$.#11623,#11655,1D58aad26-0000-0ce9-3134-383739323230',\$.0.,\$.NOTDEFINED,.\$);  
#11657= IFCLOCALPLACEMENT(#11030,#11349);  
#11658=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));  
#11659= IFCREPRESENTATIONMAP(#10,#11658);  
#11660= IFCMAPPEDITEM(#11659,#11082);  
#11661=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));  
#11662= IFCREPRESENTATIONMAP(#10,#11661);  
#11663= IFCMAPPEDITEM(#11662,#11087);  
#11664=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));  
#11665= IFCREPRESENTATIONMAP(#10,#11664);  
#11666= IFCMAPPEDITEM(#11665,#11092);  
#11667=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));  
#11668= IFCREPRESENTATIONMAP(#10,#11667);  
#11669= IFCMAPPEDITEM(#11668,#11097);  
#11670=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));  
#11671= IFCREPRESENTATIONMAP(#10,#11670);  
#11672= IFCMAPPEDITEM(#11671,#11102);  
#11673=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));  
#11674= IFCREPRESENTATIONMAP(#10,#11673);  
#11675= IFCMAPPEDITEM(#11674,#11107);  
#11676=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));  
#11677= IFCREPRESENTATIONMAP(#10,#11676);  
#11678= IFCMAPPEDITEM(#11677,#11112);  
#11679=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));  
#11680= IFCREPRESENTATIONMAP(#10,#11679);  
#11681= IFCMAPPEDITEM(#11680,#11117);  
#11682=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));  
#11683= IFCREPRESENTATIONMAP(#10,#11682);  
#11684= IFCMAPPEDITEM(#11683,#11122);  
#11685=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));  
#11686= IFCREPRESENTATIONMAP(#10,#11685);  
#11687= IFCMAPPEDITEM(#11686,#11127);

#11688=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(##11  
 353));  
 #11689= IFCREPRESENTATIONMAP(#10,#11688);  
 #11690= IFCMAPPEDITEM(#11689,#11132);  
 #11691=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(##11  
 353));  
 #11692= IFCREPRESENTATIONMAP(#10,#11691);  
 #11693= IFCMAPPEDITEM(#11692,#11137);  
 #11694=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(##11  
 353));  
 #11695= IFCREPRESENTATIONMAP(#10,#11694);  
 #11696= IFCMAPPEDITEM(#11695,#11142);  
 #11697=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(##11  
 353));  
 #11698= IFCREPRESENTATIONMAP(#10,#11697);  
 #11699= IFCMAPPEDITEM(#11698,#11147);  
 #11700=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(##11  
 353));  
 #11701= IFCREPRESENTATIONMAP(#10,#11700);  
 #11702= IFCMAPPEDITEM(#11701,#11152);  
 #11703=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(##11  
 353));  
 #11704= IFCREPRESENTATIONMAP(#10,#11703);  
 #11705= IFCMAPPEDITEM(#11704,#11157);  
 #11706=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(##11  
 353));  
 #11707= IFCREPRESENTATIONMAP(#10,#11706);  
 #11708= IFCMAPPEDITEM(#11707,#11162);  
 #11709=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(##11  
 353));  
 #11710= IFCREPRESENTATIONMAP(#10,#11709);  
 #11711= IFCMAPPEDITEM(#11710,#11167);  
 #11712=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(##11  
 353));  
 #11713= IFCREPRESENTATIONMAP(#10,#11712);  
 #11714= IFCMAPPEDITEM(#11713,#11172);  
 #11715=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(##11  
 353));  
 #11716= IFCREPRESENTATIONMAP(#10,#11715);  
 #11717= IFCMAPPEDITEM(#11716,#11177);  
 #11718=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(##11  
 353));  
 #11719= IFCREPRESENTATIONMAP(#10,#11718);  
 #11720= IFCMAPPEDITEM(#11719,#11182);  
 #11721=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(##11  
 353));  
 #11722= IFCREPRESENTATIONMAP(#10,#11721);  
 #11723= IFCMAPPEDITEM(#11722,#11187);  
 #11724=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(##11  
 353));  
 #11725= IFCREPRESENTATIONMAP(#10,#11724);  
 #11726= IFCMAPPEDITEM(#11725,#11192);  
 #11727=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(##11  
 353));  
 #11728= IFCREPRESENTATIONMAP(#10,#11727);  
 #11729= IFCMAPPEDITEM(#11728,#11197);  
 #11730=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(##11  
 353));  
 #11731= IFCREPRESENTATIONMAP(#10,#11730);  
 #11732= IFCMAPPEDITEM(#11731,#11202);  
 #11733=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(##11  
 353));  
 #11734= IFCREPRESENTATIONMAP(#10,#11733);  
 #11735= IFCMAPPEDITEM(#11734,#11207);  
 #11736=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(##11  
 353));  
 #11737= IFCREPRESENTATIONMAP(#10,#11736);  
 #11738= IFCMAPPEDITEM(#11737,#11212);  
 #11739=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(##11  
 353));  
 #11740= IFCREPRESENTATIONMAP(#10,#11739);  
 #11741= IFCMAPPEDITEM(#11740,#11217);  
 #11742=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(##11  
 353));  
 #11743= IFCREPRESENTATIONMAP(#10,#11742);  
 #11744= IFCMAPPEDITEM(#11743,#11222);  
 #11745=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(##11  
 353));  
 #11746= IFCREPRESENTATIONMAP(#10,#11745);  
 #11747= IFCMAPPEDITEM(#11746,#11227);  
 #11748=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(##11  
 353));  
 #11749= IFCREPRESENTATIONMAP(#10,#11748);  
 #11750= IFCMAPPEDITEM(#11749,#11232);

#11751=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(##11  
 353));  
 #11752= IFCREPRESENTATIONMAP(#10,#11751);  
 #11753= IFCMAPPEDITEM(#11752,#11237);  
 #11754=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(##11  
 353));  
 #11755= IFCREPRESENTATIONMAP(#10,#11754);  
 #11756= IFCMAPPEDITEM(#11755,#11242);  
 #11757=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(##11  
 353));  
 #11758= IFCREPRESENTATIONMAP(#10,#11757);  
 #11759= IFCMAPPEDITEM(#11758,#11247);  
 #11760=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(##11  
 353));  
 #11761= IFCREPRESENTATIONMAP(#10,#11760);  
 #11762= IFCMAPPEDITEM(#11761,#11252);  
 #11763=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(##11  
 353));  
 #11764= IFCREPRESENTATIONMAP(#10,#11763);  
 #11765= IFCMAPPEDITEM(#11764,#11257);  
 #11766=  
 IFCSHAPEREPRESENTATION(#12,'Body','MappedRepresentation',(##  
 11660,#11663,#11666,#11669,#11672,#11675,#11678,#11681,#11684,#  
 11687,#11690,#11693,#11696,#11699,#11702,#11705,#11708,#11711,#  
 11714,#11717,#11720,#11723,#11726,#11729,#11732,#11735,#11738,#  
 11741,#11744,#11747,#11750,#11753,#11756,#11759,#11762,#11765));  
 #11767= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(##11766));  
 #11768=  
 IFCREINFORCINGBAR('1Ogjm000Cwp4qE3SvCZ8m',#5,'BOTTOM  
 \_BAR',\$,\$,#11657,#11767,'ID58aad26-0000-0ceb-3134-  
 383739323230',\$,10,,0,,\$,NOTDEFINED,\$);  
 #11769= IFCLOCALPLACEMENT(#11030,#11469);  
 #11770=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(##11  
 475));  
 #11771= IFCREPRESENTATIONMAP(#10,#11770);  
 #11772= IFCMAPPEDITEM(#11771,#11082);  
 #11773=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(##11  
 475));  
 #11774= IFCREPRESENTATIONMAP(#10,#11773);  
 #11775= IFCMAPPEDITEM(#11774,#11087);  
 #11776=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(##11  
 475));  
 #11777= IFCREPRESENTATIONMAP(#10,#11776);  
 #11778= IFCMAPPEDITEM(#11777,#11092);  
 #11779=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(##11  
 475));  
 #11780= IFCREPRESENTATIONMAP(#10,#11779);  
 #11781= IFCMAPPEDITEM(#11780,#11097);  
 #11782=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(##11  
 475));  
 #11783= IFCREPRESENTATIONMAP(#10,#11782);  
 #11784= IFCMAPPEDITEM(#11783,#11102);  
 #11785=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(##11  
 475));  
 #11786= IFCREPRESENTATIONMAP(#10,#11785);  
 #11787= IFCMAPPEDITEM(#11786,#11107);  
 #11788=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(##11  
 475));  
 #11789= IFCREPRESENTATIONMAP(#10,#11788);  
 #11790= IFCMAPPEDITEM(#11789,#11112);  
 #11791=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(##11  
 475));  
 #11792= IFCREPRESENTATIONMAP(#10,#11791);  
 #11793= IFCMAPPEDITEM(#11792,#11117);  
 #11794=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(##11  
 475));  
 #11795= IFCREPRESENTATIONMAP(#10,#11794);  
 #11796= IFCMAPPEDITEM(#11795,#11122);  
 #11797=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(##11  
 475));  
 #11798= IFCREPRESENTATIONMAP(#10,#11797);  
 #11799= IFCMAPPEDITEM(#11798,#11127);  
 #11800=  
 IFCSHAPEREPRESENTATION(#12,'Body','MappedRepresentation',(##  
 11772,#11775,#11778,#11781,#11784,#11787,#11790,#11793,#11796,#  
 11799));  
 #11801= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(##11800));  
 #11802=  
 IFCREINFORCINGBAR('1Ogjm000CxJ4qE3SvCZ8m',#5,'BOTTOM\_  
 BAR',\$,\$,#11769,#11801,'ID58aad26-0000-0ced-3134-  
 383739323230',\$,10,,0,,\$,NOTDEFINED,\$);  
 #11803= IFCLOCALPLACEMENT(#11030,#11071);  
 #11804=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(##11  
 080));  
 #11805= IFCREPRESENTATIONMAP(#10,#11804);  
 #11806= IFCMAPPEDITEM(#11805,#11082);  
 #11807=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(##11  
 080));



## Appendix

#11808= IFCREPRESENTATIONMAP(#10,#11807);  
#11809= IFCMAPPEDITEM(#11808,#11087);  
#11810=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
080));  
#11811= IFCREPRESENTATIONMAP(#10,#11810);  
#11812= IFCMAPPEDITEM(#11811,#11092);  
#11813=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
080));  
#11814= IFCREPRESENTATIONMAP(#10,#11813);  
#11815= IFCMAPPEDITEM(#11814,#11097);  
#11816=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
080));  
#11817= IFCREPRESENTATIONMAP(#10,#11816);  
#11818= IFCMAPPEDITEM(#11817,#11102);  
#11819=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
080));  
#11820= IFCREPRESENTATIONMAP(#10,#11819);  
#11821= IFCMAPPEDITEM(#11820,#11107);  
#11822=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
080));  
#11823= IFCREPRESENTATIONMAP(#10,#11822);  
#11824= IFCMAPPEDITEM(#11823,#11112);  
#11825=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
080));  
#11826= IFCREPRESENTATIONMAP(#10,#11825);  
#11827= IFCMAPPEDITEM(#11826,#11117);  
#11828=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
080));  
#11829= IFCREPRESENTATIONMAP(#10,#11828);  
#11830= IFCMAPPEDITEM(#11829,#11122);  
#11831=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
080));  
#11832= IFCREPRESENTATIONMAP(#10,#11831);  
#11833= IFCMAPPEDITEM(#11832,#11127);  
#11834=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
080));  
#11835= IFCREPRESENTATIONMAP(#10,#11834);  
#11836= IFCMAPPEDITEM(#11835,#11132);  
#11837=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
080));  
#11838= IFCREPRESENTATIONMAP(#10,#11837);  
#11839= IFCMAPPEDITEM(#11838,#11137);  
#11840=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
080));  
#11841= IFCREPRESENTATIONMAP(#10,#11840);  
#11842= IFCMAPPEDITEM(#11841,#11142);  
#11843=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
080));  
#11844= IFCREPRESENTATIONMAP(#10,#11843);  
#11845= IFCMAPPEDITEM(#11844,#11147);  
#11846=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
080));  
#11847= IFCREPRESENTATIONMAP(#10,#11846);  
#11848= IFCMAPPEDITEM(#11847,#11152);  
#11849=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
080));  
#11850= IFCREPRESENTATIONMAP(#10,#11849);  
#11851= IFCMAPPEDITEM(#11850,#11157);  
#11852=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
080));  
#11853= IFCREPRESENTATIONMAP(#10,#11852);  
#11854= IFCMAPPEDITEM(#11853,#11162);  
#11855=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
080));  
#11856= IFCREPRESENTATIONMAP(#10,#11855);  
#11857= IFCMAPPEDITEM(#11856,#11167);  
#11858=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
080));  
#11859= IFCREPRESENTATIONMAP(#10,#11858);  
#11860= IFCMAPPEDITEM(#11859,#11172);  
#11861=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
080));  
#11862= IFCREPRESENTATIONMAP(#10,#11861);  
#11863= IFCMAPPEDITEM(#11862,#11177);  
#11864=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
080));  
#11865= IFCREPRESENTATIONMAP(#10,#11864);  
#11866= IFCMAPPEDITEM(#11865,#11182);  
#11867=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
080));  
#11868= IFCREPRESENTATIONMAP(#10,#11867);  
#11869= IFCMAPPEDITEM(#11868,#11187);  
#11870=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
080));  
#11871= IFCREPRESENTATIONMAP(#10,#11870);  
#11872= IFCMAPPEDITEM(#11871,#11192);  
#11873=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
080));  
#11874= IFCREPRESENTATIONMAP(#10,#11873);  
#11875= IFCMAPPEDITEM(#11874,#11197);  
#11876=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
080));  
#11877= IFCREPRESENTATIONMAP(#10,#11876);  
#11878= IFCMAPPEDITEM(#11877,#11202);  
#11879=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
080));  
#11880= IFCREPRESENTATIONMAP(#10,#11879);  
#11881= IFCMAPPEDITEM(#11880,#11207);  
#11882=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
080));  
#11883= IFCREPRESENTATIONMAP(#10,#11882);  
#11884= IFCMAPPEDITEM(#11883,#11212);  
#11885=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
080));  
#11886= IFCREPRESENTATIONMAP(#10,#11885);  
#11887= IFCMAPPEDITEM(#11886,#11217);  
#11888=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
080));  
#11889= IFCREPRESENTATIONMAP(#10,#11888);  
#11890= IFCMAPPEDITEM(#11889,#11222);  
#11891=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
080));  
#11892= IFCREPRESENTATIONMAP(#10,#11891);  
#11893= IFCMAPPEDITEM(#11892,#11227);  
#11894=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
080));  
#11895= IFCREPRESENTATIONMAP(#10,#11894);  
#11896= IFCMAPPEDITEM(#11895,#11232);  
#11897=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
080));  
#11898= IFCREPRESENTATIONMAP(#10,#11897);  
#11899= IFCMAPPEDITEM(#11898,#11237);  
#11900=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
080));  
#11901= IFCREPRESENTATIONMAP(#10,#11900);  
#11902= IFCMAPPEDITEM(#11901,#11242);  
#11903=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
080));  
#11904= IFCREPRESENTATIONMAP(#10,#11903);  
#11905= IFCMAPPEDITEM(#11904,#11247);  
#11906=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
080));  
#11907= IFCREPRESENTATIONMAP(#10,#11906);  
#11908= IFCMAPPEDITEM(#11907,#11252);  
#11909=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
080));  
#11910= IFCREPRESENTATIONMAP(#10,#11909);  
#11911= IFCMAPPEDITEM(#11910,#11257);  
#11912=  
IFCSHAPEREPRESENTATION(#12,'Body','MappedRepresentation',(#  
11806,#11809,#11812,#11815,#11818,#11821,#11824,#11827,#11830,#  
11833,#11836,#11839,#11842,#11845,#11848,#11851,#11854,#11857,#  
11860,#11863,#11866,#11869,#11872,#11875,#11878,#11881,#11884,#  
11887,#11890,#11893,#11896,#11899,#11902,#11905,#11908,#11911));  
#11913= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#11912));  
#11914=  
IFCREINFORCINGBAR('1Ogjmcc00YcZ4qE3svCZ8m',#5,'TOP\_BAR  
,\$,S,#11803,#11913,'ID58aad26-0000-0c2-3134-  
383739323230',S,10,0,0,NOTDEFINED,\$);  
#11915= IFCLOCALPLACEMENT(#11030,#11300);  
#11916=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
307));  
#11917= IFCREPRESENTATIONMAP(#10,#11916);  
#11918= IFCMAPPEDITEM(#11917,#11082);  
#11919=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
307));  
#11920= IFCREPRESENTATIONMAP(#10,#11919);  
#11921= IFCMAPPEDITEM(#11920,#11087);  
#11922=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
307));  
#11923= IFCREPRESENTATIONMAP(#10,#11922);  
#11924= IFCMAPPEDITEM(#11923,#11092);  
#11925=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
307));  
#11926= IFCREPRESENTATIONMAP(#10,#11925);  
#11927= IFCMAPPEDITEM(#11926,#11097);  
#11928=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
307));  
#11929= IFCREPRESENTATIONMAP(#10,#11928);  
#11930= IFCMAPPEDITEM(#11929,#11102);

#11931=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 307));  
 #11932= IFCREPRESENTATIONMAP(#10,#11931);  
 #11933= IFCMAPPEDITEM(#11932,#11107);  
 #11934=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 307));  
 #11935= IFCREPRESENTATIONMAP(#10,#11934);  
 #11936= IFCMAPPEDITEM(#11935,#11112);  
 #11937=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 307));  
 #11938= IFCREPRESENTATIONMAP(#10,#11937);  
 #11939= IFCMAPPEDITEM(#11938,#11117);  
 #11940=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 307));  
 #11941= IFCREPRESENTATIONMAP(#10,#11940);  
 #11942= IFCMAPPEDITEM(#11941,#11122);  
 #11943=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 307));  
 #11944= IFCREPRESENTATIONMAP(#10,#11943);  
 #11945= IFCMAPPEDITEM(#11944,#11127);  
 #11946=  
 IFCSHAPEREPRESENTATION(#12,'Body','MappedRepresentation',(#  
 11918,#11921,#11924,#11927,#11930,#11933,#11936,#11939,#11942,#  
 11945));  
 #11947= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#11946));  
 #11948=  
 IFCREINFORCINGBAR('IOgimc000Cz34qE3SvCZ8m',#5, TOP\_BAR'  
 \$,\$,#11915,#11947,'IDS8aac26-0000-0cf4-3134-  
 383739323230',S,10,,0,,S,,NOTDEFINED,,S);  
 #11949= IFCLOCALPLACEMENT(#11030,#11349);  
 #11950=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 353));  
 #11951= IFCREPRESENTATIONMAP(#10,#11950);  
 #11952= IFCMAPPEDITEM(#11951,#11082);  
 #11953=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 353));  
 #11954= IFCREPRESENTATIONMAP(#10,#11953);  
 #11955= IFCMAPPEDITEM(#11954,#11087);  
 #11956=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 353));  
 #11957= IFCREPRESENTATIONMAP(#10,#11956);  
 #11958= IFCMAPPEDITEM(#11957,#11092);  
 #11959=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 353));  
 #11960= IFCREPRESENTATIONMAP(#10,#11959);  
 #11961= IFCMAPPEDITEM(#11960,#11097);  
 #11962=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 353));  
 #11963= IFCREPRESENTATIONMAP(#10,#11962);  
 #11964= IFCMAPPEDITEM(#11963,#11102);  
 #11965=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 353));  
 #11966= IFCREPRESENTATIONMAP(#10,#11965);  
 #11967= IFCMAPPEDITEM(#11966,#11107);  
 #11968=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 353));  
 #11969= IFCREPRESENTATIONMAP(#10,#11968);  
 #11970= IFCMAPPEDITEM(#11969,#11112);  
 #11971=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 353));  
 #11972= IFCREPRESENTATIONMAP(#10,#11971);  
 #11973= IFCMAPPEDITEM(#11972,#11117);  
 #11974=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 353));  
 #11975= IFCREPRESENTATIONMAP(#10,#11974);  
 #11976= IFCMAPPEDITEM(#11975,#11122);  
 #11977=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 353));  
 #11978= IFCREPRESENTATIONMAP(#10,#11977);  
 #11979= IFCMAPPEDITEM(#11978,#11127);  
 #11980=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 353));  
 #11981= IFCREPRESENTATIONMAP(#10,#11980);  
 #11982= IFCMAPPEDITEM(#11981,#11132);  
 #11983=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 353));  
 #11984= IFCREPRESENTATIONMAP(#10,#11983);  
 #11985= IFCMAPPEDITEM(#11984,#11137);  
 #11986=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 353));  
 #11987= IFCREPRESENTATIONMAP(#10,#11986);  
 #11988= IFCMAPPEDITEM(#11987,#11142);  
 #11989=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 353));  
 #11990= IFCREPRESENTATIONMAP(#10,#11989);  
 #11991= IFCMAPPEDITEM(#11990,#11147);

#11992=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 353));  
 #11993= IFCREPRESENTATIONMAP(#10,#11992);  
 #11994= IFCMAPPEDITEM(#11993,#11152);  
 #11995=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 353));  
 #11996= IFCREPRESENTATIONMAP(#10,#11995);  
 #11997= IFCMAPPEDITEM(#11996,#11157);  
 #11998=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 353));  
 #11999= IFCREPRESENTATIONMAP(#10,#11998);  
 #12000= IFCMAPPEDITEM(#11999,#11162);  
 #12001=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 353));  
 #12002= IFCREPRESENTATIONMAP(#10,#12001);  
 #12003= IFCMAPPEDITEM(#12002,#11167);  
 #12004=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 353));  
 #12005= IFCREPRESENTATIONMAP(#10,#12004);  
 #12006= IFCMAPPEDITEM(#12005,#11172);  
 #12007=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 353));  
 #12008= IFCREPRESENTATIONMAP(#10,#12007);  
 #12009= IFCMAPPEDITEM(#12008,#11177);  
 #12010=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 353));  
 #12011= IFCREPRESENTATIONMAP(#10,#12010);  
 #12012= IFCMAPPEDITEM(#12011,#11182);  
 #12013=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 353));  
 #12014= IFCREPRESENTATIONMAP(#10,#12013);  
 #12015= IFCMAPPEDITEM(#12014,#11187);  
 #12016=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 353));  
 #12017= IFCREPRESENTATIONMAP(#10,#12016);  
 #12018= IFCMAPPEDITEM(#12017,#11192);  
 #12019=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 353));  
 #12020= IFCREPRESENTATIONMAP(#10,#12019);  
 #12021= IFCMAPPEDITEM(#12020,#11197);  
 #12022=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 353));  
 #12023= IFCREPRESENTATIONMAP(#10,#12022);  
 #12024= IFCMAPPEDITEM(#12023,#11202);  
 #12025=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 353));  
 #12026= IFCREPRESENTATIONMAP(#10,#12025);  
 #12027= IFCMAPPEDITEM(#12026,#11207);  
 #12028=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 353));  
 #12029= IFCREPRESENTATIONMAP(#10,#12028);  
 #12030= IFCMAPPEDITEM(#12029,#11212);  
 #12031=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 353));  
 #12032= IFCREPRESENTATIONMAP(#10,#12031);  
 #12033= IFCMAPPEDITEM(#12032,#11217);  
 #12034=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 353));  
 #12035= IFCREPRESENTATIONMAP(#10,#12034);  
 #12036= IFCMAPPEDITEM(#12035,#11222);  
 #12037=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 353));  
 #12038= IFCREPRESENTATIONMAP(#10,#12037);  
 #12039= IFCMAPPEDITEM(#12038,#11227);  
 #12040=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 353));  
 #12041= IFCREPRESENTATIONMAP(#10,#12040);  
 #12042= IFCMAPPEDITEM(#12041,#11232);  
 #12043=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 353));  
 #12044= IFCREPRESENTATIONMAP(#10,#12043);  
 #12045= IFCMAPPEDITEM(#12044,#11237);  
 #12046=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 353));  
 #12047= IFCREPRESENTATIONMAP(#10,#12046);  
 #12048= IFCMAPPEDITEM(#12047,#11242);  
 #12049=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 353));  
 #12050= IFCREPRESENTATIONMAP(#10,#12049);  
 #12051= IFCMAPPEDITEM(#12050,#11247);  
 #12052=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 353));  
 #12053= IFCREPRESENTATIONMAP(#10,#12052);  
 #12054= IFCMAPPEDITEM(#12053,#11252);

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#12055=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
353));  
#12056= IFCREPRESENTATIONMAP(#10,#12055);  
#12057= IFCMAPPEDITEM(#12056,#1257);  
#12058=  
IFCSHAPEREPRESENTATION(#12,'Body','MappedRepresentation',(#  
11952,#11955,#11958,#11961,#11964,#11967,#11970,#11973,#11976,#  
11979,#11982,#11985,#11988,#11991,#11994,#11997,#12000,#12003,#  
12006,#12009,#12012,#12015,#12018,#12021,#12024,#12027,#12030,#  
12033,#12036,#12039,#12042,#12045,#12048,#12051,#12054,#12057));  
#12059= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#12058));  
#12060=  
IFCREINFORCINGBAR('IOgimc000CzZ4qE3SvCZ8m',#5,'BOTTOM  
\_BAR',\$,\$,#11949,#12059,'ID58aad26-0000-0cf6-3134-  
383739323230',\$,10,,0,,\$,NOTDEFINED,\$);  
#12061= IFCLOCALPLACEMENT(#11030,#11469);  
#12062=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
475));  
#12063= IFCREPRESENTATIONMAP(#10,#12062);  
#12064= IFCMAPPEDITEM(#12063,#11082);  
#12065=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
475));  
#12066= IFCREPRESENTATIONMAP(#10,#12065);  
#12067= IFCMAPPEDITEM(#12066,#11087);  
#12068=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
475));  
#12069= IFCREPRESENTATIONMAP(#10,#12068);  
#12070= IFCMAPPEDITEM(#12069,#11092);  
#12071=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
475));  
#12072= IFCREPRESENTATIONMAP(#10,#12071);  
#12073= IFCMAPPEDITEM(#12072,#11097);  
#12074=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
475));  
#12075= IFCREPRESENTATIONMAP(#10,#12074);  
#12076= IFCMAPPEDITEM(#12075,#11102);  
#12077=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
475));  
#12078= IFCREPRESENTATIONMAP(#10,#12077);  
#12079= IFCMAPPEDITEM(#12078,#11107);  
#12080=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
475));  
#12081= IFCREPRESENTATIONMAP(#10,#12080);  
#12082= IFCMAPPEDITEM(#12081,#11112);  
#12083=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
475));  
#12084= IFCREPRESENTATIONMAP(#10,#12083);  
#12085= IFCMAPPEDITEM(#12084,#11117);  
#12086=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
475));  
#12087= IFCREPRESENTATIONMAP(#10,#12086);  
#12088= IFCMAPPEDITEM(#12087,#11122);  
#12089=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
475));  
#12090= IFCREPRESENTATIONMAP(#10,#12089);  
#12091= IFCMAPPEDITEM(#12090,#11127);  
#12092=  
IFCSHAPEREPRESENTATION(#12,'Body','MappedRepresentation',(#  
12064,#12067,#12070,#12073,#12076,#12079,#12082,#12085,#12088,#  
12091));  
#12093= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#12092));  
#12094=  
IFCREINFORCINGBAR('IOgimc000C\_34qE3SvCZ8m',#5,'BOTTOM  
\_BAR',\$,\$,#12061,#12093,'ID58aad26-0000-0cf8-3134-  
383739323230',\$,10,,0,,\$,NOTDEFINED,\$);  
#12095= IFCLOCALPLACEMENT(#11030,#11071);  
#12096=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
080));  
#12097= IFCREPRESENTATIONMAP(#10,#12096);  
#12098= IFCMAPPEDITEM(#12097,#11082);  
#12099=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
080));  
#12100= IFCREPRESENTATIONMAP(#10,#12099);  
#12101= IFCMAPPEDITEM(#12100,#11087);  
#12102=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
080));  
#12103= IFCREPRESENTATIONMAP(#10,#12102);  
#12104= IFCMAPPEDITEM(#12103,#11092);  
#12105=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
080));  
#12106= IFCREPRESENTATIONMAP(#10,#12105);  
#12107= IFCMAPPEDITEM(#12106,#11097);  
#12108=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
080));  
#12109= IFCREPRESENTATIONMAP(#10,#12108);  
#12110= IFCMAPPEDITEM(#12109,#11102);  
#12111=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
080));  
#12112= IFCREPRESENTATIONMAP(#10,#12111);  
#12113= IFCMAPPEDITEM(#12112,#11107);  
#12114=  
IFCSHAPEREPREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
080));  
#12115= IFCREPRESENTATIONMAP(#10,#12114);  
#12116= IFCMAPPEDITEM(#12115,#11112);  
#12117=  
IFCSHAPEREPREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
080));  
#12118= IFCREPRESENTATIONMAP(#10,#12117);  
#12119= IFCMAPPEDITEM(#12118,#11117);  
#12120=  
IFCSHAPEREPREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
080));  
#12121= IFCREPRESENTATIONMAP(#10,#12120);  
#12122= IFCMAPPEDITEM(#12121,#11122);  
#12123=  
IFCSHAPEREPREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
080));  
#12124= IFCREPRESENTATIONMAP(#10,#12123);  
#12125= IFCMAPPEDITEM(#12124,#11127);  
#12126=  
IFCSHAPEREPREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
080));  
#12127= IFCREPRESENTATIONMAP(#10,#12126);  
#12128= IFCMAPPEDITEM(#12127,#11132);  
#12129=  
IFCSHAPEREPREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
080));  
#12130= IFCREPRESENTATIONMAP(#10,#12129);  
#12131= IFCMAPPEDITEM(#12130,#11137);  
#12132=  
IFCSHAPEREPREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
080));  
#12133= IFCREPRESENTATIONMAP(#10,#12132);  
#12134= IFCMAPPEDITEM(#12133,#11142);  
#12135=  
IFCSHAPEREPREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
080));  
#12136= IFCREPRESENTATIONMAP(#10,#12135);  
#12137= IFCMAPPEDITEM(#12136,#11147);  
#12138=  
IFCSHAPEREPREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
080));  
#12139= IFCREPRESENTATIONMAP(#10,#12138);  
#12140= IFCMAPPEDITEM(#12139,#11152);  
#12141=  
IFCSHAPEREPREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
080));  
#12142= IFCREPRESENTATIONMAP(#10,#12141);  
#12143= IFCMAPPEDITEM(#12142,#11157);  
#12144=  
IFCSHAPEREPREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
080));  
#12145= IFCREPRESENTATIONMAP(#10,#12144);  
#12146= IFCMAPPEDITEM(#12145,#11162);  
#12147=  
IFCSHAPEREPREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
080));  
#12148= IFCREPRESENTATIONMAP(#10,#12147);  
#12149= IFCMAPPEDITEM(#12148,#11167);  
#12150=  
IFCSHAPEREPREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
080));  
#12151= IFCREPRESENTATIONMAP(#10,#12150);  
#12152= IFCMAPPEDITEM(#12151,#11172);  
#12153=  
IFCSHAPEREPREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
080));  
#12154= IFCREPRESENTATIONMAP(#10,#12153);  
#12155= IFCMAPPEDITEM(#12154,#11177);  
#12156=  
IFCSHAPEREPREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
080));  
#12157= IFCREPRESENTATIONMAP(#10,#12156);  
#12158= IFCMAPPEDITEM(#12157,#11182);  
#12159=  
IFCSHAPEREPREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
080));  
#12160= IFCREPRESENTATIONMAP(#10,#12159);  
#12161= IFCMAPPEDITEM(#12160,#11187);  
#12162=  
IFCSHAPEREPREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
080));  
#12163= IFCREPRESENTATIONMAP(#10,#12162);  
#12164= IFCMAPPEDITEM(#12163,#11192);  
#12165=  
IFCSHAPEREPREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
080));  
#12166= IFCREPRESENTATIONMAP(#10,#12165);  
#12167= IFCMAPPEDITEM(#12166,#11197);  
#12168=  
IFCSHAPEREPREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
080));  
#12169= IFCREPRESENTATIONMAP(#10,#12168);  
#12170= IFCMAPPEDITEM(#12169,#1202);  
#12171=  
IFCSHAPEREPREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
080));  
#12172= IFCREPRESENTATIONMAP(#10,#12171);  
#12173= IFCMAPPEDITEM(#12172,#11207);  
#12174=  
IFCSHAPEREPREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
080));

#12175= IFCREPRESENTATIONMAP(#10,#12174);  
 #12176= IFCMAPPEDITEM(#12175,#11212);  
 #12177=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
 #12178= IFCREPRESENTATIONMAP(#10,#12177);  
 #12179= IFCMAPPEDITEM(#12178,#11217);  
 #12180=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
 #12181= IFCREPRESENTATIONMAP(#10,#12180);  
 #12182= IFCMAPPEDITEM(#12181,#11222);  
 #12183=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
 #12184= IFCREPRESENTATIONMAP(#10,#12183);  
 #12185= IFCMAPPEDITEM(#12184,#11227);  
 #12186=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
 #12187= IFCREPRESENTATIONMAP(#10,#12186);  
 #12188= IFCMAPPEDITEM(#12187,#11232);  
 #12189=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
 #12190= IFCREPRESENTATIONMAP(#10,#12189);  
 #12191= IFCMAPPEDITEM(#12190,#11237);  
 #12192=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
 #12193= IFCREPRESENTATIONMAP(#10,#12192);  
 #12194= IFCMAPPEDITEM(#12193,#11242);  
 #12195=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
 #12196= IFCREPRESENTATIONMAP(#10,#12195);  
 #12197= IFCMAPPEDITEM(#12196,#11247);  
 #12198=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
 #12199= IFCREPRESENTATIONMAP(#10,#12198);  
 #12200= IFCMAPPEDITEM(#12199,#11252);  
 #12201=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
 #12202= IFCREPRESENTATIONMAP(#10,#12201);  
 #12203= IFCMAPPEDITEM(#12202,#11257);  
 #12204=  
 IFCSHAPEREPRESENTATION(#12,'Body','MappedRepresentation',(#12098,#12101,#12104,#12107,#12110,#12113,#12116,#12119,#12122,#12125,#12128,#12131,#12134,#12137,#12140,#12143,#12146,#12149,#12152,#12155,#12158,#12161,#12164,#12167,#12170,#12173,#12176,#12179,#12182,#12185,#12188,#12191,#12194,#12197,#12200,#12203));  
 #12205= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#12204));  
 #12206=  
 IFCREINFORCINGBAR('10gimc000CJ4qE3SvCZ8m',#5,'TOP\_BAR',\$,\$,#12095,#12205,'ID58aad26-0000-0cfd-3134-383739323230',\$,10,0,\$,\$,NOTDEFINED,\$);  
 #12207= IFCLOCALPLACEMENT(#11030,#11300);  
 #12208=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11307));  
 #12209= IFCREPRESENTATIONMAP(#10,#12208);  
 #12210= IFCMAPPEDITEM(#12209,#11082);  
 #12211=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11307));  
 #12212= IFCREPRESENTATIONMAP(#10,#12211);  
 #12213= IFCMAPPEDITEM(#12212,#11087);  
 #12214=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11307));  
 #12215= IFCREPRESENTATIONMAP(#10,#12214);  
 #12216= IFCMAPPEDITEM(#12215,#11092);  
 #12217=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11307));  
 #12218= IFCREPRESENTATIONMAP(#10,#12217);  
 #12219= IFCMAPPEDITEM(#12218,#11097);  
 #12220=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11307));  
 #12221= IFCREPRESENTATIONMAP(#10,#12220);  
 #12222= IFCMAPPEDITEM(#12221,#11102);  
 #12223=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11307));  
 #12224= IFCREPRESENTATIONMAP(#10,#12223);  
 #12225= IFCMAPPEDITEM(#12224,#11107);  
 #12226=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11307));  
 #12227= IFCREPRESENTATIONMAP(#10,#12226);  
 #12228= IFCMAPPEDITEM(#12227,#11112);  
 #12229=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11307));  
 #12230= IFCREPRESENTATIONMAP(#10,#12229);  
 #12231= IFCMAPPEDITEM(#12230,#11117);  
 #12232=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11307));  
 #12233= IFCREPRESENTATIONMAP(#10,#12232);  
 #12234= IFCMAPPEDITEM(#12233,#11122);

#12235=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11307));  
 #12236= IFCREPRESENTATIONMAP(#10,#12235);  
 #12237= IFCMAPPEDITEM(#12236,#11127);  
 #12238=  
 IFCSHAPEREPRESENTATION(#12,'Body','MappedRepresentation',(#12210,#12213,#12216,#12219,#12222,#12225,#12228,#12231,#12234,#12237));  
 #12239= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#12238));  
 #12240=  
 IFCREINFORCINGBAR('10gimc000CSp4qE3SvCZ8m',#5,'TOP\_BAR',\$,\$,#12207,#12239,'ID58aad26-0000-0cfd-3134-383739323230',\$,10,0,\$,\$,NOTDEFINED,\$);  
 #12241= IFCLOCALPLACEMENT(#11030,#11349);  
 #12242=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));  
 #12243= IFCREPRESENTATIONMAP(#10,#12242);  
 #12244= IFCMAPPEDITEM(#12243,#11082);  
 #12245=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));  
 #12246= IFCREPRESENTATIONMAP(#10,#12245);  
 #12247= IFCMAPPEDITEM(#12246,#11087);  
 #12248=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));  
 #12249= IFCREPRESENTATIONMAP(#10,#12248);  
 #12250= IFCMAPPEDITEM(#12249,#11092);  
 #12251=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));  
 #12252= IFCREPRESENTATIONMAP(#10,#12251);  
 #12253= IFCMAPPEDITEM(#12252,#11097);  
 #12254=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));  
 #12255= IFCREPRESENTATIONMAP(#10,#12254);  
 #12256= IFCMAPPEDITEM(#12255,#11102);  
 #12257=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));  
 #12258= IFCREPRESENTATIONMAP(#10,#12257);  
 #12259= IFCMAPPEDITEM(#12258,#11107);  
 #12260=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));  
 #12261= IFCREPRESENTATIONMAP(#10,#12260);  
 #12262= IFCMAPPEDITEM(#12261,#11112);  
 #12263=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));  
 #12264= IFCREPRESENTATIONMAP(#10,#12263);  
 #12265= IFCMAPPEDITEM(#12264,#11117);  
 #12266=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));  
 #12267= IFCREPRESENTATIONMAP(#10,#12266);  
 #12268= IFCMAPPEDITEM(#12267,#11122);  
 #12269=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));  
 #12270= IFCREPRESENTATIONMAP(#10,#12269);  
 #12271= IFCMAPPEDITEM(#12270,#11127);  
 #12272=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));  
 #12273= IFCREPRESENTATIONMAP(#10,#12272);  
 #12274= IFCMAPPEDITEM(#12273,#11132);  
 #12275=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));  
 #12276= IFCREPRESENTATIONMAP(#10,#12275);  
 #12277= IFCMAPPEDITEM(#12276,#11137);  
 #12278=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));  
 #12279= IFCREPRESENTATIONMAP(#10,#12278);  
 #12280= IFCMAPPEDITEM(#12279,#11142);  
 #12281=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));  
 #12282= IFCREPRESENTATIONMAP(#10,#12281);  
 #12283= IFCMAPPEDITEM(#12282,#11147);  
 #12284=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));  
 #12285= IFCREPRESENTATIONMAP(#10,#12284);  
 #12286= IFCMAPPEDITEM(#12285,#11152);  
 #12287=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));  
 #12288= IFCREPRESENTATIONMAP(#10,#12287);  
 #12289= IFCMAPPEDITEM(#12288,#11157);  
 #12290=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));  
 #12291= IFCREPRESENTATIONMAP(#10,#12290);  
 #12292= IFCMAPPEDITEM(#12291,#11162);  
 #12293=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));  
 #12294= IFCREPRESENTATIONMAP(#10,#12293);  
 #12295= IFCMAPPEDITEM(#12294,#11167);

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#12296=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
353));  
#12297= IFCREPRESENTATIONMAP(#10,#12296);  
#12298= IFCMAPPEDITEM(#12297,#11172);  
#12299=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
353));  
#12300= IFCREPRESENTATIONMAP(#10,#12299);  
#12301= IFCMAPPEDITEM(#12300,#11177);  
#12302=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
353));  
#12303= IFCREPRESENTATIONMAP(#10,#12302);  
#12304= IFCMAPPEDITEM(#12303,#11182);  
#12305=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
353));  
#12306= IFCREPRESENTATIONMAP(#10,#12305);  
#12307= IFCMAPPEDITEM(#12306,#11187);  
#12308=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
353));  
#12309= IFCREPRESENTATIONMAP(#10,#12308);  
#12310= IFCMAPPEDITEM(#12309,#11192);  
#12311=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
353));  
#12312= IFCREPRESENTATIONMAP(#10,#12311);  
#12313= IFCMAPPEDITEM(#12312,#11197);  
#12314=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
353));  
#12315= IFCREPRESENTATIONMAP(#10,#12314);  
#12316= IFCMAPPEDITEM(#12315,#11202);  
#12317=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
353));  
#12318= IFCREPRESENTATIONMAP(#10,#12317);  
#12319= IFCMAPPEDITEM(#12318,#11207);  
#12320=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
353));  
#12321= IFCREPRESENTATIONMAP(#10,#12320);  
#12322= IFCMAPPEDITEM(#12321,#11212);  
#12323=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
353));  
#12324= IFCREPRESENTATIONMAP(#10,#12323);  
#12325= IFCMAPPEDITEM(#12324,#11217);  
#12326=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
353));  
#12327= IFCREPRESENTATIONMAP(#10,#12326);  
#12328= IFCMAPPEDITEM(#12327,#11222);  
#12329=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
353));  
#12330= IFCREPRESENTATIONMAP(#10,#12329);  
#12331= IFCMAPPEDITEM(#12330,#11227);  
#12332=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
353));  
#12333= IFCREPRESENTATIONMAP(#10,#12332);  
#12334= IFCMAPPEDITEM(#12333,#11232);  
#12335=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
353));  
#12336= IFCREPRESENTATIONMAP(#10,#12335);  
#12337= IFCMAPPEDITEM(#12336,#11237);  
#12338=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
353));  
#12339= IFCREPRESENTATIONMAP(#10,#12338);  
#12340= IFCMAPPEDITEM(#12339,#11242);  
#12341=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
353));  
#12342= IFCREPRESENTATIONMAP(#10,#12341);  
#12343= IFCMAPPEDITEM(#12342,#11247);  
#12344=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
353));  
#12345= IFCREPRESENTATIONMAP(#10,#12344);  
#12346= IFCMAPPEDITEM(#12345,#11252);  
#12347=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
353));  
#12348= IFCREPRESENTATIONMAP(#10,#12347);  
#12349= IFCMAPPEDITEM(#12348,#11257);  
#12350=  
IFCSHAPEREPRESENTATION(#12,'Body','MappedRepresentation',(#  
12244,#12247,#12250,#12253,#12256,#12259,#12262,#12265,#12268,#  
12271,#12274,#12277,#12280,#12283,#12286,#12289,#12292,#12295,#  
12298,#12301,#12304,#12307,#12310,#12313,#12316,#12319,#12322,#  
12325,#12328,#12331,#12334,#12337,#12340,#12343,#12346,#12349));  
#12351= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#12350));  
#12352=  
IFCREINFORCINGBAR('10gimc000D0J4qE3SvCZ8m',#5,'BOTTOM  
\_BAR',\$,\$,#12351,'ID58aad626-0000-0d01-3134-  
383739323230',S,10,,0,,S,,NOTDEFINED,,S);  
#12353= IFCLOCALPLACEMENT(#11030,#11469);  
#12354=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
475));  
#12355= IFCREPRESENTATIONMAP(#10,#12354);  
#12356= IFCMAPPEDITEM(#12355,#11082);  
#12357=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
475));  
#12358= IFCREPRESENTATIONMAP(#10,#12357);  
#12359= IFCMAPPEDITEM(#12358,#11087);  
#12360=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
475));  
#12361= IFCREPRESENTATIONMAP(#10,#12360);  
#12362= IFCMAPPEDITEM(#12361,#11092);  
#12363=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
475));  
#12364= IFCREPRESENTATIONMAP(#10,#12363);  
#12365= IFCMAPPEDITEM(#12364,#11097);  
#12366=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
475));  
#12367= IFCREPRESENTATIONMAP(#10,#12366);  
#12368= IFCMAPPEDITEM(#12367,#11102);  
#12369=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
475));  
#12370= IFCREPRESENTATIONMAP(#10,#12369);  
#12371= IFCMAPPEDITEM(#12370,#11107);  
#12372=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
475));  
#12373= IFCREPRESENTATIONMAP(#10,#12372);  
#12374= IFCMAPPEDITEM(#12373,#11112);  
#12375=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
475));  
#12376= IFCREPRESENTATIONMAP(#10,#12375);  
#12377= IFCMAPPEDITEM(#12376,#11117);  
#12378=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
475));  
#12379= IFCREPRESENTATIONMAP(#10,#12378);  
#12380= IFCMAPPEDITEM(#12379,#11122);  
#12381=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
475));  
#12382= IFCREPRESENTATIONMAP(#10,#12381);  
#12383= IFCMAPPEDITEM(#12382,#11127);  
#12384=  
IFCSHAPEREPRESENTATION(#12,'Body','MappedRepresentation',(#  
12356,#12359,#12362,#12365,#12368,#12371,#12374,#12377,#12380,#  
12383));  
#12385= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#12384));  
#12386=  
IFCREINFORCINGBAR('10gimc000D0p4qE3SvCZ8m',#5,'BOTTOM  
\_BAR',\$,\$,#12385,'ID58aad626-0000-0d03-3134-  
383739323230',S,10,,0,,S,,NOTDEFINED,,S);  
#12387= IFCLOCALPLACEMENT(#11030,#11071);  
#12388=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
080));  
#12389= IFCREPRESENTATIONMAP(#10,#12388);  
#12390= IFCMAPPEDITEM(#12389,#11082);  
#12391=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
080));  
#12392= IFCREPRESENTATIONMAP(#10,#12391);  
#12393= IFCMAPPEDITEM(#12392,#11087);  
#12394=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
080));  
#12395= IFCREPRESENTATIONMAP(#10,#12394);  
#12396= IFCMAPPEDITEM(#12395,#11092);  
#12397=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
080));  
#12398= IFCREPRESENTATIONMAP(#10,#12397);  
#12399= IFCMAPPEDITEM(#12398,#11097);  
#12400=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
080));  
#12401= IFCREPRESENTATIONMAP(#10,#12401);  
#12402= IFCMAPPEDITEM(#12401,#11102);  
#12403=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
080));  
#12404= IFCREPRESENTATIONMAP(#10,#12403);  
#12405= IFCMAPPEDITEM(#12404,#11107);  
#12406=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
080));  
#12407= IFCREPRESENTATIONMAP(#10,#12406);  
#12408= IFCMAPPEDITEM(#12407,#11112);  
#12409=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
080));  
#12410= IFCREPRESENTATIONMAP(#10,#12409);  
#12411= IFCMAPPEDITEM(#12410,#11117);  
#12412=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
080));  
#12413= IFCREPRESENTATIONMAP(#10,#12412);  
#12414= IFCMAPPEDITEM(#12413,#11122);  
#12415=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
080));

#12416= IFCREPRESENTATIONMAP(#10,#12415);  
 #12417= IFCMAPPEDITEM(#12416,#11127);  
 #12418=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
 #12419= IFCREPRESENTATIONMAP(#10,#12418);  
 #12420= IFCMAPPEDITEM(#12419,#11132);  
 #12421=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
 #12422= IFCREPRESENTATIONMAP(#10,#12421);  
 #12423= IFCMAPPEDITEM(#12422,#11137);  
 #12424=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
 #12425= IFCREPRESENTATIONMAP(#10,#12424);  
 #12426= IFCMAPPEDITEM(#12425,#11142);  
 #12427=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
 #12428= IFCREPRESENTATIONMAP(#10,#12427);  
 #12429= IFCMAPPEDITEM(#12428,#11147);  
 #12430=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
 #12431= IFCREPRESENTATIONMAP(#10,#12430);  
 #12432= IFCMAPPEDITEM(#12431,#11152);  
 #12433=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
 #12434= IFCREPRESENTATIONMAP(#10,#12433);  
 #12435= IFCMAPPEDITEM(#12434,#11157);  
 #12436=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
 #12437= IFCREPRESENTATIONMAP(#10,#12436);  
 #12438= IFCMAPPEDITEM(#12437,#11162);  
 #12439=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
 #12440= IFCREPRESENTATIONMAP(#10,#12439);  
 #12441= IFCMAPPEDITEM(#12440,#11167);  
 #12442=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
 #12443= IFCREPRESENTATIONMAP(#10,#12442);  
 #12444= IFCMAPPEDITEM(#12443,#11172);  
 #12445=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
 #12446= IFCREPRESENTATIONMAP(#10,#12445);  
 #12447= IFCMAPPEDITEM(#12446,#11177);  
 #12448=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
 #12449= IFCREPRESENTATIONMAP(#10,#12448);  
 #12450= IFCMAPPEDITEM(#12449,#11182);  
 #12451=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
 #12452= IFCREPRESENTATIONMAP(#10,#12451);  
 #12453= IFCMAPPEDITEM(#12452,#11187);  
 #12454=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
 #12455= IFCREPRESENTATIONMAP(#10,#12454);  
 #12456= IFCMAPPEDITEM(#12455,#11192);  
 #12457=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
 #12458= IFCREPRESENTATIONMAP(#10,#12457);  
 #12459= IFCMAPPEDITEM(#12458,#11197);  
 #12460=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
 #12461= IFCREPRESENTATIONMAP(#10,#12460);  
 #12462= IFCMAPPEDITEM(#12461,#11202);  
 #12463=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
 #12464= IFCREPRESENTATIONMAP(#10,#12463);  
 #12465= IFCMAPPEDITEM(#12464,#11207);  
 #12466=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
 #12467= IFCREPRESENTATIONMAP(#10,#12466);  
 #12468= IFCMAPPEDITEM(#12467,#11212);  
 #12469=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
 #12470= IFCREPRESENTATIONMAP(#10,#12469);  
 #12471= IFCMAPPEDITEM(#12470,#11217);  
 #12472=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
 #12473= IFCREPRESENTATIONMAP(#10,#12472);  
 #12474= IFCMAPPEDITEM(#12473,#11222);  
 #12475=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
 #12476= IFCREPRESENTATIONMAP(#10,#12475);  
 #12477= IFCMAPPEDITEM(#12476,#11227);  
 #12478=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));

#12479= IFCREPRESENTATIONMAP(#10,#12478);  
 #12480= IFCMAPPEDITEM(#12479,#11232);  
 #12481=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
 #12482= IFCREPRESENTATIONMAP(#10,#12481);  
 #12483= IFCMAPPEDITEM(#12482,#11237);  
 #12484=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
 #12485= IFCREPRESENTATIONMAP(#10,#12484);  
 #12486= IFCMAPPEDITEM(#12485,#11242);  
 #12487=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
 #12488= IFCREPRESENTATIONMAP(#10,#12487);  
 #12489= IFCMAPPEDITEM(#12488,#11247);  
 #12490=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
 #12491= IFCREPRESENTATIONMAP(#10,#12490);  
 #12492= IFCMAPPEDITEM(#12491,#11252);  
 #12493=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
 #12494= IFCREPRESENTATIONMAP(#10,#12493);  
 #12495= IFCMAPPEDITEM(#12494,#11257);  
 #12496=  
 IFCSHAPEREPRESENTATION(#12,'Body','MappedRepresentation',(#12390,#12393,#12396,#12399,#12402,#12405,#12408,#12411,#12414,#12417,#12420,#12423,#12426,#12429,#12432,#12435,#12438,#12441,#12444,#12447,#12450,#12453,#12456,#12459,#12462,#12465,#12468,#12471,#12474,#12477,#12480,#12483,#12486,#12489,#12492,#12495));  
 #12497= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#12496));  
 #12498=  
 IFCREINFORCINGBAR('1Ogjm000D234qE3SvCZ8m',#5,'TOP\_BAR',\$,\$,#12387,#12497,'ID58aad26-0000-0d0a-3134-383739323230',\$,10,0,\$,NOTDEFINED,\$);  
 #12499= IFCLOCALPLACEMENT(#11030,#11300);  
 #12500=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11307));  
 #12501= IFCREPRESENTATIONMAP(#10,#12500);  
 #12502= IFCMAPPEDITEM(#12501,#11082);  
 #12503=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11307));  
 #12504= IFCREPRESENTATIONMAP(#10,#12503);  
 #12505= IFCMAPPEDITEM(#12504,#11087);  
 #12506=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11307));  
 #12507= IFCREPRESENTATIONMAP(#10,#12506);  
 #12508= IFCMAPPEDITEM(#12507,#11092);  
 #12509=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11307));  
 #12510= IFCREPRESENTATIONMAP(#10,#12509);  
 #12511= IFCMAPPEDITEM(#12510,#11097);  
 #12512=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11307));  
 #12513= IFCREPRESENTATIONMAP(#10,#12512);  
 #12514= IFCMAPPEDITEM(#12513,#11102);  
 #12515=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11307));  
 #12516= IFCREPRESENTATIONMAP(#10,#12515);  
 #12517= IFCMAPPEDITEM(#12516,#11107);  
 #12518=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11307));  
 #12519= IFCREPRESENTATIONMAP(#10,#12518);  
 #12520= IFCMAPPEDITEM(#12519,#11112);  
 #12521=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11307));  
 #12522= IFCREPRESENTATIONMAP(#10,#12521);  
 #12523= IFCMAPPEDITEM(#12522,#11117);  
 #12524=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11307));  
 #12525= IFCREPRESENTATIONMAP(#10,#12524);  
 #12526= IFCMAPPEDITEM(#12525,#11122);  
 #12527=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11307));  
 #12528= IFCREPRESENTATIONMAP(#10,#12527);  
 #12529= IFCMAPPEDITEM(#12528,#11127);  
 #12530=  
 IFCSHAPEREPRESENTATION(#12,'Body','MappedRepresentation',(#12502,#12505,#12508,#12511,#12514,#12517,#12520,#12523,#12526,#12529));  
 #12531= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#12530));  
 #12532=  
 IFCREINFORCINGBAR('1Ogjm000D224qE3SvCZ8m',#5,'TOP\_BAR',\$,\$,#12499,#12531,'ID58aad26-0000-0d0a-3134-383739323230',\$,10,0,\$,NOTDEFINED,\$);  
 #12533= IFCLOCALPLACEMENT(#11030,#11349);  
 #12534=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));  
 #12535= IFCREPRESENTATIONMAP(#10,#12534);  
 #12536= IFCMAPPEDITEM(#12535,#11082);

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#12537=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
353));  
#12538= IFCREPRESENTATIONMAP(#10,#12537);  
#12539= IFCMAPPEDITEM(#12538,#11087);  
#12540=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
353));  
#12541= IFCREPRESENTATIONMAP(#10,#12540);  
#12542= IFCMAPPEDITEM(#12541,#11092);  
#12543=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
353));  
#12544= IFCREPRESENTATIONMAP(#10,#12543);  
#12545= IFCMAPPEDITEM(#12544,#11097);  
#12546=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
353));  
#12547= IFCREPRESENTATIONMAP(#10,#12546);  
#12548= IFCMAPPEDITEM(#12547,#11102);  
#12549=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
353));  
#12550= IFCREPRESENTATIONMAP(#10,#12549);  
#12551= IFCMAPPEDITEM(#12550,#11107);  
#12552=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
353));  
#12553= IFCREPRESENTATIONMAP(#10,#12552);  
#12554= IFCMAPPEDITEM(#12553,#11112);  
#12555=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
353));  
#12556= IFCREPRESENTATIONMAP(#10,#12555);  
#12557= IFCMAPPEDITEM(#12556,#11117);  
#12558=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
353));  
#12559= IFCREPRESENTATIONMAP(#10,#12558);  
#12560= IFCMAPPEDITEM(#12559,#11122);  
#12561=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
353));  
#12562= IFCREPRESENTATIONMAP(#10,#12561);  
#12563= IFCMAPPEDITEM(#12562,#11127);  
#12564=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
353));  
#12565= IFCREPRESENTATIONMAP(#10,#12564);  
#12566= IFCMAPPEDITEM(#12565,#11132);  
#12567=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
353));  
#12568= IFCREPRESENTATIONMAP(#10,#12567);  
#12569= IFCMAPPEDITEM(#12568,#11137);  
#12570=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
353));  
#12571= IFCREPRESENTATIONMAP(#10,#12570);  
#12572= IFCMAPPEDITEM(#12571,#11142);  
#12573=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
353));  
#12574= IFCREPRESENTATIONMAP(#10,#12573);  
#12575= IFCMAPPEDITEM(#12574,#11147);  
#12576=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
353));  
#12577= IFCREPRESENTATIONMAP(#10,#12576);  
#12578= IFCMAPPEDITEM(#12577,#11152);  
#12579=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
353));  
#12580= IFCREPRESENTATIONMAP(#10,#12579);  
#12581= IFCMAPPEDITEM(#12580,#11157);  
#12582=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
353));  
#12583= IFCREPRESENTATIONMAP(#10,#12582);  
#12584= IFCMAPPEDITEM(#12583,#11162);  
#12585=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
353));  
#12586= IFCREPRESENTATIONMAP(#10,#12585);  
#12587= IFCMAPPEDITEM(#12586,#11167);  
#12588=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
353));  
#12589= IFCREPRESENTATIONMAP(#10,#12588);  
#12590= IFCMAPPEDITEM(#12589,#11172);  
#12591=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
353));  
#12592= IFCREPRESENTATIONMAP(#10,#12591);  
#12593= IFCMAPPEDITEM(#12592,#11177);  
#12594=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
353));  
#12595= IFCREPRESENTATIONMAP(#10,#12594);  
#12596= IFCMAPPEDITEM(#12595,#11182);  
#12597=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
353));  
#12598= IFCREPRESENTATIONMAP(#10,#12597);  
#12599= IFCMAPPEDITEM(#12598,#11187);

#12600=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
353));  
#12601= IFCREPRESENTATIONMAP(#10,#12600);  
#12602= IFCMAPPEDITEM(#12601,#11192);  
#12603=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
353));  
#12604= IFCREPRESENTATIONMAP(#10,#12603);  
#12605= IFCMAPPEDITEM(#12604,#11197);  
#12606=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
353));  
#12607= IFCREPRESENTATIONMAP(#10,#12606);  
#12608= IFCMAPPEDITEM(#12607,#11202);  
#12609=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
353));  
#12610= IFCREPRESENTATIONMAP(#10,#12609);  
#12611= IFCMAPPEDITEM(#12610,#11207);  
#12612=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
353));  
#12613= IFCREPRESENTATIONMAP(#10,#12612);  
#12614= IFCMAPPEDITEM(#12613,#11212);  
#12615=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
353));  
#12616= IFCREPRESENTATIONMAP(#10,#12615);  
#12617= IFCMAPPEDITEM(#12616,#11217);  
#12618=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
353));  
#12619= IFCREPRESENTATIONMAP(#10,#12618);  
#12620= IFCMAPPEDITEM(#12619,#11222);  
#12621=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
353));  
#12622= IFCREPRESENTATIONMAP(#10,#12621);  
#12623= IFCMAPPEDITEM(#12622,#11227);  
#12624=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
353));  
#12625= IFCREPRESENTATIONMAP(#10,#12624);  
#12626= IFCMAPPEDITEM(#12625,#11232);  
#12627=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
353));  
#12628= IFCREPRESENTATIONMAP(#10,#12627);  
#12629= IFCMAPPEDITEM(#12628,#11237);  
#12630=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
353));  
#12631= IFCREPRESENTATIONMAP(#10,#12630);  
#12632= IFCMAPPEDITEM(#12631,#11242);  
#12633=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
353));  
#12634= IFCREPRESENTATIONMAP(#10,#12633);  
#12635= IFCMAPPEDITEM(#12634,#11247);  
#12636=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
353));  
#12637= IFCREPRESENTATIONMAP(#10,#12636);  
#12638= IFCMAPPEDITEM(#12637,#11252);  
#12639=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
353));  
#12640= IFCREPRESENTATIONMAP(#10,#12639);  
#12641= IFCMAPPEDITEM(#12640,#11257);  
#12642=  
IFCSHAPEREPRESENTATION(#12,'Body','MappedRepresentation',(#  
12536,#12539,#12542,#12545,#12548,#12551,#12554,#12557,#12560,#  
12563,#12566,#12569,#12572,#12575,#12578,#12581,#12584,#12587,#  
12590,#12593,#12596,#12599,#12602,#12605,#12608,#12611,#12614,#  
12617,#12620,#12623,#12626,#12629,#12632,#12635,#12638,#12641));  
#12643= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#12642));  
#12644=  
IFCREINFORCINGBAR('10gimc000D334qE3SvCZ8m',#5,'BOTTOM  
\_BAR',\$,\$,#12533,#12643,'D58aad626-0000-0d0c-3134-  
383739323230',#10,0,0,0,NOTDEFINED,);  
#12645= IFCLOCALPLACEMENT(#11030,#11469);  
#12646=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
475));  
#12647= IFCREPRESENTATIONMAP(#10,#12646);  
#12648= IFCMAPPEDITEM(#12647,#11082);  
#12649=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
475));  
#12650= IFCREPRESENTATIONMAP(#10,#12649);  
#12651= IFCMAPPEDITEM(#12650,#11087);  
#12652=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
475));  
#12653= IFCREPRESENTATIONMAP(#10,#12652);  
#12654= IFCMAPPEDITEM(#12653,#11092);  
#12655=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
475));  
#12656= IFCREPRESENTATIONMAP(#10,#12655);  
#12657= IFCMAPPEDITEM(#12656,#11097);  
#12658=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
475));

#12659= IFCREPRESENTATIONMAP(#10,#12658);  
 #12660= IFCMAPPEDITEM(#12659,#11102);  
 #12661=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 475));  
 #12662= IFCREPRESENTATIONMAP(#10,#12661);  
 #12663= IFCMAPPEDITEM(#12662,#11107);  
 #12664=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 475));  
 #12665= IFCREPRESENTATIONMAP(#10,#12664);  
 #12666= IFCMAPPEDITEM(#12665,#11112);  
 #12667=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 475));  
 #12668= IFCREPRESENTATIONMAP(#10,#12667);  
 #12669= IFCMAPPEDITEM(#12668,#11117);  
 #12670=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 475));  
 #12671= IFCREPRESENTATIONMAP(#10,#12670);  
 #12672= IFCMAPPEDITEM(#12671,#11122);  
 #12673=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 475));  
 #12674= IFCREPRESENTATIONMAP(#10,#12673);  
 #12675= IFCMAPPEDITEM(#12674,#11127);  
 #12676=  
 IFCSHAPEREPRESENTATION(#12,'Body','MappedRepresentation',(#  
 12648,#12651,#12654,#12657,#12660,#12663,#12666,#12669,#12672,#  
 12675));  
 #12677= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#12676));  
 #12678=  
 IFCREINFORCINGBAR('1Ogime000D3Z4qE3SvCZ8m',#5,'BOTTOM  
 BAR',\$,\$,#12645,#12677,'ID58aad626-0000-0d0e-3134-  
 383739323230',\$,10,0,\$,NOTDEFINED,\$);  
 #12679= IFCLOCALPLACEMENT(#11030,#11071);  
 #12680=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 080));  
 #12681= IFCREPRESENTATIONMAP(#10,#12680);  
 #12682= IFCMAPPEDITEM(#12681,#11082);  
 #12683=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 080));  
 #12684= IFCREPRESENTATIONMAP(#10,#12683);  
 #12685= IFCMAPPEDITEM(#12684,#11087);  
 #12686=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 080));  
 #12687= IFCREPRESENTATIONMAP(#10,#12686);  
 #12688= IFCMAPPEDITEM(#12687,#11092);  
 #12689=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 080));  
 #12690= IFCREPRESENTATIONMAP(#10,#12689);  
 #12691= IFCMAPPEDITEM(#12690,#11097);  
 #12692=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 080));  
 #12693= IFCREPRESENTATIONMAP(#10,#12692);  
 #12694= IFCMAPPEDITEM(#12693,#11102);  
 #12695=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 080));  
 #12696= IFCREPRESENTATIONMAP(#10,#12695);  
 #12697= IFCMAPPEDITEM(#12696,#11107);  
 #12698=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 080));  
 #12699= IFCREPRESENTATIONMAP(#10,#12698);  
 #12700= IFCMAPPEDITEM(#12699,#11112);  
 #12701=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 080));  
 #12702= IFCREPRESENTATIONMAP(#10,#12701);  
 #12703= IFCMAPPEDITEM(#12702,#11117);  
 #12704=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 080));  
 #12705= IFCREPRESENTATIONMAP(#10,#12704);  
 #12706= IFCMAPPEDITEM(#12705,#11122);  
 #12707=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 080));  
 #12708= IFCREPRESENTATIONMAP(#10,#12707);  
 #12709= IFCMAPPEDITEM(#12708,#11127);  
 #12710=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 080));  
 #12711= IFCREPRESENTATIONMAP(#10,#12710);  
 #12712= IFCMAPPEDITEM(#12711,#11132);  
 #12713=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 080));  
 #12714= IFCREPRESENTATIONMAP(#10,#12713);  
 #12715= IFCMAPPEDITEM(#12714,#11137);  
 #12716=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 080));  
 #12717= IFCREPRESENTATIONMAP(#10,#12716);  
 #12718= IFCMAPPEDITEM(#12717,#11142);  
 #12719=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 080));

#12720= IFCREPRESENTATIONMAP(#10,#12719);  
 #12721= IFCMAPPEDITEM(#12720,#11147);  
 #12722=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 080));  
 #12723= IFCREPRESENTATIONMAP(#10,#12722);  
 #12724= IFCMAPPEDITEM(#12723,#11152);  
 #12725=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 080));  
 #12726= IFCREPRESENTATIONMAP(#10,#12725);  
 #12727= IFCMAPPEDITEM(#12726,#11157);  
 #12728=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 080));  
 #12729= IFCREPRESENTATIONMAP(#10,#12728);  
 #12730= IFCMAPPEDITEM(#12729,#11162);  
 #12731=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 080));  
 #12732= IFCREPRESENTATIONMAP(#10,#12731);  
 #12733= IFCMAPPEDITEM(#12732,#11167);  
 #12734=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 080));  
 #12735= IFCREPRESENTATIONMAP(#10,#12734);  
 #12736= IFCMAPPEDITEM(#12735,#11172);  
 #12737=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 080));  
 #12738= IFCREPRESENTATIONMAP(#10,#12737);  
 #12739= IFCMAPPEDITEM(#12738,#11177);  
 #12740=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 080));  
 #12741= IFCREPRESENTATIONMAP(#10,#12740);  
 #12742= IFCMAPPEDITEM(#12741,#11182);  
 #12743=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 080));  
 #12744= IFCREPRESENTATIONMAP(#10,#12743);  
 #12745= IFCMAPPEDITEM(#12744,#11187);  
 #12746=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 080));  
 #12747= IFCREPRESENTATIONMAP(#10,#12746);  
 #12748= IFCMAPPEDITEM(#12747,#11192);  
 #12749=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 080));  
 #12750= IFCREPRESENTATIONMAP(#10,#12749);  
 #12751= IFCMAPPEDITEM(#12750,#11197);  
 #12752=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 080));  
 #12753= IFCREPRESENTATIONMAP(#10,#12752);  
 #12754= IFCMAPPEDITEM(#12753,#11202);  
 #12755=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 080));  
 #12756= IFCREPRESENTATIONMAP(#10,#12755);  
 #12757= IFCMAPPEDITEM(#12756,#11207);  
 #12758=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 080));  
 #12759= IFCREPRESENTATIONMAP(#10,#12758);  
 #12760= IFCMAPPEDITEM(#12759,#11212);  
 #12761=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 080));  
 #12762= IFCREPRESENTATIONMAP(#10,#12761);  
 #12763= IFCMAPPEDITEM(#12762,#11217);  
 #12764=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 080));  
 #12765= IFCREPRESENTATIONMAP(#10,#12764);  
 #12766= IFCMAPPEDITEM(#12765,#11222);  
 #12767=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 080));  
 #12768= IFCREPRESENTATIONMAP(#10,#12767);  
 #12769= IFCMAPPEDITEM(#12768,#11227);  
 #12770=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 080));  
 #12771= IFCREPRESENTATIONMAP(#10,#12770);  
 #12772= IFCMAPPEDITEM(#12771,#11232);  
 #12773=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 080));  
 #12774= IFCREPRESENTATIONMAP(#10,#12773);  
 #12775= IFCMAPPEDITEM(#12774,#11237);  
 #12776=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 080));  
 #12777= IFCREPRESENTATIONMAP(#10,#12776);  
 #12778= IFCMAPPEDITEM(#12777,#11242);  
 #12779=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 080));  
 #12780= IFCREPRESENTATIONMAP(#10,#12779);  
 #12781= IFCMAPPEDITEM(#12780,#11247);  
 #12782=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 080));



## Appendix

#12783= IFCREPRESENTATIONMAP(#10,#12782);  
#12784= IFCMAPPEDITEM(#12783,#11252);  
#12785=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
#12786= IFCREPRESENTATIONMAP(#10,#12785);  
#12787= IFCMAPPEDITEM(#12786,#11257);  
#12788=  
IFCSHAPEREPRESENTATION(#12,'Body','MappedRepresentation',(#12682,#12685,#12688,#12691,#12694,#12697,#12700,#12703,#12706,#12709,#12712,#12715,#12718,#12721,#12724,#12727,#12730,#12733,#12736,#12739,#12742,#12745,#12748,#12751,#12754,#12757,#12760,#12763,#12766,#12769,#12772,#12775,#12778,#12781,#12784,#12787));  
#12789= IFCPRODUCTDEFINITIONSHAPE(\$,\$,#12788));  
#12790=  
IFCREINFORCINGBAR('IOgimc000D4p4qE3SvCZ8m',#5,'TOP\_BAR',,\$,\$,#12679,#12789,'ID58aac26-0000-0d13-3134-383739323230',,\$,0,0,\$,NOTDEFINED,\$);  
#12791= IFCLOCALPLACEMENT(#11030,#11300);  
#12792=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11307));  
#12793= IFCREPRESENTATIONMAP(#10,#12792);  
#12794= IFCMAPPEDITEM(#12793,#11082);  
#12795=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11307));  
#12796= IFCREPRESENTATIONMAP(#10,#12795);  
#12797= IFCMAPPEDITEM(#12796,#11087);  
#12798=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11307));  
#12799= IFCREPRESENTATIONMAP(#10,#12798);  
#12800= IFCMAPPEDITEM(#12799,#11092);  
#12801=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11307));  
#12802= IFCREPRESENTATIONMAP(#10,#12801);  
#12803= IFCMAPPEDITEM(#12802,#11097);  
#12804=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11307));  
#12805= IFCREPRESENTATIONMAP(#10,#12804);  
#12806= IFCMAPPEDITEM(#12805,#11102);  
#12807=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11307));  
#12808= IFCREPRESENTATIONMAP(#10,#12807);  
#12809= IFCMAPPEDITEM(#12808,#11107);  
#12810=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11307));  
#12811= IFCREPRESENTATIONMAP(#10,#12810);  
#12812= IFCMAPPEDITEM(#12811,#11112);  
#12813=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11307));  
#12814= IFCREPRESENTATIONMAP(#10,#12813);  
#12815= IFCMAPPEDITEM(#12814,#11117);  
#12816=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11307));  
#12817= IFCREPRESENTATIONMAP(#10,#12816);  
#12818= IFCMAPPEDITEM(#12817,#11122);  
#12819=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11307));  
#12820= IFCREPRESENTATIONMAP(#10,#12819);  
#12821= IFCMAPPEDITEM(#12820,#11127);  
#12822=  
IFCSHAPEREPRESENTATION(#12,'Body','MappedRepresentation',(#12794,#12797,#12800,#12803,#12806,#12809,#12812,#12815,#12818,#12821));  
#12823= IFCPRODUCTDEFINITIONSHAPE(\$,\$,#12822));  
#12824=  
IFCREINFORCINGBAR('IOgimc000D5J4qE3SvCZ8m',#5,'TOP\_BAR',,\$,\$,#12791,#12823,'ID58aac26-0000-0d15-3134-383739323230',,\$,0,0,\$,NOTDEFINED,\$);  
#12825= IFCLOCALPLACEMENT(#11030,#11349);  
#12826=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));  
#12827= IFCREPRESENTATIONMAP(#10,#12826);  
#12828= IFCMAPPEDITEM(#12827,#11082);  
#12829=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));  
#12830= IFCREPRESENTATIONMAP(#10,#12829);  
#12831= IFCMAPPEDITEM(#12830,#11087);  
#12832=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));  
#12833= IFCREPRESENTATIONMAP(#10,#12832);  
#12834= IFCMAPPEDITEM(#12833,#11092);  
#12835=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));  
#12836= IFCREPRESENTATIONMAP(#10,#12835);  
#12837= IFCMAPPEDITEM(#12836,#11097);  
#12838=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));  
#12839= IFCREPRESENTATIONMAP(#10,#12838);  
#12840= IFCMAPPEDITEM(#12839,#11102);  
#12841=  
IFCSHAPEREPREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));  
#12842= IFCREPRESENTATIONMAP(#10,#12841);  
#12843= IFCMAPPEDITEM(#12842,#11107);  
#12844=  
IFCSHAPEREPREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));  
#12845= IFCREPRESENTATIONMAP(#10,#12844);  
#12846= IFCMAPPEDITEM(#12845,#11112);  
#12847=  
IFCSHAPEREPREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));  
#12848= IFCREPRESENTATIONMAP(#10,#12847);  
#12849= IFCMAPPEDITEM(#12848,#11117);  
#12850=  
IFCSHAPEREPREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));  
#12851= IFCREPRESENTATIONMAP(#10,#12850);  
#12852= IFCMAPPEDITEM(#12851,#11122);  
#12853=  
IFCSHAPEREPREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));  
#12854= IFCREPRESENTATIONMAP(#10,#12853);  
#12855= IFCMAPPEDITEM(#12854,#11127);  
#12856=  
IFCSHAPEREPREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));  
#12857= IFCREPRESENTATIONMAP(#10,#12856);  
#12858= IFCMAPPEDITEM(#12857,#11132);  
#12859=  
IFCSHAPEREPREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));  
#12860= IFCREPRESENTATIONMAP(#10,#12859);  
#12861= IFCMAPPEDITEM(#12860,#11137);  
#12862=  
IFCSHAPEREPREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));  
#12863= IFCREPRESENTATIONMAP(#10,#12862);  
#12864= IFCMAPPEDITEM(#12863,#11142);  
#12865=  
IFCSHAPEREPREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));  
#12866= IFCREPRESENTATIONMAP(#10,#12865);  
#12867= IFCMAPPEDITEM(#12866,#11147);  
#12868=  
IFCSHAPEREPREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));  
#12869= IFCREPRESENTATIONMAP(#10,#12868);  
#12870= IFCMAPPEDITEM(#12869,#11152);  
#12871=  
IFCSHAPEREPREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));  
#12872= IFCREPRESENTATIONMAP(#10,#12871);  
#12873= IFCMAPPEDITEM(#12872,#11157);  
#12874=  
IFCSHAPEREPREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));  
#12875= IFCREPRESENTATIONMAP(#10,#12874);  
#12876= IFCMAPPEDITEM(#12875,#11162);  
#12877=  
IFCSHAPEREPREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));  
#12878= IFCREPRESENTATIONMAP(#10,#12877);  
#12879= IFCMAPPEDITEM(#12878,#11167);  
#12880=  
IFCSHAPEREPREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));  
#12881= IFCREPRESENTATIONMAP(#10,#12880);  
#12882= IFCMAPPEDITEM(#12881,#11172);  
#12883=  
IFCSHAPEREPREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));  
#12884= IFCREPRESENTATIONMAP(#10,#12883);  
#12885= IFCMAPPEDITEM(#12884,#11177);  
#12886=  
IFCSHAPEREPREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));  
#12887= IFCREPRESENTATIONMAP(#10,#12886);  
#12888= IFCMAPPEDITEM(#12887,#11182);  
#12889=  
IFCSHAPEREPREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));  
#12890= IFCREPRESENTATIONMAP(#10,#12889);  
#12891= IFCMAPPEDITEM(#12890,#11187);  
#12892=  
IFCSHAPEREPREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));  
#12893= IFCREPRESENTATIONMAP(#10,#12892);  
#12894= IFCMAPPEDITEM(#12893,#11192);  
#12895=  
IFCSHAPEREPREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));  
#12896= IFCREPRESENTATIONMAP(#10,#12895);  
#12897= IFCMAPPEDITEM(#12896,#11197);  
#12898=  
IFCSHAPEREPREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));  
#12899= IFCREPRESENTATIONMAP(#10,#12898);  
#12900= IFCMAPPEDITEM(#12899,#11202);  
#12901=  
IFCSHAPEREPREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));  
#12902= IFCREPRESENTATIONMAP(#10,#12901);  
#12903= IFCMAPPEDITEM(#12902,#11207);

#12904=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 353));  
 #12905= IFCREPRESENTATIONMAP(#10,#12904);  
 #12906= IFCMAPPEDITEM(#12905,#11212);  
 #12907=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 353));  
 #12908= IFCREPRESENTATIONMAP(#10,#12907);  
 #12909= IFCMAPPEDITEM(#12908,#11217);  
 #12910=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 353));  
 #12911= IFCREPRESENTATIONMAP(#10,#12910);  
 #12912= IFCMAPPEDITEM(#12911,#11222);  
 #12913=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 353));  
 #12914= IFCREPRESENTATIONMAP(#10,#12913);  
 #12915= IFCMAPPEDITEM(#12914,#11227);  
 #12916=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 353));  
 #12917= IFCREPRESENTATIONMAP(#10,#12916);  
 #12918= IFCMAPPEDITEM(#12917,#11232);  
 #12919=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 353));  
 #12920= IFCREPRESENTATIONMAP(#10,#12919);  
 #12921= IFCMAPPEDITEM(#12920,#11237);  
 #12922=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 353));  
 #12923= IFCREPRESENTATIONMAP(#10,#12922);  
 #12924= IFCMAPPEDITEM(#12923,#11242);  
 #12925=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 353));  
 #12926= IFCREPRESENTATIONMAP(#10,#12925);  
 #12927= IFCMAPPEDITEM(#12926,#11247);  
 #12928=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 353));  
 #12929= IFCREPRESENTATIONMAP(#10,#12928);  
 #12930= IFCMAPPEDITEM(#12929,#11252);  
 #12931=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 353));  
 #12932= IFCREPRESENTATIONMAP(#10,#12931);  
 #12933= IFCMAPPEDITEM(#12932,#11257);  
 #12934=  
 IFCSHAPEREPRESENTATION(#12,'Body','MappedRepresentation',(#  
 12828,#12831,#12834,#12837,#12840,#12843,#12846,#12849,#12852,#  
 12855,#12858,#12861,#12864,#12867,#12870,#12873,#12876,#12879,#  
 12882,#12885,#12888,#12891,#12894,#12897,#12900,#12903,#12906,#  
 12909,#12912,#12915,#12918,#12921,#12924,#12927,#12930,#12933));  
 #12935= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#12934));  
 #12936=  
 IFCREINFORCINGBAR('1Ogjm000D5p4qE3SvCZ8m',#5,'BOTTOM  
 BAR',\$,\$,#12825,#12935,'ID58aac26-0000-0d17-3134-  
 383739323230',\$,10,,0,,S,,NOTDEFINED,,S);  
 #12937= IFCLOCALPLACEMENT(#11030,#11469);  
 #12938=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 475));  
 #12939= IFCREPRESENTATIONMAP(#10,#12938);  
 #12940= IFCMAPPEDITEM(#12939,#11082);  
 #12941=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 475));  
 #12942= IFCREPRESENTATIONMAP(#10,#12941);  
 #12943= IFCMAPPEDITEM(#12942,#11087);  
 #12944=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 475));  
 #12945= IFCREPRESENTATIONMAP(#10,#12944);  
 #12946= IFCMAPPEDITEM(#12945,#11092);  
 #12947=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 475));  
 #12948= IFCREPRESENTATIONMAP(#10,#12947);  
 #12949= IFCMAPPEDITEM(#12948,#11097);  
 #12950=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 475));  
 #12951= IFCREPRESENTATIONMAP(#10,#12950);  
 #12952= IFCMAPPEDITEM(#12951,#11102);  
 #12953=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 475));  
 #12954= IFCREPRESENTATIONMAP(#10,#12953);  
 #12955= IFCMAPPEDITEM(#12954,#11107);  
 #12956=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 475));  
 #12957= IFCREPRESENTATIONMAP(#10,#12956);  
 #12958= IFCMAPPEDITEM(#12957,#11112);  
 #12959=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 475));  
 #12960= IFCREPRESENTATIONMAP(#10,#12959);  
 #12961= IFCMAPPEDITEM(#12960,#11117);  
 #12962=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 475));

#12963= IFCREPRESENTATIONMAP(#10,#12962);  
 #12964= IFCMAPPEDITEM(#12963,#11122);  
 #12965=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 475));  
 #12966= IFCREPRESENTATIONMAP(#10,#12965);  
 #12967= IFCMAPPEDITEM(#12966,#11127);  
 #12968=  
 IFCSHAPEREPRESENTATION(#12,'Body','MappedRepresentation',(#  
 12940,#12943,#12946,#12949,#12952,#12955,#12958,#12961,#12964,#  
 12967));  
 #12969= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#12968));  
 #12970=  
 IFCREINFORCINGBAR('1Ogjm000D6J4qE3SvCZ8m',#5,'BOTTOM  
 BAR',\$,\$,#12937,#12969,'ID58aac26-0000-0d19-3134-  
 383739323230',\$,10,,0,,S,,NOTDEFINED,,S);  
 #12971= IFCLOCALPLACEMENT(#11030,#11071);  
 #12972=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 080));  
 #12973= IFCREPRESENTATIONMAP(#10,#12972);  
 #12974= IFCMAPPEDITEM(#12973,#11082);  
 #12975=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 080));  
 #12976= IFCREPRESENTATIONMAP(#10,#12975);  
 #12977= IFCMAPPEDITEM(#12976,#11087);  
 #12978=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 080));  
 #12979= IFCREPRESENTATIONMAP(#10,#12978);  
 #12980= IFCMAPPEDITEM(#12979,#11092);  
 #12981=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 080));  
 #12982= IFCREPRESENTATIONMAP(#10,#12981);  
 #12983= IFCMAPPEDITEM(#12982,#11097);  
 #12984=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 080));  
 #12985= IFCREPRESENTATIONMAP(#10,#12984);  
 #12986= IFCMAPPEDITEM(#12985,#11102);  
 #12987=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 080));  
 #12988= IFCREPRESENTATIONMAP(#10,#12987);  
 #12989= IFCMAPPEDITEM(#12988,#11107);  
 #12990=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 080));  
 #12991= IFCREPRESENTATIONMAP(#10,#12990);  
 #12992= IFCMAPPEDITEM(#12991,#11112);  
 #12993=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 080));  
 #12994= IFCREPRESENTATIONMAP(#10,#12993);  
 #12995= IFCMAPPEDITEM(#12994,#11117);  
 #12996=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 080));  
 #12997= IFCREPRESENTATIONMAP(#10,#12996);  
 #12998= IFCMAPPEDITEM(#12997,#11122);  
 #12999=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 080));  
 #13000= IFCREPRESENTATIONMAP(#10,#12999);  
 #13001= IFCMAPPEDITEM(#13000,#11127);  
 #13002=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 080));  
 #13003= IFCREPRESENTATIONMAP(#10,#13002);  
 #13004= IFCMAPPEDITEM(#13003,#11132);  
 #13005=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 080));  
 #13006= IFCREPRESENTATIONMAP(#10,#13005);  
 #13007= IFCMAPPEDITEM(#13006,#11137);  
 #13008=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 080));  
 #13009= IFCREPRESENTATIONMAP(#10,#13008);  
 #13010= IFCMAPPEDITEM(#13009,#11142);  
 #13011=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 080));  
 #13012= IFCREPRESENTATIONMAP(#10,#13011);  
 #13013= IFCMAPPEDITEM(#13012,#11147);  
 #13014=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 080));  
 #13015= IFCREPRESENTATIONMAP(#10,#13014);  
 #13016= IFCMAPPEDITEM(#13015,#11152);  
 #13017=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 080));  
 #13018= IFCREPRESENTATIONMAP(#10,#13017);  
 #13019= IFCMAPPEDITEM(#13018,#11157);  
 #13020=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 080));  
 #13021= IFCREPRESENTATIONMAP(#10,#13020);  
 #13022= IFCMAPPEDITEM(#13021,#11162);  
 #13023=  
 IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11  
 080));

## Appendix

#13024= IFCREPRESENTATIONMAP(#10,#13023);  
#13025= IFCMAPPEDITEM(#13024,#11167);  
#13026=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
#13027= IFCREPRESENTATIONMAP(#10,#13026);  
#13028= IFCMAPPEDITEM(#13027,#11172);  
#13029=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
#13030= IFCREPRESENTATIONMAP(#10,#13029);  
#13031= IFCMAPPEDITEM(#13030,#11177);  
#13032=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
#13033= IFCREPRESENTATIONMAP(#10,#13032);  
#13034= IFCMAPPEDITEM(#13033,#11182);  
#13035=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
#13036= IFCREPRESENTATIONMAP(#10,#13035);  
#13037= IFCMAPPEDITEM(#13036,#11187);  
#13038=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
#13039= IFCREPRESENTATIONMAP(#10,#13038);  
#13040= IFCMAPPEDITEM(#13039,#11192);  
#13041=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
#13042= IFCREPRESENTATIONMAP(#10,#13041);  
#13043= IFCMAPPEDITEM(#13042,#11197);  
#13044=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
#13045= IFCREPRESENTATIONMAP(#10,#13044);  
#13046= IFCMAPPEDITEM(#13045,#11202);  
#13047=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
#13048= IFCREPRESENTATIONMAP(#10,#13047);  
#13049= IFCMAPPEDITEM(#13048,#11207);  
#13050=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
#13051= IFCREPRESENTATIONMAP(#10,#13050);  
#13052= IFCMAPPEDITEM(#13051,#11212);  
#13053=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
#13054= IFCREPRESENTATIONMAP(#10,#13053);  
#13055= IFCMAPPEDITEM(#13054,#11217);  
#13056=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
#13057= IFCREPRESENTATIONMAP(#10,#13056);  
#13058= IFCMAPPEDITEM(#13057,#11222);  
#13059=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
#13060= IFCREPRESENTATIONMAP(#10,#13059);  
#13061= IFCMAPPEDITEM(#13060,#11227);  
#13062=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
#13063= IFCREPRESENTATIONMAP(#10,#13062);  
#13064= IFCMAPPEDITEM(#13063,#11232);  
#13065=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
#13066= IFCREPRESENTATIONMAP(#10,#13065);  
#13067= IFCMAPPEDITEM(#13066,#11237);  
#13068=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
#13069= IFCREPRESENTATIONMAP(#10,#13068);  
#13070= IFCMAPPEDITEM(#13069,#11242);  
#13071=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
#13072= IFCREPRESENTATIONMAP(#10,#13071);  
#13073= IFCMAPPEDITEM(#13072,#11247);  
#13074=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
#13075= IFCREPRESENTATIONMAP(#10,#13074);  
#13076= IFCMAPPEDITEM(#13075,#11252);  
#13077=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11080));  
#13078= IFCREPRESENTATIONMAP(#10,#13077);  
#13079= IFCMAPPEDITEM(#13078,#11257);  
#13080=  
IFCSHAPEREPRESENTATION(#12,'Body','MappedRepresentation',(#12974,#12977,#12980,#12983,#12986,#12989,#12992,#12995,#12998,#13001,#13004,#13007,#13010,#13013,#13016,#13019,#13022,#13025,#13028,#13031,#13034,#13037,#13040,#13043,#13046,#13049,#13052,#13055,#13058,#13061,#13064,#13067,#13070,#13073,#13076,#13079));  
#13081= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#13080));  
#13082=  
IFCREINFORCINGBAR('1Ogimc000Dm34qE3SvCZ8n',#5,'TOP\_BAR',S,\$,#12971,#13081,'ID58aad26-0000-0dc0-3134-383739323231',S,10,,0,,NOTDEFINED,S);  
#13083= IFCLOCALPLACEMENT(#11030,#11300);  
#13084=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11307));  
#13085= IFCREPRESENTATIONMAP(#10,#13084);  
#13086= IFCMAPPEDITEM(#13085,#11082);  
#13087=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11307));  
#13088= IFCREPRESENTATIONMAP(#10,#13087);  
#13089= IFCMAPPEDITEM(#13088,#11087);  
#13090=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11307));  
#13091= IFCREPRESENTATIONMAP(#10,#13090);  
#13092= IFCMAPPEDITEM(#13091,#11092);  
#13093=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11307));  
#13094= IFCREPRESENTATIONMAP(#10,#13093);  
#13095= IFCMAPPEDITEM(#13094,#11097);  
#13096=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11307));  
#13097= IFCREPRESENTATIONMAP(#10,#13096);  
#13098= IFCMAPPEDITEM(#13097,#11102);  
#13099=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11307));  
#13100= IFCREPRESENTATIONMAP(#10,#13099);  
#13101= IFCMAPPEDITEM(#13100,#11107);  
#13102=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11307));  
#13103= IFCREPRESENTATIONMAP(#10,#13102);  
#13104= IFCMAPPEDITEM(#13103,#11112);  
#13105=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11307));  
#13106= IFCREPRESENTATIONMAP(#10,#13105);  
#13107= IFCMAPPEDITEM(#13106,#11117);  
#13108=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11307));  
#13109= IFCREPRESENTATIONMAP(#10,#13108);  
#13110= IFCMAPPEDITEM(#13109,#11122);  
#13111=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11307));  
#13112= IFCREPRESENTATIONMAP(#10,#13111);  
#13113= IFCMAPPEDITEM(#13112,#11127);  
#13114=  
IFCSHAPEREPRESENTATION(#12,'Body','MappedRepresentation',(#13086,#13089,#13092,#13095,#13098,#13101,#13104,#13107,#13110,#13113));  
#13115= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#13114));  
#13116=  
IFCREINFORCINGBAR('1Ogimc000DmZ4qE3SvCZ8n',#5,'TOP\_BAR',S,\$,#13083,#13115,'ID58aad26-0000-0dc2-3134-383739323231',S,10,,0,,NOTDEFINED,S);  
#13117= IFCLOCALPLACEMENT(#11030,#11349);  
#13118=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));  
#13119= IFCREPRESENTATIONMAP(#10,#13118);  
#13120= IFCMAPPEDITEM(#13119,#11082);  
#13121=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));  
#13122= IFCREPRESENTATIONMAP(#10,#13121);  
#13123= IFCMAPPEDITEM(#13122,#11087);  
#13124=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));  
#13125= IFCREPRESENTATIONMAP(#10,#13124);  
#13126= IFCMAPPEDITEM(#13125,#11092);  
#13127=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));  
#13128= IFCREPRESENTATIONMAP(#10,#13127);  
#13129= IFCMAPPEDITEM(#13128,#11097);  
#13130=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));  
#13131= IFCREPRESENTATIONMAP(#10,#13130);  
#13132= IFCMAPPEDITEM(#13131,#11102);  
#13133=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));  
#13134= IFCREPRESENTATIONMAP(#10,#13133);  
#13135= IFCMAPPEDITEM(#13134,#11107);  
#13136=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));  
#13137= IFCREPRESENTATIONMAP(#10,#13136);  
#13138= IFCMAPPEDITEM(#13137,#11112);  
#13139=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));  
#13140= IFCREPRESENTATIONMAP(#10,#13139);  
#13141= IFCMAPPEDITEM(#13140,#11117);  
#13142=  
IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(#11353));  
#13143= IFCREPRESENTATIONMAP(#10,#13142);  
#13144= IFCMAPPEDITEM(#13143,#11122);

#13145= IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(##11353));  
 #13146= IFCREPRESENTATIONMAP(#10,#13145);  
 #13147= IFCMAPPEDITEM(#13146,#1127);  
 #13148= IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(##11353));  
 #13149= IFCREPRESENTATIONMAP(#10,#13148);  
 #13150= IFCMAPPEDITEM(#13149,#1132);  
 #13151= IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(##11353));  
 #13152= IFCREPRESENTATIONMAP(#10,#13151);  
 #13153= IFCMAPPEDITEM(#13152,#11137);  
 #13154= IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(##11353));  
 #13155= IFCREPRESENTATIONMAP(#10,#13154);  
 #13156= IFCMAPPEDITEM(#13155,#11142);  
 #13157= IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(##11353));  
 #13158= IFCREPRESENTATIONMAP(#10,#13157);  
 #13159= IFCMAPPEDITEM(#13158,#11147);  
 #13160= IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(##11353));  
 #13161= IFCREPRESENTATIONMAP(#10,#13160);  
 #13162= IFCMAPPEDITEM(#13161,#11152);  
 #13163= IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(##11353));  
 #13164= IFCREPRESENTATIONMAP(#10,#13163);  
 #13165= IFCMAPPEDITEM(#13164,#11157);  
 #13166= IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(##11353));  
 #13167= IFCREPRESENTATIONMAP(#10,#13166);  
 #13168= IFCMAPPEDITEM(#13167,#11162);  
 #13169= IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(##11353));  
 #13170= IFCREPRESENTATIONMAP(#10,#13169);  
 #13171= IFCMAPPEDITEM(#13170,#11167);  
 #13172= IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(##11353));  
 #13173= IFCREPRESENTATIONMAP(#10,#13172);  
 #13174= IFCMAPPEDITEM(#13173,#11172);  
 #13175= IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(##11353));  
 #13176= IFCREPRESENTATIONMAP(#10,#13175);  
 #13177= IFCMAPPEDITEM(#13176,#11177);  
 #13178= IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(##11353));  
 #13179= IFCREPRESENTATIONMAP(#10,#13178);  
 #13180= IFCMAPPEDITEM(#13179,#11182);  
 #13181= IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(##11353));  
 #13182= IFCREPRESENTATIONMAP(#10,#13181);  
 #13183= IFCMAPPEDITEM(#13182,#11187);  
 #13184= IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(##11353));  
 #13185= IFCREPRESENTATIONMAP(#10,#13184);  
 #13186= IFCMAPPEDITEM(#13185,#11192);  
 #13187= IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(##11353));  
 #13188= IFCREPRESENTATIONMAP(#10,#13187);  
 #13189= IFCMAPPEDITEM(#13188,#11197);  
 #13190= IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(##11353));  
 #13191= IFCREPRESENTATIONMAP(#10,#13190);  
 #13192= IFCMAPPEDITEM(#13191,#11202);  
 #13193= IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(##11353));  
 #13194= IFCREPRESENTATIONMAP(#10,#13193);  
 #13195= IFCMAPPEDITEM(#13194,#11207);  
 #13196= IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(##11353));  
 #13197= IFCREPRESENTATIONMAP(#10,#13196);  
 #13198= IFCMAPPEDITEM(#13197,#11212);  
 #13199= IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(##11353));  
 #13200= IFCREPRESENTATIONMAP(#10,#13199);  
 #13201= IFCMAPPEDITEM(#13200,#11217);  
 #13202= IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(##11353));  
 #13203= IFCREPRESENTATIONMAP(#10,#13202);  
 #13204= IFCMAPPEDITEM(#13203,#11222);  
 #13205= IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(##11353));  
 #13206= IFCREPRESENTATIONMAP(#10,#13205);  
 #13207= IFCMAPPEDITEM(#13206,#11227);

#13208= IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(##11353));  
 #13209= IFCREPRESENTATIONMAP(#10,#13208);  
 #13210= IFCMAPPEDITEM(#13209,#11232);  
 #13211= IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(##11353));  
 #13212= IFCREPRESENTATIONMAP(#10,#13211);  
 #13213= IFCMAPPEDITEM(#13212,#11237);  
 #13214= IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(##11353));  
 #13215= IFCREPRESENTATIONMAP(#10,#13214);  
 #13216= IFCMAPPEDITEM(#13215,#11242);  
 #13217= IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(##11353));  
 #13218= IFCREPRESENTATIONMAP(#10,#13217);  
 #13219= IFCMAPPEDITEM(#13218,#11247);  
 #13220= IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(##11353));  
 #13221= IFCREPRESENTATIONMAP(#10,#13220);  
 #13222= IFCMAPPEDITEM(#13221,#11252);  
 #13223= IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(##11353));  
 #13224= IFCREPRESENTATIONMAP(#10,#13223);  
 #13225= IFCMAPPEDITEM(#13224,#11257);  
 #13226= IFCSHAPEREPRESENTATION(#12,'Body','MappedRepresentation',(##13120,#13123,#13126,#13129,#13132,#13135,#13138,#13141,#13144,#13147,#13150,#13153,#13156,#13159,#13162,#13165,#13168,#13171,#13174,#13177,#13180,#13183,#13186,#13189,#13192,#13195,#13198,#13201,#13204,#13207,#13210,#13213,#13216,#13219,#13222,#13225));  
 #13227= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(##13226));  
 #13228= IFCREINFORCINGBAR('10gjm000Dn34qE3SvCZ8n',##5,'BOTTOM\_BAR',\$,\$,#13117,#13227,'ID58aadc26-0000-0dc4-3134-383739323231',\$,10,,0,\$,NOTDEFINED,\$);  
 #13229= IFCLOCALPLACEMENT(##11030,#11469);  
 #13230= IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(##11475));  
 #13231= IFCREPRESENTATIONMAP(#10,#13230);  
 #13232= IFCMAPPEDITEM(#13231,#11082);  
 #13233= IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(##11475));  
 #13234= IFCREPRESENTATIONMAP(#10,#13233);  
 #13235= IFCMAPPEDITEM(#13234,#11087);  
 #13236= IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(##11475));  
 #13237= IFCREPRESENTATIONMAP(#10,#13236);  
 #13238= IFCMAPPEDITEM(#13237,#11092);  
 #13239= IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(##11475));  
 #13240= IFCREPRESENTATIONMAP(#10,#13239);  
 #13241= IFCMAPPEDITEM(#13240,#11097);  
 #13242= IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(##11475));  
 #13243= IFCREPRESENTATIONMAP(#10,#13242);  
 #13244= IFCMAPPEDITEM(#13243,#11102);  
 #13245= IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(##11475));  
 #13246= IFCREPRESENTATIONMAP(#10,#13245);  
 #13247= IFCMAPPEDITEM(#13246,#11107);  
 #13248= IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(##11475));  
 #13249= IFCREPRESENTATIONMAP(#10,#13248);  
 #13250= IFCMAPPEDITEM(#13249,#11112);  
 #13251= IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(##11475));  
 #13252= IFCREPRESENTATIONMAP(#10,#13251);  
 #13253= IFCMAPPEDITEM(#13252,#11117);  
 #13254= IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(##11475));  
 #13255= IFCREPRESENTATIONMAP(#10,#13254);  
 #13256= IFCMAPPEDITEM(#13255,#11122);  
 #13257= IFCSHAPEREPRESENTATION(#12,'Body','AdvancedSweptSolid',(##11475));  
 #13258= IFCREPRESENTATIONMAP(#10,#13257);  
 #13259= IFCMAPPEDITEM(#13258,#11127);  
 #13260= IFCSHAPEREPRESENTATION(#12,'Body','MappedRepresentation',(##13232,#13235,#13238,#13241,#13244,#13247,#13250,#13253,#13256,#13259));  
 #13261= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(##13260));  
 #13262= IFCREINFORCINGBAR('10gjm000DnZ4qE3SvCZ8n',##5,'BOTTOM\_BAR',\$,\$,#13229,#13261,'ID58aadc26-0000-0dc6-3134-383739323231',\$,10,,0,\$,NOTDEFINED,\$);  
 #13263= IFCLOCALPLACEMENT(##30,#10);  
 #13264= IFCELEMENTASSEMBLY('10elSH002JXp4qE3SnDZKn',##5,'CF1',\$,\$,#13263,\$,'CF10(?)',NOTDEFINED,..,REINFORCEMENT\_UNIT.);

## Appendix

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#13265= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit
weight',$.IFCMASMEASURE(20000.)),$.);
#13266= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit bottom
elevation',$.IFCLABEL(' -17.000')),$.);
#13267= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit top
elevation',$.IFCLABEL(' -15.000')),$.);
#13268= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit position
code',$.IFCLABEL('3-5/C-E')),$.);
#13269= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit
Mark',$.IFCLABEL('CF10(?)),$.);
#13270= IFCPROPERTYSET('3MvrV$A5r0LxcRuzhM0fvE',#5,'Tekla
Assembly','Assembly
Properties',(#34,#35,#13265,#13266,#13267,#13268,#13269));
#13271= IFCQUANTITYLENGTH('Width',$.S,$,2000.);
#13272=
IFCELEMENTQUANTITY('3Jjca6AYv81BbpQQW18WSQ',#5,'BaseQ
uantities',$.S,$,#13271));
#13273= IFCCARTESIANPOINT((3250.,160000.,-16000.));
#13274= IFCAxis2PLACEMENT3D(#13273,#9,#7);
#13275= IFLOCALPLACEMENT(#13263,#13274);
#13276= IFCCOLORRGB('Dark Gray',0,4,0,4.0);
#13277=
IFCSURFACESTYLE('CONCRETE/C50',.POSITIVE.,(#13277));
IFCSURFACESTYLE('CONCRETE/C50',.POSITIVE.,(#13277));
#13279= IFCPRESENTATIONSTYLEASSIGNMENT(#13278));
#13280=
IFCRECTANGLEPROFILEDEF(.AREA.,'2000*2000',#332,2000.,2000.
);
#13281= IFCCARTESIANPOINT((2000.,0.,0.));
#13282= IFCAxis2PLACEMENT3D(#13281,#336,#335);
#13283= IFCEXTRUDEDAREASOLID(#13280,#13282,#9,2000.);
#13284=
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#13283));
#13285= IFCSYLEDITEM(#13283,(#13279),$.);
#13286= IFCPRODUCTDEFINITIONSHAPE($,$,(#13284));
#13287=
IFCFOOTING('1OeISH002JWZ4qE3SnDZKn',#5,'CF1',2000*2000',200
0*2000',#13275,#13286,'ID58a2fd1-0000-9386-3134-
383731363531',.NOTDEFINED.);
#13288= IFCPROPERTYSINGLEVALUE('Bottom
elevation',$.IFCLABEL(' -17.000')),$.);
#13289= IFCPROPERTYSINGLEVALUE('Top
elevation',$.IFCLABEL(' -15.000')),$.);
#13290= IFCPROPERTYSINGLEVALUE('Class',$.IFCLABEL('8')),$.);
#13291= IFCPROPERTYSET('2zeh7dhU17bemuUc8DpGi',#5,'Tekla
Common','Common Properties to Shared building
elements',(#13288,#13289,#71,#72,#73,#13290));
#13292=
IFCPROPERTYSINGLEVALUE('Weight',$.IFCMASMEASURE(200
0.)),$.);
#13293=
IFCPROPERTYSINGLEVALUE('Volume',$.IFCVOLUMEMEASURE(8.
)),$.);
#13294= IFCPROPERTYSINGLEVALUE('Gross footprint
area',$.IFCAREAMEASURE(4.)),$.);
#13295= IFCPROPERTYSINGLEVALUE('Area per
tons',$.IFCAREAMEASURE(1.2)),$.);
#13296= IFCPROPERTYSINGLEVALUE('Net surface
area',$.IFCAREAMEASURE(24.)),$.);
#13297=
IFCPROPERTYSINGLEVALUE('Width',$.IFCLENGTHMEASURE(20
00.)),$.);
#13298=
IFCPROPERTYSINGLEVALUE('Length',$.IFCLENGTHMEASURE(2
000.)),$.);
#13299= IFCPROPERTYSET('3GYUOSrPAfvT8sFAVkg9r',#5,'Tekla
Quantity','Quantity Properties to Shared building
elements',(#13292,#13293,#13294,#13295,#13296,#11062,#13297,#132
98));
#13300= IFCQUANTITYLENGTH('Length',$.S,$,2000.);
#13301= IFCQUANTITYAREA('OuterSurfaceArea',$.S,$,24.);
#13302= IFCQUANTITYAREA('GrossSurfaceArea',$.S,$,24.);
#13303= IFCQUANTITYAREA('CrossSectionArea',$.S,$,4.);
#13304= IFCQUANTITYVOLUME('NetVolume',$.S,$,8.);
#13305= IFCQUANTITYVOLUME('GrossVolume',$.S,$,8.);
#13306= IFCQUANTITYWEIGHT('NetWeight',$.S,$,20000.);
#13307= IFCQUANTITYWEIGHT('GrossWeight',$.S,$,20000.);
#13308= IFCQUANTITYLENGTH('Height',$.S,$,2000.);
#13309=
IFCELEMENTQUANTITY('22ufNcjoL6wfev1Czmi6z',#5,'BaseQuanti
ties',$.S,$,#13300,#13301,#13302,#13303,#13304,#13305,#13306,#13307
,#13271,#13308));
#13310= IFLOCALPLACEMENT(#30,#10);
#13311=
IFCELEMENTASSEMBLY('1OeISH002JWp4qE3SnDZKn',#5,'CF1',$.S
,$,#13310,'CF10(?),.NOTDEFINED.,.REINFORCEMENT_UNIT.);
#13312= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit
weight',$.IFCMASMEASURE(45000.)),$.);
#13313= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit position
code',$.IFCLABEL('4-6/C-E')),$.);
#13314=
IFCPROPERTYSET('3DKSv4wpTDtOeMcZ8TNNG',#5,'Tekla
Assembly','Assembly
Properties',(#34,#35,#13312,#13266,#13267,#13313,#13269));
#13315= IFCQUANTITYLENGTH('Width',$.S,$,3000.);
#13316=
IFCELEMENTQUANTITY('2WE_fEzI9lvCmTALUcNkn',#5,'BaseQu
antities',$.S,$,#13315));
#13317= IFCCARTESIANPOINT((6750.,160000.,-17000.));
#13318= IFCAxis2PLACEMENT3D(#13317,#8,#9);
#13319= IFLOCALPLACEMENT(#13310,#13318);
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#13320=
IFCRECTANGLEPROFILEDEF(.AREA.,'3000*3000',#332,3000.,3000.
);
#13321= IFCEXTRUDEDAREASOLID(#13320,#13282,#9,2000.);
#13322=
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#13321));
#13323= IFCSYLEDITEM(#13321,(#13279),$.);
#13324= IFCPRODUCTDEFINITIONSHAPE($,$,(#13322));
#13325=
IFCFOOTING('1OeISH002JWZ4qE3SnDZKn',#5,'CF1',3000*3000',30
00*3000',#13319,#13324,'ID58a2fd1-0000-9382-3134-
383731363531',.NOTDEFINED.);
#13326=
IFCPROPERTYSINGLEVALUE('Weight',$.IFCMASMEASURE(450
00.)),$.);
#13327=
IFCPROPERTYSINGLEVALUE('Volume',$.IFCVOLUMEMEASURE(18.
)),$.);
#13328= IFCPROPERTYSINGLEVALUE('Gross footprint
area',$.IFCAREAMEASURE(9.)),$.);
#13329= IFCPROPERTYSINGLEVALUE('Area per
tons',$.IFCAREAMEASURE(0.9)),$.);
#13330= IFCPROPERTYSINGLEVALUE('Net surface
area',$.IFCAREAMEASURE(42.)),$.);
#13331=
IFCPROPERTYSINGLEVALUE('Height',$.IFCLENGTHMEASURE(3
000.)),$.);
#13332=
IFCPROPERTYSINGLEVALUE('Width',$.IFCLENGTHMEASURE(30
00.)),$.);
#13333= IFCPROPERTYSET('1W7HBgec5DGA2HnJTfjz_',#5,'Tekla
Quantity','Quantity Properties to Shared building
elements',(#13326,#13327,#13328,#13329,#13330,#13331,#13332,#132
98));
#13334= IFCQUANTITYAREA('OuterSurfaceArea',$.S,$,42.);
#13335= IFCQUANTITYAREA('GrossSurfaceArea',$.S,$,42.);
#13336= IFCQUANTITYAREA('CrossSectionArea',$.S,$,9.);
#13337= IFCQUANTITYVOLUME('NetVolume',$.S,$,18.);
#13338= IFCQUANTITYVOLUME('GrossVolume',$.S,$,18.);
#13339= IFCQUANTITYWEIGHT('NetWeight',$.S,$,45000.);
#13340= IFCQUANTITYWEIGHT('GrossWeight',$.S,$,45000.);
#13341= IFCQUANTITYLENGTH('Height',$.S,$,3000.);
#13342=
IFCELEMENTQUANTITY('3MY7cCaA5E5hN6HIEFulSZ',#5,'BaseQu
antities',$.S,$,#13300,#13334,#13335,#13336,#13337,#13338,#13339,#13
340,#13315,#13341));
#13343= IFLOCALPLACEMENT(#30,#10);
#13344=
IFCELEMENTASSEMBLY('1OeISH002JWp4qE3SnDZKn',#5,'CF1',$.S
,$,#13343,'CF10(?),.NOTDEFINED.,.REINFORCEMENT_UNIT.);
#13345= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit position
code',$.IFCLABEL('2-4/C-E')),$.);
#13346= IFCPROPERTYSET('0Yc1aKbwXFDeKixtCQ8vbx',#5,'Tekla
Assembly','Assembly
Properties',(#34,#35,#13312,#13266,#13267,#13345,#13269));
#13347= IFCCARTESIANPOINT((1750.,160000.,-17000.));
#13348= IFCAxis2PLACEMENT3D(#13347,#8,#9);
#13349= IFLOCALPLACEMENT(#13343,#13348);
#13350=
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#13321));
#13351= IFCPRODUCTDEFINITIONSHAPE($,$,(#13350));
#13352=
IFCFOOTING('1OeISH002JVZ4qE3SnDZKn',#5,'CF1',3000*3000',300
0*3000',#13349,#13351,'ID58a2fd1-0000-937e-3134-
383731363531',.NOTDEFINED.);
#13353= IFLOCALPLACEMENT(#30,#10);
#13354=
IFCELEMENTASSEMBLY('1OeISH002JUUp4qE3SnDZKn',#5,'CC1',$.S
,$,#13353,'CC10(?),.NOTDEFINED.,.REINFORCEMENT_UNIT.);
#13355= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit
weight',$.IFCMASMEASURE(86284.2)),$.);
#13356= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit bottom
elevation',$.IFCLABEL(' -28.000')),$.);
#13357= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit top
elevation',$.IFCLABEL(' -17.000')),$.);
#13358= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit
Mark',$.IFCLABEL('CC10(?)),$.);
#13359=
IFCPROPERTYSET('2wT_BHqyTDUvPTISsDYwv',#5,'Tekla
Assembly','Assembly
Properties',(#34,#35,#13355,#13356,#13357,#13313,#13358));
#13360= IFCCARTESIANPOINT((6750.,160000.,-28000.));
#13361= IFCAxis2PLACEMENT3D(#13360,#9,#7);
#13362= IFLOCALPLACEMENT(#13353,#13361);
#13363=
IFCSURFACESTYLE('CONCRETE/C50',.POSITIVE.,(#11472));
#13364= IFCPRESENTATIONSTYLEASSIGNMENT(#13363));
#13365= IFCCIRCLEPROFILEDEF(.AREA.,'D2000',#332,1000.);
#13366= IFCCARTESIANPOINT((0.,0.,11000.));
#13367= IFCAxis2PLACEMENT3D(#13366,#9688,#336);
#13368= IFCEXTRUDEDAREASOLID(#13365,#13367,#9,11000.);
#13369=
IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#13368));
#13370= IFCSYLEDITEM(#13368,(#13364),$.);
#13371= IFCPRODUCTDEFINITIONSHAPE($,$,(#13369));
#13372=
IFCCOLUMN('1OeISH002JUZ4qE3SnDZKn',#5,'CC1',D2000',D2000',
#13362,#13371,'X2/6DF751DD571F005F004300430031002D0031003
00028003F0029'X0');
#13373=
IFCCOLUMNTYPE('1BVXaFpL5Jq0ZeWJDMmBT',#5,'D2000',$.S,$,$.S,$,$.S,
$.S,.NOTDEFINED.);
#13374=
IFCPROPERTYSINGLEVALUE('Bottom
elevation',$.IFCLABEL(' -28.000')),$.);
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#13375= IFCPROPERTYSINGLEVALUE('Top elevation',S,IFCLABEL(' -17.000'),S);  
 #13376= IFCPROPERTYSINGLEVALUE('Class',S,IFCLABEL('13'),S);  
 #13377= IFCPROPERTYSET('2GLPScWYv1FOLRrG7kUb0q',#5,'Tekla Common','Common Properties to Shared building elements',(#13374,#13375,#71,#72,#73,#13376));  
 #13378= IFCPROPERTYSINGLEVALUE('Weight',S,IFCMASMEASURE(862.842),S);  
 #13379= IFCPROPERTYSINGLEVALUE('Volume',S,IFCVOLUMEMEASURE(34.5),S);  
 #13380= IFCPROPERTYSINGLEVALUE('Gross footprint area',S,IFCAREAMEASURE(3.1),S);  
 #13381= IFCPROPERTYSINGLEVALUE('Net surface area',S,IFCAREAMEASURE(75.4),S);  
 #13382= IFCPROPERTYSINGLEVALUE('Length',S,IFCLENGTHMEASURE(1000.),S);  
 #13383= IFCPROPERTYSET('3Hoc5WGk56EQBDd8BBcgIB',#5,'Tekla Quantity','Quantity Properties to Shared building elements',(#13378,#13379,#13380,#13381,#11062,#13297,#13382));  
 #13384= IFCPROPERTYSINGLEVALUE('Reference',S,IFCIDENTIFIER('X2/6DF751DD571F005F004300430031002D003100300028003F0029X0'),S);  
 #13385= IFCPROPERTYSET('0n74TpbF91FByDLLXGrN8P',#5,'Pset\_ColumnCommon','Common Properties to column elements',(#85,#13384));  
 #13386= IFCQUANTITYLENGTH('Length',S,S,11000.);  
 #13387= IFCQUANTITYAREA('OuterSurfaceArea',S,S,75.3683230645235);  
 #13388= IFCQUANTITYVOLUME('NetVolume',S,S,34.5136741280725);  
 #13389= IFCQUANTITYWEIGHT('NetWeight',S,S,862.84.1853201813);  
 #13390= IFCELEMENTQUANTITY('3PpiZjqKzBYxMGKpmvK3Lj',#5,'BaseQuantities',S,S,(#13386,#13387,#13388,#13389));  
 #13391= IFCLOCALPLACEMENT(#30,#10);  
 #13392= IFCELEMENTASSEMBLY('1OeISH002JTp4qE3SnDZKn',#5,'CC1',S,S,#13391,S,'CC10(?)',.NOTDEFINED,..REINFORCEMENT\_UNIT.);  
 #13393= IFCPROPERTYSET('07X\_4HlZr8GBiIM\_7K3QVB',#5,'Tekla Assembly','Assembly Properties',(#34,#35,#13355,#13356,#13357,#13345,#13358));  
 #13394= IFCCARTESIANPOINT((1750.,160000.,-28000.));  
 #13395= IFCAXIS2PLACEMENT3D(#13394,#9,#7);  
 #13396= IFCLOCALPLACEMENT(#13391,#13395);  
 #13397= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#13368));  
 #13398= IFCPRODUCTDEFINITIONSHAPE(S,S,(#13397));  
 #13399= IFCCOLUMN('1OeISH002JTz4qE3SnDZKn',#5,'CC1','D2000','D2000',#13396,#13398,'X2/6DF751DD571F005F004300430031002D003100300028003F0029X0');  
 #13400= IFCLOCALPLACEMENT(#30,#10);  
 #13401= IFCELEMENTASSEMBLY('1OeISH002JSz4qE3SnDZGv',#5,'SLAB',S,S,#13400,S,'A0(?)',.NOTDEFINED,..REINFORCEMENT\_UNIT.);  
 #13402= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit position code',S,IFCLABEL('2-6/A-C'),S);  
 #13403= IFCPROPERTYSET('1EsqpDM1z549U27j0dwIZT',#5,'Tekla Assembly','Assembly Properties',(#34,#35,#11033,#11034,#9685,#13402,#40));  
 #13404= IFCCARTESIANPOINT((700.,61000.,-7500.));  
 #13405= IFCAXIS2PLACEMENT3D(#13404,#9,#335);  
 #13406= IFCLOCALPLACEMENT(#13400,#13405);  
 #13407= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#11049));  
 #13408= IFCPRODUCTDEFINITIONSHAPE(S,S,(#13407));  
 #13409= IFCSLAB('1OeISH002JSp4qE3SnDZGv',#5,'SLAB','15000\*2000',15000\*2000,#13406,#13408,'X2/6DF751DD571F005F0041002D003100300028003F0029X0',FLOOR.);  
 #13410= IFCLOCALPLACEMENT(#30,#10);  
 #13411= IFCELEMENTASSEMBLY('1OeISH002JQJ4qE3SnDZCv',#5,'CF1',S,S,#13410,S,'CF10(?)',.NOTDEFINED,..REINFORCEMENT\_UNIT.);  
 #13412= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit position code',S,IFCLABEL('3-5/A-C'),S);  
 #13413= IFCPROPERTYSET('3heFixPBn9dBG2zk2SxCA1',#5,'Tekla Assembly','Assembly Properties',(#34,#35,#13265,#13266,#13267,#13412,#13269));  
 #13414= IFCCARTESIANPOINT((3250.,60000.,-16000.));  
 #13415= IFCAXIS2PLACEMENT3D(#13414,#9,#7);  
 #13416= IFCLOCALPLACEMENT(#13410,#13415);  
 #13417= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#13283));  
 #13418= IFCPRODUCTDEFINITIONSHAPE(S,S,(#13417));  
 #13419= IFCFOOTING('1OeISH002JQZ4qE3SnDZCv',#5,'CF1','2000\*2000',2000\*2000,#13416,#13418,'ID58a2ffd1-0000-936a-3134-383731363337',.NOTDEFINED.);  
 #13420= IFCLOCALPLACEMENT(#30,#10);  
 #13421= IFCELEMENTASSEMBLY('1OeISH002JNz4qE3SnDZCt',#5,'CF1',S,S,#13420,S,'CF10(?)',.NOTDEFINED,..REINFORCEMENT\_UNIT.);  
 #13422= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit position code',S,IFCLABEL('4-6/A-C'),S);

#13423= IFCPROPERTYSET('1GrHi\_3dLFTTAQMInXvP45',#5,'Tekla Assembly','Assembly Properties',(#34,#35,#13312,#13266,#13267,#13422,#13269));  
 #13424= IFCCARTESIANPOINT((6750.,60000.,-17000.));  
 #13425= IFCAXIS2PLACEMENT3D(#13424,#9,#9);  
 #13426= IFCLOCALPLACEMENT(#13420,#13425);  
 #13427= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#13321));  
 #13428= IFCPRODUCTDEFINITIONSHAPE(S,S,(#13427));  
 #13429= IFCFOOTING('1OeISH002JN4qE3SnDZCt',#5,'CF1','3000\*3000',3000\*3000,#13426,#13428,'ID58a2ffd1-0000-935d-3134-383731363337',.NOTDEFINED.);  
 #13430= IFCLOCALPLACEMENT(#30,#10);  
 #13431= IFCELEMENTASSEMBLY('1OeISH002JL4qE3SnDZCt',#5,'CF1',S,S,#13430,S,'CF10(?)',.NOTDEFINED,..REINFORCEMENT\_UNIT.);  
 #13432= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit position code',S,IFCLABEL('2-4/A-C'),S);  
 #13433= IFCPROPERTYSET('0eFLNhlcfFhHus2GLIN2e',#5,'Tekla Assembly','Assembly Properties',(#34,#35,#13312,#13266,#13267,#13432,#13269));  
 #13434= IFCCARTESIANPOINT((1750.,60000.,-17000.));  
 #13435= IFCAXIS2PLACEMENT3D(#13434,#9,#9);  
 #13436= IFCLOCALPLACEMENT(#13430,#13435);  
 #13437= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#13321));  
 #13438= IFCPRODUCTDEFINITIONSHAPE(S,S,(#13437));  
 #13439= IFCFOOTING('1OeISH002JLz4qE3SnDZCt',#5,'CF1','3000\*3000',3000\*3000,#13436,#13438,'ID58a2ffd1-0000-9356-3134-383731363337',.NOTDEFINED.);  
 #13440= IFCLOCALPLACEMENT(#30,#10);  
 #13441= IFCELEMENTASSEMBLY('1OeISH002JKz4qE3SnDZCt',#5,'CC1',S,S,#13440,S,'CC10(?)',.NOTDEFINED,..REINFORCEMENT\_UNIT.);  
 #13442= IFCPROPERTYSET('3KyOIQovEUhEMNSJ4uYZd',#5,'Tekla Assembly','Assembly Properties',(#34,#35,#13355,#13356,#13357,#13422,#13358));  
 #13443= IFCCARTESIANPOINT((6750.,60000.,-28000.));  
 #13444= IFCAXIS2PLACEMENT3D(#13443,#9,#7);  
 #13445= IFCLOCALPLACEMENT(#13440,#13444);  
 #13446= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#13368));  
 #13447= IFCPRODUCTDEFINITIONSHAPE(S,S,(#13446));  
 #13448= IFCCOLUMN('1OeISH002JK4qE3SnDZCt',#5,'CC1','D2000','D2000',#13445,#13447,'X2/6DF751DD571F005F004300430031002D003100300028003F0029X0');  
 #13449= IFCQUANTITYAREA('OuterSurfaceArea',S,S,75.3683230645235);  
 #13450= IFCQUANTITYVOLUME('NetVolume',S,S,34.5136741280726);  
 #13451= IFCQUANTITYWEIGHT('NetWeight',S,S,862.84.1853201814);  
 #13452= IFCELEMENTQUANTITY('3SKrj1RyP2NxSvpxymT4S',#5,'BaseQuantities',S,S,(#13386,#13449,#13450,#13451));  
 #13453= IFCLOCALPLACEMENT(#30,#10);  
 #13454= IFCELEMENTASSEMBLY('1OeISH002JH4qE3SnDZCm',#5,'CC1',S,S,#13453,S,'CC10(?)',.NOTDEFINED,..REINFORCEMENT\_UNIT.);  
 #13455= IFCPROPERTYSET('1jYjB16nDhO3PrTdX5k',#5,'Tekla Assembly','Assembly Properties',(#34,#35,#13355,#13356,#13357,#13432,#13358));  
 #13456= IFCCARTESIANPOINT((1750.,60000.,-28000.));  
 #13457= IFCAXIS2PLACEMENT3D(#13456,#9,#7);  
 #13458= IFCLOCALPLACEMENT(#13453,#13457);  
 #13459= IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#13368));  
 #13460= IFCPRODUCTDEFINITIONSHAPE(S,S,(#13459));  
 #13461= IFCCOLUMN('1OeISH002JHZ4qE3SnDZCm',#5,'CC1','D2000','D2000',#13458,#13460,'X2/6DF751DD571F005F004300430031002D003100300028003F0029X0');  
 #13462= IFCQUANTITYAREA('OuterSurfaceArea',S,S,75.3683230645235);  
 #13463= IFCQUANTITYVOLUME('NetVolume',S,S,34.5136741280726);  
 #13464= IFCQUANTITYWEIGHT('NetWeight',S,S,862.84.1853201814);  
 #13465= IFCELEMENTQUANTITY('0qTNP61dHJCJO3n8YFp7uo',#5,'BaseQuantities',S,S,(#13386,#13462,#13463,#13464));  
 #13466= IFCLOCALPLACEMENT(#30,#10);  
 #13467= IFCELEMENTASSEMBLY('1OeISH002JHZ4qE3SmE3Gp',#5,'CC1',S,S,#13466,S,'CC10(?)',.NOTDEFINED,..REINFORCEMENT\_UNIT.);  
 #13468= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit weight',S,IFCMASMEASURE(61199.5),S);  
 #13469= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit top elevation',S,IFCLABEL(' -1.125'),S);  
 #13470= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit position code',S,IFCLABEL('4-6/D-E>'),S);  
 #13471= IFCPROPERTYSET('2wdyePzBHafhW9pmC\_ZC',#5,'Tekla Assembly','Assembly Properties',(#34,#35,#13468,#11034,#13469,#13470,#13358));  
 #13472= IFCQUANTITYLENGTH('Width',S,S,1500.);  
 #13473= IFCELEMENTQUANTITY('3Xi9z7EJn2pgIYABRkQBQnd',#5,'BaseQuantities',S,S,(#13472));  
 #13474= IFCCARTESIANPOINT((6750.,220000.,-15000.));  
 #13475= IFCAXIS2PLACEMENT3D(#13474,#9,#7);  
 #13476= IFCLOCALPLACEMENT(#13466,#13475);

## Appendix

#13477= IFCCIRCLEPROFILEDEF(.AREA.,D1500',#332,750.);  
 #13478= IFCCARTESIANPOINT((0.,0.,13875.));  
 #13479= IFCCAXIS2PLACEMENT3D(#13478,#9688,#7);  
 #13480= IFCEXTRUDEDAREASOLID(#13477,#13479,#9,13875.);  
 #13481=  
 IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#13480));  
 #13482= IFCSTYLELITEM(#13480,(#13364),S);  
 #13483= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#13481));  
 #13484=  
 IFCCOLUMN('1OelSH002JHJ4qE3SmE3Gp',#5,'CC1','D1500','D1500',  
 #13476,#13483,'X2:6DF751DD571F005F004300430031002D0031003  
 00028003F0029X0');  
 #13485=  
 IFCCOLUMNMNTYPE('3RBqRdpGT1jRYL7MHLhu1',#5,'D1500',S,S,S,  
 S,S.,NOTDEFINED.);  
 #13486= IFCPROPERTYSINGLEVALUE('Top  
 elevation',S,IFCLABEL(' -1.125'),S);  
 #13487= IFCPROPERTYSET('0wdTiV8znB2egu3nXDCaS',#5,'Tekla  
 Common','Common Properties to Shared building  
 elements',(#11055,#13486,#71,#72,#73,#13376));  
 #13488=  
 IFCPROPERTYSINGLEVALUE('Weight',S,IFCMASSEASURE(611  
 99.5),S);  
 #13489=  
 IFCPROPERTYSINGLEVALUE('Volume',S,IFCVOLUMEMEASURE(24.  
 5),S);  
 #13490= IFCPROPERTYSINGLEVALUE('Gross footprint  
 area',S,IFCAREAMEASURE(1.8),S);  
 #13491= IFCPROPERTYSINGLEVALUE('Area per  
 tons',S,IFCAREAMEASURE(1.1),S);  
 #13492= IFCPROPERTYSINGLEVALUE('Net surface  
 area',S,IFCAREAMEASURE(68.9),S);  
 #13493=  
 IFCPROPERTYSINGLEVALUE('Height',S,IFCLENGTHMEASURE(1  
 500.),S);  
 #13494=  
 IFCPROPERTYSINGLEVALUE('Width',S,IFCLENGTHMEASURE(15  
 00.),S);  
 #13495=  
 IFCPROPERTYSINGLEVALUE('Length',S,IFCLENGTHMEASURE(1  
 3875.),S);  
 #13496= IFCPROPERTYSET('0z2YURVzLcjeimFZP8YAIA',#5,'Tekla  
 Quantity','Quantity Properties to Shared building  
 elements',(#13488,#13489,#13490,#13491,#13492,#13493,#13494,#134  
 95));  
 #13497= IFCQUANTITYLENGTH('Length',S,S,13875.);  
 #13498=  
 IFCQUANTITYAREA('OuterSurfaceArea',S,S,68.886759255985);  
 #13499=  
 IFCQUANTITYVOLUME('NetVolume',S,S,24.479780793077);  
 #13500=  
 IFCQUANTITYWEIGHT('NetWeight',S,S,61199.4519932694);  
 #13501=  
 IFCELEMENTQUANTITY('0wta\_38ID8YB9F72gIHsaw',#5,'BaseQua  
 ntities',S,S,(#13497,#13498,#13499,#13500));  
 #13502= IFCLOCALPLACEMENT(#30,#10);  
 #13503=  
 IFCELEMENTASSEMBLY('1OelSH002JGJ4qE3SmE3Gp',#5,'CC1',S,  
 S,#13502,'CC10(?)',NOTDEFINED.,REINFORCEMENT\_UNIT.);  
 #13504= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit position  
 code',S,IFCLABEL('2-4/D-E'),S);  
 #13505= IFCPROPERTYSET('2WCInv7cf7Wx9\_GVsydB1K',#5,'Tekla  
 Assembly','Assembly  
 Properties',(#34,#35,#13468,#11034,#13469,#13504,#13358));  
 #13506= IFCCARTESIANPOINT((1750.,220000.,-15000.));  
 #13507= IFCCAXIS2PLACEMENT3D(#13506,#9,#7);  
 #13508= IFCLOCALPLACEMENT(#13502,#13507);  
 #13509=  
 IFCSURFACESTYLE('CONCRETE/C30',POSITIVE.,(#11472));  
 #13510= IFCPRESENTATIONSTYLEASSIGNMENT(#13509);  
 #13511= IFCEXTRUDEDAREASOLID(#13477,#13479,#9,13875.);  
 #13512=  
 IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#13511));  
 #13513= IFCSTYLELITEM(#13511,(#131510),S);  
 #13514= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#13512));  
 #13515=  
 IFCCOLUMN('1OelSH002JGJ4qE3SmE3Gp',#5,'CC1','D1500','D1500',  
 #13508,#13514,'X2:6DF751DD571F005F004300430031002D0031003  
 00028003F0029X0');  
 #13516=  
 IFCQUANTITYVOLUME('NetVolume',S,S,24.479780793078);  
 #13517=  
 IFCQUANTITYWEIGHT('NetWeight',S,S,61199.4519932694);  
 #13518=  
 IFCELEMENTQUANTITY('1h18eXu5j6ZuGbnH7j2n9r',#5,'BaseQua  
 ntities',S,S,(#13497,#13498,#13516,#13517));  
 #13519= IFCMATERIAL('CONCRETE/C30');  
 #13520= IFCLOCALPLACEMENT(#30,#10);  
 #13521=  
 IFCELEMENTASSEMBLY('1OelSH002JF34qE3SmE3Gp',#5,'SLAB',S,  
 S,#13520,S,'A0(?)',NOTDEFINED.,REINFORCEMENT\_UNIT.);  
 #13522= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit  
 weight',S,IFCMASSEASURE(73737.5),S);  
 #13523= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit bottom  
 elevation',S,IFCLABEL(' -1.125'),S);  
 #13524= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit top  
 elevation',S,IFCLABEL(' +2.500'),S);  
 #13525= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit position  
 code',S,IFCLABEL('1-7/D-E'),S);  
 #13526=  
 IFCPROPERTYSET('2aoR8Y61L9mOLrEAuWGDu',#5,'Tekla  
 Assembly','Assembly  
 Properties',(#34,#35,#13522,#13523,#13524,#13525,#40));  
 #13527= IFCQUANTITYLENGTH('Width',S,S,8500.);

#13528=  
 IFCELEMENTQUANTITY('2gNJUZyWT7yhohQ5irmFJ\_',#5,'BaseQua  
 ntities',S,S,(#13527));  
 #13529= IFCCARTESIANPOINT((4250.,220750.,0.));  
 #13530= IFCCAXIS2PLACEMENT3D(#13529,#336,#9);  
 #13531= IFCLOCALPLACEMENT(#13529,#13530);  
 #13532= IFCCARTESIANPOINT((2500.,0.));  
 #13533= IFCCARTESIANPOINT((2500.,350.));  
 #13534= IFCCARTESIANPOINT((2200.,350.));  
 #13535= IFCCARTESIANPOINT((2200.,650.));  
 #13536= IFCCARTESIANPOINT((2000.,650.));  
 #13537= IFCCARTESIANPOINT((1600.,350.));  
 #13538= IFCCARTESIANPOINT((0.,350.));  
 #13539= IFCCARTESIANPOINT((-1125.,350.));  
 #13540= IFCCARTESIANPOINT((-1125.,-1850.));  
 #13541= IFCCARTESIANPOINT((0.,-1850.));  
 #13542=  
 IFCPOLYLINE((#53,#13532,#13533,#13534,#13535,#13536,#13537,#1  
 3538,#13539,#13540,#13541,#53));  
 #13543=  
 IFCARBITRARYCLOSEDPROFILEDEF(.AREA.,'8500\*2500',#13542)  
 ;  
 #13544= IFCCARTESIANPOINT((0.,0.,-4250.));  
 #13545= IFCCAXIS2PLACEMENT3D(#13544,#9,#7);  
 #13546= IFCEXTRUDEDAREASOLID(#13543,#13545,#9,8500.);  
 #13547=  
 IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#13546));  
 #13548= IFCSTYLELITEM(#13546,(#52),S);  
 #13549= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#13547));  
 #13550=  
 IFCSLAB('1OelSH002JEp4qE3SmE3Gp',#5,'SLAB',#8500\*2500',#8500\*  
 2500',#13531,#13549,'X2:6DF751DD571F005F0041002D00310030002  
 8003F0029X0',FLOOR.);  
 #13551=  
 IFCSLABTYPE('1b1LIBFpb4hheMU0BE9za',#5,'8500\*2500',S,S,S,S,  
 S.,NOTDEFINED.);  
 #13552= IFCPROPERTYSINGLEVALUE('Bottom  
 elevation',S,IFCLABEL(' -1.125'),S);  
 #13553= IFCPROPERTYSINGLEVALUE('Top  
 elevation',S,IFCLABEL(' +2.500'),S);  
 #13554= IFCPROPERTYSET('01419d5Qz41uOc40ThXR05',#5,'Tekla  
 Common','Common Properties to Shared building  
 elements',(#13552,#13553,#71,#72,#73,#74));  
 #13555=  
 IFCPROPERTYSINGLEVALUE('Weight',S,IFCMASSEASURE(737  
 37.5),S);  
 #13556=  
 IFCPROPERTYSINGLEVALUE('Volume',S,IFCVOLUMEMEASURE(29.  
 5),S);  
 #13557= IFCPROPERTYSINGLEVALUE('Gross footprint  
 area',S,IFCAREAMEASURE(3.),S);  
 #13558= IFCPROPERTYSINGLEVALUE('Area per  
 tons',S,IFCAREAMEASURE(1.5),S);  
 #13559= IFCPROPERTYSINGLEVALUE('Net surface  
 area',S,IFCAREAMEASURE(109.4),S);  
 #13560=  
 IFCPROPERTYSINGLEVALUE('Height',S,IFCLENGTHMEASURE(2  
 500.),S);  
 #13561=  
 IFCPROPERTYSINGLEVALUE('Width',S,IFCLENGTHMEASURE(85  
 00.),S);  
 #13562=  
 IFCPROPERTYSINGLEVALUE('Length',S,IFCLENGTHMEASURE(3  
 625.),S);  
 #13563= IFCPROPERTYSET('10x5cpWqTcvfJFpZSRq3U',#5,'Tekla  
 Quantity','Quantity Properties to Shared building  
 elements',(#13555,#13556,#13557,#13558,#13559,#13560,#13561,#135  
 62));  
 #13564= IFCQUANTITYVOLUME('NetVolume',S,S,29.495);  
 #13565= IFCQUANTITYAREA('NetArea',S,S,2.975);  
 #13566= IFCQUANTITYWEIGHT('NetWeight',S,S,73737.5);  
 #13567=  
 IFCELEMENTQUANTITY('3P7mj22qf3O971Sf0P6du',#5,'BaseQua  
 ntities',S,S,(#13527,#13564,#13565,#13566));  
 #13568= IFCLOCALPLACEMENT(#30,#10);  
 #13569=  
 IFCELEMENTASSEMBLY('1OelSH002JDP4qE3SmE3Go',#5,'CC1',S,  
 S,#13568,'CC10(?)',NOTDEFINED.,REINFORCEMENT\_UNIT.);  
 #13570= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit position  
 code',S,IFCLABEL('4-6/<A-B'),S);  
 #13571= IFCPROPERTYSET('0ZwLn1qxP6WPrF5SErAOSL',#5,'Tekla  
 Assembly','Assembly  
 Properties',(#34,#35,#13468,#11034,#13469,#13570,#13358));  
 #13572= IFCCARTESIANPOINT((6750.,0.,-15000.));  
 #13573= IFCCAXIS2PLACEMENT3D(#13572,#9,#7);  
 #13574= IFCLOCALPLACEMENT(#13568,#13573);  
 #13575= IFCCAXIS2PLACEMENT3D(#13478,#9688,#336);  
 #13576= IFCEXTRUDEDAREASOLID(#13477,#13575,#9,13875.);  
 #13577=  
 IFCSHAPEREPRESENTATION(#12,'Body','SweptSolid',(#13576));  
 #13578= IFCSTYLELITEM(#13576,(#13510),S);  
 #13579= IFCPRODUCTDEFINITIONSHAPE(\$,\$,(#13577));  
 #13580=  
 IFCCOLUMN('1OelSH002JDZ4qE3SmE3Go',#5,'CC1','D1500','D1500',  
 #13574,#13579,'X2:6DF751DD571F005F004300430031002D0031003  
 00028003F0029X0');  
 #13581=  
 IFCQUANTITYAREA('OuterSurfaceArea',S,S,68.886759255985);  
 #13582=  
 IFCQUANTITYVOLUME('NetVolume',S,S,24.479780793078);  
 #13583=  
 IFCQUANTITYWEIGHT('NetWeight',S,S,61199.4519932694);  
 #13584=  
 IFCELEMENTQUANTITY('0JT2dsrDBdQj49S2DBH',#5,'BaseQua  
 ntities',S,S,(#13497,#13581,#13582,#13583));

#13585= IFCLOCALPLACEMENT(#30,#10);  
 #13586=  
 IFCELEMENTASSEMBLY('1OeISH002JCZ4qE3SmE3Cu',#5,'CC1',S,  
 S,#13585,S,'CC10(?)',NOTDEFINED..REINFORCEMENT\_UNIT.);  
 #13587= IFCPROPERTYSINGLEVALUE('Assembly/Cast unit position  
 code',S,IFCLABEL('2-4<A-B'),S);  
 #13588= IFCPROPERTYSET('2I9upUCgDB8ur2bHA6ZFRM',#5,'Tekla  
 Assembly',Assembly  
 Properties',(#34,#35,#13468,#11034,#13469,#13587,#13588));  
 #13589= IFCARTESIANPOINT((1750.,0.,-15000.));  
 #13590= IFCAXIS2PLACEMENT3D(#13589,#9,#7);  
 #13591= IFCLOCALPLACEMENT(#13585,#13590);  
 #13592=  
 IFCSHAPEPREPRESENTATION(#12,'Body','SweptSolid',(#13576));  
 #13593= IFCPRODUCTDEFINITIONSHAPE(S,S,(#13592));  
 #13594=  
 IFCCOLUMN('1OeISH002JCP4qE3SmE3Cu',#5,'CC1','D1500','D1500',  
 #13591,#13593,'X2.6DF751DD571F005F004300430031002D0031003  
 00028003F0029.X0');  
 #13595=  
 IFCQUANTITYAREA('OuterSurfaceArea',S,S,68.8867592559849);  
 #13596=  
 IFCQUANTITYVOLUME('NetVolume',S,S,24.4797807973078);  
 #13597=  
 IFCQUANTITYWEIGHT('NetWeight',S,S,61199.4519932694);  
 #13598=  
 IFCELEMENTQUANTITY('1NYHAZ0ifCOAI0v2OoACru',#5,'BaseQ  
 uantities',S,S,(#13497,#13595,#13596,#13597));  
 #13599= IFCLOCALPLACEMENT(#30,#10);  
 #13600=  
 IFCELEMENTASSEMBLY('1OeISH002JBZ4qE3SmE38v',#5,'SLAB',S,  
 S,#13599,S,'AO(?)',NOTDEFINED..REINFORCEMENT\_UNIT.);  
 #13601= IFCPROPERTYSET('2AwwXa6Cj1yey2MB4Rq8YS',#5,'Tekla  
 Assembly',Assembly  
 Properties',(#34,#35,#13522,#13523,#13524,#13601,#400));  
 #13603= IFCARTESIANPOINT((4250.,-750.,0.));  
 #13604= IFCAXIS2PLACEMENT3D(#13603,#7,#9);  
 #13605= IFCLOCALPLACEMENT(#13599,#13604);  
 #13606=  
 IFCSHAPEPREPRESENTATION(#12,'Body','SweptSolid',(#13546));  
 #13607= IFCPRODUCTDEFINITIONSHAPE(S,S,(#13606));  
 #13608=  
 IFCSLAB('1OeISH002JBP4qE3SmE38v',#5,'SLAB',8500\*2500',8500\*  
 2500',#13605,#13607,'X2.6DF751DD571F005F0041002D00310030002  
 8003F0029.X0',FLOOR.);  
 #13609= IFCARTESIANPOINT((0.,-2000.));  
 #13610= IFCARTESIANPOINT((0.,222000.));  
 #13611= IFCPOLYLINE((#13609,#13610));  
 #13612= IFCGRIDAXIS('1',#13611.,T.);  
 #13613= IFCARTESIANPOINT((500.,-2000.));  
 #13614= IFCARTESIANPOINT((500.,222000.));  
 #13615= IFCPOLYLINE((#13613,#13614));  
 #13616= IFCGRIDAXIS('2',#13615.,T.);  
 #13617= IFCARTESIANPOINT((1750.,-2000.));  
 #13618= IFCARTESIANPOINT((1750.,222000.));  
 #13619= IFCPOLYLINE((#13617,#13618));  
 #13620= IFCGRIDAXIS('3',#13619.,T.);  
 #13621= IFCARTESIANPOINT((4250.,-2000.));  
 #13622= IFCARTESIANPOINT((4250.,222000.));  
 #13623= IFCPOLYLINE((#13621,#13622));  
 #13624= IFCGRIDAXIS('4',#13623.,T.);  
 #13625= IFCARTESIANPOINT((6750.,-2000.));  
 #13626= IFCARTESIANPOINT((6750.,222000.));  
 #13627= IFCPOLYLINE((#13625,#13626));  
 #13628= IFCGRIDAXIS('5',#13627.,T.);  
 #13629= IFCARTESIANPOINT((8000.,-2000.));  
 #13630= IFCARTESIANPOINT((8000.,222000.));  
 #13631= IFCPOLYLINE((#13629,#13630));  
 #13632= IFCGRIDAXIS('6',#13631.,T.);  
 #13633= IFCARTESIANPOINT((8500.,-2000.));  
 #13634= IFCARTESIANPOINT((8500.,222000.));  
 #13635= IFCPOLYLINE((#13633,#13634));  
 #13636= IFCGRIDAXIS('7',#13635.,T.);  
 #13637= IFCARTESIANPOINT((-2000.,0.));  
 #13638= IFCARTESIANPOINT((10500.,0.));  
 #13639= IFCPOLYLINE((#13637,#13638));  
 #13640= IFCGRIDAXIS('A',#13639.,T.);  
 #13641= IFCARTESIANPOINT((-2000.,60000.));  
 #13642= IFCARTESIANPOINT((10500.,60000.));  
 #13643= IFCPOLYLINE((#13641,#13642));  
 #13644= IFCGRIDAXIS('B',#13643.,T.);  
 #13645= IFCARTESIANPOINT((-2000.,110000.));  
 #13646= IFCARTESIANPOINT((10500.,110000.));  
 #13647= IFCPOLYLINE((#13645,#13646));  
 #13648= IFCGRIDAXIS('C',#13647.,T.);  
 #13649= IFCARTESIANPOINT((-2000.,160000.));  
 #13650= IFCARTESIANPOINT((10500.,160000.));  
 #13651= IFCPOLYLINE((#13649,#13650));  
 #13652= IFCGRIDAXIS('D',#13651.,T.);  
 #13653= IFCARTESIANPOINT((-2000.,220000.));  
 #13654= IFCARTESIANPOINT((10500.,220000.));  
 #13655= IFCPOLYLINE((#13653,#13654));  
 #13656= IFCGRIDAXIS('E',#13655.,T.);  
 #13657=  
 IFCGEOMETRICCURVESET((#13611,#13615,#13619,#13623,#13627,  
 #13631,#13635,#13639,#13643,#13647,#13651,#13655));  
 #13658=  
 IFCSHAPEPREPRESENTATION(#14,'FootPrint','GeometricCurveSet',(#  
 13657));  
 #13659= IFCPRODUCTDEFINITIONSHAPE(S,S,(#13658));  
 #13660= IFCLOCALPLACEMENT(#28,#10);  
 #13661=  
 IFCGRID('1OeISH002IzJ4qE3SmDpSp',#5,'O',S,S,#13660,#13659,(#13

612,#13616,#13620,#13624,#13628,#13632,#13636),(#13640,#13644,#1  
 3648,#13652,#13656),S);  
 #13662= IFCGRIDAXIS('1',#13611.,T.);  
 #13663= IFCGRIDAXIS('2',#13615.,T.);  
 #13664= IFCGRIDAXIS('3',#13619.,T.);  
 #13665= IFCGRIDAXIS('4',#13623.,T.);  
 #13666= IFCGRIDAXIS('5',#13627.,T.);  
 #13667= IFCGRIDAXIS('6',#13631.,T.);  
 #13668= IFCGRIDAXIS('7',#13635.,T.);  
 #13669= IFCGRIDAXIS('A',#13639.,T.);  
 #13670= IFCGRIDAXIS('B',#13643.,T.);  
 #13671= IFCGRIDAXIS('C',#13647.,T.);  
 #13672= IFCGRIDAXIS('D',#13651.,T.);  
 #13673= IFCGRIDAXIS('E',#13655.,T.);  
 #13674=  
 IFCGEOMETRICCURVESET((#13611,#13615,#13619,#13623,#13627,  
 #13631,#13635,#13639,#13643,#13647,#13651,#13655));  
 #13675=  
 IFCSHAPEPREPRESENTATION(#14,'FootPrint','GeometricCurveSet',(#  
 13674));  
 #13676= IFCPRODUCTDEFINITIONSHAPE(S,S,(#13675));  
 #13677= IFCARTESIANPOINT((0.,-4000.));  
 #13678= IFCAXIS2PLACEMENT3D(#13677,#9,#7);  
 #13679= IFCLOCALPLACEMENT(#28,#13678);  
 #13680= IFCGRID('1OeISH002Izp4qE3SmDpSp',#5,-  
 4000',S,S,#13679,#13676,(#13662,#13663,#13664,#13665,#13666,#136  
 67,#13668),(#13669,#13670,#13671,#13672,#13673),S);  
 #13681= IFCGRIDAXIS('1',#13611.,T.);  
 #13682= IFCGRIDAXIS('2',#13615.,T.);  
 #13683= IFCGRIDAXIS('3',#13619.,T.);  
 #13684= IFCGRIDAXIS('4',#13623.,T.);  
 #13685= IFCGRIDAXIS('5',#13627.,T.);  
 #13686= IFCGRIDAXIS('6',#13631.,T.);  
 #13687= IFCGRIDAXIS('7',#13635.,T.);  
 #13688= IFCGRIDAXIS('A',#13639.,T.);  
 #13689= IFCGRIDAXIS('B',#13643.,T.);  
 #13690= IFCGRIDAXIS('C',#13647.,T.);  
 #13691= IFCGRIDAXIS('D',#13651.,T.);  
 #13692= IFCGRIDAXIS('E',#13655.,T.);  
 #13693=  
 IFCGEOMETRICCURVESET((#13611,#13615,#13619,#13623,#13627,  
 #13631,#13635,#13639,#13643,#13647,#13651,#13655));  
 #13694=  
 IFCSHAPEPREPRESENTATION(#14,'FootPrint','GeometricCurveSet',(#  
 13693));  
 #13695= IFCPRODUCTDEFINITIONSHAPE(S,S,(#13694));  
 #13696= IFCARTESIANPOINT((0.,-9000.));  
 #13697= IFCAXIS2PLACEMENT3D(#13696,#9,#7);  
 #13698= IFCLOCALPLACEMENT(#28,#13697);  
 #13699= IFCGRID('1OeISH002I\_J4qE3SmDpSp',#5,-  
 5000',S,S,#13698,#13695,(#13681,#13682,#13683,#13684,#13685,#136  
 86,#13687),(#13688,#13689,#13690,#13691,#13692),S);  
 #13700=  
 IFCRELAGGREGATES('1WdMn\_qubEuvSWr18qQSCG',#5,S,S,#25,(  
 #27));  
 #13701=  
 IFCRELAGGREGATES('19ZaQ95WD25QCy0fAha8KH',#5,S,S,#27,(#  
 29));  
 #13702=  
 IFCRELAGGREGATES('0568jZc5f5DPIITNHQvILM',#5,S,S,#29,(#31))  
 ;  
 #13703=  
 IFCRELAGGREGATES('1YJKWZfajAbelRC\_O4j39D',#5,S,S,#33,(#6  
 7));  
 #13704=  
 IFCRELAGGREGATES('0AVJevFEL1hRS67RTTKvOv',#5,S,S,#95,(#  
 116));  
 #13705=  
 IFCRELAGGREGATES('2THbKoSWv4PRh36amT\_WSu',#5,S,S,#128,(  
 #156));  
 #13706=  
 IFCRELAGGREGATES('0k4Qjyw2L5SOmajmPIMUTr',#5,S,S,#173,(#  
 191));  
 #13707=  
 IFCRELAGGREGATES('3rsv5Wsn9Av1g53HGaSNU',#5,S,S,#206,(#2  
 20));  
 #13708=  
 IFCRELAGGREGATES('0R3lWtYtn2fa3qUD85meoD',#5,S,S,#230,(#  
 246));  
 #13709=  
 IFCRELAGGREGATES('2yHaWg7aj90fHSSQNLZx88',#5,S,S,#260,(#  
 272));  
 #13710=  
 IFCRELAGGREGATES('0rboJipY54oQGx76EsFMIw',#5,S,S,#278,(#2  
 89));  
 #13711=  
 IFCRELAGGREGATES('0Wnr7vuEzjBtm\_WpN68mU',#5,S,S,#295,(#  
 306));  
 #13712=  
 IFCRELAGGREGATES('0ep7Jyp1CdBvlgPZ0S8TV',#5,S,S,#312,(#34  
 2));  
 #13713=  
 IFCRELAGGREGATES('2essVtAS52f1mkR6y\_Xp6',#5,S,S,#369,(#38  
 3));  
 #13714=  
 IFCRELAGGREGATES('2Y358QyvAzAvF314\_wFjI',#5,S,S,#393,(#40  
 9));  
 #13715=  
 IFCRELAGGREGATES('2GYxjBfJ5cftggGgcGuT',#5,S,S,#419,(#429  
 ));  
 #13716=  
 IFCRELAGGREGATES('303QEQNbD3IQ7xzvBhexKZ',#5,S,S,#434,(  
 #453));



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#13717=  
IFCRELAGGREGATES('1O3C57hgP4PwS6RPsjTn7v',#5,\$,\$,#470,(#488));  
#13718=  
IFCRELAGGREGATES('0wv8bWJ4f5qeQpXpDmD5Ca',#5,\$,\$,#504,(#522));  
#13719=  
IFCRELAGGREGATES('1we0\_FTcZ7IONv2T1RwFJ',#5,\$,\$,#539,(#549));  
#13720=  
IFCRELAGGREGATES('3JgtmkJsXCwq24toFC\$He',#5,\$,\$,#559,(#577));  
#13721=  
IFCRELAGGREGATES('1voMsbkVr4e9mHLly8LTjt',#5,\$,\$,#594,(#612));  
#13722=  
IFCRELAGGREGATES('223PuAXif4wOK8lqWf4DaX',#5,\$,\$,#628,(#646));  
#13723=  
IFCRELAGGREGATES('3XhsJxA611axrFiqBILyuM',#5,\$,\$,#663,(#680));  
#13724=  
IFCRELAGGREGATES('1Neu5WCDvDbOCytD6ERzyS',#5,\$,\$,#695,(#713));  
#13725=  
IFCRELAGGREGATES('2qs0WOGwFB\_Ry2nHtiDQJO',#5,\$,\$,#730,(#740));  
#13726=  
IFCRELAGGREGATES('18DaadHNHBDReTQAcNgVj',#5,\$,\$,#750,(#768));  
#13727=  
IFCRELAGGREGATES('1kjC6N\_KD81BkWR1v2RC1T',#5,\$,\$,#784,(#802));  
#13728=  
IFCRELAGGREGATES('1bm1MB5FDCSRUU6X1Hr4EO',#5,\$,\$,#819,(#828));  
#13729=  
IFCRELAGGREGATES('0bLihMJAf3x8taw0ikYNOF',#5,\$,\$,#838,(#847));  
#13730=  
IFCRELAGGREGATES('0gDNe3gUL97fDypXmtrs5u',#5,\$,\$,#852,(#870));  
#13731=  
IFCRELAGGREGATES('3FHHrhV0T19wGzESS7XKyF',#5,\$,\$,#887,(#904));  
#13732=  
IFCRELAGGREGATES('2UcuLUv1zBewrsiwE3\$uSU',#5,\$,\$,#919,(#937));  
#13733=  
IFCRELAGGREGATES('2kLeNecxP9\$89IkAxInkXz',#5,\$,\$,#954,(#971));  
#13734=  
IFCRELAGGREGATES('0rVjSn12H9NeKdKL47Dvo2',#5,\$,\$,#984,(#1002));  
#13735=  
IFCRELAGGREGATES('2SpyRcy6TBLh6gkxAqEcGz',#5,\$,\$,#1019,(#1036));  
#13736=  
IFCRELAGGREGATES('0q9y\_xK8v05vg3pVao\_vlh',#5,\$,\$,#1051,(#1069));  
#13737=  
IFCRELAGGREGATES('1vokGuQQH4PaxXMFXLhE0l',#5,\$,\$,#1085,(#1103));  
#13738=  
IFCRELAGGREGATES('0\$G9bMtQP1tIQIPdr8zLpW',#5,\$,\$,#1120,(#1136));  
#13739=  
IFCRELAGGREGATES('3gZi1F68fC\_Peo2eajGoXe',#5,\$,\$,#1153,(#1171));  
#13740=  
IFCRELAGGREGATES('197OYA3I5DmwkcApvFpm\_F',#5,\$,\$,#1187,(#1205));  
#13741=  
IFCRELAGGREGATES('0LArGt\$9Fcfgr1QJM2krZ',#5,\$,\$,#1222,(#1240));  
#13742=  
IFCRELAGGREGATES('2NRjVykHrAvhymT4t3D4r',#5,\$,\$,#1256,(#1274));  
#13743=  
IFCRELAGGREGATES('1Qv0UnbiXDjP9O7XUdfOzR',#5,\$,\$,#1290,(#1307));  
#13744=  
IFCRELAGGREGATES('3Wm\_wmIoP4h8LTk3Kt5hwX',#5,\$,\$,#1322,(#1340));  
#13745=  
IFCRELAGGREGATES('2pFfyFjGjDeQ4VgWB\_VP0H',#5,\$,\$,#1356,(#1373));  
#13746=  
IFCRELAGGREGATES('2B\_51LCNH1tQxuVyywgp4s',#5,\$,\$,#1388,(#1406));  
#13747=  
IFCRELAGGREGATES('0N3YM0DQ1F1xbRwjCBid8z',#5,\$,\$,#1423,(#1433));  
#13748=  
IFCRELAGGREGATES('1234UmjpbCu95jVgf\_A3t5',#5,\$,\$,#1443,(#1461));  
#13749=  
IFCRELAGGREGATES('2jYbjMyAT6NetfxLFO0f3',#5,\$,\$,#1477,(#1487));  
#13750=  
IFCRELAGGREGATES('2lQ5N4W14zggvPwXFAWtA',#5,\$,\$,#1492,(#1508));  
#13751=  
IFCRELAGGREGATES('0nUtAdUMr1JP8DDyozEpGy',#5,\$,\$,#1524,(#1542));

#13752=  
IFCRELAGGREGATES('3X65tXb1b9CBa\$4haVtElv',#5,\$,\$,#1559,(#1578));  
#13753=  
IFCRELAGGREGATES('20qtWUN2DAG8GZYNmwP\_P6',#5,\$,\$,#1595,(#1612));  
#13754=  
IFCRELAGGREGATES('1osWR19sDEwOBmLFpH2KyO',#5,\$,\$,#1629,(#1644));  
#13755=  
IFCRELAGGREGATES('19RAsoSub2offPKUxIX0wc',#5,\$,\$,#1661,(#1675));  
#13756=  
IFCRELAGGREGATES('0sH3BTXqv2cQ9uYebghgYs',#5,\$,\$,#1689,(#1699));  
#13757=  
IFCRELAGGREGATES('1osUS\$8FzH3vQbxYxxmEASd',#5,\$,\$,#1709,(#1718));  
#13758=  
IFCRELAGGREGATES('1ChkUkumC576RgMwPRgA\_Ku',#5,\$,\$,#1728,(#1739));  
#13759=  
IFCRELAGGREGATES('19bnwxs5E0xti5qZkfhp',#5,\$,\$,#1744,(#1754));  
#13760=  
IFCRELAGGREGATES('2dhG13agnEagBFxfz4ig',#5,\$,\$,#1764,(#1775));  
#13761=  
IFCRELAGGREGATES('1skdw1Qvn3ERgnfL7NZN',#5,\$,\$,#1780,(#1789));  
#13762=  
IFCRELAGGREGATES('3ZoXF\$Ti8WQB1wv9G9PRA',#5,\$,\$,#1794,(#1805));  
#13763=  
IFCRELAGGREGATES('0LSDzWT157LwvWmns7Ifnx',#5,\$,\$,#1815,(#1826));  
#13764=  
IFCRELAGGREGATES('1M9ax6dpHF4wKj\$dzSpVAb',#5,\$,\$,#1836,(#1847));  
#13765=  
IFCRELAGGREGATES('2UDk4Dvb5ENAsbDgp\$Dk7z',#5,\$,\$,#1857,(#1867));  
#13766=  
IFCRELAGGREGATES('3QMZ7NHQ5BPxB8Kylw1mn',#5,\$,\$,#1877,(#1888));  
#13767=  
IFCRELAGGREGATES('1R\_EAJFhb3ChvM9uZ84Yh',#5,\$,\$,#1893,(#1904));  
#13768=  
IFCRELAGGREGATES('1rNqf\$IU1BsOKgRhOb1VgB',#5,\$,\$,#1914,(#1923));  
#13769=  
IFCRELAGGREGATES('2kBy\_oCPr3GBBeYZY\$5p76',#5,\$,\$,#1933,(#1942));  
#13770=  
IFCRELAGGREGATES('2mh0FHXTD5pAuxmAZh3ULg',#5,\$,\$,#1952,(#1963));  
#13771=  
IFCRELAGGREGATES('3dLuBMXWj4lxgA37iKISWU',#5,\$,\$,#1973,(#1984));  
#13772=  
IFCRELAGGREGATES('0o48T5pgzCgxvMfG1xfwQl',#5,\$,\$,#1994,(#2005));  
#13773=  
IFCRELAGGREGATES('3BoexZBsTCpvQxp\_fysJcZ',#5,\$,\$,#2015,(#2026));  
#13774=  
IFCRELAGGREGATES('2vEwm1Pm53tRk01kDV1CEo',#5,\$,\$,#2031,(#2042));  
#13775=  
IFCRELAGGREGATES('1bQr6SuMr0iRqpGKAWV2cw',#5,\$,\$,#2052,(#2063));  
#13776=  
IFCRELAGGREGATES('0rfx13NJP18w5hB1VppyU3',#5,\$,\$,#2073,(#2084));  
#13777=  
IFCRELAGGREGATES('3i05031GHCFc53PIKjX0F',#5,\$,\$,#2095,(#2106));  
#13778=  
IFCRELAGGREGATES('1ztuCiyPj4fxCal5vrLmYo',#5,\$,\$,#2117,(#2128));  
#13779=  
IFCRELAGGREGATES('1q4HWMYf1968n8\_hwmOzCy',#5,\$,\$,#2138,(#2149));  
#13780=  
IFCRELAGGREGATES('2m4daerc5Amhw2WEm6bT2u',#5,\$,\$,#2159,(#2170));  
#13781=  
IFCRELAGGREGATES('2q\_ZXJrNb0mBuZ9HvSXGha',#5,\$,\$,#2180,(#2191));  
#13782=  
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Appendix

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Appendix

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Appendix

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 #14273=  
 IFCRELAGGREGATES('1oOWw0kWLBRfcb\_tbecp3Q',#5,\$,\$,#10701,(#10710));  
 #14274=  
 IFCRELAGGREGATES('2IA7Efkj4hBTverqNZrOp',#5,\$,\$,#10717,(#10731));  
 #14275=  
 IFCRELAGGREGATES('19nhyjavr0VvDbGkTtCj4A',#5,\$,\$,#10746,(#10760));  
 #14276=  
 IFCRELAGGREGATES('1onQUKfBcQghmi2Jeyi2R',#5,\$,\$,#10772,(#10782));



## Appendix

#14277=  
IFCRELAGGREGATES('2D5HcmmrX759IK94ALRg8b',#5,\$,#10789  
(#10797));  
#14278=  
IFCRELAGGREGATES('0AyxjIM3HDGO9sM0NdI0FK',#5,\$,#10802  
(#10810));  
#14279=  
IFCRELAGGREGATES('0K8\$8a3utP8SeHLfYa0hFXS',#5,\$,#10820,(  
#10828));  
#14280=  
IFCRELAGGREGATES('1\_NYOKIKr5JRwdPNN3v3k',#5,\$,#10830  
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#14281=  
IFCRELAGGREGATES('1vGt\_svCn6jRLjCQeZYRHV',#5,\$,#10839,(  
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#14282=  
IFCRELAGGREGATES('0dum7j6G14jeAFSllb306',#5,\$,#10849,(#1  
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#14283=  
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(#10874));  
#14284=  
IFCRELAGGREGATES('2XafewlPEQOKGmc7SzXHg',#5,\$,#10886  
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#14285=  
IFCRELAGGREGATES('0ONtSpErV23gx0NKUT9Jv',#5,\$,#10908,(  
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#14286=  
IFCRELAGGREGATES('0k7GEQXYbFb1FQGNin1',#5,\$,#10937,  
(#10944));  
#14287=  
IFCRELAGGREGATES('1dwPP3Dqf1PhaMe9r1JSR',#5,\$,#10951,(  
#10958));  
#14288=  
IFCRELAGGREGATES('1YNLegiz7ixrc92pGMzEB',#5,\$,#10960,(#  
10967));  
#14289=  
IFCRELAGGREGATES('0F6YUpSH2Kxlv7m0hq',#5,\$,#10969,(  
#10977));  
#14290=  
IFCRELAGGREGATES('0YTS\$SkOHCDaQoUIAZUwQL',#5,\$,#10  
983,(#10993));  
#14291=  
IFCRELAGGREGATES('2VC1W3smX6esyG0KvZt1a',#5,\$,#10999,  
(#11009));  
#14292=  
IFCRELAGGREGATES('2\_4hZozr1SulSf3LGBHh',#5,\$,#11015,(  
#11025));  
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60,#11948,#11914,#11802,#11768,#11656,#11622,#11509,#11465,#113  
41,#11263,#111053));  
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IFCRELAGGREGATES('0TeE5c7SX4LuIDfd4AikZ',#5,\$,#13264,(  
#13287));  
#14295=  
IFCRELAGGREGATES('1OafIjlX9vueyDMdlInvS',#5,\$,#13311,(#  
13325));  
#14296=  
IFCRELAGGREGATES('1KrWzibj0h8B3UmPPaPfe',#5,\$,#13344,(  
#13352));  
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(#13409));  
#14300=  
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IFCRELAGGREGATES('0G5wiAfUL979Pty91j4Gs',#5,\$,#13454,(#  
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#14305=  
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#14306=  
IFCRELAGGREGATES('2HaOi3Bsf0fRAPUp3HrX',#5,\$,#13503,(  
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#14307=  
IFCRELAGGREGATES('0km1tCwJT3Q8BA1E1\_G73Z',#5,\$,#13521,  
(#13550));  
#14308=  
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#13580));  
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,#10185,#10176,#10167,#10147,#10126,#10109,#10083,#10058,#10049  
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#2960,#2951,#2942,#2928,#2914,#2900,#2886,#2872,#2858,#2844,#283  
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#14316=  
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#14317=  
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9,#272,#246,#220,#191,#156,#116,#67),#87);  
#14318=  
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S,(#67),#92);  
#14319=  
IFCRELDEFINESBYPROPERTIES('0L9hJkszf94QjIRBeyNqF',#5,\$,  
S,(#95),#98);  
#14320=  
IFCRELDEFINESBYPROPERTIES('2h7ZA9q3K94xkqfmg0n',#5,  
S,(#95),#100);  
#14321=  
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S,(#289,#116),#122);  
#14322=  
IFCRELDEFINESBYPROPERTIES('3d7I0LW0D5Nu46cK5z95rJ',#5,\$,  
S,(#116),#126);  
#14323=  
IFCRELDEFINESBYPROPERTIES('3hTsjGKf3hx8T3E0ESab2',#5,\$,  
S,(#128),#133);  
#14324=  
IFCRELDEFINESBYPROPERTIES('0ySXZHXXX8R9J1n8NkoWcF',#  
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 #14327=  
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 #14328=  
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 #14329=  
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 #173),#180);  
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 #14336=  
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 S,(#230),#235);  
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 S,(#230),#237);  
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 S,S,(#11025,#246),#254);  
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 S,(#289),#293);  
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 #14358=  
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 S,(#383),#391);  
 #14359=  
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 #14361=  
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 S,S,(#409),#417);  
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 #14367=  
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 #14368=  
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 #14369=  
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 #5,S,S,(#470),#474);  
 #14370=  
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 #14373=  
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 #14376=  
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 #14377=  
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 #14378=  
 IFCRELDEFINESBYPROPERTIES('2Dcy9Ji9DggTmWcNdXN3u',#5,  
 S,S,(#522),#537);  
 #14379=  
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 S,S,(#539),#541);  
 #14380=  
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 #14381=  
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 #14382=  
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#14385=  
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#14387=  
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IFCRELDEFINESBYPROPERTIES('167q\_HWlr1LeqhVlzyJU4m',#5,S,  
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#14396=  
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#14438=  
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#14446=  
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#14447=  
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#14457=  
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S,(#9531,#1187),#1193);  
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S,(#2170,#1205),#1212);  
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S,(#2212,#1274),#1277);  
#14483=  
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5,S,S,(#1388),#1394);  
#14502=  
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#14506=  
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#14508=  
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#14509=  
IFCRELDEFINESBYPROPERTIES('0oqEFhVNz33gUquDlikHDn',#5,  
S,S,(#2360,#2339,#1487,#1461),#1464);  
#14510=  
IFCRELDEFINESBYPROPERTIES('3RQa0B\$55HeEkPV1Azhye',#5,S,  
S,(#1487,#1461),#1467);  
#14511=  
IFCRELDEFINESBYPROPERTIES('3XdDuZjg5BjBoSbQ8hbOX4',#5,  
S,S,(#1461),#1475);  
#14512=  
IFCRELDEFINESBYPROPERTIES('3RIYM7mMf0KO92CnWx\_HSZ',#  
5,S,S,(#1477),#1479);  
#14513=  
IFCRELDEFINESBYPROPERTIES('0T1DoltaXCj9jktXIU9Ku',#5,S,  
S,(#1487),#1490);  
#14514=  
IFCRELDEFINESBYPROPERTIES('0UzLqWn4n07BWRvNjB\$9dM',#  
5,S,S,(#1492),#1496);  
#14515=  
IFCRELDEFINESBYPROPERTIES('0ae2LDg7j70xy9SOITIFr4',#5,S,  
S,(#2381,#1508),#1511);  
#14516=  
IFCRELDEFINESBYPROPERTIES('1v4fscx\_TBuOp6BYgMpZvQ',#5,  
S,S,(#1508),#1514);  
#14517=  
IFCRELDEFINESBYPROPERTIES('3aC4dAALELRG2ov8rHw',#5,  
S,S,(#1508),#1522);  
#14518=  
IFCRELDEFINESBYPROPERTIES('03WppNFIEZB\$5\_9R90A9zi',#5,  
S,S,(#1524),#1528);  
#14519=  
IFCRELDEFINESBYPROPERTIES('1YaGidJvEzRugE95uDDGG',#5,  
S,S,(#1524),#1530);  
#14520=  
IFCRELDEFINESBYPROPERTIES('1yiSVBmDPBUeMIYLSxEgbr',#5,  
S,S,(#2403,#1542),#1545);  
#14521=  
IFCRELDEFINESBYPROPERTIES('01uJZ9nkbFjw5LtQaq7LP',#5,S,  
S,(#2403,#1542),#1549);  
#14522=  
IFCRELDEFINESBYPROPERTIES('3N0wto9kD1VfVsuTOMBmJm',#  
5,S,S,(#1542),#1557);  
#14523=  
IFCRELDEFINESBYPROPERTIES('0BOUoiLb43hDeRcT\_nuwf',#5,S,  
S,(#1559),#1564);

## Appendix

#14524= IFCRELDEFINESBYPROPERTIES('2ANMVEZvz9qAJgrC8mNMFx', #5,S,S,(#10969,#10960,#10951,#10937,#10908,#10886,#10862,#10839, #10830,#10820,#10802,#10789,#10746,#10717,#10404,#10395,#10374, #10341,#10332,#10323,#10267,#10258,#10232,#10185,#10176,#10167, #10083,#10058,#10024,#9997,#9988,#9979,#9904,#9879,#9824,#9735, #9710,#9682,#3847,#3839,#3831,#3823,#3815,#3807,#3799,#3791,#37 83,#3775,#3767,#3759,#3751,#3743,#3735,#3727,#3719,#3711,#3703,# 3695,#3687,#3678,#3663,#3655,#3647,#3639,#3627,#3619,#3611,#360 3,#3595,#3587,#3579,#3570,#3560,#3552,#3544,#3536,#3528,#3520,#3 512,#3504,#3496,#3488,#3480,#3472,#3464,#3456,#3448,#3440,#3432, #3424,#3416,#3408,#3400,#3392,#3383,#3366,#3358,#3350,#3342,#33 25,#3317,#3309,#3301,#3293,#3285,#3277,#3263,#3251,#3242,#3233, #3224,#3215,#3206,#3197,#3188,#3179,#3170,#3161,#3152,#3143,#313 4,#3125,#3116,#3107,#3098,#3089,#3080,#3071,#3062,#3053,#3044,#3 032,#3023,#3014,#3005,#2996,#2987,#2978,#2969,#2960,#2951,#2942, #2928,#2914,#2900,#2886,#2872,#2858,#2844,#2830,#2816,#2797,#27 83,#2769,#2755,#2741,#2727,#2713,#2699,#2680,#2666,#2652,#2638, #2624,#2610,#2596,#2582,#2568,#2554,#2540,#2523,#2509,#2492,#247 8,#2459,#2440,#2413,#1661,#1629,#1595,#1559),#1566);	#14547= IFCRELDEFINESBYPROPERTIES('13nPvkU9F1kVwSEoAgl14',#5, S,S,(#1744,#1728),#1729);
#14525= IFCRELDEFINESBYPROPERTIES('3hjEQuC1XB8uUEv3eV8vro',#5, S,S,(#10797,#1578),#1581);	#14548= IFCRELDEFINESBYPROPERTIES('2QbVfK7d94YgOyb9SqYEPy',#5, S,S,(#8771,#1728),#1731);
#14526= IFCRELDEFINESBYPROPERTIES('3KnxSR7gz2MeLNTfhMPdt',#5, S,S,(#10797,#1578),#1585);	#14549= IFCRELDEFINESBYPROPERTIES('2KyL3\$w0H6D9yHgUhpQ7qj',#5, S,S,(#1739),#1742);
#14527= IFCRELDEFINESBYPROPERTIES('1cvtMnrSX5Pkr0nJ\$WrM7',#5, S,S,(#1578),#1593);	#14550= IFCRELDEFINESBYPROPERTIES('0ET1j9Y4XFchaQudo1ArNY',#5, S,S,(#8933,#1744),#1746);
#14528= IFCRELDEFINESBYPROPERTIES('379eqKj8L4nhFOXhpJ\$e7',#5,S, S,(#1595),#1600);	#14551= IFCRELDEFINESBYPROPERTIES('2N9tZAW7PFnO6OP6fWjEh',#5, S,S,(#1754),#1762);
#14529= IFCRELDEFINESBYPROPERTIES('2FN4AnL.vzCvxS1KHl6l\$R',#5,S, S,(#10810,#1612),#1615);	#14552= IFCRELDEFINESBYPROPERTIES('2B9NUoko11_PjUQF4Bcos4',#5,S, S,(#1764),#1765);
#14530= IFCRELDEFINESBYPROPERTIES('297vkfJE967Bn12R3P3IVj',#5,S, S,(#10810,#1612),#1619);	#14553= IFCRELDEFINESBYPROPERTIES('1TfwPapSb9fvG_Gb0xCFn4',#5,S, S,(#1764),#1767);
#14531= IFCRELDEFINESBYPROPERTIES('2i\$egaDTP2igzq9yJh6M98',#5,S, S,(#1612),#1627);	#14554= IFCRELDEFINESBYPROPERTIES('0VumbN265F1RIPEPsJVSHz',#5, S,S,(#1775),#1778);
#14532= IFCRELDEFINESBYPROPERTIES('25Pp20eWHAMPgFyfsL\$TM',#5, S,S,(#1629),#1634);	#14555= IFCRELDEFINESBYPROPERTIES('2Oh3IGomH0g86iPeUErm32',#5,S, S,(#1780),#1781);
#14533= IFCRELDEFINESBYPROPERTIES('0kZ3qdH9b1zeGhs3tHX7Xe',#5,S, S,(#10828,#1644),#1648);	#14556= IFCRELDEFINESBYPROPERTIES('1\$RGu7Dir5HgwKQ965b0RG',#5, S,S,(#1789),#1792);
#14534= IFCRELDEFINESBYPROPERTIES('0iPP7cPYP6CwtBrV9cKfJ5',#5,S, S,(#10828,#1644),#1653);	#14557= IFCRELDEFINESBYPROPERTIES('2W_ApRt_5DNflgMZNrHepB',#5, S,S,(#1794),#1795);
#14535= IFCRELDEFINESBYPROPERTIES('0NrCphaRf7M9_gNbGBILL3',#5, S,S,(#10977,#10967,#10958,#10944,#10915,#10897,#10874,#10837,#10 828,#10782,#10710,#10694,#10677,#10656,#10634,#10607,#10575,#10 551,#10536,#10492,#10472,#10411,#10402,#10390,#10381,#10348,#10 339,#10330,#10285,#10274,#10265,#10251,#10239,#10192,#10183,#10 174,#10119,#10096,#10071,#10056,#10037,#10004,#9995,#9986,#9939, #9917,#9892,#9867,#9838,#9748,#9723,#9697,#9603,#3853,#3845,#38 37,#3829,#3821,#3813,#3805,#3797,#3789,#3781,#3773,#3765,#3757,# 3749,#3741,#3733,#3725,#3717,#3709,#3701,#3693,#3685,#3673,#366 1,#3653,#3645,#3634,#3625,#3617,#3609,#3601,#3593,#3585,#3577,#3 568,#3558,#3550,#3542,#3534,#3526,#3518,#3510,#3502,#3494,#3486, #3478,#3470,#3462,#3454,#3446,#3438,#3430,#3422,#3414,#3406,#33 98,#3390,#3376,#3364,#3356,#3348,#3333,#3323,#3315,#3307,#3299,# 3291,#3283,#3272,#3258,#3249,#3240,#3231,#3222,#3213,#3204,#319 5,#3186,#3177,#3168,#3159,#3150,#3141,#3132,#3123,#3114,#3105,#3 096,#3087,#3078,#3069,#3060,#3051,#3039,#3030,#3021,#3012,#3003, #2994,#2985,#2976,#2967,#2958,#2949,#2937,#2923,#2909,#2895,#28 81,#2867,#2853,#2839,#2825,#2806,#2792,#2778,#2764,#2750,#2736, #2722,#2708,#2689,#2675,#2661,#2647,#2633,#2619,#2605,#2591,#257 7,#2563,#2549,#2532,#2518,#2501,#2487,#2468,#2449,#2427,#1675,#1 644),#1654);	#14558= IFCRELDEFINESBYPROPERTIES('3RgAPyRmvDMPS1oV9V\$TL9', #5,S,S,(#9555,#1794),#1797);
#14536= IFCRELDEFINESBYPROPERTIES('2423sj7rE9OwbqUaEjOxy',#5,S, S,(#10828,#1644),#1659);	#14559= IFCRELDEFINESBYPROPERTIES('0ZMm37v_H8ZB8P6yaMh1hK',# 5,S,S,(#1805),#1813);
#14537= IFCRELDEFINESBYPROPERTIES('3PirtmeV5Fvgx7mK7DWmDQ',# 5,S,S,(#1661),#1665);	#14560= IFCRELDEFINESBYPROPERTIES('1pqnShk8TEPeYCXi02XY2c',#5, S,S,(#1815),#1816);
#14538= IFCRELDEFINESBYPROPERTIES('3G23vyMyH8XAjNo9gEhGSE',# 5,S,S,(#10837,#1675),#1678);	#14561= IFCRELDEFINESBYPROPERTIES('1uQJKhNUz5Rhn2Bs3vRyIG',#5, S,S,(#1815),#1818);
#14539= IFCRELDEFINESBYPROPERTIES('3mUQ23RR1EtP4h2r14aR\$z',#5,S, S,(#10837,#1675),#1682);	#14562= IFCRELDEFINESBYPROPERTIES('0tWmEPv51cuQCXcD69KH2',# 5,S,S,(#1826),#1834);
#14540= IFCRELDEFINESBYPROPERTIES('2ioexVLP1\$O0ScBWNWZj',#5, S,S,(#10837,#1675),#1687);	#14563= IFCRELDEFINESBYPROPERTIES('3Qgmw6uiDBfQaTKeLoAvlS',#5, S,S,(#1857,#1836),#1837);
#14541= IFCRELDEFINESBYPROPERTIES('0yWy9FFebB3v09EikPqXe',#5,S, S,(#1689),#1691);	#14564= IFCRELDEFINESBYPROPERTIES('36rVvYwBGL0Ig8WV2nWeGbD', #5,S,S,(#1836),#1839);
#14542= IFCRELDEFINESBYPROPERTIES('3BJAcQ4iH6hgMIC\$PnMR3',#5, S,S,(#1689),#1693);	#14565= IFCRELDEFINESBYPROPERTIES('3JuwYaoEb5FuLRRK1o4zLJ',#5, S,S,(#1847),#1855);
#14543= IFCRELDEFINESBYPROPERTIES('0KLMDeLy9C8xOYF9DAoPwD', #5,S,S,(#1699),#1707);	#14566= IFCRELDEFINESBYPROPERTIES('2d34V42HF18E9WhH6Dta',#5, S,S,(#1857),#1859);
#14544= IFCRELDEFINESBYPROPERTIES('3rW6vHEv7jhn3CDQnj_s',#5,S, S,(#1709),#1710);	#14567= IFCRELDEFINESBYPROPERTIES('2xDp9b1DnEoQa_rr3ef6cB',#5,S, S,(#1867),#1875);
#14545= IFCRELDEFINESBYPROPERTIES('1QYFmg0cz0TBRrOG8hlZ7g',#5, S,S,(#1709),#1712);	#14568= IFCRELDEFINESBYPROPERTIES('3G3hSwgPj5ehPwizV8LY',#5,S, S,(#1877),#1878);
#14546= IFCRELDEFINESBYPROPERTIES('2Kp4YtKijEQRZg5P3BVopY',#5, S,S,(#1718),#1726);	#14569= IFCRELDEFINESBYPROPERTIES('3d55YquG5FngBhdCj6RGzS',#5,S, S,(#1877),#1880);
	#14570= IFCRELDEFINESBYPROPERTIES('2_1hhMMTH0ie9E1NiJkPjS',#5,S, S,(#1888),#1891);
	#14571= IFCRELDEFINESBYPROPERTIES('0fDFJ6f942gJ9tVF3YvWa',#5,S, S,(#1893),#1894);
	#14572= IFCRELDEFINESBYPROPERTIES('1zRtysd3DE5O8z75YG5SJV',#5, S,S,(#1893),#1896);
	#14573= IFCRELDEFINESBYPROPERTIES('3KfcMeEsn9IRYAs6l\$z5FZ',#5,S, S,(#1904),#1912);
	#14574= IFCRELDEFINESBYPROPERTIES('1U3TvA\$Sbf28YmKAskeKvV',#5, S,S,(#1914),#1915);
	#14575= IFCRELDEFINESBYPROPERTIES('1PhYkpS41FZ8a\$QcNy52Qg',#5, S,S,(#1914),#1917);
	#14576= IFCRELDEFINESBYPROPERTIES('0xb00B7X1C1uPZ5FPz18oA',#5, S,S,(#1923),#1931);
	#14577= IFCRELDEFINESBYPROPERTIES('2xZev5qY16M002ItB_SXO4',#5, S,S,(#1933),#1934);
	#14578= IFCRELDEFINESBYPROPERTIES('16qqASR\$RESQR\$E2C8HplS',#5,S, S,(#6560,#1933),#1936);
	#14579= IFCRELDEFINESBYPROPERTIES('1GCCf985D2ChVIIHJVliV',#5,S, S,(#1942),#1950);
	#14580= IFCRELDEFINESBYPROPERTIES('2qriovnxXDQOp5vg1qNweW',#5, S,S,(#1952),#1953);
	#14581= IFCRELDEFINESBYPROPERTIES('0pynYV0iPCOCoxTU_jf8n',#5, S,S,(#1952),#1955);

#14582=  
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 #14584=  
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 S,(#1973),#1976);  
 #14585=  
 IFCRELDEFINESBYPROPERTIES('2CP7slvX6swhem7DDbxRL',#5,  
 S,S,(#1984),#1992);  
 #14586=  
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 #14587=  
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 #14588=  
 IFCRELDEFINESBYPROPERTIES('2kj9bJ0ln8fxSM7EiLYABY',#5,S,  
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 #14589=  
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 #14590=  
 IFCRELDEFINESBYPROPERTIES('15paom2LHEVxXxILAOjXUH',#  
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 5,S,S,(#2026),#2029);  
 #14592=  
 IFCRELDEFINESBYPROPERTIES('0EFTuZdi53DgpSm7x1VGm',#5,  
 S,S,(#2031),#2032);  
 #14593=  
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 S,(#2063),#2071);  
 #14598=  
 IFCRELDEFINESBYPROPERTIES('2ywEcj4B59ogrewFW19S3U',#5,  
 S,S,(#2073),#2074);  
 #14599=  
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 S,S,(#2073),#2076);  
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 #14601=  
 IFCRELDEFINESBYPROPERTIES('1JEhGISLVAU9wx\$2BcIDfJ',#5,S,  
 S,(#2084),#2093);  
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 #14606=  
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 #14607=  
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 ,S,S,(#2117),#2120);  
 #14608=  
 IFCRELDEFINESBYPROPERTIES('25cEqb\_3T0nQlzkwKkgBi',#5,S,  
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 IFCRELDEFINESBYPROPERTIES('38SF\_fWa13y9nh8YzbeviM',#5,S,  
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 IFCRELDEFINESBYPROPERTIES('3yMHO6le5AMuwozExk0WPU',  
 #5,S,S,(#2138),#2141);  
 #14611=  
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 ,S,S,(#2149),#2157);  
 #14612=  
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 #14613=  
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 #14614=  
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 #14619=  
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 #14620=  
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 ,S,S,(#2212),#2220);  
 #14621=  
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 #14622=  
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 S,(#2254),#2263);  
 #14628=  
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 S,(#2265),#2266);  
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 S,S,(#2265),#2268);  
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 S,(#2276),#2285);  
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 #14633=  
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 #14637=  
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 #14638=  
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 S,(#2328),#2331);  
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 #14640=  
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 S,S,(#2339),#2348);  
 #14641=  
 IFCRELDEFINESBYPROPERTIES('3ib9ifzIL2iOgtAbNvOEi',#5,S,S,  
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 #14642=  
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 5,S,S,(#2360),#2368);  
 #14643=  
 IFCRELDEFINESBYPROPERTIES('2srVOXU1XE18TRin67e7Mz',#5,  
 S,S,(#2370),#2371);  
 #14644=  
 IFCRELDEFINESBYPROPERTIES('0r57S7s0T9DbRXDAs5eRaBe',#5,S,  
 S,(#2370),#2373);  
 #14645=  
 IFCRELDEFINESBYPROPERTIES('36o3e\_jPX2zeicvMfLAOXW',#5,  
 S,S,(#2381),#2382);  
 #14646=  
 IFCRELDEFINESBYPROPERTIES('394s43iA9D0OeCsEIBfXh',#5,S,  
 S,(#2381),#2390);  
 #14647=  
 IFCRELDEFINESBYPROPERTIES('3ehJ\_FG9bTRAJm8ILFOiRE',#5,S,  
 S,(#2392),#2393);  
 #14648=  
 IFCRELDEFINESBYPROPERTIES('3gC9JYPMd9YuruxWoCRHIn',#  
 5,S,S,(#2392),#2395);  
 #14649=  
 IFCRELDEFINESBYPROPERTIES('3bstRdujP3M06xLWN0FrTP',#5,  
 S,S,(#2403),#2411);  
 #14650=  
 IFCRELDEFINESBYPROPERTIES('2WDeoILNv8SgPR7IBxDr7r',#5,  
 S,S,(#2413),#2417);  
 #14651=  
 IFCRELDEFINESBYPROPERTIES('2L1PpIoGr0bDBnwMlgsu',#5,S,  
 S,(#2949),#2427),#2430);

#14652=  
 IFCRELDEFINESBYPROPERTIES('2AfjXIQyL9gDOYmNsMOLq',#  
 5,S,.(#3853,#3845,#3837,#3829,#3821,#3813,#3805,#3797,#3789,#3781,  
 #3773,#3765,#3757,#3749,#3741,#3733,#3725,#3717,#3709,#3701,#3693,  
 #3685,#3673,#3661,#3653,#3645,#3634,#3625,#3617,#3609,#3601,  
 #3593,#3585,#3577,#3568,#3558,#3550,#3542,#3534,#3526,#3518,#3510,  
 #3502,#3494,#3486,#3478,#3470,#3462,#3454,#3446,#3438,#3430,#3422,  
 #3414,#3406,#3398,#3390,#3376,#3364,#3356,#3348,#3333,#3323,  
 #3315,#3307,#3299,#3291,#3283,#3272,#3258,#3249,#3240,#3231,#3222,  
 #3213,#3204,#3195,#3186,#3177,#3168,#3159,#3150,#3141,#3132,  
 #3123,#3114,#3105,#3096,#3087,#3078,#3069,#3060,#3051,#3039,#3030,  
 #3021,#3012,#3003,#2994,#2985,#2976,#2967,#2958,#2949,#2937,#2923,  
 #2909,#2895,#2881,#2867,#2853,#2839,#2825,#2806,#2792,#2778,  
 #2764,#2750,#2736,#2722,#2708,#2689,#2675,#2661,#2647,#2633,#2619,  
 #2605,#2591,#2577,#2563,#2549,#2532,#2518,#2501,#2487,#2468,  
 #2449,#2427),#2433);  
 #14653=  
 IFCRELDEFINESBYPROPERTIES('336rSh5kzFG9xVuwmmP0EES',#5,  
 S,.(#2994,#2949,#2518,#2427),#2438);  
 #14654=  
 IFCRELDEFINESBYPROPERTIES('0gX6ZcSoj15Q3oP0lehPqp',#5,S,.(#2440),#2443);  
 #14655=  
 IFCRELDEFINESBYPROPERTIES('2EsEdqEjX6pxU18SFx2qSX',#5,S,.(#2958,#2449),#2452);  
 #14656=  
 IFCRELDEFINESBYPROPERTIES('3w4LvYegDFQxBwn7W77qVM',#5,S,.(#3186,#3141,#3114,#3051,#3021,#3012,#2958,#2825,#2750,#2708,  
 #2605,#2563,#2549,#2449),#2457);  
 #14657=  
 IFCRELDEFINESBYPROPERTIES('04XIEJYEP6XxZYpAaadYUP',#5,  
 S,.(#2459),#2462);  
 #14658=  
 IFCRELDEFINESBYPROPERTIES('3NICOH3hv5RBCXuERoY\_Z',#5,  
 S,.(#2967,#2468),#2471);  
 #14659=  
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 #3837,#3829,#3821,#3813,#3805,#3797,#3789,#3781,#3773,#3765,  
 #3757,#3749,#3741,#3733,#3725,#3717,#3709,#3701,#3693,#3685,  
 #3673,#3665,#3657,#3649,#3641,#3633,#3625,#3617,#3609,#3601,  
 #3593,#3585,#3577,#3568,#3558,#3550,#3542,#3534,#3526,#3518,  
 #3510,#3502,#3494,#3486,#3478,#3470,#3462,#3454,#3446,#3438,  
 #3430,#3422,#3414,#3406,#3398,#3390,#3376,#3364,#3356,#3348,  
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 #3249,#3240,#3231,#3222,#3213,#3204,#3195,#3186,  
 #3177,#3168,#3159,#3150,#3141,#3132,#3123,  
 #3114,#3105,#3096,#3087,#3078,#3069,  
 #3060,#3051,#3039,#3030,#3021,  
 #3012,#2994,#2985,#2976,  
 #2967,#2958,#2949,  
 #2937,#2923,  
 #2909,#2895,  
 #2881,#2867,  
 #2853,#2839,  
 #2825,#2806,  
 #2792,#2778,  
 #2764,  
 #2750,  
 #2736,  
 #2722,  
 #2708,  
 #2689,  
 #2675,  
 #2661,  
 #2647,  
 #2633,  
 #2619,  
 #2605,  
 #2591,  
 #2577,  
 #2563,  
 #2549),#2476);  
 #14660=  
 IFCRELDEFINESBYPROPERTIES('0jRCXr2VPAKBMX3jU\$fvR',#5,  
 S,.(#2478),#2481);  
 #14661=  
 IFCRELDEFINESBYPROPERTIES('3qazXrrGX7jvOczrR3YjLN',#5,S,  
 S,.(#2976,#2487),#2490);  
 #14662=  
 IFCRELDEFINESBYPROPERTIES('0hMQtQ3Sr3f8RjYf7n7Nwg',#5,  
 S,.(#2492),#2495);  
 #14663=  
 IFCRELDEFINESBYPROPERTIES('3stB6lglrFxpZMTLm8xk1S',#5,S,.(#2985,  
 #2501),#2504);  
 #14664=  
 IFCRELDEFINESBYPROPERTIES('2cLr8yJS92jewXqngdVXjP',#5,S,.(#3123,  
 #3096,#3087,#2985,#2722,#2675,#2661,#2591,#2501),#2507);  
 #14665=  
 IFCRELDEFINESBYPROPERTIES('3KS8eRkStf9BfSLygrHsK',#5,S,.(#2509),  
 #2512);  
 #14666=  
 IFCRELDEFINESBYPROPERTIES('2nwYJVfTDKOpVByoWc02z',#5,  
 S,.(#2994,#2518),#2521);  
 #14667=  
 IFCRELDEFINESBYPROPERTIES('36KsnRpaXEyhNBKv33796f',#5,  
 S,.(#2523),#2526);  
 #14668=  
 IFCRELDEFINESBYPROPERTIES('1fvMa03aD1rB52P7Py9G8',#5,S,.(#3003,  
 #2532),#2535);  
 #14669=  
 IFCRELDEFINESBYPROPERTIES('0CMi112bL24v0qSHdFvOxo',#5,S,.(#3003,  
 #2532),#2538);  
 #14670=  
 IFCRELDEFINESBYPROPERTIES('3reN3CoW58NwIHT61ynFau',#5,  
 S,.(#2540),#2543);  
 #14671=  
 IFCRELDEFINESBYPROPERTIES('2GeNssk9z0luPj4Mhpszr',#5,S,.(#3012,  
 #2549),#2552);  
 #14672=  
 IFCRELDEFINESBYPROPERTIES('2hLzeHcu9DXAZstVXiXbsW',#5,  
 S,.(#2554),#2557);  
 #14673=  
 IFCRELDEFINESBYPROPERTIES('1LokP6s2rDax7DtwM\$bjYl',#5,S,.(#3021,  
 #2563),#2566);  
 #14674=  
 IFCRELDEFINESBYPROPERTIES('0DGZqMjuICTAWAyGRpO92',#5,S,.(#2568),  
 #2571);  
 #14675=  
 IFCRELDEFINESBYPROPERTIES('0RzVlkgw5ASOBcjjR8Pp4M',#5,  
 S,.(#3030,#2577),#2580);  
 #14676=  
 IFCRELDEFINESBYPROPERTIES('2oHdIOOYTBCfzkszkeWMvQ',#5,  
 S,.(#2582),#2585);  
 #14677=  
 IFCRELDEFINESBYPROPERTIES('2aJFXsvf6\_RNxDebT5vMH',#5,  
 S,.(#3039,#2591),#2594);  
 #14678=  
 IFCRELDEFINESBYPROPERTIES('0rkgYZwfvBcgKzMScbtYdx',#5,S,.(#2596),  
 #2599);

#14679=  
 IFCRELDEFINESBYPROPERTIES('1FYbMxt5HDTf771xrkrC7R',#5,S,.(#3051,  
 #2605),#2608);  
 #14680=  
 IFCRELDEFINESBYPROPERTIES('0N4DYk8vTDbA30WNWuE59m',#5,S,.(#2610),  
 #2613);  
 #14681=  
 IFCRELDEFINESBYPROPERTIES('2SA249\_r99bwX\_EGasdCIn',#5,S,.(#3060,  
 #2619),#2622);  
 #14682=  
 IFCRELDEFINESBYPROPERTIES('1aHR0xjz6ReD7SjH1z5ym',#5,S,.(#2624),  
 #2627);  
 #14683=  
 IFCRELDEFINESBYPROPERTIES('03v\_CGIOL1LOPDnj2Nd49t',#5,  
 S,.(#3069,#2633),#2636);  
 #14684=  
 IFCRELDEFINESBYPROPERTIES('0JXInOByj7n9\_KOafJvnX',#5,S,.(#2638),  
 #2641);  
 #14685=  
 IFCRELDEFINESBYPROPERTIES('1cO7RwceE545gUXEA4HLXGI',#5,  
 S,.(#3078,#2647),#2650);  
 #14686=  
 IFCRELDEFINESBYPROPERTIES('36PSWH75r6rQ\_7piJiBiv1',#5,S,.(#2652),  
 #2655);  
 #14687=  
 IFCRELDEFINESBYPROPERTIES('0jzRILO9F9h8R2qxnWTc',#5,S,.(#3087,  
 #2661),#2664);  
 #14688=  
 IFCRELDEFINESBYPROPERTIES('3V\$utXcLPCvxJWntMidPaA',#5,  
 S,.(#2666),#2669);  
 #14689=  
 IFCRELDEFINESBYPROPERTIES('0tTHXMrPfgO\_XcLtsLaOd',#5,S,.(#3096,  
 #2675),#2678);  
 #14690=  
 IFCRELDEFINESBYPROPERTIES('1RlwL5lq54quwzV9sJ\_DAB',#5,S,.(#2680),  
 #2683);  
 #14691=  
 IFCRELDEFINESBYPROPERTIES('3nwsut3WHCeeJNV01604H',#5,  
 S,.(#3105,#2689),#2692);  
 #14692=  
 IFCRELDEFINESBYPROPERTIES('1fa6ThemL08P\_VbyYIXKaX',#5,  
 S,.(#3204,#3105,#2853,#2689),#2697);  
 #14693=  
 IFCRELDEFINESBYPROPERTIES('3qpvVbzGH3u9AN6BA4yWK',#5,  
 S,.(#2699),#2702);  
 #14694=  
 IFCRELDEFINESBYPROPERTIES('0F9NELbFP1KBVTHY9FbtZs',#5,  
 S,.(#3114,#2708),#2711);  
 #14695=  
 IFCRELDEFINESBYPROPERTIES('1\_WTAcOW52qQNXyW4bg8IZ',#5,S,.(#2713),  
 #2716);  
 #14696=  
 IFCRELDEFINESBYPROPERTIES('0kzCYqfGz9NAIX11TQW1Ek',#5,  
 S,.(#3123,#2722),#2725);  
 #14697=  
 IFCRELDEFINESBYPROPERTIES('2JLgH2Fv66IZtdjE1RoEn',#5,S,.(#2727),  
 #2730);  
 #14698=  
 IFCRELDEFINESBYPROPERTIES('1\$opQ2Wz5SOIM7mI8d\_Nq',#5,  
 S,.(#3132,#2736),#2739);  
 #14699=  
 IFCRELDEFINESBYPROPERTIES('09FL4t5v91MO6KjPqN8HNQ',#5,  
 S,.(#2741),#2744);  
 #14700=  
 IFCRELDEFINESBYPROPERTIES('0rKcBkw3f8cPvBChVooQ4',#5,S,.(#3141,  
 #2750),#2753);  
 #14701=  
 IFCRELDEFINESBYPROPERTIES('01tcRsVQXE7gsbgPosuXA',#5,S,.(#2755),  
 #2758);  
 #14702=  
 IFCRELDEFINESBYPROPERTIES('3ZsjOPW71DUgLI mhXx8j22',#5,  
 S,.(#3150,#2764),#2767);  
 #14703=  
 IFCRELDEFINESBYPROPERTIES('2tBScXDOP73umON7upjlrh',#5,S,.(#2769),  
 #2772);  
 #14704=  
 IFCRELDEFINESBYPROPERTIES('392yP2NvH3nQBjKlY9Jw8',#5,  
 S,.(#3159,#2778),#2781);  
 #14705=  
 IFCRELDEFINESBYPROPERTIES('0Qk7I39JDDx9iDyFrcB5Qa',#5,S,.(#2783),  
 #2786);  
 #14706=  
 IFCRELDEFINESBYPROPERTIES('0OpWpCqWr52PpcQxEkLpv1',#5,  
 S,.(#3168,#2792),#2795);  
 #14707=  
 IFCRELDEFINESBYPROPERTIES('0kr6LVb9f1S9PU\_BrGTGAc',#5,  
 S,.(#2797),#2800);  
 #14708=  
 IFCRELDEFINESBYPROPERTIES('21a9fWjPjEahiyQDA\_mADs',#5,  
 S,.(#3177,#2806),#2809);  
 #14709=  
 IFCRELDEFINESBYPROPERTIES('2idK1LgY9FYPpomFiv7Y70',#5,  
 S,.(#3177,#2806),#2814);  
 #14710=  
 IFCRELDEFINESBYPROPERTIES('3PTwrs7B12\_8jOs1hnPJsP',#5,S,.(#2816),  
 #2819);  
 #14711=  
 IFCRELDEFINESBYPROPERTIES('37464b\$LL8guKgpuGmMosC',#5,  
 S,.(#3186,#2825),#2828);  
 #14712=  
 IFCRELDEFINESBYPROPERTIES('10h9GKMr5FzwUraleSMLN7',#5,  
 S,.(#2830),#2833);  
 #14713=  
 IFCRELDEFINESBYPROPERTIES('1C\$AaNY0DAVQmpBwl6cEYr',#5,  
 S,.(#3195,#2839),#2842);

#14714=  
 IFCRELDEFINESBYPROPERTIES('2vFfC4L9f0b9NI2BSJz4K',#5,S,  
 S,(#2844),#2847);  
 #14715=  
 IFCRELDEFINESBYPROPERTIES('2EfkA v dvEzOCv18M9syK7',#5,  
 S,S,(#3204,#2853),#2856);  
 #14716=  
 IFCRELDEFINESBYPROPERTIES('0D0SsZ50bBrhwPZJzDwSd2',#5,  
 S,S,(#2858),#2861);  
 #14717=  
 IFCRELDEFINESBYPROPERTIES('3aMaqLFm54FOc6RdXkQ7D',#5,  
 S,S,(#3213,#2867),#2870);  
 #14718=  
 IFCRELDEFINESBYPROPERTIES('2gWpJBakv9kvXZAZria0h',#5,S,  
 S,(#2872),#2875);  
 #14719=  
 IFCRELDEFINESBYPROPERTIES('00XmRD6Lz16eepVfAHLX1h',#  
 5,S,S,(#3222,#2881),#2884);  
 #14720=  
 IFCRELDEFINESBYPROPERTIES('3BNavZAd1EbOIOuoSjFuD',#5,  
 S,S,(#2886),#2889);  
 #14721=  
 IFCRELDEFINESBYPROPERTIES('3wkBLKjBPfYocfQ\$FySL',#5,S,  
 S,(#3231,#2895),#2898);  
 #14722=  
 IFCRELDEFINESBYPROPERTIES('068PGquuH96OOMFUp6dvfl',#5,  
 S,S,(#2900),#2903);  
 #14723=  
 IFCRELDEFINESBYPROPERTIES('2nOcrxUh14DxbDGjXrS1x8',#5,S,  
 S,(#3240,#2909),#2912);  
 #14724=  
 IFCRELDEFINESBYPROPERTIES('0Sv4sYXBf2DOXzhfq\$OH9y',#5,  
 S,S,(#2914),#2917);  
 #14725=  
 IFCRELDEFINESBYPROPERTIES('10aOdJuvP92QUK6WmYexo',#5,  
 S,S,(#3249,#2923),#2926);  
 #14726=  
 IFCRELDEFINESBYPROPERTIES('0DMXMsO9HBGOu\_RCsBbyLs',  
 #5,S,S,(#2928),#2931);  
 #14727=  
 IFCRELDEFINESBYPROPERTIES('2wh8kPY3j1qeCTxDOegUx',#5,  
 S,S,(#3258,#2937),#2940);  
 #14728=  
 IFCRELDEFINESBYPROPERTIES('07Ny11p5j8vDHf6kpcjML',#5,S,  
 S,(#2942),#2943);  
 #14729=  
 IFCRELDEFINESBYPROPERTIES('1ABPS7Rb56UfrONStvk\$df',#5,  
 S,S,(#2951),#2952);  
 #14730=  
 IFCRELDEFINESBYPROPERTIES('2IQT1YRsrALxND9NrpV0hWs',#5,  
 S,S,(#2960),#2961);  
 #14731=  
 IFCRELDEFINESBYPROPERTIES('1LIWxiUYL7gOyYUnE6FvuO',#  
 5,S,S,(#2969),#2970);  
 #14732=  
 IFCRELDEFINESBYPROPERTIES('1dH1b0x1T1ngW0xxGloEo',#5,S,  
 S,(#2978),#2979);  
 #14733=  
 IFCRELDEFINESBYPROPERTIES('1WgYumYpr5dBeFviNEosCw',#5,  
 S,S,(#2987),#2988);  
 #14734=  
 IFCRELDEFINESBYPROPERTIES('1kNIAA08504BpjG9nkLbXL',#5,  
 S,S,(#2996),#2997);  
 #14735=  
 IFCRELDEFINESBYPROPERTIES('2mh6yvQc5DQARwE3wEbgkJ',#  
 5,S,S,(#3005),#3006);  
 #14736=  
 IFCRELDEFINESBYPROPERTIES('31ELmTf9T8UuVLDXDIUmlc',#  
 5,S,S,(#3014),#3015);  
 #14737=  
 IFCRELDEFINESBYPROPERTIES('1aa9gJyTX5kwEy4DbIXI2u',#5,S,  
 S,(#3023),#3024);  
 #14738=  
 IFCRELDEFINESBYPROPERTIES('3iiYvyR7vCifnk\_E7knZ\_B',#5,S,  
 S,(#3032),#3033);  
 #14739=  
 IFCRELDEFINESBYPROPERTIES('36jsRYOd9xAwBvYQHaYB9b',  
 #5,S,S,(#3039),#3042);  
 #14740=  
 IFCRELDEFINESBYPROPERTIES('1nVv9CvPv6Ue61J65xeyID',#5,S,  
 S,(#3044),#3045);  
 #14741=  
 IFCRELDEFINESBYPROPERTIES('1F7DhZ1PHDluIFTZvZ8mA7',#5,  
 S,S,(#3053),#3054);  
 #14742=  
 IFCRELDEFINESBYPROPERTIES('16b1VT0cr0SgHpqrkhXwq',#5,S,  
 S,(#3062),#3063);  
 #14743=  
 IFCRELDEFINESBYPROPERTIES('0BS1s5OnHFJAInXAtEtCpz',#5,S,  
 S,(#3071),#3072);  
 #14744=  
 IFCRELDEFINESBYPROPERTIES('0thWB8iW98nRhVGeP4Szb',#5,  
 S,S,(#3080),#3081);  
 #14745=  
 IFCRELDEFINESBYPROPERTIES('2C3r2k45r2DwTQ8S\_h7x0K',#5,S,  
 S,(#3089),#3090);  
 #14746=  
 IFCRELDEFINESBYPROPERTIES('2mZbXX\_jAie7ELJW7RWDc',#5,  
 S,S,(#3098),#3099);  
 #14747=  
 IFCRELDEFINESBYPROPERTIES('17zRhTsIdDCQ\_SiPja4vKY',#5,S,  
 S,(#3107),#3108);  
 #14748=  
 IFCRELDEFINESBYPROPERTIES('3ps3YDFhz5SP\$bolW0oSyS',#5,S,  
 S,(#3116),#3117);

#14749=  
 IFCRELDEFINESBYPROPERTIES('2DZ52sBPL5yQtUuz4fnez\_',#5,S,  
 S,(#3125),#3126);  
 #14750=  
 IFCRELDEFINESBYPROPERTIES('11JZeD358FesiHngF4WuW',#5,S,  
 S,(#3134),#3135);  
 #14751=  
 IFCRELDEFINESBYPROPERTIES('2o70LgG3j5KcCz476HpG36',#5,S,  
 S,(#3143),#3144);  
 #14752=  
 IFCRELDEFINESBYPROPERTIES('1FN0MdnXXBG8thNfVLAiT',#5,  
 S,S,(#3152),#3153);  
 #14753=  
 IFCRELDEFINESBYPROPERTIES('3ooWoWSJz7fewWmqNknel2',#5,  
 S,S,(#3161),#3162);  
 #14754=  
 IFCRELDEFINESBYPROPERTIES('2U7bWsn8v7bhTOiJINMPHy',#5,  
 S,S,(#3170),#3171);  
 #14755=  
 IFCRELDEFINESBYPROPERTIES('1DeHE3v0v4hg0kJYN3Wows',#5,  
 S,S,(#3179),#3180);  
 #14756=  
 IFCRELDEFINESBYPROPERTIES('3WCIHNuqb4\_x5MRYKoxYrV',  
 #5,S,S,(#3188),#3189);  
 #14757=  
 IFCRELDEFINESBYPROPERTIES('3Gnej7p8z59AzKYeaBNNS7',#5,  
 S,S,(#3197),#3198);  
 #14758=  
 IFCRELDEFINESBYPROPERTIES('3\_RkdjIMv0v9HwLgPsWLeJ',#5,S,  
 S,(#3206),#3207);  
 #14759=  
 IFCRELDEFINESBYPROPERTIES('0SYV m7ezr0RezMJNstLIP5',#5,S,  
 S,(#3215),#3216);  
 #14760=  
 IFCRELDEFINESBYPROPERTIES('311U\_S7fbDIBYfBerRSeHO',#5,S,  
 S,(#3224),#3225);  
 #14761=  
 IFCRELDEFINESBYPROPERTIES('11HavVF2fBZeVAVOAeBoQW',#  
 5,S,S,(#3233),#3234);  
 #14762=  
 IFCRELDEFINESBYPROPERTIES('3roRB5GZHEZPTQnyCTHai7',#5,  
 S,S,(#3242),#3243);  
 #14763=  
 IFCRELDEFINESBYPROPERTIES('1VHV0Y7ygb2jAexp9YAtbWF',#5,  
 S,S,(#3251),#3252);  
 #14764=  
 IFCRELDEFINESBYPROPERTIES('0Vxe0Zli54jOmSAY8LrEX',#5,  
 S,S,(#3258),#3261);  
 #14765=  
 IFCRELDEFINESBYPROPERTIES('2jwT1YskPBsfghqZM\_c8j',#5,S,  
 S,(#3358,#3350,#3342,#3317,#3309,#3301,#3293,#3285,#3277,#3263),  
 #3266);  
 #14766=  
 IFCRELDEFINESBYPROPERTIES('2N3S5MHQZCE9uOWehFVeuU',  
 #5,S,S,(#10977,#10967,#10958,#10944,#10925,#10915,#10897,#10874,  
 #3853,#3845,#3837,#3829,#3821,#3813,#3805,#3797,#3789,#3781,#37  
 73,#3765,#3757,#3749,#3741,#3733,#3725,#3717,#3709,#3701,#3693,  
 #3685,#3673,#3661,#3653,#3645,#3625,#3617,#3609,#3601,#3593,#358  
 5,#3577,#3568,#3558,#3550,#3542,#3534,#3526,#3518,#3510,#3502,#3  
 494,#3486,#3478,#3470,#3462,#3454,#3446,#3438,#3430,#3422,#3414,  
 #3406,#3398,#3390,#3376,#3364,#3356,#3348,#3323,#3315,#3307,#32  
 99,#3291,#3283,#3272),#3275);  
 #14767=  
 IFCRELDEFINESBYPROPERTIES('0spg9IPdv30PnA55AMtw5',#5,S,  
 S,(#3325),#3327);  
 #14768=  
 IFCRELDEFINESBYPROPERTIES('3ZY4Hywcb4kxQhZYXncNd',#5,  
 S,S,(#3634,#3333),#3335);  
 #14769=  
 IFCRELDEFINESBYPROPERTIES('3q3onRUKD9ZwK38ev6BLoq',#5,  
 S,S,(#3333),#3340);  
 #14770=  
 IFCRELDEFINESBYPROPERTIES('1np9oAUIL68g1HJFuFsjE',#5,S,S,  
 S,(#3366),#3368);  
 #14771=  
 IFCRELDEFINESBYPROPERTIES('0\_43bYllvB9RXNnpTrdaIa',#5,S,  
 S,(#3376),#3381);  
 #14772=  
 IFCRELDEFINESBYPROPERTIES('1VqTqWFg5DTgoA\_DT6Rua3',#  
 5,S,S,(#3552,#3544,#3536,#3528,#3520,#3512,#3504,#3496,#3488,#348  
 0,#3472,#3464,#3456,#3448,#3440,#3432,#3424,#3416,#3408,#3400,#3  
 392,#3383),#3384);  
 #14773=  
 IFCRELDEFINESBYPROPERTIES('10hF9M6nFkA\$YE2\_VKwvR',#5,  
 S,S,(#3560),#3562);  
 #14774=  
 IFCRELDEFINESBYPROPERTIES('21G\_ amh7XFKfTevAvN0uV',#5,  
 S,S,(#3655,#3647,#3639,#3619,#3611,#3603,#3595,#3587,#3579,#3570)  
 ,#3571);  
 #14775=  
 IFCRELDEFINESBYPROPERTIES('1y9hh\$IOH0sANVcyJEFsOy',#5,S,  
 S,(#3627),#3628);  
 #14776=  
 IFCRELDEFINESBYPROPERTIES('1Znmpps2EP6rfxc6ZnU20CA',#5,S,  
 S,(#3634),#3637);  
 #14777=  
 IFCRELDEFINESBYPROPERTIES('2zQIK2Q1D6MB1rgdBenU\_j',#5,  
 S,S,(#3663),#3665);  
 #14778=  
 IFCRELDEFINESBYPROPERTIES('3zd8arPwXC8A\_jE3CM5KHH',#  
 5,S,S,(#3673),#3676);  
 #14779=  
 IFCRELDEFINESBYPROPERTIES('1g\$V2h\_p5D8xYzZATXcaS',#5,  
 S,S,(#3847,#3839,#3831,#3823,#3815,#3807,#3799,#3791,#3783,#3775),



## Appendix

#3767,#3759,#3751,#3743,#3735,#3727,#3719,#3711,#3703,#3695,#3687,#3678),#3679);  
#14780=  
IFCRELDEFINESBYPROPERTIES('2s8OMB0mD5Kfb0PrqpGdw3',#5,S,S,(#3853),#3856);  
#14781=  
IFCRELDEFINESBYPROPERTIES('3BSImlosT6A9Wfkc1TOZx3',#5,S,(#3858),#3862);  
#14782=  
IFCRELDEFINESBYPROPERTIES('0x0FrW4M9T58P3VUxSuqHE',#5,S,S,(#6063,#3858),#3864);  
#14783=  
IFCRELDEFINESBYPROPERTIES('2IX03gXSzBq8hLRT5wnTFK',#5,S,S,(#8491,#7139,#6071,#3875),#3877);  
#14784=  
IFCRELDEFINESBYPROPERTIES('3KqzMXuM99Zjh40iY9Xj5L',#5,S,S,(#8491,#7139,#6071,#3875),#3881);  
#14785=  
IFCRELDEFINESBYPROPERTIES('24v9wTkQT47AUuW2FiTnc',#5,S,S,(#6071,#3875),#3889);  
#14786=  
IFCRELDEFINESBYPROPERTIES('2SEmUCyqD6TRuHCgsG4Esa',#5,S,S,(#3891),#3894);  
#14787=  
IFCRELDEFINESBYPROPERTIES('1YfQ7Rxef07ODYG4XPfrcb',#5,S,S,(#6073,#3891),#3899);  
#14788=  
IFCRELDEFINESBYPROPERTIES('00etF1cdLk8D\_NFe\_nK40',#5,S,S,(#8500,#7159,#6080,#3907),#3909);  
#14789=  
IFCRELDEFINESBYPROPERTIES('1rS1DWOHj91PBJGakK4FeO',#5,S,S,(#8500,#7159,#6080,#3907),#3912);  
#14790=  
IFCRELDEFINESBYPROPERTIES('0xIIHFP\_vAm8GVFGfXZln',#5,S,S,(#6080,#3907),#3920);  
#14791=  
IFCRELDEFINESBYPROPERTIES('0FsdzDFQb2QfQgwaAAO3BV',#5,S,S,(#3922),#3925);  
#14792=  
IFCRELDEFINESBYPROPERTIES('1\_Md6k8VPC6w9QskU58EZR',#5,S,S,(#6082,#3922),#3927);  
#14793=  
IFCRELDEFINESBYPROPERTIES('0iBZZzydb7cQWnup9u5v0M',#5,S,S,(#8509,#7179,#6089,#3938),#3940);  
#14794=  
IFCRELDEFINESBYPROPERTIES('3H2VNiFUnEUgJvHiD4cls',#5,S,S,(#8509,#7179,#6089,#3938),#3944);  
#14795=  
IFCRELDEFINESBYPROPERTIES('3sHqxfV3LAbuGd6mmRCK0E',#5,S,S,(#6089,#3938),#3952);  
#14796=  
IFCRELDEFINESBYPROPERTIES('2SYoMDxZn25gSjKMWEDp6o',#5,S,S,(#3954),#3957);  
#14797=  
IFCRELDEFINESBYPROPERTIES('2Ka1DhZSf7jIWQ6zNgrwbT',#5,S,S,(#6091,#3954),#3959);  
#14798=  
IFCRELDEFINESBYPROPERTIES('3qqB9QMd97oQNIpDMj\_NMx',#5,S,S,(#8521,#7199,#6098,#3970),#3972);  
#14799=  
IFCRELDEFINESBYPROPERTIES('0V8s5mVgfBxUekle0jKMVb',#5,S,S,(#8521,#7199,#6098,#3970),#3975);  
#14800=  
IFCRELDEFINESBYPROPERTIES('2MMbiebnp3wFZOgl4IJdJ',#5,S,S,(#6098,#3970),#3983);  
#14801=  
IFCRELDEFINESBYPROPERTIES('0ZGbcS9e5CWfcZHF2DLYo5',#5,S,S,(#3985),#3988);  
#14802=  
IFCRELDEFINESBYPROPERTIES('0tcp6ySiP2Fh\_LeWagenQh',#5,S,S,(#6100,#3985),#3990);  
#14803=  
IFCRELDEFINESBYPROPERTIES('1fhY5JU117rOZ3iC3BE\_az',#5,S,S,(#8538,#7219,#6107,#4001),#4003);  
#14804=  
IFCRELDEFINESBYPROPERTIES('3hiD0KIYv3BOX9S3JjQWVR',#5,S,S,(#8538,#7219,#6107,#4001),#4007);  
#14805=  
IFCRELDEFINESBYPROPERTIES('2ahtOoxPHBTf96ke2w2aTV',#5,S,S,(#6107,#4001),#4015);  
#14806=  
IFCRELDEFINESBYPROPERTIES('1jByAqKHT3mR86bvbNk7p',#5,S,S,(#4017),#4020);  
#14807=  
IFCRELDEFINESBYPROPERTIES('13aRIT57r1KeXGfoxh86IV',#5,S,S,(#6109,#4017),#4022);  
#14808=  
IFCRELDEFINESBYPROPERTIES('3cIdx10d9Eo8Sugv3kKYIR',#5,S,S,(#8547,#7239,#6116,#4033),#4035);  
#14809=  
IFCRELDEFINESBYPROPERTIES('3db3ZDPY11gRdqiz1ESbUP',#5,S,S,(#8547,#7239,#6116,#4033),#4038);  
#14810=  
IFCRELDEFINESBYPROPERTIES('21wur6e2D8WwoK162ROXct',#5,S,S,(#6116,#4033),#4046);  
#14811=  
IFCRELDEFINESBYPROPERTIES('0fZw9Gan54kQ1OzCcdhID6',#5,S,S,(#4048),#4051);  
#14812=  
IFCRELDEFINESBYPROPERTIES('11RY20eVv0yQbCWZ2NeBq',#5,S,S,(#6118,#4048),#4053);  
#14813=  
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#14814=  
IFCRELDEFINESBYPROPERTIES('0H0VNMI\$J2n9PeXXBXan4Y',#5,S,S,(#8556,#7259,#6125,#4064),#4069);  
#14815=  
IFCRELDEFINESBYPROPERTIES('0d\_braZKHENOOB3hdQ92YM',#5,S,S,(#6125,#4064),#4077);  
#14816=  
IFCRELDEFINESBYPROPERTIES('2NtZ132mr5nxjMq8DmaHyS',#5,S,S,(#4079),#4082);  
#14817=  
IFCRELDEFINESBYPROPERTIES('29oViC4xj7MgBixyBLHa1Y',#5,S,S,(#6127,#4079),#4084);  
#14818=  
IFCRELDEFINESBYPROPERTIES('1yHVfKp\_16ARvQwFbZQvuq',#5,S,S,(#8568,#7277,#6134,#4095),#4097);  
#14819=  
IFCRELDEFINESBYPROPERTIES('1MTJN9QDLc4PvATvw\_bos',#5,S,S,(#8568,#7277,#6134,#4095),#4100);  
#14820=  
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#14821=  
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#14822=  
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#14823=  
IFCRELDEFINESBYPROPERTIES('144W2cAyrFAec8h2SvtcFI',#5,S,S,(#8585,#7297,#6143,#4126),#4128);  
#14824=  
IFCRELDEFINESBYPROPERTIES('10uEsp3tDAi9HC1mSEiOw7',#5,S,S,(#8585,#7297,#6143,#4126),#4132);  
#14825=  
IFCRELDEFINESBYPROPERTIES('313eyxPRP3LA98j0\_F1fa',#5,S,S,(#6143,#4126),#4140);  
#14826=  
IFCRELDEFINESBYPROPERTIES('1XywkSDs50ueiMFHGBV\_PL',#5,S,S,(#4142),#4145);  
#14827=  
IFCRELDEFINESBYPROPERTIES('1ySyoK8UzAhPrbsdIRqCEb',#5,S,S,(#6145,#4142),#4147);  
#14828=  
IFCRELDEFINESBYPROPERTIES('09MBfDoUnE\_eyfWadVgJU',#5,S,S,(#8597,#7317,#6152,#4158),#4160);  
#14829=  
IFCRELDEFINESBYPROPERTIES('2HeKhWixT5APDjh3SNLoKR',#5,S,S,(#8597,#7317,#6152,#4158),#4163);  
#14830=  
IFCRELDEFINESBYPROPERTIES('2GB6vV1S51rgnnHatA8la',#5,S,S,(#6152,#4158),#4171);  
#14831=  
IFCRELDEFINESBYPROPERTIES('3RsrqVHjCSgZzDlnRgSkq',#5,S,S,(#4173),#4176);  
#14832=  
IFCRELDEFINESBYPROPERTIES('0FPtbsu9v5B8Kk9UGkm01s',#5,S,S,(#6154,#4173),#4178);  
#14833=  
IFCRELDEFINESBYPROPERTIES('0MpoX0Snj5AgQy2msWHM0',#5,S,S,(#8609,#7335,#6161,#4189),#4191);  
#14834=  
IFCRELDEFINESBYPROPERTIES('3Eb4BB53L4IwGLWKAWcxcQ',#5,S,S,(#8609,#7335,#6161,#4189),#4195);  
#14835=  
IFCRELDEFINESBYPROPERTIES('3VOXhPtlP8rhVsR\_n01A1',#5,S,S,(#6161,#4189),#4203);  
#14836=  
IFCRELDEFINESBYPROPERTIES('09maqqL1v4efMesy8XyXoz',#5,S,S,(#4205),#4207);  
#14837=  
IFCRELDEFINESBYPROPERTIES('36J78LjUj6R9Rx2UerOosb',#5,S,S,(#6163,#4205),#4209);  
#14838=  
IFCRELDEFINESBYPROPERTIES('0oDLv1Uoz2tOrb\_v2ZnGx6',#5,S,S,(#8621,#7355,#6170,#4220),#4222);  
#14839=  
IFCRELDEFINESBYPROPERTIES('2iMbcx\_Oz64OSIGMnzYe0g',#5,S,S,(#8621,#7355,#6170,#4220),#4224);  
#14840=  
IFCRELDEFINESBYPROPERTIES('0RllvfyALCiwSzzgNzrEF5',#5,S,S,(#6170,#4220),#4232);  
#14841=  
IFCRELDEFINESBYPROPERTIES('1SIcKszL25ftzke4sqU7u',#5,S,S,(#4234),#4237);  
#14842=  
IFCRELDEFINESBYPROPERTIES('0Jc6mcLzmE5u7C5DqTYww0',#5,S,S,(#6331,#4234),#4239);  
#14843=  
IFCRELDEFINESBYPROPERTIES('3G4r5fZLbEThrID\_M6Qosy',#5,S,S,(#8632,#7376,#6181,#4251),#4253);  
#14844=  
IFCRELDEFINESBYPROPERTIES('2aQUwXYUD9wh8LIKEWkwy0',#5,S,S,(#8632,#7376,#6181,#4251),#4257);  
#14845=  
IFCRELDEFINESBYPROPERTIES('1DMOPq7Nz2MfYnFDZaSNk',#5,S,S,(#4251),#4265);  
#14846=  
IFCRELDEFINESBYPROPERTIES('3BIWXN6zj9Iw3FGyZKBZtW',#5,S,S,(#4267),#4270);  
#14847=  
IFCRELDEFINESBYPROPERTIES('0vOplSFQ97oBPvEFGDZOnp',#5,S,S,(#4267),#4272);  
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IFCRELDEFINESBYPROPERTIES('328GxTvVx3eRBAIWHM0tH',#5,S,S,(#8651,#7397,#6200,#4284),#4286);

#14849=  
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 #14850=  
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 5,S,.(#4284),#4297);  
 #14851=  
 IFCRELDEFINESBYPROPERTIES('3MsUWK1P97cflQ0Djir66w',#5,S,  
 S,.(#4299),#4301);  
 #14852=  
 IFCRELDEFINESBYPROPERTIES('31BEjdD271fkLm1GoJhXZ',#5,S,  
 S,.(#4299),#4303);  
 #14853=  
 IFCRELDEFINESBYPROPERTIES('0HnJ88zYTAbvr\_z9\_5S4op',#5,S,  
 S,.(#8670,#7418,#6219,#4315),#4316);  
 #14854=  
 IFCRELDEFINESBYPROPERTIES('1bERN9bszghhWxeL6G1fY',#5,  
 S,.(#8670,#7418,#6219,#4315),#4319);  
 #14855=  
 IFCRELDEFINESBYPROPERTIES('3jTZ19jrTBt9QuHEHSXmoE',#5,  
 S,.(#4315),#4327);  
 #14856=  
 IFCRELDEFINESBYPROPERTIES('2HaUB17f9xbEpDujScm\_A',#5,S,  
 S,.(#4329),#4332);  
 #14857=  
 IFCRELDEFINESBYPROPERTIES('0FMf\$wbVTBduUdDBFWDPM\$'  
 ,#5,S,.(#4329),#4334);  
 #14858=  
 IFCRELDEFINESBYPROPERTIES('2Pczenf2LAeQ5n0v1Rosly',#5,S,  
 S,.(#8689,#7439,#6238,#4346),#4348);  
 #14859=  
 IFCRELDEFINESBYPROPERTIES('3313giW\_bbnugo2KD31hWr',#5,  
 S,.(#8689,#7439,#6238,#4346),#4351);  
 #14860=  
 IFCRELDEFINESBYPROPERTIES('0xzbR4bPDD1AoOR06zrzqj',#5,S,  
 S,.(#4346),#4359);  
 #14861=  
 IFCRELDEFINESBYPROPERTIES('2Lw9SQsQ93dwGNwSYKekFA',  
 #5,S,.(#4361),#4364);  
 #14862=  
 IFCRELDEFINESBYPROPERTIES('11UQXsgM5BjQn\_t65EgQNv',#5,  
 S,.(#4361),#4366);  
 #14863=  
 IFCRELDEFINESBYPROPERTIES('2W4kxGke1Ft9qB0proGBX',#5,  
 S,.(#8708,#7460,#6257,#4378),#4380);  
 #14864=  
 IFCRELDEFINESBYPROPERTIES('3SrdoTCMxAtQRfThNsvVsz',#5,  
 S,.(#8708,#7460,#6257,#4378),#4384);  
 #14865=  
 IFCRELDEFINESBYPROPERTIES('1j8iH9b77QyCp18prHjn',#5,S,(  
 #4378),#4392);  
 #14866=  
 IFCRELDEFINESBYPROPERTIES('0HSQVkOpXFxwwoVcQguaBs',  
 #5,S,.(#4394),#4397);  
 #14867=  
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 S,.(#4394),#4399);  
 #14868=  
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 S,.(#8727,#7481,#6276,#4411),#4413);  
 #14869=  
 IFCRELDEFINESBYPROPERTIES('1AXbhCEDAMfPSrOb\_CNN',#  
 5,S,.(#8727,#7481,#6276,#4411),#4416);  
 #14870=  
 IFCRELDEFINESBYPROPERTIES('3NtsL5AATCbhf2E9uNp\_7',#5,  
 S,.(#4411),#4424);  
 #14871=  
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 S,.(#4426),#4428);  
 #14872=  
 IFCRELDEFINESBYPROPERTIES('11dW4yNDXBRva\_RoHETxyf',#5,  
 S,.(#6286,#4426),#4430);  
 #14873=  
 IFCRELDEFINESBYPROPERTIES('1OSS4G7v12me\_RR39523Hc',#5,  
 S,.(#8744,#7502,#6293,#4442),#4443);  
 #14874=  
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 S,.(#8744,#7502,#6293,#4442),#4446);  
 #14875=  
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 5,S,.(#4442),#4454);  
 #14876=  
 IFCRELDEFINESBYPROPERTIES('001vGKHPT0K07mrvNrhvi',#5,  
 S,.(#4456),#4459);  
 #14877=  
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 S,.(#4456),#4461);  
 #14878=  
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 S,.(#8761,#7521,#6307,#4473),#4475);  
 #14879=  
 IFCRELDEFINESBYPROPERTIES('3F7UXHGq99cP0FWr1W7RG\_',#  
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 #14880=  
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 S,.(#4473),#4486);  
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 S,.(#4488),#4491);  
 #14882=  
 IFCRELDEFINESBYPROPERTIES('2FTTZxPr93hVLYcAfoOUK',#  
 5,S,.(#8778,#7542,#6326,#4503),#4505);  
 #14883=  
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 S,.(#8778,#7542,#6326,#4503),#4509);

#14884=  
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 S,.(#4503),#4517);  
 #14885=  
 IFCRELDEFINESBYPROPERTIES('3Osz8EK59PxEKNuLoJWD',#5,  
 S,.(#4519),#4522);  
 #14886=  
 IFCRELDEFINESBYPROPERTIES('3OXD7alZjC1wYHskwQRqp',#5,  
 S,.(#4519),#4524);  
 #14887=  
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 #14888=  
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 5,S,.(#8792,#7563,#6338,#4536),#4541);  
 #14889=  
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 S,.(#4536),#4549);  
 #14890=  
 IFCRELDEFINESBYPROPERTIES('1Epolb2or7BPPOSxGs\$KXa',#5,S,  
 S,.(#4551),#4554);  
 #14891=  
 IFCRELDEFINESBYPROPERTIES('1DRxc1Bl9Bgge9R8\_LMFOp',#5,  
 S,.(#4551),#4556);  
 #14892=  
 IFCRELDEFINESBYPROPERTIES('2D9W4m4ssL2KR2Dom4IaRmj',#  
 5,S,.(#8811,#7584,#6357,#4568),#4570);  
 #14893=  
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 S,.(#8811,#7584,#6357,#4568),#4573);  
 #14894=  
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 S,.(#4568),#4581);  
 #14895=  
 IFCRELDEFINESBYPROPERTIES('3YL3guXfbBREX4GH9hY9L',#  
 5,S,.(#4583),#4586);  
 #14896=  
 IFCRELDEFINESBYPROPERTIES('1cwiF08w5FrObUbxj5IAH',#5,S,  
 S,.(#6367,#4583),#4588);  
 #14897=  
 IFCRELDEFINESBYPROPERTIES('3IhezDQPXAlg\_jacHHBSNg',#5,  
 S,.(#8830,#7605,#6374,#4600),#4602);  
 #14898=  
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 S,.(#8830,#7605,#6374,#4600),#4605);  
 #14899=  
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 S,.(#4600),#4613);  
 #14900=  
 IFCRELDEFINESBYPROPERTIES('2fUHcvD2T5Cv98jncLxKgx',#5,  
 S,.(#4615),#4618);  
 #14901=  
 IFCRELDEFINESBYPROPERTIES('3jN4rc6fz8UOnHvo0TUMxy',#5,  
 S,.(#4615),#4620);  
 #14902=  
 IFCRELDEFINESBYPROPERTIES('05NxFUMOH9P8o4SgwwlOc5',#  
 5,S,.(#8849,#7626,#6393,#4632),#4634);  
 #14903=  
 IFCRELDEFINESBYPROPERTIES('1XnZvSA9vBwu8\$6uKfdtdx',#5,  
 S,.(#8849,#7626,#6393,#4632),#4637);  
 #14904=  
 IFCRELDEFINESBYPROPERTIES('09j0D7tpbAagpAF16Jq8v7',#5,S,  
 S,.(#4632),#4645);  
 #14905=  
 IFCRELDEFINESBYPROPERTIES('0uxFSgxGDFJPx9hUZ7WnNo',#  
 5,S,.(#4647),#4650);  
 #14906=  
 IFCRELDEFINESBYPROPERTIES('3LPkq2w0n\_Q\$3iO3ysjwX',#5,S,  
 S,.(#6403),#4647),#4652);  
 #14907=  
 IFCRELDEFINESBYPROPERTIES('3TLnKa3ObFgvT1\$THCck5h',#5,  
 S,.(#8866,#7647,#6410,#4664),#4666);  
 #14908=  
 IFCRELDEFINESBYPROPERTIES('0tzqW\$rgXA0fWPXjHchS4',#5,  
 S,.(#8866,#7647,#6410,#4664),#4669);  
 #14909=  
 IFCRELDEFINESBYPROPERTIES('0Vz6mqXMrDc94yL5InJ3n',#5,  
 S,.(#4664),#4677);  
 #14910=  
 IFCRELDEFINESBYPROPERTIES('2akYLNQNTAFwqQ5InmkD6G',#  
 5,S,.(#4679),#4682);  
 #14911=  
 IFCRELDEFINESBYPROPERTIES('21QNc\_xjb3pQOKemJwYNWE',#  
 5,S,.(#4679),#4684);  
 #14912=  
 IFCRELDEFINESBYPROPERTIES('1jXxvEGgr4dQoGRvVSx1ti',#5,S,  
 S,.(#8885,#7668,#6429,#4696),#4698);  
 #14913=  
 IFCRELDEFINESBYPROPERTIES('2lhGRSMRl1wu6Oof0c99OV',#5,  
 S,.(#8885,#7668,#6429,#4696),#4701);  
 #14914=  
 IFCRELDEFINESBYPROPERTIES('1QbS7wLAX6qWtMAGXrAh',  
 #5,S,.(#4696),#4709);  
 #14915=  
 IFCRELDEFINESBYPROPERTIES('266EpnDen1cOd\$K82vhoPP',#5,S,  
 S,.(#4711),#4714);  
 #14916=  
 IFCRELDEFINESBYPROPERTIES('1zLWX2cZz6K99kvlfcN8u',#5,S,  
 S,.(#4711),#4716);  
 #14917=  
 IFCRELDEFINESBYPROPERTIES('392c60zZDEMRyg16guIIV',#5,S,  
 S,.(#8904,#7687,#6448,#4728),#4730);  
 #14918=  
 IFCRELDEFINESBYPROPERTIES('0cIHEo7CH34f83M00t\_iMb',#5,S,  
 S,.(#8904,#7687,#6448,#4728),#4733);

Appendix

#14919=  
IFCRELDEFINESBYPROPERTIES('1\_UfdRelvCzQgdJ2uxc7p5',#5,\$  
,(#4728),#4741);  
#14920=  
IFCRELDEFINESBYPROPERTIES('0spbsYH094CRogSWOZCoaD',#  
5,\$,S,(#4743),#4746);  
#14921=  
IFCRELDEFINESBYPROPERTIES('2T1z2RMoDEW98dVGTu817r',#  
5,\$,S,(#4743),#4748);  
#14922=  
IFCRELDEFINESBYPROPERTIES('35OSvp5pT0hwN0s9u3rG6p',#5,\$  
,S,(#8923,#7708,#6462,#4760),#4762);  
#14923=  
IFCRELDEFINESBYPROPERTIES('3X\_qWh\_312J9DHjimeKfqw',#5,  
S,S,(#8923,#7708,#6462,#4760),#4765);  
#14924=  
IFCRELDEFINESBYPROPERTIES('3ppyuYmqH1aOMpIozIKv4E',#5,  
S,S,(#4760),#4773);  
#14925=  
IFCRELDEFINESBYPROPERTIES('1ivLuWKEH5Kx44fNP5W0WB',  
#5,\$,S,(#4775),#4778);  
#14926=  
IFCRELDEFINESBYPROPERTIES('0hQyTd9W967POqeTrUVBc1',#5  
,S,S,(#4775),#4780);  
#14927=  
IFCRELDEFINESBYPROPERTIES('2S9KJHwvrrD7QP6K9ISKM1',#  
5,\$,S,(#8940,#7729,#6481,#4792),#4794);  
#14928=  
IFCRELDEFINESBYPROPERTIES('1\_uBHN8VfEmBvYe5GnOzS5',#  
5,\$,S,(#8940,#7729,#6481,#4792),#4797);  
#14929=  
IFCRELDEFINESBYPROPERTIES('27eelUSZH63xx9C98nNxX9',#5,  
S,S,(#4792),#4805);  
#14930=  
IFCRELDEFINESBYPROPERTIES('1XH1fPIV52iBx9\_aWDb2vO',#5,  
S,S,(#4807),#4810);  
#14931=  
IFCRELDEFINESBYPROPERTIES('3JG9qTe8D0D9R8OQx5z\_MD',#  
5,\$,S,(#4807),#4812);  
#14932=  
IFCRELDEFINESBYPROPERTIES('2E3fa\_tN99Dwjgqj1aAm6X',#5,\$,  
S,(#8959,#7750,#6495,#4824),#4826);  
#14933=  
IFCRELDEFINESBYPROPERTIES('39qsyRW0n1PBq4UBCzFra7',#5,  
S,S,(#8959,#7750,#6495,#4824),#4829);  
#14934=  
IFCRELDEFINESBYPROPERTIES('1rjvPz6YLDpfeNYbdHcETI',#5,\$,  
S,(#4824),#4837);  
#14935=  
IFCRELDEFINESBYPROPERTIES('0KLLg81XD6B7fEKi7Spy\_',#5,\$  
,S,(#4839),#4842);  
#14936=  
IFCRELDEFINESBYPROPERTIES('29WMQvHqn0bgp5adDue2S',#5,  
S,S,(#4839),#4844);  
#14937=  
IFCRELDEFINESBYPROPERTIES('30R3KGW3bWweilQF7qJLP\_',#5,  
S,S,(#8978,#7769,#6514,#4856),#4858);  
#14938=  
IFCRELDEFINESBYPROPERTIES('3Z28zSY514O9v0N2MLPzG',#5,  
S,S,(#8978,#7769,#6514,#4856),#4861);  
#14939=  
IFCRELDEFINESBYPROPERTIES('235yN0W3DFf8nBEYvj3qnK',#5  
,S,S,(#4856),#4869);  
#14940=  
IFCRELDEFINESBYPROPERTIES('2GxPZDjYDFwfw8rj7S0AOY',#5,  
S,S,(#4871),#4874);  
#14941=  
IFCRELDEFINESBYPROPERTIES('2Ar7MCSSL9Nhdh4cUyPIZ',#5,  
S,S,(#6524,#4871),#4876);  
#14942=  
IFCRELDEFINESBYPROPERTIES('28pVZm7n7uQHvB9J44LSM',#  
5,\$,S,(#8995,#7789,#6531,#4888),#4890);  
#14943=  
IFCRELDEFINESBYPROPERTIES('0QkkUPk357WANSRob2K0Lm',  
#5,\$,S,(#8995,#7789,#6531,#4888),#4894);  
#14944=  
IFCRELDEFINESBYPROPERTIES('0R95d94JfFk9oT8DnLiur\_',#5,\$,S,  
(#4888),#4902);  
#14945=  
IFCRELDEFINESBYPROPERTIES('04XsWFAPP3sfcezUZsT\_pe',#5,\$,  
S,(#4904),#4906);  
#14946=  
IFCRELDEFINESBYPROPERTIES('1P52G61R1Aj89oo0aw6qDP',#5,\$,  
S,(#4904),#4908);  
#14947=  
IFCRELDEFINESBYPROPERTIES('3SAL0bbdP9uxfJijPe94p',#5,\$,S,  
(#9014,#7809,#6550,#4920),#4921);  
#14948=  
IFCRELDEFINESBYPROPERTIES('0jaffZMh5ENAexqo4ipe9',#5,\$,S,  
(#9014,#7809,#6550,#4920),#4924);  
#14949=  
IFCRELDEFINESBYPROPERTIES('0IK9dqm0r16AiNkHVcOofP',#5,\$  
,S,(#4920),#4932);  
#14950=  
IFCRELDEFINESBYPROPERTIES('2jt38cn7TA3BxmA3C0nEL',#5,\$,  
S,(#4934),#4937);  
#14951=  
IFCRELDEFINESBYPROPERTIES('2D0tD8sfjFlgBlJIsAeSk',#5,\$,S,(#  
4934),#4939);  
#14952=  
IFCRELDEFINESBYPROPERTIES('0Bo\$IOmlH0oPKsjWcwiNj',#5,\$,  
S,(#9031,#7829,#6567,#4950),#4952);  
#14953=  
IFCRELDEFINESBYPROPERTIES('0CfNCqLJ56hAfABkvsKJ9',#5,\$,  
S,(#9031,#7829,#6567,#4950),#4955);

#14954=  
IFCRELDEFINESBYPROPERTIES('1ZEnWLVqnBaePnooEyBK2A',#  
5,\$,S,(#4950),#4963);  
#14955=  
IFCRELDEFINESBYPROPERTIES('0HDtg\_TiPEzA0eGeYsLnl',#5,\$,  
S,(#4965),#4967);  
#14956=  
IFCRELDEFINESBYPROPERTIES('0oIpmvSPH6JPZxsWX52F2t',#5,\$  
,S,(#4965),#4969);  
#14957=  
IFCRELDEFINESBYPROPERTIES('3arlZMMRX4rumw\_k7mXP8P',#  
5,\$,S,(#9050,#7849,#6581,#4980),#4981);  
#14958=  
IFCRELDEFINESBYPROPERTIES('0lx\$Xx5cb5Igi4QWECjJar',#5,\$,S,  
(#9050,#7849,#6581,#4980),#4984);  
#14959=  
IFCRELDEFINESBYPROPERTIES('0xswjoaVDD8eZek8qHMtOI',#5,\$  
,S,(#4980),#4992);  
#14960=  
IFCRELDEFINESBYPROPERTIES('2wc93c0AD2QwAxSiM3JjLD',#5,  
S,S,(#4994),#4997);  
#14961=  
IFCRELDEFINESBYPROPERTIES('0qHk0NxtV94AN\_ExtUf1X',#  
5,\$,S,(#6850,#5476,#4994),#4999);  
#14962=  
IFCRELDEFINESBYPROPERTIES('3cP09WqyfcEwOL2t6CMQ8E',#  
5,\$,S,(#9064,#7869,#6595,#5011),#5013);  
#14963=  
IFCRELDEFINESBYPROPERTIES('07bz0Yv8f6fQriF6Dnmrio',#5,\$,S,  
(#9064,#7869,#6595,#5011),#5017);  
#14964=  
IFCRELDEFINESBYPROPERTIES('39NBwdllP3dvdcyJ1SiDC\_',#5,\$,  
S,(#5011),#5025);  
#14965=  
IFCRELDEFINESBYPROPERTIES('2ZZitHgbFQ9B08TjOXza5',#5,\$,  
S,(#5027),#5031);  
#14966=  
IFCRELDEFINESBYPROPERTIES('1vVvW12GbDG8LkVlwzTmCn',#  
5,\$,S,(#5027),#5033);  
#14967=  
IFCRELDEFINESBYPROPERTIES('2Fwif4yv58UROlnf4whVZD',#5,\$  
,S,(#9083,#7889,#6614,#5045),#5048);  
#14968=  
IFCRELDEFINESBYPROPERTIES('0\_16HzOibCtuH\_EIWkpnf',#5,\$,  
S,(#9083,#7889,#6614,#5045),#5051);  
#14969=  
IFCRELDEFINESBYPROPERTIES('3hKBaZo9DBXw\_juCCoOwDV',#  
5,\$,S,(#5045),#5059);  
#14970=  
IFCRELDEFINESBYPROPERTIES('2UoFJHA992YvXdhhu3sN9X',#5,  
S,S,(#5061),#5064);  
#14971=  
IFCRELDEFINESBYPROPERTIES('3bhj6z\$zXFABAjAR6Ku0vx',#5,  
S,S,(#5061),#5066);  
#14972=  
IFCRELDEFINESBYPROPERTIES('1O\$KewkaP0QPQHf4f0WWwH',  
#5,\$,S,(#9102,#7909,#6633,#5077),#5079);  
#14973=  
IFCRELDEFINESBYPROPERTIES('1jDffH45BKAnsdWnhyaG',#5,\$,  
S,(#9102,#7909,#6633,#5077),#5082);  
#14974=  
IFCRELDEFINESBYPROPERTIES('0eqKOC\$KtIjOaGscpHZ1wN',#5  
,S,S,(#5077),#5090);  
#14975=  
IFCRELDEFINESBYPROPERTIES('1XIOIhYw5ByRoVX3S\_IsM0',#  
5,\$,S,(#5092),#5095);  
#14976=  
IFCRELDEFINESBYPROPERTIES('3jDdaU5552KRUfr3RjRqUs',#5,\$,  
S,(#6643,#5092),#5097);  
#14977=  
IFCRELDEFINESBYPROPERTIES('1TAK\$04tjBZOp1epdj4uwf',#5,\$,  
S,(#9119,#7929,#6650,#5108),#5110);  
#14978=  
IFCRELDEFINESBYPROPERTIES('3KBmi2qA11bOIwr1Qw38M4',#5  
,S,(#9119,#7929,#6650,#5108),#5113);  
#14979=  
IFCRELDEFINESBYPROPERTIES('05yp\$7JoH4\_RG6uOBKOYPH',#5  
,S,S,(#5108),#5121);  
#14980=  
IFCRELDEFINESBYPROPERTIES('2EweQTewN7M8zy\_6totKCo',#5,  
S,S,(#5123),#5126);  
#14981=  
IFCRELDEFINESBYPROPERTIES('2Ti40cQQH9Xot5hzRWXb3D',#  
5,\$,S,(#6660,#5123),#5128);  
#14982=  
IFCRELDEFINESBYPROPERTIES('0uTu5a9r05AcJ7kZ1xCel',#5,\$,S,  
(#9138,#7949,#6667,#5139),#5141);  
#14983=  
IFCRELDEFINESBYPROPERTIES('3hWBiYsVr2shlTUiFe\_5YE',#5,\$,  
S,(#9138,#7949,#6667,#5139),#5145);  
#14984=  
IFCRELDEFINESBYPROPERTIES('03S0wRDmBDfGpaa45DFLO',#5,  
S,S,(#5139),#5153);  
#14985=  
IFCRELDEFINESBYPROPERTIES('1xBWBOur4Y9aTmF9QixF',#5,  
S,S,(#5155),#5159);  
#14986=  
IFCRELDEFINESBYPROPERTIES('1\$HBL7V\_nESvLCC6p0mmbQ',#  
5,\$,S,(#6677,#5155),#5161);  
#14987=  
IFCRELDEFINESBYPROPERTIES('2GFnxzL9FYOTIYnnoP6DE',#5,  
S,S,(#9155,#7970,#6684,#5173),#5176);  
#14988=  
IFCRELDEFINESBYPROPERTIES('0wnCiAeMTCFgOr2AgKaiiq',#5,  
S,S,(#9155,#7970,#6684,#5173),#5179);

#14989=  
 IFCRELDEFINESBYPROPERTIES('3g4KSiqNzBIBfKsakiZc7h',#5,\$,  
 ,( #5173),#5187);  
 #14990=  
 IFCRELDEFINESBYPROPERTIES('2\_PlkbY5PFJBIpfc0DOTOS',#5,\$,  
 S,( #5189),#5192);  
 #14991=  
 IFCRELDEFINESBYPROPERTIES('0aRoK6x9XCu87bZX5VfPS',#5,  
 S,( #6694,#5189),#5194);  
 #14992=  
 IFCRELDEFINESBYPROPERTIES('2pjxsHGsrA7xwsUfN1OuhA',#5,\$,  
 S,( #9172,#7990,#6701,#5205),#5207);  
 #14993=  
 IFCRELDEFINESBYPROPERTIES('05KBs\_5\_5AmviZLOEY6W3',#5,  
 S,( #9172,#7990,#6701,#5205),#5211);  
 #14994=  
 IFCRELDEFINESBYPROPERTIES('2CeaGfHf8mARpk9EMxVuf',#5,  
 S,( #5205),#5219);  
 #14995=  
 IFCRELDEFINESBYPROPERTIES('1zr4r759CgggrCSnvAyt',#5,\$,(  
 #5221),#5224);  
 #14996=  
 IFCRELDEFINESBYPROPERTIES('36P\_5XYFvEmgl4J2HbmEu',#5,  
 S,( #5221),#5226);  
 #14997=  
 IFCRELDEFINESBYPROPERTIES('0WDu6kosL2sOj9aGaS3Op\_',#5,\$,  
 S,( #9191,#8011,#6720,#5238),#5240);  
 #14998=  
 IFCRELDEFINESBYPROPERTIES('27cdkdUc1AFx1Wfch0b1Sy',#5,\$,  
 S,( #9191,#8011,#6720,#5238),#5243);  
 #14999=  
 IFCRELDEFINESBYPROPERTIES('1HcnHlzo57vOWA1NAhWQPZ',  
 #5,\$,( #5238),#5251);  
 #15000=  
 IFCRELDEFINESBYPROPERTIES('1KEzIS9OjFYHtGdmCPn38S',#5,  
 S,( #5253),#5256);  
 #15001=  
 IFCRELDEFINESBYPROPERTIES('1ZdBUD2n1Aved7zExvqMW7',#  
 5,\$,( #6730,#5253),#5258);  
 #15002=  
 IFCRELDEFINESBYPROPERTIES('0CORNuFTX57ByzhbVyKmh\_',  
 #5,\$,( #9208,#8032,#6737,#5270),#5272);  
 #15003=  
 IFCRELDEFINESBYPROPERTIES('1DGPtBotXCMxFau775PrX',#5,  
 S,( #9208,#8032,#6737,#5270),#5270);  
 #15004=  
 IFCRELDEFINESBYPROPERTIES('0XTMkTExHCrhdV33Vf9r26',#5,  
 S,( #5270),#5283);  
 #15005=  
 IFCRELDEFINESBYPROPERTIES('2qEvWw4KT9Ew0OFE5t4lvb',#5,  
 S,( #5285),#5288);  
 #15006=  
 IFCRELDEFINESBYPROPERTIES('2\_MWwma0P6oPVEicj4jV74',#5,  
 S,( #6747,#5285),#5290);  
 #15007=  
 IFCRELDEFINESBYPROPERTIES('1T2RVd\_P53HBsJtcULBjS',#5,\$,  
 S,( #9225,#8052,#6754,#5301),#5303);  
 #15008=  
 IFCRELDEFINESBYPROPERTIES('1B1TzJrTn6ivT6GYAcie6G',#5,\$,  
 S,( #9225,#8052,#6754,#5301),#5306);  
 #15009=  
 IFCRELDEFINESBYPROPERTIES('1rxPM6Zzr8YBhDVJKEd8pi',#5,  
 S,( #5301),#5314);  
 #15010=  
 IFCRELDEFINESBYPROPERTIES('3xwcdlbfCM9rkQTzP1r9U',#5,\$,  
 S,( #5316),#5320);  
 #15011=  
 IFCRELDEFINESBYPROPERTIES('0Wcg79Sa97P9iMZYXIO9oP',#5,  
 S,( #6764,#5316),#5322);  
 #15012=  
 IFCRELDEFINESBYPROPERTIES('28\_kutPr1EM8nCP0JlpfL',#5,\$,  
 S,( #9243,#8071,#6772,#5333),#5335);  
 #15013=  
 IFCRELDEFINESBYPROPERTIES('25ThF0dv3ABTFIBZO9\_c',#5,\$,  
 S,( #9243,#8071,#6772,#5333),#5339);  
 #15014=  
 IFCRELDEFINESBYPROPERTIES('0dkwfkSJPB3wejTdg\_B6Z2',#5,\$,  
 S,( #6772,#5333),#5347);  
 #15015=  
 IFCRELDEFINESBYPROPERTIES('21HVBBB7f33wr53UESojcy',#5,\$,  
 S,( #5349),#5352);  
 #15016=  
 IFCRELDEFINESBYPROPERTIES('0LMNwcBi90LACebCMOAs41',#  
 5,\$,( #5349),#5354);  
 #15017=  
 IFCRELDEFINESBYPROPERTIES('3bHel\_p5fbc98EHDHfYNS',#5,\$,  
 S,( #9252,#8091,#6783,#5365),#5367);  
 #15018=  
 IFCRELDEFINESBYPROPERTIES('2vS\_3tKAb5\_hX7HixYVOAP',#5,  
 S,( #9252,#8091,#6783,#5365),#5370);  
 #15019=  
 IFCRELDEFINESBYPROPERTIES('14\$Hlfb81AbA2i4A\_d9Y8g',#5,\$,  
 S,( #5365),#5378);  
 #15020=  
 IFCRELDEFINESBYPROPERTIES('1Kdka6P\_15U876SDemViLU',#5,  
 S,( #5380),#5383);  
 #15021=  
 IFCRELDEFINESBYPROPERTIES('2gRIw5Z0DEr8nEd2LslzVD',#5,\$,  
 S,( #5380),#5385);  
 #15022=  
 IFCRELDEFINESBYPROPERTIES('1SVeaXJbz4HBQ6DF0wjk4',#5,\$,  
 S,( #9271,#8111,#6802,#5396),#5398);  
 #15023=  
 IFCRELDEFINESBYPROPERTIES('1wb8ibxq17H9bkBZfcm\_Hf',#5,\$,  
 S,( #9271,#8111,#6802,#5396),#5401);

#15024=  
 IFCRELDEFINESBYPROPERTIES('1c4PzeriPCh8rMtNjMjYUEW',#5,  
 S,( #5396),#5409);  
 #15025=  
 IFCRELDEFINESBYPROPERTIES('29J1KqHCL0efKsWnzX7Fy',#5,  
 S,( #5411),#5414);  
 #15026=  
 IFCRELDEFINESBYPROPERTIES('3UH\_9DjovAsfB1NLGgShi3',#5,\$,  
 S,( #5411),#5416);  
 #15027=  
 IFCRELDEFINESBYPROPERTIES('1Q7td07L94O9MCo4ze278I',#5,\$,  
 S,( #9290,#8132,#6821,#5428),#5430);  
 #15028=  
 IFCRELDEFINESBYPROPERTIES('0SS7KROB9Dkwrvt8t8kgCt',#5,\$,  
 S,( #9290,#8132,#6821,#5428),#5434);  
 #15029=  
 IFCRELDEFINESBYPROPERTIES('1eEOTMipH4xuDP57i2UFks',#5,  
 S,( #5428),#5442);  
 #15030=  
 IFCRELDEFINESBYPROPERTIES('0lxG\_Chlf488GgyJW0Q5a',#5,\$,  
 S,( #5444),#5447);  
 #15031=  
 IFCRELDEFINESBYPROPERTIES('0YhM1RjvPDfbs9EwhSNyR',#5,  
 S,( #5444),#5449);  
 #15032=  
 IFCRELDEFINESBYPROPERTIES('0Prv7hStf6lwgBltyzmIR2',#5,\$,(  
 #9307,#8151,#6840,#5461),#5463);  
 #15033=  
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 5,\$,( #9307,#8151,#6840,#5461),#5466);  
 #15034=  
 IFCRELDEFINESBYPROPERTIES('3V0suTP3HAWOJqMr3o4IF',#5,  
 S,( #5461),#5474);  
 #15035=  
 IFCRELDEFINESBYPROPERTIES('2fa3LRS3DFp9cmvRwNyrDV',#5,  
 S,( #5476),#5479);  
 #15036=  
 IFCRELDEFINESBYPROPERTIES('1QWw6q6j5r8r1CCRq\$NiS',#5,\$,  
 S,( #9324,#8171,#6857,#5490),#5492);  
 #15037=  
 IFCRELDEFINESBYPROPERTIES('1JqUrotDb3pQW\$2hucJ\_i',#5,\$,  
 S,( #9324,#8171,#6857,#5490),#5495);  
 #15038=  
 IFCRELDEFINESBYPROPERTIES('3YwX2oCuXBrOoXhLxj\_7hz',#5,  
 S,( #6857,#5490),#5503);  
 #15039=  
 IFCRELDEFINESBYPROPERTIES('3be3Ch99152Ql5cGmQ2YS',#5,  
 S,( #5505),#5508);  
 #15040=  
 IFCRELDEFINESBYPROPERTIES('2zgnTAuMH3cgJg1FGhnYXE',#  
 5,\$,( #5505),#5510);  
 #15041=  
 IFCRELDEFINESBYPROPERTIES('0TmMak8XrAcBiA5z4nHY2',#  
 5,\$,( #9335,#8189,#6868,#5521),#5523);  
 #15042=  
 IFCRELDEFINESBYPROPERTIES('0qwY6JnStC0gsHck5kXdUY',#5,  
 S,( #9335,#8189,#6868,#5521),#5527);  
 #15043=  
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 #15044=  
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 #15045=  
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 #15046=  
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 #15047=  
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 #15048=  
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 #15049=  
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 #15050=  
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 #15051=  
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 #15052=  
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 #15053=  
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 #15056=  
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 S,( #9382,#8249,#6908,#5616),#5618);  
 #15057=  
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 #15058=  
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 #5616),#5629);

## Appendix

#15059=  
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\$.S,(#5631),#5634);  
#15060=  
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#15061=  
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#15062=  
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#15072=  
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#15073=  
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\$.S,(#5708),#5722);  
#15074=  
IFCRELDEFINESBYPROPERTIES('07Ru1J6Bj2SeZoegNjHYng',#5,  
\$.S,(#5724),#5727);  
#15075=  
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\$.S,(#5724),#5729);  
#15076=  
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\$.S,(#5771),#5784);  
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#15110=  
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#15111=  
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#15112=  
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#15113=  
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\$.S,(#5956),#5969);  
#15114=  
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 #15185=  
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 #15188=  
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 #15189=  
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 #15191=  
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 #15198=  
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Appendix

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#15200=  
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#15204=  
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#15205=  
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 #15331=  
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 #15332=  
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 #15333=  
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 #15334=  
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 #15335=  
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 #15336=  
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 #15337=  
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 #15338=  
 IFCRELDEFINESBYPROPERTIES('1JpLsehP92HenjrxBvc5e',#5,S,  
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Appendix

#15339=  
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#15340=  
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#15341=  
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#15342=  
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#15344=  
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#15376=  
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#15377=  
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#15378=  
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#15387=  
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#15388=  
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#15389=  
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#15390=  
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#15395=  
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#15397=  
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#15406=  
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#15407=  
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Appendix

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#15419=  
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#15428=  
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#15455=  
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S,(#8287),#8295);  
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#15463=  
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Appendix

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## Appendix

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#15768=  
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#15769=  
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#15770=  
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#15771=  
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#15772=  
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\$,\$,(#10447),#10413),#10419);  
#15773=  
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#15774=  
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#15776=  
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#15778=  
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#15779=  
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\$,(#10536),#10492),#10472),#10474);  
#15780=  
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#15781=  
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#15783=  
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#15784=  
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#15785=  
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#15786=  
IFCRELDEFINESBYPROPERTIES('1SbCuR3tL1SB0mWEmvUnv',#5  
,\$,\$,(#10514),#10515);  
#15787=  
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#15788=  
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#15789=  
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#15794=  
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#15795=  
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\$,(#10558),#10564);  
#15796=  
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#15797=  
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\$,(#10590),#10594);  
#15800=  
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#15802=  
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#15803=  
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#15805=  
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#15807=  
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#15808=  
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#15809=  
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#15816=  
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#15827=  
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\$,\$,(#10860),#10760),#10762);  
#15828=  
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#15829=  
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 #15830=  
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 #15837=  
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 #15844=  
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 #15848=  
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 #15852=  
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 #15853=  
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 #15856=  
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 #15857=  
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 \$,(#10977),#10981);  
 #15858=  
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 #15859=  
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 \$,(#10983),#10987);  
 #15860=  
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 #15861=  
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 \$,(#10999),#11003);  
 #15863=  
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#15864=  
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 #15865=  
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 #15866=  
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 #15867=  
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 #15870=  
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 #5,\$,\$,(#13409),#11053),#11065);  
 #15871=  
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 #15872=  
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 #15875=  
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 #15876=  
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 #15877=  
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 #15878=  
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 #15879=  
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 #15880=  
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 #15881=  
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 #15882=  
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 #15883=  
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 5,\$,\$,(#13439),#13429),#13352),#13325),#13333);  
 #15884=  
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 #15885=  
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 #15886=  
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 #15887=  
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 \$,(#13461),#13448),#13399),#13372),#13377);  
 #15888=  
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 \$,(#13461),#13448),#13399),#13372),#13383);  
 #15889=  
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 #15891=  
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 #15892=  
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 #15893=  
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 #15894=  
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 #15895=  
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 \$,(#13431),#13433);  
 #15896=  
 IFCRELDEFINESBYPROPERTIES('3ml8swOuzFjry8dQpEQe0',#5,\$,  
 \$,(#13441),#13442);  
 #15897=  
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Appendix

#15898=  
IFCRELDEFINESBYPROPERTIES('2sQf8TtErFaQqh1ZSLkhaZ',#5,S,  
S,(#13454),#13455);  
#15899=  
IFCRELDEFINESBYPROPERTIES('2Si3\_GN19AQPiSuowfcXHs',#5,S,  
S,(#13461),#13465);  
#15900=  
IFCRELDEFINESBYPROPERTIES('0KaQoEWF1ATxGBxNVcDA1j',  
#5,S,S,(#13467),#13471);  
#15901=  
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#15902=  
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S,S,(#13594,#13580,#13515,#13484),#13487);  
#15903=  
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#15904=  
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#15905=  
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#15906=  
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#15907=  
IFCRELDEFINESBYPROPERTIES('1Dsjs2RUVa4exKw496DbPK',#5,  
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#15908=  
IFCRELDEFINESBYPROPERTIES('2jsVvRjU53XfRm8Z1Q151k',#5,S,  
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 #1508,#1487,#1461,#1433,#1406,#1373,#1340,#1307,#1274,#1240,  
 #1205,#1171,#1136,#1103,#1069,#1036,#1002,#971,#937,#904,#870,#847,  
 #828,#802,#768,#740,#713,#680,#646,#612,#577,#549,#522,#488,#453,  
 #429,#409,#383,#342,#367);  
 #15933=  
 IFCRELASSOCIATESMATERIAL('0eag6FeZP6b8j0ful0TmJ',#5,S,S,(  
 #13262,#13228,#13116,#13082,#12970,#12936,#12824,#12790,#12678,  
 #12644,#12532,#12498,#12386,#12352,#12240,#12206,#12094,#12060,  
 #11948,#11914,#11802,#11768,#11656,#11622,#11509,#11465,#11341,  
 #11263),#11298);  
 #15934=  
 IFCRELASSOCIATESMATERIAL('0949P3sVluQXTxDm87HWy',#5  
 S,S,(#13594,#13580,#13515),#13519);  
 #15935=  
 IFCPRESENTATIONLAYERASSIGNMENT('SLAB',S,(#64,#113,#153  
 #188,#217,#243,#270,#287,#304,#10991,#11007,#11023,#11050,#1340  
 7,#13547,#13606),S);  
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 IFCPRESENTATIONLAYERASSIGNMENT('BEAM',S,(#339,#380,#406,  
 #427,#450,#485,#519,#547,#574,#609,#643,#677,#710,#738,#765,#799,  
 #826,#845,#867,#901,#934,#968,#999,#1033,#1066,#1100,#1133,#1168,  
 #1202,#1237,#1271,#1304,#1337,#1370,#1403,#1431,#1458,#1485,  
 #1505,#1539,#1575,#1609,#1641,#1672,#1697,#1716,#1737,#1752,#1773,  
 #1787,#1803,#1824,#1845,#1865,#1886,#1902,#1921,#1940,#1961,#1982,  
 #2003,#2024,#2040,#2061,#2082,#2104,#2126,#2147,#2168,#2189,  
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 #2447,#2466,#2485,#2499,#2516,#2530,#2547,#2561,#2575,#2589,  
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 #4186,#4217,#4248,#4281,#4312,#4343,#4375,#4408,#4439,#4470,#4500,  
 #4533,#4565,#4597,#4629,#4661,#4693,#4725,#4757,#4789,#4821,  
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 #5861,#5892,#5923,#5953,#5984,#6014,#6044,#6069,#6078,#6087,#6096,  
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 #10135,#10155,#10172,#10181,#10190,#10202,#10220,#10237,#10249,  
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 #10367,#10379,#10388,#10400,#10409,#10427,#10452,#10469,#10490,  
 #10502,#10519,#10534,#10549,#10572,#10604,#10631,#10653,#10675,  
 #10692,#10708,#10728,#10757,#10780,#10795,#10808,#10826,#10835,  
 #10845,#10858,#10871,#10894,#10913,#10922,#10942,#10956,#10965,  
 #10975),S);  
 #15937=  
 IFCPRESENTATIONLAYERASSIGNMENT('TOP BAR',S,(#11261,#11339,  
 #11620,#11654,#11912,#11946,#12204,#12238,#12496,#12530,#12788,  
 #12822,#13080,#13114),S);  
 #15938=  
 IFCPRESENTATIONLAYERASSIGNMENT('BOTTOM BAR',S,(#11463,  
 #11507,#11766,#11800,#12058,#12092,#12350,#12384,#12642,#12676,  
 #12934,#12968,#13226,#13260),S);  
 #15939=  
 IFCPRESENTATIONLAYERASSIGNMENT('CFI',S,(#13284,#13322,  
 #13350,#13417,#13427,#13437),S);  
 #15940=  
 IFCPRESENTATIONLAYERASSIGNMENT('CCI',S,(#13369,#13397,  
 #13446,#13459,#13481,#13512,#13577,#13592),S);  
 #15941=  
 IFCPRESENTATIONLAYERASSIGNMENT('Grid +0',S,(#13658),S);  
 #15942=  
 IFCPRESENTATIONLAYERASSIGNMENT('Grid -4000',S,(#13675),S);  
 #15943=  
 IFCPRESENTATIONLAYERASSIGNMENT('Grid -5000',S,(#13694),S);  
 ENDSEC;

END-ISO-10303-21;