

# Hang Out Inside

A possibility of young adults living responding to  
Nordic climate

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**CHALMERS**  
UNIVERSITY OF TECHNOLOGY

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### ABSTRACT

Nordic countries always have a long winter time together with few daylight, strong wind and a lot of rain. This kind of unpleasant weather block people's life to the indoor. So the aim of this thesis is to design an inside hang out space that can support different kinds of activities.

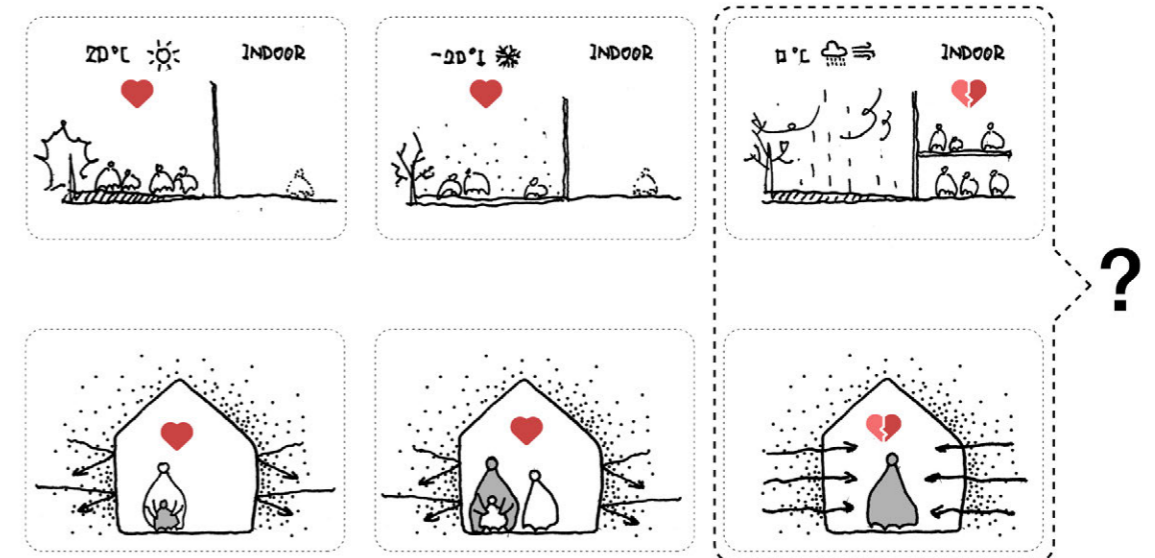
I choose young adults apartment to be the carrier of this inside hang out space. Since young adults who live alone without accompanying families are the group of people who have the demand of this kind of common space to keep away from loneliness and have more exercise in daily life.

The thesis is developed through the method of research for design. Research part focus on what kinds of spatial qualities this inside hang out space should have to face the challenge coming from Nordic climate & young adults and serve as an extended common space in residential building. And then, build prototypes of spatial sequences, spatial scales and connection to outside with the considerations of needed spatial qualities. Design part is based on the research result and prototypes. The site I choose is a young adults apartment plot in an under construction community in Lindholmshamnen developed by Riksbyggens. My project has followed the community plan and the height restriction of the building. The result is an inside hang out space attached to a young adults apartment which can show a possibility of young adults living responding to Nordic climate.

The thesis focus on exploring the relations between space and people's activities, and the additional part is sensory space design. The theoretical background of this thesis is environmental psychology which throughout the entire process.

Examiner: Ola Nylander

Supervisor: Jonas Carlson



# Content

## 1 Background & Concept

1.1 Background	1
1.2 Challenge coming from Nordic climate	2
1.3 Challenge coming from young adults	4
1.4 The concept of “Hang out inside”	5
1.5 Spatial qualities	6
1.6 Reference project	8

## 2 Research

2.1 Common space in residential building	12
2.2 Spatial scales	18
2.3 Spatial sequences	23
2.4 Connection to outside	26

## 3 Design proposal

3.1 Location	31
3.2 The process of design	34
3.3 Site plan	36
3.4 Plans	37
3.5 Sections	40
3.6 Story board	44
3.7 Diagrams	50
3.8 Structure & Material	54
3.9 Details	58
3.10 Renderings	62
3.11 Community network	68
3.12 Model photos	70

## 4 Reflection & Reference

4.1 Reflection	72
4.2 Reference	76



## Background

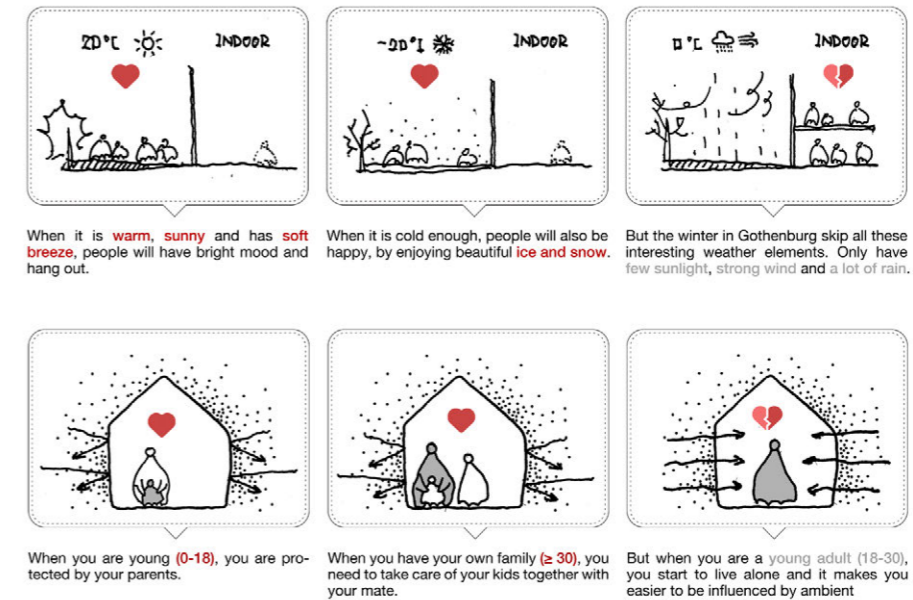


Figure 1. The background story.

My hometown located in Northeast of China, where has really cold winter. The temperature is around -20 to -30 degree. Even though I am really get used to such cold climate, my first Swedish winter was still a hard period of time for me.

I think it has two reasons:

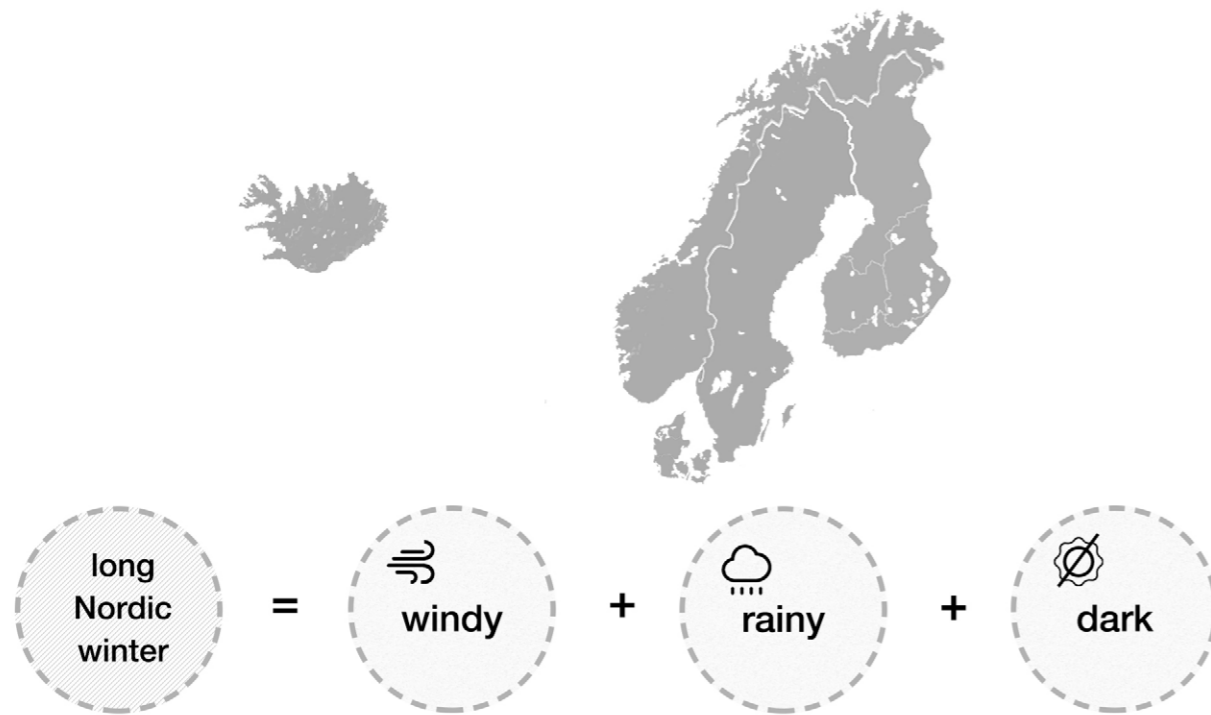
One is the feature of Nordic climate. If it is warm enough, people would like to hangout to enjoy the sunshine; If it is cold enough, people would also like to hangout to play with ice and snow. But if it is in between, together with strong wind, a lot of rain and long night time, it blocks people's life.

The other is my identity – young adults. Most of the young adults live alone, loneliness is an unavoidable problem, especially when the unpleasant weather take away the possibility of hangout with friends.

### Background & Concept

Chapter 1 contains the statement of background, the bringing forward of concept, the claim of aiming spatial qualities and the study of relevant project.

## Challenge coming from Nordic climate

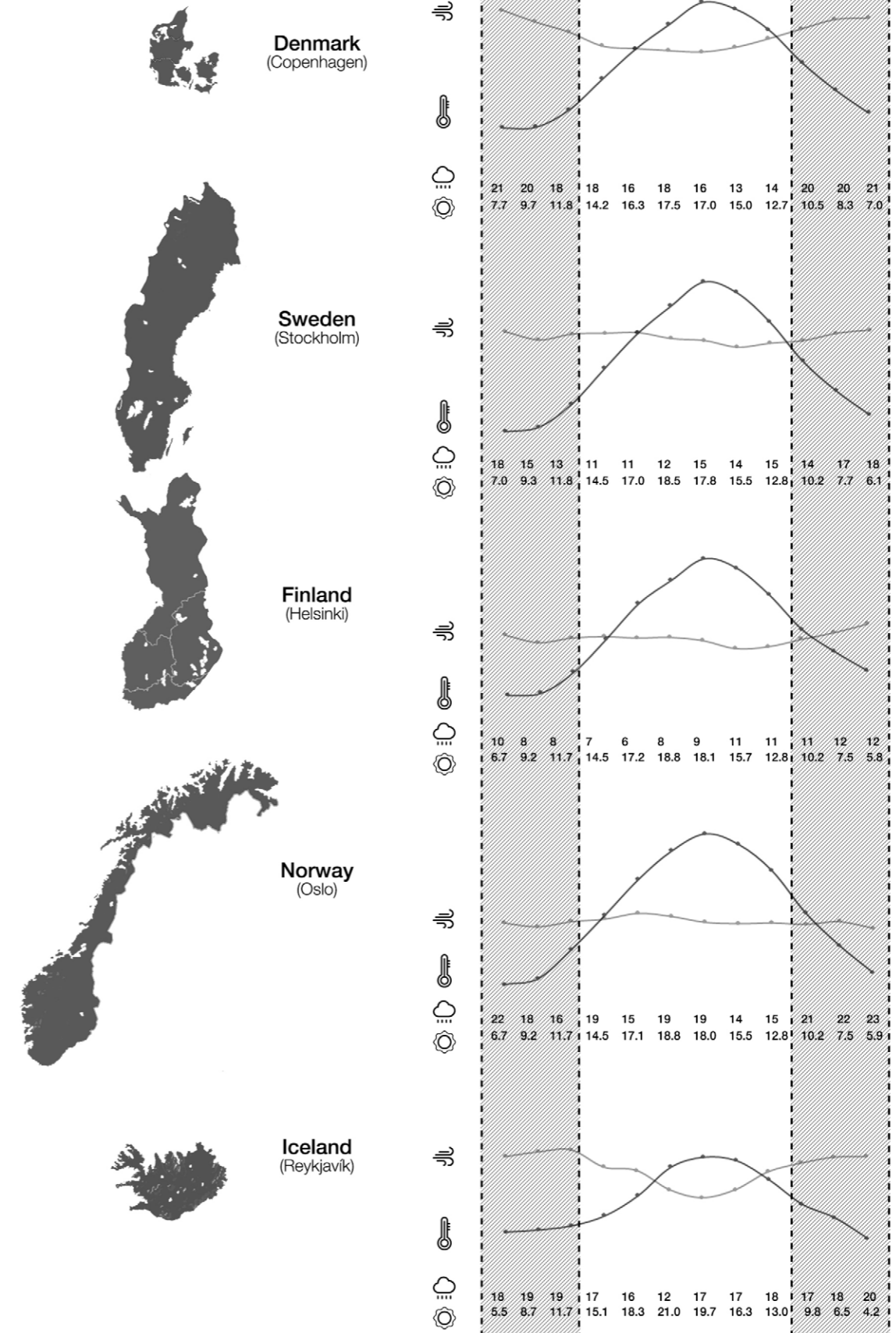


Nordic countries located in the high latitude area (55°N-70°N) have their typical climate features.

South-western parts closed to the ocean belong to the temperate maritime climate zone, southern in-land parts belong to temperate continental climate zone, and northern parts belong to frigid zone. Since the north Atlantic current is strong and coastlines are winding, Baltic Sea go into the in-land area, terrain in western area is relatively flat and mountains mainly go from west to east, so the wind and cyclone coming from west can go deep into in-land area that expand the effects coming from Atlantic. So the southern part of Nordic has the features of temperate maritime climate more or less: mild temperature but rainy all the year around, especially in autumn and winter.

On the other hand, high latitude result in long winter time (nearly 5 months) with few daylight (mostly 4-7 hours per day), and even fewer sunlight due to the cloud and rain.

## Nordic climate data



■ winter

## Challenge coming from Young adults



Most of the young adults would choose a right time to leave home and start to live alone. Live alone means you can dominate your live freely, nevertheless in another hand may cause some problems:

- easily feel lonely or depressed without accompanying families
- have insecure feeling
- feel unbacked when come across emergencies



Young adults are a group of people who have the willing to express themselves and communicate with the other people. The communication involves different levels of contact: with close friends, with acquaintance, with strangers and also passive contact like seeing or hearing other people.



As computers and mobile phones become important things in people's daily life. They are not only make contributions to the entertainment, but also support study and work more and more. This development makes indoors more attractive, especially in days with bad weather. Lack of moving around is really bad for health and also makes people easier to become anxious (do exercise could help people to distract attentions, relieve tensions and depressions).

## Hang out inside

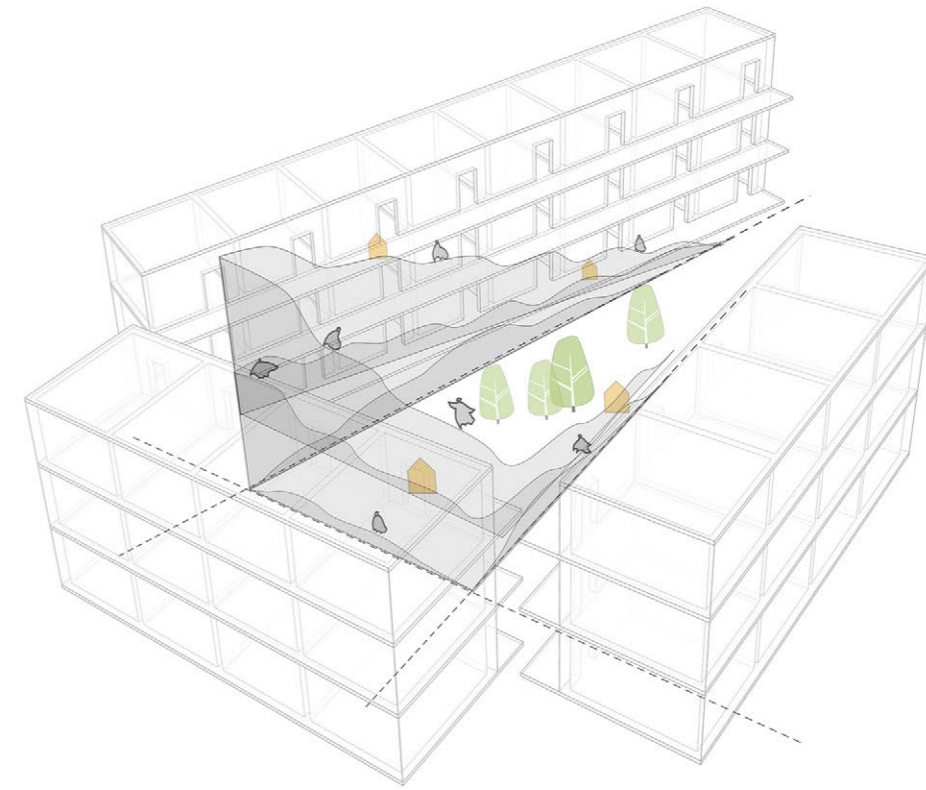


Figure 2. Conceptual drawing.

In general, the challenge coming from Nordic climate is abundant wind and rain, long dark night in winter; the challenge coming from young adults is loneliness, less moving around and having the eager to communicate. Responding to the challenge coming from Nordic climate and young adults, I come up with a concept of "Hang Out Inside" - a shelter space between residential apartment and natural environment.

This inside hang out space aims to:

Provide multiple stages for various activities (rest & relaxing & communication).

Additional parts:

Encourage people to feel the rain with the help of some weather experience space.

## Spatial quality

### Responding to the Nordic climate

protect people  
from rain and wind

Rain and strong wind are the two factors that would block people from hanging out (except necessary ones). Rain and wind could also cause lower sensible temperature by increasing the air humidity and the evaporation rate. So, protect people from rain and wind is necessary to increase the utilization frequency and comfortable rate of the space.

catch the light

Since Sweden has long winter time with few daylight and even fewer sunlight, with the addition of cloud and rain, light is really rare. So try to catch the light is important in project design. Besides having bigger size of glass window/wall that can receive the direct light, getting the refracted light by mirror or water or glass can also be a useful method to catch light.

utilize  
the "bad weather"

People don't like the so-called bad weather is because it bring inconvenience to people, the weather itself is not bad at all. I will try to get use of the bad weather elements (rain, wind, dark.....) to show their potential energy. Nature has the ability of healing and pacifying people and also can bring people inspirations.

create  
warm feeling

Psychological warm feeling could fight against the physical cold to a certain extent. From building's aspect, use warm material with warm color; provide a sense of being protected. From people's aspect, bring people closer to each other.

## Spatial quality

### Responding to the Young adults

eliminate  
the loneliness

- Provide the possibility of having various activities, include enriching the activities done by one's own, with close friends, with acquaintances, with neighbours, with people from outside.
- Promote the relationship in neighbourhood. Bring people closer to each other by physical or passive contact.

encourage  
communication

- Encourage communication doesn't mean to force people to chat with other people, but provide the comfortable and encouraging communication stage without disturbing people's willing of being alone.
- Provide relaxing environment.
  - Use the appropriate spatial scale.
  - Combine the public with privacy.

encourage  
moving around

- Encourage people to move around more, is not only good for people's health, but also provide people a possibility to come across more interesting things.
- Provide attractions to encourage people to move around.
  - Provide diversified moving around path.
  - Eliminate the invasion feeling during moving from one place to another.

## Reference project



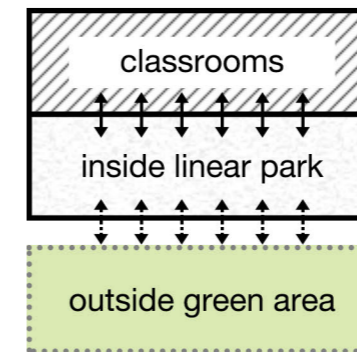
Figure 3. Retrieved from <http://www.archdaily.com/616637/sou-fujimoto-lead-team-selected-to-design-ecole-polytechnique-learning-centre-in-paris>

## Flexibility, Mingling and Openness

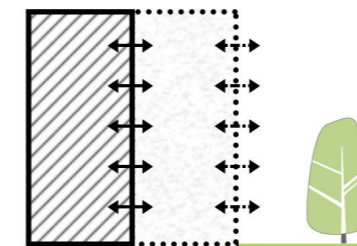
New learning center at paris' ecole polytechnique

By SOU FUJIMOTO ARCHITECTS, Manal Rachi OXO, Nicola Laisne

This learning centre is around 10000 m<sup>2</sup>, consist of lecture halls, classrooms and specialized classrooms. A linear park is connected to each functional area through stairs together with different levels' platforms. "Inside, a wide atrium is inhabited by the light vegetation and a series of walkways and staircases creating numerous informal spaces for teachers, students and visitors allowing new places to meet or work. These platforms, the 'spontaneous amphitheatres' and the classrooms are united under one roof providing promiscuity and privacy in an intimate relationship with nature.", the team describes, "People won't pass each other in corridors anymore, but meet in vivid places, in a unique space bathed in soft light, with surprising and changing views."



The inside linear park located in between functional area (lecture halls & classrooms) and outside green area ( lawns and partly wooded). On one hand, served as an extension part of classrooms, on the other hand, import the outside scenery into the building.



The inside linear park is covered by transparent glass which can import sunlight & scenery, build up an intimate relationship with nature, and also provide a feeling of openness.

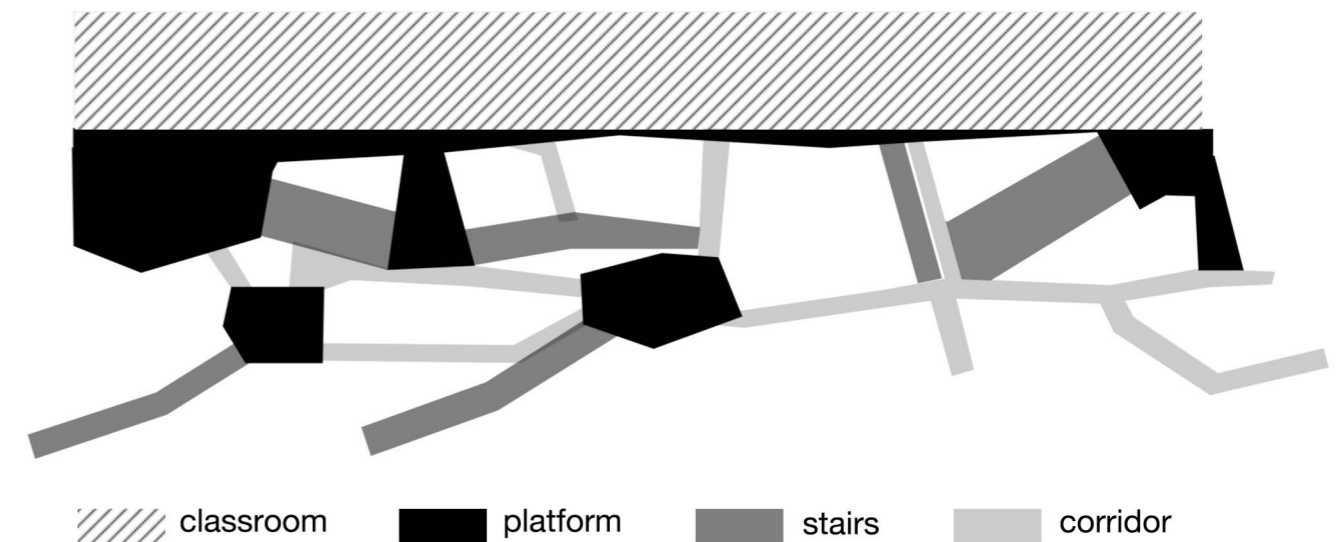


Figure 4. Communication system. Based on the image from <http://www.archdaily.com/616637/sou-fujimoto-lead-team-selected-to-design-ecole-polytechnique-learning-centre-in-paris>

The "spontaneous amphitheatres" has three layers - platform, stairs and corridor. These three elements crossing with each other and create various informal meeting space, and also changing view when people ramble in this "theatre".



## Reference project



Figure 5. Retrieved from <http://www.archdaily.com/616637/sou-fujimoto-lead-team-selected-to-design-ecole-polytechnique-learning-centre-in-paris>

### Inspirations:

This inside linear park is an extended corridor, it makes great contribution to the communication in this study centre. After meeting and seminar happened inside the classroom, people have the place to do some extra discuss or some informal chat instead of just pass and leave. People without any specific purpose can also step into the building to meet and communicate with other people. Tables and chairs are for study, work and relatively long and planed meeting. Stairs and corridors are for spontaneous and relatively short and unplanned meeting.

- A strong location - in between of functional area and outside
- Combine with vertical communications in order to have high use efficiency.
- Transparent material
- Different layers interated into each other to create variuos meeting space.
- Break the huge space into small scale ones to be multiple, protective and private.
- The connection to the outside makes the boundary between outside and insde become vague, people can step back and forth freely.

### Rejections:

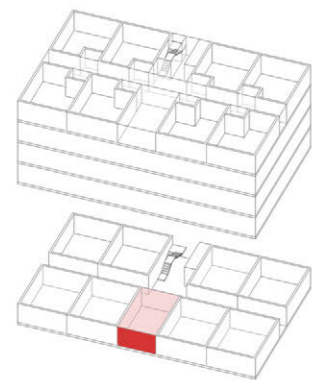
- The outside extension part may block the light, it is not very suitable in sunshine scarce Nordic.
- Although the unordered placement of platform, stairs and corridor could create a lot of unique meeting space, but it is a kind of out of control. I will try to do something various but controlled.
- Trees grown inside may be hard to survive.



## ***Research***

*Chapter 2 shows the research I have done and how have I applied it to the project. The research focus on common space in residential building, spatial scales, spatial sequences and connection to the outside.*

## A study of common space in residential building small scale



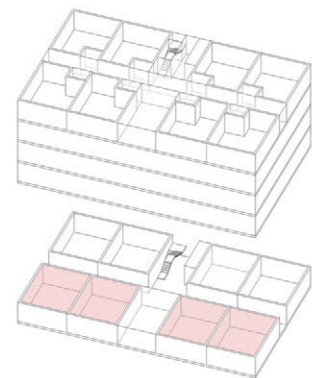
### Entrance (with additional space)

Amount of users

Duration of stay

Activity type

Space description Normal Entrance area is a pass-by and temporary rest space. To create more social activities- extend the entrance hall to provide people a warm space in cold area; extend the rain shelter to provide people a sunshade and rainshade space in hot and rainy area.



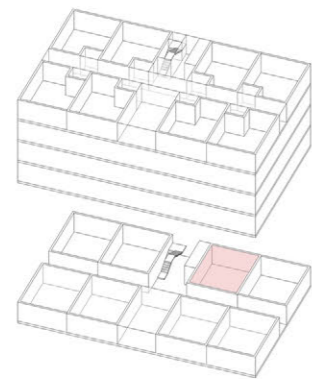
### Commercial area

Amount of users

Duration of stay

Activity type

Space description A place to know the people living in the same district. The design should take care of the flow of inhabitants and the other people.



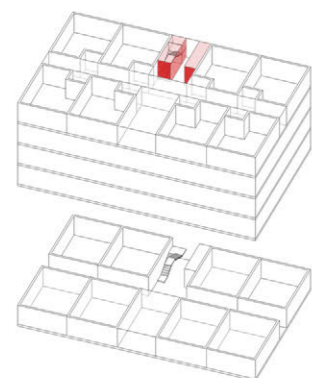
### Common room (kitchen, game room.....)

Amount of users

Duration of stay

Activity type

Space description Common kitchen is for planned activities between friends. Game room can be a possibility to encourage neighbours with similar interests to get to know each other and have fun together.



### Staircase / elevator

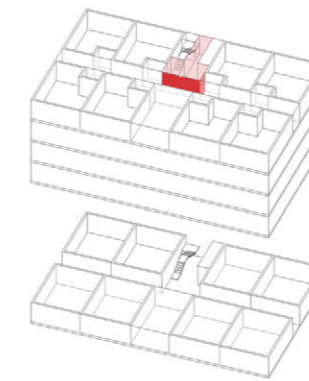
Amount of users

Duration of stay

Activity type

Space description Staircases and lift are the important vertical communication area. It could become attractive social area if extend the platform, import the sunlight, well decorate and furniture the space.

## A study of common space in residential building small scale



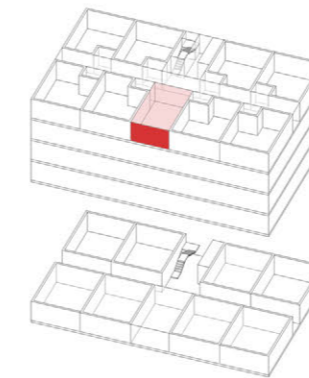
### Lift hall

Amount of users

Duration of stay

Activity type

Space description Most of the lift halls are dark and narrow. Some visual contact with the courtyard or the atrium could make these area more lively.



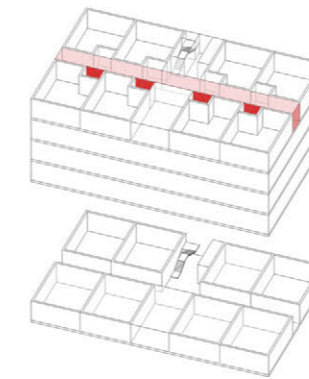
### In-between platform

Amount of users

Duration of stay

Activity type

Space description It is shared by the people living in the same floor. The scale and interior layout is very important. It should either be big enough for several activities (groups), or small enough for only one activity (group).



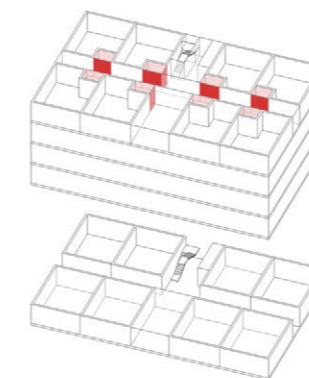
### Corridor

Amount of users

Duration of stay

Activity type

Space description People don't like to stay in a uniform corridor even though it is wide enough. Make some convex-concaves, combine with apartment entrances, staircases or corridor turning. A transition space can eliminate people's invasion feeling.



### Space before the door

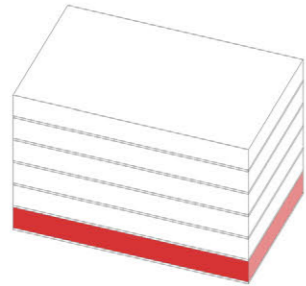
Amount of users

Duration of stay

Activity type

Space description A self-decorated semi-public area could improve inhabitants' sense of belonging. Its location and scale means it is not for long conversation. It is used as a say-hello space or a passive contact space.

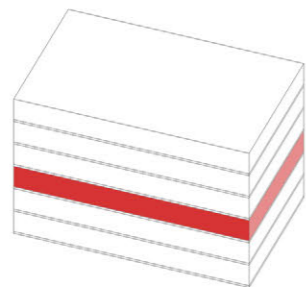
## A study of common space in residential building big scale



### Stilt Floor

Example: Unité d'Habitation, Marseille

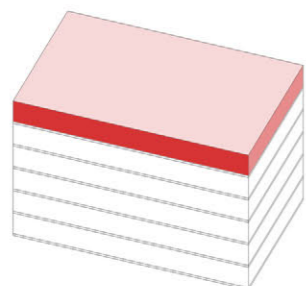
- Pros**
  - Suit for hot and rainy area. Sunshaded, rainshaded and good for ventilate, damp proofing.
  - Eliminate the trouble of ground-floor living's visual and noise disturbance.
- Cons**
  - Central part is dark and oppressive.
- Proposal**
  - Design the edge. Use water, landscape, installations, recreational facilities to invite people come into the space.



### Common Floor

Example: Some Japanese apartments

- Pros**
  - Equal for the upper and lower floor inhabitants.
  - Provide a possibility of multiple activities.
- Cons**
  - Central part is dark and oppressive.
  - Hard to access. It is not on people's daily necessary route.
- Proposal**
  - Well divide the space and design attractive activities.

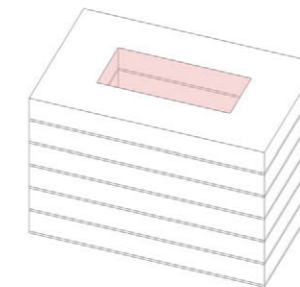


### Roof garden

Example: Unité d'Habitation, Marseille

- Pros**
  - Abundant sunshine, great view
  - Planted roof or shelter on the roof makes contribution to the building's heat insulation.
- Cons**
  - Hard to access.
- Proposal**
  - Make it visible and easily access.
  - Use step-back terrances to improve the spacial diversity and accessibility.

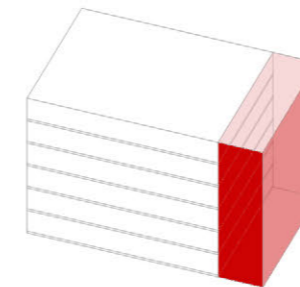
## A study of common space in residential building big scale



### Atrium garden (surrounded on three/four sides)

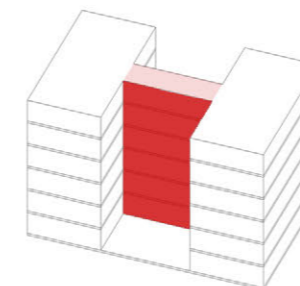
Example: Bovierans vinterträdgård

- Pros**
  - Easy to access. Also has strong visual contact throughout the whole building
  - Promote the communication between different floors.
  - Combine the social activities with vertical communication, has high using frequency.
  - All the apartments facing the atrium garden, has stronger sense of belonging.
- Cons**
  - Enclosed form cause noise problem.
  - Not good for ventilation



### Corner garden

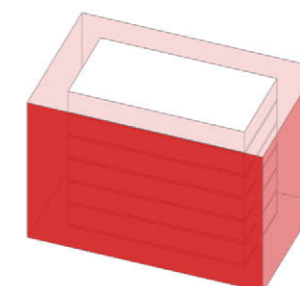
- Pros**
  - Have strong connection to the ambient.
  - If combine with vertical communication, it will have high using frequency.
- Cons**
  - Not very easy to access.
  - Sunlight and view depends on its orientation.
- Proposal**
  - Combine with vertical communication and entrance.



### Connective corridor

Example: Park Hill, Sheffield/ 8 House, Denmark

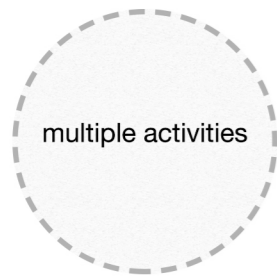
- Pros**
  - Break the barrier between buildings in one community.
  - Create a safe (without vehicle) and shaded ramble space. Encourage people to have more exercise.
  - Could merge different functions (kiosk, restuarant..... ) into the connective corridor.
- Cons**
  - Monotonous.
- Proposal**
  - Design mutiple and attractive activities.
  - Open or enclosed depends on the local climate.



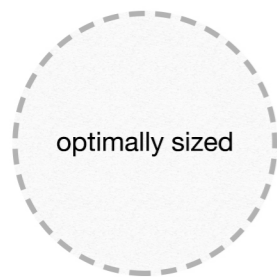
### Greenhouse

Example: Sundby naturhus

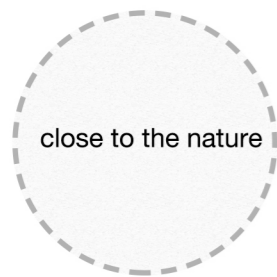
- Pros**
  - Have pleasant (artificial) climate all the year around.
- Cons**
  - High technology.
  - Not natural ventilation and lighting. Lose the sense of seasonal and weather variation



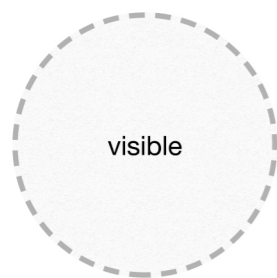
- a. Multiple activities in one space. A space where multiple activities happening at the same time is more attractive and vibrant. People could jump from one to another stage, and different people could mix together.
- b. Flexibility. A space that has the possibility to support different activities with different arrangement has higher usage frequency.
- c. Meet people's different demands.



- a. Different types of activities between people with different relationships corresponding to different spatial scales.
- b. An optimal size means it should be neither too big to let people feel nervous, nor too small to let people feel depressive; either big enough for several groups using it at the same time, or small enough for just one group to use it.
- c. Not only space, but also furniture.



- People have the inborn willing of getting close to the nature. A place with trees and flowers, soft wind, warm sunshine, pleasant birds singing will be very attractive.
- a. Import the nature into the indoor space through view, sound, and physical touch.
  - b. Build relation between indoor and outdoor. Weaken the separation between in and out.



- a. A visible space help people to judge the property of this space - Is it okay for me to step in? Will I interpret other people? Is there anything interesting?
- b. A visible space is more appealing to other people. People has the willing of to see and be seen. People are the most attractive attractions to people.

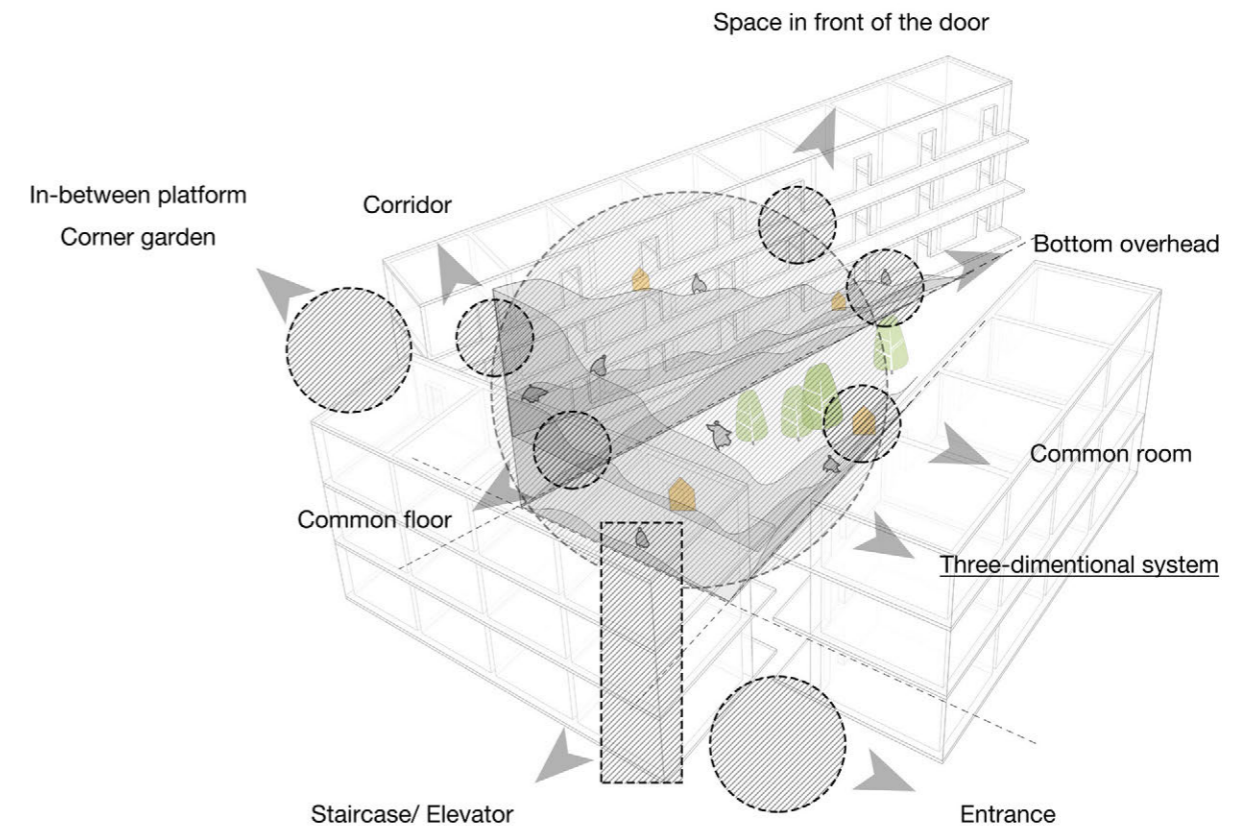


Figure 6. Conceptual drawing 1. Apply appropriate common space qualities on the project.

Find out a list of qualities that an attractive common space should have, then merge these qualities into the hang out space.

## Spatial Scale

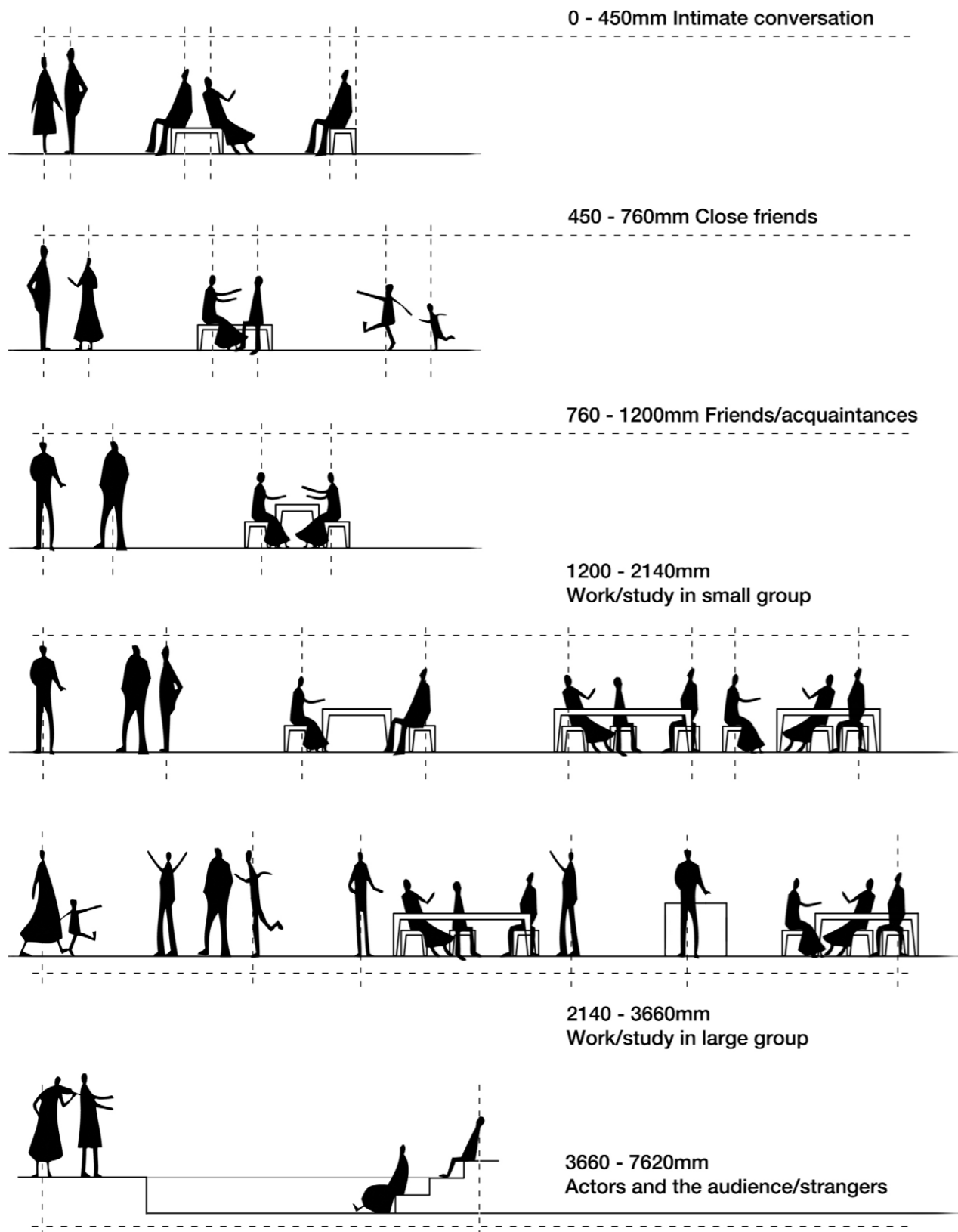


Figure 7. Relationship of distance and activities. Sketch people come from SANAA.

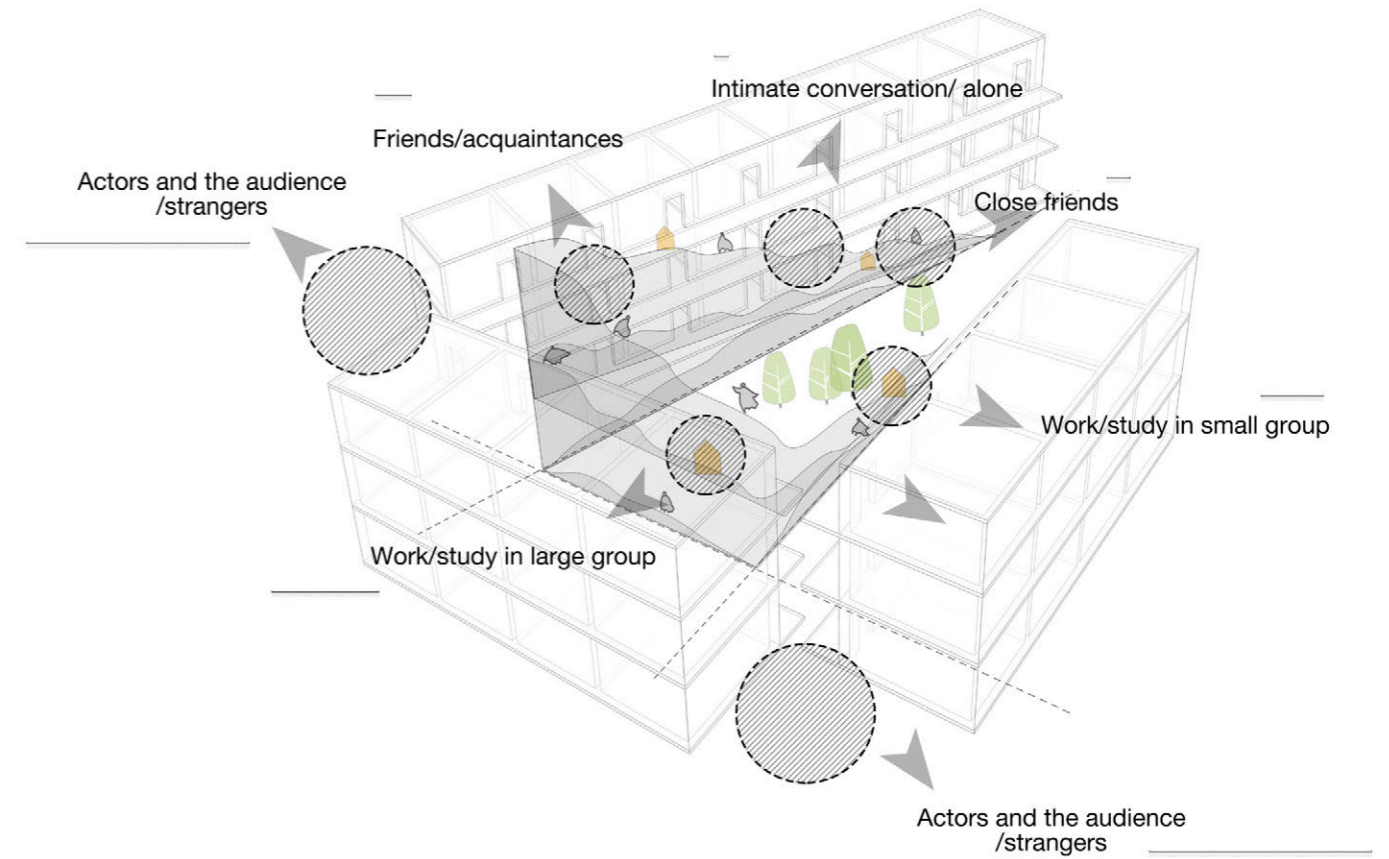


Figure 8. Conceptual drawing 2. Apply appropriate spatial scales on the project.

Pick different scales for different activities I want to support.

## Spatial Scale

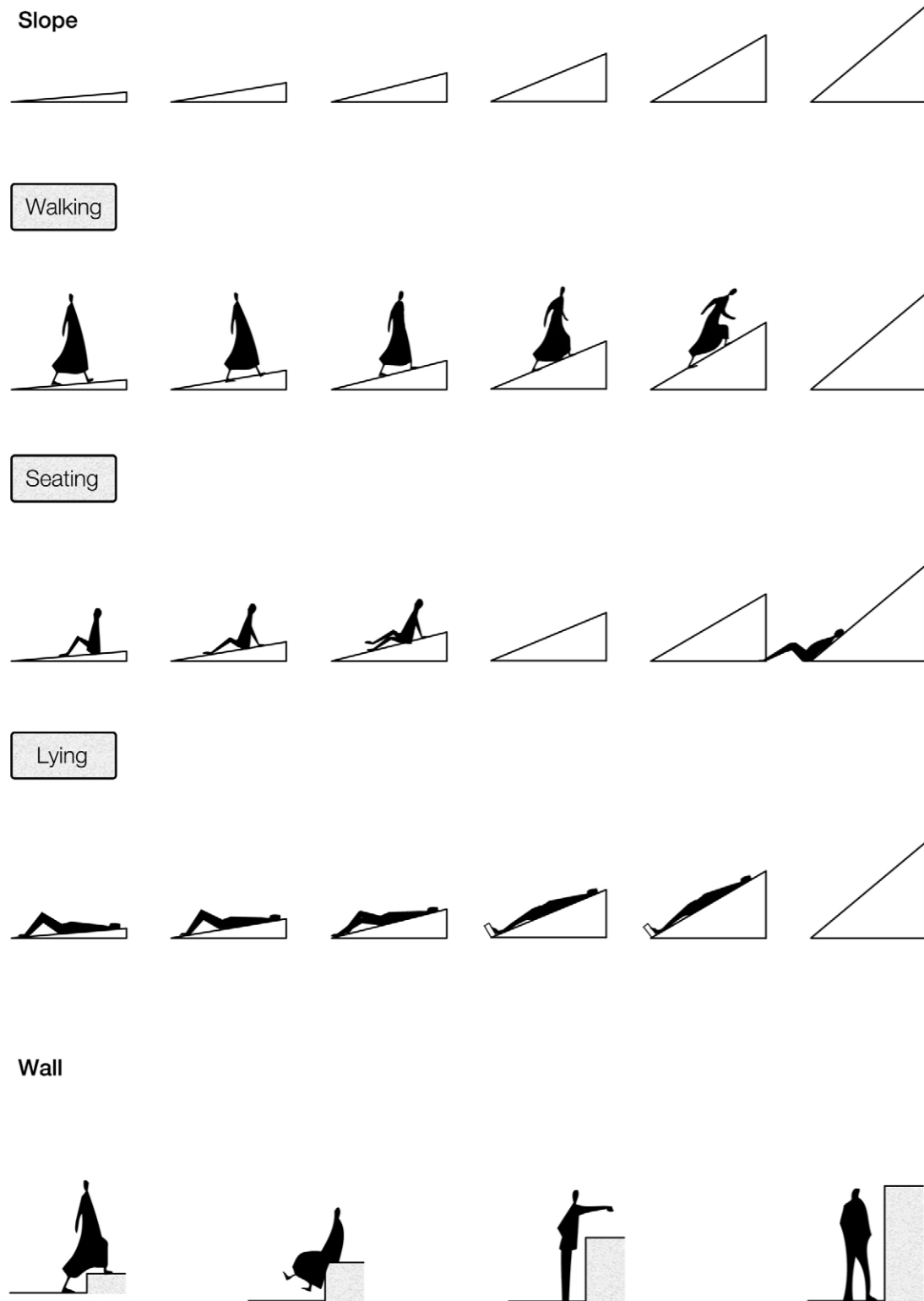


Figure 9. Relationship of slopes/ wall and activities. Sketch people come from SANAA.

## Spatial Scale

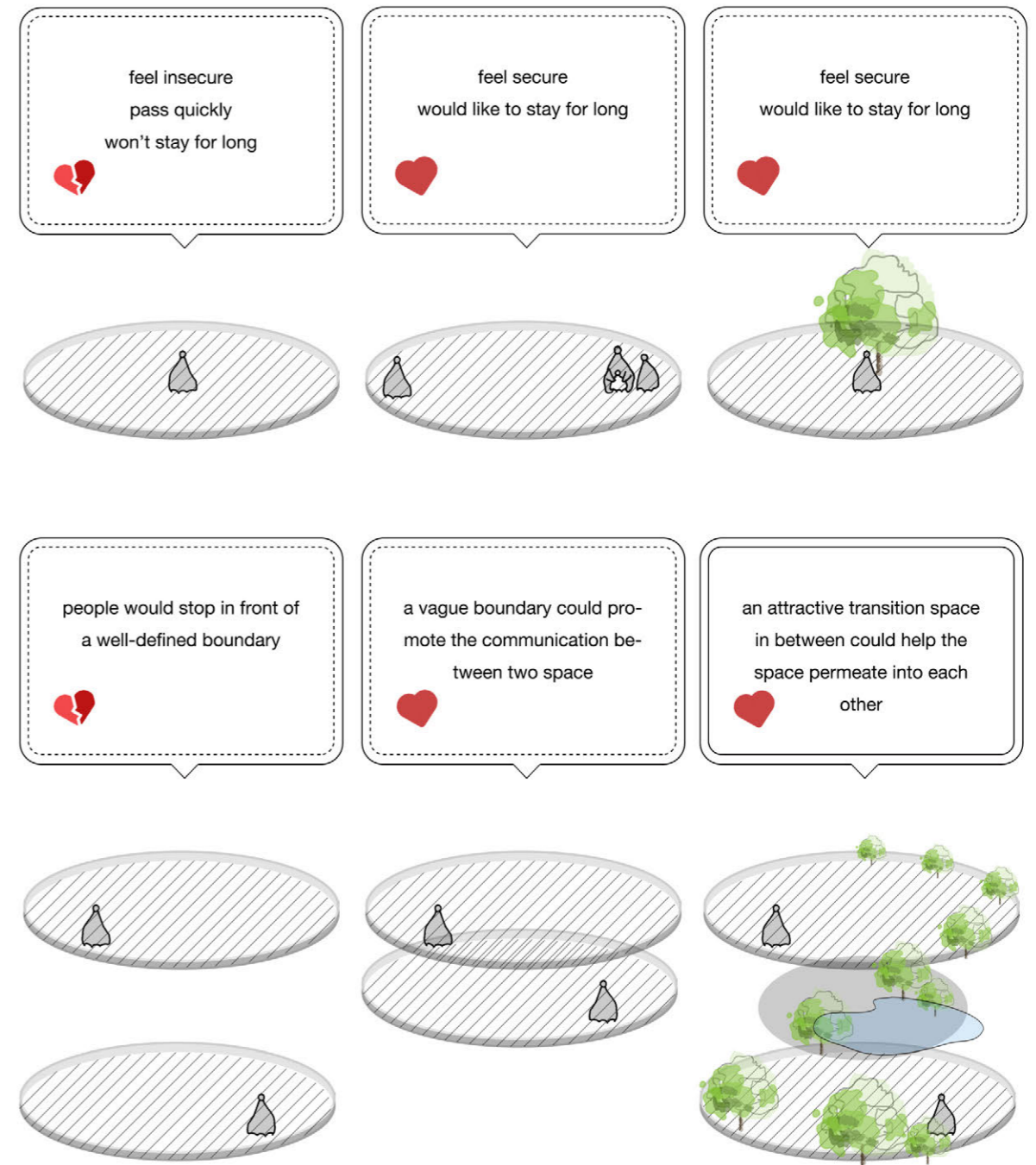


Figure 10. Some spatial design rules.

# Spatial Sequences

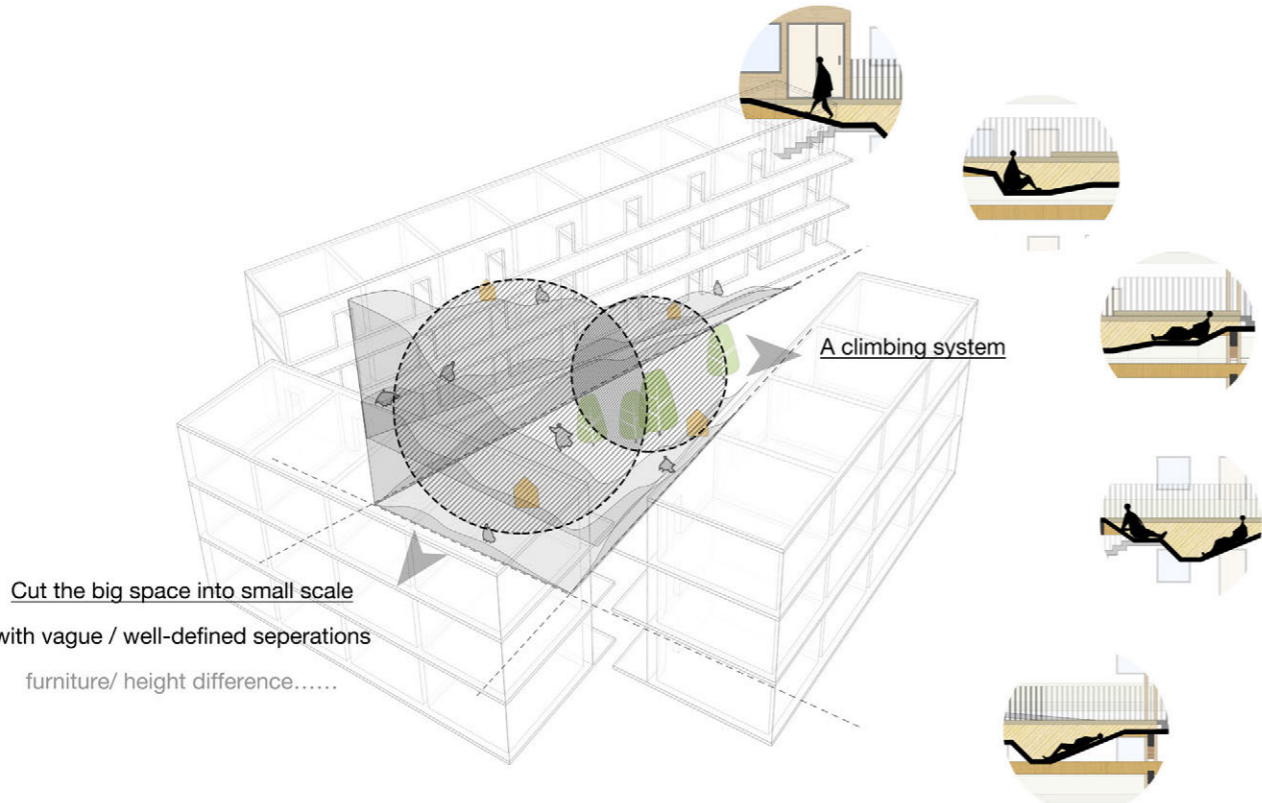
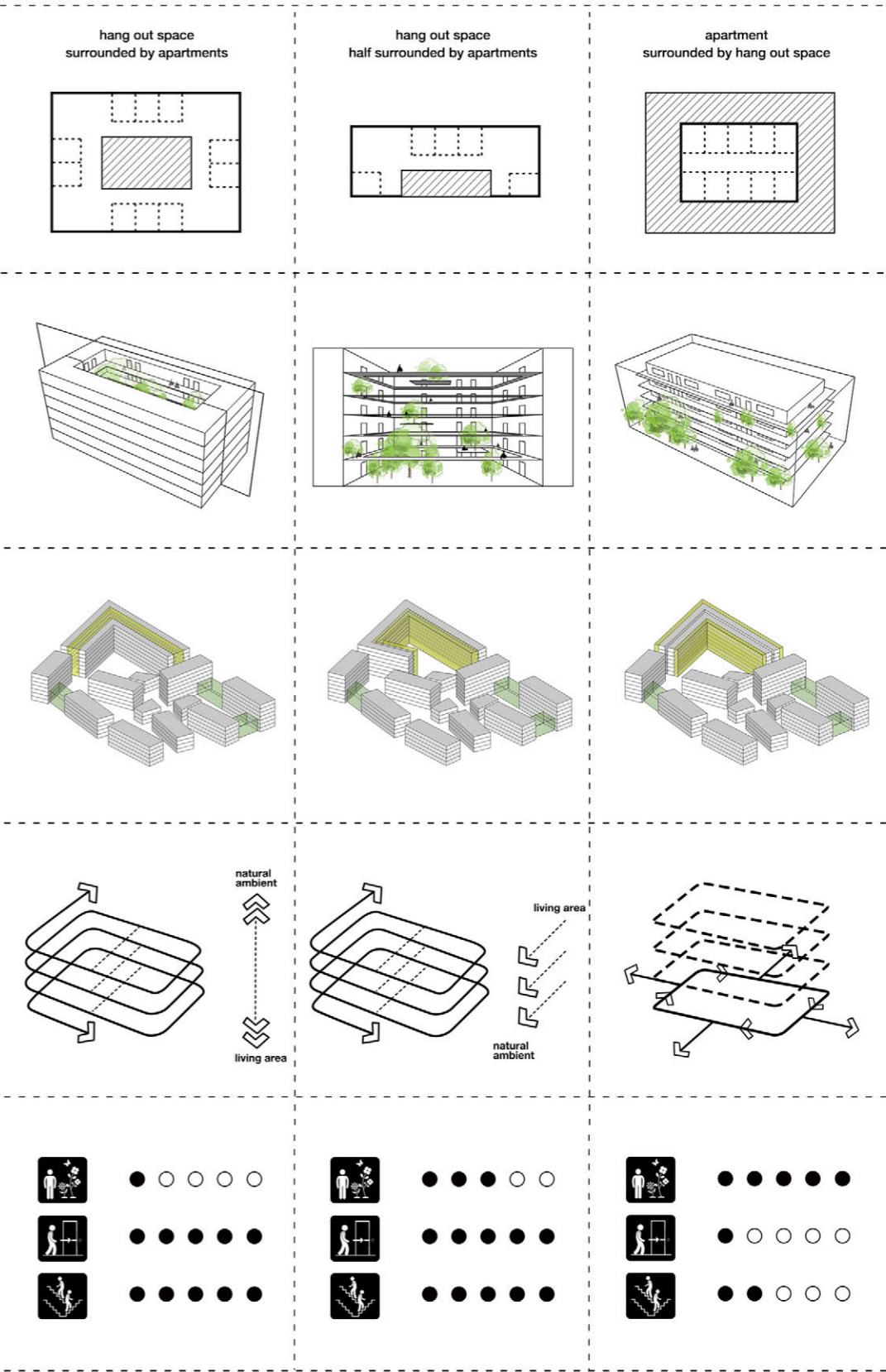


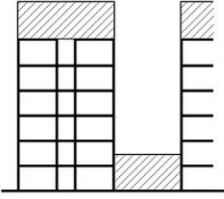
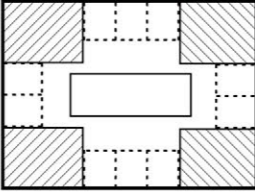
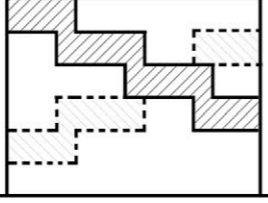
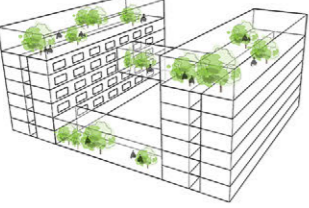
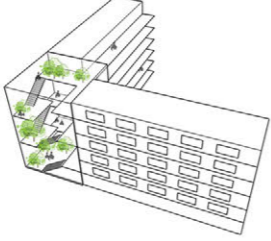
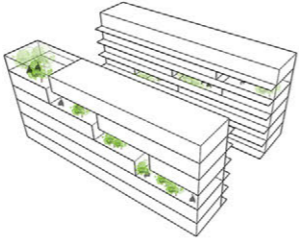
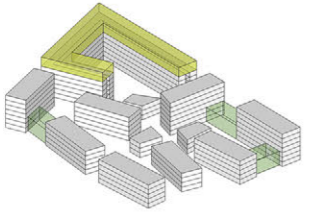
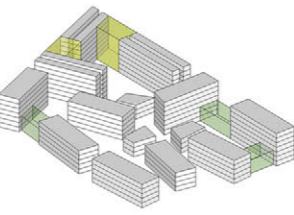
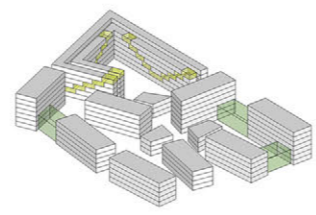
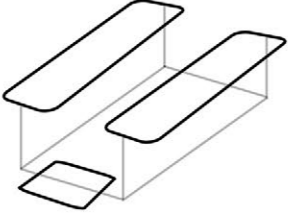
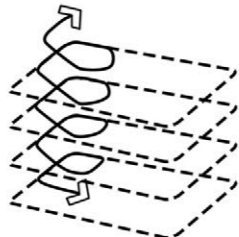
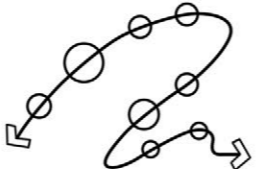









Figure 11. Conceptual drawing 3. Apply appropriate rules and elements on the project.

Use the conclusion of the spatial arrangement rules to modify the space, and use different angle's slopes to create a multi-functional climbing system to diversify the hang out route.





# Spatial Sequences

hang out space on the roof/ connective corridor	hang out space at the corner	hang out space interpenetrated with apartments
		
		
		
		
 ● ● ● ● ●  ● ○ ○ ○ ○  ● ● ○ ○ ○	 ● ● ● ● ○  ● ● ● ○ ○  ● ● ● ○ ○	 ● ● ○ ○ ○  ● ● ● ○ ○  ● ● ● ● ●

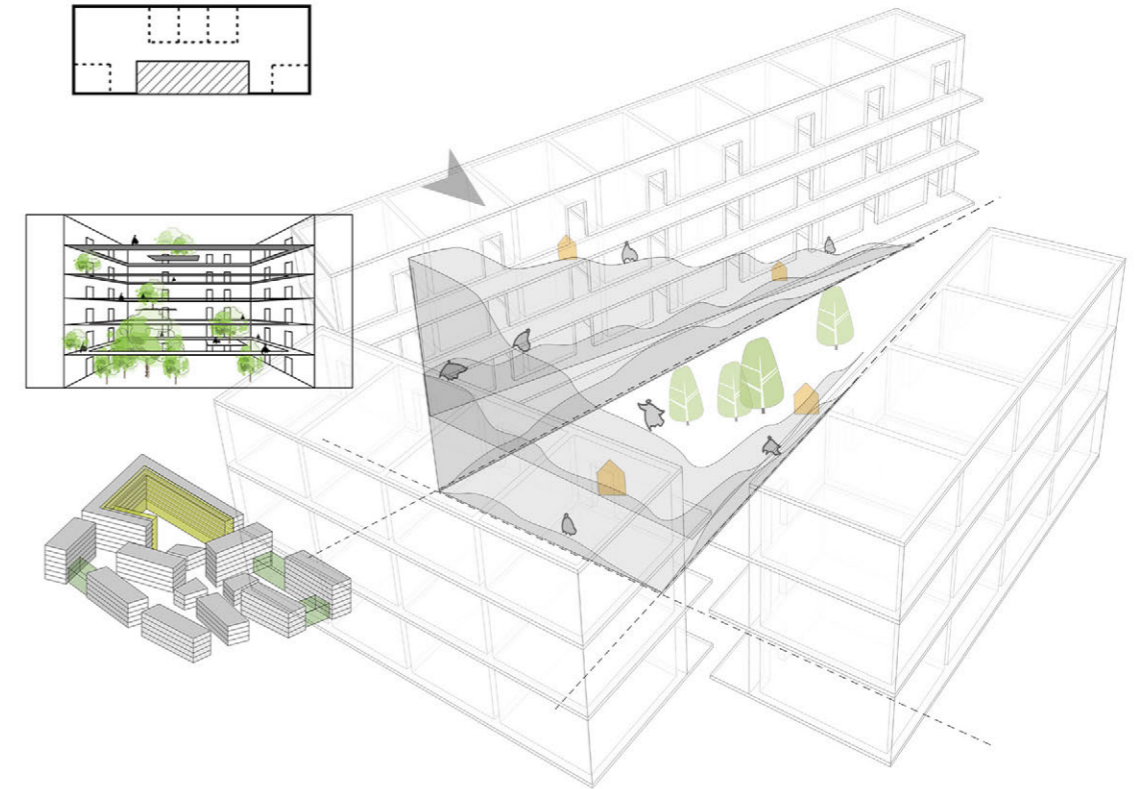






Figure 12. Conceptual drawing 4. Apply appropriate spatial sequences on the project.

Pick the most suitable placement of inside hang out space and apartments.

## Connection to outside





### Arrangement of plants

	look 	hear 	smell 	touch 
<b>landscape</b>	plants river mountains	river	plants	plants river soil
<b>wind</b>	blow things shaky shadows	the sound of wind	---	various levels of wind things blowing by wind
<b>rain</b> <small>flowing, splashing, cooling, reflecting</small>	rain curtain fog (water vapour) water drainage	raindrops water drainage	the smell of wet soil	rain curtain rain drops fog (water vapour)
<b>sun/daylight</b>	various light light and shadow darkness	---	---	warm light cool shadow

next to the window  
combine with water installation

## Connection to outside

### Import the rain water

	look 	hear 	smell 	touch 
<b>landscape</b>	plants river mountains	river	plants	plants river soil
<b>wind</b>	blow things shaky shadows	the sound of wind	---	various levels of wind things blowing by wind
<b>rain</b> <small>flowing, splashing, cooling, reflecting</small>	rain curtain fog (water vapour) water drainage	raindrops water drainage	the smell of wet soil	rain curtain rain drops fog (water vapour)
<b>sun/daylight</b>	various light light and shadow darkness	---	---	warm light cool shadow

make water installations and landscape by  
import and collect the rain

can be used to irrigate

use clarified water drainage to make rain  
can be seen and heard

## Connection to outside

### Wind and window

	look 👁️	hear 👂	smell 👃	touch 👋
<b>landscape</b>	plants river mountains	river	plants	plants river soil
<b>wind</b>	blow things shaky shadows	the sound of wind	---	various levels of wind things blowing by wind
<b>rain</b> <small>flowing, splashing, cooling, reflecting</small>	rain curtain fog (water vapour) water drainage	raindrops water drainage	the smell of wet soil	rain curtain rain drops fog (water vapour)
<b>sun/daylight</b>	various light light and shadow darkness	---	---	warm light cool shadow

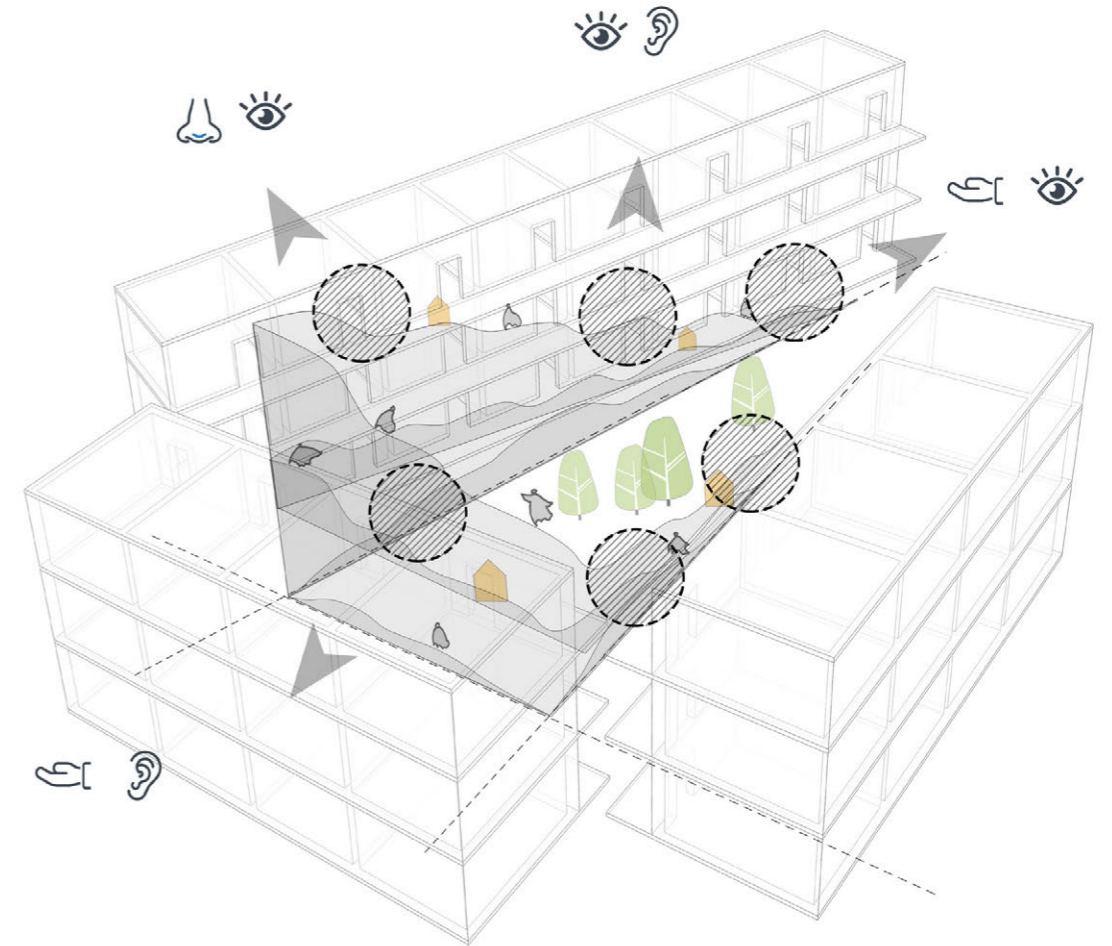


Figure 13. Conceptual drawing 5. Apply appropriate strategies of connecting to outside on the project.

Pick some feasible strategies that can be used in my project to create different spatial experience

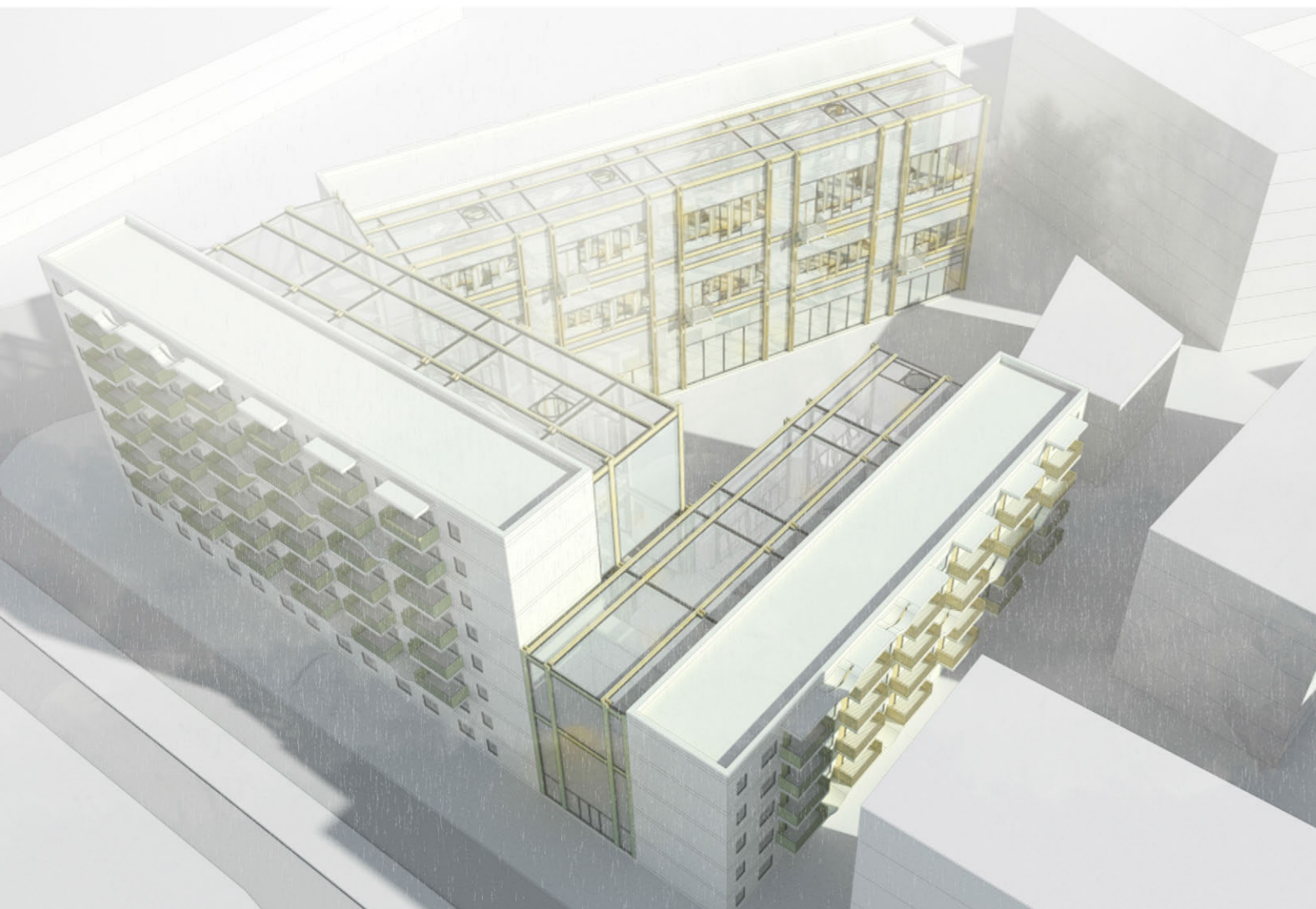
windows can be interesting components  
which can play with wind

combine with plants arrangement



### ***Design proposal***

*Chapter 3 shows my design proposal, including site analysis, design process, plans & sections, stories that will happen in the building, details and renderings.*



## Location



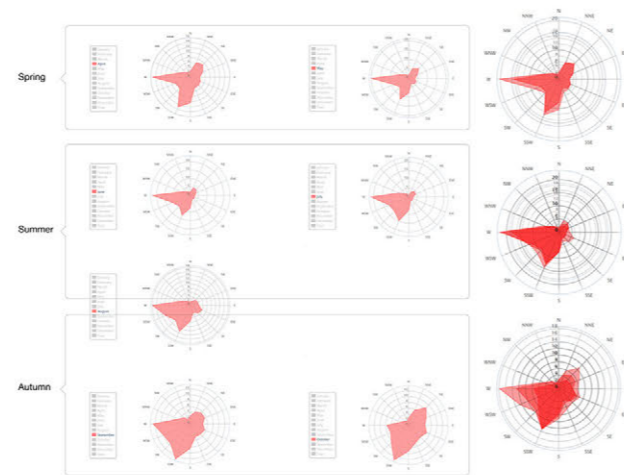
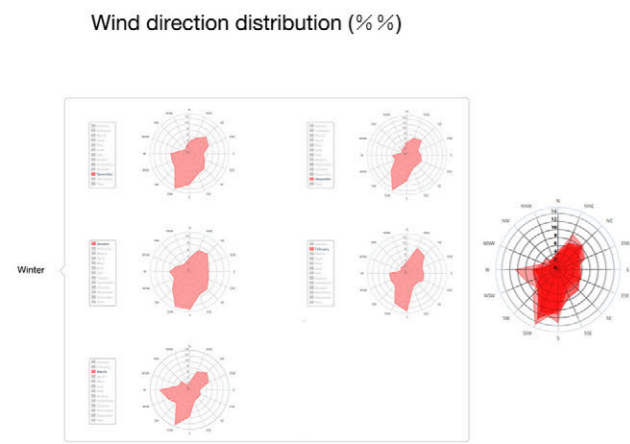
Figure 14. Site location. Based on the map coming from Mapbox.

## Gothenburg

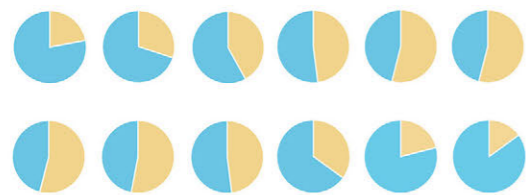
Gothenburg located along southwestern coast, strongly influenced by the north Atlantic current, typical Nordic oceanic climate - rainy and windy with mild temperature and long dark wintertime, quite suitable for my master thesis topic.

Meanwhile, Gothenburg is the second largest city in Sweden and the fifth largest city in Nordic countries. Many young people come here to study or start their career. So the young adults apartment is an inevitable product here in Gothenburg.

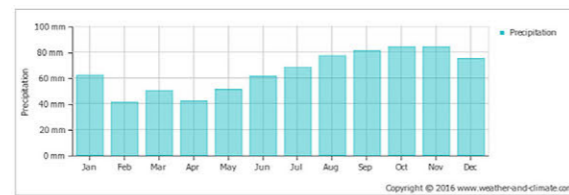
Attached is a study of Gothenburg's climate.



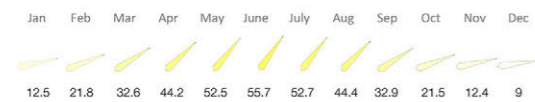
### Sunny & Cloudy daylight hours (%)



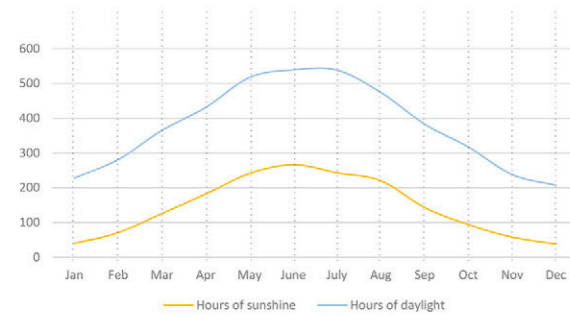
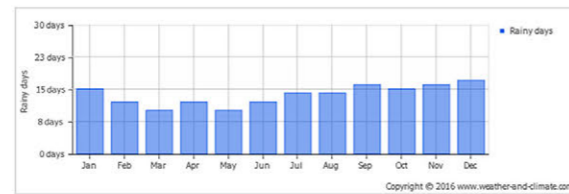
### Average precipitation (rain/snow)



### Sunny altitude at solar noon on th 21st day (°)



### Average rainy days (rain/snow)



### Frost Days per Year (Jan. 2006-Dec. 2016)

Month	Jan	Feb	Mar	Apr	May	Jun	
Frost Days	20.1	18.3	16.4	5.5	0.5	0.0	[days]
	98	99	97	99	99	98	Data availability[%]
Month	Jul	Aug	Sep	Oct	Nov	Dec	
Frost Days	0.0	0.0	0.0	1.4	7.6	14.2	[days]
	97	98	96	96	98	97	Data availability[%]
Averaged Value (January 2006 - December 2016) : <b>84.0 days</b>							

### Ice Days per Year (Jan. 2006-Dec. 2016)

Month	Jan	Feb	Mar	Apr	May	Jun	
Ice Days	14.1	9.8	2.8	0.0	0.0	0.0	[days]
	98	98	96	99	98	98	Data availability[%]
Month	Jul	Aug	Sep	Oct	Nov	Dec	
Ice Days	0.0	0.0	0.0	0.0	2.0	7.1	[days]
	95	98	95	93	97	97	Data availability[%]
Averaged Value (January 2006 - December 2016) : <b>35.9 days</b>							

Figure 15. Gothenburg climate diagram. Based on the data coming from WeatherOnline, timeanddate.com.

## Location

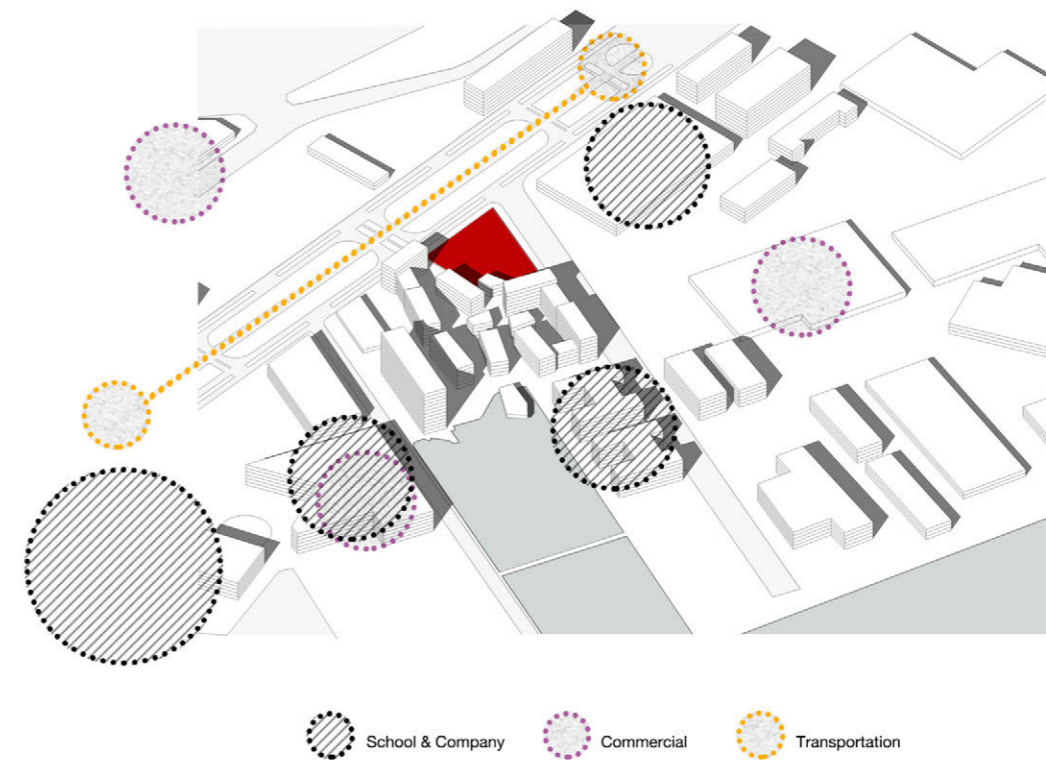


Figure 16. Site Analysis.

### Location - Lindholmshamnen

The site located on the island of Hisingen, on the northern shore of Göta Älv. It used to be an industrial park with many shipyards. Afterwards, some of these shipyards disappeared, and some are transformed into new-functional buildings, mainly serving for different technology and media companies as well as schools. In recent years, many newly-built large office buildings as well as residential buildings appear in the neighbourhood, this area becomes lifeful and full of energy.

The red area above is the location of my project, at the crossroad of Lindholmsallen and Gotaverksgatan, in a newly-built community.

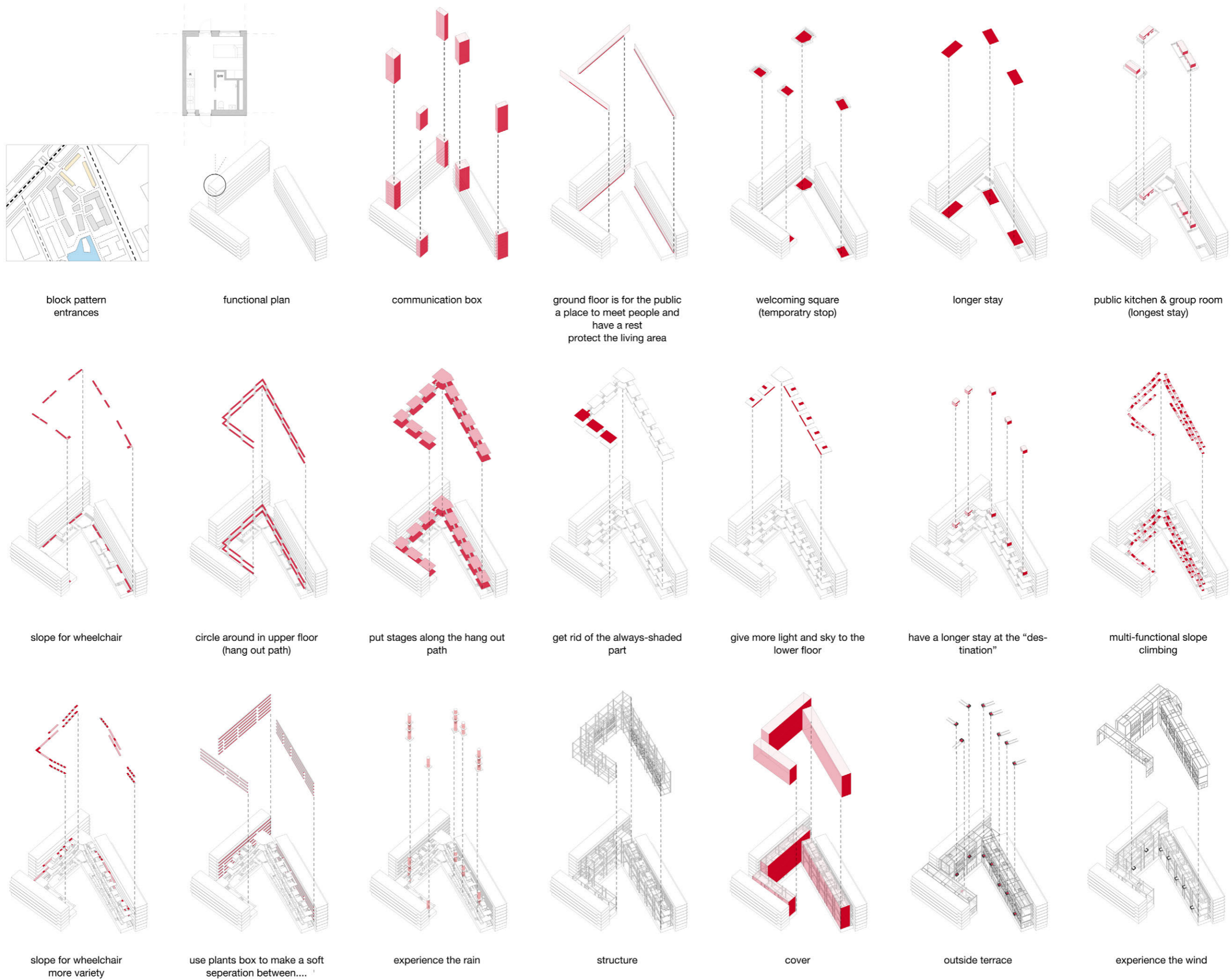


Figure 17. Design process.

### Master plan

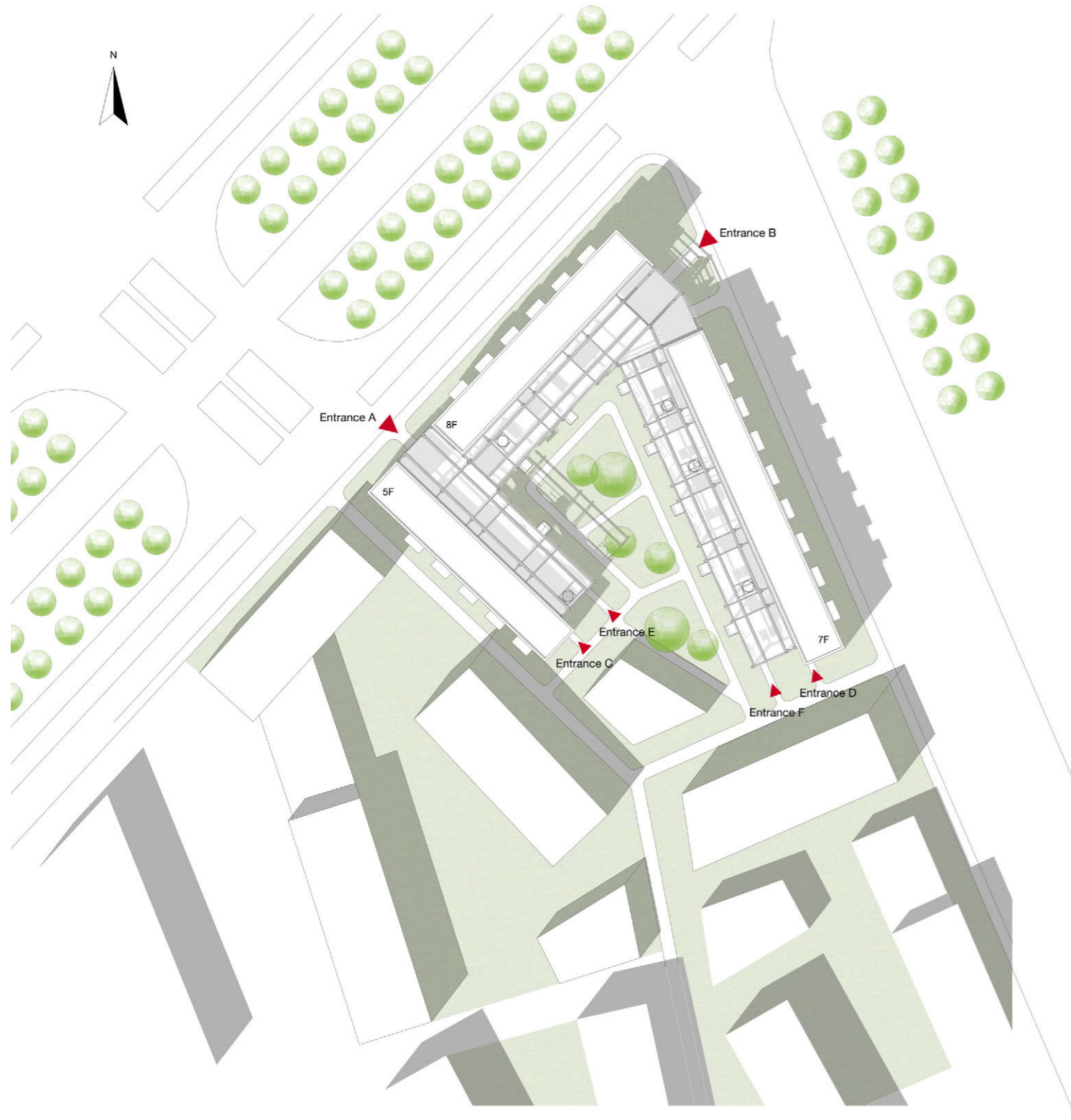


Figure 18. Design process.

### 1st layer plan

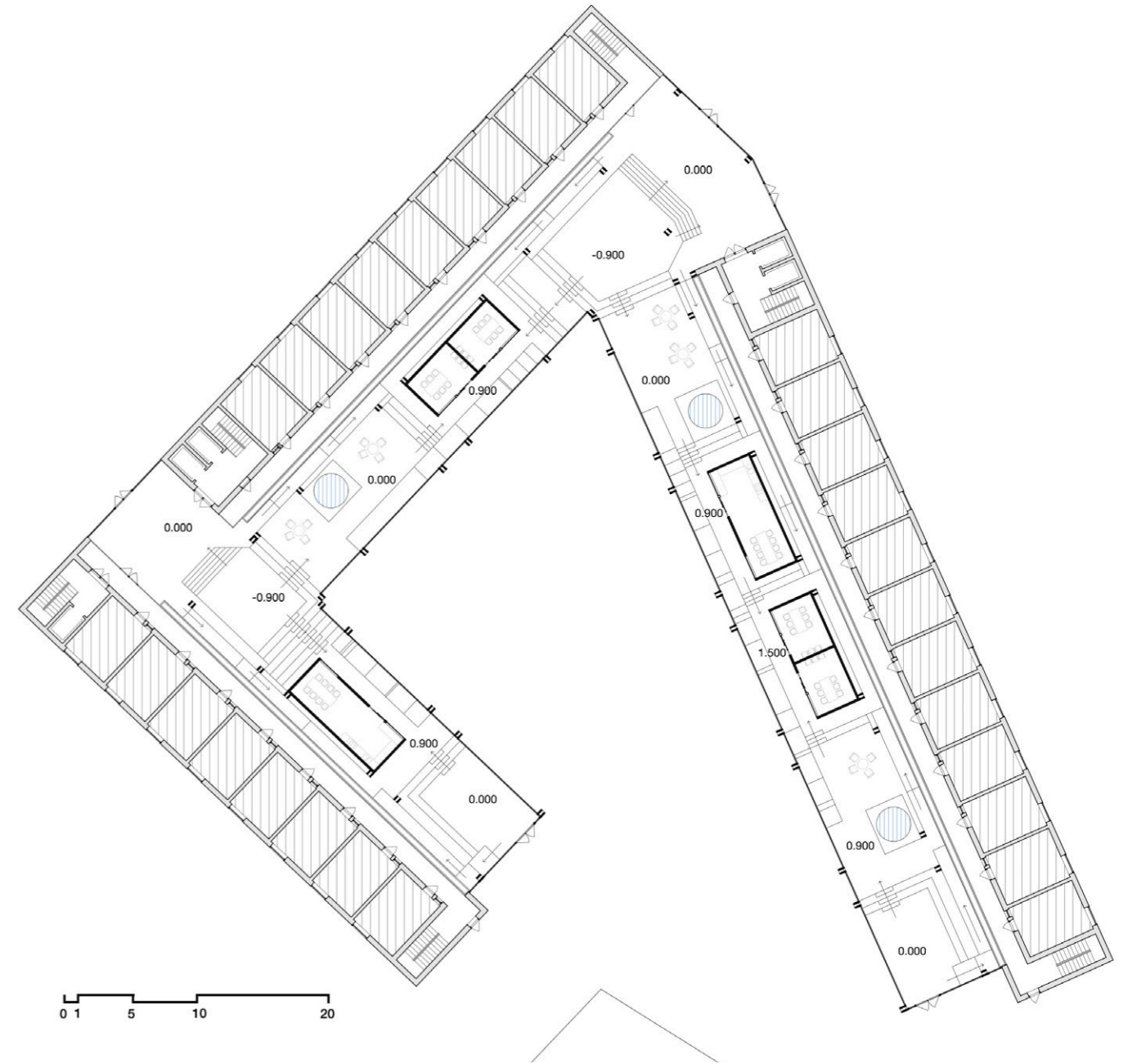


Figure 19. 1st layer.



2nd layer plan

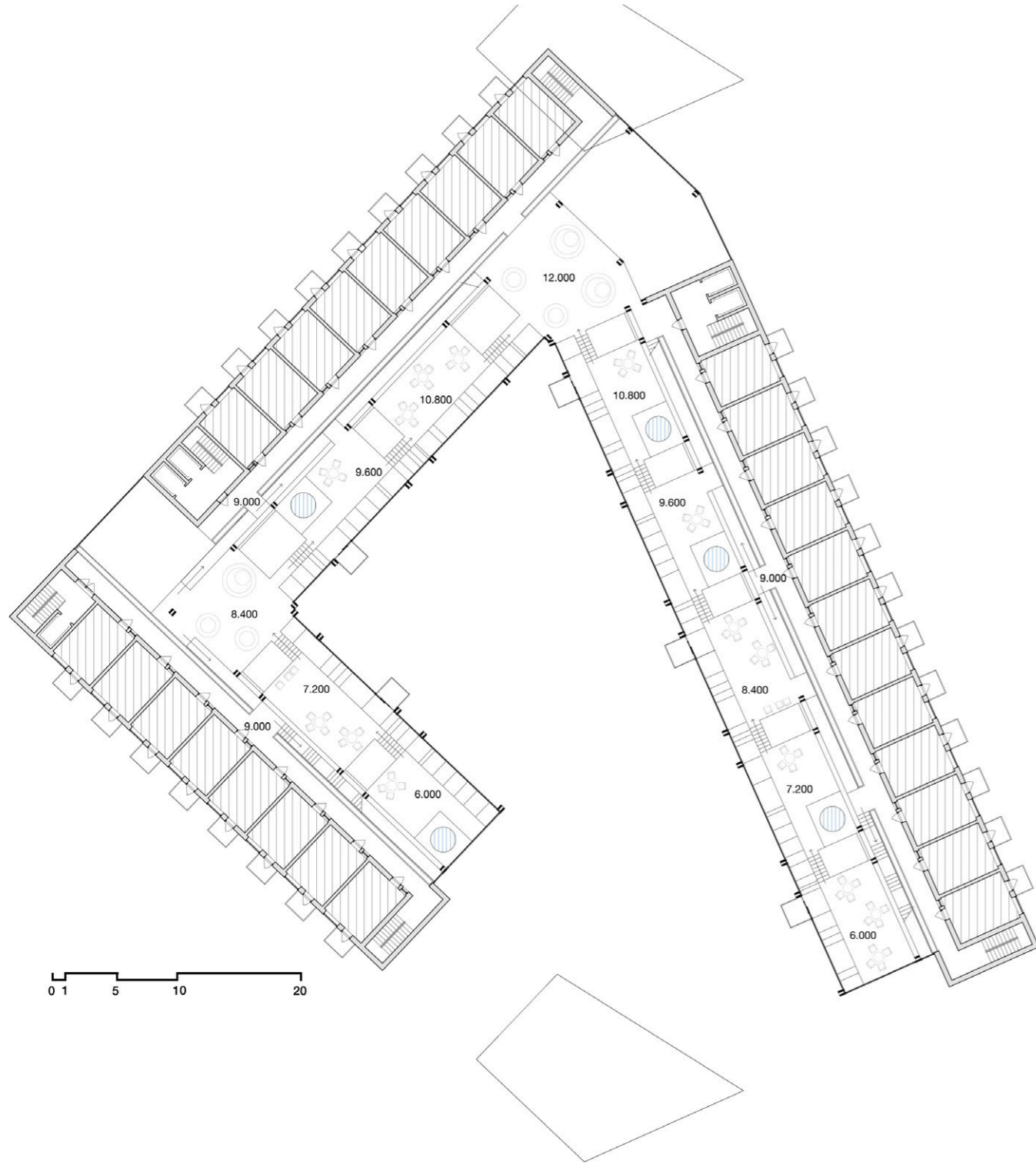


Figure 20. 2nd layer.

3rd layer plan

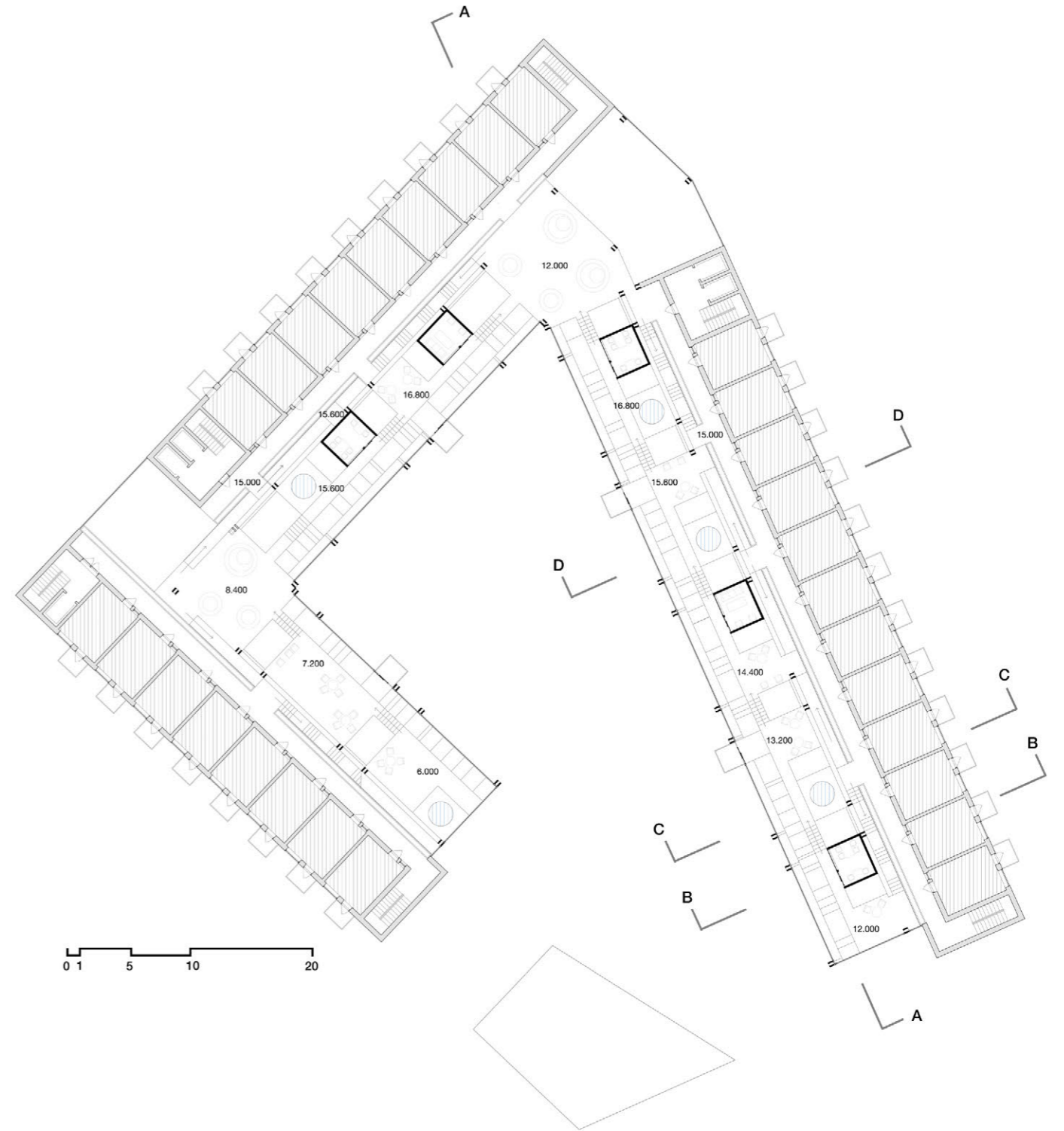


Figure 21. 3rd layer.

A-A section

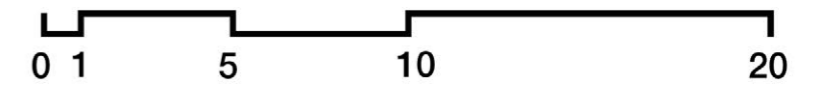
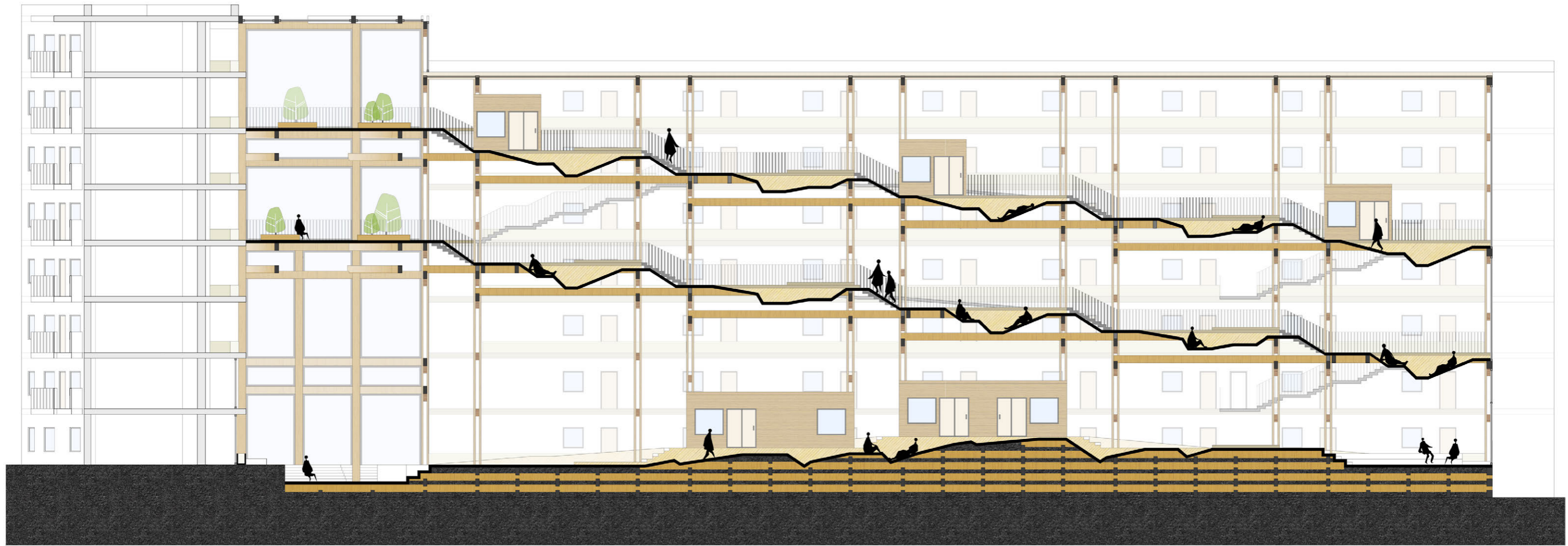


Figure 22. A-A section.

B-B section

C-C section

D-D section

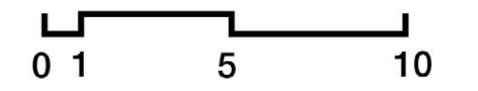
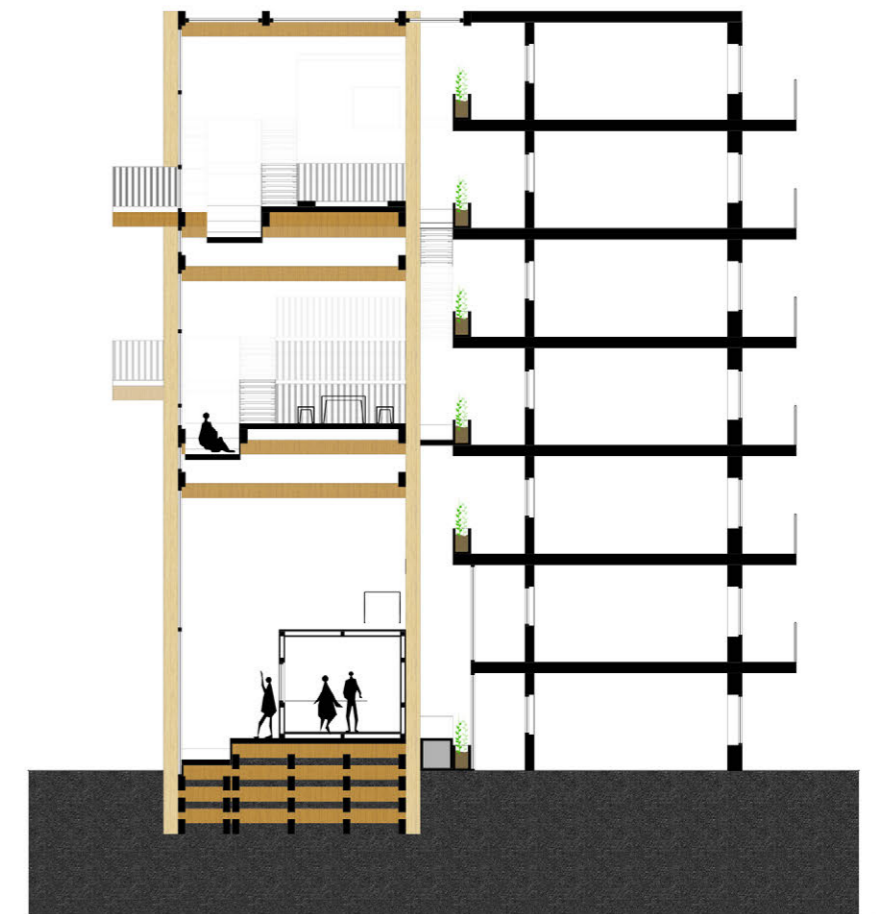
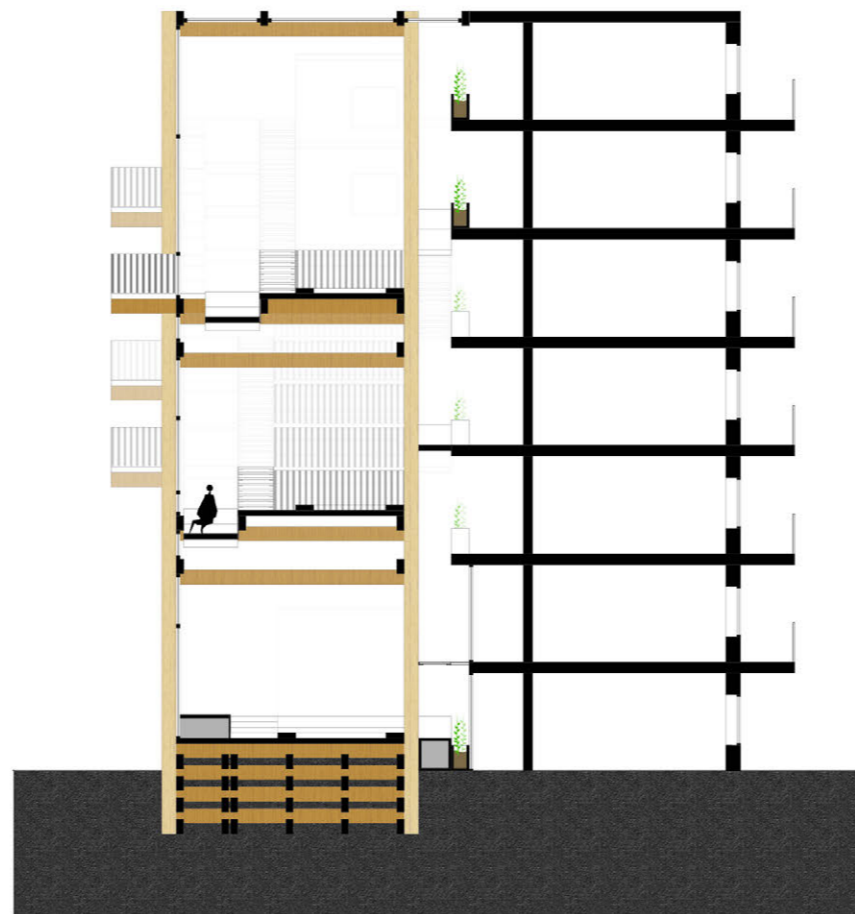
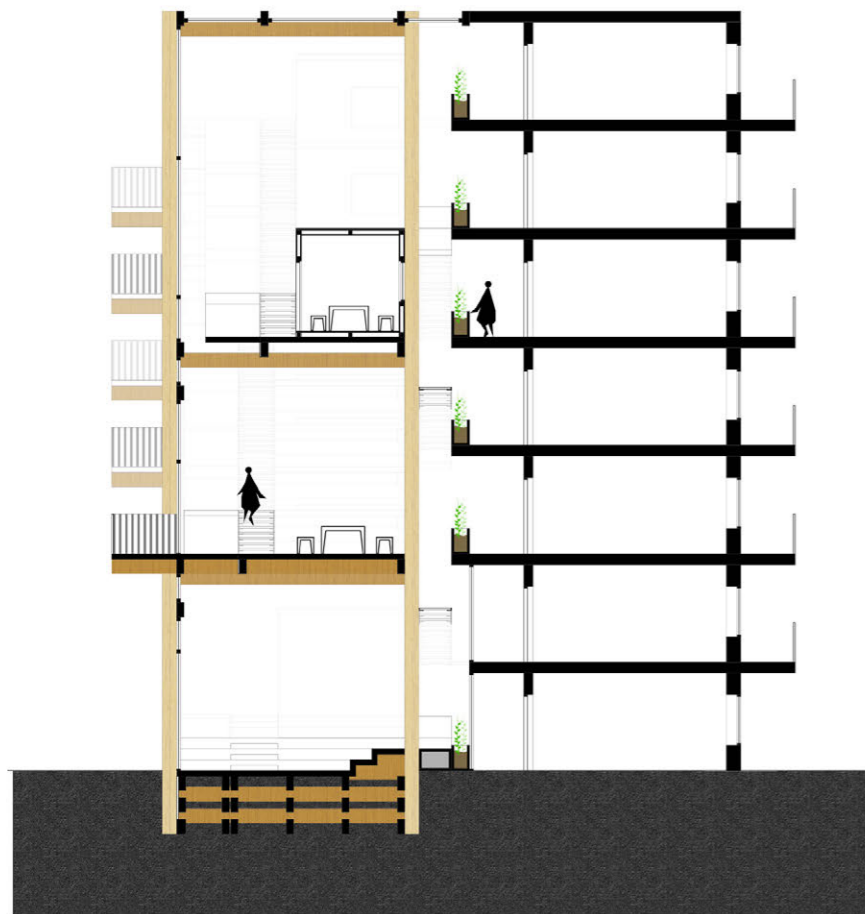
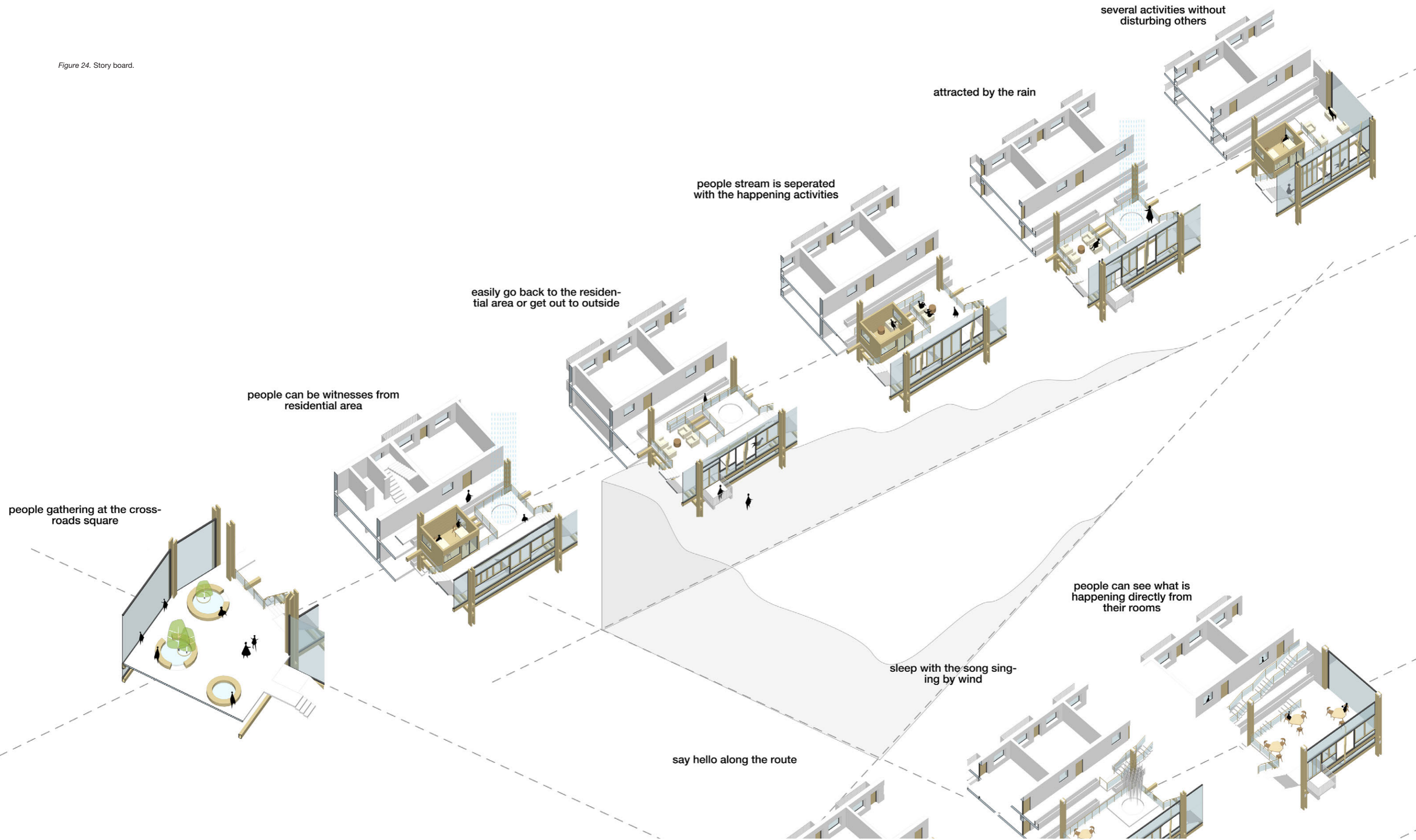
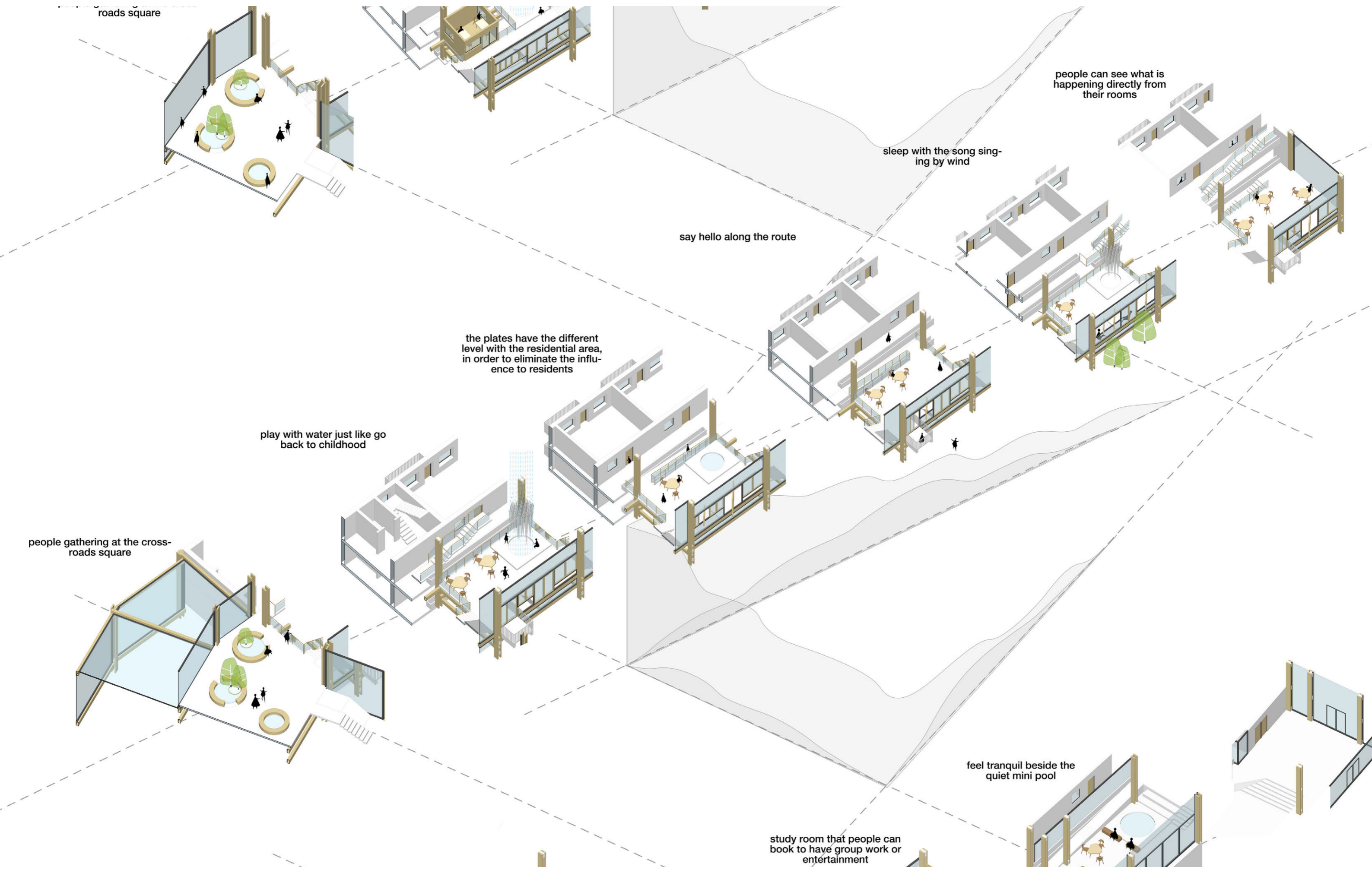


Figure 23. B-B/ C-C/ D-D sections.

# Story board - Journey in building

Figure 24. Story board.





roads square

people can see what is happening directly from their rooms

sleep with the song singing by wind

say hello along the route

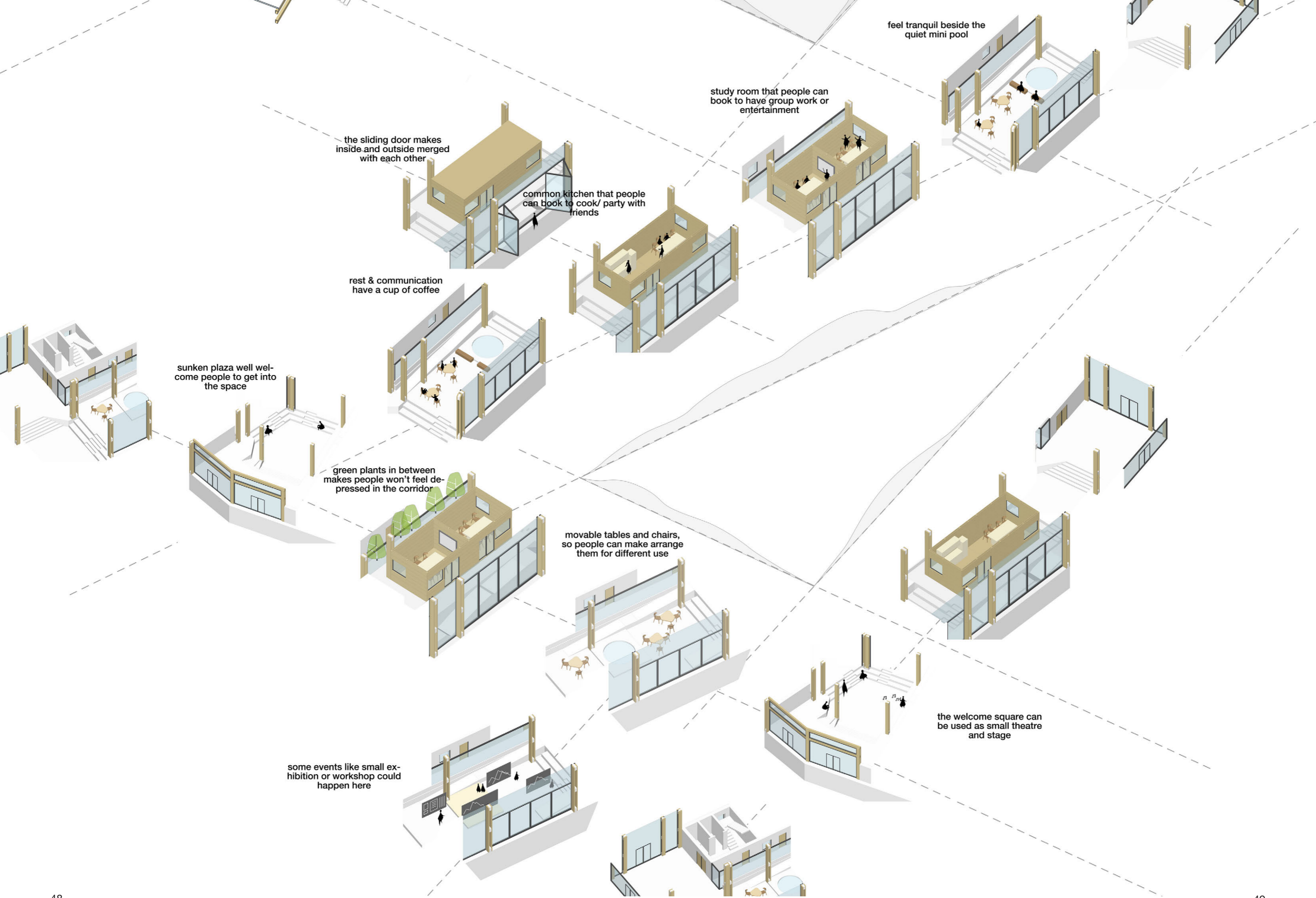
the plates have the different level with the residential area, in order to eliminate the influence to residents

play with water just like go back to childhood

people gathering at the cross-roads square

feel tranquil beside the quiet mini pool

study room that people can book to have group work or entertainment



feel tranquil beside the quiet mini pool

study room that people can book to have group work or entertainment

the sliding door makes inside and outside merged with each other

common kitchen that people can book to cook/ party with friends

rest & communication have a cup of coffee

sunken plaza well welcome people to get into the space

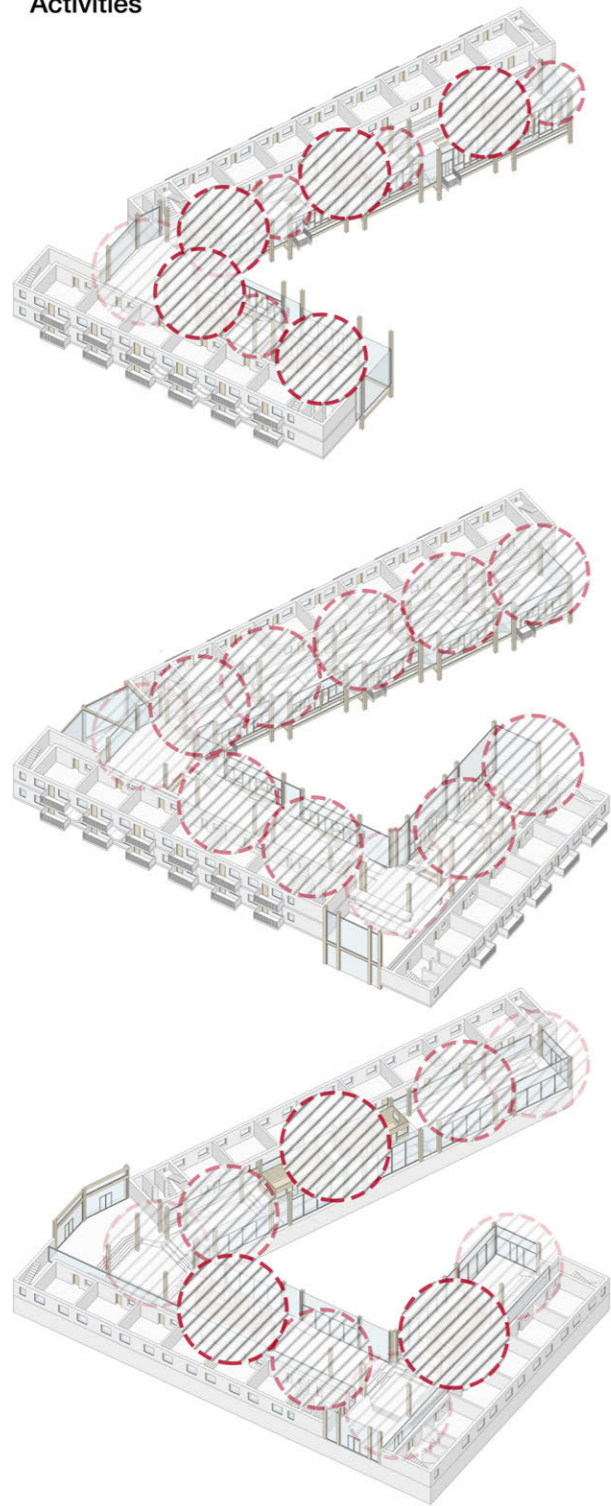
green plants in between makes people won't feel depressed in the corridor

movable tables and chairs, so people can make arrange them for different use

the welcome square can be used as small theatre and stage

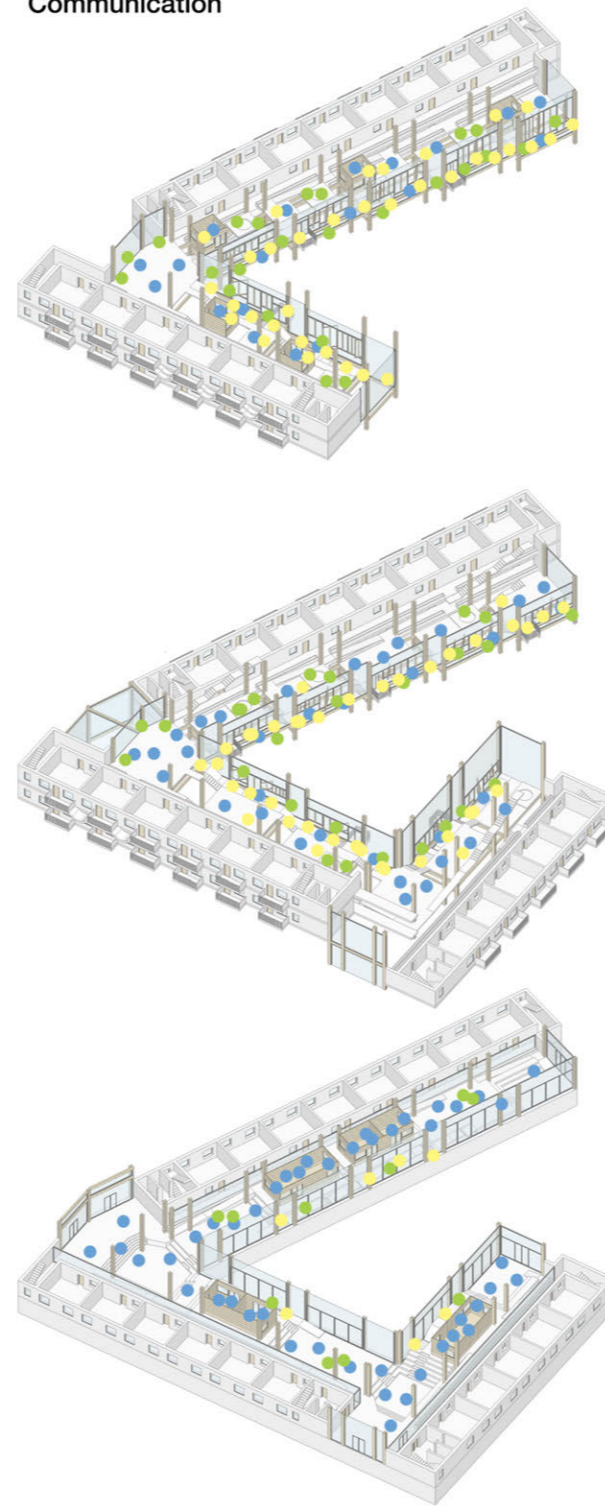
some events like small exhibition or workshop could happen here

Activities



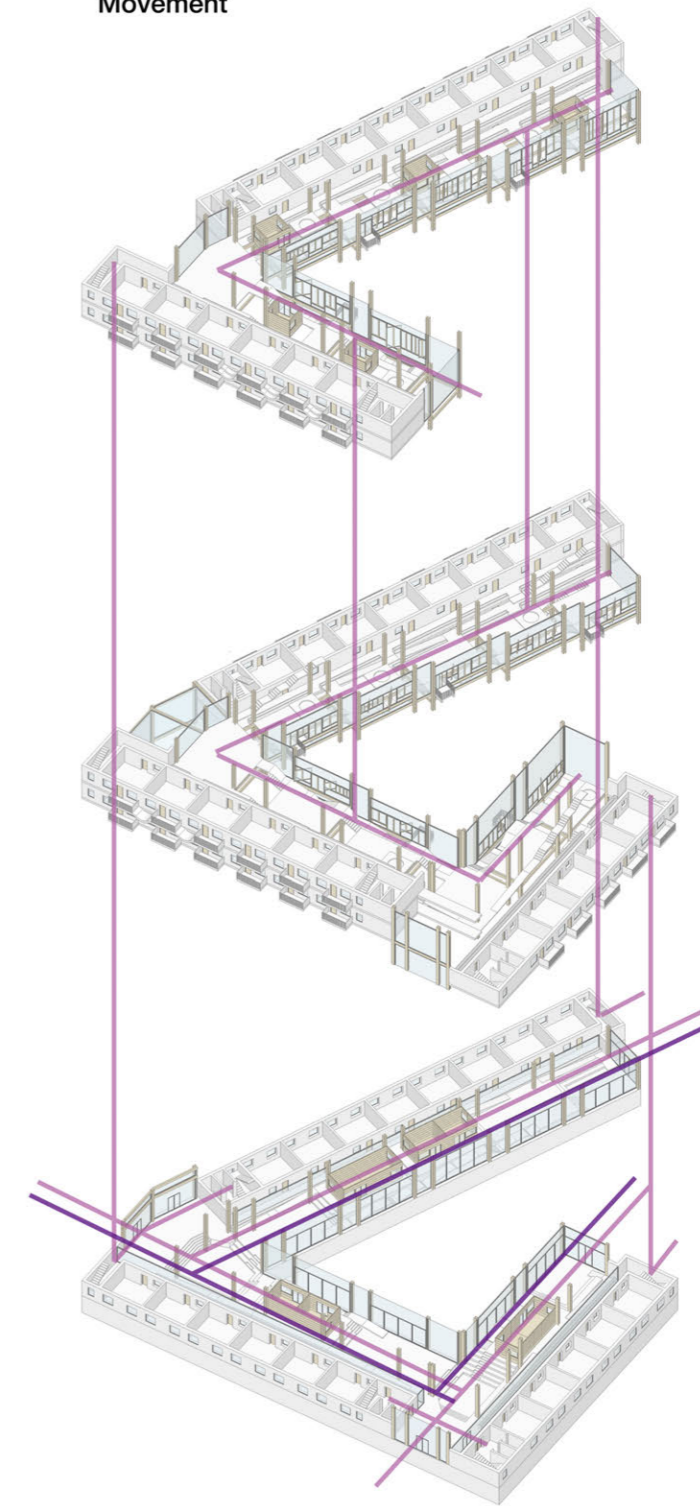
-  **temporary stay**  
waiting/ gathering/ temporary theatre/ performance/ planting box
-  **longer stay**  
relax & rest & communicate/ small exhibition/ workshop
-  **longer-longer stay**  
(group & solo) entertainment/ eating/ studying/ working



Communication



-  **communicate with people**
-  **communicate with ourselves**
-  **communicate with nature**

Movement



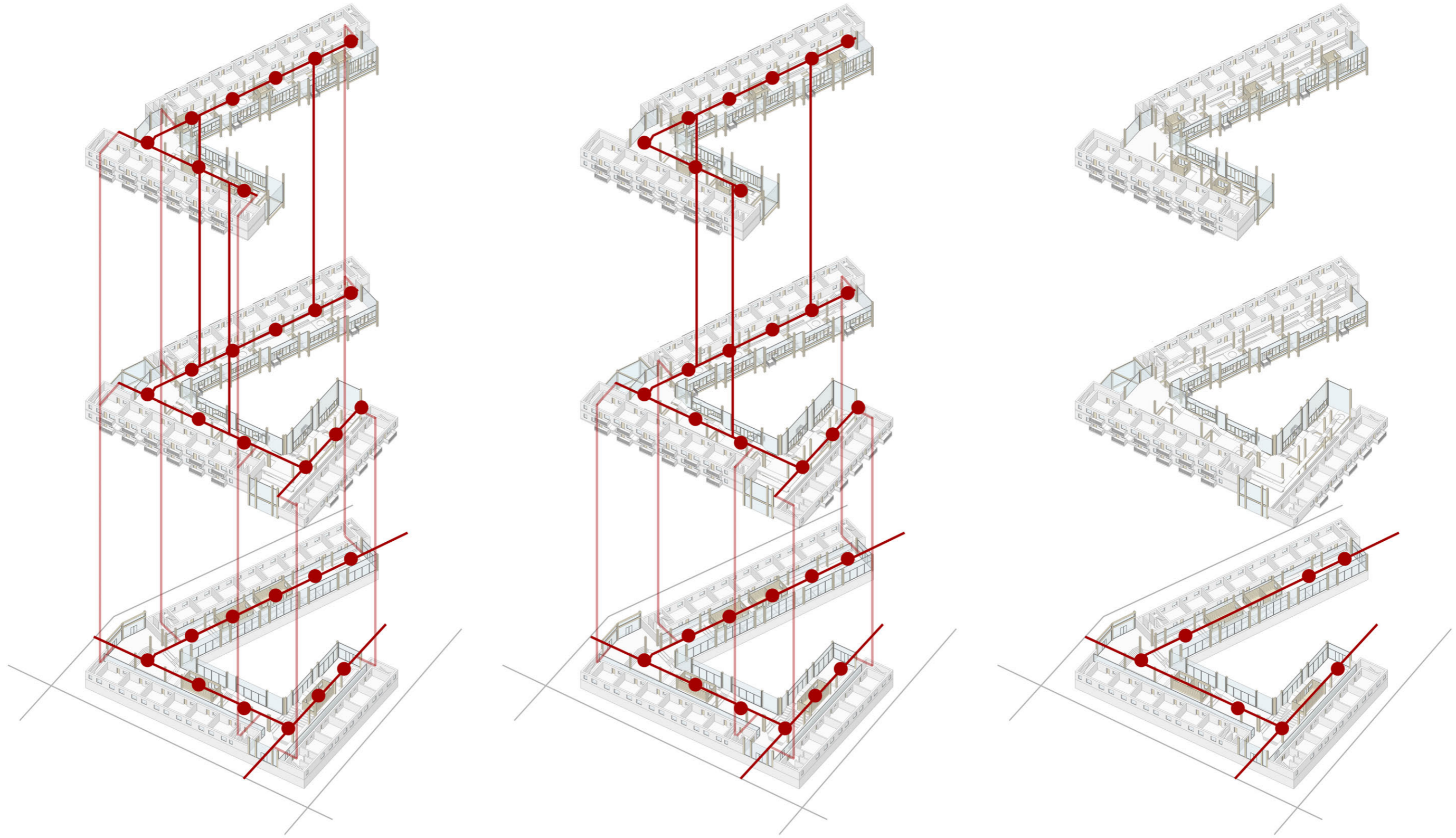
-  **people from outside**
-  **people living in this community**

# People flow

Inhabitants living in the building

Inhabitants living in the community

The public



— hang out route

● stages

— ordinary staircases



# Structure & Material

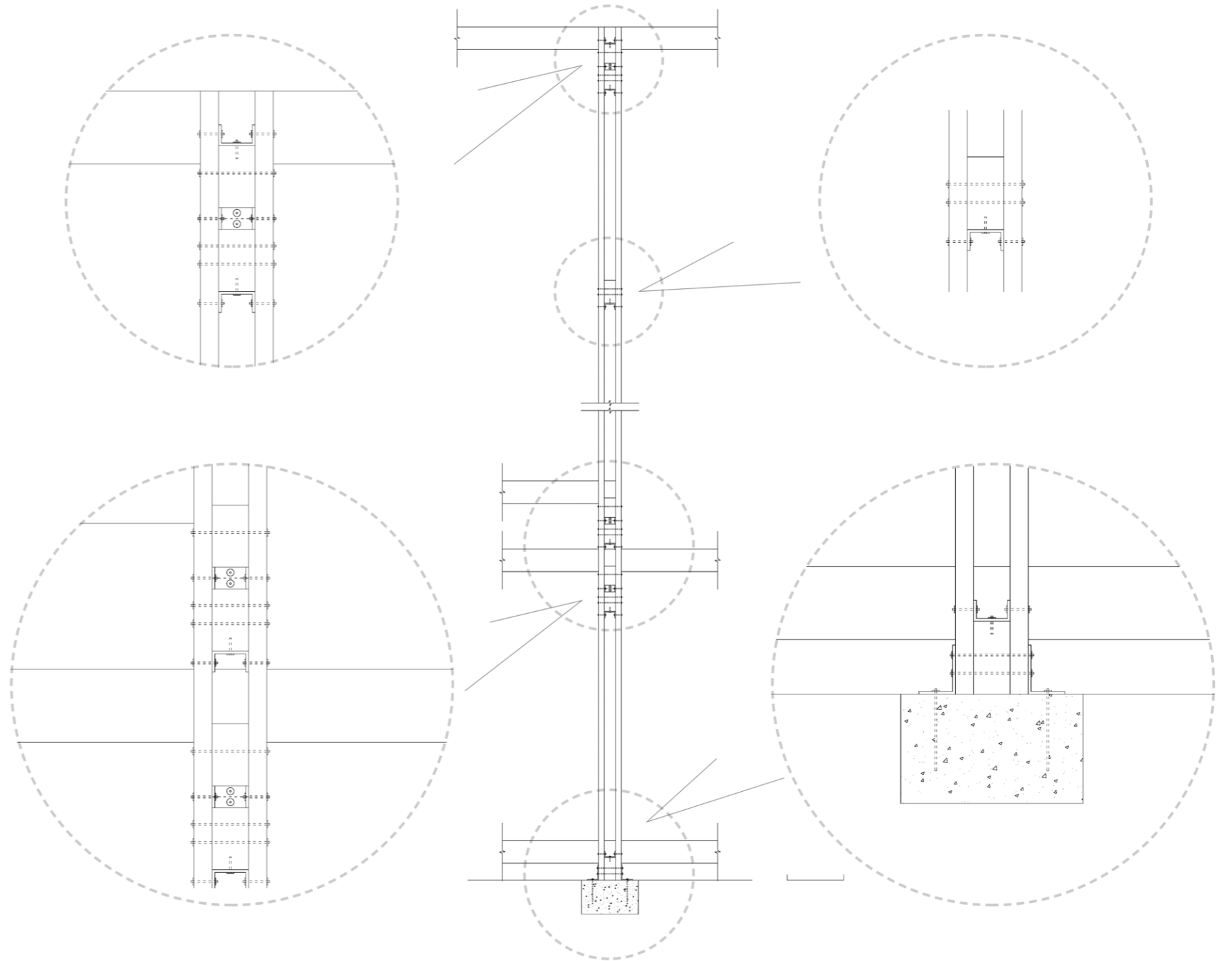
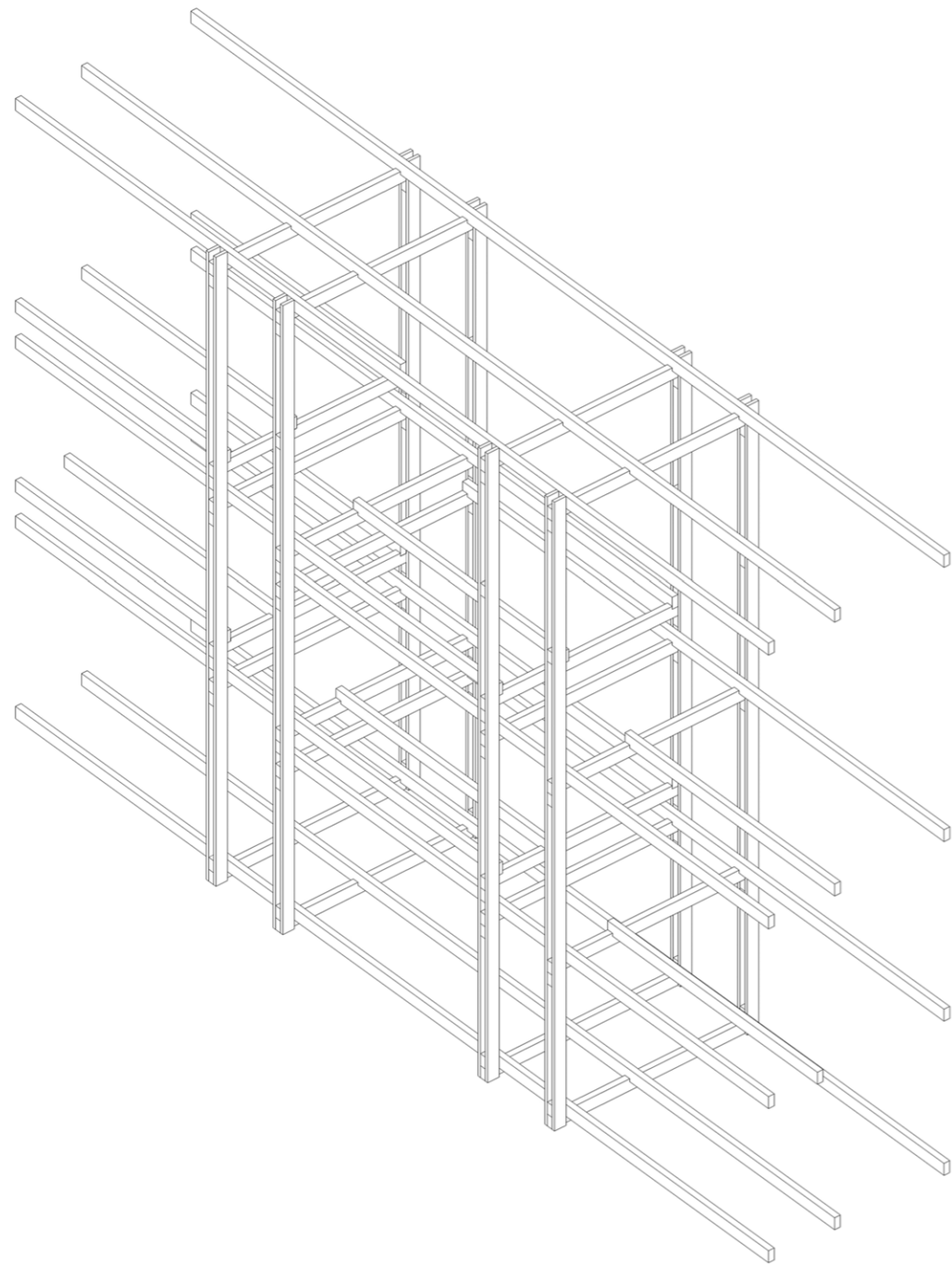
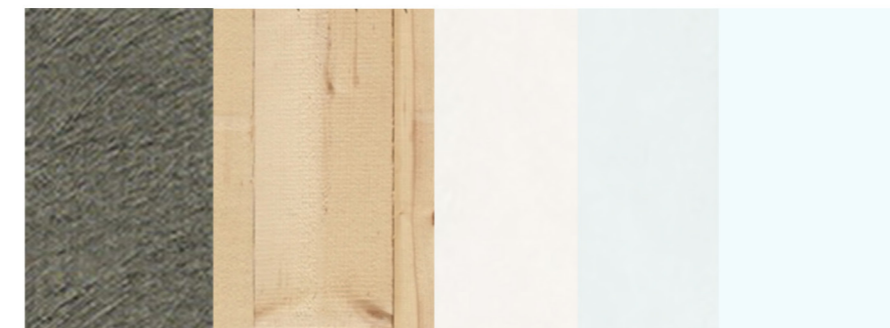
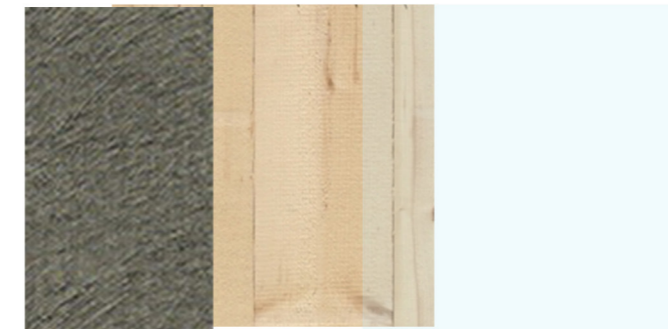
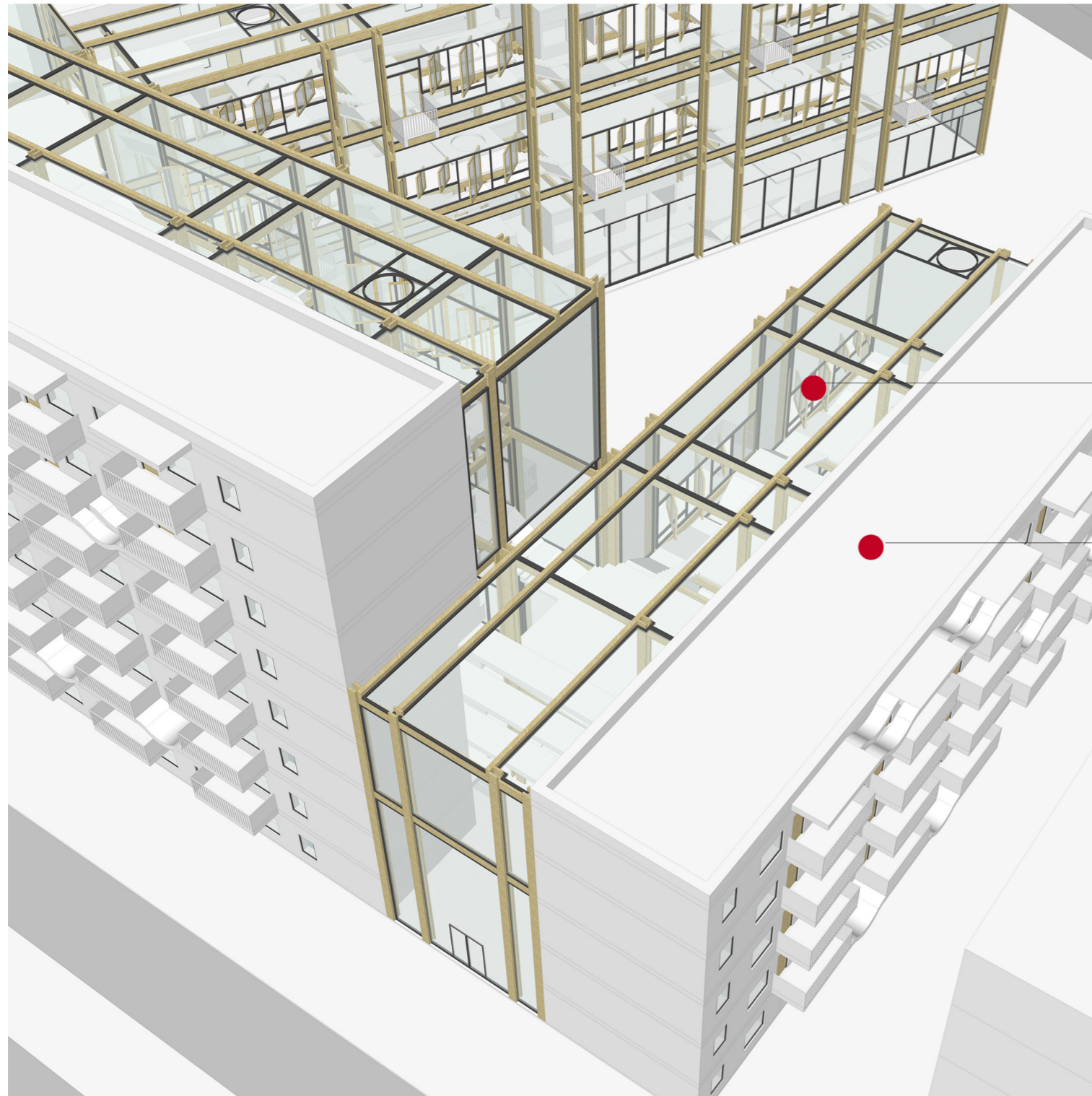


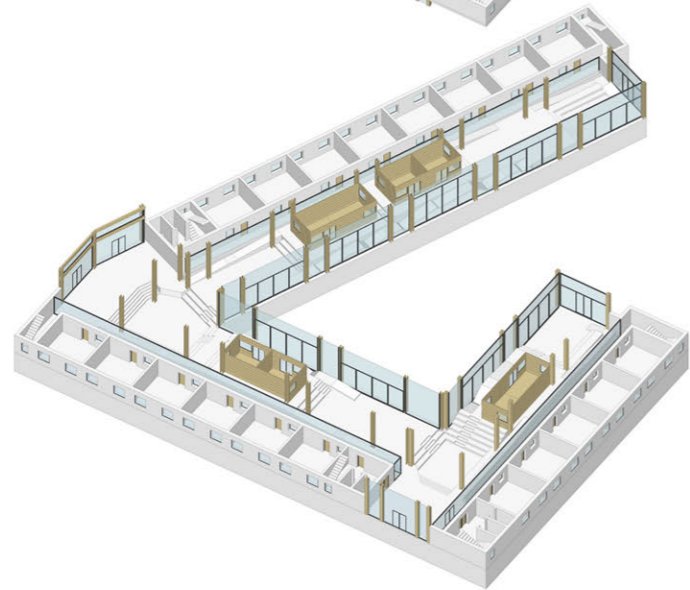
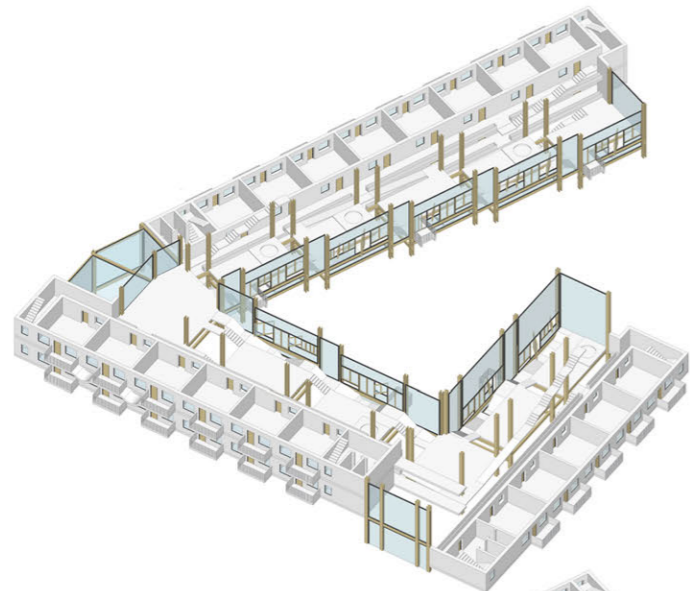
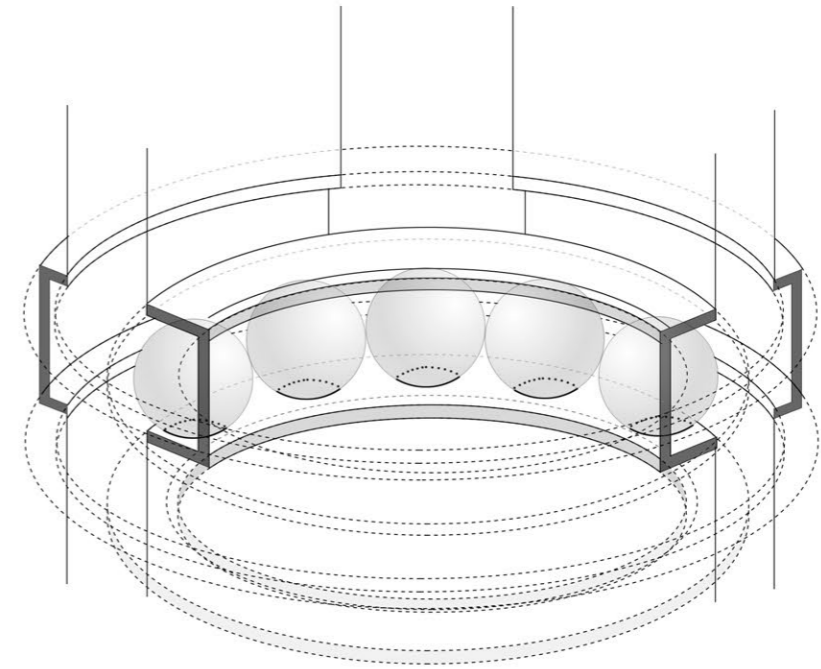
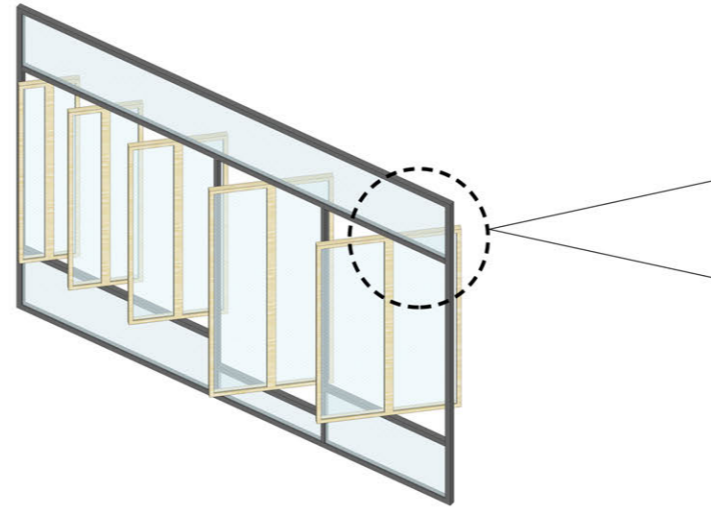
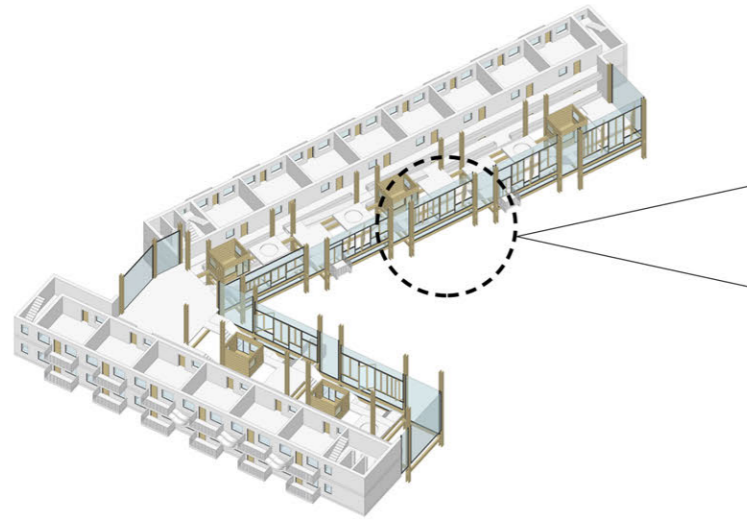
Figure 27. Structure.

## Structure & Material

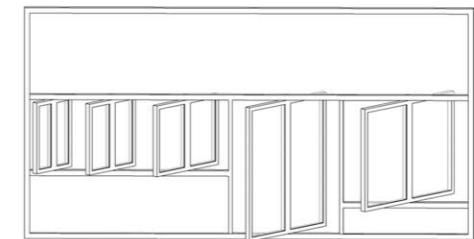
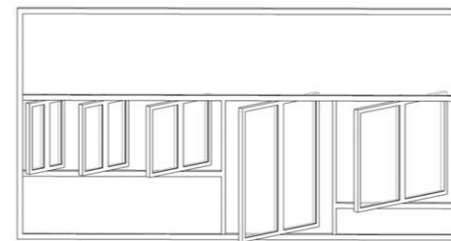
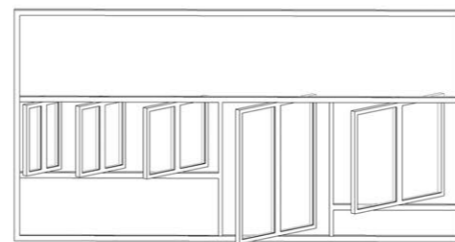
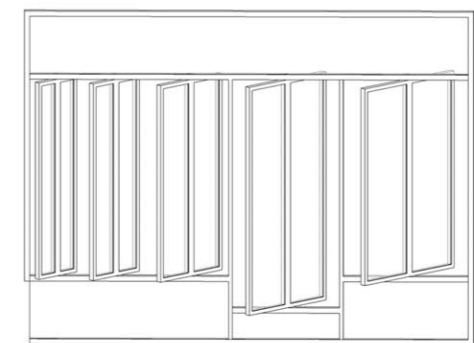
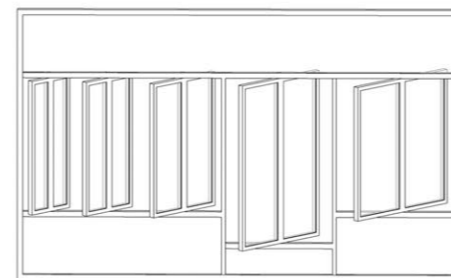
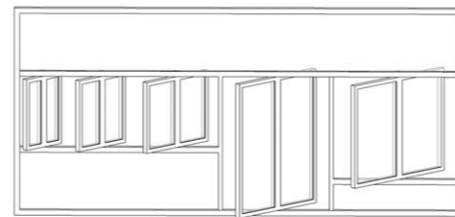


I choose bright and warm materials both for apartments and hang out space to provide bright and welcoming feeling.

Details



Different size, different wind strength



Same size, different wind strength

# Details

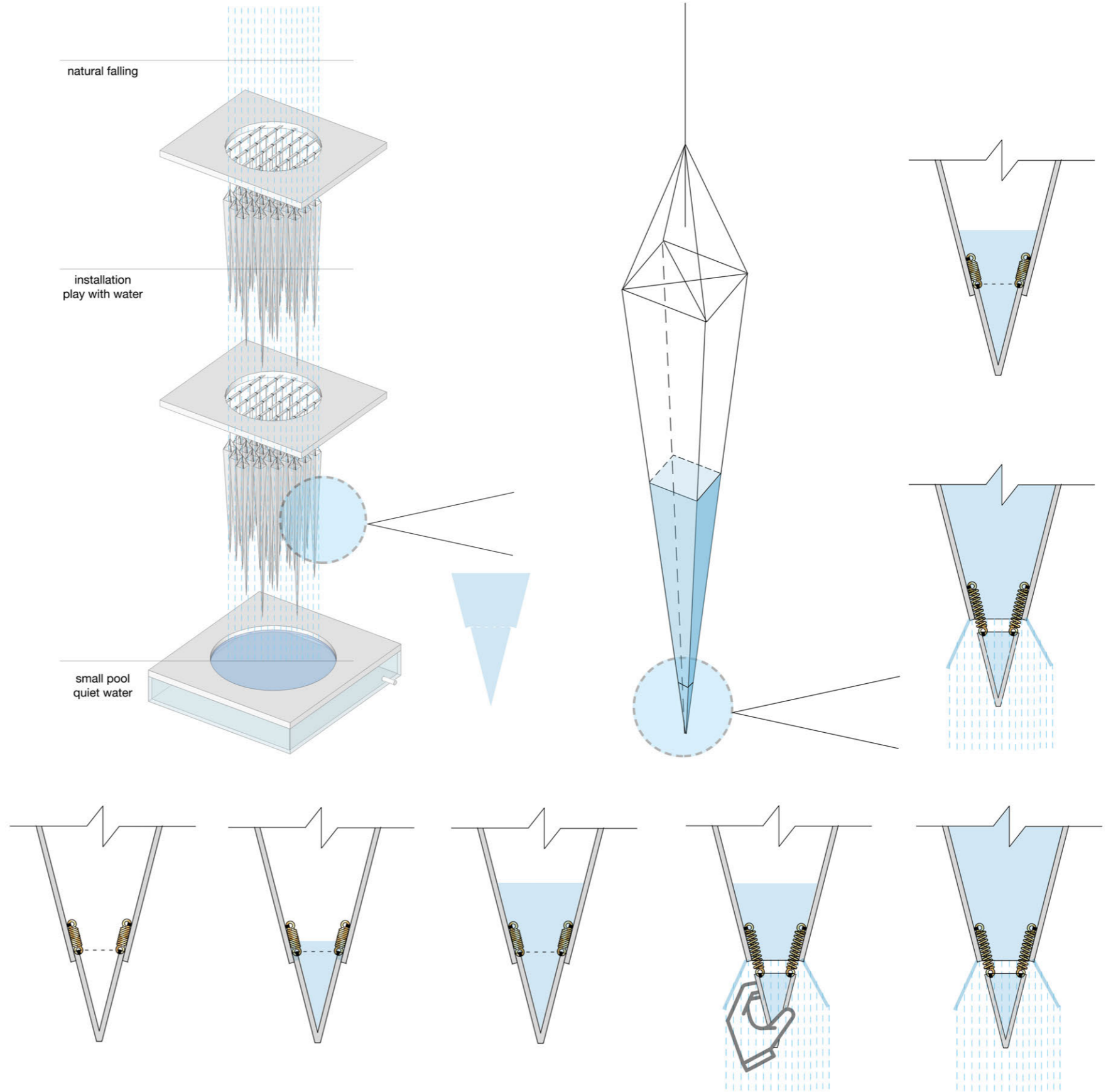
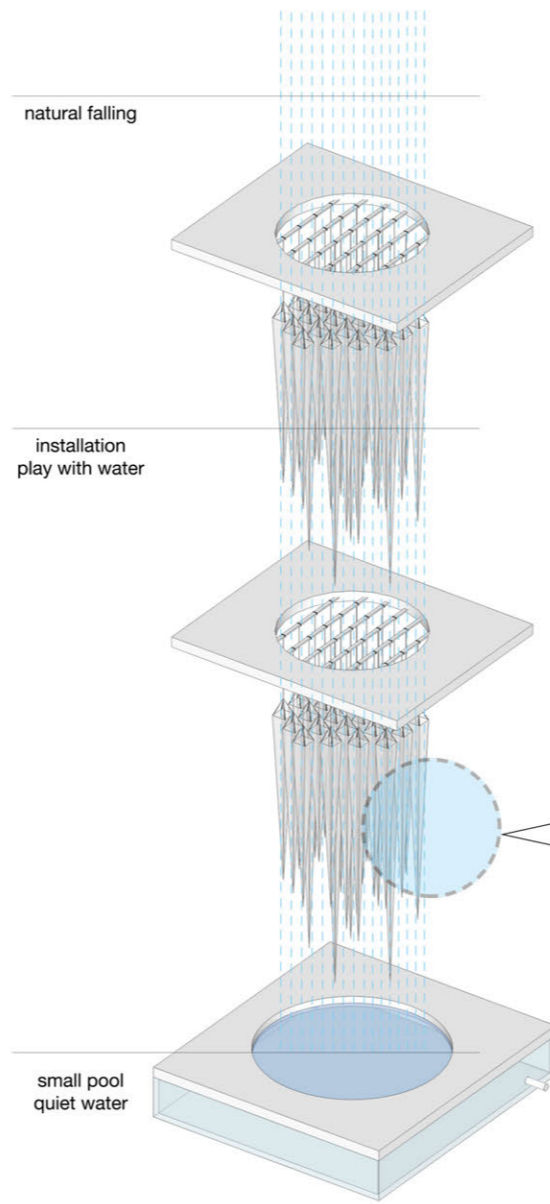
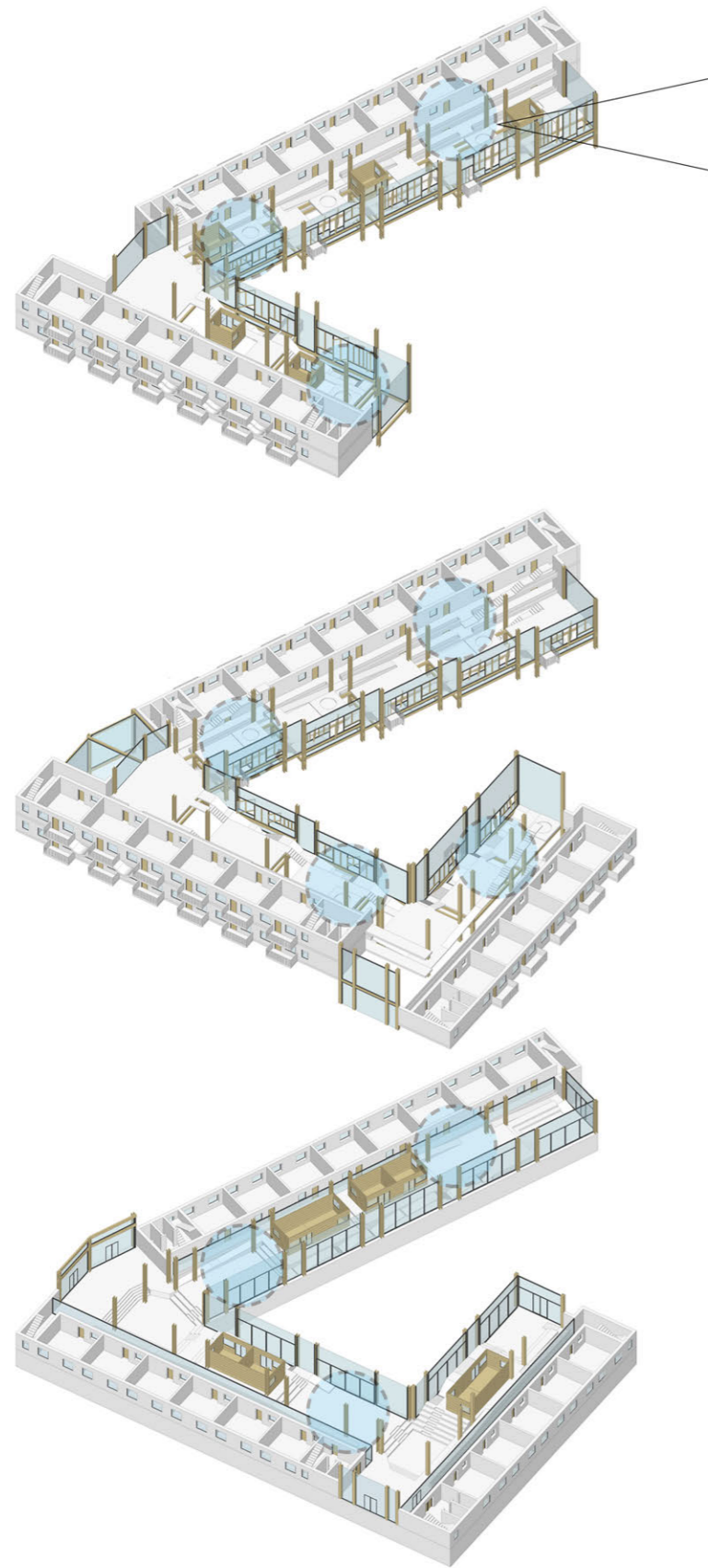


Figure 30. Water installation details.

Rendering



Figure 31. Rendering 1.

Rendering

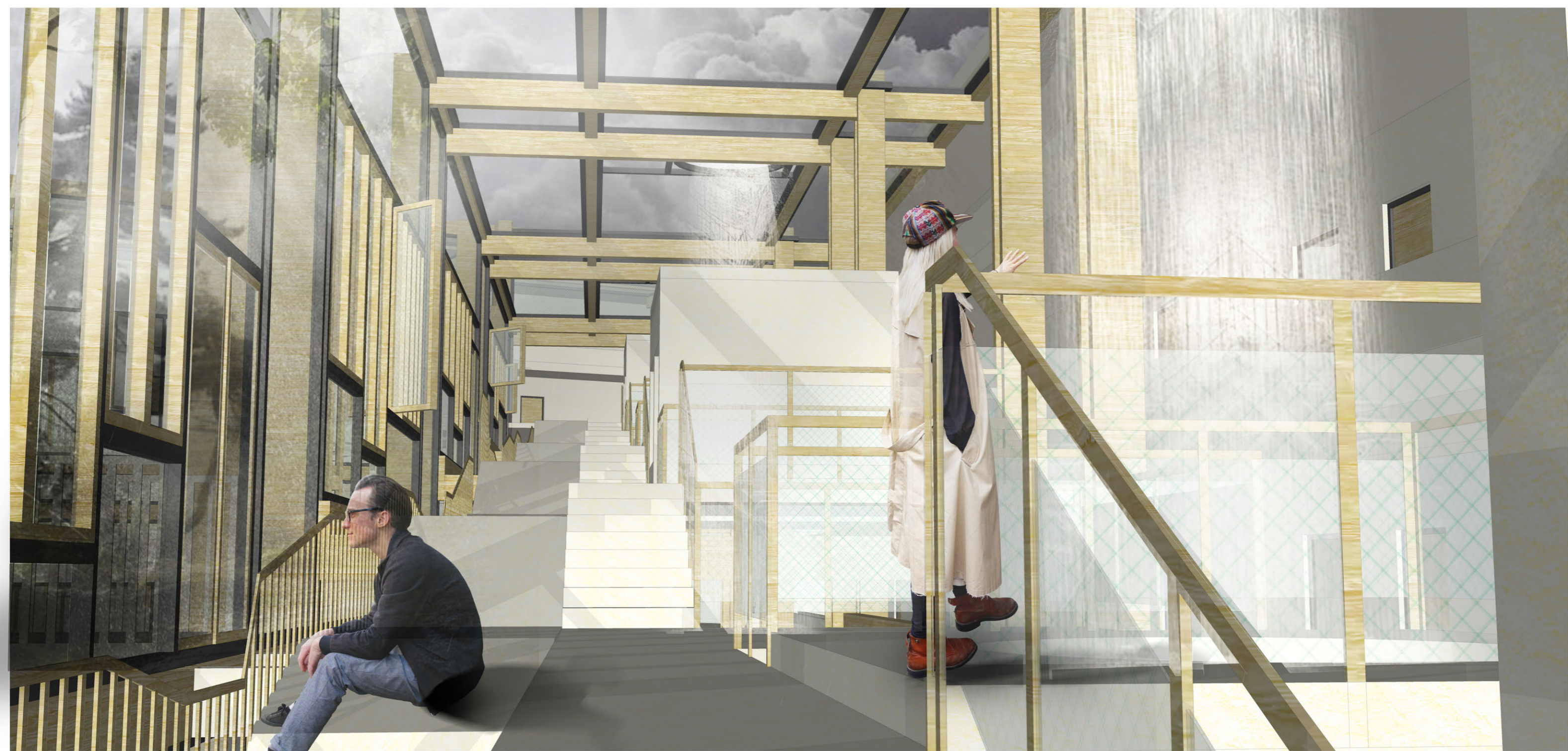


Figure 32. Rendering 2.

# Rendering

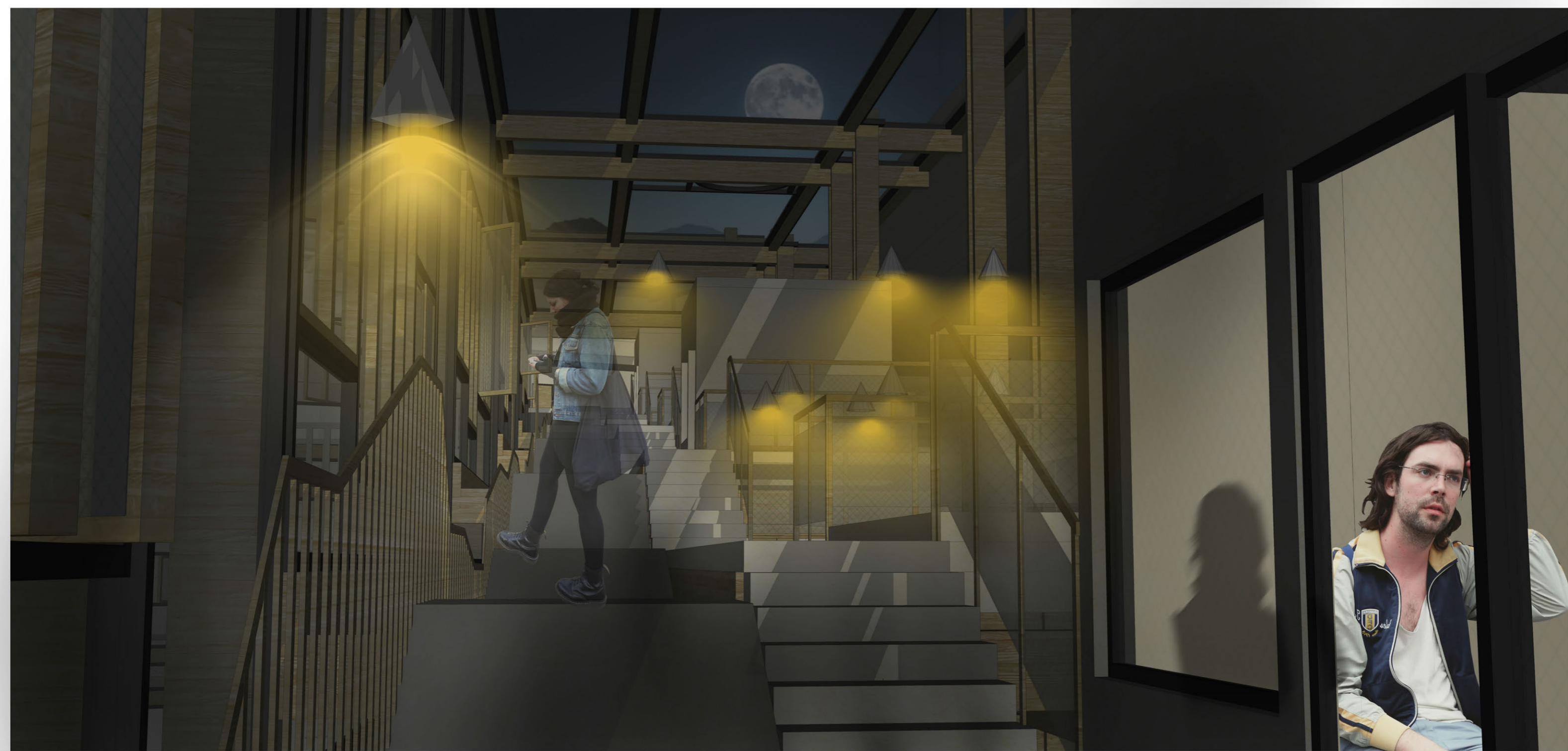


Figure 33. Rendering 3.

**Network in the whole community**

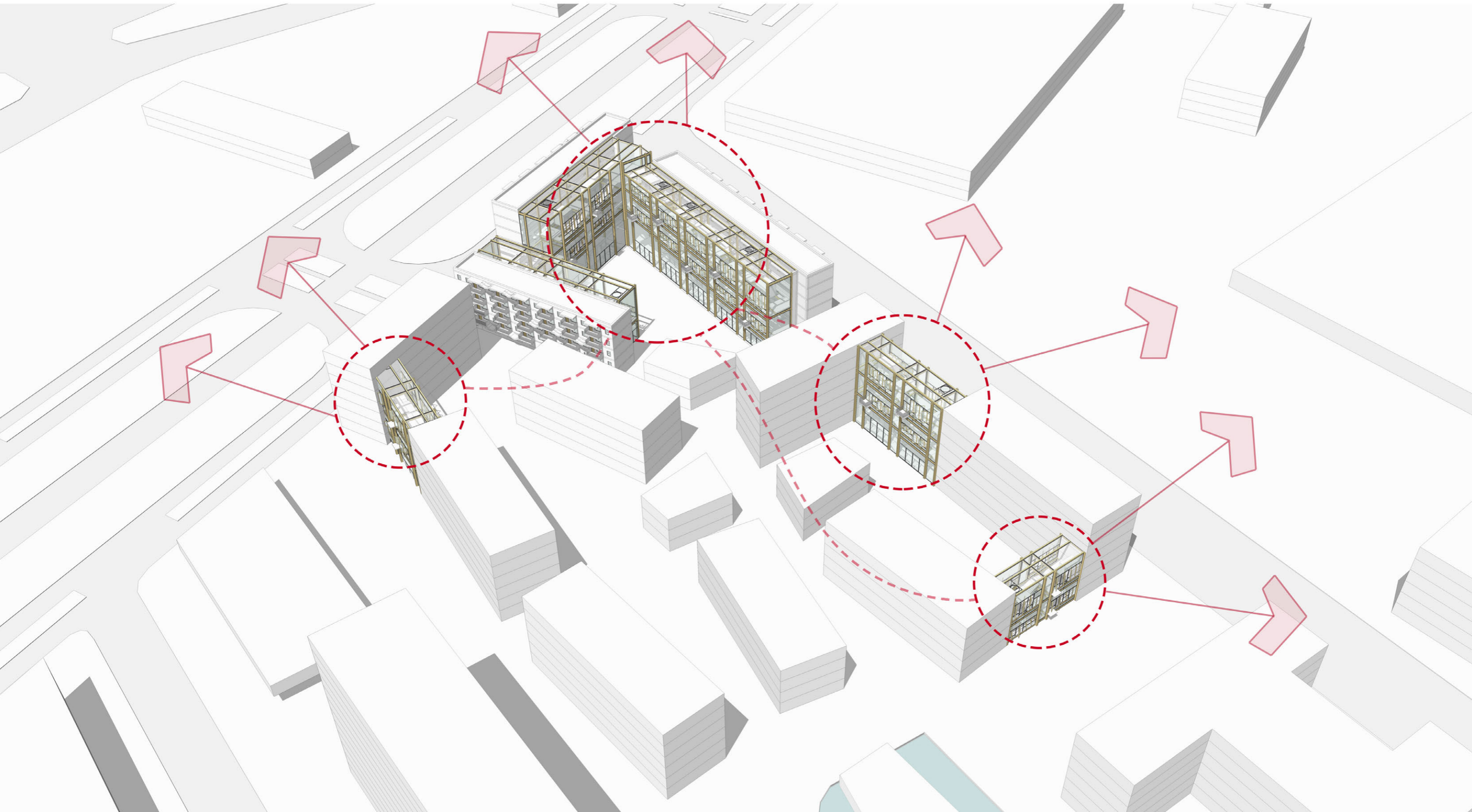
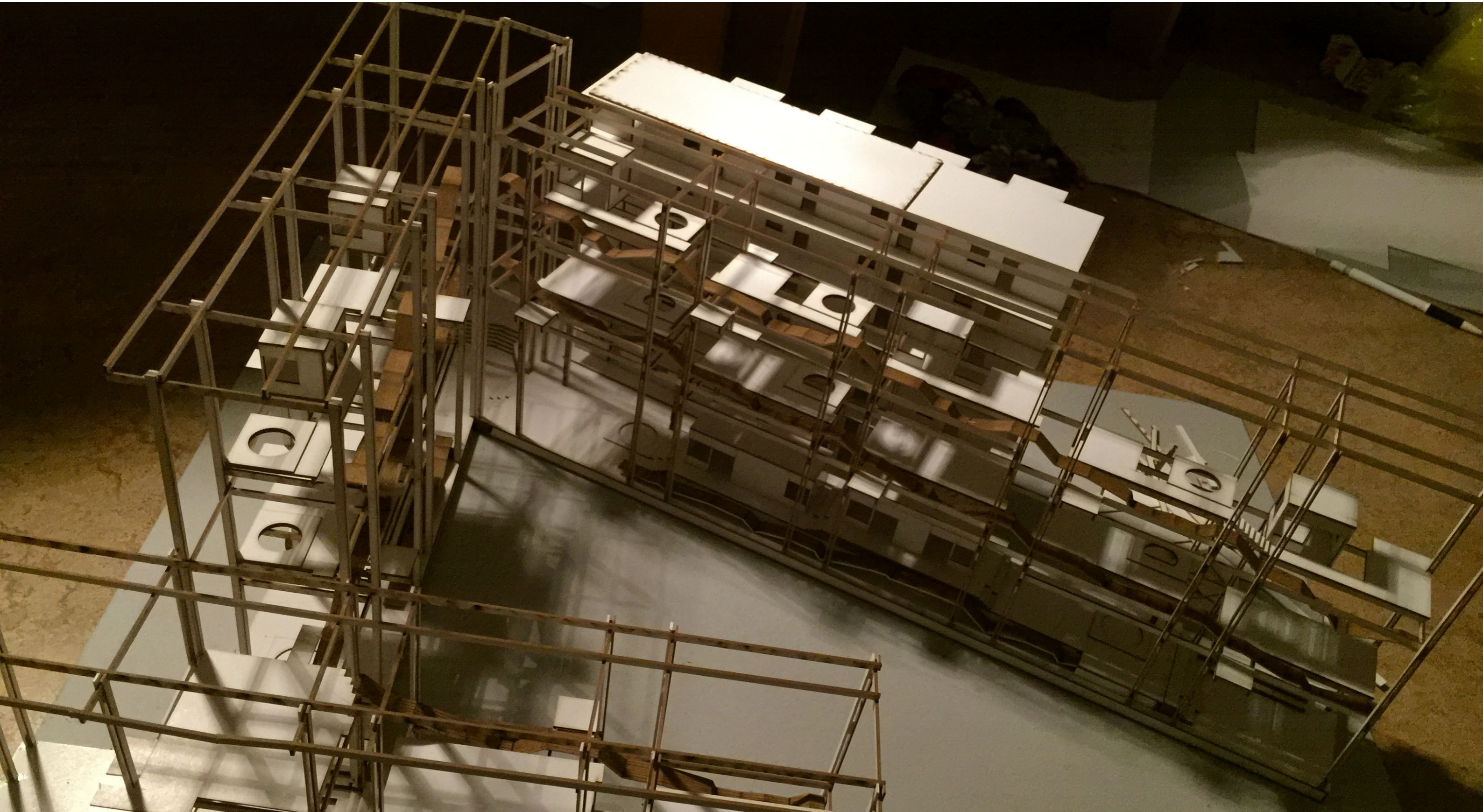


Figure 34. Community network.



Model photo





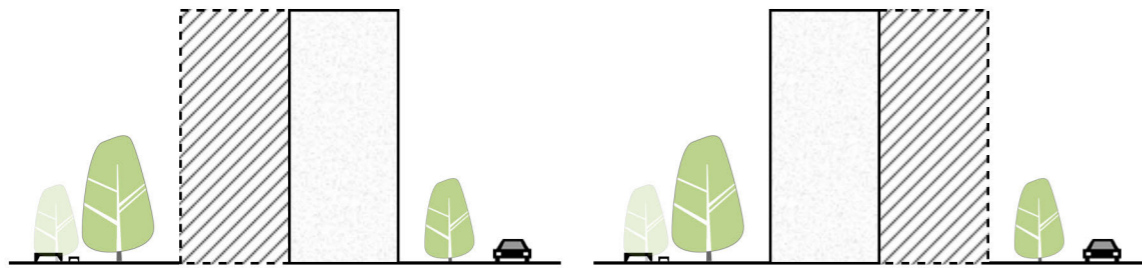
#### ***Reflection and reference***

*Chapter 4 shows reflection on my thesis, including more possibilities on the inside hang out space and a conclusion of the process and result of the thesis.*

## Reflection

### More possibilities for this inside hang out space

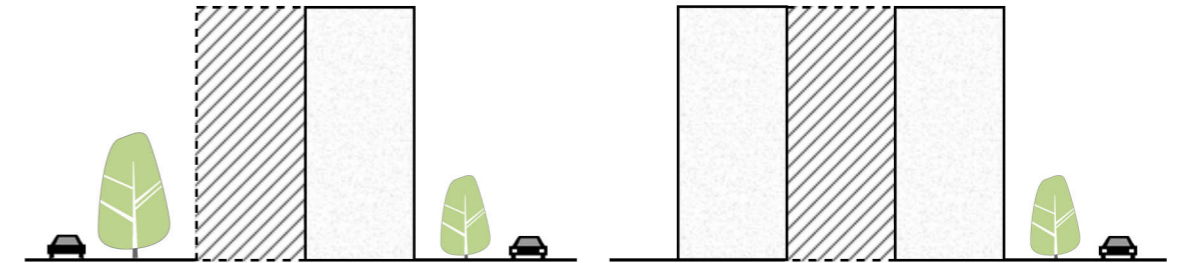
#### 1. Switch the hang out space with apartments



Because the hang out space is relatively private and it belongs to the community, the space was placed facing the yard. The positive aspects are providing secure feeling to users of the upper floors, and providing sufficient sunlight since the longest side of the building faces south. On the other hand, the first floor is designed for public but blocked by the apartments. Thus, the negative aspect for this design is the weak connection to the street.

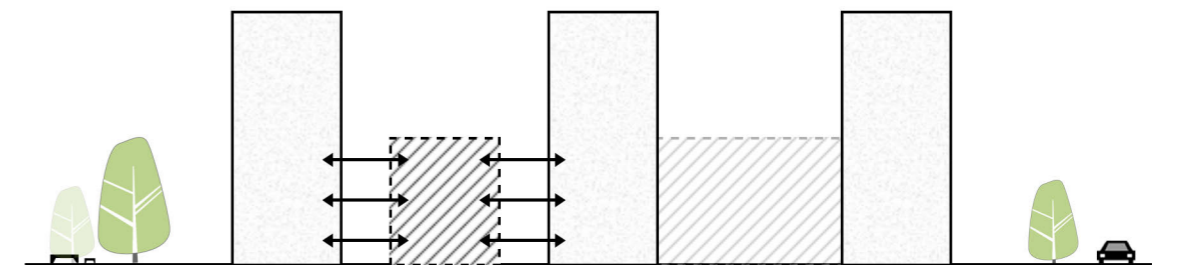
If the hang out space and the apartments are switched, the hang out space would face the street which changes its identity. The purpose of the hang out space would be more designated for the public. Additionally, the upper floor part would be exposed towards the public. The positive aspect is that the hang out space could be more visible to the public through weakening boundary between the street and the community. Served as an urban space, the hang out space brings positive influences to the larger urban area. Specifically when stepping into the space, people have no invasive feeling. The negative aspects are that the residents would feel insecure due to the exposure, and most of the space would lack sunshine.

#### 2. + commercial/office building



This inside hang out space can be attached to a commercial or an office building. If combined with a commercial building, the hang out space would have the main function as providing a place for dining, rest and entertainment. If an office building is combined, the main function of the hang out space would be for the purpose of communication, co-working and leisure. The main function of the hang out space needs to be interrelated with the main function of the office building in order to build up an efficient and fluent flow.

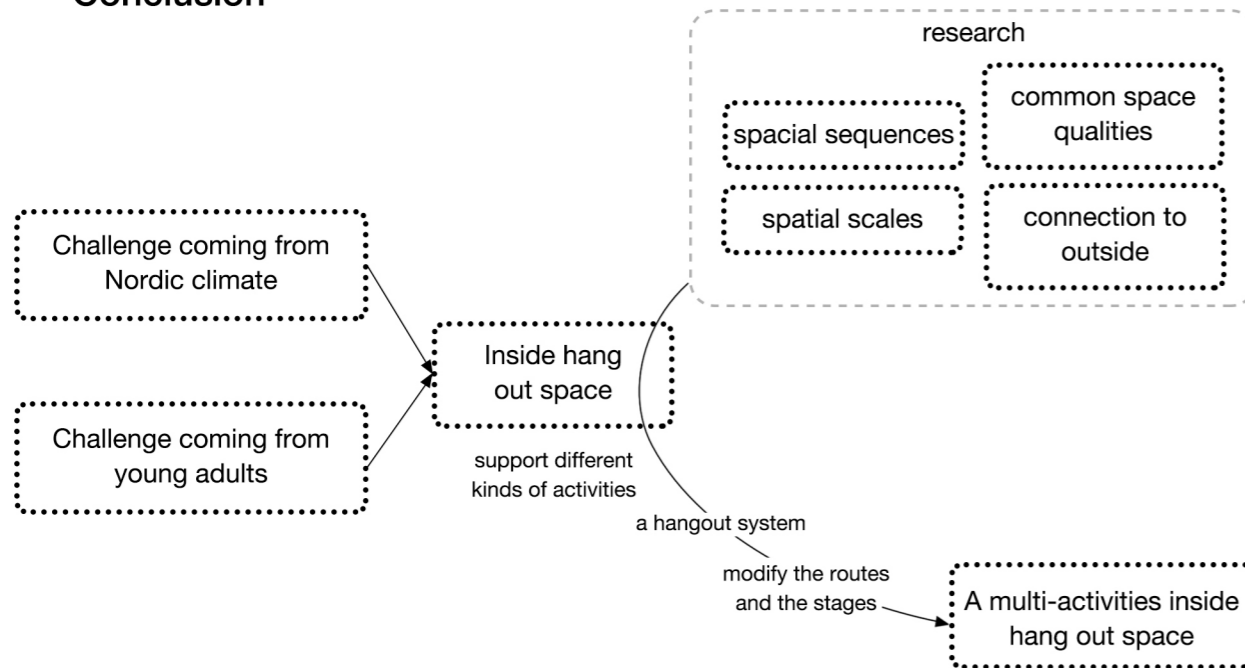
#### 3. + nothing, to become an inner street



If this hang out space exists as an independent inner street which is no longer an attachment to another building, it should have its own particular function – facilitating circulation of people, together with several commercial and leisure spaces. Without restrictions from an attached building, the space could have various functions. Furthermore, the orientation and view can be optimized. Then, the main task for the designer is to investigate the role of the space in the local urban area.

## Reflection

### Conclusion



#### Multi-activities space

The aim of this thesis is to design an apartment-attached shelter that is capable to hold multiple activities.

I started with the research of the relationship between activities and spatial features. The research of common space in residential building gave me an overview of what types of activities and spatial feelings an additional space in residential building should inhere. The research of spatial sequences helped me select the suitable relative location of the hang out space and the apartments. The research of matching spatial scales with various activities happened between different human relationships helped me to decide the scales of spaces. The research of connection to outside is a subordinate part which provides extra value to the space.

The design part is based on the research results. The design process started from choosing the spatial sequences and spatial scales, building up a system of the hang out space, modifying each route of this large system, to modifying each stage along each route. Finally, it generates a multi-activities space.

#### What is given to the residents

This hang out space provides people an attractive shelter to meet, mingle and communicate with other people without disturbance from any unpleasant weather. For the residents living in this building, on one hand, it is an extension of their homes into the public; on the other hand, it is an extension of the outside world to their living space. The shelter provides residents a special social climate. For all residents living in this community, the shelter imitates a community center where people can visit and mingle with neighbors. It is a starting point to expand the network of social spaces located in different sites of the community and all residents in the community would form stronger social bindings.

#### What is given to the street

The hang out space can become a “power bank” on the street, where people can come over to have a rest, wait for friends, take a walk, have a short meeting or relax for a while. If combine with some commercial area in the future, it could hold a common sitting area which is extended from a café shop, a restaurant, a food track, or a bookstore.

#### Environmental psychology

The theoretical background of this thesis is based on a discipline called environmental psychology. “Environmental psychology is an interdisciplinary field that focuses on the interplay between individuals and their surroundings.”- from Wikipedia. Through the research and design process, I gradually learned that designing multi-activities space is a process of considering the interplay between people and physical surroundings. The thesis is a practice of applying the environmental psychology theory as an underlying principle to lead and support my architectural design. In the future, I would like to apply this process in a real project. The feedback from users could bring me tremendous insights and reflections towards the theory.

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**CHALMERS**  
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Master thesis

**Qiaoyi Tong**

Hang Out Inside

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Chalmers School of Architecture  
Department of Architecture and Civil Engineering