Skyline west

a new approach for densification in Innsbruck

Sharif, K.

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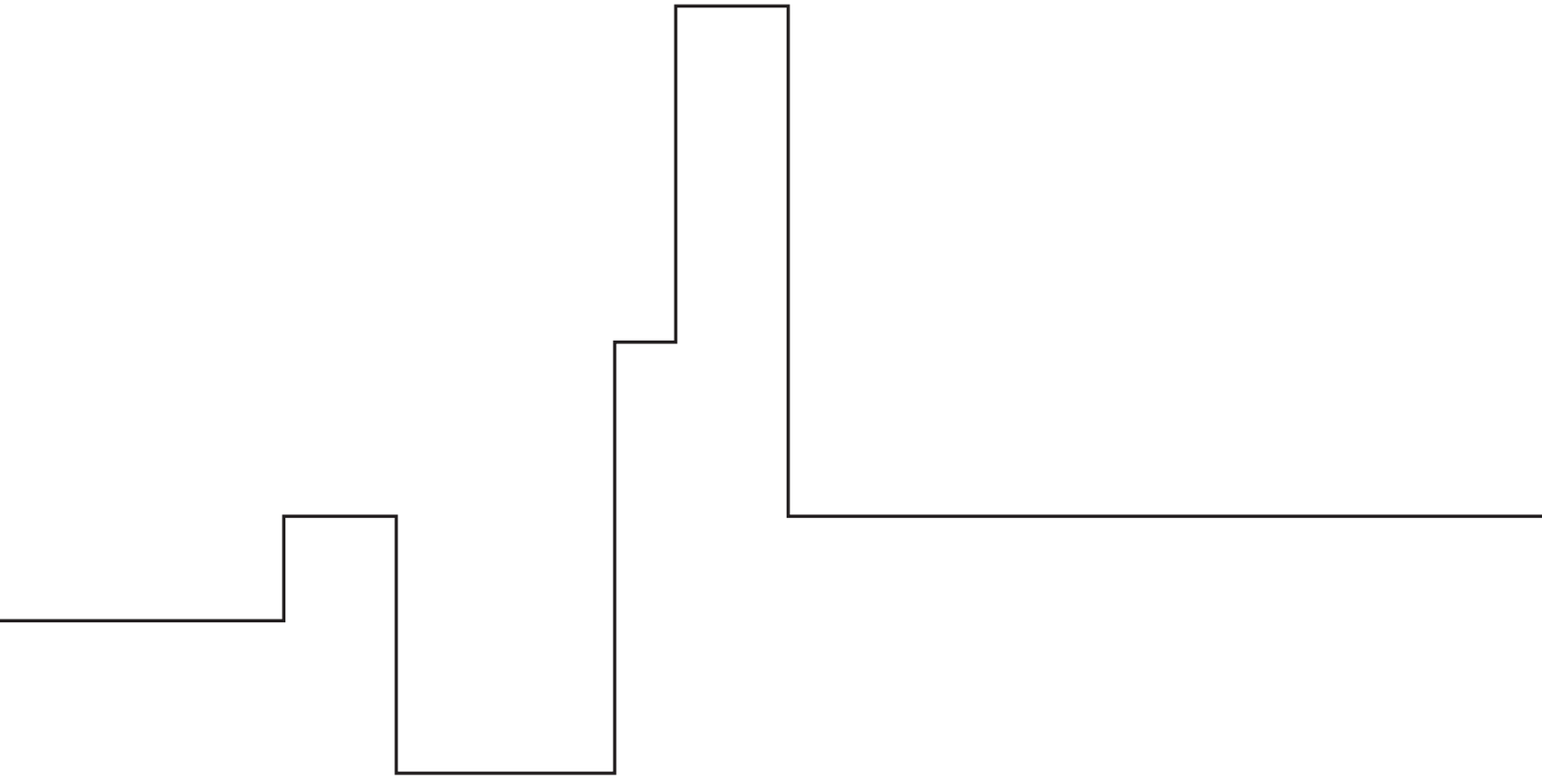
Kia Sharif



Colophon

7X45M0 + 7X15M0
Graduation studio “Densified Living”

Guidance: prof. ir. D. (David) Gianotten / ir. M.H.P.M. (Maarten) Willems / ir. J.J.P.M. (Sjef) van Hoof

Graduation report by Kia Sharif / 0932968

The graduation studio is part of the chair ‘Architectural Design and Engineering’(ADE) of the department ‘Architectural Urban Design and Engineering’(AUDE) of the faculty Bouwkunde at Eindhoven University of Technology

“Density, which represents quantity, must be combined with quality in the form of good city space”

Jan Gehl

For Manti

Preface

‘Densified living’ is a topical theme. Almost everywhere in the world cities are dealing with the concept of urban densification. The most interesting aspect about this studio is that the relevant city, which is Innsbruck, is not the first common city one would think of in terms of densification. However because of its very specific problematics, the entire densification process has been very interesting and challenging.

In the graduation studio we started to learn about densification in general. By analysing the topic worldwide we learned that densification is context- related and differs in typologies in different parts of the world. Our one month stay in Innsbruck lead to new insights and motivation for the further development of the graduation process.
Analysing and observing Innsbruck while walking around was very helpful. Innsbruck directly stunned me by its wonderful nature. However in terms of architecture and urbanity my first impression was a city , which is a resemble of different architectural objects and morphological structures. Moreover the lack of coherence and quality in public spaces within the city was also very noticeable in my perception. In the process of getting know Innsbruck and its related densification problematic, I would like to thank different local architects and urban planners who gave us the opportunity to speak with them. Each of them shared their ideas and perception about densification in Innsbruck and helped me to develop my own view on the city.

What interested me the most after being in Innsbruck was the connection of densified living and public spaces. After reading *cities for people* by Jan Gehl, I knew which densification concept I wanted to develop in Innsbruck. The Danish architect and professor Jan Gehl shares the studies he has done in the past 40 years, about building cities for people. He believes that one can build modern cities in a way which is based on the human’s needs and behaviour. He argues that (high quality) public spaces play a significant role in cities, especially the ones that are densifying. This led to my enormous fascination about public spaces and the start of my densification concept in Innsbruck. Thereby I was interested in the question: ‘How can high density living be generated simultaneously with a high quality public space?’

In order to analyse, and eventually be able to answer this question, it was necessary to understand the following simple question: what makes a good public space? In order to do so, I watched the movie: *The social Life of Small Urban Spaces* by the American writer and journalist William Hollingworth Whyte. In this movie Whyte critically analyses public spaces and explains about different factors that make a public space good or bad. He does that entirely by observing the spaces through the eyes of the users.

With this thesis I have tried to share my own vision about a new densification concept in Innsbruck and take into account all the analysis and research that I have done.
I would like to thank the tutors for the lay-out of the entire studio in which we worked very efficient and result-oriented in order to learn about densified living. And in addition, for their thoughtfulness in the final phase of my project. I would like to thank David for his strict and very instructive guidance, and moreover for the good organization of the entire studio, Sjef for his enjoyable and detailed feedback and Maarten for his always informative and realistic point of view.

Furthermore, my thanks goes out to Peter Lorenz, Rainer Köberl and Wolfgang Andexlinger for their useful thoughts about Innsbruck in general, and densification in this city, as being local architects and urban planners. Furthermore my thanks goes out to Hüsnü Yegenoglu for his very important feedback about the urban development in my design process and Faas Moonen for his technical feedback in the final phase.

In conclusion a most sincere thanks goes to my family for their mental support in the very stressful periods, especially my father who helped me to go through the entire process and helped me with his enormous experienced background in the built environment and many other facets.

Table of contents

1. Densified Living

Introduction to densified living

Worldwide, cities are dealing with densification. Our current population of 7.6 billion is estimated to grow to around 10 billion by 2055 (worldometers, 2018). This growth will lead to a necessity of dense urbanity in which the demand for new residential settlements will grow rapidly. However, existing free land is scarce and it is going to be reduced for new settlement areas even more. According to the guardian the total area covered by cities worldwide is estimated to triple in the next 40 years (the guardian, 2016). Densified living is becoming an inevitable form of human development and will soon be prominent in cities all over the world.

In order to be understand high density housing it is necessary to understand the term density in general. Density is simply put, the ratio of mass to a certain surface or the compactness of mass within an object. However, when linking density with the built environment, the concept becomes more complex. High density in the built environment cannot be defined as a universal formula which is beforehand determined from an equation. It is a dynamic concept which is related to both qualitative and quantitative values. The complexity of the concept is dependent on parameters such as perception, context and the socio-cultural elements.

High density housing could both have positive as negative outcomes. As stated in *Designing High-Density Cities for Social and Environmental Sustainability*,

'higher and more compact city design conserves valuable land resources, reduces transport distance and, thus, the energy needed, and the density makes public transport more viable' (Smith, 1984; Betanzo, 2007 as cited by Cheng; Ng, 2010).

Furthermore, provided that the necessity for diversity is highlighted and balanced in a proper way, living closer to each other may also lead to social cohesion and interaction among diverse groups of people in a city (Baledea; Dumitrescu, 2013). However high density housing also contains problematics. According to the (2003) article of the Guardian, titled; *Experts warn against high-density housing*, several negative outcomes are discussed in the context of high density housing whereby noise and privacy issues are the most prominent ones. Furthermore, despite the fact that high density housing can stimulate a social interaction, it also may lead to the opposite, which is the stress of crowded living (Freedman, 1975; travers, 1977).

Concerns within the content of high density housing are often based on the previous questionable developments like unsustainable urban sprawls, slums and the 60s 'solitaire' high-rise ideology. However, it is clear that the planet has limited amount of spaces and that we need to reconsider the way we use these spaces. Cities need to be densified in innovation and sustainable ways, considering previous mistakes. As specified in *High-Density Forms in Contemporary Architecture*,

'The quality of high density architectural forms lies in the mix between the spatial configuration and the way in which people live and conduct activities within them' (Baledea; Dumitrescu, 2013).

In order to understand (high) density and its link to built environment, it is important to understand both the qualitative and quantitative measurements. This chapter attempts to examine these values by defining the two main concepts of urban density: physical density and perceived density. For this purpose, several literature tools, like the book, *Designing High-Density Cities, for Social and Environmental sustainability* by Edward Ng, have been used to understand high density and its link with the built environment. This will later on help to develop a personal perception and concept about high density housing.

Physical density

In order to define the concept of physical density within the context of built environment it is important to examine its two main measurements: population density and building density. As follows, a number of definitions of physical density, as specified in several references.

'Physical density is a numerical measure of the concentration of individuals or physical structures within a given geographical unit. It is an objective, quantitative and neutral spatial indicator. It is strongly dependent to a specified scale of reference which means that its value can differ significantly with reference to different scales of geographical unit' (Cheng; Ng, 2010).

Population density

Population density can be defined as the amount of people to a certain area. It is a concept which indicates the quantitative distribution of people on a certain area. However it is important to understand that density is strongly related to the context and different scales of geographical unit (Cheng; Ng, 2010).

Different parameters can be determinative in the way people choose to live or stay somewhere. 2006 has been a key momentum in the human evolution. It was in fact the year where the world population had a remarkable shift from rural living to urban living. Since then high density housing has become a concept which has been examined and analysed a lot. One of the important aspects to understand is the human behaviour towards urbanization. As Freedman states,

'High concentrations of people are in general measured in dense urban areas whereas large areas of land remain uninhabited. One of the main reasons of this is the fact that people naturally tend to live in areas with desirable conditions' (Freedman, 1975 as cited by Baledea; Dumitrescu, 2013)'.

The differentiation in the population distribution in a country varies from a small scale level to a large scale level. In fact population density is divided into three different scale levels: Regional density, residential density and occupancy density.

Regional density
Regional density is used to define the ratio of a population to the land area of a region. The reference area is usually defined by a municipal boundary and includes both developed and undeveloped land (Cheng; Ng, 2010).

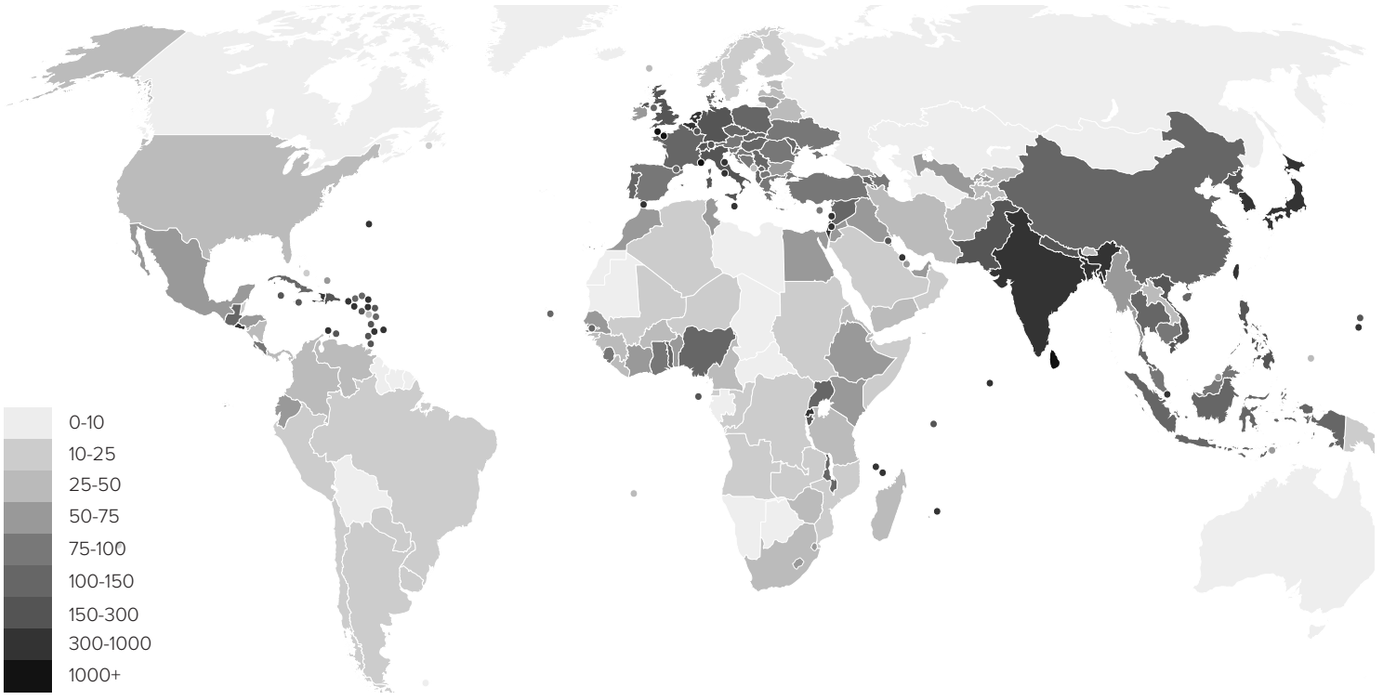
Residential density
Residential density is the ratio of a population to residential land area. This measure can be further classified in terms of net and gross residential densities based on the definition of the reference area (Cheng; Ng, 2010). As specified in the handbook *Understanding Residential Densities,* net and gross residential densities can be defined as the following,

'Net residential density indicates the number of dwellings per hectare on land devoted solely to residential development, including private driveways and private open space. Gross residential density refers to the density of a given area, including infrastructure such as public roads, public open space and in some instances non-residential development such as schools and shops (Oliver, S; Davis, M).

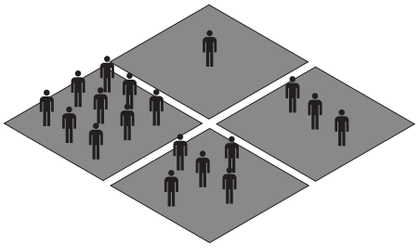
Occupancy density
Occupancy density is used to indicate the ratio of the number of dwellers to the floor area of an individual habitable unit.
As specified by Cheng,

'The reference habitable unit can be any kind of private or public space, such as a dwelling, office, theatre and so on. However, the reference area usually refers only to an enclosed area' (Cheng; Ng, 2010).

Moreover, in order to indicate the available space for individual occupants the 'occupancy rate' is commonly used, which in fact is the inverse measure of occupancy density.



world's populaion density (people per km²), 2006



Population density

Net residential area

Gross residential area

Building density

Building density is a significant factor in the context of high density housing. As previously mentioned, it generally indicates the ratio of building structures to a plot surface. However the concept is more complex when examining it to a further extent and relating it to urban morphology and architectural form.

Building density is divided in two categories: plot ratio and site coverage. The complexity of the concept lays on the fact that different typologies and forms could be developed within the combination of plot ratio and site coverage. Furthermore different housing developments may have the same quantitative density measurement while their typology is significantly different.

Plot ratio (floor area ratio)

The plot ratio or floor area ratio (FAR) is the ratio of built area, which indicates the total gross floor area of a building to the area on which the building is built. A higher FAR value implies a dense construction which also indicates the availability of more floor area within the same plot. If the ratio is for instances 1.0, it indicates that a one story building occupies the entire site area or that a two storey building occupies half the site area. Since the definitions of both floor and site area are relatively clear in the measurement and urban masterplans, plot ratio is considered as one of the most unambiguous density measures (Cheng; Ng, 2010).

Site coverage

Site coverage is used in order to indicate the relationship between the footprint of the structure and the site area. Likewise the floor are ratio, this indicator is of great importance and is beforehand planned in the urban planning policy. Especially in densifying and dense cities this factor plays a significant role as it manages the space on the ground level which is assigned to urban- and green space and private space. In order to indicate the amount of open space available on the development site, the open space ratio is used, which is in fact is the inverse measure of site coverage (Cheng; Ng, 2010).

The combination of the values site coverage and plot ratio often result in different architectural typologies. Typologies which contain the same FAR value may have a different coverage value which result in different typologies, of which low-rise and high-rise are typical examples.

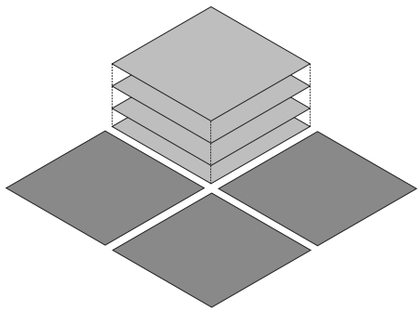
Perceived density

Perceived density is defined as an individual's perception and estimate of the number of people present in a given area, the space available and its organization (Rapoport, 1975). Individual cognitive factors affect the interpretation of physical density. These factors often are related to different social and cultural beliefs and perceptions. They way one interpret a certain space and the way one interacts between the environment together form the concept of perceived density. Therefore perceived density indicates both the relative relationship between individual and space as the individual in the space (Cheng; Ng, 2010).

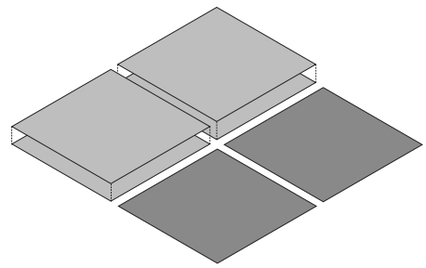
An example which is rendered in *Designing High-Density Cities for Social and Environmental Sustainability* represents the concept of perceived density quite well,

'For example, suppose there are two spaces with the same occupancy rate of 3 square meters per person; in one case, there is a group of friends in a clubroom, while in another there are several unacquainted people in a small lobby. Clearly, these two situations are very different in social and perceptual terms, even though they show the same physical density' (Chan, 1999 as cited by Cheng; Ng, 2010).

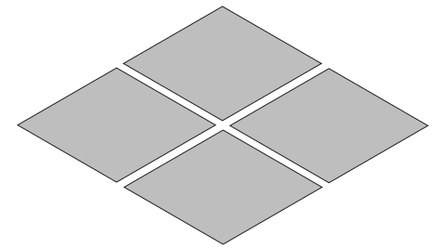
Perceived density can be exploded into two sub concepts: spatial density and social density. The first indicates the perception of density in relationship with spatial configuration whereas social density indicates the interaction between individuals.



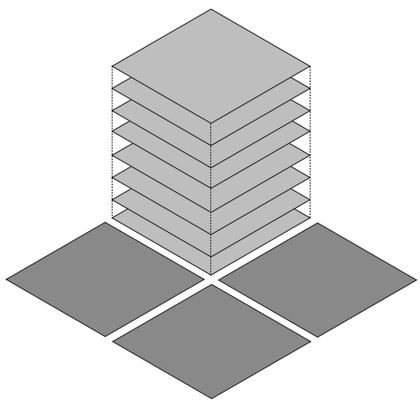
Floor Area Ratio, 1 / coverage, 25%



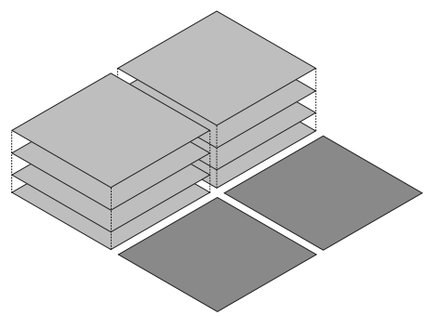
Floor Area Ratio, 1 / coverage, 50%



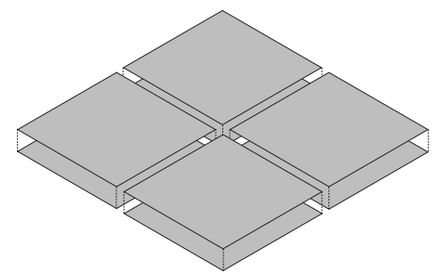
Floor Area Ratio, 1 / coverage, 100%



Floor Area Ratio, 2/ coverage, 25%



Floor Area Ratio, 2 / coverage, 50%



Floor Area Ratio, 2 / coverage, 100%

“**I believe that every building that is being build becomes guilty with nature. Because we take away something from nature [...] we take something which is not ours even if we are the owners [...] in order to keep the guilt as low as possible, we have to produce good architecture**.”

- Peter Lorenz

Personal definition of densified living

As already mentioned in the introduction, the rapid urbanization which the world is facing now has led to a high pressure on urban developments in many cities. Within this case densification has become a widely discussed and a complex issue which cities need to deal with.

In this part an attempt will be made to share a personal vision and introduce an approach on high density housing.
This will lead to a proposition which will be carried out on the case study, Innsbruck. The new concept will be designed on a plot which will be determined after urban analysis. The concept will be specified more as the analysis and the theoretical research will narrow the concept in a framework.

Personal perception

Before starting with the studio, density for me was defined as the ratio of a certain amount of objects to a certain surface. The only solution I could think of when relating it to architecture, was creating tall buildings on a compact surface. However after understanding the definition of density thoroughly, and its link with built environment I got to know that the definition is far more complex. Density and architecture are strongly related to each other. ‘Density is a measurement but design is a tool, which creates the built environment. Therefore, both density and design play an important role to create desirable and sustainable built environment in various cultural contexts’ (Sivam; Karuppannan, 2012)

The most interesting thing that I started to believe was actually that it is not high density housing per se which is my goal to achieve, but qualitative density. In my perception qualitative density is the mix of high density housing and high density public space. High density housing for me does not apply on the fact to put values in an equation that generates answers. It is very much related to the context, the sociocultural factor, the existing urban morphology, the architecture, the people and diversity. High density housing can only be succeeded when the concept is combined with quality public space which is place for diversity and city life. As Jan Gehl states in Cities for People, ‘Density, which represents quantity, must be combined with quality in the form of good city space (Gehl, 2010).

I believe that densifying increases the demand for public space in a city. Generally a new densification project takes over a part of free land which is scarce and valuable. A densification concept can be interpreted as a failure if it comes in costs of greening and public space, or if it lacks the attention towards a quality and well-defined city space. Every new development should come with its own sufficient amount

of usable and quality city space and even increase the demand for more. In this way there is at least an attempt to fulfil the aspired quality in a densifying city.

In a lecture at TU Graz Dietmar Eberle describes density as a tool to determine the urban atmosphere, which is dependent on the character of the public space. He believes that it is these spaces that connect people to a certain place. Eberle goes on explaining that density is not a good or a bad thing but simply has automatic and fixed determinations upon quality, atmosphere, people fluctuation and so on (Worldpress, 2013). He believes that open space must be increased in order to obtain quality in dense environments. In another lecture held at Università di Pisa in 2016, Eberle emphasises the importance of public space and the contribution of a new building to the context in relation with its volumetric positioning. He believes that in the future the quality of architecture in densifying cities is strongly related to the understanding of the public and the contribution to the quality of to the public.

However just by generating public spaces simultaneously with high density housing still does not ensure a good densification concept. Density must be combined with diversity as well. It is people for whom we design. Therefore I believe that diversity is a crucial factor for a good densification concept. High density housing applies for high concentration of people, as it may not sound unfamiliar, people are different from each other, have different beliefs and cultural backgrounds. A new densification project without the philosophy of balancing the needs and aspiration of different segments of people will result in scatters of people, mass and void without the required coherence.

Density Typologies

Regardless of global location, economic condition and stage of densification - one can say that different residential typologies, can solve a density equation. All will have their own urban qualities and problematics which need to be considered in order to develop a new plan.

Low-rise typology

Low-rise typology could be interpreted as a typology with a low floor area ratio. In a densification plan this solution can be considered as complex and problematic, as the required ground area for such typology is high. Therefore city space will be reduced in order to generate a new settlement area. Often, because of the insufficient or valuable ground area in a city this solution tends to lead to scattered density outside the central urban areas, whereas people in the contrary are becoming increasingly more dependent on the city centre and prefer to live inside of it. An example of horizontal densification is urban sprawl. In my perception this is not the most sustainable way to solve a density equation, as it often is an example of neglecting the nature and the valuable ground area. Furthermore an urban spread creates an infrastructural complexity as well because of the required connections of the new developed areas with the central urban areas. As Dom Nozzi explains, ‘Walk-able urbanism and healthy transit require FARs to be at least 1.5 to 3.0 [..] Anything less than about 1.0 locks a community into sprawl, extreme auto dependence and downwardly spiralling downtowns’ (Nozzi, 2004).

High-rise typology

High-rise typology generally refers to high density housing with a high value of floor area ratio and a low value of site coverage. This allows to keep the plan sustainable, compact and to release valuable ground area which can be used as city space. These spaces can be used for communal activities and amenities and thereby stimulate social interaction. In fact this solution has got the potential to both solve the qualitative as the quantitative aspects of density as it could eventually lead to the improvement of the quality of urban life.

However a high-rise typology also contain problematics and challenges. Because of the verticality these typologies have the vulnerability to become isolated and static if the importance of the context, nature and people is neglected. High-rise buildings need to contribute to their context both on city level and on site level. A Contribution is not just emphasized on the quantitative

aspects of density but the plan has to stimulate and improve the qualitative aspects of an area as well.
Furthermore, the adjacent public spaces which will be released, likewise have the vulnerability to be interpreted as an undefined spaces, considering the large dimensions these open spaces often have. Furthermore because of the open structure these spaces often cannot provide safety and privacy or at least a safe feeling for the people. Furthermore the orientation and composition of the buildings are of great importance too. Over-massing and unplanned positioning of buildings will lead to negative outcomes such as, over-shadowing, obstructed sightlines and anxiety. These factors will play a significant role in the way people perceive density.

Altogether high rise typology is a conceivable answer to a high density question. However it need to be carried out very carefully. Without correct land-use planning and the required reference to the context, it can easily be a poor solution.

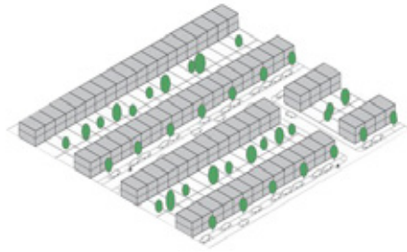
Mid-rise typology

A mid-rise typology can be interpreted as a combination of low and high- rise typology. The form is often strongly dependent on the context and the urban tissue in the area. If the urban form is chosen without reference to these factors, the typology may be experienced as solitaire. In general this typology is a good solution to density as it is able to both emphasize on the qualitative and quantitative aspects of densification. Moreover it can provide a fair floor area ratio and still maintain a relative low coverage. Furthermore the mid-rise solution can generate diversity both in typology as socially, and relative to a high-rise it can generate a defined and intimate public domain. A typical well accepted example of this typology is the perimeter block typology or ‘the Barcelona Model’ as it is called by Rob Adams, an Australian urbanist and architect.

However this typology also contains problematics. First of all the mid-rise typology is a good answer to a density or maybe even a high density housing on a certain surface. However it is restricted in the density it can provide because of its strict esthetical and compositional ratio.
It l s a typology that I believe, can easily be adapted in the context. Yet it can also become ‘just another block’ which is not innovative enough and does not create a much higher density than the already existing blocks in the context. As Dom Nozzi explains,

‘Healthy communities sometimes acknowledge that the historic character of a neighbourhood should not be forever frozen in its current character. Sometimes, a neighbourhood may have been originally built as a low-density residential area with smaller homes, at a time in which it was remote from the more urban locations of a city’ (Nozzi, 2004).

Moreover, I believe that despite the fact that these developments can contribute to the context on a micro meso level, they cannot - or at least, not easily - contribute on a macro level significantly.



low-rise 75 units/ ha

high-rise 75 units/ ha

mid-rise 75 units/ ha

Research question

In order to develop a new densification concept in Innsbruck, in which the emphasis is laid on qualitative density and the connection of living and public domain, the following research questions have been rendered:

Main question

How can high density living in Innsbruck be generated simultaneously with a high quality public space ?

Sub questions

- Which components define a high quality public space

- How can the proposed densification plan contribute to its context both on a small scale level as on a city level?


ōbikā

Proposition

Hybrid density typology

It is important to understand that density alone cannot endeavour a well-defined and sustainable densification plan. Diversity is another crucial factor that need to be emphasized on. According to the *New Zealand Ministry of the Environment*, 'mixed places where different functions, such as living, working and recreation, are in the vicinity of a neighbourhood or in the buildings, can have a strong beneficial effect on the quality of a densification plan (McIndoe, G. et al, 2005).' Furthermore, Jane Jacobs also highlights the importance of diversity in *The Death and Life of Great American Cities* (1961), accentuating the essence for districts to serve more than just one or two primary functions, in order to stimulate different people to use common facilities.

As the main goal is to achieve super high density and diversity, a hybrid typology will be chosen for the new densification plan. A hybrid model seeks for a mixture of high-rise and mid-rise typology. From each typology individually, the aim is to highlight the positive aspects by nuancing the negative ones and to eventually develop a new model.

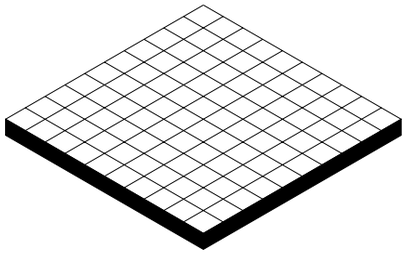
First and foremost, the choice of location is of great importance. The high-rise typology must be realized at a location that can adopt such an extensive typology, with all the character traits it entails. In the first instance, due to the compactness of the high-rise typology and a high floor area ratio, a (large) open space will be released, which in the first instance can be considered as a undefined and not integral public domain.

The high-rise typology should not be an ordinary high-rise that might eventually manifest itself as an isolated and free-standing object. In fact, it should be reinterpreted in a new way, trying to reflect the public facilities and domains within the buildings and thus allow the buildings to breathe. This step will be important to stimulate a positive and healthy perceived density. The high-rise also will have to manifest itself as a landmark and it will have to add, aesthetic and public qualities, as well as high density. This will have to ensure that the project can make a significant contribution, not only on a small scale level but also on a city level.

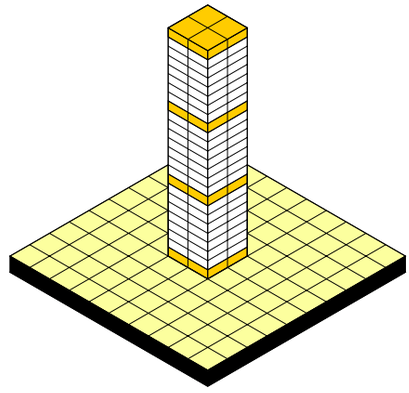
Next, the mid-rise typology will be applied to both increase the density and anchor the plan on a smaller scale level. Density, in this case does not only refer to physical density, but also diversity in public spaces. The character of a mid-rise typology will somehow need to refer to the urban form of the context, in order to nuance the 'introverted' character of the high-rise. This is an attempt to strengthen the connection at micro meso level so that the plan is accepted in its close context. One of the most important aspects of the mid-rise block will be, that it will have to take care of embracing the open space that has arisen and, creating an integral public domain. This public domain will have to reinforce and emphasize the feeling of intimacy and the transit from private to public domain. Within this square, the necessary tools and instruments will then be used to ensure the aspirations and needs of diverse people and to seek coherence.

Target audience

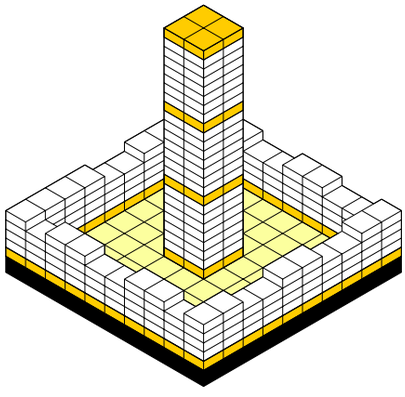
As already explained the plan seeks for a hybrid typology whereby it will contain both smaller and larger building typologies. It need to endeavour flexibility and diversity both in the public amenities and housing typologies. The high-rise typologies will have to be more suitable for the independent groups. These typologies will contain sale and luxurious housing whereas the lower parts must be more accessible for affordable and rental housing for the more dependent category of people.
The goal is to create a healthy mixed-use area where a dense concentration of people with different backgrounds and varying ages could live, work, and have pleasure. The enclosed composition of the plan needs to ensure intimacy for the residents and users and activate the feeling to be connected to the ground floor surface. The amenities in the buildings and the plinths need to also attract people on a city level. Thereby an interesting and important issue will be the sequence and transit between the public and the private domains.



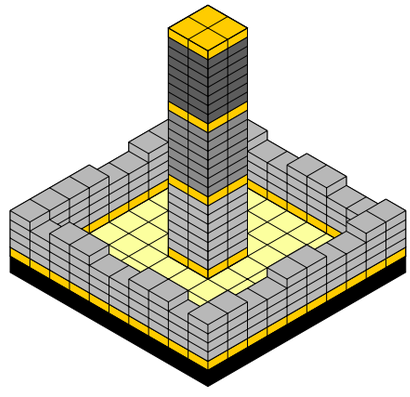
Plot



High-rise typology



High-rise + mid-rise typlogy



hybrid density typology

Methodologies

Different types of methodologies will be applied that will help to answer the research questions. Different means such as literature study, theoretical study, urban analysis and comparative analysis will be used to explore the area on both a large scale level and a small scale level and finally to develop an new densification concept in Innsbruck.

First, the content of the project in general will be highlighted and discussed. The general definition of density and its relationship with the built environment will be studied and specified by means of a number of literature studies. 'Densified Living' will then be defined personally, following which the research questions will be formulated. The underlying idea and the direction of the plan will be emphasized in a proposition. After this it is necessary to place the personal perception and statements in a framework. A number of literature and data will be used for this purpose.

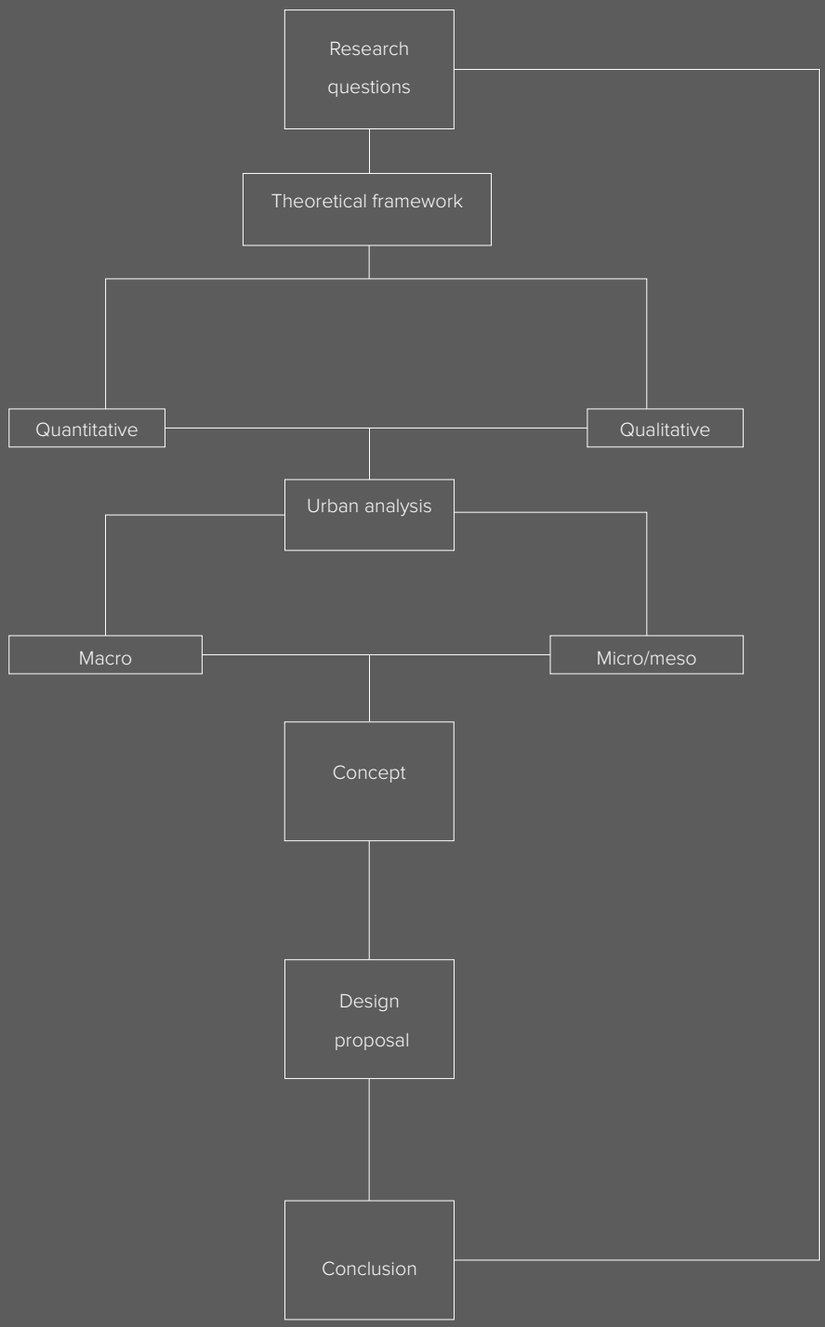
First, the urban analysis will be performed on a macro scale level. During the research a month will be spent in Innsbruck to explore and observe the city, whereby different data will be collected during this period. In order to gain local insight and to understand the visions of the city, information will be obtained through conversations with architects, urban planners and the municipality of Innsbruck. Thereby the relevance of densification in Innsbruck and the future visions of the city will be examined. The final intention of the stay is to choose a location in Innsbruck where the plan can be realised. When choosing a location, it is important to be able to guarantee the personal visions and ambitions established in advance. Thereby the potentials and challenges of the location will be examined, which will be further investigated in the urban analysis.

Parallel to the overall research, the Theoretical framework will provide a foundation and frame to gain more scientific insight into the linked topics that have been identified, and will help to steer in the right direction. The theories will be important to anchor the concept in order to eventually justify the questions. In the theoretical framework, particular attention will be paid to the quality of public domains and the criteria for well-functioning open spaces. Among other things, it will look at the components that are specified in the book, *Cities for People*, by Danish architect, *Jan Gehl*, *The Social Life of Small Urban Spaces and City, Rediscovering the Centre,* by the American journalist and writer, *William Hollingsworth Whyte*. The components obtained from this will be important to define a well-functioning public space. From this, a tool box will then be derived that will later be used for the development of the final concept.

After having explored the city on a macro scale, it is important to perform the urban analysis on a micro-meso level. A part of this will be the morphological analysis. This will play a crucial role in the morphological development of the plan. Linked to this, a comparative analysis will be performed to gain more grip and insight over squares all over the world with their associated characteristics. This analysis, together with the theoretical analysis, will play a significant role in the design of the public spaces in the plan.

From these analyses a goal will be formulated, which will form itself in a concept. The concept is linked to the previous urban and the theoretical analyses and will then will be developed further in an architectural analysis. Among other things, this includes a shape study that will be important for the realization of the final composition of the plan. Ultimately, the design will be derived from the concept.

Subsequently, a conclusion will be drawn in order to determine what the plan has yielded, with regard to the visions that have been aspired in advance. The conclusion will then make a link with the questions that were established in the beginning of the research.


Research questions
Theoretical framework
Quantitative
Qualitative
Urban analysis
Macro
Micro/meso
Concept
Design proposal
Conclusion

2. Theoretical framework

Public space

In this chapter, the term ‘public space’ will be examined. The emphasis will be laid on the components that can create a high quality public space and in particular a high quality public square.

In order to get a better grip on the previously formulated research questions, a number of additional questions have been rendered:

- What is public space?
- What makes a quality public space / square?

Definition of public space

‘Public space’ is a commonly used term that is defined and reinterpreted differently by many. Therefore it is hard to define the term specifically. Nevertheless, almost all definitions share one important aspect: Public space often refers to a ‘non-private’ space that is accessible to everyone and does not exclude anyone.
As follows, some of the definitions of public space:

‘A public space refers to an area or place that is open and accessible to all peoples, regardless of gender, race, ethnicity, age or socio-economic level. These are public gathering spaces such as plazas, squares and parks. Connecting spaces, such as sidewalks and streets, are also public spaces’ (UNESCO, 2017).

‘Public space (narrowly defined) relates to all those parts of the built and natural environment where the public has free access. It encompasses: all the streets, squares and other rights of way.’ (Carmona et al., 2008)

Personal perception

For me, public space can be interpreted as the public living room of a city, of which our houses are the bedrooms.
It is also a place where the forced and fatigued character of today’s man can be nuanced by spontaneous confrontations. A place where everyone, regardless of his or her background and ideology, can communicate with each other, share laughter and enter in to debate, about whatever. It is also a place in which people can sit and look at other people, while they can also be left unhindered, if they want to be alone among strangers. Despite the public character, the place must ensure intimacy and give people the feeling of safety and comfort. A good public space must be able to emphasize a transition and Interplay from the private domain and the public domain, whereby one for instance - while sitting at home - can look at a square from the window of his house and can let his thoughts go for a moment.

“**When you focus on place**
you do everything differently.”

- Fred Kent

Typologies of public space

Public space is a definition that can be divided in to several categories and typologies. Also in this case public space can vary in form and its interpretation depending on the global position and cultural background. However the following list differentiates types of public spaces in to five main categories, as specified in the *Global Public Space Toolkit* (Garau, 2015):

1. Streets as public spaces
• Streets, avenues and boulevards
• Squares and plazas
• Pavements
• Passages and galleries
• Bicycle paths

2. Public open spaces
• Parks
• Gardens
• Playgrounds
• Public beaches
• Riverbanks and waterfronts

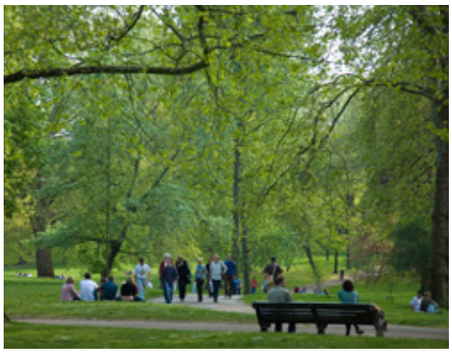
3. Public urban facilities
• Public libraries
• Civic/community centres
• Municipal markets
• Public sports facilities

4. The ‘Space of the Public’
5. The city itself
6. Cyberspace

In this report an emphasis will be put on the quality of a good public square, as it will be one the most important aspects of the final design. This does not detract from the fact that other mentioned typologies of public space are less important and will be excluded in the final proposal. In fact, I believe that a well-functioning city, especially a densifying city, should contain as much of these typologies as possible. However, it is important how these spaces are defined and related to each other.

Street as public space

Piazza as public space



Park as public space

Riverfront as public space

Football stadium as public space

Market hall as public space

What makes a quality public space?

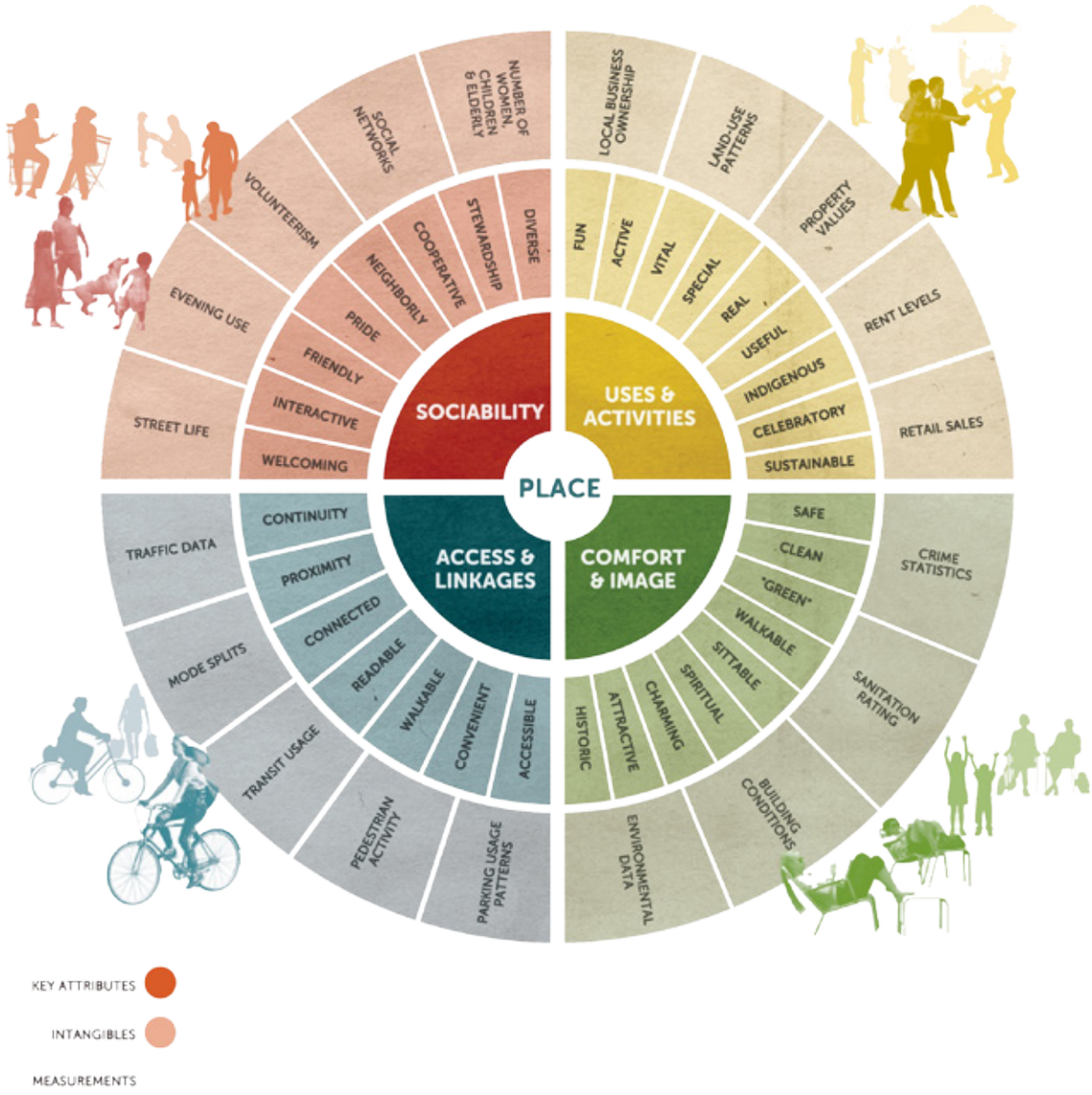
“A public space of high quality will always be recognized by people interrupting their walk or daily business so they can rest, enjoy the city, the public spaces and be together with other people” (Gehl, 2002).

The importance of public spaces in a city or neighbourhood has already been emphasized. However the next step is to understand the criteria which define a quality public space. The quality of a good public space is dependent on various factors. There can be made a rational differentiation in quantitative factors and qualitative factors. The first is more emphasized on factors which may influence the value and quality of a space in a larger content. Important elements are for instance the urban planning, city policy and demographics. The qualitative factors are more tangible and represent a public space on the perception of people and the usability. Furthermore the quality of a public space can be described from two perspectives, the functional and the physical features. The first is an intangible feature which is for instance related to people’s background, while the latter is related to tangible feature like the lay-out or the opportunities for ‘pedestrianism’ as Gehl calls

After studying a lot about public spaces, It is very difficult to have one list which includes clear standards for a good public space. Therefore, to demarcate the examined theory, the following sources have been particularly used:
Global Public Space Toolkit (UN-Habitat); *What makes a successful place?* (PPS); *Cities for people* (Jan Gehl) and *City: Rediscovering the Center/ The Social Life of Small Urban Spaces*, William H. Whyte.

In conclusion, based on the literature read about the quality of a public space, the following four factors, established by PPS (2005), define a high quality public space:

‘Accessibility, It is accessible and well-connected to other important places in the area; **Comfort**, the space is comfortable and projects a good image; **Sociability,** it is a sociable place where people like to gather, visiting it again and again; **Activities,** people are drawn to participate in activities there’ (PPS, 2005).



criteria for a high quality public space


CAFFE' FONTE GAIA


RISTORANTE AL MANGIA
BRASSERIE BAR AL MANGIA

Public square

A public square, ‘piazza’ or also called ‘plaza’ is considered as one of the most important components in city design.

‘A square or plaza is both an area framed by buildings and an area designed to exhibit its buildings to the greatest advantage’ (Moughtin, 2003).

According to Moughtin (2003), two main methods can categorize a square: function and form. He argues that these factors are equally important in the design of a square. Empty and undefined spaces surrounded by buildings that do not contribute to the space and vice versa are examples of many recent low quality squares that often neglect whether the essence of function or form in the design.

Function of the square

The activity in a square is important in the way it attracts people. It is, after all, people that reflect the quality of a place, and only if the function is well-defined, people will be motivated and curious to be part of that place. Furthermore the adjacent buildings should contain a program that is not only visually but also functionally related with the space.

Form of the square

As Moughtin argues, many number of attempts have been made to classify the form of a square from which he believes that Paul Zucker and Sitte have outlined the most influential theories. Zucker as cited by Moughtin was able to distinguish five archetypal forms:

‘The **closed square** where the space is self-contained; the **dominated square** where the space is directed towards the main building; the **nuclear square** where space is formed around a centre; **grouped squares** where spatial units are combined to form larger compositions; and the **amorphous square** where space is unlimited’ (Zucker, 1959 as cited by Moughtin, 2003).

Moughtin concludes that the public square is probably still the most important element in city design. As he states, “ The public square [...] it is the chief method by which a town or city is both decorated and given distinction.” He adds that “The most important physical quality of public squares is enclosure” (Moughtin, 2003).

Closed square / Plaza Mayor, Madrid

Dominated square / Pariser Platz, Berlin

Nuclear square / Trafalgar Square, London

Grouped squares / Palazzo del Podestà, Bologna

Amorphous square / Place de l'Opéra, Paris

William Hollingsworth Whyte

In his book, City: Rediscovering the Center (1988), Whyte, shares the outcomes of his detailed analyses and observations whereby he emphasizes the factors that can be essential for a successful public square. For this purpose he formulates the following key points as being essential:

1. Sittable spaces
People tend to sit where there are places to sit" (1988). The best places have many places to sit.

- Benches: social situation is more important than physical situation. Benches should not be paced in isolation but towards the action. Human dimensions are very important. A dimension that is important is the human backside. It should be two backsides deep and at least 76, 2 cm.

- Chairs: should not be fixed, "people like to move moveable chairs", and have a back.

- Ledges: should be present in as many as possible spots and in many combinations. Ideal height: 40 – 50 cm.

- Steps: 'low and easy'. It should afford an infinity of possible groupings and excellent sightlines. Minimal width 35.56 cm.

- Grass: free to sit anywhere and in any way.

2. Relationship with the street:
- Visual distance, and physical accessibility.

- Sightlines: "if people do not see a space, they will not use it."

- Inviting: curiosity, what happens there? It happens there!

3. Water, Wind, Trees and Light
Sun: where there is sun people sit, where there is no sun they don't.

Warmth: as much as important as sunlight.

Trees: the best time to seat beneath the tree is when there is sunlight to be shaded from. Works as sound barrier as well.

Rain, wind and cold: keep the people away.
Water: should come in many forms, fountains, waterfalls, and so on. It should be physically touchable by people.

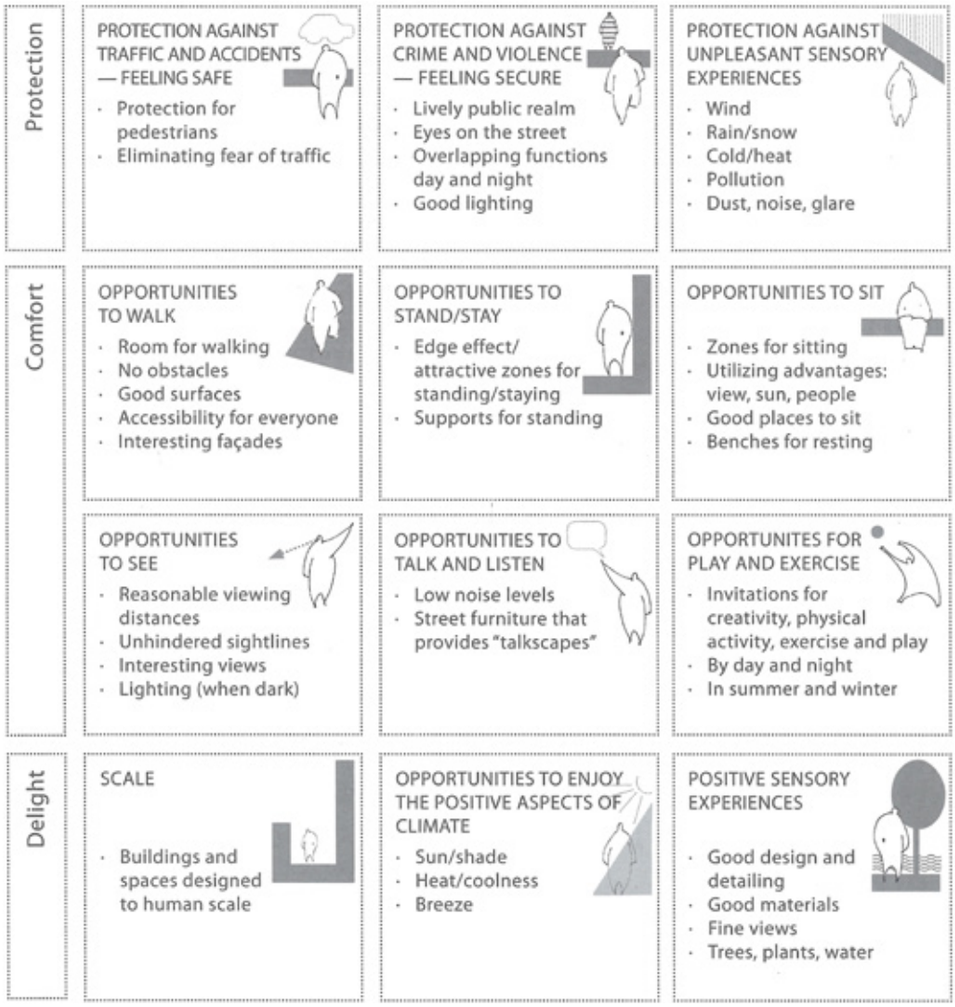
"It's not right to put water in front of people and then keep them away from it."

4. Food
"If you want to seed a place with activity, the first thing to do is to put out food."

"Food attract people, who attract more people."

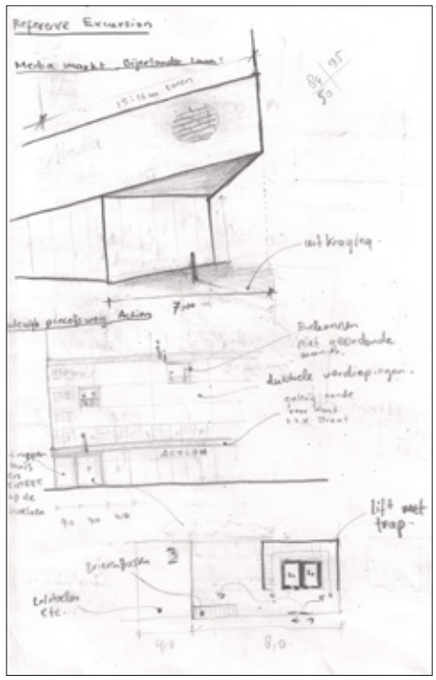
5. Triangulation
- Public art and sculptures
- Street artists

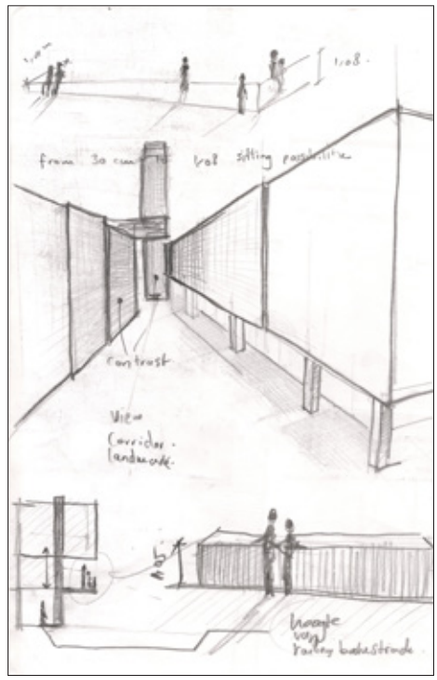
Unexpected confrontations and talks.
People attract people. "If you are alone, a lively place can be the best place to be."

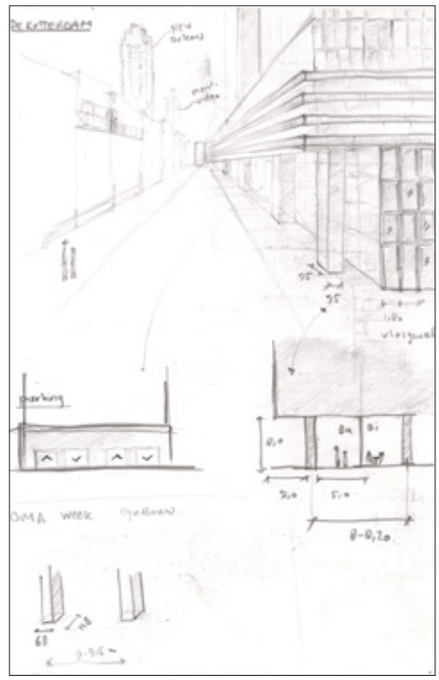


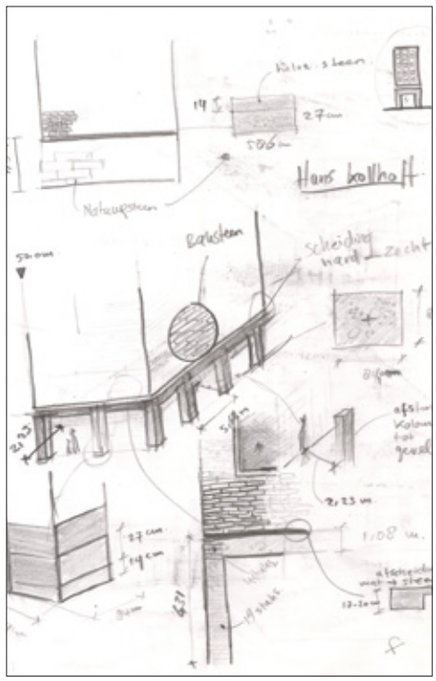
12 criteria for a quality public space

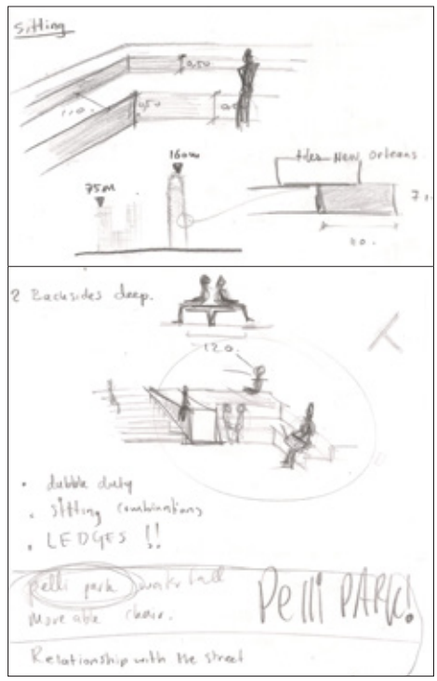
In search for details

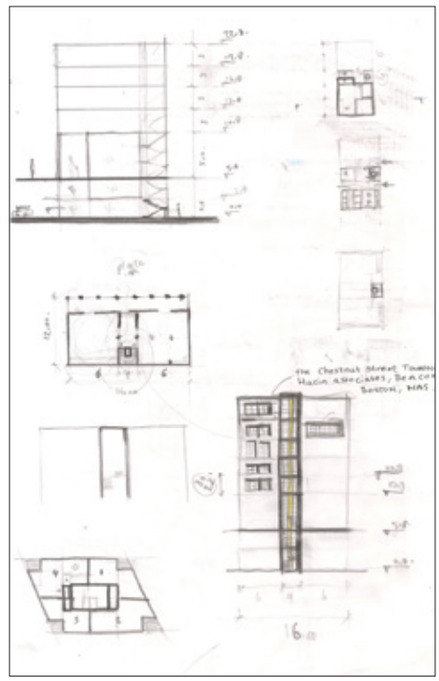










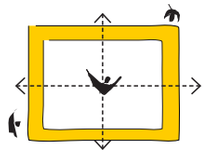


Toolbox derived from the theoretical framework

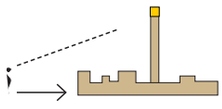
Sittable

Walk and stand

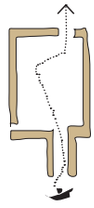
Enclosure



Active plinth

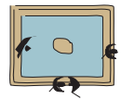


Landmark

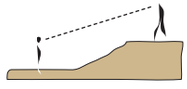


Sequence

Green

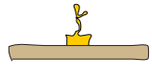


Useable water

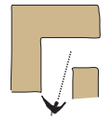


Change of levels

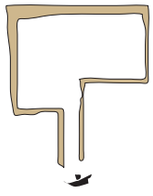
Sightlines



Street art



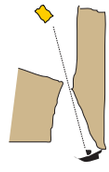
Differentiated sightlines: curiosity



Narrow to open

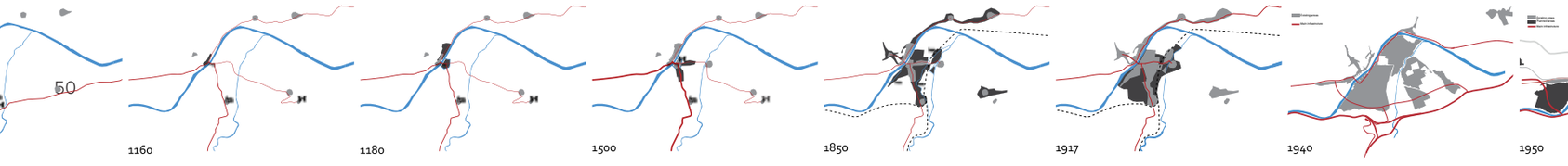
Child-friendly

Accessible



Curiosity

3. Observation Innsbruck



1500 1700 1750 1800 1820 1840 1860 1880

1180 Bridge
First wooden bridge constructed over the river Inn

1420 Transport hub
Connection Venice - Augsburg, Innsbruck as a transport hub

1520 Tyrol part of Austria
Tyrol becomes part of Austria

1809 Battle of Bergisel
Battle of Bergisel led by Andreas Hofer (fought by an army of farmers)

1858 Lower Inn valley railway
This new railway connects Innsbruck to the European Railway network and was the first western austrian railway line. Track goes from Innsbruck to Kufstein near the german border

1281 Neustadt
Start of the expanding of the Neustadt

1525 Farmers revolution
Revolution of the tyrolean farmers, wanted to set up egalitarian democratic cristian state

1665 Habsburg dies
The Habsburg Dynasty goes extinct, therefore tyrol part of Austria again. Also end of Innsbruck as residence city.

1803 Napoleon wars
Napoleon

1849 Innsbruck capital tyrol
Innsbruck steal the title capital from Merano

1867 Brenner railway
The Brenner Railway was the first railway to connect Innsbruck to Italy. Track goes from Innsbruck to Verona.

1564 Tyrol Indepence
Tyrol and the Alpine forelands become independent again

1669 University
Start of the University of Innsbruck

1703 Bavaria attack tyrol
Bavarians invade Tyrol, but the Tyroleans repelled the invasion. Later the Tyroleans succeed to expulse the Bavarians from Tyrol.

1027 Wilten Abbey
Monastery established in the village of Wilten– village owns a lot of fields

1363 War Bavaria
War with Bavaria, Bavarians defeated @ Innsbruck

1460 Hofburg
Start of building the Hofburg

1683 Ottoman empire defeated
In the battle with the Ottoman Empire, it is defeated at Vienna.

1720 Treaty
The treaty divided the spanish inheritance between Austria and Spain

1752 Vorderösterreich
Vorderösterreich is no longer governed from Innsbruck

1782 Vorarlberg
Vorarlberg added to Tyrol

1796 Revolution
The french army reaches up to the borders of Tyrol as a result of the French revolution

1848 Revolution
Most of the activity of these revolutions had a nationalistic character.

1160 Market
Market and center of Innsbruck formation

1390 Habsburg
Time Period called Habsburg Dynasty

1490 Maximilian I
Innsbruck/Tyrol ruled by Maximilian 1st, Also a wealthy era

1860 Increase in forest area
Forest area has increased, especially in the alpine region

1875 Housing
Villas were built in historic style, large housing blocks, with green courtyards also constructed.

1390 Altstadt
Development of the Innsbruck Altstadt typology

1494 Stadtturm
Construction of the Golden Roof attached to the new court finishes

1629 First Opera and Theater building
First Opera and Theater building opens

1740 Reforms
The Theresian reforms limited the power of the Tyrolean Authorities. Improved economy

1765 Triumphate
Triumpfate built to collebrate the marriage of emperor Leopold II

1790 Emperor Joseph II
Death of emperor Joseph II and the Tyrolean estates are get more and more rights again.

1814 Tyrol reunited with Austria
After decisions of the congress of Vienna, Tyrol was given back to Austria

1848 Building Boom
General building boom mainly of public buildings in a historic style

1860 Constitution
Liberal and federal constitution Austria

1878 First sattelite
Here spor actually start, it was still a hobby but it starts.

1406 Tirol one country
Tirol becomes one country

1553 Hofkirche
The hofkirche (Court Church) built as a memorial to his grandfather Emperor Maximilian I. Designed by Andrea Crivelli.

1805 Pressburg
Treaty between Napoleon and the Holy Roman Empire in which Austria had to do large territorial concessions. Tyrol and Vorarlberg to Bavaria.

1850 Glacier shrinkage
Glacier mass has shrinked by about 60 %

1867 Empire
Austrian Hungarian Empire

1420 Residence City
Innsbruck becomes the residence city of the Habsburg family, who purchase a new court. (now the Golden Roof)

1584 Ambras
Ambras castle is transformed into a renaissance palace and a museumbuilding is added for Ferdinand II's art collection

1867 Rights
Formulation Civil rights & Nationality Legislation

1453 Silbergasse
Expansion of the Silbergasse area

30000

1792 1814 1867

MIDDLE AGES | 16th-17th C | BAROQUE | NAPOLEON | BIEDERMAIER PERIOD | AUST

Timeline of Innsbruck

1900 1920 1940 1960 1980 2000 2030

1884 Arlberg line — Connects the cities of Innsbruck and Bludenz. It is Austria's only east-west mountain railway.

1894 Tyrolean house — The first time there was a mentioning of the Tyrolean house in the book "Das Bauernhaus in Tirol und Vorarlberg"

1905 First tramline opened — The tramline was constructed in order to connect the Südbahnhof (south station) with the Staatsbahnhof (main station - today known as the west station).

1905 Skiclub Innsbruck — Innsbruck gets their own skiclub, which proved to be benificial for the tourist industry

1914 WW I — The war was triggered because of the assasination of Archduke Franz Ferdinand of Austria.

1909 Centennial battle of bergisel — Remembrance of nationalistic feelings for Tyroleans

1909 First ski jump — Innsbruck gets their first ski-jump for holding a game

1914 Architects fled or died — Most experienced young architects fled or died during the war, leaving a gap of knowledge in the post-war reconstruction where there was already no room for architectural experimentation and everything had to be cheap and pragmatic

1912 Mittenwald railway — Connecting the Austrian district of Ausserfern (west of the Fern Pass) with Tyrol through Germany.

1925 Airport — The airport opens for Innsbruck. It would become the largest international airport in Tyrol in western Austria.

1934 Civil War — Also know as February uprising, which had major impact on later political situations.

1884 — Biking and ice-skating become a sport

1900 Hungerburg — "Hungerburg" touristic settlement. Oldest touristic settlement in the Alps

1910 Railways — Development of building railways into mountains slowly starts

1921 Referendum — Referendum held for affiliation with the German empire. Fascist adhoxs in South Tyrol

1892 Skiing becomes a sport instead of a helpfull thing for walking on a snowed hill.

1903 Soccer — First official soccer match

1907 Referendum — First time there were general and equal voting rights for the elections

1925 Sport — Sport activities become more and more important

1893 Large exhibition — Exhibition in Innsbruck with sport as the main theme.

1904 Protection — Founding of association for homeland protection

1914 Referendum — Electoral Reform forthe tyrolean state parliament during WWI

1928 Skiing — First skijumping at the Bergisel

1928 Railways — Finally, a way to build railways into the mountains

1915 Conscription — Italy declares war on Austria

1928 Skiclub — First construction of Ski-lifts

1896 Exhibition — Exhibition where they absolute a running track.

1908 Verein Heimatschutz — The association was found to counter the effects of industrialisation

1918 Italy occupies Südtirol — After the defeat of the Austro-Hungarian empire the Italians marched up to Innsbruck and occupied Südtirol.

1909 First ski — Innsbruck gets natural and artificialice tracks

1918 Autonomy — Creation of the Tyrolea National Assemblie, increasing demand for autonomy in Tyrol

1919 Treaty — Treaty of Saint Germain. First Election for Tyrol Parliament

1920 Sports — Hannes Schenieder developed the forms and standards for the modern sport.

1939 WWII — Start of World War II. Agreement with Italy and Germany to join the Axis' side.

1945 Postwar Reconstruction — 60% of Innsbruck is destroyed during the war, Pradl is the most affected area. The plans for the city's reconstruction was based on developing the city through the buildings.

1930 Hotel — Construction of Hotel Post which was a hotel shaped as a giant Tyrolean house and set an example for future hotels to be built.

1944 Transport — Introduction of the "Trolleybus"

1950 Tourism — Densification of settlement pattern through intensive recreational usage of limited area. Agriculture has left its stamp on the structure of the village, now emphasis is placed on summer tourism

1933 Skiing — First skiing world championships in Innsbruck

1945 Invasion — The allies invade Tyrol and elections and rallies are held to remove south tyrol.

1946 Referendum — Plans for reconstruction. Zoning is applied in the city.

1950 Otto Mayr — Otto Mayr developed a new plan, however the city with serious problems with the electricity, sewage system. As a solution an increase of taxes should improve the economy of the city.

1949 Station — Reconstruction almost stopped, new plan for centralisation

1955 Treaty — Austria's independence and withdrawal of allocupation forces. Austria declares neutrality, buffer zone between the East and the West. The only treaty by Soviet Union and United States after the 1947 Paris Peace Trieties.

1938 Referendum — Referendum announced by chancellor Schuschnigg.

1938 Chancellor — Chancellor Schuschnigg resigns after germans invade Austria. Innsbruck became part of Germany

1950 Merging — Bulk areas among main infrastructure connect and merge villages

1950 Pradl — Compact settlement on intersection frontal and Fern Pass

1960 Developing — Over 50% of houses built

1961 Negotiation — Austrian-Italian negotiations

1939 Olympics — Start of using concrete as a building material in Innsbruck

1939 Olympics — Half of the growth population from Tyrol is located in Innsbruck

1954 Developing — New plans for Hotting, an increase of 366 acres

1962 Zoo — Opening of the Alpenzoo

1943 Occupation — Germans occupy Italy

1943 Operation Zonnenland — Operation Zonne Alpenoordand developed under supervision of Franz Hofer

1956 Negotiation — Start of negotiations on the paris treaty between Austria and Italy

1958 Planning — Plans to extend the city to 10000 inhabitants

1945 Rebuilding — Rebuilding work in French zone

1964 Olympics — First olympic wintergames are held in Innsbruck, causing a huge amount of tourists to visit the city.

1960 Debates — Südtirol debates, United Nations resolutions, plan of the olympic villas and beginning of the explosive attacks, police actions, arrests and assaults

1967 Highrise — First project developped that is 30 meters high (start of highrise) and the development of first building of offices, hotels and garages under the ground

1969 Faculty — Before young architects were educated in Graz or Vienna, now Innsbruck has its own faculty and produces architects which often stay in their direct surroundings working in Innsbruck

1969 Autonomy — Agreement on autonomy for the Bozen region

1970 Council — 1st council of Innsbruck and Bozen

1970 Planning — Plans for historical buildings

1970 Lego — Introduction of the Tiroler House Lego kit

1974 Planning — New Concept "Gunter Nuner" Plan 1200 houses

1976 Olympics — Second olympic wintergames are held in Innsbruck, causing a huge amount of tourists to visit the city.

1976 Olympics — Renovation and new construction based on the 1964 onks.

1976 — Each municipality is required to make an urban plan for itsmunicipal region.

1980 Highway — Construction of the A12, which runs parallel to the federal highway in the Inntal

1980 Large Scale — Large scale planning (90.000 m2 and 50.000 m2 developments). Result of 1972 competition. 537 houses for social rent, with 80 different typologies of housing. The Peerhofsiedlung plan was considered very successful and high quality standard

1980 Realisation — Realisation of cableears to the Hafele & densification of village structure by the expanding hotel sector.

1980 Pradl — Federal highway becomes corridor for commercial and industrial areas

1980 Pradl — Development of West Hottinger + Au area

1980 Pradl — Expansion of outskirts through single family houses. Center becomes shopping street

1988 Autonomy — Realisation of the package and and Operationscalender for autonomous rights for the region of Bozen as agreed upon in 1969

1988 Trolleybus — re-introduction of the trolleybuses

1989 SOWI — Construction SOWI faculty building, turning point in architecture

1993 Architectur und Tirol — Just is the Architektur und Tirol forum which opened the discussion on architecture in Tyrol

1993 MPress — MPress store on the Lienz Dolomitenstrasse is the first MPress store to win an architecture award

1994 van Staa — Herwig van Staa the first major of Innsbruck that saw architecture as a tool to enhance the image of the city.

1995 Birthday — Austria celebrates its 1000th birthday

1999 Building — A building boom that lacked reflection afterwards

2001 Bergisel Ski Jump — Construction by Zaha Hadid, one of the first contemporary pieces of architecture marking a new era for Innsbruck

2002 Urban plan — Urban plan for the future.

2002 Hochbaustadt — Hochbaustadt, exhibition in Innsbruck

2004 Construction — Construction Hauptbahnhof by Riegler Riewe

2004 MPress — MPress pavilion on Venice Biennale

2005 Motorway — Construction Motorway Service Area

2005 Phenomena — Large commercial and industrial zones between two motorways

2005 Phenomena — Densification housing within settlement area

2005 Phenomena — Flat built-up area stretches from Innsbruck to Hall in Tirol

2005 Phenomena — Extension through the use of sub-urban villages.

2005 Phenomena — Development of a new bicycle path along the river Inn.

2005 Phenomena — Denser Structure, extension along highways

2005 Pradl — Construction Rathaus by Dominique Perrault

2005 Phenomena — Ecological Rules and regulations

2005 Phenomena — Ice Hockey World Championship

2007 Hungerbahn — Construction of the Hungerbahn stations designed by Zaha Hadid

2008 Soccer — Host of the European Soccer Championship

2009 Seilbahn — Opening of the Tyrol Cable Car

2006 Leitbild — Image plan for systematic planning of space

2010 Kaufhaus — Construction Kaufhaus by David Chipperfield

2010 Sophie Sieberg — Photography project to produce alternate pictures of Tyrol

2011 Panorama Tyrol — Opening of the building. This museum is now home to the riesenrundgemaelde, an important 19th century painting and one of the few remaining from that time.

2012 Olympics — First youth olympics

2012 Olympics — Construction of new olympic village

2014 INNCONA — Large scale energy savings project initiative

2017 Hotelbau — Research into hotels in Innsbruck

2026 Olympics — Innsbruck bid 2026 Winter Olympics set for rejection

2025 Urban plan — Urban plan for 2025

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AUSTRIA - HUNGARY | WW I | INTERWAR | WW II | THE SECOND REPUBLIC | FUTURE

Innsbruck

Introduction

Innsbruck, the city where you are able to ‘touch’ the mountains and be on top of it in less than a half hour. A city which contains different parameters for high quality living. The nature, knowledge and vitality reflect the image of the city of Innsbruck as a young and healthy place to live. One quarter of the population is formed by students and a 350 year old university reflects a rich educational history. A city which has not been stayed unnoticed by foreigners and tourists and has an extremely high ratio between tourism and population. Innsbruck is a growing city which is densifying gradually. Because of its unique features and characteristics it has a lot of potentials to become an example of a healthy densified second tier city.

Located in a wide Alpine valley, Innsbruck is the capital and largest city in the Austrian state of Tyrol. It is located in western part of the country, in the Inn valley, where it intersects with the Wisp valley, allowing access to the Brenner Pass, approximately 30 km to the south (Wikiwand, 2018).

Innsbruck is oriented on a significant line between Munich in the north and Verona in the south. The city is positioned in the broad valley between two mountains. In the north, by the Nordkette in the Karwendel Alps with Hafelekarspitze as the highest mountain top of 2,334 meters (Wikiwand, 2018).

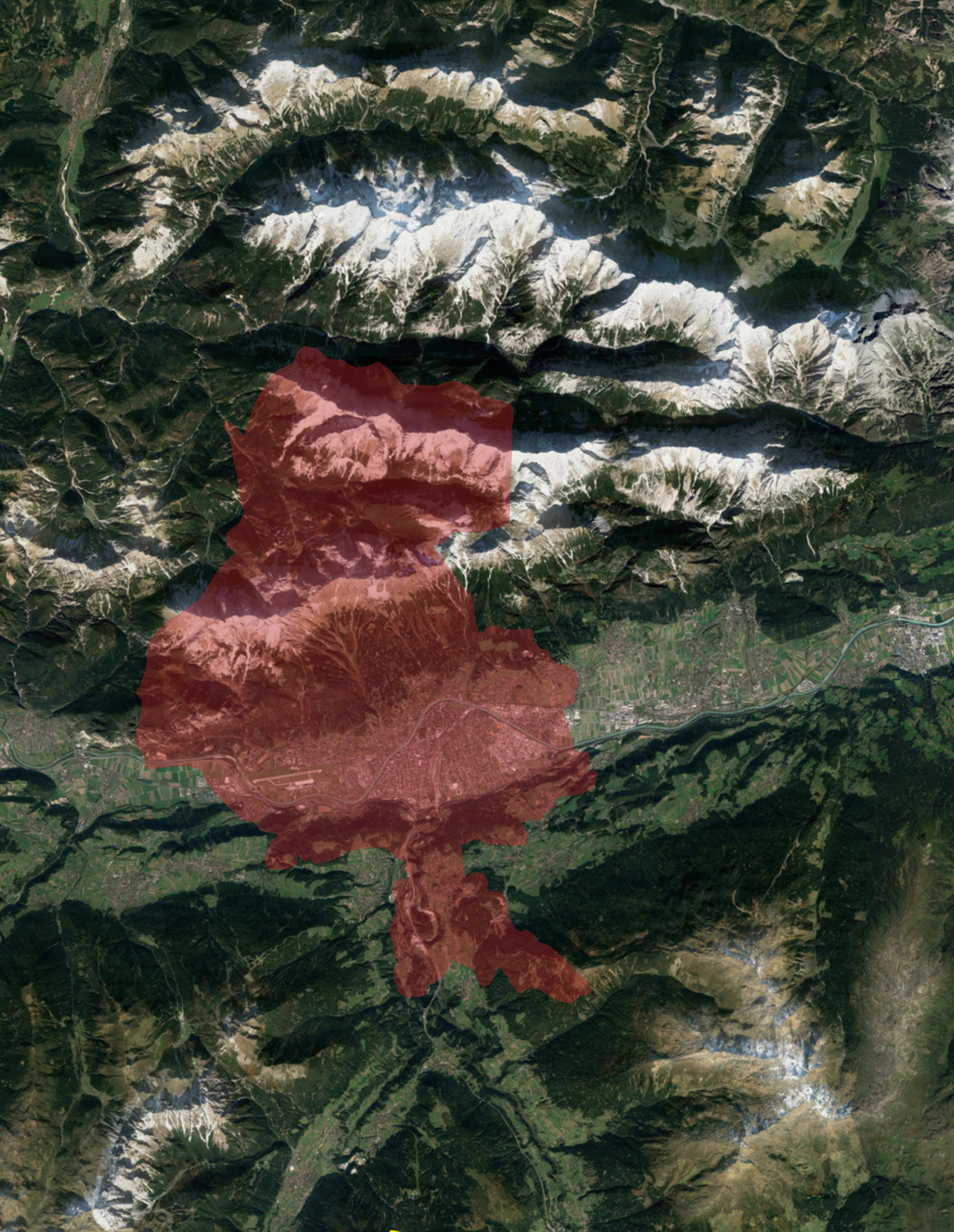
In the south, the Patscherkofel with the top reaching 2,246 meters and Serles 2,718 meters (Wikiwand, 2018).

Relevance of densification in Innsbruck

Since the year of 2011, Innsbruck has had a significant growth in its inhabitant numbers. A reason is the worldwide migration caused by conflicts, mainly in the Middle East zone. However in Innsbruck, the main reason of the population growth is due its economic, knowledge and educational sectors, which in the last years have attracted many expats and students from countries like Germany, Luxemburg and Italy. A big reason of Innsbruck’s and Tyrol’s good economy is the profitable position of the city. With Munich on one side and Verona on the other, the city is positioned in an important old corridor which consist of two extremely developed regions.

Currently Innsbruck has a population of ca. 132.000 (2018) of main residences and ca. 153.000 of attending residences. According to the municipality of Innsbruck (ÖROKO 2.0), the population of the city in the next 10 years will grow by approximately 1300 people per year, which means that the population is estimated to be around 160.000 in 2030. The growth will be mainly caused by immigration of a young sector which are connected to the knowledge and economic sector. Furthermore, till the year of 2025, the number of households will grow to ca. 73.000, which requires an expected demand of approximately 6.500 to 7.000 dwellings (Andexlinger, 2017).

Considering the dimensions of the city these numbers are significantly high. Innsbruck’s entire surface is about 10.000 hectare whereby just 25% could be considered as a buildable settlement area. This is mainly caused both topographically, by the surrounding mountains and politically, by strong boarder cities, like: Völs in the west and Rum in the East. Because of these limitations and the growth of the population, Innsbruck has shown densification in the past years and according to the aforementioned data the densification process will grow even more in the future. Nevertheless, according to diagnoses by the municipality, there will be enough building land to develop the required number of dwellings. However the challenges in Innsbruck are more based on political and economic issues caused by, among others things, high land prices and private sectors.




Altstadt (north) / Wilten (south)
Mühlau & Arzl
Hötting
Pradl & Amras

Problem definition

Densification in Innsbruck

Densification is surely necessary in Innsbruck, simply because of the growth in its population and its limited structure both politically as physically. Already from the mid-twenties until now several studies have been done concerning the topic of densification in Innsbruck. Most of those studies had the outcome that there basically is sufficient free land to build in the city. However many other issues have made densification challenging in Innsbruck in the recent years and are going to be important for new densification developments.

Even though densification is not a new discussion for the city itself, many of the habitants still experience the process of densification as a new phenomenon. Many of them believe that Innsbruck is in fact still a village. However it starts to have features of a city. As the local architect Martin Mutschlechner stated during an interview,

“Innsbruck [...] is the biggest small town and the smallest big city.”

This fulfil the image of the city entirely when observing the city and speaking with locals. People who were used to have a rural way of living are suddenly experiencing changes and new features of urbanity in the city. For many, especially the younger habitants this can be experienced as something new and exciting. On the other hand for the people who always have lived in a village, the new changes can be overwhelming.

Therefore in Innsbruck one of the key aspects within the process of densification is the harmony and coherence between the cultural and social demands of all the habitants.

Urbanity

Urbanity has not been reaching Innsbruck thoroughly. When observing the city, the differentiation in its structure is noticeable. Innsbruck needs to densify within its limited structure, which means that it also needs to be more unified as a city. Increasingly more land will be used to make new developments which means that the use and quality has to be high and efficient. The lack of urbanity in Innsbruck translate itself to several aspects within the city.

The city is highly fragmented in its urban tissue. An example is the northern part of the city, the Olympic village, which for instance looks almost like another city, both in its morphology and its experience. However, the fragmentation of the city is not only noticeable in the morphology of the city, it is also noticeable in the experience of the city on a human scale. The city kind of feels like a collage of different parts. This translate itself in other aspects, such as the social aspect, which means that the attendant inhabitants of the city are also fragmented in different groups: the students and people from clinics, the tourists and the locals. A social cohesion between these groups is lacking.

River Inn

For several years there have been discussions going on in Innsbruck about the disconnection of the river with the city. Often the outcome is that - like many other European cities - one is not aware of the potential of the river in Innsbruck.
The marvellous river Inn with its remarkable topography has a lot of potentials for the city, especially in terms of new densification projects, whereby the use of river can contribute to higher quality of life and public spaces. However the river Inn is not connected to the city in a proper way. One of the reasons is the wild character of the river which limits the accessibility and usage in its direct surrounding. On the other hand the people of Innsbruck are very eager and excited to use the river, and they try to, as much as they can.

Housing typologies

In the Second World War, during the fascist period, Mussolini and Hitler urged people from the south of Tyrol to decide whether they want to be Italian or German. When someone chose for the latter, one had to move to Austria. Therefore a lot of people in the beginning of the war moved to the south of Tyrol, among which to Innsbruck. This resulted in the development of a lot of social housing concepts. These houses were designed by mainly German architects. The 'closed block' typologies contained great living qualities with a lot of open space in between. The houses are still present in some areas of Innsbruck like, Saggen and Wilten. When observing and speaking with locals, many agree on the fact that the concept of this typology that was introduced in that period, had a great quality in terms of living and urbanity. These blocks have an inner private and integral space, which often contains community spaces, like for instance a park or a playground. Furthermore each house has its own garden in front of the house.

Recently one need to spend a lot in order to buy properties in Innsbruck, whereby the new housing typologies often are being built too small. An interesting observation and problematic is that the dwellings which are being made recently are often smaller than the ones that were built after the Second World War. Obviously this has also to do with the fact that the classic family household type of 4 or 5 persons is dropping, whereas the percentage of singles and couples is growing. Nevertheless, the people in Innsbruck have high demands of living quality. If the new dwellings are too small they become unusable.

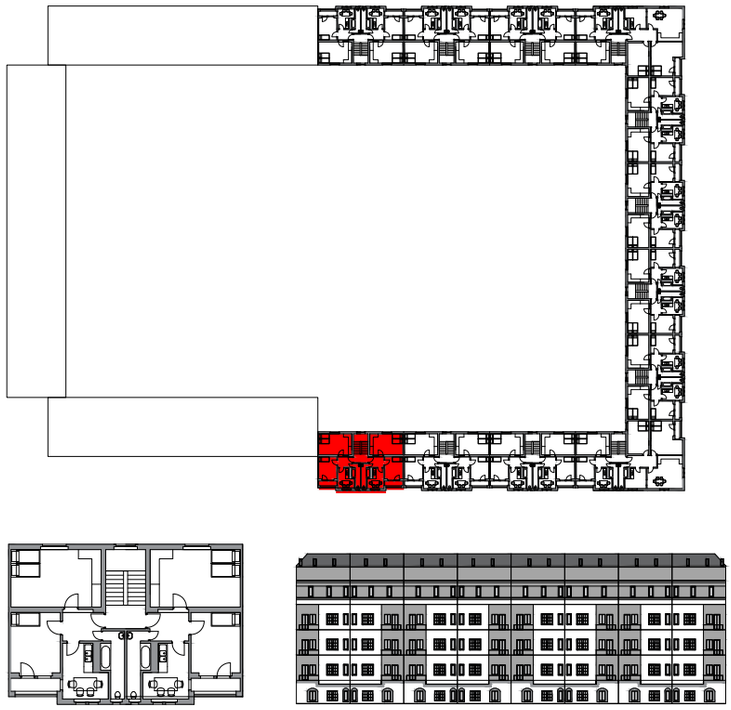
Cars and parking

Another important problematic issue in Innsbruck, as pointed out before is the presence of a lot of cars in the centre . This is mainly caused by the presence of parking spots in the centre. When someone has the opportunity to park the car in the centre, one will do that. This issue has been causing one of the infrastructural problems in Innsbruck.
Considering densification in Innsbruck, a new project can be developed to make a place denser, whereby it is also important to keep in my mind the mobility tools, like cars. It is therefore remarkable when for example looking at the districts of Wilten and Saggen, there are almost no underground parking garages. All the cars are parked on the streets whereby the quality of spaces on the ground level is being damaged.

Knowledge

The number of students is significantly high in Innsbruck, as it nearly forms one quarter of the population. Therefore the students are a very important aspect about Innsbruck, however most of the students are not habitant of Innsbruck, which means that after staying for couple of years they leave the city. The students bring life to the city as they occupy lots of public spaces and facilities in the centre. The reason of the disconnection with the locals may be the fact that most of the students are coming from elsewhere. The disconnection of the locals and the students is a negative aspect. The potentials of a unification between these groups can contribute to healthy development of the city, especially when the city is going to densify and seeks to be a knowledge and a manifold city.

Schlachthofblock, 1925, Theodor Prachensky



Principal drawings of the Schlachthofblock

Public and green spaces

Continuing about the issue of fragmentation in Innsbruck, another important topic is the public –and greenspace. Speaking about locals, about this topic, the first argument that you will hear is:

"We have our mountains!"

However when putting emphasis on this answer and being critical, almost everyone agrees that the quality of the public –and greenspaces is lacking. The fragmentation of the structure also applies for these urban spaces in the city. The main public spaces are located in the centre of the city.

Speaking about the inadequate quality, the emphasis is mainly laid on aspects such as, the accessibility (bot in terms of infrastructure and functionality), the social quality and the cultural aspects. Especially when the city is going to be more densified the demand for public space will and should grow further. Pointing out the aforementioned statement again, the people from Innsbruck have indeed a big advantage, which is being in the nature - the mountains and forest - in a short time. From one side the people indeed have the marvellous surrounding nature, which is located on a short distance, and may not need a lot of public spaces in the centre. However a critical question that arise is: "which activities and qualities does the existing public spaces contain, in order to keep people in the town? " An example is the 'Hofgarten', which is a wonderful green place. However its quality and accessibility in terms of program is very low. So just having a public –and greenspace does not solve the lack of urbanity, it is about the things added to this spaces which triggers people really go there and stay there.

Furthermore a differentiation could be made between a 'direct' public space and an 'indirect' public space. The latter can be defined as public space on large scale level, which is the surrounding nature in Innsbruck, and contains the mountains and the forest. A direct public space on the other hand can be defined as public space on smaller scale levels. Spaces within the city on several places where people can meet after work, smoke a cigarette, drink a wine and so on. A good example is the Fountain Square Cincinnati in Ohio. This square is well enclosed by its surrounding buildings, and contains lots of amenities that attract people to stay.

These high-quality spaces are of great importance in a city as they can stimulate the social cohesion and interaction between the inhabitants. Even though the city is surrounded by marvellous surrounding nature, a well-defined public space never will be redundant in a city.
As Jan Gehl states:

"If you make more public space, you will have more public life"

Landhausplatz, Innsbruck

Fountain Square Cincinnati, Ohio

Modern architecture

Innsbruck is growing and densifying. However the city still has a lots of features of a village while it starts to develop some of a city as well. In architectural terms the city is developing fast. It has already been a place where several international competitions have taken place and where famous architects like Zaha Hadid, David Chipperfield and Dominic Perrault already have put their names on.

Tourism

The tourism is playing a big role in the architectural development of the city, landmarks such as the ski jump of Zaha Hadid has been attracting a lot tourists, whereas the local people of Innsbruck do not make use of these attractions so much. Innsbruck has a significantly high number of visitors during the year, both in summer and in winter. Clearly the tourism has a lot advantages for the city, such as the financial aspect, the diversity of culture and people. Nevertheless, a interesting fact is that the tourism is more important for the valleys of Tyrol rather than for Innsbruck. It is remarkable, that almost 20 % of the population of Tyrol now are tourists, one of the highest in Europe. Yet, in terms of finance it is less than of 10% of the GDP of Austria (municipality of Innsbruck, 2018).

Real estate market

Another problematic issue in Innsbruck is that lots of building land does not belong to the city, but to private parties. This makes it quite difficult to convince these parties to build houses on the free lands.

At the moment the land prices are increasing with about 6% every year, which is significantly fast (municipality of Innsbruck, 2018). Therefore, one prefers to invest his money on a property or land rather than on the bank. Within this ideology, a lot of dwellings are being bought to be rented afterward. The result is a lot of empty houses in the centre of the city that – because of the high prices – are staying empty. Around 1000 to 2000 apartments are empty while the demand of living in the centre will grow even more because of densification. Innsbruck therefore has a lot of pressure for growing. The municipality has estimated that 60 to 70 hectares for building land is needed for new settlement area's in the next 10 years.

The economic situation that Innsbruck is facing also translate itself to architecture and the housing typologies. New housing typologies often are being build too small in the sake of real estate markets and high prices.

Kaufhaus Tyrol, David Chipperfield

Bergiesel Ski Jump, Zaha Hadid

Vision of the city

In order to gain more insight on Innsbruck's goals as a densifying city and to understand the challenges, which the city is facing, we had the great opportunity to have a conversation with Wolfgang Andexlinger, who is a Assistant Professor at the Institute for Urban Design and Spatial Planning at the University Innsbruck, and Head of Urban Planning, Urban Development and Integration department of the City. This had a great impact on the further development of the personal densification project in Innsbruck,

Urbanity and nature

One of the first goals the city has set is to force and develop the city within the Alps. Therefore the relation between the Alpen areas and the urban areas is a very strong target. The integration of nature in the city and the urbanity in the nature is thereby an aspiration. Even though the contrast of nature and urbanity is high in Innsbruck, at the same time there is a strong relation between those two parameters, both a visual and economical relationship. An example is for instance that, you often notice people with their skis walking through the city centre or riding a bike. The city is trying to maintain this unique characteristic of Innsbruck and even improve that by trying to increase the opportunity for pedestrianism as a form of transport, and the bike as the number one mobility element for the people in the city. The city therefore is trying to force the cars out of the city. However this is a complex and problematic issue due to the large parking sports in the centre whereby one has the opportunity to drive his cars into the city.

Culture

As many cities worldwide Innsbruck has got the vision to be a worth living and manifold city. Therefore the city's aim is to put emphasis on the cultural cohesion in the city, diversity of people and the different living styles.

Knowledge

Innsbruck has a strong knowledge and economical sector. Its famous clinics, economical sector, high amount of students are some parameters which have made this sector very strong. Yet the city wants to strengthen its educational and economical sector even more. Therefore large investments are put into new construction such as, for university, schools, and kinder gardens.

Moreover large investments are also put in the economic sector in order to be able to compete in a larger context with cities like Munich, Salzburg and Milan.

Open and green spaces

Another important and complex goal that the city has set is the maintenance of the open and green space in the city within the densification process. The complexity of this topic lies on the pressure on the city, which needs to grow and be densified. Therefore a sustainable, compact and high quality spatial development is one of the emphasized targets.

There are not lots of green spaces within the city, however the direct surrounding add a lot of quality to the health of the city. Nevertheless the city aims to put focus on high quality green- urban spaces within the flat areas. However, there are again economical challenges and pressure. The city therefore will focus on hybrid buildings, which are mixed-use buildings.

Densification goals

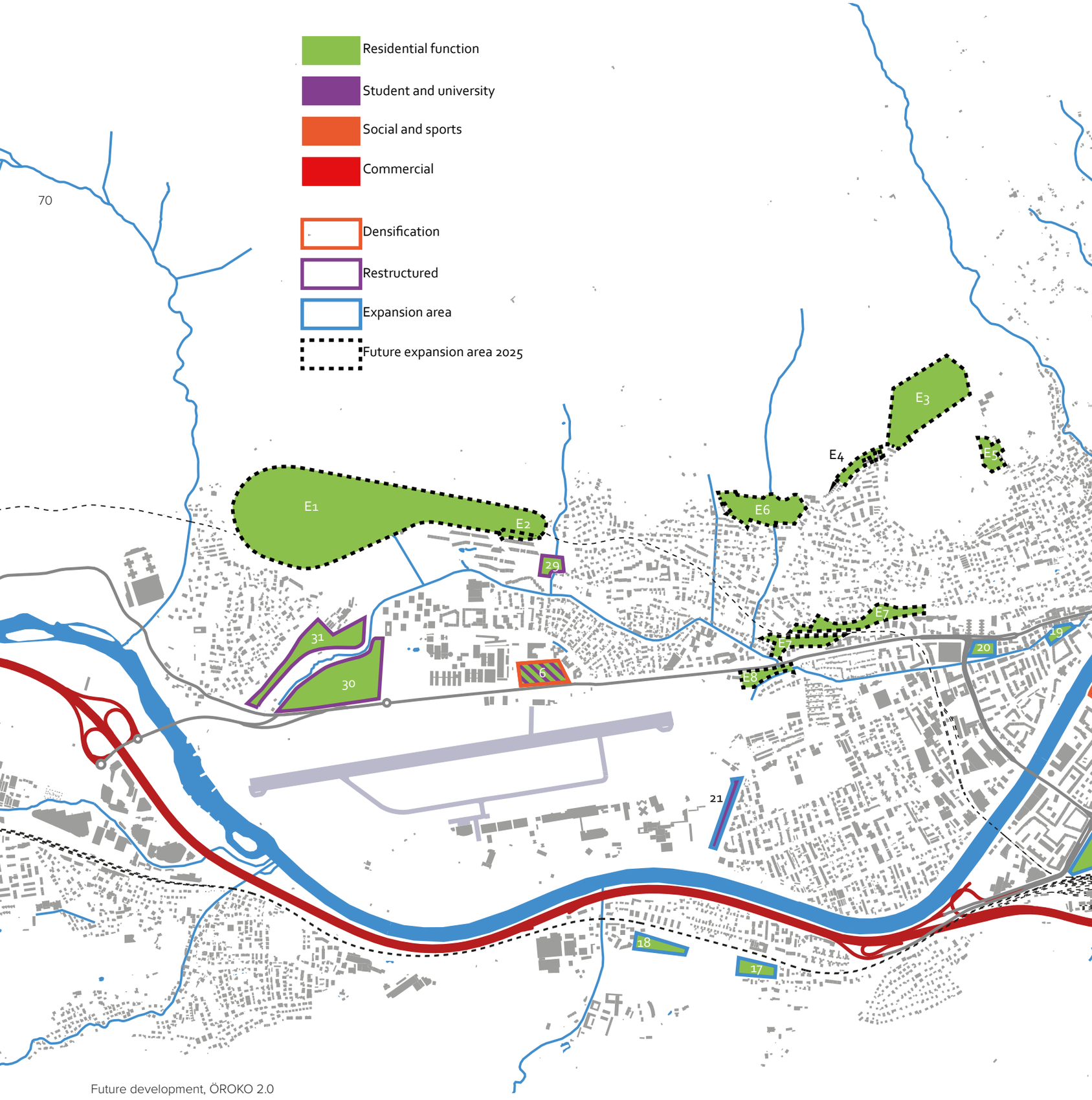
Regarding to the growth of the city the municipality of Innsbruck has planned densification through different typologies. 50% of is going to be achieved through transformation and multiple use, 25% through existing resources of building land and 25% through new site developments.

Thereby an important goal is to keep the city compact and keep a strict boarder within the city. On the east and the west ,there are strong boarders with villages, like Völs (west) and Rum (east). Thus, the city has already limited expansion possibilities in these directions. However diagnoses have shown that there would be enough land to build on for the near future, yet the city planners are eager to keep densification compact and try to focus on dense structures within the city.

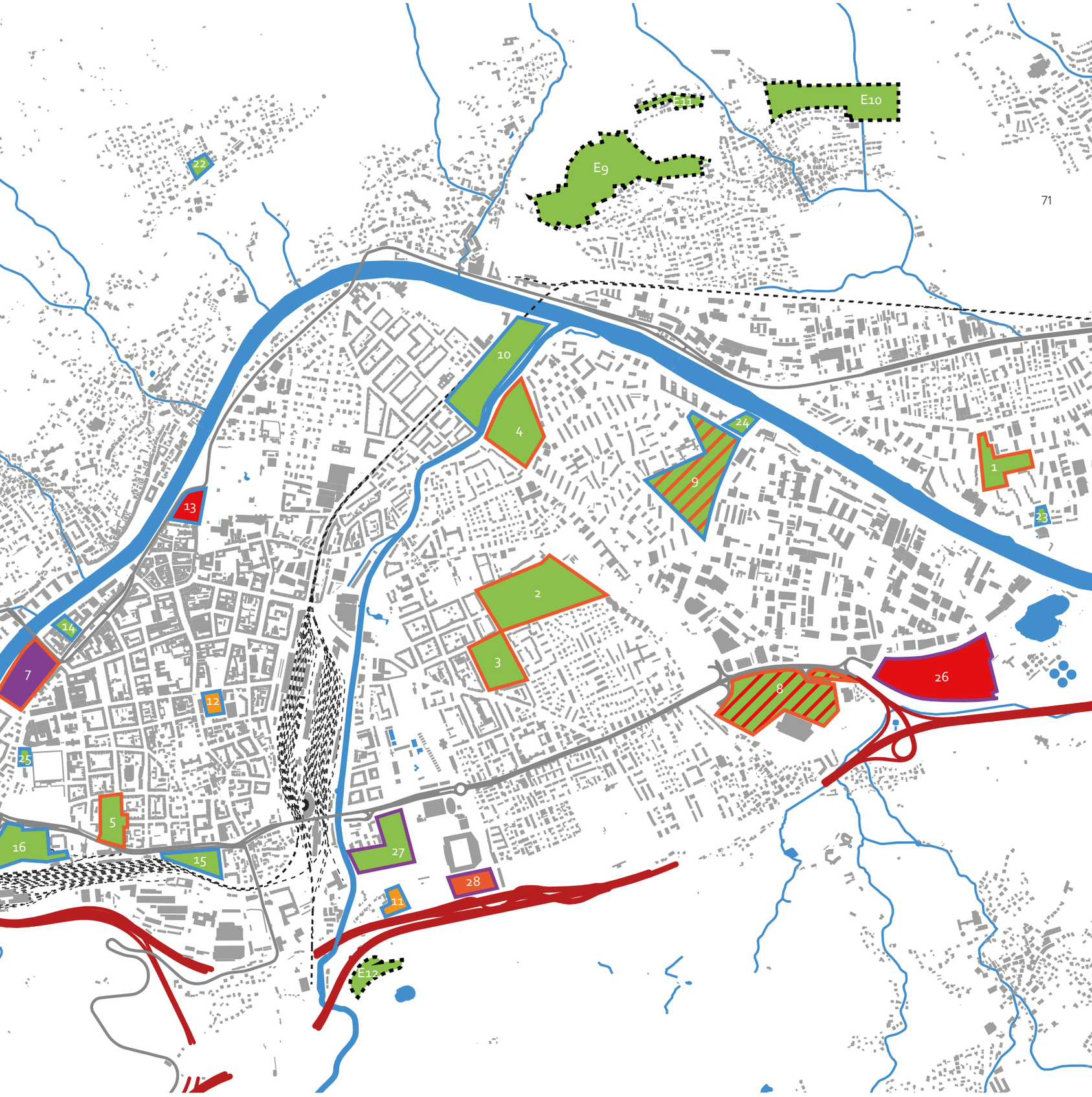
Infrastructure

The city of Innsbruck aims to make new connections between north to south and east to west, as those parts are not connected in a proper way yet.

Moreover, the aim is also to improve the pedestrian and biker routes above railway station as a direct link. The area at the ‘westbahnhof’ station, which is a large new development area will become very important for this purpose.



Future development, ÖROKO 2.0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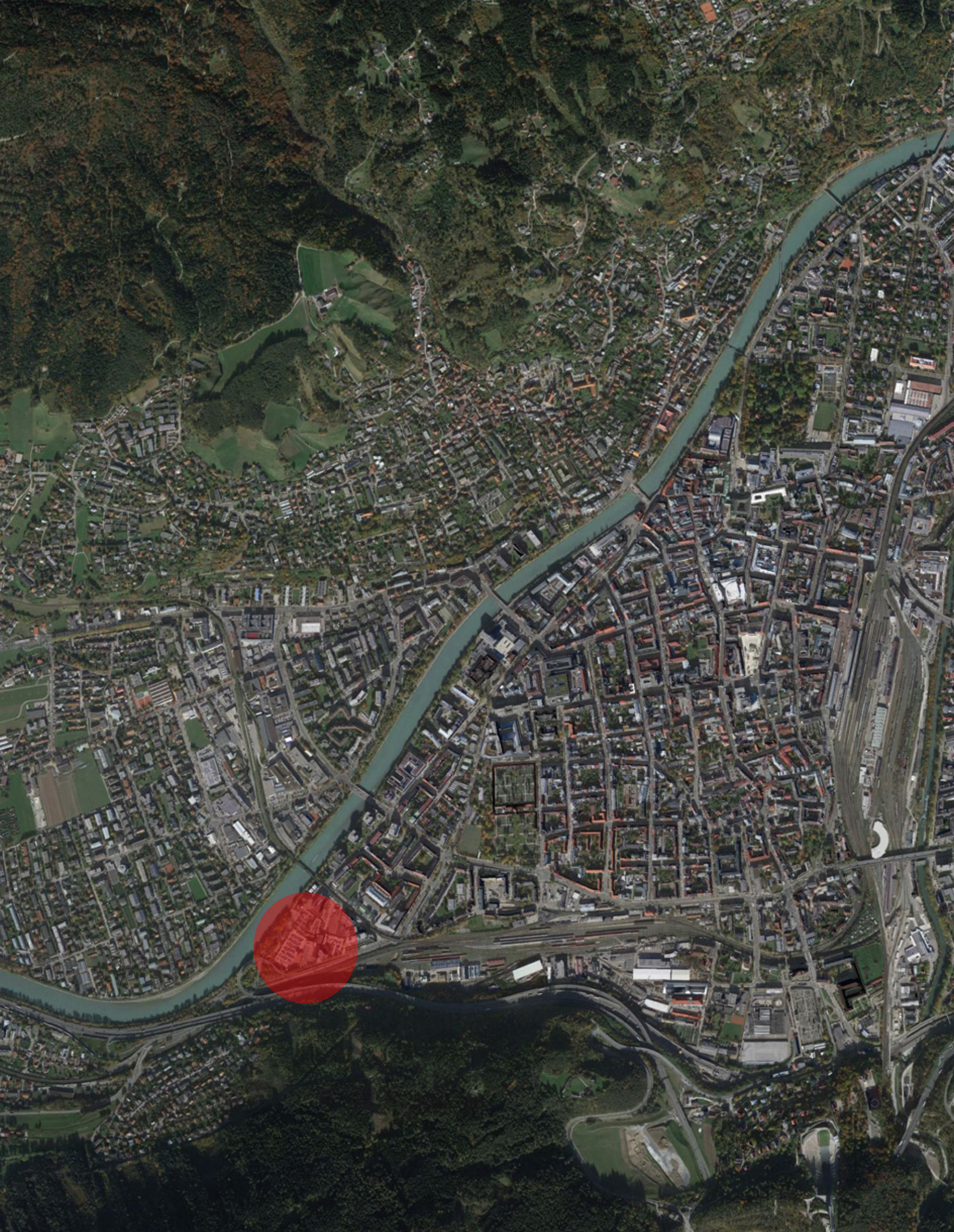
4. Urban analysis

“Dominant spaces with varying degrees of openness can occur at the scale of the city [...] Residual spaces are not unknown in our cities. I am thinking of the open spaces under our highways and the buffer spaces around them. Instead of acknowledging and exploiting these characteristic kinds of spaces we make them into parking lots or feeble patches of grass-no-man’s lands between the scale of the region and the locality.”

- Robert Venturi



Orientation

After analysing the city and observing the aforementioned topics, the idea was to choose a location which contains both potentials and the discussed problems. The idea is to implement densified living as a catalyst In order to stimulate a spatial, architectural and social cohesion in the area. Considering the topic of densified living, a new project can be developed to make a place denser, whereby it is also important, to keep the demands and requirements of the new residents in mind.

West Entrance

The chosen plot is located in the south-western part of Innsbruck at the west entry of the city. When approaching the location and entering the city, one cannot observe urbanity. A fragmented urban tissue and a vast parking area located on the ground level is noticeable. Making a new development at this location allows you to define and highlight what it means to enter the city and to contribute to an improvement of the location.

River Inn

At the chosen location the river Inn makes a very interesting bending topographically, towards the west. This creates a lot of extra potential qualities, like new sightlines from the west entrance of the city. Especially for the pedestrians and bikers whom have a path alongside the river inn and are entering the city from the west part of the city. This district of the city which includes *Höttinger Au* accommodates some important spots of the city like, the airport and the technical university campus. When one is able to orient the new development to the west a lot of potential spaces and sightlines could be generated.

Hills and forest area

Another great potential feature of the chosen location, is the existence of the forest area in the district Sieglanger-Mentlberg, located within the direct surrounding, in the south of the location. This area is not accessible in a proper way. This is mainly caused by the disconnection that the Egger Lienz Stasse creates and the railway. For the new densification project this area could play an important key in order to stimulate the quality of living and increase the quality of public and greenspaces. A challenge will be to improve the accessibility in order to activate the forest area and link it with the chosen location.

Parking

Within a new densification plan it is important to keep in mind the mobility tools, and the before mentioned parking problematic. The chosen plot, located in Wilten, contains almost 17.000 m2 of parking area on the ground level.

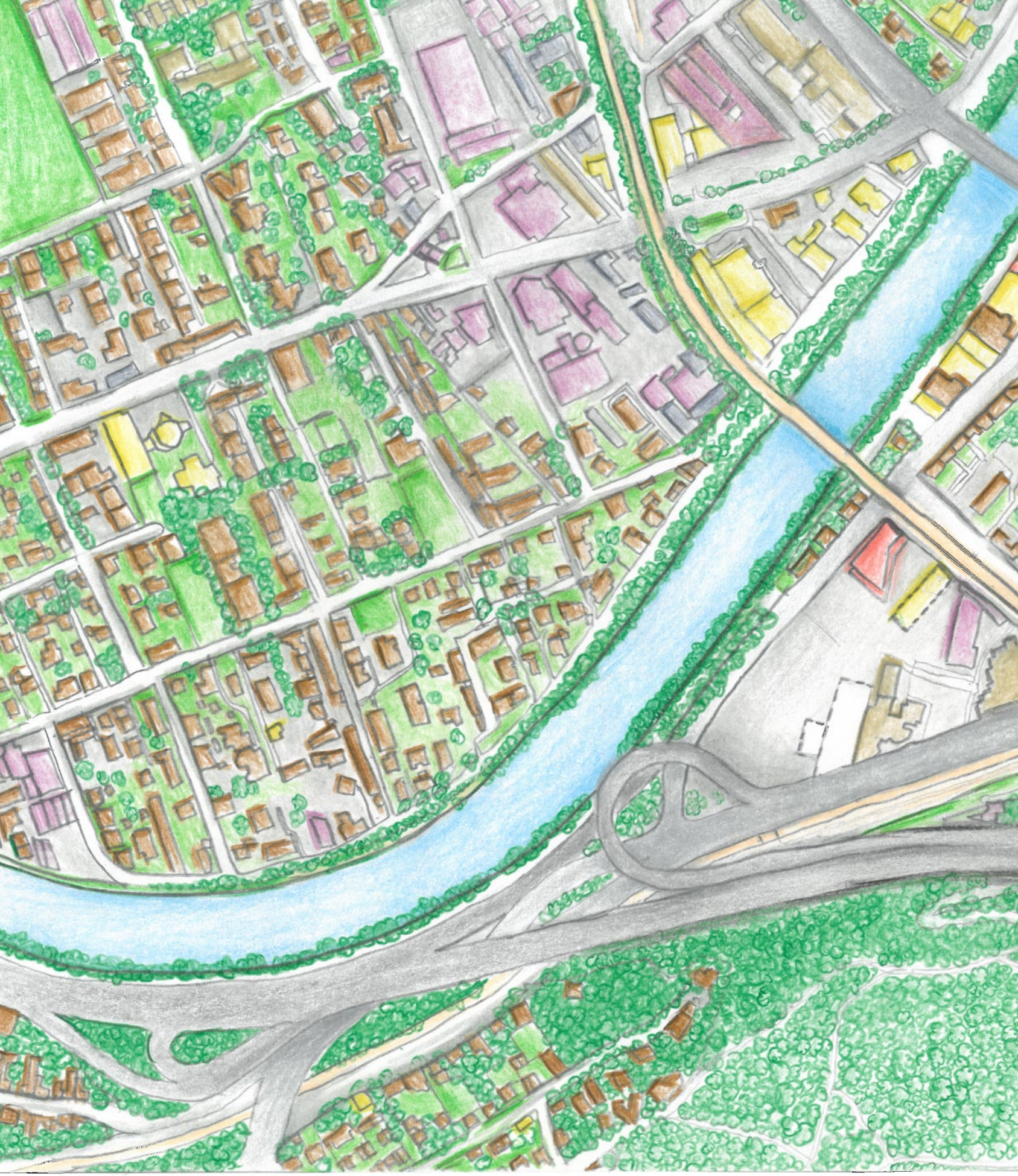
The aim is to not make the situation more complex and problematic with a new density plan. For this purpose a new parking zone can be generated which may contain more capacity and can provide parking spots for both people from the direct context as the entire city.

In order to put more emphasize on the entrance of the city the ground level will get a public program, whereby people have the opportunity to park their cars and walk to the city centre, or to stay and use the public facilities. This will also fit into the concept that the municipality is aiming for, which is, trying to put pressure on the cars in the city centre.

Public spaces

The main public spaces are located in the centre of the city and do not make a good connection with the south- west of the city. Therefore the chosen plot can be an ideal place to generate high quality public spaces that can function as bridge between the western part of the city and the city centre.

Furthermore, the area already has a lot of public and cultural potentials. In the future a hotel will be constructed next to the wifi campus and the medical centre. This will make the place denser with more public programs. It is also interesting to put emphasis on the axis of the *Karwendelbögen* in the north of the plot and use its charming character for future public programs.


Residential
Public
Business
education
Health / medical care
Industrial
Earth
Green
Wood
Highway
Primary streets
Railway
River Inn
future de
Future de

evelopment

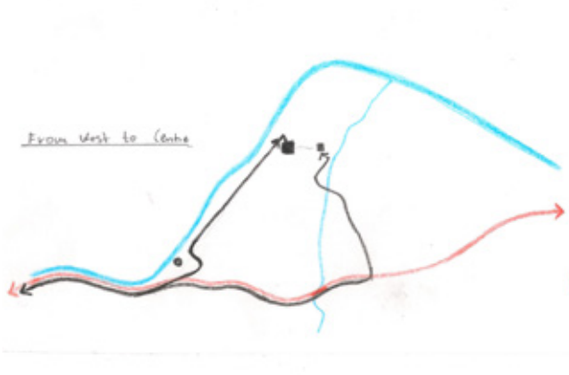
emolition

25m 50m 100m 200m

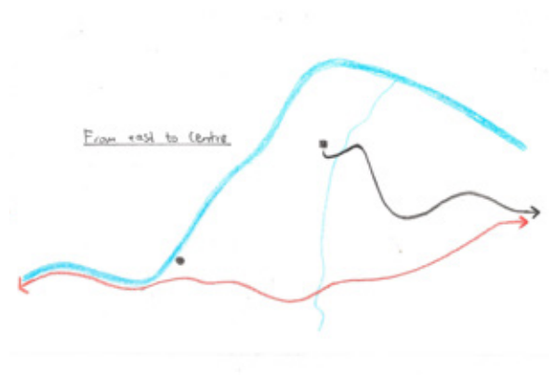
Kia Sharif / 0932968
7X45M01 "Densified Living"
Case study Innsbruck
Existing plan of the "Hafen" area


DOCK
CLUB

Site analysis



From west to Innsbruck centre



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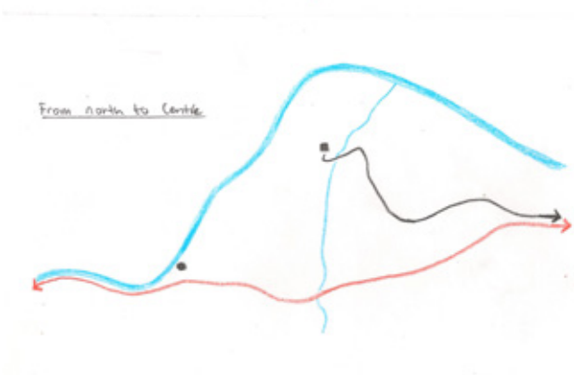
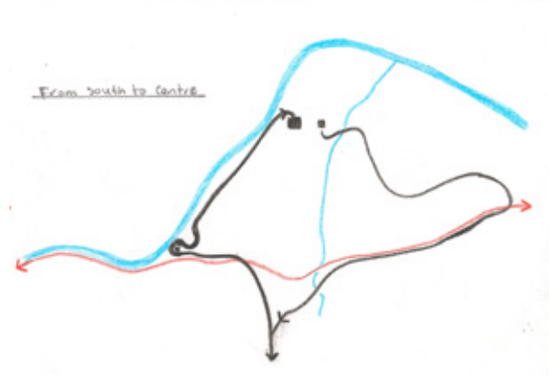
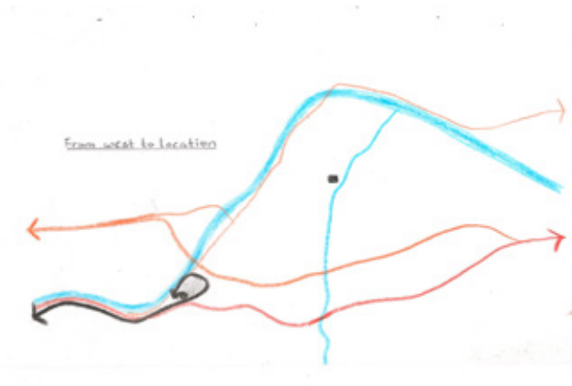


From north to Innsbruck centre

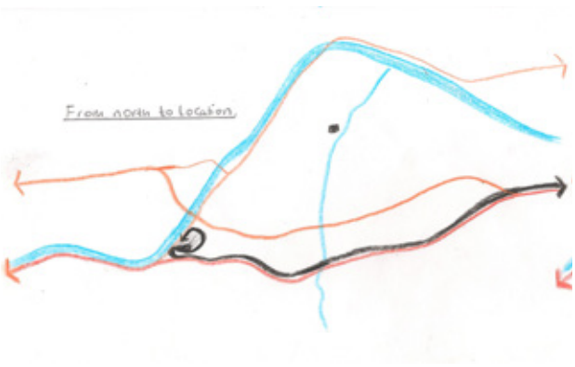


From south to Innsbruck centre

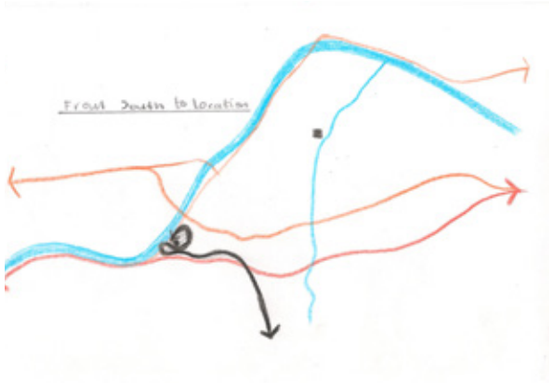


From west to location

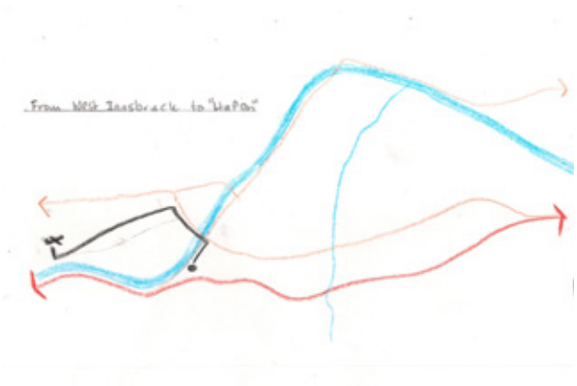
From east to location



From north to location



From south to location



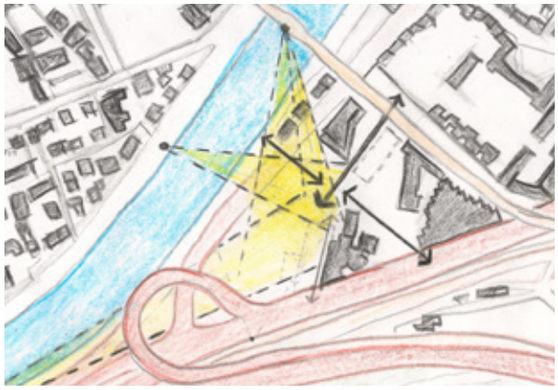
From west Innsbruck to location

From east/ north Innsbruck to location

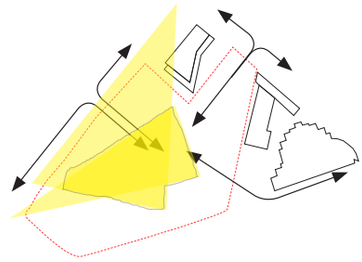
From Innsbruck centre to location

Egger-Lienz-Strasse: Isolation

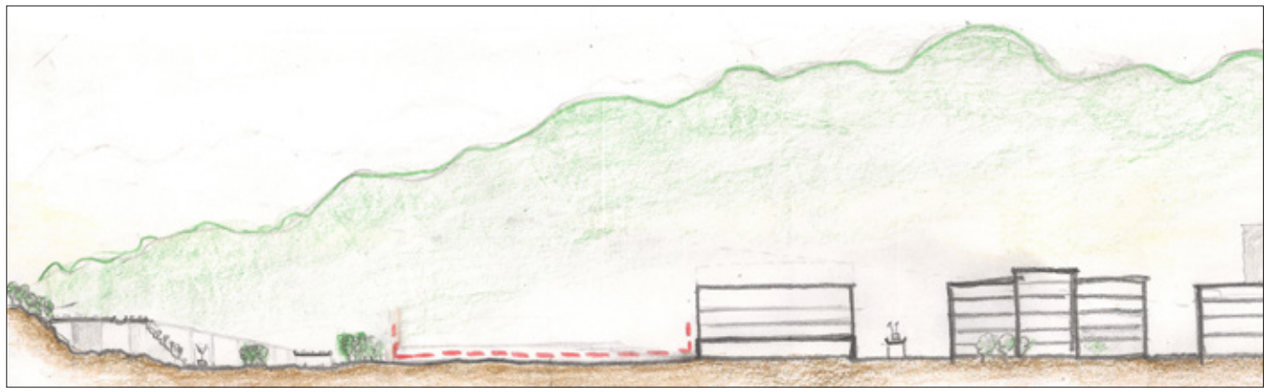
Main zones for public spaces



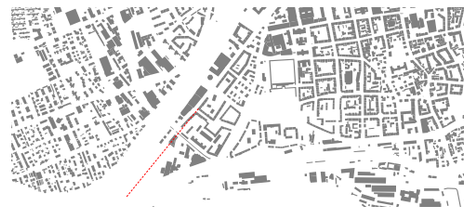
Important views and sightlines

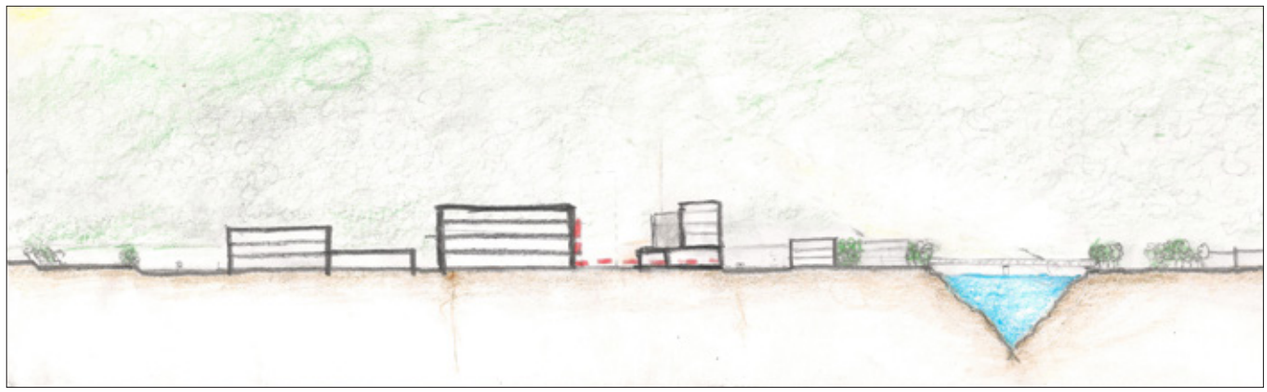


Site determination



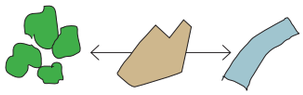
Urban section



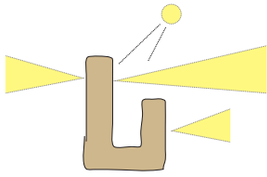


Urban section

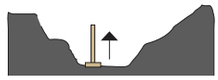
Toolbox derived from the site analysis



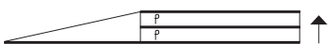
Connection with public domains on large scale levels



Sun and views



‘getting out of the valley’



Tilted ground/ car-free square

Reference to Innsbruck block typology

Reference to skyline context

Morphological analysis

Block typologies

In order to understand the composition of the morphology in Innsbruck, it is important to take a closer look at the block typologies that together form the overall urban tissue of the city. When observing more carefully, it is noticeable that the morphology is mainly composed from 3 main block typologies: closed typology, hybrid typology and solitaire typology. In a way one can say that the close typology, which already has been discussed before is more prominent in its attendance in the city centre towards the north, whereas – among other parts- towards the south west the typologies transform into hybrid blocks and eventually, at the height of the chosen plot, into solitaire typologies.

Closed block typology

The close block typology - or the 'ideal typical' Innsbruck block typology– is morphologically not designed as one element but is composed from different smaller parts that therefore form an intact unit. These blocks are quite neutral, which means that there is one integral building plot whereby different smaller elements are designed at the edges of the plot. These blocks contain a defined inner square which in a way is more characterized as a private domain, whereas at the outside of these blocks the adjacent spaces are more publicly defined.

Hybrid block typology

The basis of the hybrid block typology is similar as the close block typology. However the hybrid block often consists of bigger and solitaire elements which are added afterward. Furthermore the block is often subtly opened which allows more public penetration. Nonetheless, as a whole there is often a coherence of the closed block and the solitaire elements within it. This typology is often used to increase the differentiation in amenities and the density of a close block. However because of the open character of the block, a private and intimate inner square is often hard to ensure.

Solitaire block typology

The solitaire block typologies which is prominently present near the chosen plot, consist of independent elements that are in fact self-contained. These blocks do not seem to be designed to engage dialogue with other morphological typologies. One of the reasons that can explain the presence of this typologies in the city is the prominent manifestation of the Egger-Lienz-Strasse, which in a way cuts through the urban tissue in the south and creates undefined buffer zones on the southern edge of the city. This typologies can also refer to high-rise blocks which are often designed in clusters.

Relationship of typologies and public domains

As explained, the differentiated morphology consists of three main typologies with different characters and compositions. In order to find coherence with the morphology in the context it is necessary to consider all three typologies and test their potentials and complexities. Furthermore the chosen site, likewise contains a differentiation within the levels of public domains. The interesting question is how the relationship can be defined between the different types of morphologies and public domains at the height of the location.

Scale levels of public domains

The different scale levels of public domains are of great importance considering the chosen location. The public domains are basically layered in 3 main levels, macro level and micro-meso level. The micro level is the block level that can be defined as the public space on and adjacent to the chosen block. The second is on the meso level, which is the space at the riverfront, which by that way can be seen as crucial public space. The route along the River Inn can be considered as an urban space on a macro level or city level.

The riverfront at the level of the chosen site therefore is only a part of this bigger open urban space. Another potential public domain, which is at a large scale level is the forest in the mountain in the south.

Moreover smaller public spaces occur adjacent to the new plan that also need to be considered as very important, as they define the entrance of the block. The challenge is to understand these relationships and to try to find ways to connect the public domains of different scale levels with each other. The advantage of the chosen plot is that the new development with its new public space can work as a bridge that connects two large public domains with each other. This can both contribute to the quality of the public spaces and connect parts of the city.

Closed block typology

On a morphological level a closed block structure, does not communicate with the solitaire elements on the site. Moreover besides the big integral open space inside the block there will be other intermediate spaces between the block and the other solitaire elements, which also will be considered as public spaces. However conflicts will appear on these zones because of the morphological composition. The inner square is on one hand integral and intimate however it has the difficulty to be fed by the qualities of the forest and the river.

Solitaire block typology

A solitaire block will in the first place communicate with the elements on the site and on a small level fit in its context. It can also reinforce the solitaire quality of the plot and create coherence among them.

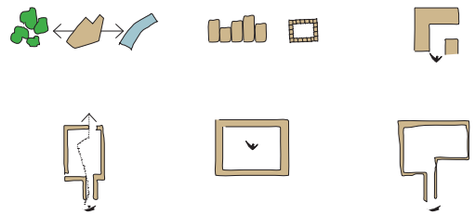
However this typology can be seen as ‘Atypical’ comparing with the other block structures in Innsbruck. Furthermore this typology will have problematic implications on the program of the ground level and the coherence between the public spaces.

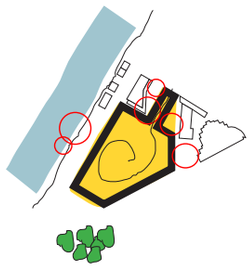
Hybrid block typology

The starting point of the hybrid typology will be the closed block structure. However the new structure will be a reinterpretation. On the one hand a reference will be made to the ideal typical block structure as described before and on the other hand to the solitaire elements on the site. Therefore the block will not be designed as one unity but will be composed from different elements. A reference will be made to a hybrid structure which is also in the context of the project site.

Conclusion

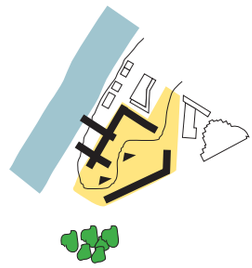
A conclusion can be drawn that a reference, on one hand will be made to the context of Innsbruck on a larger scale (the ideal typical block structure), however when analysing the morphological structure further in different layers, there are on the other hand, possibilities to choose for a hybrid structure, which is a composition of solitaire and close block morphology. Furthermore this typology will allow to be fed by the qualities of public domains on larger scale levels, while the block itself will contain an integral inner public space.





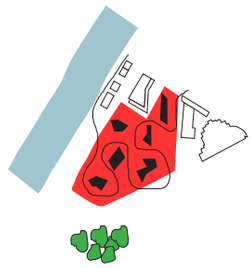
Closed block typology

- conflict with existing elements
- low sequence
- no reference to larger public domains
- ‘ideal typical’ block typology
- integral public space



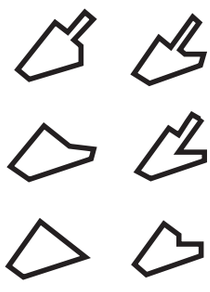
Hybrid block typology

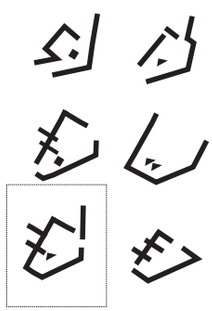
- low conflict with existing elements
- sequence
- reference to larger public domains
- reference to ‘ideal’ block typology
- semi- integral public space

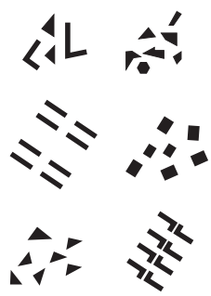


Solitaire block typology

- coherence with existing elements
- undefined sequence
- reference to larger public domains
- no reference to ‘ideal’ block typology
- undefined public space







Comparative analysis of public squares

As part of the morphological analysis, a comparative analysis has been done. Thereby the morphological structure of a number of squares around the world has been examined. In the analysis the scale and surface areas of these squares, including characteristics that may explain their high or moderate quality, are studied as well.

Fountain Square, Cincinnati

This square is situated in a grid pattern tissue. It has a close relationship with the street, which in this case can be considered as something positive because of the sightlines to and from the square. At the same time the square is well enclosed by its surrounding buildings, which kind of gives the space an integral experience. Furthermore it is located in a central place in the city, whereby there is a sequence from the block to another block. Moreover a positive aspect about the square is its differentiation in the supply of sitting spaces ,amenities, green and water.

Landhausplatz, Innsbruck

Situated in the inner city of Innsbruck this square is surrounded by close and hybrid blocks. However it is not experienced as being well enclosed. The surrounded buildings do not seem to engage dialogue with the square. However there are public amenities in the context but the connection of these amenities with the square is interrupted by Wilhelm-Greil Street. Consequently, dissimilar to the square in Cincinnati the presence of the street in this case does not reach its benefit positively. Furthermore it kind of feels awkward to use this square as the lay-out is quite dominant, whereby for instance the sittable spaces have been determined in a forced way. Moreover the presence of water and green is missing. A positive aspect about the square is that it is a meeting place for the younger sector and the skater scene in particular.

Schouwburgplein, Rotterdam

The Schouwburgplein is located in the centre of Rotterdam. It manifest itself in a block structure which mainly is composed from solitaire elements with all their own unique characters. The square is surrounded by lots of public amenities, which is a positive aspect as one would think. However the square somehow does not use the benefits of the amenities to the fullest, whereby the square's connection with the surrounded buildings feels kind of awkward. The lay-out of the square is quite open which on one hand is positive, as it allows activities and events to take place. On the other hand it feels like a huge no-man's-land when it is not in use, and it does not always feel attractive to stay at. Similar to the Landhausplatz, this square also lacks the important supply of water and green.

Plaza de la Virgen, Valencia

Situated in the old town of Valencia the square is located in a dense urban fabric surrounded by both closed block typologies and solitaire typologies. The different layers of elements in the context seem to fully interact with the square. Small streets lead to this open space which is surrounded but lots of public amenities and green. The square is well enclosed and fully engages in dialogue with its surrounding while inviting people to stay. One of the reasons is the fountain and the church, which are kind of a cachet of the place.

Piazza del Campo, Siena

Located in the hearth of the city, the square is likewise Plaza de la Virgin situated in a dense urban fabric. Also here small and old streets lead to the open inner space. The square obviously contains some very important and historic buildings that invite people to come and stay. The layout of the square is open and flexible, which allows all kinds of activities to take place. Because of its subtle slopes people can sit anywhere they would like and therefore the space is kind of experienced as an amphitheatre. The square is well enclosed by buildings and public amenities and fully interacts with its context. The presence of green is on the other hand is missing in the square.

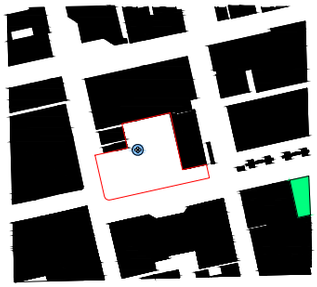
Important notes

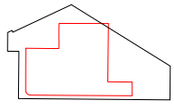
- From narrow to open
- Sequence
- Enclosed and integral public square
- Interaction with the surrounding
- 100 meters long and wide
- Public amenities, green and water

Hafen square, Innsbruck

12.300m²

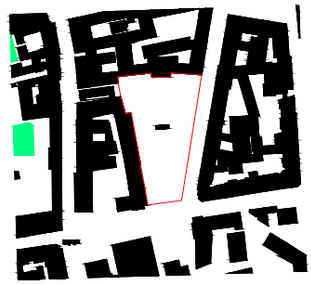
Fountain Square, Cincinnati

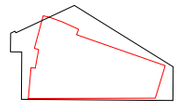




6.200m²

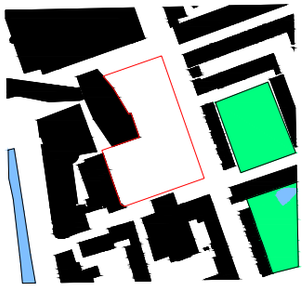
Landhausplatz, Innsbruck

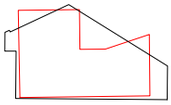




8.400m²

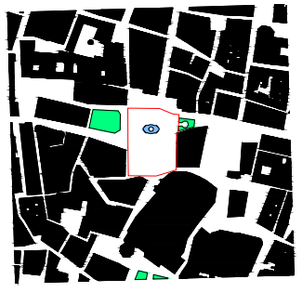
Schouwburgplein, Rotterdam

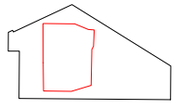




10.140m²

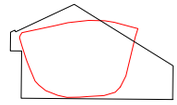
Plaza de la Virgen, Valencia





3.700m²

Piazza del Campo, Siena



8.070m²

Fountain Square, Cincinnati

Landhaus Platz, Innsbruck

Plaza de la Virgen, Valencia

Piazza del Campo, Siena

5. Concept

Application of toolboxes

The new typology

The new hybrid block typology itself, refers to a closed block structure, but in fact it differs slightly from this typology because it has to - somehow - communicate as an ambiguous element, also with its environment. So it can be seen as an open broken block, which tries to create a kind of dialogue with itself and with its environment. By breaking open the block, however, new kinds of gravity points arise in terms of squares and public spaces. These public spaces are also considered as important and have their own qualities and dimensions. Thereby in the analysis it is examined which connections between these spaces and the main space offer the most qualities.

The new structure is part of the city structure, and also contains a sequence of public spaces. These spaces can be interpreted as the front room, whereby the main square can be considered as the living room. In addition, there is actually a hierarchy in entering the square, you first enter a front room then the main square.

One of the important public spaces outside the block is the river front, where the pathway can be seen as a crucial point. The riverfront gives you access to the inner square. This also applies to the other adjacent spaces that have been formed by the new structure.

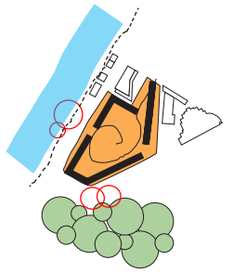
In the first place, the main square is quite large compared to the other squares that have been formed. Therefore, the main square is differentiated into different zones, with each its own identity. The main space has a coherent form but that coherent form is formed from different parts that can communicate with the front rooms in terms of dimensions. Yet the closed character and integrality, creates a coherent square within the new plot.

Interplay of public and private

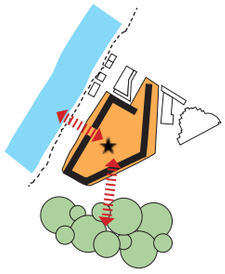
The new plan will make the threshold of different scales of public domains and the private domains as flexible as possible. By creating a high-quality inner space people from the city will be attracted to enter and use the square. For instance, people walking along the river can easily enter the square via the developed riverfront in order to stay in the inner square or to continue to the mountain via the bridge.

The relationship and sequence of public spaces on a large scale with the public domain in and near the new block are very important. In addition, the Interplay from public to private domain is a crucial factor in the new plan. The elements in the new block must become a part of the inner square. This will be provided by overlapping and integrating public functions and amenities in the tower and the two slabs. Moreover, most of the lower buildings will also contain a public plinth that will feed people both from inside and outside.

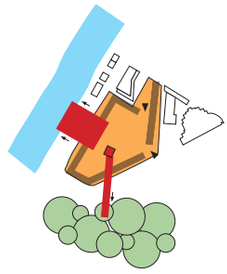
This project will not only increase density in housing. However by connecting public and private domains on different scale levels, the density will also be increased in the public program and visitors. The square will be further densified because the people of the Sieglanger-Mentlberg district in the mountain will now get a short cut to the city centre, by entering and crossing the new public space. Thereby the bridge plays central role as it will emphasize the confrontation between private and public in an architectural way.



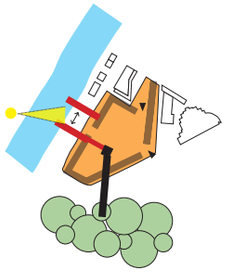
1. Chosen typology: hybrid



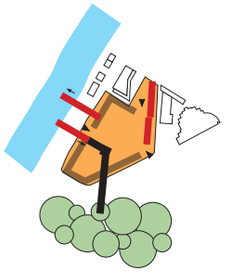
2. Connection large scale public domains



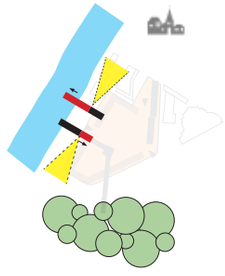
3. Basic massing



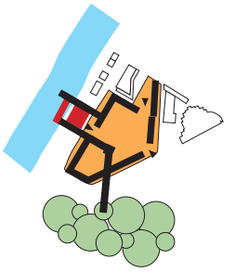
4. Seperating



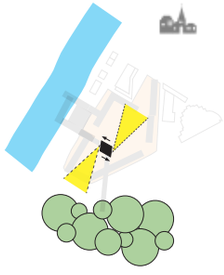
5. Shifting for views



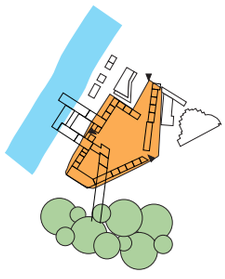
6. Views



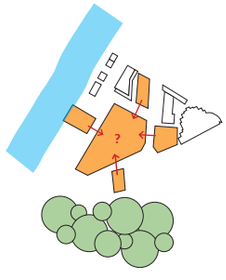
7. Connection buildings



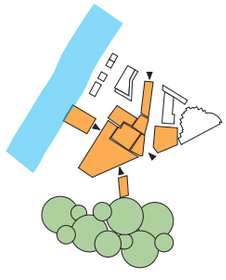
8. Shifting for views



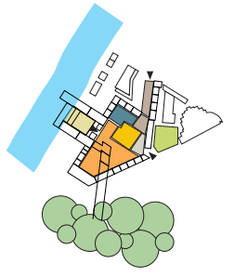
9. Final morphology



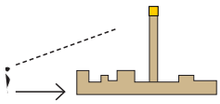
10. Public domains: conflict of sizes



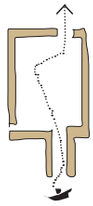
11. Differentiation of square



12. Different identities in the square



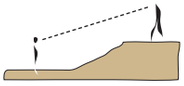
Landmark



Sequence

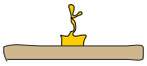
Green

Useable water

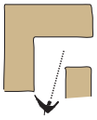


Change of levels

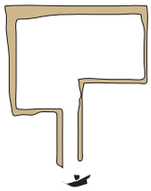
Sightlines



Street art



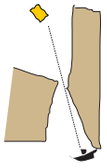
Differentiated sightlines: curiosity



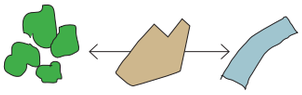
Narrow to open

Child-friendly

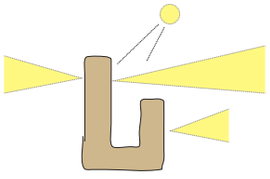
Accessible



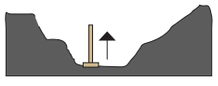
Curiosity



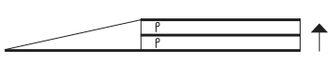
Connection with public domains on large scale levels



Sun and views



‘getting out of the valley’

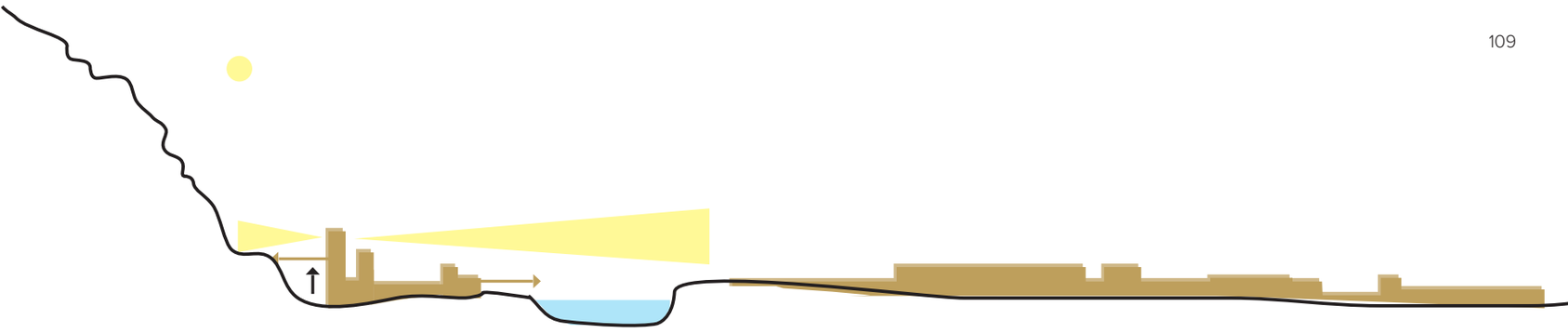


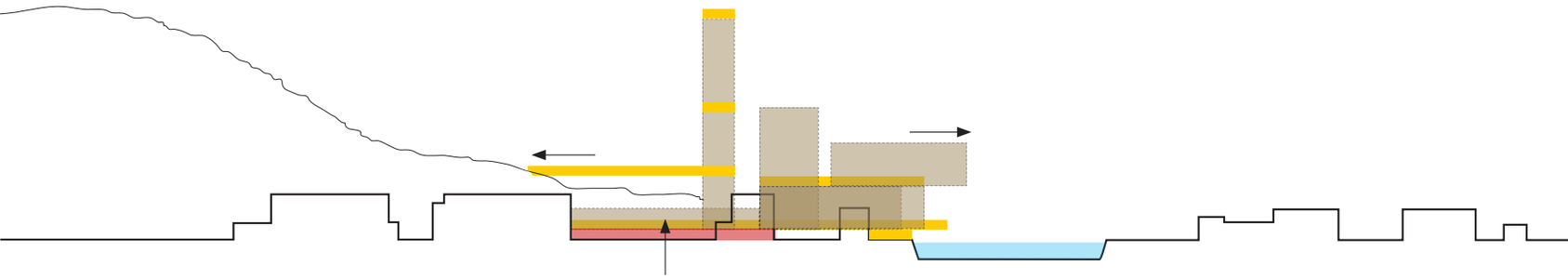
Tilted ground/ car-free square

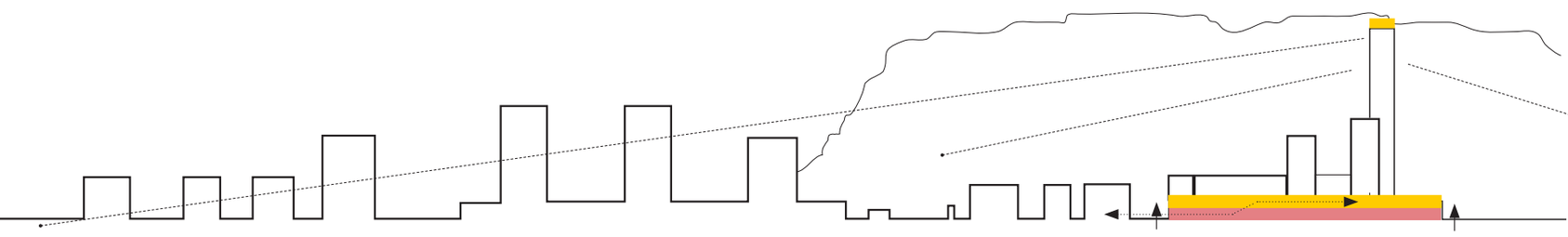
Reference to Innsbruck block typology

Reference to skyline context

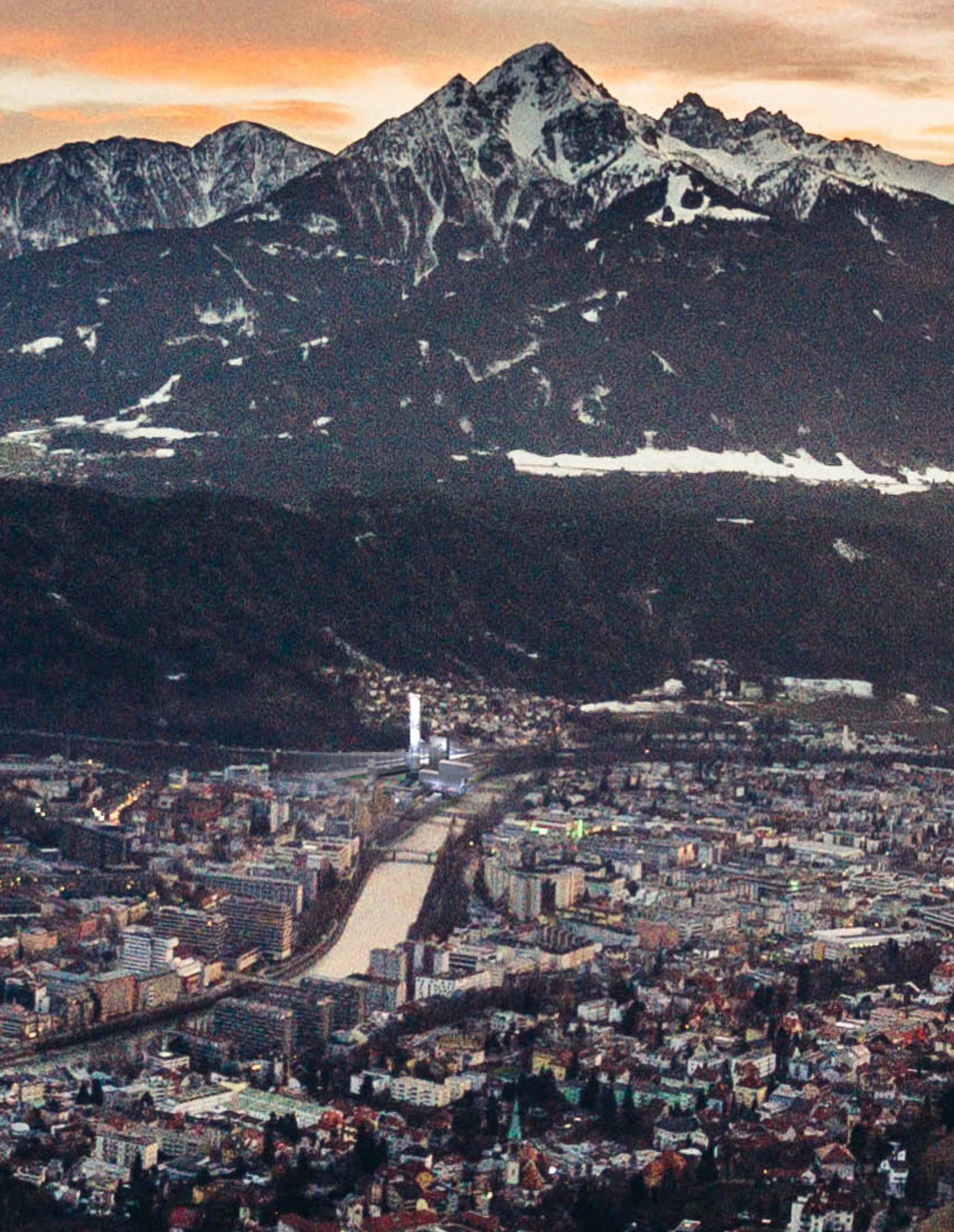
Conceptual overview



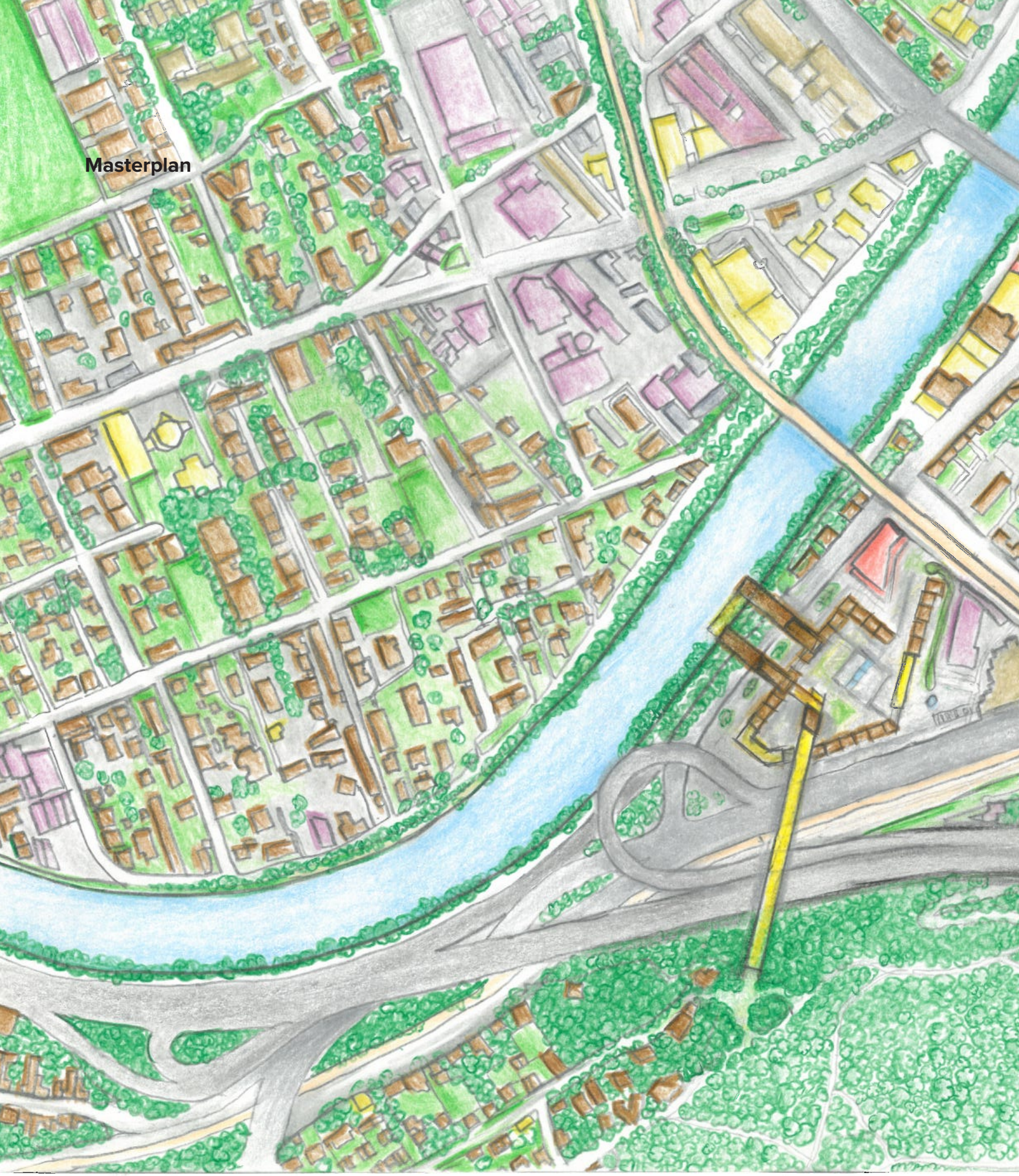




6. Final design



Masterplan

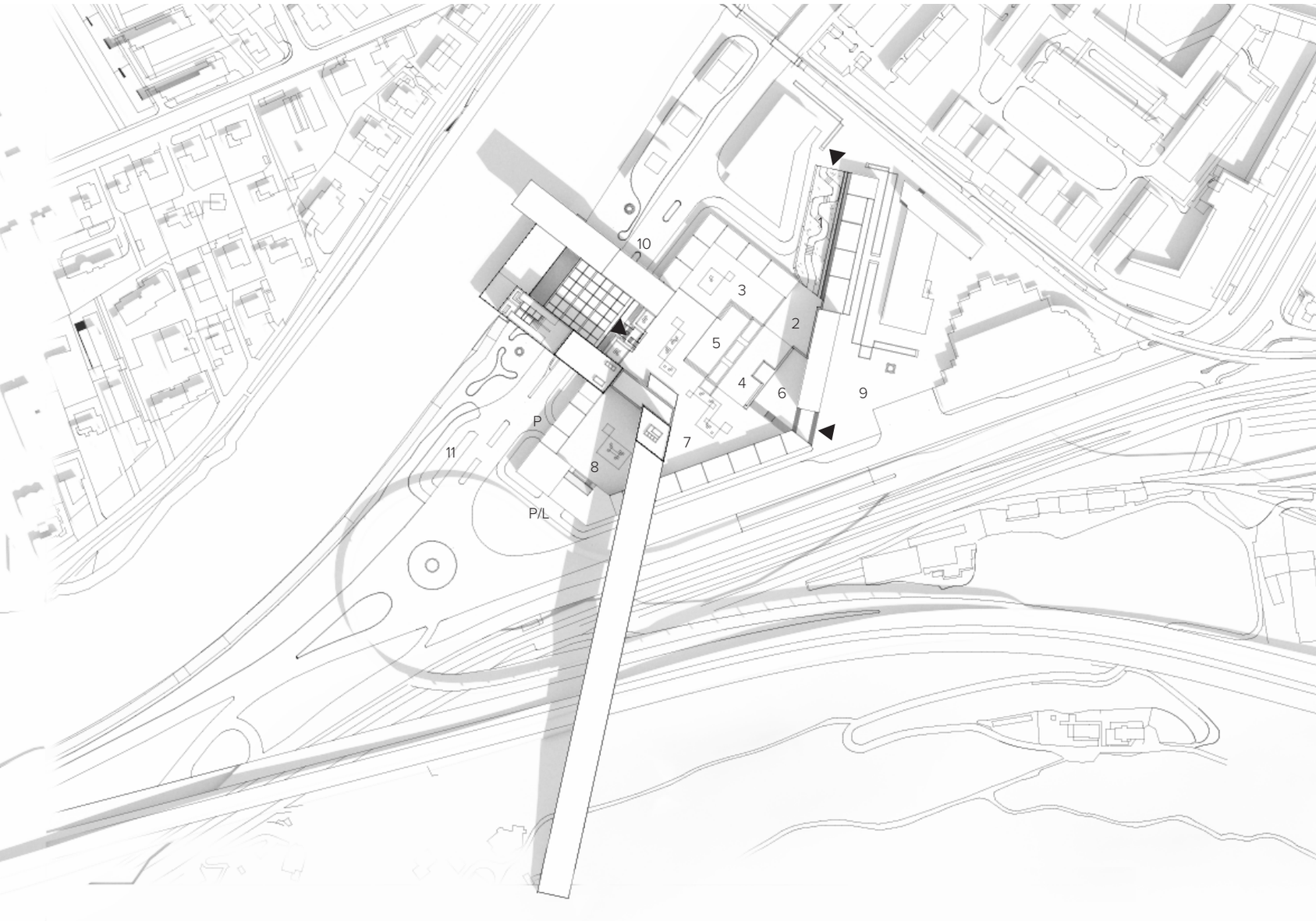

Residential
Public
Business
education
Health / medical care
Industrial
Earth
Green
Wood
Highway
Primary streets
Railway
River Inn
future de
Future de

evelopment

emolition

25m 50m 100m 200m

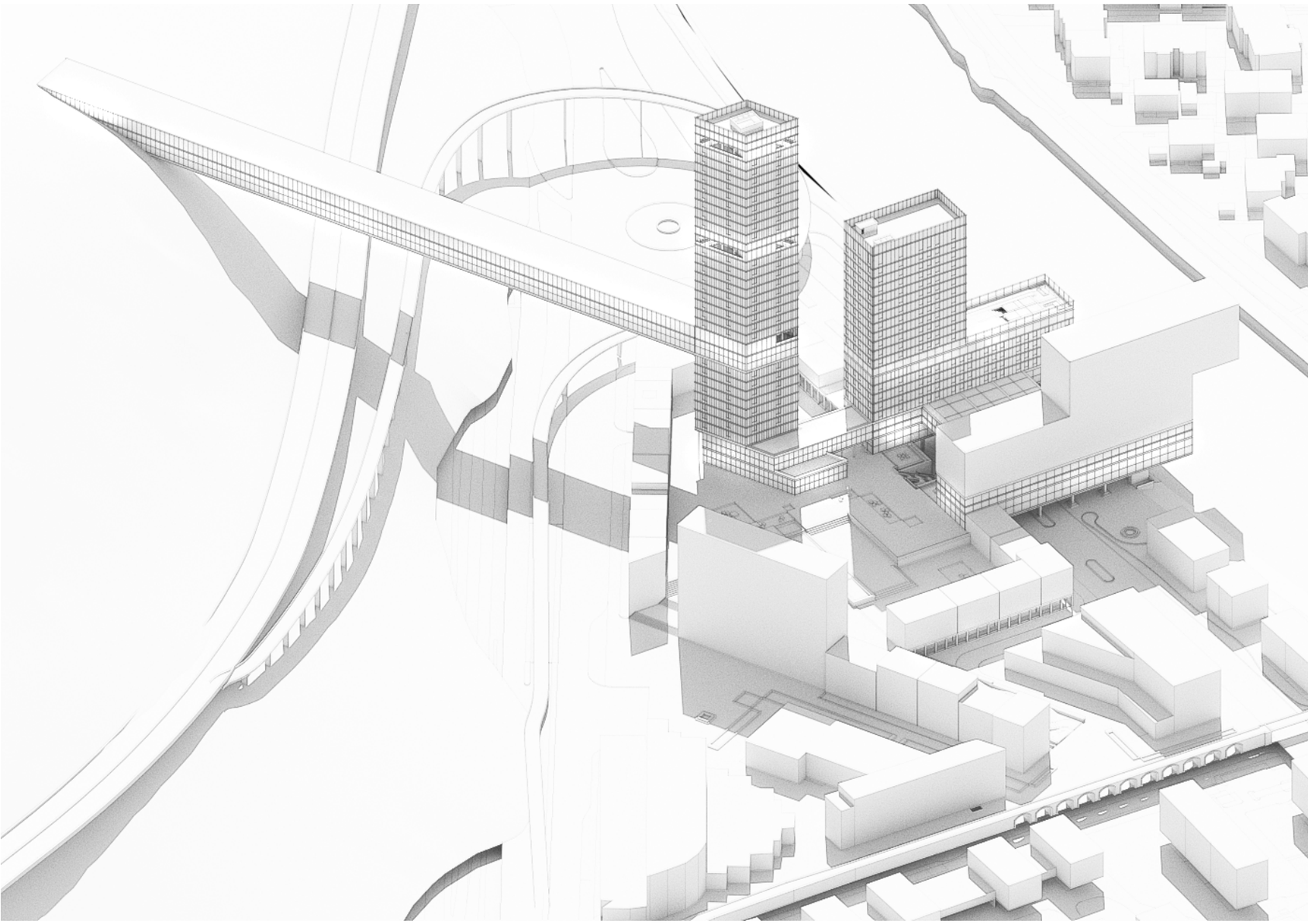
Kia Sharif / 0932968
7X45M01 "Densified Living"
Case study Innsbruck
Existing plan of the "Hafen" area



plan overview

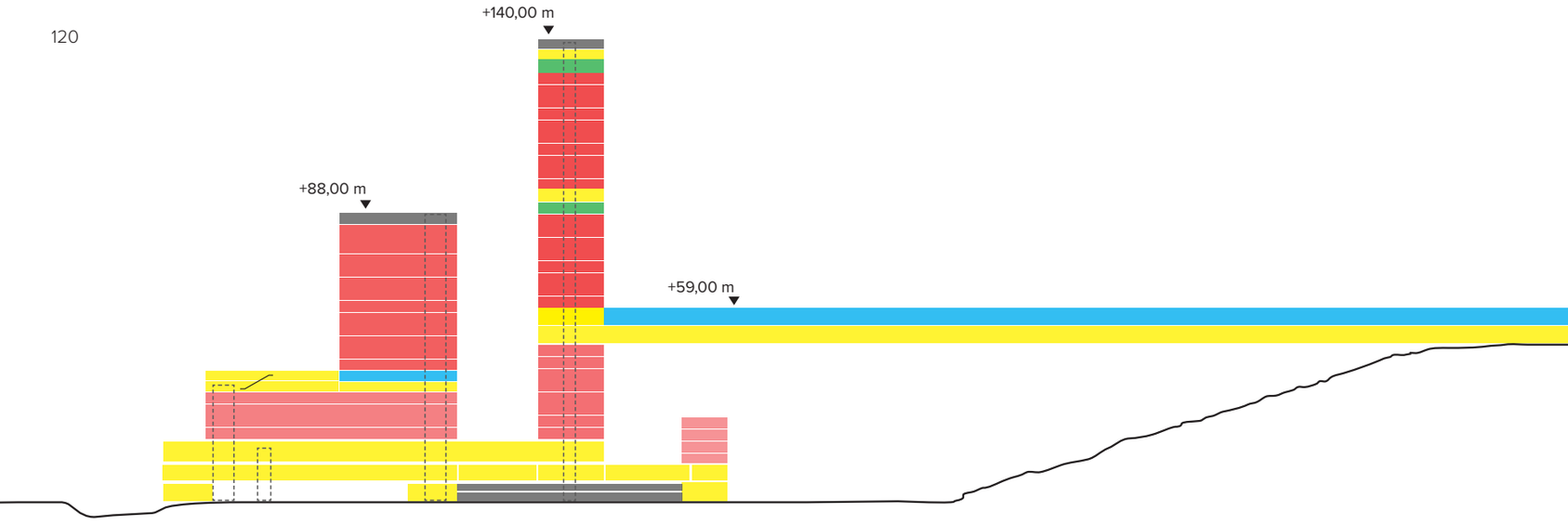
0 25 75 175 m

Legend: 1 entrance Medicent 2 collector platform (+3.74 m) 3 childeren playground (+2.80 m) 4 slope 5 podium (+4.80 m) 6 hotel platform (+3.20 m) 7 main plaza (+6.40 m) 8 waterfall 'square' 9 hotel square 10 riverfront 11 kiss and ride P/L parking/ loading

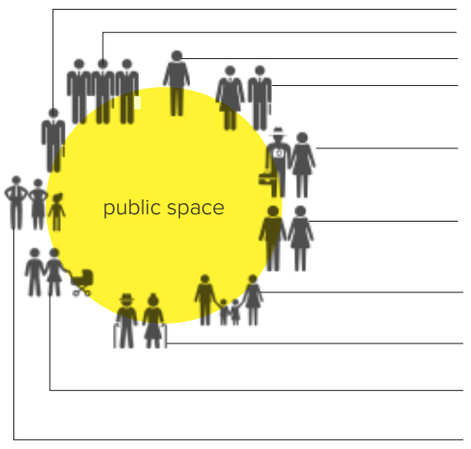


composition

Program

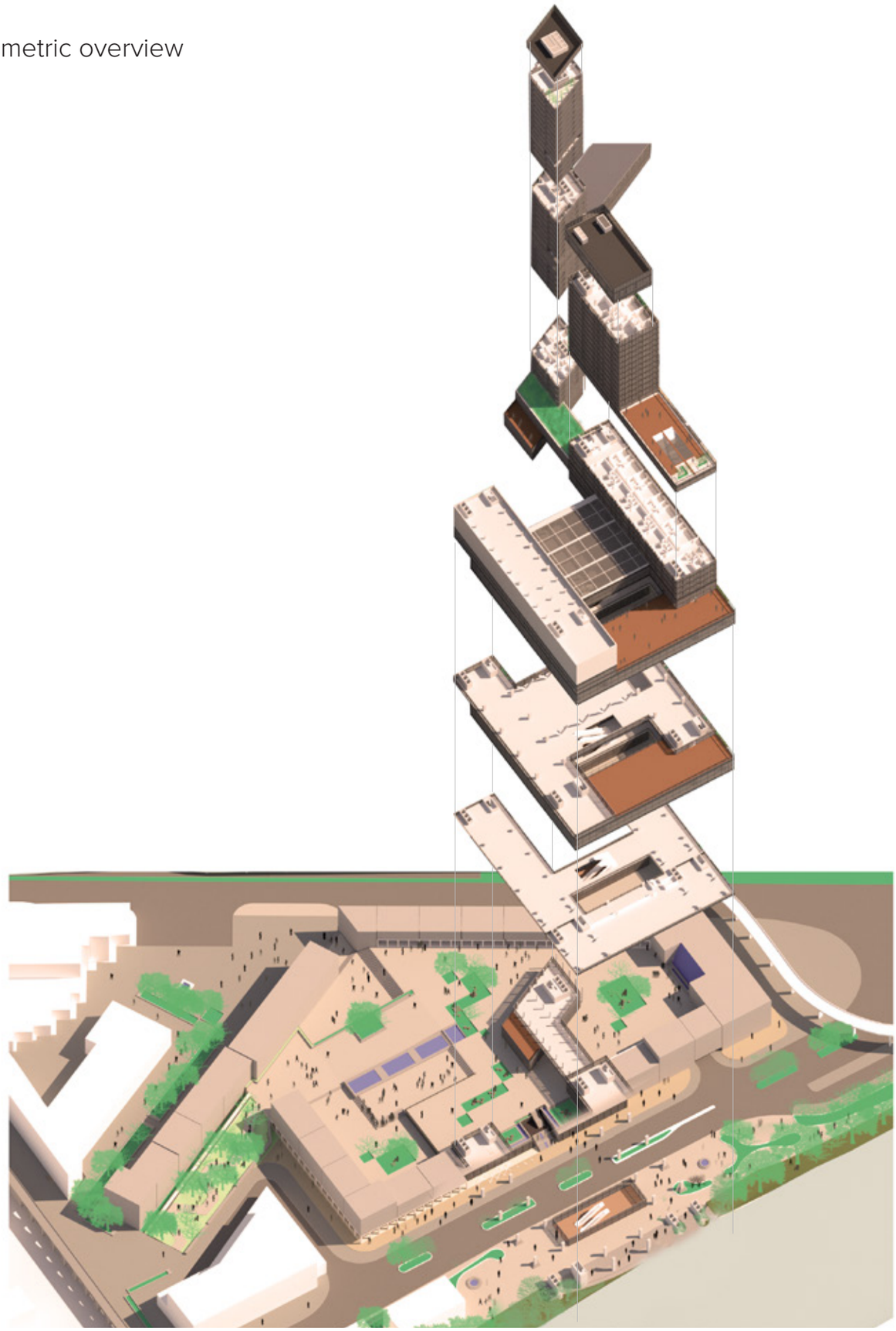


- Residential high-rise A
- Rresidential high-rise B
- Residential low-rise A
- Residential low-rise B
- Residential low-rise C
- Plaza
- Retail and Food
- Public green space
- Extra
- Office/ co-working

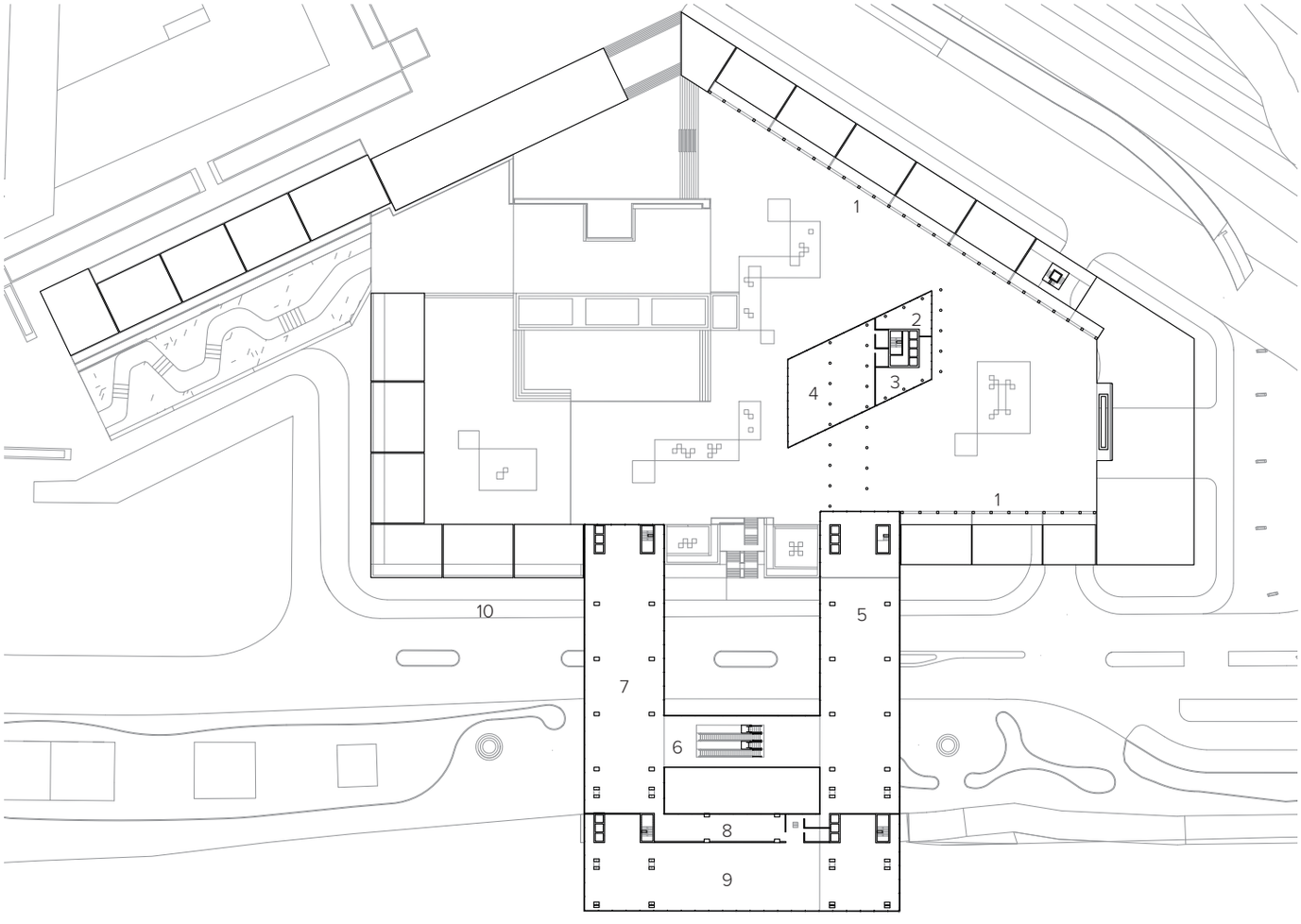


- expats and young professionals - luxurious housing
- co-working / office
- individuals - affordable and rental housing
- “DINKS” - luxurious housing
- tourist - hotel
- starters - affordable and rental housing
- ‘classic’ family
- special housing
- starters family
- one - child family

Axonometric overview



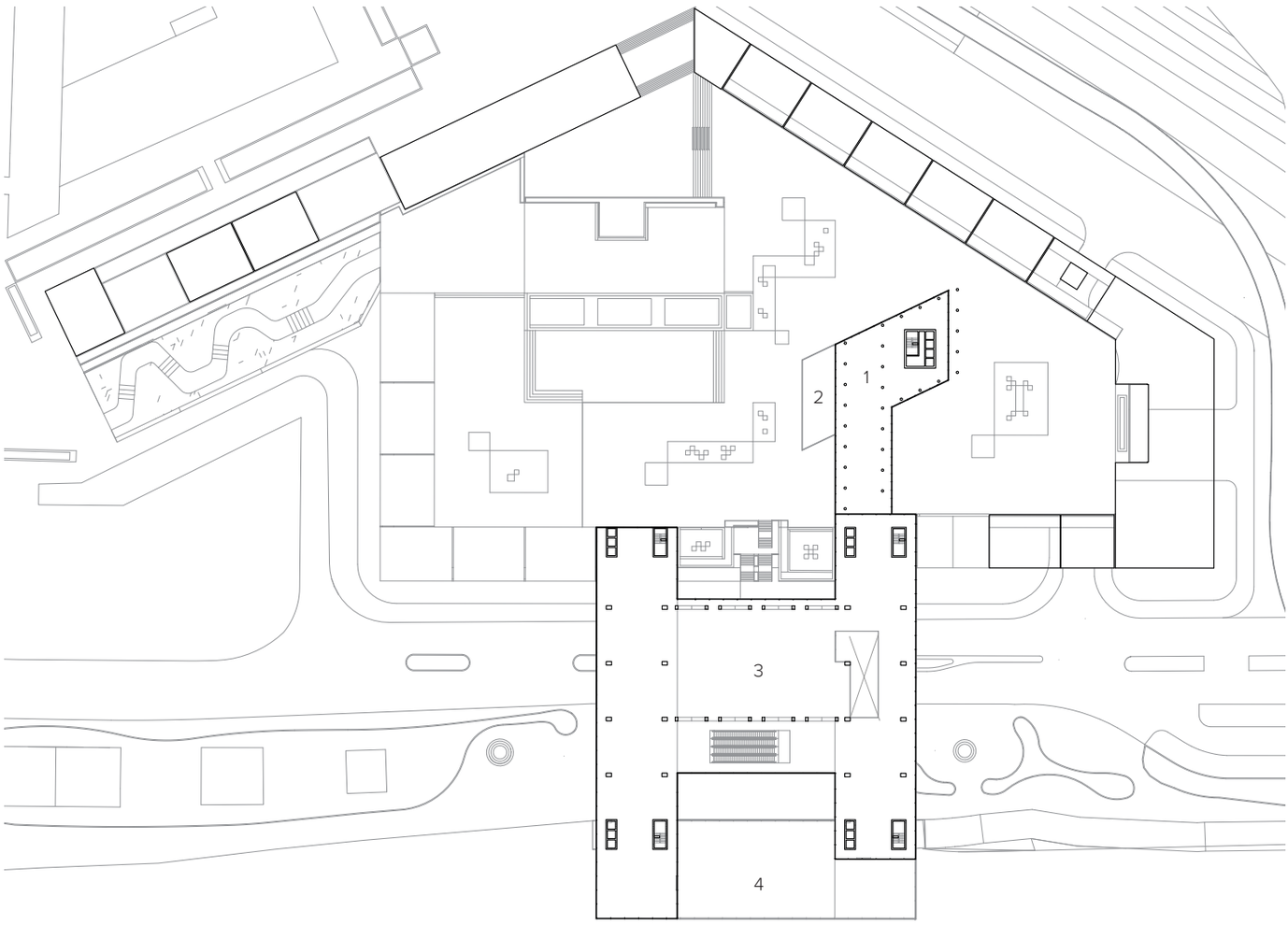
Plans



Plaza (+6.40 m)

0 10 20 40 80 m

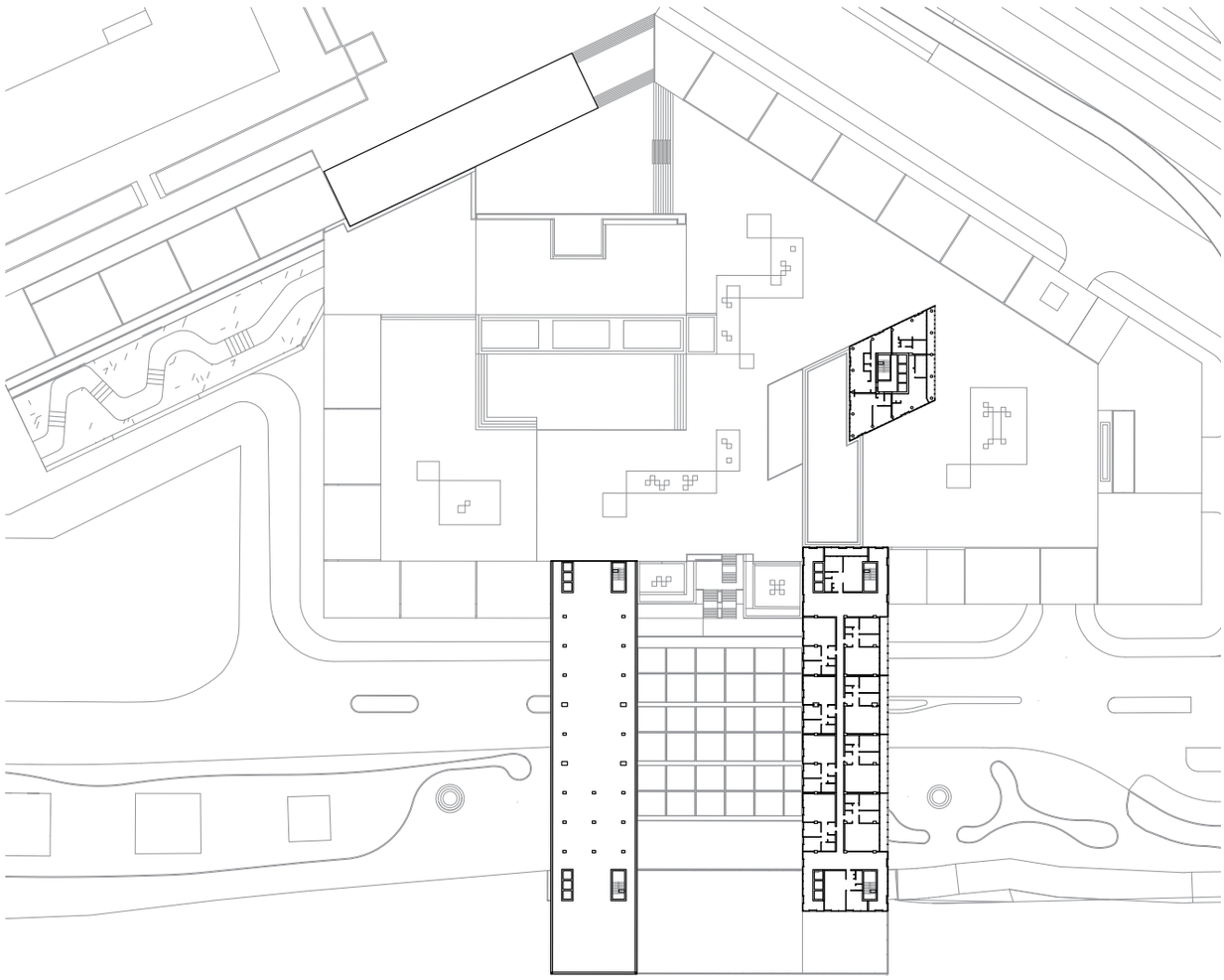
Legend: 1 passage 2 residential lobby 3 public lobby 4 exposition 5 retail 6 escalator 7 retail 8 kitchen 9 restaurant 10 boulevard



Atrium (+12.80 m)

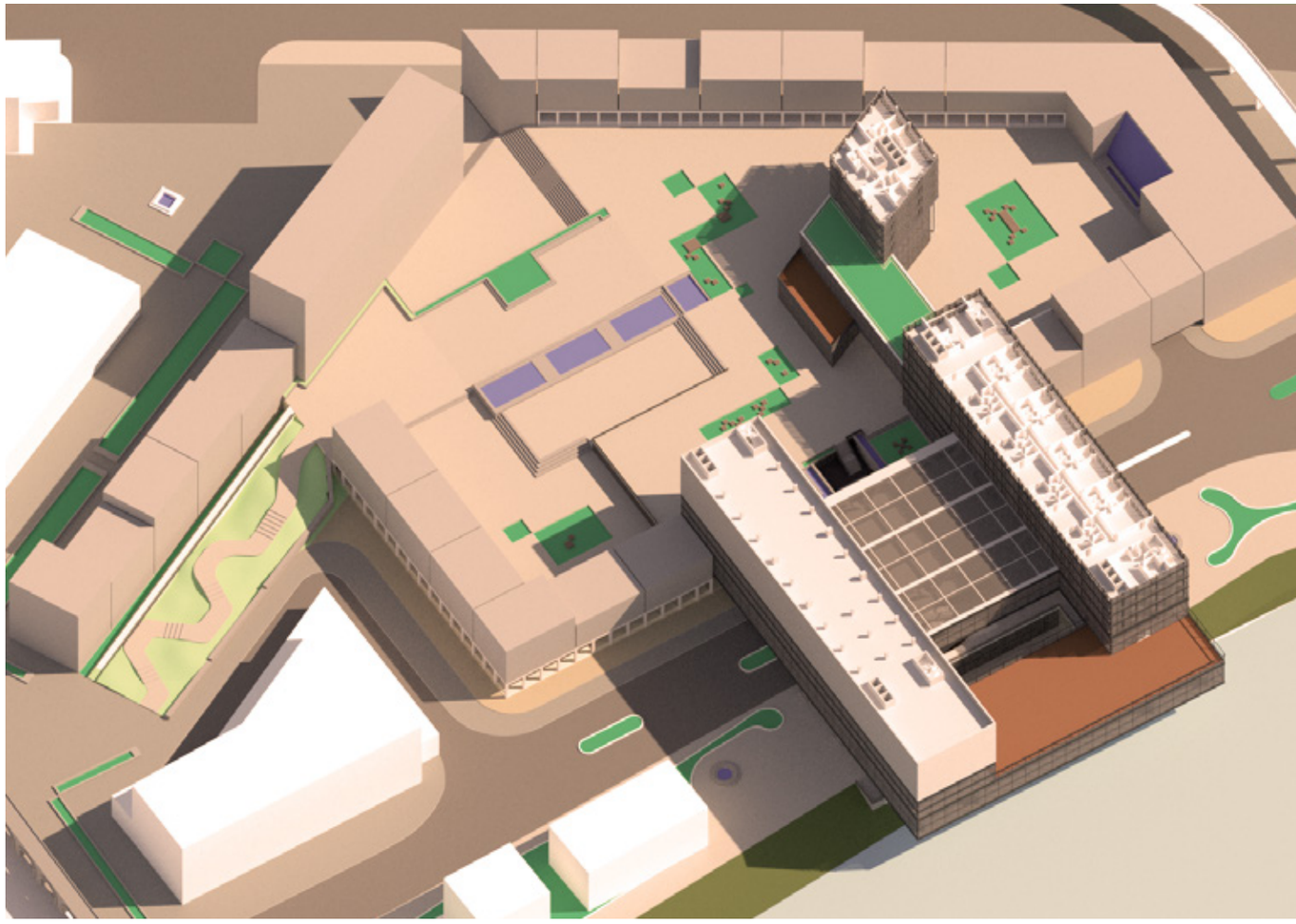
0 10 20 40 80 m

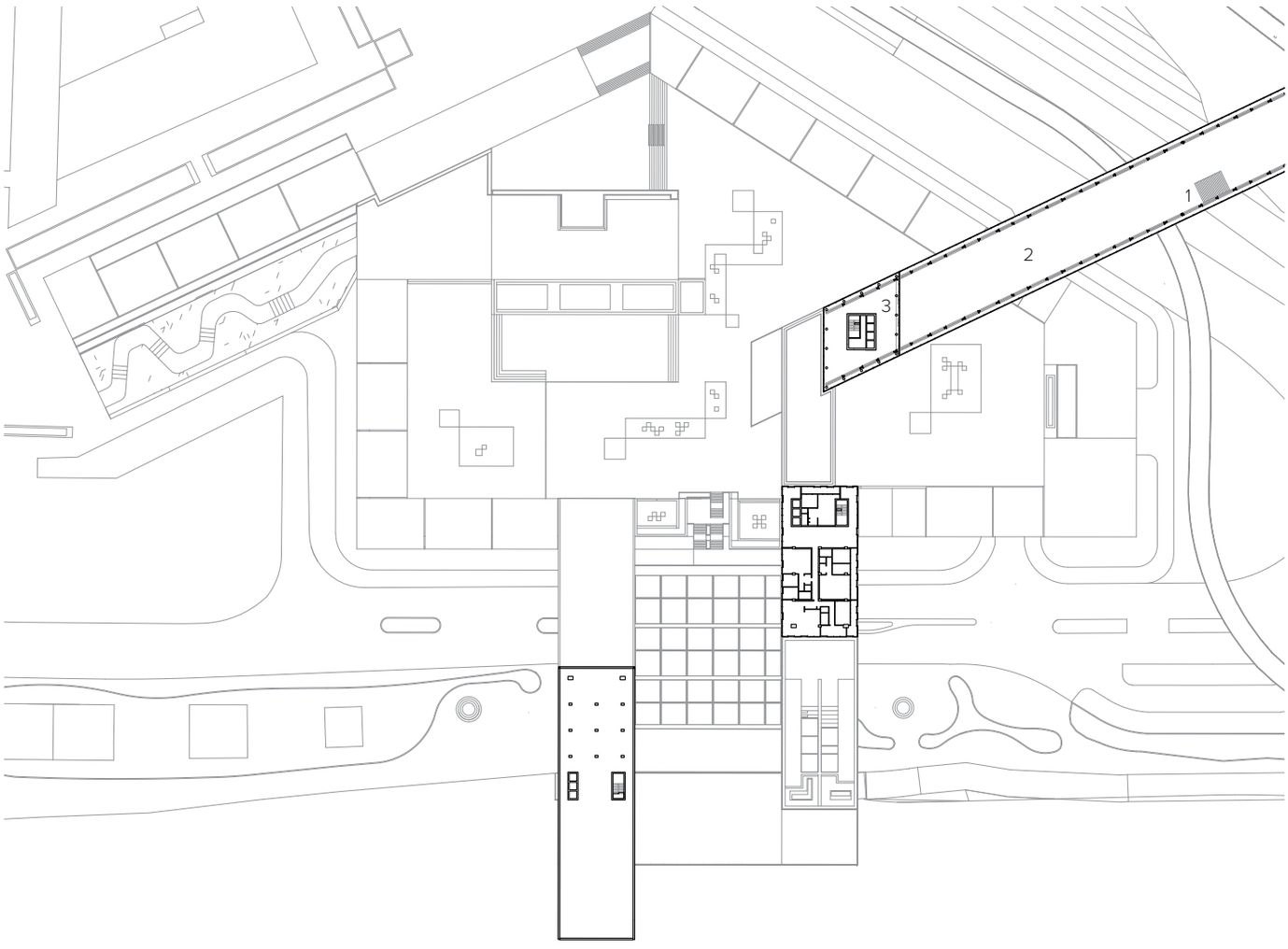
Legend: 1 route 2 green terrace 3 retail/ public living room 4 terrace



Low-rise (+19.20 m)

0 10 20 40 80 m

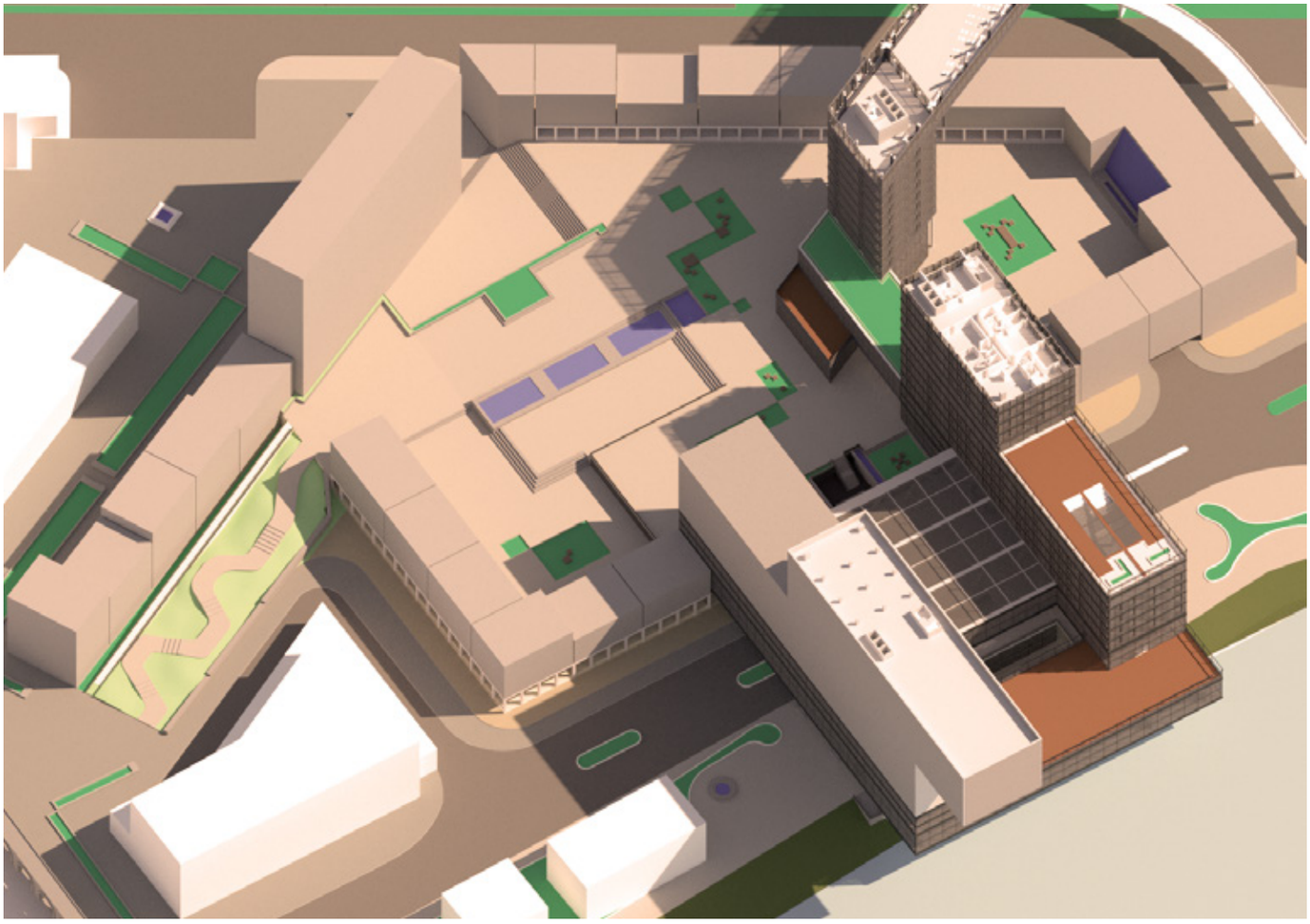


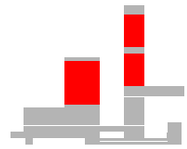


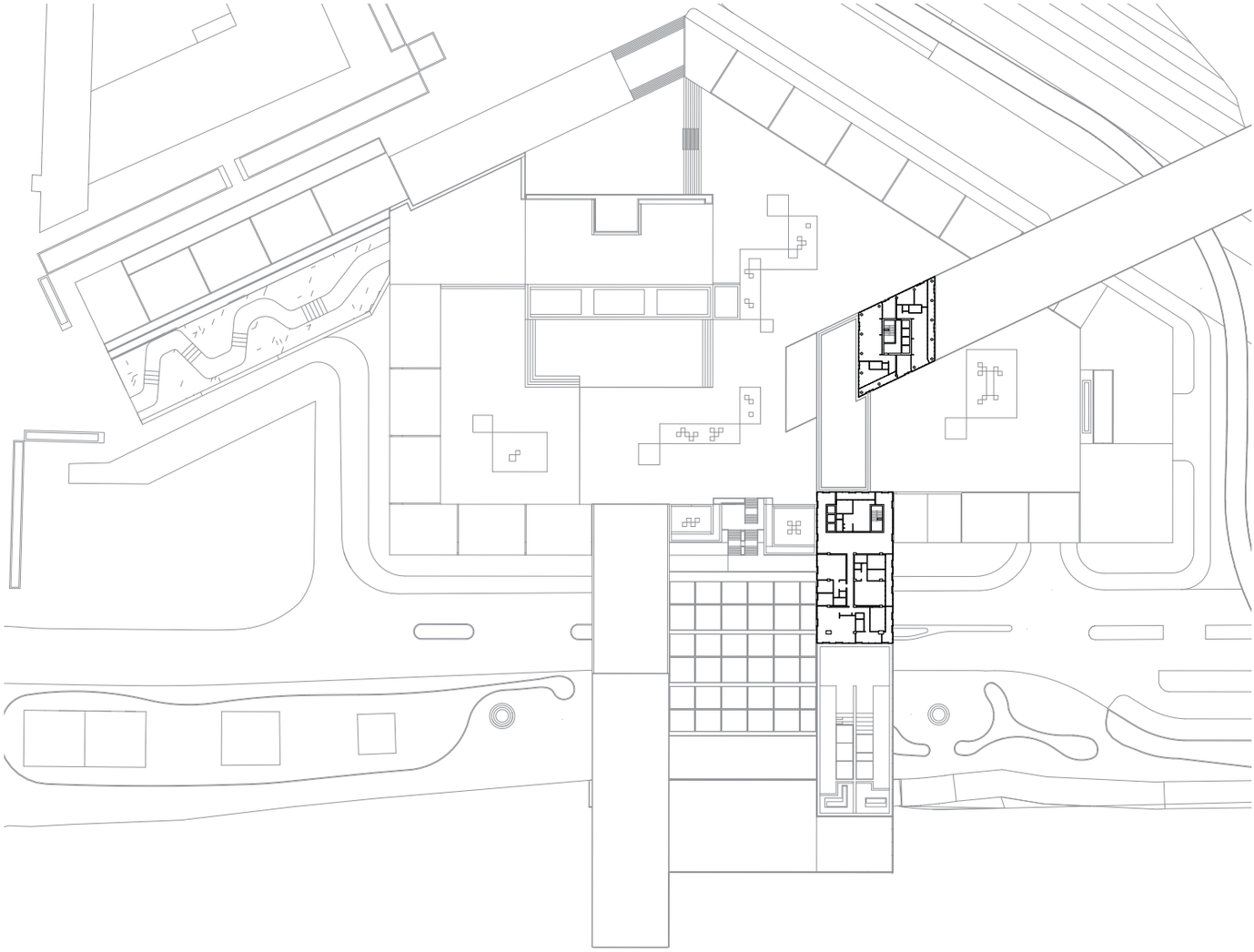
Bridge (+48.60 m)

0 10 20 40 80 m

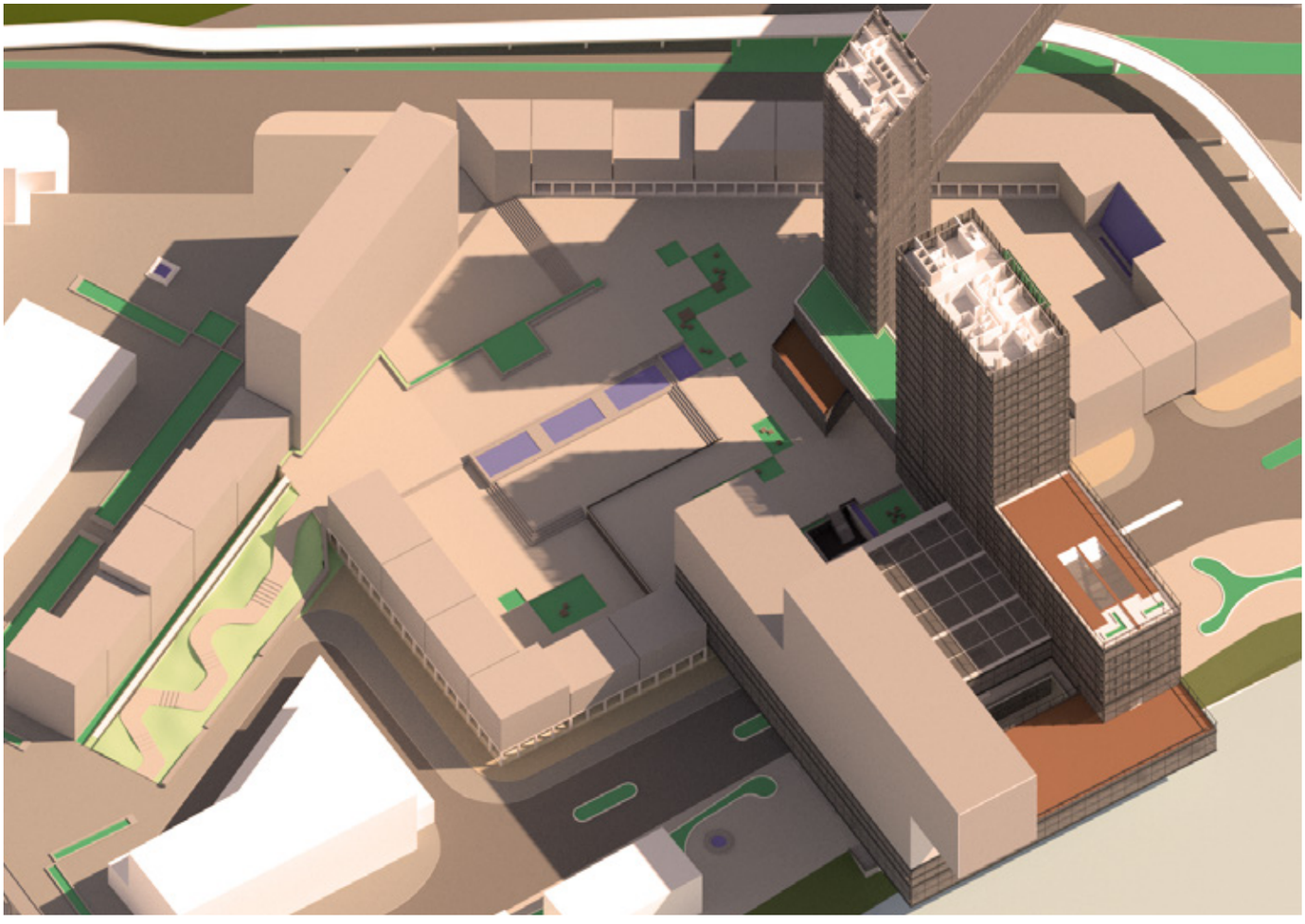
Legend: 1 staircase (co-working/ office) 2 retail and public route 3 lobby







High-rise (+40.25 m)



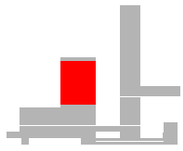
Residential plans

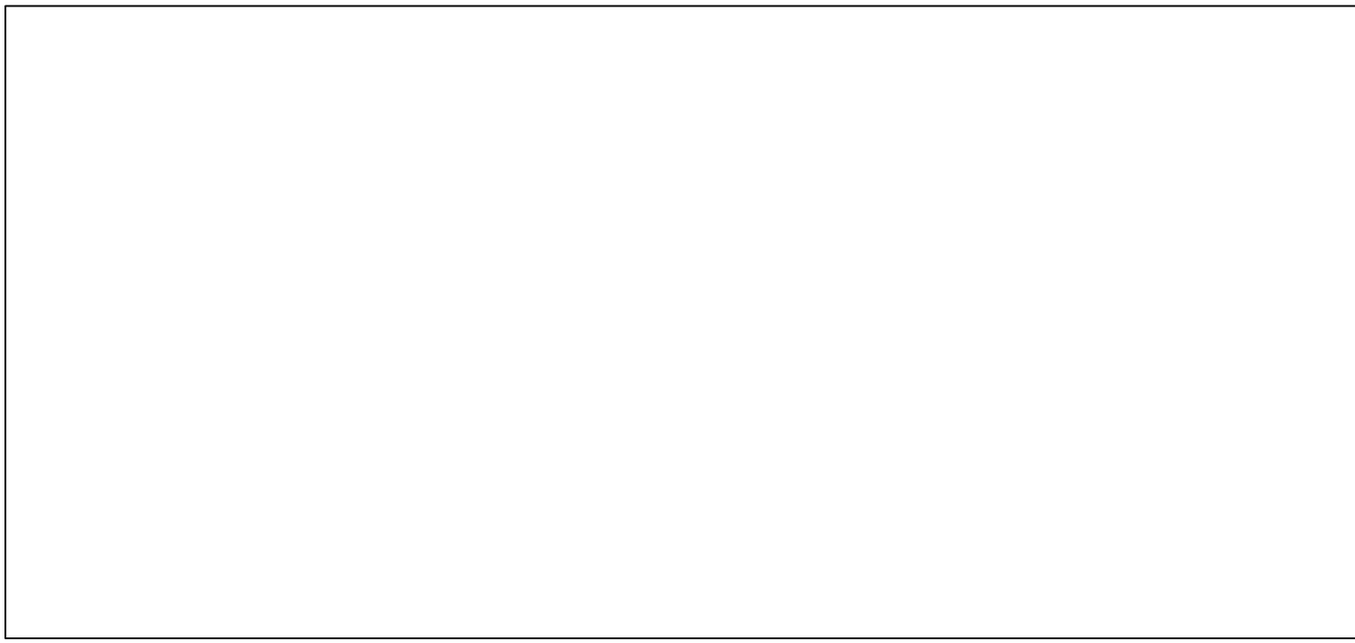
1:200

Low-rise B

Legend: 1 living room 2 kitchen 3 bedroom 4 bathroom 5 toilet 6 balcony 7 public lobby


7
2
5
4
1
3
3
6
7



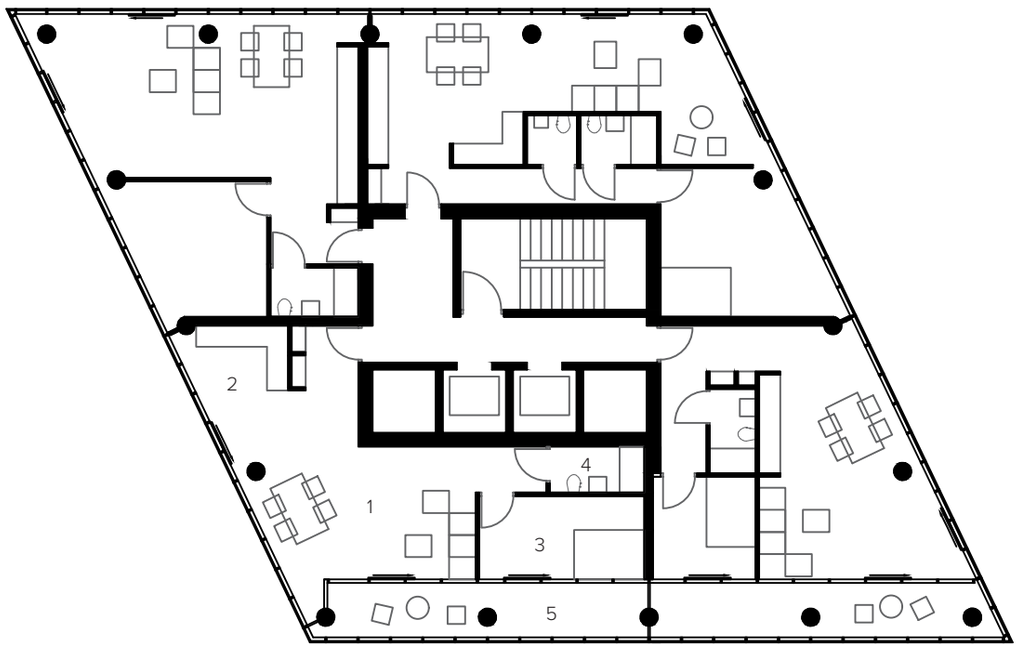


1:200

High-rise B

Legend: 1 living room 2 kitchen 3 bedroom 4 bathroom 5 toilet 6 loggia 7 public lobby

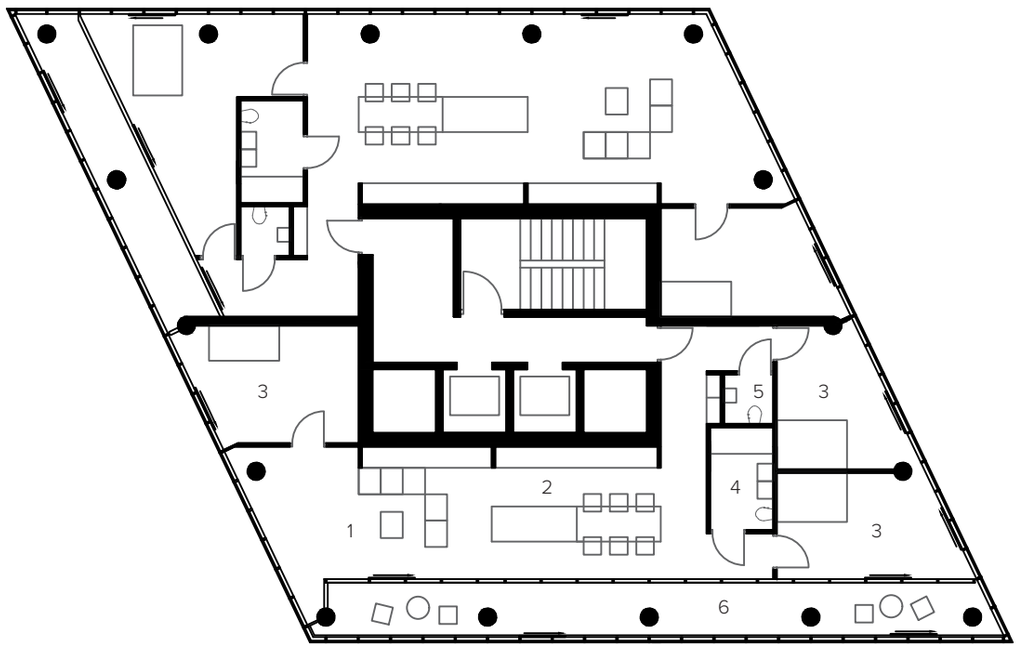

1
2
3
3
4
5
6
7



1:200

Low-rise A

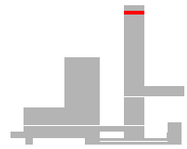
Legend: 1 living room 2 kitchen 3 bedroom 4 bathroom 5 balcony

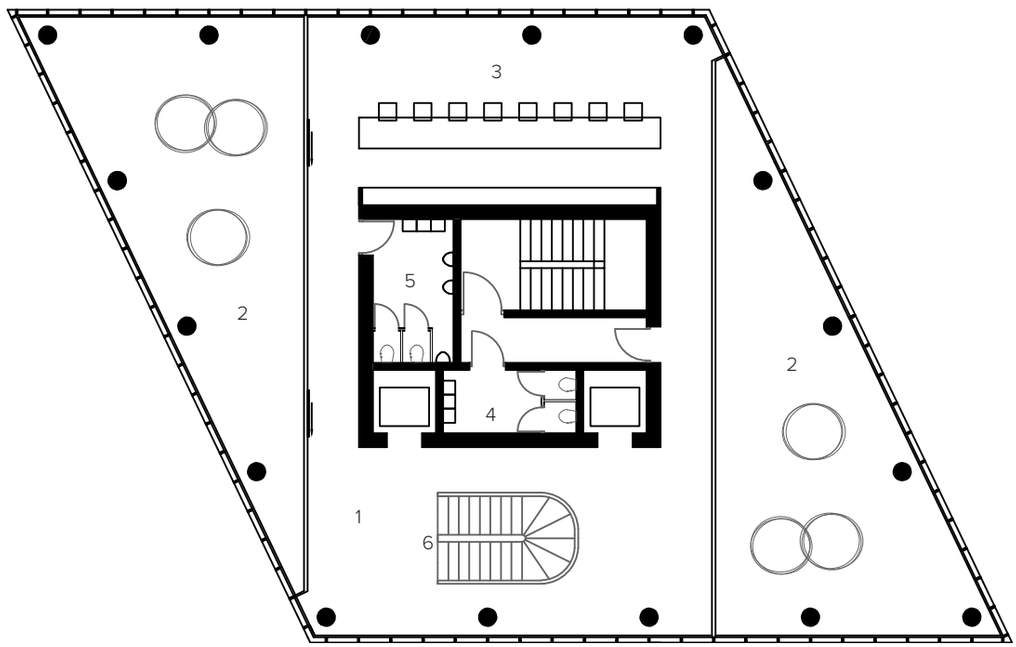


1:200

High-rise A

Legend: 1 living room 2 kitchen 3 bedroom 4 bathroom 5 toilet 6 loggia

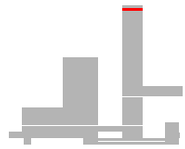


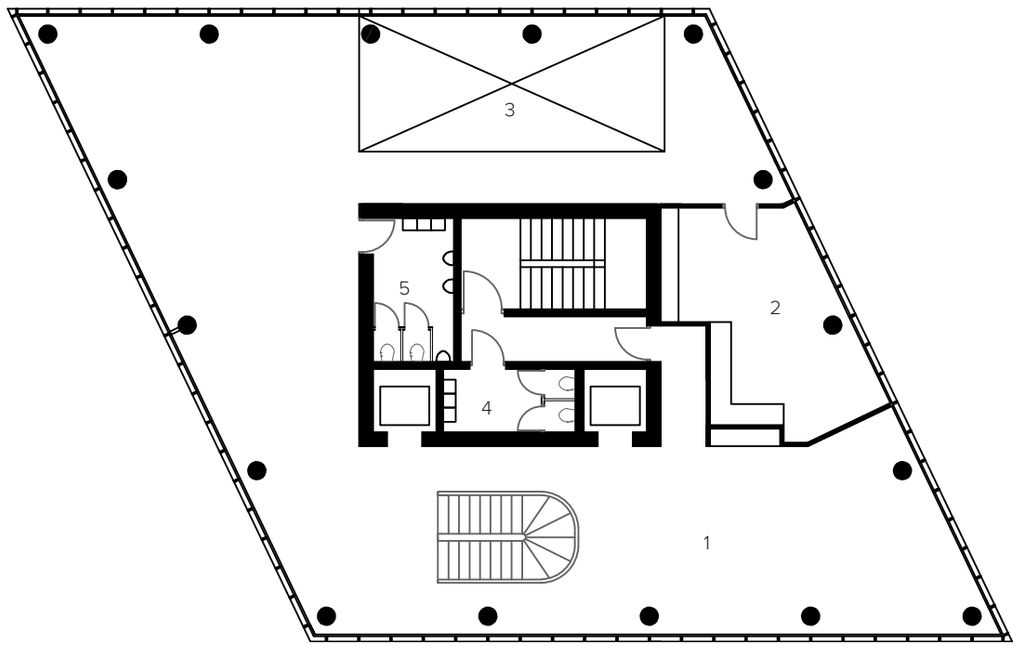


1:200

Sky-lounge

Legend: 1 main lounge area 2 green rooftop 3 bar 4 toilet woman 5 toilet man 6 staricase (restaurant)





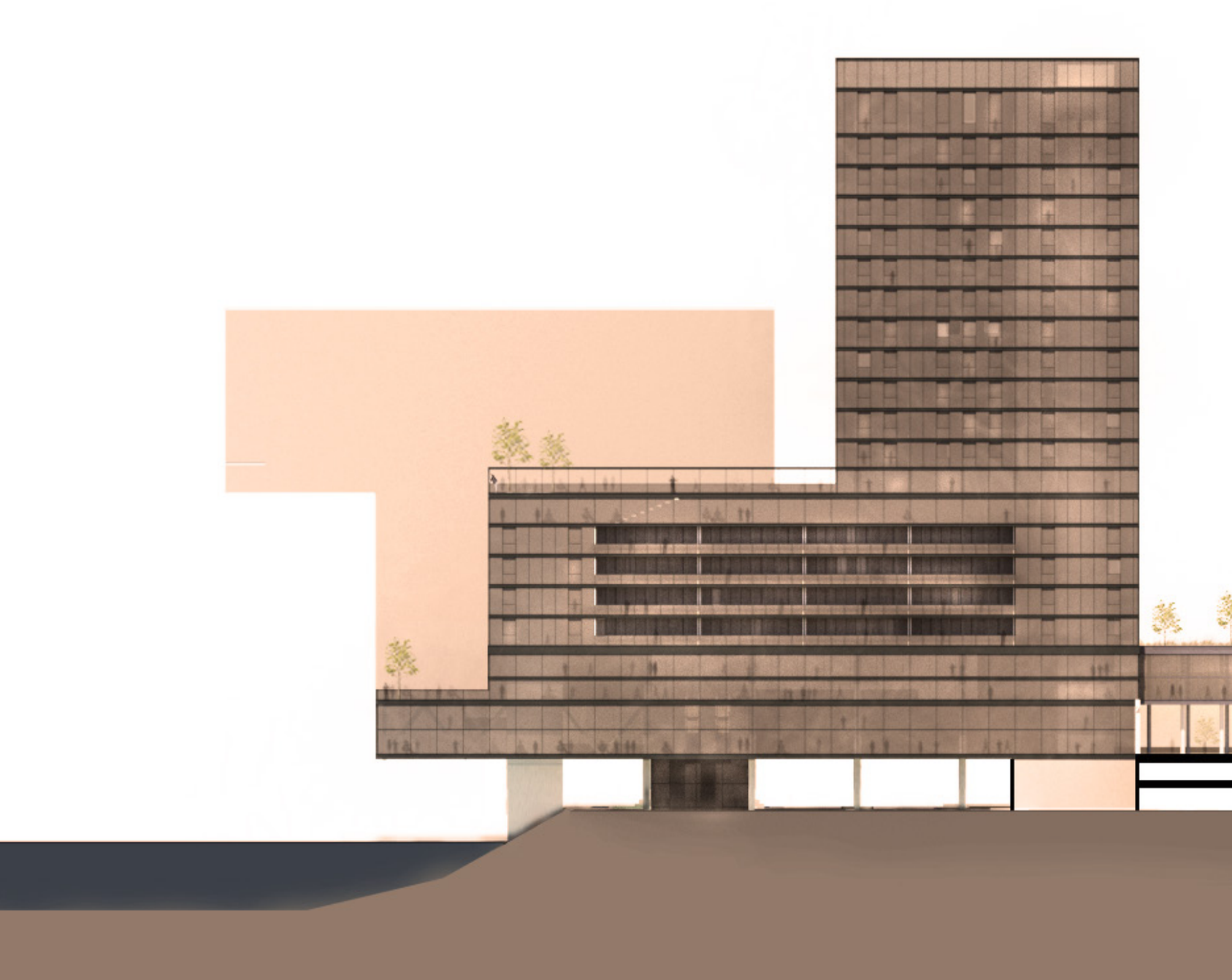
1:200

Restaurant sky-lounge

Legend: 1 restaurant 2 kitchen 3 vide 4 toilet woman 5 toilet man

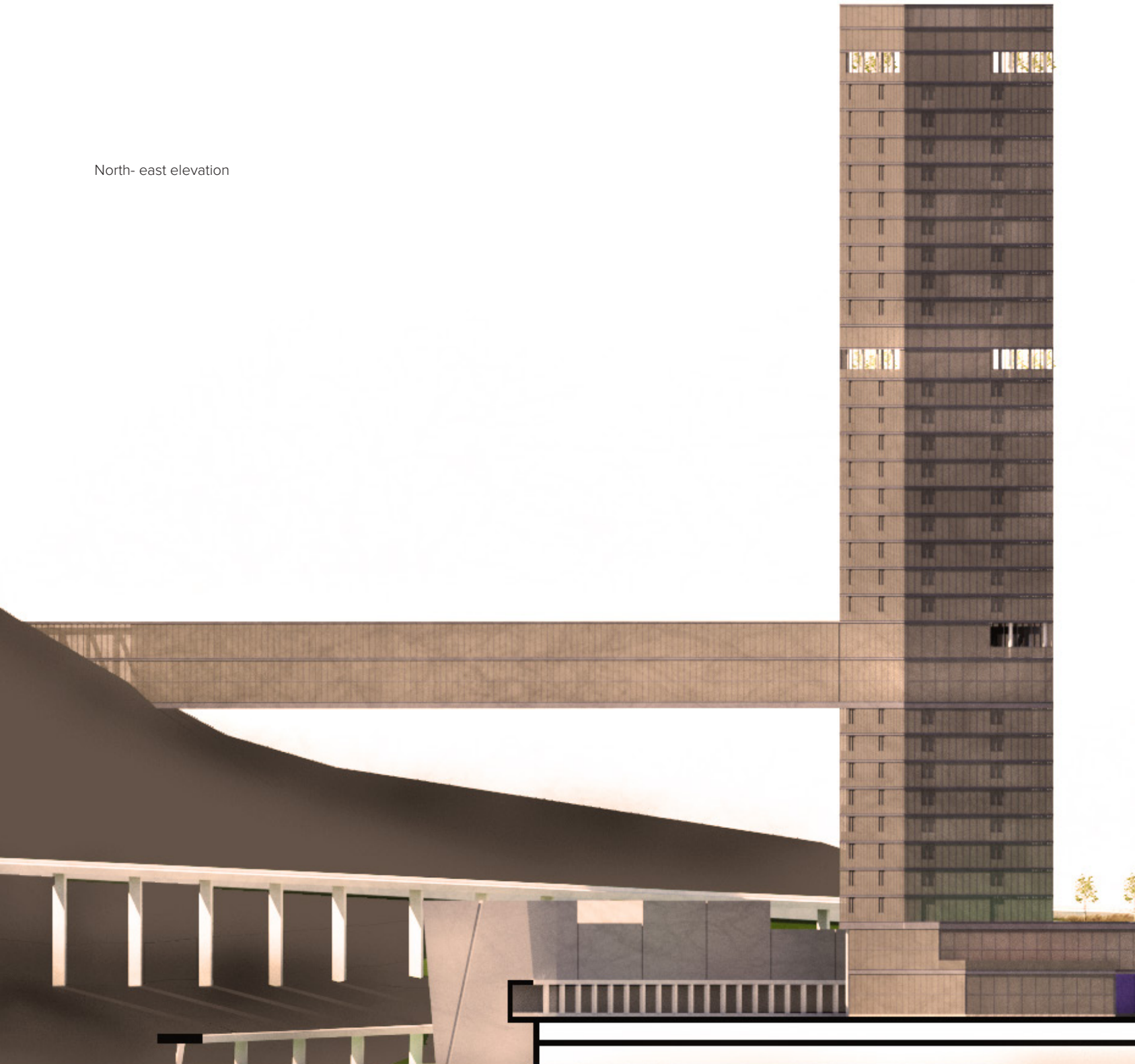
Elevations

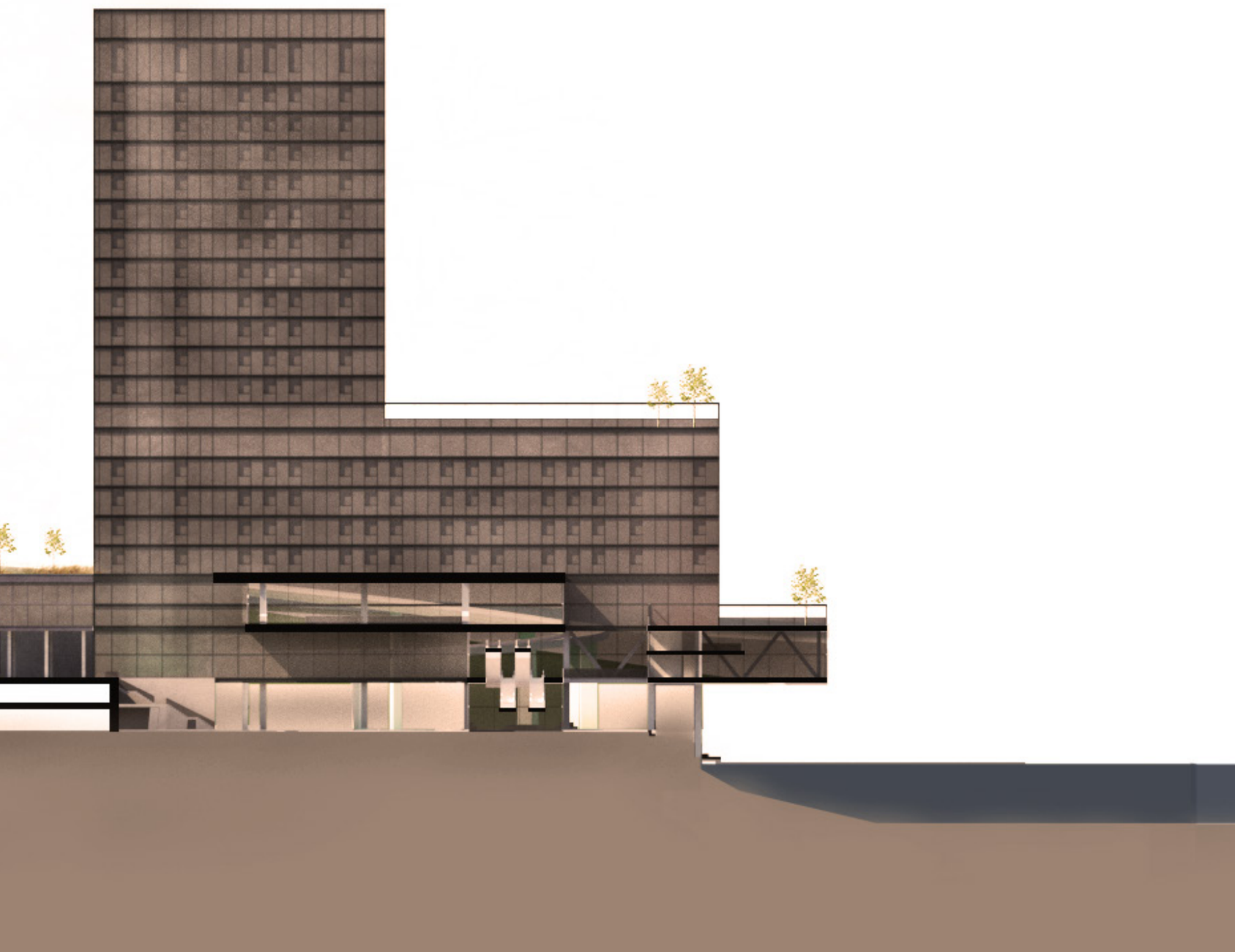
South- west elevation



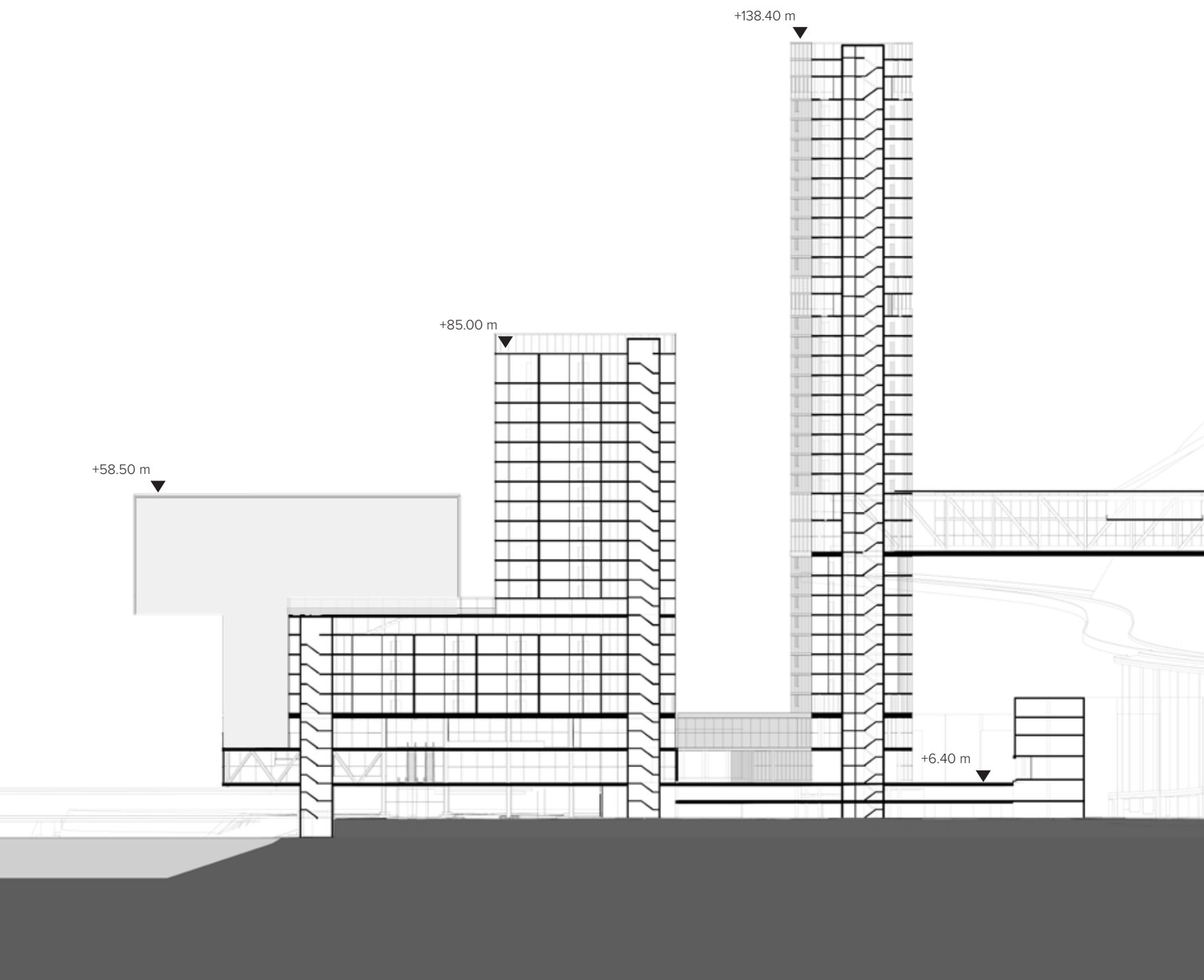

0
10
20
40

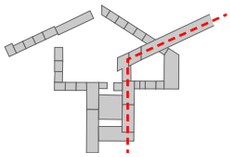
North- east elevation




0
10
20
40

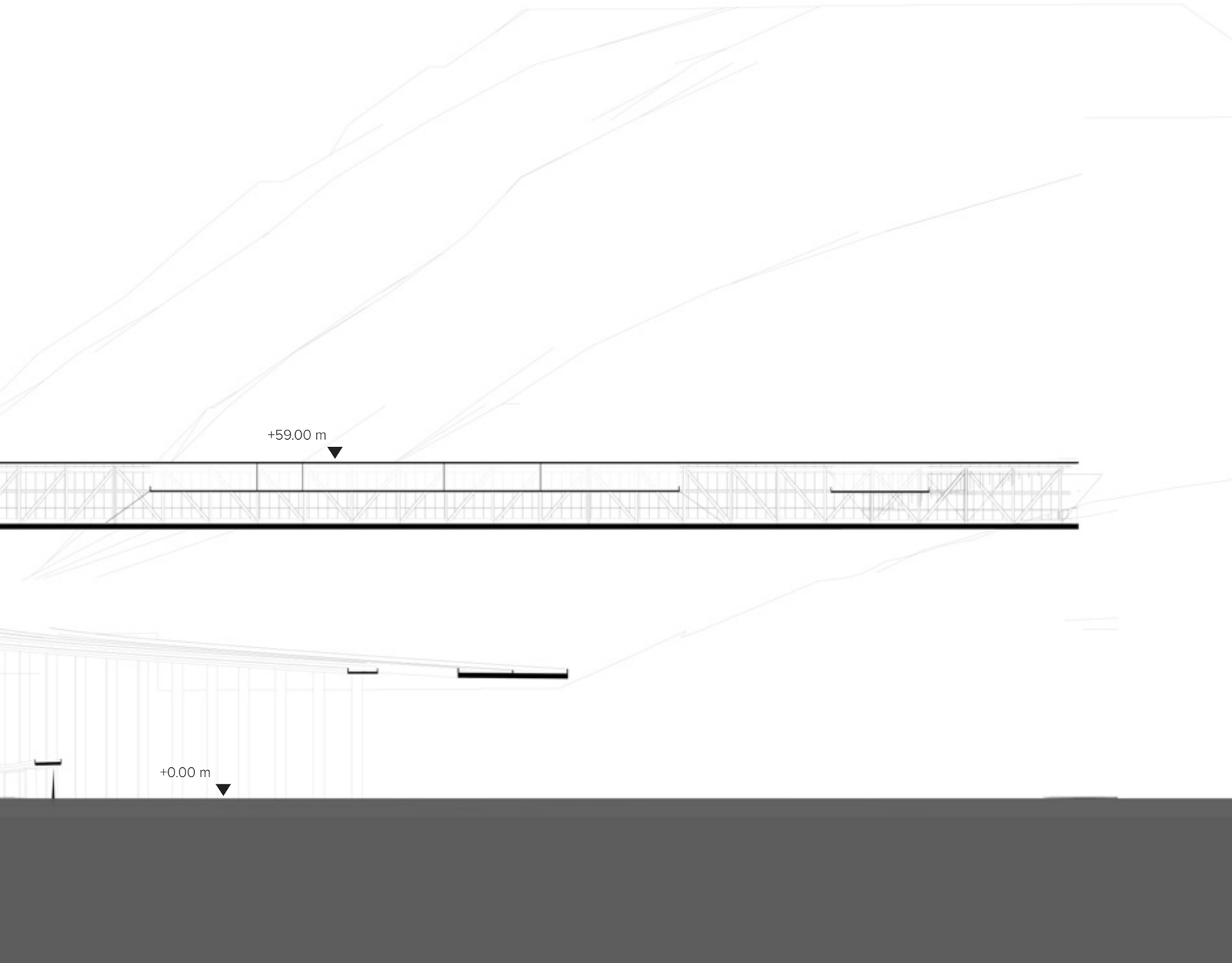
Sections

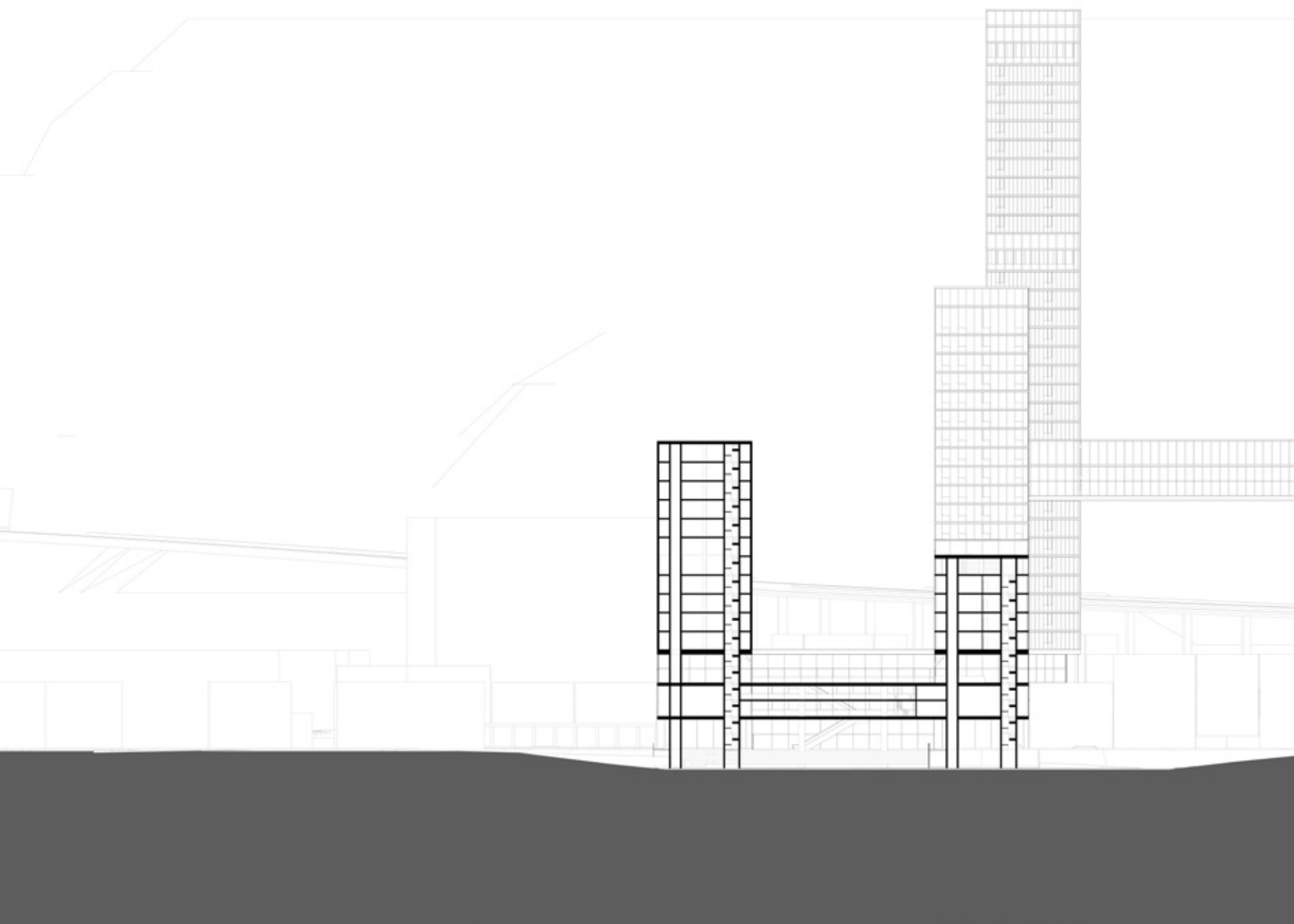


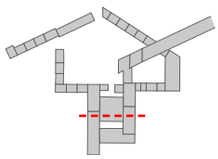


Section 1

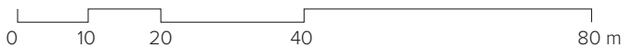
0 10 20 40 80 m



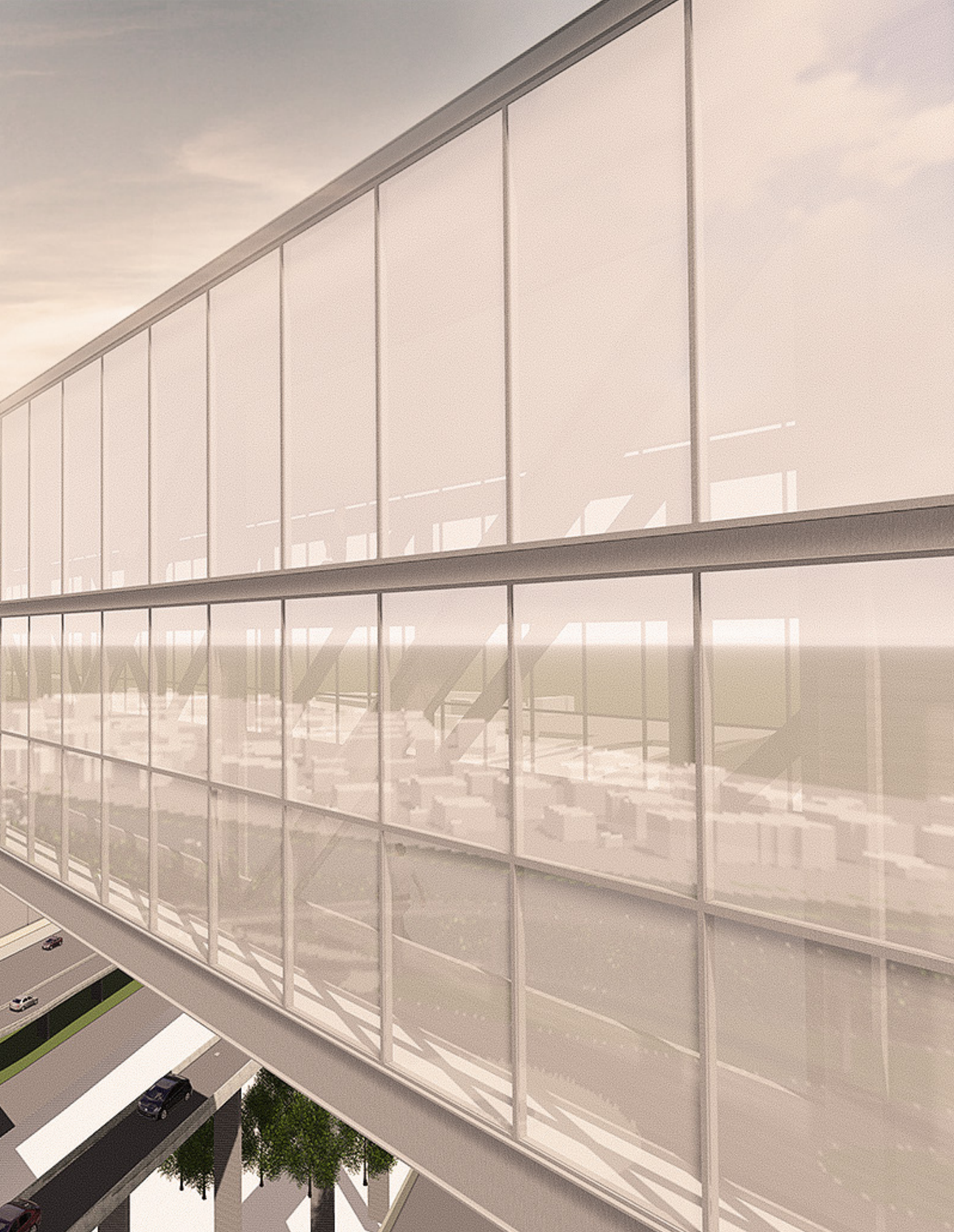




Section 2




10
CITY CENTER



‘Sitting on the slope’

Entrance Medicent Square

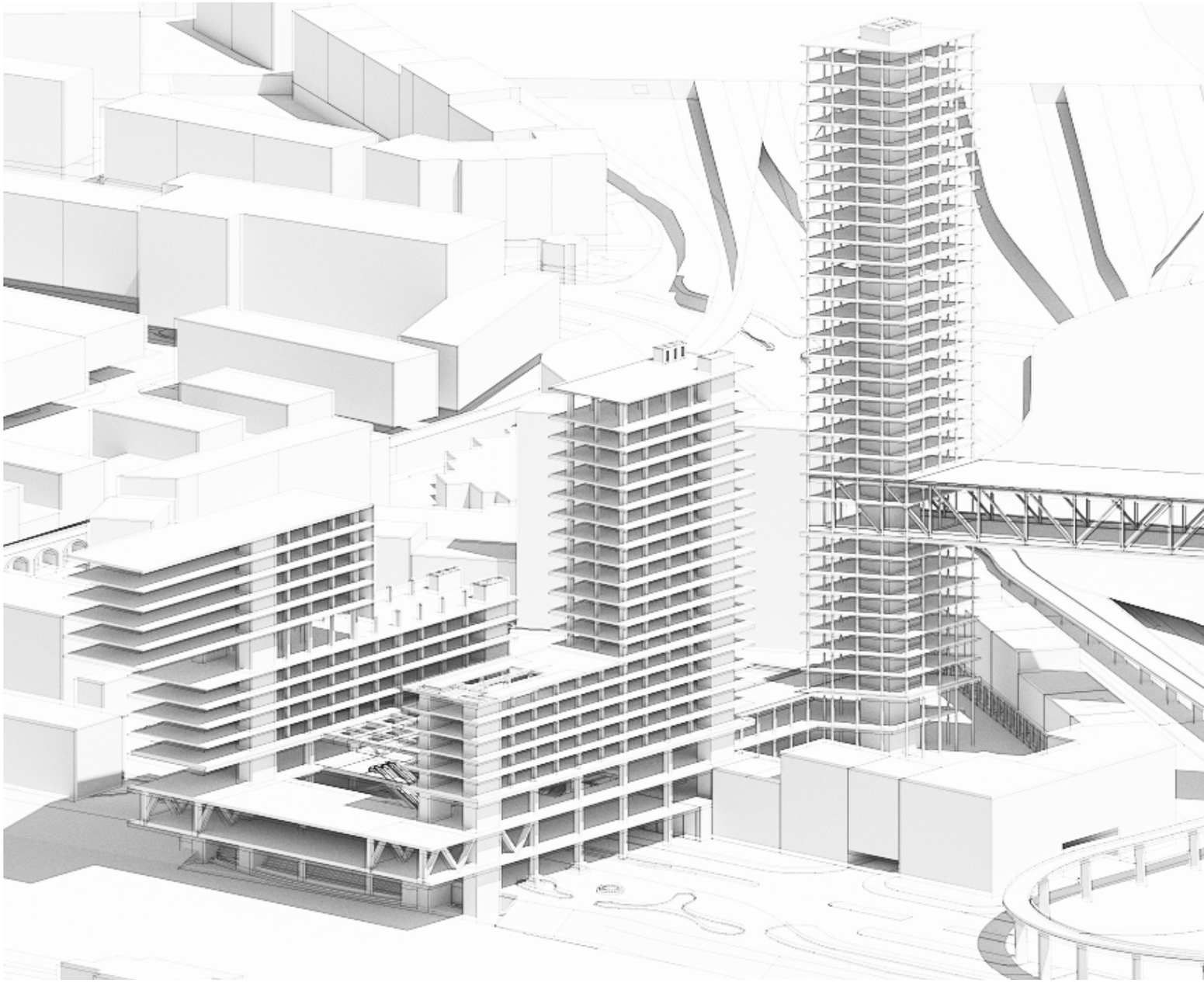
Kids playground

Entrance hotel

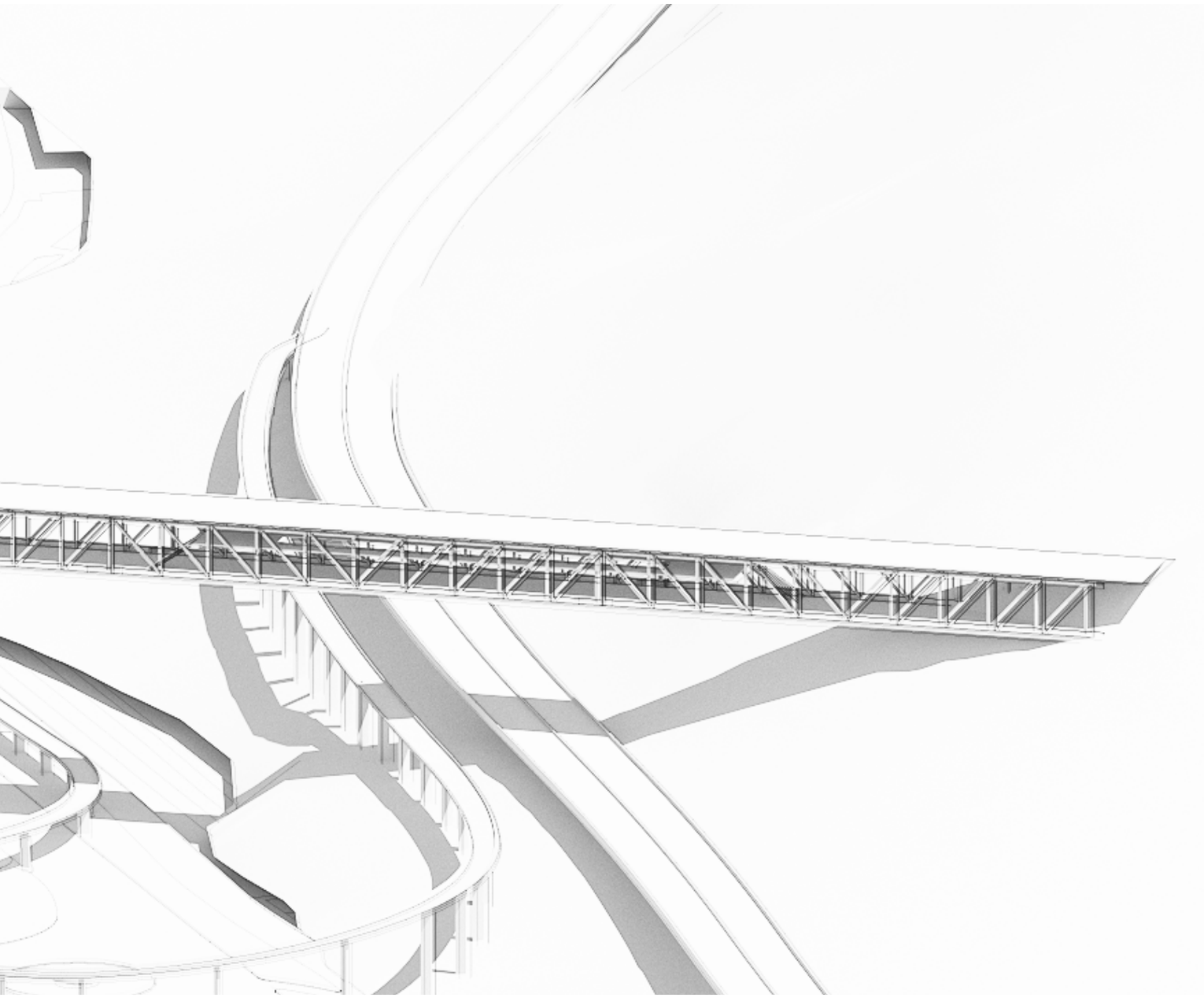
View from across river

‘Sitting on the slope’

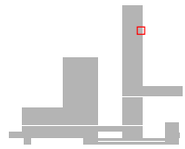
Technique



An overview of the concrete and steel (truss) structure



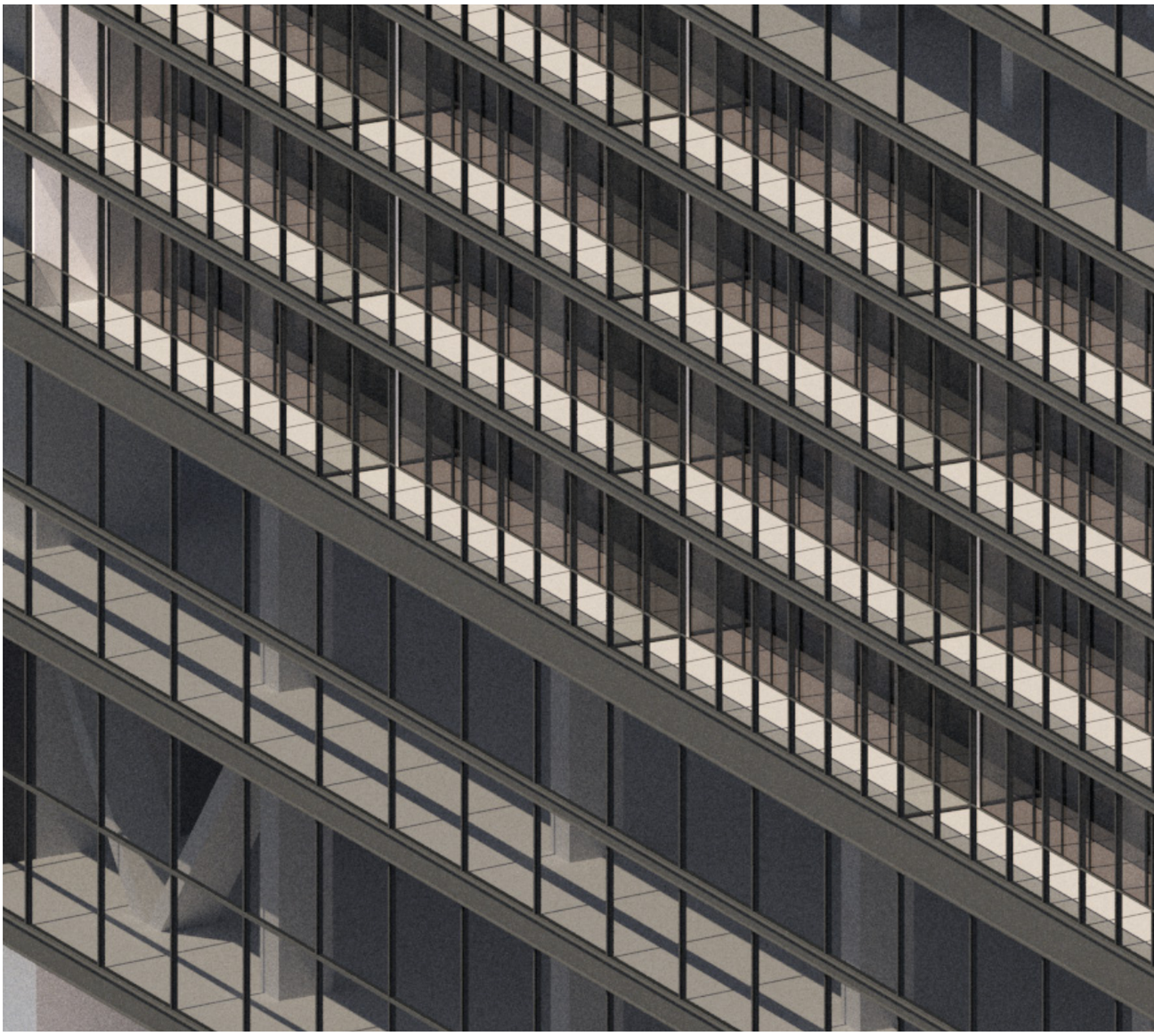
Detail low-rise (balcony)



Detail low-rise (Loggia)

Fragment lower part

Fragment bridge



Fragment lower part, tower B

7. Conclusion

Conclusion

The development of the concept began with the personal fascination in which the relationship between the public domain and densification was central. In order to frame the personal perception, it was converted into a problem definition. Thereby, it was important to anchor the idea by using a theoretical framework.

Consequently, the topic, which derived is about the fact that densification normally is at the expense of greening or public spaces.

For this purpose the following questions had been formulated:

Main question

How can high density living in Innsbruck be generated simultaneously with a high quality public space ?

This question has been supported by research on density and its various typologies related to the built environment. Each of these typologies have different features with advantages and disadvantages. A kind of comparison showed that a hybrid density typology would best fit in to the new super high density living plan in Innsbruck.
This typology contains both a high rise typology and a mid-rise typology. These two typologies in the first place will solve the quantitative equation of a densification plan, which is to generate high amount of housing for people on a certain plot.
In the first place the released ground floor area that has been generated due the compact form of a high rise typology will be undefined and of low quality. It does not provide enclosure and an integral public space, especially considering the complex morphology of the context with numerous of solitaire elements.

The mid-rise typology which contains lower houses varying from 3 to 6 floor levels will help to improve that by enclosing the arisen public space and define it with an identity.

With the new typology an attempt will be made to keep high density both extremely compact, and at the same time to create a public space that is enclosed and can be used by both the residents of the block and the city.

Sub questions

Which components define a high quality public space?

These components are explicitly explained in the theoretical framework. The four key factors which define a good public space are accessibility, comfort, sociability, and activities. In addition a good public square will among other aspects have the following features: a flexible lay-out, change of levels, differentiation of sittable spaces and activities, centrality, connection with its context, viability and diversity.

How can the proposed densification plan contribute to its context both on a small scale level as on a city level?

Small scale level
In the first place the new plan can contribute to its direct context or on a micro-meso level. Thereby the important aspect is the morphological relation of the plan with its neighbouring blocks. The morphological analysis has shown that a the new block is composed from a hybrid typology, which contains both elements of a closed block typology and elements of a solitaire typology. In this way the new structure will work as an ambiguous element that on hand tries to communicate with itself and on the other hand with its direct context. Furthermore the public space on a small scale level - within the block - will provide public amenities such as food, gym and day care centre, which will supply people from the new houses and the neighbours.

City level
The new plan is part of the city structure, as it contains a sequence and connection of public spaces of small and large scale levels. Thereby the surrounded nature has been tried to be activated. The River Inn that in the current situation is not used to its full benefits is activated in a form of a riverfront, which lays in the route along the river. This intervention does not only contribute to the residents of the new plan but also allows people from the city, to use the river in a proper way. Furthermore the forest area in the district, Sieglanger-Mentlberg has been activated too, as it is connected to the city centre of Innsbruck via the new plan. In this way two public spaces that can be considered as public domains on a large scale level have been connected to each other via a route through the new project.

This will not only provide high quality of living for residents in the new block but will also improve the quality of public spaces and increase the number of visitors. For instance, residents of the Sieglanger-Mentlberg district will now have a short-cut to enter the city in an elegant way, whether to stay in the new public domain or to continue to the centre of the city.

Furthermore the towers, especially the highest tower and the bridge will manifest themselves as a landmark for the city of Innsbruck, and will kind of define and highlight the way someone enters the city of Innsbruck or passes the city via the highway. An additional quality of the bridge is that it will translate the confrontation of two parts of the city - and moreover the confrontation of public and private - in a physical and architectural way. In addition, the sky-lounge in the krone of the tower will express vibrancy 24/7.

Furthermore the new public domain offers high amount of amenities and spaces. Because of the flexible layout of the inner square, events, markets and expositions can take place that will invite all kind of residents and tourists. For this purpose, diversity can be encouraged and will improve the overall quality of densification and social cohesion in the city.

Another important feature of the new plan is the encouragement of ‘pedestrianism’ as Jan Gehl states. By creating a car free zone in the public square, whereby parking is situated underneath, the emphasize is laid on pedestrians and bikers. The new plan can have a positive impact on the parking and infrastructural issue in Innsbruck as people have the opportunity to park their cars in the new parking garage instead of driving in to the centre. Afterwards, one can decide to walk to the centre or to stay at the square.

Final conclusion

As final conclusion it can be said that the new plan will not only increase density in housing. However by connecting public domains on different scale levels, the density will also be increased in the public spaces and attract more visitors from all the city.

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