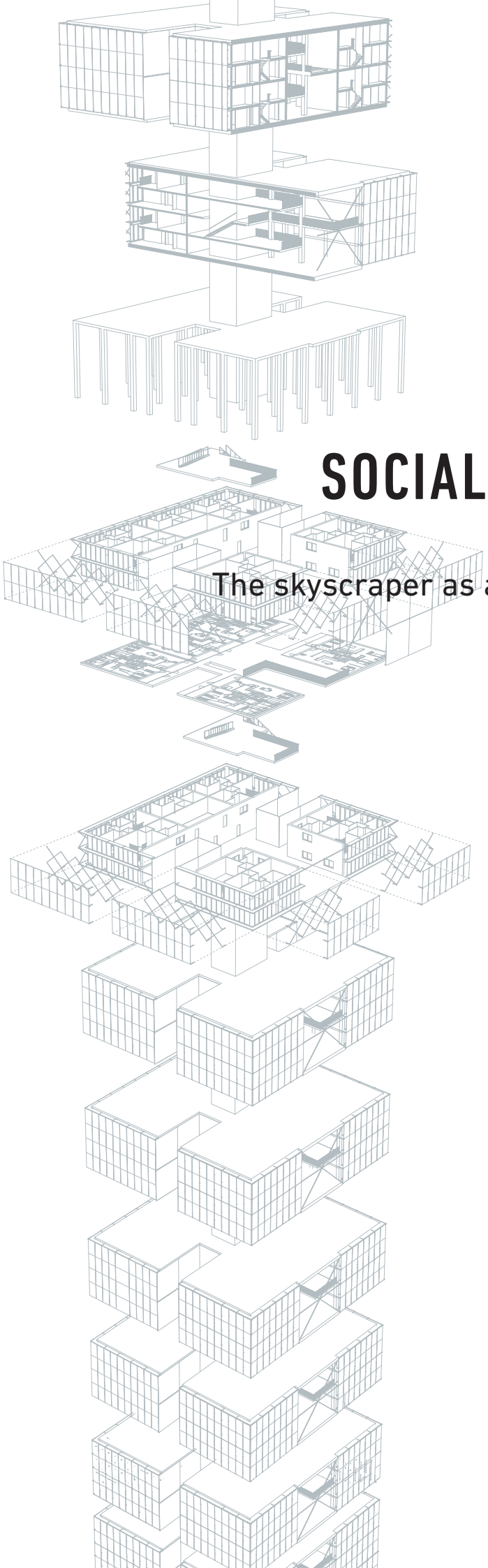

SOCIAL SCRAPER

The skyscraper as a future social amplifier

Astrid Parinder
Master thesis at Chalmers Architecture
Gothenburg, Sweden, 2017

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Master thesis
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Abstract

The typology of the generic contemporary high-rise building often acts as an isolator neglecting the need of informal meetings and social interactions through its lack of social spaces.However, the typical Swedish neighbourhood, on the contrary to the high-rise building, uses the in-between spaces for informal interaction as its core, hence forming a community which operates through its common identity based on the local context and the social interaction between its residents. With this is mind, would it be possible to adopt and translate key qualitatives and quantiatives from the traditional neighbourhood into the high-rise typology?

The main purpose with this master thesis is to investigate and analyze the social problems within a skyscraper to see what can be changed and how social spaces can be implemented in order to increase social interaction within the building. Instead of seeing the skyscraper as a set of individual units with a central core, where the greatest possibility of interaction lies between the entrance lobby and the lift, would it be possible to instead re-organize the spatial arrangement based on an expanded internal communication system encouraging social interaction?

The focus for the master thesis will neither be on the building's construction or technical elements, nor the economical feasibility, but rather on the social aspects; life quality, social interaction and sense of belonging.

With a mixed research of literature, analyses of neighbourhoods, building typologies and an experimental design research, the aim for this master thesis is to speculate on an alternative high-rise design which reduces the social-phsycological problems related to generic contemporary high-rise buildings.

Content

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"To experience a sense of belonging, we need to reclaim our humanity and place more value on the power of relationships. We need to be with people and in situations where our fallibility is accepted rather than treated as something to be fixed. We need to reclaim time, to have time on our hands, time to waste, time for unplanned conversation, time for biding our time."

-Peter Block, 2009

INTRODUCTION

Background/Personal Experience

With the personal experience of living in Shanghai and London, two cities where new high-rise buildings are constantly being built, gave me the knowledge of how individuals' lives and their social interaction are formed completely different from what we are used to in Sweden.

In Shanghai, high-rise buildings are built in order to fill the extreme lack of housing units while battling the equal lack of land. With millions of people living in this sprawling city of Shanghai, high-rise buildings become the only solution in order to provide homes for its citizens. Thus, skyscrapers are no longer only built in order to create an identity, but rather to solve the combined problem of sprawl and shortage of housing units and land. However, with an extremely high construction speed, the high rise communities also come with great sacrifices.

My personal experience of living in a high-rise building is mainly the lack of character and identity both in a social and an architectural aspect, aspects which can be assumed to derive from the need of high speed constructions. Further more, most residential high-rise communities are of a common generic type. The exteriors and surrounding areas often look pretty and trimmed with well managed greeneries and larger entrance floors, however I soon discovered that it was all just for show. The green areas were not to be used or touched and the large entrance halls were empty unused spaces. Also, there were no common areas or social spaces within the gated communities, which forced you, as an inhabitant, to adopt a very isolated lifestyle. Although this might be common to the western world, this becomes a problem due to the extreme contrast it poses to the traditional Shanghai style of living where people are used to live close together with several layers of shared spaces.

Evidently, there is a clear gap, socially and architecturally, between the traditional and the contemporary. Therefore, I find it highly intriguing to look into the possibilities of implementing and preserving the traditional social structures by informing and later adapting the typology of the skyscraper. This is not least valid to address in a Scandinavian context due to an increasing planning and execution of this type of building typology.

Overall, the housing shortage in Gothenburg and Sweden in general poses mayor problems as we are now struggling with the big task finding quick and efficient solutions in order to potentially solve this housing shortage. As a result, the discussion about skyscrapers' and high-rise buildings' potential suitability as part of Swedish cities' general contexts has long been an integral part of the housing shortage topic. Looking at the public opinion, there has been a larger opposition against skyscrapers and a general concern on how they affect our skylines in a negative sense, not only in Sweden but also in the rest of the Europe as the number of approved high-rise projects reaches record levels. But the discussion is starting to change. In London alone, over 200 high-rise buildings are planned for the coming years (The Guardian, 2014).

Both Gothenburg and Stockholm will get their first skyscrapers, both over 200 m,with mostly positive feedback from the citizens, which obviously is quite intriguing and surprising. Thus, with this trajectory towards an increased implementation of skyscrapers in Sweden, it is important to address and ask if and how this global typology can be adapted to preserve and encourage the social interaction commonly linked to low-rise developments?

Purpose/Problem

There is a general tendency of citizens living, in social terms, increasingly isolated from each other as the density increases, thus generating a higher number of single households in Sweden (Statistiska centralbyrån, 2014). Relating to traditional communities and neighbourhoods, the interdependent relationships and hence social structures create not only an individual sense of safety and belonging, but also form a common identity in which the local area, with its shops, cafés etc, thrive from.

In comparison with the typology of the high-rise building, the latter clearly suggests the opposite. While high-rise dwellings do provide a high level of privacy, the possibility for breathtaking views and a considerably alternative living experience from the conventional ground level habitation, high-rise living also faces several sociological problems. An isolated form of living embraces the autonomous individual which has access to all its materialistic needs of contemporary life, but completely lacks the sense of belonging as an effect of the built-in physical isolation and fragmentation characterising the typology. The skyscraper's strict vertical orientation and internal movement of the building leaves very limited possibilities for social interaction or activity (Gang, 2015).

The main purpose with this master thesis is to investigate and analyse the social problems within a skyscraper to see what can be changed and how social spaces can be implemented in order to increase social interaction within the building. By investigating how the "typical" Swedish neighbourhood is constructed through its meeting points and potential social/common spaces, and by investigating what "good" living conditions are, I want to look at the possibilities of translating and possibly implementing a similar "system" into the high-rise building. If we were to re-imagine this typology, could we make people be more willing to live in a compact building shared with hundreds of other people? Instead of seeing the skyscraper as a set of individual units with a central core, where the greatest possibility of interaction lies between the entrance lobby and the lift, would it be possible to instead re-organize the spatial arrangement based on an expanded internal communication system encouraging social interaction?

Questions

What are the problems associated to high-rise living and how can they
be changed?

What can be learned in terms of qualities from the "typical" Swedish neighbourhood and how can they be implemented into a high-rise residential building?

How to design a high-rise residential building in order to support and promote social interaction within the building?

Method

A mixed research of literature, analyses of neighbourhoods and good living conditions and building typologies, forms the backbone of my background research. Through an analytic approach of a generic Swedish low-rise neighbourhood, private, semi private and public spaces can be mapped out described in order to find qualities and quantitatives which can be extracted, adapted and possibly implemented into the high-rise structure. This is also put in relation to the current housing situation in Gothenburg and what it could mean to use the skyscraper as a general typology for the city's future expansion of residential buildings. With these aspects as a common thread through out the thesis, the experimental research in terms of the single tower, focuses on typological iterations in order to reach a potential implementation and transformation of the skyscraper.

Delimitations/Focus

The focus for the master thesis will neither be on the building's construction or technical elements, nor the economical feasibility, but rather on the social aspects; life quality, social interaction and sense of belonging. My focus will be on communication areas, potential social spaces and public places within a skyscraper. I will also propose an alternative for the individual living unit to showcase how these could look like.

Aim/Result

The aim is to find an alternative high-rise design which reduces the socio-psycological problems associated with conventional high-rise buildings meaning: segregation, fragmentation and isolation. The design alternative is an exploration of the possibility of promoting human interaction and sense of community with regard to collective identity and shared responsibility. The intention with this speculative adaptation of the typology is to suggest a prototype, not as an answer to one site specific site context, to broaden the general conception of what the typical high-rise living could be.

Gothenburg. Retrieved from Bing.com/maps

"High density is often equialized with tall buildings. However, as far as residential areas are concerned, the same density can actually be achieved with moderate building heights due to the qualitative questions about the use and proportions of outdoor environments, space experiences and the close-by climate must be taken in consideration."

-Stadsbyggnadskontoret, 2008

BACKGROUND

The Housing Situation in Gothenburg Today

To have an own dwelling is a human right and adequate housing is an essential condition for the individual to experience a sense of belonging within a community (Länstyrelsen Västra Götalands län, 2016). It is a question about the basic need of planning and managing our own lives. The sense of belonging is crucial for the inhabitants of the city but also for the wellbeing of the society on a larger scale. The sense of belonging can make the difference between a socially sustainable society and a socially destructive society, the latter characterized by for example social anxiety. In Sweden, there is a great general lack of all types of housing units but in particular rental apartments. According to Länstyrelsen, 2016, there is today an unbalanced housing situation in the county of Västra Götalands, with a deficit of dwellings in 44 of its 49 municipalities. This is a problem not only affecting the individual person but also the society. Young people need to stay in their family homes for a longer time and elderly need to stay in inaccessible dwellings, but it also affects companies in the sense of not being able to attract people with the right skills due to the lack of dwellings today.

Additionally, the population is constantly growing, especially in the main urban areas of the county. This poses great problems as total population within the county is expected to not only grow to 1,9 million people by 2030 but also increasing the number of people above 80 years of age with 50 procent (Länstyrelsen Västra Götalands län, 2016). Hence, the problem is multifaceted in the sense of both increasing numbers but a heavy change of needs. However, the deficit of dwellings is particularly problematic for young people and people who are new to the housing market. According to Länstyrelsen, there is a shortage of 78 000 new dwellings today which translates to an average need of annually constructing 7 800 new dwelling during the period 2016-2025. In comparison with the number of completed dwellings in 2015, the annual construction of residential units need to increase by roughly 22 percent immediately.

High-rise Buildings in Gothenburg

Gothenburg has a long history of public scepticism against high-rise buildings and what this foreign typology could contribute to the city. Today Gothenburg is generally characterized by a low-rise structure with the exception of a few higher buildings, Gothia Tower (100 m) being the tallest followed by Läppstiftet (86 m), none of which are residential buildings. It is in recent years that the reluctance against high-rises have started to become more relaxed in terms of acceptance of a greater construction height in newly built areas from the Urban Planning Department of Gothenburg.

Future of High-rise Buildings in Gothenburg

The lack of dwellings in Gothenburg is a growing problem for the city. Since 1990, the population has grown with 124 000 people but only 39 000 new dwellings have been added during the same period (Hyresgästföreningen, 2017). For the Gothenburg 400th anniversary, 7000 new dwellings should be finished with the largest focuspoint on the central areas (Göteborg 2021, 2017).

In 2008 Stadsbyggnadskontoret released the report *Stadsbyggnads-kvaliteter Göteborg* on qualities for future planning of the City of Gothenburg. In the report they state that high-rise buildings may be appropriate in some cases where site and arguments are right for the purpose. After analyzing suitable areas for high-rise buildings, the City of Gothenburg has been focusing on mainly two areas which are considered to be more appropriate for a higher and more dense urban fabric as a result of the expanding city. The areas which Stadsbyggnadskontoret see as suitable and hence are being planned are around the central station and along Mölndalsån. Frihamnen and Norra Masthugget are also seen as potential areas for some higher buildings. Karlatornet on central Hisingen, which is planned to be finished by 2020, will be the tallest building in Gothenburg (240m).

Figure 1. Gothia Towers, Korsvägen, Hotel. Figure 2. Posthotellet, Drottningtorget, Hotel. Figure 3. WSP, Ullevi, Office. Figure 4. Skanska, Gårda, Office. All pictures author's own copyright.

Turning Torso, Malmö, residential building. The tallest building in Sweden. Retrieved from http://urbantoronto.ca/news/2015/08/malmö's-turning-torso-wins-10-year-award-ctbuh

What is a High-rise Building?

Already from the early days of ancient civilization, tall buildings have been part of the human endeavour. A simple look at the Tower of Babylon or the pyramids makes it easy to understand that the human urge to build towards the sky is not a new phenomena. One question interesting to reflect upon is the definition of a high-rise building. The character of being a low, medium or high-rise building are rather relative measurements based on individual and subjective judgements. There are no definitive number of stories or meters that defines a typical high, medium or low-rise structure. However, a possible definition of a high-rise building can be explained as:

”A high-rise building is a building whose most important dimension is that of height, and which dominates it environment. Buildings that are substantially higher that their surrounding.” (Cowan, 1974).

This means that the definition of a high-rise building can vary depending on where in the world you are. The highest building in Sweden today is Turning Torso in Malmö reaching 54 floors (190 m) containing mostly dwellings. Compared to the highest building in the world, Burj Khalifa in Dubai which is 828 m, Turning Torso is still considerably low.

General Aspects For and Against

Claes Caldenby in 1990 wrote the book *Höga hus i Göteborg - Varför, var och hur samt inte minst om* where he reviews the arguments for and agains high-rise buildings. In the book he presents aspects to be taken into consideration during the planning of high-rise buildings, some of which will be explained below.

Place on the world map

To excel in the world through the building of high-rises, has during the 2000s boom been a frequently used argument for high-rise buildings. The significant amount of opponents to taller structures though means that it is not the height that puts the city on the world-map but rather the building in it self. Many of the higher buildings that are built today looks the same wherever in the world you are. With the same type of buildings around the world, the idea of being one of a kind is lost. Iconic buildings are thus icons due to its architecture and not because of its height.

Density

The question regarding whether taller buildings means higher density is divided. Some people believe that it's possible to reach the same level of density with a low-rise structure as with a taller, sparser structure. Taking into consideration qualitative questions such as demands on outdoor environments, proportions and spatiality between buildings, high-rise structures cannot be built as dense as a lower structure, especially when it comes to residential buildings. However, if these questions can be discussed and solved, a taller structure could mean a higher density.

City life

With a high-rise building one usually wishes a higher density and larger amount of people in a small area. Increased density often means more people on the streets and a stronger basis for commercial activities, services and entertainment. But there are also potential chances that a high-rise building will absorb the city life, people move inside the building instead of outside it. A high-rise building might also create undefined spaces around it which in some cases can be perceived to be deterrent. Therefore it is of highest importance to plan for inviting street environments and public spaces.

Orientability

Landmarks are important for orientation in a city and contributes to an interesting skyline. For good orientability it is important that the major streets and key locations are distinguished from the general urban fabric. Landmarks as a help for orientation is of largest importance to visitors or new residents in the city.

View

The view is a great value for a high-rise building. A tall building cannot only supply residents with a magnificent view but also the residents and visitors of the city by making for example the roof public. A high-rise building however may also mean a loss of view for its neighbours.

Economy

The question regarding if a high-rise structure is of economical benefit due to the maximum use of land is also widely discussed. The market prices are generally higher the more central to the city you come. Some mean that the value of a building also increases with a higher attraction in the city which is often created with a building which is taller and more expressive than average.

The problem is that the taller the building, the more installation and construction space is needed as well as the facade and material costs. Depending on the ratio of the construction costs and the demand for space the economical benefits may vary from different projects.

Function

Some buildings are, due to their function, of a higher sort as for example tv-towers, water towers, bridges and windmills. Few other functions demand taller buildings. Hotels and offices are functions that are more suitable for taller buildings while dwellings are harder to find arguments for.

Impacts in the City

Caldenby (1990) also describes other aspects that require specific consideration on how high-rise buildings affects the urban environment in the city, some of which are explained below.

Cityscape

The city silhouette can be affected when many new high-rise buildings are added to the city. A city will inevitably change but changes of greater impact should be taken under consideration as they might result in great changes to the character and symbolic identification of a city.

Spatiality

One of the most important aspect of high-rise buildings are their connection with the street life and how it will change the urban fabric. It is not only the relationship between the height of the building and the width of the street that matters. How the area between the houses is divided, furnished and inhabited also affects the impression. Despite a well-defined urban space, the scale can still be too big for the individual person. Hence it becomes especially important next to tall buildings and larger urban places to maintain the human scale.

Climate

A tall building affects the surrounding climate with both wind and shadow. A tall building brings down the wind to street level, especially if the distance to the closets neighbouring building is less than the initial building's height. By extruding the ground floor horisontally or adding a cap to the building, the wind is allowed to break and thus decrease. A high building also casts long shadows on the surrounding ground. Slimmer buildings shadow a place for shorter time of period compared to a wider building.

Traffic

A high-rise building often means an increased density of people and greater load on existing public transport and traffic in general. High-rise buildings are therefore advantageously placed near places with good transport links. Public transport benefits from a larger base of travellers, who in turn makes public transport more attractive.

Picture retrievd from https://blogg.bostadsportal.se/2015/01/20/vi-star-inte-ut-med-grannen/

"Today, cities desperately need to aspire once more to the goal of design that will bring to city people a richer and more fulfilling environment, because we do not know yet how to design urban residential neighborhoods that compete with the suburbs for social desirability, especially for families with children."

-Elisabeth Wood, 1961

THEORY

To Live Today

When we plan and design for new residential areas, it's easy to focus on the quantifiables such as floor areas, accessibility and economic gain and it's easy to forget the people and the lives they are going to inhabit the new area. Therefor the question becomes if it is possible to plan for the life we want to happen within the borders and walls of the houses we design?

According to Gehl(2013, ch. 5.2), the human scale is of highest importance during the planning cities. He argues that we need to follow the principle: first life, then space, then buildings when designing in the larger city scale. Life and space needs to be treated before the buildings because life is fundamentally the essence of the city. Therefore, the starting point when designing cities should always be human mobility and human senses. Basically because they provide the biological basis for activities, behaviour and communication within the city space. Without any people and without any life, there is no city, only a formation of buildings.

Could this way of thinking be adopted to the scale of a residential neighbourhood? Just as the city, we plan and design residential buildings for one purpose, made by and for us, the humans and the life we intend to live in it. Without any life, the building will only be a space, filled within the borders of four walls. But what signifies a good life in a neighbourhood? Just like Gehl believes that life in the city is created by its inhabitants, it is the residents who create the life within the neighbourhood. The neighbourhood is developed and formed by the group of people living there, otherwise it would only be a set of isolated autonomous units. Therefore, I believe, the life of a neighbourhood can be seen as a measurement of its social interaction between its inhabitants. Instead of starting with the building, is it possible to start from the life within it and work our way out to the building when we plan for residential neighbourhoods? Meaning, starting with life, adding space and finally articulating and materialising it through the built structure?

Planning for Activities

Everyday outdoor activities can be influenced by a numbers of different factors. What we choose to do when we are outside has much to do with the physical environment, and this is one of the factors informing us why we use the outdoor space as we do. According to Gehl (2006 pp. 11-16), outdoor activities in public and semi-public space can generally be divided into three different categories; necessary activities, optional activities and social activities.

Necessary activities include all everyday vit al activities such as go to work or school, wait for the bus, do the weekly shopping etc. Necessary activities often mean walking or waiting. These activities will continue all year round independently of the physical environment, we simply have no choice.

Optional activities means activities where there are needs to do so if time and place make it possible. These kind of activities include taking a walk without purpose or sitting down on a park bench. For this category, the physical environment is vital. With an unpleasant outdoor environment, these kinds of activities are lost and only the necessary activities will occur.

Social activities are dependent on other peoples presence in the particular space. The activities include childrens' play, conversations, communal activities but most of all just the passive contact by simply seeing or hearing other people. These types of activities are developed in connection with the other two types of activities and occur spontaneously as a direct consequence of people visiting and using the same spaces. Physical planning is important for social activities to occur simply because the more chances people get to spend time at the same place, the more opportunities for social meetings.

The possibility to meet neighbours in connection to daily routines, the necessary activities, increases the chance for conversation and spontaneous social interaction and also chances to develop contact with your neighbours. It's easier to maintain a relationship with someone if you see each other frequently and thus have more direct contact, compared to if your only contact is by lets say telephone. Gehl(2006, pp 29-31) means that if people perceive a sense of belonging to an area beyond the border of the actual dwelling it will result in a greater use of surrounding public spaces. For example, parents might be more willing to allow their kids to play outdoors at an early age if they feel that the space partly belongs to them, compared to if they don't.

Defensible Space

Newman (1976, p. 52.) believes that a more human physical environment for the inhabitants would exist if a collective sense of responsibility was developed for the common areas. He argues that areas such as common swimming pool, tennis court or meeting rooms do not contribute to an increased sense of collective territory in a high-rise building. Instead, the number of people using these kinds of facilities is beyond the comprehension of the individual. Clearly, the value of a facility shared with others therefore decreases with the number of people using it. Newman believes that a smaller outdoor play and sitting area with the intention to be used by groups of up to twelve families has greater significance for each family compared to a larger area shared by more families.

Social Neighborhood

According to a survey made by Olsson, Sondén and Ohlander(1997), where 100 residents of different kinds of various Swedish neighbourhoods were asked about living conditions, 35 percent answered that the neighbours are the most important aspect when it comes to living conditions. 35 percent answered neighbours combined with other factors, such as appearance or a well functioning courtyards, as the most important aspect.

A factor which seemed commonly important to the residents of a given neighbourhood is the boundary between the private and common space. A border between the private life and the common space seemed to be of high importance in order to be able to protect yourself from intrusive visitors. This border can be just as simple as the front door of a dwelling where the private sphere is inside the home and the collective is outside. Olsson, Sondén and Ohlander means that many people seem to enjoy the contact with neighbours as long as they don't feel the pressure of having to invite them. Instead, having the contact outside the dwelling is in favour, in order to keep the home as the private sphere.

According to Olsson, Sondén and Ohlander people are not willing to invite the neighbours into their homes, therefore the common areas of a neighbourhood are necessary in order to sustain the contact between individuals. The common areas therefore become stages of social interaction.

Further follows a summery of aspects from Olsson, Sondén and Ohlander which are important in the relationship between neighbours:

1. It is important to know who your neighbours are. People strongly prefer to recognize the people using the common spaces. People you don't recognize generates insecurity.
2. People prefer to meet their neighbours in pleasant and social environments. They want to be seen by others and to be able to stop quickly for a chat with a familiar face.
3. A large impact on the feeling of security is the possibility to get help and to help others when needed. People are not interested in a continuous helping relationship but rather smaller gestures.
4. People appreciate the possibility to solve problems together, for example when acting against the property owners. This is due to the increased self-consciousness generated by the sense of belonging to a bigger group, altering a greater impact compared to a single person.

Visual Contact

Newman (1976, p. 77.) means that for an area to work as a collective group and for people to feel the sense of belonging, the visual contact combined with the "right" numbers of units is vital and should be considered. Looking at the typical villa street, a family may feel closer to the neighbours if the distances are shorter and the visual contact between the families are better. The farther distances between the dwellings means a less intimate and more casual relationship between the neighbours.

Important Spaces

The Courtyard

The courtyard is a social arena which, compared to the private apartment, provides possibilities for social interaction without being too intrusive or private. Olsson, Sondén and Ohlander(1997 pp. 104-108) suggests that people do not wish to feel that they are forced to socialize but rather have the opportunity to it when needed. Important factors for a well functioning courtyard are:

- Aesthetic qualities; greenery, material and the preconditions for usage.
- The sense of belonging; if the courtyard should be private for the residents only instead of open for everyone.
- Child-friendly; the children families are the most frequently users of the courtyard.
- Location related to entrances; entrances located in direct contact to the courtyard means higher usage of the courtyard.

In terms of Sweden as a local context, a problem with the courtyard as the most important space for social interaction within the neighbourhood is the natural decrease of social interaction during the cold and dark winter months.

The Front yard

When it comes to row-house neighbourhoods, Gehl, Thornton & Brack (1977) believe that there are significant differences between private and semi-private outdoor yards. They state that the front yard is 10 times more used than the backyard simply because the semi-private front yard also is the pathway from the street into the house and therefore is passed by all members of the household several times a day, compared to the backyard which you always have to make an active choice to use. Even if it's most likely to be shorter visits and usages; passing through, picking up the mail, or sitting down on the stair drinking your morning coffee, it still influences the perceived character and overall safety of the neighbourhood. The more time people spend on the street or places seen from the street, the more possibilities for people to actually meet and interact. The front yard, with visual access to the street is clearly more private than public, yet the distance to the street and the proximity to the dwelling creates a sense of semi-privacy. The sense of full privacy is realized when entering the house.

To create a soft threshold means to create a gradual transition from public to private. This means providing opportunities for people to remain on the public side of the house to be able to interact with other people on the street or in other yards, but at the same time remain within the "private territory", as in a safety-zone. Below follows a summery of aspects from Gehl, Thornton & Brack (1977) which can influence the possibilities for interaction in the semiprivate yard:

- The yard should have a clear boundary and be defined with for example a fence, high enough to lean on but low enough to see over.
- The area should provide spaces for activities, such as gardening
- The route to and from the house should pass through the yard
- The distance from the street to the front door of the house should not be longer than allowing for conversation between someone on the street and someone sitting on the front stair.
- The yard should provide comfortable places to sit and should be protected from rain.

The Stairwell

The stairwell consists of different components; entrance/lobby, staircase, landing platform and in some instances the lift. Adjacent to the stairwell is often ancillary spaces such as storage, laundry and direct contact to garage. According to Olsson, Sondén and Ohlander (1997, pp. 118-120), apart from communication, the stairwell can be used in different ways.

- To decorate; people enjoy adding their own mark in the stairwell such as some sort of decoration on your door or a flower in the stairwell window.
- Storage; for example bicycles, strollers or outdoor toys. This is something that typically causes irritation among the residents since it normally is not a place for storage.
- Conversation with neighbours; a simple conversation or hello can be an important confirmation that you know and recognize your neighbours.

The Laundry

According to Olsson, Sondén and Ohlander(1997, p. 138.) people seem to like the idea of seeing the laundry-facilities as a meeting place. The laundry-facilities provide an informal space where you meet your neighbours and where you can have an undemanding conversation without the feeling of being forced to socialize. Some people even put in a routine to meet at the laundry-room at the same time every week to wash their clothes together. The Athena-house at "Bo-mässan"-92 was designed by female architects only and they gave the laundry-facilities a central place in the middle of the building to favour of comfort and interaction between especially women. Also, by glazing up the laundry towards the stairwell or adjacent common spaces made it easier for people to see who was washing and therefore easier stop by and say hello. Glazing the laundry is also a way to prevent people from stealing.

Shanghai. Photo by Michael Westerlund

"What is the city but the people"

Shakespeare, 1623

ANALYSING THE HIGH-RISE

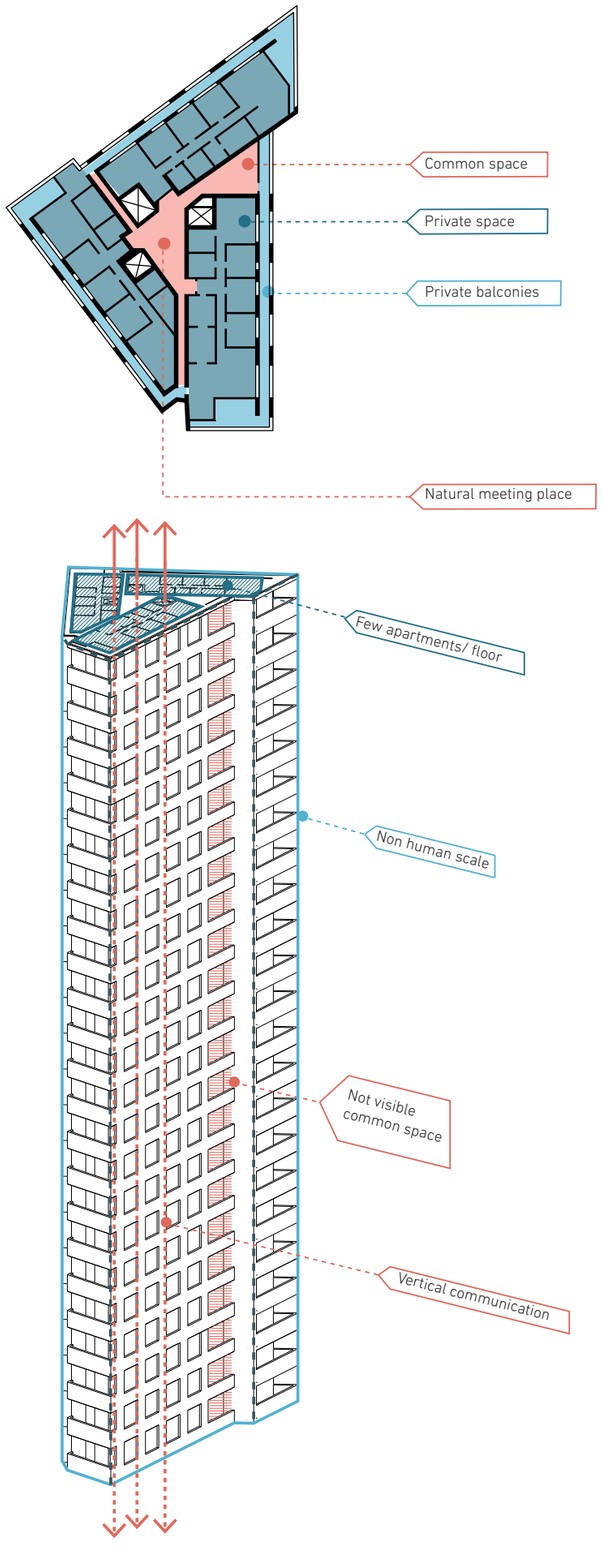
Case Studies

This chapter will present three case studies of high-rise apartment buildings with the intention to familiarize the reader with built and non-built examples of the typical high-rise building design in order to analyse and localize common issues of the execution. To get a wider picture, the case studies have been selected according to different building shape and floor plans as well as time of construction; One older example built in the 70s, one contemporary example and one not yet built example.

An important consideration in the analysis of a high-rise building is the internal hierarchy of space and the varying degrees of privacy. For example, the lobby area is the threshold between the street and the building and functioning to serve a great number of people in the entire building. The lobby is often the only common area shared by the inhabitants of the building, but due to the great amount of people sharing this space and the dislocation from the individual dwellings, the lobby does not contribute to the sense of collective territory or extension of the individual unit.

The individual corridor served by the elevator on each floor is the next step of semi-private space. The corridor does not belong to anyone in particular, rather the entire floor as a group, although the typical corridor is often of the smallest possible area and is only used as transportation from the elevator to the private apartment. The apartment door is the definite transition point between the extremely private sphere and the semi-private corridor. Due to the small amount of space in the corridor it's not surprising that doors to apartments normally are closed as a result of the inhabitant defending its right to privacy.

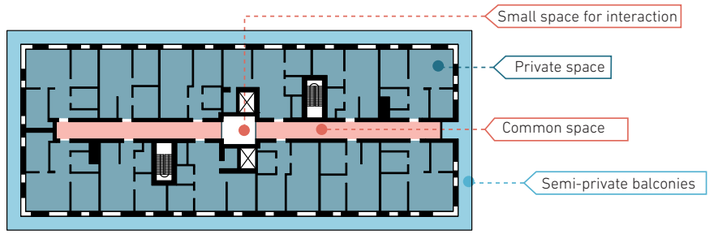
Turkington, van Kempen and Wassenberg (2004, p. 11.) believe that many of the collective and semi-public spaces within a high-rise building such as corridors, entries and garages has been proved to be quite problematic areas rather than an inviting place for people to meet and interact. In many cases such spaces have become major issues for vandalism and public safety.

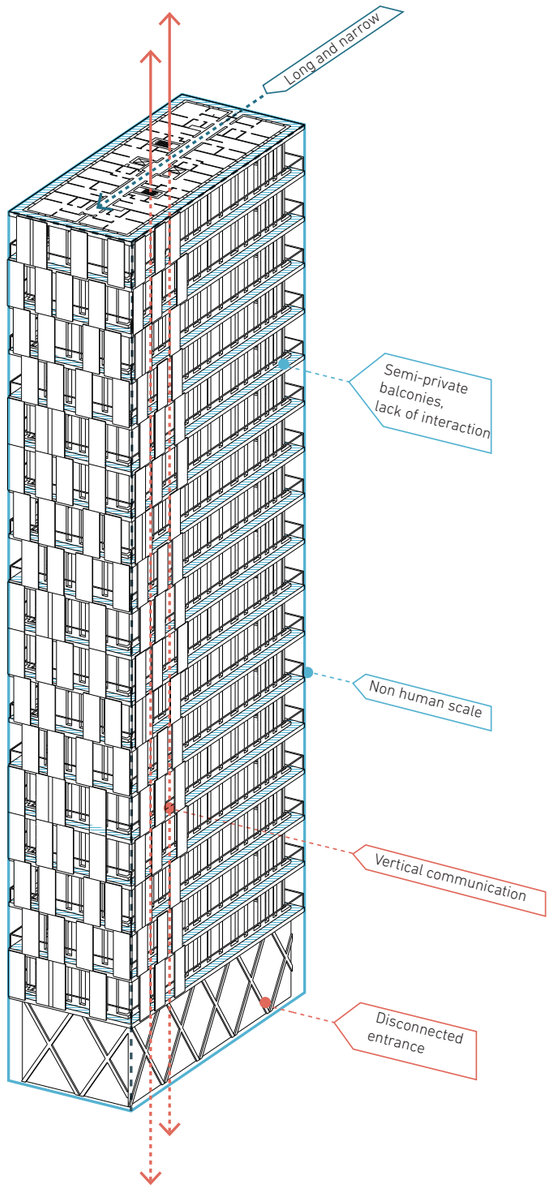


The Barbican, London

The Barbican, a large building complex in central London, consist of 13 residential building, 3 of which are high-rise(44 stories), grouped around a central courtyard. The complexed, designed by Chamberlin, Powell and Bon in 1976, contains not only dwellings but also the culture centre Barbican Centre. The residential areas are all connected by a “highwalk” system away from any roads which helps keep Barbican life peaceful and isolated from the rush of the city(Wikipedia, 2017).

Due to the short numbers of apartments on each floor(three) the chances of meeting someone are considerably small. Though, the communal space outside the elevators is rather big and with a connecting shared balcony/terrace which invite for a spontaneous conversation. Since the entire building complex is sharing the same courtyard, the chances for feeling a sense of belonging to the shared outdoor environment are small.

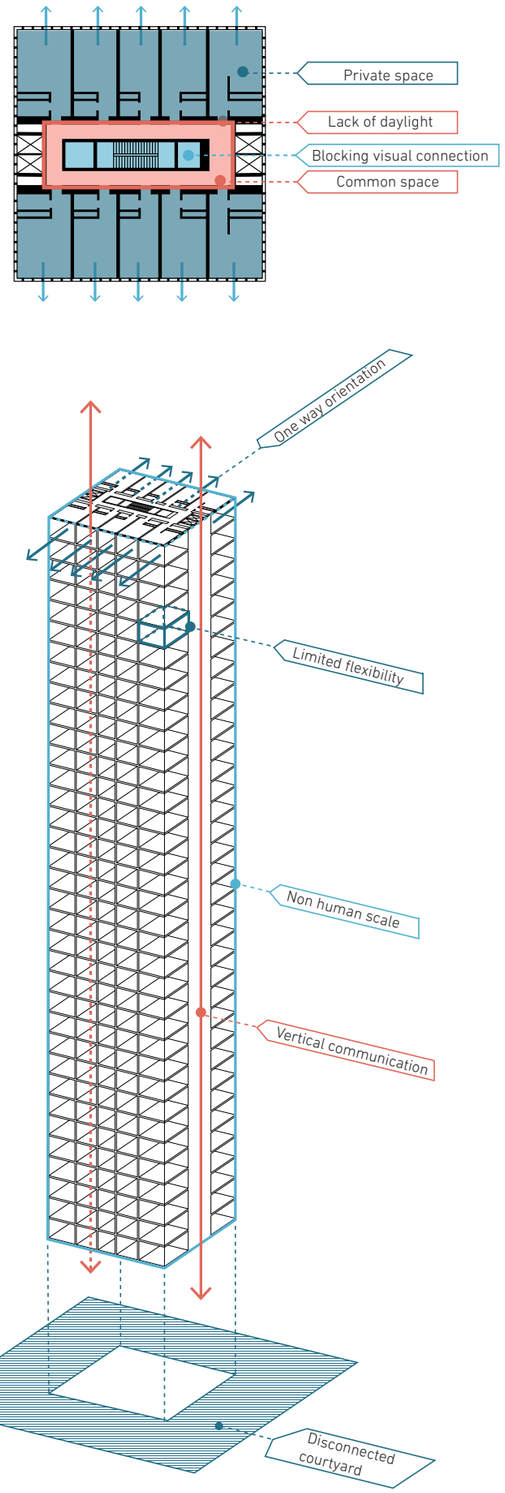




Park Tower, Antwerp

Park Tower, designed by Studio Farris in 2014, is a residential high rise building in the historic town in Antwerp, Belgium. With the height of 78m, park Tower is one of the tallest building in Antwerp today. The building offers studios and apartments in different sizes and the scheme responds to today's growing need for comfortable living space for a diverse range of age groups. The building is vertically divided into two groups with the first 10 floors focusing on smaller studios for single-persons households, students and expats meanwhile the next 10 floors are focused on elderly care facilities. From the main entrance of the ground floor, the different groups of inhabitants can reach their own floors using separate elevators. Each unit have one private terrace/ balcony, protected from wind with glass panels (archdaily, 2017).

The long and thin corridor on each floor is separating the dwellings on each side from each other in the same time as it doesn't provide any qualitative place for meeting. The private balconies are all linked together which slightly breaks the barrier and increases the visual contact between the apartments. The main entrance of the building is the only natural meeting place for the residents.



Tellus Towers, Stockholm

Tellus Towers, designed by Wingårdh architects, are two residential towers planned to be built in Stockholm, Sweden. The two towers are planned to be 78 and 58 floors tall. The project is planned to start in 2019 and be finished 2021(Wikipedia, 2017). 95% of the total amount of dwellings will be studios or one bedroom apartments. The motto for the new project is ”Stay small, Live bigger”, mening limited living space but with high quality. The Hong Kong based architect Gary Chang has used the concept ”multi-use-of-space” when designing the floor plans with sliding walls as a way to make the space more effectiv(ssmliving, 2017).

Except for the corners, all apartments have only one way orientation of lights and extreme limited flexibility for personalization.

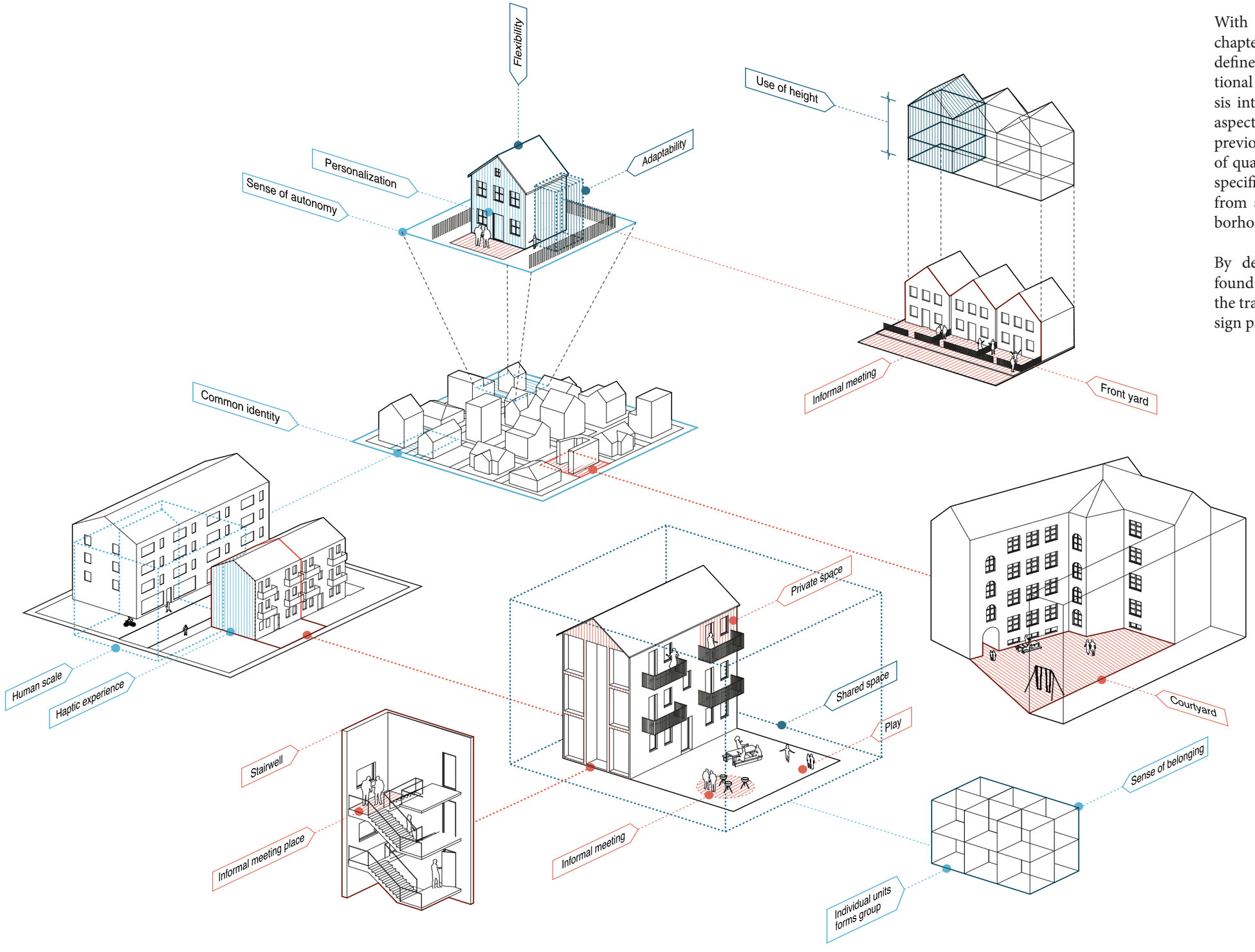
Due to the extreme space efficient floor plan, the communal space on each floor is very limited with no contact with exterior or outdoor view. A central core in the middle of each floor separates the two sides and prevents visual contact between neighbors. The floors are not connected in any other way than through elevators and fire emergency, leaving the very disconnected entrance hall as the main meeting place in the building.

Picture retrievd from http://www.business.dk/bolig/husejere-er-blevet-rigere-i-ni-ud-af-11-landsdele

"The urban, architectural and civil wealth of a city is that of its collective spaces, that of all the places where collective life develops, is represented and is remembered."

-maul de Sola-Morales, 1992

MAPPING THE NEIGHBORHOOD



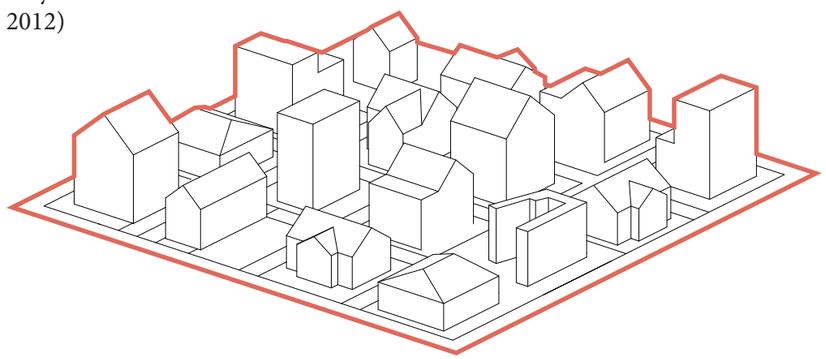
Mapping the Neighbourhood

With the base in previous literature this chapter will attempt to collect, categorize and define qualities and quantities of the ”traditional Swedish neighborhood”. This analysis intends to capture the largely subjective aspects of civic and private space, based on previous theory. Nevertheless, this definition of qualities is not meant to be found in one specific Swedish neighborhood, but is rather from a collection of various places, neighborhoods and typologies.

By defining and describing the qualities found in the neighborhood sets the start of the transformation of these into concrete design parameters used later on in the process.

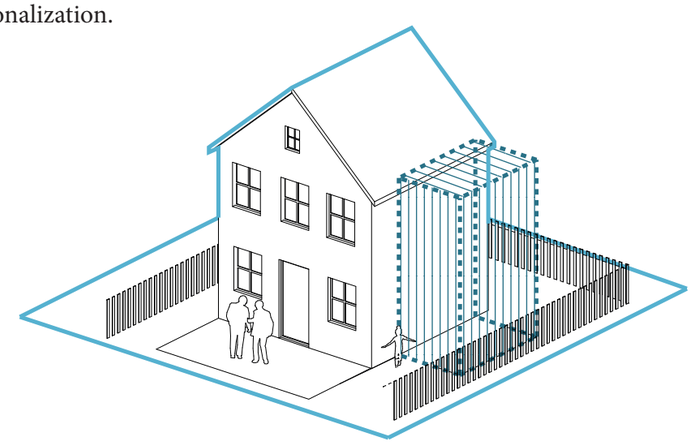
Identity

Every neighbourhood has an identity, none is ever the same. The neighbourhoods respective identity offers a coherent reflection of the characteristics of their inhabitants, cultures and programs. The common identity induces a common social pride of belonging to a group. The strength of identity of a place can be measured by its overall visual coherence. (MVRDV, 2012)



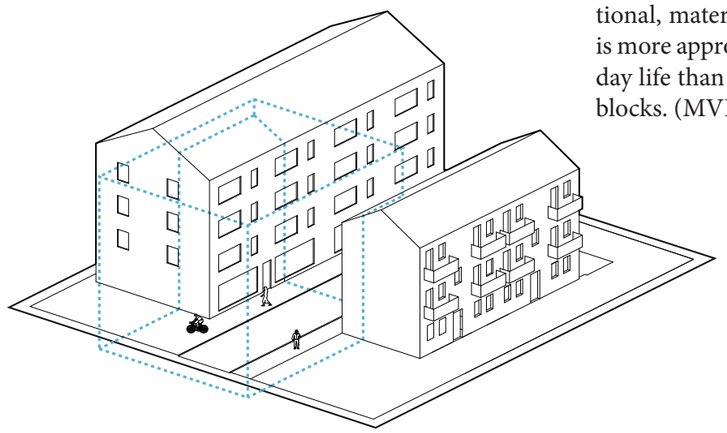
Individuality

A neighbourhood is developed and created by its inhabitants which makes all neighbourhoods individual and exclusive. Neighbourhoods which allow for the personal and unique touch and the freedom of expression give the keys to individualization. The possibility to adopt and change the autonomous space creates a sense of personalization. (MVRDV, 2012)



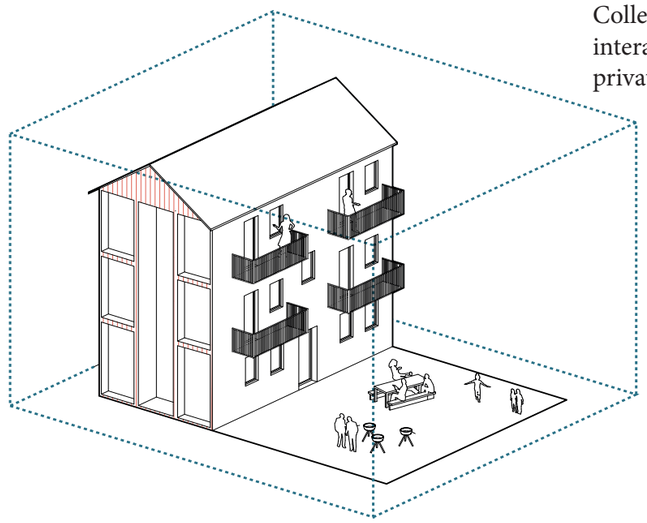
Human scale

The typical residential neighbourhood is of human-scale. Whether or not a space is of human-scale is determined by its proportions. Lower height and narrow streets can be considered to be of human-scale. A human scaled neighbourhood offers proportional, material and spacial intimacy which is more appropriate for dwellings and everyday life than for example high-rise building blocks. (MVRDV, 2012)



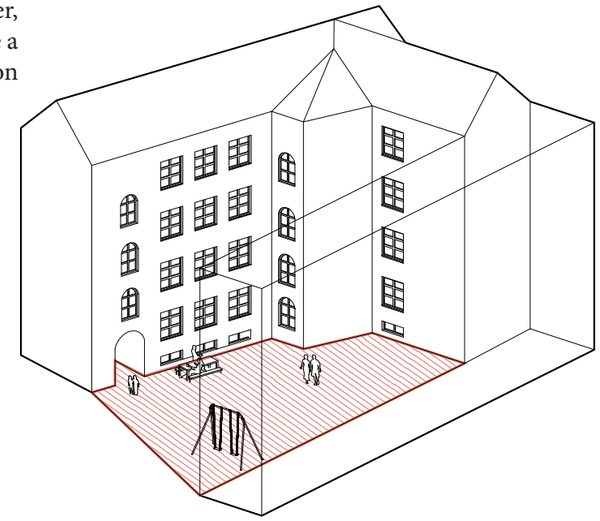
Collectivity

Neighbourhoods functions as collectives: they offer the sense of belonging and feeling of being part of a supportive group. With shared ways of living, the neighbourhood creates a social security for its inhabitants. Collectivity is not only a measure of social interaction but also of the mixture between private and public paces. (MVRDV, 2012)



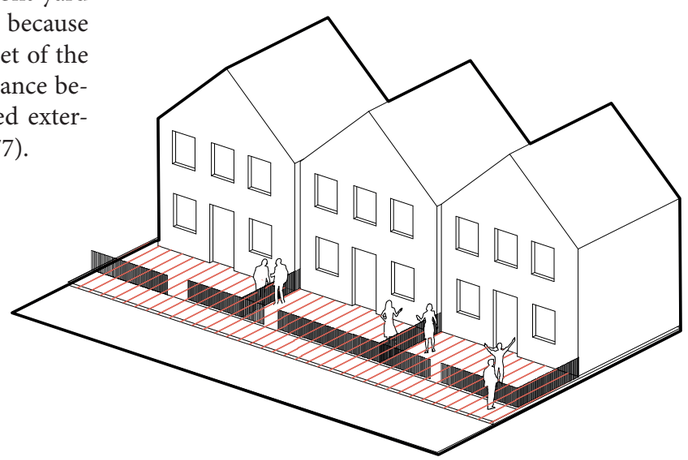
Courtyard

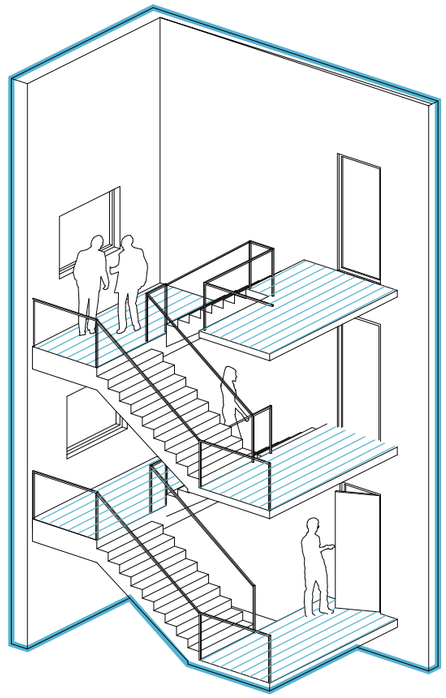
The semiprivate courtyard is often the core of the collective community within the neighbourhood. If the courtyard also functions as the entrance to the building, the chances of meeting your neighbours are greater (Olsson, Sondén and Ohlander, 1997). The activity in the courtyard can be a measurement of the communal interaction and cohesion.



Frontyard

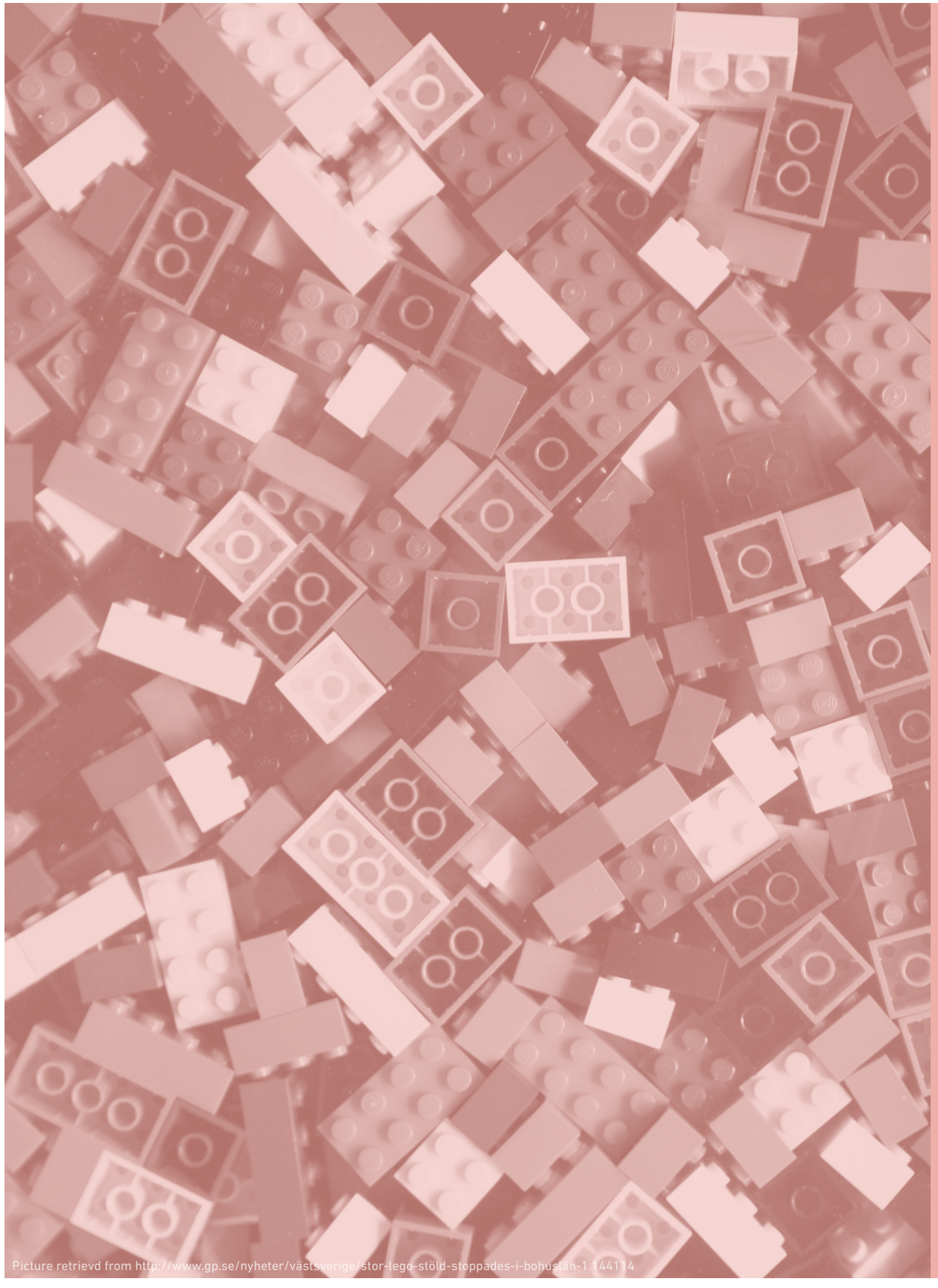
The front yard is a private space, stepping toward semipublic space. The front yard is used daily due to location in between the entrance door and the street. Its easier and more likely for neighbours to have a quick and relaxed conversation in the front yard compared to the private balcony because their intended use and thus mindset of the user combined with the actual distance between the dwellings now connected externally (Gehl, Thornton & Brack, 1977).





Stairwell

The stairwell is a natural meeting point within the building. If the stairwell needs to be used, it's more likely to meet some of your neighbours here compared to when waiting for the lift. The stairwell is also a more comfortable place to meet compared to the lift as the interaction naturally can feel more forced. (Olsson, Sondén and Ohlander, 1997).



Picture retrievd from http://www.gp.se/nyheter/västsverige/stor-lego-stöld-stoppades-i-bohuslän-1.144114

"A healthy social life is found only, when in the mirror of each soul the whole community finds its reflection, and when in the whole community the virtue of each one is living."

Rudolf Steiner

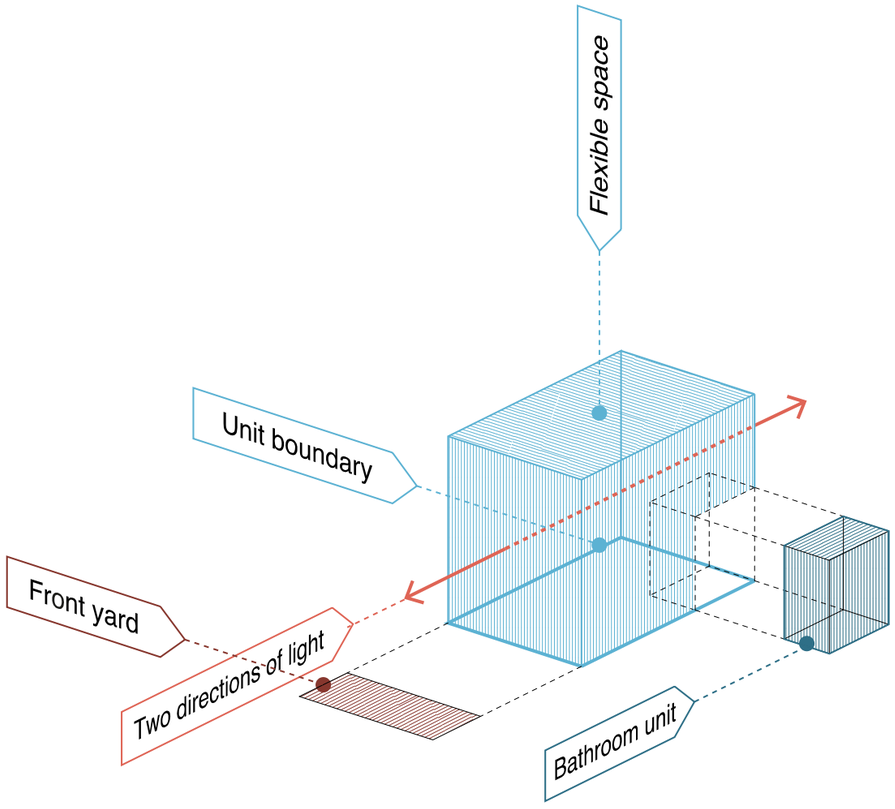
IMPLEMENTATION OF KNOWLEDGE

Toolbox

The Individual Unit

All units will have the same proportions with certain given preconditions such as bathrooms. The remaining floor-plan is flexible for the resident to be used as preferred. A smaller footprint and instead the height of a duplex apartment, means the double amount of units on each floors compared to single floor apartment with larger footprint. Double amount of units on each floor, means double chance for social interaction.

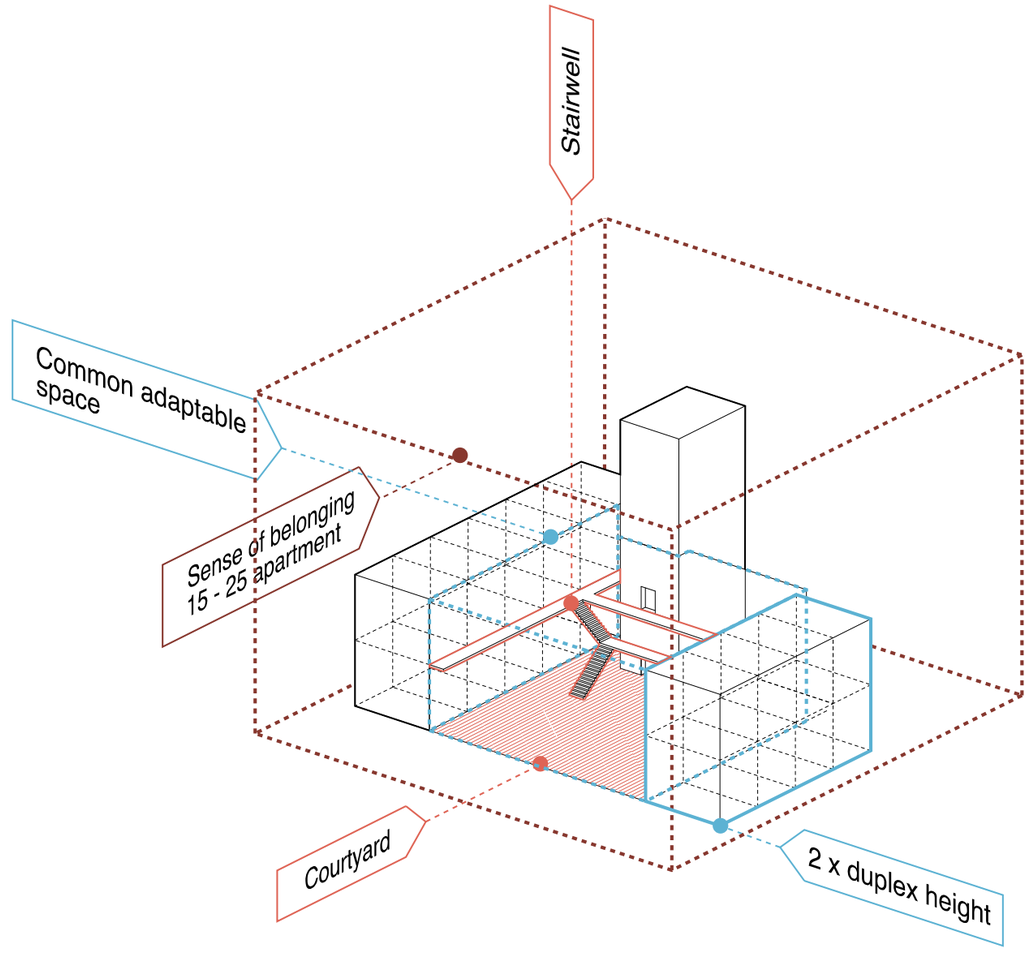
Each unit will have a smaller space in front of its entrance, as alternative to the individual balcony, free to be used as preferred.



The Community

One community is a group of four floors(two duplex floors,) altogether 15-25 apartments, which will be connected with a stairwell as internal communication. Each community will have a common space with a main courtyard, which you will have to pass to reach your apartment.

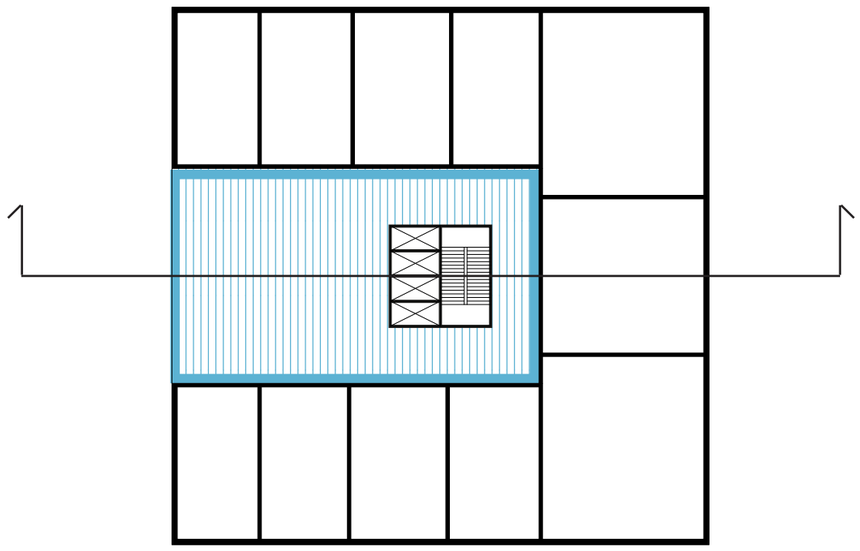
Its up to the inhabitants to plan and use the vertical space within the common area which will form an individual expression of the common space.

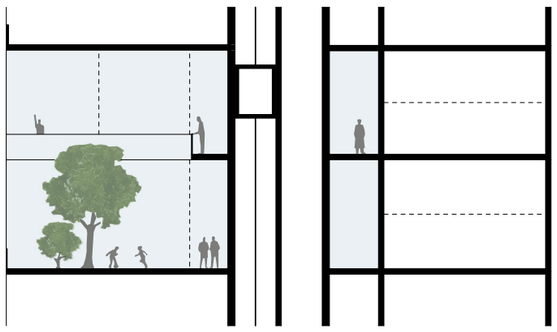


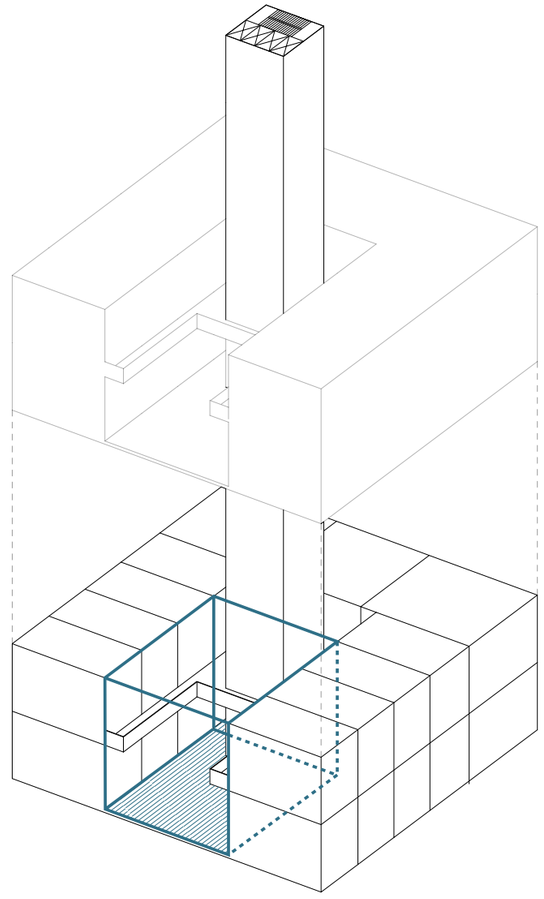
Possible Toolbox Alterations

Focus: The Courtyard

This alternative focuses on the courtyard as the main element. Coming out from the elevator, you are in direct contact with the common space. Negatives with this alteration is the impossibility to have the same footprint of individual units as well as the absent of boundary between private and common space.







Private / ~~Semi~~ / Common Space

80% 10%

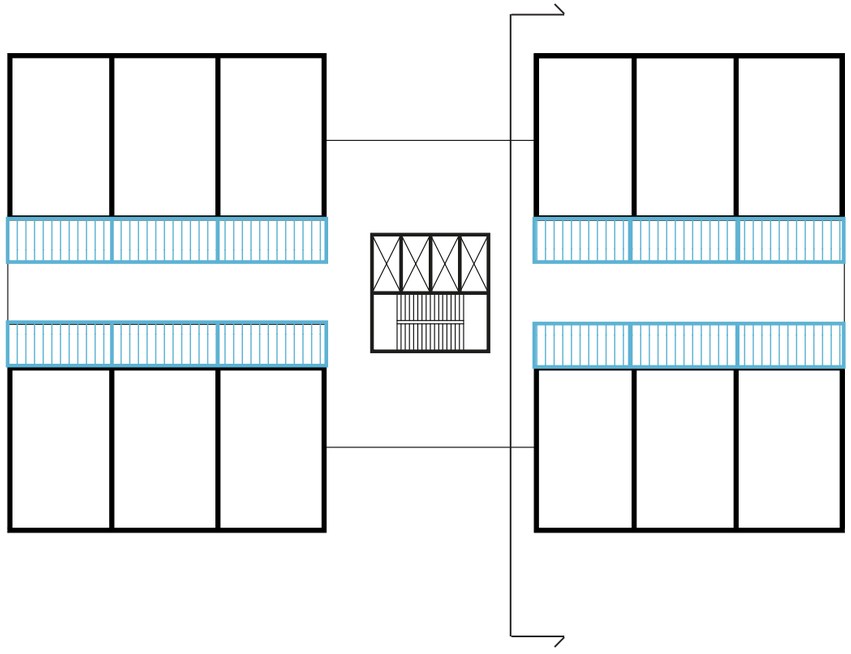
Visual contact

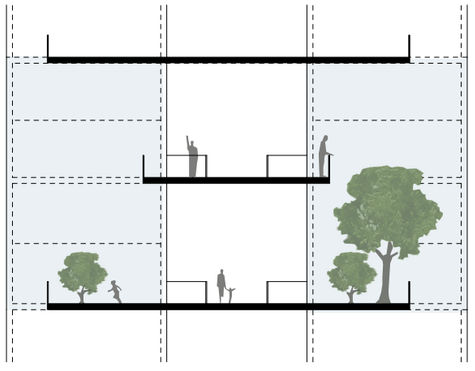
Light conditions

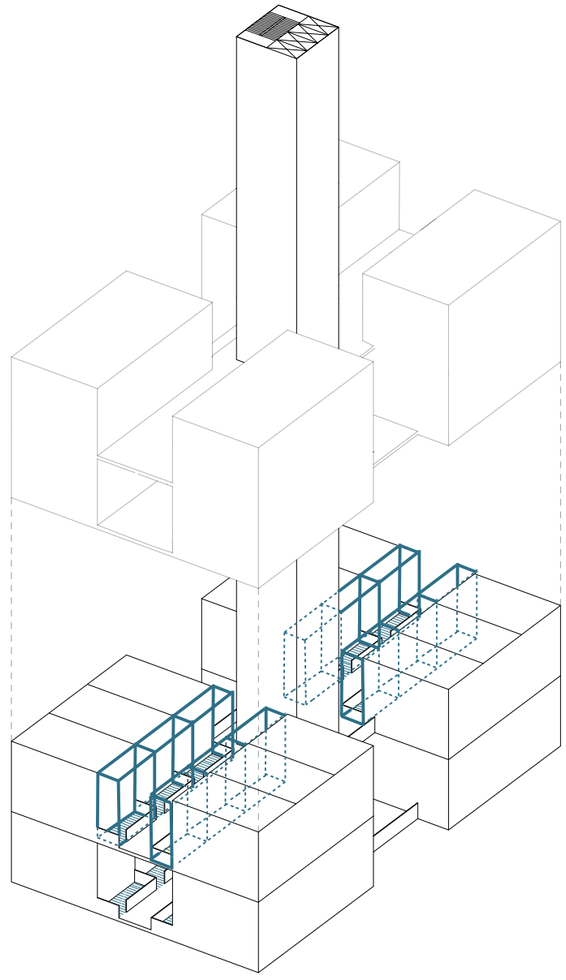
This alternative offers a large sized communal courtyard but leaves minimal opportunities for any sort of semi-private space in front of the apartments. A good visual contact with neighbours is possible for at least half of the units. This alteration provides good light condition from one direction and for some units moderate light from opposite side of apartment.

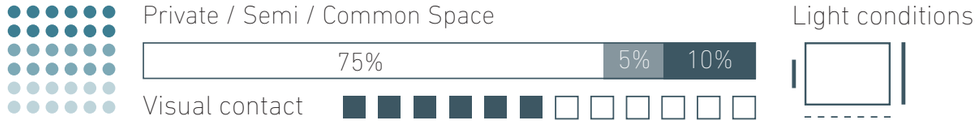
Focus: Transition of openness

This alternative focuses on the transitions from public to private space. Coming out from the elevator you reach the fully communal and public space. Reaching towards the individual units the space gets more private. Each units will have free space in front of the entrance to as a last step between the private and semi-private space. Negatives with this alternation is the non-specified common space and the clear division of the two sides.





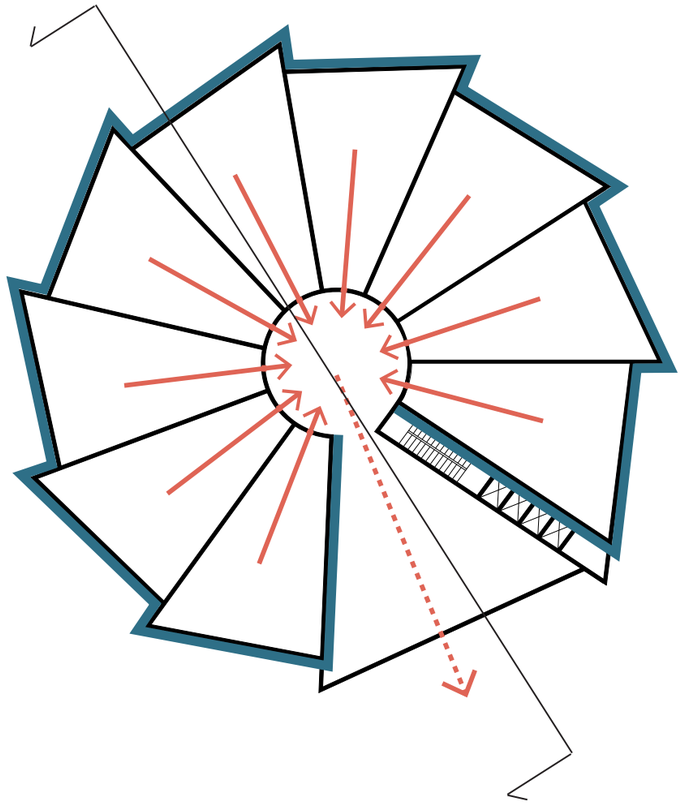


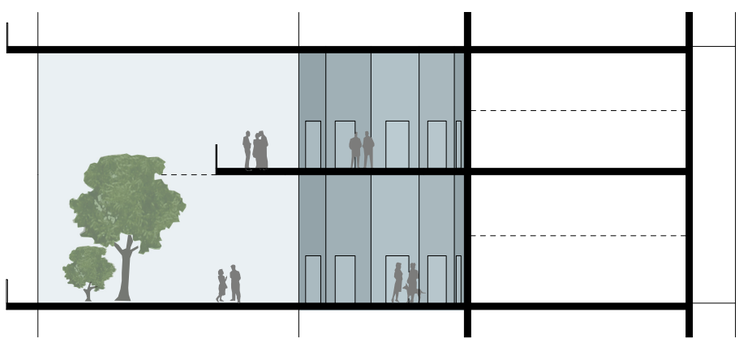


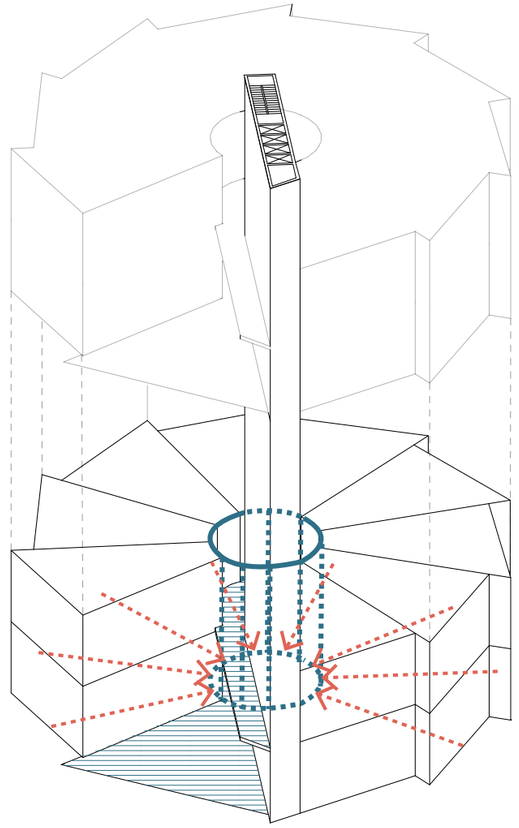
This alternative offers two smaller communal courtyards on either side of the elevator. More focus is set on semi-private space in front of the apartments. The community is clearly divided in two groups which affects the visual contact. This alteration provides good light condition from one direction and moderate to good light from a second, and in some cases from a third side.

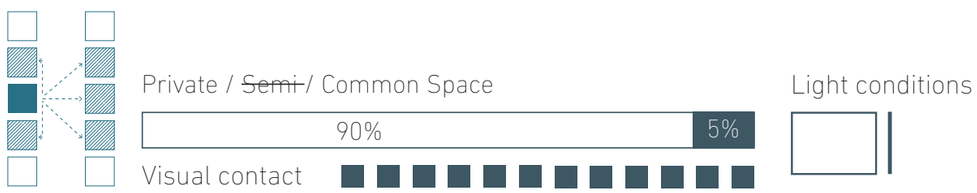
Focus: Visibility

This alternative focuses on the sense of belonging and visual contact as main quality. All units on the floor will have visual and close connection to all other from the entrance. Negatives with this alternation is the depth of the units and lack lights from two direction.





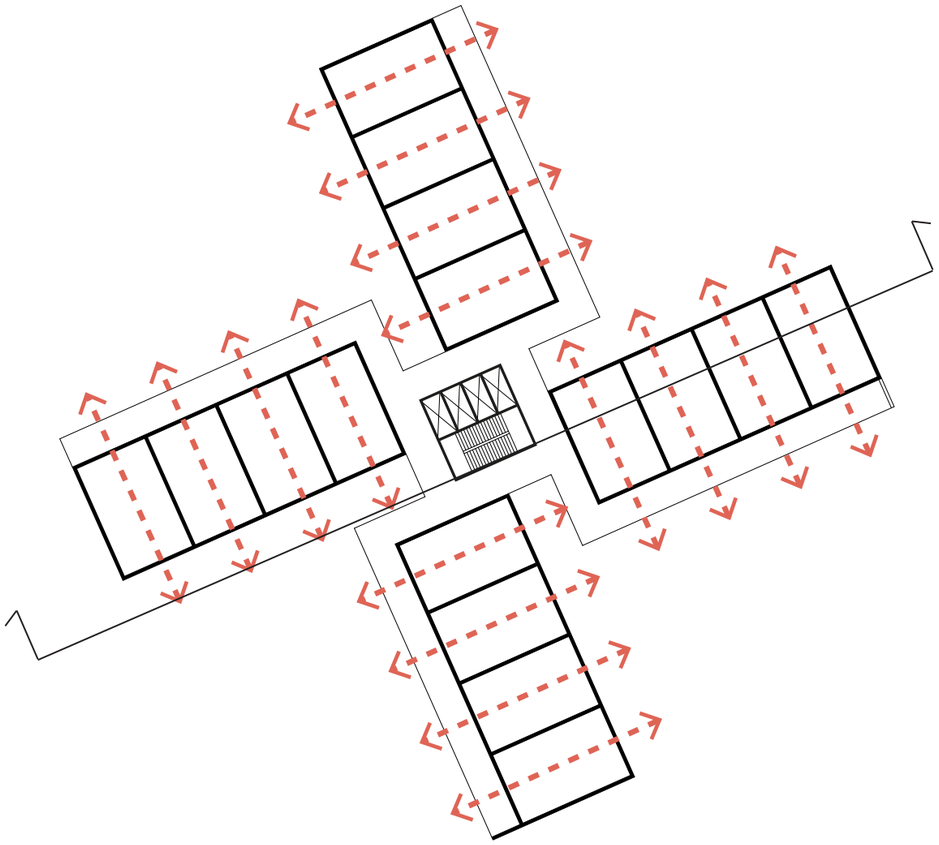


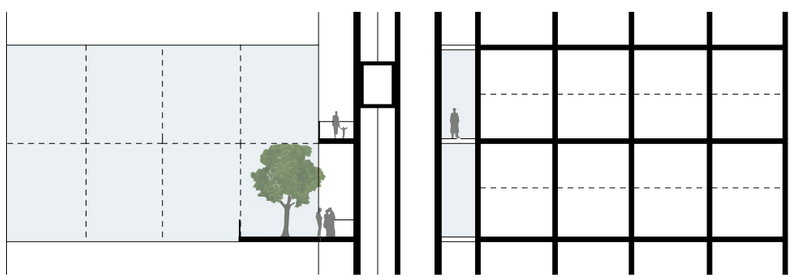


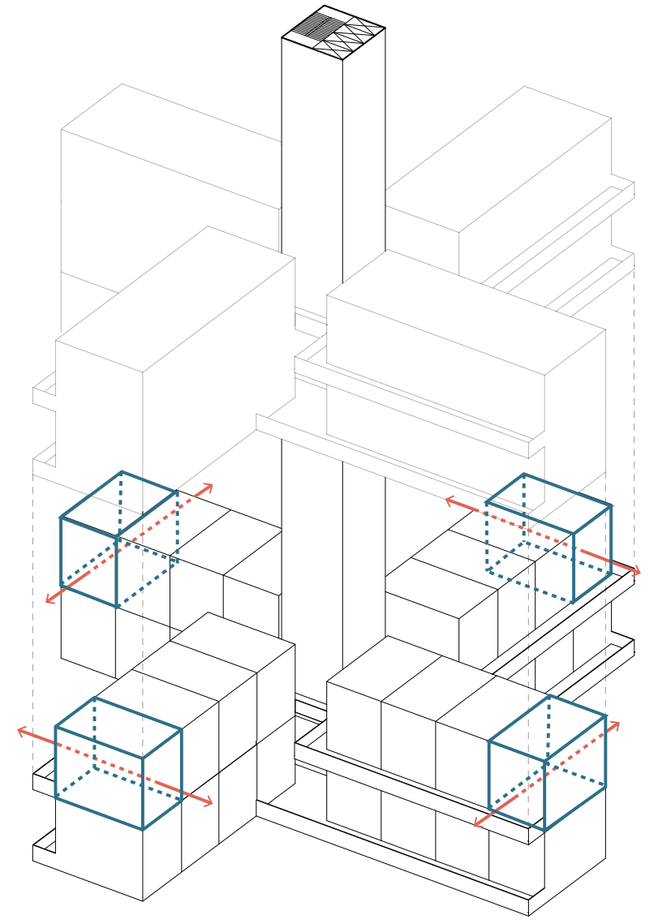
This alternative gives best possible visual contact with the neighbours as all entrances are centralized in the middle. Due to the arrangement of the units, no opportunities for semi-private space in front of the apartments are possible. This alternations is lacking in light conditions since only 20% of the apartments will have light from two direction.

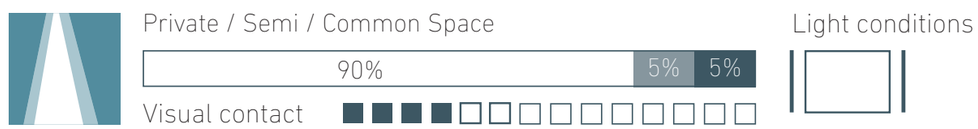
Focus: Light conditions

This alternative focuses on getting as good light conditions as possible for each unit with view from at least two direction for each apartmet. Negatives with this alternation is the division of the four wings and lack of usable common space.

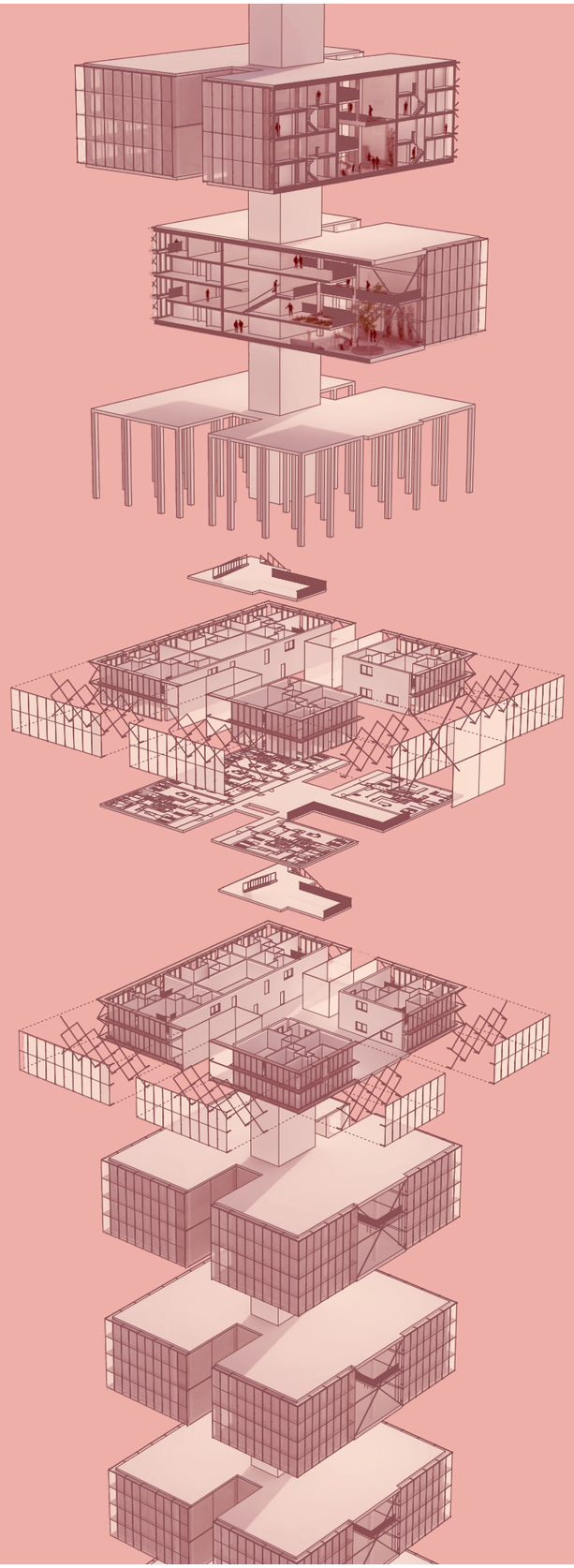








This alternative is lacking the usable communal space but provides a good semi-private space in front of each dwellings. Due to the clear separation of the four wings, the visual contact is also lacking. All apartments will have good light from two directions.



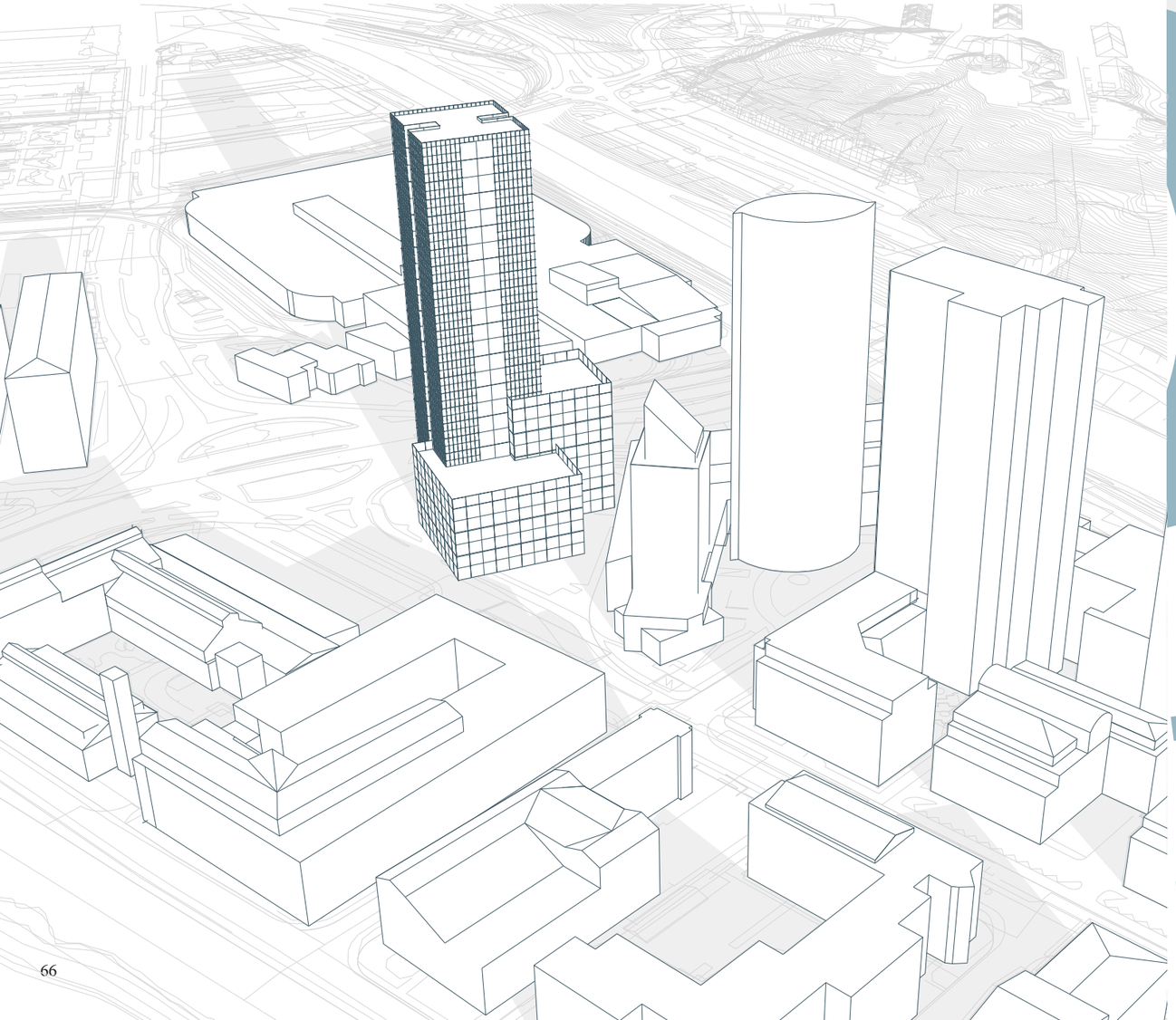
"Indeed, all ages desire social interaction; it´s part of being human."

-Jeanne Gang, 2015

PROPOSAL

Contextual Iteration

As a generic building, the proposal could be placed in any suitable space for a high-rise residential tower. The proposed design is not an answer to a specific site context even though a site has been chosen. The selected site is instead set to serve an example on how this typology could be implemented in the city context of Gothenburg. The site is in Gårda in central Gothenburg in an area where it today already is planned for at least three new high-rise buildings, one which they already started the preparatory ground work for. The planned building at the chosen site has set some of the preconditions for the proposal such as building heigh(140m) and available footprint.



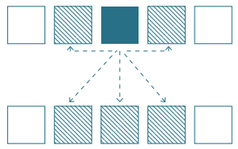
Elaborated Toolbox

After evaluating the alterations from previous chapter, a merged proposal of the four iterations, with further developed focus points, was drafted with the design parameters listed to the right as starting points.

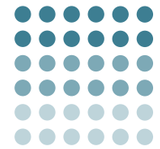
1. Provide a secure living environmen.
2. Provide flexible accommodations for the residents to design after one's need.
3. Encourage a sense of belonging in the community within the building.
4. Provide activities which will make the communal area a space for spontaneous interaction.
5. Provide space to permit residents to extend territorial claim beyond the individual unit.

Central Courtyard

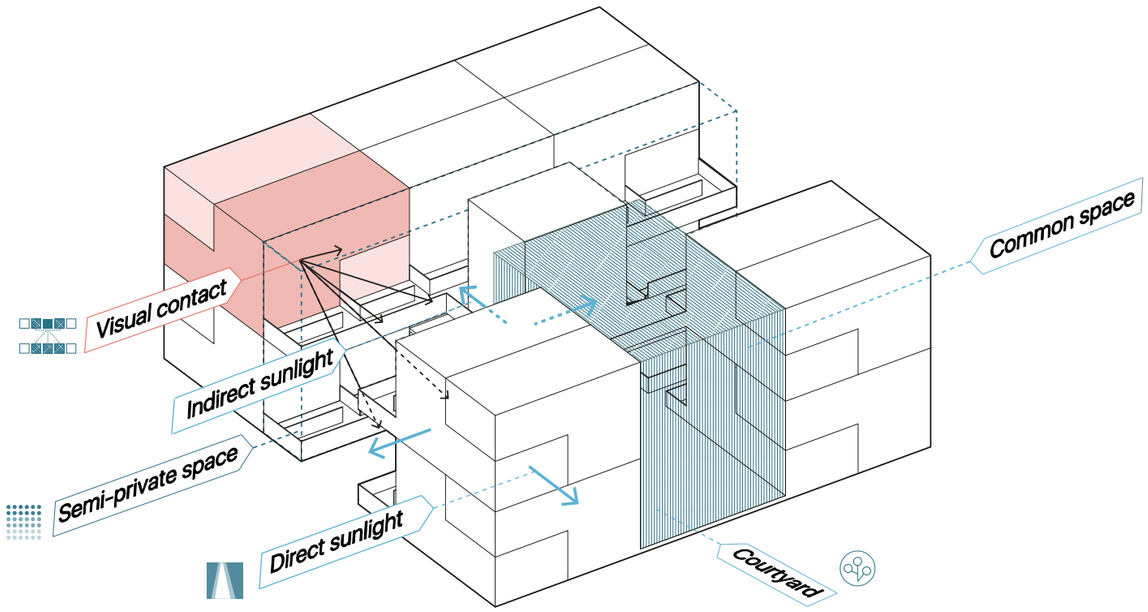
Light Conditions



Visibility



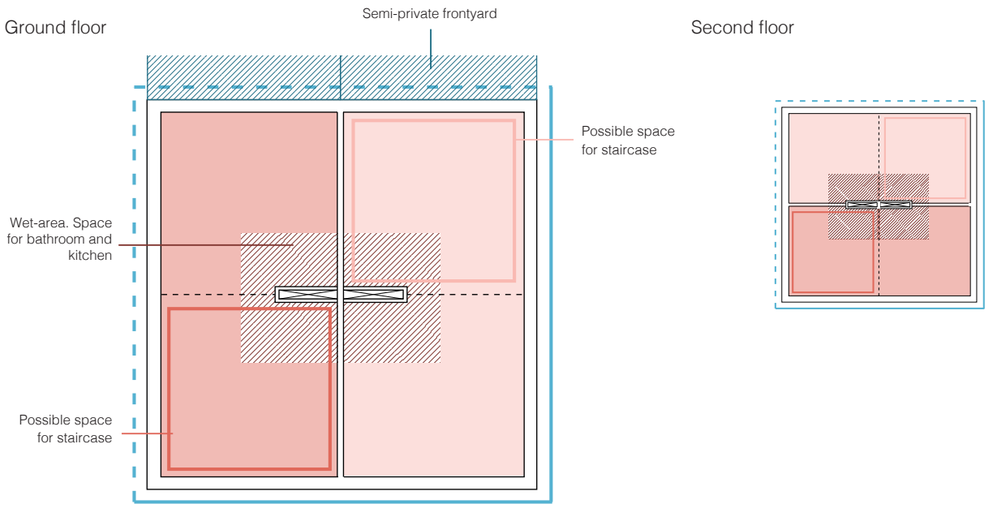
Transition of Openness

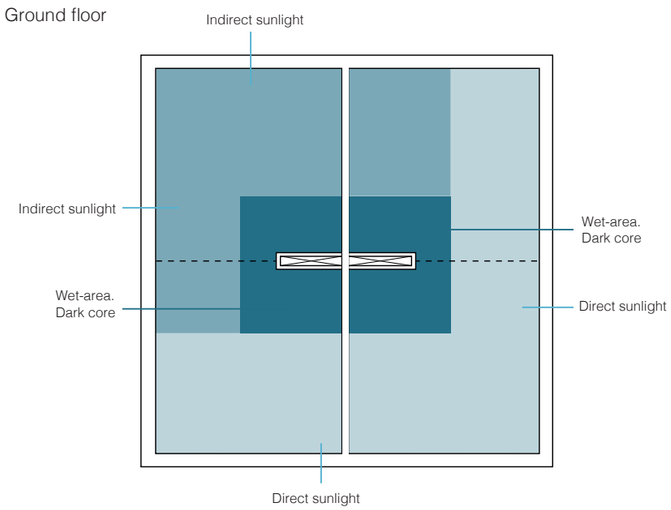


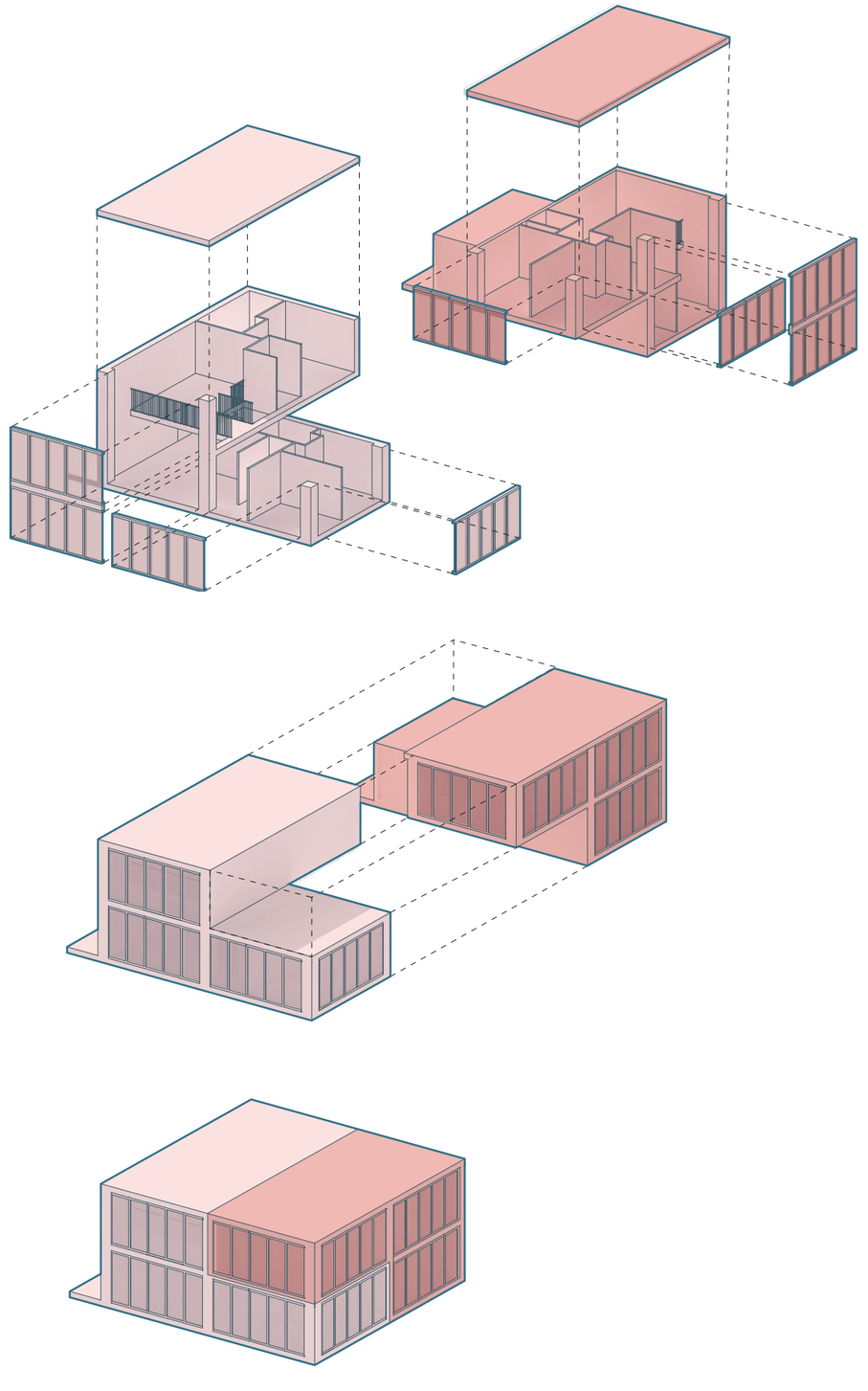
The Group

Pairing the individual units

18 of the 20 apartments in each community are duplexes. Each apartment has got an own semi-private front yard instead of a fully private balcony on the external facade. The apartments are pared in groups of two which will twist in their form between the two floors. In this way, each apartment will have equal light conditions with at least one wider side of exterior exposure and will have light from at least two directions, in some cases even four.

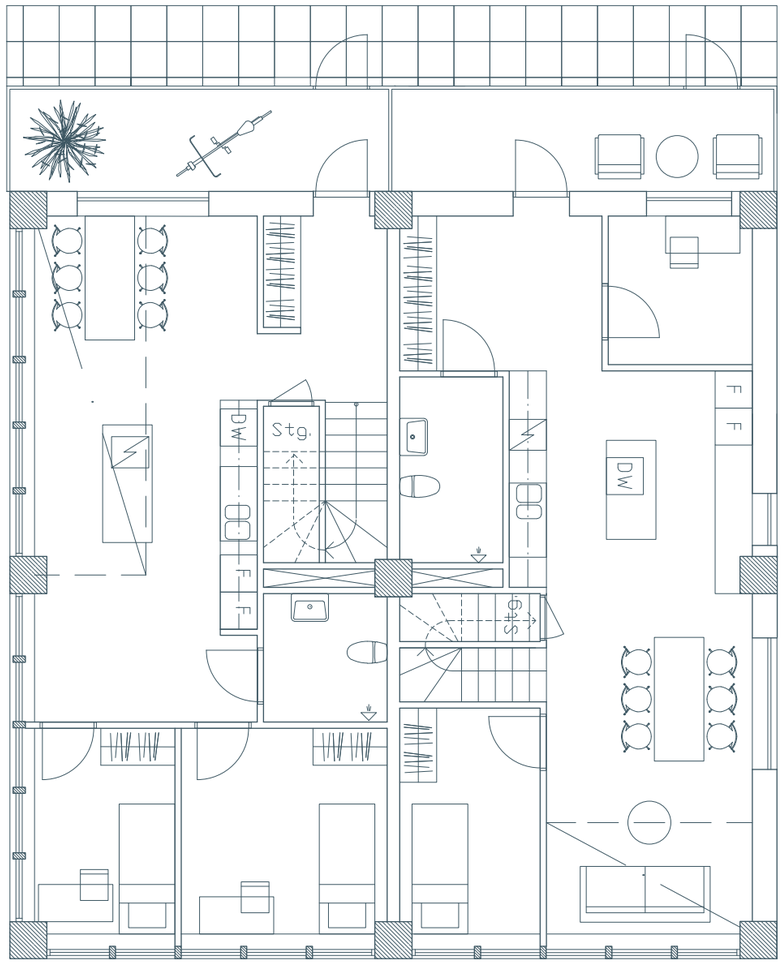




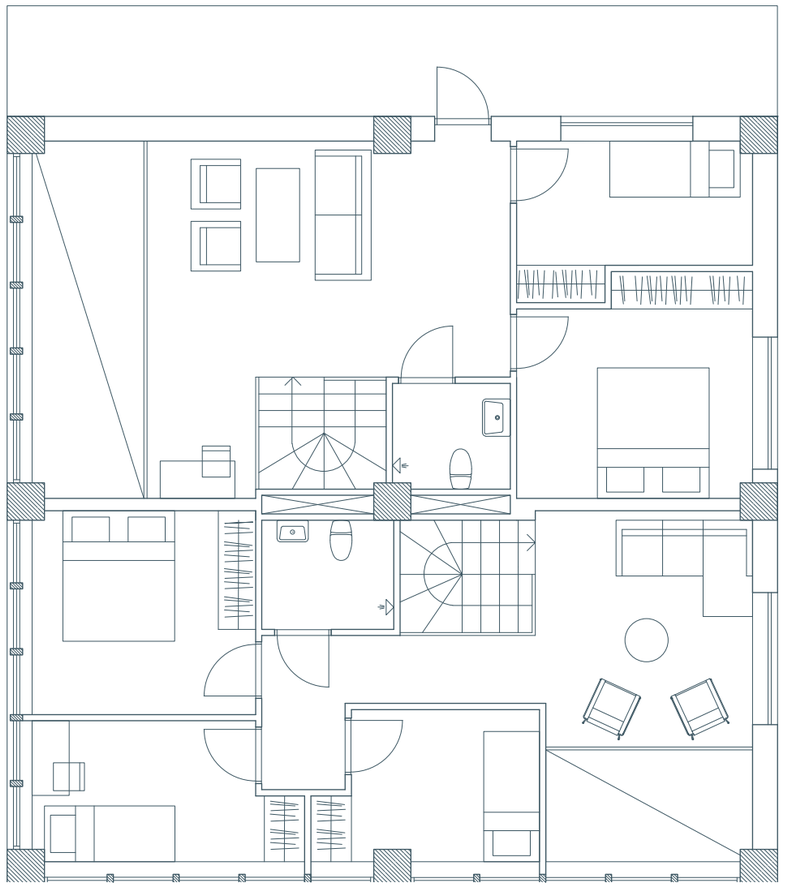


The Individual Unit

Example of Floor plans



Ground floor 1:100



Second floor 1:100

0 5m

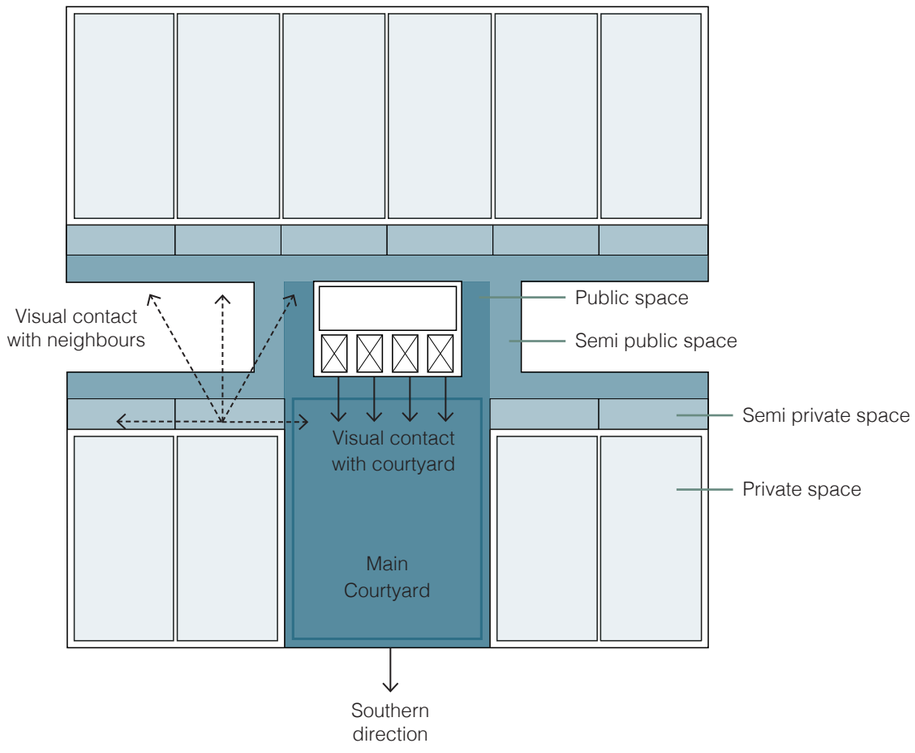
Each apartment has a footprint of 12 x 6 meters, resulting in a floor area of 120 m^2 per unit. Shafts will be centralized to the core of each apartment and thus set the conditions regarding where to place wet areas and kitchen, otherwise it is up to the residents' to choose and design the internal arrangement of their apartment respectively. The largely sized apartments could easily be designed as a four bedroom apartment suitable for a larger family.

The Community

Groups forming Relations

The residential tower houses 12 communities, each organized in groups of duplex apartments over four floors. Instead of having larger single floor apartments on four floors, duplexes on every second floor double the chances for residents to meet a neighbour. Each community consists of 20 apartments. The numbers of apartments/ families that are likely to develop a friendship depend in part on the visual contact.

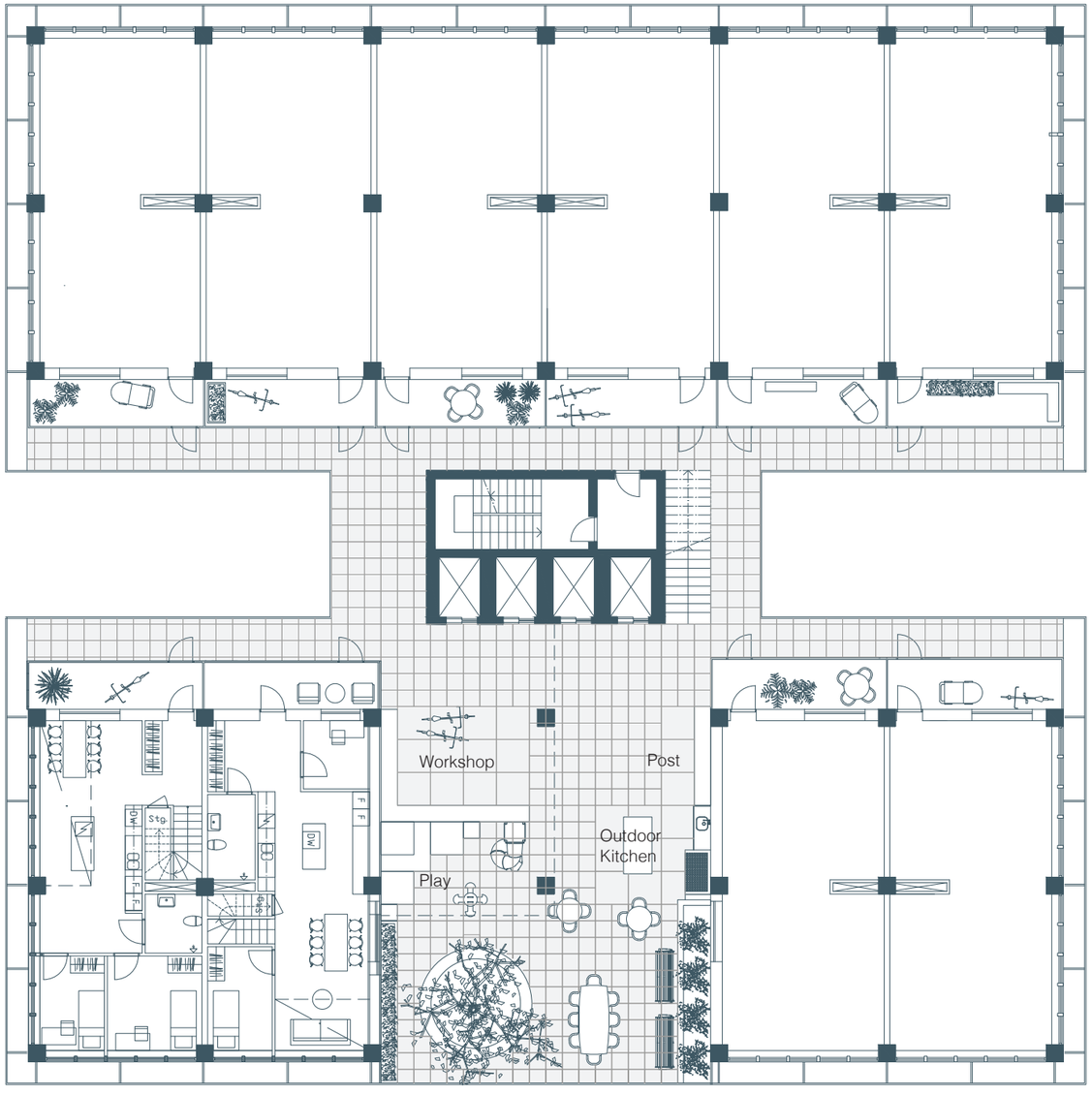
A smaller group of people are more likely to start a conversation and use a common/ shared space compared to a larger group of people. The selected amount of apartments, is a figure which is believed to be in the collective comprehension of one individual. This means, by limiting the community to twenty families permits a resident to identify herself/himself as part of the group living in one shared community.



Interior perspective from common space

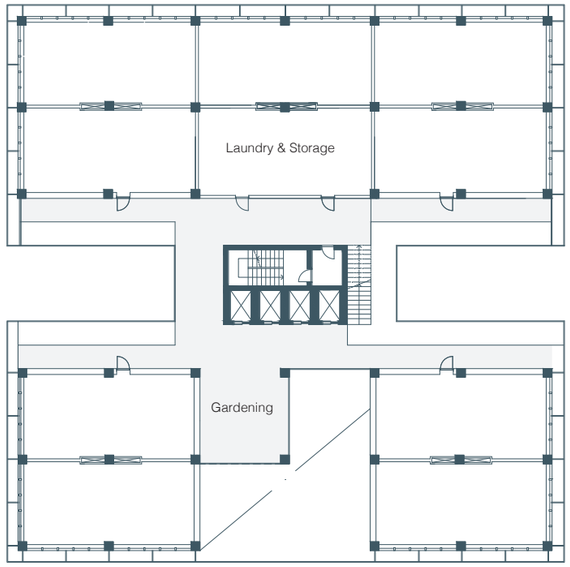
Communication & Communal Space

The shared communal space is of southwards orientation, making it a pleasant sunlit space all year round. The common space will be a semi-outdoor climate zone with a glazed facade to protect from wind and allow full usage all year round but without the isolation to keep the feeling of being outdoor and allow seasonal differentiation. The common space encourage activities such as socializing and recreation while also providing best possible conditions for gardening and raising of plants.

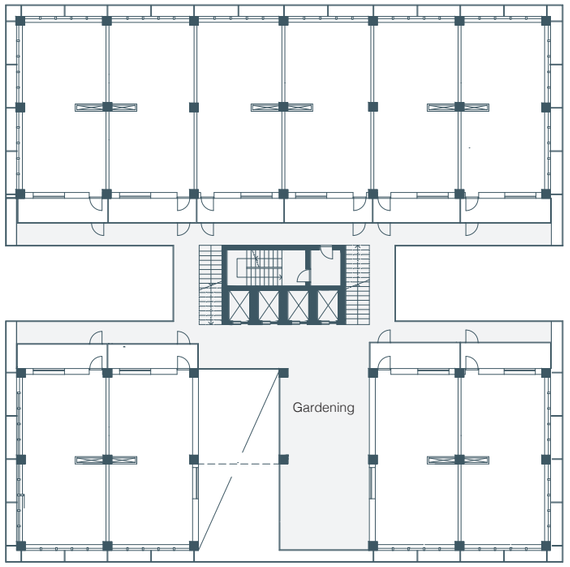


Ground floor 1:200

0 10m N



Second floor 1:400

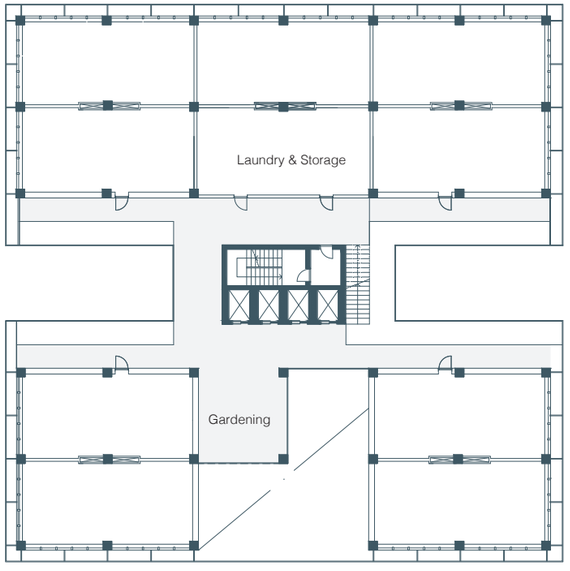


Third floor 1:400

0 20m

Access to each community is provided by lifts which stop at two of the four community-floors. The main stop is at the bottom floor of each community where the mailboxes and main common area is located. The two entrance levels are connected with a larger stairwell in the central core, functioning as internal communication between the floors. The larger main common zone is located southwards on the first floor of the community with a various ceiling height of one to four levels.

Balconies reaching out over the main common space on second and third floor overlooks the main common space and enjoys the same sunlit southern exposure so that the entire communal zone receive the best given sunlight throughout the day, all year round. On the balconies, residents are provided with space for gardening or other activities based on the need and wishes from the residents. Laundry amenities and storage are located on the second and fourth floor.

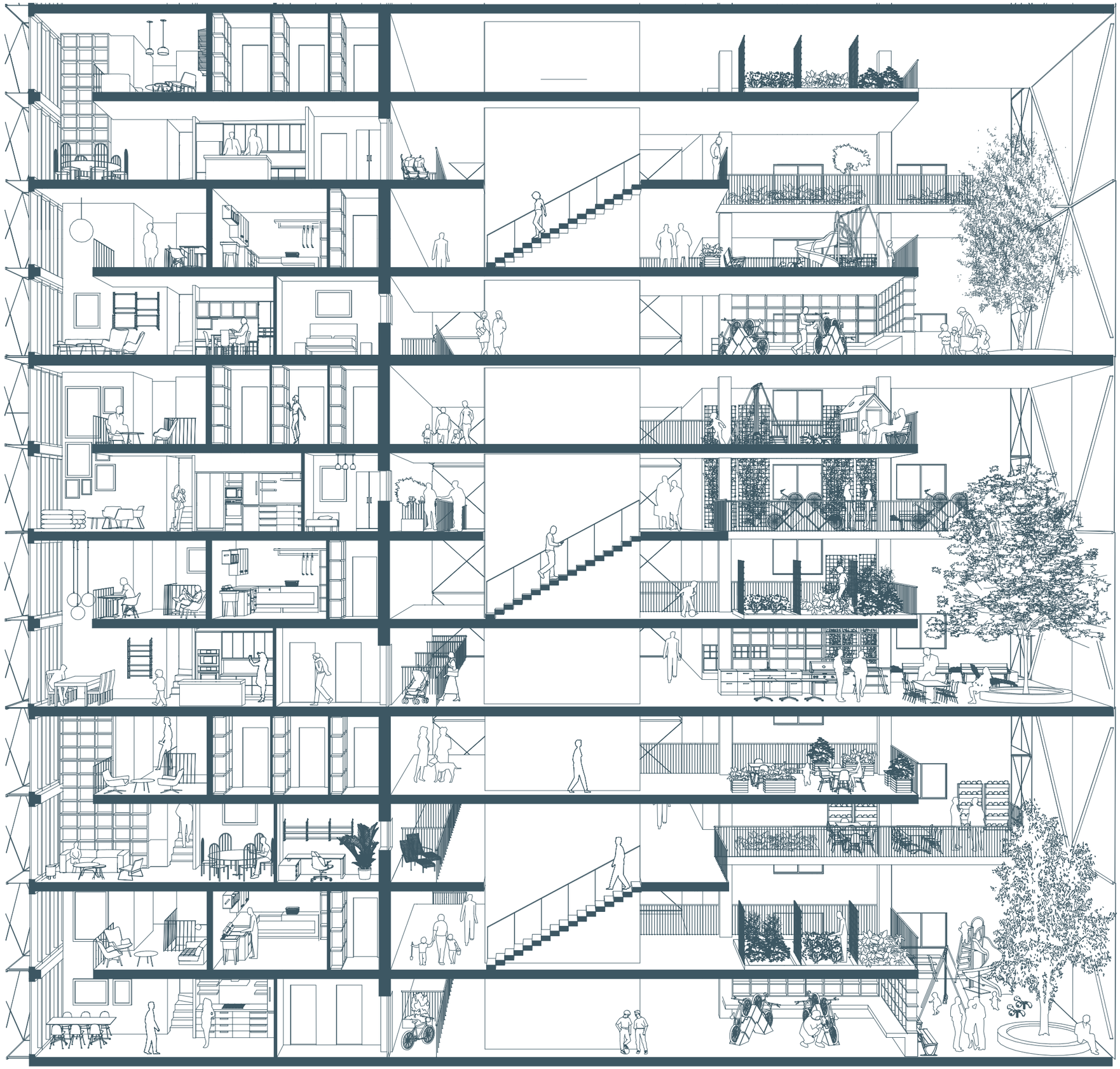


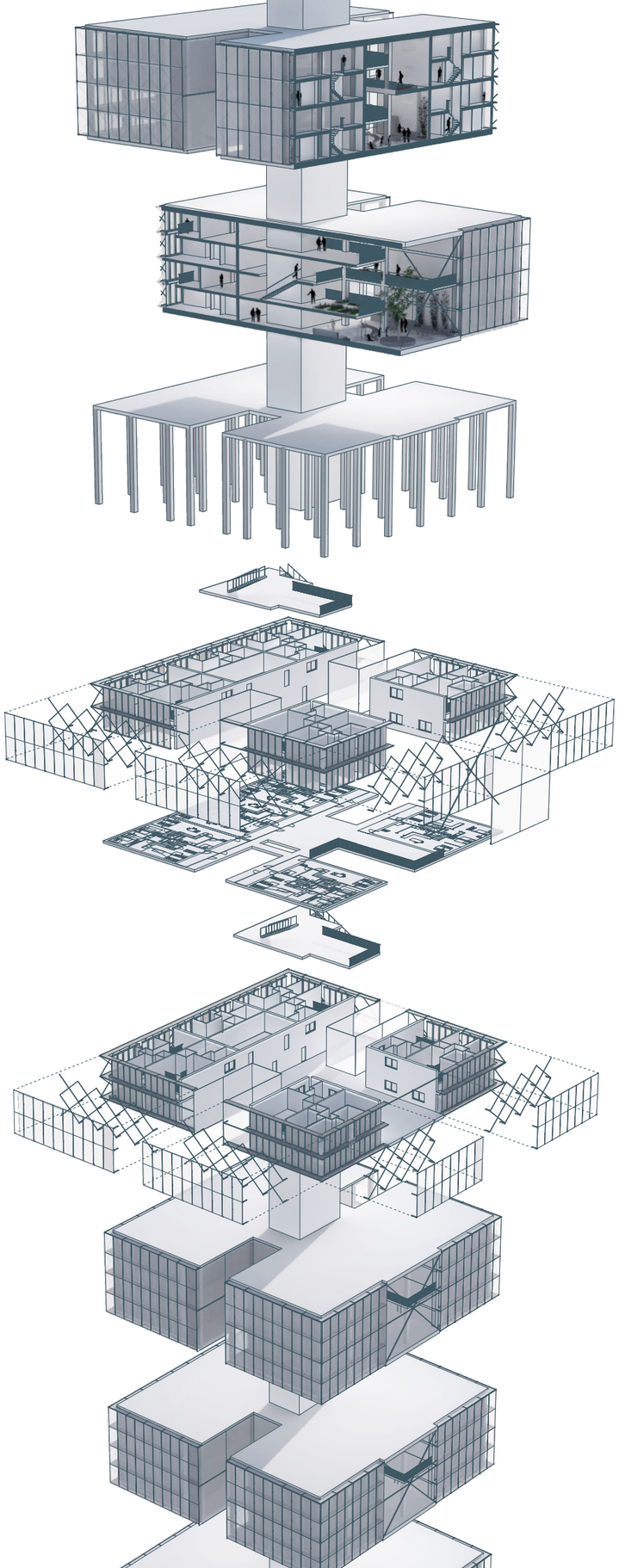
Fourth floor 1:400

Hierarchy of space

The main common space is reached directly from the elevators on the bottom floor of each community. This space is primary used by the twenty neighbouring families and it' is the largest of the common spaces, in some parts reaching to four levels in height while occupying a floor area of approximately 60 m^2. By placing the common space in direct contact with the lifts, it increases the chances for spontaneous meeting and usage of the common spaces. The semi-private spaces corresponds to the low-rise neighbourhoods shared "streets" and is used by the residents on the same floor, however they are considerably smaller than the main common space in order to fill the function as infrastructure. Each apartment has got their own semiprivate front yard as a "buffer-zone" between the semiprivate street and the fully private apartment.

The hierarchy between spaces is to be completed with the contribution of personalization of the residents. The semi-private front yard is fully up to the residents to decide how to use. The nature of the main common space may also vary among the different communities, depending on interests of the individual families and people sharing the space.





Sense of Belonging

Because of the fact that the common space is restricted to only the twenty families inhabiting each community, it helps to establish a sense of belonging to this space and it's therefor easier for the residents to develop a friendship or casual contact within the group while maintaining an individual sense of responsibility.

CONCLUSIONS / REFLECTIONS

Conclusions/Reflection

I started this master thesis with a self experienced problem that came to me when I lived in Shanghai for one year. Living in a skyscraper, although in the context of China often meaning a generic residential tower, has always been something of a dream to me. Breathtaking views and living above the city has always fascinated me, and still does. However, the year in Shanghai also made me familiar with common typology-related issues such as isolation and and social fragmentation, which soon made me realize the solid frame it imposed on peoples living habits. Obviously, my personal experience was also affected by the evident gap between mine and locals communication skills and cultural exchange. However, the blocked interaction between the inhabitants were clearly built-in isolating characteristics of inhabitation, which can be considered as commonly known.

Regardless, the implementation of skyscrapers as a design strategy for future cities keeps increasing . A common argument is to save land and hence increase the number of people/km2. I find this intriguing as it is not only a global argument for building towards the sky but also in our local context of Sweden and mainly our top 3 cities according to size. In addition, the Swedish context also offers the arguments of a unique lack of housing units and as a result too high housing prices. Thus one can summarize these factors as being stronger than the fact that Sweden's potential lack of land can be discussed heavily.

In regard to public opinion, the result has become a gradually shifting attitude towards a positiveness towards an increasing implementation of the high-rises. Therefore, a large number of taller buildings are being planned or being under construction, where the 240 m high Karlavagnstornet is the tallest. As these types of structures become embedded as logical entropies of our cities, this will naturally bring a shift of the visual perception of Swedish cities', how we move and interact, how local centre are planned and thus sociologic structures. Therefore, it is highly relevant to discuss the potential impact on how to prevent the generally built-in destructive forces of this typology.

To do this, we first need to map and understand the fundamental differences between a high-rise and a low-rise, the latter being a commonly used building type in Sweden. Research shows that whether the amount of livable square meters in the end differ between the two typologies are clearly divided. Due to the problematic question regarding the need of space in between structures there is no clear answer to which typology offering highest density. Secondly, evaluating what qualities and lifestyle the different typologies bring, the differences are more clear. The high-rise offers a high level of privacy,views and a considerably alternative living experience. Hence it is exclusive. Meanwhile the low-rise neighborhood structure is clearly more focused on the collective group and to create a sense of belonging outside the private unit.

As an architect, but also as an habitant of a larger city, I argue that social contact with neighbors is of highest importance when it comes to perceived living quality. Since creating buildings is what we do, it becomes strikingly clear that architects can affect and improve the possibility for social interaction by the way we design and plan for new residential areas and a possible evolution of the high-rise. An example of this when looking at low-rise blocks is the immediate positive effect on peoples' wellbeing a well planned courtyard has. It increases the sense of home, the engagement and effort residents' put in the environment and also the interaction and welcoming of people. All of which are tools completely forgotten or neglected in the generic high-rise.

This might be the case as, in an historical sense, the typical low-rise neighborhood is an old and well known typology. It has become conventional and therefore the know-how on how to maximize the square meters as well as creating a good living atmosphere is well known. When it comes to high-rise buildings on the other hand, all these factors and knowledge seem to vanish. It is as if our limited power within the design process narrows down in the same pace as the building becomes taller. Leaving us to only play with pure economical factors neglecting humans' and nature's needs. This is evident as the most common reasons for building a high-rise residential building is either to maximize the numbers of dwellings on a limited plot, for a single investor, or to make an icon building as a statement within the city. Unfortunately, neither of these options cares primarily about the human, the user, the inhabiter. So why does there need to be a difference in how we implement our knowledge and fundamental values depending on if we are designing a high-rise or low-rise? I see this as a result of a natural left-over from a tradition of low-rise structures and skepticism about high-rises which seem to put us in limbo as professionals not knowing how to implement our beliefs. Thus, I believe that we need to equalize the different typologies in terms on priority on life qualities in order to face the built-in issues characterizing the high-rises of today.

The result of this master thesis proposes an alternative prototype of how a high-rise could be arranged in order to broaden one's potential conception. Therefore, the thesis showcases a speculative approach on how it could be possible to react to the most common challenges regarding high-rise buildings starting with mapping the experience and knowledge from planning a generic neighborhood as part of a high-rise down to a site specific iteration. As a consequence, great emphasis has not been laid on construction or economical factors, but rather on social aspects related to the building type. If more time would have been given, these question together with the issues of "top and bottom" would have been a natural continuation.

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