

# The Finnish townhouse as a home. Starting points and interpretations.

*Habitat Components – Townhouse.  
Final report.*



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Final report.***

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Helsinki

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# **01** *Introduction*

Hannu Huttunen

# 1.1 General

Habitat Components – Townhouse study, now available as a final report, started in Finland in 2013 with the general interest in small-scale, dense urban structure and image created by the new townhouse typology. Discussions on its potential to enrich the urban environment have primarily occurred in the Helsinki metropolitan area since the 1990s, but it has also been discussed more actively during the last decade, when it was included in the land use planning of new residential areas. The observation that led to conducting the study was that land use plans of different stages in Helsinki and the completed city plans included a sizeable amount of urban detached housing when examining building permits. Particularly the suburban area of Östersundom – at least when the study was being launched – was largely based on the urban detached housing concept.

The notion of the “second wave” of the urban townhouse and enriching Finnish housing typology was seen as a valuable goal. However, it also introduced the question on how much and to what extent the suitability of townhouse typology to Finnish housing culture and construction had been researched. Early experiments of the typology do exist, however, such as the dense detached housing area built in Säterimetsä, Espoo in the 1990s, the Vuorenjuuri townhouse blocks in Malminkartano, Helsinki, and the artisan district of Pikku-Huopalahti, from which experiential data was obtained (e.g. Hasu 2010; Fogelholm 2003). During the current decade, new city blocks of townhouse rows were being erected in new residential areas, such as Alppikylä, Ormuspelto, and the inner city-like and dense Kalasatama. In addition, a design competition involving both Kruununvuorenranta and Jätkäsaari had been organised for new city blocks of small-scale urban housing. The discouraging experiences from some of the implementation processes cast a negative light on the housing typology, thus affecting its reputation. More comprehensive experiences, interest and preferences of potential residents, and many questions associated with the implementation remained unanswered, and there was no systematic and sufficiently comprehensive study available.

Therefore, interest in the new small-scale urban design and introducing new forms of housing and typologies to Finnish residential construction provided the impetus to launch a comprehensive study on the Finnish townhouse typology at the Aalto University School of Arts, Design and Architecture. The goal, however, is not to introduce a new housing typology to Finland or promote the return of urban detached housing. Instead, the study aims to answer questions on the social sustainability of the new housing typology

in the context of Finnish housing and urban construction: Is there a demand for dense, small-scale urban housing and the townhouse typology? What types of preferences or expectations might the residents of the Helsinki metropolitan area have regarding the typology? Another goal of the study is to ascertain how a dense typology meets the needs created by sustainable urban design, energy-efficiency or carbon neutrality. These needs will have to be met in practice in the coming decade. In addition, the themes of the study have also included questions on the suitability of residential housing, feasibility of implementation, and affordability, which is a current housing policy issue, especially in the Helsinki metropolitan area. It may also be vital for the realisation of small-scale urban structure.

The multidisciplinary study conducted by the Aalto University Departments of Civil and Structural Engineering, Mechanical Engineering, Architecture, Electrical Engineering, and Automation and Systems Technology has been structurally divided into four work packages (WP1-WP4). Put in simple terms, the themes are divided into: 1) demand and appeal of the townhouse typology; 2) Finnish concept of the townhouse typology; 3) the energy efficient townhouse; and 4) affordable townhouses. The first two aim to address the perspectives of social sustainability. The second and, in particular, the third theme are strongly associated with ecological sustainability, optimising energy consumption and carbon balance. The last, which is to be continued through the pilot block project over the next few years, aims to answer the question as to whether townhouse buildings and small-scale residential areas can be implemented cost-effectively and at affordable prices. The goal of the research as a whole is to gain a comprehensive understanding of the typology’s possibilities to supplement the selection of Finnish urban living.

Due to its scope, the final report of the townhouse study has been divided into three different publications. The focus of this report is on the first work package of the study, Habitat Components – Townhouse: Finnish Dream Home, but also, in part, on the second work package, which involves development of the townhouse typology concept. In addition, the analysis of the results includes themes and results from the Envi survey of the third work package, Energy Efficient Townhouse.

The central question of the Dream Home study is that is there a demand for dense townhouse typology living in the Helsinki metropolitan area and what types of people and households may be interested in it and what preferences and



**Figure 1.** Student work from Aalto University Townhouse studio, spring 2013.

needs would they have regarding this typology. At the same time, the relationship of townhouse living with private and public was studied based on the results of the preference survey, in addition to analysing the structural and dimensional concepts of the townhouse block and preparing diagrams illustrating townhouse concepts. In addition, the study has examined the features of the cost effective townhouse typology, which have been partially applied as the foundation of the diagrams describing townhouse block level. The initial chapters of this publication are the analyses of the development histories and current environments of the townhouse typologies in three European countries central for the typology, Netherlands, Germany and Great Britain.

The other sections of the final report series, to be published later, discuss the opportunities of the townhouse typology and the urban design it produces from the perspective of energy efficiency and ecological sustainability (second publication) and present the prepared concept designs and applications to different types of urban contexts (third publication).

The Habitat Components – Townhouse study is a joint project by the City of Helsinki and Aalto University in the Innovative City programme, funded by the Innovation Fund. The study has been conducted in co-operation with the City of Helsinki. In addition to the City Planning Department and Executive Office of the City of Helsinki, the project has been supported by the Housing Finance and Development Centre of Finland (ARA). We offer our gratitude for the project to funders, the Steering Group of the project, and all individuals that participated in the project during different phases by providing their knowledge contribution.

On a broader scale, the results are hoped to increase knowledge on how different types of interesting foreign types of residence can be refined into a part of Finnish housing options.

## 1.2 What townhouse?

The typology has a long-standing tradition in the Netherlands, Germany and Great Britain and it has experienced a second wave of interest in the Netherlands and Germany over the past few decades. Here in Finland, great interest has been expressed in the typology, especially among city planners. The typology has been referred to with many names, and it has also been subject to numerous different interpretations and variations. Now when discussing variations of new urban detached housing created over the past few decades, the name has simply become established as the English term “townhouse”. The term townhouse has also become established in Finland, although the typology does not have a history or recognised relationship in urban design in Finland, nor has the term or typology been defined in more detail. The definition of the term has been intentionally kept relatively loose among designers, so that many different types of small-scale typologies can be included in the concept. Typical characteristics of the typology have been itemised in reports and papers on the subject drafted for example by the City Planning Department of the City of Helsinki (cf. Jalkanen et al. 2012). The presented characteristics vary by author in an interesting manner and partially also reflect the subjective expectations of the opportunities presented by the townhouse typology in enriching Finnish urban cityscape. The study at hand also uses the term “townhouse” despite the typology itself not being established in Finnish construction. However, the term has already been established especially among designers and city planners. Besides, no alternative terms that would be better suited in Finnish have not yet been established.

The definition of the typology in the Habitat Components – Townhouse study was to be made in a manner that would be meaningful and sufficiently accurate for the study. One of the principles for the definition was the goal to differentiate the typology from the current general types of detached housing in Finland. In principle, a townhouse is a single family house, but differs distinctly from a traditional one, as it is built to adjoin the neighbouring house. In some applications, a townhouse is very close to the Finnish row house – especially its two-floor version. In some instances, the differences between these typologies can be said to be a blurry line. In the reports by the City of Helsinki (Jalkanen et al. 2012) or the thesis study “Why Townhouses? A Comparative Study of Emerging Housing Concepts in Helsinki and Stockholm” by Timo Hämäläinen (2013), a significant distinction is identified as being the relationship of the buildings to the cityscape. In these reports, the Finnish row house is defined in principle as an outer city or suburban typology, while the townhouse is considered distinctively as a city typology – or to highlight the issue – an urban typology.

The Habitat Components – Townhouse study has partially sidestepped the features of the townhouse typology in relation to cityscape and focused on the physical features that affect the forms of living offered by the typology, its individuality, privacy or communality, and relationship with urban design – what type of social community can the dense townhouse typology potentially create?

The comparison of the townhouse and the Finnish row house is interesting and offers opportunities for various interpretations. As a form of living, by floor plan or in relation to the environment and neighbours, the Finnish row house is in many ways similar to its European cousins considered townhouses. The traditional British terrace houses built for the working class were originally constructed in developer-form, similar to Finnish row houses, which originally also had uniform architectural features. As opposed to being housing co-operatives, the British residences were independently-owned properties. Their appearance has changed from adjustments made throughout their long history, which has resulted in slight or more visible variations and individuality in the architecture. The traditional merchant houses or commoner’s houses in the Netherlands and Germany or even urban houses of the British upper class were independent, individually designed homes, which naturally resulted in them differing from their neighbouring residences.

The housing cooperative form of the Finnish row house and the laws affecting it have contributed to the appearance of row houses being more like housing cooperative apartment blocks than detached houses. The uniform appearance of the building is highlighted at the expense of individuality. The housing cooperative member’s ability to influence changes in the architecture are also limited, as the housing cooperative and its members must jointly agree when, for example, planning changes to facades. The significance of the housing cooperative can also be seen in the fact that shared outdoor areas are more domineering compared to the residence-specific yards. Therefore, the ownership structure, housing cooperative type and joint decisions affecting all co-operative members can be considered essential differences between a row house and townhouse. This notion begs the question if an independent townhouse typology can exist in a housing cooperative or is it then a row house? It also raises the question as to whether the housing cooperative and its decision processes can be made more house-specific in order to support individual solutions.



In the Habitat Components – Townhouse study, the goal was to clearly define the townhouse as its own independent typology, which has specific features and characteristics it fulfils. These features have been derived from traditional European townhouse typologies and they are relatively common and similar in the townhouse typologies of different countries. The features include:

- *own plot or “independence” of the housing unit*, if part of a housing cooperative.
- *several floors* (2 – 4 floors in the study, could be more, but the size of the dwelling becomes unnecessarily large)
- *built to adjoining neighbouring units* (density, uniform facade facing street)
- *own, defined, home-specific yard area* (back yard and potentially front yard)
- *own entrance to street and yard*
- *multifunctionality* (may include work, business and storage space, in addition to living area)
- *individual architectural appearance or autonomy of varying degree on decisions pertaining to appearance*
- *non-centralised parking* (parking space in conjunction with the dwelling, on the property or street parking in front of the property)

The aforementioned physical attributes combined with the efficiency of land use and the density typical for the typology form the definition of the townhouse typology in this study. The typology is discussed both on the level of building or housing unit and on the block level. The third level is the regional level of the urban structure; the regional level is assessed with the assumption that the townhouse is the prevailing typology and that the zoning and public premises, including streets, are defined by the townhouse typology.

From the perspective of the Habitat Components – Townhouse study, the problem has been that Finland does not yet have more extensive urban areas where the townhouse is the dominant typology, which results in it not being possible to observe an existing area and conduct a case study. Methodological choices applied in the study regarding lack of experience with the typology have been discussed in Section 4 of the report.



Figure 2. Borneo-Sporenburg, Amsterdam, The Netherlands.

# 1.3

## Background of townhouse typology and its suitability in Finland

The appeal of townhouse living in Finland is evident in several studies conducted on the typology in the 2000s. Living and the associated ways of life, needs and valuations are, however, more local than other areas belonging to the field of architecture and borrowed housing typologies rarely are directly suitable to another cultural context. The Finnish townhouse concept was first traced in the expert interviews of the Finnish Dream Home study (n=11) (WP1), where the need for the context sensitive definition was identified. In addition to interpretations of attached houses conforming to terrains, experts highlighted the importance of location, when referring to the different natures of townhouse areas in the suburbs and city centres. Referring to international examples, several interviewees discussed the need to identify solutions that provide moderate-sized and compact townhouses. The ability to share was associated with both cost efficiency and decreasing household size. The interviews also provided grounds for the question if “townhouse” is a housing typology or just a general term for a conforming type of housing. (cf. Huttunen et al. 2015).

Context sensitivity was seen in the interviews as a feature of the physical environment, but it could also be expanded to include historical, social or cultural context and its connection with housing. When discussing the townhouse typologies of the Netherlands, it is evident that the creation of the housing typology is clearly connected with societal context and reflects changes in the society and industry. The same causal relationship can also be viewed in a slightly different way in Great Britain with the construction of both upper class townhouses and the rows of working class terrace houses. The establishment of the European townhouse is a result of historical, societal and cultural processes in the local environment, which resulted in the prevailing living typology and standard. It is very telling that the Netherlands and Great Britain have adopted and strongly committed to small-scale residential construction in a dense urban environment, while Finland, as a scarcely populated country, is characterised as a country of apartment blocks.

For the study, comparing Netherlands to Finland is interesting also from another perspective. Netherlands has implemented a significant government influence on residential policies, since the Housing Act of 1902, and carried out large-scale societal residential programmes with significant impact since the 1960s. As a result of the programmes,

different solutions were created during different periods, but with the exception of the period in the 1960s and 1970s when apartment blocks prevailed, the focus has been on small-scale residential construction. An example of this includes the Vinex programme, started in 1994, which contributed to creating the modernised townhouse typology and other urban small-scale variations (Ellilä 2014; Straver-Nevalainen 2006). Similarly, Finland has been subject to strong societal influence in residential construction during the period following the wars, and since early 1950s, heavily influenced by housing policies based on apartment block construction. Comparing Finland and Netherlands is interesting due to its paradox and the reasons for different trends are difficult to comprehend without societal or cultural context.

The need to individualise living and the home is often repeated when discussing developing both apartment blocks and smaller housing typologies. The need for individual design solutions is also recognised in the results of the Finnish Dream Home study, from both the perspective of building architecture and home-specific private outdoor areas. The study identifies important issues for residents, which are associated with the need of individuality and its connection to the home and the local environment. The experiences from the Dutch residential programmes also highlight how important it is to seek methods that can be used to find a balance between the needs of individuality and a uniform cityscape that may lead to monotony at its worst.



**02**

## ***Townhouse: European history – Finnish future?***

The history of the townhouse is long and diverse. The housing typology is often used to refer to Dutch, British, North American and German examples. Townhouse has also become an established term in Finnish. The following examines what townhouse living means in Netherlands, Germany and Great Britain: What can we learn from Central European tradition and new interpretations?

## 2.1 The Netherlands

**The Dutch housing is distinguished by the fact that a majority of residences, even in mid-sized cities, are small-scale residences, despite high population density (Wassenberg 2008). Dense small-scale areas are located both in city centres and suburbs, and they offer dwellings in varying typologies and price categories. Townhouses have a lengthy history in Netherlands and they have become established as a significant part of the selection of Dutch homes. Reasons for preserving the housing typology and its current popularity can be considered to be their ability to respond to the changing needs of housing and the high-quality and interesting urban design they create (Krokkfors 2006).**

### 2.1.1 Dutch dream home

Residential areas based on apartment blocks have not become greatly popular in Netherlands. However, the large number of residents and lack of land for development compel dense living, but usually it means dense and low-rise small-scale living. A row house with two or three floors is the most typical form of residence in these areas. Approximately half of the dwellings built in Netherlands in the 1900s are row houses; ground-level dwellings comprise approximately 60 percent of all homes (Straver-Nevalainen 2006). Dutch row houses usually have their own plots and many features resemble the Finnish townhouse (Ellilä 2014).

#### Housing preferences

Dutch residents would rather live next to one another than on top of one another (Straver-Nevalainen 2006). Having a ground-floor entrance, a private yard, and direct access from the dwelling to the street, and, therefore, social life, are considered important in housing. Having private outdoor areas are important to many, as they can function as social areas for most of the year. In addition, with personal touch, they can be used to communicate one's individual preferences. It is also common in Netherlands to establish small, home-based companies, which especially highlight the need for the ground-floor areas of the dwelling (Russell 2001). Row houses and townhouses respond well to the preferences of Dutch residents.

Privacy has become an increasingly important theme in housing already since the 1990s (e.g. Oosterman 1996). Therefore, an increasing distinction between private and public space has started to become apparent: traditionally, the large windows have faced the street without curtains, but many new townhouses have closed off the floor to the street or the street level has a work or hobby area, for example, and the private areas are on upper floors. Privacy for the first living floor can also be created through the use of the front yard. In Netherlands, townhouses are often built

directly adjoining the street and there is no front yard, but row houses commonly have front yards

Apartment blocks remained unpopular in Netherlands for a long time. There was an apartment block boom in the 1960s and 1970s, during which over 60 percent of the current apartment blocks were constructed. The areas were characterised by separating functions, large scale, identical buildings and locations on the outskirts of cities. They received a lot of criticism, due to poor quality construction and being unsafe environments. (TNO Bouw et al. 2004.) Several negative characteristics were associated with apartment blocks for a long time, which explains their lack of popularity, and, therefore, the high popularity of small-scale homes. It wasn't until the 1990s, when the popularity of apartment blocks began to rise, when some high-quality developments were being carried out in city centres. Up to that time, the trend was that the wealthy would move to lush suburbs seeking single-family houses, but now some were moving to city centres to apartment blocks. The newer apartment blocks located in urban areas have a good reputation (TNO Bouw et al. 2004).

#### Target group

Ground-floor houses are favoured especially by families with children and many cities have used them to encourage families to stay in the cities (Straver-Nevalainen 2006). Townhouses are a way to offer urban, but spacious living to families (Ellilä 2014). Urban living can be made an attractive alternative for families with children through the efficiency of every-day life, as functions outside of the house, such as work and services are nearby (van Diepen & Musterd 2009). Dense and low-rise construction can also be considered to offer child-friendly and safe living environments. However, not all townhouses are ideal for families with children. For example, in Borneo-Sporenburg, the townhouses are narrow and deep without yards – many houses only separate the bathrooms and one or two bedrooms from the other areas, which create a spacious look in the narrow dwelling. These



**Figure 3.** Homeruskwartier consists of plots with different themes and sizes for private creating varied cityscape.

types of solutions may be difficult for families with several children and the townhouses could be considered to be more suited for couples without children.

#### **Resident-orientation**

It has been demonstrated in Dutch studies that resident preferences are met sufficiently in current residential construction (Straver-Nevalainen 2006). The diversification of family models and working from home becoming more common resulted in the need for more individualised and flexible solutions. Private individuals have rarely had a home built or even participated in the design of their house in Netherlands, but the situation is changing. Increasing resident-orientation is one of the most important goals of the 2005 “National Spatial Strategy (Nota Ruimte) – Creating Space for Development” government programme: resident influence is to be improved by increasing the number of private projects. The goal is that a third of the houses being built would be funded or built by private parties. (IenM 2004.) The effect of the programme is already beginning to be apparent in practice, as new areas have begun offering plots for private development. The plots may be really small, but offering them has become a competitive advantage on the housing market. Good examples of this are the new areas of Nieuw Leyden and Homeruskwasrtier. Individualised solutions have been present in townhouses already before on the new islands in Amsterdam, for example, but along with the new direction, individuality may become more highlighted also in other housing typologies.

#### **Affordability**

Reasonable pricing is one of the most important factors in Netherlands when selecting a home. Many dream of a single-family house or semi-detached house, but very few can afford them. Row houses are similarly priced as apartment blocks and are the best feasible alternative for most (Straver-Nevalainen 2013). Townhouses are usually larger than row houses, and, therefore also more expensive, but their advantages can be considered to be individuality and central location. Serial customising has been a common way to implement resident-orientation with affordable pricing: residents are allowed to specify options from a limited range of alternatives. Row house and townhouse developments, for example, have been implemented in a manner where the developer has offered 5-6 types, from which the resident selects the desired alternative (Väliniemi et al. 2009). Through resident choices, the created rows of houses become randomly varying, although the dwellings are not individually built. In the new Homeruskwartier area in Almere, plot prices have been kept low, so that having houses built by individuals would be economically attractive. The cost of first phase plots was 375 euros per square metre – on average, the final price of a house was 800–1,800 euros per square metre (Homeruskwartier 2013).



**Figure 4.** Different typologies have been combined in the same block in Vlinderbuurt: townhouses with three to four floors, townhouses combined with commercial or work areas, two two-storey apartments on top of one another, and regular one-storey apartments.

### 2.1.2 High-quality cityscape

Many of the strengths of Dutch row houses and townhouses are associated with the environment they create: the scale is humane, private outdoor areas are near the dwelling and the streets are intimate and safe. When compared with traditional single-family houses, the importance of cityscape and private outdoor areas of areas consisting of townhouses is more important, which is why more attention needs to be paid to designing the nearby environment, in addition to the individual buildings. With high-density development, the boundaries between public and private areas must be clear and there are no buffer zones typical for suburbs in urban areas. (Ellilä 2014.) The resulting environment and cityscape can be managed using various methods.

#### Small-scale urban design

Small-scale areas are popular due to the safe and high-quality living environment and the sense of community they offer. Houses that adjoin the streets create social control and the narrow streets of the areas slow down traffic, which is perceived as increasing the safety of the areas. Streets, front yards, and entrances to the homes act as social meeting places, which provides opportunities for creating a sense of community, but does not compel it. The cityscape of the areas can be managed using various methods. Most often, Dutch rows of townhouses and row houses form dense, uniform rows that adjoin the street. Small plot sizes ensure the creation of small units and entities. Townhouses in several

new areas are highly individualised in appearance, but uniformity has been created with a regular street network and a potential theme that unites the entire area, such as channels.

The broader policies of community design are directed in Netherlands using national programmes issued every 5 to 10 years. The programmes have controlled the spread of urban design and they have contributed to directing toward small-scale, dense construction. Already in the 1970s, the programmes included dense and low-rise construction, which was aimed to address the criticism resulting from apartment block construction following the war and to make cities more attractive places to live (Straver-Nevalainen 2006). From the perspective of new townhouses, the 1994 Vinex programme is especially interesting. It resulted in the construction of new, large, dense and low-rise areas. Through the programme, city growth was to be guided to the areas surrounding the existing city centres. One of the main goals was to offer small-scale living to the middle class and families with children (Straver-Nevalainen 2006). As a result, a lot of different types of attached small-scale homes were built in Vinex areas. Well-known Vinex areas include IJburg in Amsterdam and Ypenburg in Delft, among others.

It is common to adopt an area-specific approach and highlight qualitative principles in planning in Netherlands. Quality criteria include sustainable development, diversity of space, comfort and humane environment – small-scale, dense construction well meets these quality requirements. Plans are often left relatively loose, which allows liberal

placement of typologies and the number of houses and provides space for new housing solutions (Straver-Nevalainen 2006). As a result, Netherlands has a lot of examples of various attached small-scale housing and a combination of different housing typologies. Detailed plans may be necessary when, for example, the concept of the area or underground parking limit the placement of houses in the area (Straver-Nevalainen 2013).

### Ground-floor homes

Row houses and townhouses are the primary typology in many residential areas – apartment blocks may function as a contrast for small-scale dwellings, introduce variation in the zoning of the area, and function as landmarks of the areas. Unlike in Finland, apartment blocks are extraordinary in many areas and townhouses and other attached small-scale residences are the ordinary housing typology. The relation of ground-floor residences to apartment blocks is defined in many newer areas: for example, several municipalities of Vinex areas have mandated that 80 percent of dwellings must be on the ground-floor (Straver-Nevalainen 2006). Together with the density goals, this provision has led to several different types of attached small-scale dwellings being built in the areas.

Therefore, Netherlands has a lot of different attached small-scale housing typologies. Individual small-scale buildings may also include several residences: for example, a building with two two-storey units on top of one another may be referred to as a row house. This results in a diverse offering of dwellings in small-scale housing areas. In the Netherlands, access regulations pertain primarily to apartment blocks only: for example, a lift is required only in buildings that have four or more floors (Bouwbesluit 2011). Even a lift provision is not required in small-scale buildings and it is easier to divide separate floors into their own units than in Finland, due to access regulations. The Dutch fire regulations also differ from those in Finland: for example, the fire classification of a building is not bound to the number of floors of a building, but to the size and height (Pulkkinen & Veijalainen 2008).

As stated earlier, large apartment block areas were constructed in Netherlands after the war. In these areas, the ground floors primarily contained storage areas for the dwellings. This resulted in areas being easily created on the ground-floor that were not looked after, which resulted in the areas being untidy and feel unsafe (TNO Bouw et al. 2004). As a result of the criticism, dwellings were placed on the ground-floor in newer areas and they were placed in the same blocks as low-rise apartment blocks. Since the 1990s, apartment block areas dating back to after the war have been improved in many ways and the values of many areas have been successfully increased. Activating the ground-floor has been one significant method to improve apartment blocks built after the war. In some of the areas, old apartment blocks have been demolished and replaced with attached small-scale buildings, townhouses, for example (TNO Bouw et al. 2004).

### Dense and social street space

It is important that designing the street areas occur side-by-side with the design of townhouses, so that the streets support the townhouse typology. In the Netherlands, the streets in residential areas are not just for moving around. Instead, they also function as social areas and even as places for children to play. In small-scale areas, homes usually have unrestricted visibility and direct access to the street. Row houses and townhouses adjoin the street, unlike in Finland, where it is common to have private yards surrounding small-scale buildings. Therefore, streets and dwellings are more closely bound. Courtyards are implemented only rarely in row house or townhouse developments in Netherlands. The scarcity of courtyards can be explained, for example, by the different role of streets: streets acting as meeting places and leisure areas may partially replace the role of courtyards.

The street width is to be kept narrow, as narrow streets slow traffic and, therefore, result in increased safety. Parking is often located along streets and in yards, as it is expensive to build underground parking, due to high water levels. Diversified parking is the most affordable for the cityscape and street parking attracts life to the streets and slows down traffic. A lot of focus is also placed on bicycle routes, as a comprehensive cycling network is perceived to reduce the use of private cars. (Straver-Nevalainen 2006.)

### Mixing functions

Density and low-rise properties alone does not result in urban and high-quality areas. Instead, the areas must also include services and access to public transport. Good traffic connections and services are aimed to be established as early as possible in new residential areas in Netherlands. This results in quality of living, even if the area is still under development (Straver-Nevalainen 2006). It is often possible to combine a commercial or work area with townhouses: the height of the ground floor can be regulated higher than the standard height of a residential floor, which makes it better suited for other purposes than living. The need for using private cars is to be reduced by placing new residential areas in locations that favour traffic and by ensuring that services are available to pedestrians and bicyclists. However, this is not always possible. For example, the lack of access to public transport was one of the areas of criticism of Vinex areas early on (IenM 2012). When implementing services, the changing needs over time are considered – a school may be located in a residential building, for example, which allows the school to be reconverted back into a residence when the number of children changes (Straver-Nevalainen 2006).



**Figure 5.** Nieuw Leyden is an area implemented at the end of 2010 with a large number of individualised townhouses. The front yards of the townhouses have access to pedestrian and bicycle traffic and are also safe locations for children to play.

### 2.1.3 What can we learn from townhouse building in the Netherlands?

The Netherlands clearly has a more vast selection of different small-scale typologies than Finland. Differing from Finland, attached small-scale residences are not usually part of a housing cooperative. Therefore, many Dutch small-scale homes can be considered townhouses, according to the Finnish definition. In Netherlands, the location affects the definition: dwellings located in city centres are usually referred to as townhouses and dwellings in the suburbs are referred to as row houses. To date, primarily two types of townhouses have been implemented in Helsinki: townhouses in suburbs that resemble single-family houses and developments in inner cities that resemble the new Dutch townhouses. There would also be a need for types between these in Helsinki, which could be used to supplement the suburbs surrounding the inner city.

As previously stated, many of the strengths of Dutch townhouses are associated with the environment they create. When compared with traditional small-scale areas, a lot of attention is to be paid to designing the streets and environment in townhouse areas, so that they support townhouse living. To date, townhouse developments in Finland have most often remained individual exceptions next to apartment blocks. In Netherlands, however, apartment blocks are often the exception and townhouses are the primary typology in many areas.

Townhouses are seen as an answer to residency preferences in both Netherlands and Finland. Townhouses offer a

diverse variety of different types of solutions in Netherlands: townhouses may contain several small dwellings or one large one. The dwellings provide often also open floor plans, which allows the interior of the home to easily be arranged in many different ways and combine living and leisure areas. Many residents in Netherlands experience cost efficiency as one of the most important factors when selecting a home. This is good to be kept in mind also in Finland where townhouses easily become expensive. Therefore, it is important to develop ways of implementation that allow resident-oriented and affordable construction. A good method to accomplish this may be, for example, group-based construction.

#### Different townhouse names in Netherlands

There are many different names for townhouses in Netherlands, which may also be descriptive of the great popularity of the typology and the number of its variations. Some of the names describe the features of the townhouse, such as its location in the row of buildings. Some of the names are also used also with other attached small-scale homes.

- **herenhuis** = "nobleman's house", manor
- **grachtenhuis** = channel house
- **stadshuis** = urban house
- **stadswoning** = urban apartment
- **tussenwoning** = "intermediate house, located in-between houses"
- **hoekwoning** = corner house
- **grondgebonden woning** = ground-level apartment
- **eengezinswoningen** = single-family house



## 2.2 Germany

The global trend of the increase in popularity of urban living is evident in today's German cities (UN DESA) and the townhouse has become established in city centres during the current century. The construction of attached small-scale urban houses has always been strongly bound to societal development in Germany. They have been used as a tool for solving social problems, and different programmes have supported the construction of the typology during different decades. Along with urbanisation and cities becoming more dense, a long-forgotten urban culture, characterised by a strong relationship with one's house and the city itself, has emerged. Group-based construction developments are a result of this and they have always had a significant impact on the development of townhouses in Germany. (Ullrich 2014.)

### Townhouse – a rediscovered housing type

The typical characteristics of the German *Bürgerhaus* from the Middle Ages, such as a narrow plot, vertical orientation, and deep building frame are very close to the current townhouse typology. Regardless, the German townhouse is not a direct descendant of the historic *Bürgerhaus*, although the era of urban small-scale houses in historical Germany lasted rather long – from the early Middle Ages to the Baroque period, when the *Bürgerhaus* traditions began to erode. With the rise of modernism, the city structure of the Middle Ages was left behind for good in Germany, with the ideal becoming a well-lit and spacious city. The architectural pioneers rejected the bourgeois cityscape and opposed the individuality associated with it in the 19th century. (Ullrich 2014.) The modernists also opposed the private ownership of land, which was associated with small plot allocations (Stimmann 2011, 6–9).

In the late 1970s, the long-forgotten attached urban house was experiencing its first renaissance in Germany and, in the 1980s, the type was used to redevelop small-scale building in city centres. In the 2010s, urban living is more popular than ever in Germany. The phenomenon is associated with the changes in housing preferences and the plot policies implemented by German cities, which were used to react to the outer city sprawl occurring at the turn of the 21st century. Decision-makers in many German cities were considering how to prevent suburbanisation early in the 2000s and stem the erosion of the community structure (Kunz 2011, 6; Feketics 2005, 4; Karlsruhe 2003, 3). It was considered

important for a democratic and socially mixed city to offer housing alternatives to all social groups. A small, privately owned plot in the city, which had long been forgotten in Germany, was a way decision-makers could attract families with children or middle-aged people moving to the city from the country to build their dwellings in the city, in addition to providing an attractive option for groups already living in the city. A lot more models of urban living have been created in Germany in the 2000s than during the 1980s and 1990s. (Ullrich 2014.)

Plot policies were used in Berlin, for example, to encourage building on privately owned plots during 1999–2010 in the *Planwerk Innenstadt* programme. Karlsruhe, in turn, responded to research results in the 2000s with local land reserves in planning (cf. Stimmann 2011; Karlsruhe 2003). New models of living included projects that combine living and working, highlight community living or created new interpretations of private, semi-private and public areas. The German attitude toward dense housing and individuality has changed and the requirements of being ecological, sustainable construction and flexibility of housing have grown. (Krämer & Kurz 2012; Pfeifer & Brauneck 2009.) The emergence of townhouses in German cityscapes is associated with the aforementioned plot policies. Another factor, which has offered cities good opportunities for development, is the adoption of conversion areas that became available for use in the 2000s (Krämer & Kurz 2012, 17; Stimmann 2011, 21).

### German housing preferences

In 2009, single-family houses were at the top of the German list of types of housing (Pfeifer & Brauneck 2009, 11). Among city residents or those who had to move to surrounding municipalities, surveys and studies on housing preferences revealed a high demand for urban housing (Thierstein et al. 2013; Kunz 2011; Karlsruhe 2003). Conditions for urban living and criteria were set for construction in the city, which are similar to Finnish preferences on the living environment (cf. Strandell 2011). The preference was for the home to be centrally located near public transport and services. The ideal environment should be green, peaceful, child-friendly and parking should be located near the dwelling. A private garden was also at the top of the wish list. Greater freedom in planning and individualised solutions were also considered important. (Karlsruhe 2003.) Modern German society is based on life that highlights individuality (Krämer & Kurz



**Figure 6.** Group-based construction site Scheffelhof Frankfurt.

2012, 16). Income inequality is increasing (OECD 2011) and society is becoming divided and polarised. These factors seem to be increasingly highlighted in living and the associated choices. The values of today's Germans are reflected in the new types of living (Krämer & Kurz 2012, 16). In addition to the social perspective, urban living is attractive due to cultural offerings and services. The ideal is a thriving city where distances are short and it offers good leisure options. Some may also experience the anonymity offered by cities to be liberating (cf. Pfeifer & Brauneck 2009; Karlsruhe 2003) and many are no longer able or willing to live the nuclear family model (Krämer & Kurz 2012, 17).

#### **Added value through joint building ventures**

Group-based construction has become highly popular in Germany. Joint building ventures were a large driver of urbanisation in the late 1990s. In addition to individual builders and unprejudiced developers, construction groups were the ones to rediscover privately owned plots with attached urban homes, forgotten in the 1980s, as a new form of urban living (Stimmann 2011, 37). A requirement for the groups becoming active was that they received support from the municipalities or cities. Through citizen participation, city planning has become a more democratic process in Germany and the role of German municipalities and cities in the development of cities has changed. Instead of a regulatory top-down influence on the development, their role presently is more that of facilitating processes. (Ullrich 2014.) Construction groups form an important contributor for the development of cities. Motives of groups include

the ability to influence during early phases of construction and the resulting additional value (cf. Ring 2013). The will to engage in a group-based construction project is created when people feel that they receive added value through the project (cf. Krämer & Kuhn 2009, 19). In addition to financial and social benefits, interest in ecological construction, for example, can act as a motive to engage in a group-based construction project. These shared goals often result in a well-constructed environment and high-quality architecture. Groups are committed to their projects and the developments follow the theme of the location. Diverse and unprejudiced developments act as examples on what future living may be like and how the needs and requirements of living in Germany have changed. (Ring 2013, 45.) New areas or blocks in Germany are perceived to give the entire residential area a positive impulse for development (Krämer & Kurz 2012) and cities also see an opportunity through group-based construction projects to utilise plots that are difficult to develop for residential use with other housing typologies (Ehrlinger 2008, 12–15). According to the experiences in the city of Leipzig, individualised solutions emerging in the cityscape also attract developers to implement their own projects. Through this trend, the valuation of single-family houses on the outskirts of Leipzig has declined. (Kunz 2011, 9.) This can be considered an interesting development in the efforts to increase city density and townhouse construction.

Based on experiences in Germany, the savings of group-based projects are 20–30 percent of the total construction costs, but they require participating residents to contribute



Figure 7. Space filler, Auguststrasse in Berlin.

20 percent more time when compared to traditional construction (Arkk 1; Feketics 2005, 14). The response to the question on why the type is not used more in construction in Germany was answered by the required increased planning efforts. It was also mentioned that developers do not make enough in the developments in question, so they do not implement them. Although the shared design process was perceived to be nerve-racking, tedious, long and complicated or the number of group meetings was seen as a burden, the process was ultimately considered rewarding and people were very pleased with the results. Some of the participants in group-based construction would acquire a project coordinator if they were to participate in a similar project again. Groups felt that the synergy benefits were smaller than they could have been, as the co-operation between residents was not effective or only the frame of the building was developed together. In addition to jointly issued bids for construction work, benefits were also gained through taxation that favoured group-based construction. (Ullrich 2014; Arkk 1; 2; 3.)

#### Different models of townhouses in Germany

Two models of townhouse rows exist in Germany. One is *individualised houses attached to one-another*, which illustrates the individuality of their residents. Each house usually has one owner, who has implemented his or her own views on urban living. The other is a *uniform row of townhouses*, where the group creates entity and the facades of the houses do not communicate the individuality of their residents. These sites may either be developed by a group or an investor. In addition to these models, townhouse solutions exist in Germany where one house is attached to

pre-existing buildings and includes 1–2 dwellings or office space and a home – the so-called *space fillers*. The houses are located in a developed urban environment, usually in a dense block design, where a house has been demolished or is missing. (Ullrich 2014.)

The blocks in German cities are largely four or more floors in height. Due to cityscape reasons, a space filler must usually have the same height as the neighbouring buildings. As a four-floor or taller townhouse is too large and expensive for most builders, it is possible to implement the fourth floor as a roof terrace. A wall with gaps is often seen facing the street to provide the image of height. The construction mass on the garden-side is often graded. The stairs and passageways of a townhouse with four floors or more in height take up too much space and result in increased costs of the home. This alternative is suitable for inner cities where people enjoy the benefits of location and are willing to pay for it. (Ullrich 2014.) They save a lot of time due to short travel distances and are able to use a bicycle or public transport instead of a personal car (Kunz 2011, 19, 36).

#### Cityscape management

In Germany, townhouse areas are managed using construction method instructions and city plans. The goal is to use instructions to bind individualised solutions to a greater cityscape framework. There are various methods to accomplish this. The plan in the example of Paul-Ehrlich Strasse in Karlsruhe required all houses to be built on the same line in reference to the street, the depth of the houses is the same, as is the storey height and recessed top floors. In addition, the project group that engaged in the joint building venture

set a rule that a wall is required between the houses. The wall is to be built conspicuously from the bottom floor to the rooftop (Arkk 1). Other solutions that may unite the townhouses could be the width of houses, design of street lines, a distinct feature of the houses, such as the shape of the end walls or roofs, uniform materials or spectrum of colours or uniform details. The BIGYard project in Berlin is an example of how a uniform appearance can be successfully implemented. Although the project resembles an apartment block typology, a semi-public area has been created by using small elements, such as recessed entrances and outdoor benches, which differentiates the area of an individual home and separates it from the street area. (Ullrich 2014.)

### **What can we learn from German townhouse building?**

Townhouse areas implemented in Germany indicate that the typology enriches the offering of urban housing, vitalise the cityscape and offer diverse opportunities for the use of space. In Germany, the building type has functioned as a method to calm the housing market and increase city density. In the competition between cities, the type of building is interesting for attracting well-educated labour, which has affected the cities' ability to compete and economic growth (cf. Kunz 2011; Karlsruhe 2003).

As Germany's townhouse areas are located in urban areas subject to growth, some of Finland's planned townhouse projects are located on the outskirts of cities. An essential question with the planning of Finnish townhouse-focused residential areas will be how mixed functions are accomplished in these areas. The mix of living, work and services are distinct for German townhouses and nearly all other housing typologies. Townhouse projects that highlight only housing have also been implemented in Germany, but they are located in the centres of large cities where services are nearby.

In addition to mixed functions, another important subject is the functionality of public transport. As illustrated by studies examining German housing preferences, an urban area equipped with good transport connections is experienced to fulfil an essential criterion of an urban area, even if the area is located further from the city centre (cf. Thierstein et al. 2013; Karlsruhe 2003). In addition, good public transport connections and central location of a residential area result in reduced use of private cars (Kunz 2011, 21), which is desirable from an ecological perspective.

### **Building control and the new roles of residents**

As it is difficult to create inspiring and interesting urban areas that would appeal to target groups for townhouses through planning, Finnish private parties, such as construction groups and architects could seek a suitable and interesting living environment from cities on their own. However, this would require cities to implement flexible plot policies and the desire to support new ways of housing. The city of Leipzig and its actions in the Selbstnutzerprogramm user programme can be used as an example.

Officials, such as city planners and building control authorities, have an important role in providing instructions, in order for townhouse areas to be successful. The importance of detailed street planning and organisation of public, semi-public and private areas is highlighted in dense townhouse areas. It is timely to consider what may the role of building control be in the future and could demarcations and areas of responsibilities be redefined. Building regulations and their applications should be re-examined for the townhouse typology. Although the model in Leipzig serves as a good example, according to architects, the co-operation with building control authorities was difficult in other cities. In Karlsruhe and Berlin, the permit process was long and difficult, as existing examples of new townhouse areas were not yet available. The projects were initially received with doubt and their potential for success was questioned by the officials (Arkk 1; 2).

A hindrance for updating the regulations in Finland is the lack of experience in townhouse construction. Germany can be used as an example only a limited fashion, as legislation differs significantly between the countries, from the perspective of accessibility, for example. In Germany, it is possible to implement solutions that differ from Finnish construction practises, such as split-level apartments and ground-floors that are partially underground. Apartments with unrestricted access and suitable for wheelchairs are separated in Germany and only some of the apartments of an apartment block must be designed as accessible. The number of new dwellings with accessibility and suitable for wheelchairs is defined in the LBO regulations. The number is defined by the height and number of homes of the building. The regulation defines the minimum number of dwellings, which when exceeded, requires the apartments of one floor to be suitable for wheelchair users. The minimum number of dwellings varies by state between two and six.

In Germany, apartment blocks are regulated to be equipped with lifts, if the number of apartments exceeds a specified number. If the number of apartments is below the regulated number, a lift does not have to be built (DIN 18040-2). The LBO regulations in Berlin and Baden-Württemberg, for example, require that the dwellings on one floor must be suitable for wheelchairs, if there are four or more apartments in the building. Therefore, a townhouse, which can be divided into three dwellings, does not need to be equipped with housing units suitable for wheelchairs in these states. It is also then possible to implement solutions where the bottom floor has an area intended for use other than housing. To date, the bottom floor must serve as a surviving floor in Finland for buildings not equipped with a lift.

Another major challenge in townhouse construction is the quality control of architecture. Excessively strict requirements for townhouses are in conflict – at least according to the views formed during this project – with the original principles highlighting individuality. The fear of loosing the quality of architecture, however, is justified based on experience. If designers do not have a vision on what methods are used to create an urban atmosphere in a townhouse area and these factors cannot be defined in the town plans, the

typology can easily create more row house-like suburbs. In Finland, defining and outlining the features of the typologies in detail is important for interpreting building regulations. However, the type should not become a static concept. In order to facilitate diverse construction, Finnish building regulations should allow the construction of different housing typologies and new urban living solutions. (Ullrich 2014.)

### **Names of attached small-scale urban houses in Germany**

#### ***Townhouse***

one of the terms used to describe an urban, attached small-scale house

#### ***Stadthaus*** (city house)

a general term that is often used in Germany to describe a typology similar to the Finnish definition of townhouse typology. However, Stadthaus is not an unequivocal term in Germany that describes an architectural typology or cityscape. The word is widely used to describe an urban house, whether it may be a small-scale urban house, an urban villa, or an apartment block in the city.

#### ***Townhaus***

a German version of the word 'townhouse', common particularly in sales brochures, but not in professional literature.

#### ***Hollandhaus*** (Dutch house) or

#### ***Grachtenhaus*** (channel house)

directly refer to the traditional construction typology in Netherlands; the term is only used in spoken language.

#### ***Attached urban house***

(Ger. städtisches Haus in der Reihe)

the term defines an individualised row house adjoining a public area (Feketics et al. 2005, 10).

#### ***Attached and stacked single-family houses***

(Ger. übereinander gestapelte Einfamilienhäuser)

as townhouses may include residences stacked on top of one another, German architects also use the term of stacked single-family houses (Arkk 1).

#### ***City row house*** (Ger. das städtische Reihenhäuser) or ***urban row house***

the definition is more broad than the traditional row house used in Finland and the term is used to describe townhouses. For the former Building Manager of Berlin, Hans Stimmann, modern townhouses in Berlin are a new interpretation of an attached small-scale house in an urban context. Stimmann considers the boundary between a row house and the townhouses in Berlin blurry, even though he feels that returning to a row house typology in an urban environment is problematic (Stimmann 2011, 25). According to him, the relationship of the building to the constructed environment, and specifically the street area, is what makes it either a row house or a townhouse. This aforementioned interpretation is also evident in the texts of other researchers or statements by architects (Arkk 2). The interpretations are based on a way of

thinking that is also represented by Brenner & Geisert (2004) in "Das städtische Reihenhäuser". According to them, the urban row house is a typology that has been forgotten in Germany for decades and reinventing it can function as a method to condense and reinvigorate cities. It can be considered as both a large group and as a small, clearly defined unit, but it cannot be compared to a single-family house. Historical examples include all alternatives from uniform rows of houses to diverse groups of row houses. (Ullrich 2014.) Urban row houses are created in relation to the city plan and they are always bound to their environment (Brenner & Geisert 2004, 20).



Figure 8. Leipzig, Germany.

## 2.3 Great-Britain

**In Great Britain, the history of urban small-scale houses dates back to the Middle Ages. The country has a tradition of building townhouses for several centuries, and the typology dominated the housing stock, particularly in English cities, up to the 20th century. It was not until the last hundred years that apartment blocks became more common in Great Britain, thus eroding the dominance of townhouses. Instead of the term townhouse, the typology is more commonly known in the country as “terrace house” or “terraced house” (Muthesius 1982).**

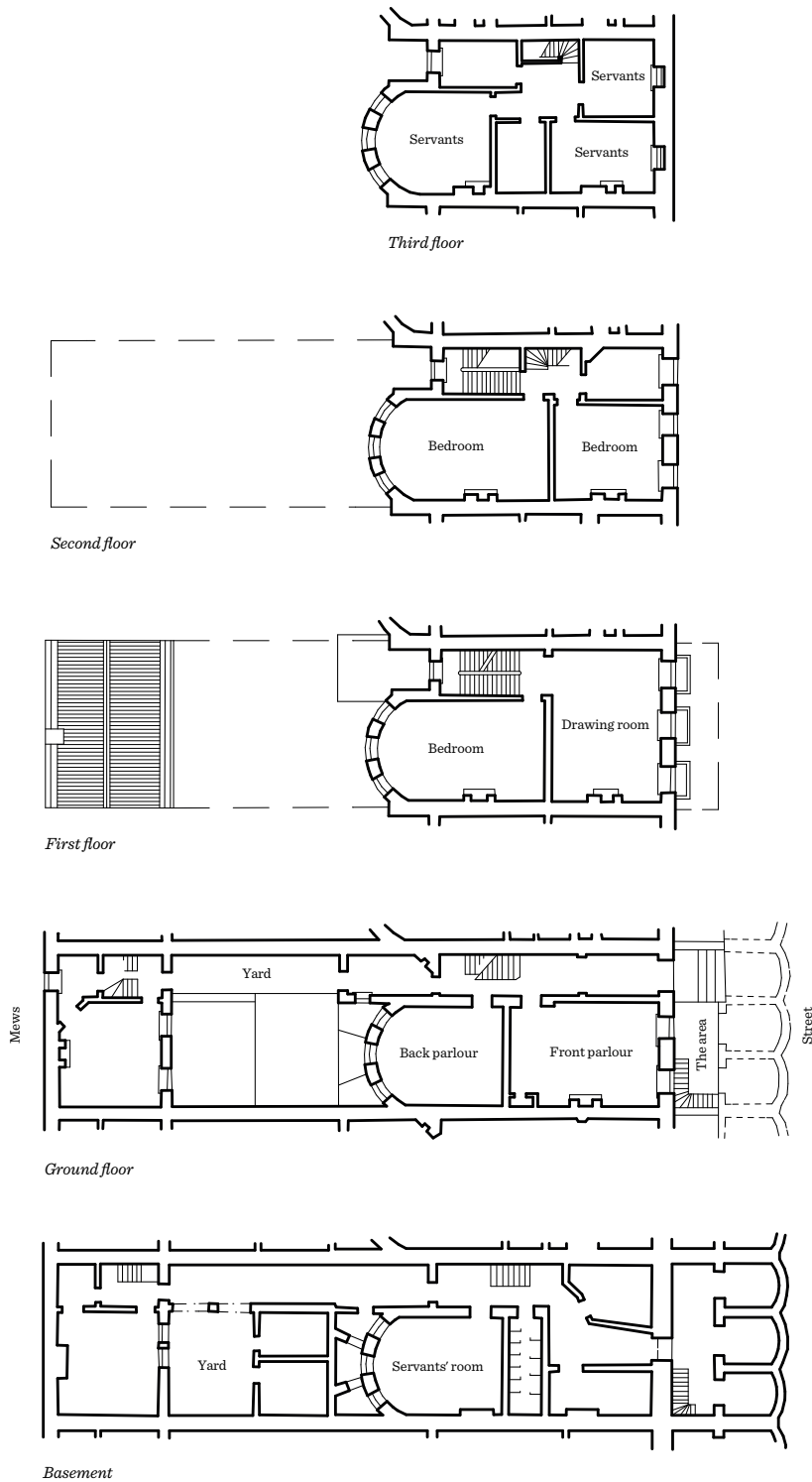
### 2.3.1 Townhouse history in Great Britain

The roots of townhouses in Great Britain are in the residential buildings of the Middle Ages: aristocratic boarding houses, merchant houses and row houses. The latter of these were the most significant for the future development, due to their small size. (Stewart 2006.) The narrow and long plot typical for townhouses was also established during the Middle Ages. As cities became more dense, the street facade was at a premium, which resulted in land being divided in a manner where as many houses as possible could open to the street (Girouard 1990; Barley 1986). The small, Middle Age row house was a step toward modern social structure, which was not based on self-reliance, but on a network of services and industries.

The next development in the history of British townhouses occurred during the Georgian era, primarily in the 18th century. A townhouse of the period is even today referred to as a “Georgian classic” (Stewart 2006), which is telling of the appreciation of the era. The story of the Georgian townhouse begins with the arrival of the Renaissance in England, which resulted in classical features becoming also more common in residential construction (Stewart 2006; Cook 1968). In addition to the adoption of the new style, the development of the Georgian townhouse was defined by speculative construction and building regulations. Speculative construction refers to a form of construction economics where, in simple terms, the builder constructs and sells a house with the aim of making as high a profit as possible. Building regulations, however, became more strict as a result of several devastating fires, such as the Great Fire of London in 1666. The regulations aimed to ensure high quality of the buildings and fire safety, which led, for example, to brick becoming more common as a facade material. Speculative builders enabled the implementation of the new building regulations quickly and cost-effectively, while meeting the high demand for residences caused by the fires. (Stewart 2006; Summerson 1993; Cruickshank 1986.)

The floor plan of the Georgian townhouse partially explains its popularity. The floor plan is still very much present in the housing culture of Great Britain today (Stewart 2006). The most typical Georgian floor plan is based on two living rooms (front and back room), stair room, and a potential rear wing, as illustrated in Diagram 2 (Byrne 1990). Therefore, the spaces intended for living have been separated from the spaces intended for access to other areas of the house, which results in the floors being rather autonomous and private. The floor plan is repeated in a similar fashion on every floor, although the intended purpose of the rooms may vary. In addition to being repeated among floors, the floor plan is repeated between houses. Therefore, the floor plans of Georgian townhouses were nearly exact copies of one another. The practice does not only apply to floor plans, but it also affects how facades are structured. Rows of houses often consisted of identical townhouses, including decorations, which was supported by speculative construction and building regulations. The end result was discreetly elegant, even a simplified range of facades, which was later also considered dull. In response to this, townhouses were started to be arranged in different types of squares, arcs and circles. The main facade of rows of townhouses could also be decorated to resemble a palace in appearance (Stewart 2006). Rows of townhouses became a type of art where an individual house only functioned as a component of the monumental entity.

In the 19th century, however, Great Britain’s townhouse history is defined by the Victorian era and the great changes brought about by industrialisation. Larger Victorian townhouses moved ever further to the suburbs to get away from the pollution in the centres. Suburban townhouses became typically a middle-class form of living and the more wealthy inhabited semi-detached houses or single-family houses (Girouard 1990). During the Victorian style era, it was typical to get away from the monotony of the Georgian townhouse. Instead, houses were defined by the amount of ornamentation and constantly varying styles and materials (Muthesius 1982). Despite this, townhouses built next to one another were still built as identical copies of one another for economic reasons.



**Diagram 2.** Floor plan of typical Georgian townhouse. Drawn according to Muthenius (1982, 2).



Townhouses were not, however, just a form of housing for the upper or middle class. As previously stated, the townhouse was the predominant form of living in Great Britain until to the 20th century. Therefore, the working class also lived in townhouse-style residences. During the industrial revolution, the residential areas of the working class grew exponentially, as industry required an ever-growing amount of labour. The residential areas in question often consisted of small and modest townhouses, such as the “two-up-two-down” or “back-to-back” houses (cf. Diagram 3). As indicated in the name, the “two-up-two-down” house consists of two floors, both of which have two rooms: one in the front and one in the back (Hanson 2003; Muthesius 1982). A “back-to-back” house is a ‘half’ of a townhouse, which only opens in one direction and back-to-back with another similar residence (Muthesius 1982). The houses of both types were often very small and confined and they were inhabited by large families. Therefore, working class residential areas often were subject to the problems of population growth: cramped living conditions, sanitary problems, ventilation and other maintenance was insufficient and diseases spread easily (Frampton 1992). The need for speculative builders to construct at minimal cost and as efficiently as possible only made the problems worse (Girouard 1990; Osborn & Whittick 1969). However, the poor living conditions cannot be considered to be a result of the working class townhouses. Instead, the problems were associated with more wide-spread social failures in controlling population growth (Olsen 1982). In any case, small working class townhouses demonstrate the ability of the typology to adapt to the needs of vary different types of user groups, if necessary.

Early in the 20th century, townhouses were unpopular in Great Britain. The decline in popularity began already in the 19th century with the encountered problems in urban living (Friedman 2012). New ideas, such as the garden city ideology and apartment blocks becoming more common affected the popularity of townhouse living in the 20th century (Burnett 1978; Osborn & Whittick 1969). Over the last fifty years, increasing attention has once again been paid to townhouses. Starting in the 1960s, dense and low-rise construction was set again as the goal, in response to the inefficient land use of garden cities (Burnett 1978). Wide-scale public construction projects were significantly present in residence production at the time. The projects aimed to address the lack of residences after the world wars (Burnett 1978). In public housing production, housing was defined very precisely, which resulted in the floor plans they favoured becoming more common (Bullock 2002). Potentially the most significant changes in townhouses in the 20th century were that dwellings were wider and had an open floor plan (Burnett 1978; Cook 1968). A wider dwelling allowed two adjoining rooms, which differs from the traditional floor plan of past centuries. An open, wider floor plan allows rooms to be organised in many different ways. This has also led to the traditional floor plan making ways for new ideas. There was also a need to modify the logic behind the flexibility of townhouses: Previously, the flexibility created by identical floor plans on each floor is realised in newer townhouse construction through the use of large, open areas.

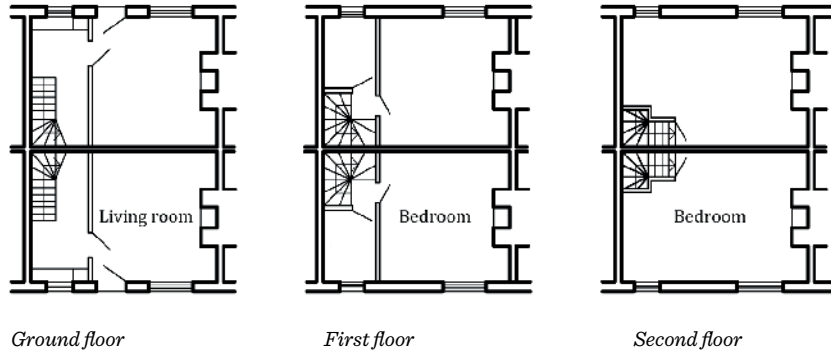
Recent interest has also been expressed in older townhouses located near the city centres. Close proximity to work and potentially the aesthetics of old townhouses have attracted people to renovate and modernise old buildings (Ravetz & Turkington 1995). Regardless, the popularity of townhouses in Great Britain has not recovered to where it was prior to the 20th century. Today, the townhouse has to compete with apartment blocks in urban environments. The pressure caused by it may be the reason the townhouse of Great Britain is undergoing constant change, which results in the most imaginative versions of this old typology being built.

### 2.3.2 Main features of the townhouse in Great Britain

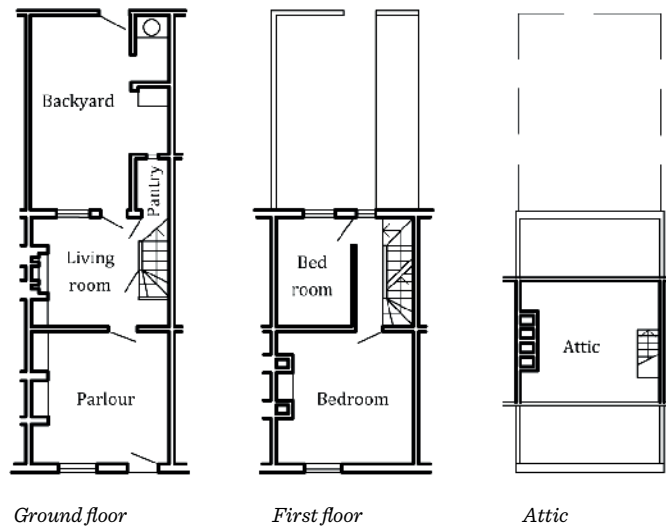
Typical features of the townhouse in Great Britain include standardisation, flexibility for conversion and the “classlessness” of the typology, despite the class society (Utriainen 2016). The standardisation of townhouses reached its peak with the advent of speculative construction beginning in the 17th century. Speculative construction refers to a form of construction where the developer buys the land, builds, and sells the property in attempt to maximise profit. Speculative construction and standardisation were both economically and time-wise the most effective construction method to meet the demand of urban residences of growing cities (Stewart 2006; Summerson 1993; Cruickshank 1986). When reaching the 19th century, standardisation included nearly all of the materials association with building townhouses, from decorations to building materials. Standardisation was taken so far in Great Britain that completely identical rows of townhouses were built block after block. Therefore, townhouses were practically copies of one another, including both the interior and exterior. The basic townhouse solution in Great Britain can be considered to be two rooms deep, two or more floors, which could be expanded with a cellar, attic or rear wing, if necessary (cf. Diagram 4). Whereas some countries highlight the individualism of townhouses, they are copies of one another in Great Britain. (Utriainen 2016.)

One of the most significant accomplishments of standardisation in Great Britain was the floor plan of townhouses, which have become even a significant cultural feature (Stewart 2006). The floor plan in question consists of a front room, back room, and a stair room on one of the sides of the house and a hallway as illustrated in Diagram 4. The same floor plan is repeated nearly unchanged on every floor. Due to this, townhouses that follow the floor plan have proven to be flexible for adaptation for the needs of different types of residents and changing intended uses. Each floor and room functions in these houses very autonomously, allowing larger townhouses to be divided into smaller housing units. Today, many larger older townhouses have been divided into smaller apartments, or their ground floor has been converted into commercial space. Subleasing is also common when the house can be easily divided into smaller units. Secondly, the adaptability of townhouses has also allowed city areas to develop without wide-scale demolition and rebuilding. It has not been necessary to demolish old townhouses to make room for new construction, even if the nature of the city area would have changed from a residential area to a service centre, for example. The same standardised floor plan has,

*“Back-to-back”*



*“Two-up-two-down”*



**Diagram 3.** Small working class townhouses allowed the typology to adapt to the needs of vary different types of user groups. Drawn according to Chapman et al. (1971, 141, 149, 229).

therefore, offered the possibility to use townhouses in many different ways during different time-periods. (Utriainen 2016.)

The third significant feature of the townhouse tradition of Great Britain is the suitability of the typology for the entire population (Utriainen 2016). Great Britain is historically well-known for its strong class society, which has significantly affected different areas of life within a social class in a manner where classes are differentiated from one another, often very distinctively. Townhouses, however, form an exception to this development. Before apartment blocks came to Great Britain, townhouses were a way of living for every social class; working class, middle class and upper class. Naturally there were significant differences in the size or decor, based on the position or wealth of the resident, but the basic townhouse remained often unchanged as illustrated in Diagram 4. (Muthesius 1982.)

### 2.3.3 What can we learn from townhouse building in Great Britain

As stated in the previous section, the primary features of townhouses in Great Britain are standardisation, adaptability, and suitability for all social classes. These features may be educational also from the perspective of designing the Finnish townhouse. Firstly, the architecture of the townhouse in Great Britain indicates that even by repeating standard solutions, an appealing environment can be created, without losing the good features typical for the housing typology. Individuality is often considered a benefit of townhouses. However, based on the example from Great Britain, a completely opposite approach is also possible. Repeating solutions that are found functional can also be effective in creating a good and sustainable living environment, and also cost-effectively. (Utriainen 2016.)

Secondly, adaptability may be very natural for townhouses. The useful life of buildings is extended as they adapt to meet the needs of new users and intended applications. The adaptability of buildings, townhouses in this instance, also allows the development of city areas, as the same housing typology functions as a platform for even very different functions. The adaptability of townhouses can be used to influence construction in accordance with sustainable development by utilising the natural features of the typology. (Utriainen 2016.)

Finally, townhouses are suitable for use by all types of residents, regardless of socioeconomic status or household size, which is also supported by adaptability. To date, the typology in Finland has been considered rather expensive form of living for families with children, allowing only a few to afford it. However, the typology of townhouses in Great Britain demonstrates that the typology can offer a residence also for smaller households. The need for small dwellings is typically solved by dividing a townhouse into smaller apartments. When dividing a house, for example, by floors, however, some typical features of townhouse living are lost, such as the private entrance and the vertical nature of living. From this perspective, the “back-to-back” type townhouses in Great Britain, which refer to a “half” of a townhouse that opens in only one direction, are very interesting. They offer an alternative for also implementing small residences without losing the typical features of the housing typology. (Utriainen 2016.)



**Diagram 4.** Townhouses were divided into four classes in London, based on size. Although the houses varied greatly in size, the same floor plan typical for Great Britain is repeated in every floor. Drawn according to Muthenius (1982, 81).



## **03**

# ***Housing expectations and preferences***

Diversification characterises both housing preferences and needs. The same diversity has not yet become established on housing production, which is one of the reasons for the townhouse study. The expectations, preferences and needs of housing can be studied from many different perspectives.

## 3.1 Social sustainability as a starting point?

Different types of scales must be considered in all types of planning, also when assessing aspects of sustainability, as also examined in the study on townhouse living.

“Sustainable development refers to a social change taking place globally, regionally, and locally, continuously and in an instructed manner which aims to secure good living prospects for present and future generations. This also means that the environment, people and economics are equally considered in decision-making and actions.” (Ministry of the Environment 2013.)

Sustainability questions are important in city planning, from the ecological, economic and social sustainability perspective, when examining sustainability. Ideally, economic, ecological and social sustainability are all a part of the social development that supports the well-being of residents (cf. Ministry of the Environment 2013).

This goal is challenged by the social sustainability, which is considered difficult to define and, therefore, study. In addition, its different levels challenge researchers. Social sustainability, which also includes the cultural aspect, is associated with justice on an international level, equality, and the ability to influence locally.

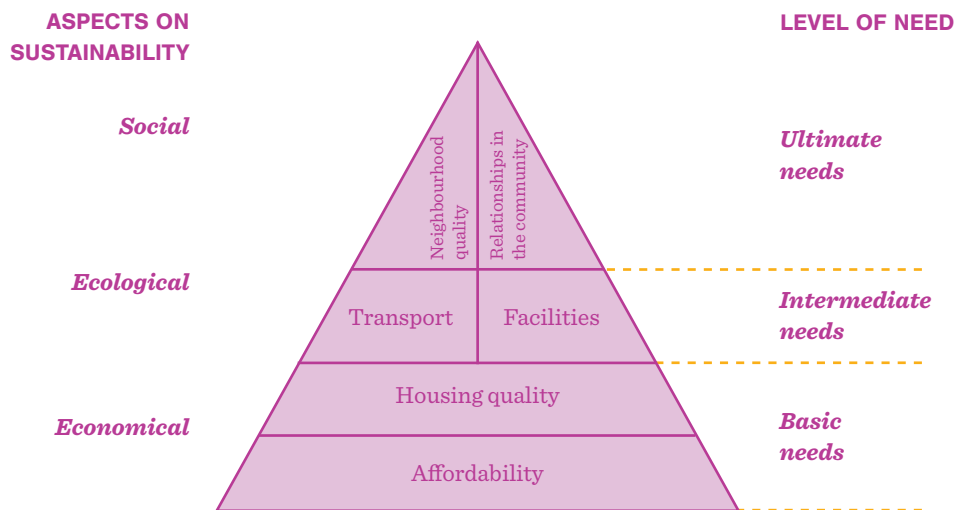
On a city-level, social sustainability has long been evaluated largely in the ecology of urbanisation and condensing (Vallance et al. 2012; Colantonio & Dixon 2011; Cuthill 2010). Social sustainability, however, is rarely included as a part of planning (Næss 2001). According to Næss (2001), the reason for this is that the factors of social sustainability have remained undefined specifically from a planning perspective, which inevitably results in land use theories differing from practice. This creates the risk that lifestyles and their significance to residents, for example, are not considered, which leads to long-term sustainability planning goals and practical actions not meeting one another (also Allen 2010).

At a residential area-level, sustainability consists of fairness and sense of community (Dempsey et al. 2011; Bramley & Power 2009; Bramley et al. 2009;). Justice highlights the availability of the services and dwellings in the residential area (Chiu 2003). According to Bramley and Power (2009), factors included in the sense of community are (1) the relationships within the community and between communities,

the goal being social cohesion and inclusion; (2) the sense of place and its appreciation: a strong locational identity binds the residents to the location and creates responsibility and the will to work for the community; (3) participation and influence: recognising one’s role and opportunities helps functioning in the community and also helps influencing the environment. Community recognition also promotes (4) the experienced safety and security. A preferable housing environment and neighbourhood support (5) stability: community stability and continuity are descriptive of housing satisfaction. On a broader scale, they also describe social cohesion.

Neighbourhood dynamics and the social level have generally been studied in the context of more spacious city structures (Forrest et al. 2002, 216). To date, studies that would research the entity consisting of the dwellings, buildings and local environment are rare. Bramley et al. (2009) have included the apartment and living satisfaction as a part of their social sustainability study. This has been an important new approach, as from the resident perspective, many of the issues representing sustainability, such as energy-efficiency of the buildings, may be so-called imposed values, which cannot be affected through individual choices.

Understanding living choices, lifestyles, role of the household, and everyday routines is a part of promoting sustainable opportunities (Spaargaren 2003). Ancell and Thompson-Fawcett (2008), who studied social sustainability in an increasingly dense urban structure, have proposed a hierarchy framework for studying the availability and quality of residences, availability of modes of transport, availability of services, residential area quality and social relationships of communities (cf. Bramley & Power 2009). Social sustainability analysis conforming to Marlow’s hierarchy of needs brings together resident preferences, limitations, and the features offered by housing and the levels of needs. According to Maslow’s (1943) interpretation, the basic need of living beings is survival. For humans, this means the need for cover, safety and food. This basic need is apparent in the emphasis of criteria of living: selections are often defined by location, size and offering and the resulting price from these.



**Diagram 5.** The social sustainability factors of housing, interpreted using Maslow's hierarchy of needs model. Revised according to the model by Ancell & Thompson-Fawcett (2008): sustainability dimensions added to the model.

The presented hierarchy of needs is based on Maslow's concept that the needs of a lower level must first be met before moving to the next level (Maslow 1943). Basic needs define the threshold criteria of choices (Diagram 5). In the sustainability interpretation using a need pyramid, the affordability of a dwelling is recognised as a level on which resident requirements and expectations are based upon. In practice, this means that the dwellings available on the market are evaluated in relation to the household's phase in life and budget limitations. This results in the size, price and location also guiding the handling of other criteria (cf. Bramley & Morgan 2003), so included opportunities for adaptation of the dwelling, for example, are not highlighted as a selection criteria if they carry an additional cost. Adaptability, however, may support full life-cycle living and save the resident from moving costs later on.

Adaptability does not necessarily mean additional costs. Tarpio (2015) presents seven spatial logics as a result of his doctoral dissertation: apartments adapt to different uses without additional costs associated with adaptability when adaptability refers to changes in the physical features of the space. It is significant if residents are available to appreciate these features as consumers and how these features are made visible to consumers.

The affordability of the dwelling determines the fulfilment of other quality possibilities (Diagram 5). Therefore, affordability surpasses building quality – people settle with what is available (cf. Ancell & Thompson-Fawcett 2008, 434). When assessing features of living adjusted to the hierarchy of needs, transport and facilities are the next level after fundamental needs. Transport choices are related to the possibilities of residents. Many will give up or reduce the use of a private car, if the environment supports it. Facilities and services also affect transport and mobility needs.

In practice, the division of the economic and ecological dimensions of housing is not unambiguous, but Diagram 5 acts as a reminder that even though the selection of a residence is directed by its location, the possible choices of a residence culminate to the purchase and housing costs. Therefore, the link between housing and social sustainability, indicated in Diagram 5 by the experienced quality of the residential area and neighbourhood, proves to come second to economic factors in particular. It is impossible for residents to focus on quality of the residential area (architectural appearance, level of maintenance, etc.), if restricted by budget constraints.

Maslow's hierarchy of needs is also subject to criticism (e.g. Neher 1991), as, for example, the goal of the top level, self-actualisation, has occurred in the work of many artists, despite their lives in poverty. Therefore, the need levels are not to be taken literally. Instead, the hierarchy of needs provides an opportunity to interpret and identify resident attitudes toward different sustainability dimensions and recognise the ways residents make sustainability-associated choices.

In the Aalto University townhouse study, social sustainability issues have been included in the goals of planning. The aforementioned framework of different dimensions of sustainability acts as a reminder of the affordability requirement for living, which has been included as an important part of the study. Ideally, the quality factors of a residential building, such as technical solutions, reduce monthly housing costs, which the Envi survey indicated even surpasses purchase price as a choice criteria. It remains the responsibility of designers to promote the possibilities offered by the residential area and social environment. It is difficult for consumers to promote these quality requirements within their budgets.



Figure 9. Social sustainability is part of everyday life.



## 3.2 Housing images and research in Finland

Small-scale house predominance, home ownership, proximity to nature and safety are significant Finnish housing preferences, according to surveys (Lapintie 2010, 53). In contrast, the diversification of housing preferences is also evident in housing preference studies: both domestic and international studies indicate increasing changes in lifestyles, values of housing, family models and population structure (e.g. Coulter et al. 2015; Lilius 2014). Societal development is reflected on living. For example, changes in the types and locations of work have long been expected to affect the development of housing preferences. The supply of residences, however, has not become more diversified. The pattern of producing apartment blocks and row houses has been presented as one of the reasons for the popularity of single-family houses, which is further reinforced by private areas and increased authority of the residents (Junnto 2010a, 10<sup>11</sup>–12). While the share of row houses has become established at 15 percent of residences, the need for new typologies that would mix the typologies of small-scale houses and apartment blocks has been identified (Junnto 2010b, 44, 47).

When typologies and residential area types are examined in the level of design and planning, many of the concepts prove to be insufficiently defined. For example, the area that is characterized by small-scale houses may mean dense and low area with apartment block efficiency, whereas an area characterised by apartment blocks is equally true in quiet suburbs and the urban residential areas of the inner cities. (Lapintie 2010, 54). Although the Residents' barometer survey (Strandell 2011; 2005; 1999) that examines the quality of Finnish urban living environments and was repeated three times does not allow for regional or other subgroup-based comparative analysis, due to the relatively low number of respondents (n=1272; Strandell 2011), the barometer provided principles for the housing preferences in the Finnish Dream Home survey (Huttunen et al. 2015, 27<sup>11</sup>–28). In addition, the Residents' barometer offers comparative data over time. For example, the popularity of living in an apartment building has increased in city centre-like areas, meaning areas that offer good services, recreational possibilities and cultural offerings. At the same time, dissatisfaction with the yards of the high density residential areas based on apartments buildings has increased and, in addition to families with children, seniors are using the yards more actively than could be assumed based on their housing typology distribution. Dissatisfaction with public transport services has also

increased, even though the public transport services of residential areas have not worsened and the bus stop is just as close to the home as before. (Strandell 2011.)

The need to recognise the different, partially independent characteristics of the predominant housing typology, is evident as indicated in the survey conducted in 2002 (Tuominen et al. 2005) and examined the assumptions of the relationships between life situations and the associated forms of housing: Of households with one or two persons in the inner city of Helsinki, nearly 40 percent would want a small-scale house, whereas 47 percent of the families in the inner city would like to live in an apartment building. The popularity of small-scale houses increases significantly in the areas outside the inner city consisting mainly of apartment buildings, for example, 71 percent of families with children would want to live in small-scale houses. Respondents were profiled by generation in the same study: predominance of small-scale housing was identified as being important to those born in the 60s and the baby boomers. Although younger respondents born during 1976–1981, referred to as the IT generation, also appreciated peacefulness and proximity to nature, small-scale housing predominance was not very important to them. (Tuominen et al. 2005, 35–6.) These results provide grounds for considering what the new modes of urban living and life are for younger generations that have lived their entire lives in cities.

## 3.3

# Concepts create and mould views

**Kimmo Lapintie (2008, 31) emphasises the importance of resolving the unclear concepts of housing preferences. Instead of preferences being interpreted in a linear fashion as single-family house or urban housing, it should be understood what associations the preferences are based upon. Examining the associations intertwined with housing reduces the challenges in studying a new housing typology. When housing is dissected into features, it is possible to examine each feature independently. However, the housing preferences, needs and explanations for housing choices must also be understood as a part of cultural understanding (cf. Rapoport 2005).**

### 3.3.1 Challenges of housing typologies

The townhouse typology is challenged by the term small-scale urban house, and the fact that the typology is often compared to a single-family house. A small-scale urban house associates the typology to an urban environment, often even a high-density area. Comparison to a single-family house connects the typology with property-based ownership housing, even though the typology is well-suited also for housing cooperatives. One challenge in Finnish housing culture is the ample space associated with the townhouse typology particularly when estimated in terms of square meters. These are examples that mould resident images and beliefs on townhouses, also incorrectly.

One of the central challenges of housing preference research is the question on how to study new housing concepts that do not yet have existing examples. Examples are essential, as survey respondents and interviewees responding to housing preference studies base their opinions on experiences. If they do not have experience, responses are based on beliefs (cf. McFadden 1999). The lack of examples does not only apply to housing typologies, but also to the study of new housing typologies. The study of new concepts has primarily been focused on the residential area level (e.g. Kauko 2006; Kersloot & Kauko 2004). The possibilities of housing concepts have been assessed in the Urba project, primarily through international examples (cf. Norvasuo 2010; 2008). In Finland, living in high-rise apartment building, “housing towers”, is an example of a new typology, which has somewhat generated research interest (Hasu & Staffans 2014).

### 3.3.2 Living environment questions

The housing environment, in addition to the dwelling, is a central factor in both housing choices and the ease of everyday life. Of the housing environment, we can recognise

the built environment, but the environment also has several other dimensions: social, functional, and the symbolic level that reflects the identity of the location (Nykänen et al. 2013, 24). The housing area is not irrelevant when choosing the future home, even though the service environment, for example, may be identical at more than one location.

From the resident perspective, the residential environments have differences based on the experience of the home. A balcony or yard are examples of private outdoor areas that are part of the home, and that may expand into a shared courtyard, for example. The home emphasises the experience of private space and sovereignty (cf. Lapintie 2010), but the significance of social areas are highlighted with courtyards and at the block level. In this context, resident profiles identified in this study prove to function as promising “design keys”.

The appeal of social areas has raised discussion, which is also discussed in this report (see 5.5). Social interpretations of the environment are primarily expressed as housing choice criteria. Some residents consciously seek community living, underlining housing cooperatives or a club room or resident block house as important factors. Some residents consider the same factors as being negative. A challenge for the planner is that the formerly mentioned “social resident” and the latter “private resident” may be a couple.

The solution for pleasing the couple is not “everything for everyone”. Instead, the design must seek area-specific solutions on how to create sufficient private space and sufficient social areas. This can occur through behavioural patterns; during the workshops, we observed that creating the rules had a key role. Additionally, meeting the potential residents in advance has proven important in concept development of developers (e.g. Haapamäki 6.2.2014). In the future, the same planning method could potentially be applied on a regional level.

## 3.4 Demographic trends and design challenges of urban livings

**Beliefs and expectations for housing are primarily studied through preference surveys. Their challenge is the tendency to generalise, which results in not knowing what is behind the housing concepts and preferences (Lapintie 2008, 29). It is also typical that a group of respondents is treated as representative of the entire resident group.**

An example of this is the Nurmijärvi phenomenon, which occurred in the early 2000s, and its interpretation of the mass exodus of families with children from cities. Some of the families with children, however, remained and some moved closer to the inner city; this trend has also been further reinforced. The living preferences of families with children are becoming more diverse, which also means research results that can be considered conflicting. Hirvonen and Puustinen (2014) observed that the number of families with children in city centres is declining, whereas other studies (e.g. Lilius 2014; Karsten 2007) have observed an increase of families with children living in city centres. The difference between research results is irrelevant to planning, where the important issue is to recognise the preferences of families with children for settling in different types of areas. Some of the families with children appreciate busy, urban, city centre-like living and some prefer a more spacious type of living in close proximity to nature – answers and options should be offered for both.

Recognising the diversity within a single group is associated with multiculturality: ethnic groups are often viewed as homogeneous resident groups (e.g. Abramsson et al. 2002), although place of birth alone does not yet define personal preferences of perceived possibilities. With immigration becoming increasingly common, types and preferences of housing are also becoming more diverse. However, multiculturality is not only associated with immigration, but also with diversification of Finnish ways of life. Therefore, direct and simplifying conclusions should be avoided in an era of diversity. The differentiation of housing should be recognised instead. Along with immigration, the differentiation trend in living in the Helsinki metropolitan area is affected by living alone becoming more common and an ageing population (Juntto 2010c, 270, 275, 289.)

### 3.4.1 Solo dwellers

Living alone becoming more common comprehensively changes the goals set for planning living environments. At the end of 2015, of the 2.6 million households in Finland,

42 percent were single resident households. The number of one-person households is increasing faster than other household types. The number of people living alone increased by 14,000 from the previous year and a majority of this group are over 65. Although 28 percent of the solo dwellers that were over 65 lived in single-family houses or semi-detached houses, 54 percent lived in apartment buildings. Living in an apartment building is the most common with one-person households. Of those under 35 years, 80 percent live in apartment buildings. (Official Statistics of Finland (SVT) 2015.)

In the Helsinki metropolitan area, sufficient housing space and affordability are at the heart of housing policy discussion focusing on the increase in solo living. The lack of scale advantages results in higher housing and living costs for those living alone representing the largest household group of those with small incomes (Official Statistics of Finland (SVT) 2015). Increased living costs result in smaller apartments. Paradoxically, the increase in solo living means increase in general living density (Lankinen & Lönnqvist 2010). A proposed solution for the increased housing costs includes, for example, mini-residence concepts. It is also necessary to propose new housing options due to the Finnish housing supply being perceived as lacking diversity. Studio apartments, however, are rarely an answer to the living preferences of a solo dweller. For example, a survey (n=1088) focusing on solo dwellers of ages 25-74 living in Helsinki indicates that the most suitable size of the apartment for a solo dweller is 40-59 square metres. Many respondents also expressed a preference for 60-79 square metre apartments, which would correspond with three-room apartments. (Backman 2015.)

Differences in the housing preferences of one-person households indicate the heterogeneity of the resident group: all solo dwellers do not necessarily live alone and the housing needs may be defined by an active social life. However, the analysis based on the size of the apartment easily overshadows an important aspect of housing design: the number of square metres cannot be compared to one another, as the way they are used in the housing type defines how they can be

utilized by the resident, which, in turn, is defined by the subjective housing preferences. In addition to analysis based on the amount of living area, research results would be needed that reflect the use of the living area in order to renew the typologies of studio apartments, one-bedroom apartments and two-bedroom apartments. Information would also be needed on how well suited different forms of living that include shared domestic spaces are for small households. In this manner the growth of solo living is connected with the theme of social sustainability in housing. Concepts that share domestic spaces in different ways are potentially also affordable. As the report at hand confirms, identifying resident groups is important for the increase of new forms of housing. It is essential to understand that significant factors for housing, such as lifestyles and values, do not necessarily conform to classifications based on household size.

### 3.4.2 Ageing population

Urbanisation and an ageing population increase the need and demand for dwellings suitable for senior residents, especially in the centres of small cities and sub-centres of large cities. Sub-centres are centralised areas of apartments, jobs and services that rely on public transport. According to research (Ristimäki et al. 2013), those over 74 years of age move to city centres and sub-centres. In all city areas, especially the pedestrian areas of sub-centres, the share of those over 74 years has been increasing. This is understandable, as access to everyday services is a requirement for independent living.

According to the "2013–2017 Development programme for senior living", produced by the Ministry of the Environment, a majority of those over 75 lived in detached houses (39.1%) in 2011, or in semi-detached houses or row houses (16.4%), and less than half in apartment buildings (44.5%). The goal of the programme is to support senior residents living at home as long as possible. The lack of lifts in apartment blocks as well as stairs at the entrances have been identified as the greatest obstacle for the mobility of seniors. The programme has set the goal that, by 2030, a third of Finland's housing will be fully accessible. (Ministry of the Environment 2013.) The goal can be reached through new construction and renovation. The goal applies to both apartment buildings and small-scale houses. An apartment building is defined as a residential building, which has a minimum of two floors and contains areas of different apartments on top of one another (RakM. G1). Regulations pertaining accessible access apply currently only to apartment buildings. In principle, the townhouse is a single-family house, so accessibility regulations do not apply to it. According to the instructions associated with building regulations, the entrances and routes to the entrances must have accessible access, if the shape of the plot allows it. The instructions leave room for interpretations and leads to inequality of the builders of the dwellings. In addition, practices vary in different parts of Finland.

The research on housing and housing preferences of the ageing population has partially produced conflicting results. On one hand it is stated that a dwelling may not be suitable for a resident and an ageing resident cannot manage

in their home without great difficulty (Clough et al. 2004). Therefore, changing the dwelling or type of living may be desirable. In contrast, other research indicates that residents do not want to move when they retire (Myers & Ryu 2008). Although seniors leave the home and travel more than before, the permanency of the location seems to increase with increasing age. The willingness to move decreases and many remain living in the same home as they age. According to a study, those under 35 years old live in the same dwelling for approximately 4.3 years, whereas those over 85 years of age had lived in the same dwelling 30.2 years, on average (Smith et al. 2008). Moves of those over 65 years old also decrease significantly in Helsinki, including moves from one dwelling to another (HKI 2016). A resident survey conducted in Lauttasaari supports this view (Nenonen & Verma 2015). Therefore, it appears that many housing decisions, which affect the resident to the end of their life, are made when middle-aged. Clark and Deurloo (2006) also found that due to this, the ageing population lives more spaciouly and in larger dwellings than younger generations and families with children. Residents remain in the dwellings when the children move out. The form of ownership also affects the will to move. The aforementioned study found that ageing residents will first use their other savings, before selling the dwelling and moving to a smaller one. In Finland, over 80 percent of those over 75 years of age live in privately owned dwelling (Ministry of the Environment 2013). In Helsinki, this figure is approximately 70 percent (HKI 2016). If the future population trend is to be prepared for, allowing life-cycle housing must be considered in all new types of housing, including single-family houses and townhouses. In contrast, it has been found that those living on leases and over 85 years of age are more satisfied with their form of housing than those of the same age living in privately owned dwellings (James 2008). Maintenance of the building and yards are challenging to the older senior population and affect the residents' willingness to move. The will to relinquish obligations is evident. The affordability of living costs is also important to retired residents. Housing costs may prevent moving. For example, the old age pension of a woman was approximately 1,800 euros and the old age pension of a man was nearly 2,600 euros in Helsinki in 2014. A majority of single residents over 75 years of age are women (HKI 2016).

Jacobsen and Pirinen (2007) discuss the requirement of aesthetics and comfort also in accessible design solutions. According to them, residents that may have limited mobility, wish for solutions that are aesthetically pleasing, create a good feeling and empower the resident. The dwelling is wished to have individuality and functionality. There is a desire to preserve routines and lifestyles. The adaptability of the home and good usability can be associated, for example, with the ability to combine the toilet with the laundry room when the need for space changes. Outdoor areas, the yard, post box and bin shed must also be easily accessible. The significance of a private yard or terrace for well-being increases, if mobility is limited. Their maintenance, however, is difficult for an ageing resident and, therefore, a significant reason to move.



Figure 10. Family life in the city.

### 3.4.3 Urban families

All households do not move from city centres to low-density areas after starting a family. According to Lilius (2014), there is a lifestyle appeal to urban residential areas, which is also recognised after starting a family. Although the living environment is expanded to playgrounds through the children, everyday life still becomes organised around the value added services of the area and social life offered by the city that improve the quality of life of the parents. Often, the housing preferences associated with a residential area are preserved in the new life situation characterised by parenthood and family life, which includes a special characteristic of urban lifestyles becoming intertwined. From the perspective of housing preferences, it is also interesting that according to a city planner interviewed in the study, families with children do not, in contrast to prevailing views, move from Helsinki because of the ideal of a single-family house, but because they cannot afford to live there. In the context of planning and design, the results encourage to critically examine organising the city based on individual phases of life and family lifecycles.

Good traffic connections, services and jobs located within walking distance were recognised as significant reasons for urban living in a study that assessed the significance of an urban environment to Helsinki residents that are on parental leave (Lilius 2015). As urban housing meant more cramped housing, parents had made a conscious housing

choice based on the features of the living environment. For the well-being of the parents, it was essential that childcare was perceived to be less lonely in the city than in the suburbs. Urban living was also experienced to better allow the parents to engage in recreational activities. The results are reinforced by Mäenpää's (2011, 67) proposal that apartments should be viewed as an "interface to everyday life outside the dwelling": The different possibilities for use associated with living surpass the amount of living space in importance. The external usability also includes examining adaptability, which is also discussed in this final report.

The results of residential area preferences of urban families with children supplement the Resident barometer survey results, which indicate that the popularity of living in city centre-like apartments is increasing (Strandell 2011, 12). At the same time, the different natures of the residential areas are included in the discussion and the ability to generalise the results of the analysis of the Resident barometer's survey material: Of the Barometer respondents, 15 percent state that they are afraid to move outside alone at night. The respondents that were most afraid of going out alone at night were those living in apartment blocks and high-density areas (ibid. 61). However, the mothers interviewed by Lilius (2014, 850) discussed feeling safe in a residential area that is located only two kilometres from Helsinki Central Railway Station. People on the streets, sounds from neighbours and a small city-like atmosphere were identified as safety factors.

### 3.4.4 Multiculturalism and immigrants

With immigration becoming increasingly common, the uniform culture of living is also changing, especially in the Helsinki metropolitan area, where nearly half of Finland's population that speak a foreign language reside. According to predictions, the population of foreign language speakers in the Helsinki region, which includes 14 municipalities, will increase from 164,000 to 350,000 by 2030, equating to 21 percent of the population. In the municipalities of the Helsinki Metropolitan area, not including Kauniainen, the increase is expected to equate to 23–28 percent by 2030. The increase in population from other countries has been recognised to result in challenges in the municipalities. The challenges are associated with multilingualism, multiculturalism and societal integration. (2015-2030 Helsingin seudun vieraskielisen väestön ennuste, 2016). The reasons for immigration, household size, ethnic background, and socioeconomic background explain the housing choices of residents associated with immigration. Discussion has also occurred on the ethnic isolation of residential areas, as the original population move away from areas predominantly inhabited by immigrants (Vilkama et al. 2013). In contrast, studies examining international skilled labour find that the price-quality ratio is considered poor, despite the different backgrounds of the respondents (Eskelä 2011; Kepsu et al. 2010). Particularly the small size and the large number of studio apartments are questioned by international skilled labour (Eskelä 2011). The availability of suitable rental apartments was also seen as insufficient. Diversity is called for in both the types and architecture of the apartments, especially in relation to the housing costs. (Kepsu et al. 2010.) The diversification of housing options is recognised to support the needs of both domestic and international skilled labour (Eskelä 2011). If the analysis of multiculturalism is expanded to the ideological level affecting urban living, we encounter the still prevailing functionalistic planning approach, which does not have room for city planning that promotes multiculturalism. The seemingly logical approach of combining form and function proves outdated, as it cannot react to the cultural changes of housing and urban life. (Lapintie 2014.)

The green areas of residential areas increase well-being. Faehnle et al. (2010) introduce the possibility of using nature areas to increase participation and social interaction. People from different countries may have a very different relationship with nature. According to research, people from Africa and Asia will use green areas more for social interaction, parties, and grilling than people from Nordic countries. Female immigrants from these areas will not take a walk to nature destinations further away, as they may consider them unsafe. This highlights the importance of green and public areas as sources of well-being. In previous studies, Somalians and Iraqis, among others, living in Finland have expressed a wish to have a private kitchen garden and yard. The possibility for urban gardening can be seen as a way of integrating people with different backgrounds (Faehnle et al. 2010).

### Summary

The demographic trends of urban living mean that design solutions must be considered more target group-specifically. Resident groups function as trendsetters of housing needs. In contrast, the significance of resident groups to planning must be assessed critically, as all of the aforementioned groups – solo dwellers, ageing population, urban families with children and immigrants – are very heterogeneous. The heterogeneous nature of resident groups is associated with planning knowledge, which dictates that solutions intended primarily for one resident group may be necessary and interesting also to other user groups. Accessible environments that serve families with children and those with limited mobility are a good example of this. Limitations may become opportunities when they are used as guidelines for planning and, when including the emphases of the target groups.



## 04

# *Finnish dream home and dream environment*

The basis of the Finnish Dream Home study was public dialogue on city planning and new types of housing, where townhouse living was interpreted to be especially well-suited for families with children. Referring to the demographic trends of urban living, the research question *On what terms the townhouse typology could meet the housing wishes of different resident groups?* renounced the family-centric approach, which leaves out an increasing number of one and two person households. However, it must be remembered that the size of the household is not necessarily the most significant factor guiding housing preferences. The form of the research question was also affected by the identified need to combine the resident perspective missing from previous townhouse studies to the challenges of housing design and planning.

The Finnish Dream Home research created a comprehensive overview of the housing preferences and opportunities and the interest in the townhouse typology. The Envi survey, which measured the energy and environment attitudes of residents in the Helsinki metropolitan area, continued along the same lines of testing the interest in the typology, but also expanding on the housing preferences, in addition to choosing housing and the environment.

This chapter discusses the essential research results on housing preferences. Some of the material overlaps, as one of the goals of the Envi survey was to test the previous Finnish Dream Home survey results, such as lifestyle profiling. In many ways, the results supplement one another and expand on the views of the appeal and opportunities of townhouse living. In the future, the Finnish Dream Home study will also be referred to as the Dream Home, in abbreviated format.

## 4.1

# Research materials and methods

**The Finnish Dream Home and Envi surveys have both examined who may be a future townhouse resident and what preferences, needs, and attitudes does he or she have. The following presents the materials and central conclusions of both studies. Then it will be presented how the approach characterized as adaptive research has directed the further development of workshops on townhouse living. Finally, the examination will return to the expert interviews.**

### 4.1.1 Finnish Dream Home

The goal of the study highlighting the resident perspective was to identify significant factors in the increase of the townhouse typology and townhouse living for the use of experts working with the planning and development of new types of housing. The materials consist of expert interviews, a survey and workshop materials. Methodological triangulation, where understanding of the research subject accumulates in the interaction of the materials, was selected as the research strategy. (Huttunen et al. 2015, 24–51.)

#### Expert interviews

Architects, city planners, researchers and other experts participated in the expert interviews (n=11). In addition to the definition of the townhouse, the interviews covered location, residents, design solutions, private outdoor areas, obstacles for the typology becoming common, and construction methods.

#### Survey – Housing preferences without the connection to the townhouse typology

When designing the Finnish Dream Home survey studying the opportunities of the townhouse typology, attempts were made to avoid potential incorrect or tainted perceptions. The primary goal for preparing the survey was to recognize the preparedness of Helsinki metropolitan area residents for townhouse living; meaning what is considered acceptable and with what conditions? Two factors in particular cast doubts on the townhouse concept: price and having several floors. Price is a factor that is influenced by the size, location and construction method of the building. In addition, having several floors becomes apparent as a feature that may create an unbreakable barrier on the views on suitability of townhouse living for oneself or family.

The primary materials of the survey consisted of web panelists, aged 24–80 (n=1214). Quotas for people 24–59 years of age were implemented by household type, which resulted in approximately 1,000 respondents, with a somewhat even distribution of solo dwellers, couples and families with children. A quota of 200 respondents was also set for people 60–80 years of age. In addition to the web panelists, the collection of materials was also tested using two other channels. The number of respondents reached through the Etuovi.com website (n=81) was so small, that the use of the material was limited to reviewing it in relation to the other two sources of material. However, all of the open-format comments and views of respondents were processed and considered in the overall analysis. The survey link was also sent to the email list of those who had applied for a plot from the City of Helsinki. A total of 603 messages were sent out and received. A total of 122 responses were received through the survey link, resulting in a 20 percent response rate. Despite the relatively small number of respondents, this material was considered important, as plot applicants can be considered to have seriously considered factors associated with housing and construction. The distribution of respondents (web panelists and plot applicants from the city) in the materials by typology, type of tenure, household type and gender have been presented in the Finnish Dream Home report (Huttunen et al. 2015, 26-27).

The Finnish Dream Home survey was designed based on expert interviews, literature sources, and design understanding of the research group. One of the central goals was to identify a survey method that would extend beyond traditional housing typology-based preferences. Thus it was ultimately decided to dissect the townhouse typology to the significant components of its design, including private outdoor areas and location. For example, in the section titled Typology features, views on having several floors in the home or adaptability were uncovered using statements. A significant strategic choice was also to present the statement “Townhouse as a typology would fit me/us well” at the end of the survey.



## Workshops

A design game was developed for the workshop (cf. Tervo & Hasu, forthcoming), in order to expand on the materials from the expert interviews and surveys. Workshop participants were primarily reached through the Finnish Dream Home survey. A total of 61 urban residents interested in the subject participated in seven workshops. The first five workshops discussed themes derived from the survey: private outdoor areas, typology, shared domestic spaces and adaptability. Time was left in the last two workshops to address themes arising during the progress of the workshops. Ultimately, the selected themes were the design solutions and adaptability of street areas, front yards and entrances.

The themes evolved and became more detailed as the workshops progressed: they allowed reflection on previously collected materials: for example, resident co-operation in creating rules for the use of shared domestic spaces provided indications on ways to respond to the preferences and requirements of both social and private-minded resident profiles. Idea exchange and discussion with fellow residents helped participants understand the views and opinions of one another. At the same time, every participant was examining their own requirements and correcting misconceptions. People with previously negative attitudes toward a shared courtyard or resident buildings may have observed that shared areas may also create opportunities. If one can influence the rules of engagement, it is likely that different functional models can be identified for different user groups.

The themes and materials of the workshops are detailed in the New Finnish Dream Home report (Huttunen et al. 2016, 29–51), including the summary on the typology of front yards, which was used as the foundation for creating the block models in the design game.

### 4.1.2 Envi survey

Envi, a survey on the environment and energy attitudes of residents in the Helsinki metropolitan area, was conducted as part of the Aalto AEF Energy Efficient Townhouse project (cf. Hasu & Hirvonen 2015). A total of 1,017 web panelists, of ages 25–80, from the Helsinki metropolitan area responded to the survey. Unlike in the Dream Home survey, quotas for respondents were not created based on households. Of the respondents, 35 percent were single residents and 35 percent were couples. 29 percent of respondents were families with children. Of the respondents, 61 percent lived in Helsinki, 20 percent in Espoo, and 16 percent in Vantaa. 72 percent of the respondents lived in apartment buildings and 27 percent lived in small-scale housing. Of the housing stock of the entire area, 75 percent are apartment buildings, so the distribution of respondents' housing corresponded with the area.

The survey confirmed the classification of resident profiles and townhouse interest identified in the Finnish Dream Home survey. The focus areas of the survey were on identifying features associated with the housing environment and attitudes associated with sustainability. In order to compare

data over time, the survey utilised the 2001 study on environmental attitudes by Aalto University (Helsinki University of Technology at the time) (Heikkinen et al. 2004). In addition, some of the Envi survey questions were adjusted to match the questions of the previous ENE survey conducted by Aalto University, Department of Energy Technology, to allow comparative analysis (see Alanne et al. 2015).

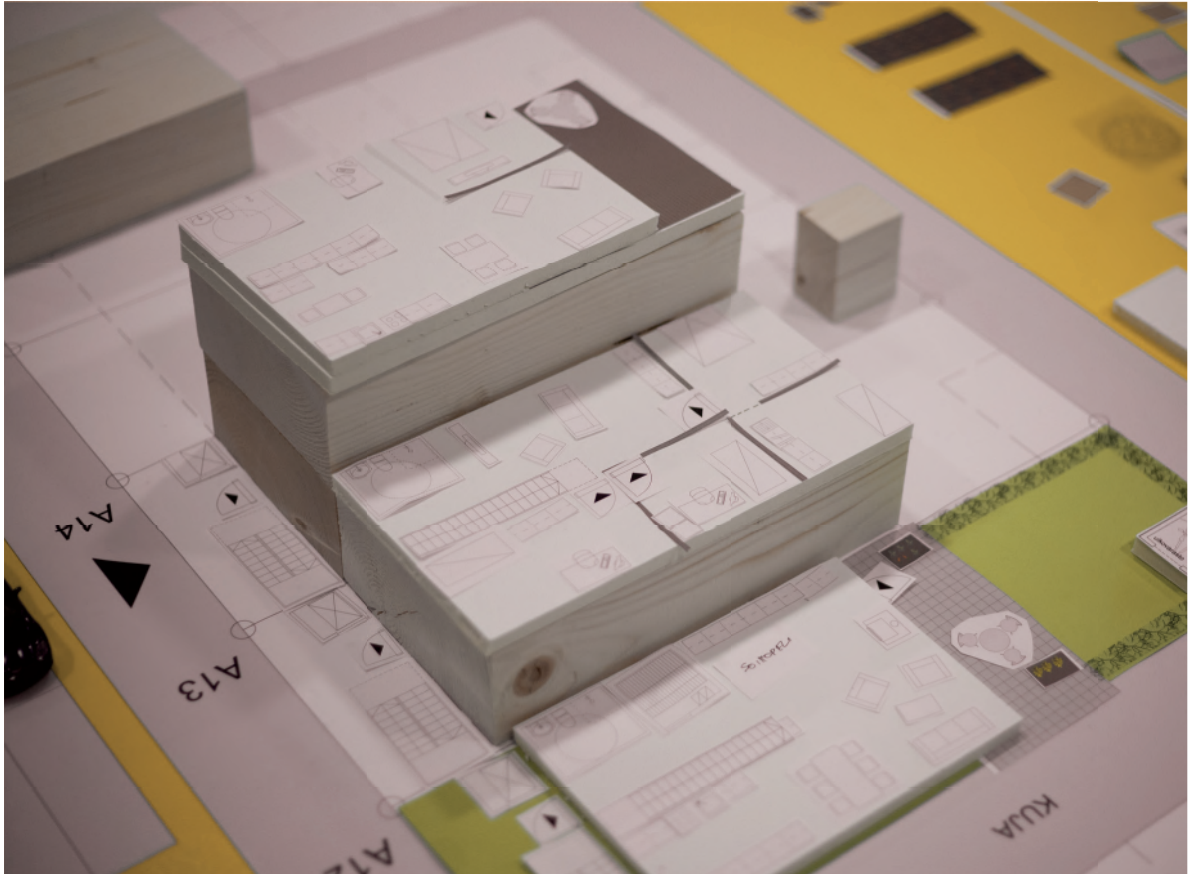


Figure 11. Results of townhouse workshops.



Figure 12. Possibilities of townhouse living were discussed in the workshops.

## 4.2 Results

### 4.2.1 Resident profiling and lifestyles

Lifestyles have gained more ground as a part of housing research over the past few years. Many developers study what types of profiles do different resident types represent: do they represent traditional values and a “stay at home” lifestyle or a more mobile lifestyle where the home functions more as a base (cf. Gibler & Tyvima 2015). The focus of the approach on lifestyles in the Townhouse study has been placed on housing values and attitudes of residents: what type of window view is appreciated as a part of the home and individual living, and what is the attitude toward participation and influencing in relation to one’s residential area? (Hasu et al. forthcoming). These factors were analysed already as a part of the Finnish Dream Home survey, hence some of the statements were included in the Envi survey, in addition to some new ones to test recognised resident profiles.

When studying resident profiles, it is important that the groups identified help answer questions associated with both city planning and housing design. Proximity to nature, bustling urban life, privacy and socialness are values that are linked to planning and living preferences. Often, they are also positioned as opposing values. However, when these factors become a part of lifestyle groups and resident profiles, it is notable that despite the opposing values, the features do not always exclude one another (Hasu et al. forthcoming).

Situational dependence applies in the context of housing: the overall entity is the determining factor. Many of the residents must compromise on some of their preferences and even values. This holds true especially when there are more than one person in the household. There may be people with different lifestyles in the same household. It will be a planning challenge to recognise the different sets of values and meet the essential needs. An example of this is the identified shared domestic spaces in the Dream Home project (Hasu et al. forthcoming). Once the residents’ different possibilities and preparedness to use the shared spaces are understood, planning, implementation and management questions can be more easily addressed. A “private-minded” resident wants to rent the space for private use and a “social” resident wants to use the space together with others.

Resident profiles were recognised in the Finnish Dream Home (FDH) study in relation to the urban preferences of the city structure: analysis was performed on were resident preferences weighted on a dense and bustling urban life or on a less bustling, low-density area. Residents were also analysed in relation to attitudes to local community.

A similar approach was also used in the Envi survey conducted later on.

Therefore, both surveys presented statements associated with the housing and living environment. The statements with significant correlation with one another produced two indicators, which formed four resident profiles. Below are the sections titled urbanity and socialness indicator sections and their statements:

#### Built environment structure (urbanity) sections:

- *I enjoy being a part of liveable, urban housing environment*
- *I would like to be able to follow bustling street life from my window*
- *Nearby park is enough nature for me*
- *I am not interested in being responsible for the maintenance of a house or a garden*

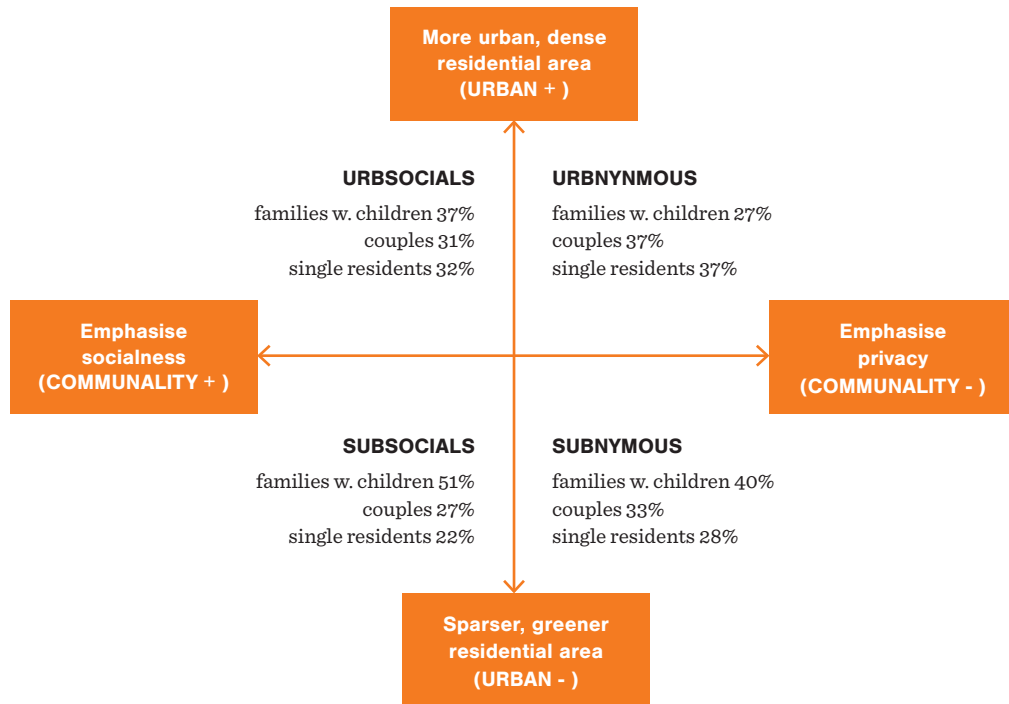
Cronbach’s Alpha SU 0.76, Envi 0.69

#### Attitudes towards local community (socialness) sections:

- *I want to actively take part in events in my city area (only Envi)*
- *When choosing a home and location, social contacts significantly impact my choice*
- *Socialising with my neighbours is very important to me*
- *I want actively to participate in a development of my neighbourhood*

Cronbach’s Alpha SU 0.61, Envi 0.67

Of the statements added to the Envi survey on use of the environment and participation, one became a component of the socialness indicator, following correlation analysis. The essential differences between the two materials is that some of the respondents were not included in the profiles of the Envi materials. The mean value (8) was obtained with both indicators by respondents, whose responses were dominated by “do not agree or disagree” responses. These so-called middle-ground respondents describe residents who could be characterised as those who adjust to housing. As the descriptive value of the profiling already completed once using the Dream Home materials could now be expanded upon, the mean values were omitted from the indicators. In the Envi survey, we had more interest in attitudes than adjustment: for or against a statement. This action contributes to explaining the differences between the FDH and Envi surveys with the distribution of profile groups.



**Diagram 6.** Resident profiles and percentage of family types in four different profile types. (FDH)

The four resident profiles, identified using the urbanity and socialness indicators and attitudes toward lifestyles, were formed as follows (Finnish Dream Home (FDH) survey 2014; Envi survey 2015):

- 1) *Urbsocials*  
urban living preferences and greater significance of local community (FDH 30 %, Envi 26 % of respondents)
- 2) *Urbnymous*  
urban living preferences and less significance of local community (FDH 28 %, Envi 18 % of respondents)
- 3) *Subsocials*  
less urban living preferences and greater significance of local community (FDH 22 %, Envi 24 % of respondents)
- 4) *Subnymous*  
less urban living preferences and less significance of local community (FDH 20 %, Envi 32 % of respondents).

The factor that binds resident profiles to lifestyles is that the traditional background variables are omitted as explaining factors (cf. Diagram 6). When profiles are analysed in relation to the ages, education, and family sizes of the respondents, for example, the aforementioned factors do not predict the classification of a respondent to a specific profile. Only families with children in more bustling, urban areas are slightly more frequently social, not withdrawn. Similarly, solo dwellers value busy, urban living slightly more often than lower density and greener living. It is essential, however, to note that each resident profile has a minimum of one fifth of each household type. The greatest household variation occurs with subsocials, of which over half (51%) were

families with children and approximately one fifth were solo dwellers (22%) in this group of respondents. The distributions were more even in other profile groups.

Table 1 presents the distribution of Dream Home respondents in different lifestyle groups and some of the characteristics of their current living and housing preferences. The preferences of a lower density housing with more green areas is also reflected on the size preference of the dwelling – although those favouring busy areas also prefer homes ranging above and below 100 square metres. Diagrams 7 and 8 state the distribution of respondents interested in townhouses by background variables. It is slightly unexpected that both materials indicate single-family house residents have the lowest interest in townhouses. This acts as a reminder that the current type of housing does not directly indicate one's attitudes or interest in a new housing typology.

#### 4.2.2 Townhouse interest and other preferred living

Over half of the respondents in the 2015 Envi survey either fully or mostly agreed with the “Townhouse as a typology would fit me/us well” statement. These 52 percent were classified as “townhouse-positive”. The corresponding figure of the 2014 Dream Home survey was 56 percent (diagram 9). In the Envi survey, more than one fifth disagreed with the statement on townhouse suitability (mostly disagree 13% and disagree 9%). These respondents were interpreted to feel negative toward townhouse living. We have used these two groups, those positive and negative toward townhouse living, in result analysis.

In the Envi survey, 26 percent were neutral on townhouse living and responded “do not agree or disagree” when asking the interest towards a townhouse (Diagram 9). There were

Finnish Dream Home (n=1214)	Total	Urbsocials	Urbnymous	Subsocials	Subnymous	Test result	
Interested in Townhouse, %	56 %	62 %	58 %	55 %	45 %	1)	***
<b>Family type</b>							
family with children, %	38 %	37 %	27 %	51 %	40 %	1)	***
couples, %	31 %	27 %	27 %	27 %	33 %	1)	***
single, %	31 %	36 %	36 %	22 %	28 %	1)	***
<b>Housing preferences</b>							
preferred dwelling size, sq.m.	108	102	99	120	115	2)	***
preferred number of rooms	3,9	3,8	3,6	4,3	4	1)	***
prefers apartment in a city centre, %	33 %	53 %	53 %	5 %	8 %	1)	***
prefers detached house, individ.design, %	36 %	26 %	23 %	60 %	47 %	1)	***
<b>Income and housing costs</b>							
household net income, € per month	3,499	3,428	3,414	3,766	3,429	2)	-
monthly housing costs, maximum WTP of net income, %	31 %	32 %	30 %	30 %	31 %	2)	-
<b>Current housing situation</b>							
households without a car, %	21 %	22 %	31 %	14 %	13 %	1)	***
city centre dwellers, %	24 %	38 %	34 %	11 %	7 %	1)	***

1) Chi Square; 2) Kruskal-Wallis Test ; \*\*\* p < 0,001 ; p < 0,05 ; - not stat. significant p ≥ 0

Table 1. More detailed analysis of housing preferences and current housing of the respondents. (FDH)

**”TOWNHOUSE AS A TYPOLOGY WOULD FIT ME/US WELL.”**  
(WEB PANELISTS n=1214)

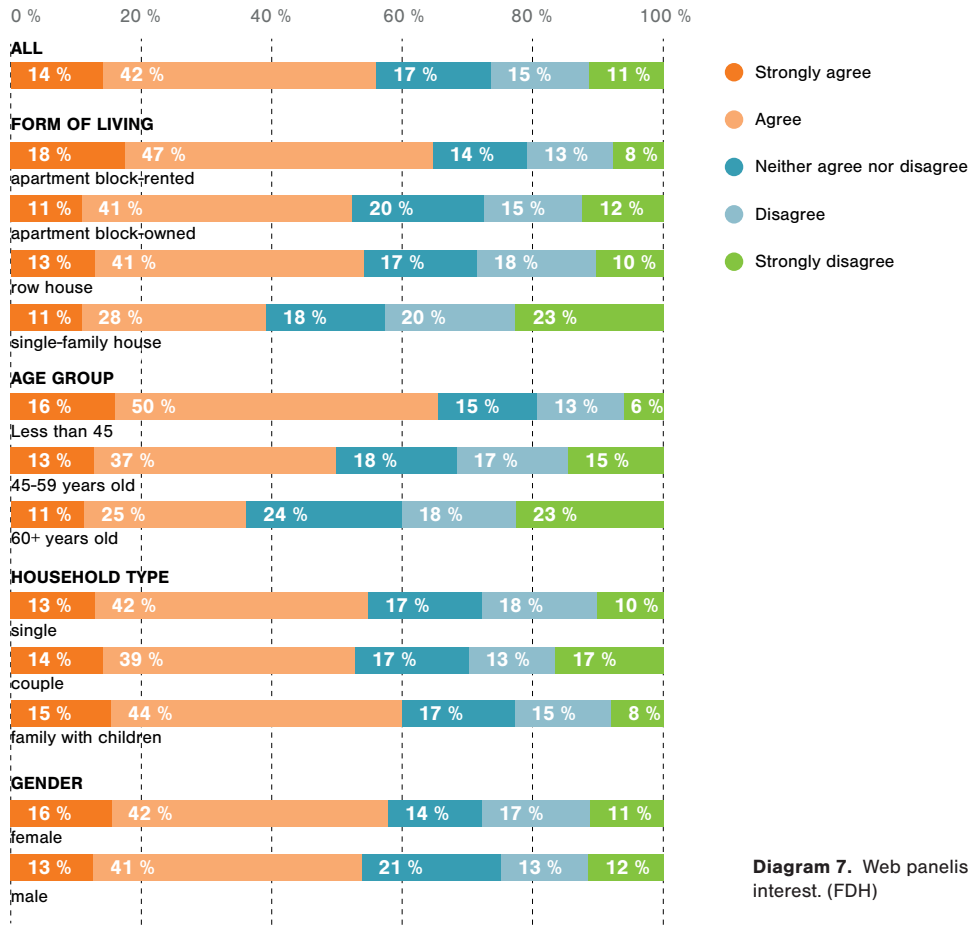
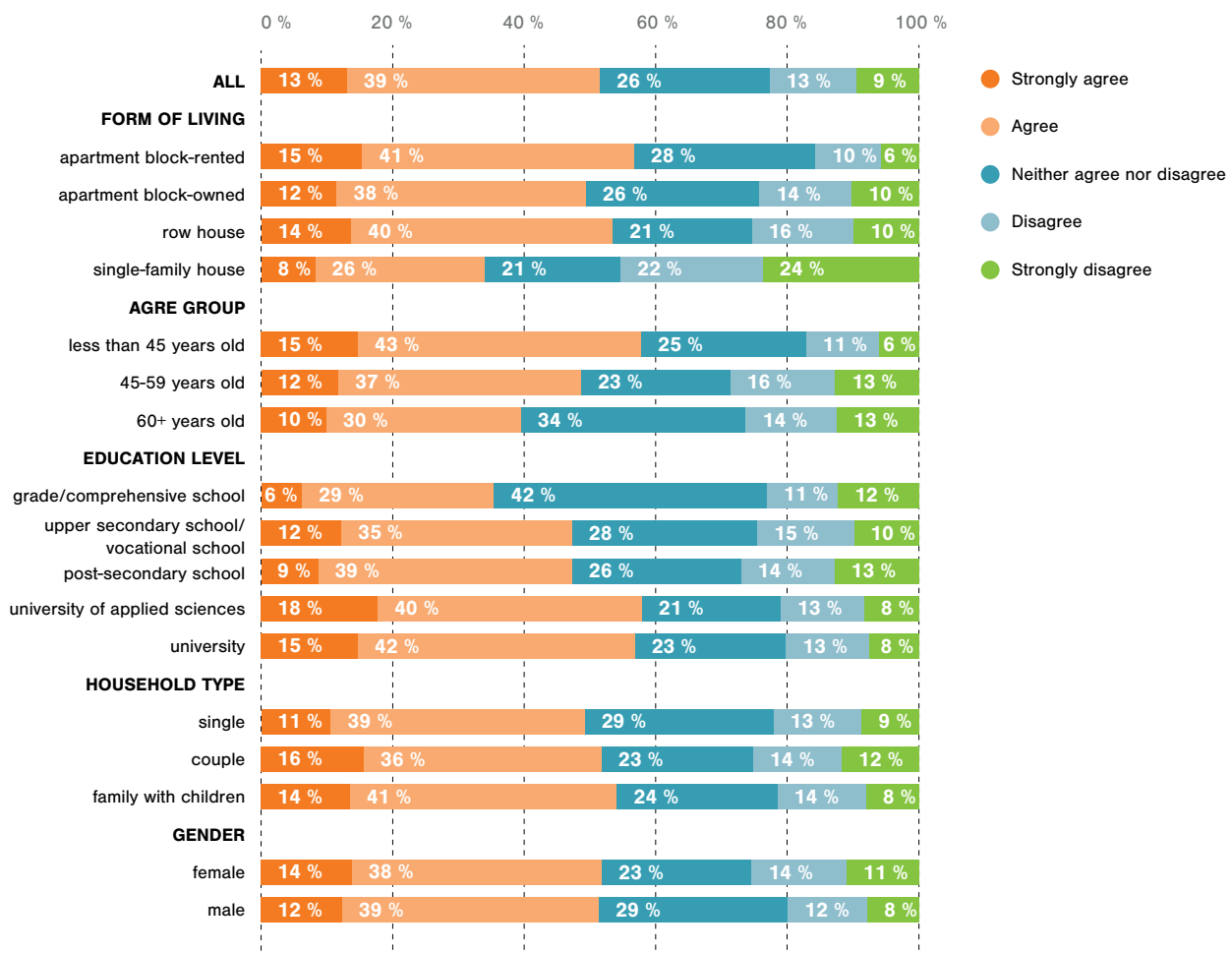


Diagram 7. Web panelists based on townhouse interest. (FDH)

**"TOWNHOUSE AS A TYPOLOGY WOULD FIT ME/US WELL."  
(ENVI V. 2015, n=1017)**



**Diagram 8.** Web panelists based on townhouse interest. (Envi)

somewhat more neutral respondents in the Envi survey than in the Dream Home survey, where 17 percent of respondents were neutral. The difference is likely caused by the Dream Home survey asking several diverse questions associated with townhouse-like living before the question about the suitability of townhouse living for the respondent. A similar path was not laid out in the Envi survey nor were the living preferences as comprehensively assessed. Regardless of this, nearly one in ten (9%) of the respondents of the Envi survey indicated townhouses would be their ideal type of living; the townhouse typology was not included in the alternatives for ideal homes in the Dream Home survey. The figure is greater than, for example, interest in living in tower blocks (6%). As townhouses in the Envi survey received a positive indication from more than half of respondents (52%), without the assessment of one's housing attitudes, and 9 percent stated the typology was their favourite, it can be concluded that townhouse living has potential in urban areas.

The distribution of interest in relation to the current housing of the respondent is presented in Diagram 10. Of single-family house residents, 70 percent would like to also live in a single-family house in the future: 5 percent of the respondents in this group felt that a townhouse would be

their favourite. In contrast, those living in small-scale apartment buildings felt that townhouse living would be their third most preferred housing type, alongside living in an apartment building (12%).

**4.2.3 Residential area preferences and resident profiles**

In Finland, types of residential areas are rather clearly defined as city centre, outer city, suburbs, sparsely populated areas and countryside. Recognised residential area preferences from the Dream Home study included descriptions of low-density, green areas and high-density, busy area types. Their features were expanded upon using attitude statements. These features wanted to be better understood as a part of the Envi survey.

In the Envi survey, the preferred residential area was compared to the ideal dwelling type of the respondents. Of the favourite typologies, Diagram 11 groups small-scale apartment blocks, "regular" apartment blocks, and tower blocks together as a single classification of apartment buildings. The interest of the respondents that stated their favourite housing type as apartment building (tower block, apartment block or small-scale apartment block) is targeted toward city

"TOWNHOUSE AS A TYPOLOGY WOULD FIT ME/US WELL."

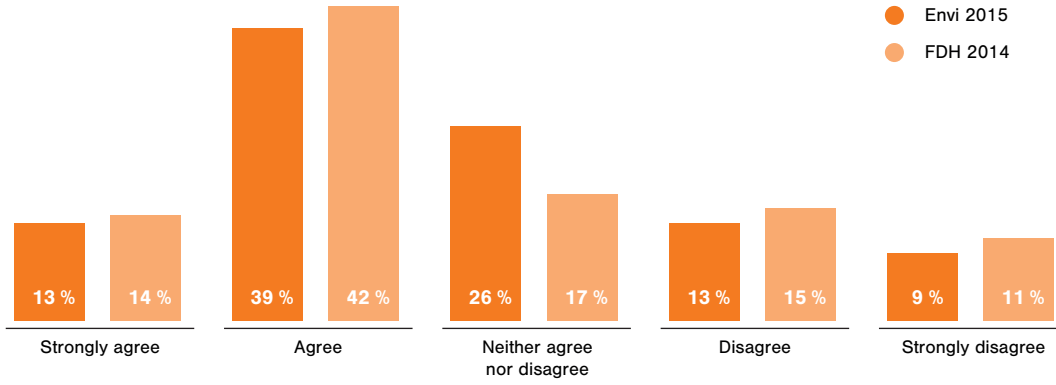


Diagram 9. Townhouse interest in two different materials (Envi 2015 and FDH 2015).

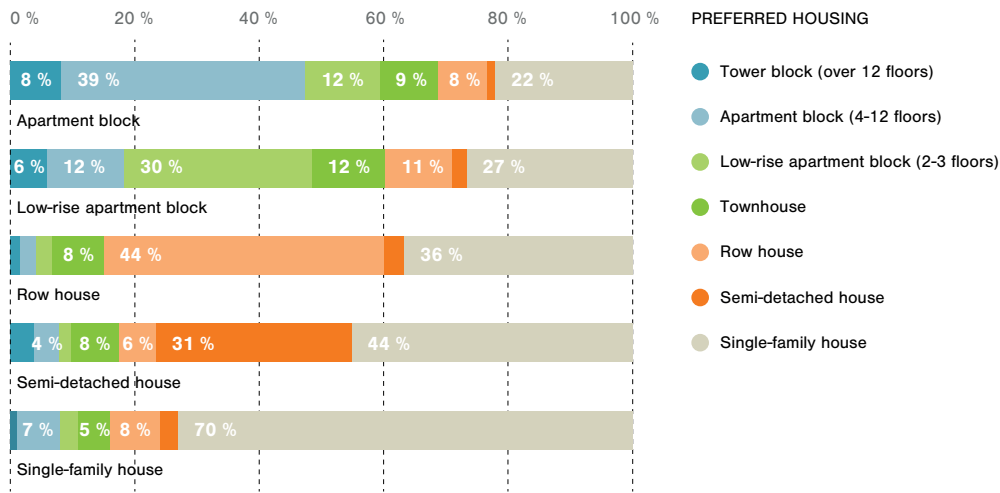


Diagram 10. Current form of living and preferred housing typology of respondents. (Envi)

WHAT TYPE OF ENVIRONMENT WOULD YOU WANT YOUR IDEAL HOME TO BE LOCATED IN?  
RESPONSES BY IDEAL TYPOLOGY

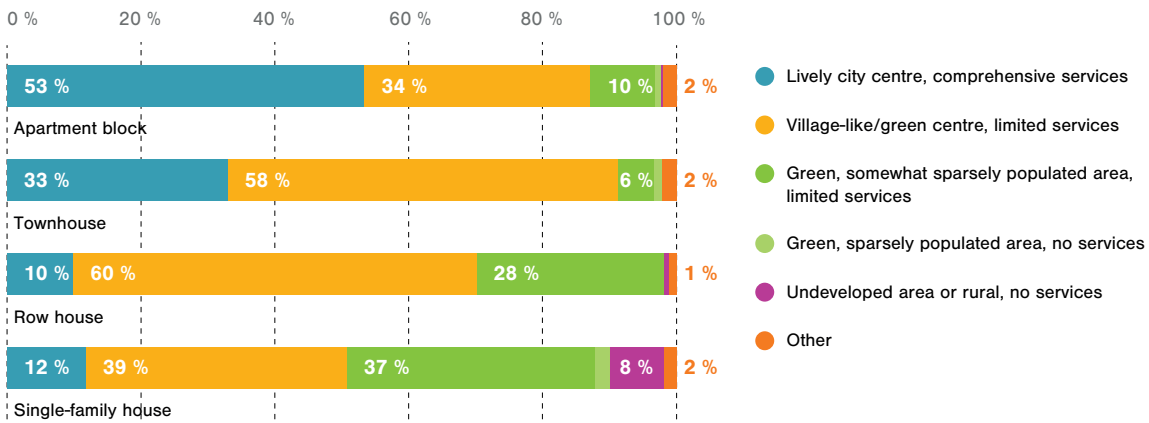


Diagram 11. Residential area preferences by ideal housing typology. (Envi)

centre-like, urban living (53%). Of those that stated single-family houses were preferred, a significant share prefer village-like (39%) or low-density residential area living (37%) with some available services. Only a small share of respondents would be willing to give up services (10%). This group was also the only group that expressed a preference toward sparsely populated areas or countryside.

Of the respondents that identified townhouses as the favourite typology in the Envi survey, over half (58%) would prefer a village-like residential area. However, one third (33%) would value comprehensive services and the urban, high-density living that they require. The residential area preferences of those favourable toward townhouse living, therefore, support the notion of townhouse typology as a form of infill building in highly varying urban environments.

Where townhouses may be considered an alternative to single-family house or row house, they differ with their associated residential area preferences. However, location in a village-like environment speaks to the majority (Diagram 11). A village-like, green city structure seems to suit a majority of the respondents. The residential area type also served to test resident profiles: dependencies were highly significant, according to the Chi Square test. The residential area preferences, measured from the attitude statements, were aligned with the preferred residential area types stated by the respondents.

Location can also be analysed through resident profiles; lifestyles carry a significant role in selecting a dwelling. Ideally, the dwelling and its environment support the lifestyle and way of living of the resident. A dwelling that enables a lifestyle is at the top of the list of choice criteria, according to the Envi survey. In addition to the dwelling, the residential area defines the way of housing and living (Diagram 13). An example of this is the attitude toward driving: of those wishing to live without a car, and have the lack of the car indicated as “very important”, 39 percent would prefer a bustling city centre with its comprehensive services, 46 percent would prefer a village-like centre and 13 percent would prefer a sparsely populated area with limited services

In the analysis of resident profiles, a village like centre appears as the favourite with those that prefer sparsely populated areas, socials (52%) and private-minded (40%). The next popular residential area type among those who favour sparsely populated areas is sparsely populated areas with limited services. Five percent of the subnymphous, and three percent of subsocials would want to live in sparsely populated areas. (Diagram 12).

Busy centre-living with its comprehensive services appeals especially to the urbnymphous (55%), but also to urbsocials (48%). Indeed, it is impossible to draw clear lines between types of residential areas. Different resident profiles and preferences on favourite areas, however, do demonstrate that residential areas should be made distinctive. It is important to recognise the central target groups and concede that one area cannot offer suitable living solutions for everyone.

#### 4.2.4 Housing appreciations and criterions

Townhouse living means living on several floors. Traditionally, having more than one floor is considered to hinder everyday life and not be suited for the needs of families with small children or seniors. The Finnish Dream Home survey, however, demonstrated otherwise. Especially the townhouse-positives see having several floors as an opportunity that allows for diversity in the use of space and privacy of family members. Having several floors was also used in workshops for coping strategy: it is possible to even lease out a floor or an outdoor building to a third-party, such as a small business owner. This provides new opportunities in managing housing assets, for example.

The Finnish Dream Home study reveals new valuations in housing, which have been further reinforced by the Envi survey. No previous study has demonstrated the residents' wish for adaptability to the same extent. Although adaptability was not mentioned by a majority of the respondents in the Dream House survey (ability to divide the home, for example), the different forms of adaptability were discussed in the workshops. In contrast, adaptability and flexibility may also be features that people do not know to appreciate (cf. Hasu 2010).

The dialogue of the residents in the workshops illustrated the challenges of adaptability – the needs are present, but there is not always a way to express them. When lacking examples, residents find it difficult to comprehend what the ability to a divide a home means, let alone its impact on their living opportunities.

The Envi survey studied what selection criteria residents would focus on. Of the respondents, 61 percent would highly or relatively highly value that a dwelling could adapt to the changing needs of life when selecting a new residence. A high total of 86 percent feel it is very or rather important that the dwelling corresponds with the lifestyle. Lifestyle is also evident in the Resident barometer as a value of living, but the Townhouse study demonstrates its significance more than before.

The Envi survey focuses on affordability when selecting a dwelling, where monthly housing costs are slightly more important than purchase price – this acts as a reminder of the opportunities with energy efficiency, but it also reinforces the requirements: energy efficiency cannot result in additional cost to the resident. The next criterion in order of importance is a functional floor plan (Diagram 13). The functionality of a floor plan, however, can be determined in many different ways, which became evident also in the townhouse workshops.

The workshops clearly highlighted the functionality of everyday life and the associated assumptions. A good example of functionality of everyday life is the kitchen and its location. For many, the only correct location of a kitchen is at ground-level: when you arrive home with your groceries, you hope for the fridge to be near the entrance. Open kitchen and dining room plans are favoured by many, such as the living



WHAT TYPE OF ENVIRONMENT WOULD YOU WANT YOUR IDEAL HOME TO BE LOCATED IN?

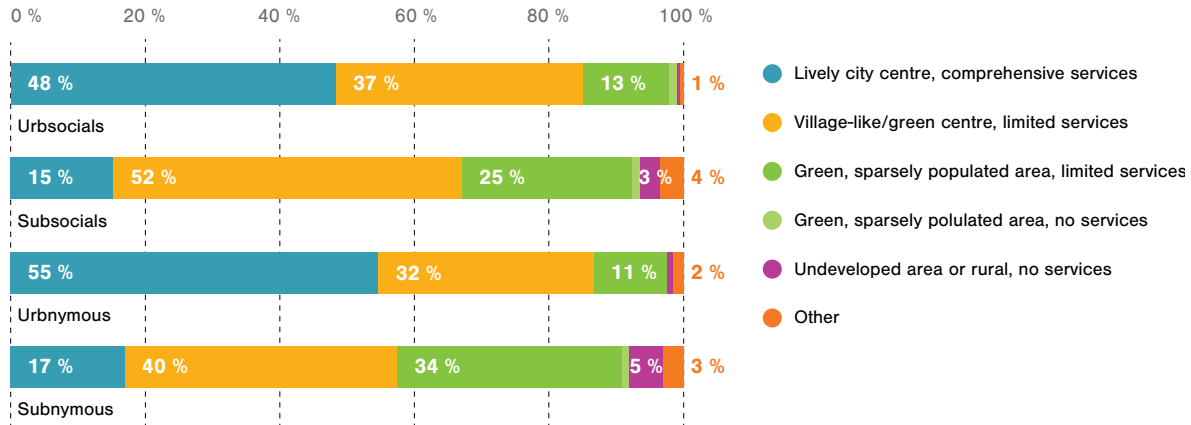


Diagram 12. Preferred residential area type in relation to resident profile. (Envi)

IF YOU WERE SEARCHING FOR A NEW HOME, HOW IMPORTANT WOULD YOU CONSIDER THE FOLLOWING FACTORS IN YOUR SEARCH?

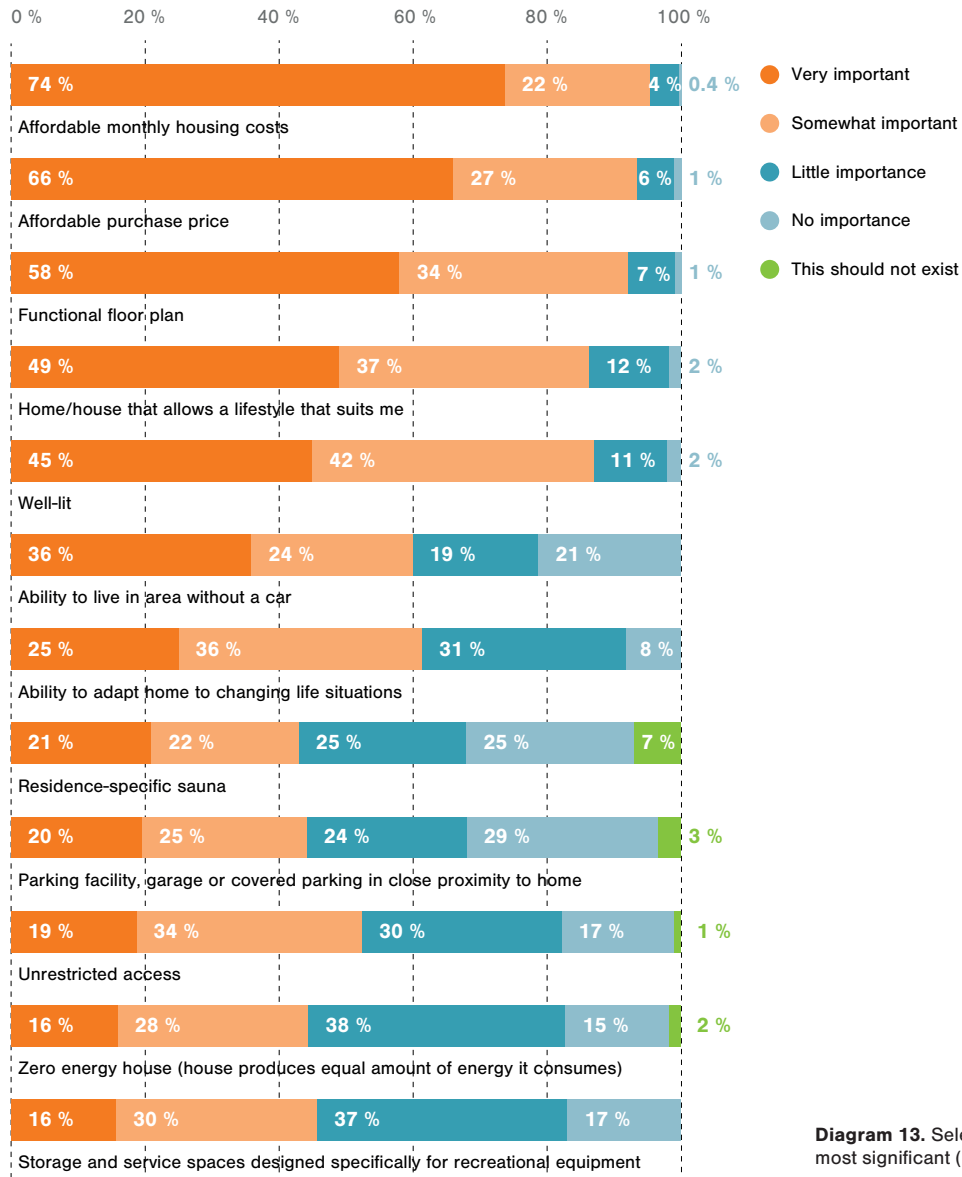


Diagram 13. Selection criteria of dwelling, 12 most significant (ENVI).

room being located near them. Some of the residents could place the living room on a different floor and similarly allocate a larger area for dining. At the workshop of youth from Lohja (cf. 4.2.7) none of the five teams of two partners placed the kitchen at ground-level – it was more important for youth that you have as unrestricted views as possible from the kitchen and dining area in its vicinity. The thought of the potential for a lift affected the choices made by youth.

A home with a lift changes assumptions: if the only reason to place the kitchen downstairs is to minimise moving, the kitchen could be located even on the top floor in a building with a lift. Indeed, this would occur in homes with residents of several generations, as illustrated in the Dream Home workshops and the two-generation living discussed in them. The roof terrace floor inhabited by grandparents functions without access restrictions, if there is a lift providing direct access to upstairs from the carport or garage. In addition, it combines an open floor plan with a beautiful roof terrace.

Storage solutions, which were included in the Envi survey as their own feature, may also be associated with the functionality of the floor plan. According to the results, the storage of recreational equipment divides the views of residents as a selection criterion. In an era where square meters expensive, people who do not partake in recreational activities where storage would be significant, expectedly do not feel storage space is important. On the contrary, “redundant” storage space unnecessarily increases the cost of living. Similarly the residents that include recreational activities as a part of their everyday life feel that the associated storage space is important (46% very or rather important). (Diagram 13)

The ability to live in an area without a car is of interest to over half of the respondents (60%). Of respondents interested in the townhouse typology, it was of high or rather high interest to 67 percent of respondents. The observation is interesting for two reasons in particular: for the expectations of the townhouse concept itself, and for the expectations of the residential area.

The townhouse concept examines the use of solar energy and electric cars (discussed in the second part of final report series). In this planning goal, the electric car would be a significant part of townhouse living. The electricity produced by solar panels would be used to recharge the car, but the electric car would also function as a type of battery, a collection reserve of solar energy. Therefore, integrating a solution that would produce solar energy as a part of townhouse construction would produce free, carbon-neutral energy for the motorist, but also store excess solar energy over the summer.

In contrast, if an increasing number of residents appreciate living without a car in the future, it could indicate a demand for car-free city areas. This would increase the need for local services and would function as a demand generator for brick and mortar stores. At the same time, not having cars would reduce the interest on utilising electric cars as building technology solutions. As affordability is a significant criterion in the development of models of urban living, the goal requires each design solution to be assessed in relation to the needs

of the target group. Alternatively put, the findings highlight that the future townhouse is not a single concept. Instead, it consists of several different types of concepts where one integrates car use and another integrates not having a car.

The two-fold attitudes of residents toward work spaces creates its own challenge for the townhouse concept. In the workshops, work space was identified as increasing the adaptability of a home and allowing housing for entire life-cycle. However, work space associated as a housing choice criteria is not that important, also among those interested in townhouses (41 %) when compared to those not interested in townhouses (40 %). Instead, space designed for recreational equipment received more attention among those interested in townhouses (49 %) than those not interested in them (43 %).

For some residents, recreational activities may compare with working, which place a lot of value on sufficient space. Recreational activities and types of work are also associated with lifestyle, which is recognised as important among those interested in townhouses (89%). In the future, it is essential to identify the methods that can describe solutions that support lifestyles. As indicated by Diagram 14, outdoor buildings, for example, which could be used as both work and recreational spaces, do not receive overwhelming interest among those interested in townhouses (35%). Therefore, the preparedness alone for a specific housing concept does not automatically result in interest in its different opportunities.

The above analyses the selection criteria of dwellings among all respondents (Diagram 13) and among those interested in townhouses (Diagram 14). Lifestyle groups contribute to expanding on the analysis (Diagram 16). For example, the adaptability of the home is appealing to those who value city centre-like living, for both urbnymous and urbsocial residents. Adaptability is least appealing to subsocials. Respondents were asked about the density of ideal living in the Dream House survey. Subsocials wished for the most square metres (cf. Hasu et al. forthcoming).

Resident profile analysis reveals the interest of urbsocials in both car-free living and electric cars. In contrast, urbsocials are more interested in the ability to recharge the car in close proximity to the home than others. This highlights the need to design different types of townhouse entities in urban environments for those that appreciate car use, particularly electric car use, and those who prefer a car-free block structure.

Outdoor area preferences also reveal a divergence in preferences. Urbsocials express interest in both small and larger yards. This also describes the need to introduce new solutions to a monotonous city structure. Outdoor buildings interest subsocials the most; this appears to be a group that is not seeking adaptability, but is looking for different types of spaces that each have their own intended purpose. Interesting examples of adaptable space could, however, interest the group, if the solutions could be demonstrated to increase spaciousness. (cf. Diagram 16)

HOME SELECTION CRITERIA ACCORDING TO INTEREST IN TOWNHOUSES

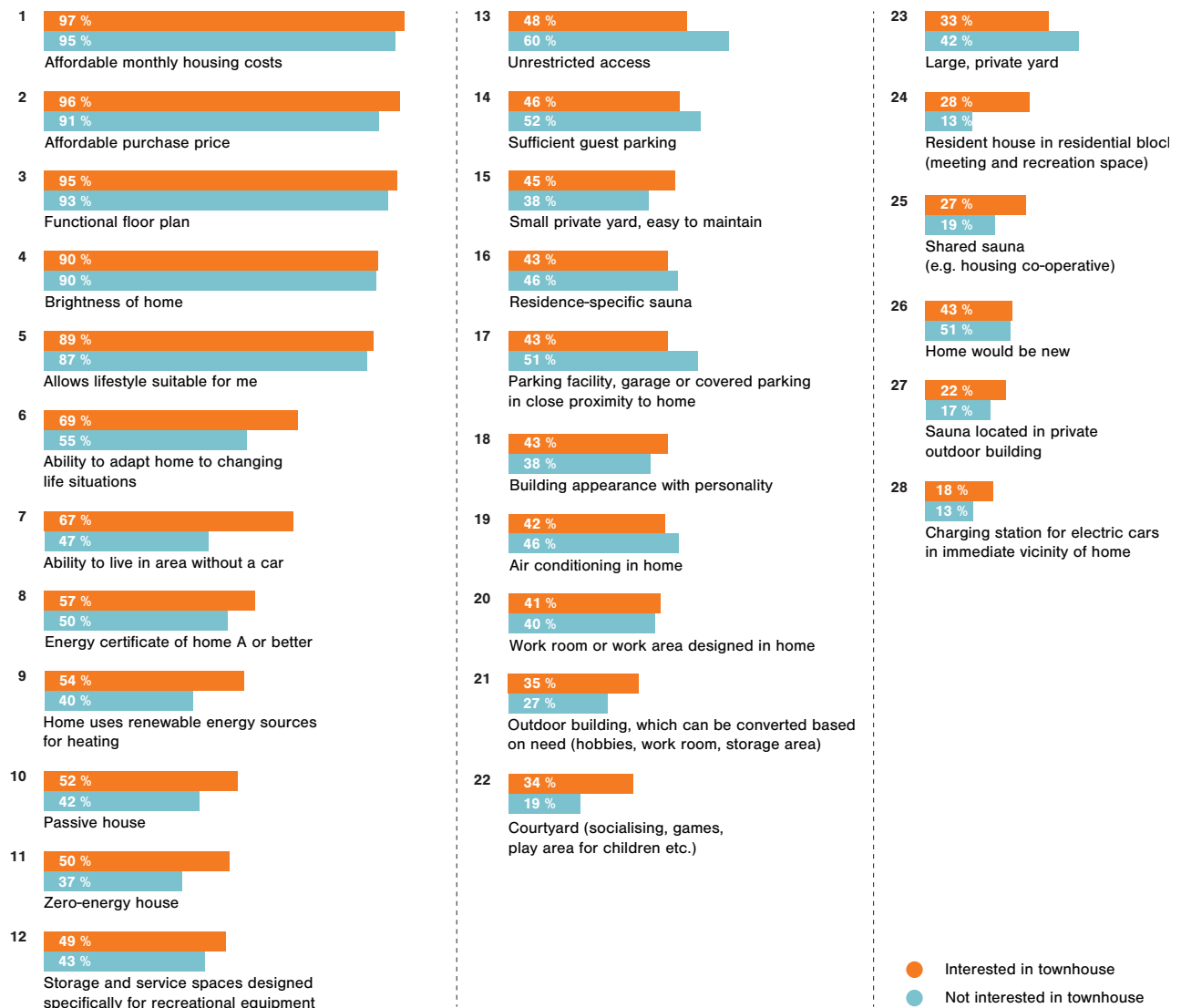


Diagram 14. Dwelling selection criteria according to interest in townhouses. Location preferences were not included in this comparison - they were covered in separate questions. (Envi)

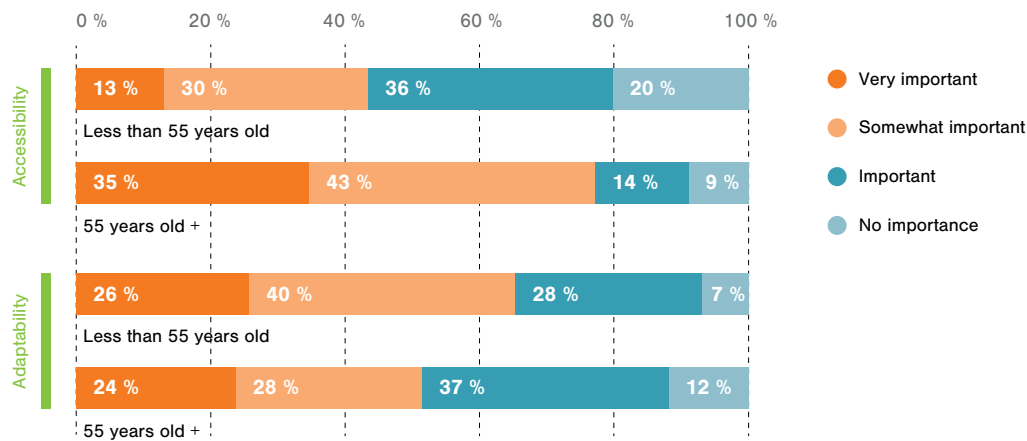


Diagram 15. Comparison of adaptability and accessibility in two different age groups. (Envi)

## HOME SELECTION CRITERIA BY LIFESTYLE GROUPS

VERY OR SOMEWHAT IMPORTANT, %

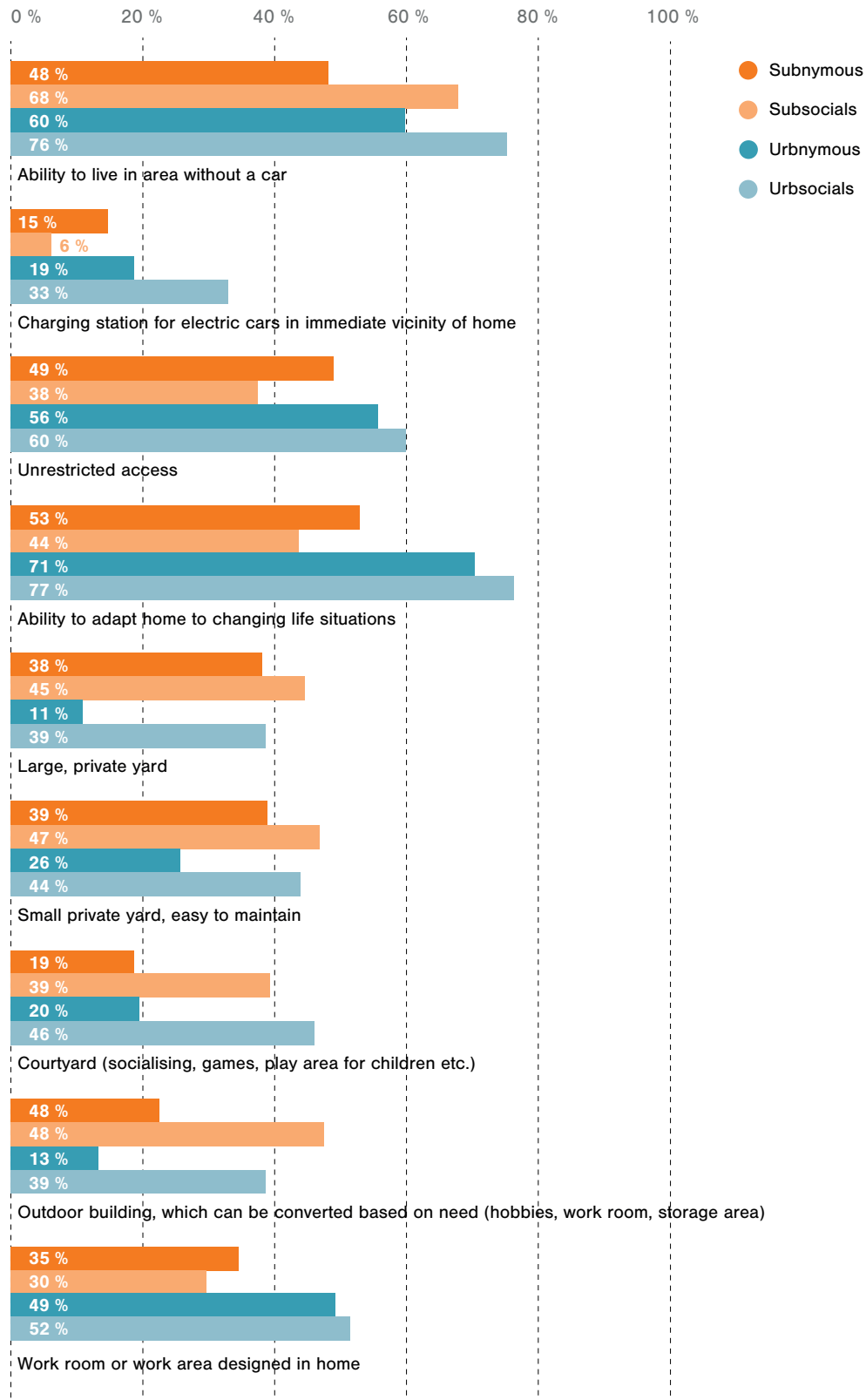


Diagram 16. Dwelling selection criteria by lifestyle groups. (Envi)

#### 4.2.5 Housing for lifetime

In the Envi survey, the adaptability of the dwelling was seen as a more important selection criterion than accessibility when selecting a dwelling. The explanation of this focus is partly in life situations and partly in the image created by accessibility. Accessible solutions, which includes wider doorways and adjusted dimensions for bathrooms, hallways, and kitchens, may be seen as increasing housing costs, especially among younger residents, which results in accessible solutions being less appealing. Indeed, the popularity of accessible solutions and adaptability were found to be age-dependant. According to Diagram 15, of the respondents 55 years or more of age, 78 percent felt that accessibility was very (35%) or somewhat (43%) important. Of the respondents below 55 years of age, only 13 percent felt that unrestricted access was important. Similarly, over a fourth (26%) of those in the same age-range felt adaptability to different life situations was important and 40 percent felt it was somewhat important. Regardless of the different values of the age groups, ultimately the conclusion is the same: adaptability to different life situations also includes accessible design solutions.

A recently conducted survey on attitudes toward unrestricted access (Norlund & Mäntylä 2016) supports the results of the Envi survey. Although less than half of the respondents currently felt they benefit from accessible design solutions, they were seen as desirable and solutions that prepares for the future. According to the survey, of those over 50 years of age, nearly 70 percent were very positive toward accessibility and a fourth (25%) were somewhat positive. The survey also found that of those under 30 years of age, 56 percent felt very positive toward accessibility and 67 percent believed it would benefit them in the future.

#### 4.2.6 Achievability of accessible design solutions – does everything depend on costs?

Affordability has become an important subject when discussing residential construction. For example, people in Helsinki live confined apartments, the dwelling density is approximately 34 m<sup>2</sup> per resident and the average size of a dwelling is approximately 63 m<sup>2</sup>. The size of the built townhouses was 140 m<sup>2</sup> – 165 m<sup>2</sup>. Therefore, they are relatively large when compared to other homes in the city. This also affects their affordability.

Public discourse in Finland has engaged in debating over the additional costs caused by accessible design solutions. Based on the analysis completed by Tuomola (2016), however, it can be concluded that accessibility can be achieved in bathrooms and washing areas without having to significantly increase the living area of the apartment. According to Tuomola, the accessibility of student housing was more to do with the shape of the space than the amount of the square meters. The alternative plans he created were only 0.2 m<sup>2</sup> – 0.7 m<sup>2</sup> larger than the implemented solutions that were not accessible. A report prepared by the Ministry of the Environment also supports this view. According to the report, costs incurred due to design solutions that support

accessibility may increase the amount of space approximately 1.0 – 1.5 m<sup>2</sup> in toilets and bathrooms. On the other hand, renovating the inaccessible toilets afterwards is nearly 3.5 times more expensive than the cost during initial construction (Kilpelä et al. 2014). The renovations done afterwards are completed at the expense of the resident, in some cases subsidised by the municipality. From the perspective of accessible design solutions, the usability of the space and comprehensive design are more important than simply mechanically copying a circular turning space based on the dimensions of the wheelchair. At worst, the end result may be “an accessible space” that a person with limited mobility cannot reach.

A lift within a dwelling increases costs during construction. If the space for the lift is allocated in the floor plan, it can be implemented at a later time, if necessary. The allocated space allows for easier installation of the lift and reduces the costs of necessary revisions. Life-cycle thinking can reduce the total costs of the dwelling during construction and use. According to a survey on people’s attitudes on accessible solutions in built environments (Norlund & Mäntylä 2016), 14 percent of the respondents felt that accessible solutions were expensive and 36 percent felt they were somewhat expensive. However, only five percent felt they were unnecessary or somewhat unnecessary. Of the respondents, 48 percent fully agreed and 35 percent somewhat agreed with the statement “By investing in accessibility now, we can save later as the population age increases”.

Underground parking increases construction costs and is the single greatest individual challenge for the implementation of affordable dwellings. In the current economic situation, the demand for large dwellings has fallen and some of the new family dwellings have remained unsold. Developers feel that the ability to divide dwellings into smaller units makes them more marketable. Townhouses can be divided into two or more dwellings on top of each other. However, if the building includes several dwellings on top of one another, it is considered an apartment building. This results in different interpretation of building and fire regulations. Dividing buildings supports the increasing need for more community-minded living and multi-generational housing. Multi-generational housing, in particular, was discussed in the project workshops.

#### 4.2.7 Further development of Townhouse study: workshops in Lohja

One of the methodological findings of the townhouse study is associated with workshops and the opportunities they provide for the research methodology. Workshops proved to be especially effective when studying new housing solutions. Therefore, further development and use of workshops was extended to other projects of the townhouse study. Lohja is an example of a municipality influenced by the Helsinki metropolitan region and is seeking housing solutions for urban and suburban living. As the townhouse study progressed, regional differences of townhouse preferences proved valuable.

Townhouse-themed workshops were arranged early in 2016 in Lohja, in co-operation with Tutkimus- ja suunnittelupalvelu Kiila, which was responsible for the land use and interaction model development for Environment department of the City of Lohja. The participants of the workshops organised in Lohja were identified from the respondents of the housing preference survey as was the case with the Dream Home study. In addition, participants were contacted through resident associations and sports clubs. One of the workshops was organised in co-operation with Lohja Art School for Children and Young People.

The workshops discussed combining living and recreational areas, townhouses as an element of infill building in a small-scale housing area, and the possibilities of townhouses. The workshop with youth studying visual arts proved especially interesting. Youth and children rarely have their opinions heard when assessing living alternatives. The workshop proved to be a particularly suitable and inspiring method for uncovering the housing preferences and needs of children and youth. (cf. Lohja: Townhouse; Lohja: interaction.)

The townhouse workshops in Lohja examined, among other things, what would be the suitable plot size for townhouse living outside of the Helsinki metropolitan area. Reference plot boundaries were outlined in the design platform, but residents could specify the desired plot width. Initially, the widest available plot was selected (13 m). As the design process progressed, however, it was noted that maximum plot size in itself is not a desirable feature. It is more important to position one's most important functions onto the plot in a manner where the townhouse block forms a pleasant entity and the usability of the private plot is maximised. The same usability goal also was noted to apply to designing floor plans. The natural flow of light was identified as a more important feature than width of the home. For townhouses, it is natural to define specific minimum and maximum widths, so that the usability and furnishing capacity would not be excessively hindered. This was also observed by the participants of the workshops.

In addition to usability, another central observation is associated with resident areas and other shared spaces. The housing preference surveys (Dream Home survey and housing preference survey conducted by the City planning unit of the City of Lohja) that preceded both the Helsinki metropolitan area and Lohja workshops studied the interest in shared spaces. The participants introduced ideas, practically in all workshops, on shared spaces associated with living (such as resident house) – also when shared spaces were not a theme of the workshop. This is descriptive of surveys functioning as a marketing channel for different types of features: the survey and the potentially included introduction of specific features (such as resident house) causes the respondent to consider personal views on the presented opportunities. Recognising this opportunity supports the notion on surveys having an interactive role – residents are not only a source of information and ideas, but they can also receive them through the surveys.

Resident houses and shared spaces were confirmed in the workshops: interest is expressed regardless of area type or location. Although many residents also have negative experiences of shared spaces, working in the workshops revealed the opportunities offered through them without being burdened by the past. Many who first felt a shared courtyard or resident block house was unnecessary, recognised the opportunities as the design work progressed: a shared courtyard offers growing possibilities for useful berry bushes and fruit trees, for example. Socials were interested in courtyards and resident block houses as meeting places, whereas private-minded people recognised diverse areas as options: one can meet with neighbours under a shared pergola, if desired, or sit in the shade of an apple tree reading a book. A private bicycle or gardening storage space is not necessary for each yard, if a shared one is available.

Everything does not need to be stored in one's dwelling or plot. Workshops demonstrated that it is natural for residents to select the largest available plot size under the notion that "bigger is better". As the design work progresses, however, it is noted that the size of the plot is not a value in itself. It is more important that the yard allows the placement of the most important functions to the resident. If there is a courtyard or storage space near the property, residents are prepared to compromise on the size of the plot. The overall entity is the decisive factor, also with the home.

#### **4.2.8 Assumptions and answers – return to expert views**

- 1) In the background of the Finnish Dream Home study were views discussed by different contributors (cf. Huttunen et al. 2015, 17-20) on townhouse living, which had a target group of families with children and wealthy couples. In contrast, the potential for townhouse construction was recognised as a form that allows cost efficiency: joint building venture a method to reduce prices, although it requires knowledgeable project co-ordination. It must also be admitted that self-development is of interest to a minority – a majority of respondents is interested in buying from developers. This allows one to know what is being paid for, what is being received and on what schedule. Therefore, townhouse developments also call for different types of building and development methods.
- 2) The Townhouse survey has uncovered new opportunities. In contrast to the majority of expert views on townhouse living being primarily for those who are building the home themselves or having it built for families with children, a townhouse may offer housing for those living alone or with another person. Based on the results, the popularity of the typology would be increased, for example, by the ability to divide a townhouse into several stacked homes (Huttunen et al. 2015, 73, 81), which, however, means the definition must be expanded upon in building regulations where it is interpreted either as a small-scale house or an apartment block.
- 3) A developer-form typology results in it being an option for the majority. Those who selected rental living also express interest in townhouse living.



## 05

# *Townhouse concept*

The beginning of the report's last chapter presents four diagrammatic models of the Finnish townhouse typology and their features.

The models are based on the Master's theses done by Emilia Ellilä and Emma Blomqvist as part of the townhouse study and the concepts developed in them (Blomqvist 2016; Ellilä 2014). Every effort was made to widely incorporate the results obtained from the townhouse study in the models, drawing from the European traditions of the typology. At the end of the chapter, four different types of block structures are applied by developing the research results presented in the preceding chapter while using the townhouse typology models.

Using both the typology models and block solutions, the themes encountered during the townhouse studies—usability, outdoor space possibilities and community—were summed up as part of the townhouse typology conceptualisation.

# 5.1

## Finnish townhouse type models

**Versatility is one of the strengths of townhouses. The multi-storey construction of a townhouse offers versatility both with regard to spatial solutions and the flexible combination of functions. In addition to living space, the townhouse might also contain various types of offices/workspaces, commercial premises or hobby rooms. Below, we will present some of the main features of the townhouse typology. The alternatives of the Finnish townhouse typology have been encapsulated into four simple base models, within which a wide variety of solutions may be applied.**

### Space structure and dimensioning

Indeed, Finnish townhouses should be designed in smaller versions than their European counterparts in order to ensure that affordable townhouse residences are available on the market. The size of a townhouse is also in relation to its location: According to reports done by the City of Helsinki, larger residences are sold in waterfront areas, while townhouses with a floor area of 120-140 square metres seem to be suitable for suburban areas (Jalkanen et al. 2012). According to the results of the Dream House survey, the maximum recommended size of a Finnish townhouse is 120 square metres (Huttunen et al. 2015, 54-55). In addition to this, the Dream House survey identified different lifestyle groups, which have different wishes regarding the number of rooms and, in turn, the size of the residence and relationship between its outdoor spaces and the surrounding environment. One of the identified lifestyle groups, “subsocials”, felt that it was important to have extra space, such as a storage room or sauna, in the residence as well as for the spaces to serve multiple purposes. In order for the townhouse to appeal to different user groups, residences should be offered in a variety of sizes and prices, including those larger than the maximum recommended. However, the potential user segment and its extent should be identified in the largest townhouse types.

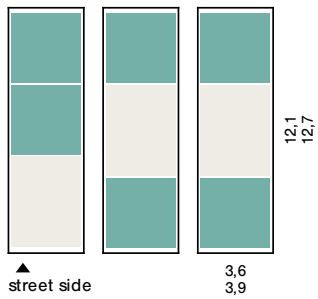
In addition to the desired floor area, the house’s dimensions are also affected by space arrangements, which can be divided into three categories based on the location of auxiliary spaces and stairs: side zone, middle zone and corner zone (Blomqvist 2016, 27-29; Ellilä 2014, 124). Different space arrangements lead to different types and sizes of townhouses. The placement of stairs plays a key role in the adaptability of a dwelling (Ellilä 2014, 124). It is also important to specify a minimum and maximum width for the townhouse, so that its usability and furnishability are not compromised (Huttunen et al. 2015).

The typical features of a townhouse can be found in all four base models: a narrow street facade, direct access from the street into the dwelling and anywhere from two to four floors. Each type has its own strengths and challenges. The different types are suitable for different housing approaches, different user groups and different environments. The plot density of narrow-framed townhouses is high, which is why they are suitable in very densely-built urban environments. The size of this model can also easily be decreased by reducing the number of floors, thus serving families of widely varying sizes. The side zone base type is adaptable and, as a result, can be placed in city centre locations, where space use can change over time, as well as in suburban environments. In this base model, the different floors can also be divided into separate residences, thus making it suitable for smaller households. The *wide and large* townhouse is suitable for use as, for example, a suburban family residence. The Finnish Dream House survey highlighted the same main themes for concept development (Huttunen et al. 2015, 91-94).

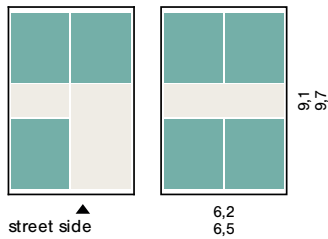
The dimensioning of the townhouse typology is also affected by parking solutions used in the area and for the house itself, particularly in situations where the parking space is integrated into the building mass of the house (Diagram 18). “Insetting” the parking space into the house emphasises the resident’s sense of maintaining their own territory. If necessary, the space can also be flexibly used for not only parking, but also as a storage area for outdoor equipment. The parking space can be incorporated either entirely or partially into the house, thus also affecting the resident’s sense of privacy by creating a semi-public space in front of the building (Huttunen et al. 2015, 47-51).

Next, we will examine townhouse typology features, which influence the space arrangements and adaptation to the environment used in the typology at both the block level and in relation to the street space.

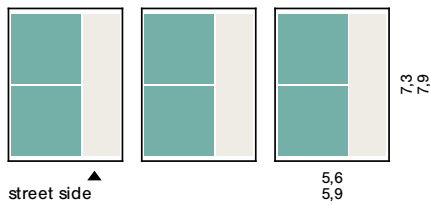




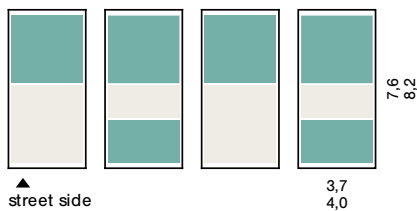
(i) The dimensions for a *narrow and deep* townhouse are based on the minimum width of a single room. Due to the narrowness and number of floors, this type has a high plot density. The supportive functions (service area and transition space) are located in the centre of the house.



(ii) The space arrangement in a *wide and large* townhouse is similar to that used in a traditional Finnish row house. Supportive functions are located in the centre of the house. A *Wide and large* townhouse can quickly become too large in floor area, which is why this type only has two floors. The plot density for this type is the lowest of the four types.



(iii) The third townhouse type is not as deep as the other types. The spaces in the dwelling are divided into two longitudinal zones: one for supportive functions and the staircase, and the other for main living areas. A three-storey house would have an urban plot density.



(iv) A small, high townhouse is based on two lateral zones of equal size: the main living spaces are located toward the back yard and supportive functions face the street. This house has a high plot density. (Blomqvist 2016, 28-30.)

Supportive functions Rooms

**Diagram 17.** Four townhouse typology models, which can serve as the starting point for a Finnish townhouse (Blomqvist 2016, 28).

### Indoor spaces

A key feature of the townhouse is having multiple floors. In the Finnish Dream Home survey, having multiple floors was found to enhance the adaptability and privacy of the living space (Huttunen et al. 2015, 73). With its various intermediary floor openings and interior views, a multi-storey floor plan also allows for the personalisation of interior space solutions. In a multi-storey dwelling, it is important to give thought to the placement of rooms on different floors and in relation to each other, as the placement of functions can have a significant impact on the smooth flow of daily routines. For example, the popularity of the open kitchen and its placement adjacent to the living room was repeatedly brought up in the Dream House survey workshops. Workshop participants also wanted to see the master bedroom and bedrooms of small children placed on the same floor.

The installation of a lift has a major impact on room placement, because it helps with such things as carrying the groceries from the entrance floor up to the kitchen located above the ground floor (Huttunen et al. 2015). According to workshop participants, senior residents also consider a townhouse with a lift to be accessible. The desired degree of privacy also affects room placement in a townhouse. The rooms with a higher degree of privacy can be placed on the upper floors, while those requiring less privacy can be placed at street level (Huttunen et al. 2015, 100-105). The kitchen and living room, which are the central living spaces for resident socialising and entertaining guests, can be placed on the more public ground level. Bedrooms, which demand more privacy, are naturally found on the upper floors. Diagram 20 shows this principle. The perception of privacy is, however, always subjective.

The soundproofing between floors makes it possible to ensure privacy often lacking in one-storey dwellings. When an intermediary floor serves as a soundproofing structure, even spaces requiring a great deal of privacy can be isolated on different floors. For example, one floor can be reserved for the private use of a teenager gaining their independence. Respondents to the Finnish Dream Home survey felt that this was a major benefit in townhouse living (Huttunen et al. 2015, 70).

Privacy of the townhouse can also be examined using the townhouse type models described above. The model in which the supportive functions (service area and transition space) are placed toward the street offers the most privacy. On the other hand, this reduces the amount of contact between the living space and street space. For example, townhouses in Germany and the Netherlands traditionally have a strong connection with the street, and the spaces opening out into the street comprise a key component of the street environment.

In very densely-built environments, the availability of natural light can influence the arrangement of rooms. Because the upper floors of a multi-storey house get more light (Blomqvist 2016, 84), this would be a good reason to place rooms used for more social and active functions, such as the kitchen, dining room, living room and office/workspace on

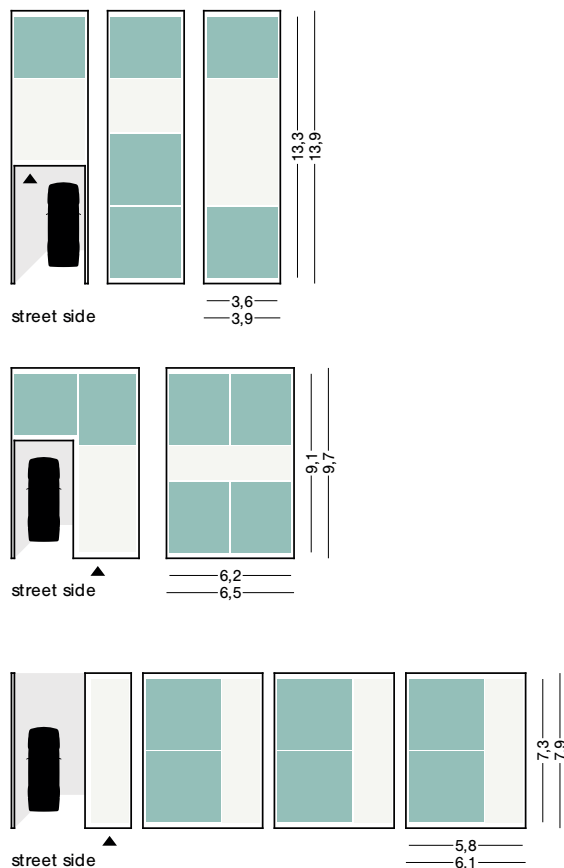
the upper floors. The natural placement of auxiliary spaces requiring less light would be in the centre of the house, particularly in *narrow and deep* townhouses. (see Diagram 19)

The lightness of spaces on the ground floor or in the centre of the house can be affected by increasing the height of each floor or making a two-storey space at either end of the dwelling. In older houses, the ground floor is often higher than other floors to allow an adequate amount of natural light into the dwelling.

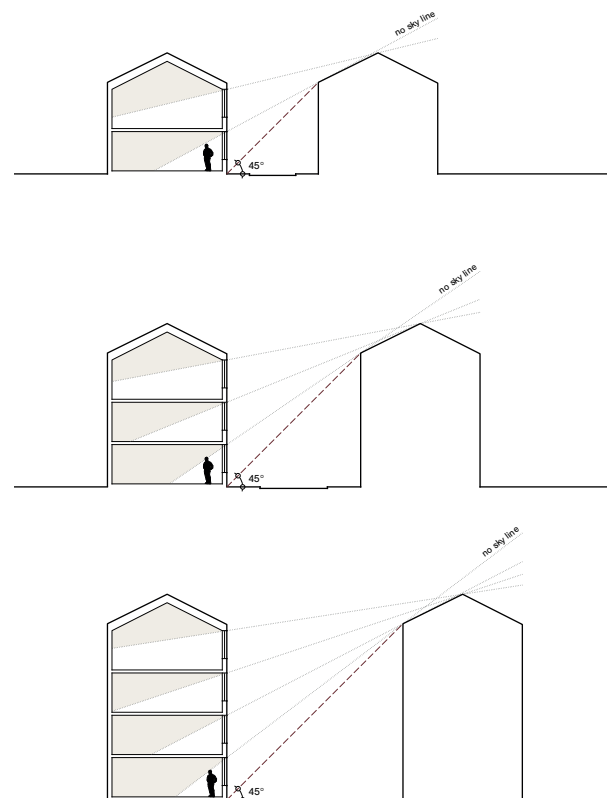
In narrow Dutch townhouses, living rooms are often made two storeys high, thus allowing light to reach deep into the house (Ellilä 2014).

### Overlapping of indoor and outdoor spaces

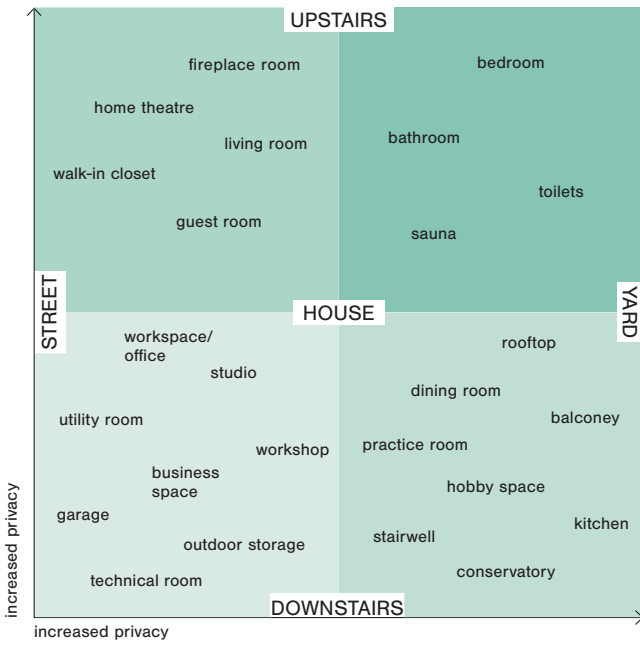
In a Finnish context, special attention must be given to ensuring an adequate amount of privacy for housing in a densely-built environment. The boundaries between private and public spaces must be clearly defined. The amount of contact with public space that a room has affects how it will be used. Lack of adequate shelter and poorly defined boundaries might lead to a closing up of spaces, as opposed to the goal of openness.



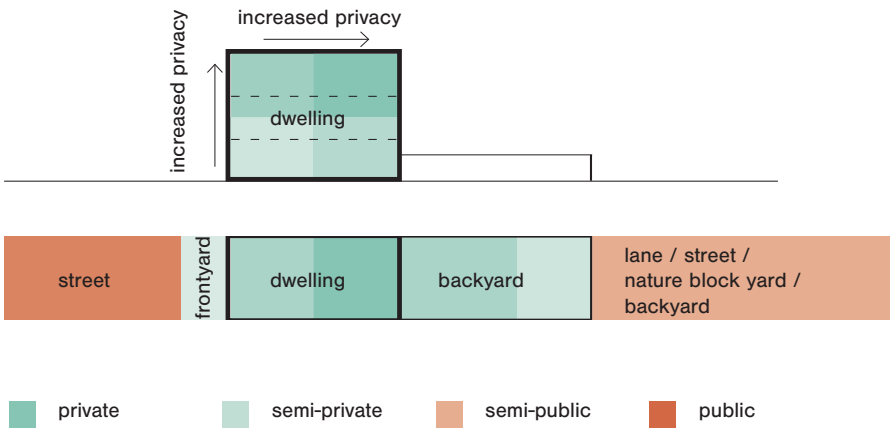
**Diagram 18.** Impact of parking on townhouse type floor plans (Blomqvist 2016, 40).



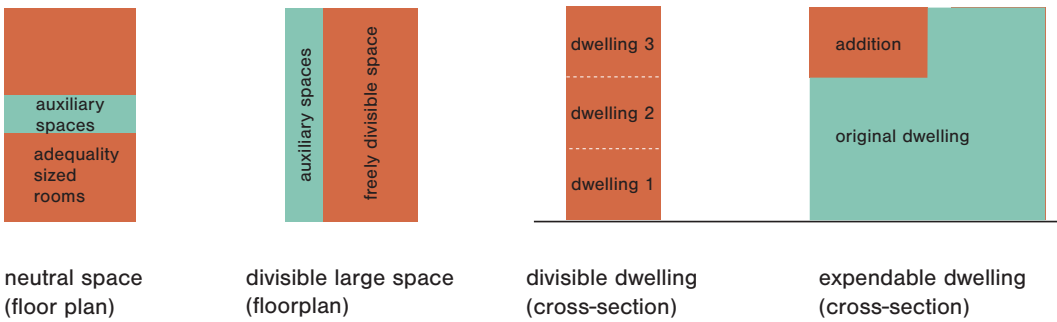
**Diagram 19.** Impact of the number of floors on room lightness (Blomqvist 2016, 66-67).



**Diagram 20.** Simplified four-quadrant graph on the placement of different functions in a townhouse, according to the need for privacy (Ellilä 2014, 126).



**Diagram 21.** Various degrees of privacy surrounding a townhouse and within the residence (Ellilä 2014, 120).



**Diagram 22.** Different approaches to realising flexibility in a townhouse (Ellilä 2014, 65).

The sense of privacy is affected by both space arrangements and views between indoor and outdoor spaces. An adequate sense of privacy cannot be achieved if there is a direct line of sight into the dwelling from a public space, such as the street (cf. Huttunen et al. 2015, 78). Ground level privacy and shelter can be affected by different means. For example, a more public space, such as an office/workspace or commercial space, which would benefit from a direct connection with the street and high visibility, can be placed at street level. However, a separate office/workspace only interested a few of the Dream Home survey respondents. (Huttunen et al. 2015, 73). At any rate, Finland still has a large number of self-proprietors and small enterprises as well as distance workers, for whom a room converted into a home office/workspace would be a good solution (Yrittäjät 2008; Lehto & Suutela 2008). The ground floor could be given privacy also with a front yard and vegetation or by raising the first floor above street level, although this might present an accessibility problem when making the entrance, particularly with townhouses that do not have a front yard.

Degrees of privacy also vary within the house. In a typical townhouse, the privacy of different floors is affected by how far the floor is from ground level and whether it is facing the street or the yard. As Diagrams 20 and 21 show, the street-side ground floor usually has the least amount of private space, while the yard-side top floor has the most.

### **Adaptability**

Flexibility and multipurposing are key to the lifecycle and durability of a townhouse. In both the Envi and Dream Home surveys, residents valued the adaptability of their houses to changing needs over time (Alanne et al. 2015, 25; Huttunen et al. 2015, 77). Townhouses are seen as being a naturally flexible housing concept (Väliniemi et al. 2009). Townhouse flexibility can be realised in a variety of ways.

The adaptability of a residence's indoor spaces can be realised in two ways. The rooms can be neutral spaces, which are suitable for many different uses. This requires that the rooms are an adequate size and sensibly connected to adjoining spaces (Krokfors 2006). A good example of this are the old townhouses in Amsterdam, which have large, multipurpose rooms at either end of the house. Adaptability can also be realised by having large, dividable rooms, thus allowing the resident to use the room as a single open space or divide it into smaller sections with light partition walls, according to their own needs. The ability to partition a space is affected by, for example, openings in the facade, the location of bathrooms and interior traffic routes. If the frame is very deep, a light opening in the middle of the frame makes it possible to partition the space so that spaces in the centre of the frame receive light (Krokfors 2010). In the four townhouse models described above, an effort has been made to take flexibility into consideration, thus allowing the remaining spaces to serve as neutral spaces or large, open spaces.

Flexibility in urban housing can also be realised by making it possible to divide a dwelling into several smaller dwellings, which allows part of the house to be sold or rented out

or, alternatively, to be joined with each other. When partitioning dwellings, entrances and yard arrangements, space for a potential lift and requirements for soundproofing and utilities should all be taken into consideration during the design phase (Krokfors 2010). Under current regulations, however, many townhouses are defined as being multi-storey apartment buildings, which requires that the fire compartmentalisation of the different apartments be taken into account. Staircases should also be kept separated from other spaces, so that they can also be used as a stairwell for multiple households.

One approach to flexibility is to increase the size of the dwelling during its lifecycle. Size can be increased both inside the dwelling and by expanding outwardly, such as by building an additional floor. The floor area can be increased without increasing the exterior dimensions of the dwelling by, for example, converting semi-insulated spaces, such as the attic, into insulated spaces or by filling spaces that are multiple storeys high with an extra floor. (see Diagram 22) In addition to this, the outdoor space can be put to use with a yard sauna or outbuilding, according to one's own needs (Huttunen et al. 2015, 81).

### **Individuality and autonomy**

Two of the key features that distinguish a townhouse from a row house are individuality and the autonomy that comes with plot ownership. These features are also present in the townhouse throughout its lifecycle. Residents are usually able to influence their future dwelling during the design phase. Plot ownership allows the residents to make their own decisions regarding any remodelling, extensions and maintenance to be done during the lifecycle of the dwelling.

Townhouses are usually built individually, which helps each dwelling to stand out within a row of houses, if so desired, and if zoning allows. The townhouse is also considered to be more personal than an ordinary row house (Huttunen et al. 2015, 70; Gaudia Tutkimus 2013). Studies show that the feeling of home is further enhanced by the ability to shape one's own environment (Smith 1994). Today, a dwelling is considered a place for self-realisation and creating one's own identity (Ilmonen 2007). Home provides a space for freedom and responsibility, a place where the residents can make their own decisions. The goal of individuality poses new challenges for Finnish building co-operation-type property development. If the townhouse typology is to be realised as a building co-operation, the individuality offered by the Central European model of plot ownership is not possible. Instead, new solution models, the development of operating approaches and possibly the amendment of legislation will be required.

## 5.2 Ingredients of a townhouse block

In the Helsinki metropolitan area, the townhouse typology is still establishing its place in blocks, where, alone or together with other building types, it forms a new type of urban structure. Solutions created during the planning phase are emphasised in dense building, and they have a direct impact on how different resident groups experience their living environment. What is a block structure that serves different resident groups and takes their housing preferences into consideration like? What kinds of possibilities does the townhouse typology offer? What are the challenges facing the townhouse type in a block structure? Below, the transfer of the above-mentioned design keys to the block level, which is based on the townhouse study, will be examined.

### **Previous observations concerning the possibilities offered by townhouses at the block level**

Studying the structures of townhouse areas in the Netherlands and Germany provides new perspectives on the possibilities offered by the typology and their application in Finnish housing. Townhouses can diversify the Finnish housing and create new kinds of small-scale urban environment (Ellilä 2014, 113). The relationship between housing and the urban space is a key perspective in densely built residential areas. Understanding streets as a social venue is strongly linked to the new European townhouse typology and its features. In Central Europe, attached single-family house areas have already been used in previous decades to solve the problems posed by car-oriented urban planning, including a dispersed community structure and lack of clearly-defined street space (cf. Ellilä 2014, 50–51; Ullrich 2014, 75; Tarbatt 2012, 40).

A lack of places to meet was identified problematic on new densely built areas. In addition to this, an environment that offers a minimum mix of functions and services as well as poor public transportation connections is not attractive to those interested in urban living. The distant location of services in these areas increases the need for private car use (Ellilä 2014, 36, 113; Ullrich 2014, 71, 86).

Jonathan Tarbatt points out that the urban planners are not responsible for social mixing, but taking the characteristics of various resident groups into consideration makes the diverse development of areas possible (Tarbatt 2012, 32). Social diversity can be created in residential areas by, for

example, carefully combining housing typologies. Due to their features, townhouse typology residences are basically large in size, but combining, for example, low-rise apartment blocks in townhouse blocks naturally provides small dwellings, shared domestic spaces and commercial or office spaces (Blomqvist 2016, 89; Ellilä 2014, 36).

One of the main findings in the Finnish Dream Home survey is that a densely built urban structure does not automatically provide a sense of community. In surveying interest in the townhouse typology, residents were asked about their interest in shared domestic spaces. In the responses, a special emphasis was given to the possibilities and challenges of outdoor spaces. The lifestyle groups formed based on the survey results were used in the development of block models in this part of the study.

### **Townhouse block models based on resident profiles**

Resident housing preferences in urban and less urban residential areas differ from one another (Huttunen et al. 2015, 57). It is therefore justifiable to ask what the intended community pattern will be during the initial zoning phase of townhouse areas (cf. Bartuska 2013, 302), i.e. what kind of resident groups might be interested in the new townhouse? It should be kept in mind that there might be several different resident profiles within a single family. However, certain emphases must be made in design work and resident profile-based models can be combined, thus resulting in a diverse townhouse block that serves different resident groups, starting from families with children to solo dwellers.

The following resident profile-based models are, in addition to the data gathered in the townhouse study, based on means of increasing contacts between the residents or meeting their needs of privacy as suggested by Jan Gehl (Gehl 2011, 72). Although the massing of typologies presented in section 5.1 of this study was used in conceptual drawings, the architectural solutions, such as the house facade, its analysis and material choices, were excluded from our focus.



**Busier, denser residential area (URBANITY + )**



**FRONT YARDS**

- no front yard / small front yard
- house in immediate contact with the street
- entrances facing neighbours (houses are not all facing in the same direction)
- street and ground level are on the same level; differences in height are to be avoided

- centralised parking on the periphery of the area

**VIEWS**

- vibrant street life, with some green interspersed

**STREET AREAS**

- bicycling & walking important; pedestrian city
- street space bordering houses
- thoroughfares pass through the area
- narrower street, short distances between neighbours
- shops, workshops and workspaces/offices along the street

**KEY CONSIDERATIONS IN THE AREA**

- needs and safety of children and senior citizens
- places for impromptu encounters
- opportunities for privacy
- opportunity to use shared spaces for private functions

**FRONT YARDS**

- no front yard / small front yard
- house in immediate contact with the street
- entrances facing away from neighbour entrances (houses can all be facing in the same direction)
- house entrances as far away from each other as possible
- level differences and stairs used to enhance privacy

**VIEWS**

- street life, including car traffic
- it should not be possible to see into the home directly from the street

**STREET AREAS**

- wider street area
- may be a high-traffic street area

**KEY CONSIDERATIONS IN THE AREA**

- bicyclists and pedestrians
- preserving resident privacy, e.g. sight lines from the rooftop terrace or balcony into neighbour yards or from the street are to be avoided
- gathering places for those who want them, e.g. children's play areas

**OUTDOOR SPACES**

- residence yards can be on rooftops

**PARKING SOLUTIONS**

- car-free / good public transportation connections
- car parked immediately next to/inside the house

**OUTDOOR SPACES**

- shared yard areas & play areas are key
- shared buildings/structures in the yard area
- shared rooftop terrace
- examples of shared activities: garden areas, snow clearance, repair work, dining, lounging, street flea markets, parties

**PARKING SOLUTIONS**

- car-free / good transportation connections

**Emphasis on socialness (SOCIALNESS + )**

**Emphasis on privacy (SOCIALNESS -)**

**FRONT YARDS**

- open, large front yard
- space to play and do chores/activities in the front yard
- entrances facing the neighbours
- street and ground level are on the same level; differences in height are to be avoided
- elements defining the boundaries of each yard allow for personal contact (low plantings, fences or walls)
- elements & walls designed for sitting height
- distances between private and public spaces should allow for audiovisual contact

**VIEWS**

- quiet street life & green views

**STREET AREAS**

- mixed-use street, slow street
- slow traffic (bicycling & walking)
- thoroughfares pass through the area
- short distances between neighbours

**KEY CONSIDERATIONS IN THE AREA**

- needs and safety of children and senior citizens
- opportunities for privacy (e.g. in the back yard) or one part of the yard is sheltered and the other is open or clearly defined; own back yard and shared rooftop terrace
- opportunity to use shared spaces for private functions
- planned meeting places: front yard and street area are not substitutes for a shared space, such as a park or playground

**FRONT YARDS**

- sheltered, large front yard
- walls & (hedge)rows, outbuildings define the boundaries of the private yard area and block views
- level differences and stairs used to enhance privacy

**STREET AREAS**

- more spacious street area
- distances between neighbours can be longer
- thoroughfares pass through the area

**KEY CONSIDERATIONS IN THE AREA**

- preserving resident privacy, e.g. sight lines from neighbouring houses, the street or park into the back yard or from the street into the house are to be avoided
- gathering places for those who want them, e.g. children's play areas
- consideration must be given to completely shutting out the neighbours from the back yard, but the boundary around the front yard is made lower, thus allowing a line of sight into the street area

**OUTDOOR SPACES**

- car parked immediately next to/inside the house
- parking space in the front yard possible

**VIEWS**

- green, sheltered views

**OUTDOOR SPACES**

- shared yard areas & play areas, with a courtyard in the middle of the area
- common buildings/structures in the yard area, e.g. a yard sauna

**PARKING SOLUTIONS**

- centralised parking on the periphery of the area
- parking within the frame of the house allows for a line of sight to the street



**More spacious, greener residential area (URBANITY - )**



**SUBSOCIAL BLOCK STRUCTURE**

**e=1.2**  
plot efficiency

*building area*  
6.5m x 9.7m

*plot*  
6.5m x 19.7m  
front yard: 2.5m  
backyard: 7.5m

**VIEWS**  
quiet street life and green views

- FRONT YARDS**
- open, large front yard
  - entrances facing the neighbours
  - elements defining the boundaries of each yard allow for personal contact (low plantings, fences or walls)
  - houses facing different directions

**PARKING**  
parking within the frame of the house allows for a line of sight to the street.

**e=1.2**  
plot efficiency

*building area*  
6.5m x 9.7m

*plot*  
6.5m x 19.7m  
front yard: 2.5m  
backyard: 7.5m

**SHARED AREAS**  
e.g playground,  
gathering place

**PRIVACY**  
private backyard and  
rooftop terrace

- STREET AREAS**
- mixed-use street, slow street, e.g. 8m width
  - slow traffic (bicycling and walking)
  - thoroughfares pass through the area
  - short distances between neighbours



**Diagram 24.** Example of a subsocial street area. Conceptual drawings: Tina Ullrich.

## /URBSOCIAL BLOCK STRUCTURE

### VIEWES

vibrant street life with some green interspersed

**e=1.4**  
plot efficiency  
building area  
6.5m x 9.7m  
plot  
6.5m x 17.2 m  
backyard 7.5m

**COMMUNITY**  
shared rooftop terrace

**BACKYARDS**  
private and sheltered,  
retreat opportunity

**PARKING/TRAFFIC**  
car-free area

**e=1.4**  
plot efficiency  
building area  
6.5m x 9.7m  
plot  
6.5m x 17.2 m  
backyard 7.5m

### FRONT YARDS

- no front yard
- house in immediate contact with the street
- entrances facing neighbours
- street and ground level are on the same level

**MIXED-USE**  
residential or  
commercial use

### STREET AREAS

- more narrow street, e.g. 8m width
- slow traffic (bicycling and walking)
- thoroughfares pass through the area
- short distances between neighbours



**Diagram 25.** Example of an urbsocial street area. Conceptual drawings: Tina Ullrich.



**SUBNYMOUS BLOCK STRUCTURE**

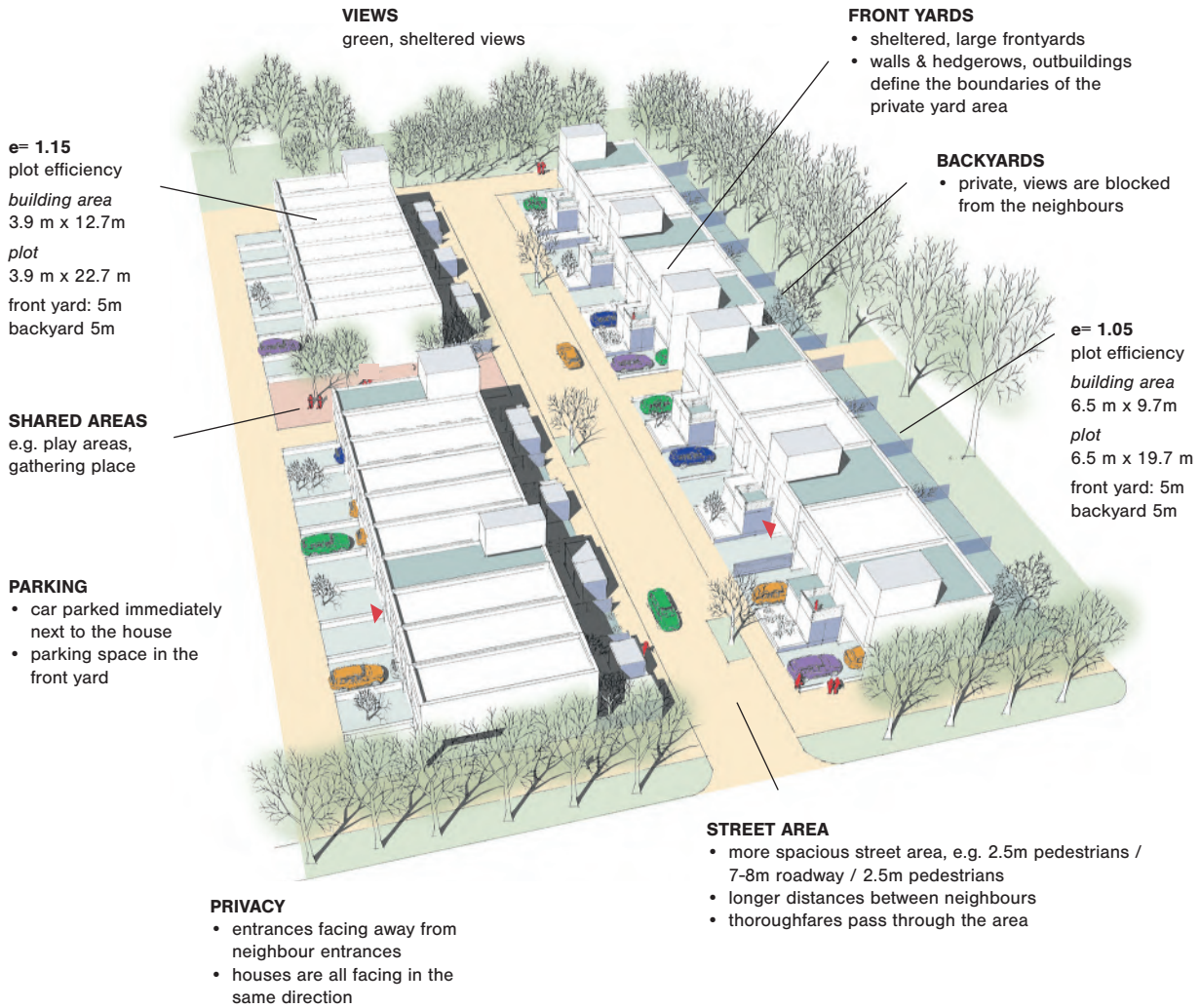


Diagram 26. Example of a subnymous street area. Conceptual drawings: Tina Ullrich.

## / URBNOUS BLOCK STRUCTURE

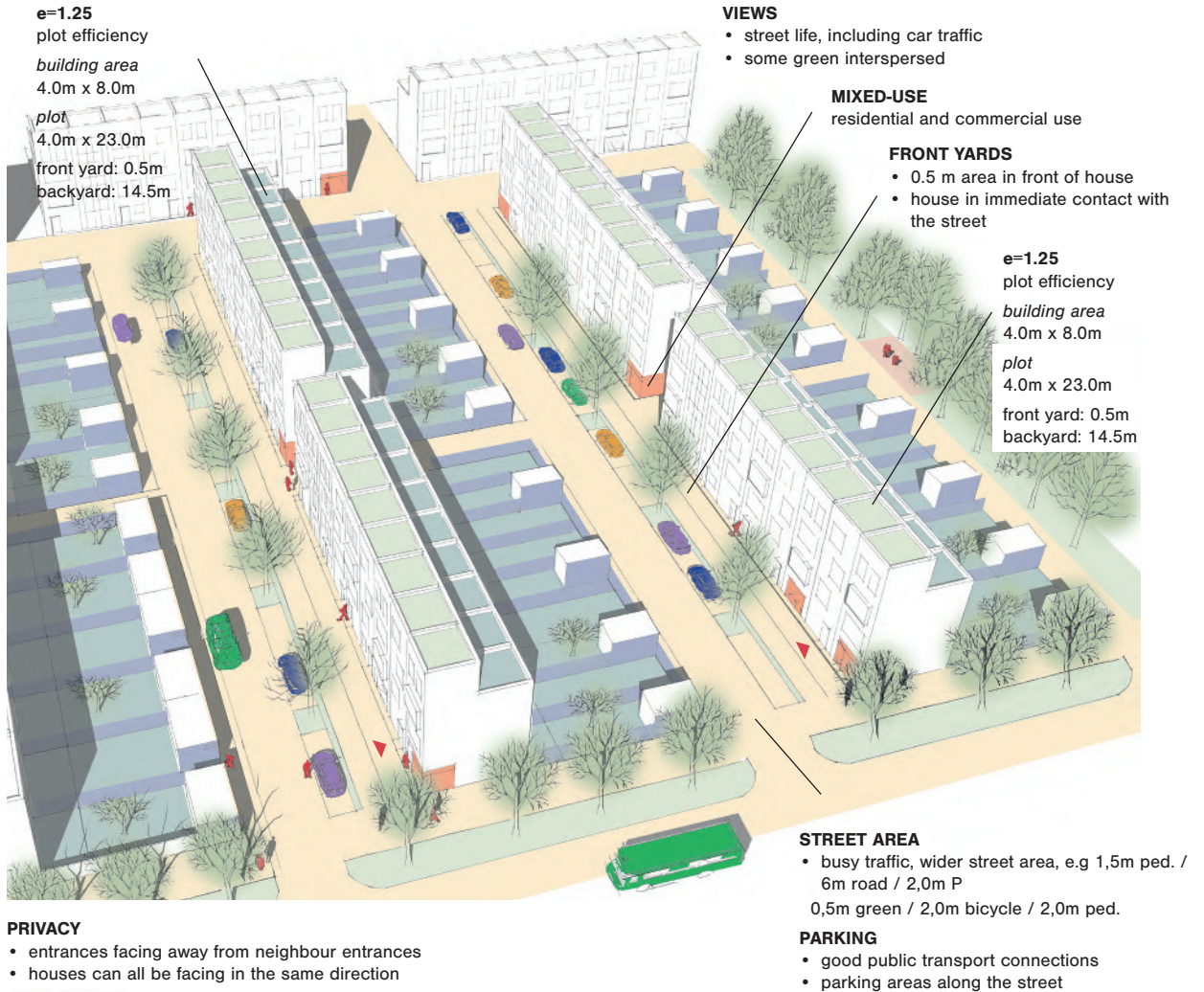


Diagram 27. Example of a urbnyous street area. Conceptual drawings: Tina Ullrich.



**Figure 13.** Real-life encounter playing Pokemon Go along the Monikonpuro Creek in Leppävaara.

### Interfaces and meeting places in townhouse areas

The importance of interfaces to the vitality of an entire area has been understood for a long time (Gehl 2011, 150). An interface is a transition zone between the home and a public space, such as the street. It is the point where home and community meet. The transition from a townhouse to a street area might be direct or through an area where the degree of privacy changes from private to semi-private (Ullrich 2015, 30-35).

In apartment blocks, where access to residences is gained from a central stairwell, the interface is minimal, while townhouses have a large natural contact interface with yard and street areas. Direct contact between indoor and outdoor spaces, functional lounging areas in front yards and the ability to engage in different activities create the conditions for vital yard and street spaces, where people can meet and spend time together. Outdoor spaces overlap with indoor spaces through, for example, sights, sounds and passageways (cf. Hasu 2009, 51). In townhouse blocks, front and back yard design solutions have a major impact on the nature of the area as well as how it can meet the social and privacy needs of the residents.

Members of the socially-oriented lifestyle groups value doing things together with others and meeting places (Huttunen et al. 2015, 66). 65 percents of the townhouse-minded felt that having social contact with their neighbours was very important or important, while only 9 percents felt that having social contact was not important (Huttunen et al. 2015, 60). In residential areas, there is a need for meeting places for both random and planned meetings (Juntto 2010c, 265).

Daily routes and routines intersect and result in spontaneous encounters. Getting around on foot or by bicycle were considered requirements for random encounters in one's own residential area, because people do not meet each other when driving a car: "Life takes place on foot" (Gehl 2011, 72). When functions are centralised in squares, parks and community sports venues or around courtyards, these can become places for shared activities (Huttunen et al. 2015). In addition to places for spontaneous encounters, spaces for promoting interaction can be planned for residential areas. These spaces would be used by the more active residents.

Even though a great deal of social contact has "gone digital", i.e. it has partly shifted to social media, many social welfare studies on adolescent behaviour reveal that youths who are socially active on the Internet also frequently meet with their friends in person (cf. Myllyniemi 2009; Kraut et al. 2002). Social media will naturally never replace real-life social engagement and, in turn revolutionise planning of the residential areas. What it does do, however, is reflect the different lifestyles and degrees of socialness in much the same way they do in a physical environment.

### Parking

Some future townhouse residents would like to have their own parking space close to their house, while many others are interested in car-free living (Huttunen et al. 2015, 69; see. 4.2.4). Parking densities are specified during the zoning phase, and the placement of parking spaces is specified in the detailed plan. It is during this phase that a determination is made as to whether the parking will be arranged on an area-wide basis or in each plot. Parking solutions have a



**Figure 14.** Plot-specific parking along a mixed-used street.

significant impact on the street space, its safety and appearance, sight lines and the possibilities for resident encounters.

A car-free area and model, where parking is concentrated on the edges of the area, allows for the creation of a safe, car-free street area. Parking in one's own plot offers many advantages, such as having a short distance between the residence and car, making it easy to carry things in and out, and safe or accessible access from the dwelling to the car. A parking space adjacent to one's own home or within the house structure can also be used for other purposes, whereas the purpose of a parking space in a carport or open parking area is prescribed and is often left empty for the entire day. A parking space within one's own plot serves as, for example, a play area for children, a place to repair bicycles or a lounge area when the car is not parked there. In a densely built area, this can be considered an argument for plot-specific parking.

In the placement of plot-specific parking, attention must be given to the fact that a car will block sight lines, especially for children. It would be good to have a direct view from the street level window and front yard out into the street area. This increases the chances for personal encounters: residents are better able to see what is happening on the street and, while spending time in the front yard, interact with passers-by. A line of sight also allows residents to keep an eye on playing children.

In areas where the townhouses are on their own property, a building co-operation-type of arrangement required for a shared parking area or a separate parking plot must be resolved in urban planning and in accordance with laws. An alternative solution is to provide parking in the street

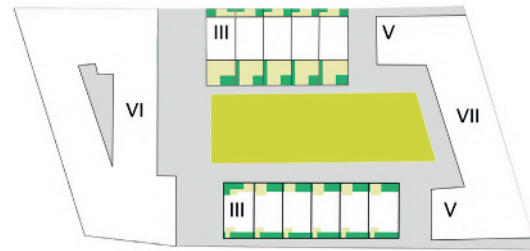
area, which raises the questions of who will be responsible for maintenance of the parking area. The area-specific, centralised arrangement of parking spaces increases social encounters, while the plot-specific arrangement of parking spaces reduces the number of people passing through the area and, in turn, the chances for social encounters (Gehl 2011, 126). Thus, parking arrangements can have a significant impact on the social and functional aspects of the area.

The coming decades may see major changes to the current car ownership situation, thus making parking solutions, which cannot be changed or converted to serve other purposes, a wasted investment that impedes development. The solutions used today should be made so that they can serve a purpose or be modified for changes occurring in decades to come.

#### **Townhouse and a diverse block**

Because the arrival of the townhouse in Finland as a new housing typology is strongly linked to the diversification of housing, it is important to examine the suitability of a townhouse for blocks containing a variety of housing typologies. Conducted at the Tampere University of Technology, the recent Talopaletti research project comprehensively examines models in which the townhouse is combined with other types of residential houses or spaces used for purposes other than housing (Hedman et al. 2016). The timing of the Talopaletti project underscores the topicality of small-scale, dense urban building.

The Antareksenkatu site, which is located in the Kalasatama District of Helsinki, combines the townhouse and apartment



**Figure 15 and Diagram 28.** Combi-block on Antareksenkatu in Kalasatama.

block typologies. The problematic aspects of the “combi-block” presented in the Talopaletti study can be found at this site. Because the apartment blocks are taller than the townhouse units, many of the residences in the apartment blocks have a direct line of sight into the townhouse courtyards and residences, thus putting these in a subordinate position (Hedman *ym.* 2016, 188) and the privacy typical of the typology is not realised. According to the Finnish Dream House project, potential townhouse residents do not want anyone to see into their residence or back yard directly from the street (Huttunen *et al.* 2015, 78). Townhouse residents might find the unwanted lines of sight into their houses as being unpleasant due to the large number of apartments. In this situation, the townhouse residents are forced to compromise on their privacy, but the apartment block residents are not.

With appropriate massing and grouping, a combi-block (concept, *cf.* Hedman *et al.* 2016) allows for a varied street environment and small-scale yard area, offering excellent lighting conditions for all residents of the city block. The combi-block also makes it possible to create courtyards and mixed-use streets, which were also examined in the Dream Home project (*cf.* Huttunen *et al.* 2015). (Hedman *et al.* 2016, 188, 195). Views into the townhouse yards can be avoided to a certain extent by including outbuildings in their design (Hedman *et al.* 2016, 189) and high walls or fences. One possibility solution to unwanted lines of sight in a combi-block is to face the main living spaces of townhouses away from the apartment blocks. In this case, a compromise must be made where the ideal orientation of the dwellings is concerned, which might have a negative impact on the lighting conditions of the dwellings.

The Kalasatama solution indicates that, when combining very different typologies in the same block, it should be ensured that the features of the typologies employed can be used in the block structure. The subordinate position of the townhouses does not allow the typology to provide the desired privacy and the importance of the typology in the block and Kalasatama area remains little more than a means to enliven the cityscape.

### Summary

One of the key findings of the townhouse study is that simply aiming to achieve urbanity in townhouse areas is insufficient as a definition for a residential area. Qualitative, resident-specific factors were highlighted along with the above-mentioned criteria and were, in many cases, considered even more important. The resident profiles identified in the Dream House survey and the themes more broadly addressed in the townhouse study reveal that an approach that reflects different lifestyles can be beneficial to the development of the townhouse typology and its resulting block models. Examples of the townhouse type base models and block models illustrate how the townhouse typology can be used to create various urban structural and visual solutions by means of analysis and taking different housing preferences into consideration. All of these solutions might differ a great deal in terms of building density, urban or suburban, thus resulting in a diverse urban environment that meets the needs of resident groups and lifestyles.

Sites such as Antareksenkatu in Kalasatama have revealed the problems of using the Finnish townhouse typology in a densely built urban structure dominated by apartment blocks. The possibilities offered by a dense, low-rise building type as a means of densifying suburban structures (Manninen & Holopainen 2006, 5) or as a key building-type in suburban areas can, on the other hand, be considered promising.

Themes addressed during the townhouse studies, such as usability, the possibilities offered by yards and street spaces, and community can be effectively taken into consideration in a suburban-type structure. In addition, the goal of a pedestrian city, which provides a natural setting for a vibrant street space and personal encounters, can be more effectively realised in a suburban environment. In a densely built urban environments, the above-mentioned qualitative factors will have to be compromised to a certain extent.



Photo 16. Nieuw Leiden, The Netherlands.

## 5.3 Usability and accessibility as part of the townhouse concept

In the context of housing, usability can be defined as follows: The degree to which the user (resident) can effectively realise their own housing-related wishes and provide them with a sense of satisfaction. This involves, among others, user experience, safety, functionality, efficiency and accessibility. Diagram 29 shows how the areas of usability have been addressed in the report *Moniaistisuus ikääntyneiden asuinympäristöjen kehittämisessä* (Verma 2012).

Taking population growth and equality criteria into account, all types of dwellings should be designed so that they will not basically prevent senior citizens, sensory-impaired persons and persons with reduced mobility from living in them. People with special challenges and needs in their daily lives are “lead users” in housing development projects. New housing and architectural solutions, which make it easier for residents to perform tasks, can result in innovations that improve the housing experience for all residents. According to Jacobsen and Pirinen (2007), two types of innovations may be produced. Some of the new solutions brought about by lead users are borne out of necessity. This results in the creation of a new solution that enhances usability. On the other hand, existing solutions can be made more user-friendly and less typifying of the residents. Good design and aesthetic quality are important to nearly all people.

A prerequisite for housing that is suitable for as many different resident groups as possible is the ability to enter the dwelling. A route leading from the street into the dwelling that does not require stairs or thresholds to compensate for differences in levels is user-friendly. Guests with reduced mobility can enter the dwellings, provided that their street-level space planning and door opening dimensions allow for the use of rollators and wheelchairs. Accessible toilet and bathroom facilities are key to daily hygiene. The dwelling should have at least one toilet and bathroom dimensioned for wheelchair access. There should also be an accessible route to the toilet and bathroom from the entrance floor of the dwelling. If a toilet dimensioned for wheelchair access is located on one of the upper floors, a light-duty lift must be installed in the dwelling.

According to the principles of Universal Design (Mace 1998), a design solution must be equally accessible to all. As the population ages, user-friendly solutions will become a selection criterion that promotes the sale of residences. In addition to solutions that promote accessibility, the definition of

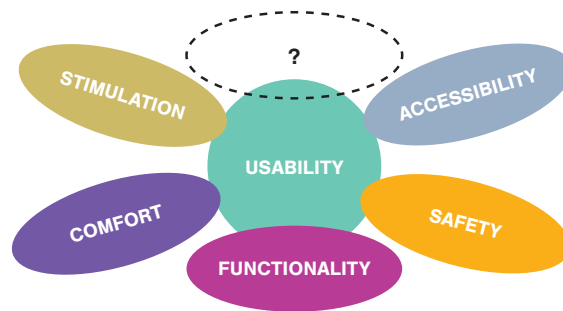


Diagram 29. Usability areas.

spaces, contrasts and lighting solutions contribute to a high degree of usability. Access to utility spaces and, for example, waste receptacles and mailboxes must also be possible with a rollator. Wide door openings and openings without the thresholds movement, for instance, with strollers as well as enable changing the placement of the furniture. In addition to the challenges posed by an ageing population, Finland has ratified the UN Convention on the Rights of Persons with Disabilities, which states, among other things, that persons with etc. with disabilities have the opportunity to choose their place of residence and where and with whom they live on an equal basis with others and are not obliged to live in a particular living arrangement. Good solutions promote social sustainability and reduce segregation.

The technical usability of a building refers to, among others, heating, indoor air and lighting. Smart home technology, such as the individual control of lighting and heat in each room, can enhance living comfort and convenience. The use of renewable energy sources and energy-efficient solutions in buildings is of particular interest to senior citizens, provided that these solution reduce living costs. Technological solutions should be intuitive, automatic and instructive. They should also support the resident’s lifestyle. For example, an apartment building, whose windows cannot be opened due to the air conditioning solution being used, is not user-friendly. Solutions must also be developed in such a way that the resident does not necessarily need to know anything about energy-efficiency or sustainable development. The optimisation of electricity and water consumption can be improved so that the resident is guided in making the right choices. It must be possible for the resident to set the indoor temperature to a comfortable level. Setting the temperature too high can, however, result in increasing costs, which provides an incentive to reduce consumption levels. According to Kapedani et al. (2016), an energy-efficiency building is a product, where the resident is seen as a consumer, and construction is regulated by technical guidelines. Improving usability is a resident-based process, for which there currently is no binding guidelines. However, an ageing population will lead to the development of usability and Universal Design principles in building, much as the oil crisis affected energy-efficiency requirements in past decades.

## 5.4

# Possibilities of the yard

From the resident's point of view, a living environment is part of the home, particularly due to its outdoor spaces. A balcony or yard are private outdoor areas and a part of the home that may expand into a courtyard, for example. Outdoor spaces belonging to a home further enhance the perception of having one's own space and autonomy (Lapintie 2010), but the significance of social areas can be highlighted with courtyards and at the block level. Resident profiles completed in this context prove to function as promising "design keys".

As a selection criterion, having one's own yard or balcony was not given a great deal of importance (cf. Diagrams 10 and 11, chapter 4). Having a yard, whether large or small, did not make it into the top 12 most important criteria in the Envi survey. Diagram 10 shows that the townhouse-minded are interested in a small, low-maintenance yard (45%). This is a promising point for the townhouse concept. There was also a certain degree of interest in having a courtyard (34%). It was common in the surveys that the various features related to yards were not given a great deal of importance. However, the opposite was true in, for example, workshops.

The townhouse workshops held in Helsinki and Lohja showed that residents could accept a smaller yard if a courtyard of a housing co-operation or adjacent park would serve as an extension of it. Having a courtyard raised doubts among the urb/subnymous residents, particularly with regard to rules, management and maintenance. A more private lifestyle also creates the perception that having a courtyard is not necessarily of value to them. Solutions to these doubts were also found in the workshops: if urb/subnymous residents were able to explore and discover ways of using a courtyard by using it, they might gradually begin to more broadly recognise the opportunities it would provide.

General attitudes toward participating in the planning and maintenance of yard areas were also examined in the Envi survey. Even though urb/subnymous residents are not very interested in participating in and influencing their residential areas, there is some degree of interest in participating in the planning and maintenance of a housing co-operation type of yard arrangement (Hasu & Hirvonen 2015). This is indicated by the opportunities that yard spaces offer in building a community. Workshop participants wanted the opportunity to grow useful plants, such as fruit trees, in a shared yard, as the desired small back yard is not suitable for trees which will grow to be large.

Yards are best suited for rest and relaxation as well as places to meet with neighbours (for a more detailed discussion, see Huttunen et al. 2015, 75–80). In addition to its recreational value, yards also offer many other ecosystem services.

The mosaic formed by plot yards is a vital component of the green infrastructure in residential areas, which is why the way yards are realised has a major impact on the ecosystem services provided in the residential area. The vegetation cover and absorption surface area as well as the type of soil play a key role in the ecological functionality of the area (Breuste 2011a; 2011b).

Yards covered with paving stones or dominated by lawn are ecologically one-sided, but a yard with varied ground cover, perennial plants, shrubs and trees as well as various water features offer greater diversity. These kinds of yards enhance the green infrastructure of the residential area, thus making it more resilient when dealing with different types of problems and changes. (Perämäki 2016.) The lush, diverse green area provided by yards regulates the microclimate in each plot, thus affecting the energy consumption of the building (e.g. Kuismanen 2005). It also regulates water quality and its circulation and thus mitigates flood risk as well as binds harmful substances (e.g. carbon) in the atmosphere and offers a habitat for various flora and fauna. A diverse yard environment is also stimulating and refreshing to the residents and promotes their health (e.g. Jäppinen et al. 2014; Cameron et al. 2012). Plot yards offer a place to practice, for example, urban gardening, such as planting fruit trees, berry bushes, vegetable gardens or planter boxes, which also offers pollinators a key habitat. Yards can also have a negative impact on the environment: fertilisers and pesticides used in gardening as well as invasive plant species can degrade the condition of the local ecology (Cameron et al. 2012).

Green solutions integrated in townhouse structures, such as green roofs and walls, can enhance the provision of several ecosystem services. They can, for example, slow down storm water run-off, bind airborne pollutants, cool the air and insulate buildings (e.g. Lundholm 2011; Obendorfer et al. 2007) as well as provide varying habitats in the form of, for example, a meadow-like green roof.

Courtyards and parks can also offer residents the opportunity to engage in activities that would not be possible or practical in a private yard. These kinds of activities and functions, such as allotment gardening or playgrounds, promote social contacts, thus providing ecosystem services. Larger trees or more extensive, multipurpose catchment areas, which play a key role in the provision of ecosystem services, can fit more easily in larger courtyards or parks. The interconnectedness of plot-specific yards with surrounding ecosystems is important to strengthening the green infrastructure network on a broader scale. (Perämäki 2016.)



## 5.5 Sense of community in townhouse living

Sense of community was repeatedly encountered in the Townhouse survey. Sense of community is related to both a sense of local community within an urban structure and a sense of community at the block level and in the housing co-operations. Promoting sense of community is also a goal of the revised City of Helsinki Building Department guideline concerning shared spaces. Even though the guideline *Yhteistilojen toteuttaminen asuinrakennushankkeissa* (Creating shared spaces in the apartment building projects, 2015), is intended for application in new buildings with lifts, its content should be examined in relation to townhouse living at the block level. Indeed, the guideline facilitates the design of the shared spaces in such a way that it encourages the designers to come up with new solutions that place an emphasis on the usability of spaces over compliance with dimensional requirements.

### Steps toward local community and involvement

When comparing townhouse living to single-family houses, the concepts and possibilities of the sense of community and shared spaces are left distant. However, shared spaces were assigned a great deal of importance by residents in the surveys and workshops. A courtyard makes it possible to engage in activities that exceed the capacity of a private yard, such as children's games requiring a large amount of space and useful plant gardens. A courtyard and possible block house open a wide variety of opportunities to expand the home from the house itself out into the greater block area.

The management and rules of a shared space are seen as challenges. Workshops, in particular, offer possibilities for tackling these challenges. Setting rules lowers the threshold for bringing together the more private and more social resident types. The best result is naturally achieved if the workshop participants are actual future residents of a development.

Sustainability is the recognised desire to participate and influence one's own living environment. By profiling residents, the survey found that this participation is more natural to social residents than to private ones. Pride in one's own block and a street space that reflects one's own

personality is one way to encourage even the more private residents to assume responsibility and participate in shaping their living area. The shared spaces of residents play an extremely important role.

### Examples of socialness

Over half of all Finns over 65 years of age live in detached houses or semi-detached houses. Many senior citizens are interested in more community-oriented housing types. There are examples of these types of new housing solutions in Finland and the Nordic countries. For example, in Denmark there are detached house solutions, which promote resident socialness. Bofælleskabet Højen is comprised of 26 senior citizen residences, which are owner-occupied. All the dwellings are accessible. The plot (11,600 m<sup>2</sup>) contains 26 row house dwellings and one large common building. The residences are 105–125 m<sup>2</sup> in size. The common building offers a venue for socialising and recreational activities as well as dining. The common building has, among other things, a dining hall and lounge area, a gym and a laundry room. The ratio of housing costs to living space can be expanded by living spaces divided in different ways.



Figures 16. Bofælleskabet Højen, Denmark.

## 5.6 Service environment

Even though townhouses were separated from the type of the residential area in the Dream Home survey, the definition of the research framework does not disregard the importance of the living environment's meaning. This is why the Envi survey went one step further and included an analysis of residential area preferences.

The Envi survey claims regarding service preferences in residential areas were derived in part from the Residents' Barometer (Strandell 2011), in part from the Dream Home study workshops and in part from the comments on services and service environments made in the Dream Home survey.

### 5.6.1 Service preferences and needs

According to the Envi survey results, service preferences are tied to the respondents' life situation. Families with children valued being in close proximity to day care centres and schools, while older respondents wanted basic services. In terms of the attractiveness of townhouse living for families with children, local schools are a key factor, but other services also generate more demand among both townhouse-minded and townhouse-opposed across the board.

Different things are sought in a residential area. Background variables provide an idea what kind of aspects are valued by different resident groups. Preferences can be explained by the resident profiles described earlier.

Living in close proximity to a grocery store was considered important to all residents (cf. Diagrams 30 and 31). A nearby super or hypermarket was wanted by residents who value busy, city centre living (66% of urban and 57% of urbsocial respondents). On the other hand, the popularity of brick-and-mortar stores was emphasised among socially-oriented residents, not according to the structure of the residential area: 40 per cent of suburban and 60 per cent of the urbsocial felt that it was very important or important to have brick-and-mortar stores within walking distance. This puts the goals for "boulevardisation" in an interesting light: Is it true that the clientele of a brick-and-mortar store is made up of residents who emphasise local community instead of close physical proximity?

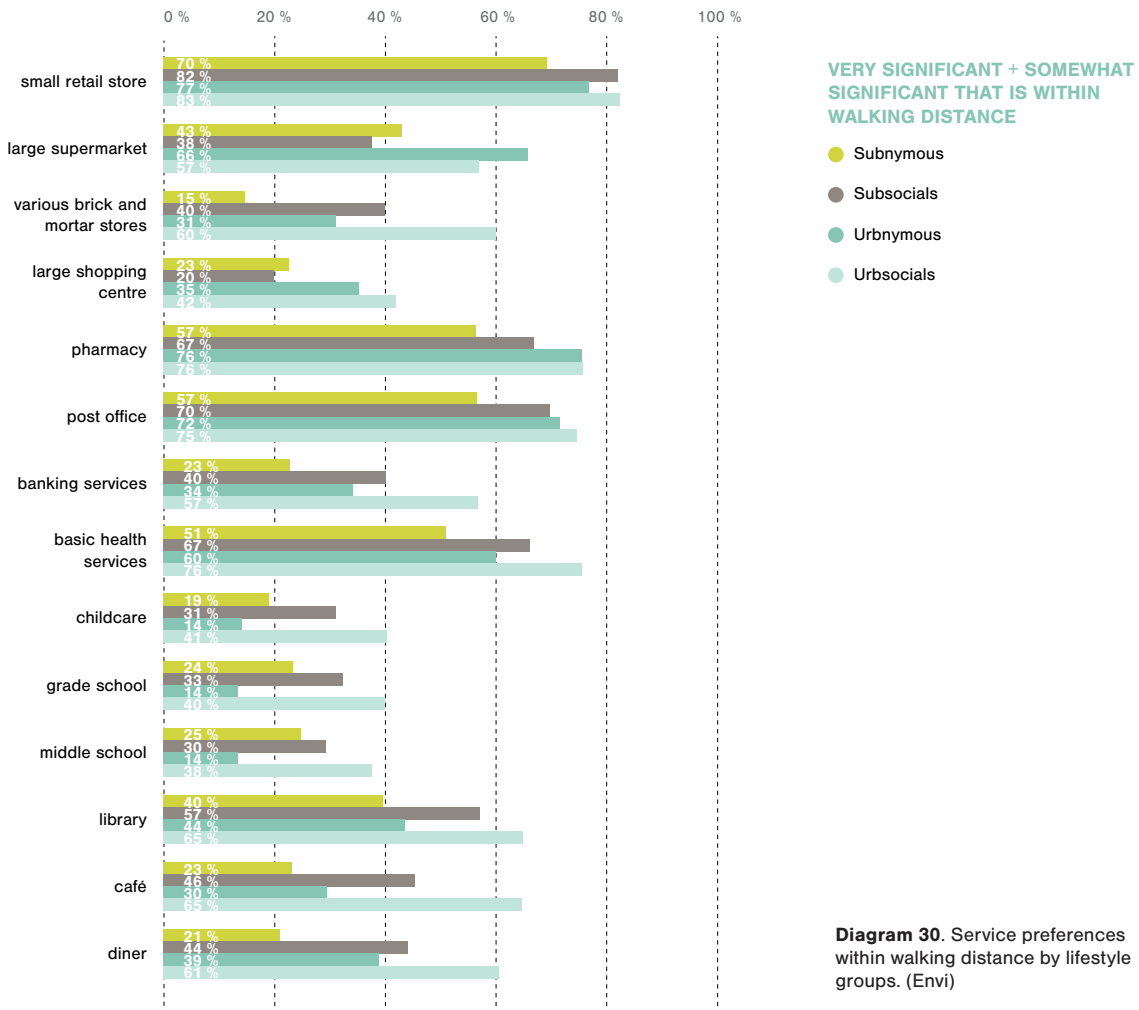
Urbsocials seem to be more demanding service users - all services, with the exception of super/hypermarkets, are more important to them than to other groups. Super/hypermarkets are primarily appealing to the more private residents. Most of the negative comments, i.e. "I wouldn't like this" were made regarding the following services: large shopping centre (7% of all respondents) and comprehensive/junior high schools (both 5%). Some of the residents (no children) would consciously choose to reside far away from schools, which is also a lifestyle-informed choice.

An examination of services by age group reveals that age was not a significant factor in terms of service preferences (Diagram 31). In all other alternatives, age was a decisive factor. For respondents over 60 years of age, postal, bank, health care and library services as well as cafés and restaurants were more important. A majority of these service types are currently undergoing changes. It is important for senior citizens to have a sufficient number of services within walking distance of their residence. One of the proposed solutions was a multipurpose shared service point. These would also serve the needs of the more socially-oriented residents. Day care centres and schools were more important to respondents under 45 years of age. This is directly informed by their life situation. Services for families with children are one of the key factors behind the attractiveness of townhouse living. On the other hand, if there is enough courage to also develop townhouse living for senior citizens, this would result in additional service needs.

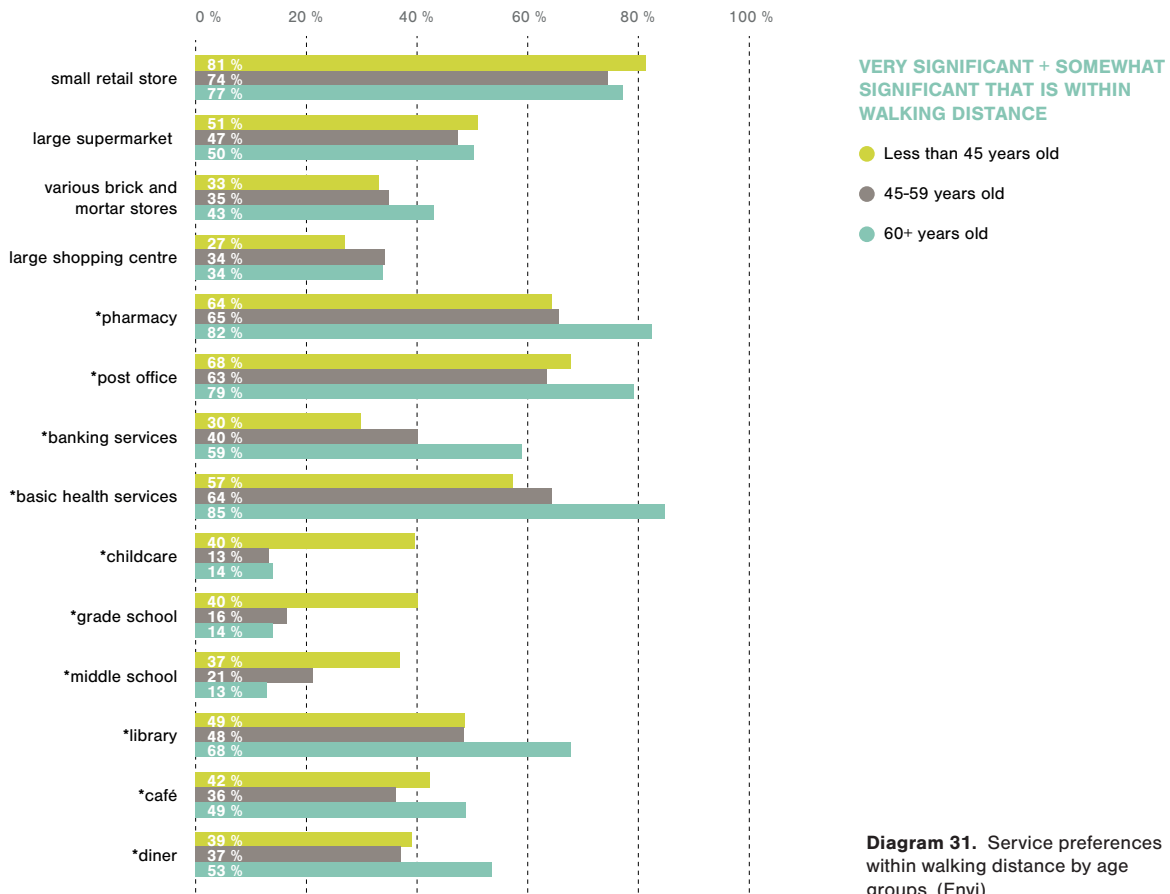
### 5.6.2 Mobility and recreation

One common denominator among metropolitan area respondents is that they expect to have good transportation connections. There were significant differences between lifestyle groups in every area except public transportation stops. Public transportation was also considered important in all resident groups in the previous Dream Home survey.

In general, all issues concerning the mobility environment were more important to the socially-oriented group than to the private group. The exception to this, however, is having a local forest, which is more important to



**Diagram 30.** Service preferences within walking distance by lifestyle groups. (Envi)



**Diagram 31.** Service preferences within walking distance by age groups. (Envi)

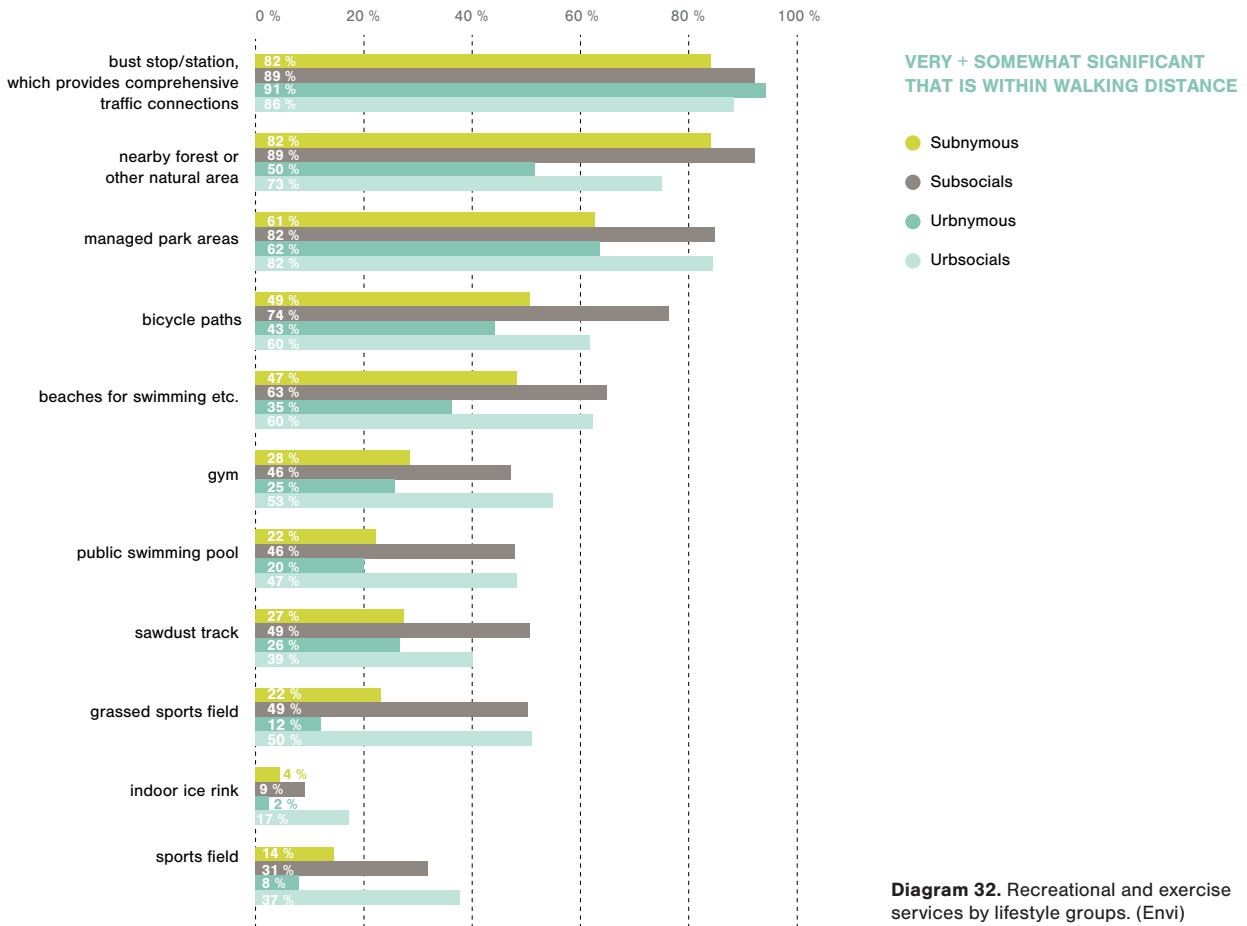


Diagram 32. Recreational and exercise services by lifestyle groups. (Envi)

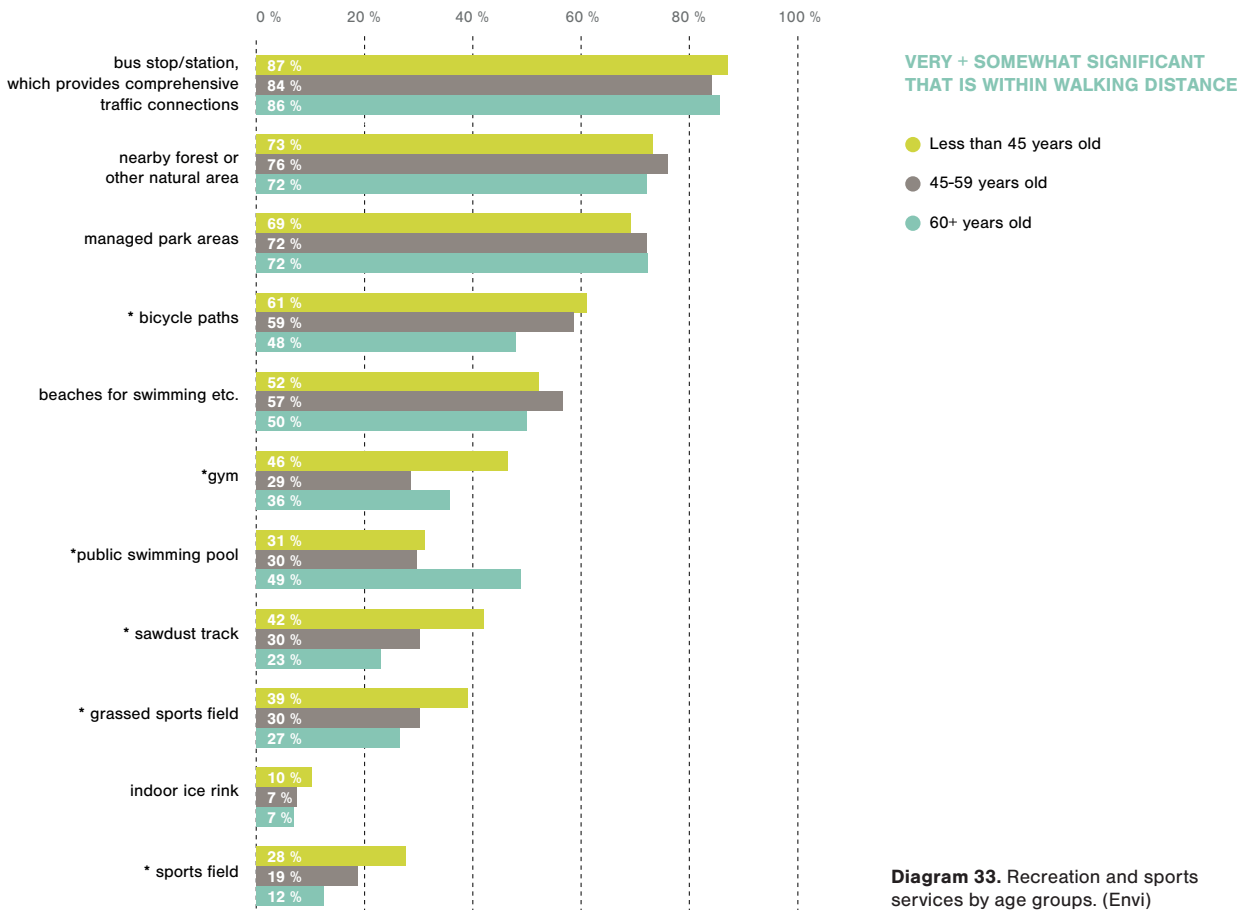
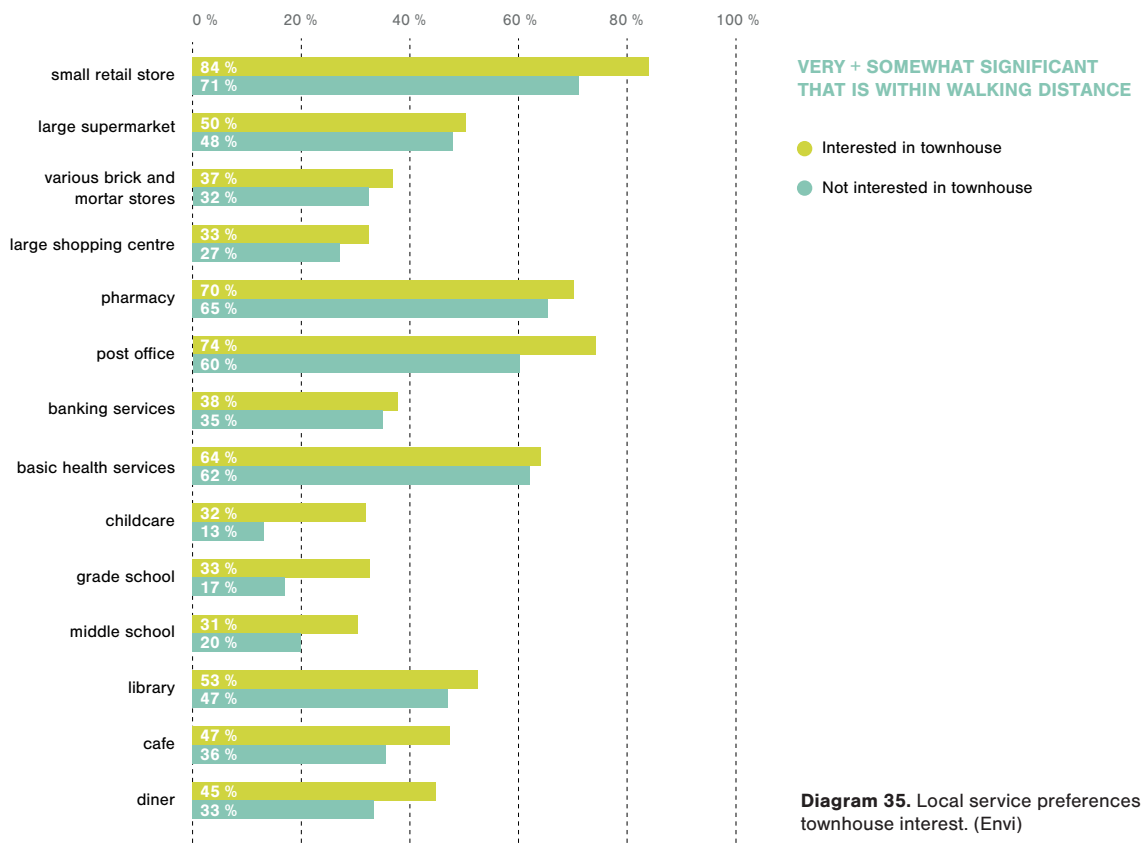
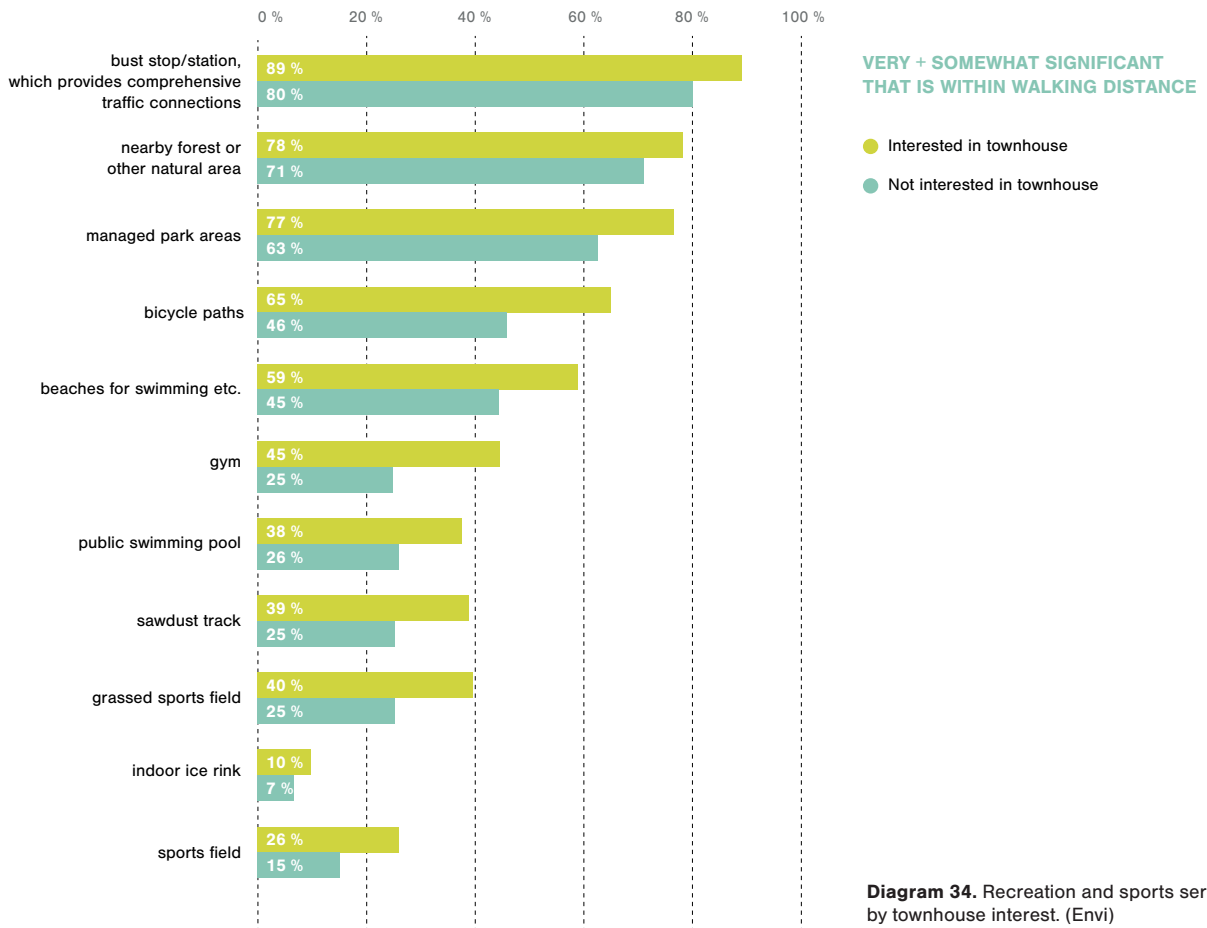


Diagram 33. Recreation and sports services by age groups. (Envi)



subsocial/subonymous residents than urbsocial/urbnymous residents. A local forest was least important to urbnymous residents (Diagram 32).

Well-managed park areas are particularly appealing to socially-oriented residents, regardless of the area type. This requires that green area planning be included in different area types. Tended, “city-like” parks were also desired in suburban areas, without losing forests and similar green areas.

Diagram 32 also shows that bicycle routes are especially appealing to subsocials. The increased interest in bicycling also demands that it be taken into consideration in housing design, including spaces for storage and maintenance as part of the shared spaces.

Socially-oriented residents are a resident group who find it more natural to be involved in influencing the development of their residential area. Based on the results obtained, it can be surmised that, at least for the time being, there is an equal amount of proponents for outdoor activities and recreation in the residential areas with different densities.

The location of public transportation stops and green areas are just about equally important in all age groups. Age group, however, was a significant factor in many areas related to mobility and recreation (Diagram 33). For respondents over 60 years of age, it was more important to have a swimming hall (49 per cent felt it was very important or important), with having a gym coming in second in the age group comparison (36%). Access to sport and playing fields, running tracks and gyms was more important to younger respondents (under 45 years of age) than others. Bicycling routes were less important to older respondents than others. Might this also mean that senior citizens do not value combined bicycling/walking routes due to their different speeds? This line of thinking is necessary in townhouse areas where bicycling might even be a key mode of transportation. Walking routes separated from bicycling routes must be provided for in order to ensure a slower, safer avenue for mobility.

Among younger respondents, the popularity of playing fields speaks to the usability of green areas - local parks are not just wanted for relaxing, but also for playing and being active. Usability also came up in issues concerning attitudes: a majority of the respondents felt that the usability of local green areas was more important than any conservation values they might have.

### 5.6.3 Valuation of services, mobility and recreation in townhouse interest

In closing, we can assess service preferences according to one’s interest in townhouses. In developing the townhouse typology, one key issue was the location of a townhouse residence. In what kind of service environment will the Finnish townhouse of the future be located?

The survey results reveal that respondents interested in the townhouse typology require services more than average (Diagrams 34 and 35). This same observation was made in

the townhouse workshops. Service preferences emphasise the desire for a city centre location for townhouse living. However, a city centre area type can vary widely, ranging from heavily built-up and busy to green and village-like. Naturally, these different area types offer different possibilities for service provision.

The future of townhouse living should therefore offer – even for families with children – the opportunity for car-free living, with some living along tramlines and others farther away from the city centre in greener surroundings. There is a common desire for daily convenience, local schools and meeting places, such as libraries and cafés. Examining recreational and mobility services according to interest in townhouses show that the respondents interested in townhouse living value functional public transportation. Local forests and maintained park areas are also on the wishlist of respondents interested in townhouse living. There is an emphasised desire for bicycling routes, which, in turn, emphasises the need for functional bicycle storage and maintenance facilities. It must be possible to easily access bicycles year round.

With regard to recreational services, the respondents interested in townhouse living generally seem to be active residents who value mobility. This is in line with the storage and laundry solutions used in townhouse living. The Finnish Dream Home survey workshops also repeatedly addressed the needs of an active, sporty lifestyle. A utility room, various storage spaces for hobby gear and drying sports equipment are examples of resident needs that must be taken into consideration in housing design.

## 5.7 Conclusions

In the Helsinki metropolitan area, the discussion has recently been focused on city boulevards and promoting bicycling. Brick-and-mortar stores are an integral part of city boulevards. When residents have all of their most fundamental needs served within walking or bicycling distance, the need for a car is minimised. The close proximity of services is emphasised among townhouse-minded while, for instance, the significance of the brick-and mortar stores is received even alarmingly little meaning in relation to the proximity of pharmacy, postal and basic health care services. A majority of the services valued by residents, such as schools, health care and postal services, are being centralized, which is making their local availability uncertain. How can this developmental trend promote the principles of conducting business locally and pedestrian-intensive mobility? This makes the scenario even more challenging when the resident profiles identified in the Dream Home and Envi surveys are added to the mix. Proponents of living in densely built, city centre areas can be divided into urbsocials and urbnymous residents. Over half of the urbsocials (60%), but only less than a third of urbnymous (31%) feel that the close proximity of brick-and-mortar stores is important. Urbnymous residents living in densely built city centres would rather shop in large super/hypermarkets (66%). The reason for this might be their desire to conduct business anonymously - brick-and-mortar stores lend themselves to a higher degree of social interaction and generally the characteristics sought in urban planning.

A pioneering spirit is emphasised among townhouse-minded residents, also where car-free living is concerned. In the future, there will supposedly be residents who will find a car-free residential area appealing. For these, the location of services will become a key factor. Convenience, also where services are concerned, is associated with townhouse living. This is why the location of townhouse residences matters. Target resident groups also matter. It is almost impossible to offer all key services within walking distance. As a result, a determination must be made as to what services could be provided in a certain area and to which resident segments they would appeal. Challenges in dimensioning are posed by the “housing for a lifetime” goal. On the other hand, service facilities designed to adapt over time provide the necessary flexibility. In this goal, residential housing in the area can play its own, key role. Club activities for senior citizens and children can take place in the same facilities, one after the other or even overlapping.

Identifying the factors that promote settling down and participating in a residential area play a key role in sustainable housing solutions. In addition to this, more comparative research is needed in order to identify and assess the benefits of measures taken to ensure sustainability.



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**06**  
***Conclusions***

In light of the results obtained in the *Habitat Components – Townhouse* study, the townhouse represents an interesting new addition to Finnish housing typologies. In terms of features, it meets the challenges of future housing solutions, such as sustainability requirements, infill building, different urban structures, various ways of living and lifestyles. Despite the cost pressures currently being exerted on residential construction, a small-scale urban structure and larger family dwellings are both still topical and will also enjoy demand in the future. Because there is also a need for housing types suitable for use in a denser urban environment, the townhouse offers potential user groups a worthy alternative for both the detached house and apartment block living.

The Finnish Dream Home survey identified surprising and interesting resident groups, such as solo dwellers and senior citizens, who are interested in the lifestyle offered by the typology. A versatile and user-oriented townhouse block can also offer these groups an attractive residential environment. A dense urban structure and adequate resident base lay the foundation for ensuring the availability of a wide variety of local services essential for urban living. Lifecycle housing seems to be an interesting option for families with children, middle aged residents and senior citizens wanting to settle down for the long run: a townhouse on its own plot, with its own yards, flexible ground floor and possible outbuildings makes it possible for multiple generations to live in the same house or, for example, the same block. Townhouses can be designed with space set aside for a lift, a lift can be installed or the ground floors can be designed to ensure accessibility, thus also allowing people with reduced mobility to live there regardless of the fact that the dwelling has multiple floors. The townhouse typology also addresses the need for flexibility as part of coping strategy that was highlighted in the survey. Outbuildings and forward-thinking design make it possible to rent out space, such as in a new approach to sub-letting. Flexibility increases the housing costs of residents and the ability to manage space needs.

Individuality and one's expression of identity were identified as key factors in both Master's theses on townhouse living in the Netherlands and Germany and the Finnish Dream House survey: As an independent property on its own plot, the townhouse is comparable to a traditional single-family house, offering not only a wide variety of space solutions, but also the possibility to make a personal expression in

the streetscape, thus also influencing the area's identity. No other typology has been associated with such clearly-defined identity-based expectations before. This poses a challenge in housing cooperative-type construction: if the townhouse typology follows a housing cooperative approach, it is important to find solution models and operating approaches to individualise residence units, both in terms of living space and outward appearance.

The resident profile data obtained in the Finnish Dream House survey is an interesting approach that offers a new perspective for design: resident valuations given in accordance with the resident profiles identified in this survey define the nature and features of the urban structure and local community. The approach and the data obtained can be used directly as a tool for design and planning. It provides opportunities for new elements related to future ways of living, such as the sharing economy, inclusion as part of the housing concepts. These could be such things as electric cars shared by the residents, shared indoor and outdoor spaces and even possibilities for using the street space. The survey resident profiles also revealed that, in particular, families with children belong to the "subsocal" lifestyle group. This indicates that the degree of townhouse area density plays a major role when examined from a lifestyles and value standpoint. Many types of townhouse areas are needed and even suburban areas can be urban or like a small city in character. Suburban areas need meeting places and a "hustle and bustle" akin to the city. In such cases, this "hustle and bustle" would differ from that found in city centres. The most important thing would be to use planning to create settings that would appeal to residents seeking these kinds of opportunities for activity.

Townhouse solutions – like architectural solutions in general – are always place-bound, but identifying the target group or groups during the planning phase provides an excellent platform for planning during implementation and finding potential residents. This also indicates that, even though the "Habitat Components – Townhouse" study managed to remain relatively well within the defined townhouse typology interpretation, it is essential that the Finnish townhouse typology is broadly developed to meet a variety of needs and contextual variations of it also transcend conventional classifications. The study has generally highlighted the need to create new small-scale and urban environments. The target group approach also offers a functional tool for

use in the development of the townhouse typology and the residential areas they form as well as in the conceptualisation of new housing typologies.

The typology base models and block models presented in the Habitat Components – Townhouse study (see Chapter 5) were made diagrammatically on purpose, avoiding an architectural expression. Their purpose is to transform data produced in different parts of the study into a functional and physical form and compile it to serve as background and auxiliary data for planning and land use, conceptualisation and follow-up research that can be put to a wide variety of uses. The study also revealed that the townhouse cannot be converted into an apartment block (a building with separate residences stacked on top of each other) without implementing solutions that will incur additional costs. The results obtained in the townhouse typology study, however, provide tools for the development of various conventional townhouse evolutionary models, typology combinations and also other typologies, such as the low-rise apartment block.

One question raised in the study is the continuously growing interest of small households (solo dwellers, small families, senior citizens, cohabitants, etc.) in detached housing and urban structures dominated by detached housing. This highlights the need to also offer these groups a dense, small-scale urban environment. The development of residential apartment blocks suitable for use within the structure and scale of a townhouse area and taking these into consideration in land use is an interesting topic for further examination. Although this particular subject has been topical from time to time over the past few decades, it deserves a broader analysis, in which the different building approaches for small residences would be given greater consideration, also from a planning and financial feasibility standpoint. Based on experiences from the Netherlands, it can be said that the development needs for small-scale housing solutions should, as a rule, be re-examined. This is also linked to the theme of social sustainability, which is advancing to the forefront of housing research. Social sustainability can be seen as comprehending several topical themes and issues, such as making use of the resident's perspective and maintaining affordability, but these issues should be examined together on a user-specific basis, taking both qualitative and financial perspectives into consideration.

Although the Habitat Components – Townhouse research project concludes with this report, the townhouse study will continue, with the other two sections of the final report, which were referred to in the introduction of this report, being published in the spring of 2017. In addition, the Department of Architecture launched its wood townhouse-pilot block development project this autumn (2016). The block will be built in 2018 in East Helsinki. The block will be planned and designed by architecture students as coursework and thesis work. An independent developer will carry out the actual construction. The goal of the project is to make use of the results obtained in the Habitat Components – Townhouse and Energy Efficient Townhouse studies as widely as possible, testing and applying them in the industrial wood house production of a dense Finnish residential

area based on small-scale houses. The resulting block primarily involves normal residential production, but, seen from a research standpoint, the objective is to take one of the residential units in the block for use by Aalto University. This unit would serve as a facility for the long-term research of townhouse living and user experiences as well as issues related to the development of community in small-scale residential areas and solutions promoting sustainable housing. It would also allow for the testing of, for example, new housing innovations related to energy efficiency and digitalisation. The building process is hoped to also provide information on functional, cost-effective solution models involving building developments in dense areas and prefabricated industrial production.

A human-friendly living environment is mentioned in the Aalto Living+ programme, which is linked to Aalto University's strategic focus areas. The townhouse survey is strongly linked with developing the qualitative features of urban living environments, taking user needs into consideration more and more. (<http://www.aalto.fi/fi/research/platforms/living/>)



Photo 18. Waterwoningen, IJburg, The Netherlands.

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Arkk 2. E-mail interview. Bernauer Strasse, Berlin: Residents and architects. Conducted: aikana 10.12.2013–11.2.2014. Interviewer: Tina Ullrich.

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## PICTURE SOURCES

Figure 1. Student work from Aalto University Townhouse studio, spring 2013. Illustration: Aku Jokinen.

Figure 2. Borneo-Sporenburg, Amsterdam, The Netherlands. Photo: Caroline Moinel, 4.10.2016.

Figure 3. Homeruskwartier consists of plots with different themes and sizes for private creating varied cityscape. Image source: [http://www.ikbouwmijnhuisinginalmere.nl/kavels\\_in\\_almere/homeruskwartier](http://www.ikbouwmijnhuisinginalmere.nl/kavels_in_almere/homeruskwartier)

Figure 4. Different typologies have been combined in the same block in Vlinderbuurt: townhouses with three to four floors, townhouses combined with commercial or work areas, two two-storey apartments on top of one another, and regular one-storey apartments. Image source: [http://locusarcitecten.nl/files/project/4/9901-Vlinderbuurt\\_website.pdf](http://locusarcitecten.nl/files/project/4/9901-Vlinderbuurt_website.pdf)

Figure 5. Nieuw Leyden is an area implemented at the end of 2010 with a large number of individualised townhouses. The front yards of the townhouses have access to pedestrian and bicycle traffic and are also safe locations for children to play. Photo: Caroline Moinel, 1.10.2016.

Figure 6. Group-based construction site Scheffelhof Frankfurt. Photo: Tina Ullrich, 29.9.2013.

Figure 7. Space filler, Auguststrasse in Berlin. Photo: Jukka Honkala, 14.11.2014.

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Figure 17. Bofælleskabet Højen, Denmark. Photos: Ira Verma, 31.1.2012.

Figure 18. Waterwoningen, IJburg, The Netherlands. Photo: Caroline Moinel, 4.10.2016.





*The Finnish townhouse as a home. Starting points and interpretations for the future.* This final report of the Habitat Components – Townhouse project discusses the evolution of the townhouse typology and its relationship with topical themes on housing. These themes include divergent housing wishes and lifestyles, social sustainability, energy efficiency and affordable housing. Results emphasising the importance of the residents' perspective demonstrate the numerous possibilities offered by the townhouse typology and its conceptualisation. The townhouse is highly adaptable and can play a key role in an urban structure. This is why, for example, resident profiling is examined in terms of housing design, city planning and local community.

This report presents the bases for the townhouse typology and its European origins as well as the observations made and results obtained during different phases of the study concerning the possibilities offered by the Finnish townhouse typology. Using basic models and block solutions of townhouse typology, the data obtained in various parts of the study is transformed into a functional and physical form in the report. Thus, this report compiles the data collected during the project and uses it as a foundation for and in support of zoning and land use, conceptualisation and further research. The research results also provide information for the development of combinations of typologies as well as other typologies, such as the low-rise apartment block.

Due to its scope, the final report of the townhouse study has been divided into three different publications. The two publications following this report deal with the townhouse typology and the urban structure it creates from an energy efficiency and ecological standpoint. They also present concept plans and applications in different urban structures developed during the study

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