

TERRITORIALLY PERFORMATIVE COURTYARDS

- and its social value in the city

Master Thesis

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PART
01
INTRODUCTION

I.I PREFACE

The values we see in society are reflected in the built environment we produce. Although an open and democratic society is something that we want, it is not obvious that this openness should be transferred directly to our built environments. What social life takes place when courtyards become part of the public sphere instead of the private one?

Well-designed courtyards function as a complement to the outdoor activities in public spaces of the city. The prevailing planning paradigm of today with denser building patterns has led to smaller and darker courtyards. In urban design plans of the past decade the closed block structure has often been broken up, and the distinction between private and public has become more diffuse.

The aim for this thesis is to create a framework of spatial arguments that can work to produce well-functioning courtyards with a focus on social sustainability. The design of the courtyard should provide usability and a sense of ownership. A performative approach is used to look at what functions are embedded in the built form and how they can support the desired outcome. The concept of territoriality can be used as a way of clarifying the relationship between architecture and use, and that is why I want to create a toolbox for territorially performative courtyards.

“The concept of urban territoriality is situated at the very heart of urbanism – namely at the interface between the public and private realms, entangled with both circulation and habitation, between absolute and relative space.”

I.2 AIM AND METHOD

The aim for this thesis is to investigate, through study of research as well as through my own inventories, what spatial factors sets the conditions of a socially sustainable courtyard. A performative approach is used to look at what functions are embedded in the built form.

The result will be a toolbox that works as a framework of spatial arguments. I will explore the tools on a testbed in Malmö, Sweden. The courtyard will be the main starting point for the design and will also be weighed against the conditions and qualities on site. This thesis is written from a Swedish planning perspective and context.

WHY TERRITORIAALLY PERFORMATIVE COURTYARDS?

To me, a socially sustainable courtyard is one that enables a high degree of usage and sense of ownership. The concept of territoriality can be used as a way of clarifying the relationship between architecture and use, and that is why the goal of the toolbox is to set conditions for territorially performative courtyards.

RESEARCH QUESTIONS

- *What are the spatial factors that can provide usability and a sense of ownership of a courtyard?*
- *How can this translate into an urban design toolbox?*
- *What are the social values of territorially performative courtyards?*

DEFINITION OF A COURTYARD

In research on courtyards as social territories done by Eva Minoura in 2019, the definition of a 'courtyard' is based on the definition of a 'plot' as it is formulated in the 1st chapter 4 § PBL. A plot is:

”an area which is not a public space, but which comprises land intended for one or more buildings and land which is directly adjacent to the buildings and is needed for the buildings to be used for the intended purpose”
(My translation).

This means that a courtyard is: the undeveloped land adjacent to those apartment buildings that share the same property or block (in case several properties together form a block) (Minoura 2019, p.21).

SUPERVISION

Something that has permeated my work is the relationship between theory and practice. I have been fortunate enough to be supervised by professionals from both parts of the field, which has led to many interesting discussions that have influenced the results of my work. In addition to my examiner Jesper Magnusson and my main supervisor Ida Sandström, from Lund University, I have also been supervised by the architect and researcher Eva Minoura as well as the municipally employed architect Ulrika Signal at the city of Malmö.



2.1 HISTORIC TRANSFORMATION OF THE COURTYARD

In the book “Urban Forms: The Death and Life of the Urban Block” (2004) Panerai et al. describe how a series of urban design paradigm shifts changed cities and how life took place in them, during the century between 1860-1960. Most interestingly for this thesis, they describe how the built form successively less supported the differentiation between private and public. In these years, the distinction between private and public were made more diffuse, and this has had an impact on the courtyard.

There are however many planning factors affecting the outcome of the courtyard. In Sweden, during the 19th century, a street structure was laid out consisting of wide esplanades, residential streets of mainly 18 meters and a few smaller streets of 12 meters:

“The building height was regulated by a relationship between street width and eaves height. The height must not exceed the street width plus 1.5 and 2.5 meters respectively” (Gahm 2000, p.9).

In this way, a scale ratio of 1: 1 was achieved in the street sections, with taller buildings on the wider streets. Height restrictions have mainly focused on the street scape, but of course also affects the proportions of courtyards. In today’s exploitation, this is not the norm (Minoura 2019, p.18).

In the years of 1850-1900 Sweden was industrialized. In the three largest cities; Stockholm, Göteborg and Malmö the number of inhabitants doubled in a few decades. This led to a housing shortage and overcrowding in buildings with low standards. These poor housing conditions later lead to health issues (Nylander 2013, p.13). The urban planning patterns that permeated the cities in the industrialism era was the rigid rectangular closed block structure.

In the beginning of the 1900’s, the state took responsibility for the housing situation. Space-efficient, bright and airy are expressions that characterize the buildings of the 1930’s. This was completely in line with Per Albin Hansson’s vision of ‘Folkhemmet’:

”The great Folkhemmet. It is a matter of creating coziness and well-being, making it good and warm, bright and happy and free” (Nylander 2013, p.61. My translation).

Politicians understood that the society must act and take command of the housing production. The modernist era had its breakthrough in Sweden. Throughout the 1950’s, older buildings were demolished in many Swedish cities due to the low standards. The streetscapes were widened, and buildings were freed from the street. This was because of the car and increasing traffic that required more space in the city (Nylander 2013, p.119). Now the building patterns started having a more open character. The courtyard was more integrated with the public realm than before.

During the 1960’s, the scale of housing projects grew. The architecture was characterized by a vision of the building as a sculpture in the landscape and by industrial construction methods (Nylander 2013, p.144). Large-scale, open structures spread across Sweden. Despite an increased production of housing following the Second World War, the shortage remained. The criticism against the government grew, and they responded with a long-term program with the goal to build one million homes between 1965 and 1974 – ‘The million program’.

The 1970’s marked a turning point and were defined by questioning of the large-scale quantitative housing production of the past decade. The modernism design language was later replaced by new-old urban design ideas such as closed block structures and grid plans. The large scale was replaced by low and dense (Nylander 2013, p.187).

Outdoor environments have been considered very important for health and well-being in previous planning ideology, mainly during the record years of 1960–1978, but has lost its significance when the pressure to build more and denser has become greater (Minoura 2019, p.13). The courtyard is now more enclosed than during the modernism era and has become smaller as a result of the denser building patterns.

To conclude this historical overview of Swedish planning ideals since 1850, the courtyard has gone through a transformation from small, enclosed, and dark – to open, large, bright, and airy – to a mix of the two; small and open. At the same time, the scale of the buildings has gone from small, to large, to small, and is now increasing again.

When we allow the houses to grow both in height and width, it undeniably changes the spaces in between; the squares, the parks, the street spaces and of course also the courtyards. The amount of free space per person is becoming lower than what we are used to (Minoura 2019, p.13). Today's high pressure on housing production has resulted in many small, dark courtyards that is often open to the public to let some rays of light in.

There is a tendency in the planning of the last century with more open building structures not to look at either courtyards or concrete property boundaries from a user's perspective (Minoura 2019, p.32). What happens to the quality of the outdoor space and what social life takes place there when courtyards are becoming part of the public sphere instead of the private one?

The values we see in society are reflected in the built environment we produce. In recent years, the strive for an inclusive and open society has become more important. 'Everyone's right to the city' is a rhetoric we often hear in discussions about urban design in Sweden. This is reflected in most urban design projects in Sweden today, where the closed block structure is broken up to make the courtyard accessible for everyone.

This is often done with a social sustainability ambition and a vision that the residents of the city should have more places to meet. However, there is a risk that this will result in a place that neither residents nor visitors use (Minoura 2019, p. 7). This discrepancy is highlighted by the researcher and architect Eva Minoura in the book "Bostadsgården – territoriell arkitektur" (2019).

The transformation of the built form, from a closed block structure to more open building patterns, has led to a new urban landscape with less of a differentiation between the block's front and back and between its interior and exterior. This gave rise to more "neutral spaces", space that is more abstractly conceived and have a less apparent social utility (Panerai et al. 2004, p.132). When it is unclear who a space is for, it can lead to a confusion and have a negative impact of the level of use.



2.2 DO WE NEED COURTYARDS?

In a world where cities are becoming denser and denser, it is increasingly important to create high-quality outdoor environments for the inhabitants. In recent years, there has at the same time been a tendency for a return of the green movement in Sweden, when more people than before are choosing to leave the larger cities for a new lifestyle on the countryside. If we want people to stay in the cities, there is a need for the courtyard to compete with the gardens of the single-family homes outside of the city. There should be a possibility to live that garden-lifestyle within the city. It is also important to design good living environments for those who do not have the possibility to choose their lifestyle or where they want to live.

In “Bostadsgården – territoriell arkitektur” (2019) Minoura explains how the function of the courtyard is often questioned. Some believe that courtyards are not being used anyway and then question why valuable land should be wasted when it can be used to build more homes instead. It is obvious that if we create small and dark courtyards, they will not be used, but this should not be used as an argument to why they are not needed at all.

Whether or not someone consider that courtyards are needed, they will keep being produced since there is always land adjacent to apartment buildings that is not public space. It is therefore important to create conditions for that outdoor space to be used, so that it is not wasted.

By enabling outdoor environments close to one’s home and promoting the individual’s control over their immediate surroundings, courtyards can be a factor in increasing social sustainability. The main function of the courtyard is to make outdoor activities possible. Outdoor activities have a great impact on health, and can for example help us to recover from stress. Studies also show that the more time children spend outdoors, the more physical activity they get (Raustorp, Pagels, Boldemann, Dal & Mårtensson 2012). For most children in a dense city, the residential courtyard along with the schoolyard are the only two spacious outdoor environment they come in daily contact with. This clarifies how important the courtyard can be when it comes to children’s physical activity and health.

If we create courtyards that residents do not want to use, because they are not inviting in their design or microclimate, they instead seek to the public space for their outdoor activities. The parks then need to be dimensioned for this increased pressure. In practice, planners often have a difficulty ensuring adequate park space in denser districts (Minoura 2019, p.17).

It is also important to note that well-designed courtyards, that are being used, serves as a complement to the outdoor activities offered in parks and squares. Both parts are equally needed, and one cannot replace the other (Grahn & Stigsdotter, 2003). The courtyard should in this sense be seen as part of the home, in the same way as parks are part of the public space.

Studies have shown that people do not replace one type of outdoor activity with another (Grahn & Stigsdotter, 2003), which provides support for considering the courtyard as a different kind of asset than what a park is. Simplified, Minoura explains it as such that the public spaces offer a more extroverted stay, while the function of the courtyard is more introvert. With this been said, we need places for introverted stays, where we can let go of the guard, retreat and be private (Minoura 2019, p.29). These spaces where one can be private should not only be located inside the home, but instead also extend into the outdoor environment. The total amount of park or public space within a district can never make a courtyard unnecessary.

To give some nuance to the notion of extrovert and introvert stays, it is important to note that there is of course a gradient to this. Some activities that take place on the courtyard can be somewhat extrovert just as some activities in a park can be more or less introvert. The important point here is that they still serve different purposes and are equally needed. One big difference seems to be that:

“spaces like parks or public squares are used without necessarily being territorialized.” (Minoura et al. 2011)



PRIVATE



PUBLIC

3.1 TERRITORIALITY

Territoriality theory can be used to explain social behavior in space and is therefore a suitable theoretical framework for this thesis.

“Territoriality is a natural point of departure from which to start to uncover a theoretical framework for the research [on courtyards as social territories], as it encompasses a body of theory regarding social behavior in space.”
– (Minoura, 2016, p.83. My translation)

To me, a socially sustainable courtyard is one that enables usability and a sense of ownership. Mattias Kärrholm writes in his book “Arkitekturens territorialitet” (2004) that the concept of territoriality is used to discuss spatial control and accessibility and could therefore be used as a way of clarifying the relationship between architecture and use (Kärrholm 2004, p.10, 25). In general, territoriality can be seen as a form of coding or institutionalization of space, where any actor – a person, group, or a practice – establishes certain meanings within a limited area. A certain place is linked to a certain person, group, use, practice, identity, or culture (Kärrholm 2004, p.62).

“Each territory is constituted by an order, a rhythm or a kind of chorus, around which more complicated loops of signals and melodies can form. Once the melody is established, it can be picked up and sung by others.”
– (Kärrholm 2004, p.79. My translation)

Territories should in this way be seen as not only the physical space where it takes place. Brighenti (2010) describes that territories “is not defined by space, rather it defines spaces through patterns of relations” (Brighenti 2010, p.57). Jesper Magnusson (2016) also explored the relation between territoriality and architecture, urban design, and materiality. He formulates it as “what takes place makes space” (Magnusson 2016, p.48) and that territories are interesting when linked to social sustainability, as it “links social and material issues and relate them to lived space” (Magnusson 2016, p.48). In that way, the research on territories provide a conceptual tool for understanding the production of space (Magnusson 2016, p.49) and what this means to the use of that space.

“The continuous exertion of control over a particular part of physical space by an individual or a group results in the establishment of a territory.”
– (Madanipour 2003, p.50)

Kärrholm continues to discuss how the research on built environment often has come to focus on our experiences, or on the built as an expression of an idea or social order. More rarely the focus has been on what the built environment does and more concretely describing its role for people’s use and everyday life (Kärrholm 2004, p.9). Minoura (2019) also identified this, that too much focus on what the architecture looks like may lead to a lack of understanding of what architecture actually *does*.

Kärrholm examines the differences in notions of space, place, and territoriality. He describes that where the notion of space and place primarily draws support in philosophy around being and existence, territoriality draws support in social and behavioral science discourses around power and control. However, they can also coincide, for example in matters of identification – rooms in which one identifies or which has a strong identity (Kärrholm 2004, p.24). People identify themselves with their immediate environment and have certain expectations of what it should be like.

TERRITORIALITY AND COURTYARDS

Territories help us understand what behavior that is expected of us. Creating unclear territories leads to confusion about who the space is for and can result in it not being used. This must be seen as a failure of the courtyard's main function.

Speaking in terms of territories may seem difficult to reconcile with the ideal of 'Everyone's right to the city' – that the city should be for everyone and that planning should promote people to meet. But if uncertainty makes us hesitant and leads us to distance ourselves more, perhaps the view of boundaries as exclusive and dismissive should be questioned? (Minoura 2019, p.28-29)

Some may picture an open courtyard as being equal to a pleasant and inviting one just because of the fact that it is open and permeable, without problematizing what it means when it is unclear who that space is for (Minoura 2019, p.36). Is the purpose of the courtyard for outsiders to be able to see how nice it is, or is the purpose to be an appropriate and attractive place for those who live there?

"We want to be democratic and open as a society, but the open structures we have built over decades are not able to support 'life between buildings' – which is Jan Gehl's classic expression"
– (Minoura 2019, p.92. My translation).

The tendency of the last century to plan more open building structures has resulted in courtyards without clear borders. Lack of boundaries create unclear territories where people may have a difficulty understanding what behavior is expected of them (Minoura 2019, p.51).

A common paradox is when the openness that was planned for instead results in more fences than if boundaries had been designed more refined from the beginning. Permeable structures mean diffuse boundaries between private and public and can lead to residents experiencing this need to set up their own fences. When architecture does not do a territorial job by communicating where the boundaries are, a need to make such additions often arise (Minoura 2019, p.37).

"The territorial issue must be raised in the early stages of urban design projects in an equally obvious way as stormwater management and accessibility."
– (Minoura 2019, p.84. My translation)

INTERFACE

In "Public and Private Spaces of the City" (2003) Madanipour explains that the space where borders forms, is the interface where public and private realms meet. Borders take two different roles as mediators between the two spheres. They are de-fining and separating them, while at the same time, connecting them (Madanipour 2003, p.210). This is what the notion of interface rather than boundary could mediate.

"Boundaries act as excluding or enclosing, while the meaning of interfaces is the face in between two things"
– (Minoura 2019, p.75. My translation)

Thinking in terms of interfaces instead of boundaries formulates the strive to make both sides attractive. When we talk in terms of 'soft edges' or 'active ground floors', it is the function of interfaces – the intermediaries of inside and outside as well as private and public – that we strive for.

In the interface, functions may overlap. For example, part of a sidewalk may belong to the property but be perceived as belonging to the public space. This overlapping space could be called a hybrid zone. A narrow hybrid zone often work better than a generous one as the contact between the street and the building can get difficult to perceive (Minoura 2019, p.77). For example, it does not take a lot of space for someone to be able to put out a bench or some plants outside of your door. These personal additions creates an added value to the street and contributes to a more human scale. This in combination with a high density of entrances enables the residents to contribute to the interface and creates greater variety in the streetscape.



3.2 MINOURA'S RESEARCH ON COURTYARDS IN MALMÖ

The architect and researcher Eva Minoura published her doctoral dissertation "Uncommon Ground: Urban Form and Social Territory" in 2016. Here, Minoura examines the values of open and closed courtyards of different sizes and investigates tools for understanding how the built form sets conditions for different types of social life (thus creating social territories).

In her research, Minoura combined qualitative and quantitative methods to find connections that explain how we use and experience courtyards. By calculating the spatial qualities using GIS (geographic information systems) and comparing these with surveys from residents as well as site inventories of the courtyards, correlations emerged. Through surveys and analyzes, Minoura has studied 28 residential courtyards in Malmö and Stockholm and generated approximately 1,000 respondents.

"The selection represents areas with substantial variations in morphology and population in order to capture differences in territorial outcome. Closed-block formations in the areas from the first half of the twentieth century give way to open-block formations and point-buildings in the more recent examples."
 – (Minoura 2016, p.219).

It is difficult to determine one correct answer on how courtyards should be designed, and that is not the aim for this thesis. However, there are spatial conditions to be aware of depending on what our goal is. In urban design, we create spatial conditions for different kind of life, functions, activities, qualities.

"Spaciousness and size provide capacity. Spatial control provides responsibility and belonging. Care for the interface provides readability."
 – (Minoura 2019, p.98. My translation)

One of the conclusions of Minoura's research is that the urban form of courtyards greatly influences how residents perceive them and how much they are being used. The conclusions highlight that two important factors work together to create social territories – control and capacity (Minoura 2019, p.73). With these two main factors it is possible to predict the social sustainability values of the courtyard since aspects such as flexibility, microclimate and sense of security and community are some of the results.

The first factor concerns spatial framing and boundaries and can be summarized as control. High control gives higher privacy; low control gives higher publicity. More enclosed courtyards are less exposed to the public space and this correlate with a high sense of security and belonging. During Minoura's site visits there were more traces of life and private initiatives such as plants, furniture and toys left for shared use on the more enclosed courtyards (Minoura 2016, p.270-273). Simplified, a sense of belonging enables a neighborhood community because the courtyard is not for everyone.

The survey results also show that in addition to the degree of enclosure, the perception of boundaries and interfaces are crucial for the sense of belonging and perceived security. Clear boundaries contribute to the residents feeling a sense of belonging to the courtyard (Minoura 2019, p.111). A level of enclosure of 85-100 percent supports the perceived sense of belonging and control of the courtyard (Minoura 2019, p.102).



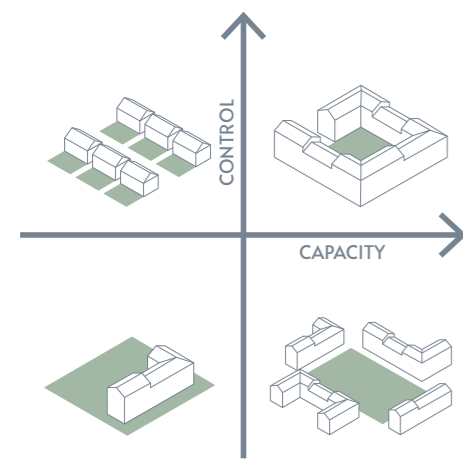
Illustration of the studied typologies (Minoura 2016).



The study areas in Malmö.

In other words, some openness in the structure can be argued for in some cases, but public paths through the courtyard should always be avoided. Allowing courtyards to be private social territories for the residents may seem exclusive, but semi-open courtyards create unclear territories that do not undoubtedly invite outsiders to use them either.

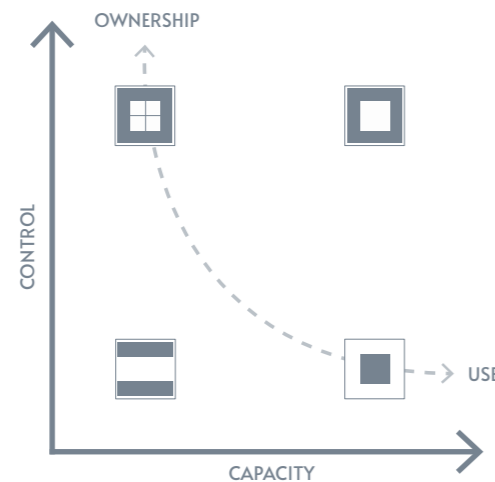
The second factor concerns size and spaciousness and can be summarized as capacity. High capacity gives higher publicity; low capacity provides higher privacy. Size and spaciousness (space per person) are two crucial factors for how much the courtyard is used since it correlates with the diversity of activities that can take place there.



Typologies illustrating level of control and capacity (Minoura 2016).

On courtyards with at least 1200 square meters of common space, several activities can take place at the same time (Minoura 2019, p.98). This means that one type of use (e.g. cultivation) does not exclude the other (e.g. play).

Of course, there are courtyards with the size of over 4000 square meters with many qualities, however, according to Minoura it is unlikely that the positive effects of spaciousness achieved at a courtyard over 1500 square meters will increase, the effects will probably level out (Minoura 2019, p.101). If more homes share the same courtyard, there is a risk of a weakened sense of ownership and belonging, which has a negative effect on the sense of security and community.



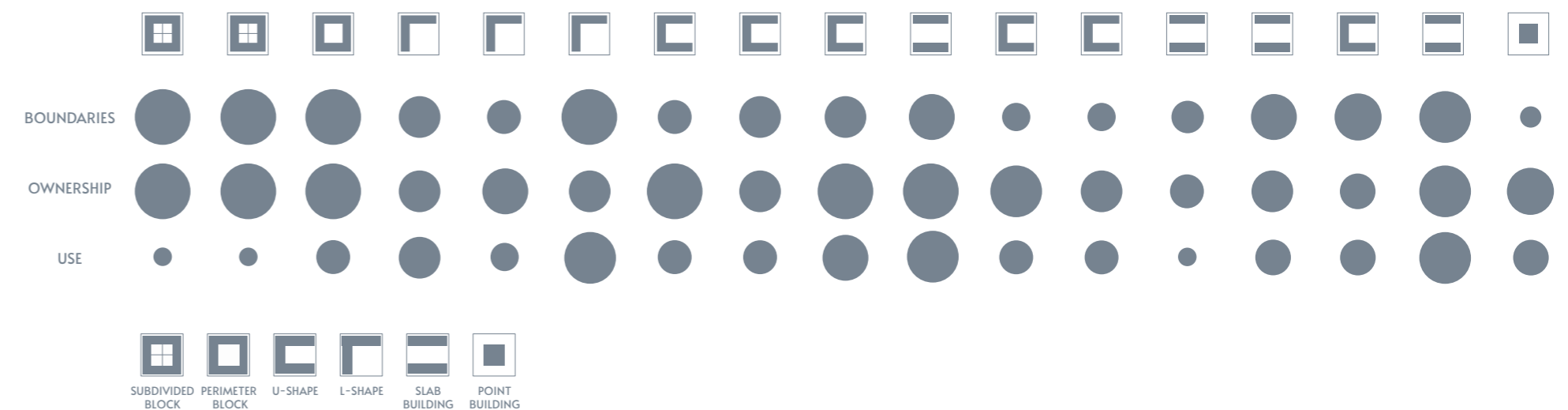
Ownership and use connected to control and capacity (Minoura 2016).

A spaciousness of 10-20 square meters per 100 square meter gross floor area is a recommendation (Minoura, 2016), (Kristensson, 2003), (Berglund & Jergeby, 1998). This spaciousness ensures that the courtyard is not overloaded and put under higher pressure than it can take.

Two other recommendations highlighted in Minoura's research are concerning the balance between green and hard surfaces as well as how much sunlight that reach the courtyard. The recommendation of about 50 percent of green space (Kristensson, 2003) is related to the recommendation of about 50 percent sunlit courtyard on spring and autumn equinoxes (Spacescape, 2016). Vegetation is important when it comes to the microclimate of the courtyard, and can also create smaller spaces within the space. This is another factor that contribute to more functions being able to take place at the same time, without disturbance.

Finally, Minoura addresses the importance of ensuring that the interface between private and public is carefully designed. The care for the materials and the exchange between private and public should include both the facade and the zone closest to the house.

"The effect of several well-designed interfaces in a row is an effective way to create variety and attractive, intimate street spaces that are best experienced in motion, as a sequence of minor events and details for the eye to perceive."
 – (Minoura 2019, p.79. My translation)



Results from surveys conducted by Minoura (2016) on 17 study areas in Malmö. The size of the bubbles represents the share of responses indicating clarity of borders, sense of ownership and frequent use.

3.3 INVENTORY KV. ÖSTERGÅRD

To get a personal view of what I think constitutes a well-designed courtyard, I went on a study visit to a courtyard that I have seen as a good example of a socially sustainable courtyard. The property where this courtyard is situated is called Östergård and is located near the train station Östervärn in Malmö.

I came here on a sunny Tuesday afternoon in early spring; it was quite cold, but the sun felt nice. People had just finished work and parents had picked up their kids from school or preschool. I was welcomed into the courtyard by the chairman of the tenant-owner association. At once, I was pleasantly surprised by the amount of people who was out using the courtyard – adults as well as children.

The children were running around playing with each other, the adults sat on benches talking and enjoying the sunshine. What is it about this courtyard that entices the residents to use it? I tried analyzing it through looking at measurements and functions and I will present my findings in photos I took, as well as in a plan sketch and two sections.

Östergård is a unique example in its size. The total size of the courtyards is approximately 4,500 sqm and the scale of the built is only three stories. There are 79 apartments sharing the courtyard together with a preschool in the ground floor of the western part of the block, with approximately 50 children.

Another thing to add to this is that there are semiprivate patios closest to the building that are between 5-7 meters deep, throughout the courtyard. This leads to a size of the contiguous space in the middle of approximately 2,500 sqm. If you calculate on 2 persons per apartment it means that 148 persons share courtyard. This gives about 30 sqm of total courtyard space per resident and about 16 sqm of common space per resident. However, you also have to consider the 50 preschool children sharing the courtyard with the residents of Östergård. If you count them in this gives you about 12 sqm of common space.

The semiprivate patios bring a quality to the courtyard in the way that it provides a first stop if you want to go outside but not be on the common parts of the courtyard. If you are out on your patio, there is a great chance that you will meet a neighbor walking by, leading to neighbors recognizing each other, and this is of value for the sense of community within the courtyard.

On the outside of the building the life of the residents spills out on the street in the shape of benches and plants. This gives a soft and lively edge towards the street and gives it a human scale. These interfaces between the private inside of the building, the semiprivate patios or the public street contributes to a gradient of public and private that is presented in the sections on the following page.

Another quality of Östergård is the amount of vegetation and topography. The hill in the middle of the courtyard is a great asset to the residents. Children use it for play in all seasons of the year. It also helps divide this quite big space into smaller spaces, as it blocks off both noise and visual contact between for example children playing and a group of people having a barbeque. The trees and shrubs also frame small spaces within the courtyard where you can sit down or play hide and seek in.

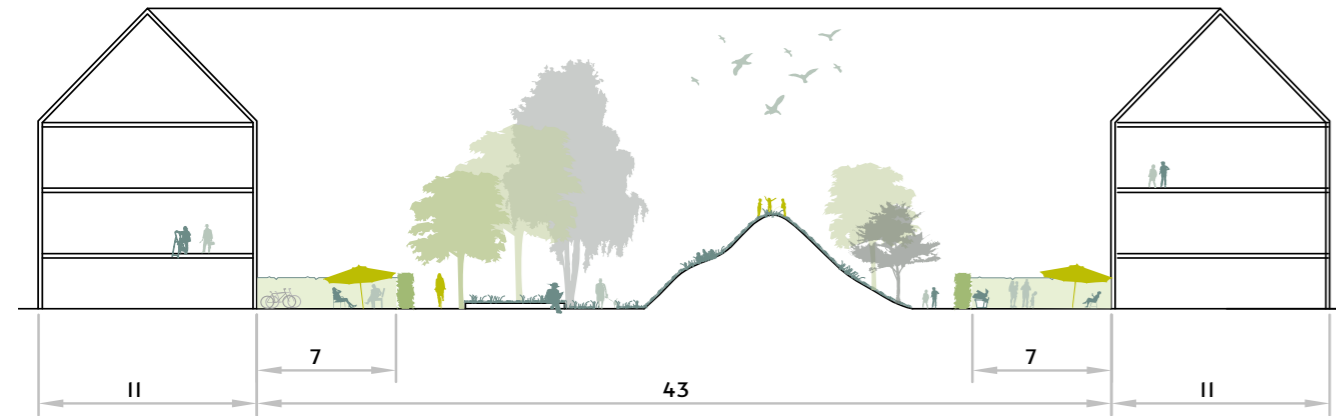
There is a great variety of functions on the courtyard. There are places for play, cultivation, barbequing, playing boule, an open lawn where you can put down your picnic blanket as well as a small hill that invites for different activities.

Another quality is the ratio between programmed and unprogrammed space. This is something that the tenant-owner association together has decided that they want, so that they can change the functions from year to year if the demands change over time.

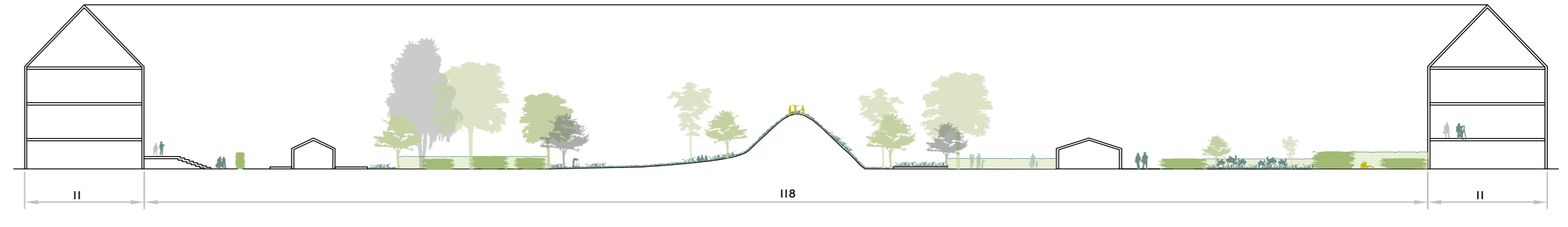
Discussing Östergård with a practitioner lead to the quote: *“It is impossible to build Östergård today”*. And that is of course regarding the scale and the size. The floor space index (FSI) here is only about 1,2 and this can be compared with most newbuilt areas in Malmö today with a FSI of above 2,0. This means that it would be expensive and maybe not economically defendable to build something like Östergård today.



SECTIONS OF KV. ÖSTERGÅRD



Section A-A.



Section B-B.

PHOTOS OF KV. ÖSTERGÅRD



1. An overview of Östergård, with the hill in the middle. 2. One of the patios. 3. Traces of use. 4. Cultivation. 5. A common compost that young residents built.

PHOTOS OF KV. ÖSTERGÅRD



6. The life of the residents spills out on the street outside of the building. 7. More patios. 8. More traces of use. 9. "A place to hide" as the chairman of the tenant-owner association said.

4.1 TOOLBOX FOR TERRITORIALLY PERFORMATIVE COURTYARDS

The theory together with my own inventory of Östergård has given me an understanding of what variables that can be associated with the usability and sense of ownership of courtyards. I want to propose a toolbox with different tools representing threshold measures that together can work to enable territorially performative courtyards. It is hard to fulfill all tools together in one courtyard, so different qualities has to be weighed against each other. I have not set a hierarchy within the toolbox, this is something that can be done in individual projects, however some of the tools set conditions for other tools to be used so in that way they might be considered more crucial to reach the desired performance.

To structure the toolbox, the tools are divided into the two different factors that they aim to perform – usability and ownership. They are however intertwined and together can generate more qualities than that. All tools should be seen as guidelines and not fixed numbers. The aim is to create a framework of spatial arguments that can work to produce well-functioning courtyards with a focus on social sustainability.

The toolbox is presented on the following two pages.

TWO RECOMMENDATIONS

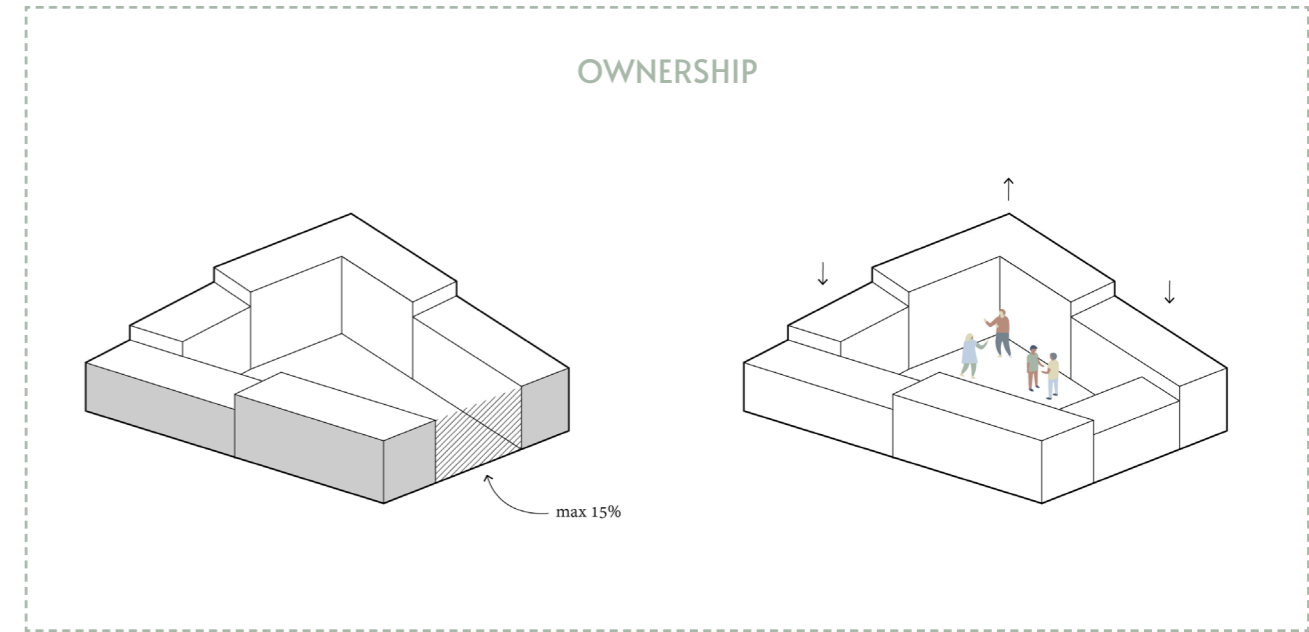
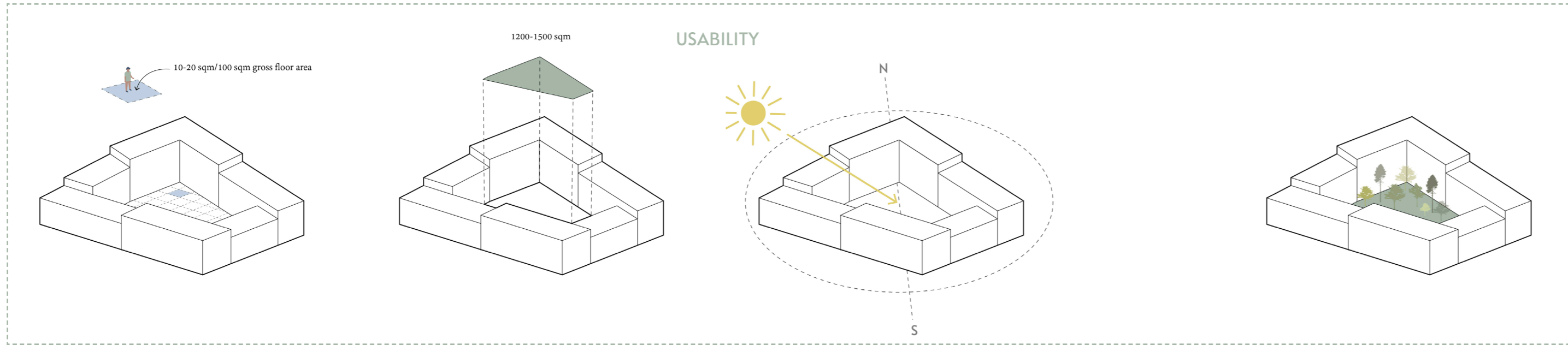
In addition to the tools in the toolbox, two independent recommendations can be made:

Care for the interface (contact inside and outside)

Even narrow zones closest to the building can be an asset for residents who, with their care for the space, can make the street pleasant and create a human scale. This in combination with a high density of entrances gives residents control of the interface and creates a variety (Minoura 2019, p.106). It provides readability of places and clearly convey information about whose affiliation and responsibilities are concerned.

Ratio programmed versus unprogrammed space

This affects the courtyard's functionality and adaptability for new demands, to enable high usability, as well as the possibility for residents to make personal additions, which then help strengthen the sense of ownership.



SPACIOUSNESS

~10-20 square meters per 100 square meter gross floor area (Minoura, 2016), (Kristensson, 2003), Berglund & Jergeby, 1998). This spaciousness ensures that the courtyard is not overloaded and put under higher pressure than it can take. It is reasonable for a city to have a nuanced density with lower density further away from public transport nodes and higher density in central areas, according to principles such as transit oriented development (Spacescape, 2016). The spectrum of 10-20 sqm per 100 sqm GFA gives room for this kind of nuanced density within different districts of a city.

SIZE

~1200-1500 square meters common space, with private patios excluded. At a size of 1200-1500 sqm, the courtyard is large enough to accommodate several functions and users at the same time (Minoura, 2016). Even if courtyards can be over 4000 sqm, such as in the 'Storgårdskvarter' from the beginning of the 1900's, it is unlikely that the positive effects of the spaciousness achieved of a courtyard of over 1500 sqm will increase, but the effects will probably level out. The risk is that if too many people share the courtyard it could become anonymous instead (Minoura 2019, p.101). The larger the block, the coarser the mesh of the street network will also be, which affects movements through the urban fabric and the accessibility to different functions.

USABILITY

~ 50% of the courtyard should be sunlit at 12.00 on spring and autumn equinox, to create a high quality of stay and set the conditions for greenery to thrive (Spacescape 2016). A courtyard without sunlight will not have much greenery or have the possibility of becoming an attractive living environment. With taller buildings, the wind also increases in strength between the houses and on the ground surrounding it. Another aspect related to this is that of the level of daylight reaching inside of the homes. If you reach about 50% of sunlight on the courtyard, the daylight measures are also good.

GREEN SPACE

~50% of the courtyard should be green. The use of the courtyard increases if there is a balance between green and hard surfaces. The vegetation must have the conditions to thrive as well as to recover from wear and tear (Kristensson, 2003). Shrubs and trees together with topography can shape smaller spaces within the courtyard, which also allows for more activities to take place at the same time. When constructing new residential buildings, the excess land mass can be used to shape the landscape, creating a topography within the courtyard. This is a sustainability factor since the transport and localization of excess land mass is a problem in new construction areas.

ENCLOSURE

A level of between 85-100% enclosure of the courtyard supports belonging and control, which promotes initiatives and responsibility of the residents (Minoura, 2016), (Sack, 1986), (Ostrom, 1990). By strengthening the sense of belonging to a space, a social connection can be tied between neighbors, that can be seen as a kind of territory or a common neutral arena (Olsson & Törnquist, 2009).

Another part to this tool is that there should be no public paths through the courtyard, as it invites the public to enter and should therefore be avoided if the aim of the courtyard is for it to be an asset primarily for its residents and not for the public (Minoura, 2016), (Ostrom, 1990). If you want to open up the enclosed structure, there should be an argument as to why, and this should be weighed against the consequences it may have on the social life of the courtyard.

COMMUNITY

~ 150 residents sharing one courtyard to enable a sense of belonging and community. Anonymity arises in large group constellations and is considered to weaken the sense of responsibility. 'The Dunbar's number' is a theory stating that the size of the human brain allows for about 150 relationships. This idea was developed as 'weak ties' in 1973 (Granovetter, 1977). It has recently also been addressed in the book 'Tipping point' (Gladwell, 2000), which states that 150 meaningful social relationships is a norm (Minoura 2019, p. 49). The concept of 'deindividuation' is discussed in theories on group dynamics and includes mechanisms that leads to a weakened sense of responsibility in an individual (Strandberg, 2017).

PART
05
TESTBED



Map of Malmö municipality. The two yellow beans represents two main development areas, prioritized in the Comprehensive plan.

5.1 MALMÖ'S MUNICIPAL PLANS

COMPREHENSIVE PLAN OF MALMÖ

Comprehensive plan of Malmö

The site for the testbed is located in the eastern parts of central Malmö, right next to the new train station "Östervärn" that was inaugurated in the beginning of 2019. The site is part of one of the prioritized development areas, pointed out in the Comprehensive plan of Malmö (2018b). See map on previous page.

IN-DEPT COMPREHENSIVE PLAN FOR NORRA KIRSEBERG/ÖSTERVÄRN

Malmö municipality has also done an in-dept comprehensive plan of the area around the new train station. The aim for the development is to tie the areas of Östervärn, Ellstorp, Johanneslust and Kirseberg together, and connect them to the central parts of Malmö, through the development.

The in-dept comprehensive plan also contains many interesting statements that courtyards are important for this area. On the next page there are some examples of the statements done by the municipality: (Malmö stad 2020, my translations)



Area boundary for the In-dept Comprehensive plan for Norra Kirseberg/Östervärn

"Apartment buildings should have common areas of high-quality to benefit the coexistence between neighbors" (p. 19)

"A closed block structure leads to safe courtyards free from noise" (p.19)

"The boundary between public and private environments must be clearly readable" (p.25)

"Courtyards should be large enough, protected, and readable in order to create conditions for a sense of belonging, active play and provide protection from traffic" (p.30)

"Blocks that are divided into several properties should have a common courtyard" (p.25)

"Special consideration should be given to the conditions for sunlight of both the homes and the courtyards" (p.31)

"Underground parking should be avoided to allow for rich greenery and large trees on the courtyard" (p.29)

"Offer gardens for those living in the ground floors of apartment buildings" (p.19)

5.2 NORTHERN ELLSTORP TODAY

The size of the testbed is about 6 hectares and mainly consists of undeveloped land between existing buildings in the area of Ellstorp and the railway. To the west, the site is bounded by Södra bulltoftavägen. Today, the space mainly functions as a green walking path and has a dog park. There are several different trails that testifies movements across the site where people go to rest their dogs. The most dominant one is framed by large trees, and it runs across the site in a west-east direction, from the train station and central Malmö, towards the park "Ellstörsparken".

Large parts of the area have previously been used for gardening, which you can see traces from in the amount of fruit trees on site. The land has then been left untouched for years after the cultivation and the railway operations stopped.

Today, the area consists mainly of three different characters of vegetation: the open and wild character with old fruit trees in the north, a row of larger trees in the middle, and finally the 'runderatmark' in the south. Examples of 'runderatmark' can be gravel paths, harbors, and industrial plots. In these places, wild vegetation and plants that can endure the cold and survive for a long time without human care will thrive. The 'runderatmark' within the testbed consists of a gravel covered parking space. The row of larger trees consists of different tree species but is dominated by birch. Different types of wildly grown plant species cover most parts of the green space.



Simplified illustration of the testbed, showing where the photos on the next page are taken from.



1. An overview of the testbed, from Östervärn train station. 2. One of the facades of the warehouse building. 3. The parking area, covered with gravel. 4. The walking path framed by large trees.

PART
06
DESIGN

6.1 PROCESS - STUDY MODEL



Placing the principle blocks (see following page) on the testbed.



Trying different shapes of the blocks, and leaving space for the existing trees to form a park.



6.2 PRINCIPLE BLOCKS - S, M, L, XL

With the tools of the toolbox, four principle blocks have been formed – small, medium, large and extra large. This was a way of starting to evaluate how the tools can be combined in different ways.

THE S BLOCK

This principle block has a courtyard with a total size of 1,200 sqm. To reach somewhere between 10-20 sqm courtyard space per person this means that the block can have four stories. The sunlight is at 50%, allowing for vegetation to thrive and cover 50% of the courtyard.

THE M BLOCK

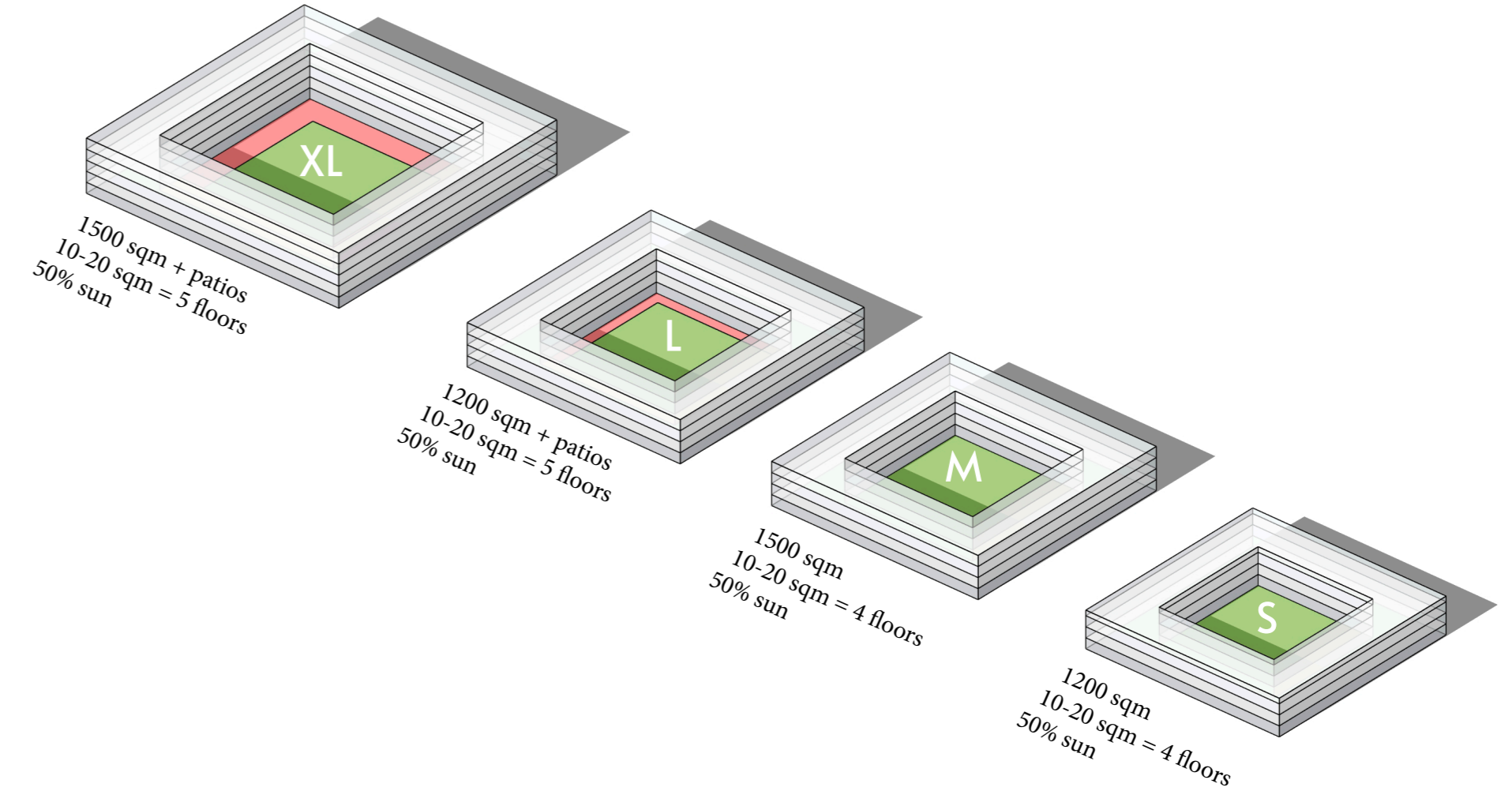
This principle block has a courtyard with a total size of 1,500 sqm. To reach somewhere between 10-20 sqm courtyard space per person this means that the block can have four stories. The sunlight is at 50%, allowing for vegetation to thrive and cover 50% of the courtyard.

THE L BLOCK

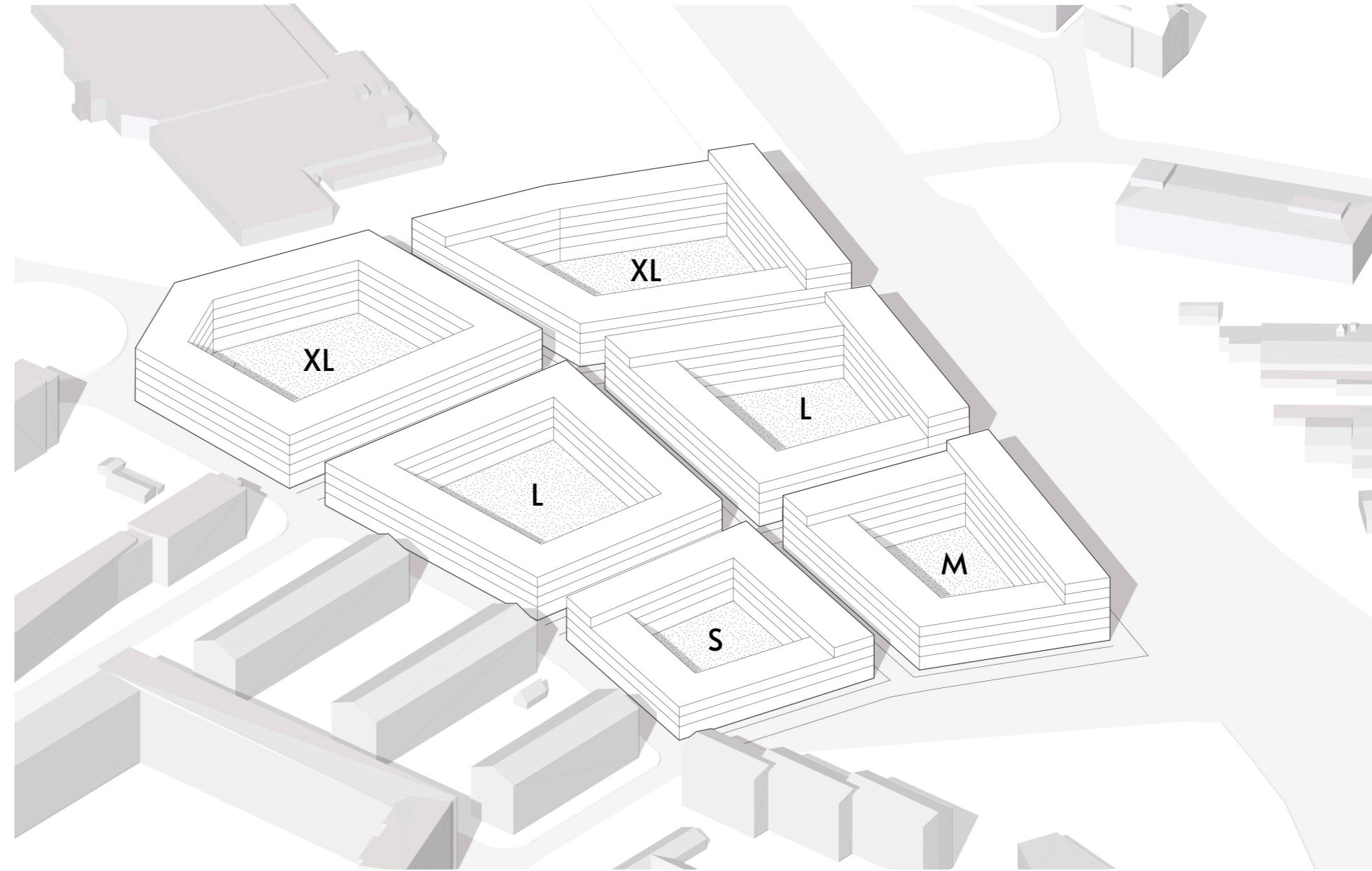
This principle block has a courtyard with contiguous space of 1,200 sqm, however there are also semiprivate patios closest to the building. The patios are four meters deep, making the total size of the courtyard xx sqm. To reach somewhere between 10-20 sqm courtyard space per person this means that the block can have five stories. The sunlight is at 50%, allowing for vegetation to thrive and cover 50% of the courtyard.

THE XL BLOCK

This principle block has a courtyard with contiguous space of 1,500 sqm, however there are also semiprivate patios closest to the building. The patios are seven meters deep, making the total size of the courtyard xx sqm. To reach somewhere between 10-20 sqm courtyard space per person this means that the block can have five stories. The sunlight is at 50%, allowing for vegetation to thrive and cover 50% of the courtyard.



6.3 PLACING THE PRINCIPLE BLOCKS ON THE TESTBED



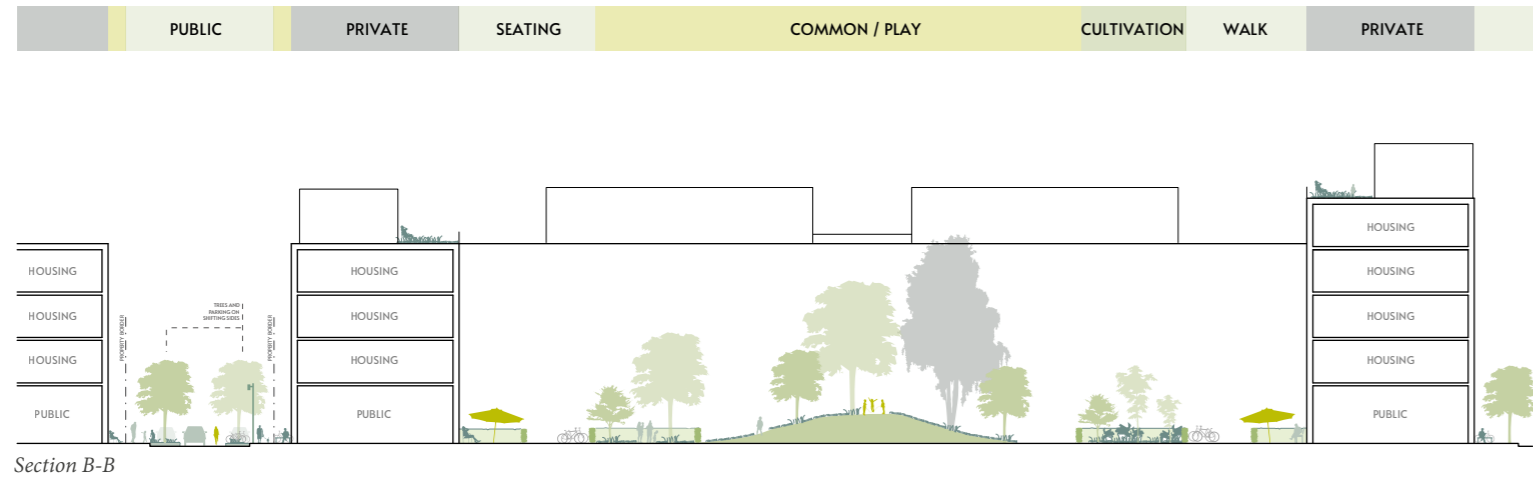
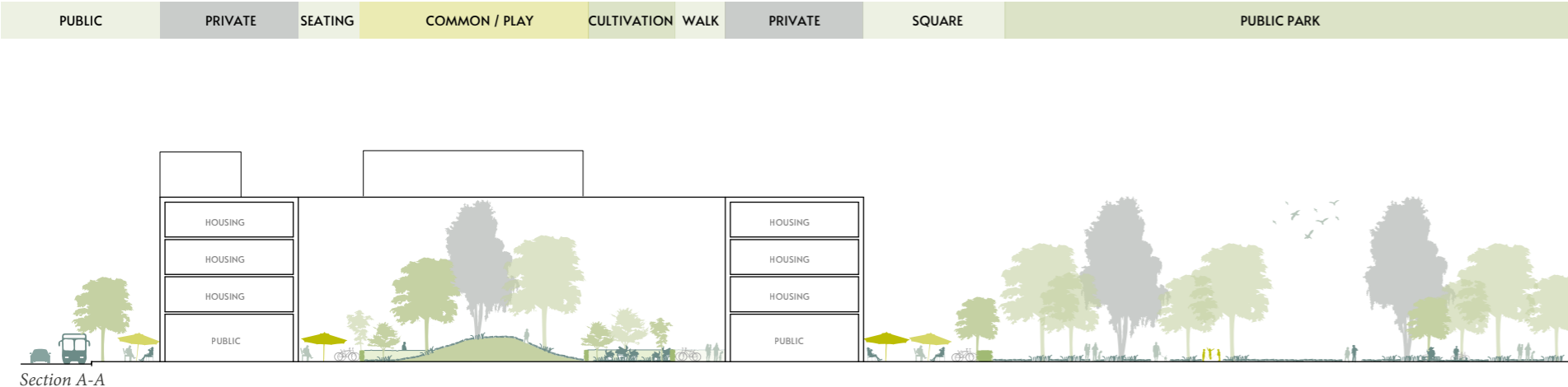
6.4 EXISTING QUALITIES



6.5 TESTBED MASTERPLAN



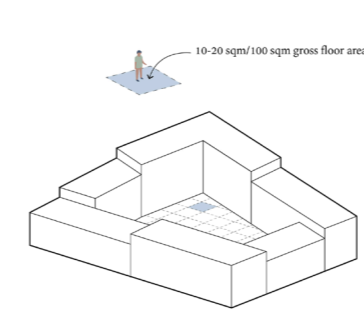
6.6 SECTIONS



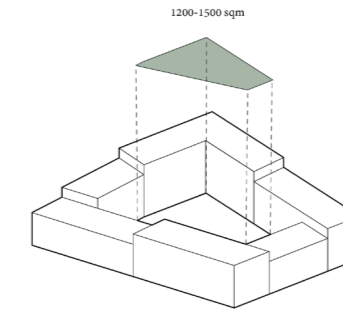
6.7 AXONOMETRIC VIEW



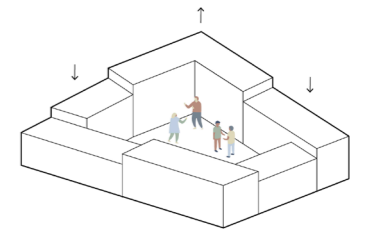
6.8 TOOLBOX EVALUATION OF TESTBED



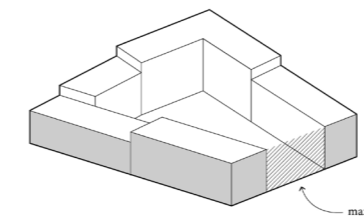
15-18 sqm per person.



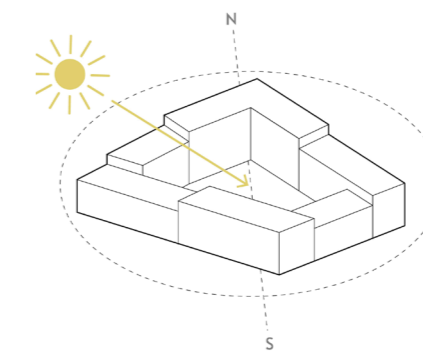
1300-1600 sqm courtyards.



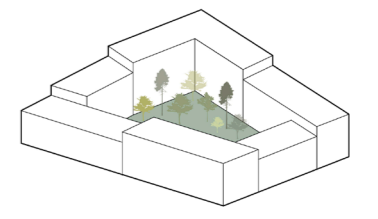
140-200 people per block.



~85-100% enclosure of the courtyards.



43-56% of sunlight on the courtyards.



More than 50% of green space.

PART 07 REFLECTIONS

7. REFLECTIONS

I am lucky enough to have had supervisors from both the research field as well as from the field of practice. My own process of working with my thesis has been going back and forth between theory and practice. I have been sketching, reading, writing back and forth throughout the process. This has helped me find interesting intersections as well as frictions between the theory and practice. It was when I started trying out my tools that I saw the frictions between them.

If relating to the planning paradigm of today with the dense city as an ideal, it might be hard to use all the tools of my toolbox together. There is a friction in creating spacious courtyards without it leading to too many people sharing it. Having too many neighbors lead to a difficulty recognizing them, and if you do not recognize the neighbor walking by, you might not feel the security and belonging that is needed for a sense community. Creating conditions for social relations between neighbors help with the sense of responsibility one sense for its courtyard, which for example leads to personal additions being made and the care for the outdoor space to be higher.

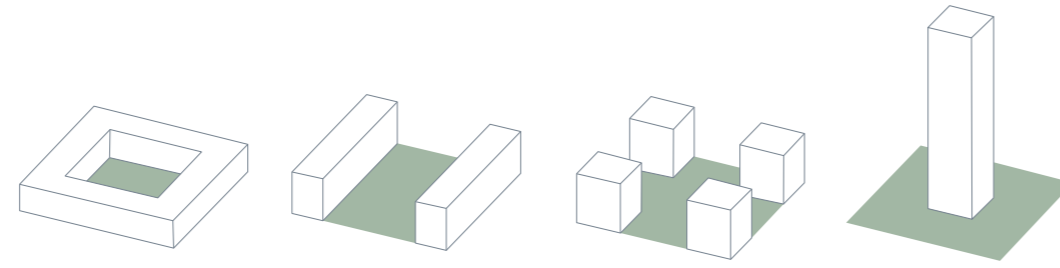
There is however a certain amount of space needed to create conditions for more functions and activities to take place at the same time. Since the result I am aiming for is for the courtyard to allow for a high level of use, the courtyard needs to allow for a variety of functions. This means that the spaciousness tool is important for my design. Urban design is always about weighing different interests against each other. There is a fine line to balance on in not putting too much focus on one tool.

I made a statement in the beginning of my thesis that what I think constitutes a socially sustainable courtyard is one that is enabling a high level of use and a sense of ownership. I think that a well-designed courtyard that allows for a variety of functions will invite more residents to use it. This will then lead to more of the residents meeting each other and a sense of trust and security to be experienced. It is first then, that the sense of belonging and community can arise. It is not certain how the amount of people sharing the courtyards affects this community feeling. More research must be done on that aspect.

At Östergård the sense of community is high. During my visit there it was clear that many of the residents are familiar with each other and they feel a strong belonging to their courtyard. This is a unique example in its size and scale, with about 150-200 people sharing a 4,500 sqm courtyard. It is hard to argue for something like that to be built within the planning paradigm of today. However, there is so much to learn from an example like this, and many of the features from Östergård can be translated and used in new ways.

There is a high care for the interfaces at Östergård. The gradient between private – semiprivate – semipublic and public in this case works to invite people to meet. This is not often the case, when unclear borders between the private and public sphere can lead to a confusion about who the space is for. Here, the distinction is clear and obvious and the interface between them works as a connector rather than a divider. And even though the benches that are placed out on the street are not that frequently used, they still give added value to the streetscape.

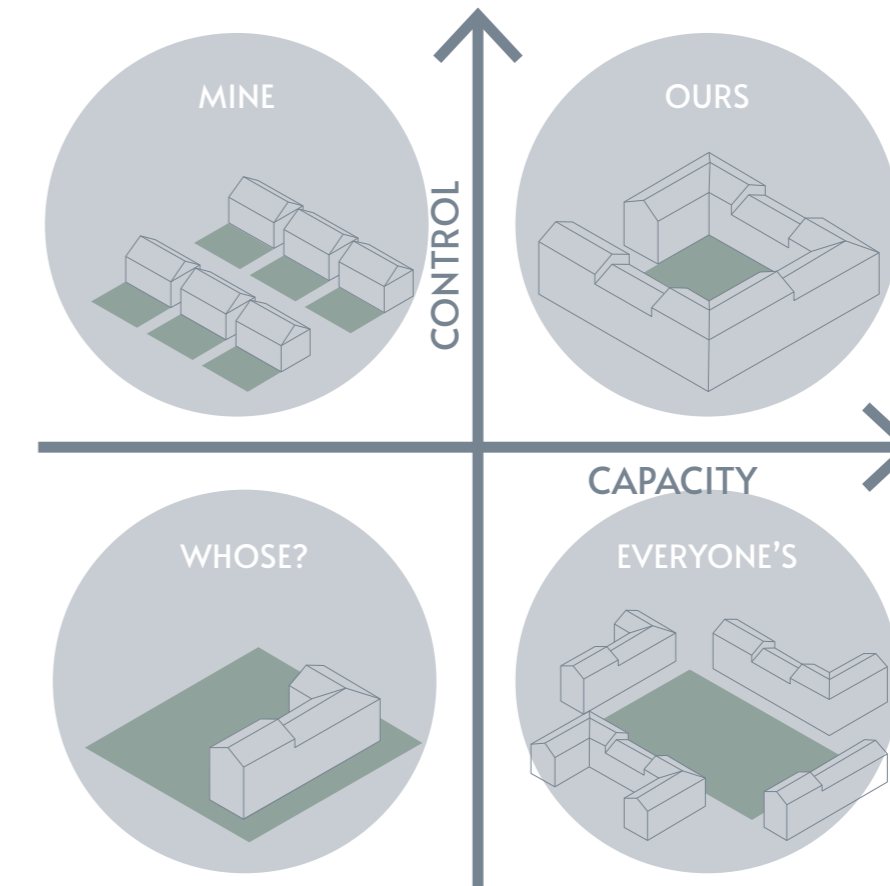
Relating back to Minoura's research on courtyards, with regards to my toolbox, I found that my design on the testbed was not the utopian masterplan I first thought it would be, but in stead quite a realistic one. I found that I was able to reach about the same figures of floor space index and number of housing units as in many new built areas in Sweden today. I compared my plan with several areas in the Western harbour of Malmö, built in early 2000's up until today (see appendix) and saw that the figures in my plan is within the same range.



Buildings with a variation in scale but with the same floor space index.

What I managed to achieve in my plan, except courtyards with higher capacity, was a lower scale than the sites in the Western harbour. A lower scale has many qualities in itself, it gives the streetscape a more human scale, it brings in sunlight and daylight to the courtyard as well as to the apartments, and it helps creating a nice microclimate around the buildings.

This made me hopeful that I can continue to work with what I have learned in my thesis, in my professional life - to create territorially performative courtyards.



Built form in relation to sense of ownership (Minoura 2016).

PART 08 REFERENCES

8. REFERENCES

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APPENDIX - CALCULATIONS

COMPARISON WESTERN HARBOUR



BOOI

Floor space index 1	2.1
Floor space index 2	1.4



FLAGGHUSEN

Floor space index 1	2.4
Floor space index 2	1.2



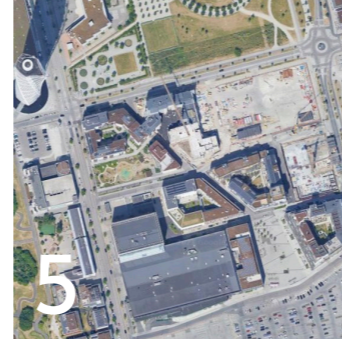
FULLRIGGAREN

Floor space index 1	2.6
Floor space index 2	1.5



KAPPEGLAREN

Floor space index 1	3.0
Floor space index 2	1.9



MASTHUSEN

Floor space index 1	1.6
Floor space index 2	2.0

*Floor space index 1 =
gross floor area / plot area

*Floor space index 2 =
gross floor area / total area



The Western harbor in Malmö.