



# GREEN LIVING ROOM

-An exploration of a new domestic  
space in the urban housing.

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Master thesis  
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ACEX35

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Department of architecture and civil engineering

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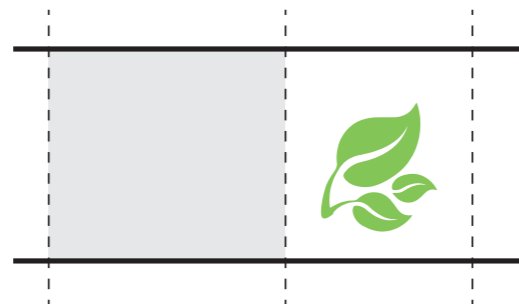
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Department of Architecture and Civil Engineering  
Masters Programme of Architecture and Urban  
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## Abstract

Living in big cities usually has a lot of advantages which make the cities an attractive place to live in. Normally people immigrate from the countryside to the cities to take part of those benefits. Job opportunities, proper public transportation and broad and compelling social life and activities are only a few of them to be mentioned. However, living in an urban context has its disadvantages as well. Life in big cities usually is associated with limited access to greenery, stress, anxiety and a low standard of living due to obvious reasons. Furthermore, the studies indicate that all these issues are somehow related to each other and affect one another in a direct and sometimes in an indirect manner. Due to the low standard of living and lack of greenery in urban areas people need to deal with a lot of psychological issues more than people in the rural areas. Access to nature and greenery have a direct impact on the well-being of people. According to studies, patients who have been exposed to greenery have had a shorter recovery period than people who have not been exposed to greenery. Moreover, the presence of greenery can reduce the stress level and anxiety of people in the cities caused by air pollution, tension and hecticness. Due to the hectic nature of urban spaces people in the cities are usually facing minor mental and even physical issues. In the other hand, as the positive impact of greenery on the well-being of humankind is no secret, greenery should be an antidote to the modern society issues. The usage of greenery should not be limited to the small area in the courtyard or in the small park in the neighbourhood. It should be valued as a tool for improvement of human health.

The aim of this master thesis is to investigate the implementation of greenery in domestic space in order to promote a sustainable way of living in the cities. The focus has been to design a housing typology in an urban context and try to imitate and model housing typologies associated with countryside and rural areas. A housing complex which despite being in a dense part of a city contains the qualities of a villa or single-family housing.



## Background

2017-2020  
2020-2021

Chalmers - Bachelor in Architecture  
EPFL - Master in Architecture  
Studio Gay Menzel - Urban Legends  
Studio Huang  
Constructing the view  
Architecture in the age of acceleration  
Comfort & Architecture  
Cartography  
Behind-Beyond future cities  
Apparent realities  
Interactive conceptual design of structural forms  
Swiss Cooperative Housing

2021-2022

Chalmers - Master in Architecture  
Transformation & environmental care

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## Part 1 – Introduction

## I.I – Academic framework

## Purpose

The purpose of this work is to design a new urban housing typology to promote a new lifestyle towards a sustainable future. Lack of a domestic space for recreation and leisure is tangible in the housing situation in urban areas. Therefore, the goal of this master thesis is to create a domestic space that meets that need and provides a space for relaxing and taking distance from all stress and anxiety that city imposes on people.

## Method

Studying built projects and literature which promote these sustainable living in the research phase to further generating iterations of a housing typology based on the characteristics of the site. Several solar and volume studies were done to determine the most suitable and feasible iteration. The method used in this work is research through design.

## Theory

As the site of the project is in Gothenburg, Sweden. And due to the extreme climatic situation, all the literatures and projects were based in Nordic context. "På Acacias vilkor" has been a starting point and underlying source for this work. "Glasade utrymmen i bostadshus" was another literature used during the research and design phase.

## Delimitations

In order to be able to achieve a more concrete result, the project site was delimited to the Nordic context, more specifically Gothenburg. All the literature and theoretical writings were exclusive for the Swedish climate. Also, the selected references in this work are situated in Nordic region.

The main purpose of this work as mentioned earlier, is the design of an additional domestic space where people can have access to vegetation, a space for recreation. Many ecological, economic, and social sustainability aspects have been considered and measured in this work however, the choice of the material for the project is mostly based on rather the spatial and atmospheric impact and effect of the materials than their ecological and environmental impact.

## I.II – Context and site

The site chosen for this work is Pusterviksplatsen. A narrow unsymmetrical plot only two blocks away from Järntorget which is one of Gothenburg's biggest nodes. The plot on the north is fronting Rosenlundskanalen. These elements beside giving the site a unique character makes it challenging to handle. The context needs to be dealt with care and in a very subtle manner.

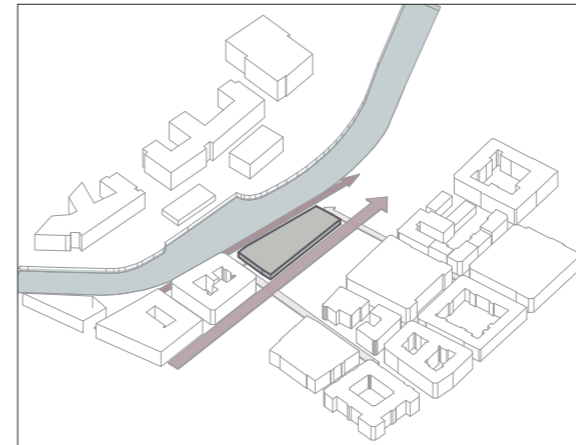


## Site analysis

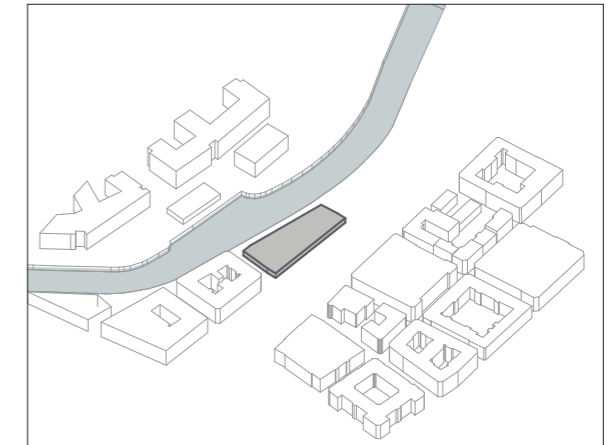
The plot is situated only a few blocks away from one of Gothenburg's biggest nodes, Järntorget. On the south the plot is facing Norra Allégatan and on the north side, fronting Rosenlundskanalen. The canal is an interesting feature that cannot be ignored. These two characteristics turn Pusterviksplatsen into a very attractive place hence, the land price is very high. Due to the high land price, the units and site should be exploited and developed in an efficient way to convince the potential investors which reduces the flexibility of the design of the units and the plot in that sense.

Surrounded by building blocks mostly are in 4-5 levels with small windows and openings towards the street, the site Facades mostly are in brick and plaster. The high pedestrian traffic because of the short distance to Järntorget, the buildings accommodate commercial enterprises on the ground level. Above the commercial ground levels, housing and offices are located.

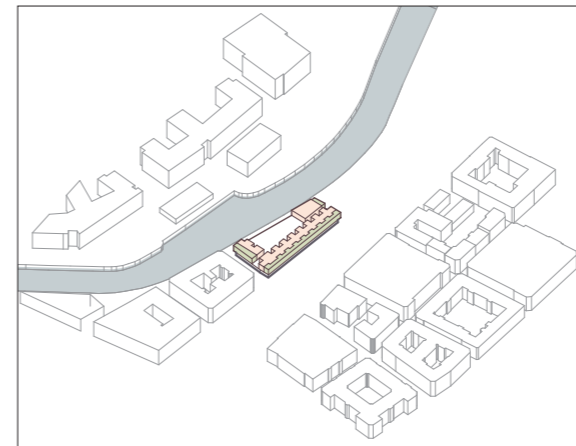
The plot itself has an unsymmetrical shape and east and west oriented which is ideal for catching the sunlight. The boundary of the site is determined by the existing sightlines and the street grid. The ideal shape for the proposed building is a high exploited building block having the same scale as the surrounding buildings.



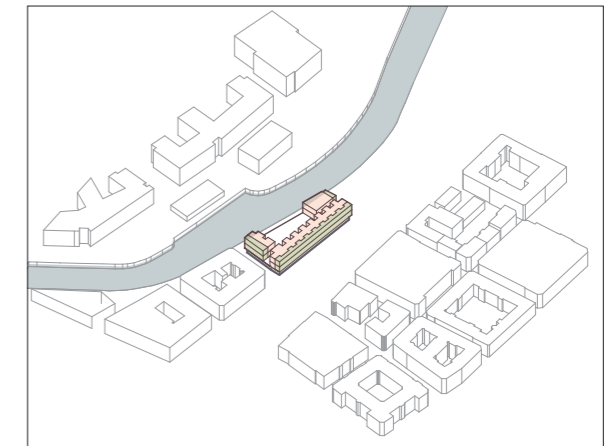
*Axiality*



*Commercial enterprises*



*Terraces towards south*



*Matching the height of the surrounding buildings*

## Theory

Waking up in the machine world, surrounded by plastic, concrete, metal, breathing in pollution, carbon dioxide, cigarette smoke, going to work surrounded by cars, gears, railways. Is this what people imagined when they put the foundation stone of the very first cities? Did they dream of concrete jungle for their descendants? With exponential technological development in the recent decades human beings seem to consign to oblivion one important fact, a fact which they were familiar with once. That now forgotten reality is that human is depended on the nature, or more precisely human is a part of nature. Just having a look at Charles Darwin's evolution of man underlines that homo sapiens, the modern human's ancestors were apes. We are a more developed and intelligent species which have been able to take over the planet earth and do as we desire without thinking of that every action there is a consequence that follows. Human actions and the way it endangers the environment has been a subject of sci-fi movies. Blade runner 2049 pictures a post-apocalyptic earth perfectly. A future where a lot of species have come to extinction. Humankind

is living in mega cities surrounded by skyscrapers crowded, in absence of moral. Everything is artificial. The protagonist lives in one the skyscrapers with his virtual girlfriend, suffering depression and insomnia. Now one might think what I try to picture is a distant future that doesn't have anything to do with us and most likely this won't be our reality. But let's have re-evaluate the modern urban life. The vegetation and nature have become insignificant. When was the last time you stepped into nature and tried to merge with nature? How broad is our knowledge about other species?

The green spaces are limited to a small area in the local park or in the courtyard. One also might think; well, it's not New York or Tokyo we are dealing with. There are plenty of green spaces and recreation areas in Gothenburg. Little attention has been devoted to the impact of the vegetation on human health. What I guess interests me is the implementation or including of a sort of "naturrum (meaning nature room)" into the conventional housing typology common in urban context. A space which reminds you of the fundamental nature of human, mother nature.

## References

### Get a lott

With the glazed balconies as an extension of the apartments the project has been a source of inspiration for the green living room. These glazed balconies could extend the summer season and could be used by inhabitants even colder seasons.

- Integration of nature with housing
- Winter garden
- Greenhouse balcony
- Duplex apartments
- Water management
- Sustainability strategies

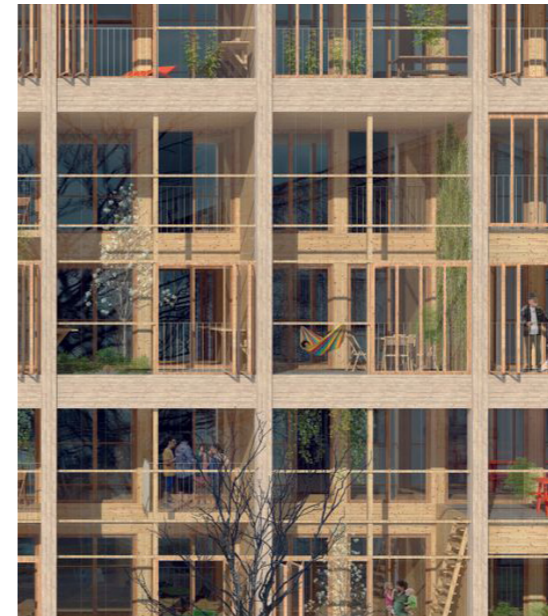
### Naturhus

Bengt Warne's nature house has been one of the very first references for this set of work. Although the scale and context of such project is more in the countryside, the principles of the nature house according to Warne's book "På Acacias vilkor" has worked as a guideline and inspiration.

### Urbana Villor

The architect also has tried to implement some elements of a villa typology with the garden into an apartment typology. The balconies enriched with vegetation are situated in front of the apartments main functions giving a nature-like character to the building.

- Balcony with vegetation
- Dealing with the sunlight
- Duplex apartments



*Get a lott - Tailor Made*



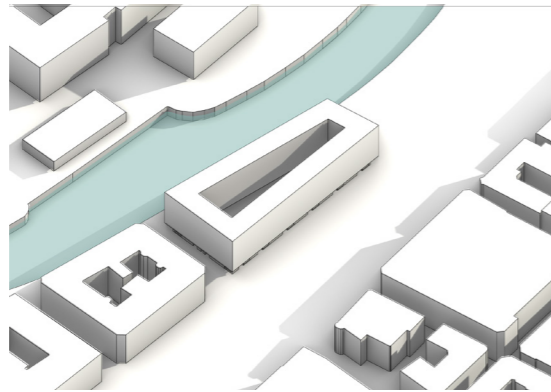
*Urbana villor - Cord Siegel*



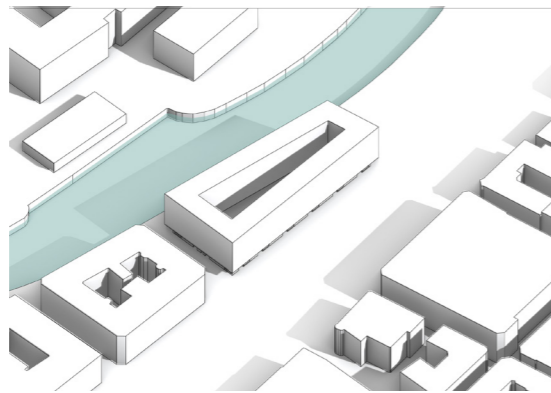
*Naturhus - Charles Sacilotto*

### Solar studies

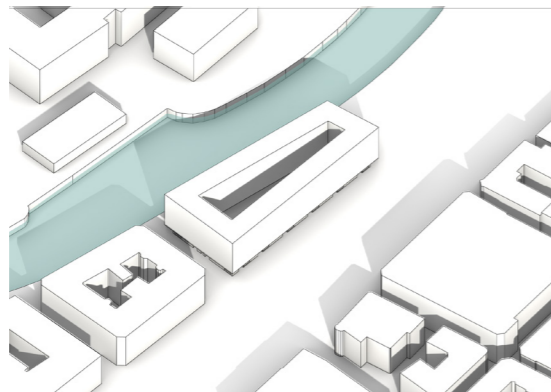
Sunlight and how its dealt with is very essential for the concept. The sunlight should give the maximum amount of daylight without generating overheat or glare. Several solar studies were made to give an understanding of what volumetry and depth in the façade is ideal.



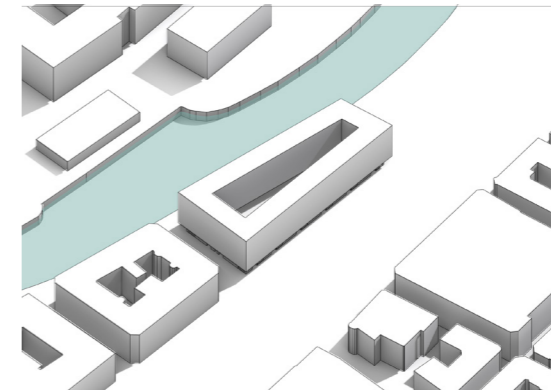
March 21st - 09 AM



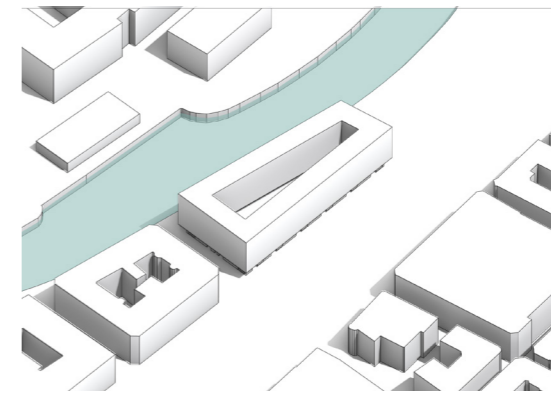
March 21st - 12 AM



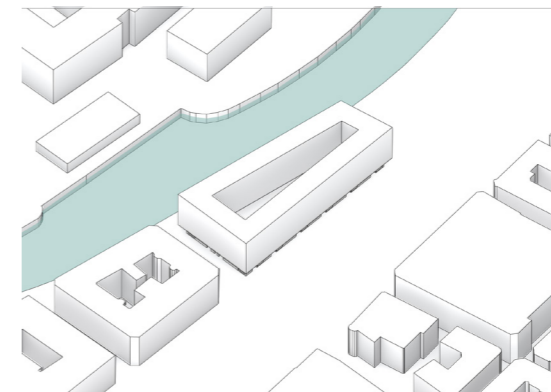
March 21st- 15 PM



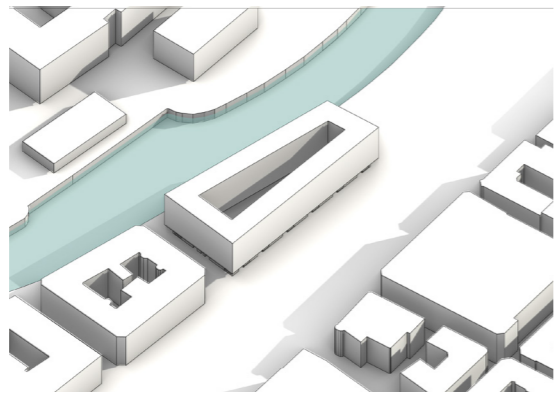
June 21st - 09 AM



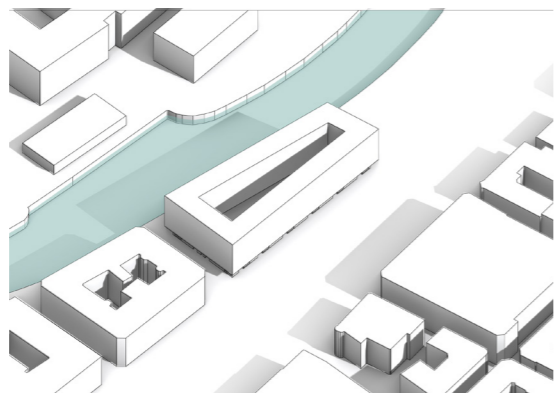
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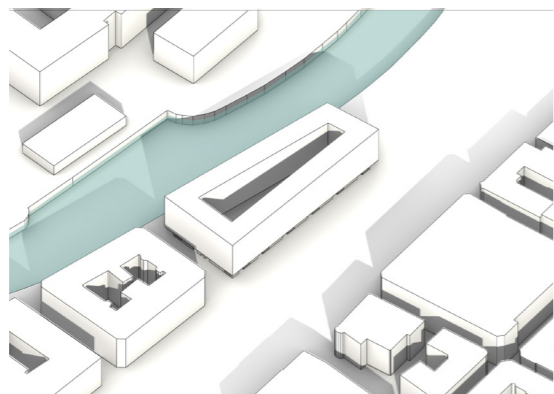
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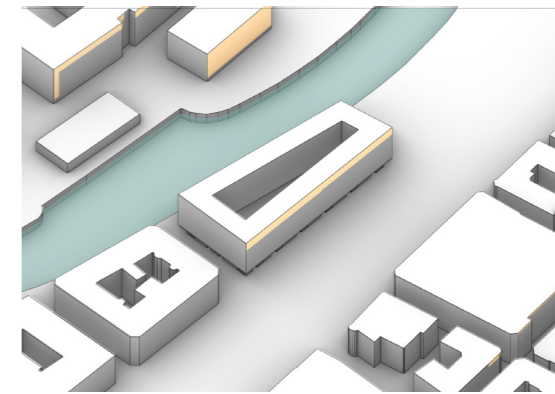
Sep 23d - 09 AM



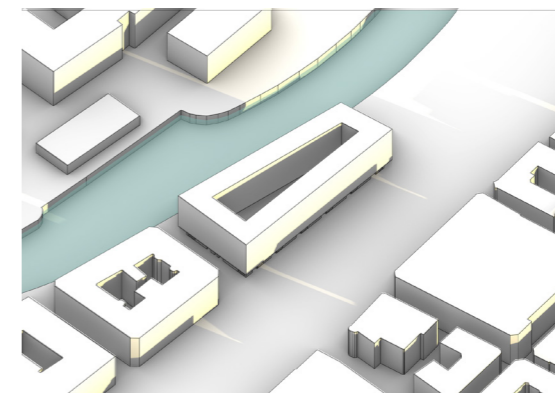
Sep 23d - 12 AM



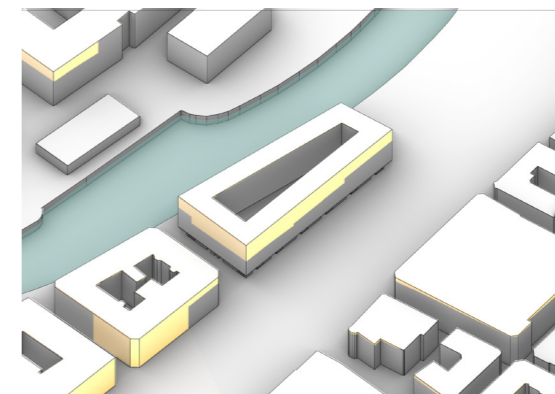
Sep 23d - 15 PM



Dec 21st - 09 AM



Dec 21st - 12 AM



Dec 21st - 15 PM

### Plan iterations

Beside working with solar and volume study several unit plans were generated. Various room compositions and flows were experimented. the process of designing plans and executing solar and volume studies were collateral as they affect each other in a direct fashion.



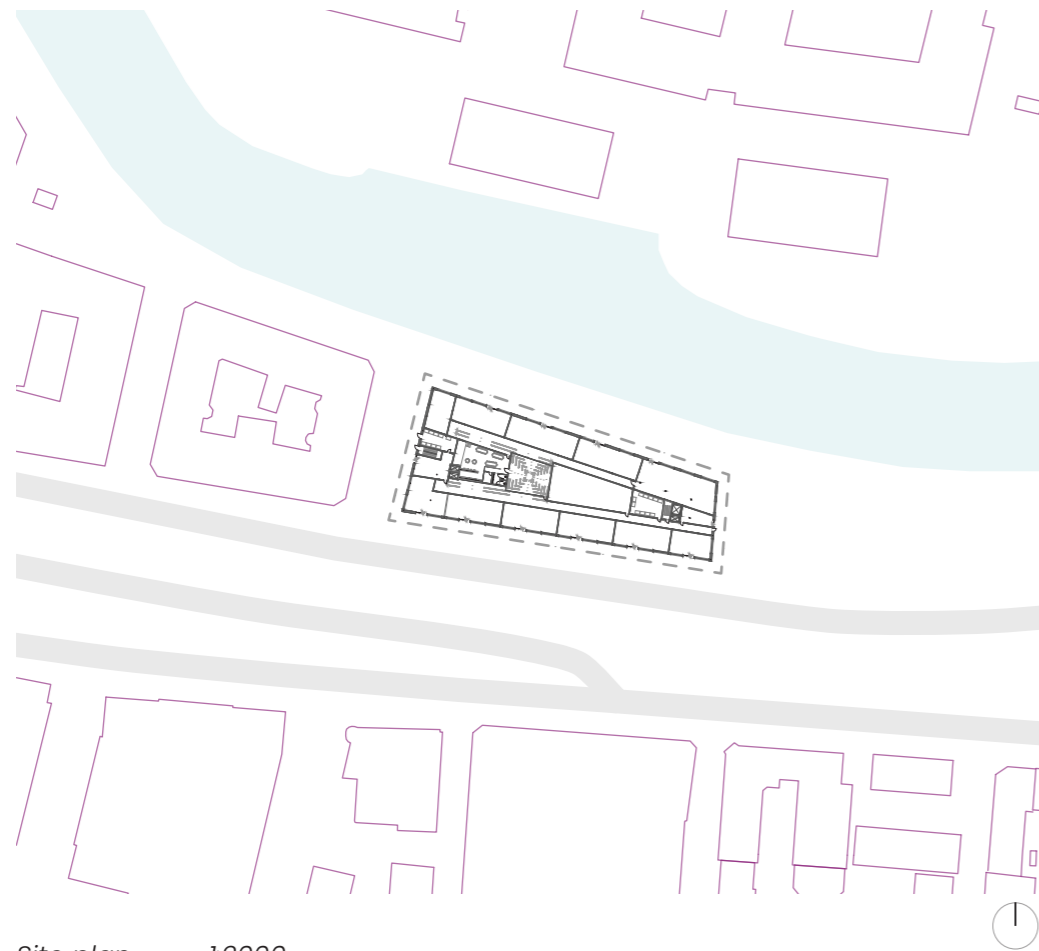
## Part II – Design proposal

## Site plan

Based on the results of the studies and taking the site's characteristics a new volume was proposed.

The ground level will accommodate shops and some commercial enterprises and some technical areas.

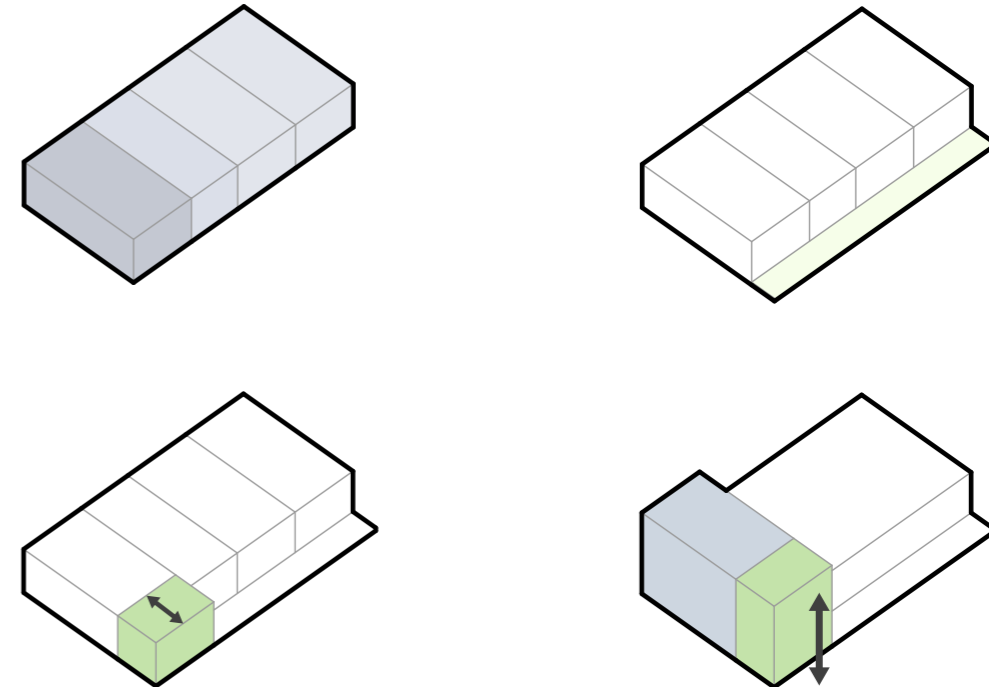
In this proposal the northern part of the building will accommodate the circulation area. Terraces are situated towards south and facing the street.



Site plan 1:2000

## Apartment units

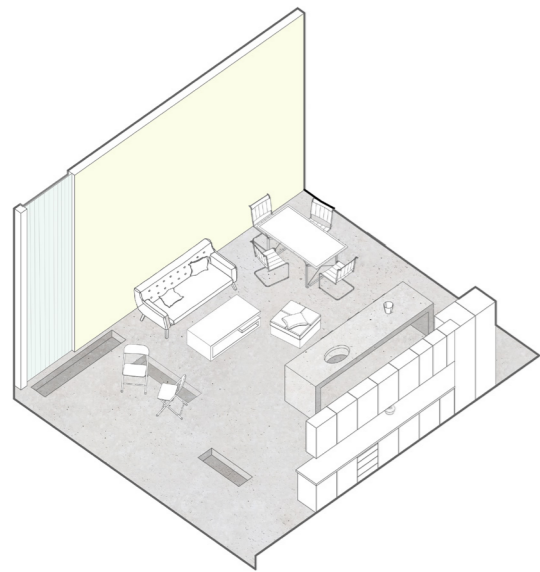
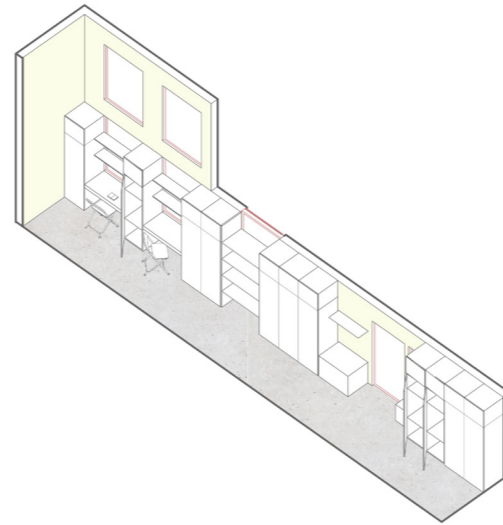
There are two different variants of the apartment units which contain some common qualities and characteristics. A storage/circulation spine along different rooms in the back of the unit connects these rooms to each other. The private functions such as bedrooms and bathrooms are situated in one end and the living room and kitchen on the other end. Towards the street however there is an additional circulation path which functions as the leisure area in the unit. This circulation path in form of balcony functions as an acoustic buffer from the street. The living room along the nature room have double height ceiling and have a direct access.



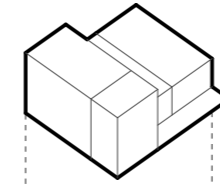
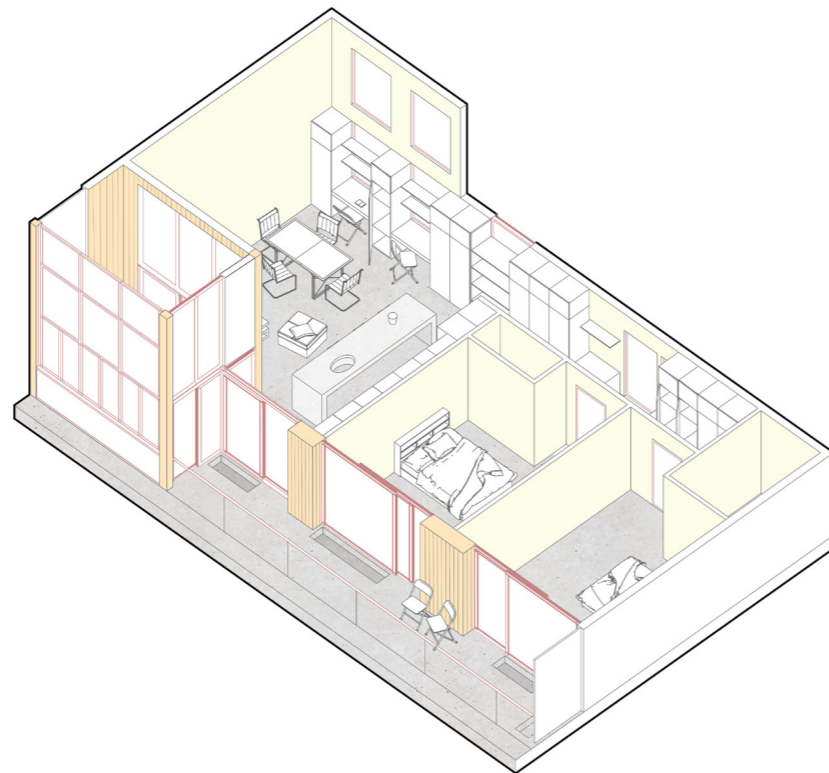
## Floor plans

To create a spacious and harmonic living room, where social interaction occurs the ceiling height has been doubled, however the rest of the apartment has single height ceiling. This has affected naturally the other floors. Therefore, the apartment units are designed into Tetris-like shapes and are stacked on top of each other.

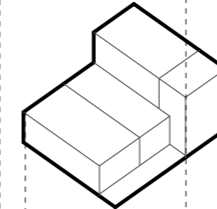
- ◆ Hallway as a connecting path
- ◆ The hallway is equipped with integrated storage, work spaces etc.



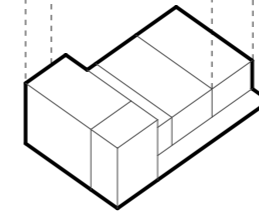
- ◆ Direct connection between the social functions.
- ◆ Double height ceiling
- ◆ Sunlight provided through the generous openings.



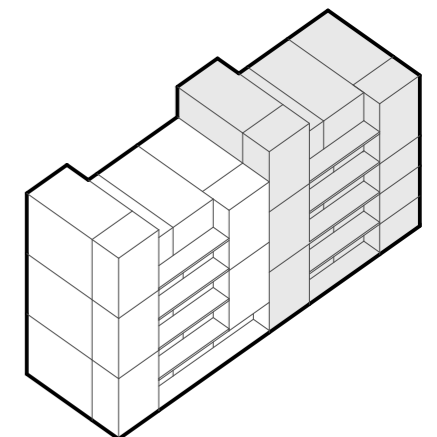
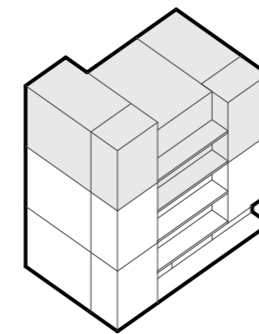
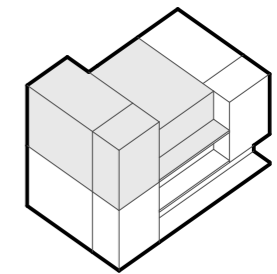
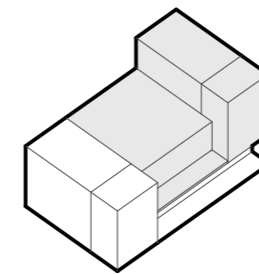
the small units which are stacked on top of the large units fit one bedroom with kitchen, living room and nature room.



In order to make the composition of the Tetris-like units the small units are mirrored and have the double height living room and the nature room on the other end of the unit.



the large apartments on the first floor accommodate 2 bedrooms, a kitchen and a living room alongside the nature room.

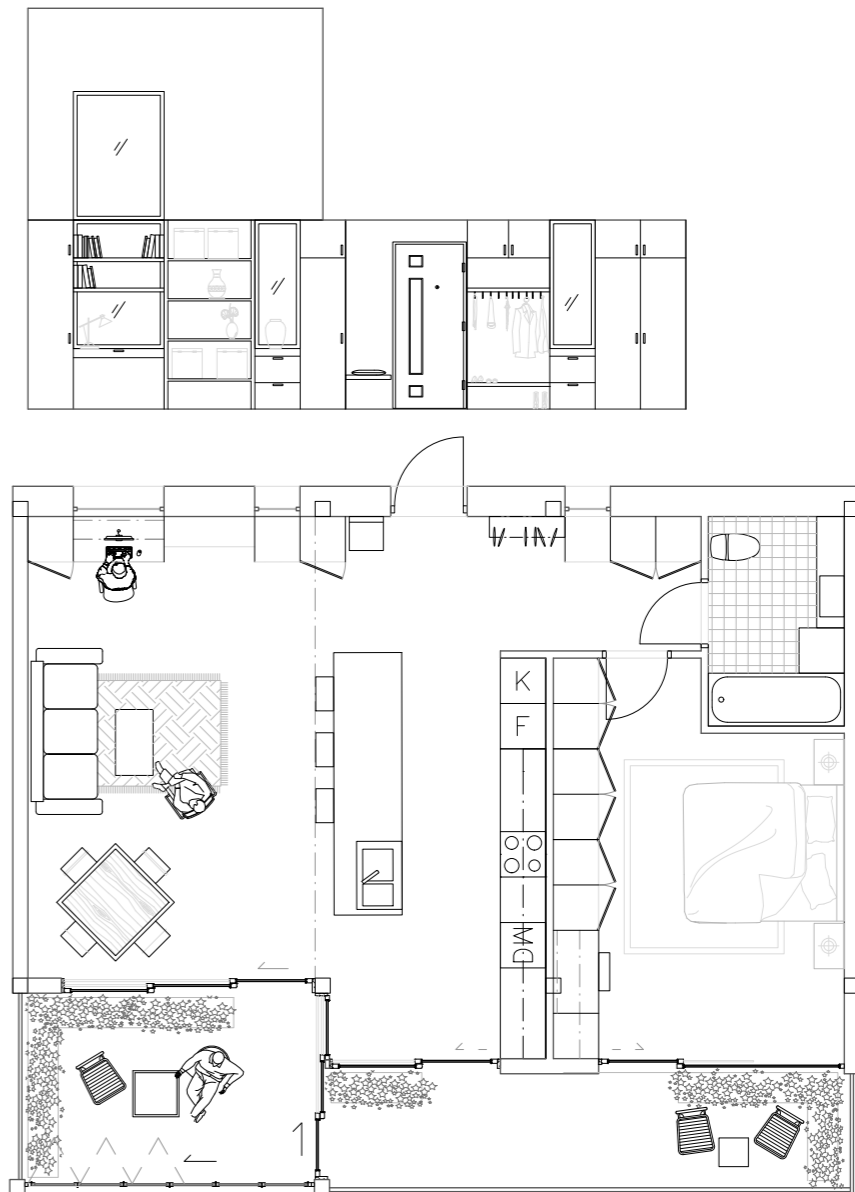


## Storage- circulation

In the back spine of the apartment unit there are a number of integrated storage spaces (wardrobe and shelves) and some other functions such as working space, exit door and cloth hanger. There are also some windows which will create a sense of security and surveillance for other inhabitants which find themselves in the courtyard of the building.



Apartment plan 1:100



Apartment plan 1:100

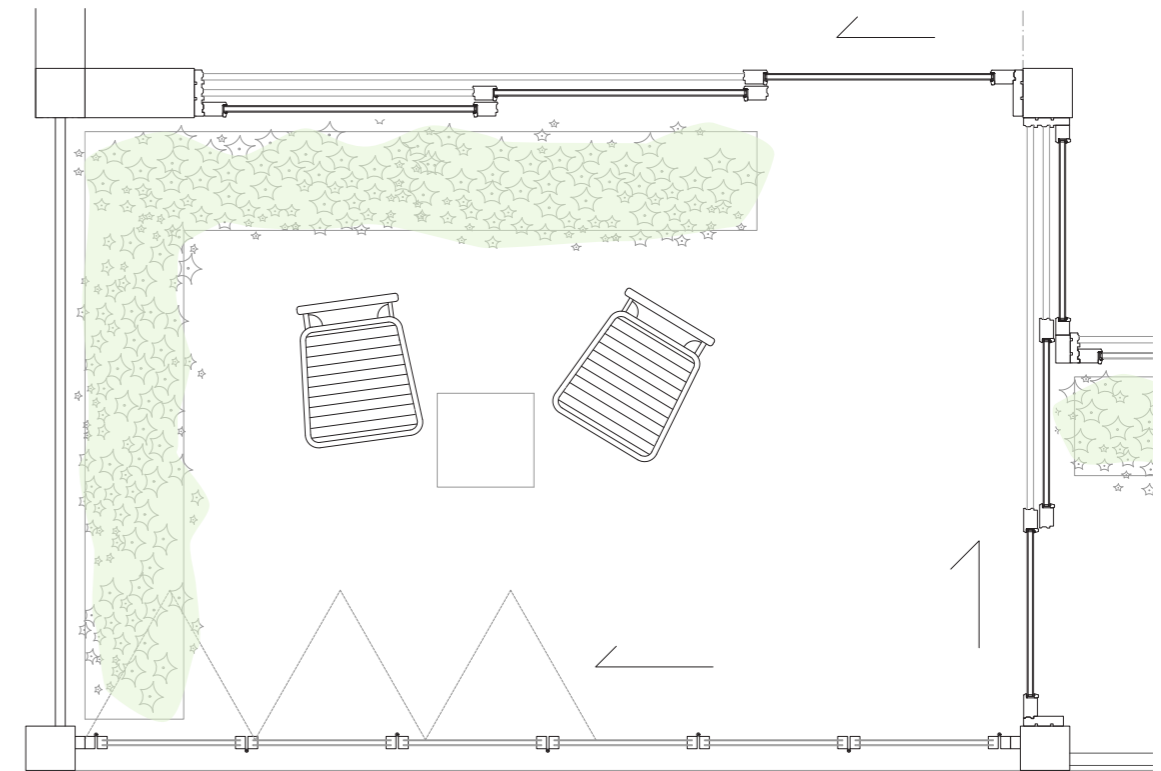
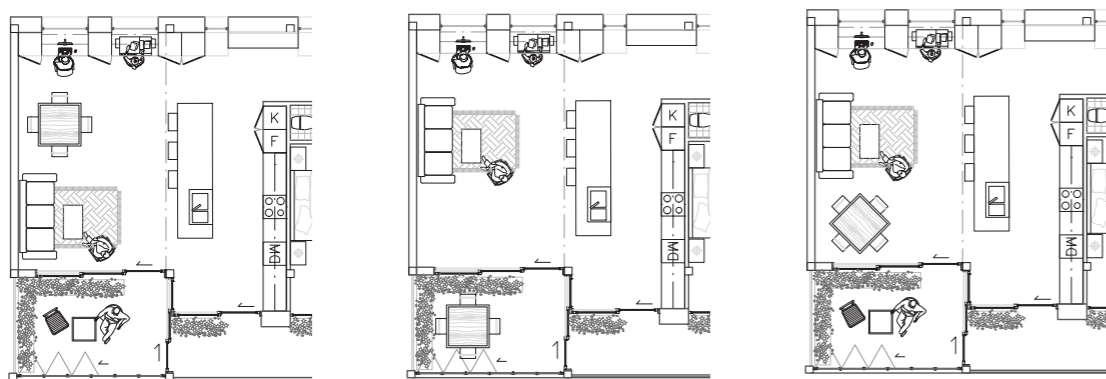
## Balconies

Each unit has access to two balconies. One is glazed and warm and the other is an outdoor balcony which are along the same line. The glazed balcony is equipped by two set of windows, one which is a bi-fold sliding window partitions and the other one is fixed. The bi-fold sliding windows can be pushed aside to the corner of the nature room resulting in a panoramic view to outside.

## Scenarios

The spaces are designed in a flexible manner so they can be furnished in various ways. Here are some alternatives to furnish the living room and the nature room.

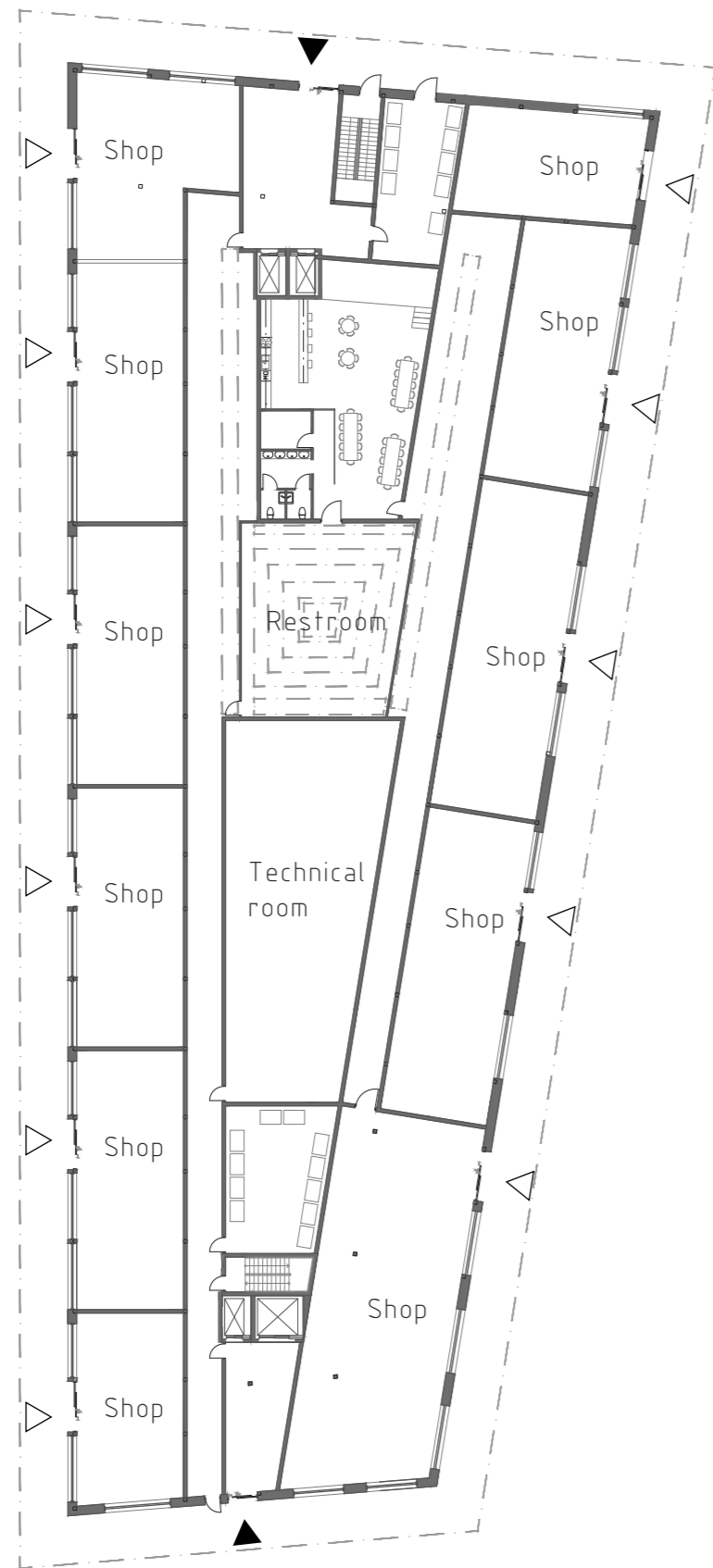
With the kitchen island being primarily used as dining table there is no need for additional dining table but if there are many people living in the household and based on the preferences of the inhabitants, they could place the table in the nature room or even in the generous living room.



Naturrum

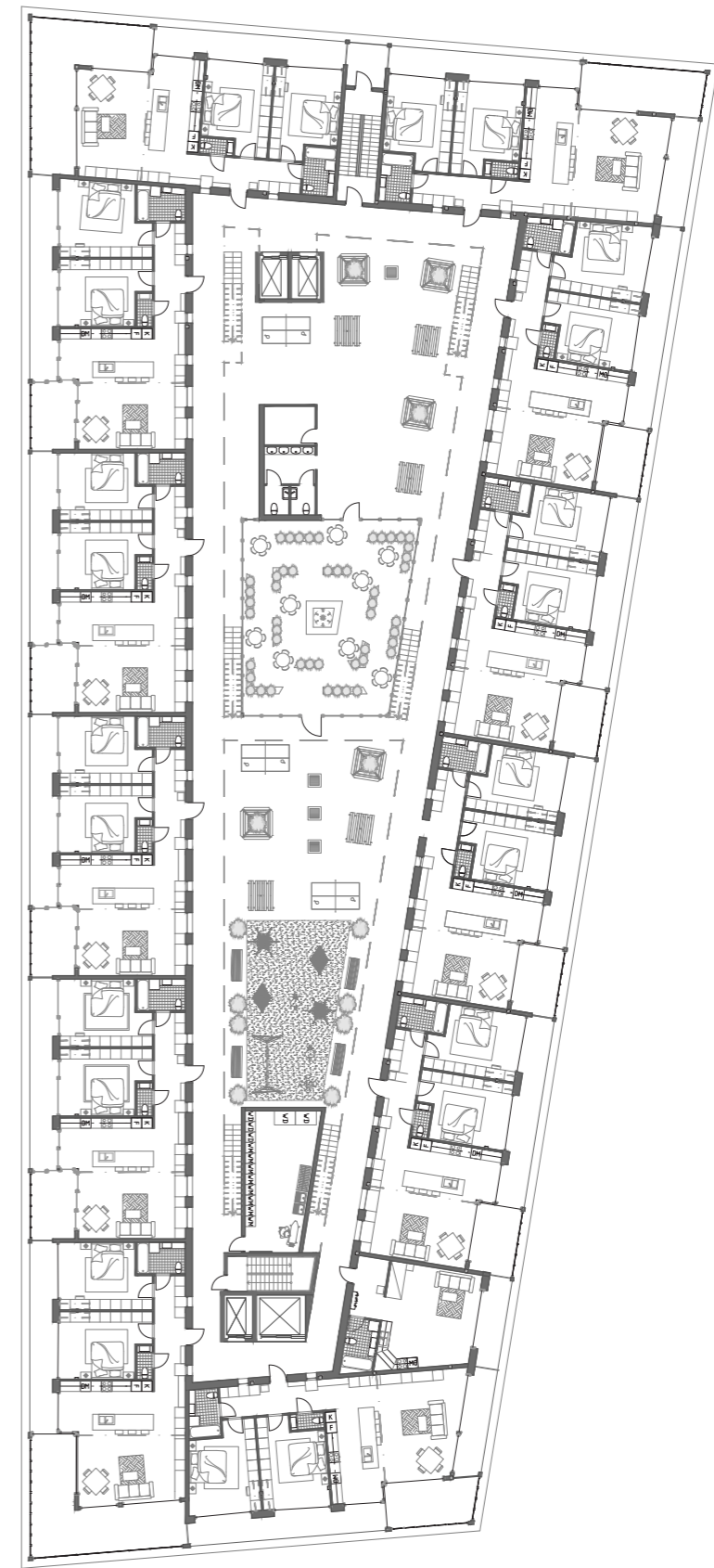


Naturrum and balcony



Ground floor

1:400



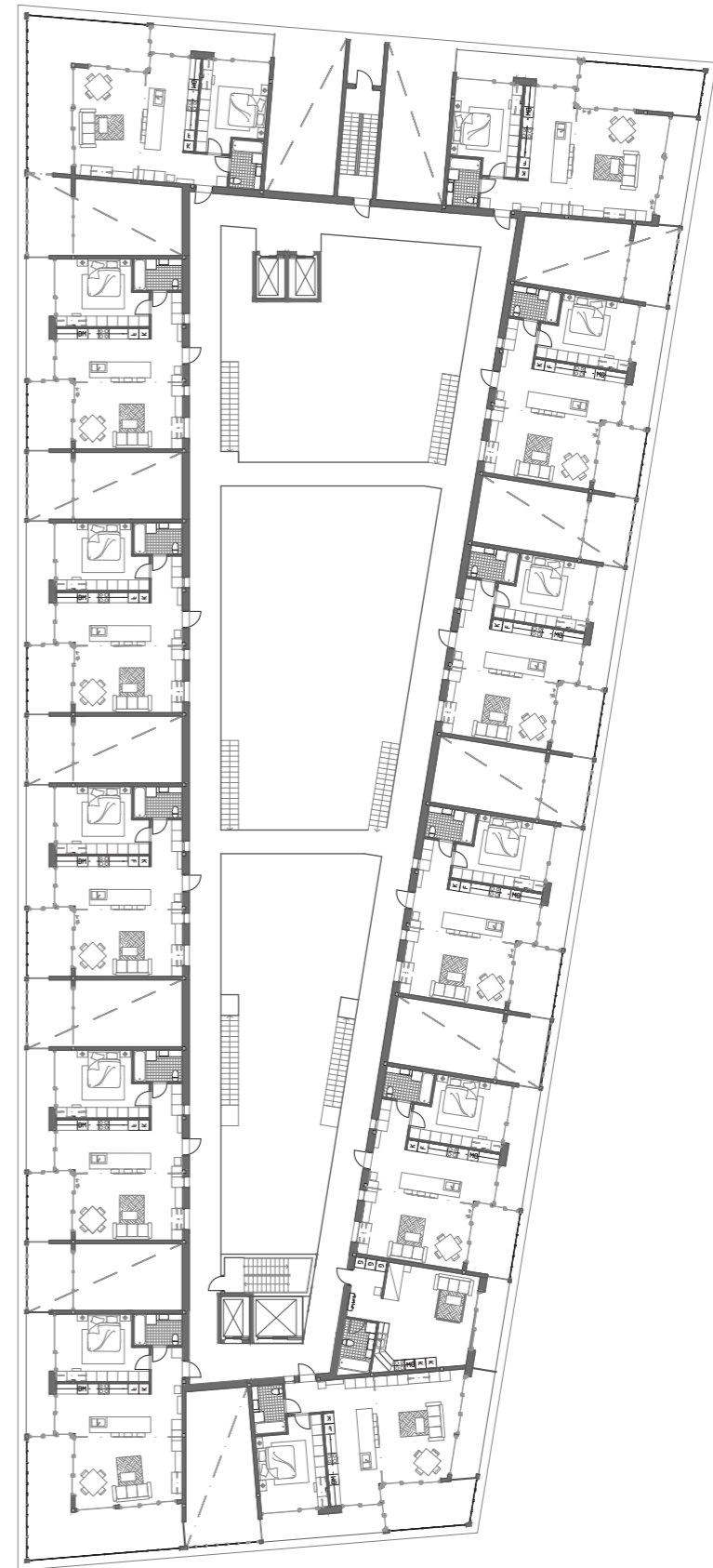
1st floor

1:400



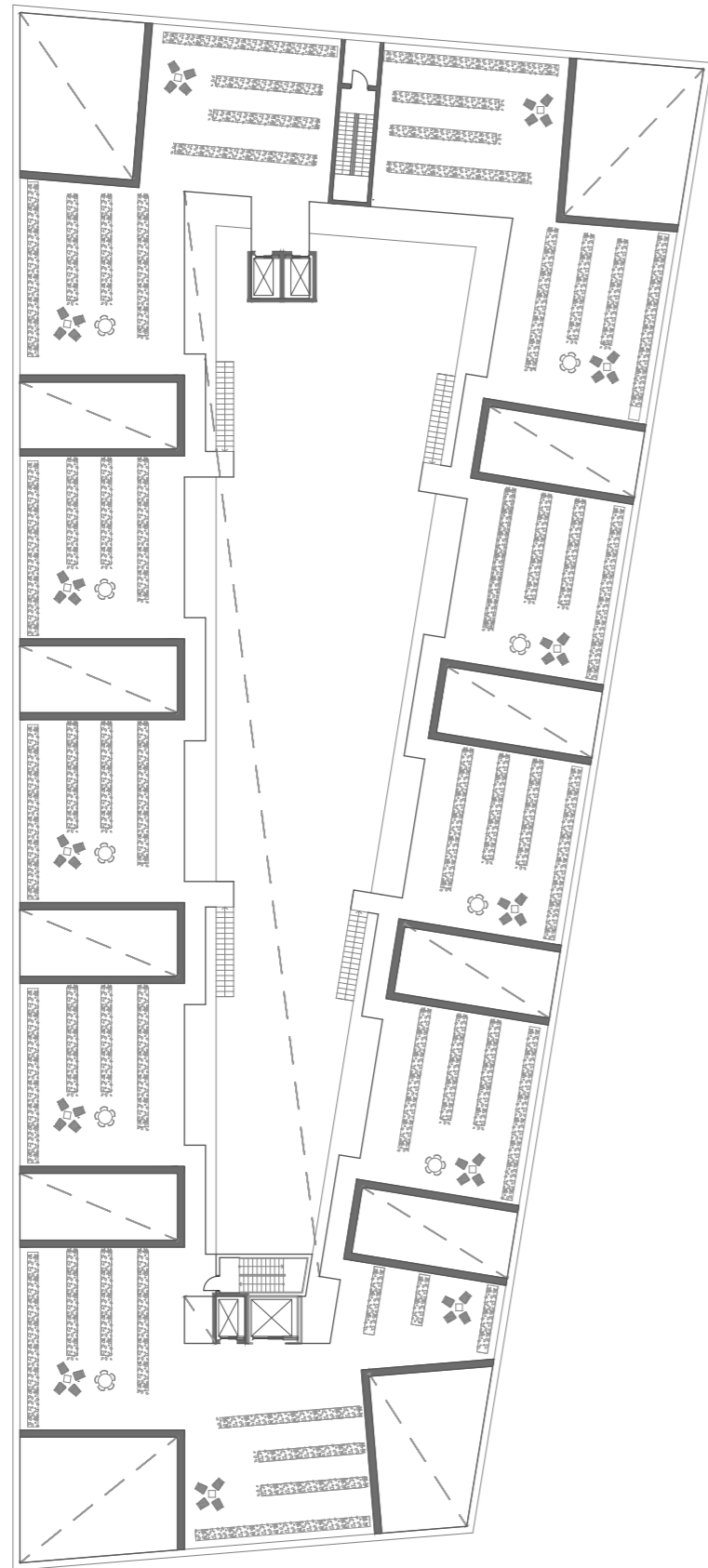


2nd and 4th floor



3th and 5th floor

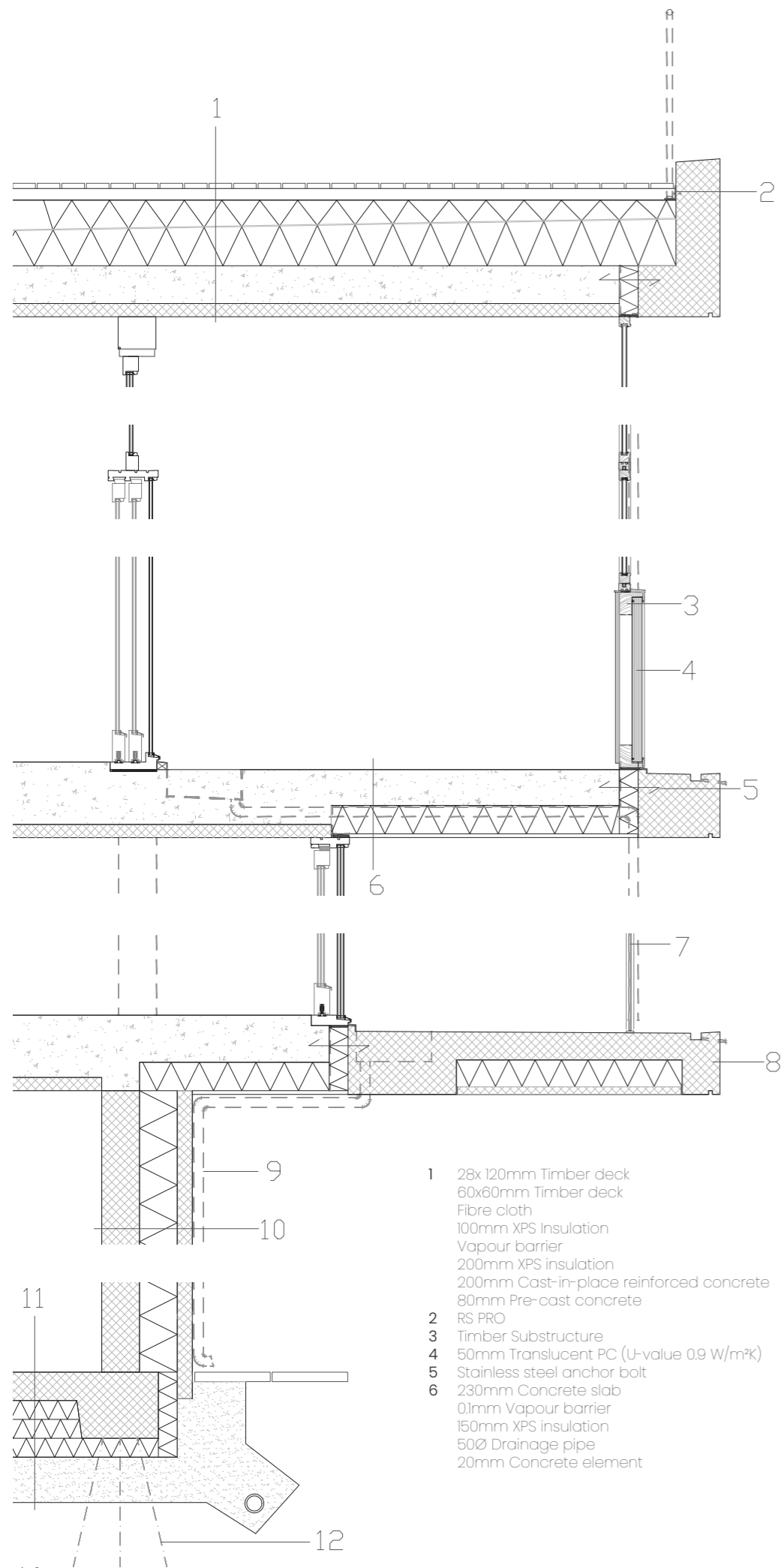




2nd and 4th floor



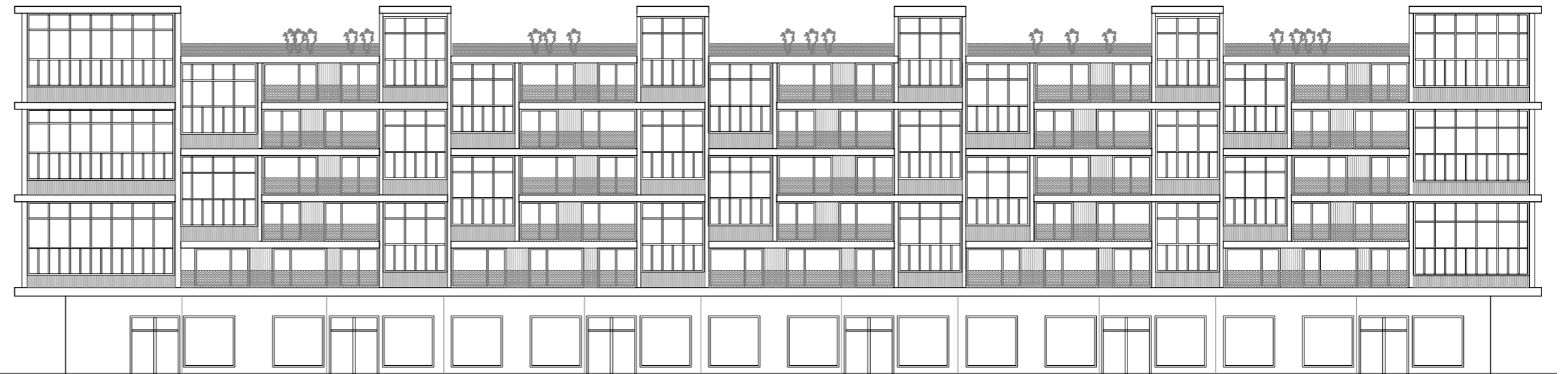
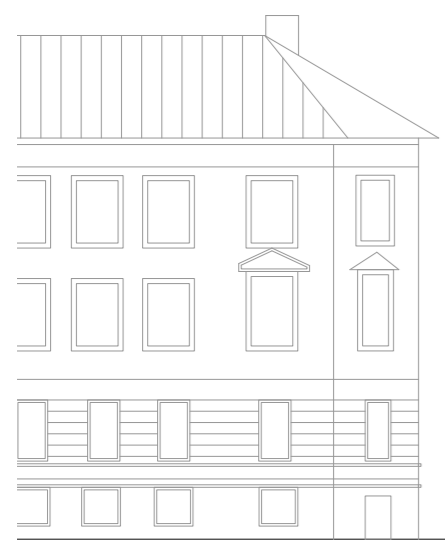
Exterior - south-west facade



Exterior - southern facade



Section 1:500



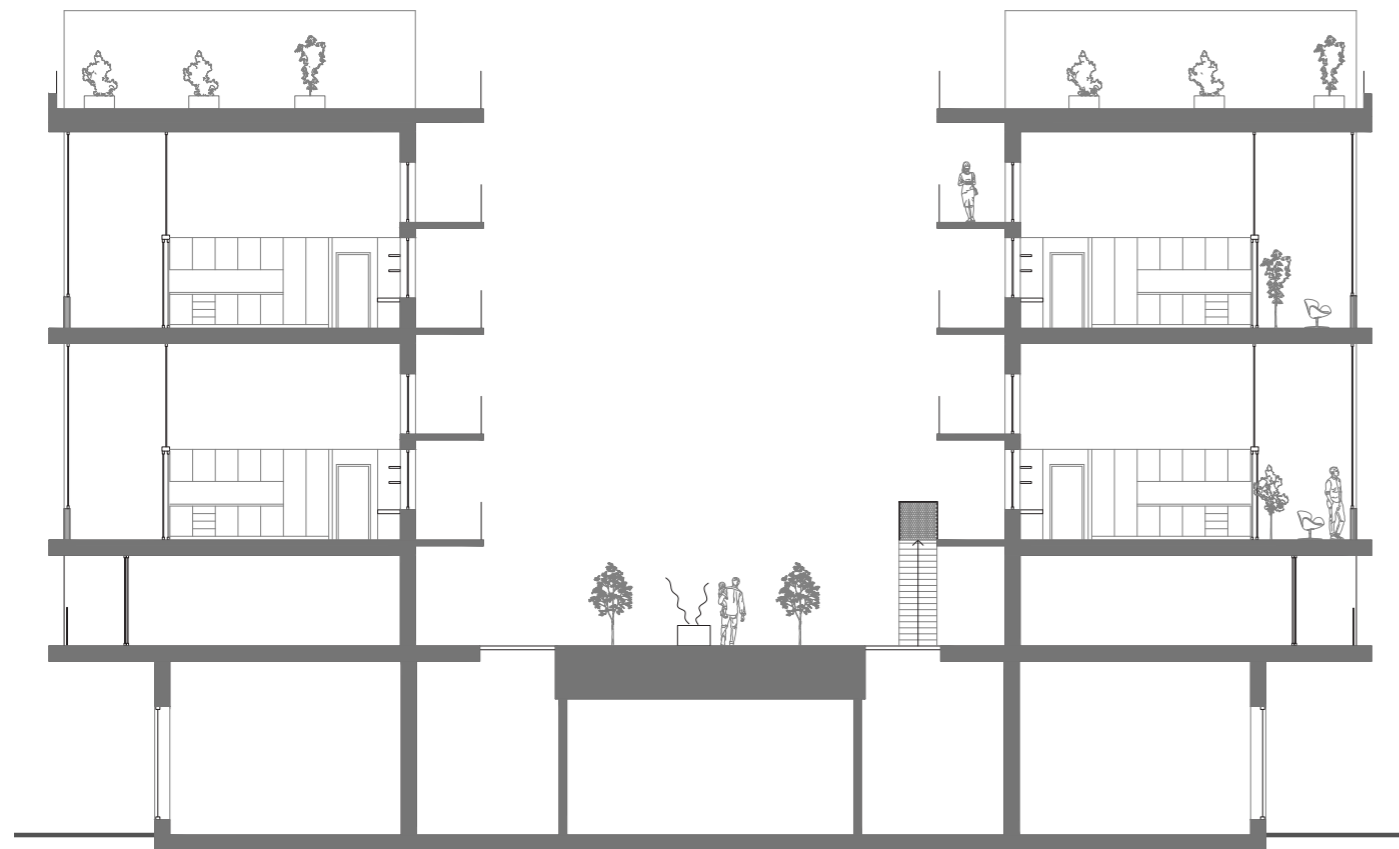
Elevation south 1:300



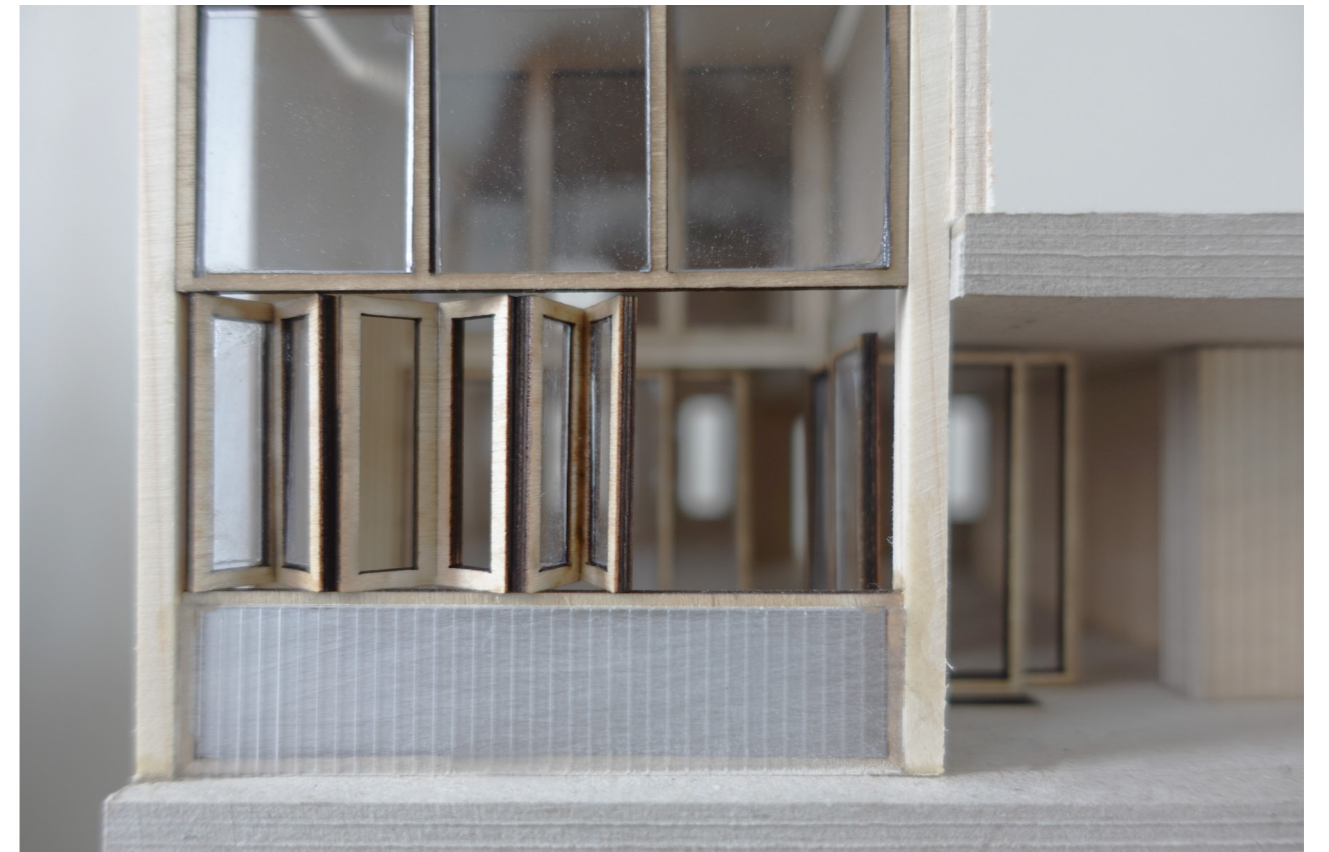
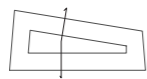
facade west 1:200



Model - Apartment units

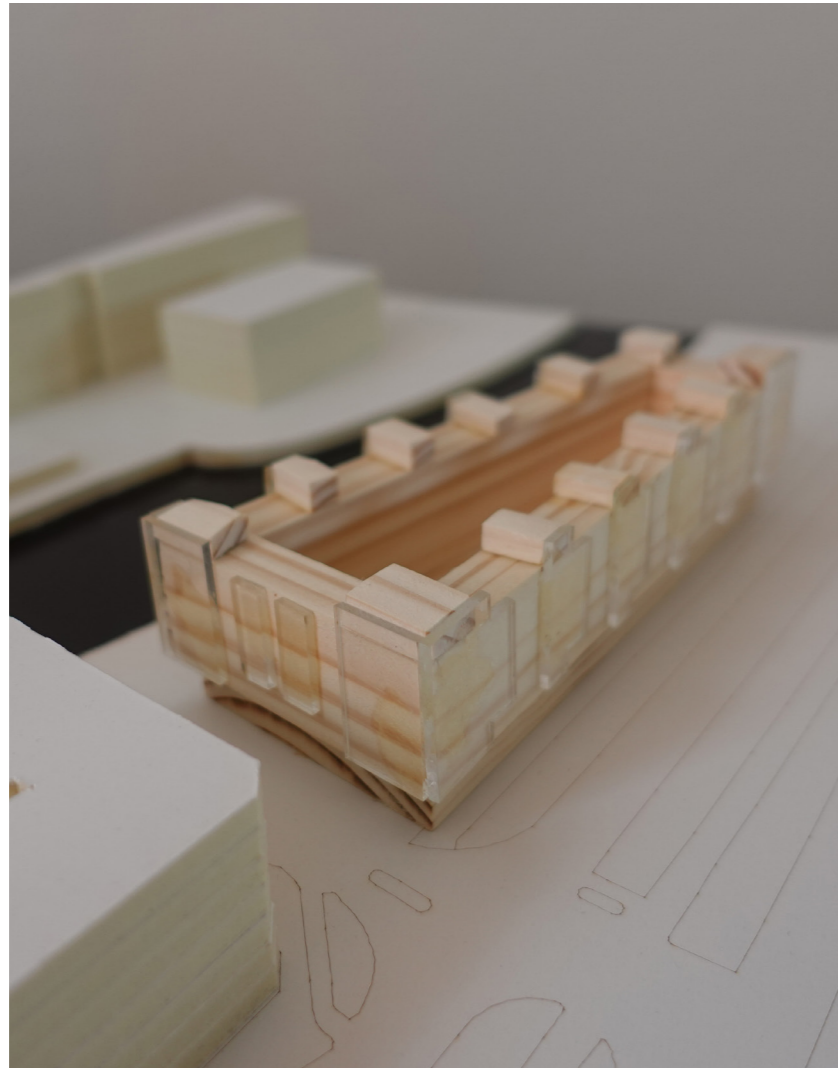


Section 1:200



Model - Naturrum

Model



## Conclusion

In this design proposal the goal was rather to find a balance between an optimal housing project for showcasing the new domestic space, the green living room and the feasibility of the project in terms of economical constraints than only focusing into the ideal proposal for this topic. Not considering the economic aspects the project would have taken a totally different direction. But in reality all the projects are vastly delimited by economic elements, therefore in most of the design dilemmas the financial aspects were of a higher value and was prioritized before other issues.

Explorations regarding defining a new domestic space for recreation isn't something new today. Several architects and developers attempts to implement these ideas into their proposals, has led to "Get a Lott" by Tailormade or their new project in Skellefteå or even Cord Siegel's "E.On huset" in Malmö. In order for this ideas to become reality, however there should happen some changes in the municipality regulations. As Kajsa Crona emphasize in her book "Glasade utrymmen i flerbostadshus" the municipality considers the glazed indoor areas as a living area (BTA) which discourages the investors and developers from implementing these types of domestic spaces. Also as well as the municipality, the developers and investors should also show enthusiasm into this new typology/ indoor recreation space and try to consider the impact of it on the housing quality and health of inhabitants.

However I view it as an conflict of interest that has been going on forever. From the eye of an investor and developers the project should be profitable and lucrative while for architects the value and interest usually lies in the sustainable lifestyle. This conflict of interest is what makes the whole situation very complicated which is perhaps beyond the scope of this work.

Fundamentally having access to a recreation space in our homes is very appreciated by many but it all eventually is depended to the economical freedom of the inhabitants and their demand.

Not a while ago people used to live in and by nature. Human and nature are symbioses and benefiting from each other. Humankind should not forget the essentiality of nature and its impact on us. But also, perhaps as Jean-Baptiste Say states: "supply creates its own demand". General public might realize the importance of going back to nature, going back to "green living room". By designing cities both in a city level and domestic level we could pave the way for developers of the future cities.

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### Images

If not stated, the images belong to the author.

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