



# KNIJTIJZERPANDEN PROCESS BOOKLET

AR3AH105 ADAPTING 20<sup>TH</sup> CENTURY HERITAGE

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PADDY TOMESSEN







# KNIJTIJZERPANDEN

MAURIZIO BRENNNA



# Design Case

Site - 1:10000





# Design Case

Site - 1:5000



# Design Case

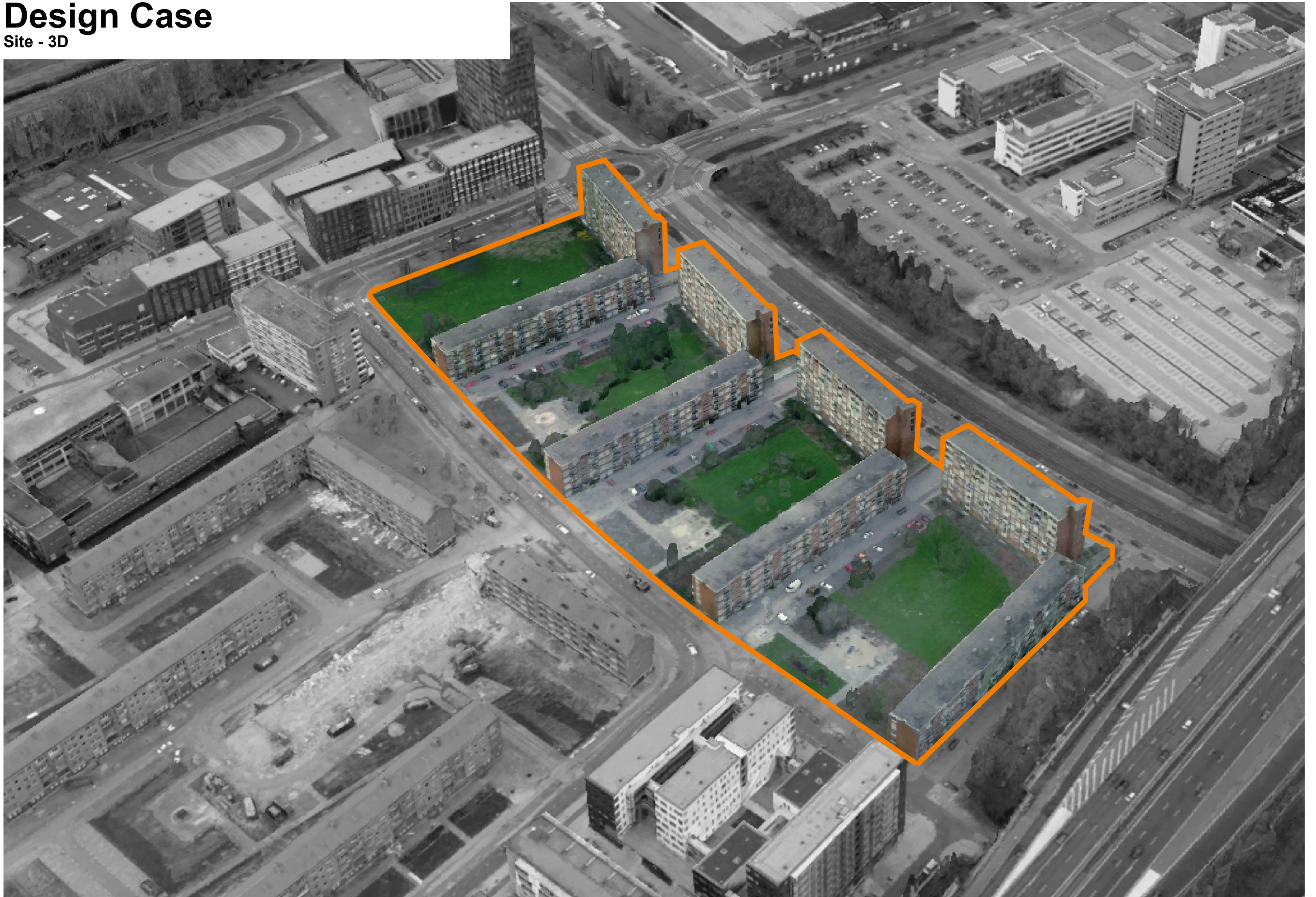
Site - 1:1000





# Design Case

Site - 3D





# Design Case

## Amsterdam New-West - Knijptijzerpanden - Historic Development

### The General Expansion Plan (AUP)

The Design Case is located in Amsterdam New-West. Separated with the older city districts by the A10 highway, the site is part of the area known as the Western Garden Cities. The Western Garden Cities is the most well-known part of the General Expansion Plan (AUP). This urban development plan was created between 1934 and 1958 and was delayed by World War II. The first construction started in 1951 in Slotermeer. After followed the areas of Geuzenveld, Slotervaart, Overtoomse Veld and Osdorp. The entire area was completed in 1965.

The idea of the Expansion Plan was that each neighborhood has its own shops, schools, churches, ample greenery and playgrounds. These invite social interaction and relaxation. The accessibility to different facilities provide residents with a high degree of independence from the old city. A basic principle of the Garden City concept, in which the neighborhood functions as a self-sufficient unit. The buildings are mixed: medium-height constructions (up to 4 floors), single-family homes, and special types of housing such as elderly housing and villas as interspersed. High-rise buildings create 'distinctive points' among the low-rise structures.

All of this is, of course, optimally oriented towards the sun. The motto of the Expansion Plan by Van Eesteren was 'light, air and space'. Through traffic is separated from residential areas and shops are planned along the main roads. Work also played an important role in the Expansion Plan. From offices within the neighborhood to light industry in designated areas to heavy industry in the Western Port Area.

### Overtoomse Veld

The construction of Overtoomse Veld began in 1959. To the east of this neighborhood lies Rembrandt Park, serving as a green buffer with the pre-war city. Like the nearby neighborhood of Slotervaart, Overtoomse Veld consists of a mix of low-rise, mid-rise, and high-rise buildings.

Urban renewal is still in full swing in the area. The focus is on an urban living environment with a mix of functions, high density, and closed building blocks. Amsterdam is building homes here for the many people seeking housing. The neighborhood originally had many different functions and amenities aimed at the entire city, such as the GVB bus depot, the World Fashion Centre, and hospitals. Newcomers include hotels, creative hubs, nightlife spots like sky bars and clubs.

Furthermore, the municipality has designated Overtoomse Veld as a suitable location for schools for students from both the new garden cities and Oud-West and the Jordaan. In addition to several primary schools, various secondary schools and a teacher training college are located in the district.

### Playgrounds

In the design of the new neighborhoods and districts that arose after World War II, attention and space for (playing) children formed a significant pillar. As a result, a substantial part of the public space was filled with places where children could play together freely and safely. In 1947, the Department of Public Works wisely sought the help of architect and designer Aldo van Eyck for this purpose. With the unique combination of his design talent, didactic insight, and social heart, he created iconic playgrounds and play equipment for children throughout Amsterdam.

Aldo van Eyck created a unique design with its own character for each play location. Up until 1957, this resulted in approximately 200 detailed, unique in situ designs for playgrounds.



Knijptijzerpanden in Development (<https://archief.amsterdam/beeldbank>).



Completion of the Knijptijzerpanden around 1960 (<https://archief.amsterdam/beeldbank>).



# Design Case

## Knijtizerpanden - Architect - Recent Development

### Knijtizerpanden

The architect, Herman Knijtizer, was born in 1914. In 1934 he graduated in building sciences with which he started his career. In his first years as an architect he combined working with another study at the Academy of Building Arts. During his time at the academy his teacher was Eshauzier, which Knijtizer would see as an exemplary architect. Knijtizer was mostly active during the post-war reconstruction period, in which there was a great housing shortage. In 1955 he designed four building blocks, now known as the Knijtizerpanden.

The ensemble of high building blocks adjacent to the Jan Evertsenstraat forms a whole with the lower residential blocks around the open courtyards behind them. Together the complex form gives substance to the post-war Amsterdam garden city architecture in a characteristic way. The building complex consists of 364 dwellings and 4 shops equally distributed over four building blocks of four stories and four building blocks of seven stories. The building blocks accompany the radial street (Jan Evertsenstraat), which leads directly to the city centre. The floor plans of these 'Knijtizerpanden' are characteristic for post-war housing in Amsterdam. Remarkable for these building blocks however, is the combination of porch apartments at the lower levels and gallery apartments on the top levels. The last which contain apartments for singles, a new target group for that time. Furthermore, the implementation of elevators in residential building blocks was also a relatively new addition during that time.

Even more, three of the four courtyards of the building complex have playgrounds for kids. A typical characteristic for the Western Garden City concept in which attention and a safe space for (playing) children was important.

### New Life

If not for the economic crisis in 2008, the Knijtizerpanden, then owned by housing company FarWest, would have most likely been demolished. The state of the buildings was dramatic and even the demolition permit already granted. During that time most housing corporations were considering either a high renovation or demolition. Most corporations then drew the conclusion that renovation costs would be just as high as demolition and new construction. However, due to the economic crisis, the buildings fell into the hands of housing corporation Rochdale. Rochdale took the position of preservation towards the Knijtizerpanden and immediately decided that instead of demolishing the buildings they would renovate them for around 25.000 euros per apartment. By renovating the buildings would last for at least 20 more years, the rent would stay the same and the apartments would remain affordable, according to Rochdale.

The preservation of the Knijtizerpanden would be a relieve to heritage conservationists, which protested against the demolition of the buildings. In december of 2012, the Knijtizerpanden would be designated as municipal monument by the New-West district and the complex is now part of the top 100 post-war Amsterdam heritage list.



Streetview of the Knijtizerpanden from the Jan Evertsenstraat (<https://archief.amsterdam/beeldbank>).



Goed Wonen interior style of the reconstruction period (<https://archief.amsterdam/beeldbank>).



SITE

MAURIZIO BRENNIA



# Amsterdam

Amsterdam - 1:10000





# Amsterdam New-West

Overtoomse Veld - 1:5000



# Overtoomse Veld North

Knijtijzerpanden - 1:1000





# Historic Urban Development

Overtoomse Veld - 1960, 1975, 1995, 2010 - 1:5000 (Scaled)



**Overtoomse Veld - 1960**

Around 1960 the construction of the Overtoomse Veld was as good as completed. One of the last constructed districts of the (western part) of the General Expansion Plan (AUP). The surroundings of the district, a part of the pre-war city districts to the east, are still very spacious and not very densely developed yet.

Over time (1975 & 1995), the development of the surrounding areas is already more structured. The reconstruction period is blossoming and the construction of the hospital and schools are important developments boosting the area and making it exemplary as a Western Garden City district.

In 2010 we see even more development of the area, as urbanisation has become more prominent, and the demands for city housing keep growing. The area is structured more densely and we even see changes in building complexes. Building complexes to the south of the design case have been restructured by demolition and new construction. The architecture of the area was considered as ugly and of low value. Due to the economic crisis this demolition and rebuilding process was halted. This halt evoked new ideas about the preservation and the uniqueness of the reconstruction period architectural structures. Which also led to the preservation of the Design Case - the Knijptijzerpanden.



**Overtoomse Veld - 1975**



**Overtoomse Veld - 1995**



**Overtoomse Veld - 2010**

# Historic Urban Development

Overtoomse Veld - 2023 - 1:5000 (Scaled)



Overtoomse Veld - 2023



# Demographic Info

Overtoomse Veld - 1:5000

The Knijtjzerpanden are located in Amsterdam New-West, in the district Overtoomse Veld North (highlighted in the map). According to the municipality of Amsterdam, the residents of Overtoomse Veld have various migration backgrounds. The largest group consists of residents have no migrational background. Furthermore other large groups have a European or Moroccan migration background. The rest of the inhabitants have either Turkish, Asian or other migrational backgrounds.

Graphic 1 shows the diverse backgrounds of the residents of Amsterdam New-West. The demographic composition of residents is extremely mixed. Multiple cultures come together in this district.

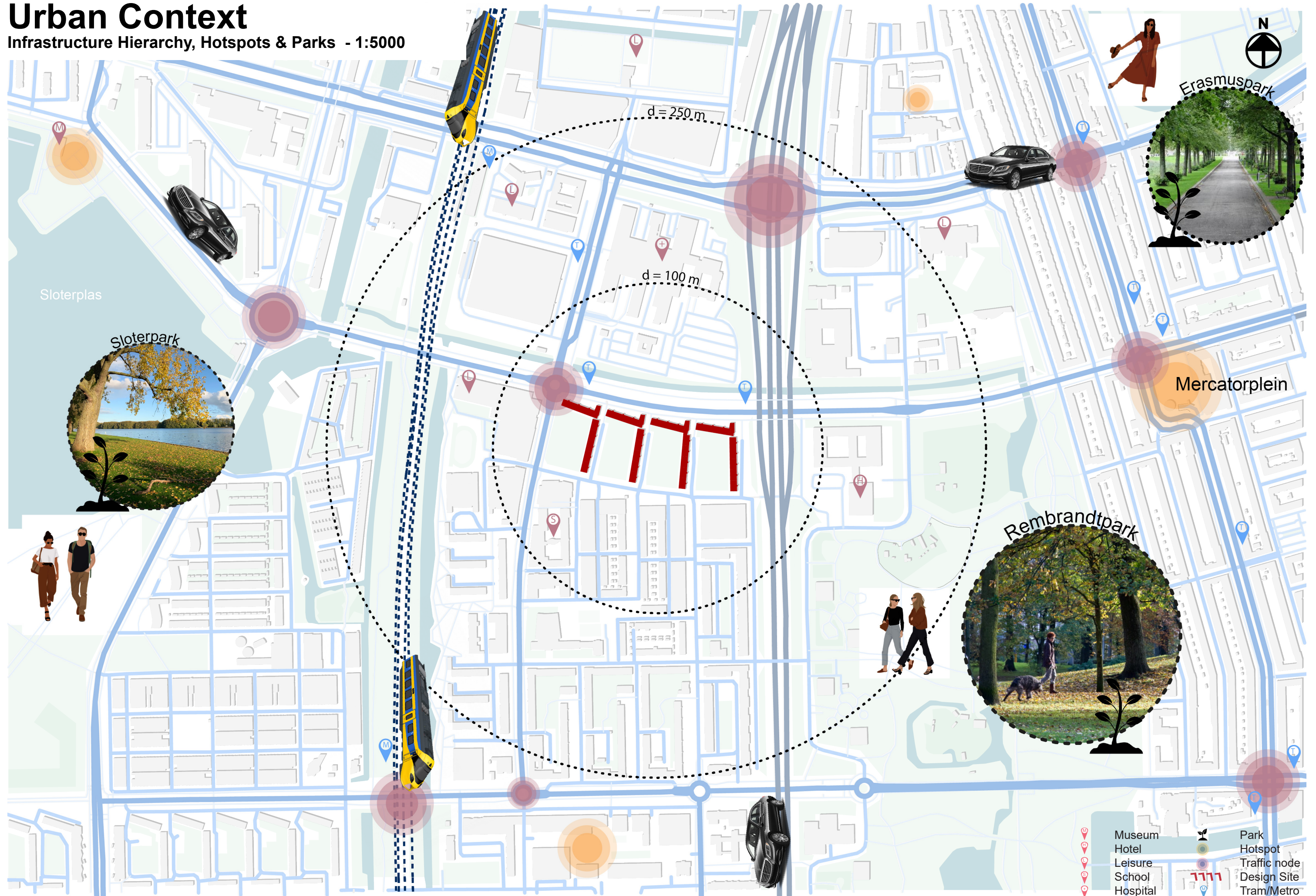
Graphic 2 shows the division of men and women in the district of Overtoomse Veld. In total the district counts 14.674 inhabitants. 51% of these inhabitants are women, the other 49% are men. To conclude we can say that this small difference is non-significant and is very balanced.





# Urban Context

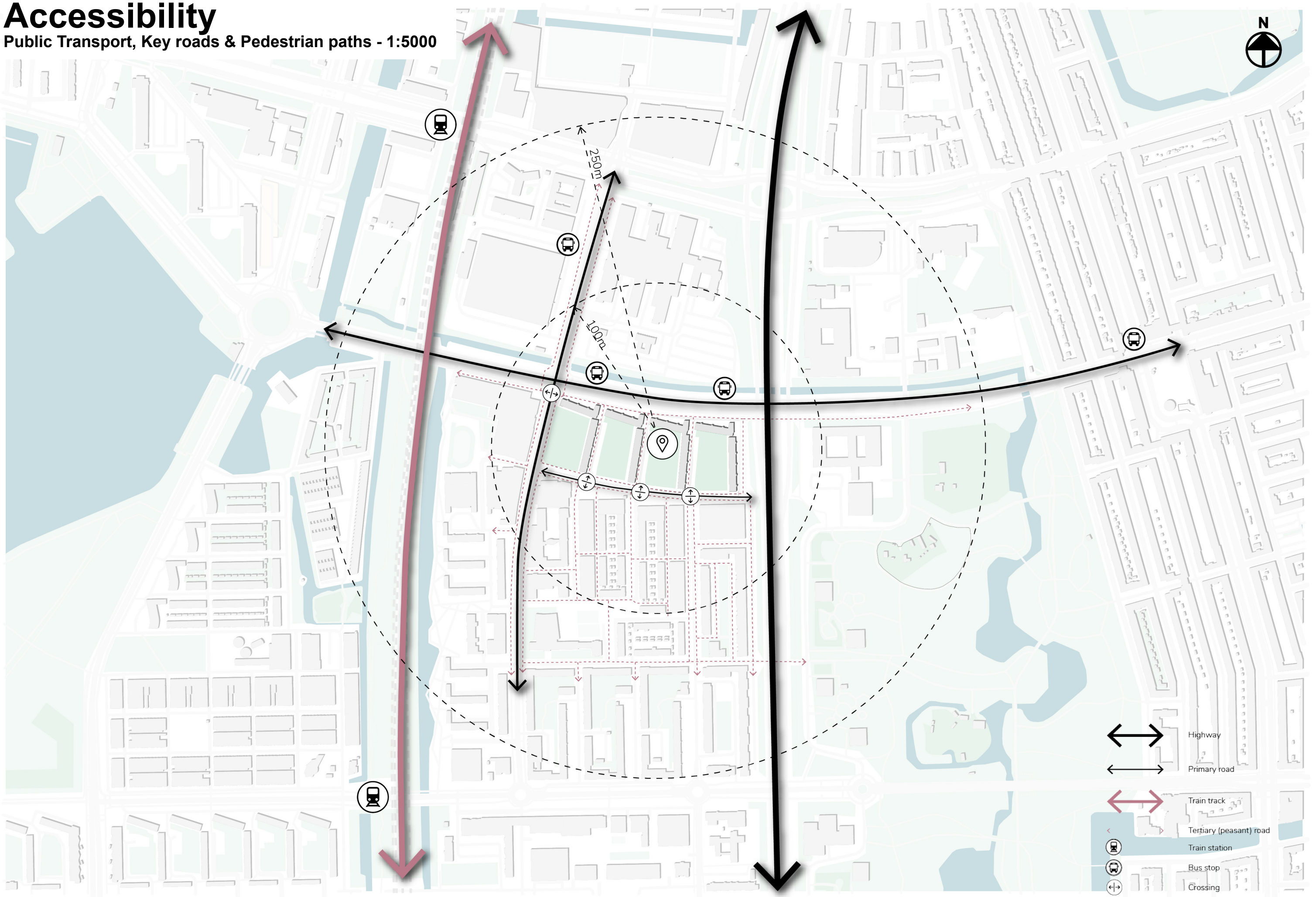
Infrastructure Hierarchy, Hotspots & Parks - 1:5000





# Accessibility

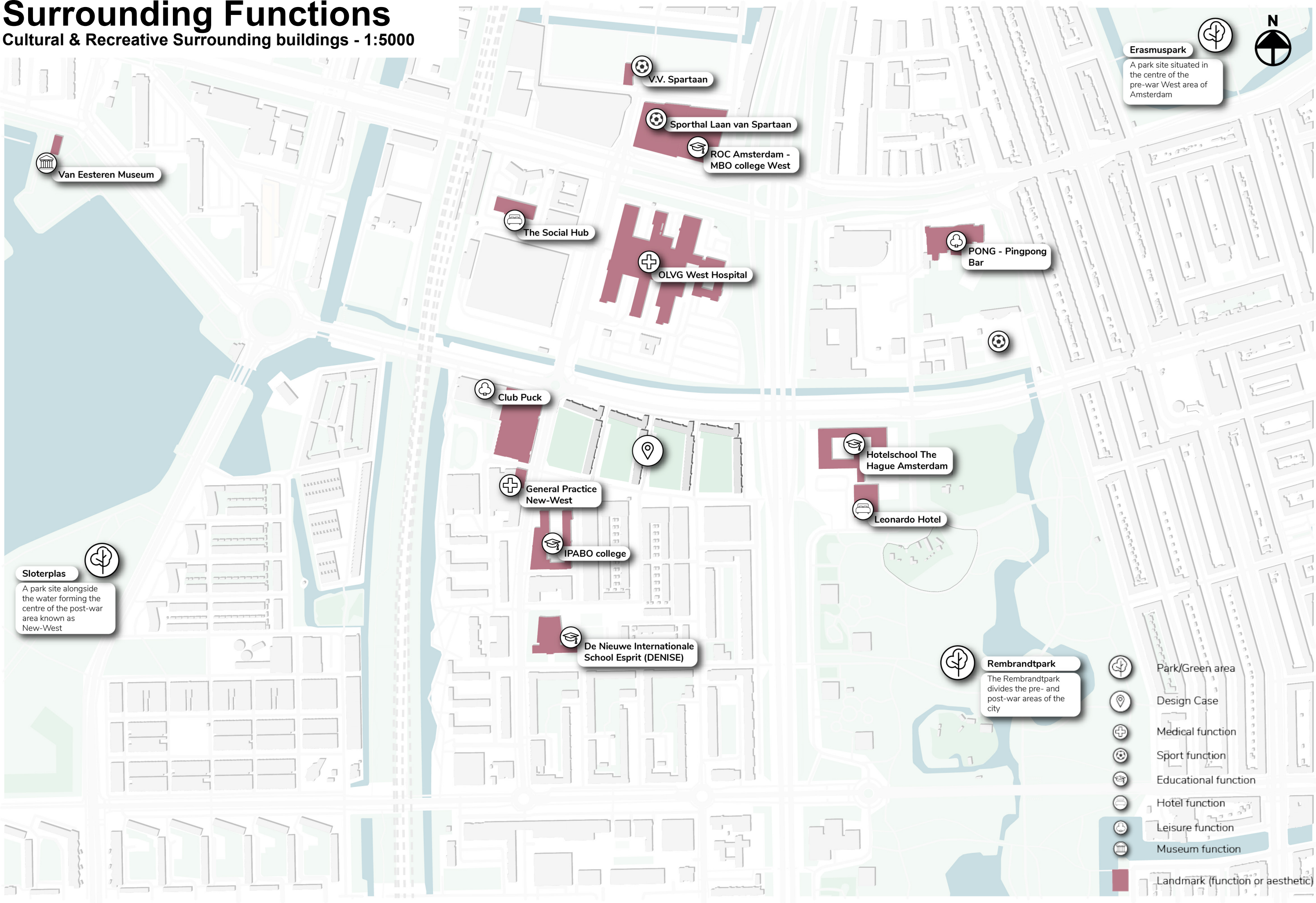
## Public Transport, Key roads & Pedestrian paths - 1:5000





# Surrounding Functions

Cultural & Recreative Surrounding buildings - 1:5000





# Sun Analysis

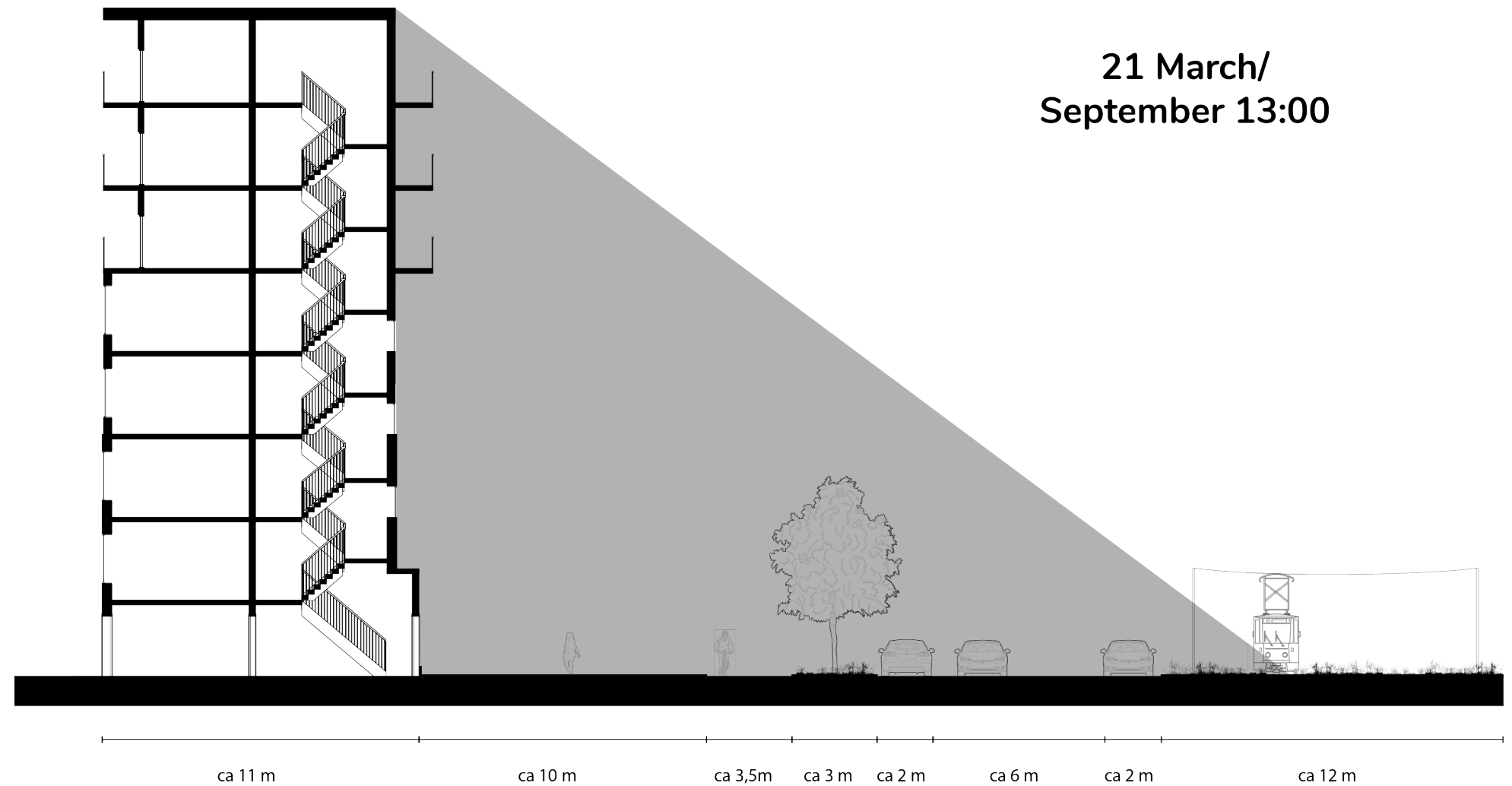
Orientation to the Sun - 1:5000



# Sun Analysis

21 March/September in Site Plan & Section - 1:1000 (Scaled) / 1:200

During the longest period of the year, most of the Jan Evertsenstraat is shaded. Only at the highest point of the sun, the street gets some sunlight. This however is only on the other side of the street. The narrow openings of 'the Wall' (Knijtijzerpanden) provide the little sunlight which debunks the perception of a 'Wall' a little bit. However the height of the building is significant and plays a big part in the perception and sentiments on the northern side of the site.



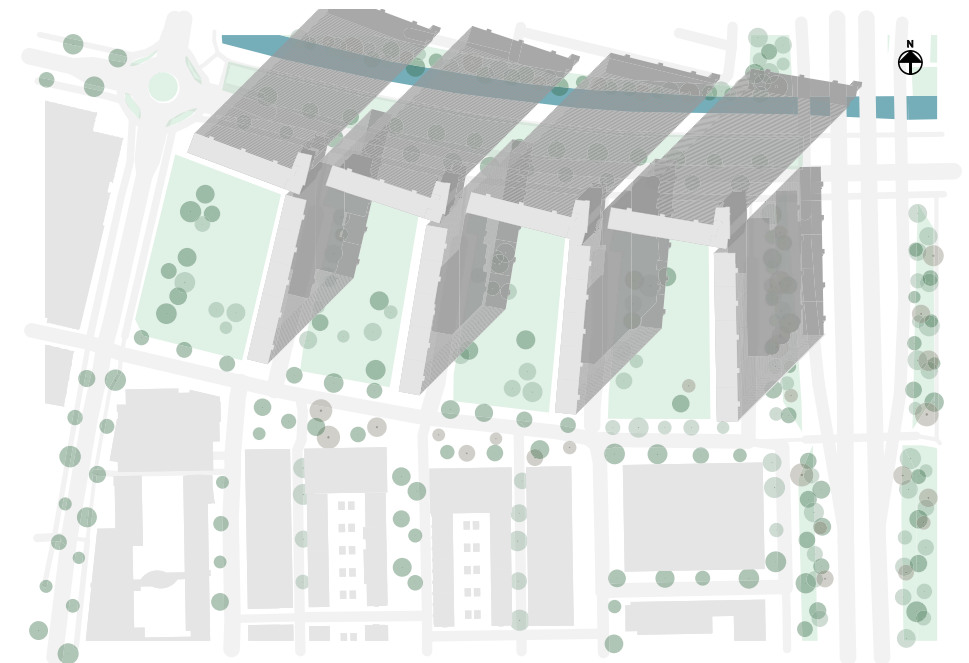
21 March/September 9:00/10:00



21 March/September 13:00/14:00



21 March/September 17:00/18:00

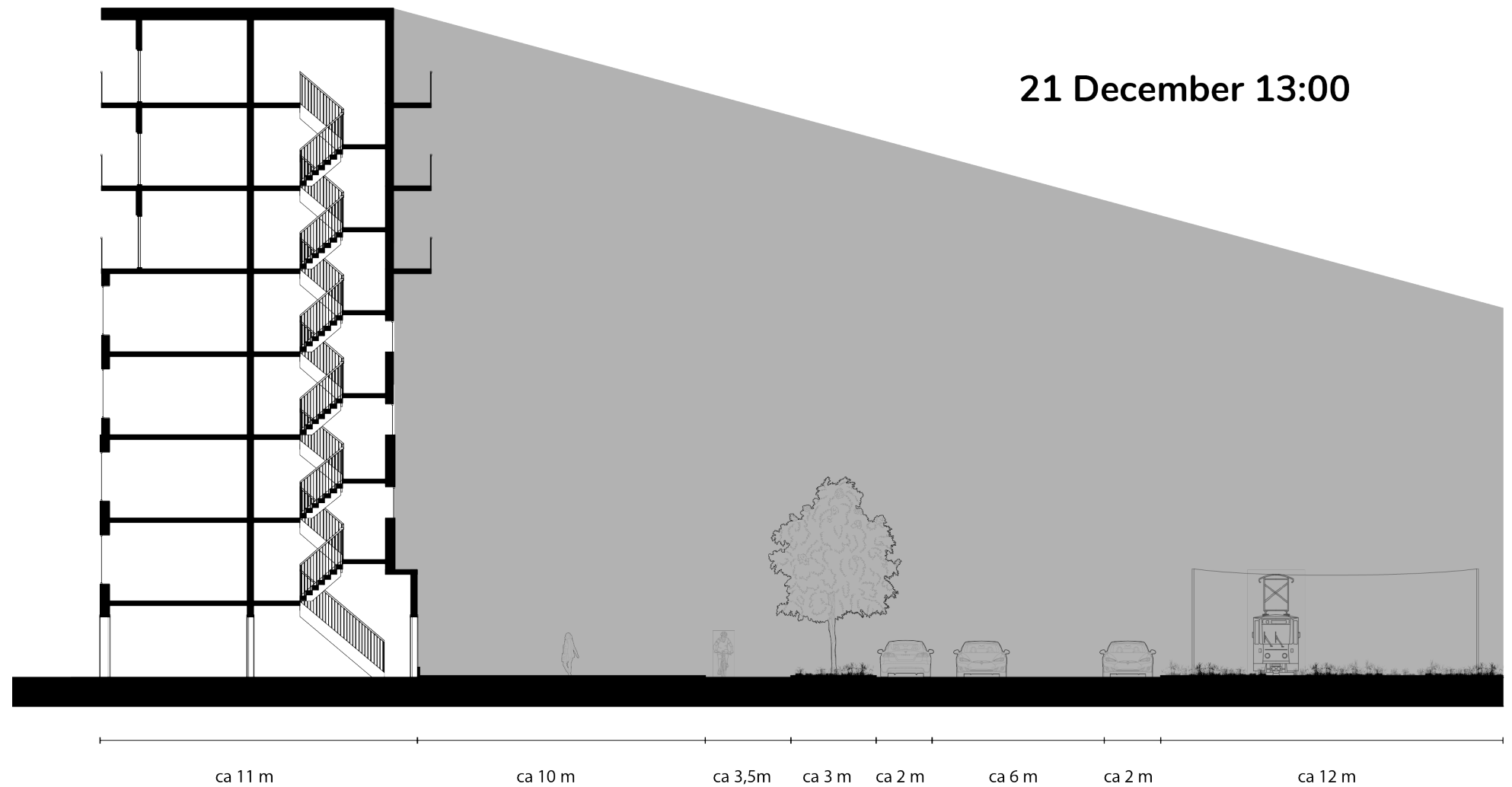




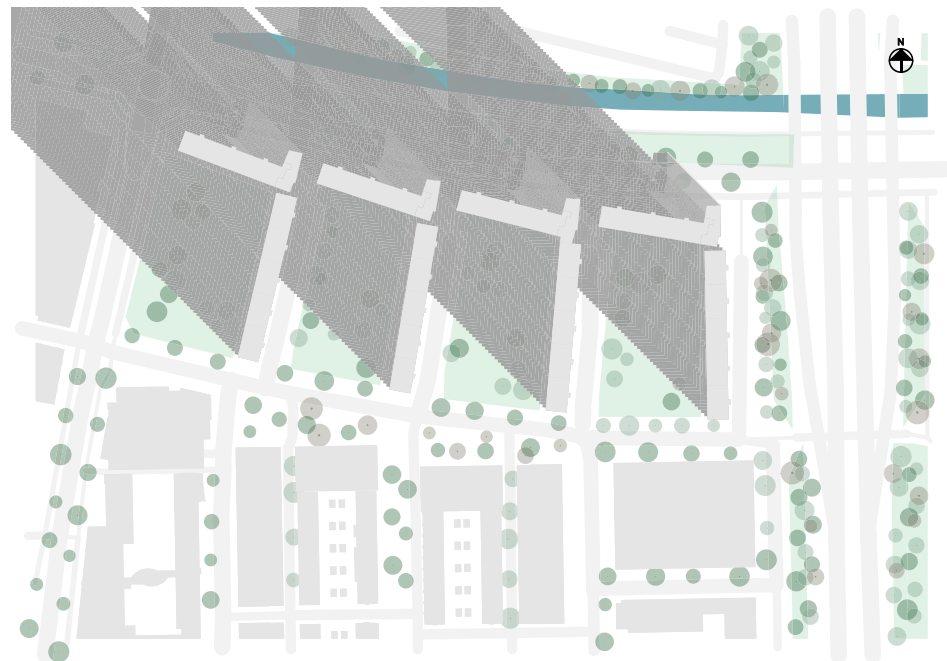
# Sun Analysis

21 December in Site Plan & Section - 1:1000 (Scaled) / 1:200

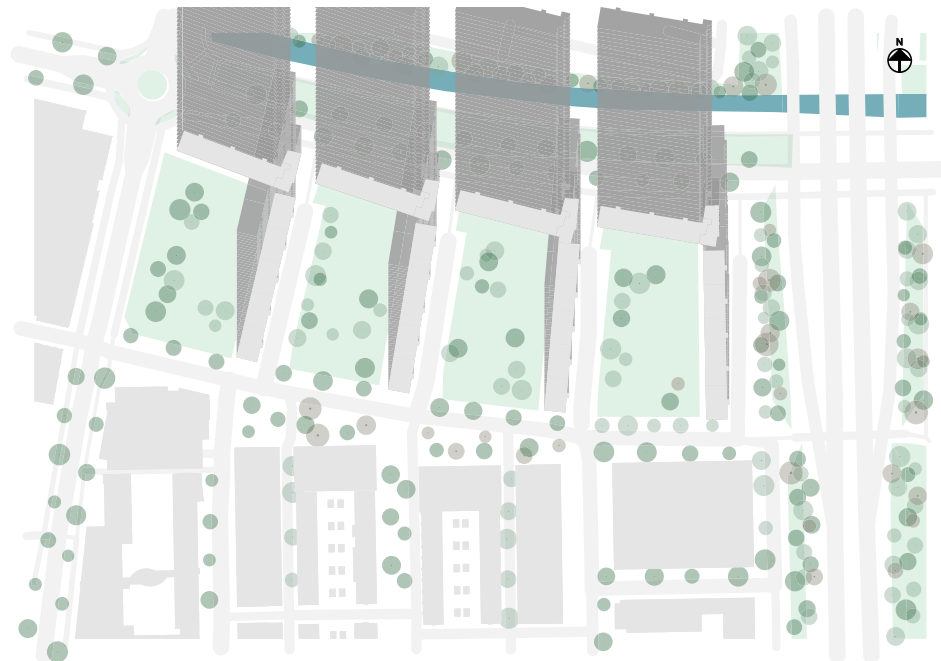
During the 'darkest' period of the year, the Jan Evertsenstraat at the northern side of the site is completely shaded. Even at the highest point of the sun during the day around 13:00 (12:40), the street is in complete shade. This creates for an enhancement of the Knijtjzerpanden being perceived as a 'Wall'. We see the only parts which are not shaded are the narrow ways in between the buildings which lead towards the open courtyards.



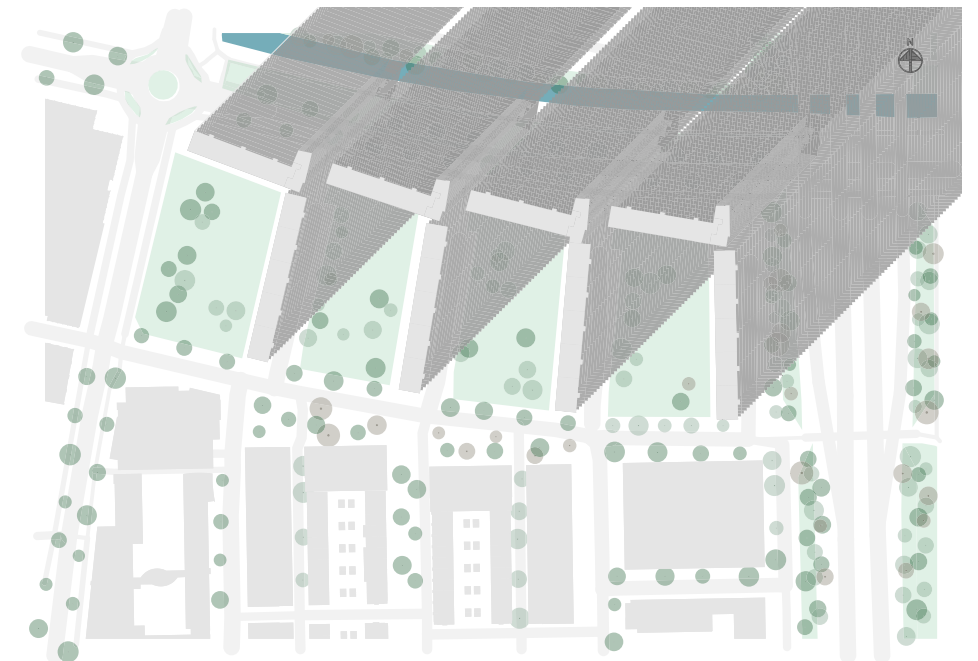
21 December 10:00



21 December 13:00



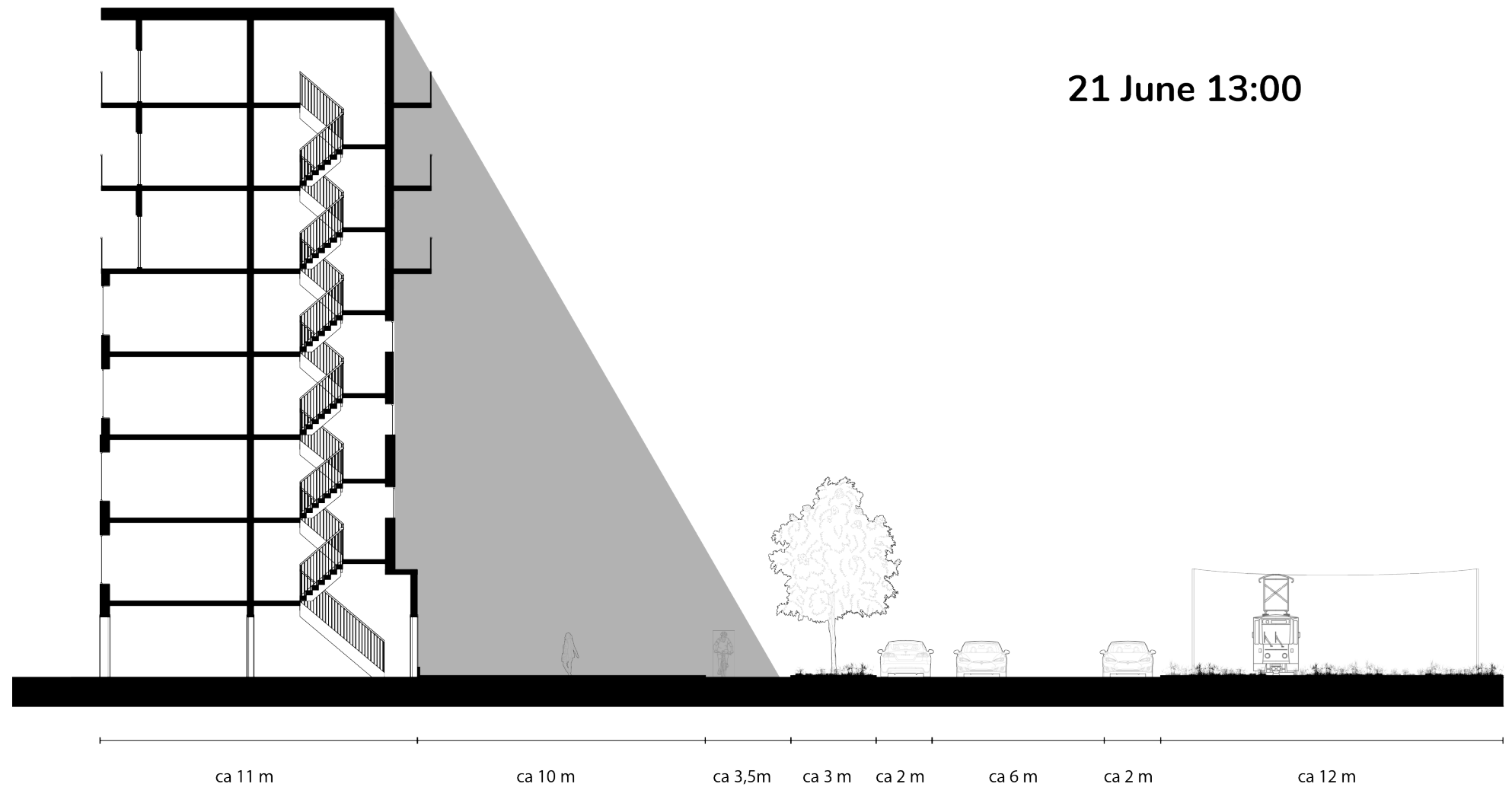
21 December 16:00



# Sun Analysis

21 June in Site Plan & Section - 1:1000 (Scaled) / 1:200

Even in summertime, the walkway and bikelane of the Jan Evertsenstraat are completely shaded. The car and public transport lanes do get sunlight and therefore the 'Wall' feeling is debunked a little. However this feeling remains strong when walking or biking past the building. Especially for the low amount of greenery close to the building.



21 June 9:00



21 June 13:00



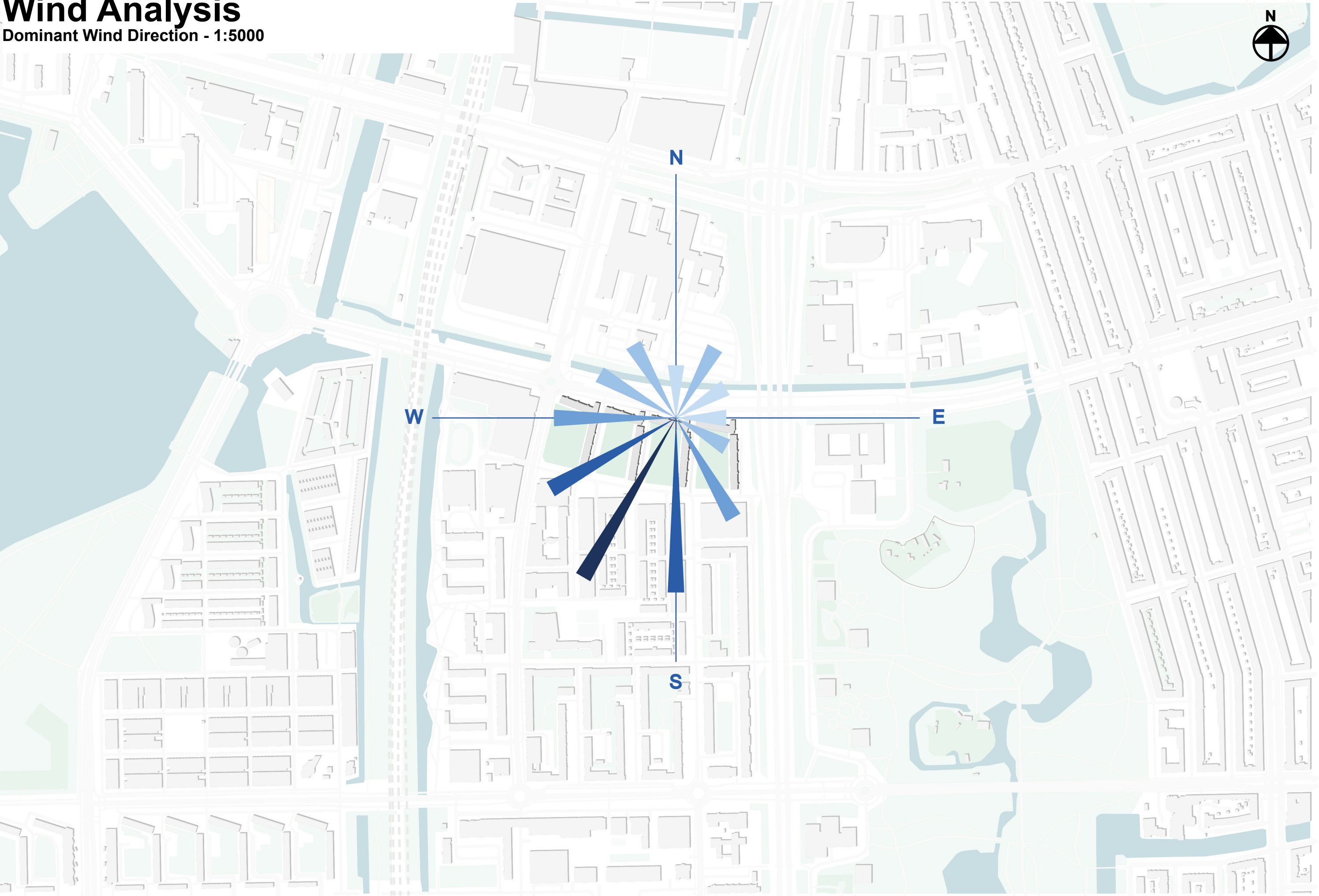
21 June 17:00





# Wind Analysis

Dominant Wind Direction - 1:5000





# Noise Analysis

Sound Hindrance of Surroundings - 1:1000



# Climate Analysis

Temperature - Sunlight hours - Wind speed/force

## Sun hours

During summer (June/July/August), a day contains between 8-10 hours of sunlight and about 14-17 hours of daylight. With a UV index of between 4 and 5.

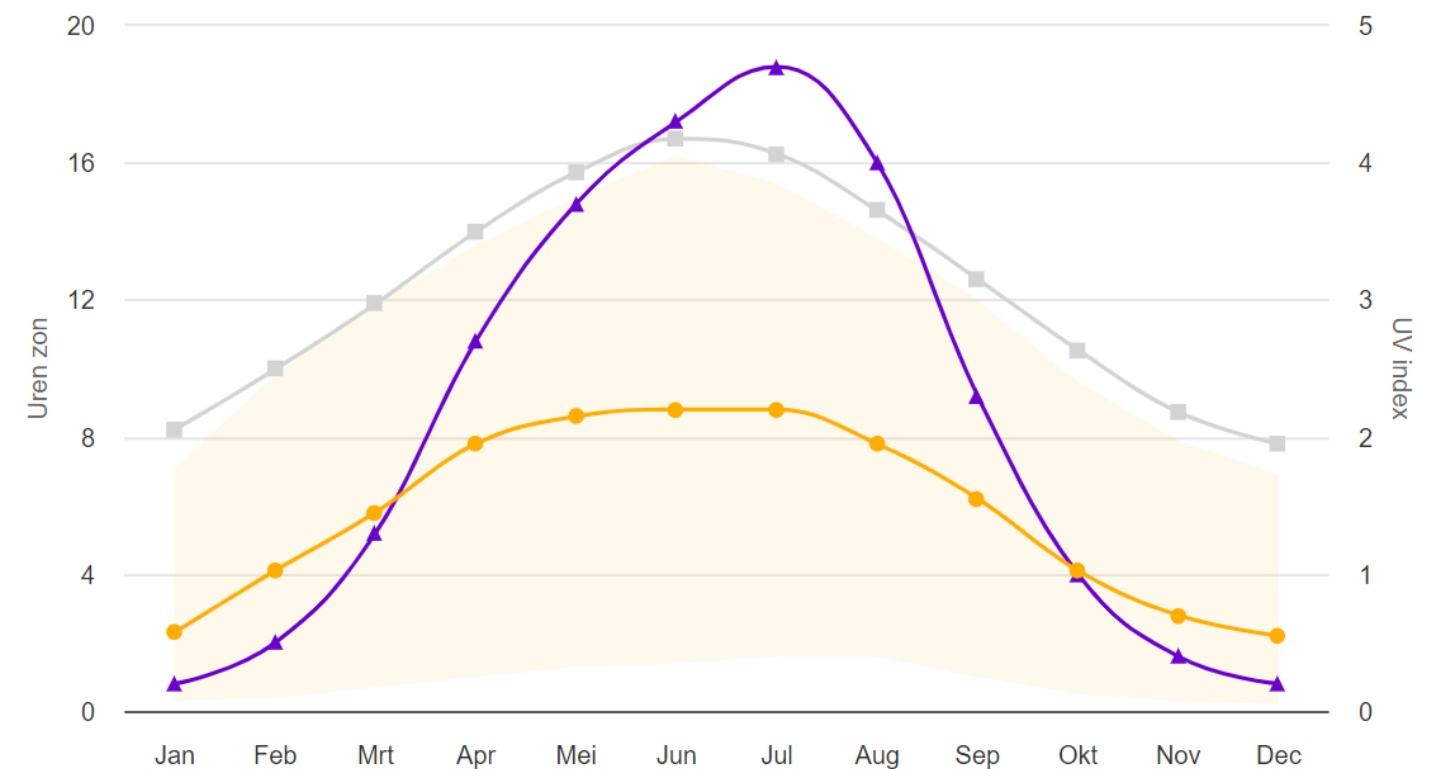
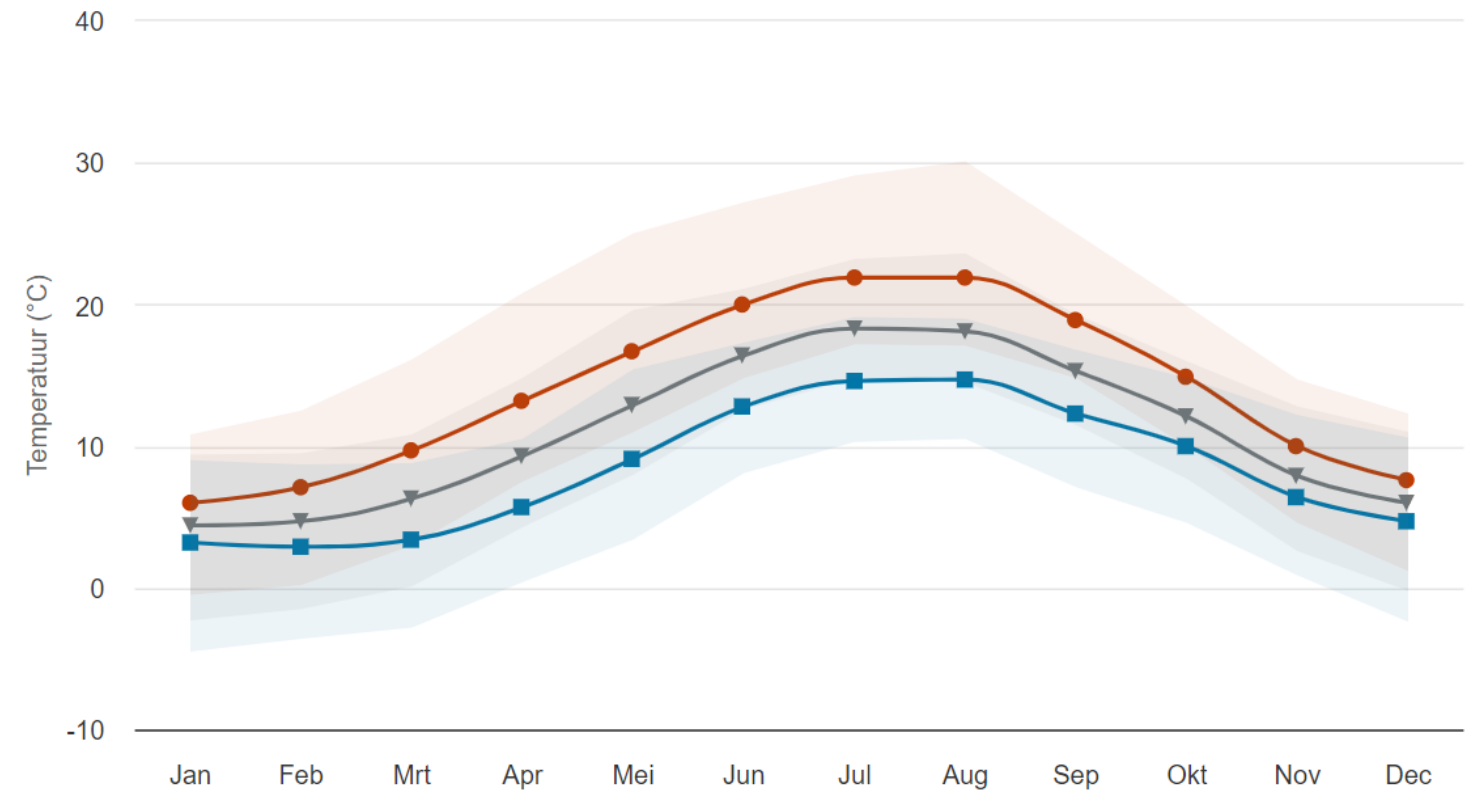
The winter months (December/Januari/Februari) have the lowest UV index of between 0 and 1. The amount of sunlight hours is between 2-4 hours and the daylight hours are between 8 and 10 hours a day.

During spring (March/April/May) the amount of sunlight hours a day is between 6 and 9 hours and the amount of daylight hours is between 12 and 16 hours a day. With a UV index of 1-4.

The autumn months (September/October/November) contain around 2 to 6 hours of sunlight, 8-12 hours of daylight and a UV-index between 2,5-0,5.

## Temperature

The maximum temperature during summer is around 30° C and the minimum around 10° C. For the winter period the maximum temperature is about 15° C and the minimum around -5° C. The average temperature in the Amsterdam differs from 5° C to 19° C.





# Climate Analysis

## Rainfall - Humidity

### Wind speed/force

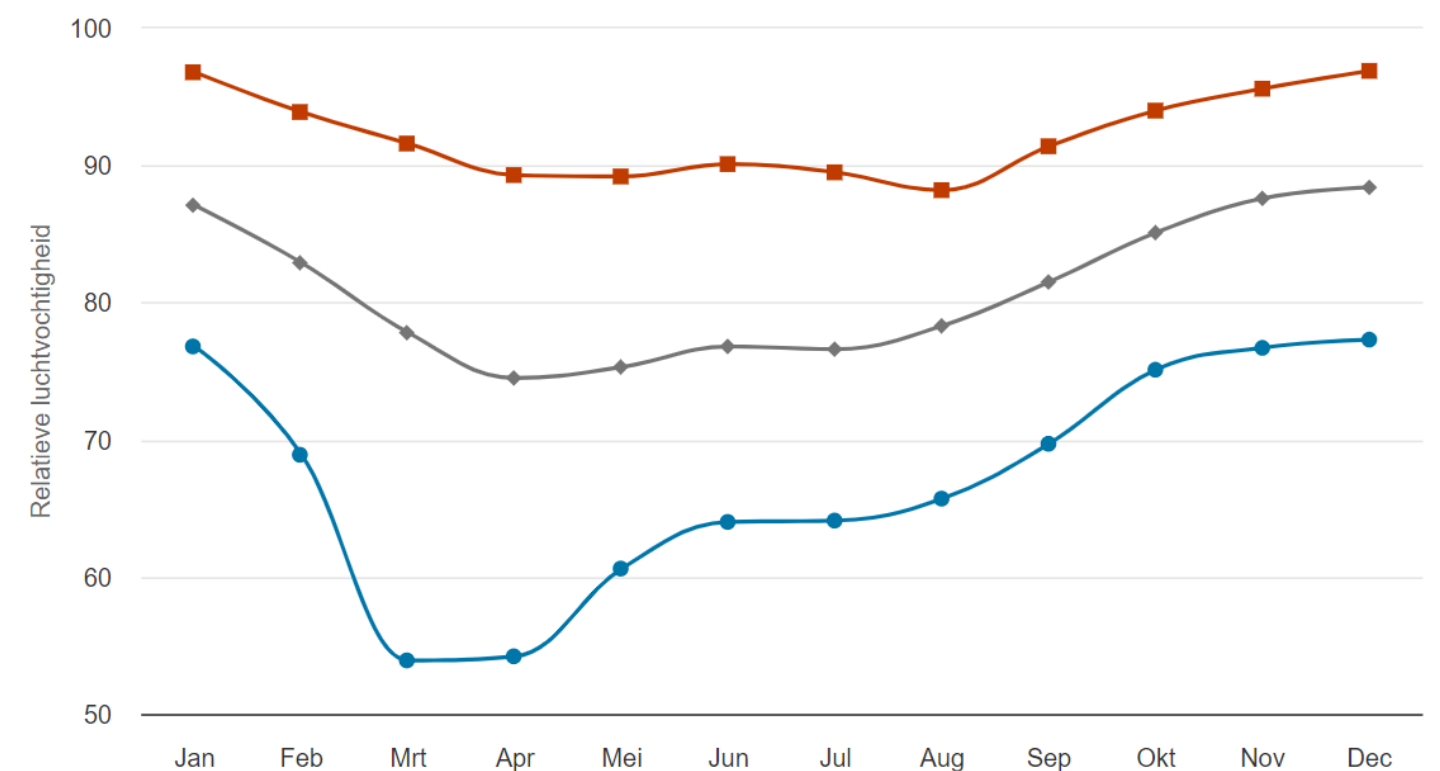
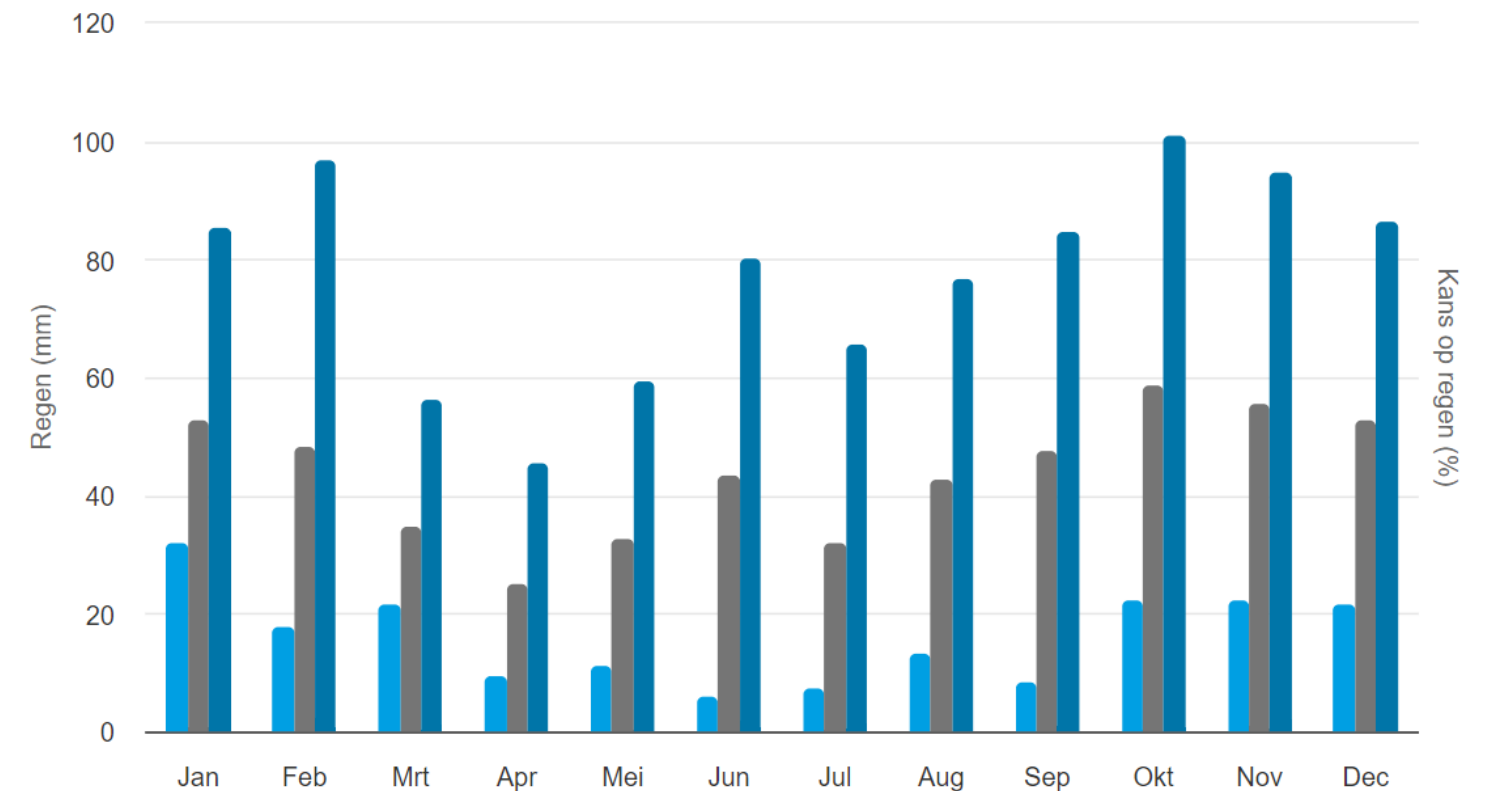
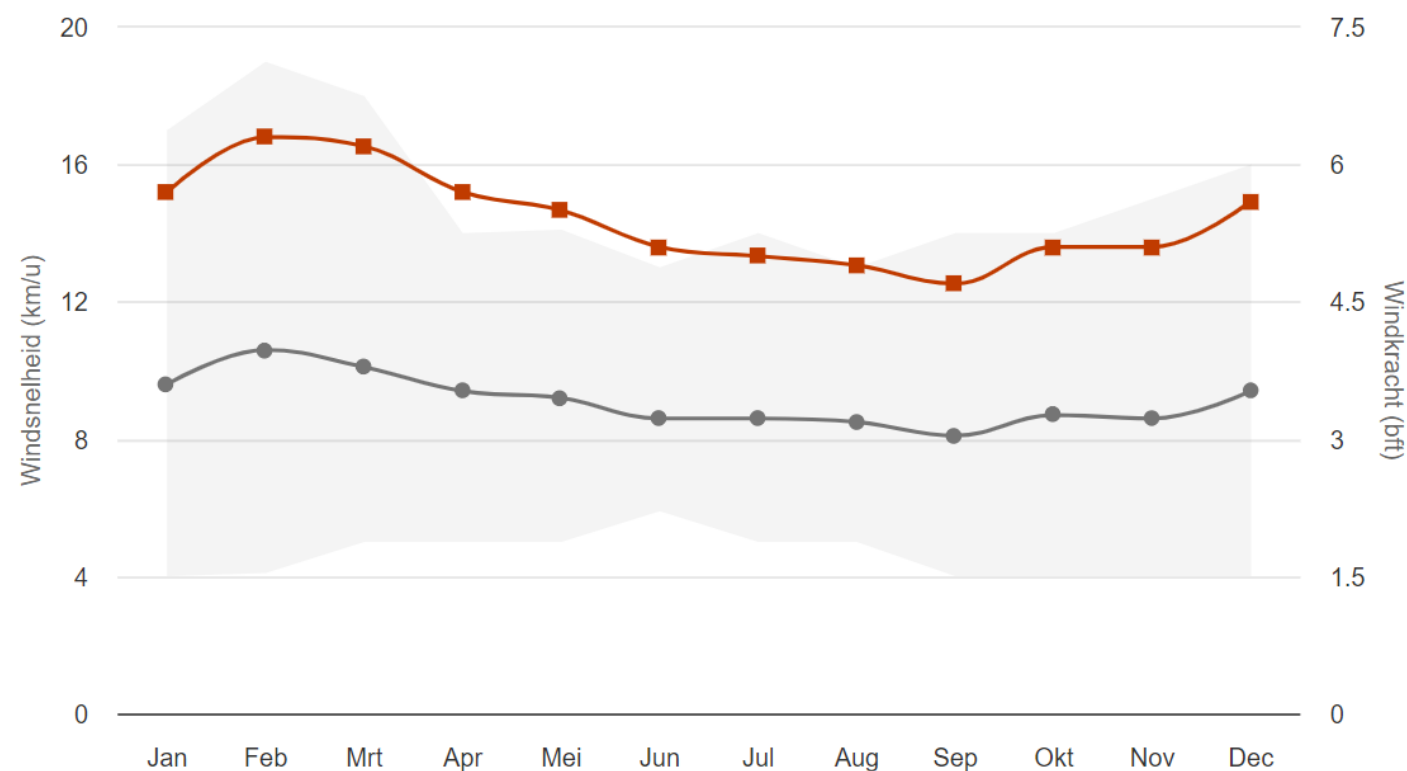
The average wind speed in Amsterdam of the last 10 years is between 8km/h and 10km/h. Top speeds are mostly measured in the winter period and can have a windforce of around 7btf.

### Rainfall

During the last 10 years, the spring months (March/April/May) are the months with the least rainfall (25/35mm per month). Months with the highest average rainfall are October, November and December with about 55/60mm or rainfall a month. Even during the summer months, the average rainfall is around 35/40mm per month.

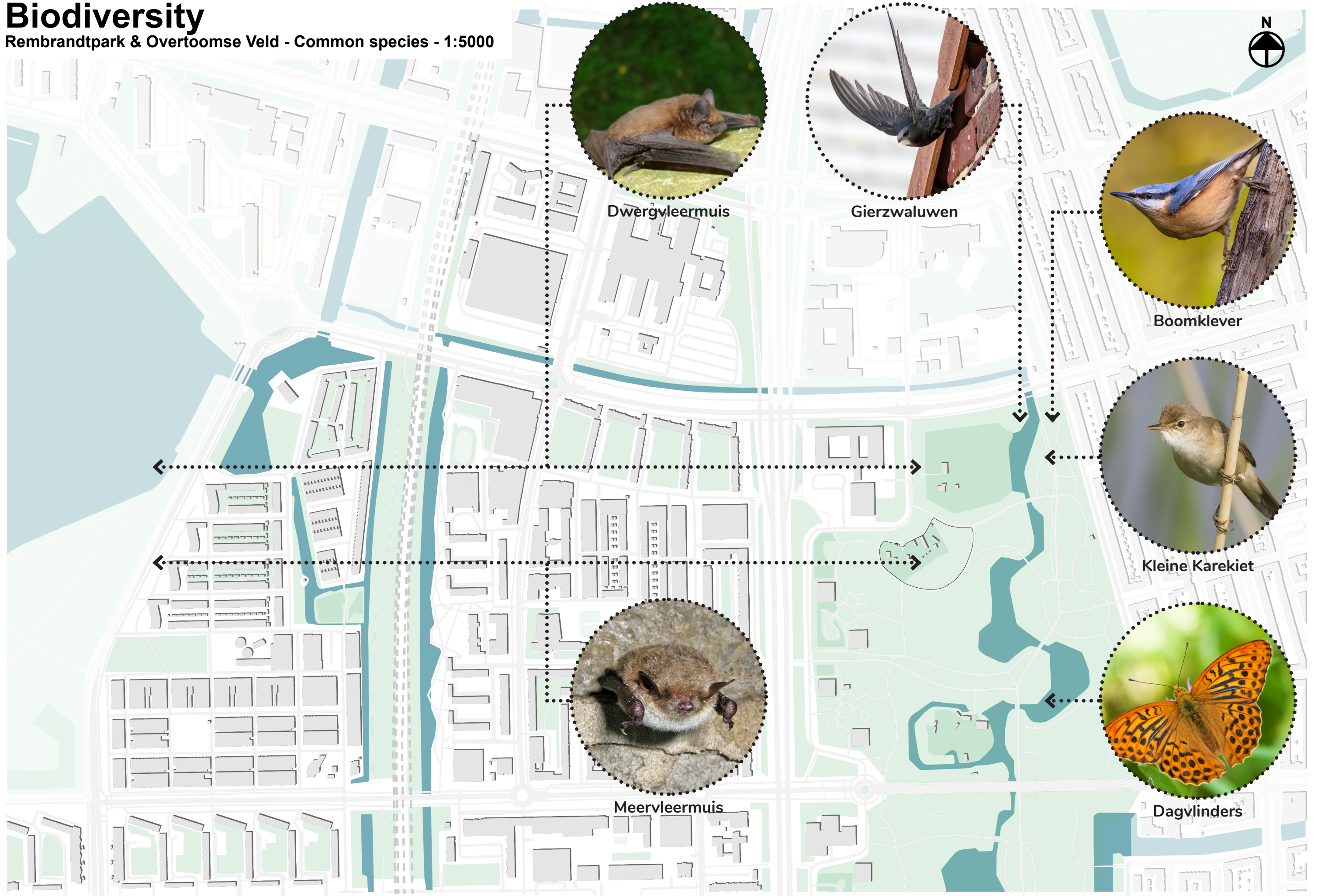
### Humidity

The humidity is correlated with the rainfall. Having higher humidity during the winter and fall period and the lowest humidity during spring (and summer). The highest average humidity is during winter with around 85% humidity and the lowest average is during spring with around 75% of humidity. The highest humidity during winter can be around 95% and the lowest about 70%. During spring the highest humidity is about 90% and the lowest can be about 55%.



# Biodiversity

Rembrandtpark & Overtoomse Veld - Common species - 1:5000





# Biodiversity

## Rembrandtpark & Overtoomse Veld - Common species



**Dwergvleermuis**

The Dwergvleermuis is extremely small and could fit in a lucifer box. For this reason it nestles in cracks and hollow walls of building structures. It can therefore also be found in the cavity of walls. The bat feeds in areas around water, which makes the Sloterpark a perfect feeding area. The route between the Rembrandtpark and Sloterpark is being flown by the bats to search for food.



**Meervleermuis**

Like the Dwergvleermuis, the Meervleermuis nestles in wall cavities of building structures. It also feeds mostly around water structures such as the Sloterpark. A cavity wall can serve as home for entire colonies of bats which makes the bats very vulnerable for construction works. Investigation for bats is therefore always necessary before construction works start. Most information on bats is still unknown.



**Gierzwaluwen**

Gierzwaluwen live in and around buildings, like the Huismussen. They nestle usually behind fascias. These nestling places are vulnerable for construction works and are therefore protected by the Flora and Fauna law of Amsterdam.



**Dagvlinders**

In total there were 35 species of butterflies in Amsterdam between 2005-2010. Nowadays about 10 species are no more, and other nine are decreasing. Most species are found in varied, flower-rich grasslands.



**Kleine Karekiet**

The Kleine Karekiet is a characteristic bird which lives in different reed vegetations more inward the city.. Reed is found next to shallow waters. When adding also Willows or Alders to the shore, the reed could also host the Blauwborst species.



**Boomklever**

Boomklever birds nestle in old tree hollows and are dependent on the food richness in and on the old trees. This bird species is mostly habitant in old forest gardens in or around the city. Parks with old trees are a good place for this bird species as a habitat.



# Biodiversity

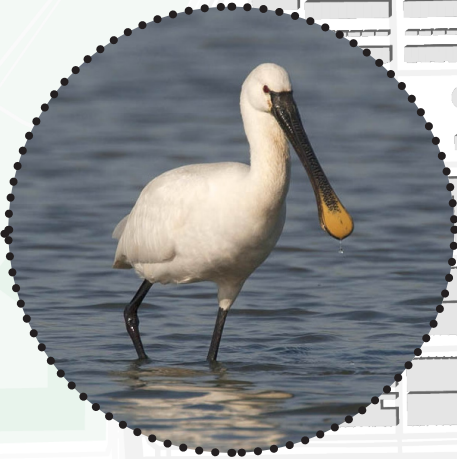
Slotervaart - Common species - 1:5000



Blauwe Reiger



Roeken



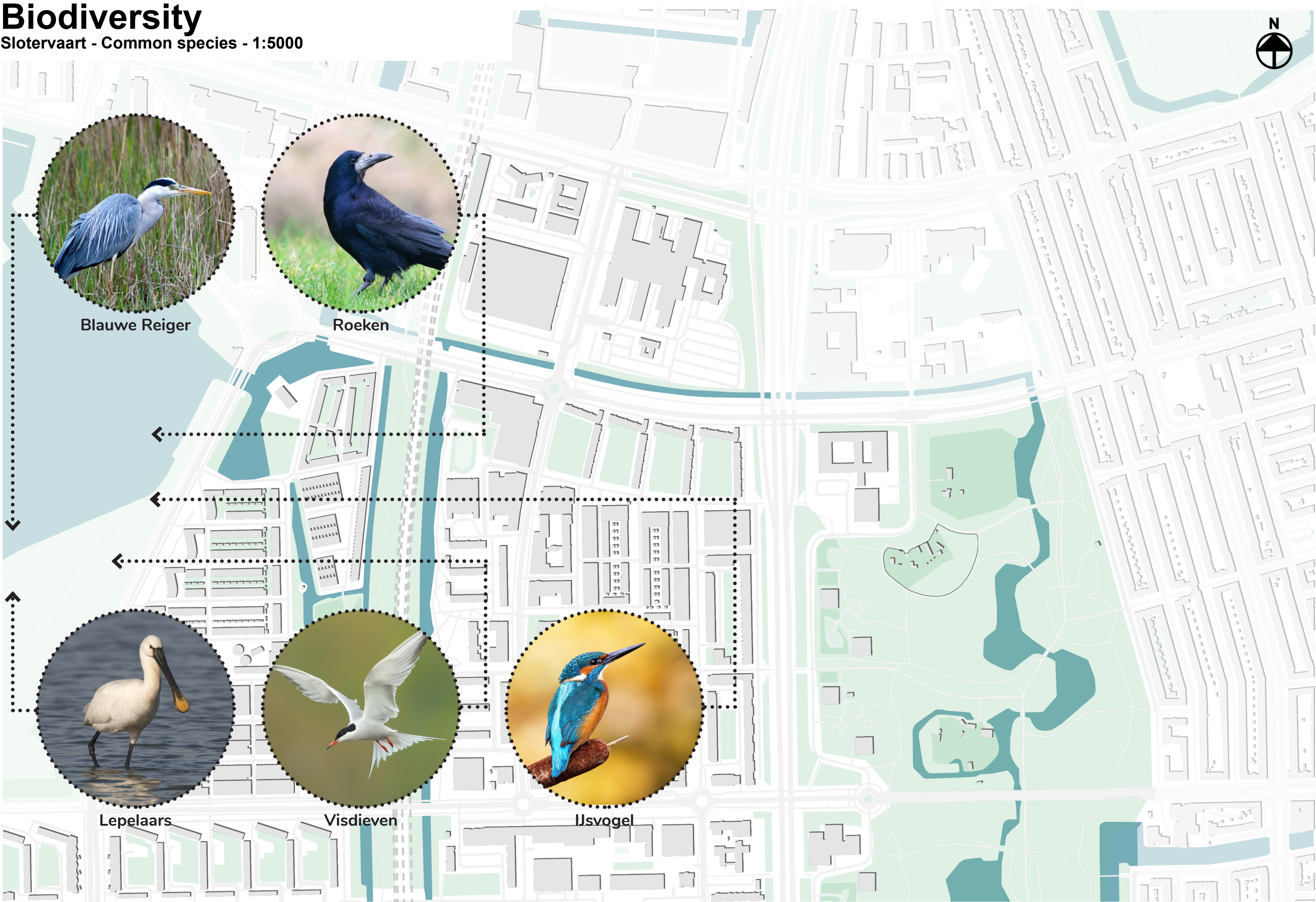
Lepelaars



Visdieven



Ijsvogel





# Biodiversity

## Slotervaart - Common species



**Blauwe Reiger**

The Blauwe Reiger nestles in trees in parks in the city. It feeds itself on the border of shallow waters. Species such as the Blauwe Reiger like to nestle next to with other bird species. This way they are less vulnerable as prey and have to be less attentive to dangers. Big colonies of this bird species are to be found in Amsterdam since a long period of time.



**Roeken**

Another brother colony bird species found in the area are the Roeken. Being part of a brother colony means spending more time on finding food, which is beneficial for all species of birds. Roeken nestle in trees.



**Lepelaars**

Lepelaars nestle in both trees as well as on the ground. They can be found nestling in the trees of Sloterpark. Lepelaars, just as the Blauwe Reiger, Roeken and Visdieven like to nestle in colonies with colonies of other species. This bird species is relatively new compared to the other brother colonies: 2012.



**Visdieven**

Visdieven are, same as the Blauwe Reiger, a bird species which has been nestling in Amsterdam for a long time. As well as Blauwe Reigers and Lepelaars, Visdieven are part of the brother colonies and therefore nestle next to other bird colonies. Visdieven nestle on flat roofs and on the ground.



**Ijsvogel**

The Ijsvogel nestles next to streams in steep surfaces such as steep natural walls. Due to the addition of breeding walls as well as the improvement of the water quality, the Ijsvogel has become part of the ecosystem of Amsterdam.

# Biodiversity

Protected species in the area - 1:5000





# Biodiversity

## Protected species in the area



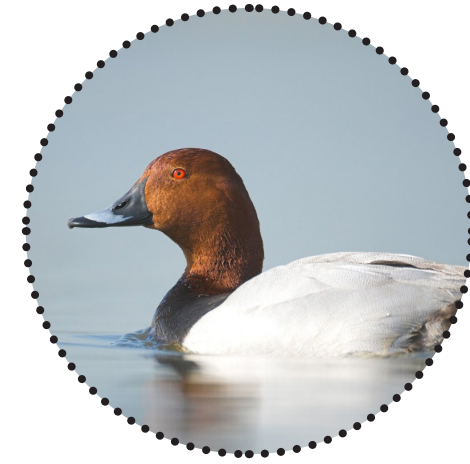
**Huismus**

The Huismus are a type of bird which breeds in buildings, mostly underneath roof tiles. These breeding places are vulnerable and are overlooked during construction works. Due to this overlooking, it is important for this bird species to implement its breeding places into a design.



**Sperwer**

The Sperwer is a protected bird species. It hunts other smaller birds as food. The male species are smaller in size compared to the female species which also hunt bigger birds. It nestles in forests, parks and gardens, possibly in the city. Preferably they nestle in coniferous trees in half open landscapes. It can hunt far away from its nest.



**Tafeleend**

Tafeleenden are to be found in and around still or slow streaming water structures with a lot of overgrown greenery. They nestle in waters with a minimal water depth of 1 meter. They eat multiple sorts of foods such as insects, small fish, amphibians and water plants. Tafeleenden also dive under water for their food.



**Bees**

In the area there is currently a lack of bee species. However on the city scale the amount of bees has increased. The amount of bees has increased most in areas where integrated ecological management is carried out and there is a lot of rich variation of blossoming plants. Also chemical weed control has decreased.

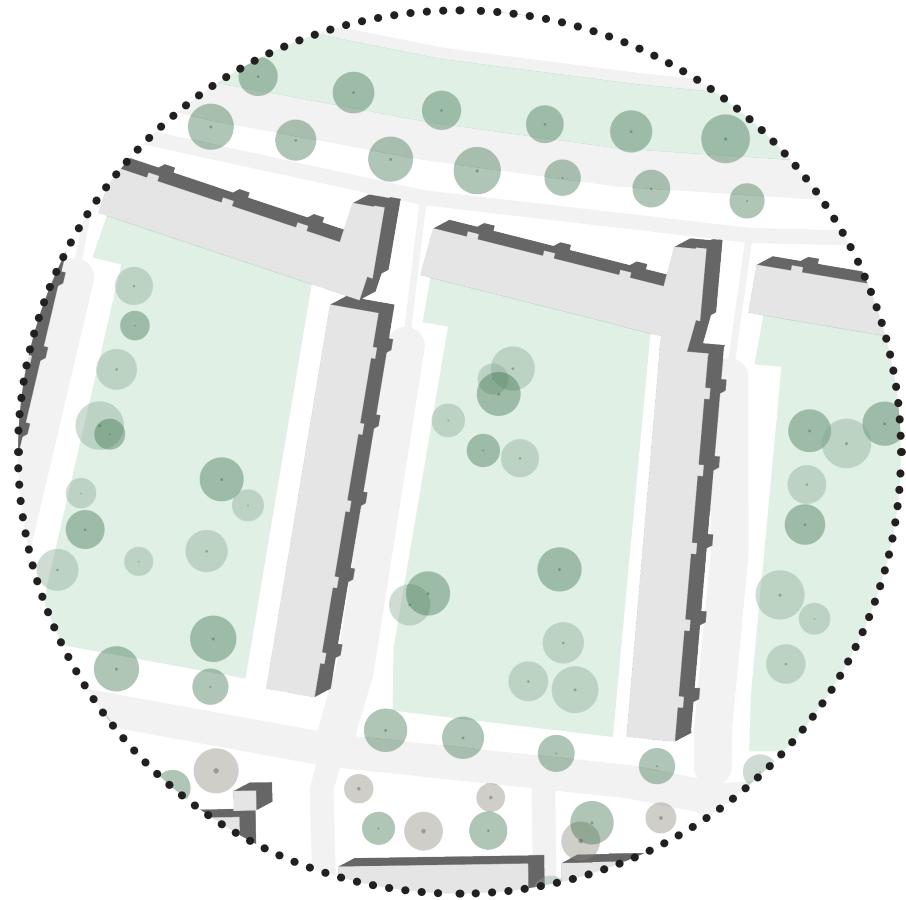


**Orchids**

Orchids are reluctant on man-made pieces of land such as ditch sides and roadsides. Orchids thrive on well maintained nutrient poor land pieces. Orchids contribute to (and therefore sometimes bare the names of) insects and animals with which they are linked and in case of bees are fertilized.

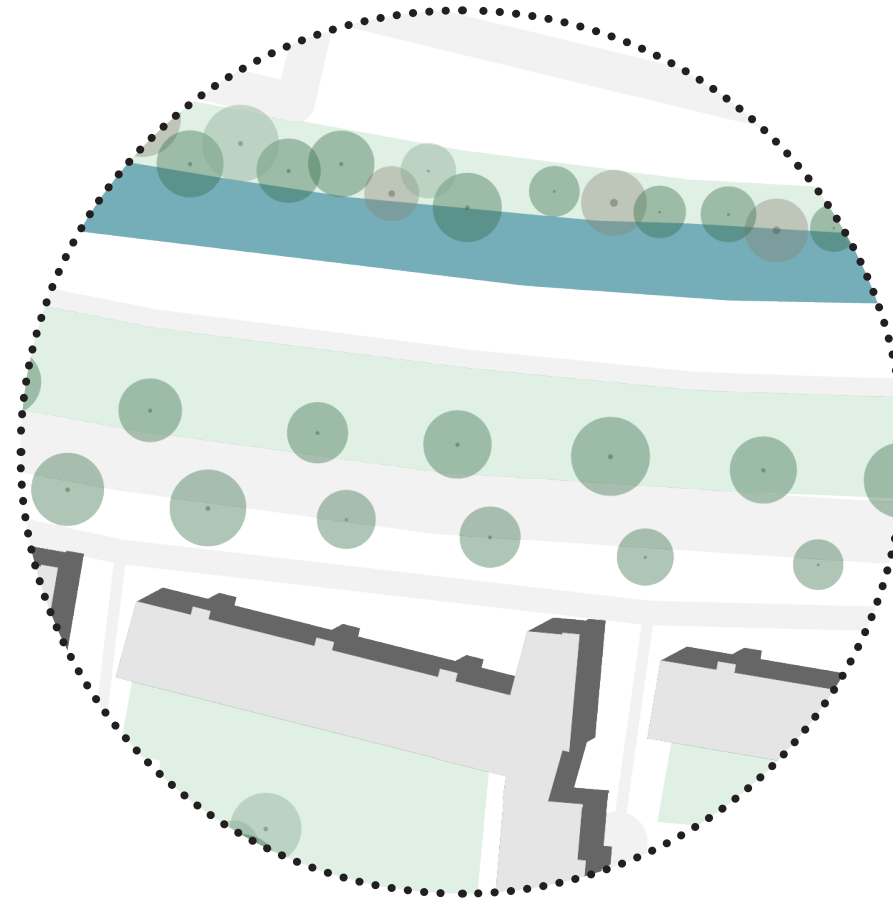
# Biodiversity

## Improving Biodiversity - Potential Biodiversity Expansion Zones



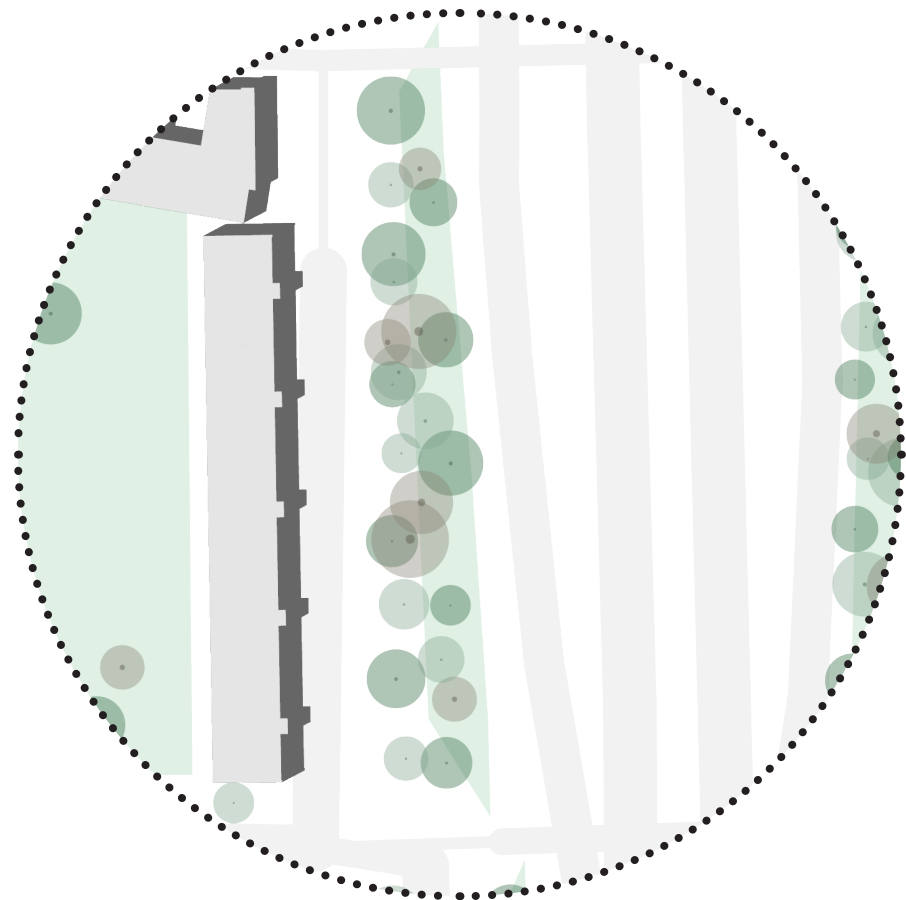
### Hofjes

The hofjes of the Western Garden cities have a green typology and are potential green spaces in an urban city context in which the biodiversity and of flora and fauna can be improved.



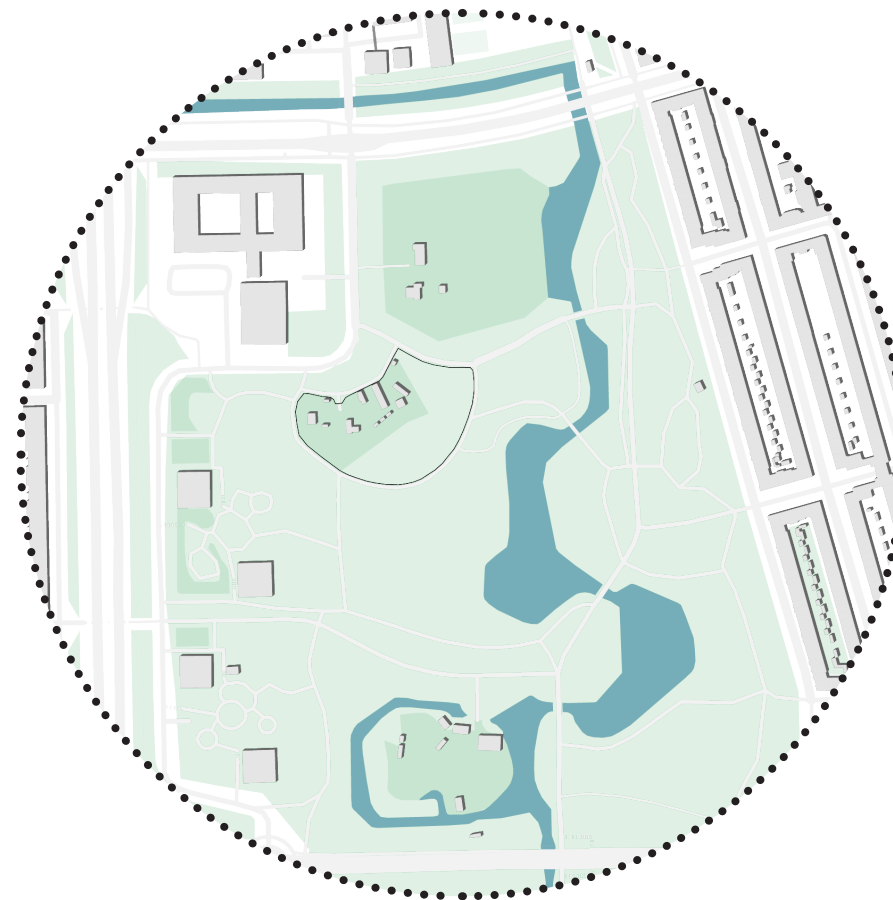
### Shores

Shores of waterways are perfect opportunities to increase the biodiversity for multiple bird and insect species thrive off of the combination of water and greenery. A connection of waterways in combination with greenery can improve the transit areas for multiple animals to other green areas.



### Road verge

Similar as the shores, verges of roads can function as perfect areas for additional greenery and can function as transit areas for animals inbetween green areas. Furthermore greenery in road verges can also have a noise cancelling function which improves the quality of the spaces separated by the road verge.



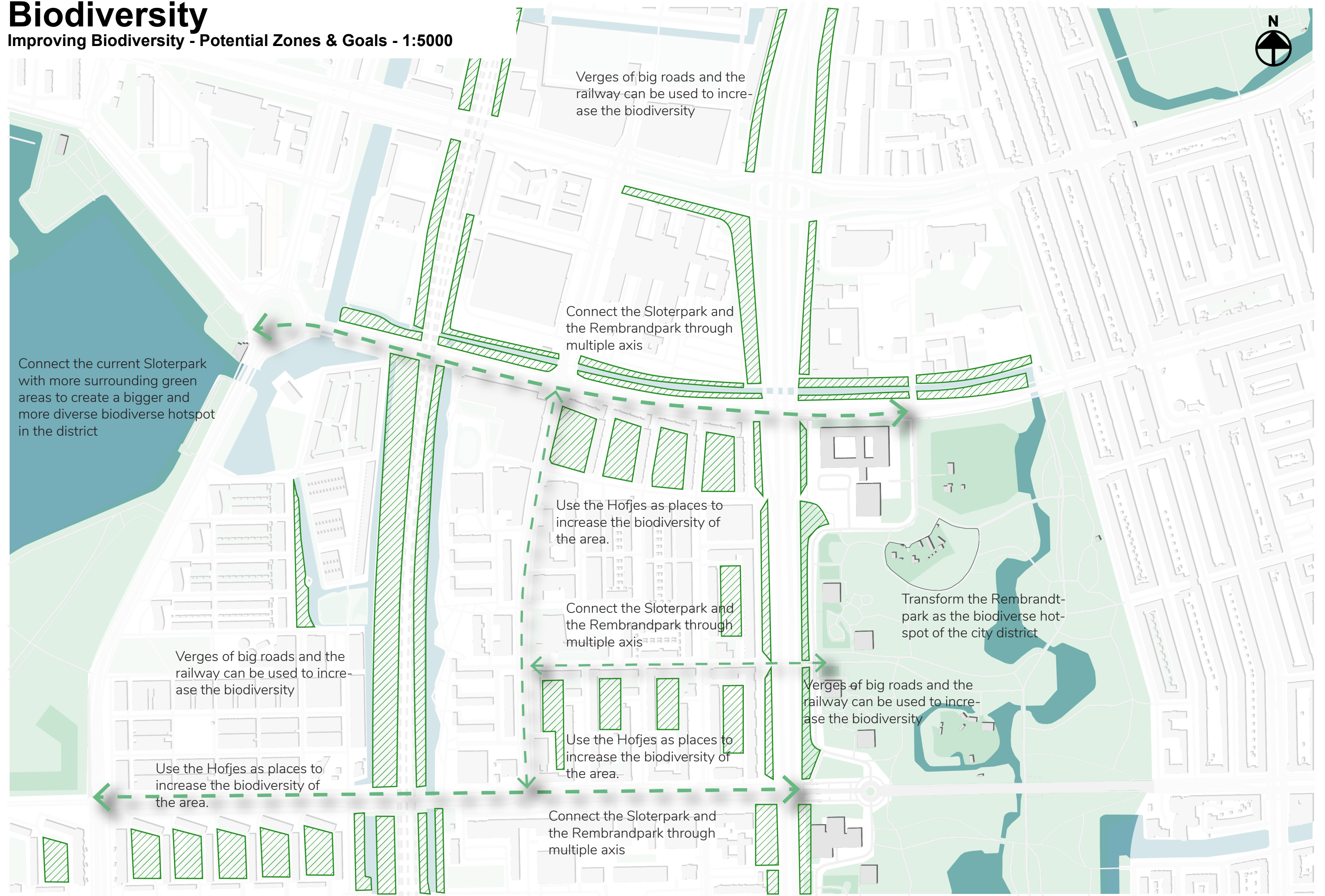
### Parks

A connection of green axis between parks can be beneficial to increase the areas of multiple species. Parks are perfect for improving biodiversity which will also benefit visitors of the park. Especially inside a city context, parks can function as the ultimate biodiverse hotspots in the urban tissue.



# Biodiversity

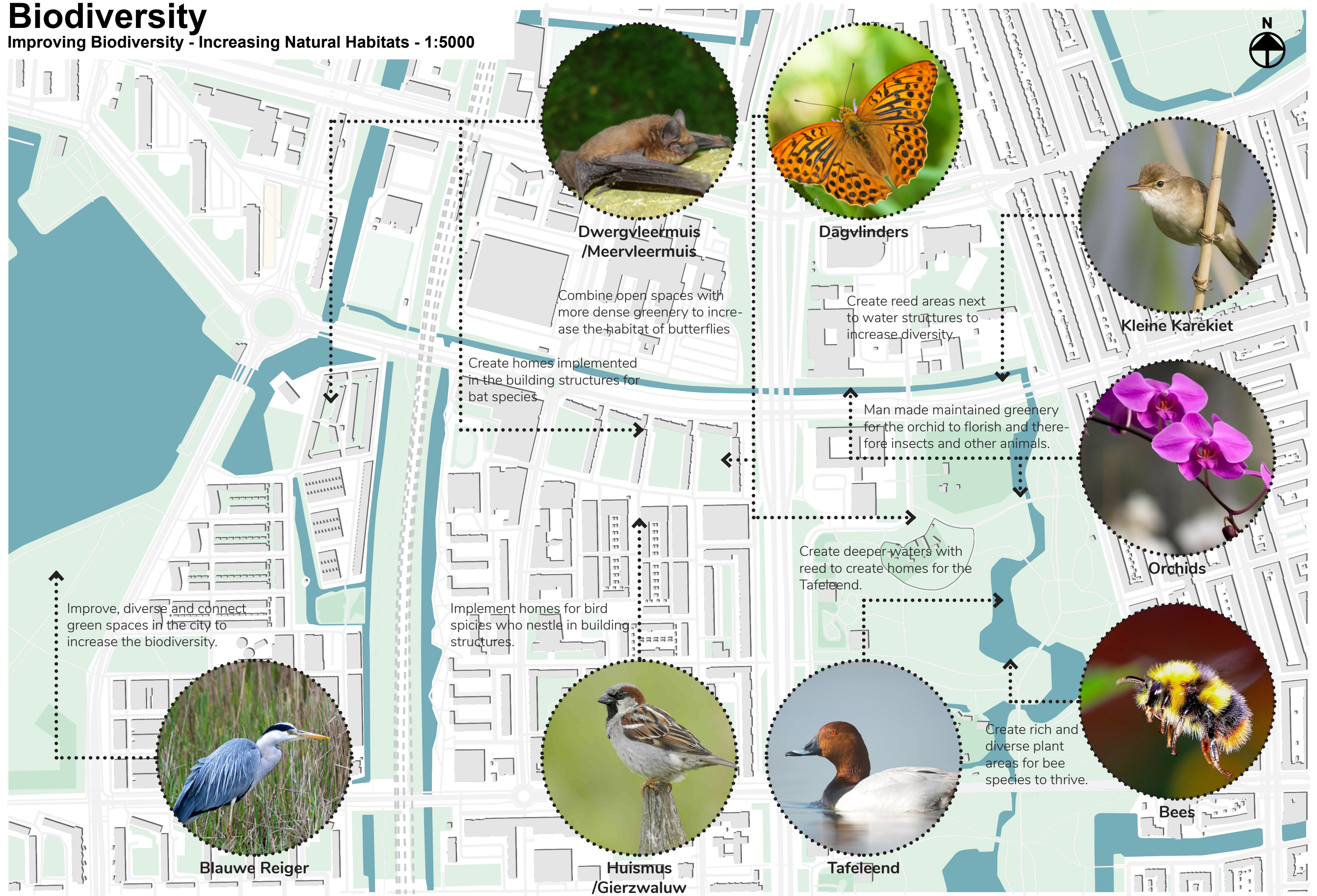
Improving Biodiversity - Potential Zones & Goals - 1:5000





# Biodiversity

Improving Biodiversity - Increasing Natural Habitats - 1:5000







# BUILDING STATUS

MAURIZIO BRENNNA



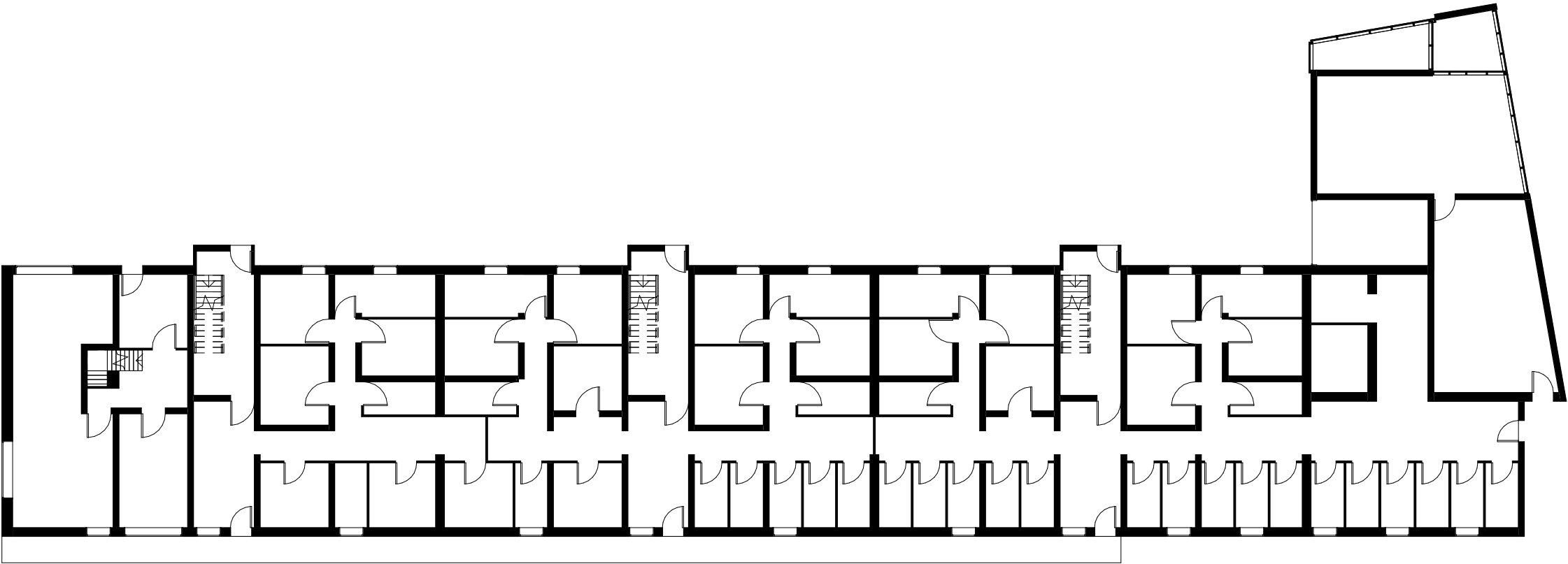




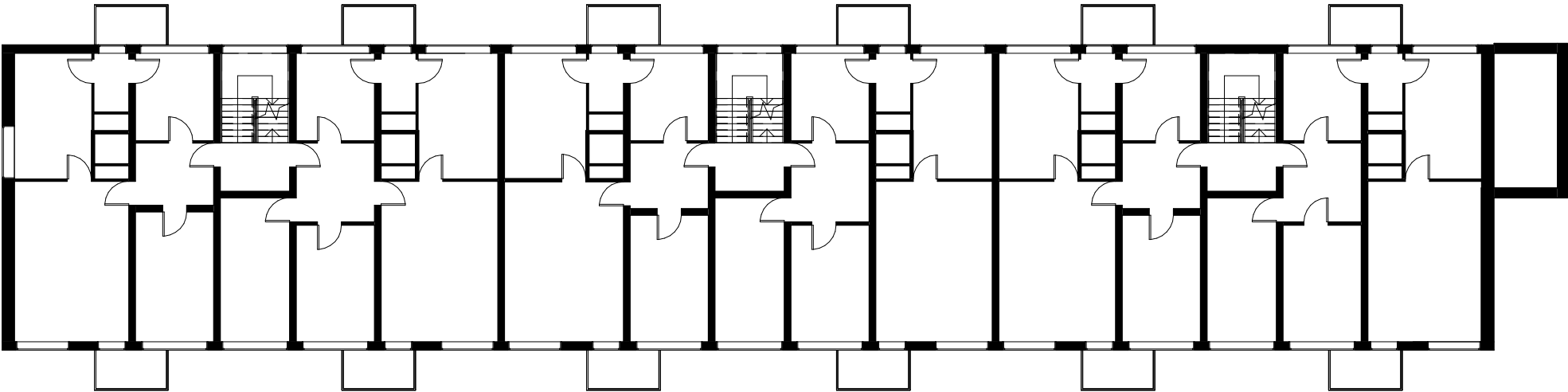
# Existing Floor Plans

High Building Block (7 stories) - 1:200

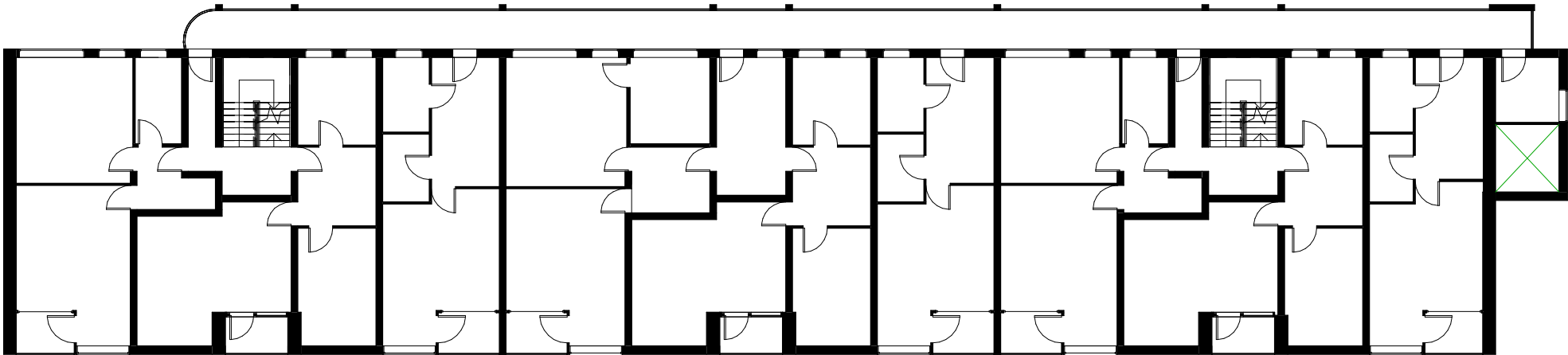
LEVEL 0



LEVEL 1-4



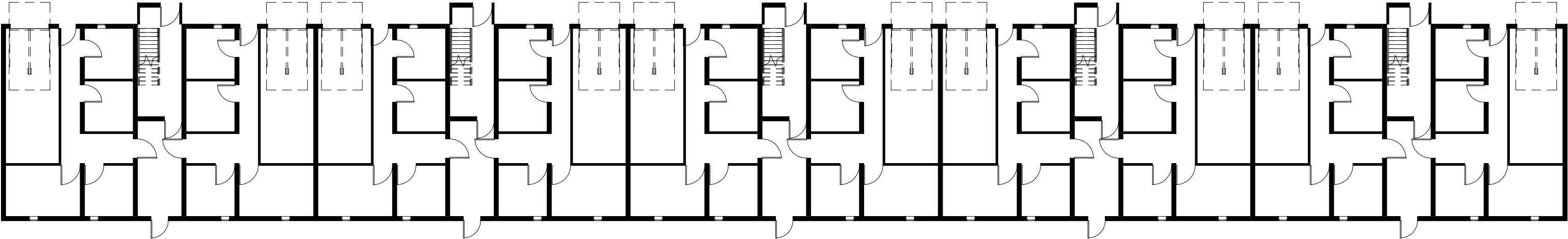
LEVEL 5-7



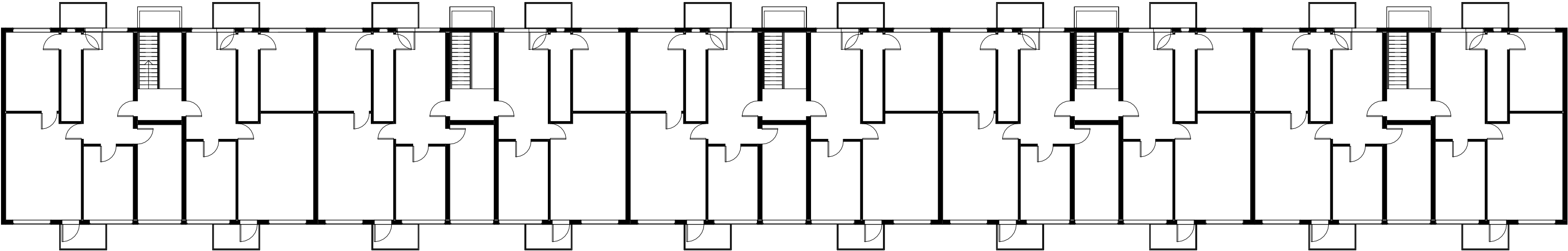
# Existing Floor Plans

Low Building block (5 stories) - 1:200

LEVEL 0



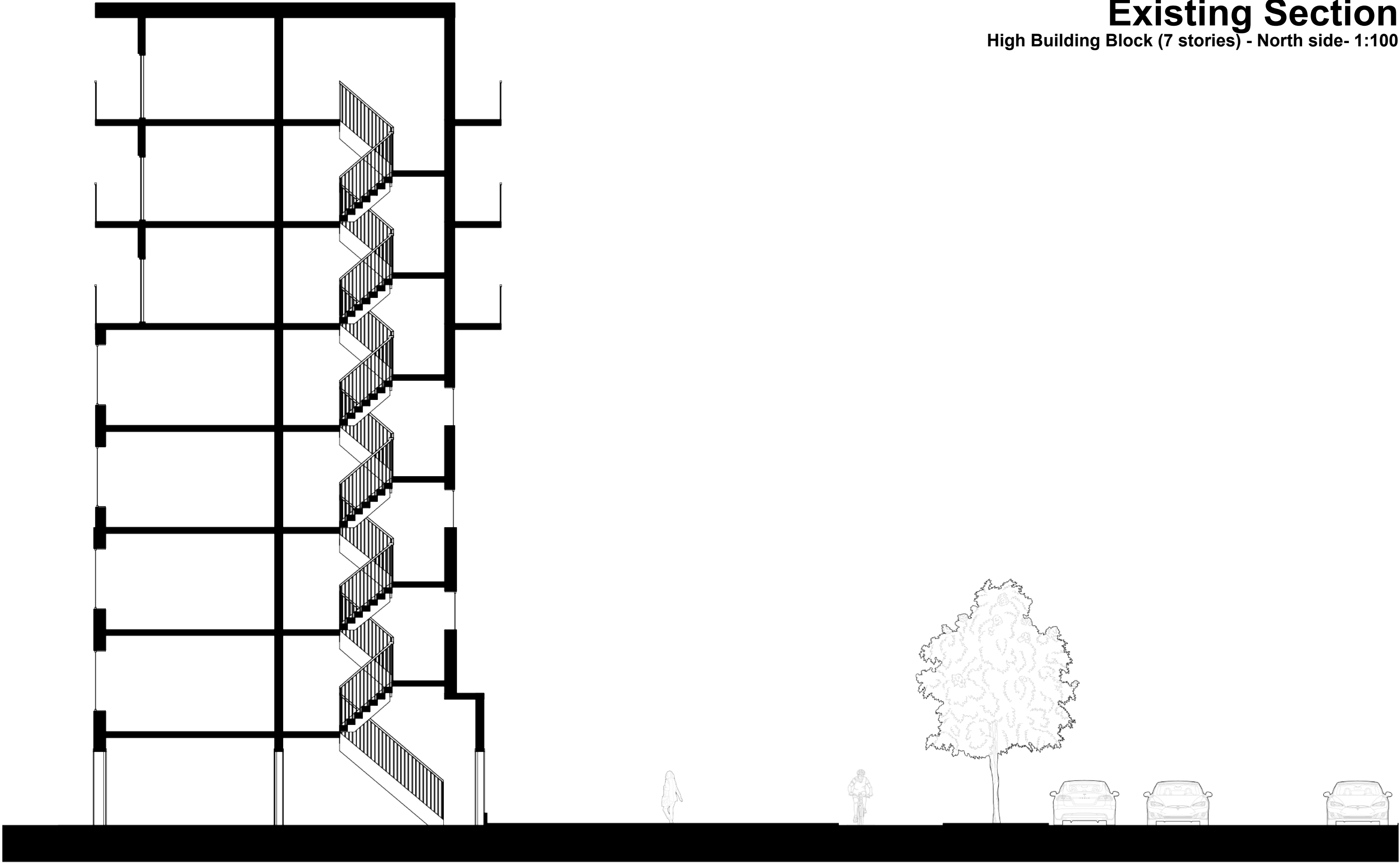
LEVEL 1-4





# Existing Section

High Building Block (7 stories) - North side- 1:100



ca 11 m

ca 10 m

ca 3,5m

ca 3 m

ca 2 m

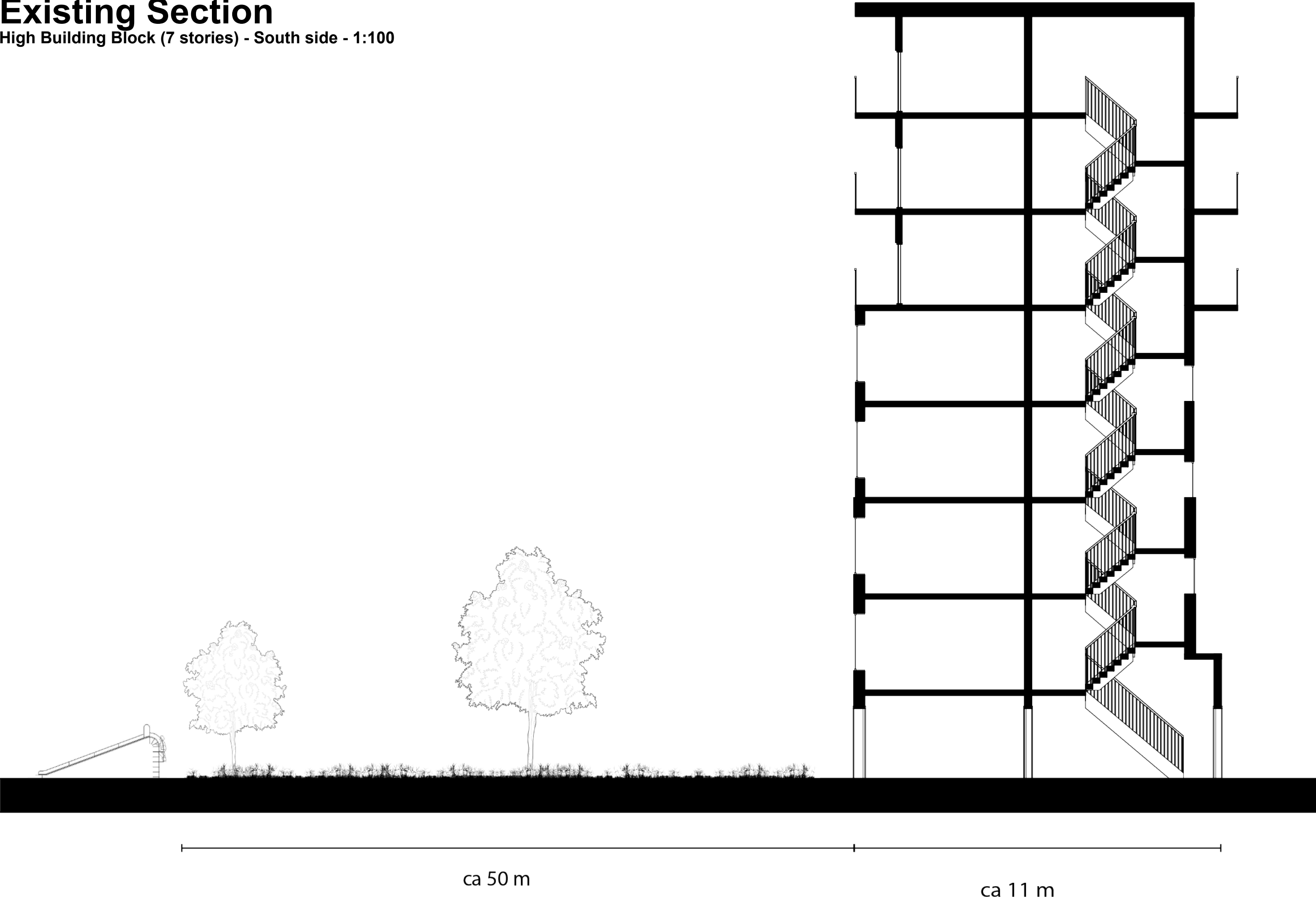
ca 6 m

ca 2 m



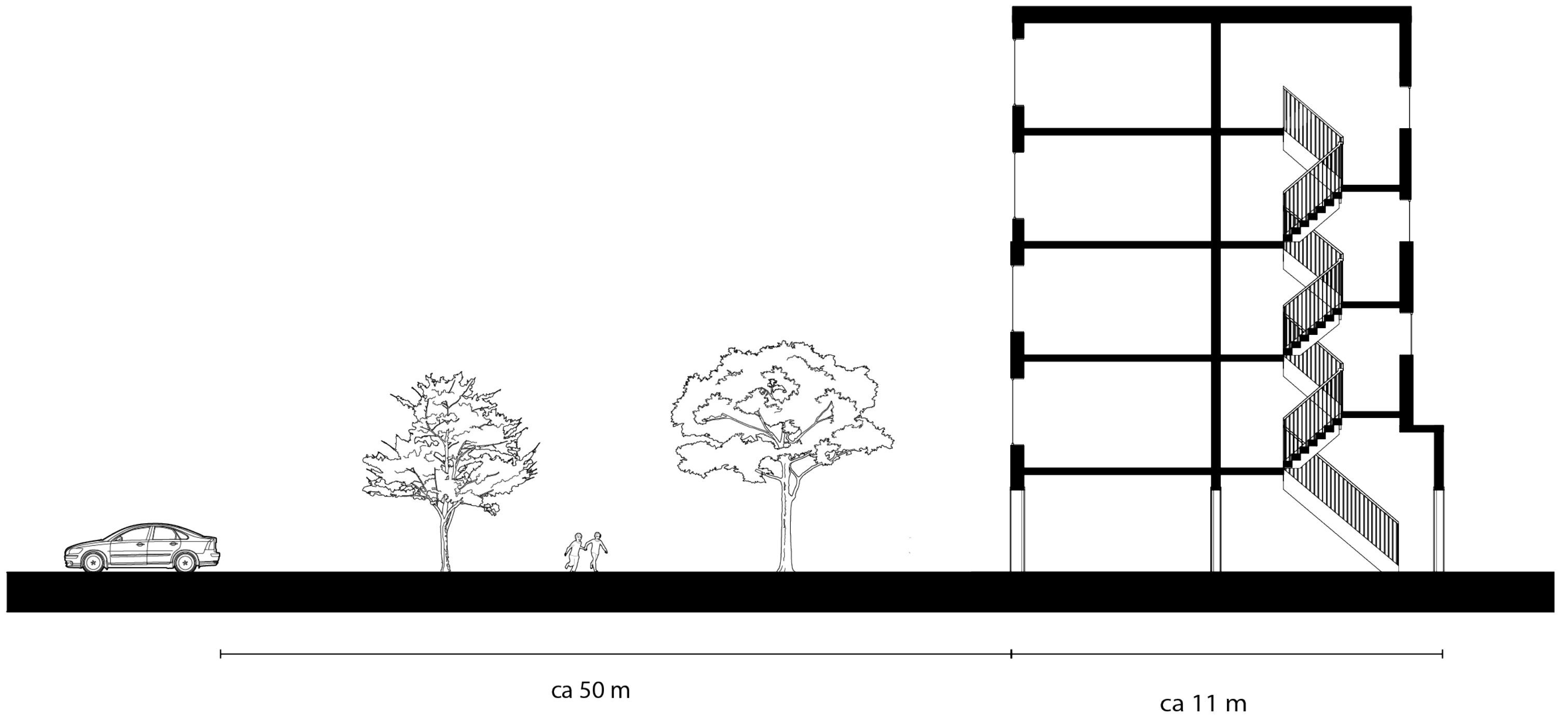
# Existing Section

High Building Block (7 stories) - South side - 1:100



# Existing Section

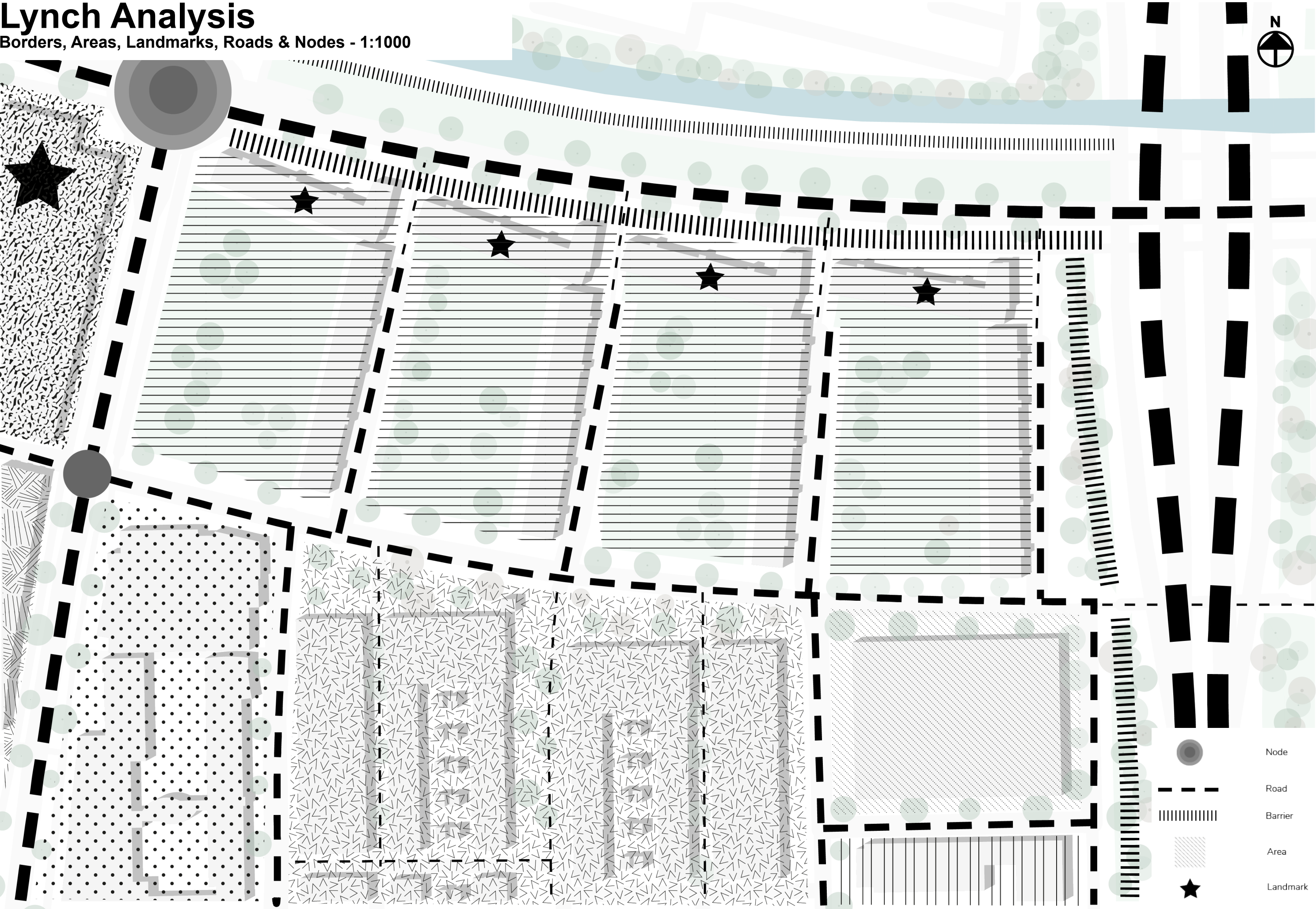
Low Building block (5 stories) - 1:100





# Lynch Analysis

Borders, Areas, Landmarks, Roads & Nodes - 1:1000



# Good Quality

Protecting Function - Collage





# Good Quality

Protecting Function - Collage





# Dwelling Types

Current Dwelling Types with Target Groups - 1:200



**Family**

- Two/three room apartments
- Small bathroom
- All rooms separated
- Balconies
- (One maisonette per building block)



**Single Parent**

- Two room apartments
- Small bathroom
- All rooms separated
- Balconies/Loggia



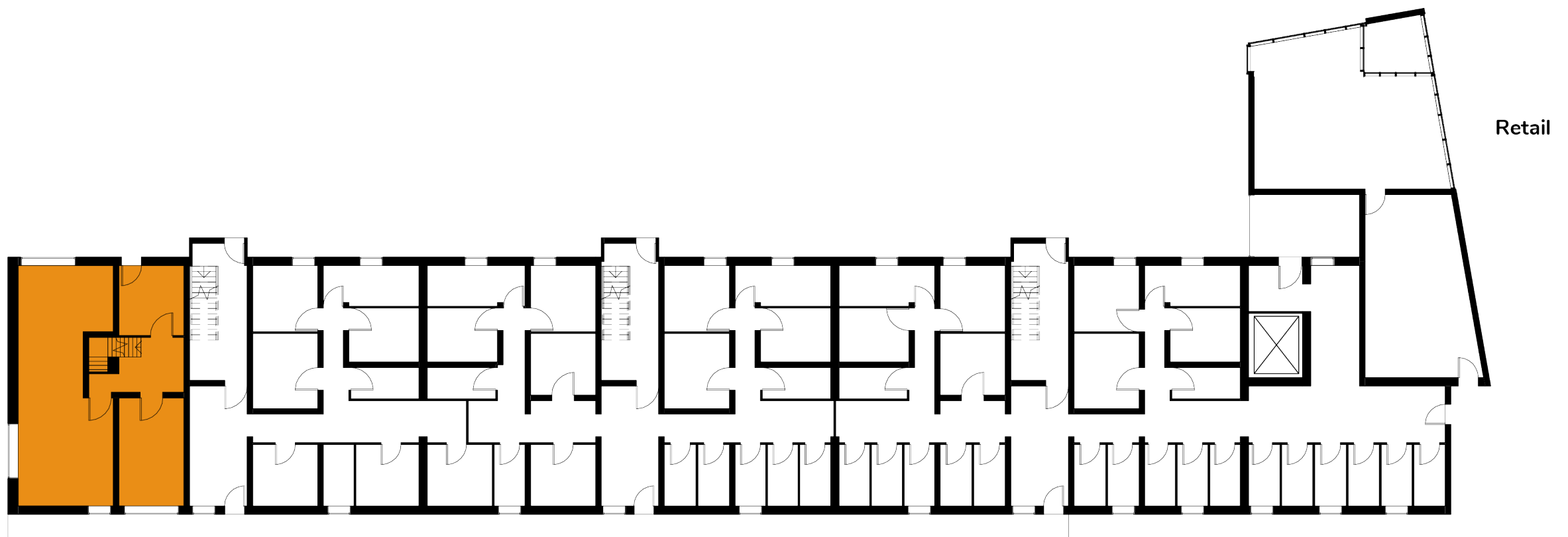
**Child**

- Playground/space outside

## Type A

Maisonette:  
+/- 125m<sup>2</sup>

## Storage





# Dwelling Types

Current Dwelling Types with Target Groups - 1:200



**Starters**

- Two/three room apartments
- Small bathroom
- All rooms separated
- Balconies



**Single Parent**

- Two room apartments
- Small bathroom
- All rooms separated
- Balconies/Loggia



**Family**

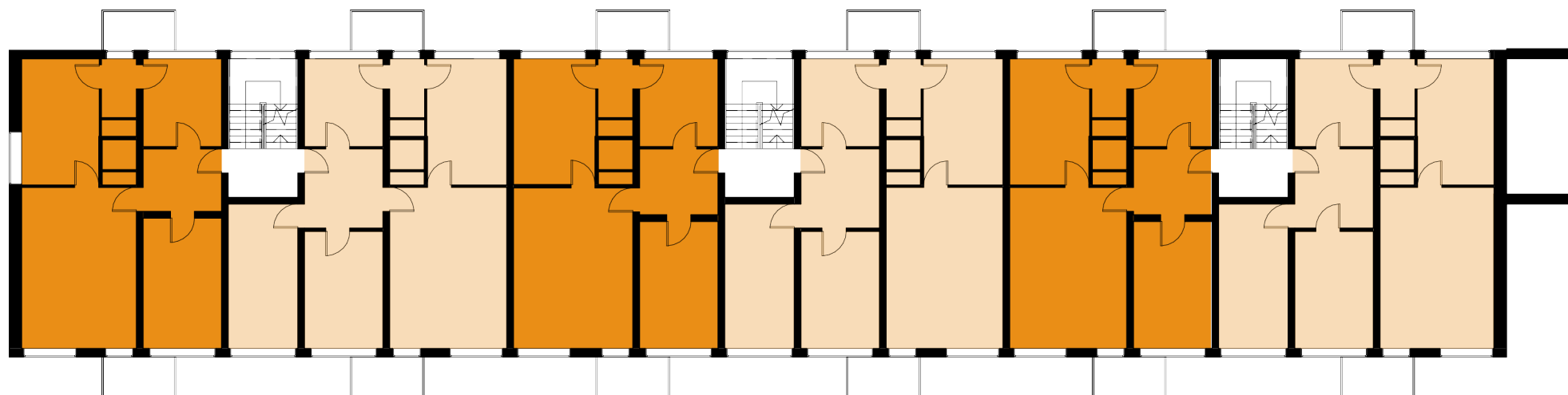
- Two/three room apartments
- Small bathroom
- All rooms separated
- Balconies

## **Type B1**

Family apartment:  
+/- 63m<sup>2</sup>

## **Type B2**

Family apartment:  
+/- 75m<sup>2</sup>



# Dwelling Types

Current Dwelling Types with Target Groups - 1:200



Couple

- Two/three room apartments
- Small bathroom
- All rooms separated
- Balconies



Singles

- Two room apartment/studio (with guestroom)
- Gallery circulated
- Good public transport connection
- Loggia
- No shared space



Students

- Two room apartment/studio
- Gallery circulated
- Good public transport connection
- Loggia
- No shared space

## Type C1

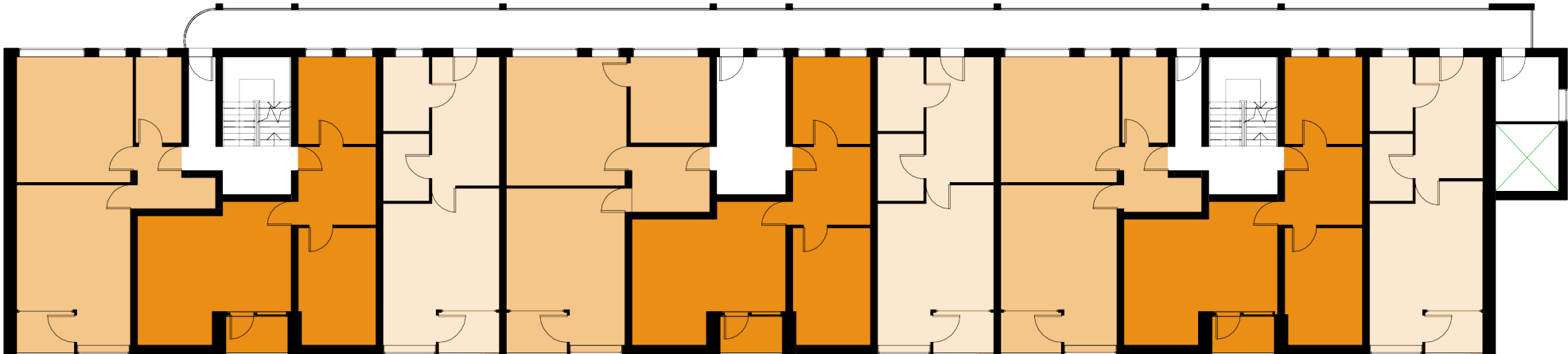
Singles apartment:  
+/- 50m2

## Type C2

Singles apartment:  
+/- 50m2

## Type C3

Singles apartment:  
+/- 40m2





# Target Group

## Wishes per Target Group - Introduction to Diversity



### Starters

- Baby/Child room
- (Semi-)private outdoor space
- Enough storage
- Space for working at home
- Accompanying living space (kitchen/living room)



### Students

- Place to study quietly
- Good public transport connection
- Own room
- Shared space for parties or cooking
- Bike storage
- (Semi-)private outdoor space



### Child

- Playground/space outside
- Room to play inside (alone/with friend)
- Place to study/learn (depending on age)



### Singles

- Contact with other residents or nature (maybe shared space)
- Good connection with public transport
- Space for working at home
- (Semi-)private outdoor space



### Single Parent

- Safe place to play for the kids whilst working/doing house chores
- Bedroom for each kid
- Extra working space
- (Semi-)private outdoor space



### Couple

- Big bedroom
- Enough storage
- (Semi-)private outdoor space
- Good public transport connection
- Space for working at home



### Family

- Separate working space
- Play room for the kids
- Own bedroom for kids
- (Semi-)private outdoor space
- Enough storage
- Large family accompanying living spaces

# Target Group

Wishes and Similarities per Target Group - Introduction to Diversity

	Multitple Rooms	Working Space	(semi)Private Outdoor Space	Social Contact	Social Control	Play Space (Indoors)	Play Space (Outdoors)	Shared Space	Responsibility for Building/ Surroundings
Families	Multiple bedrooms Rooms with other functions	Separated working space	Garden Balcony	With other parents With direct neighbours	Overlooking children playing outside Safety	Room for toys Playroom (could be flexible)	Garden or close to playground for children	No	VVE Urban farming Biodiverse Garden No
Starters/ Couples	No	Either separated or at dinner table	Garden Balcony	With direct neighbours	Safety	No	No	No	VVE Urban farming Biodiverse Garden No
Single Parent	Multiple bedrooms	Either separated or at dinner table	Garden Balcony	With other parents With direct neighbours	Overlooking children playing outside Safety	Room for toys Playroom (could be flexible)	Playground Grass field	No	VVE Urban farming Biodiverse Garden No
Singles	No	At dinner table or in shared space	Garden Balcony	With other singles With direct neighbours	Safety	No	No	Working space Laundry room Kitchen Living/Chill room Shared garden	VVE Urban farming Biodiverse Garden No
Students	No	At dinner table or in shared space	Garden Balcony	With other singles With other students With direct neighbours	Safety	No	No	Working space Laundry room Kitchen Living/Chill room Shared garden	VVE Urban farming Biodiverse Garden No
Children	Own bedroom	No	Garden Balcony	Yes	No	Room for toys Playroom (could be flexible)	Playground Grass field	Play room	No



Families



Starters/  
Couples



Single Parents



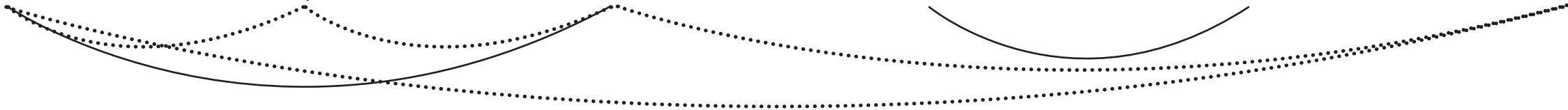
Singles



Students



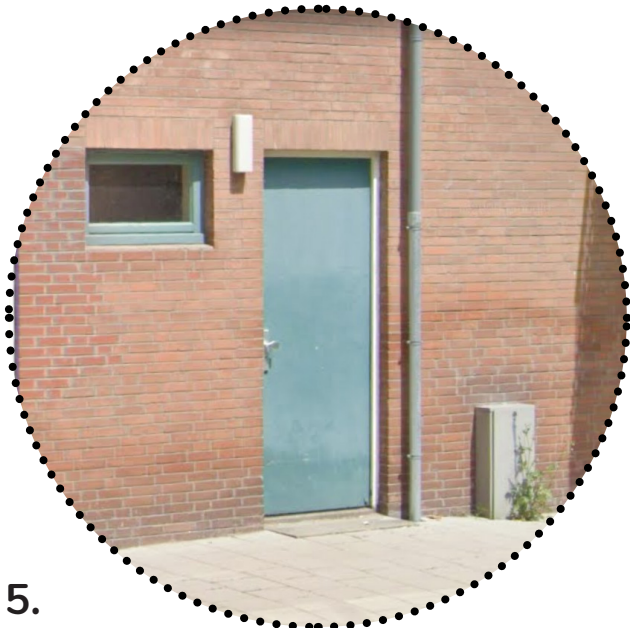
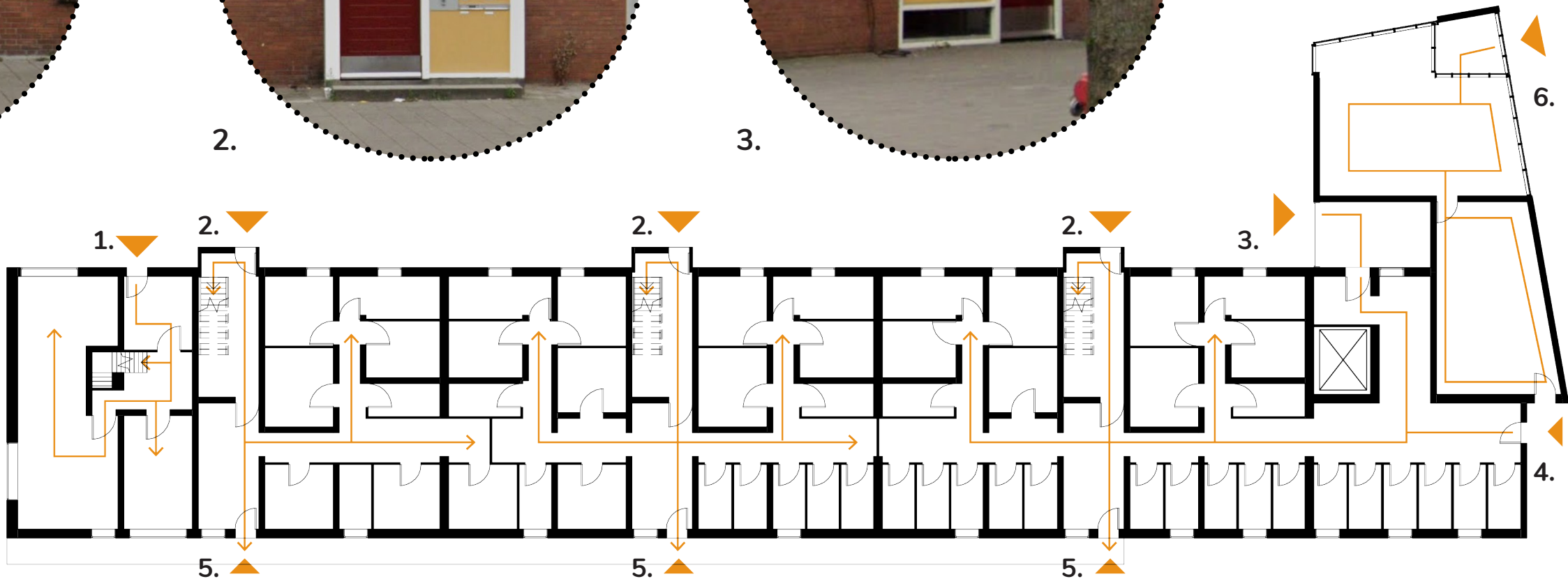
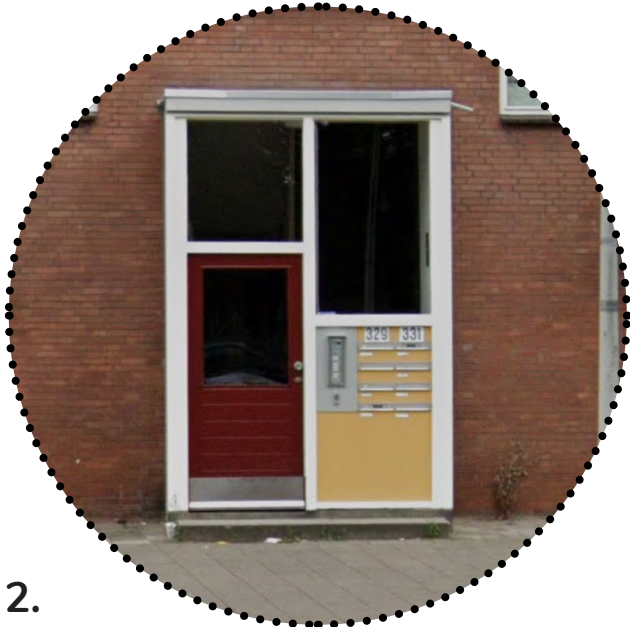
Children





# Entrances and Connections

Existing Entrances - 1:200

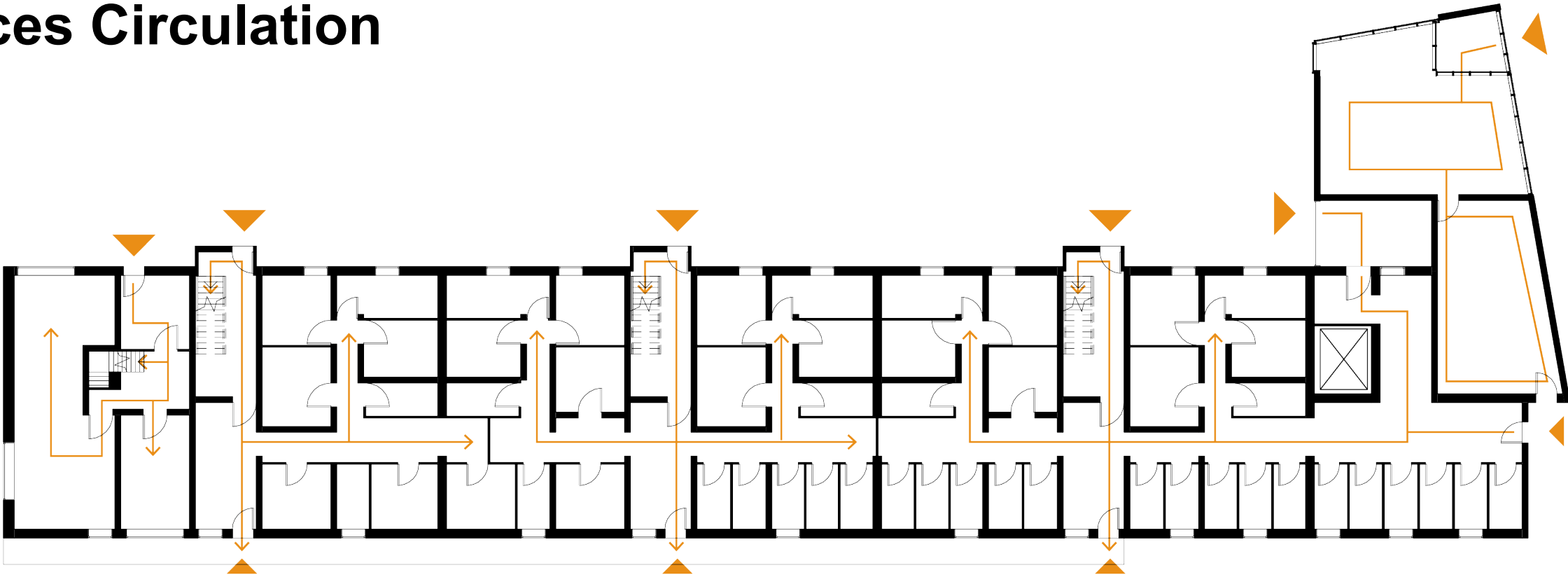


- Primary entrance
- Secondary entrance

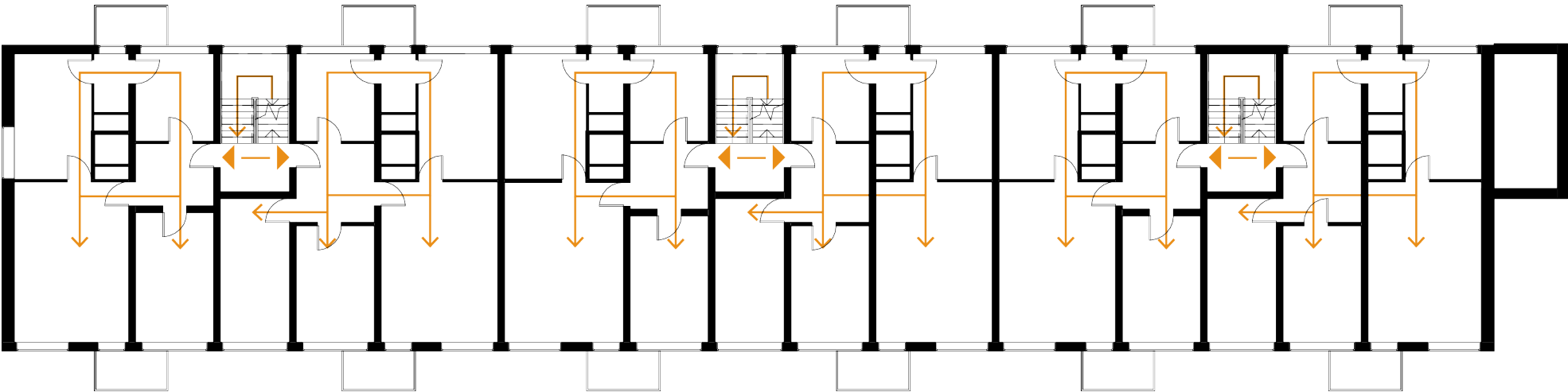
# Building Entrances Circulation

Entrances and Circulation - 1:200

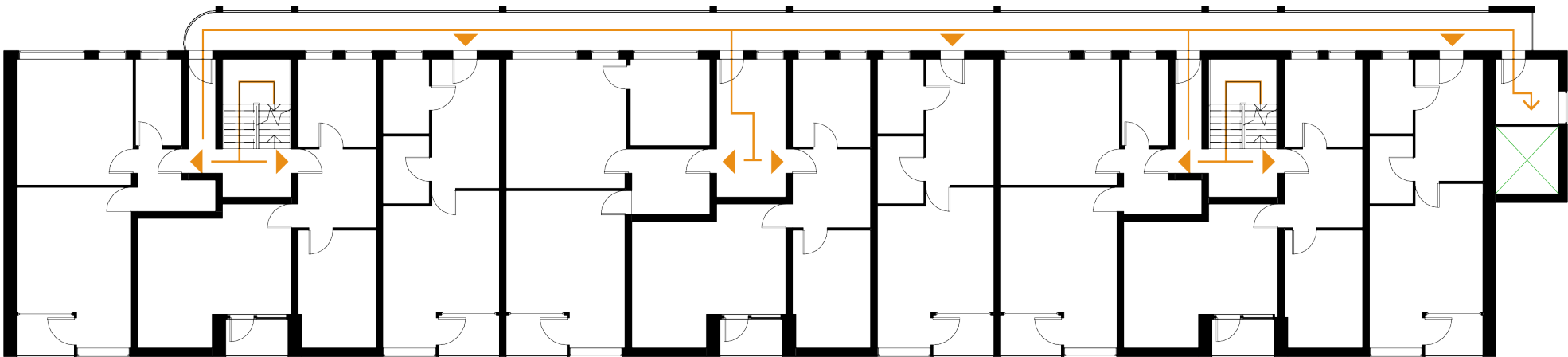
GROUND  
FLOOR



LEVEL 1-4



LEVEL 5-7



- Primary entrance
- Secondary entrance



# Existing Problems

## Design Case Problems - Improvement Points



### Street Waste

When visiting the area, the direct surroundings of the building were full of street waste. Not only does this negatively impact the image of the area, but it also has a bad influence on the climate and is unsustainable.



### Public Green Space

The green spaces are completely public spaces. This is a positive in the sense of people and children having all the freedom to use the space how they see fit. However, the completely public character of the space causes for a lack of responsibility for the space which can lead to street waste and the space not being used optimally.



### Closed Plinth

The closed plinth on the ground floor causes for a lack of interaction between building and street. It also causes for the building to have a more closed off image and the lack of openness on the ground floor can lead to more shady environment at night.



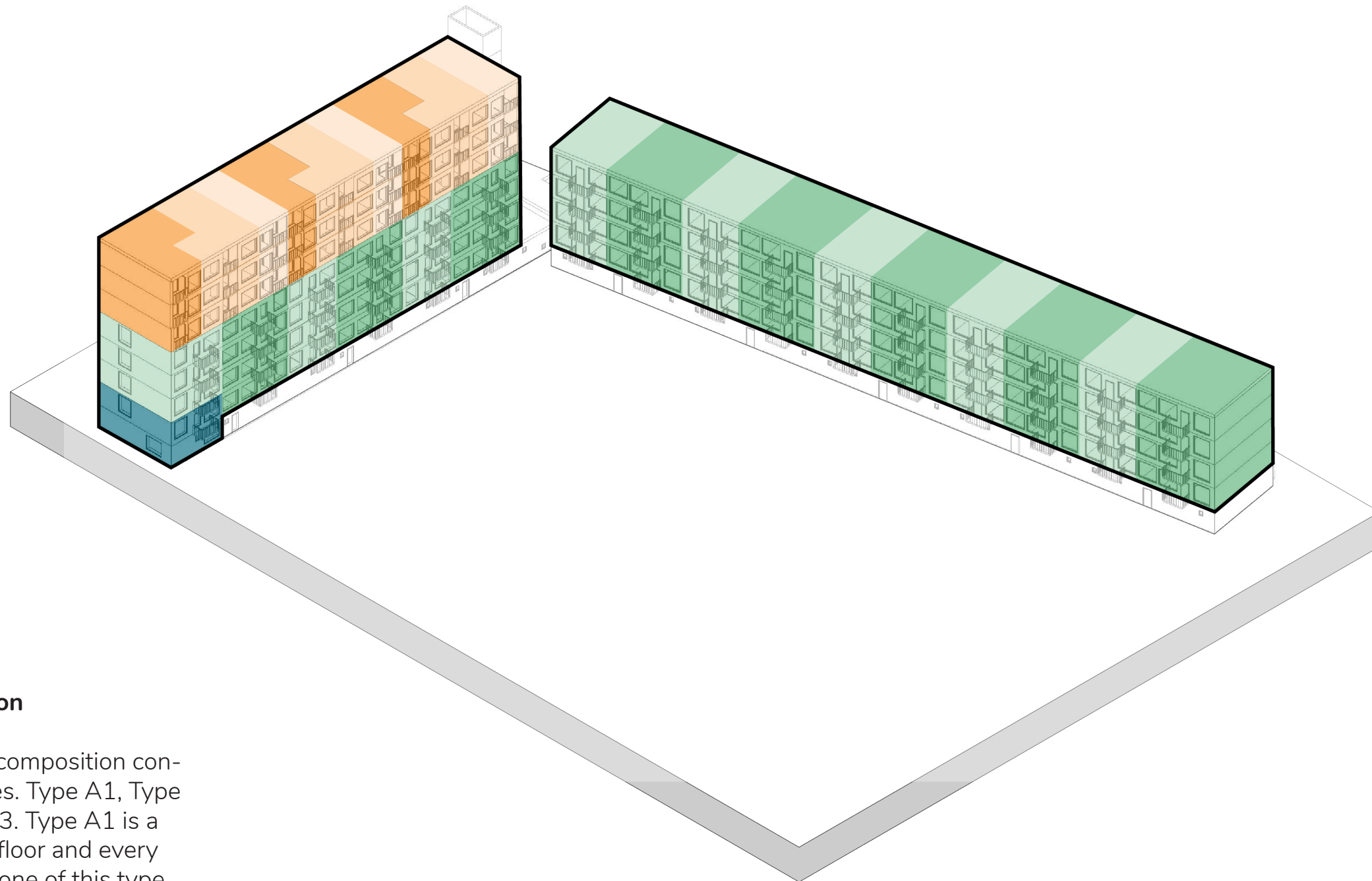
### Ground Floor Storage

The ground floor has the function of storage. Which again leads to lack of interaction with the street and surrounding areas. Therefore there is also a lack of introduction from the building towards the garden and street.



# Dwelling Type Composition

## Existing Dwelling Type Composition



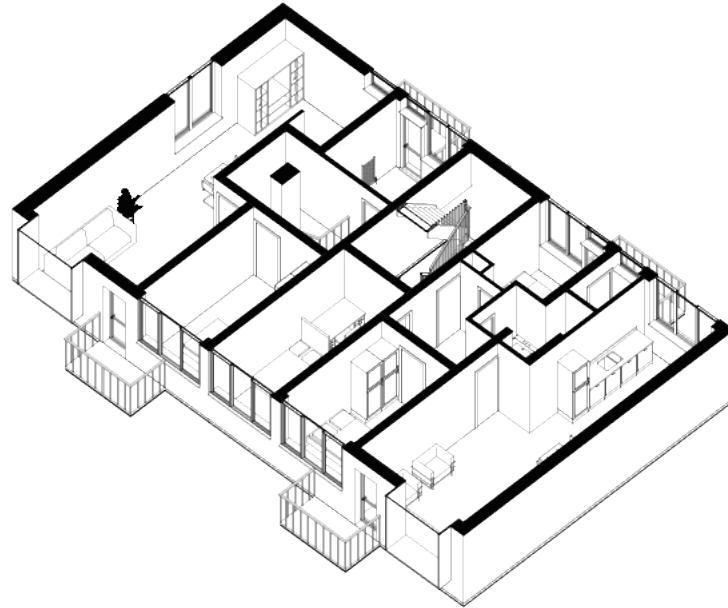
## Dwelling Type Composition

The current dwelling type composition consists of three dwelling types. Type A1, Type B1&B2 and Type C1,c2&C3. Type A1 is a maisonette on the ground floor and every building complex has only one of this type. Type B are family apartments and make up for the majority of the apartments. Type C are apartments for singles, which was a new dwelling type during the construction period. The current situation lacks diversity and Type B and C are kind of the only dwelling types existing in the current situation.



# Dwelling Types

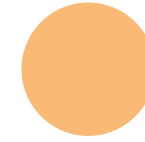
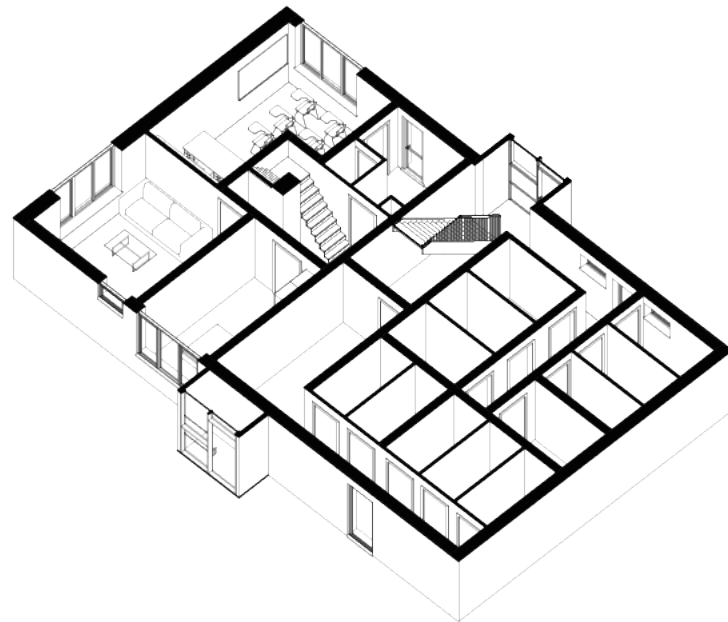
## Existing Dwelling Type Composition



### Type A

Maisonette:  
+/- 125m<sup>2</sup>

Storage



### Type C1

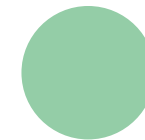
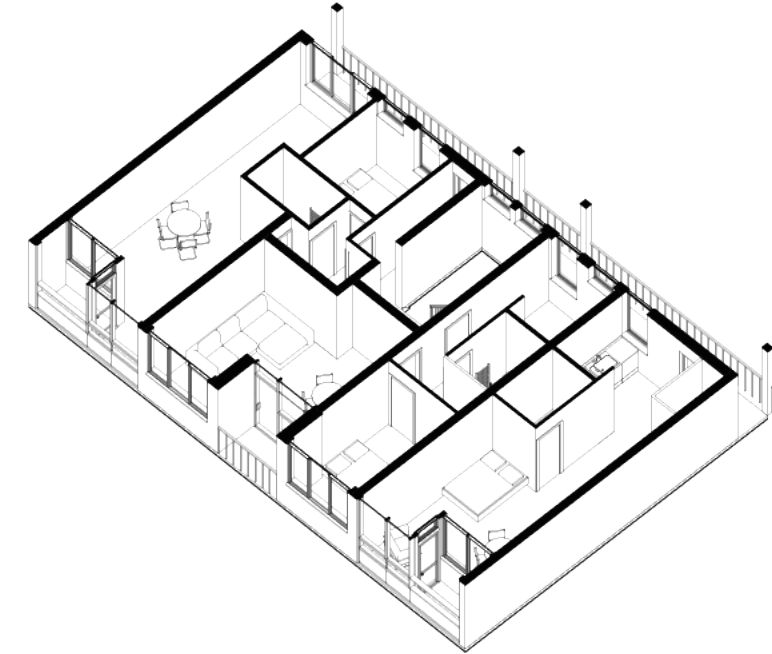
Singles apartment:  
+/- 50m<sup>2</sup>

### Type C2

Singles apartment:  
+/- 50m<sup>2</sup>

### Type C3

Singles apartment:  
+/- 40m<sup>2</sup>

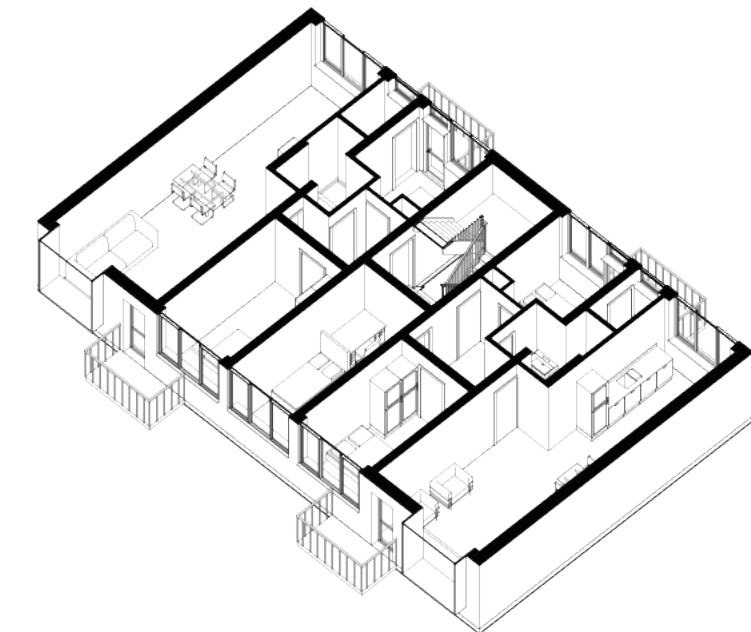


### Type B1

Family apartment:  
+/- 63m<sup>2</sup>

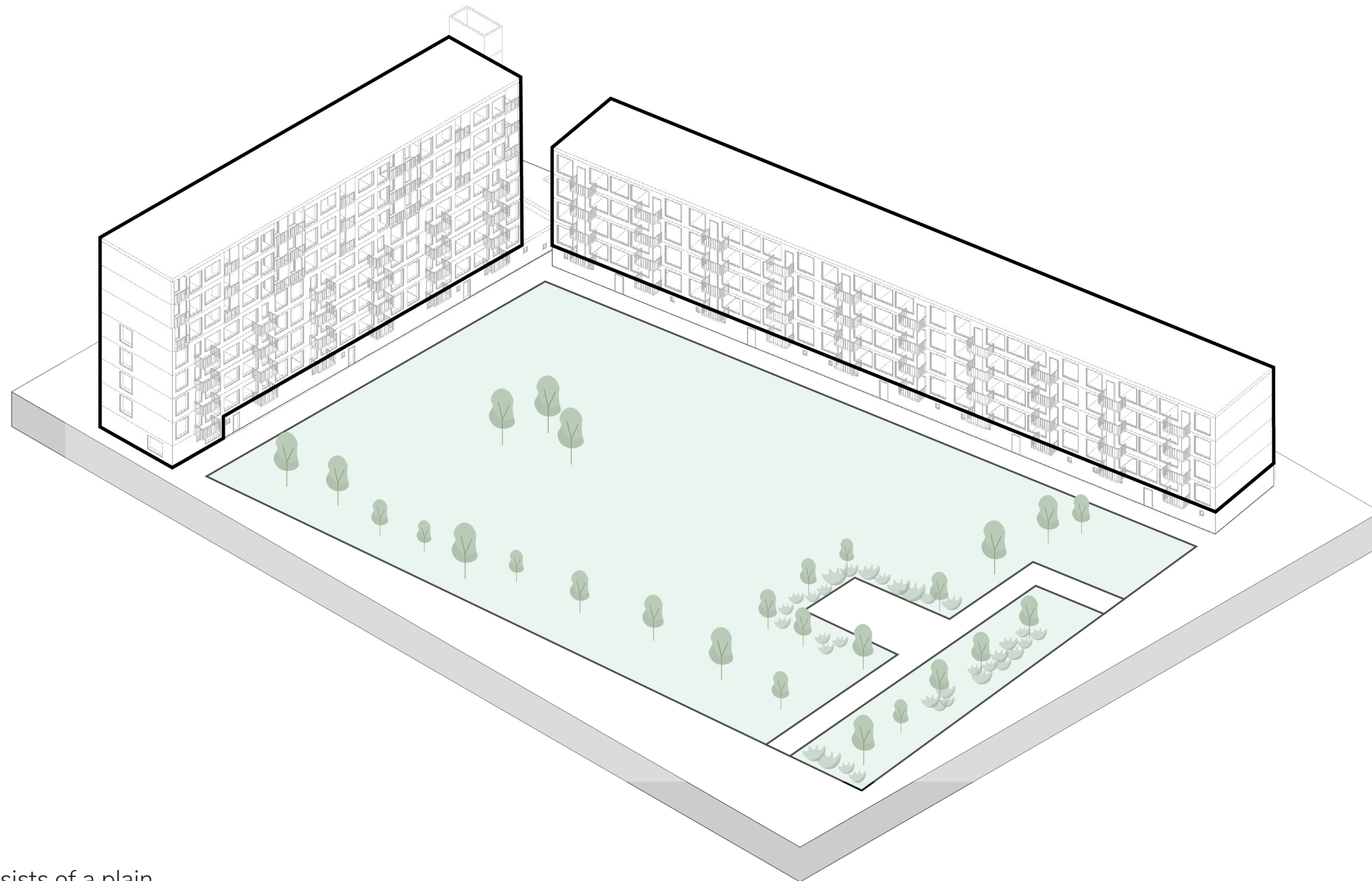
### Type B2

Family apartment:  
+/- 75m<sup>2</sup>



# Courtyard

## Existing Courtyard Situation



### Courtyard Composition

The current courtyard consists of a plain grass field with no actual function apart from the small playground next to the southern walkway. Since the courtyard has no actual purpose residents do not feel drawn to the courtyard and it is more like a dead space. A proper function would benefit the space and also the residents of the Knijptijzerpanden.





# REFERENCES

MAURIZIO BRENNNA



# Reference

## Flourish Pavilion - Biodiversity Concept Reference

In the greenhouse, where sunlight and moisture converge, emerges a sacred space for the growth of flowers and crops. Inspired by the everyday scenery of agricultural greenhouses in Changhua, Taiwan, “Flourish” features a bamboo-structured dome. This artwork utilizes agricultural materials such as bamboo and agricultural mesh, aiming to showcase the vitality of blooming flowers through modern geometric structures. The interior of the dome presents a variety of spaces, including large floral floating islands, greenhouse mist irrigation systems, original electronic music, and projection art, intending to bring a vibrant new atmosphere of spring to the public.

The bamboo dome of “Flourish” is constructed using heat-treated bamboo pipes and metal joints, supporting a colossal dome measuring 9 meters in height and 23 meters in length and width. The structure primarily employs thicker-diameter Moso bamboo as columns and beams, while thinner, heat-treated Makino Bamboo is pre-stressed and curved to form arches, serving as structural braces and artistic expressions for the agricultural film. Three large floral floating islands, suspended in the center of the dome and collectively weighing 400 kilograms, act as a means to reduce wind forces and stabilize the overall structural system. Bamboo and custom-made metal joints are meticulously installed layer by layer, following pre-set patterns, enhancing the precision of the bamboo structure construction.

Source: [https://www.archdaily.com/1013680/flourish-pavilion-studio-a-light?ad\\_source=search&ad\\_medium=projects\\_tab](https://www.archdaily.com/1013680/flourish-pavilion-studio-a-light?ad_source=search&ad_medium=projects_tab)



Architects	Studio A-Light
Location	Ghanghua City, Taiwan
Area	415m2
Year	2024



# Reference

## Spaarndammerhart Housing - Community Concept Reference

The Spaarndammerhart restores the urban fabric of the Spaarndammer neighborhood. The street that disappeared in the 1970s for the construction of the local school, Spaarndammerschool, has been restored. The plan also brings back two street walls and adds a public courtyard to the neighborhood. Accessible through two large gates, it also connects to De Klerk's iconic 'The Ship' building. In fact, the neighborhood is characterized by several world-famous monuments of the Amsterdam School.

The project's location is surrounded by not only De Klerk's Het Schip and Spaarndammerplantsoen, but also Walenkamp's Zaanhof and De Bazel's Zaandammerplein. And while the architecture of Spaarndammerhart is unmistakably contemporary, it also has subtle references to these Amsterdam School classics. For instance, the building features rich and nuanced masonry in red and yellow brick, glazed bricks for the 'interior facades' of the courtyard, slender profile frames in an unambiguous facade structure, and 'soft' progressions along the building's mass. In addition, visual art – in this case by Martijn Sandberg – is an integral part of the larger architecture and landscape design.

Source: [https://www.archdaily.com/993277/spaarndammerhart-housing-marcel-lok-architect-plus-korth-tielens-architects?ad\\_source=search&ad\\_medium=projects\\_tab](https://www.archdaily.com/993277/spaarndammerhart-housing-marcel-lok-architect-plus-korth-tielens-architects?ad_source=search&ad_medium=projects_tab)

### Architects

Marcel Lok\_Architect + Korth Tielens Architects

### Location

Amsterdam, Netherlands

### Area

12676m<sup>2</sup>

### Year

2021





# Reference

## Havenkade Nijmegen - Housing Concept Reference

Havenkade, located by the harbor along the Waal River, is the most recent residential addition to Nijmegen’s urban silhouette. The development is part of the larger urban transformation plan for the Waalfront area, the city’s former industrial district. The project is a joint initiative, notable for its diversity in housing types. It comprises 324 apartments, including 164 social rent units for housing corporations Talis and Portaal, designed by architectuurcentrale Thijs Asselbergs and Van Ommeren Associates (VOA). The 38 medium-priced rental apartments and 122 private-sector apartments were designed by JURY! Within a recognizable masonry ensemble, a versatile mix of housing has been created. Characteristics are the two-story high entrances that form the connection between the new city street and the courtyard within the building block. The exterior has a robust masonry character, while the courtyard is detailed in a more neutral way that serves as a basis for the vegetation to flourish. The collaborating architectural firms, aTa and VOA, see tailor-made standardized construction and modular construction as the solution for the future. Series-produced housing projects consisting of diversity in housing typologies create architectural enrichment with lasting value. In the Havenkade project, social housing is designed with the same attention and thoughtfulness as all other housing types. The variety of housing typologies on the Havenkade – living by the water, the street, or the courtyard and the range of sizes of apartments and maisonettes – offer diverse housing options for the Nijmegen community.

Source: [https://www.archdaily.com/1009592/havenkade-nijmegen-social-housing-vanommeren-architecten-plus-architectuurcentrale-thijs-asselbergs?ad\\_source=search&ad\\_medium=projects\\_tab](https://www.archdaily.com/1009592/havenkade-nijmegen-social-housing-vanommeren-architecten-plus-architectuurcentrale-thijs-asselbergs?ad_source=search&ad_medium=projects_tab)

Architects	Architectuurcentrale Thijs Asselbergs, vanOmmeren-architecten
Location	Nijmegen, Netherlands
Area	17000m2
Year	2023





# Reference

## Klussen op de Klarenstraat - Housing Diversity Concept Reference

Together with Urbannerdam, Vanschagen architects examined the possibilities of the shell and the feasibility of the business case in advance on behalf of De Alliantie, the then owner of the complex. From the initiation phase to completion, we guided the buyers in the project's development, design and implementation. The 1956 Groosman-designed building originally consisted of forty identical 75m<sup>2</sup> porch flats. After the transformation, almost no flat is the same and the thirty flats range in size from 40 to 190 m<sup>2</sup>. The shell (facade, entrances, insulation shell, floating floor incl. underfloor heating and structural interventions in the house) has been tendered to Slokker Almere and will be delivered in spring 2014. Buyers here have high sustainability ambitions: almost all homes will get energy label A. After jointly tackling the shell, individual buyers will start working on their own built-in. It is the first post-war porch building in the Netherlands to be renovated under collective private commissioning (cpo). The NRC (dated 14-09-2013) identifies the project as a first for the Amsterdam creative class across rail and A10 due to the combination of convenient location, competitive pricing and freedom offered.

Source: <https://arcam.nl/architectuur-gids/klussen-op-klarenstraat/>

### Architects

VanSchagen Architecten

### Location

Amsterdam, Netherlands

### Contractor

Vvo Klussen op de Klarenstraat

### Year

2014





# Reference

## Bosleeuw Midden - Facade Concept Reference

The housing in Bos en Lommer was developed at the beginning of the 20th century for the then young Housing Act. The houses are just short of monumental status, but are of great cultural-historical value for public housing. Typologically, they form an interesting intermediate form in the development from building block to strip parcelisation. The plans for the neighbourhood date from 1935, the time when Cornelis van Eesteren at the city development department instigated experimental housing construction for the functional city and developed the General Expansion Plan. With refined roof overhangs and slender steel frames, the four Forest Lion building blocks contributed to the rich streetscape of this period. Renovation during urban renewal caused the buildings to deteriorate in quality with cheap solutions and mediocre detailing. An initial study showed that a restorative approach was not feasible. Besides economic aspects, interior insulation would greatly affect the use value. Therefore, with a construction consortium, an approach was developed for a complete, new façade around the building. For this, careful research was carried out into possible frame types and precisely fitting ceramic products. The brick not only had to fit architecturally, but also had to be technically workable as strips under guarantee conditions. Using a special approach, the project was carried out within social renovation budgets in just 12 days per house. For this, the process of design and implementation was aligned. The home improvement took place in occupied condition. This involved tackling the entire facade, roof, porches, entrances, insulation, plinth, installations, bathrooms, kitchens and toilets. Floor plan improvements were also worked out as options in mutations.

Source: <https://www.kaw.nl/projecten/renovatie-bosleeuw-amsterdam/>

### Architects

KAW Architects

### Location

Amsterdam, Netherlands

### Contractor

Stadgenoot Amsterdam

### Year

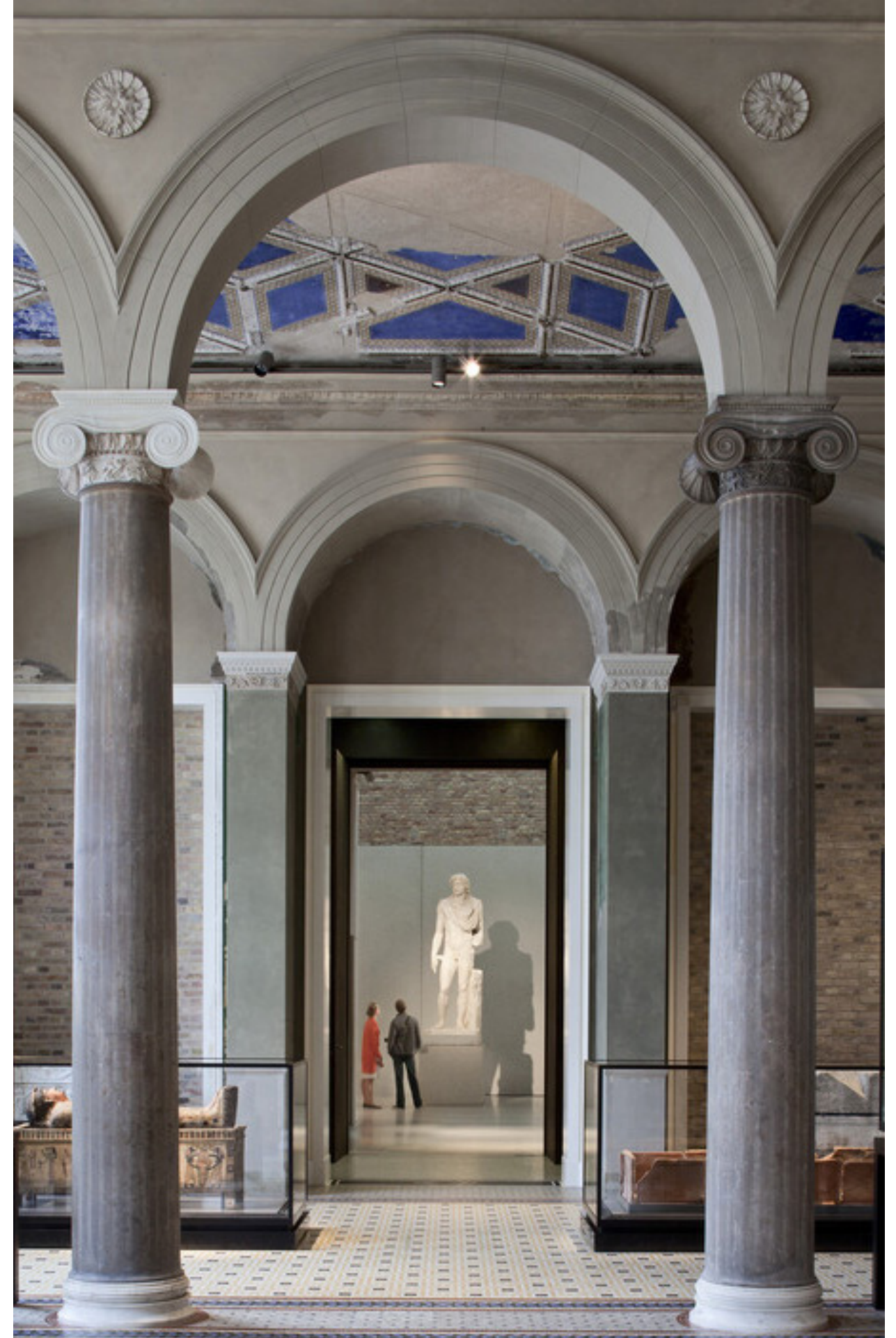
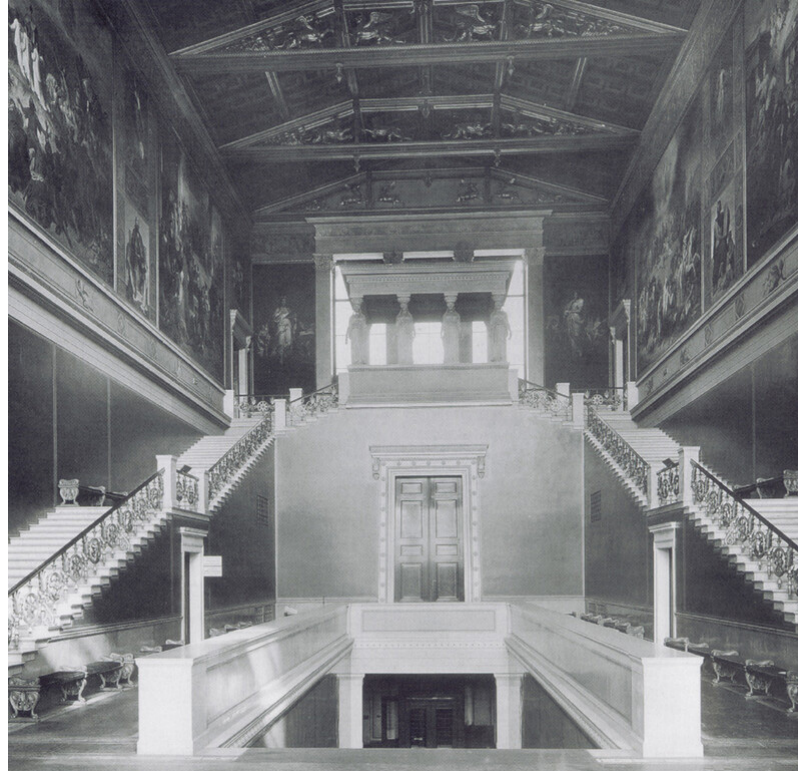
2014





# Heritage Position Reference

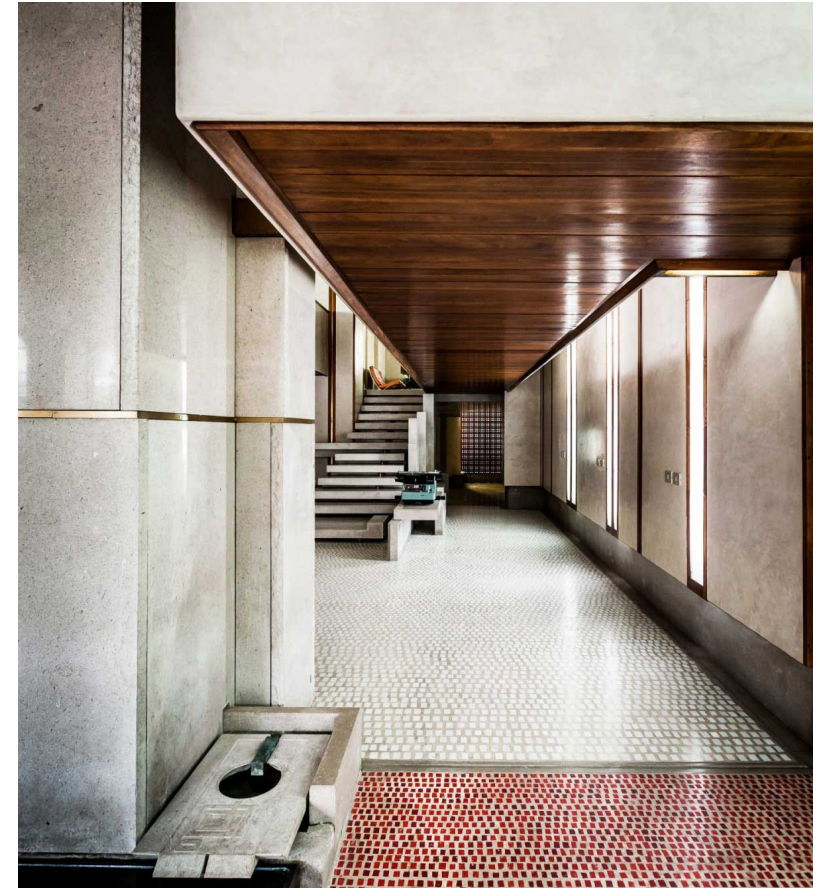
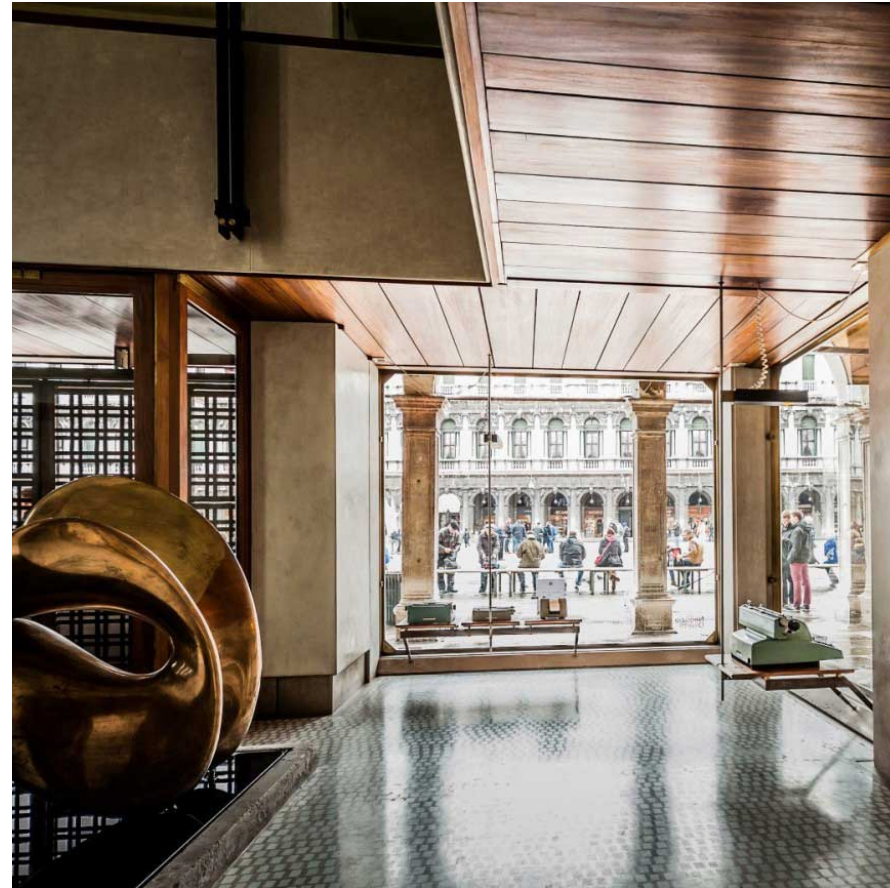
Old in New Style - David Chipperfield - Neues Museum, Berlin





# Heritage Position Reference

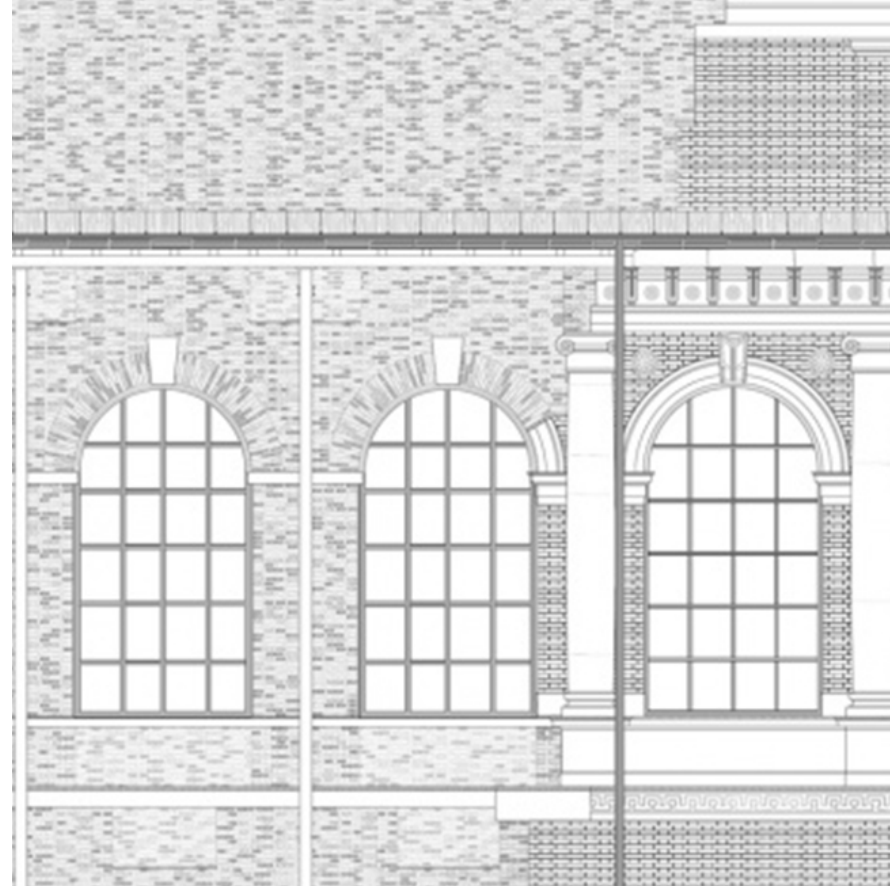
Addition to Exploit - Carlo Scarpa - Olivetti Showroom, Venice





# Heritage Position Reference

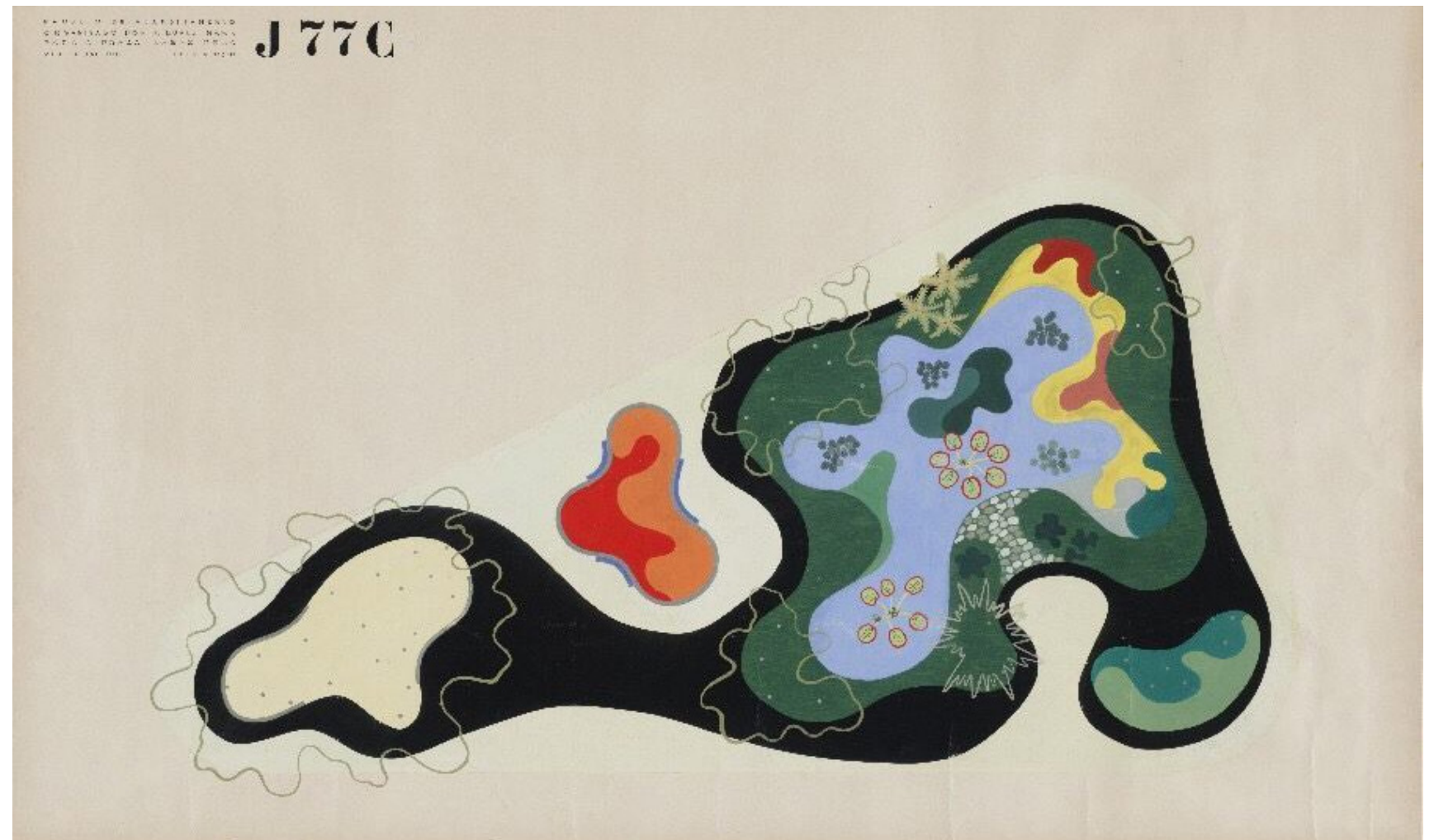
Blend/Slight Contrast - Hans Döllgast - Pinokothek, Munich





# Courtyard Reference

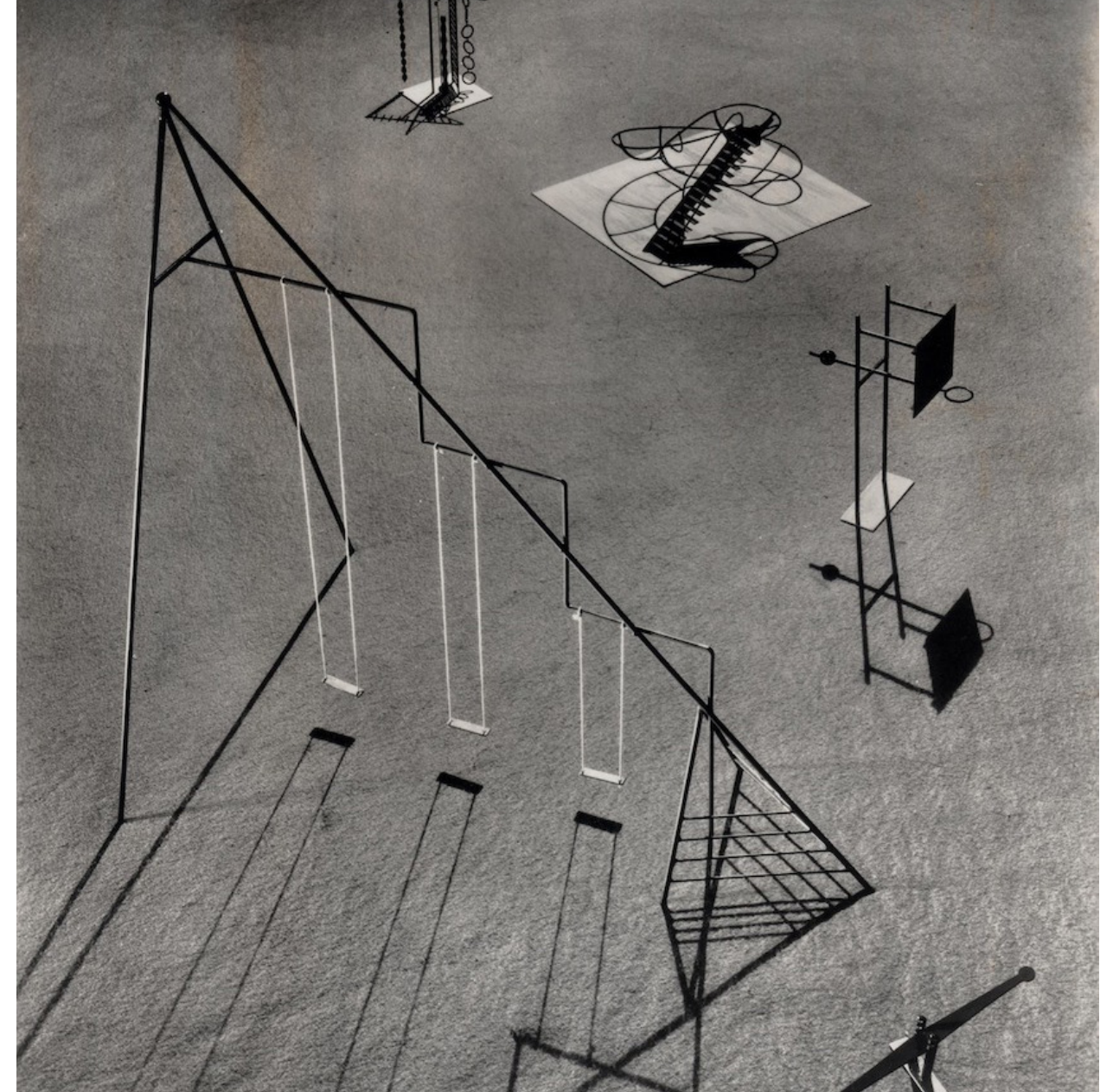
Burle Marx - Garden Painting





# Courtyard Reference

Noguchi - Playground as a Sculpture





# Courtyard Reference

Courtyard as Meeting Place - NL Architects - Basket Bar







# POSITON ON HERITAGE

MAURIZIO BRENNNA



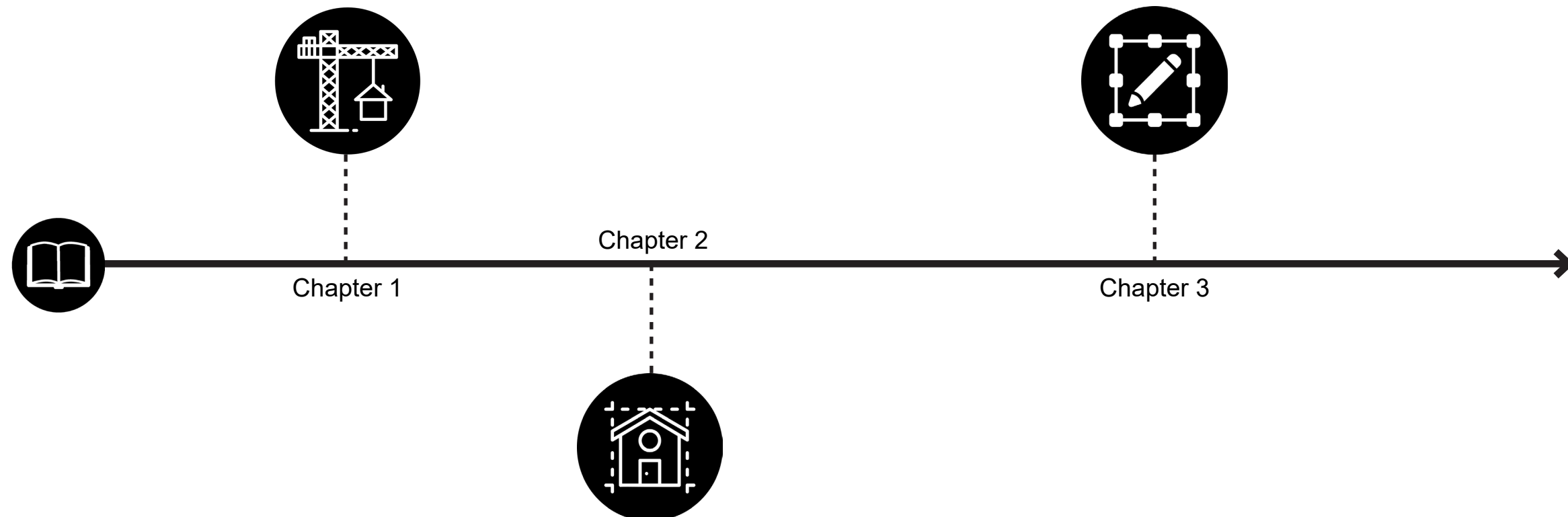
# Personal Ideology towards Heritage

Ideologies and Views on dealing with Heritage

Heritage can be seen as a **history book**, in which every addition or transformation has its own chapter in a different time period. Therefore, every transformation shall tell the **story** of the contemporary wants and needs of that particular time period.

To **respect** history does **not** mean only **preservation**. **Memory** can be honored and can revive in many different forms.

**New solutions** do **not** have to be **incorporated or concealed**, but may be visible and have to find a balance in the contrast with the existing, showing the beauty of combining the opportunities contemporary technology offers and **create poetry** with the existing.







# REDESIGN

MAURIZIO BRENNNA



# Interaction

## Interaction Between Inside/Outside - North and South Facades

### Interaction

Creating more interaction by restructuring the storage ground floor and opening up the facade. This way, movement on the inside becomes transparent to the outside.



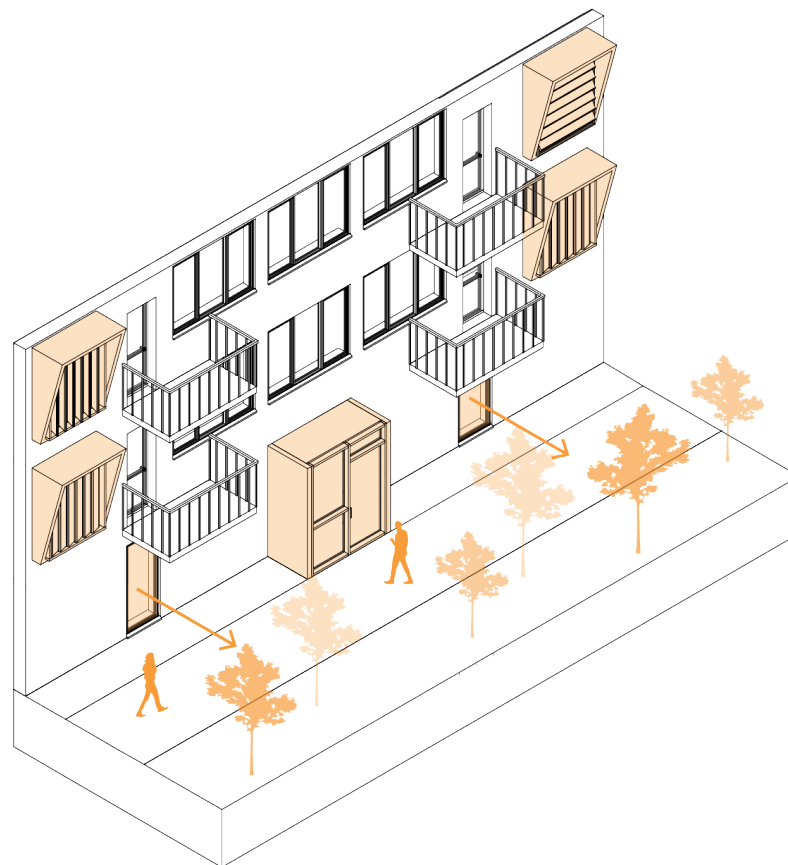
### Softening / Buffer Zones

Softening 'the Wall' by adding green zones on the north side. Furthermore, greenery creates a softer transition between hard facade material and hard street material.



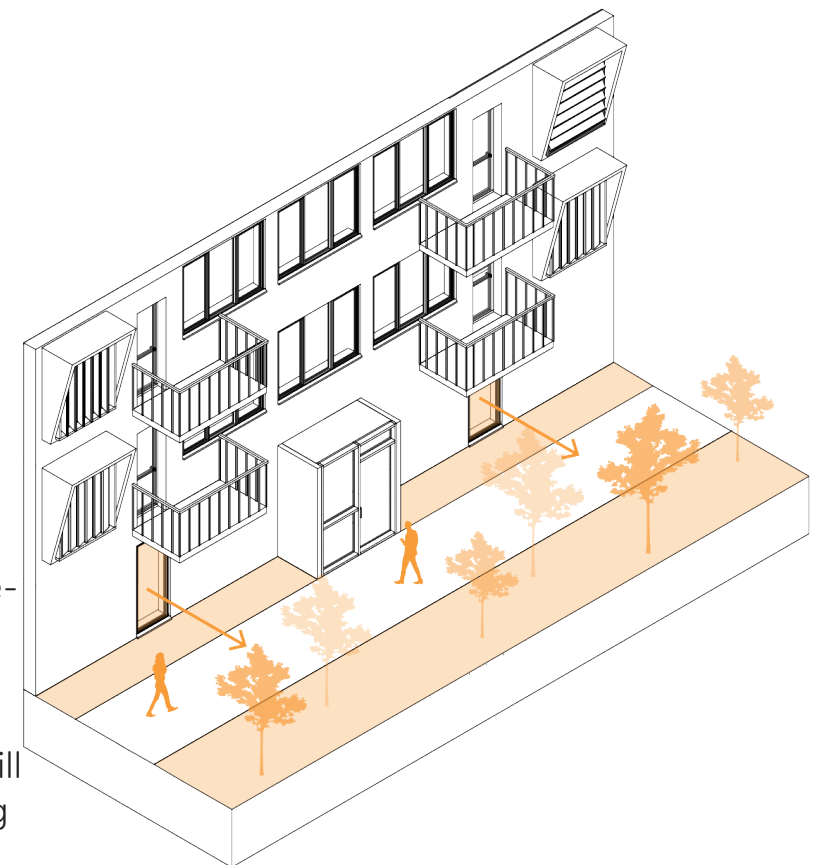
### Interaction

Creating more interaction by restructuring the storage ground floor and opening up the facade. This way, movement on the inside becomes transparent to the outside. The new entrance on the southside clarifies a new connection and the windows show the focus on the courtyard from appearance but also as their function.



### Softening / Buffer Zones

Softening 'the Wall' by adding green zones on the north side. Furthermore, greenery creates a softer transition between hard facade material and hard street material. It also separates the private and the public area with a semi-public/private green zone which will allow for separation between dwelling and street.



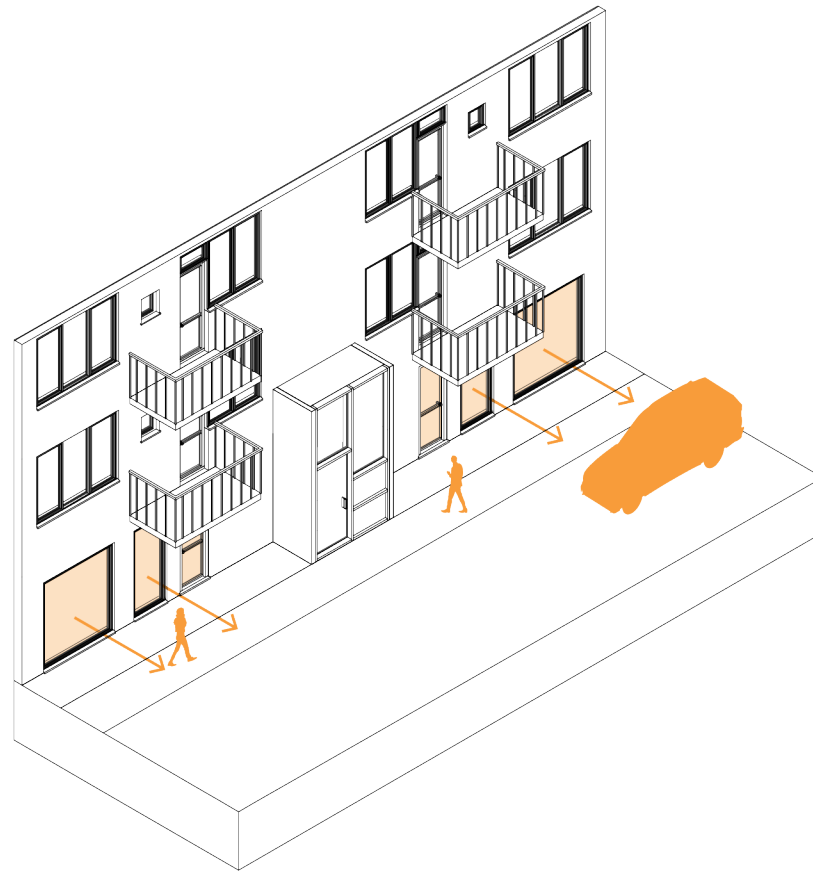


# Interaction

## Interaction Between Inside/Outside - East and West Facades

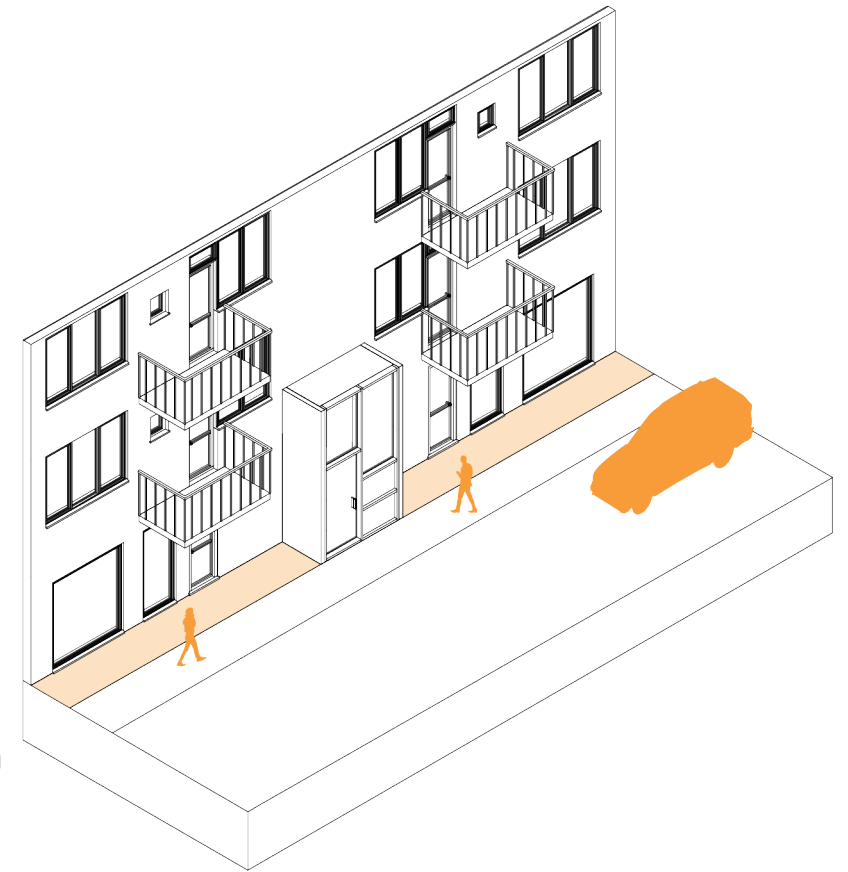
### Interaction

Creating more interaction by restructuring the storage ground floor and opening up the facade. This way, movement on the inside becomes transparent to the outside.



### Softening / Buffer Zones

Softening 'the Wall' by adding green zones on the north side. Furthermore greenery creates a softer transition between hard facade material and hard street material. It also separates the private and the public area with a semi-public/private green zone which will allow for separation between dwelling and street.



### Interaction

Creating more interaction by restructuring the storage ground floor and opening up the facade. This way, movement on the inside becomes transparent to the outside. The new entrance on the southside clarifies a new connection and the windows show the focus on the courtyard from appearance but also as their function.



### Softening / Buffer Zones

Softening 'the Wall' by adding green zones on the north side. Furthermore greenery creates a softer transition between hard facade material and hard street material. The brick small gardens separate the public and private areas with a semi-private small garden. The size and shape of this small garden has the purpose to send people to the community areas, and if they decide to stay in their own garden, interaction is stimulated and not blocked.





# Design Inspiration

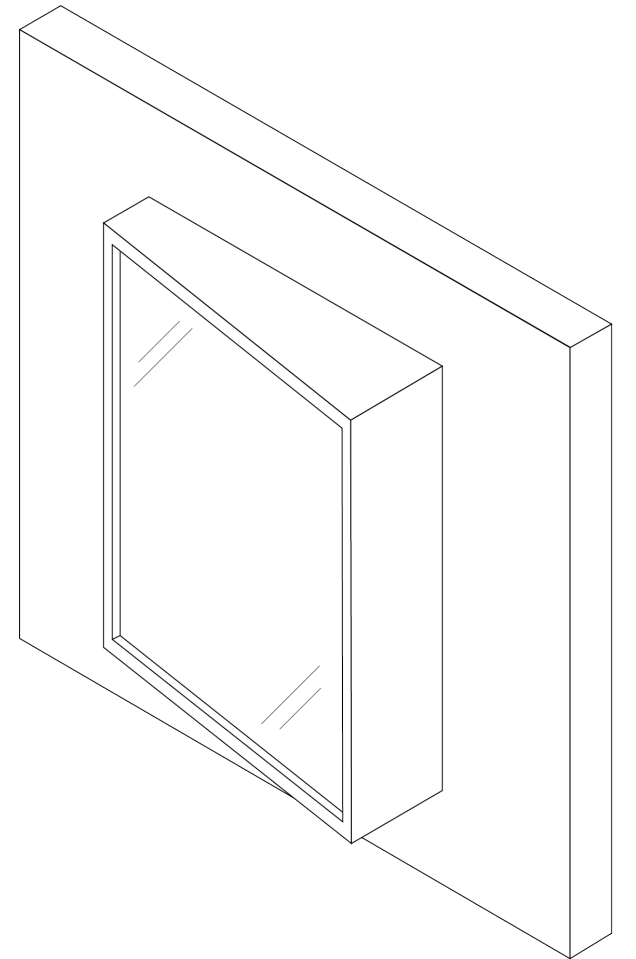
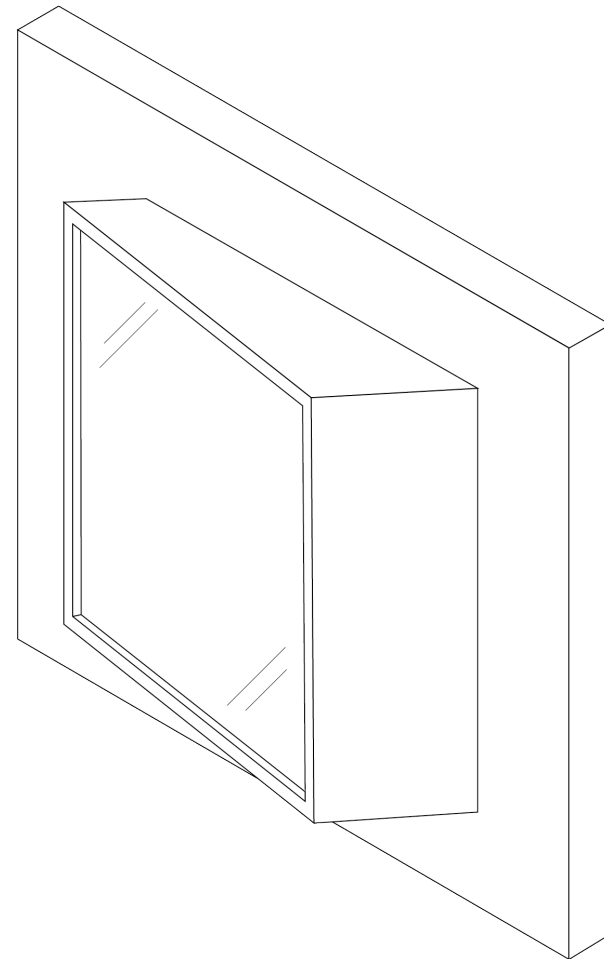
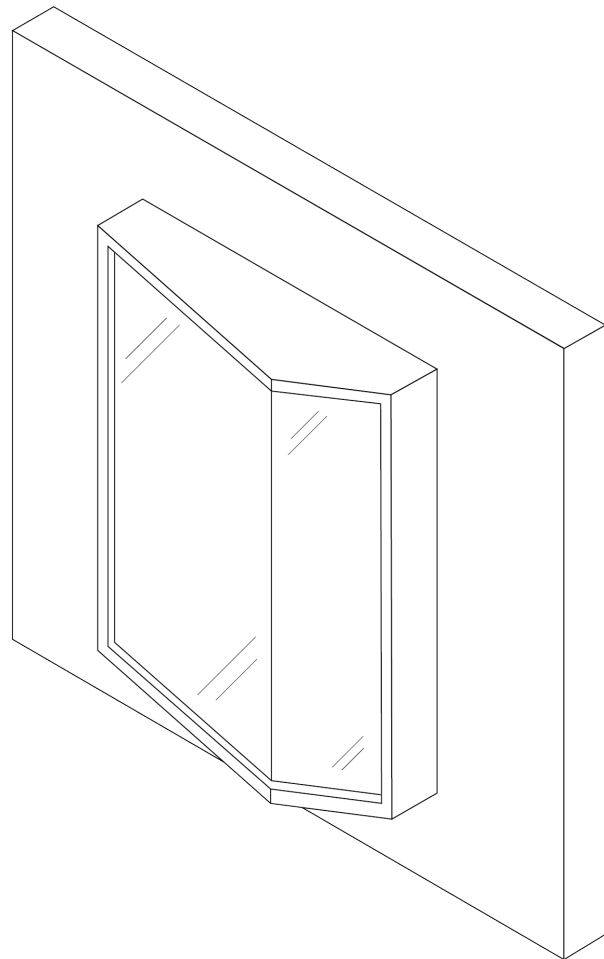
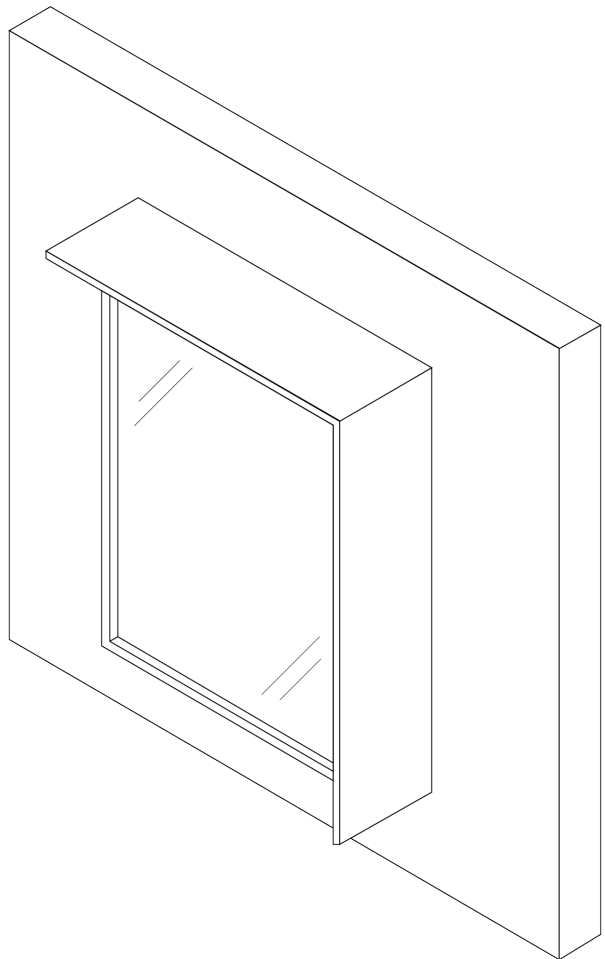
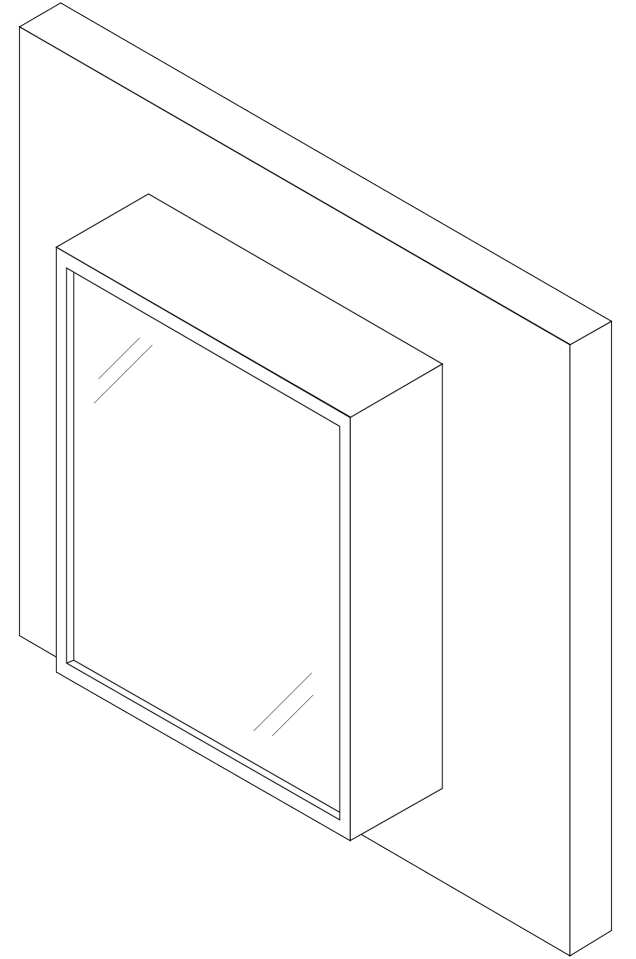
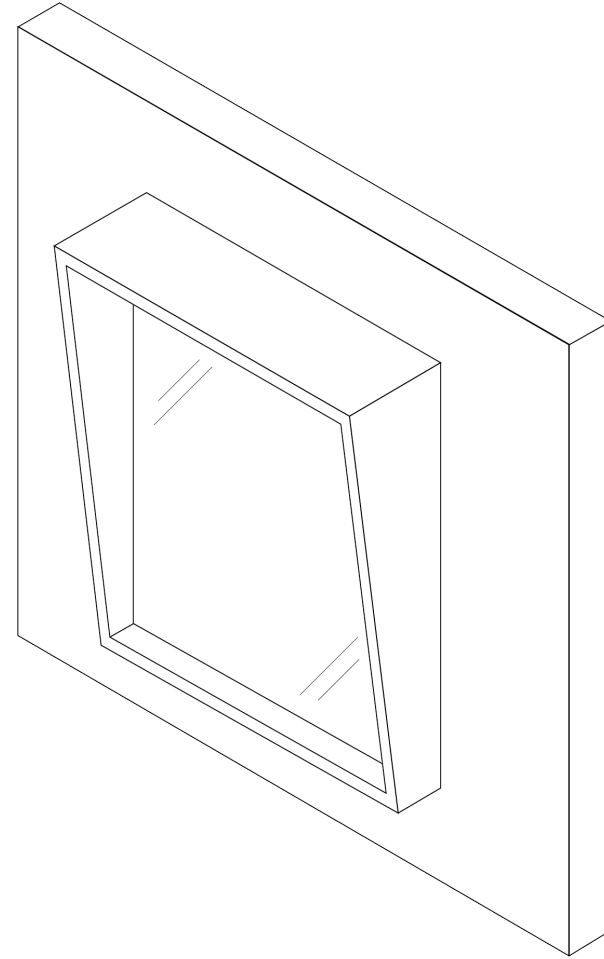
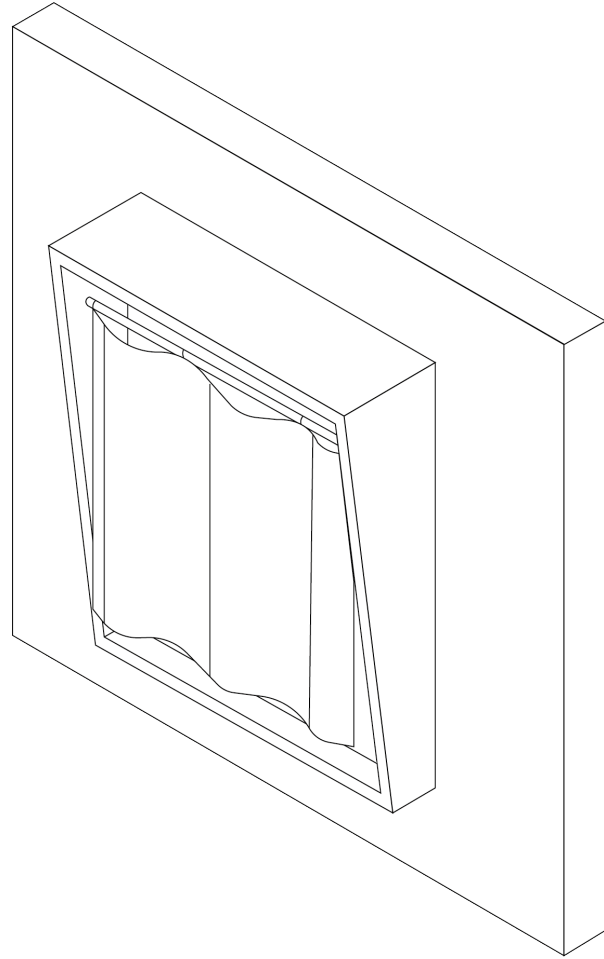
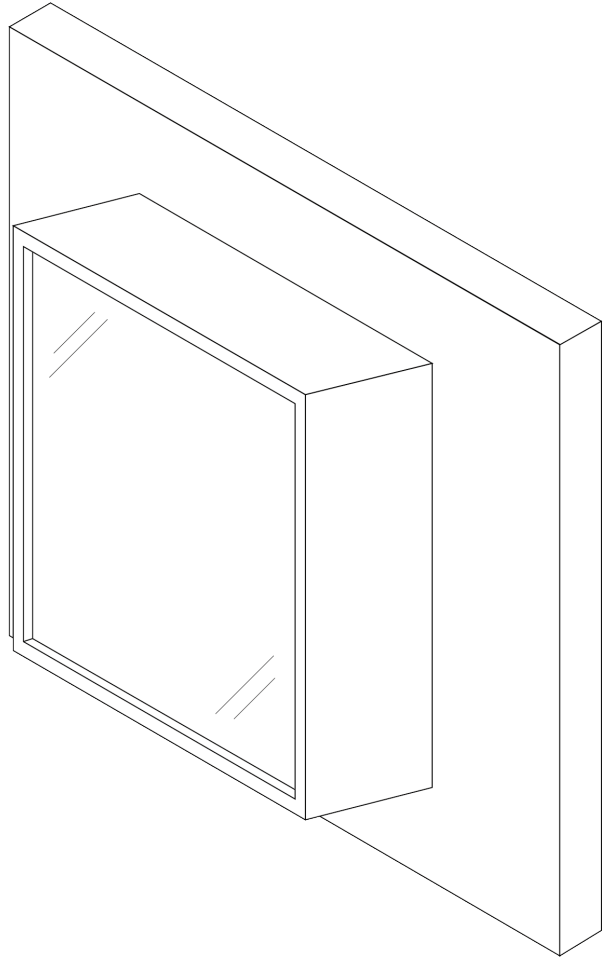
## Extruding Window





# Design Studies

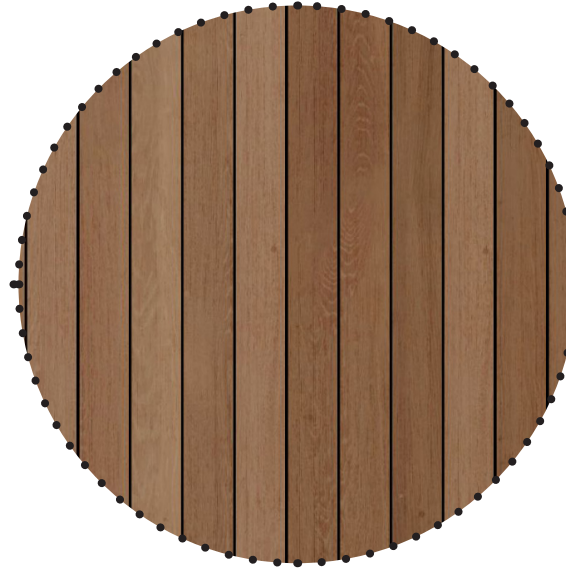
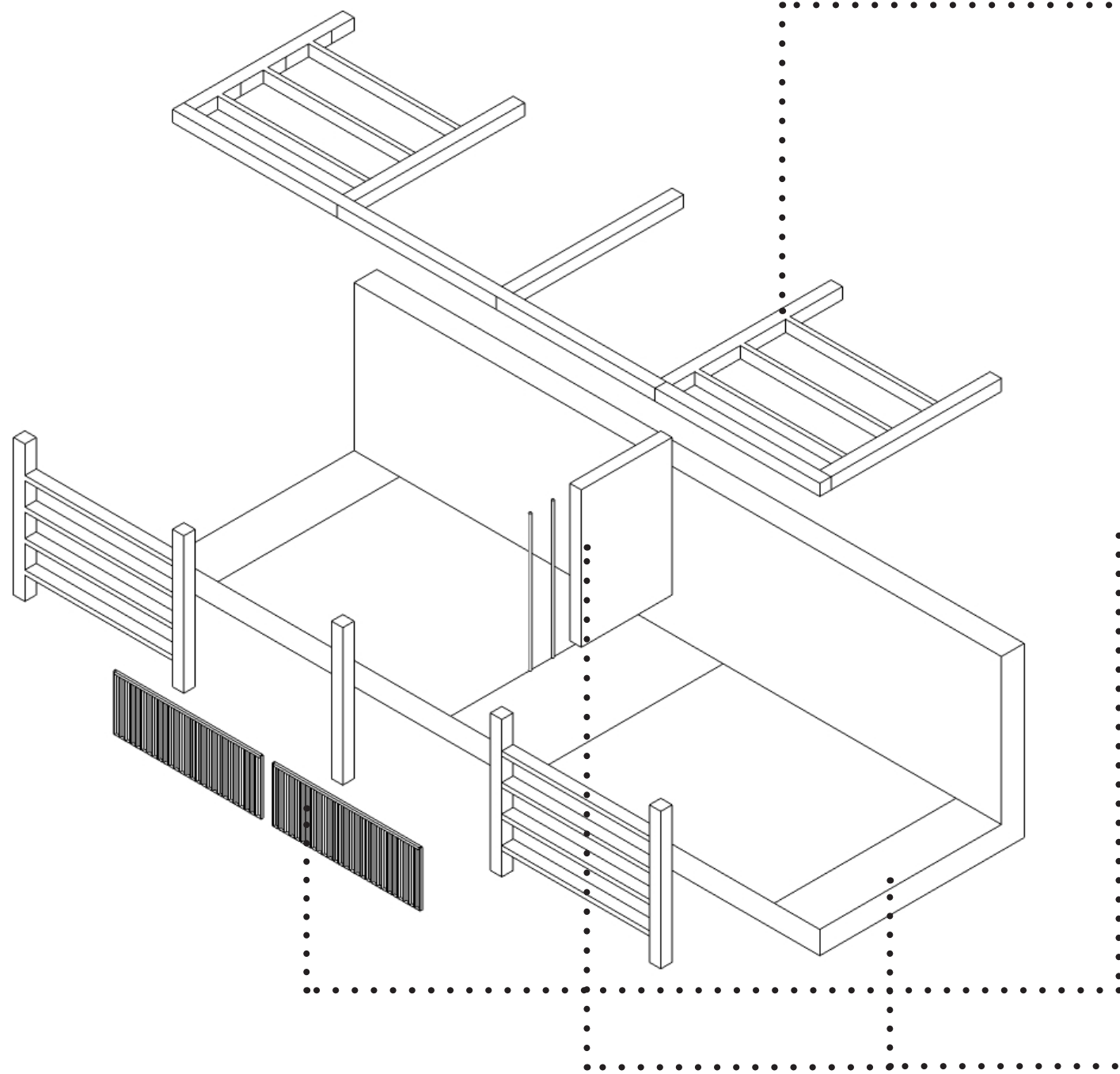
## Extruding Window





# Design Studies

## Pergola - Topping Up



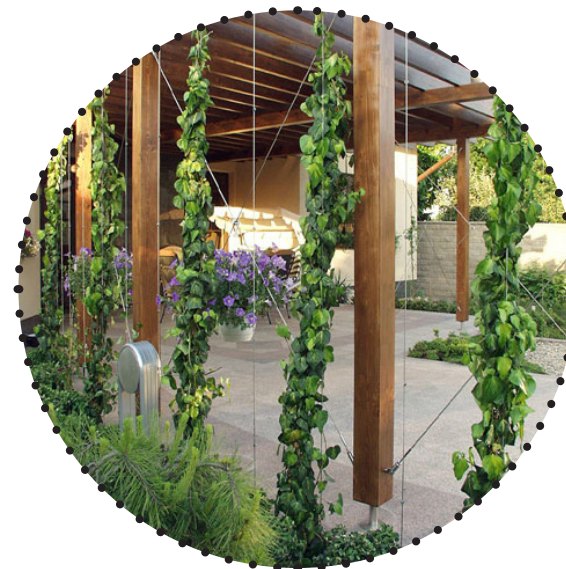
### Wooden Pergola

Due to its weight and warm perception, the Pergola will consist of a wooden structure. The combination of wood with other materials contributes to the character of the building and stands in contrast to the existing building in terms of used materials. This will make it stand out and show that the use of wood was an addition of the life time of the building. A new chapter in the buildings history.



### Light Railing

The railing will be of a thin composition. This way views (interaction) on and with the courtyard are not blocked of. In terms of privacy this will not be an issue since the height of the terrace is on the existing roof structure and therefore not clearly visible from the street level.



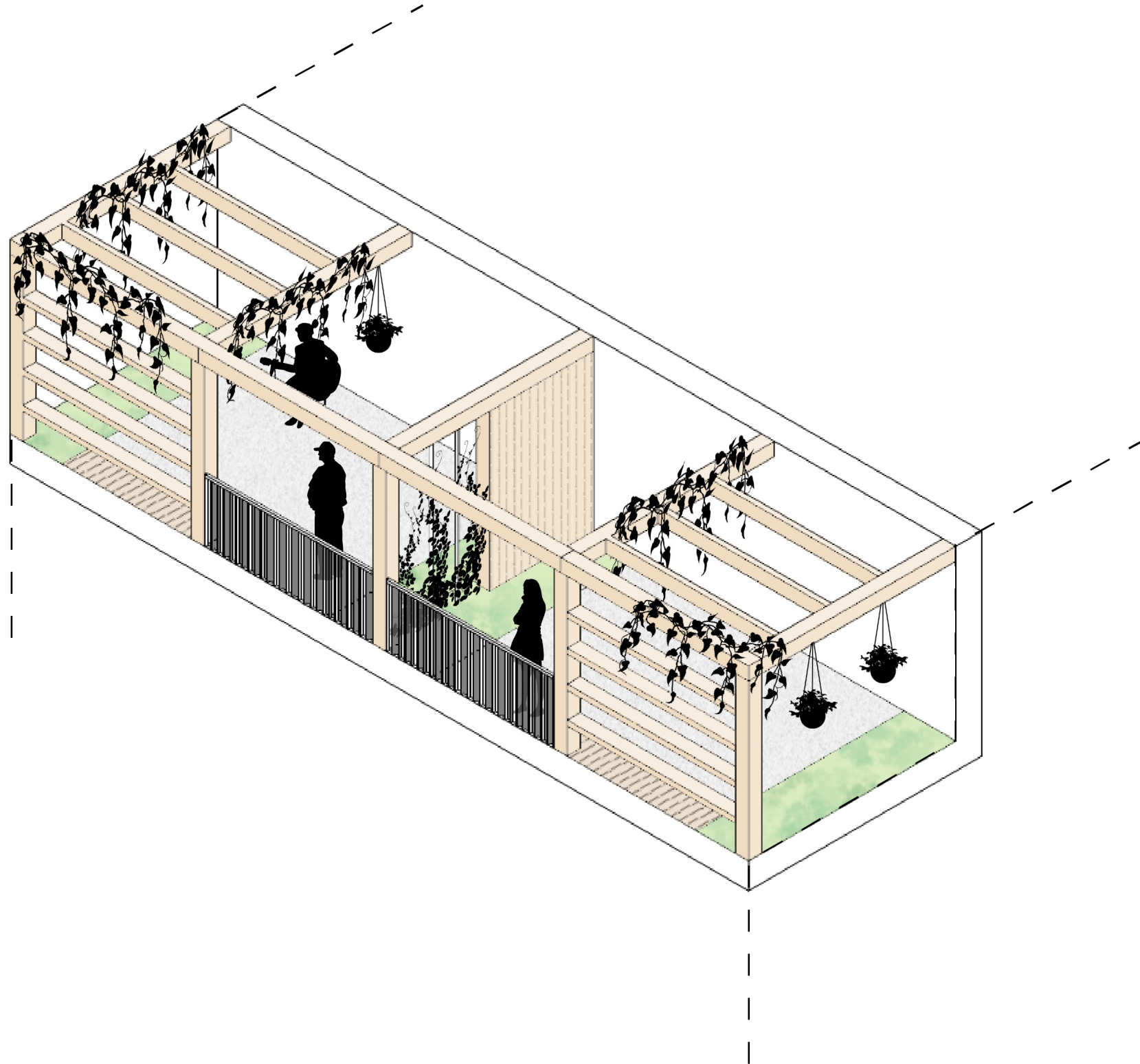
### Privacy

Privacy will be achieved through two methods. A covering wooden separation wall and steel threads. The steel threads will allow for plants to grow up and protect the privacy through semi covered greenery. This allows for interaction if desired. Furthermore through pavement. Through the use of different pavements the separation is enhanced. Close to the border of the terrace, grass will be used instead of hard pavement.



# Design Studies

## Pergola Design Concept - Topping Up



### Roof Greenery

The differentiation between roof terrace pavements hints at the zones of the terrace meant for seating and which ones have a more dividing function. Close to the terrace barrier the roof terrace will have a garden function, this way people will stay more out of each others way and still have a garden-ing option. Furthermore the pergola can function as structure for hanging plants and other plants to grow on to create a very pleasant outside green roof terrace.

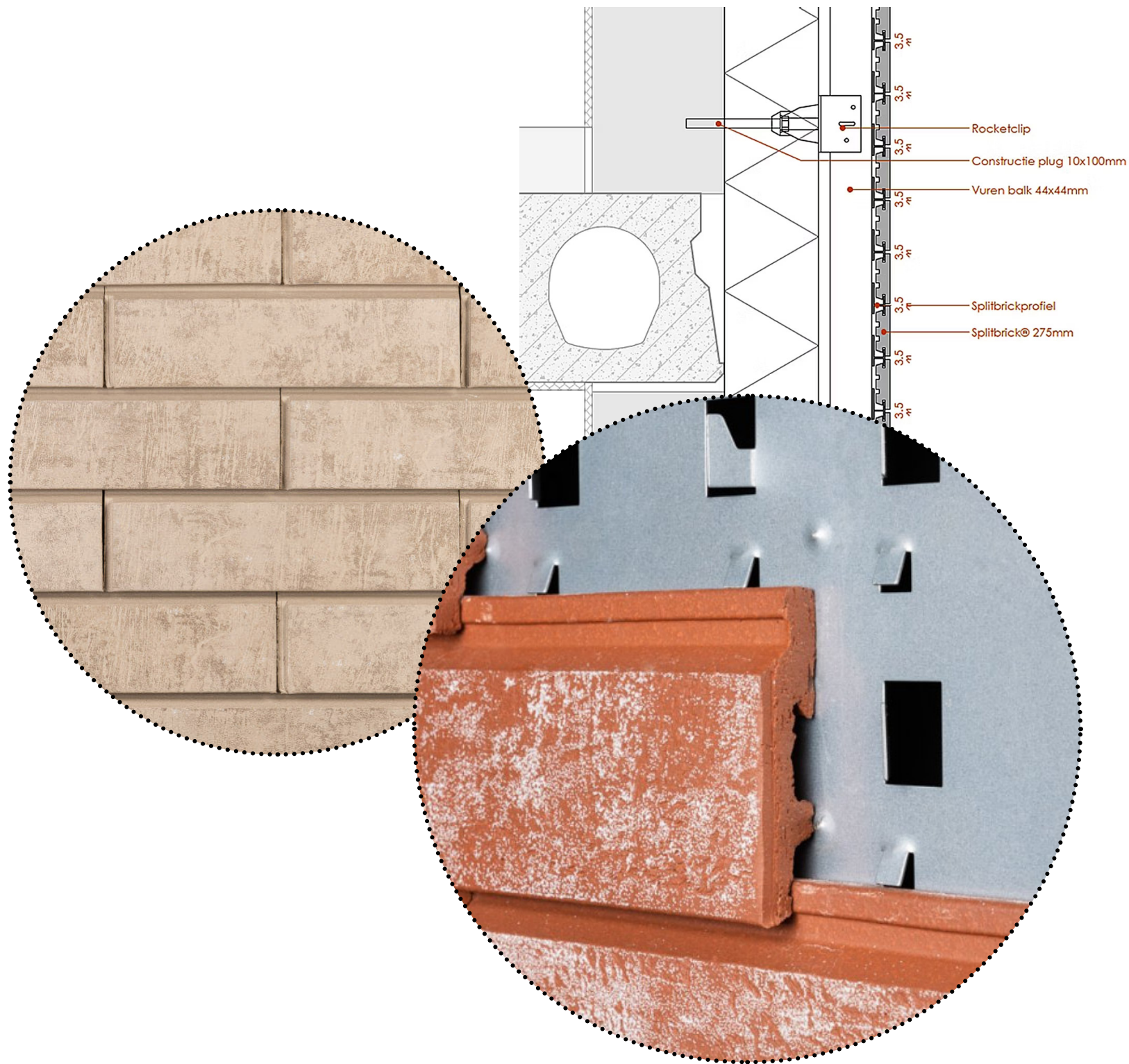
### Climate Design

This impression of the Pergola shows how the different elements come together to create a pleasant terrace space. The combination of open and more closed pergola not only serves for the privacy but also has a function as sun protection. The pergola wooden slats are placed orientated towards the West, to block the evening sun overexposing the windows of the facade. This way the inside climate does not overheat inside in the evening.



# A-Brick

Materialisation - Sustainability - Brick Slip System



## Brick Re-use

- Re-use the brick of the interventions and re manufacture them as brick slips
- Get remaining necessary brick slips from other re-used brickwork
- Easily mountable/dismountable for future re-use



# Green Roof

Materialisation - Sustainability - Xyhlo Biofinish



## Green Roof

- Protects the roofing against UV rays, heat, old and against hailstones
- Prevents restriction and provides new living space for plants and animals
- Extra usable space for more quality of life
- Retains rainwater
- Reduces heating and cooling costs
- Improved noise reduction



# Design Studies

Materialisation - Sustainability - Xyhlo Biofinish



**XYHLO**<sup>®</sup>  
BIOFINISH

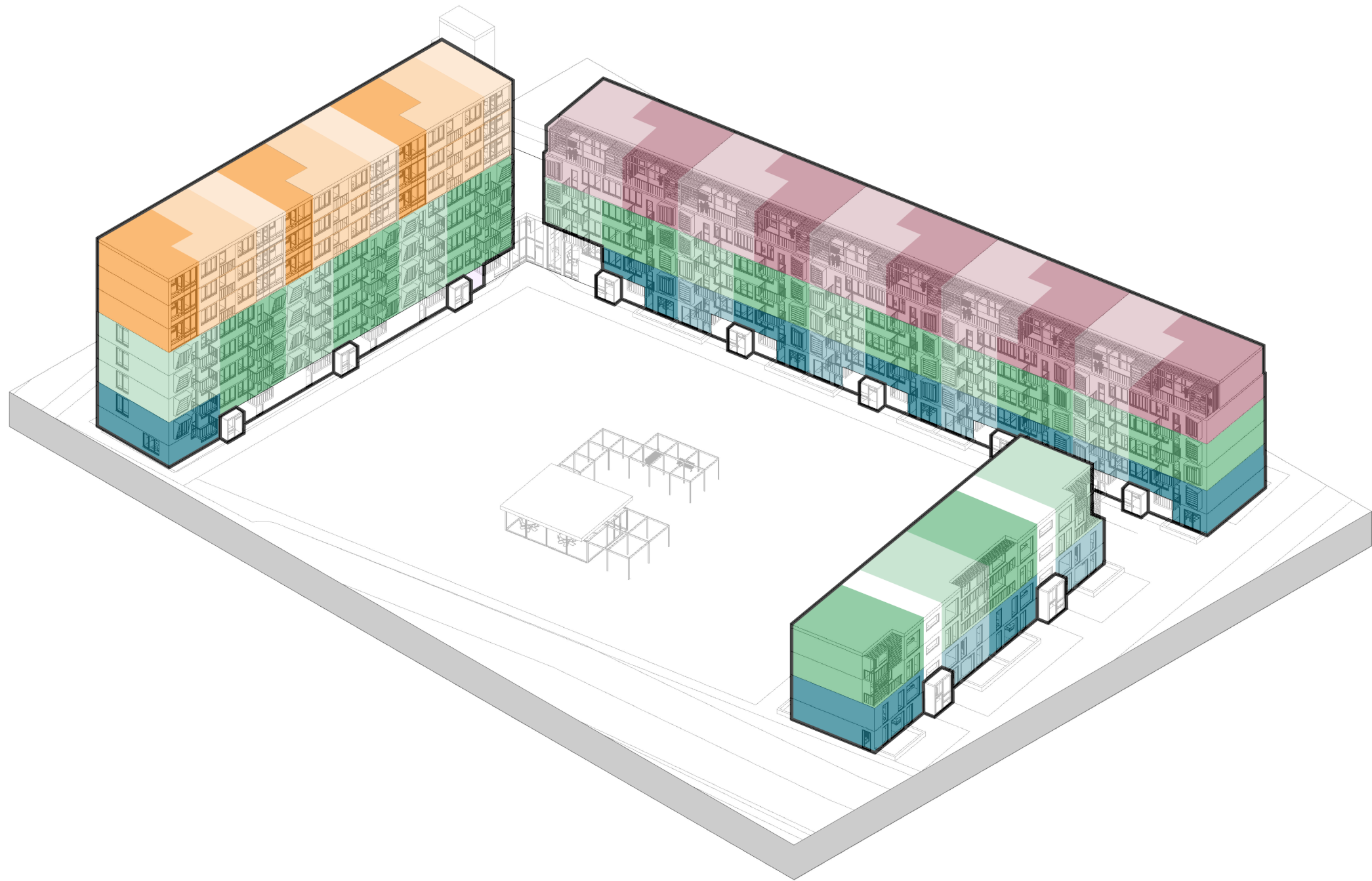
## Xyhlo Biofinish

- Matt black wood finish
- Low maintenance
- Self repairing material
- 100% Circularity
- Natural look
- Organic, protective membrane
- Base coating of natural oils and second (biological) coating of nature-activated and harmless fungus



# New Dwelling Type Composition

New Dwelling Type Composition



## Type A

Maisonette:  
+/- 125m2

## Type A2

Family apartment  
/ 110 m2



## Type B1

Family apartment:  
+/- 63m2

## Type B2

Family apartment:  
+/- 75m2



## Type C1

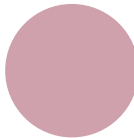
Singles apartment:  
+/- 50m2

## Type C2

Singles apartment:  
+/- 50m2

## Type C3

Singles apartment:  
+/- 40m2



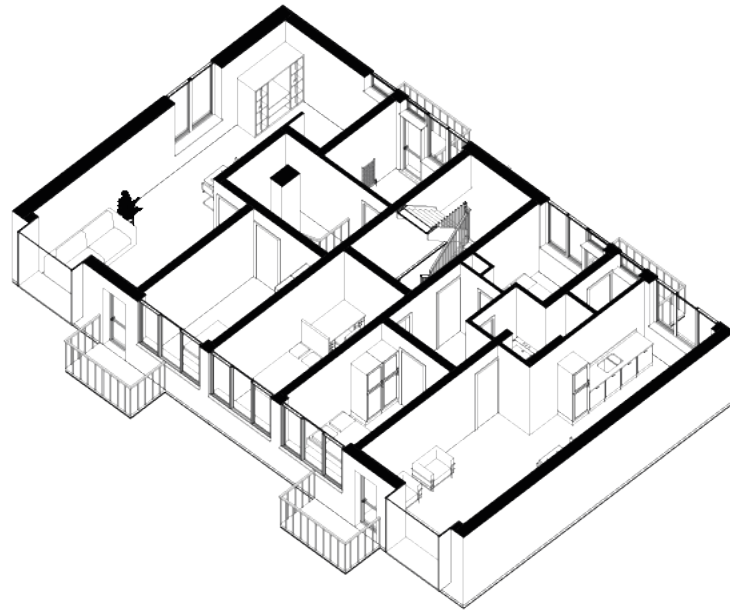
## Type D1

Family apartment  
/ 125m2



# Dwelling Types

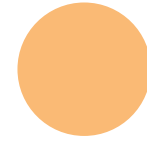
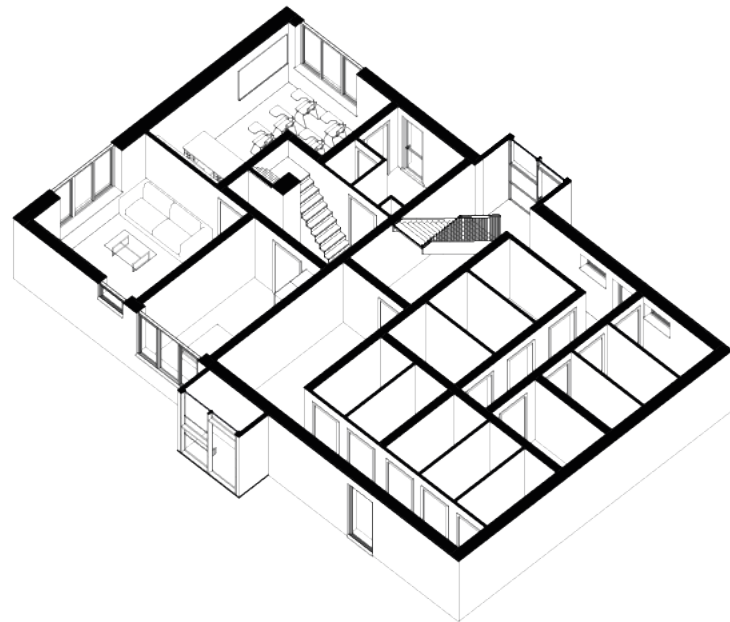
## New Dwelling Type Composition



### Type A

Maisonette:  
+/- 125m<sup>2</sup>

Storage



### Type C1

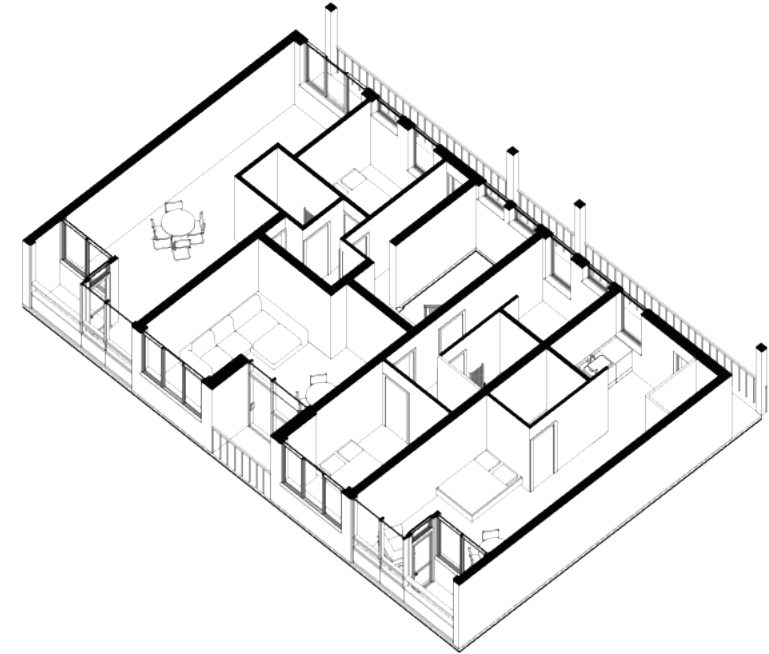
Singles apartment:  
+/- 50m<sup>2</sup>

### Type C2

Singles apartment:  
+/- 50m<sup>2</sup>

### Type C3

Singles apartment:  
+/- 40m<sup>2</sup>

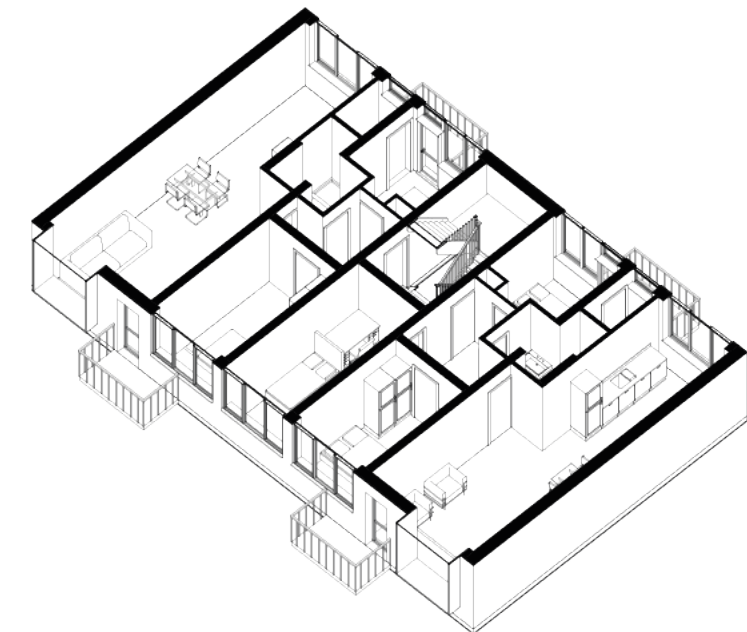


### Type B1

Family apartment:  
+/- 63m<sup>2</sup>

### Type B2

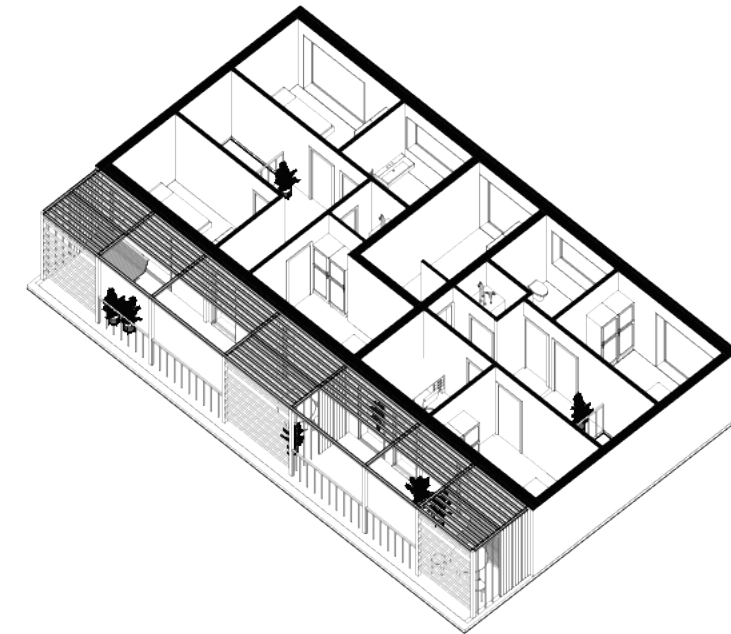
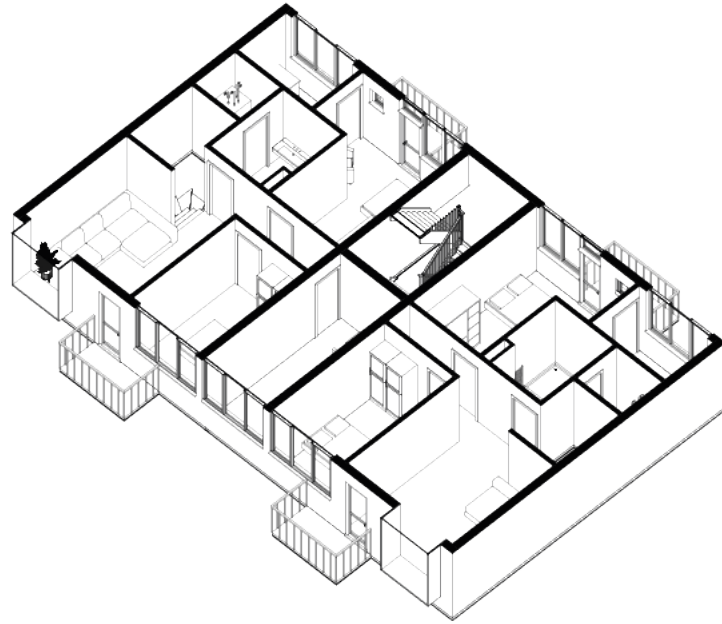
Family apartment:  
+/- 75m<sup>2</sup>





# Dwelling Types

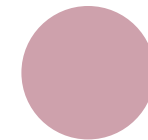
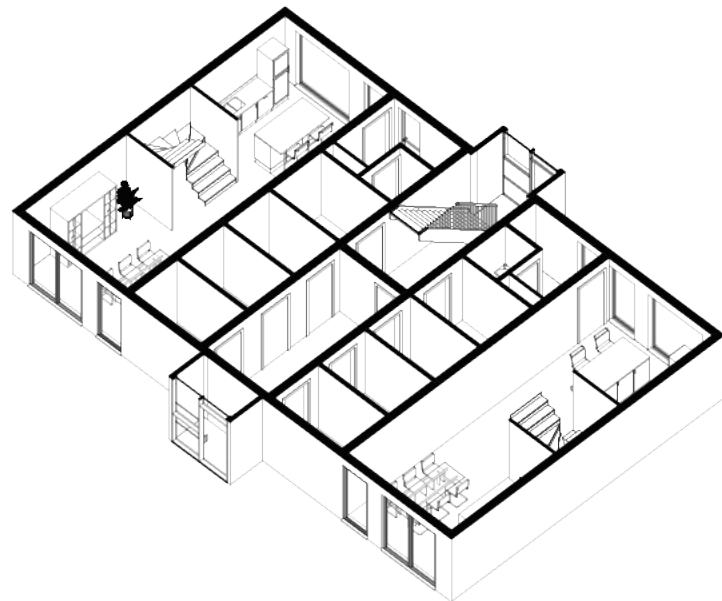
New Dwelling Type Composition



## Type A2

Family apartment  
/ 110 m2

Storage



## Type D1

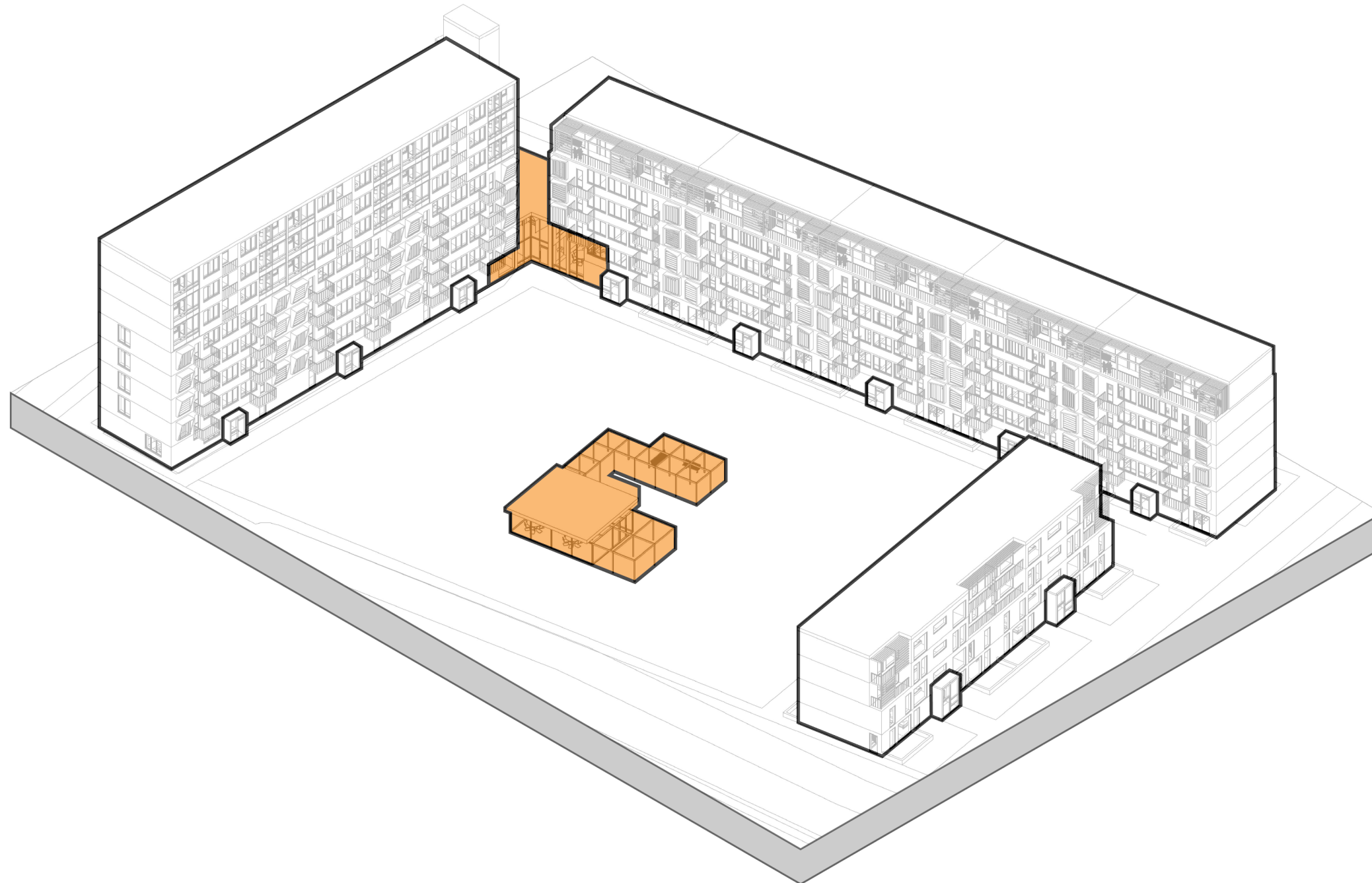
Family apartment  
/ 125m2





# Community Space

Addition of Community Spaces





# Community Space

## Addition of Community Spaces

### Lifting the Roof

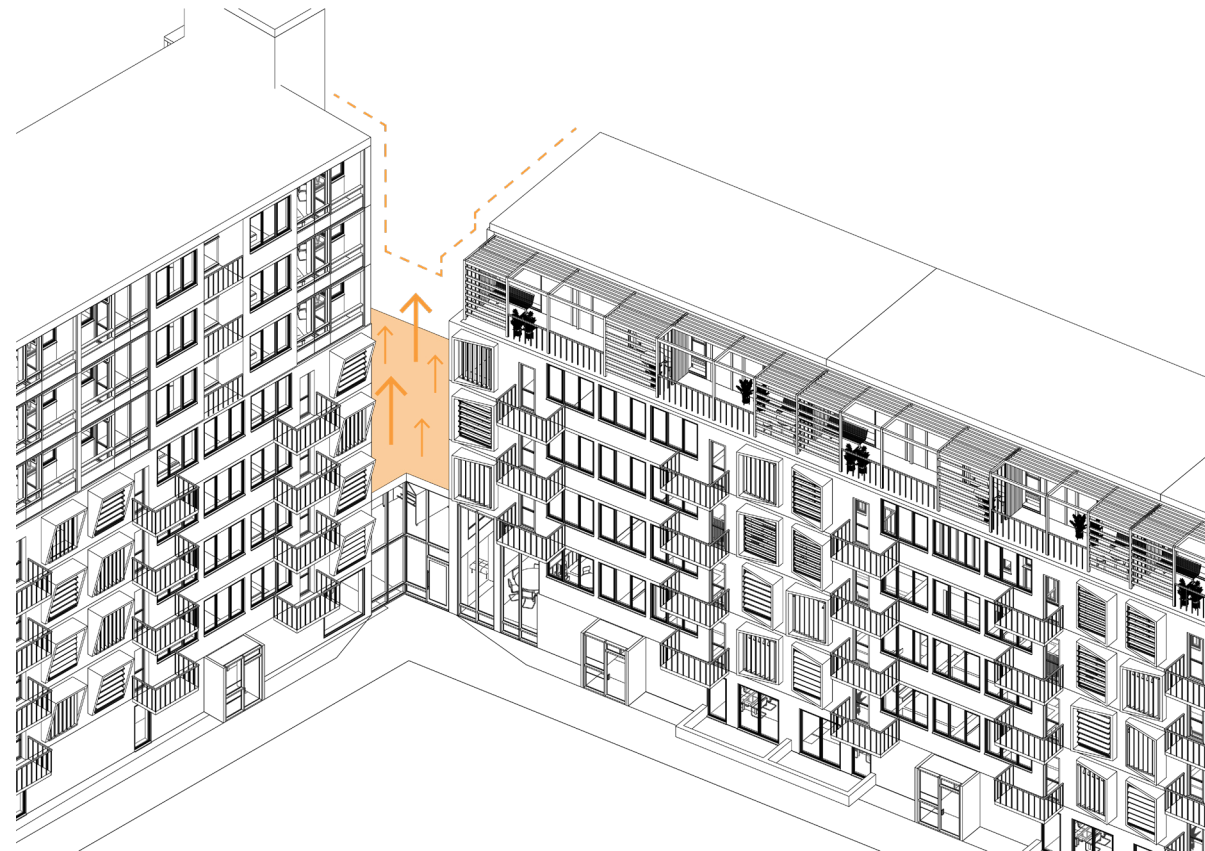
Lifting the roof allows for a more even hierarchy between the building height composition of the three volumes. The corner building gets highlighted more since its importance increases. Furthermore, lifting the roof creates for more light entrance and a more pleasant space inside.

### Creating a Connection

The new corner layout and additional building creates for a direct and transparent connection between the courtyards and the other side (north or east for the building blocks).

### Shared Space

Since the apartments consist of a lot of family and single apartments which do not have the luxury of an own study or workspace, shared spaces are a perfect solution. Also to increase interaction between people and create an even greater sense of community.



## Creating a new Connection



## Shared Space





# Courtyard Concept

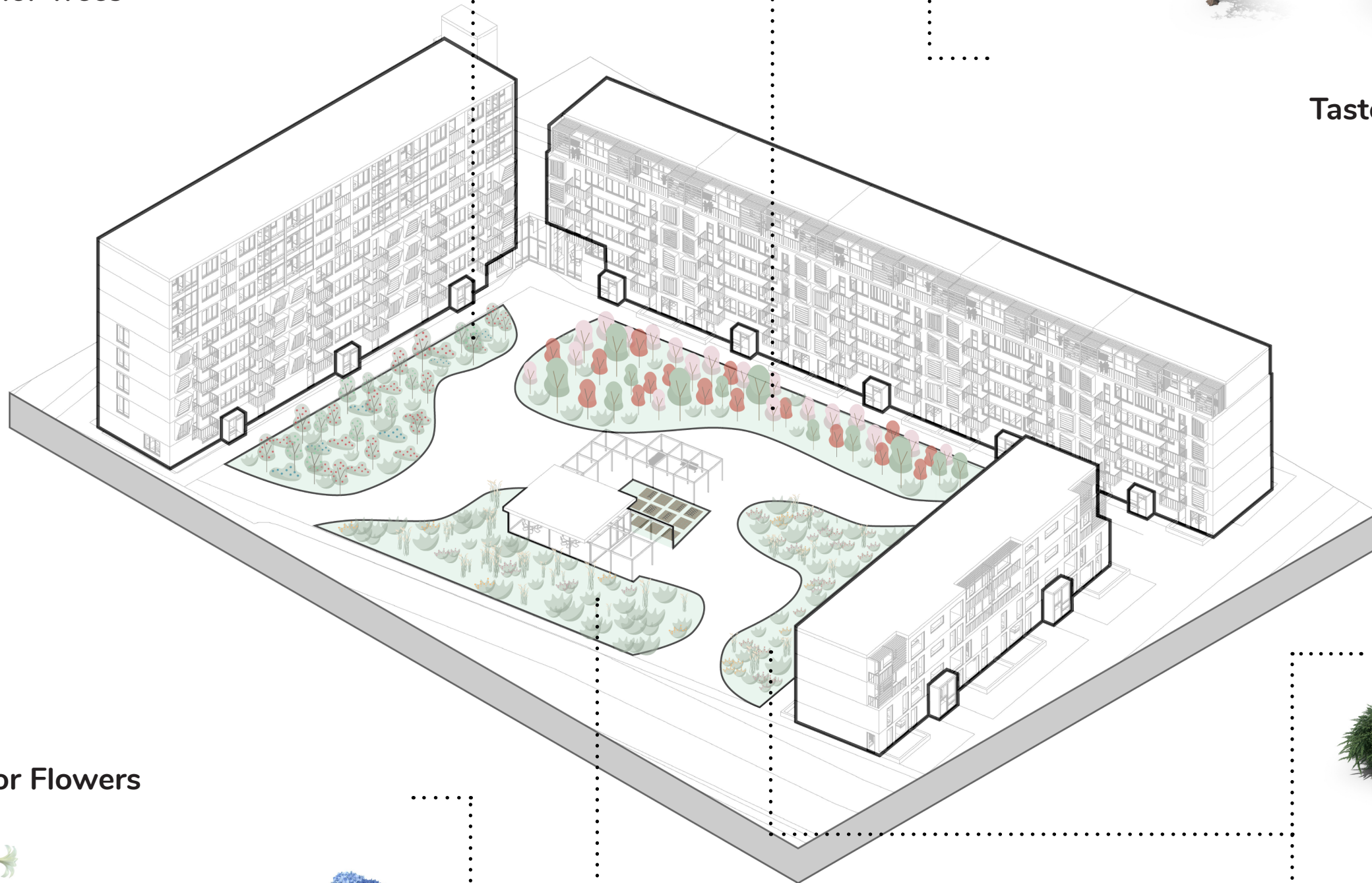
Courtyard Design



Color Trees



Taste



Color Flowers



Smell



# Courtyard Concept

Biodiversity - Urban Farming



## Urban Farming

Urban farming is a sustainable way of producing your own food in an urban context. This way mass production is halted and you only produce as much as you need. Furthermore, the concept of urban farming is already applied in one of the courtyards of the Knijtijzerpanden complex. The urban farming will now be moved to the most eastern courtyard next to the community house.

Urban farming also increases the feeling of togetherness and community since people can help each other, meet each other and produce food for one another. By placing the community house next to the urban farming places, the part of the community which does not do urban farming can still be in connection with them.





# Courtyard Concept

Biodiversity - Taste



Apple Tree



Japanese Cherry Tree



Blue Berry Plant



Olive Tree



Plum Tree



Pear Tree



# Courtyard Concept

Biodiversity - Smell



Jasmin Plant



Lavender Plant



Rosemary Plant



Roses



# Courtyard Concept

Biodiversity - Color



Japanese Maple Tree



Maple Tree



Wisteria Plant 'Blue Rain'



Ornamental Grass



Ilium Flower



affodil Flower

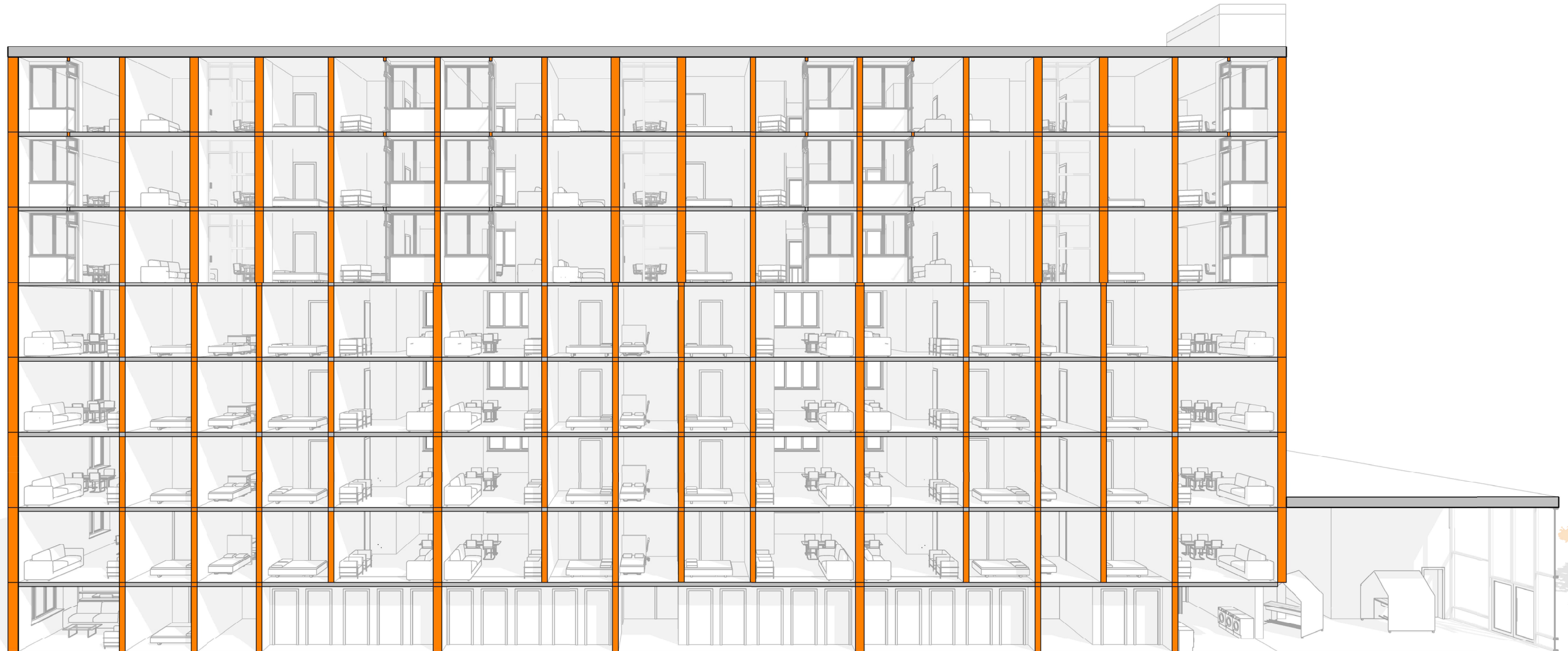


Hortensia Plant/Flower



# Load Bearing Structure

High Building Blocks - Section - Load Bearing Walls





# Load Bearing Structure

High Building Blocks - Section - Load Bearing Floors and Roof





# Load Bearing Structure

Low Building Blocks - Section - Load Bearing Walls





# Load Bearing Structure

Low Building Blocks - Section - Load Bearing Walls

