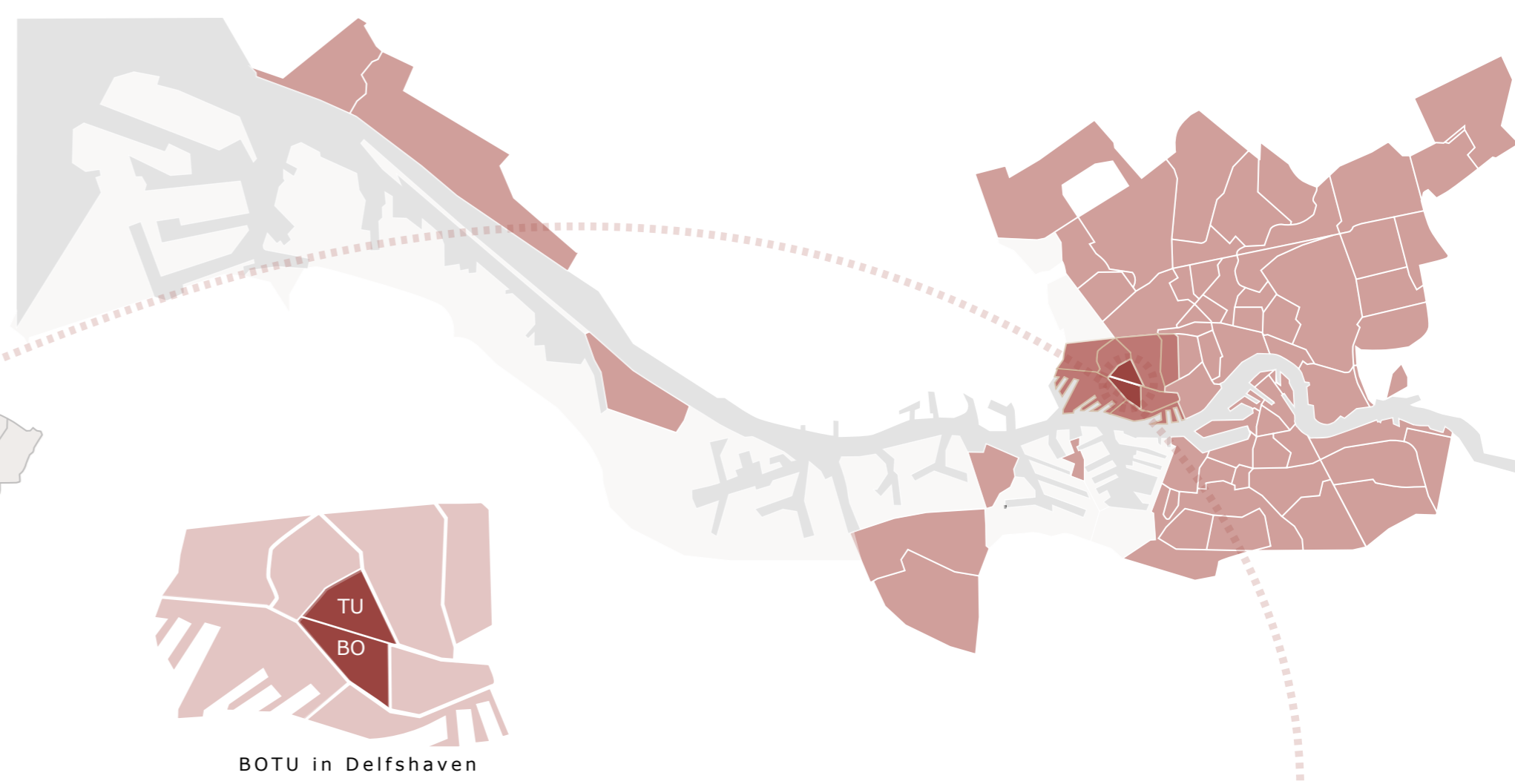


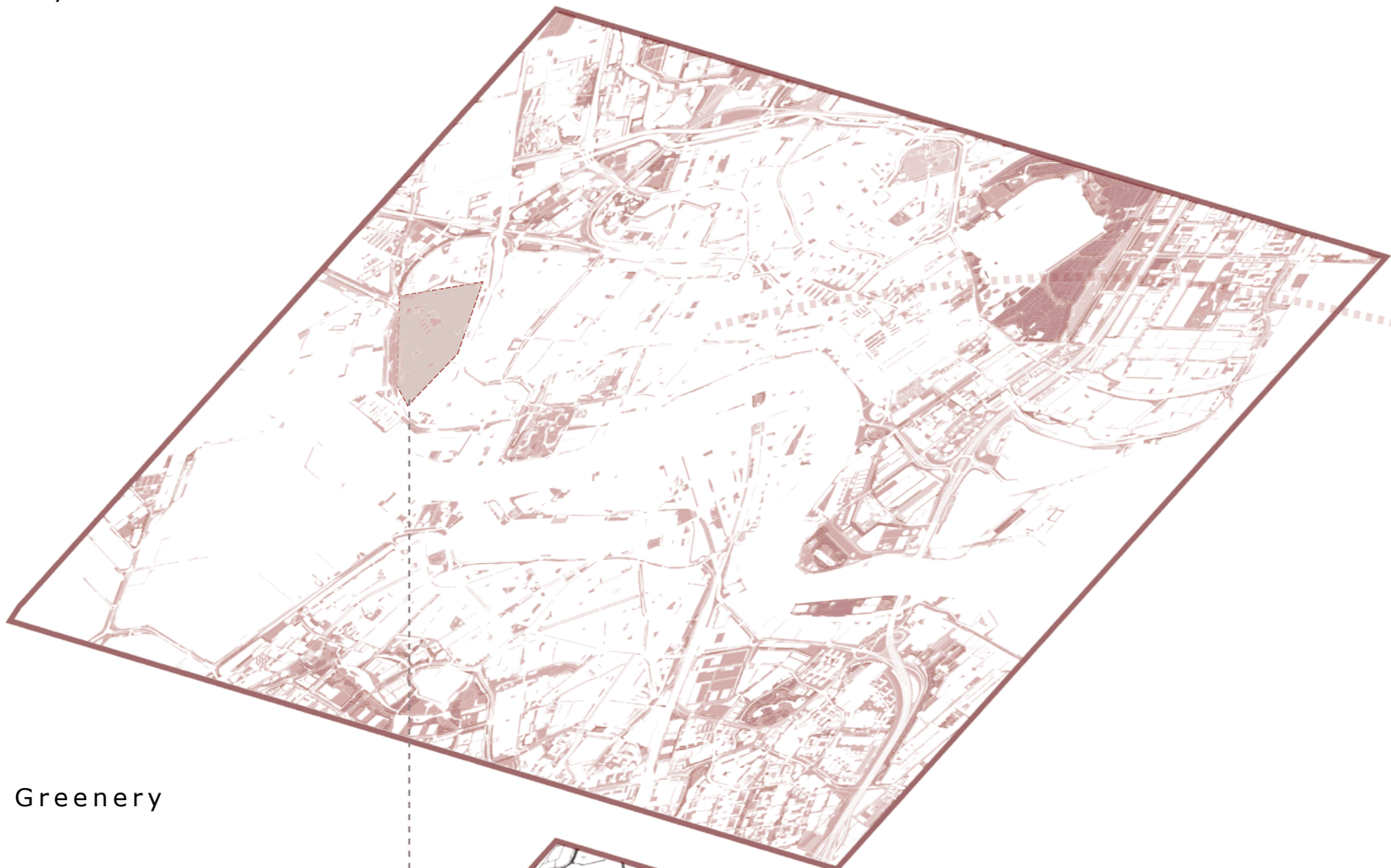
South holland province in the Netherlands

Rotterdam in South holland province

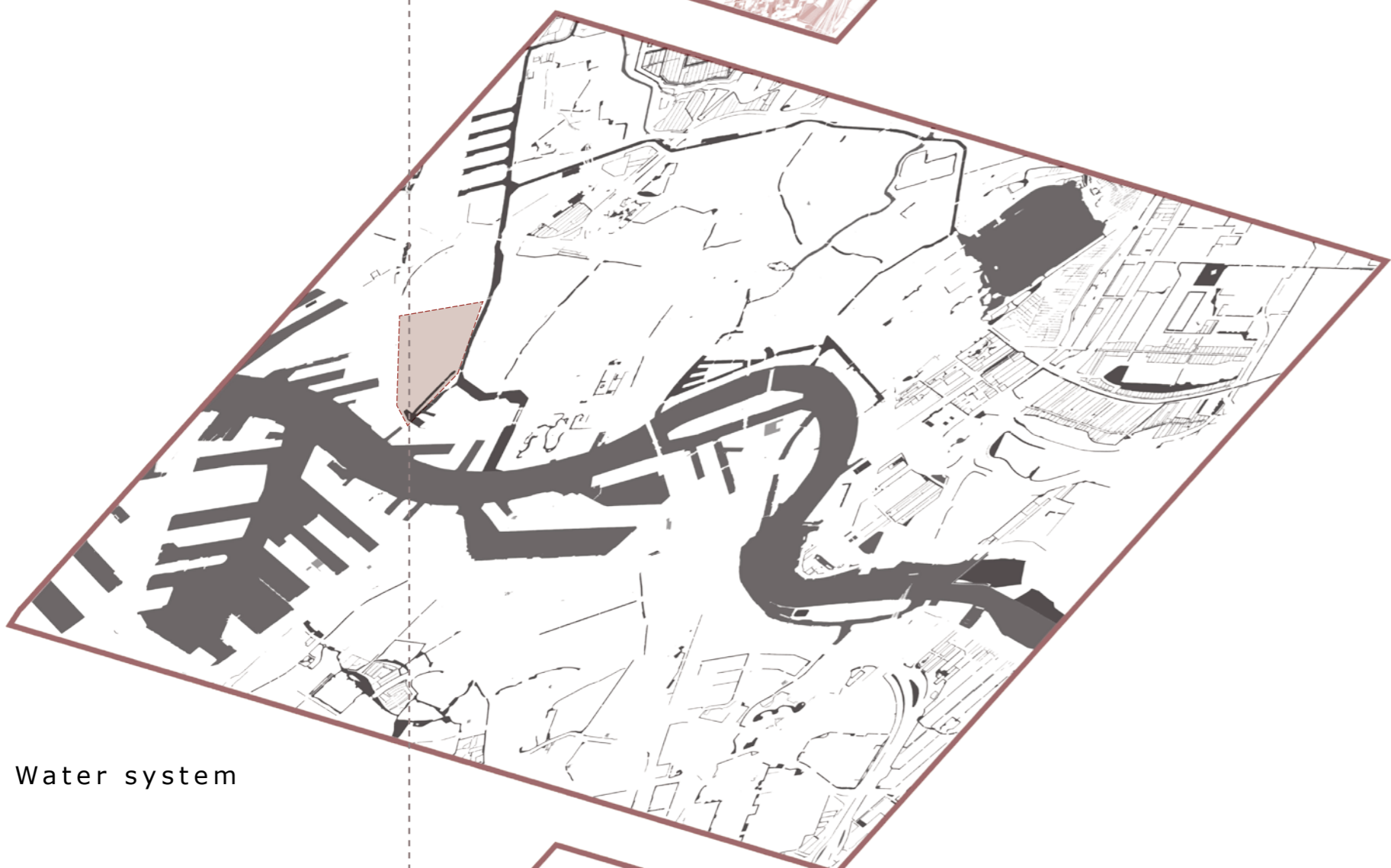


BOTU in Delfshaven of Rotterdam

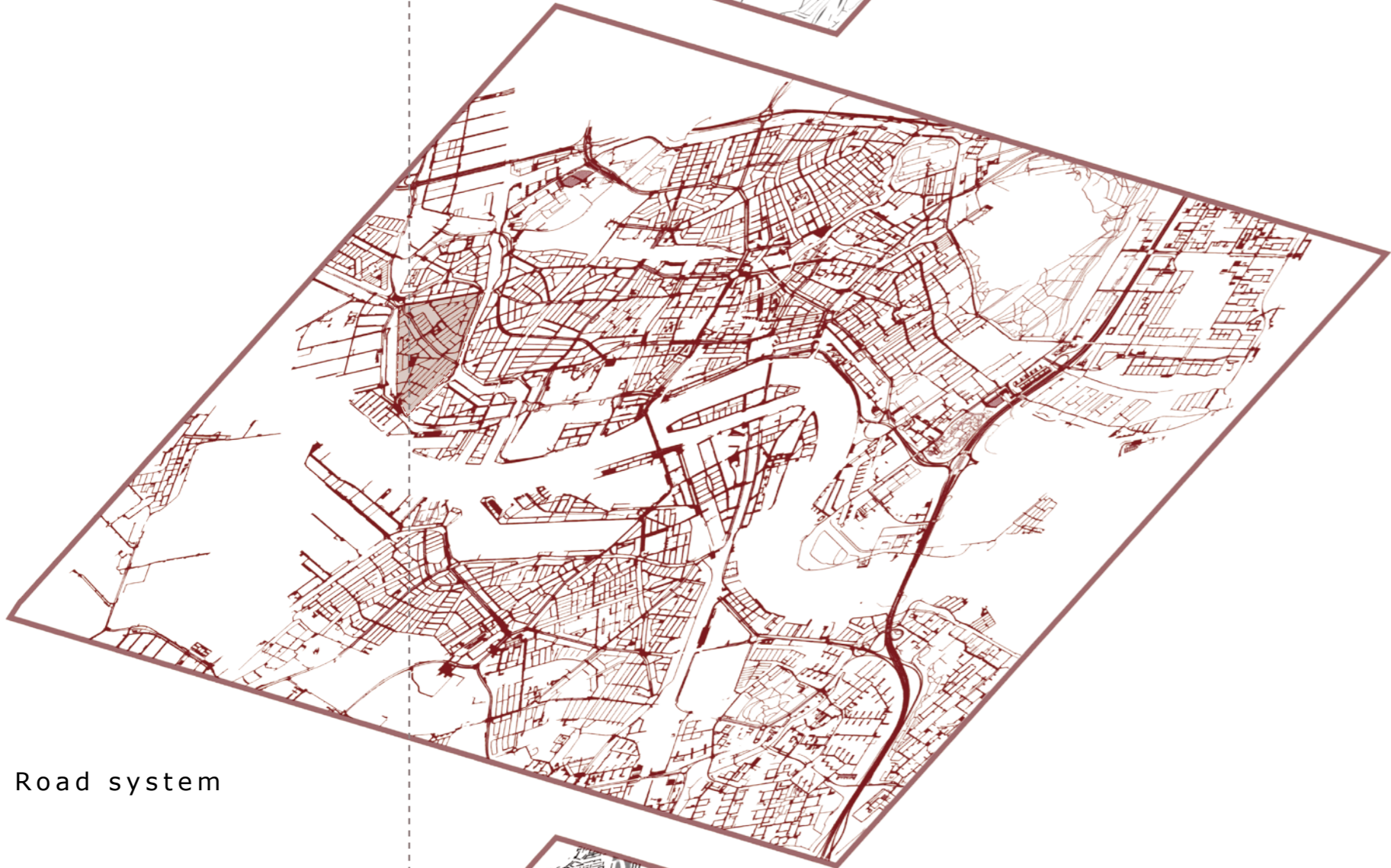
Layers of Rotterdam



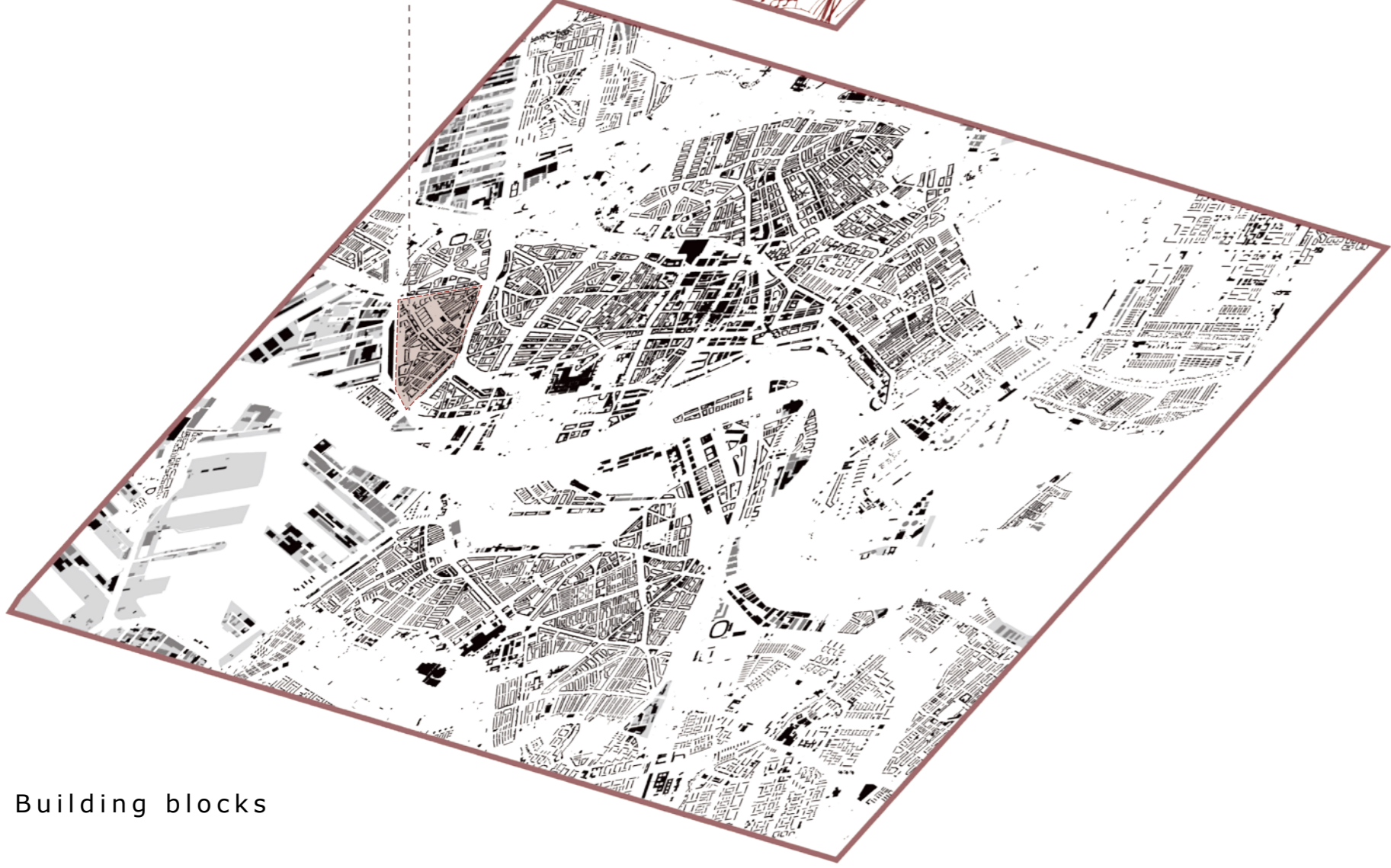
Greenery



Water system



Road system

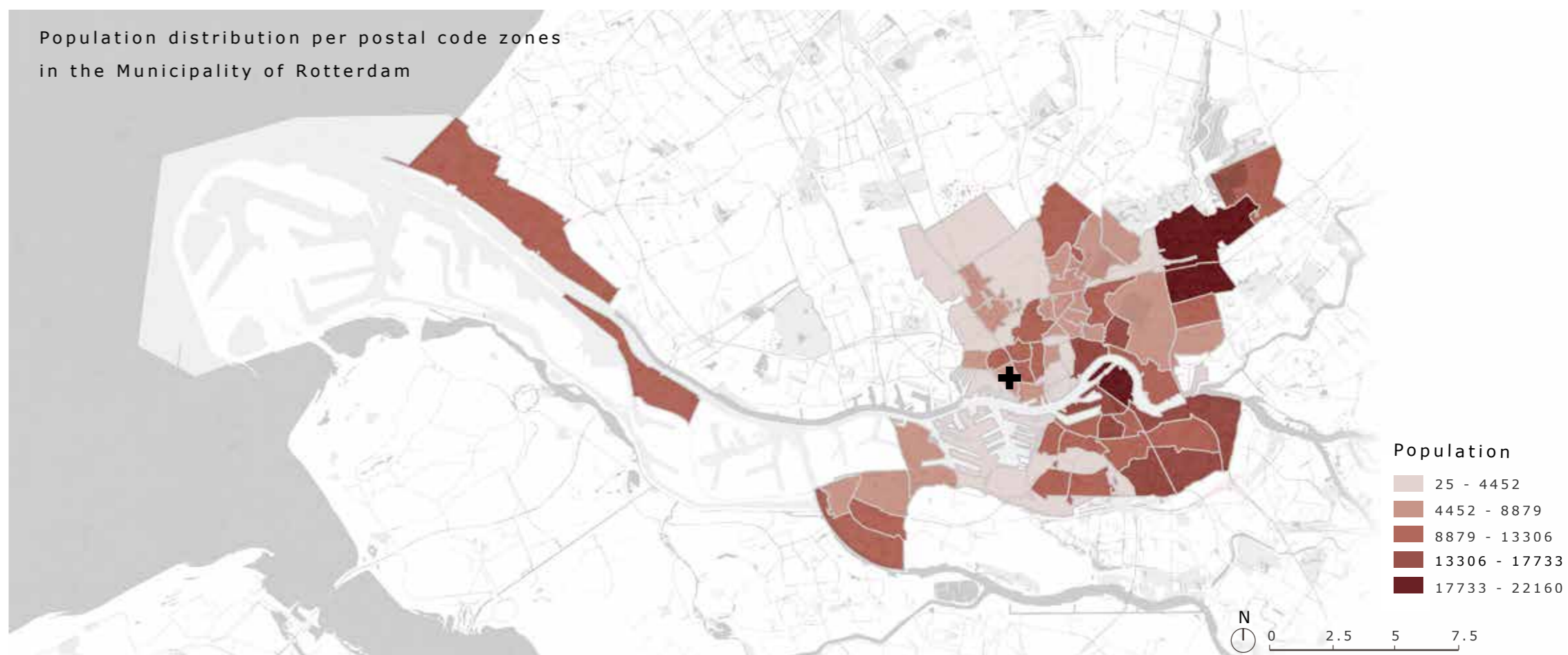
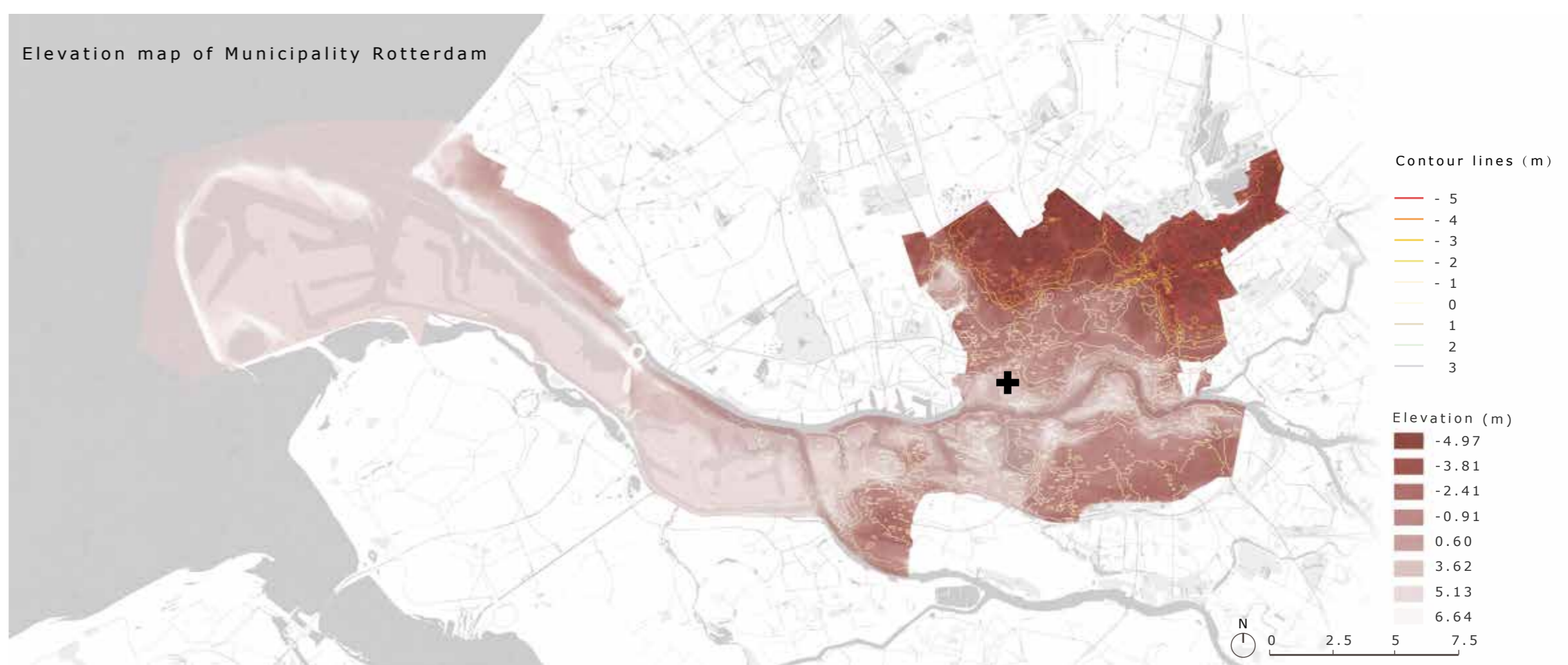


Building blocks

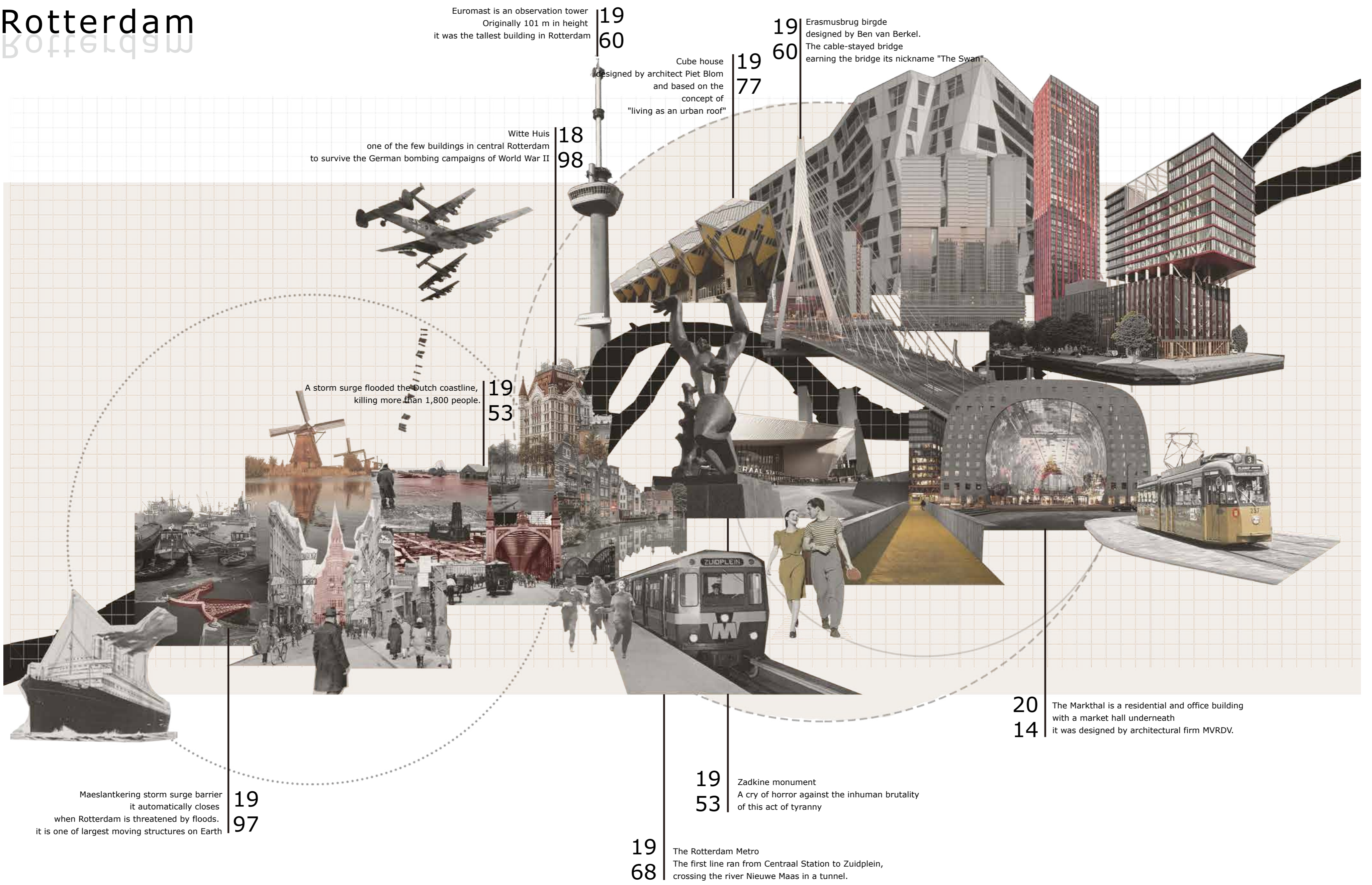


Lowland country and Urbanization

The Netherlands is located in the northwest of Europe, in the Rhine, Maas and Scheldt deltas. There are more than 1,800 km of sea dams and banks along the coast, with a coastline of 1,075 km. Since the thirteenth century, about 7,100 square kilometers of land have been encircled, equivalent to one-fifth of the land area of the Netherlands. Today, 18% of the Dutch territory is artificially reclaimed. The whole territory is lowland, one quarter of the land is less than 1 meter above sea level, and one quarter of the land is lower than the sea surface. Except for some hills in the south and east, most of the land is very low. Its lowest point is near Rotterdam, 6.7 meters below sea level.



Rotterdam



19
60
Euromast is an observation tower
Originally 101 m in height
it was the tallest building in Rotterdam

19
60
Erasmusbrug bridge
designed by Ben van Berkel.
The cable-stayed bridge
earning the bridge its nickname "The Swan"

19
77
Cube house
designed by architect Piet Blom
and based on the
concept of
"living as an urban roof"

18
98
Witte Huis
one of the few buildings in central Rotterdam
to survive the German bombing campaigns of World War II

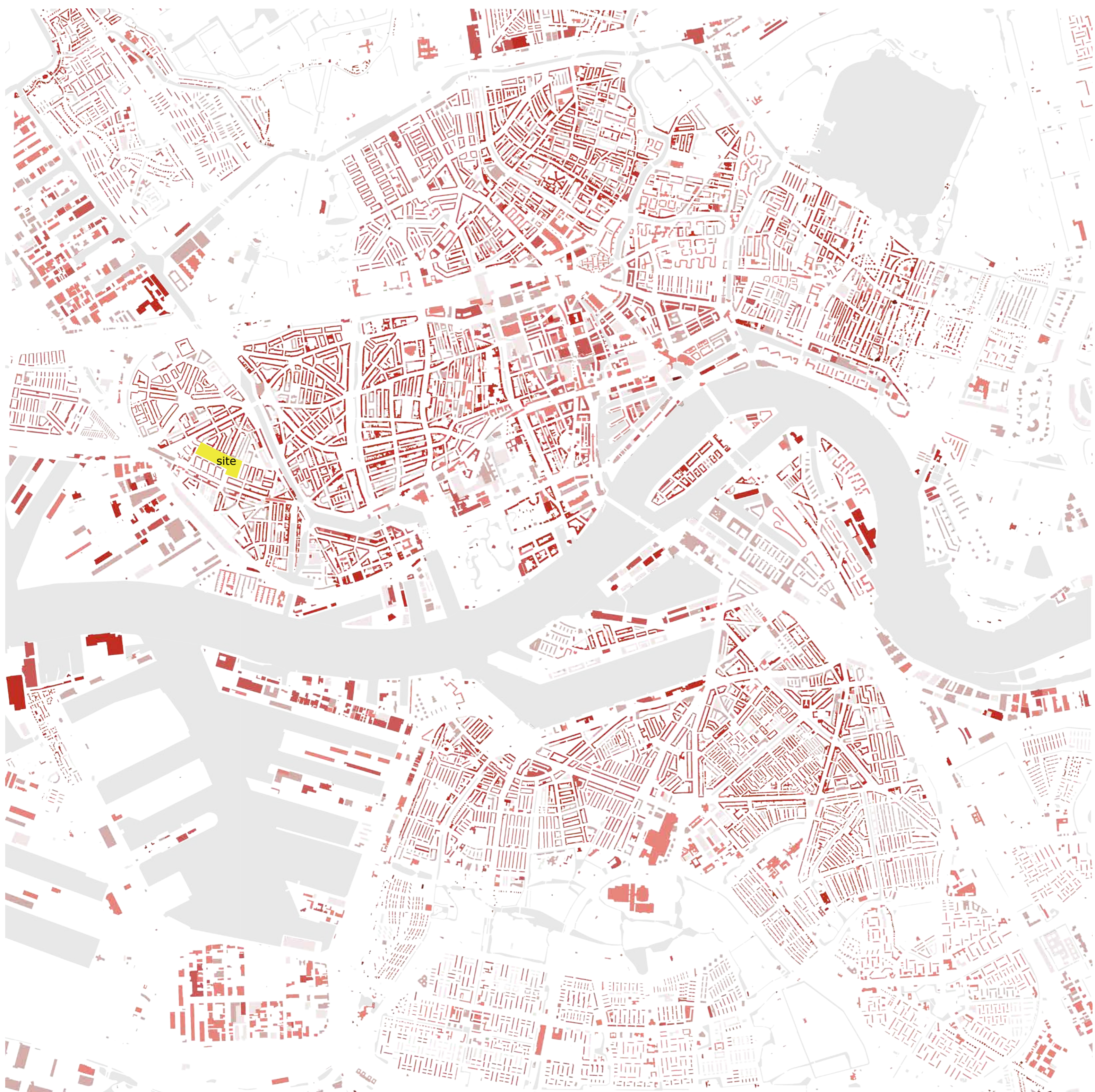
19
53
A storm surge flooded the Dutch coastline,
killing more than 1,800 people.

20
14
The Markthal is a residential and office building
with a market hall underneath
it was designed by architectural firm MVRDV.

19
97
Maeslantkering storm surge barrier
it automatically closes
when Rotterdam is threatened by floods.
it is one of largest moving structures on Earth

19
53
Zadkine monument
A cry of horror against the inhuman brutality
of this act of tyranny

19
68
The Rotterdam Metro
The first line ran from Centraal Station to Zuidplein,
crossing the river Nieuwe Maas in a tunnel.



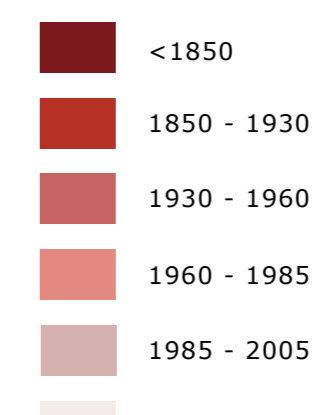
City feature in a nutshell

Second biggest city in Netherlands
Rotterdam is big in terms of both population (644,000) and surface area (320 km²). It is the second-biggest city in the Netherlands after Amsterdam.

International sea port
The city was built on the dam between the Rotte and Nieuwe Maas. Thanks to the Nieuwe Waterweg - the stretch of water that connects Rotterdam to the North Sea - Rotterdam developed into an international sea port.

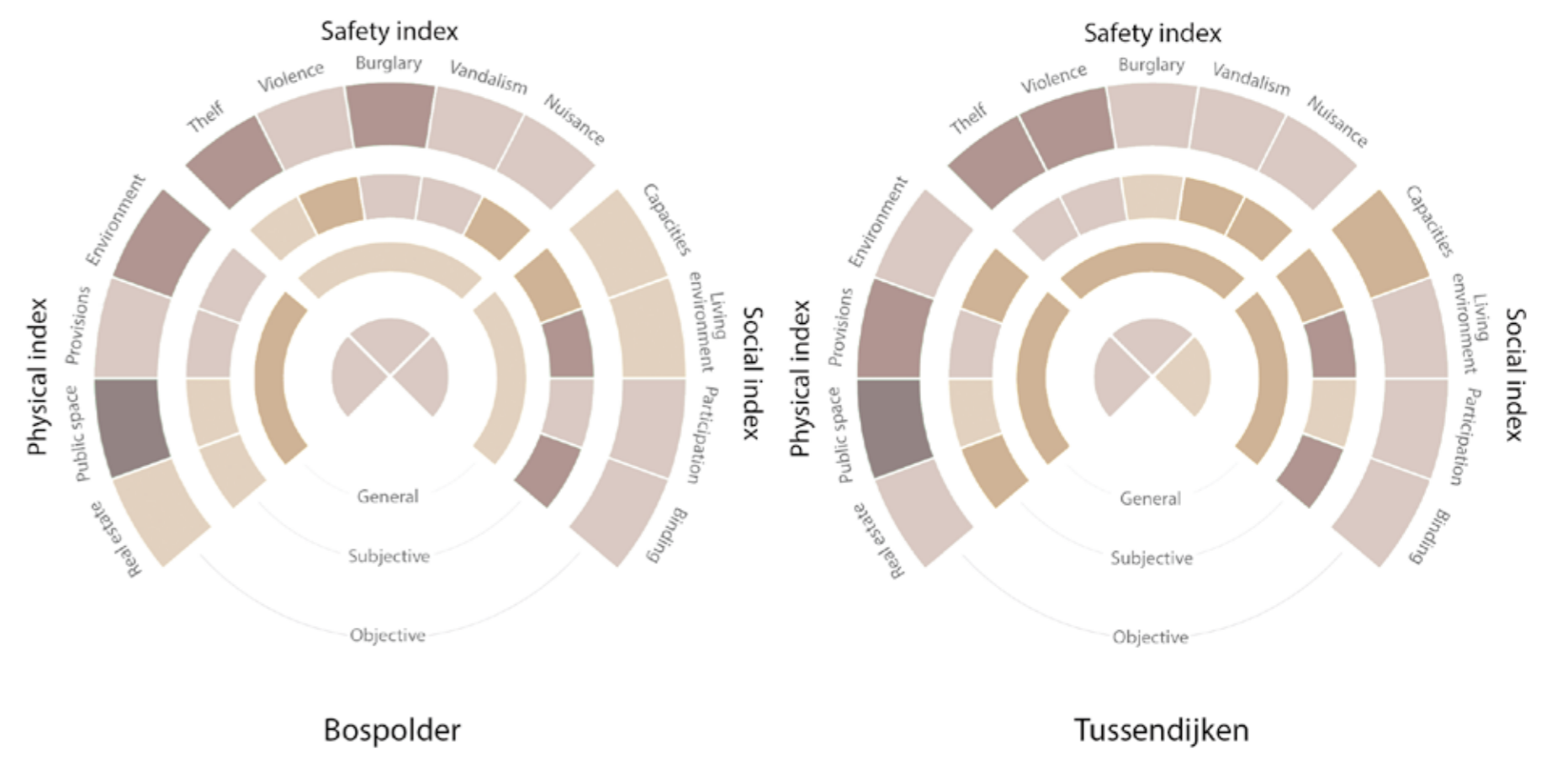
Reconstruction after bombardment
More than 75 years ago, the city centre of Rotterdam was erased by a bombardment during the Second World War. A post-war reconstruction plan was carried out according to the modern principles with regard to the separation of functions: a spatial layout in quarters separated by boulevards with plenty of space for traffic. Today, Rotterdam's new cultural heritage accommodates a town centre that reflects the individuality of the city. The post-war reconstruction buildings have shown themselves quite easily transformable. Many have been given new functions, but they have also been able to retain their special exteriors.

Modern city—experiment, innovation
Rotterdam has been characterized by a desire for innovation. Reconstruction after the Second World War have resulted in an 'expanded' city and, in some districts, to a high concentration of identical, small dwellings. Rotterdam wants to build on the valuable icons from previous construction periods - such as its canals, city streets, lanes, boulevards and parks - and on the innovative mindset that characterizes Rotterdam. Experimenting and making room are in the city's DNA. The grain elevators of the Nieuwe Maas silo, the Lijnbaan, the Van Nelle factory, the Maeslantkering, the water squares, the Erasmus Bridge, the kluswoningen (DIY renovations) and the Markthal are embodiments of audacious, unprecedented thinking that took place here and thus raised the city to the next level.

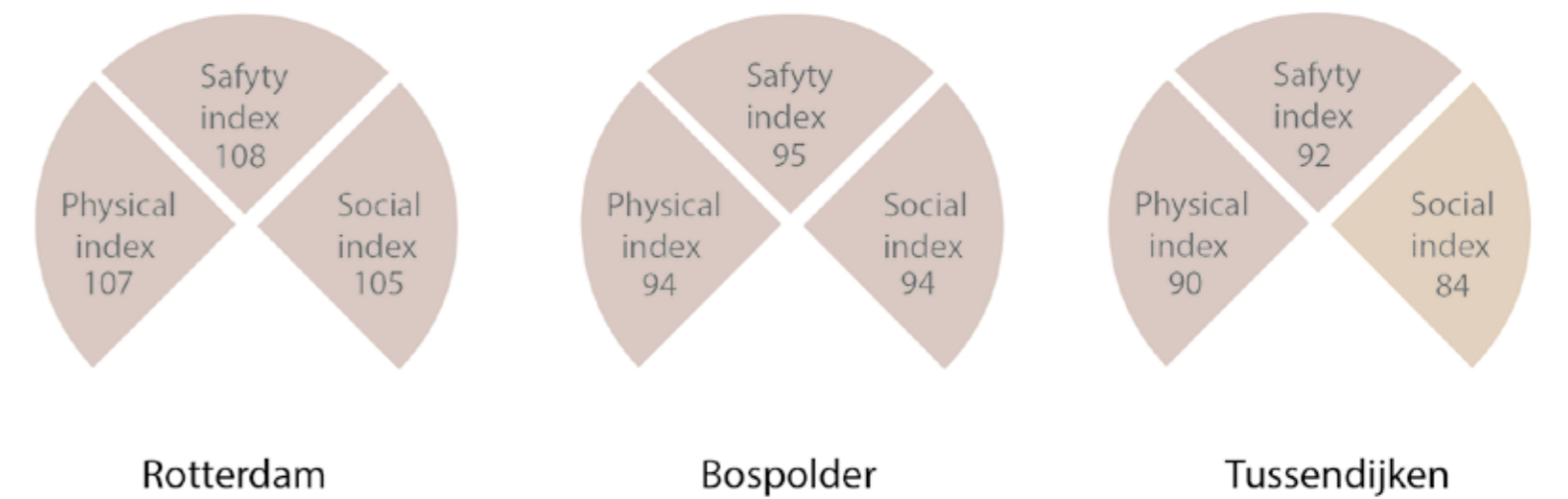
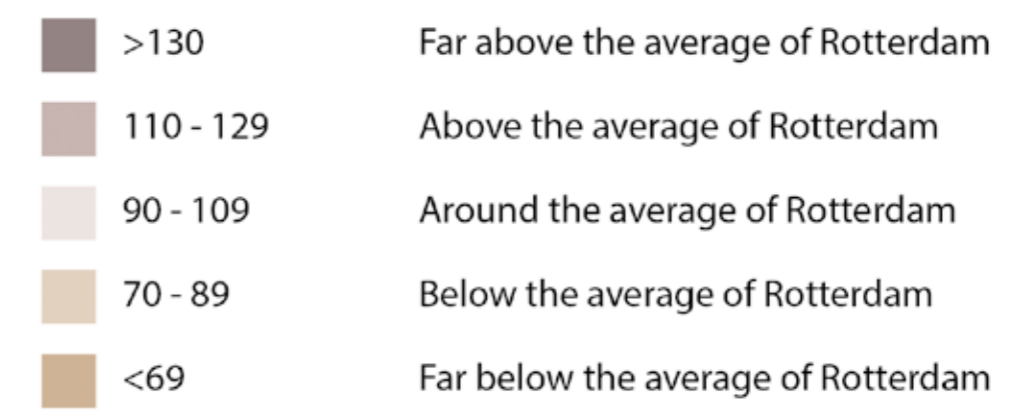


Building Age in Rotterdam

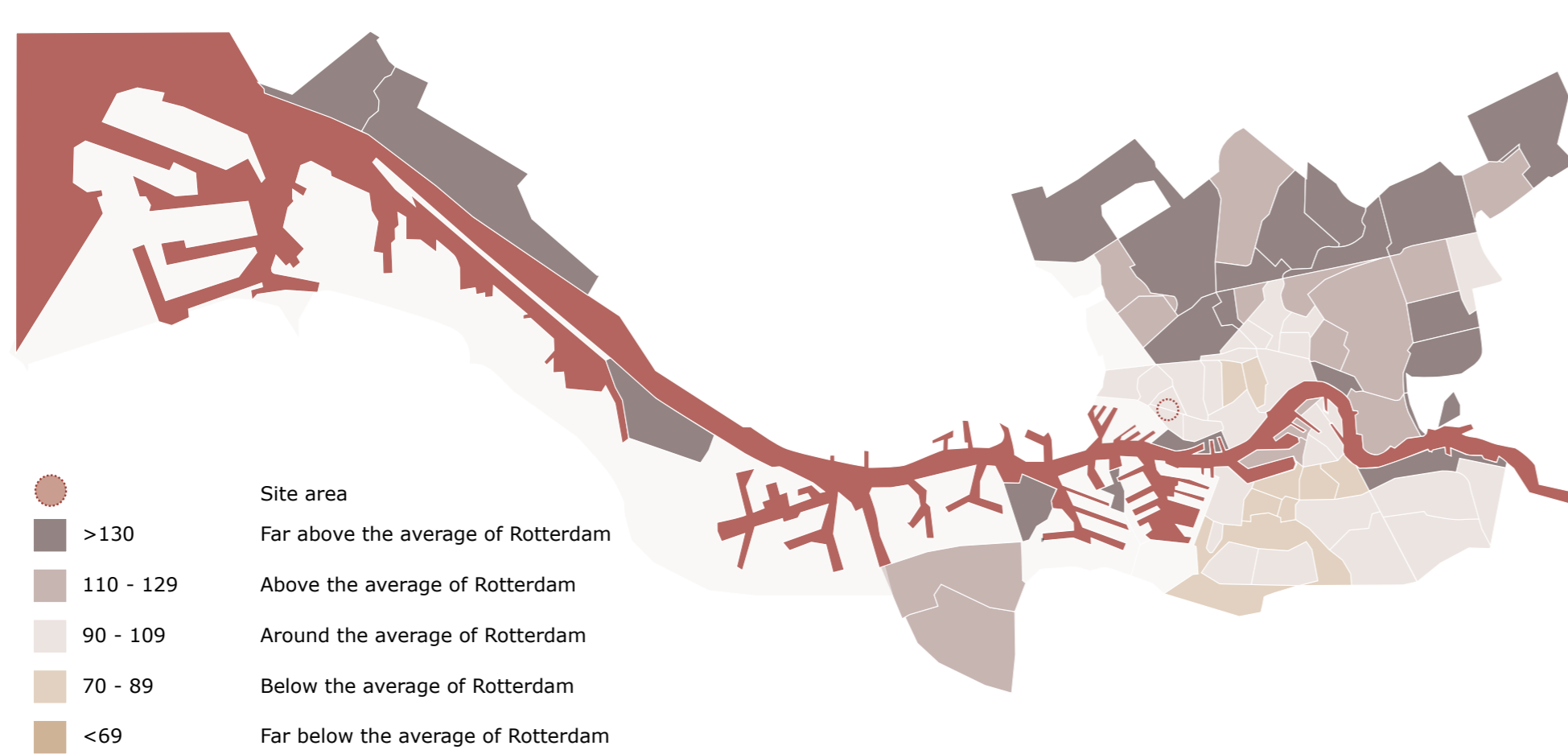
Physical index 2018



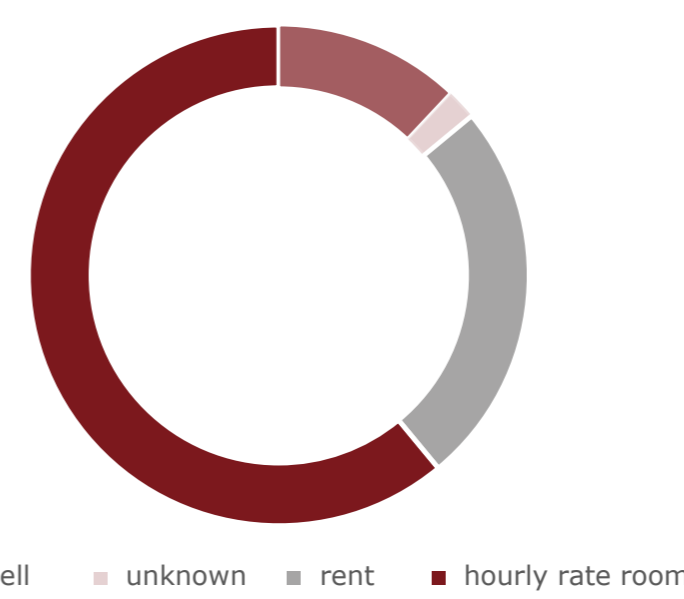
Social index 2018



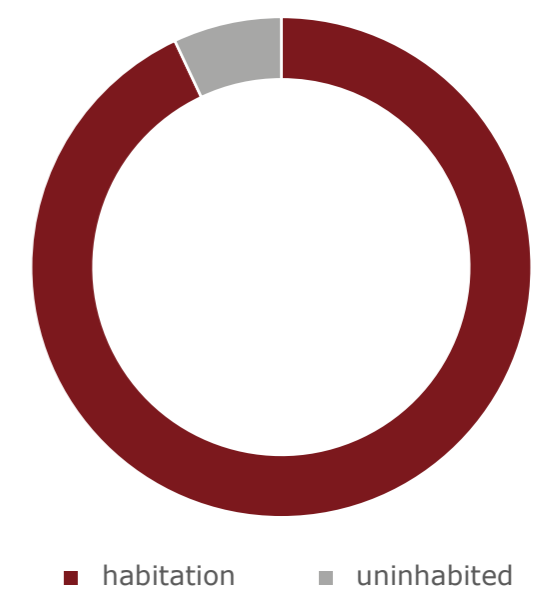
Safety index 2018



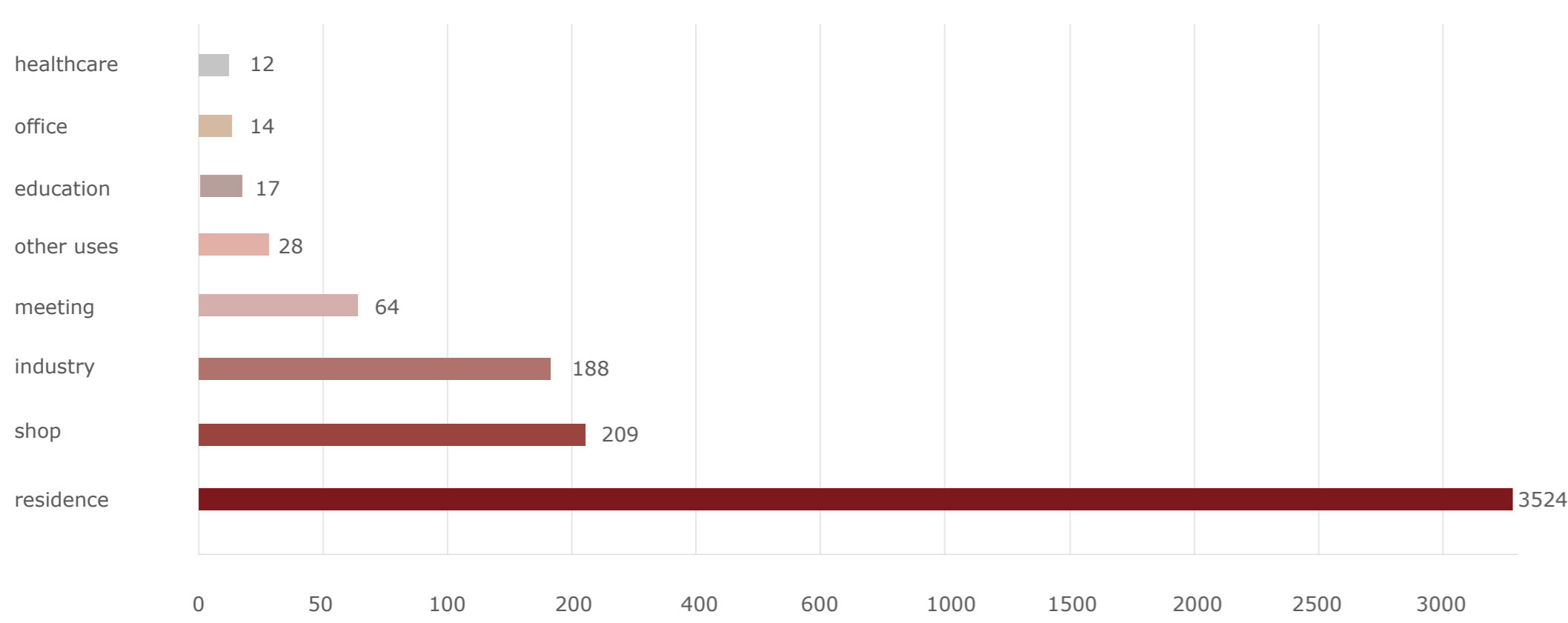
Housing property



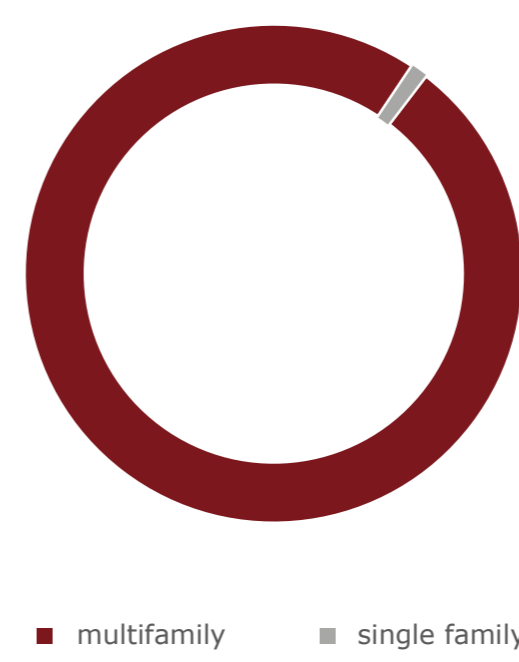
Habitation



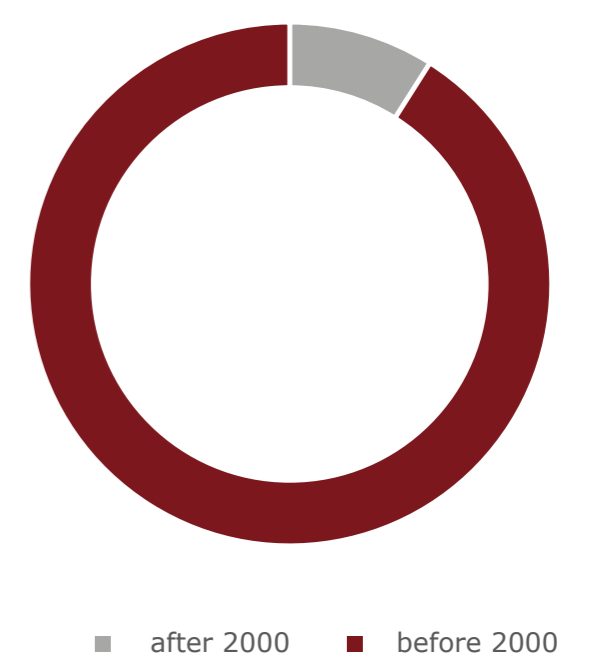
Purposes of use



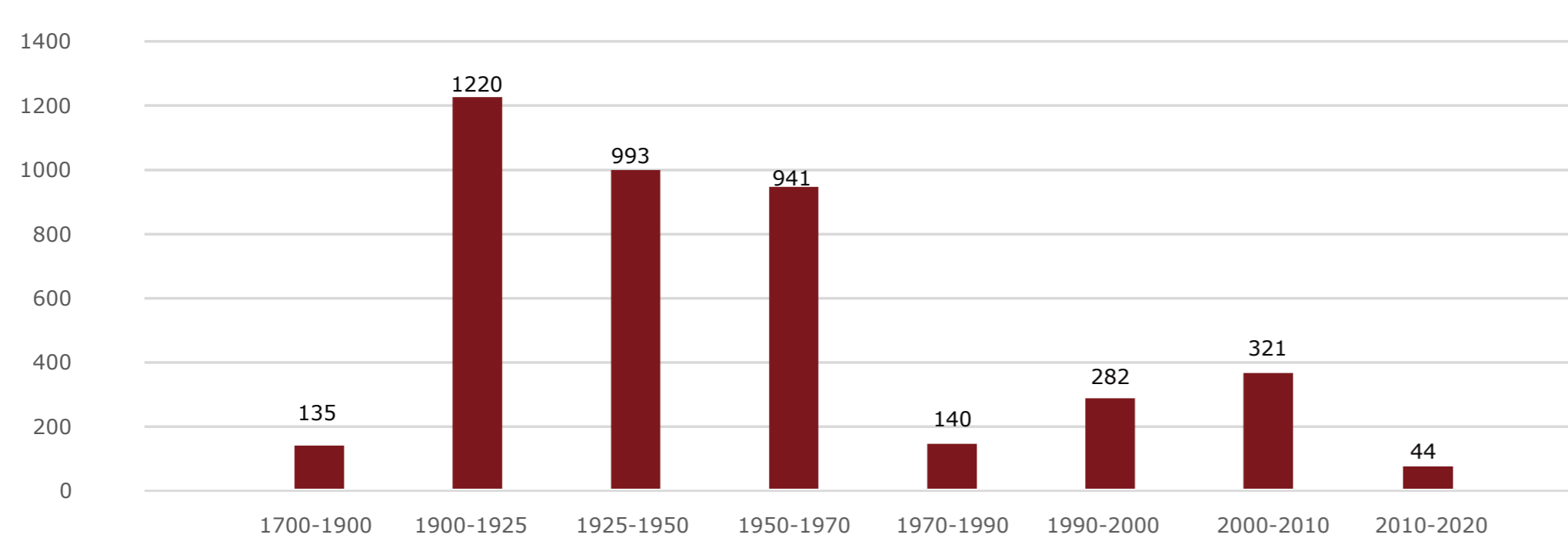
Type of houses



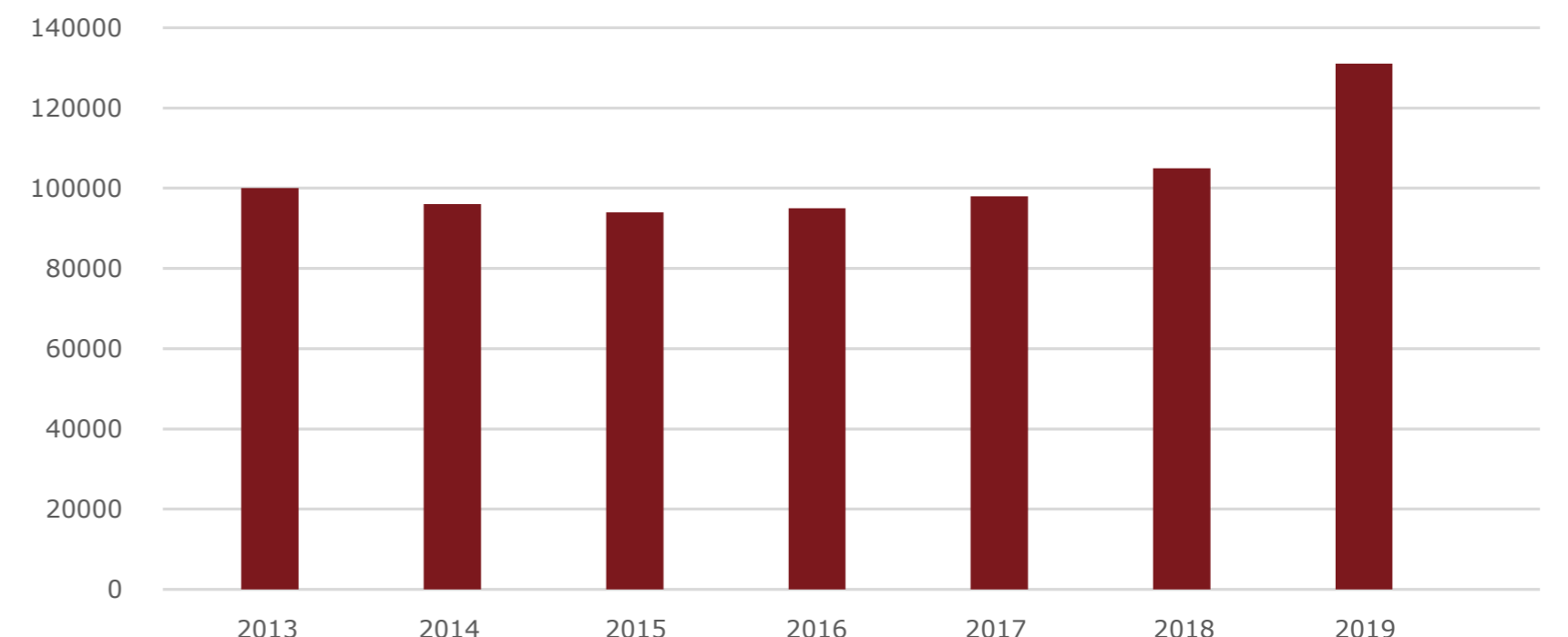
Construction year



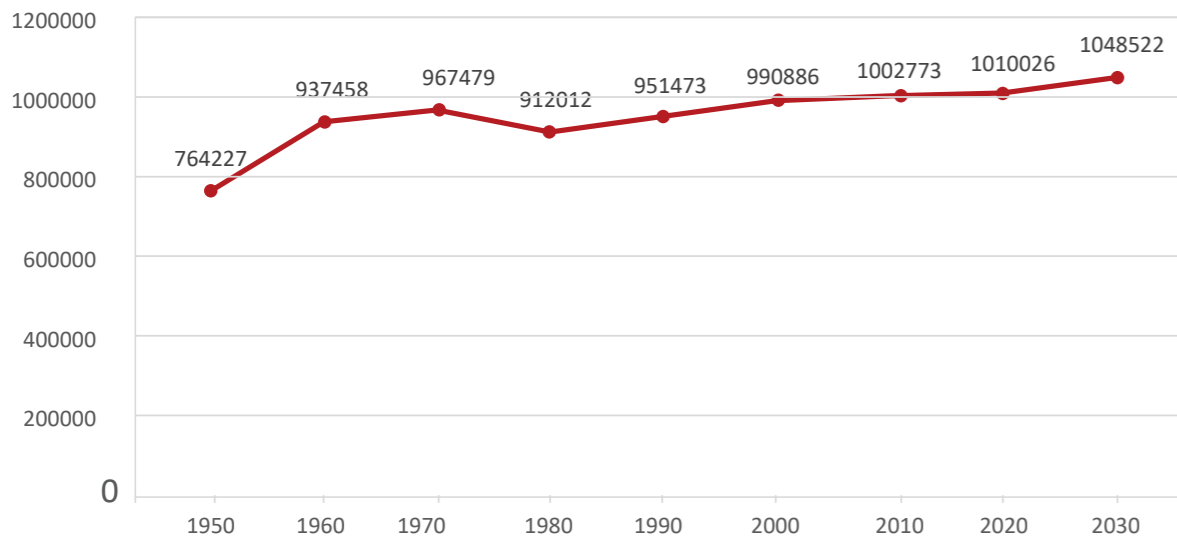
Building construction year



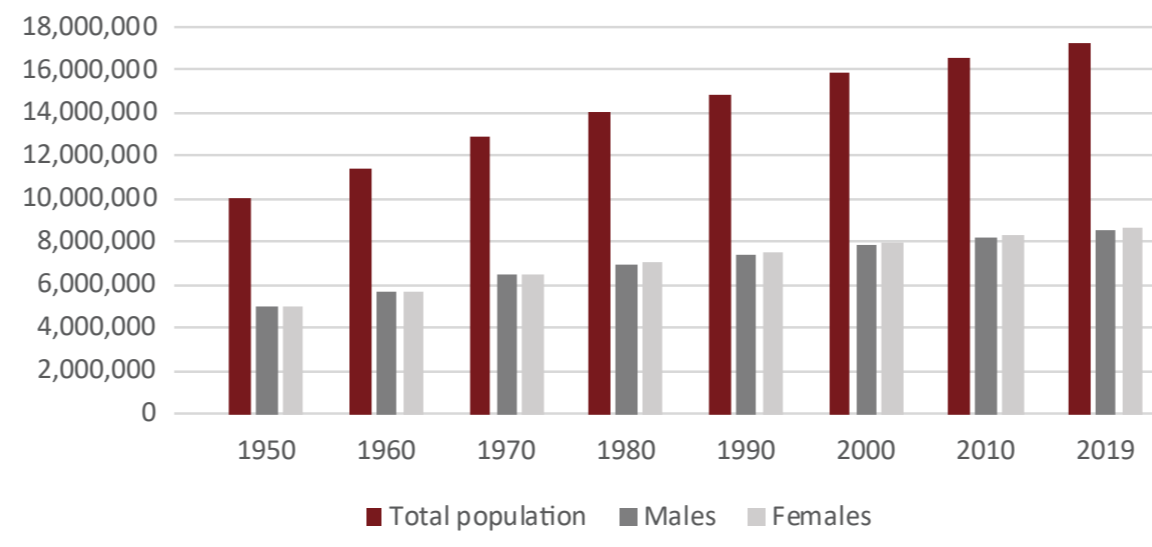
Average WOZ home value per year €



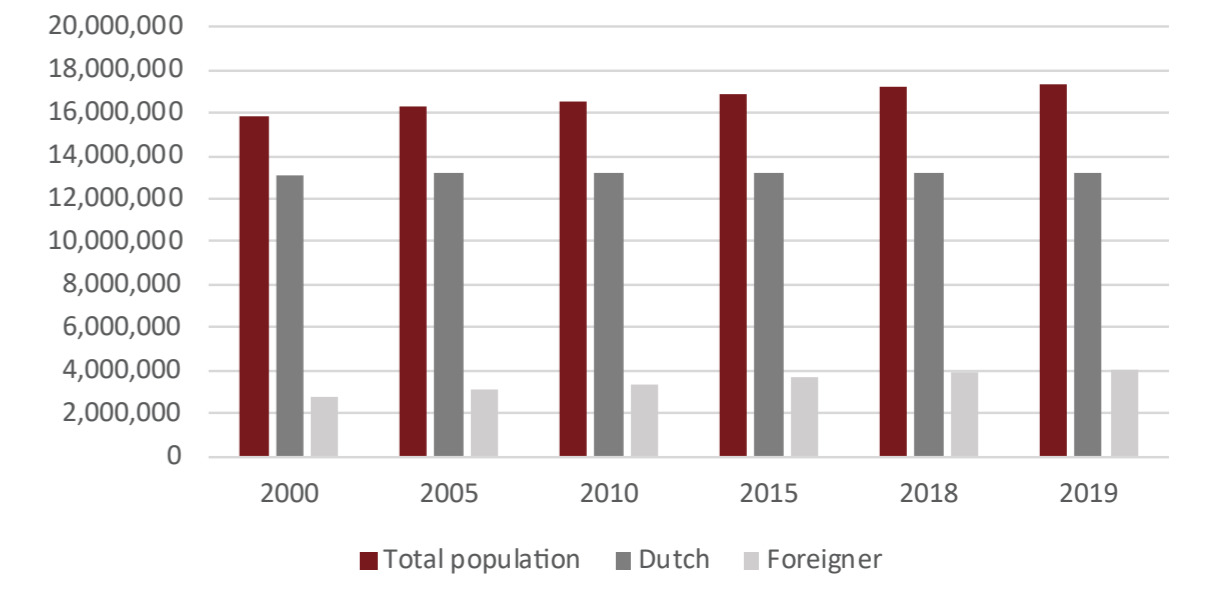
Rotterdam Population growth prediction



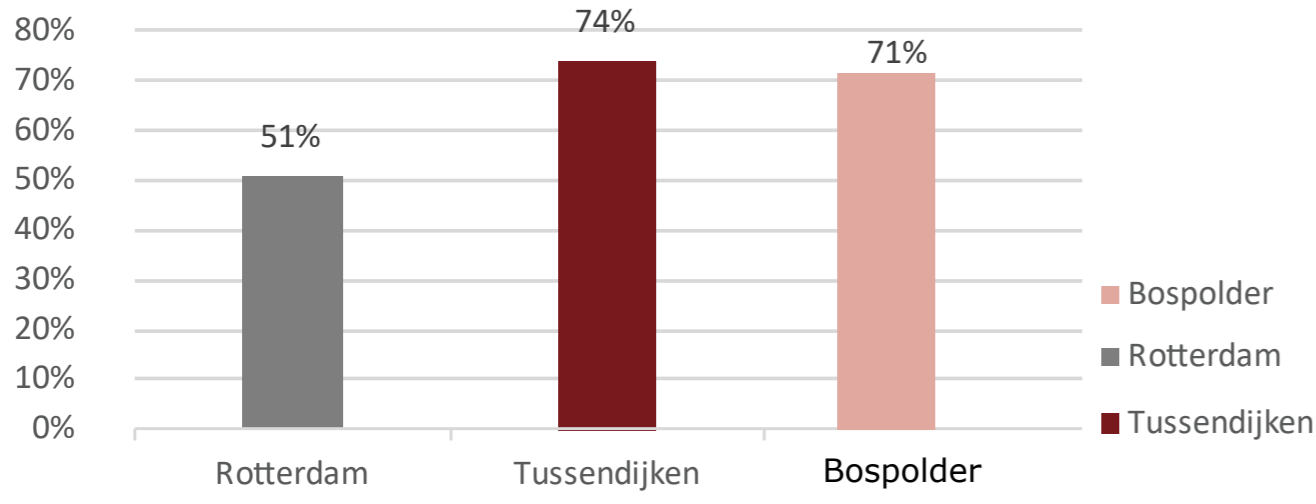
Rotterdam population growth



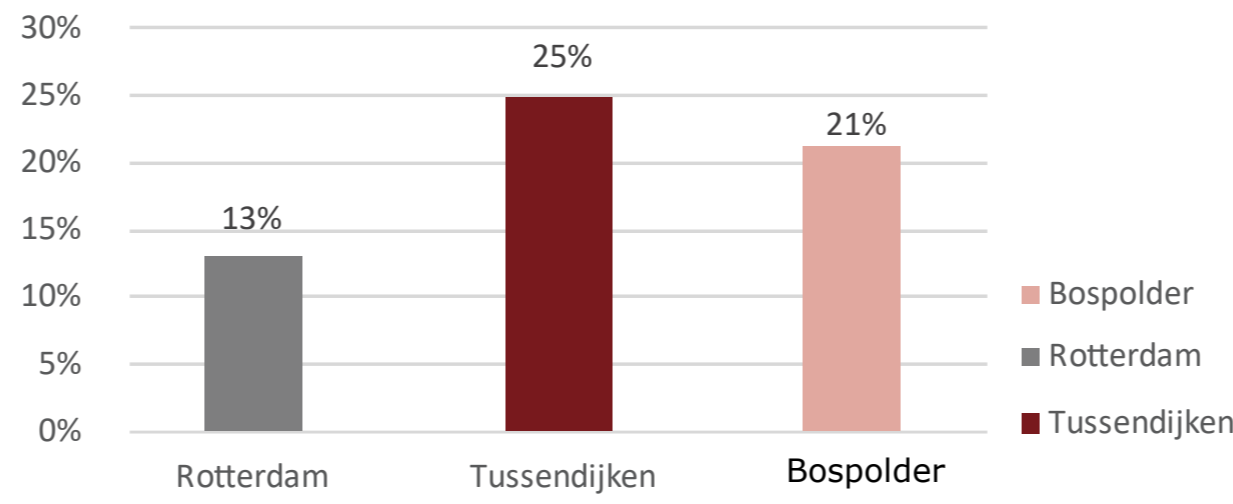
Migration background



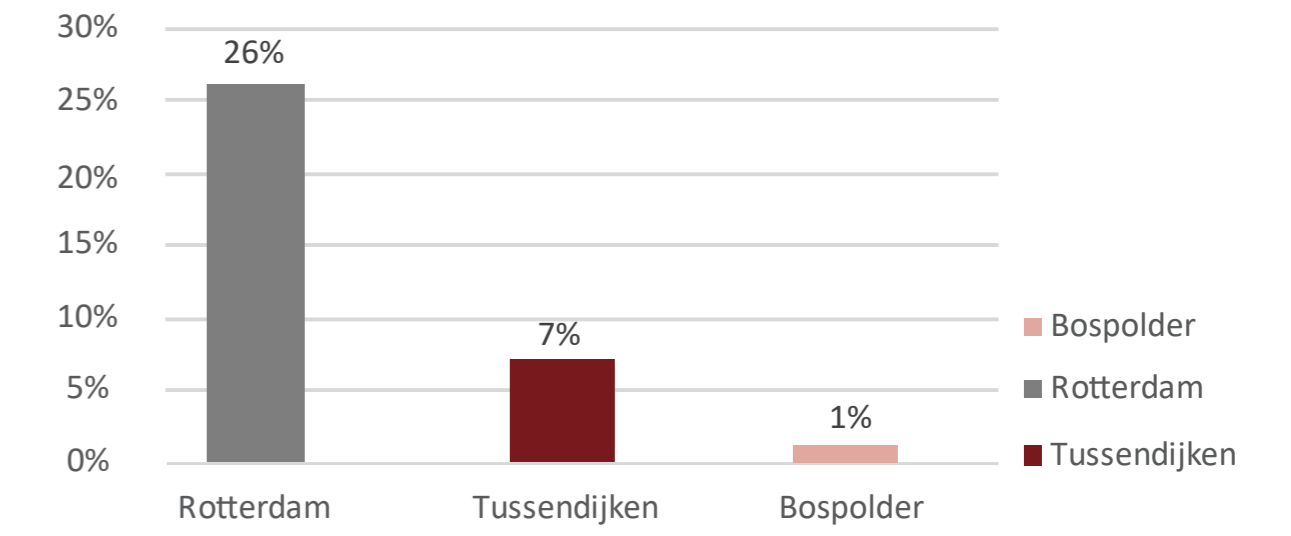
Low-income population



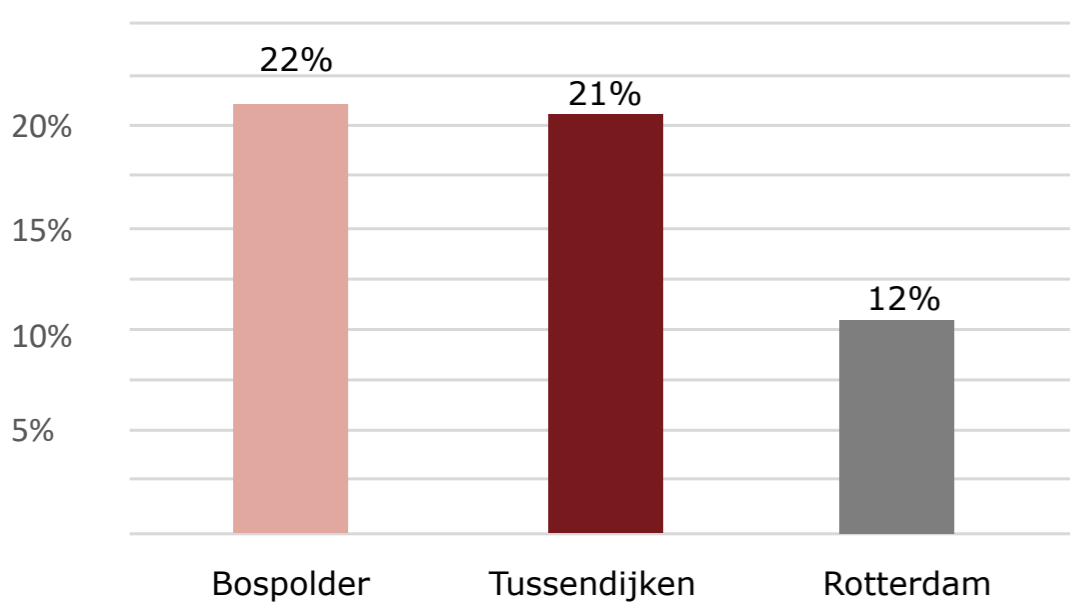
Difficulty with speaking Dutch



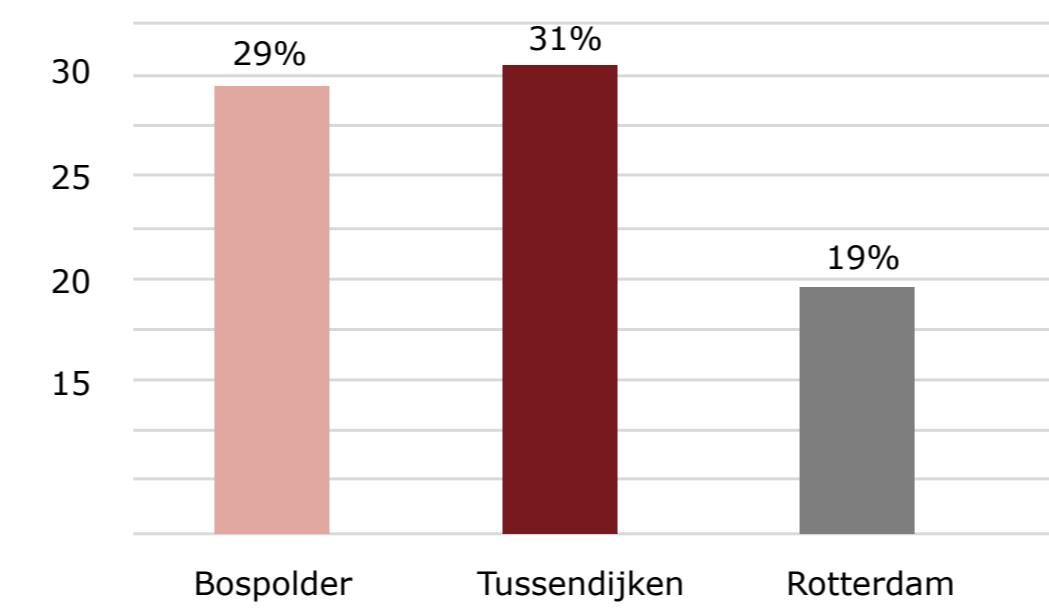
Single family house (over occupied homes)



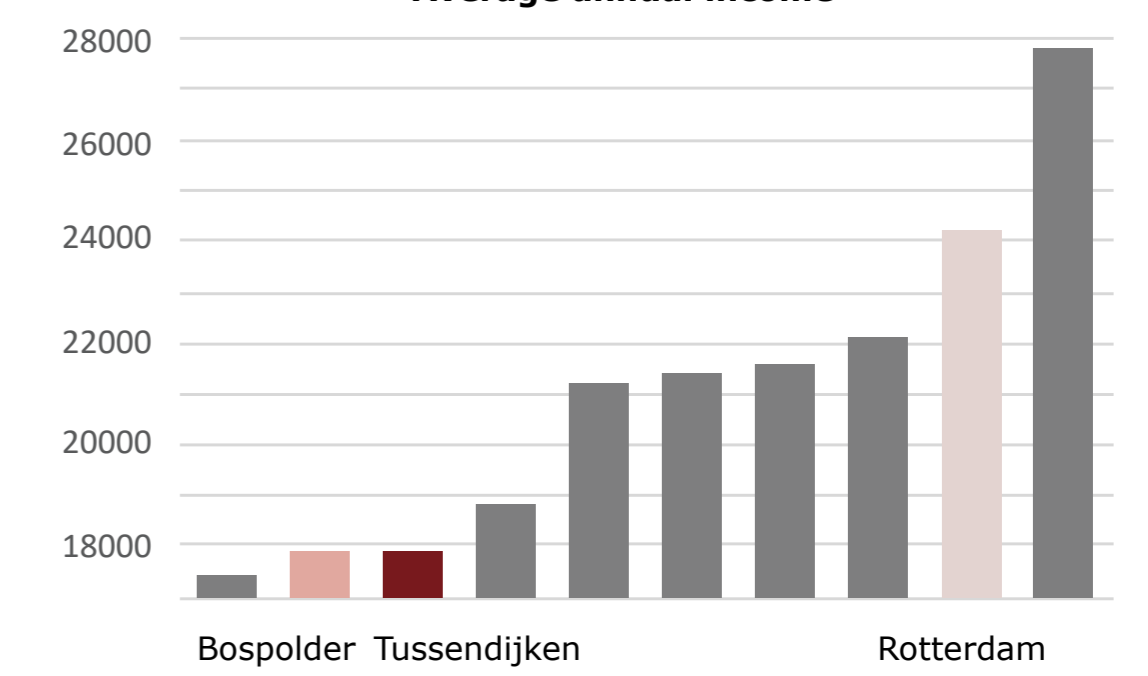
Percentage of households on social assistance



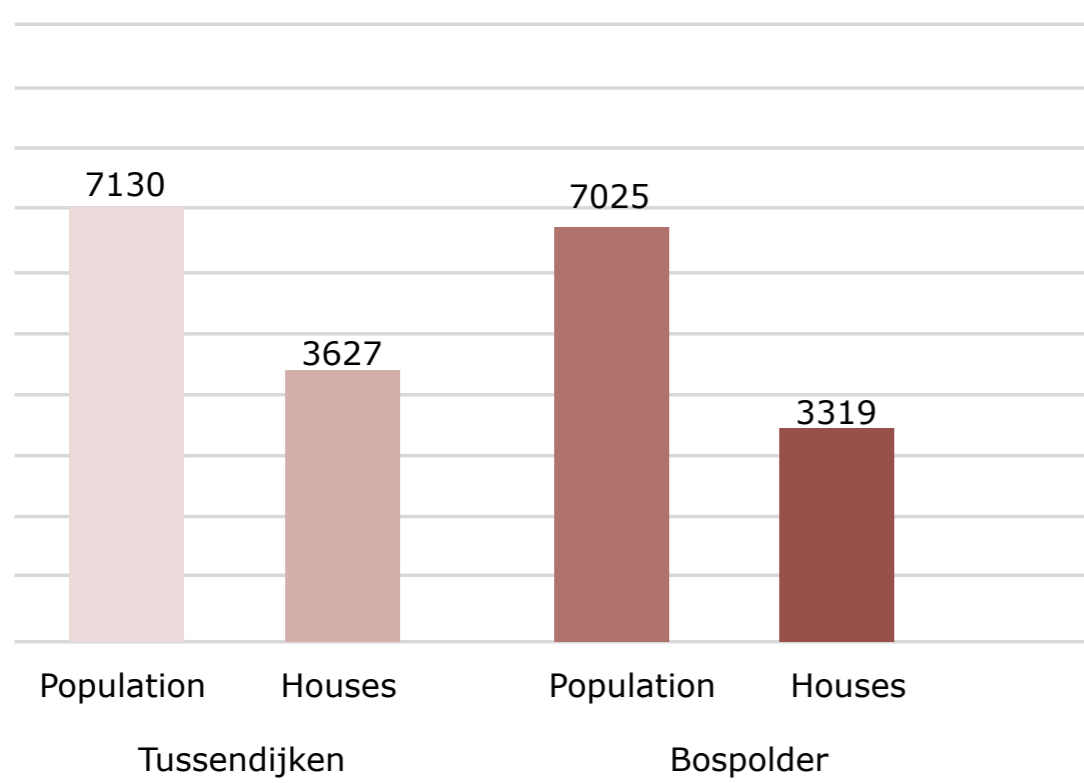
Residents without a basic qualification between 24 and 65 years old



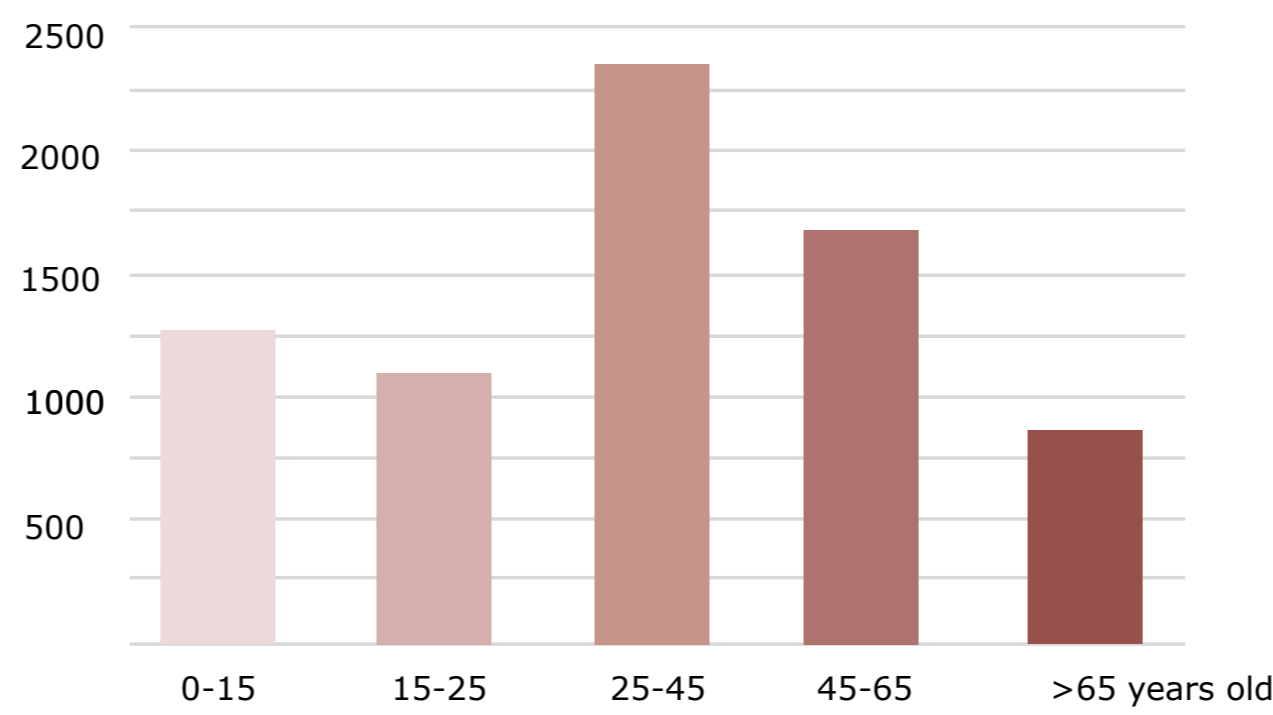
Average annual income



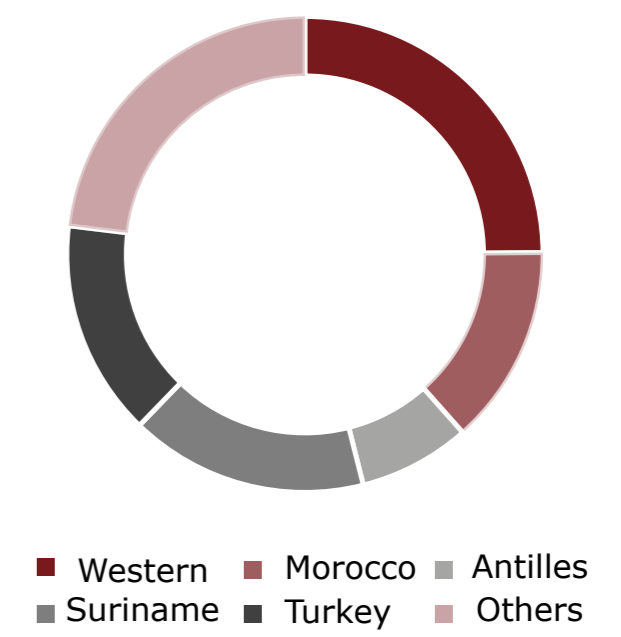
Population and number of Houses



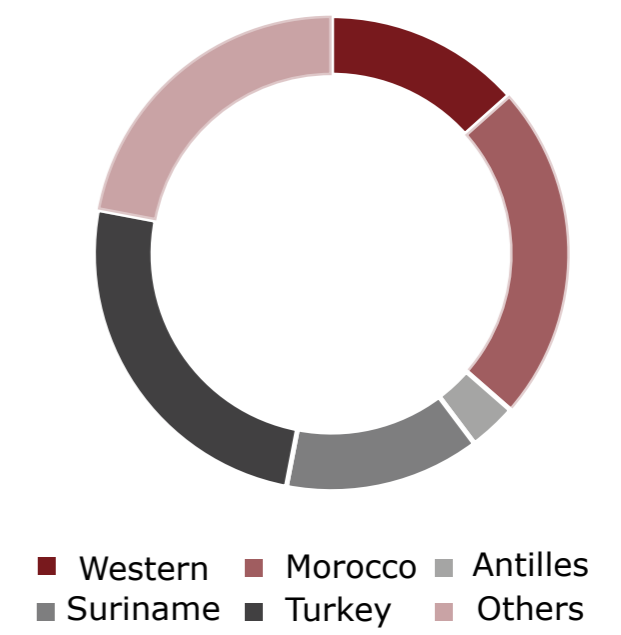
Residents by age



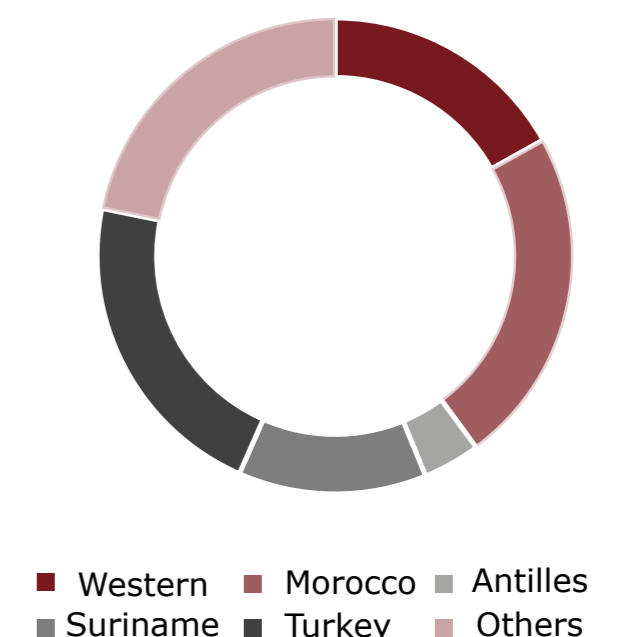
Rotterdam



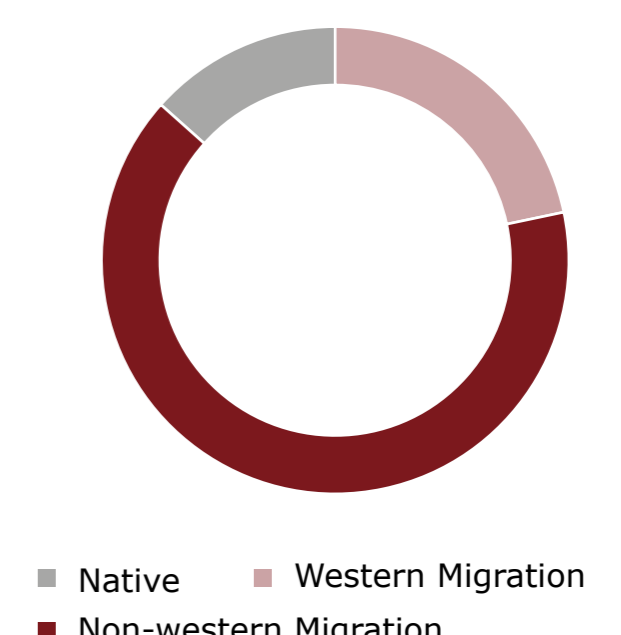
Bospolder



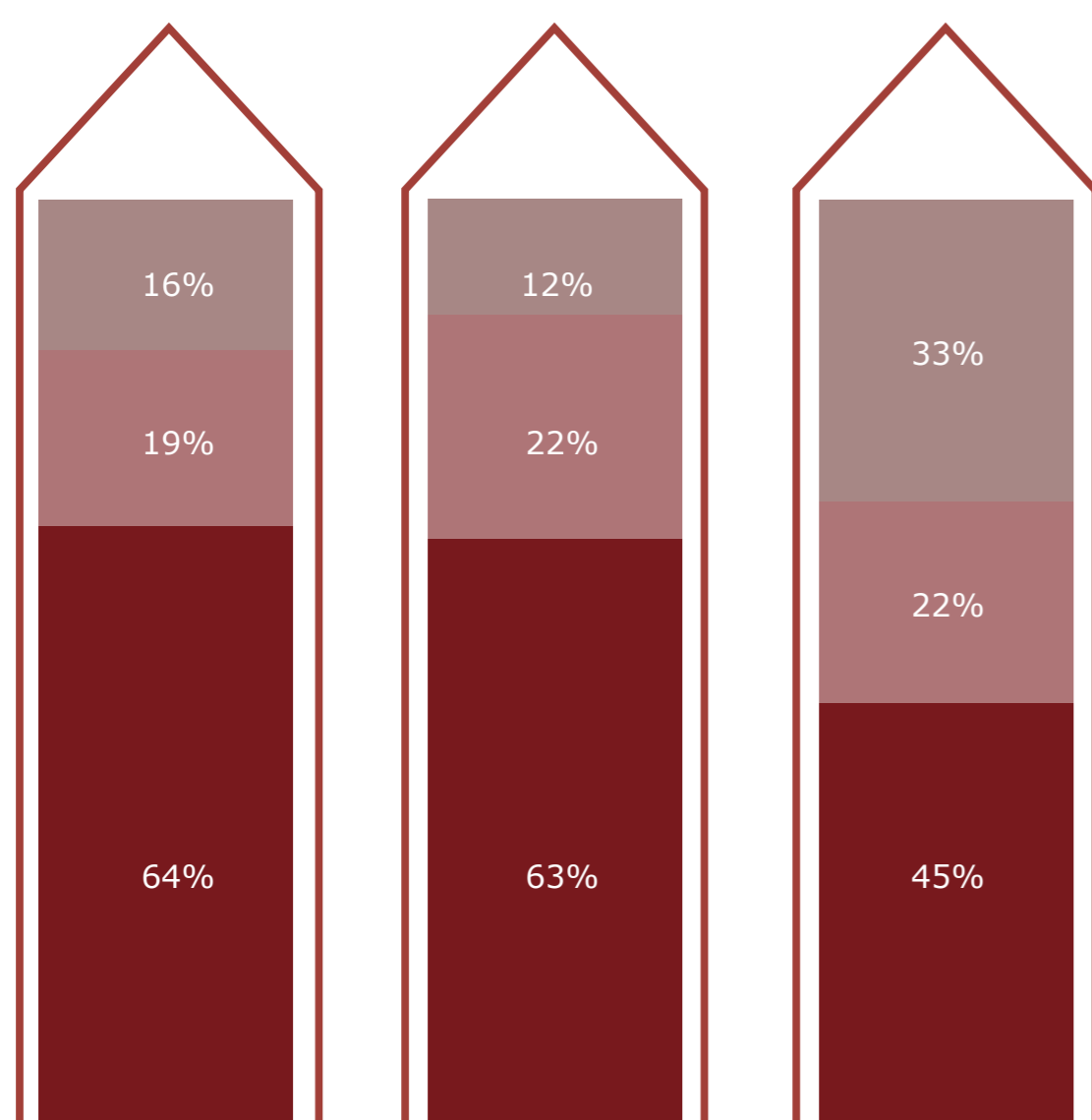
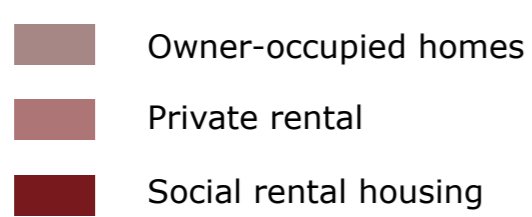
Tussendijken



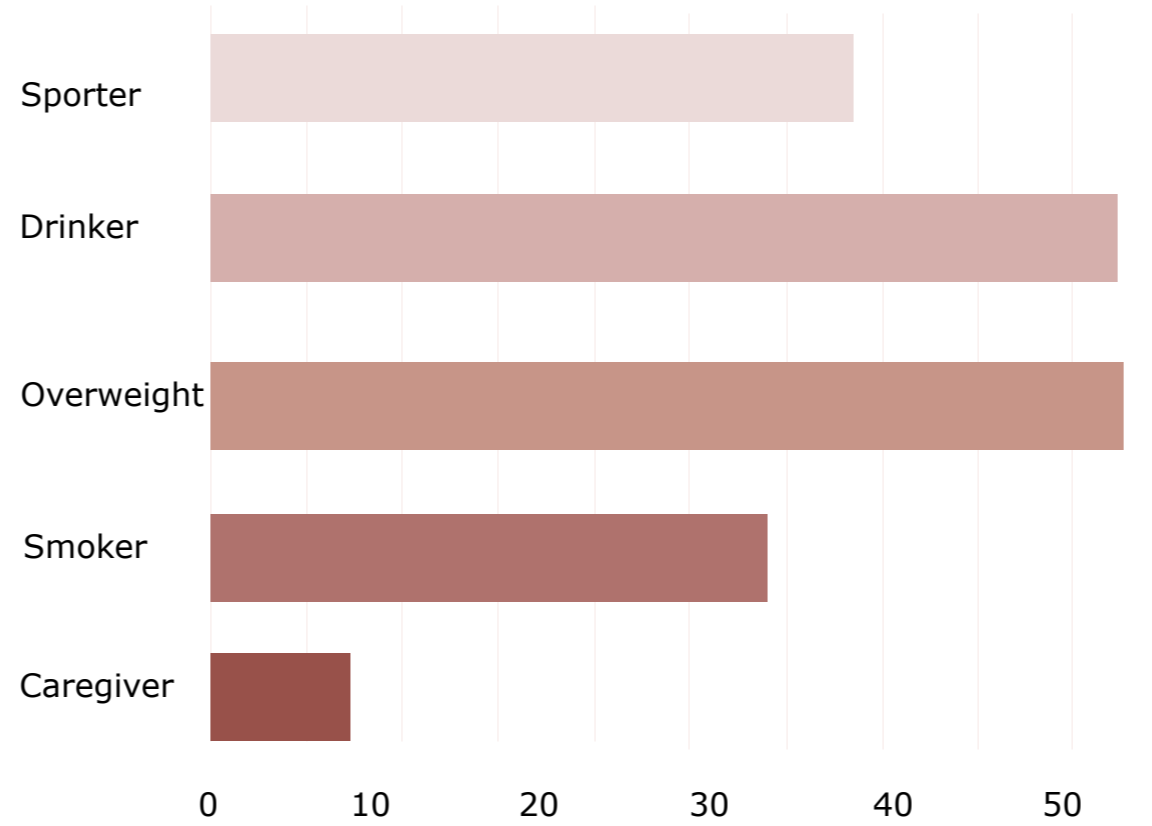
Tussendijken



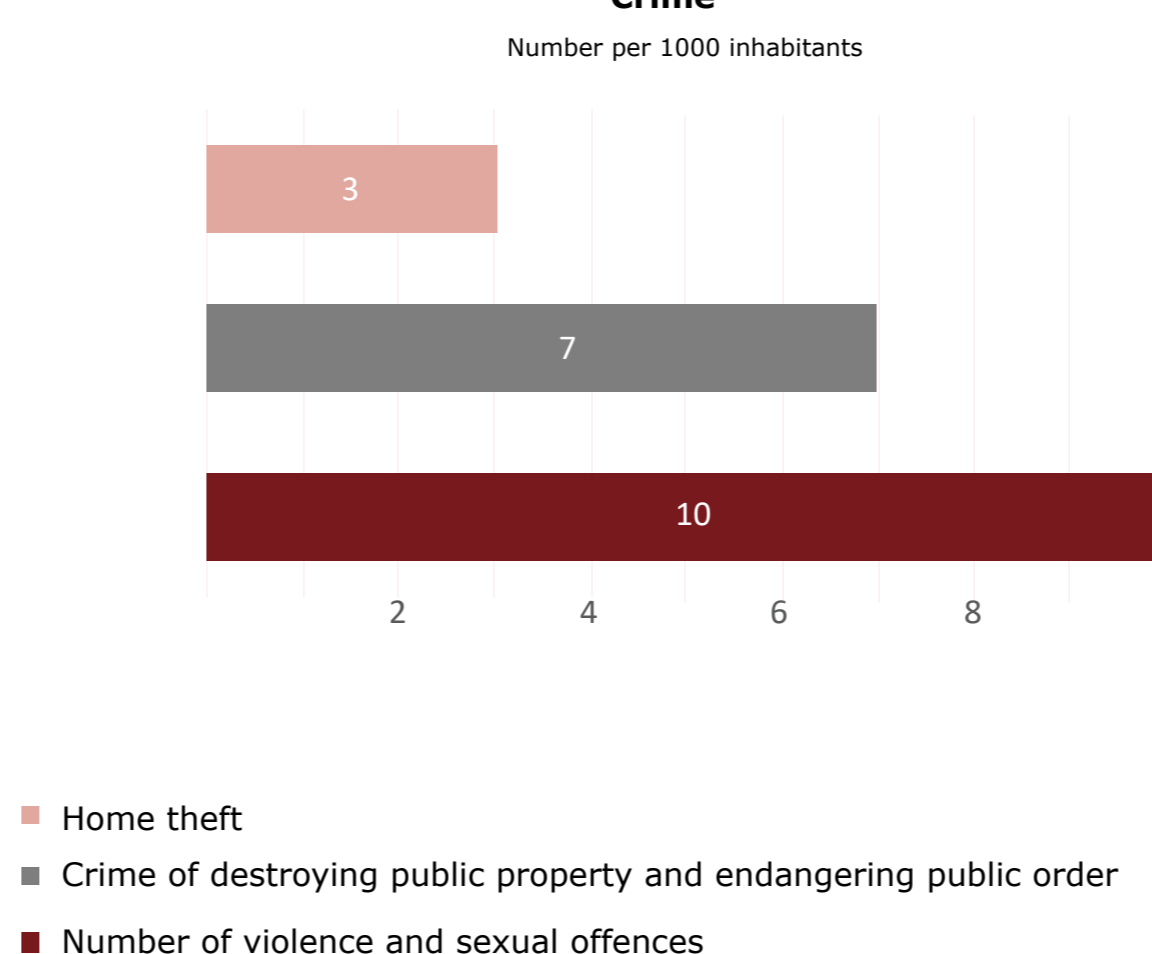
Living

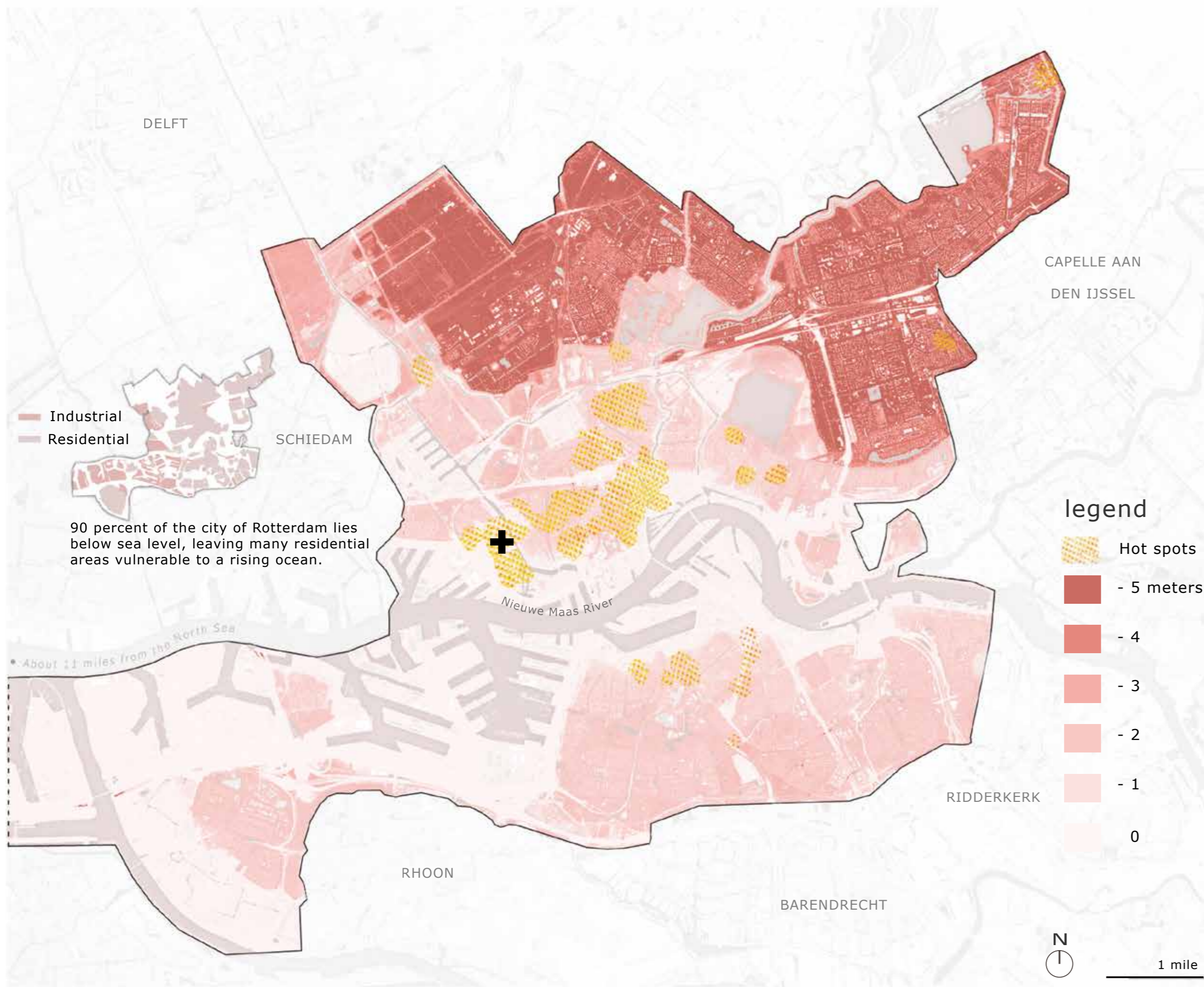


Healthy & Behaviors

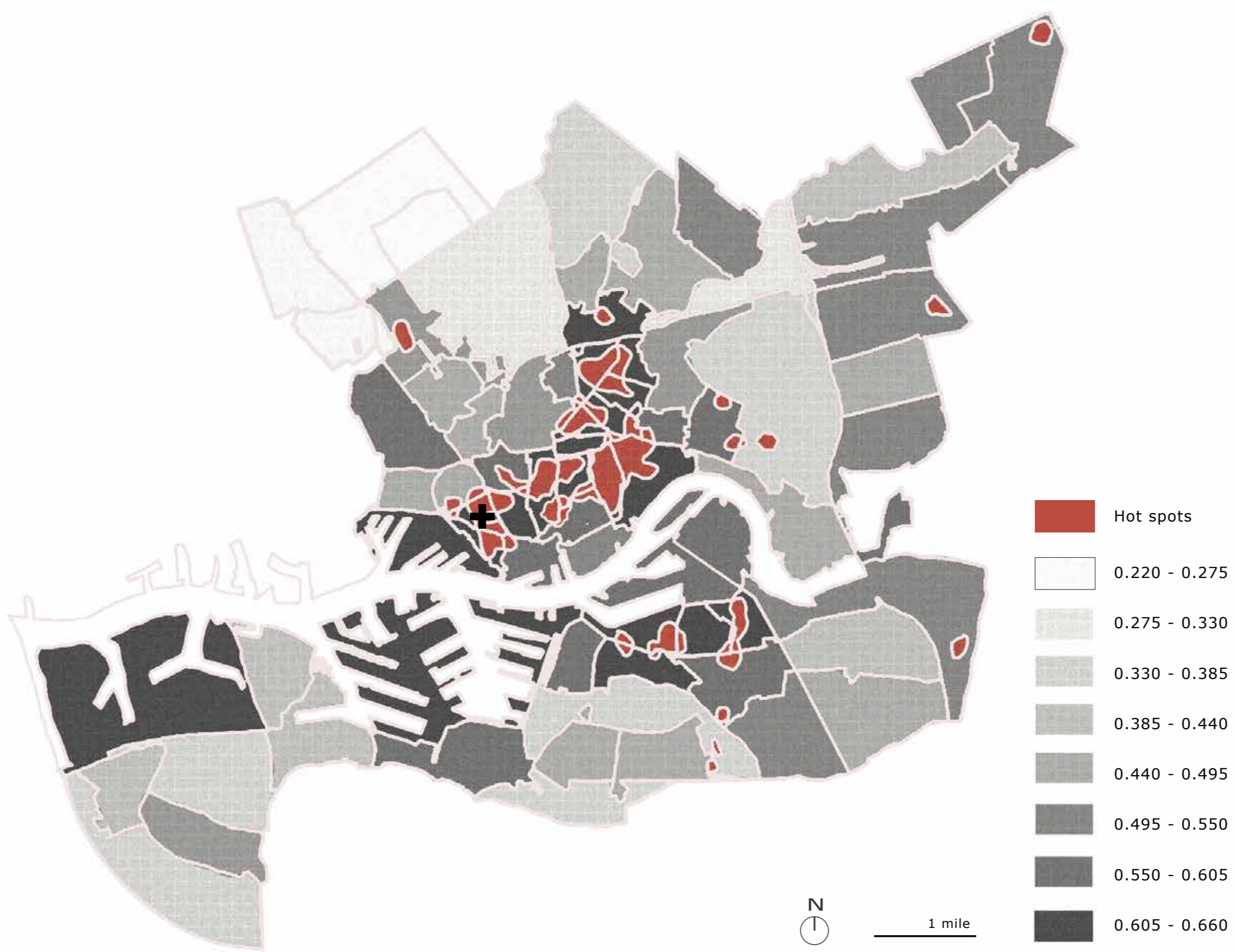


Crime

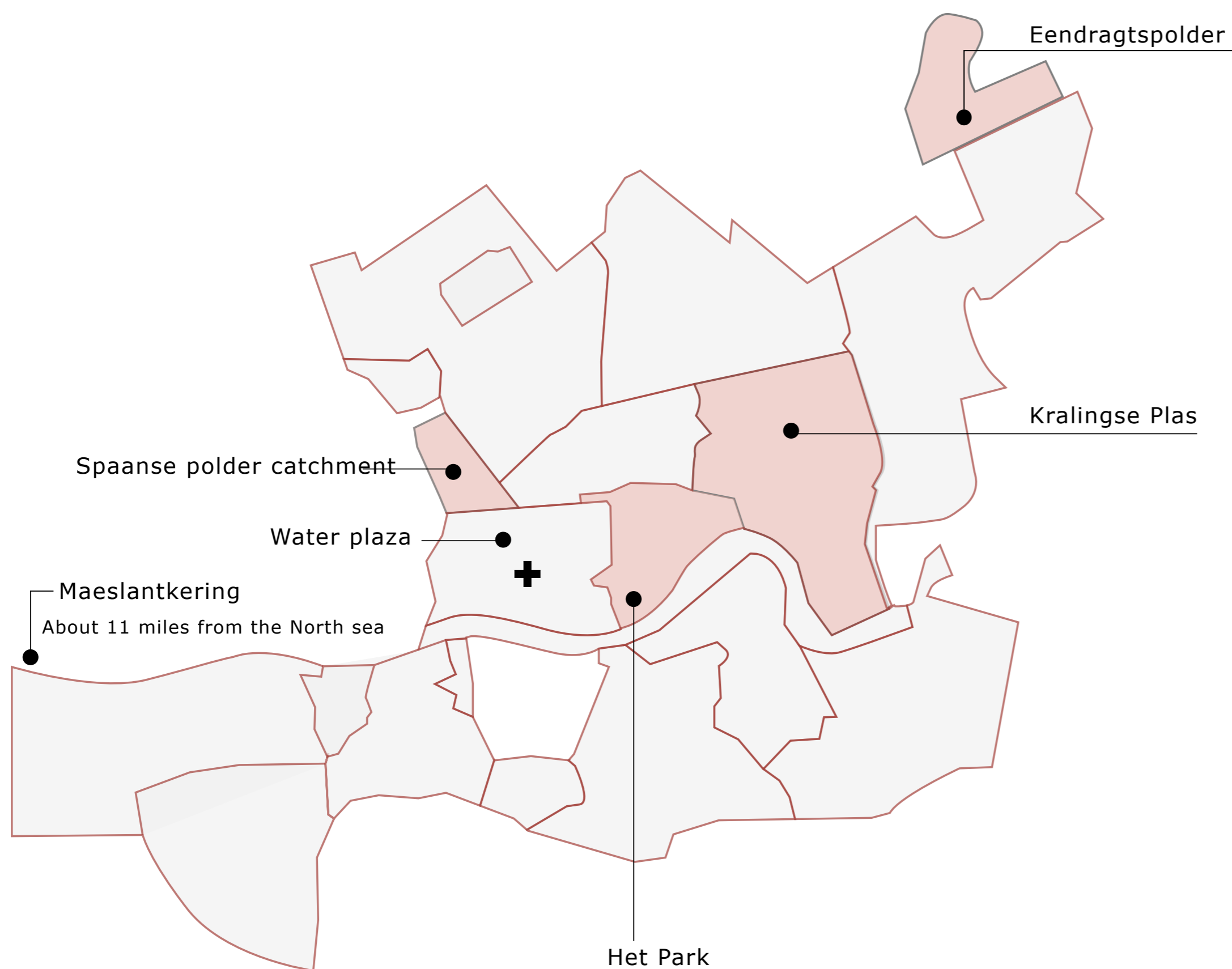




Area of Rotterdam below sea level



Map of imperviousness per postal code zone versus hot spot locations



Urban pluvial flood risk areas & solutions

Urban pluvial flood risk & Solutions cases



Eendragtspolder

Rowing teams practice at the Eendragtspolder, a site intended to be both a public amenity and a reservoir for floodwater.



Het Park

Under the Museumpark an underground storage facility has been built by Rotterdam City, to reduce flooding risk in the district during heavy rainfall



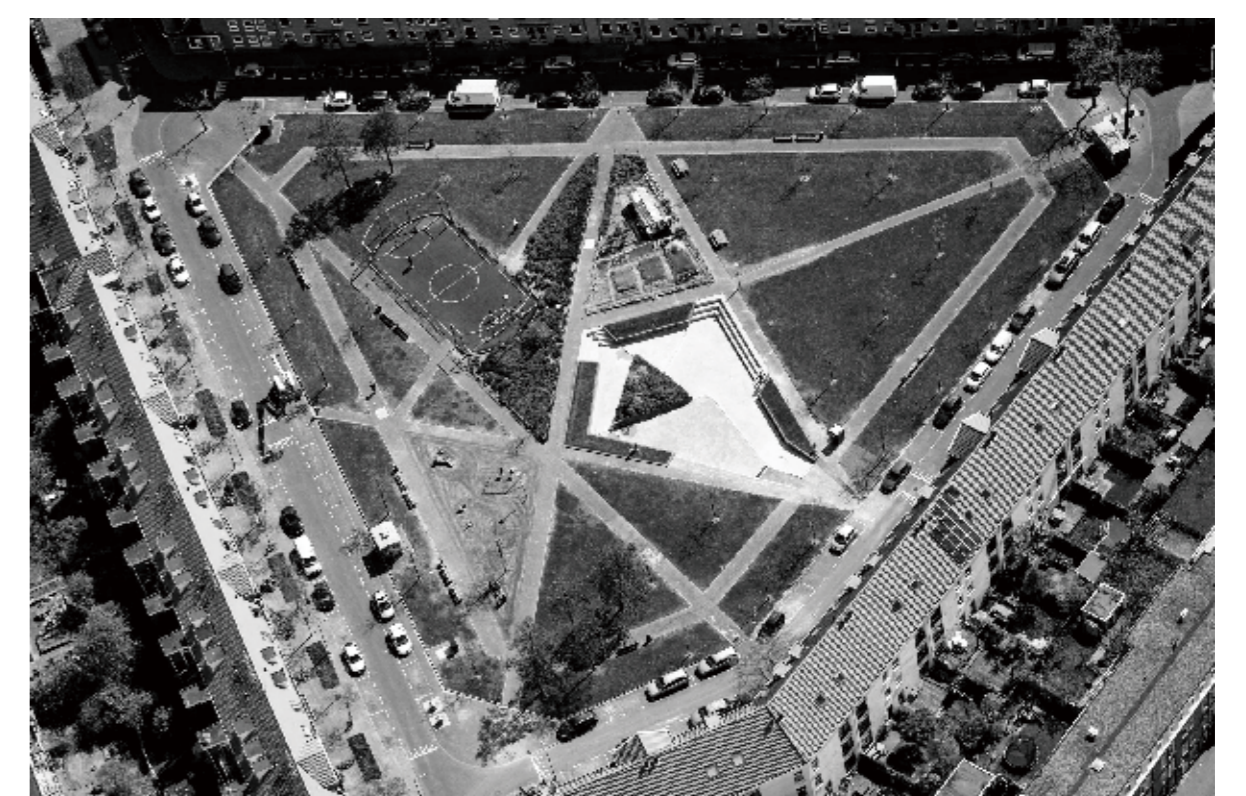
Maeslantkering

The Maeslantkering, an immense sea gate conceived decades ago to protect the port of Rotterdam.



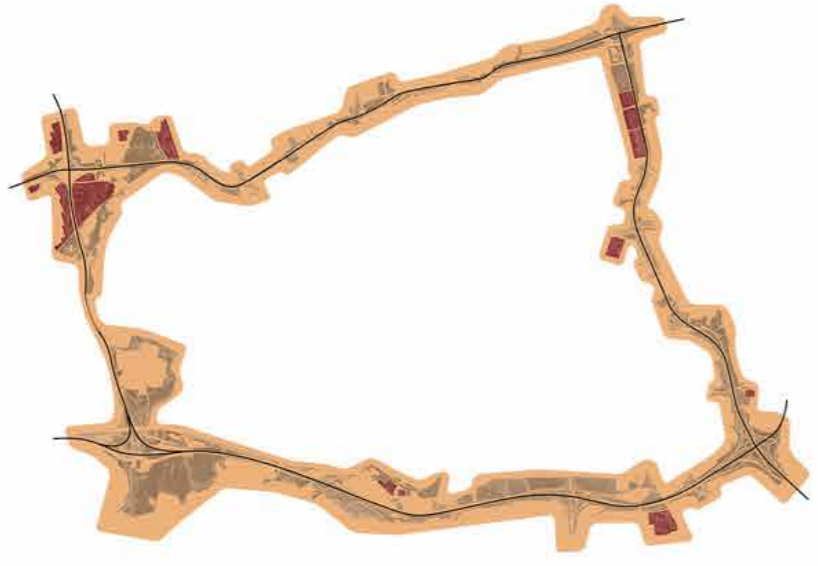
Kralingse Plas

The Kralingse Plas is a 100 ha lake adjacent to the green area.

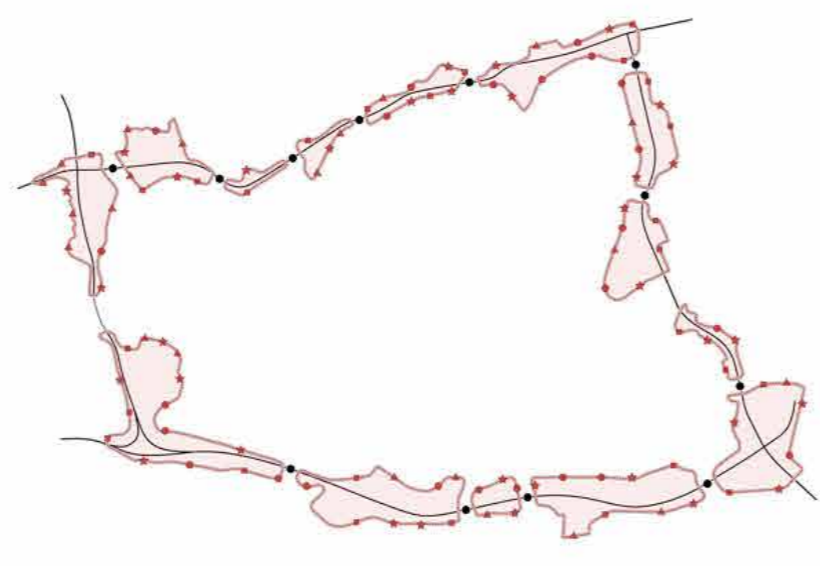


Water plaza

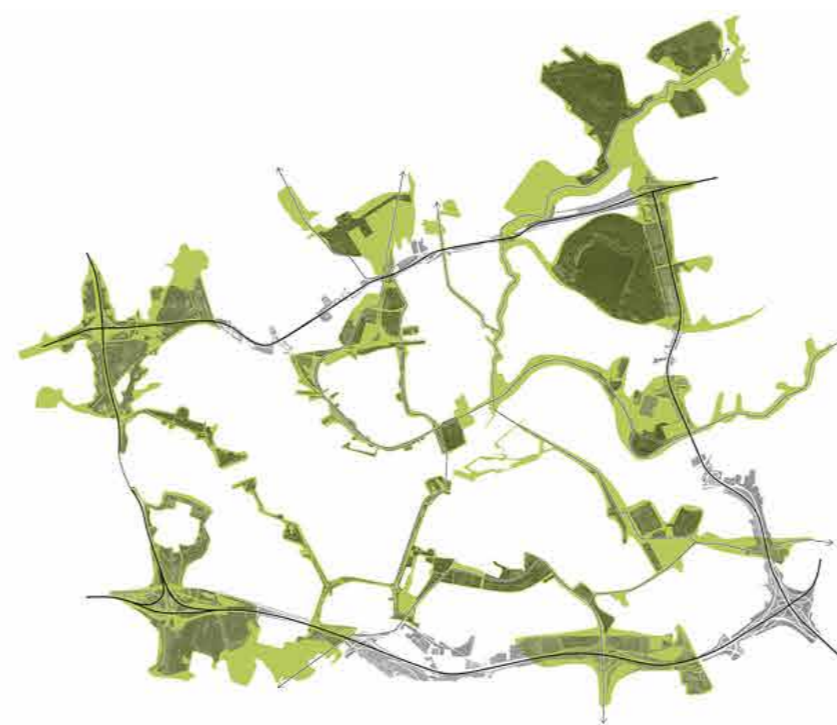
A water plaza in the Spangen neighborhood of Rotterdam was created to capture floodwater.



Infrastructural Landscape



Active Mobility Loops



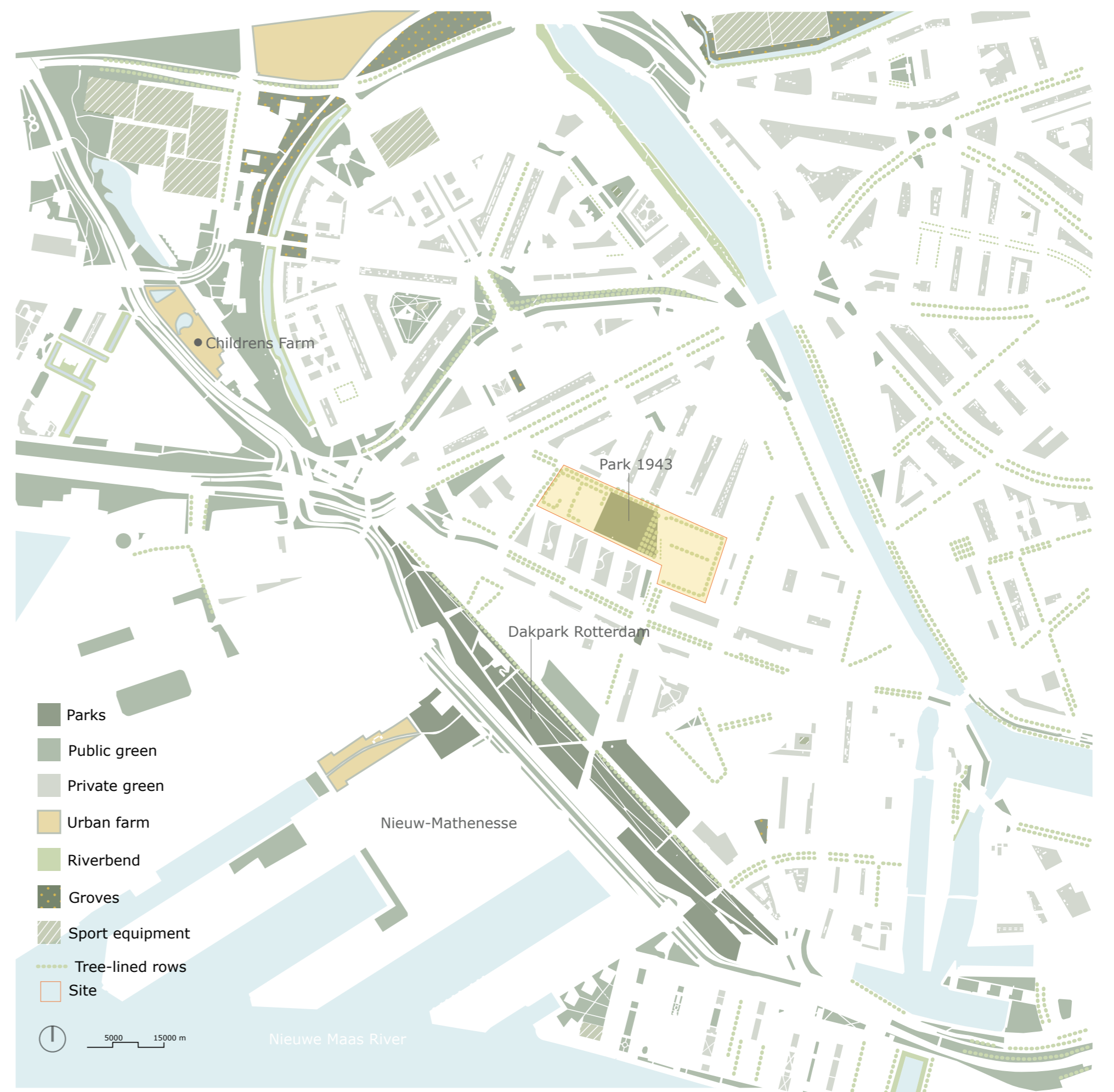
Green Radials



The Rotterdam necklace



Public service analysis



Green system analysis



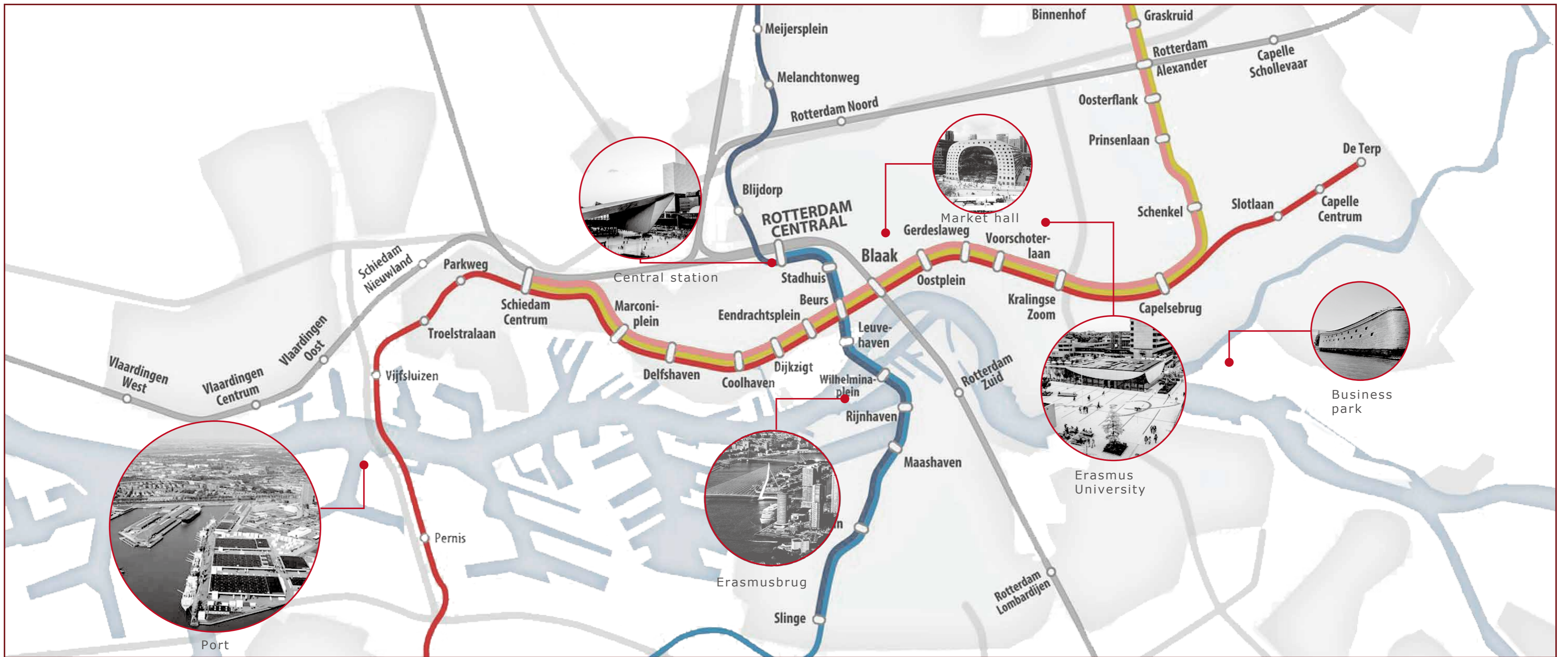
Rotterdam landuse

The Botu area is located in the west of Rotterdam. The main function of the area is residential land and there is a lot of educational land around the area.

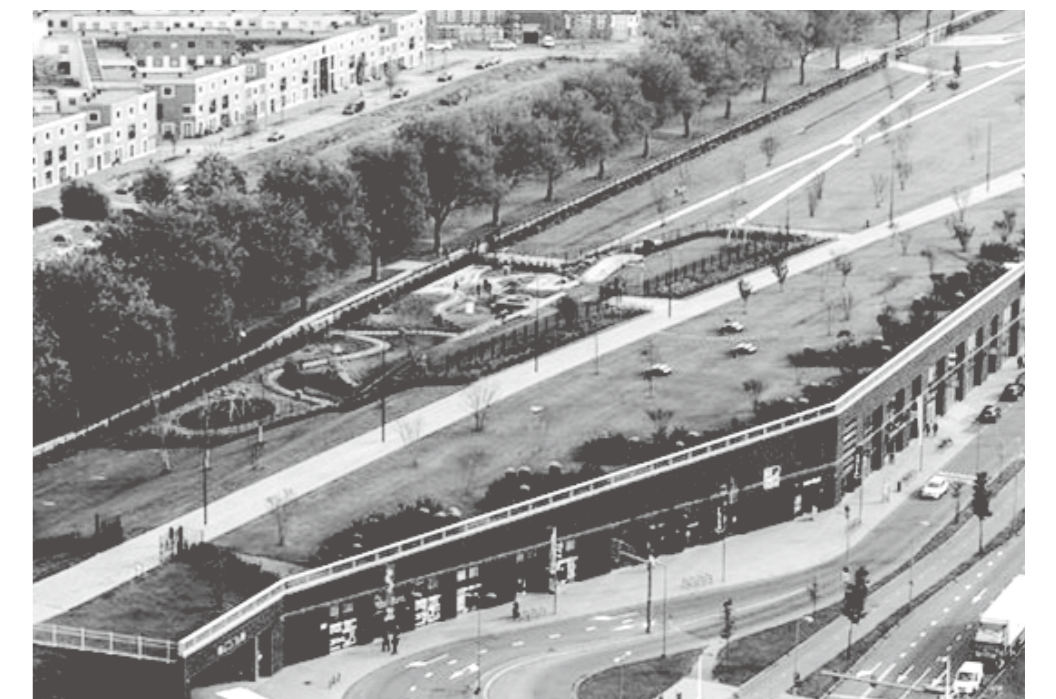
With the development of the large number of residential buildings, the corresponding commercial facilities have not been developed.

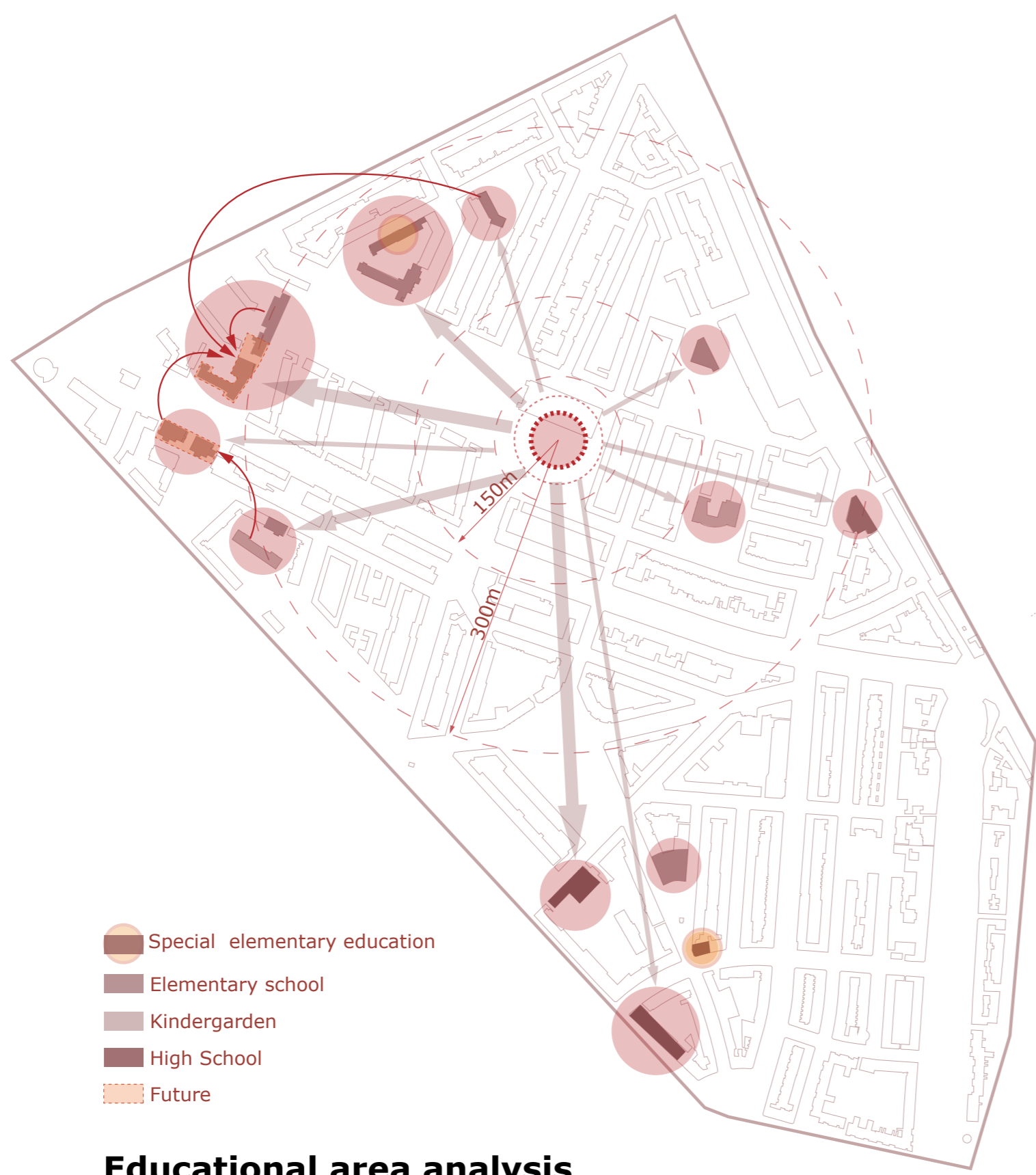
- offices commercial area
- industrial area industrial area ports
- residential area mixed function
- services educational area religion area

Rotterdam mobility system analysis



Botu area mobility system analysis





Educational area analysis



Commercial activity analysis



Sports area analysis



Road width



Static snapshots: Native Dutch



Static snapshots: Non-Western immigrants



- Building after 2000
- 1970-2000
- 1950-1970
- 1930-1950
- 1900-1930
- Building before 1900
- Bombing area in 1943

Building age



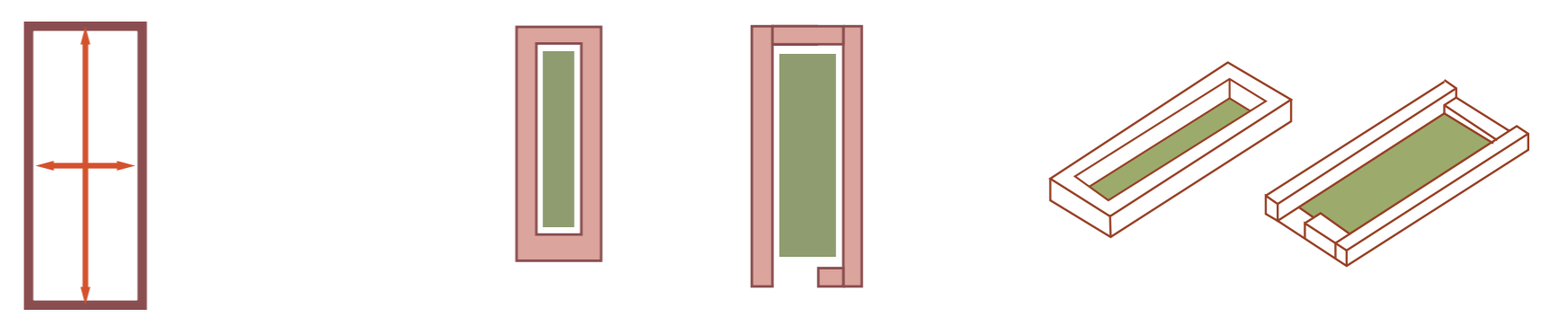
-

Building height

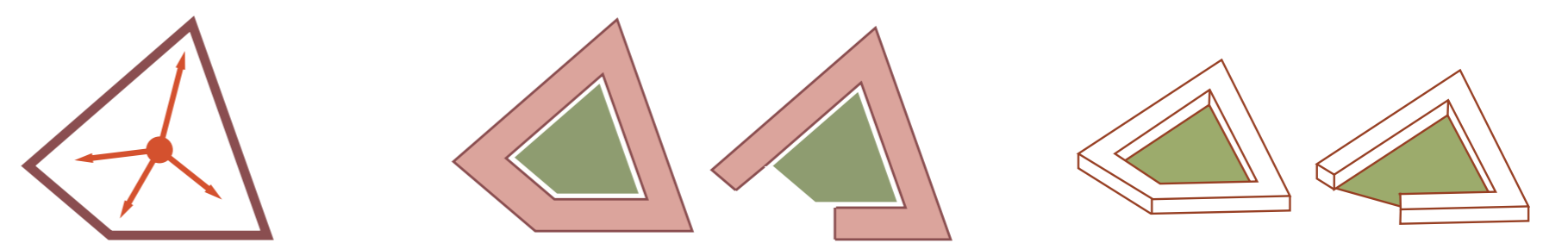


- Type 1
- Type 2
- Type 3
- Type 4

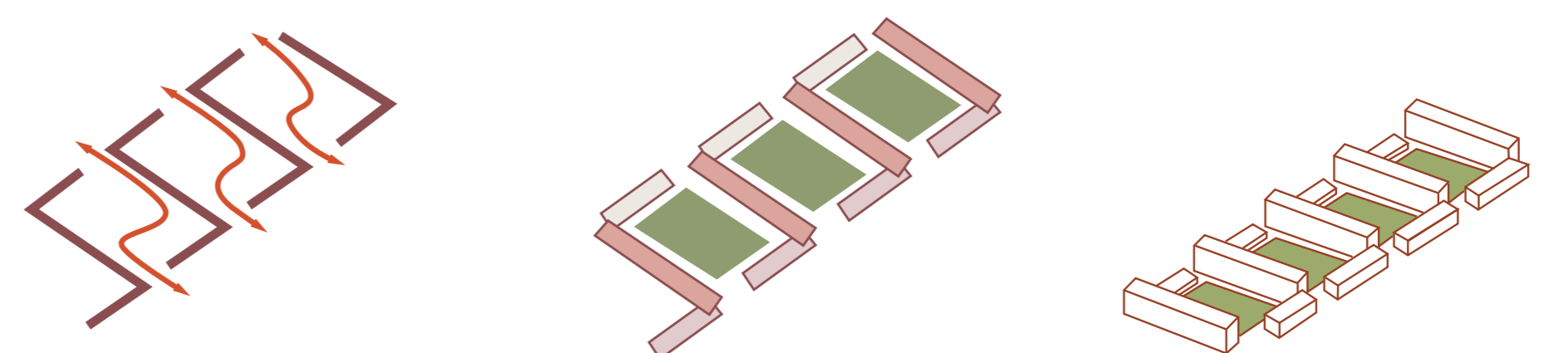
Building type



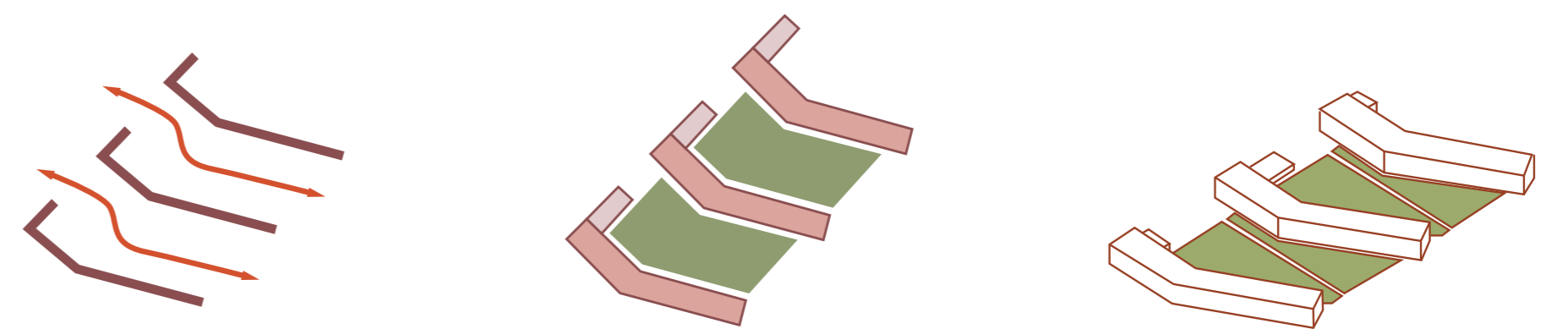
Long rectangular courtyard



Center surround courtyard



Weak connection courtyard



Semi-open courtyard

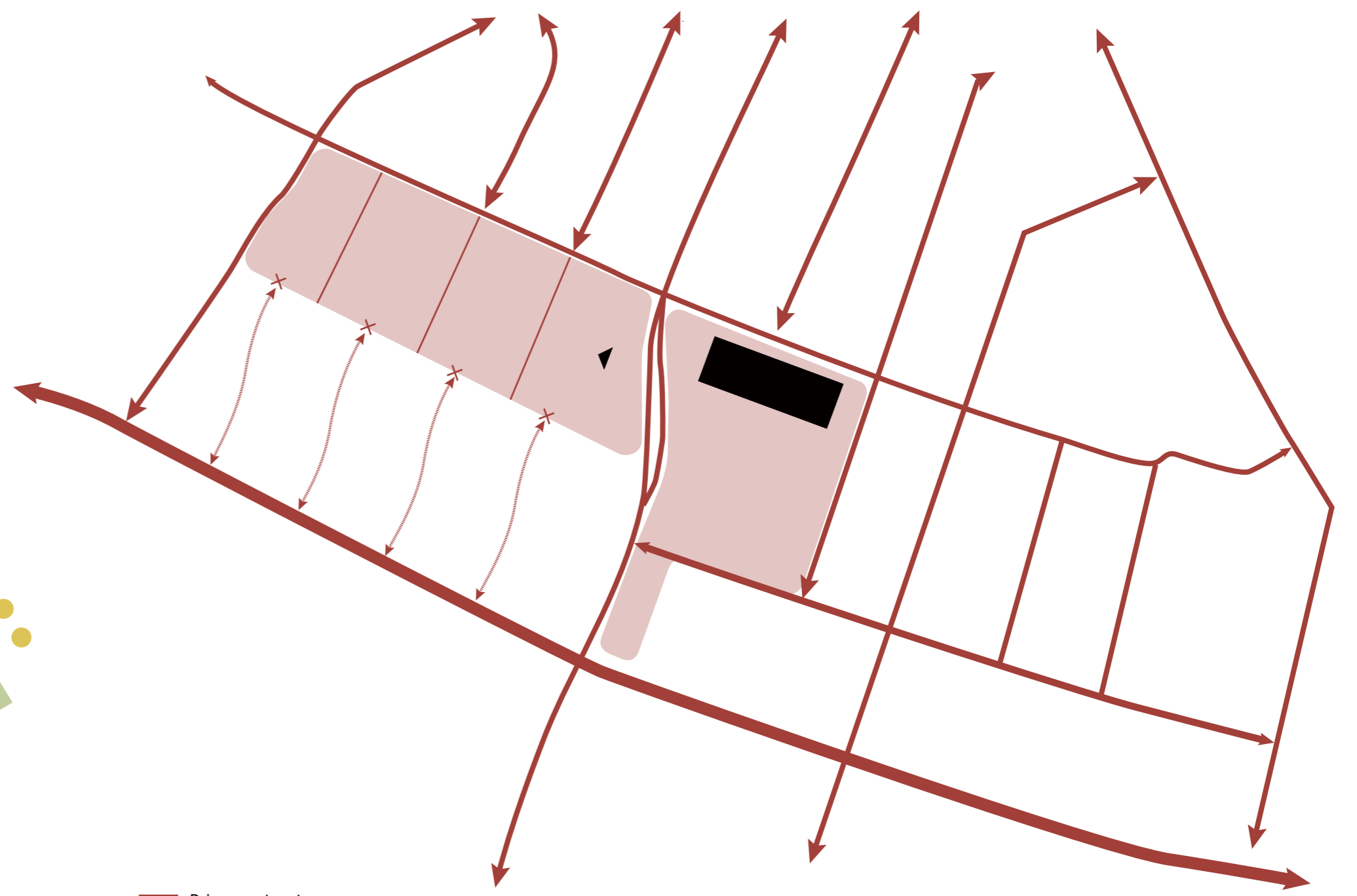




- Collective garden on building block level
- Local square with primary green character
- Tree structure to be preserved
- Tree structure to be strengthened or supplemented

Site area green system analysis

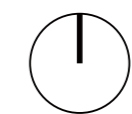
0 5 10 15m



- Primary street
- Secondary road
- Weak connection
- × Dead end
- ▲ Entrance

Site area accessibility analysis

0 5 10 15m



SWOT



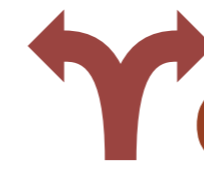
Strength

- Convenient transportation facilities
- Diverse culture
- Large green space



Weakness

- Low utilization of square
- Lack of connection between square & park
- Lack of after school activity places
- Lack of economic activities



Opportunity

- Green space resources
- Central location of BOTU
- Weekly market
- Political supports
- Labour resources



Threats

- Security issue
- Flooding issue

Learning together



Working together



Living together



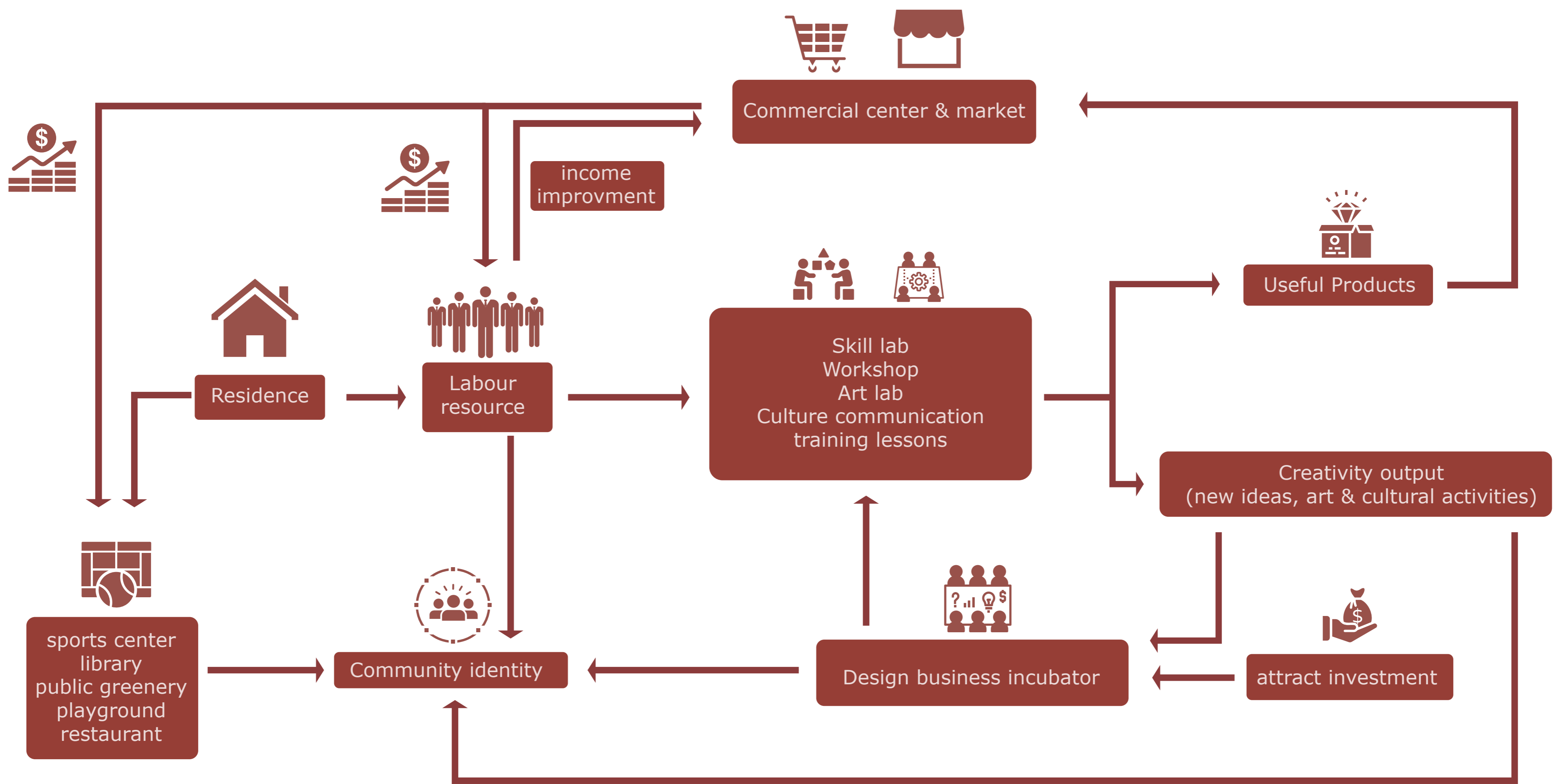
BOTU Future Hub



Sharing together



Playing together



Community Symbiosis



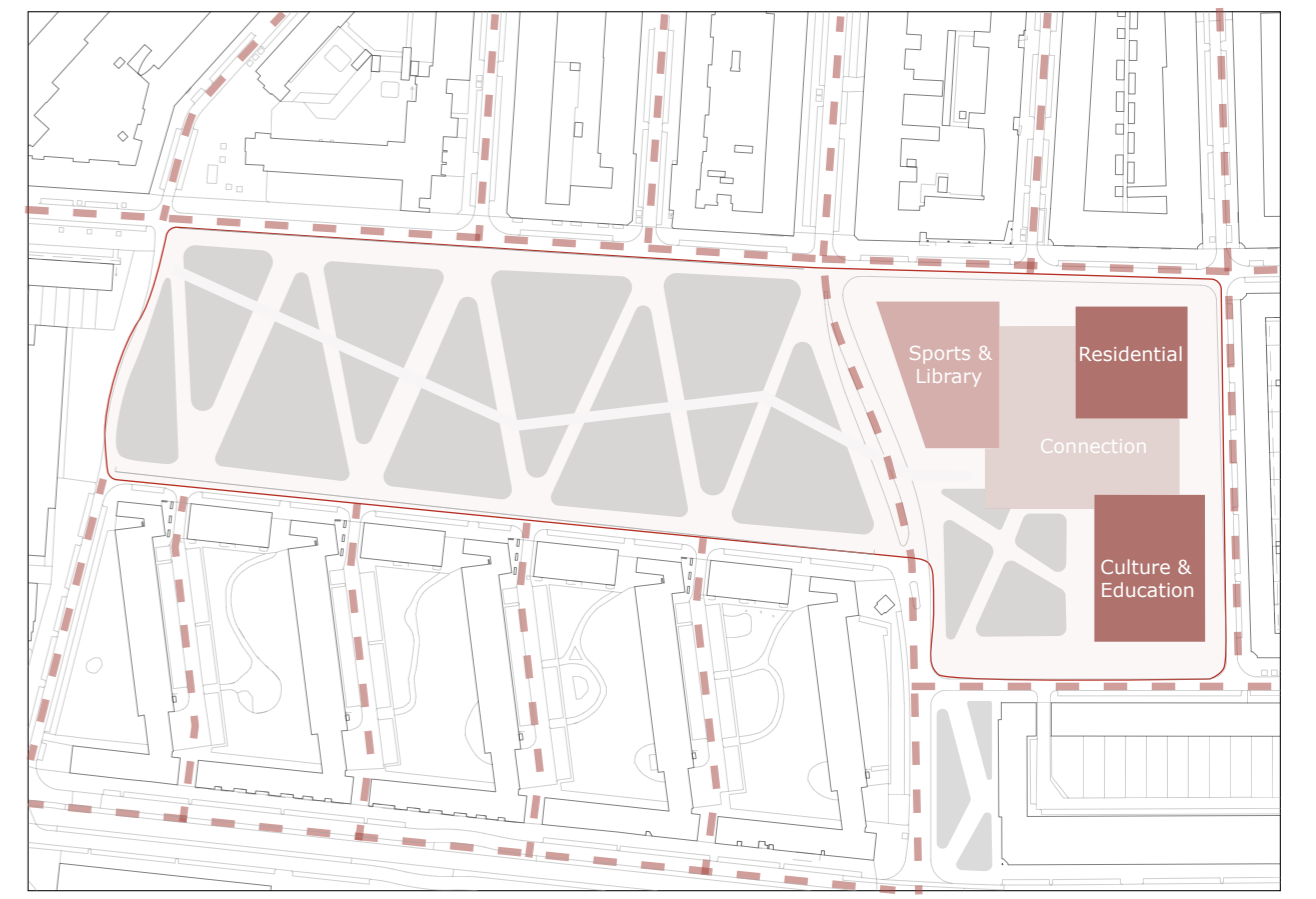
Market square



1. Adding the most convenient roads according to the urban context.



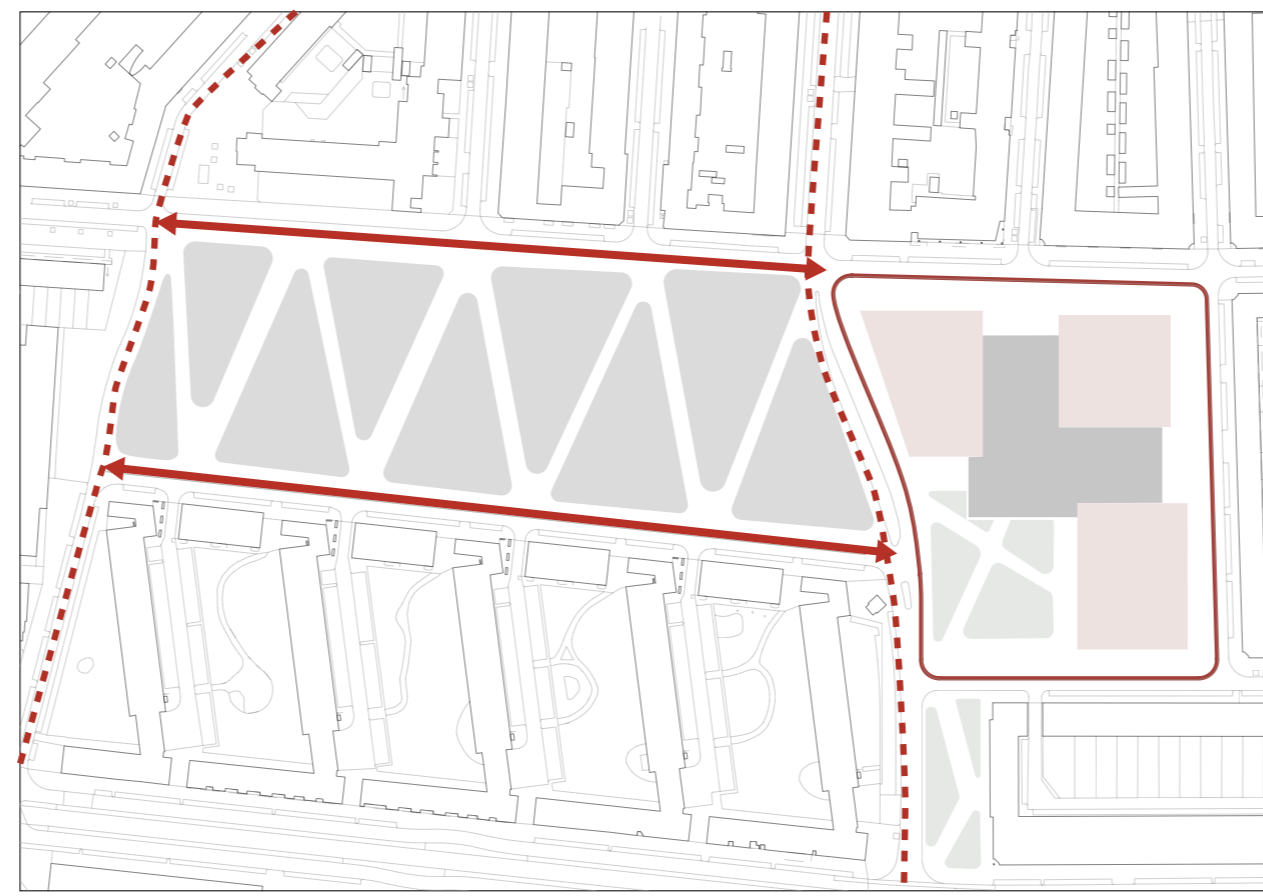
2. Adding main access that pass through the whole site.



3. Giving functions to building according to the needs.



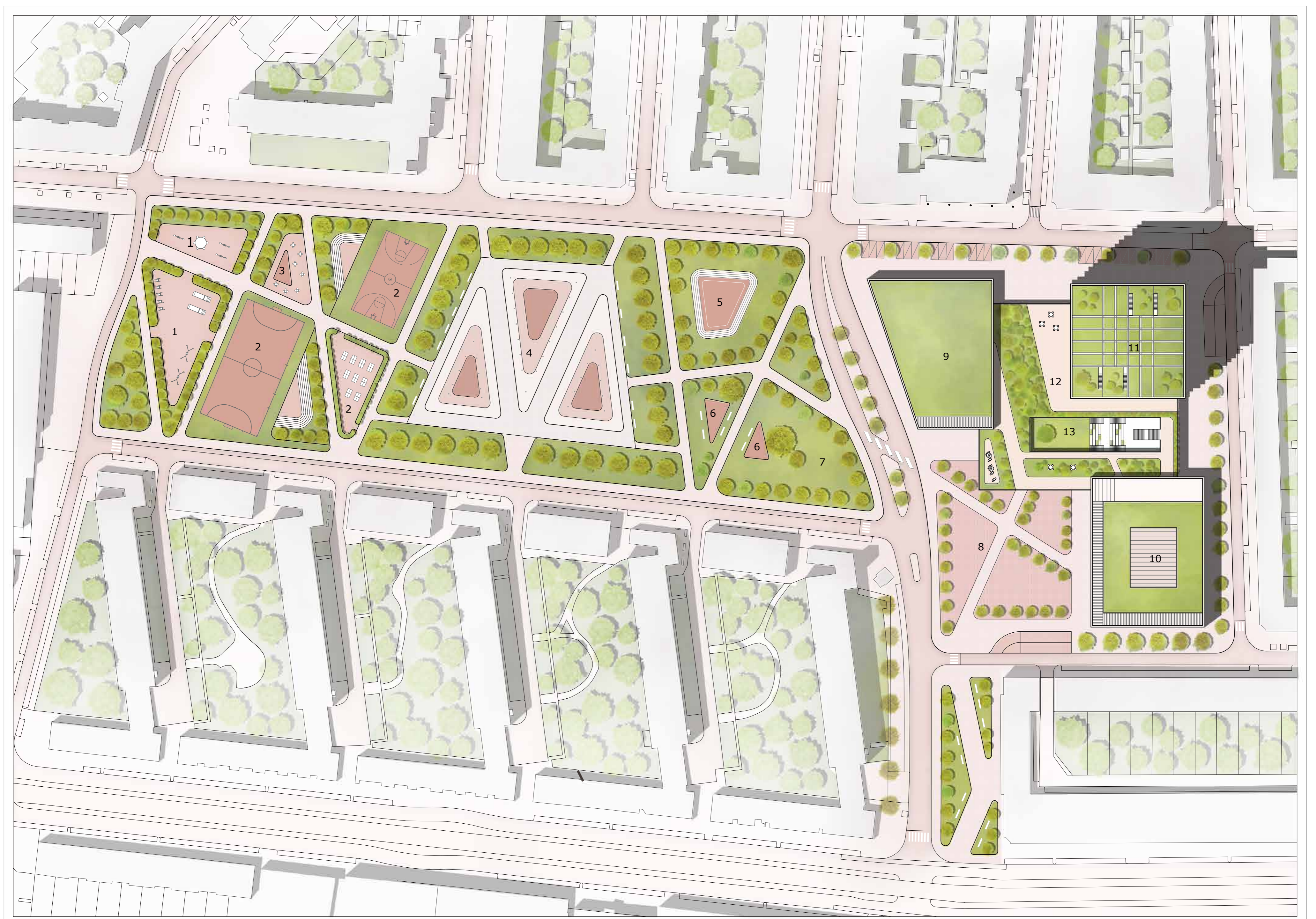
4. Putting different functions according to the surrounding needs.



5. Adding bike lane on two sides of park to improve the accessibility.



6. Organizing the green structure according to government planning.

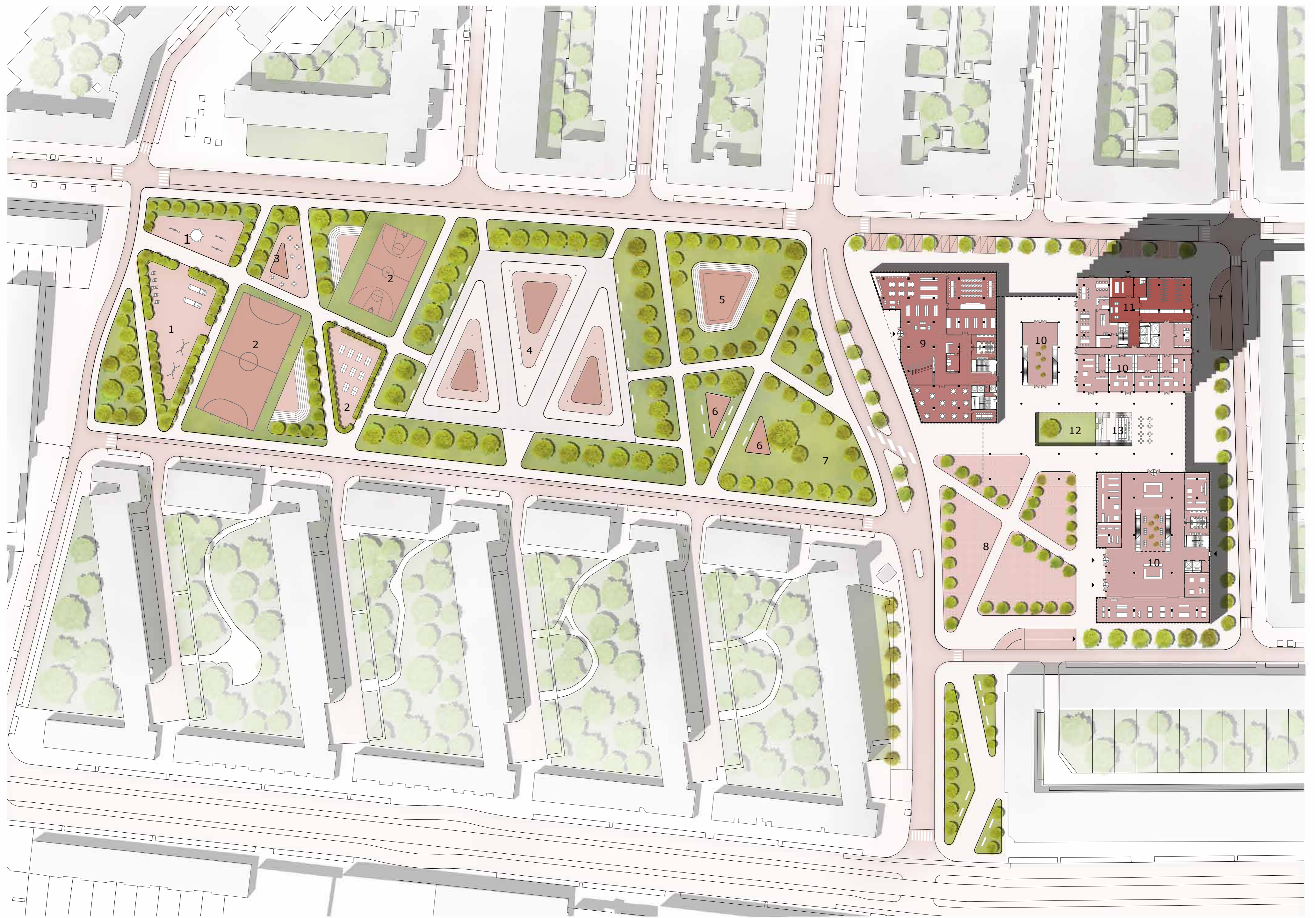


- 1 Children's playground
- 2 Sports area
- 3 Park bar
- 4 Central Water park
- 5 Theater
- 6 Pavilion
- 7 Green space
- 8 Market square
- 9 Library & Sports center
- 10 Culture center
- 11 Residence
- 12 Roof garden
- 13 Courtyard

Masterplan



0 10 20 30m



1 Children's playground 2 Sports area 3 Park bar 4 Central Water park 5 Theater 6 Pavilion 7 Green space 8 Market square 9 Library 10 Commercial area 11 Residence 12 Courtyard 13 Cafeteria

Ground floor plan  



1 Playground



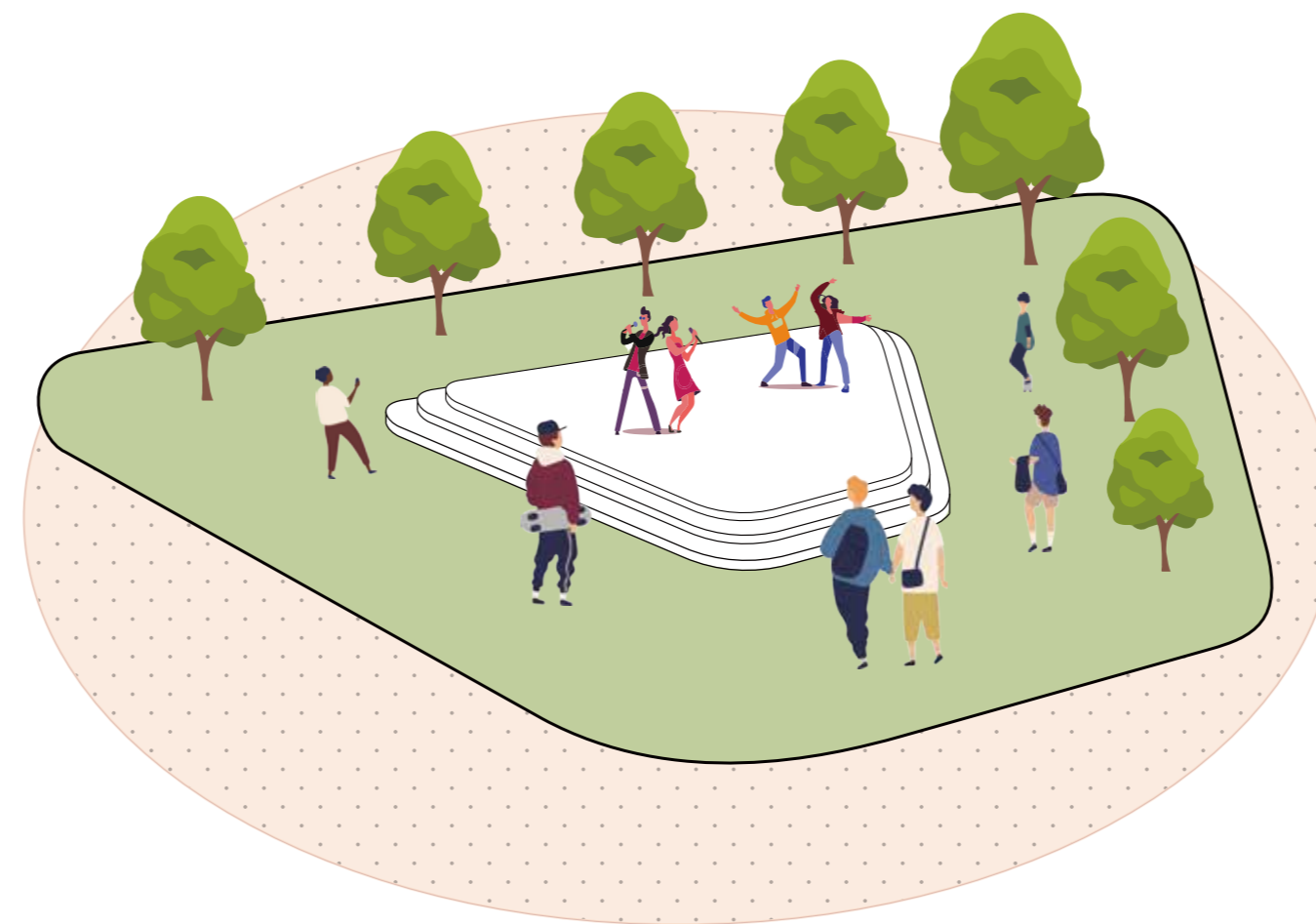
2 Groundstand for sports



3 Park bar



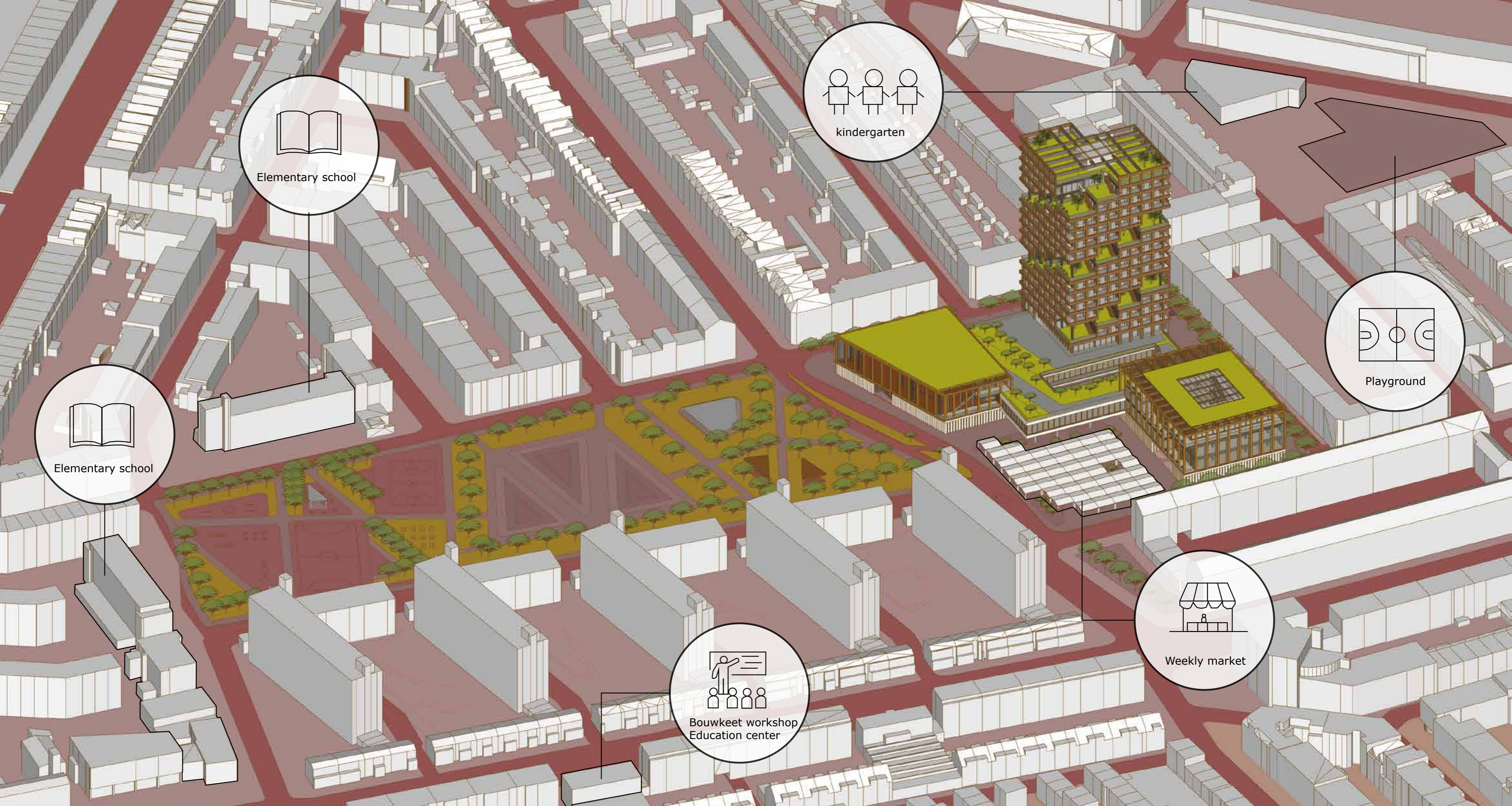
4 Central water park



5 Park theater

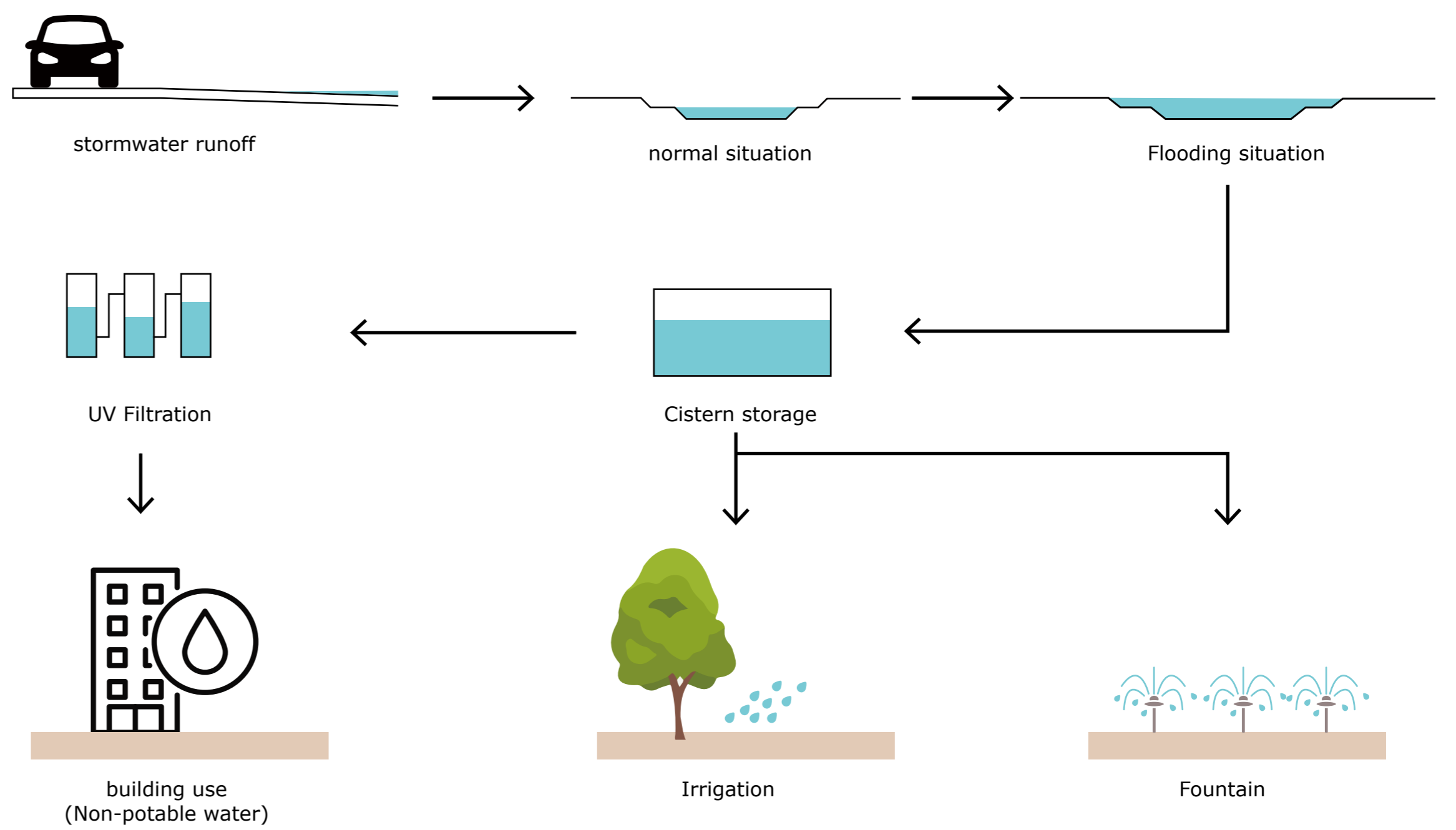


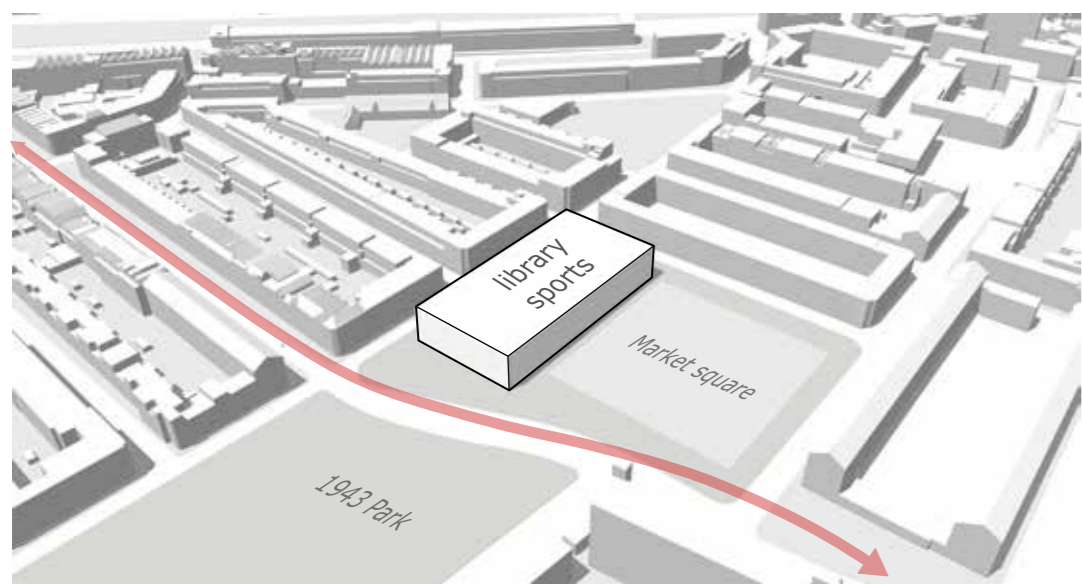
6 Park pavillion



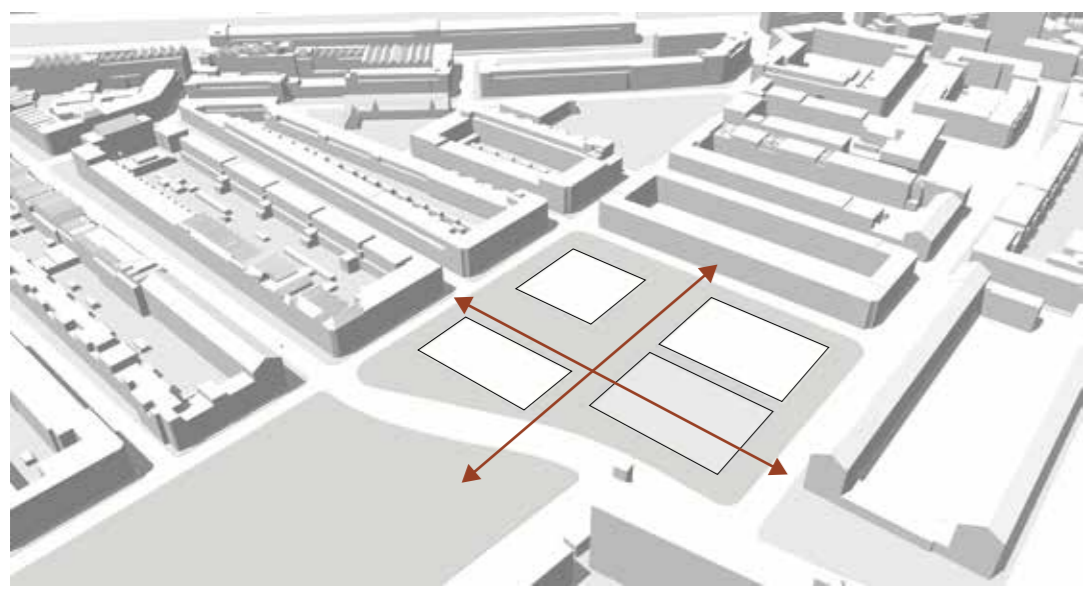
Sustainable water system (Solution of flood problem)

We create the central water park , as a beautiful view in good weather, when the rainy season come, it become a container of water and the water could be reused to irrigate the plants or for the fountain . and with the UV filtration, the water could be used for residence in the building.
 This method provide a environment friendly way to save water resource and solve the flood problem at the same time.

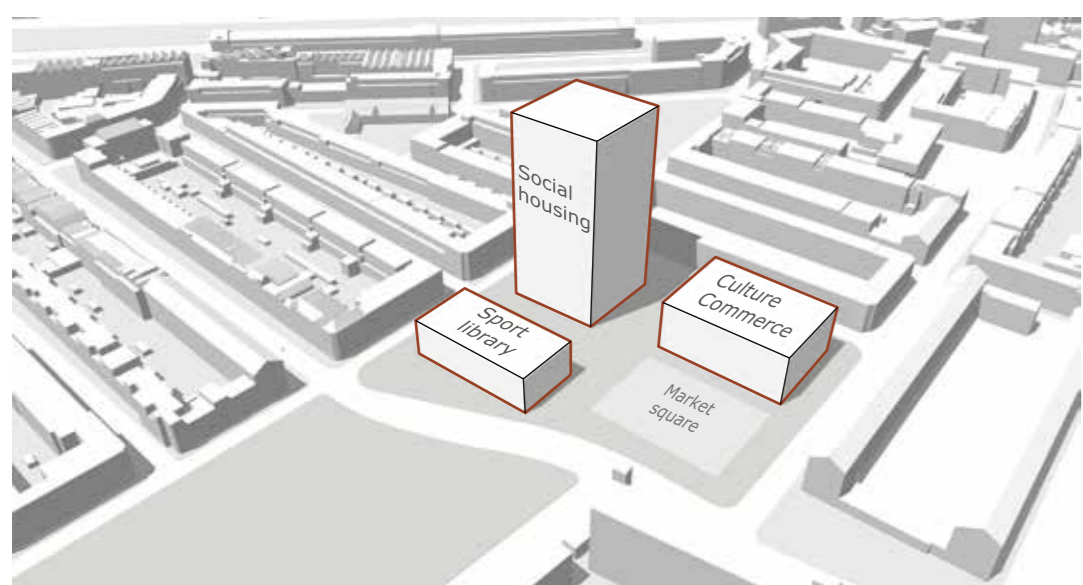




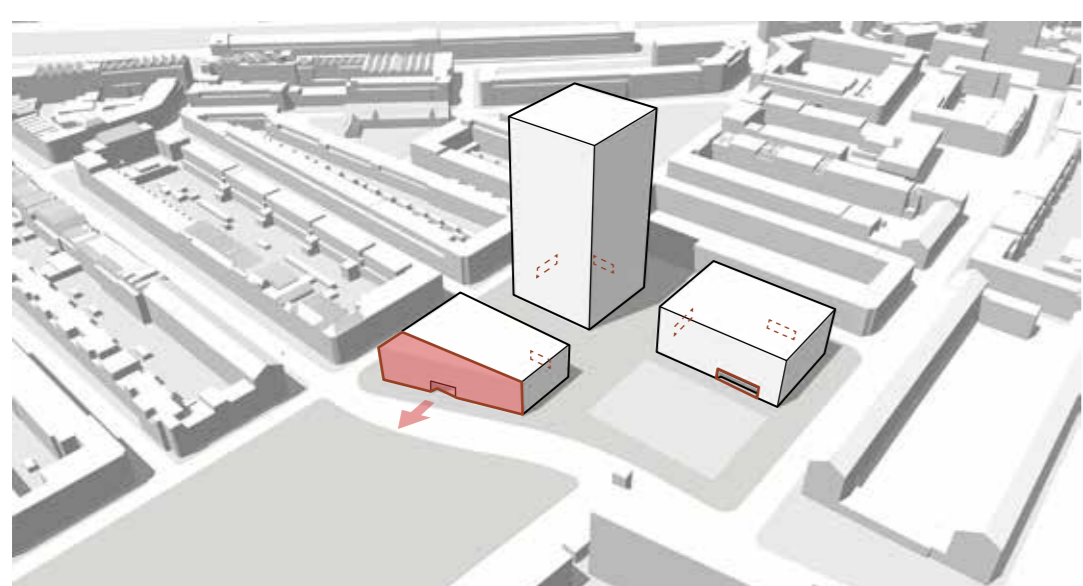
Existing situation



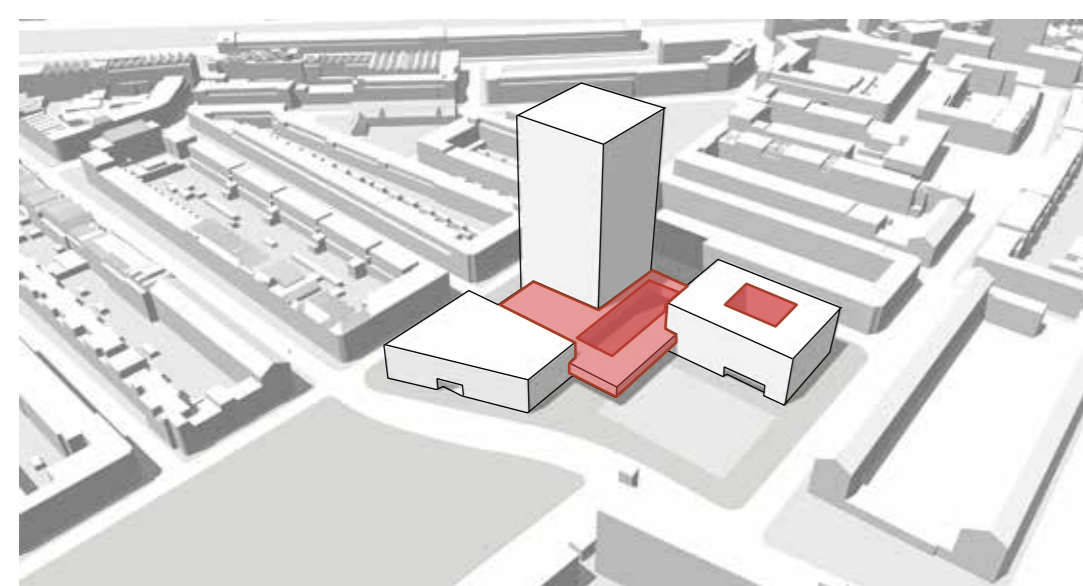
Major axis



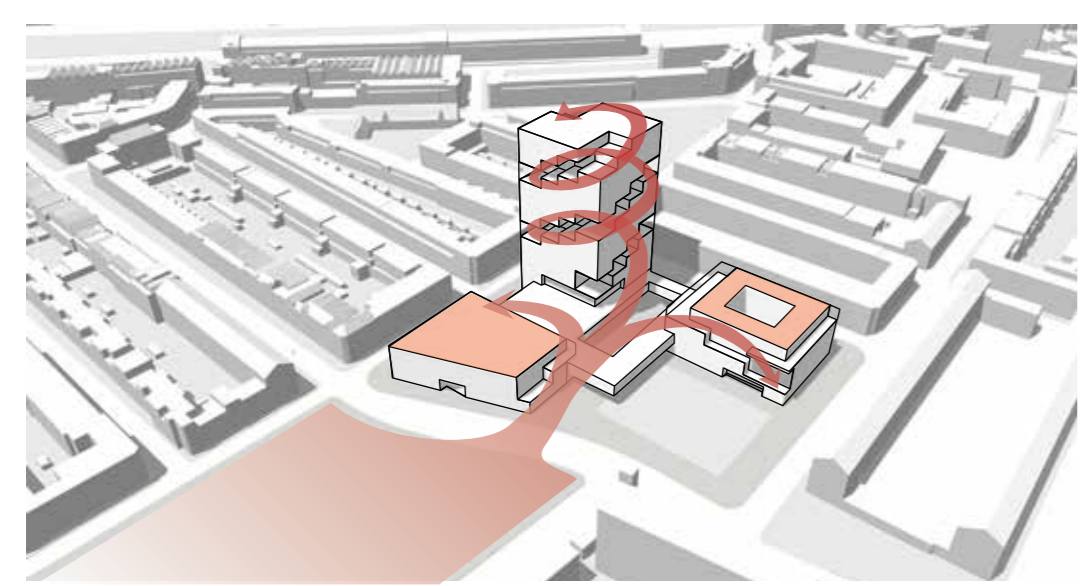
New volumns



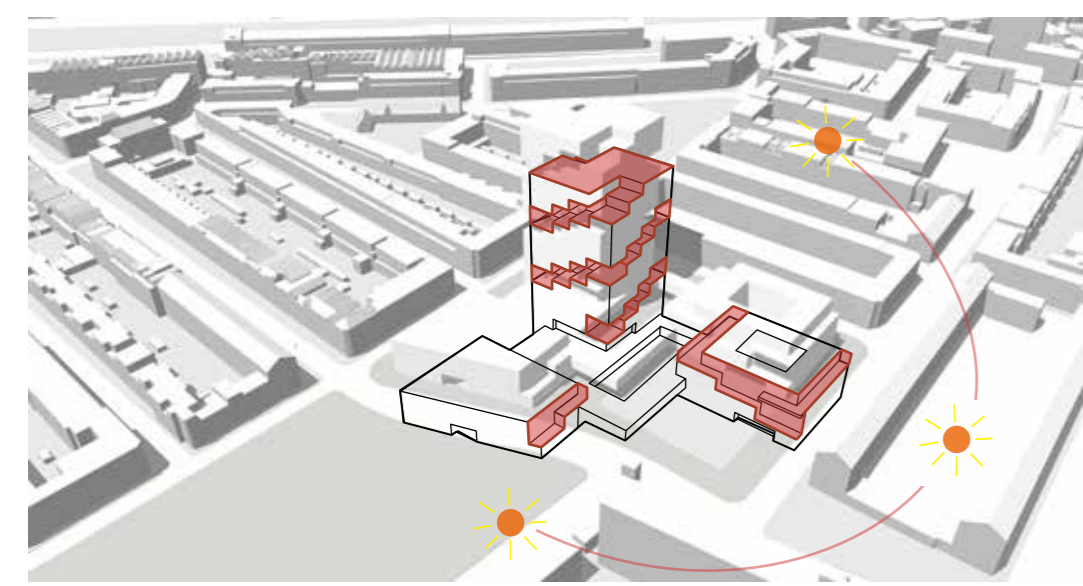
Entrance



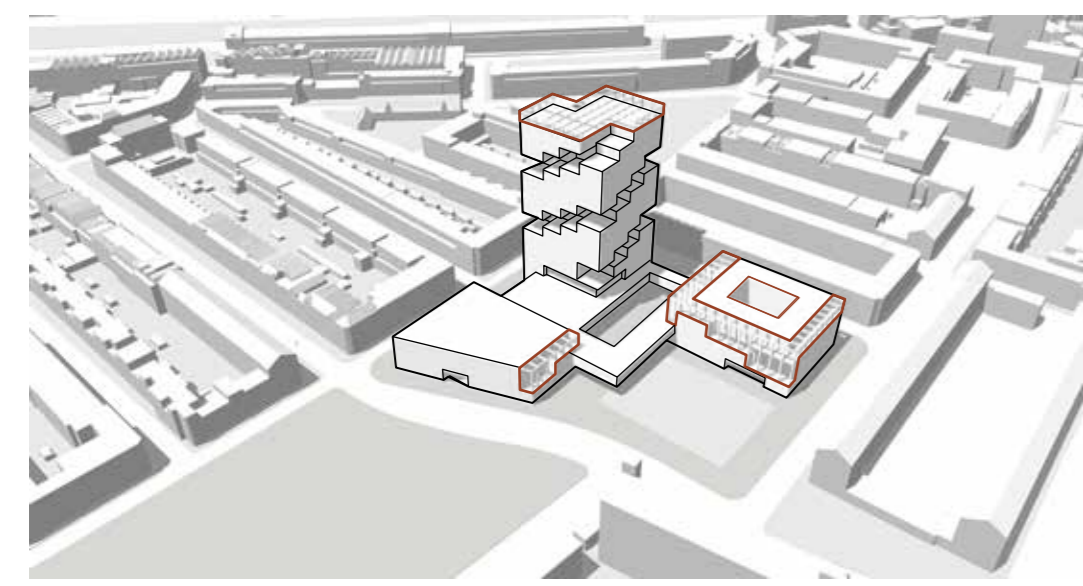
Courtyard with connecting program



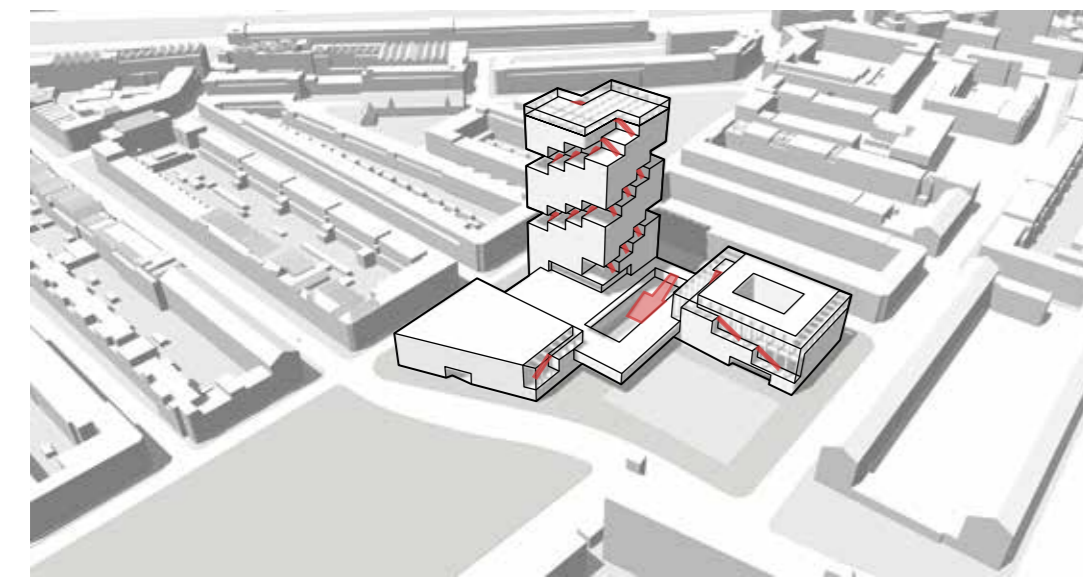
Concept of Sky park



Terracing

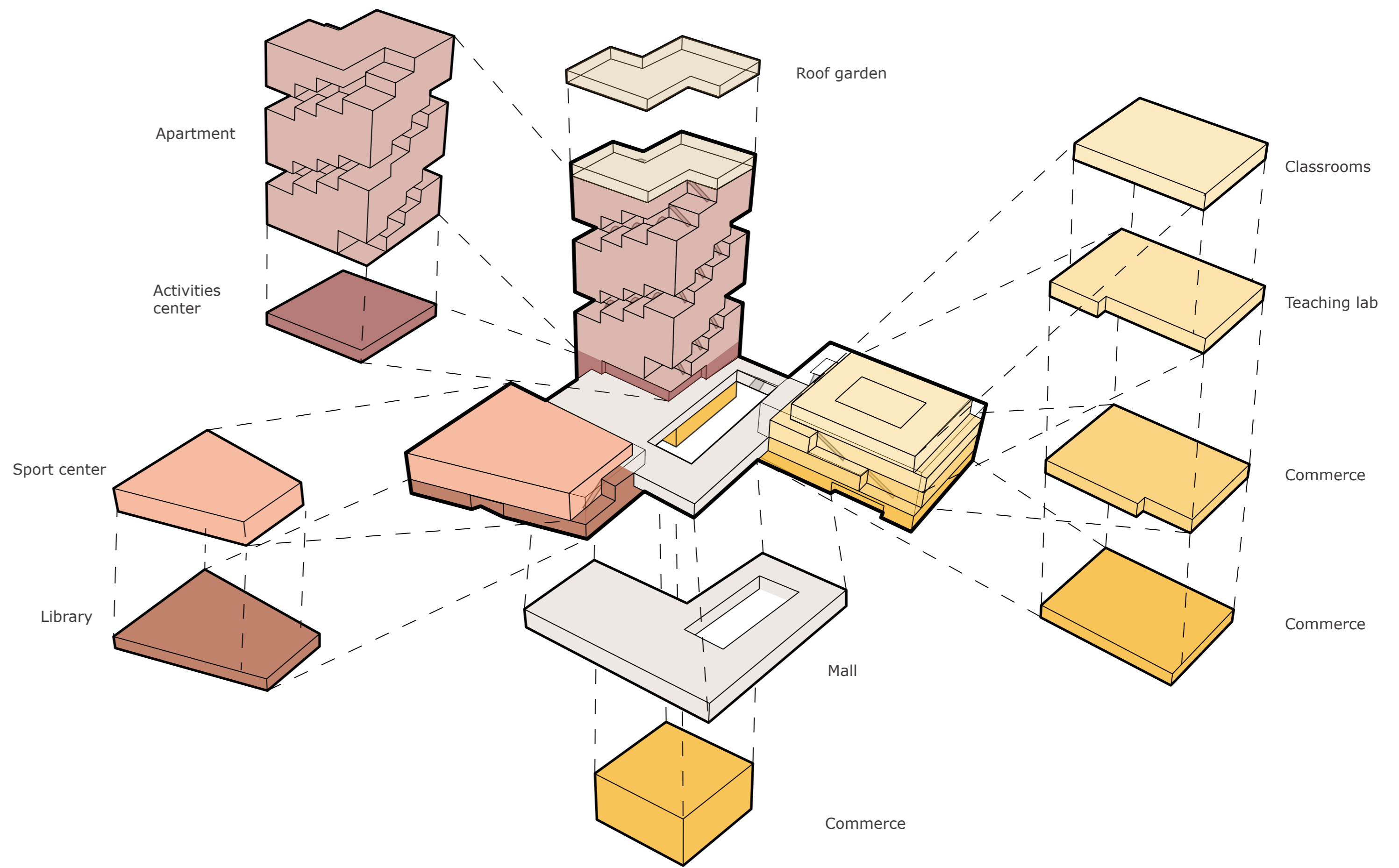


Canopy

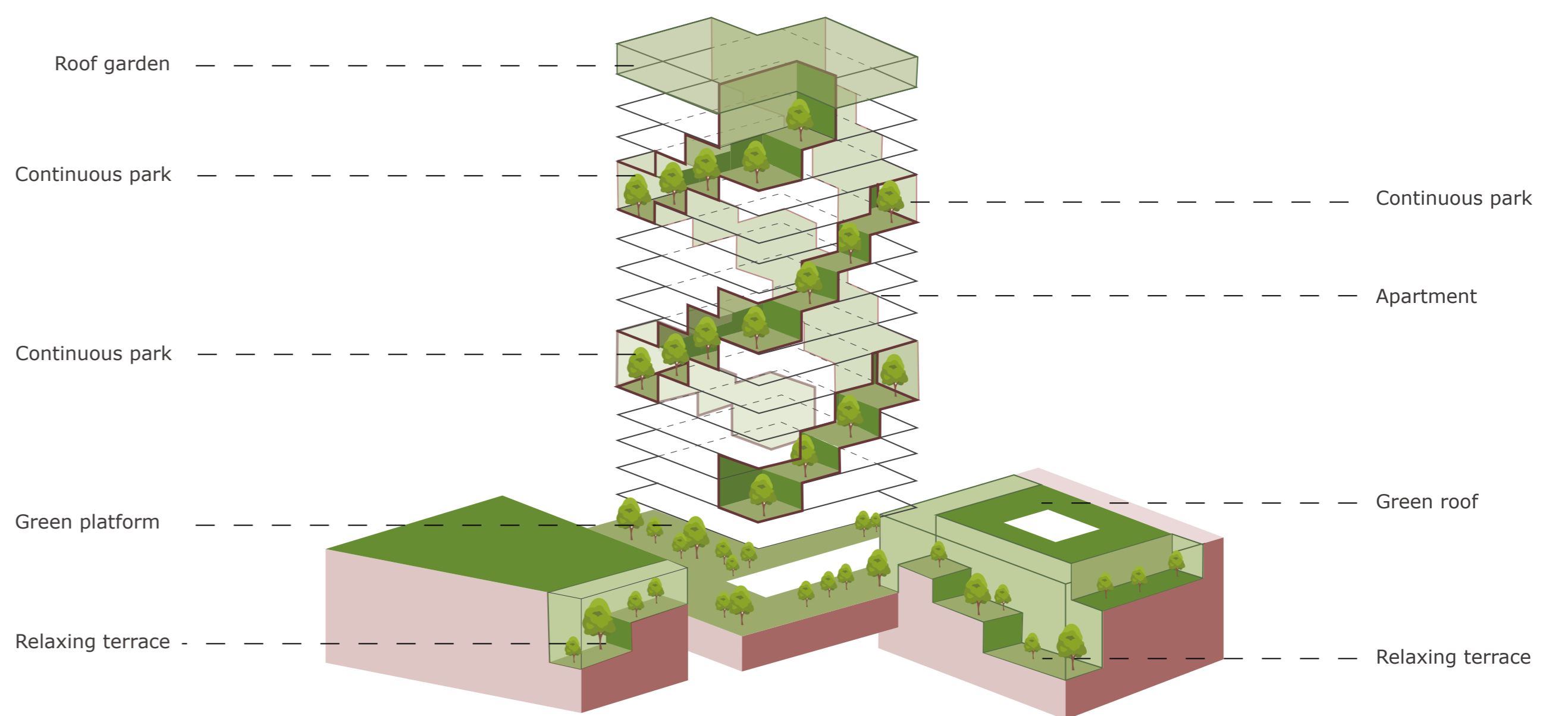


Vertical connections

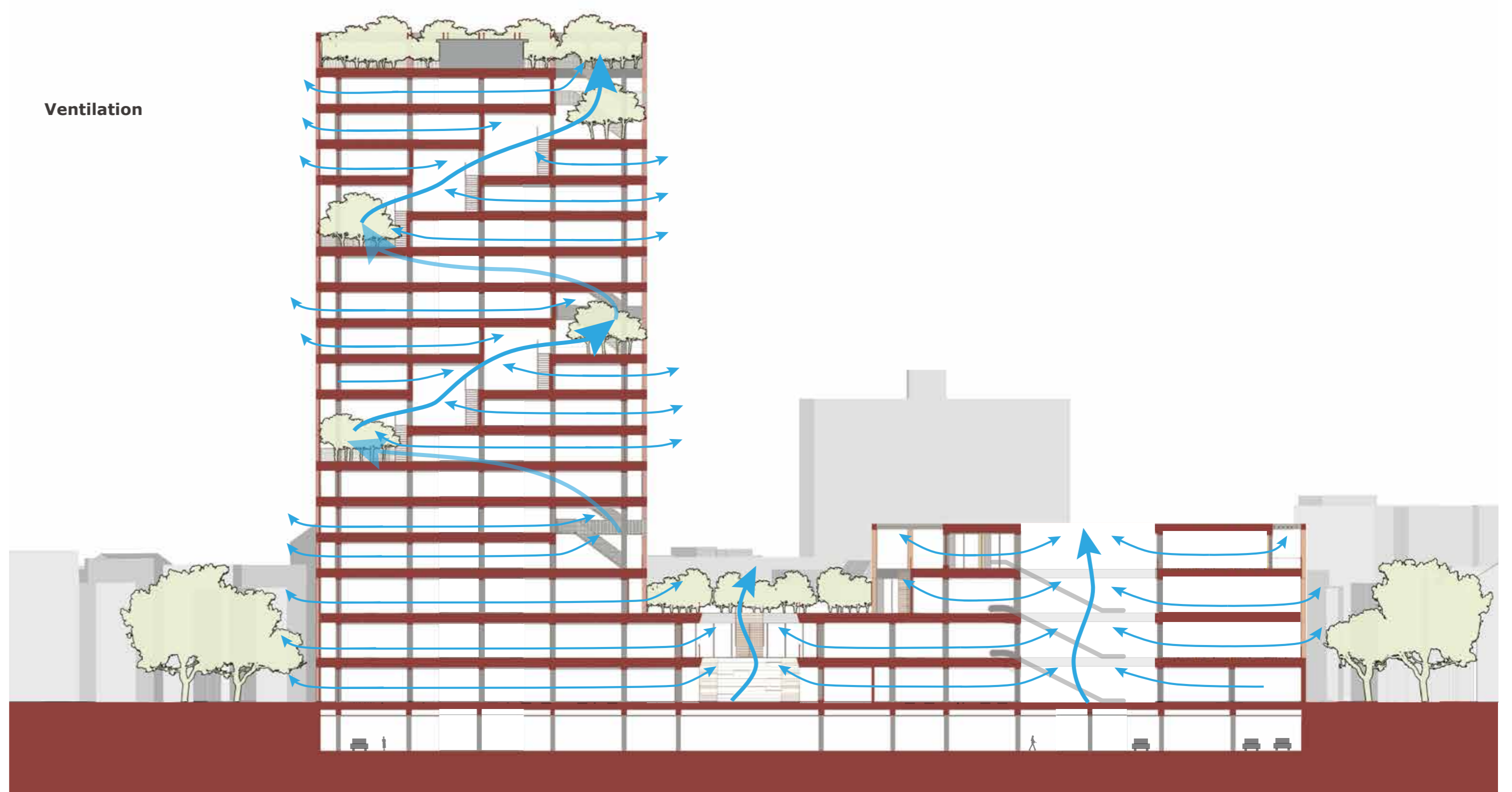
Functions



Vertical green system

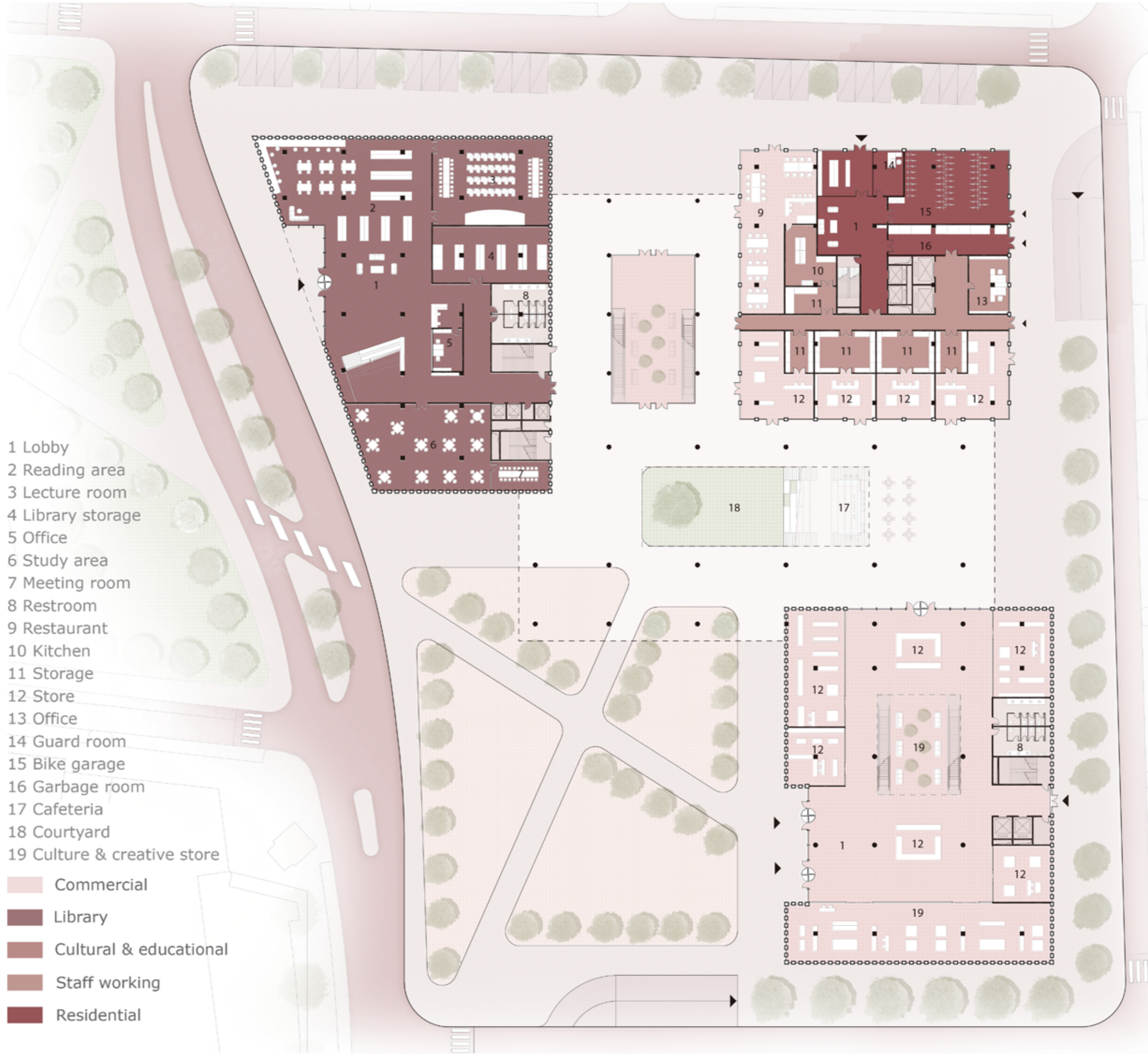


Ventilation





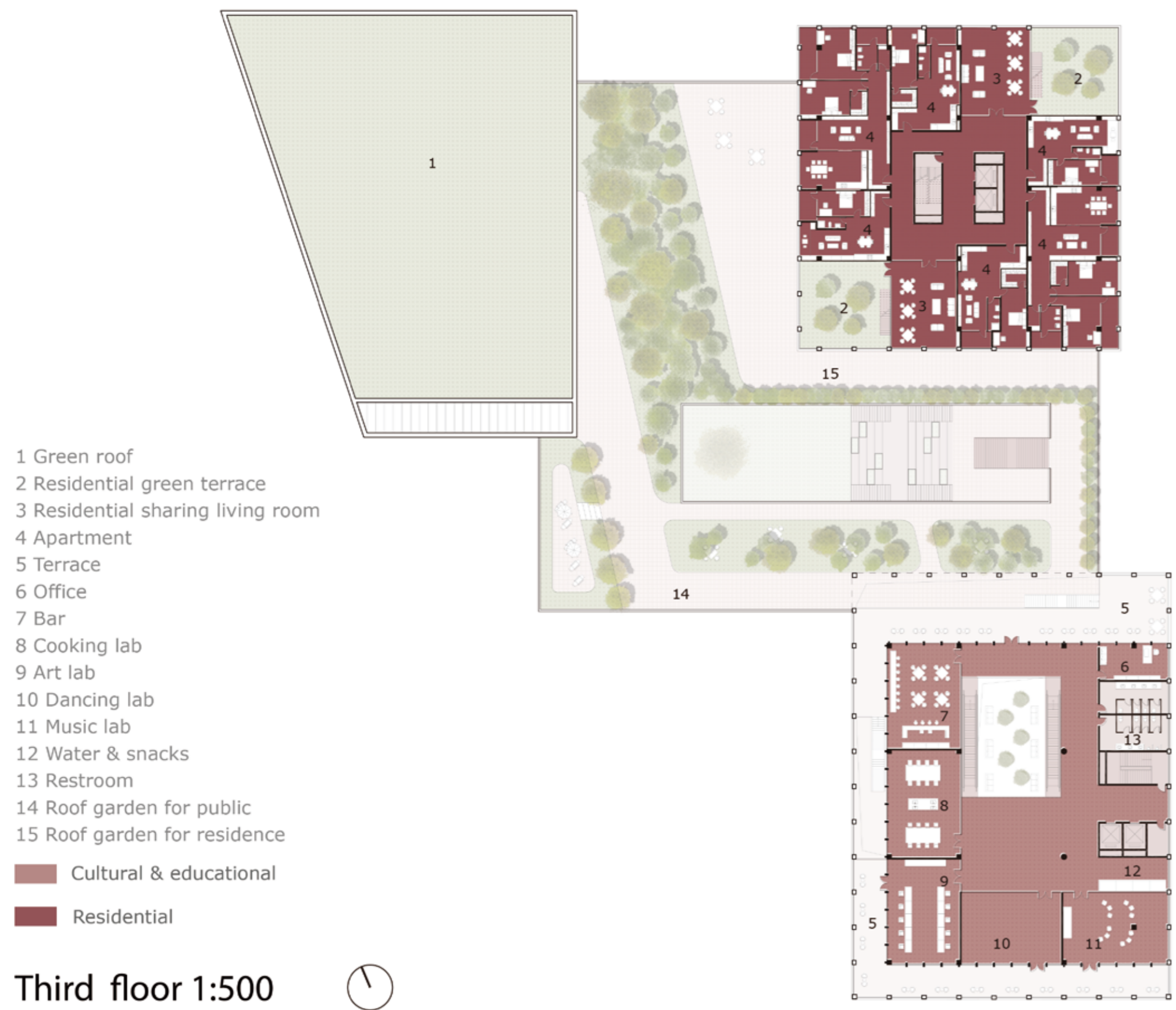
Underground floor 1:500



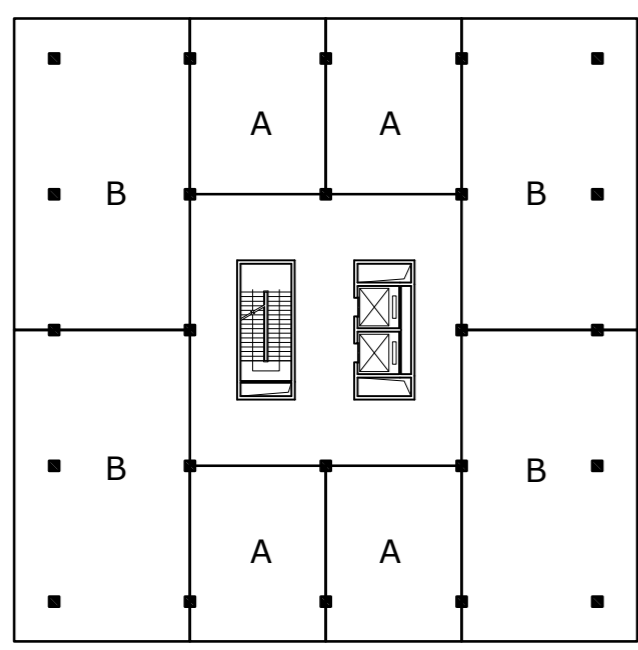
Ground floor 1:500



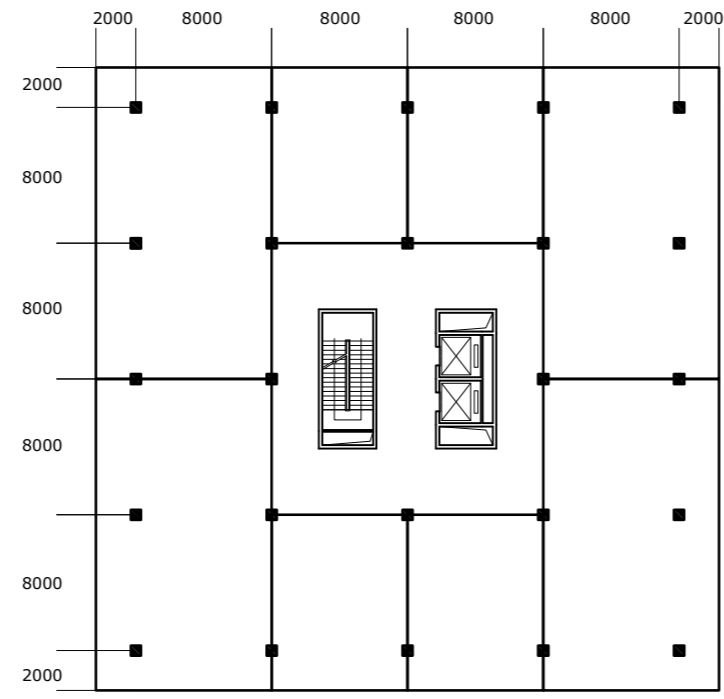
Courtyards view



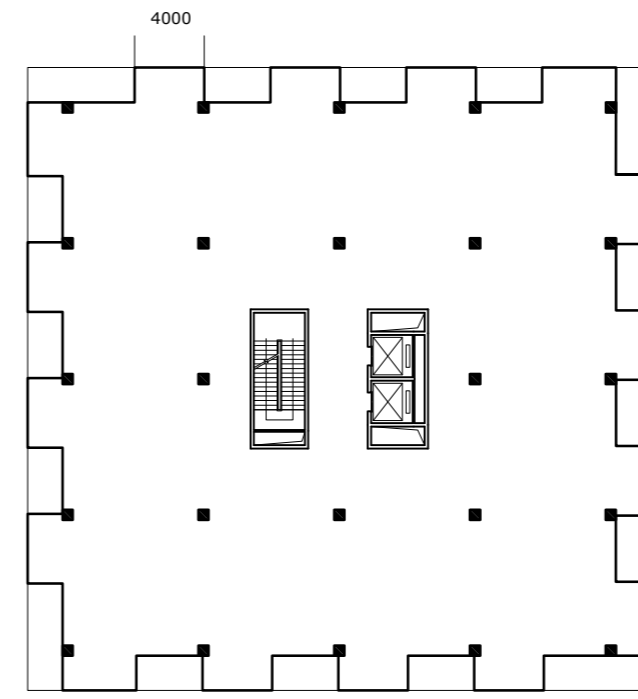
Apartment units type



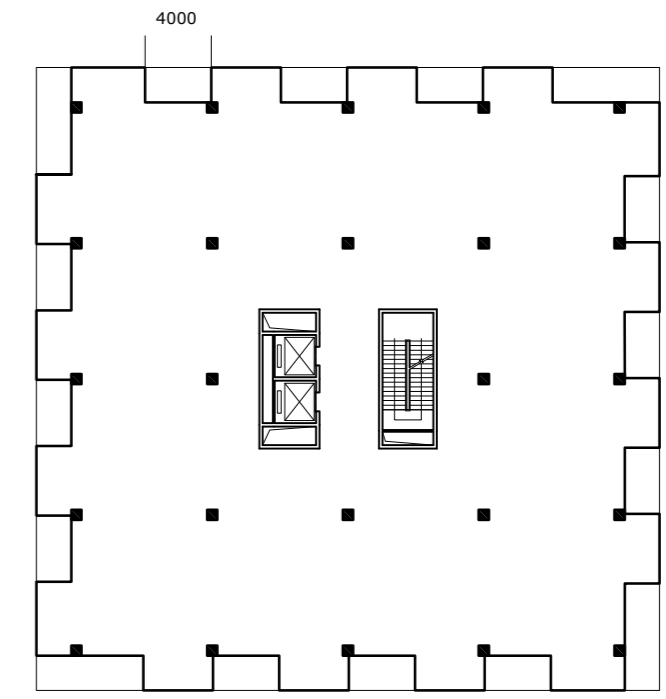
Type A : for single or couple
Type B : for family



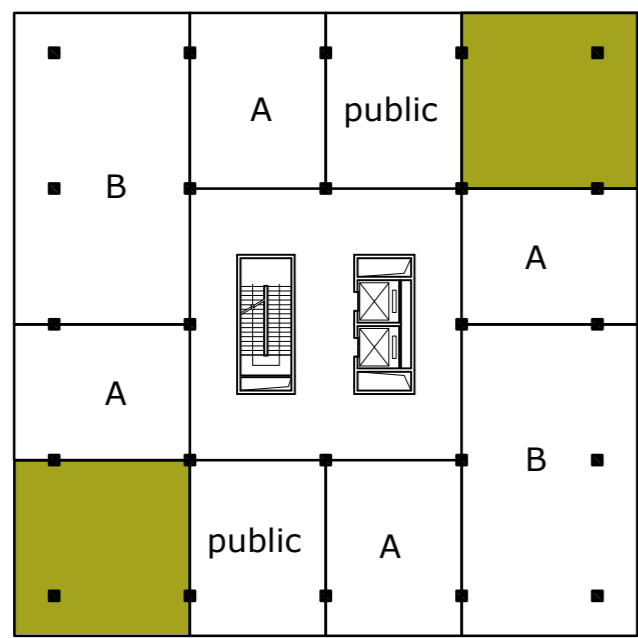
Column net (8*8m)



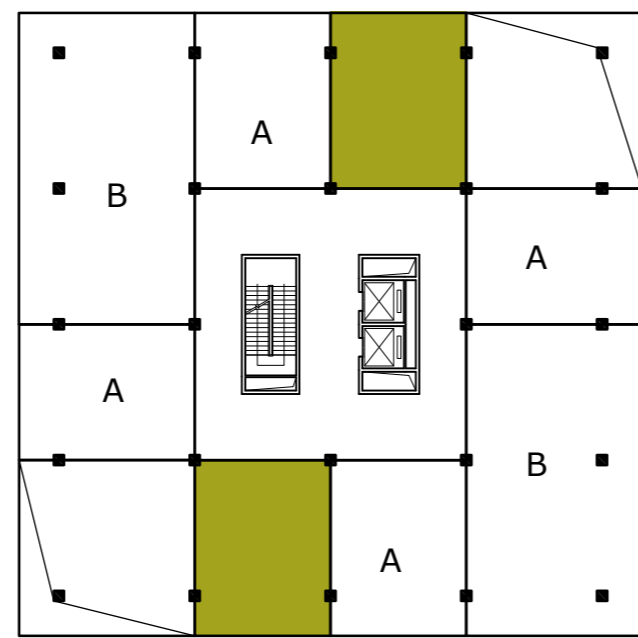
Facade design



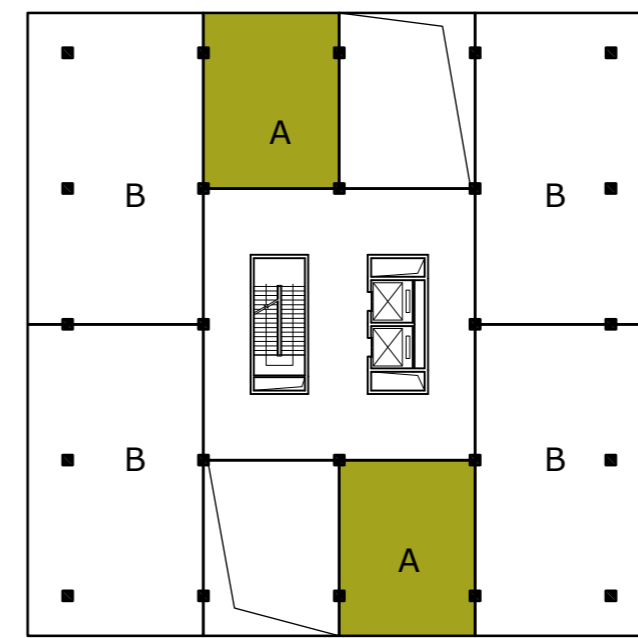
Facade design (balcony shifted)



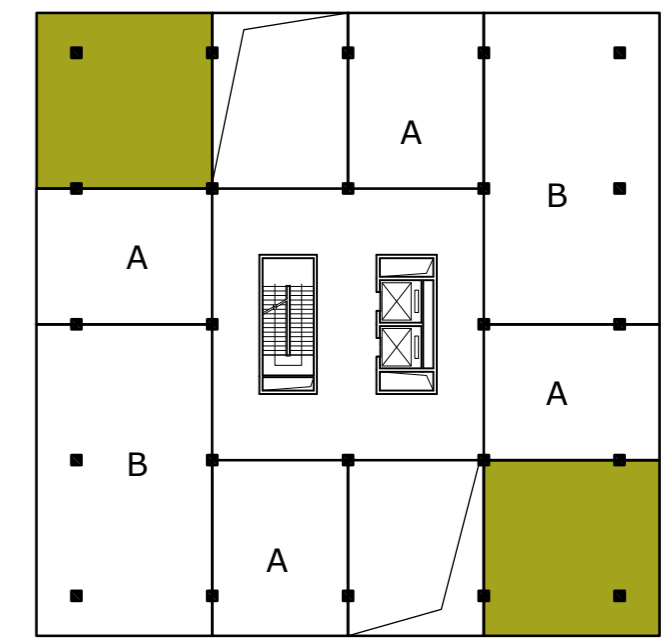
3rd floor



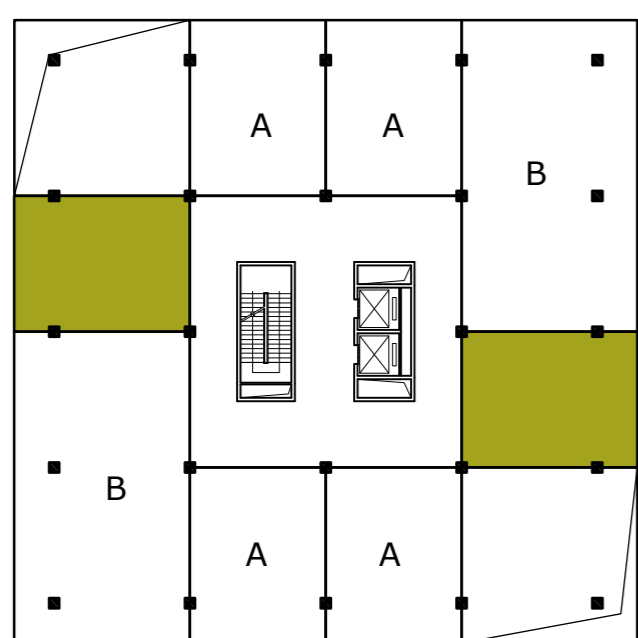
4th, 10th, 16th floor



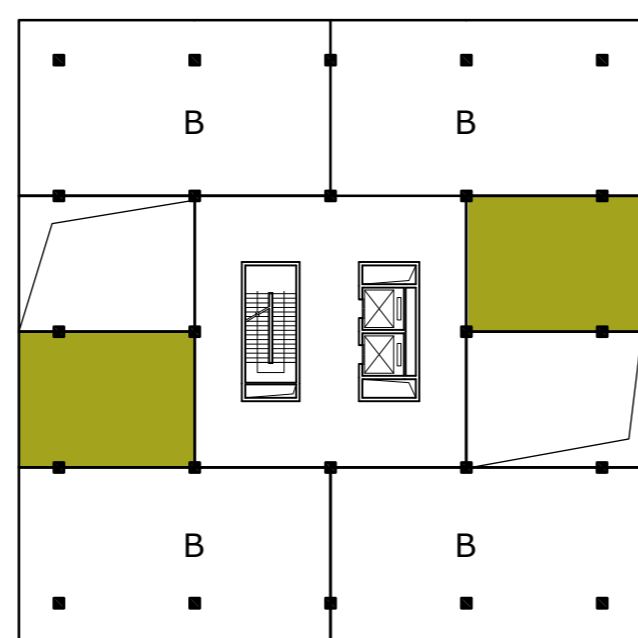
5th, 11th floor



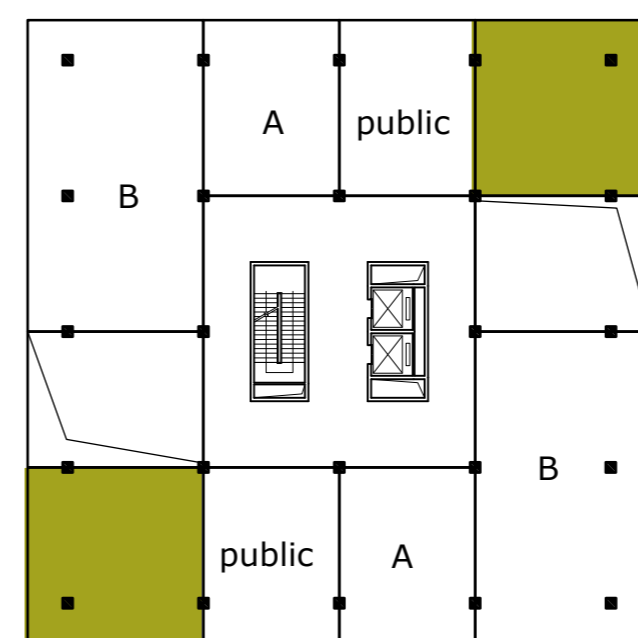
6th, 12th floor



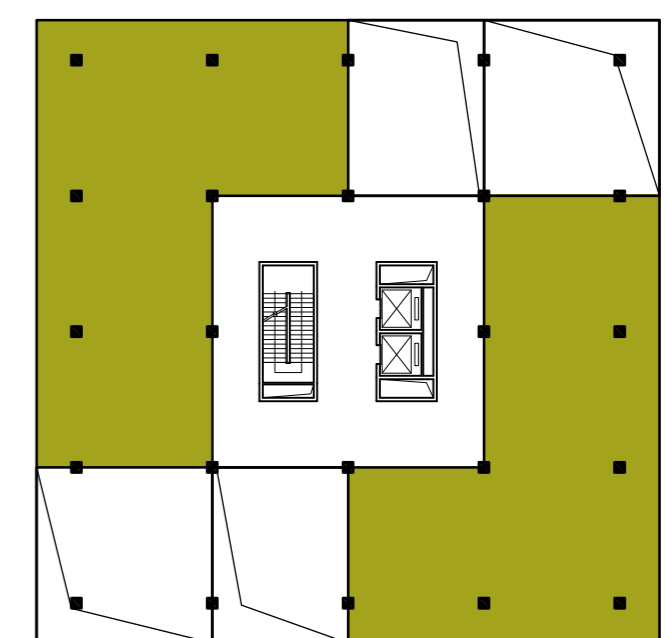
7th, 13th floor



8th, 14th floor



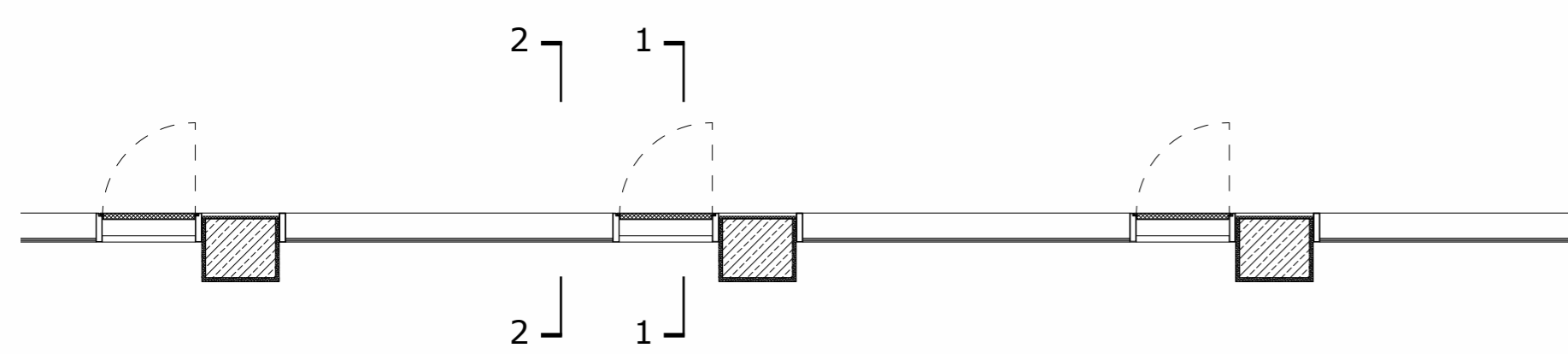
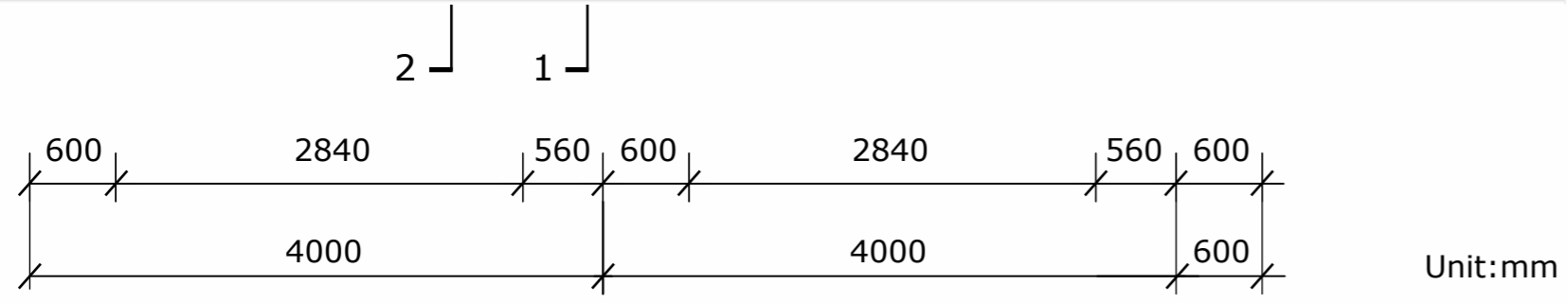
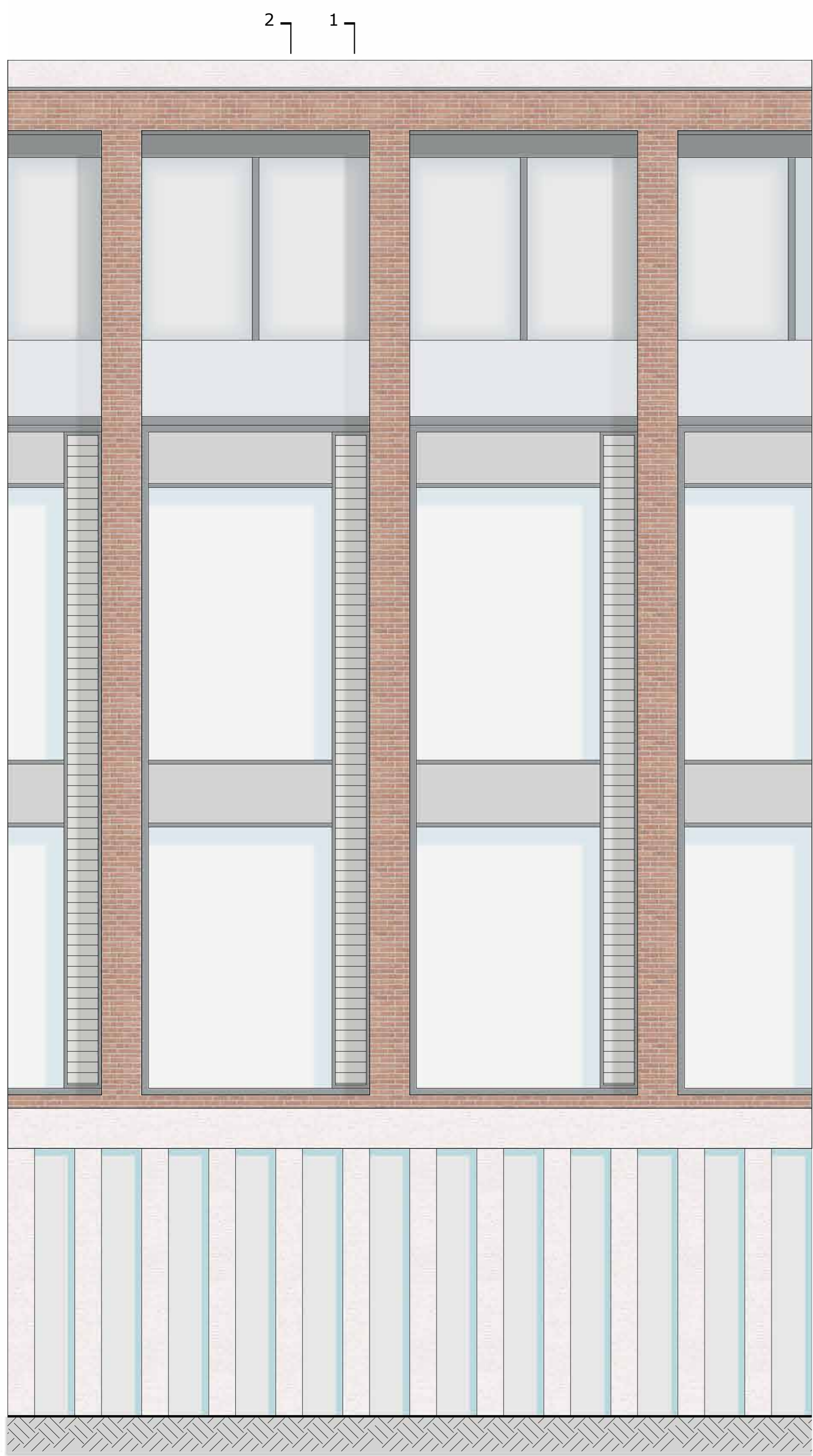
9th, 15th floor



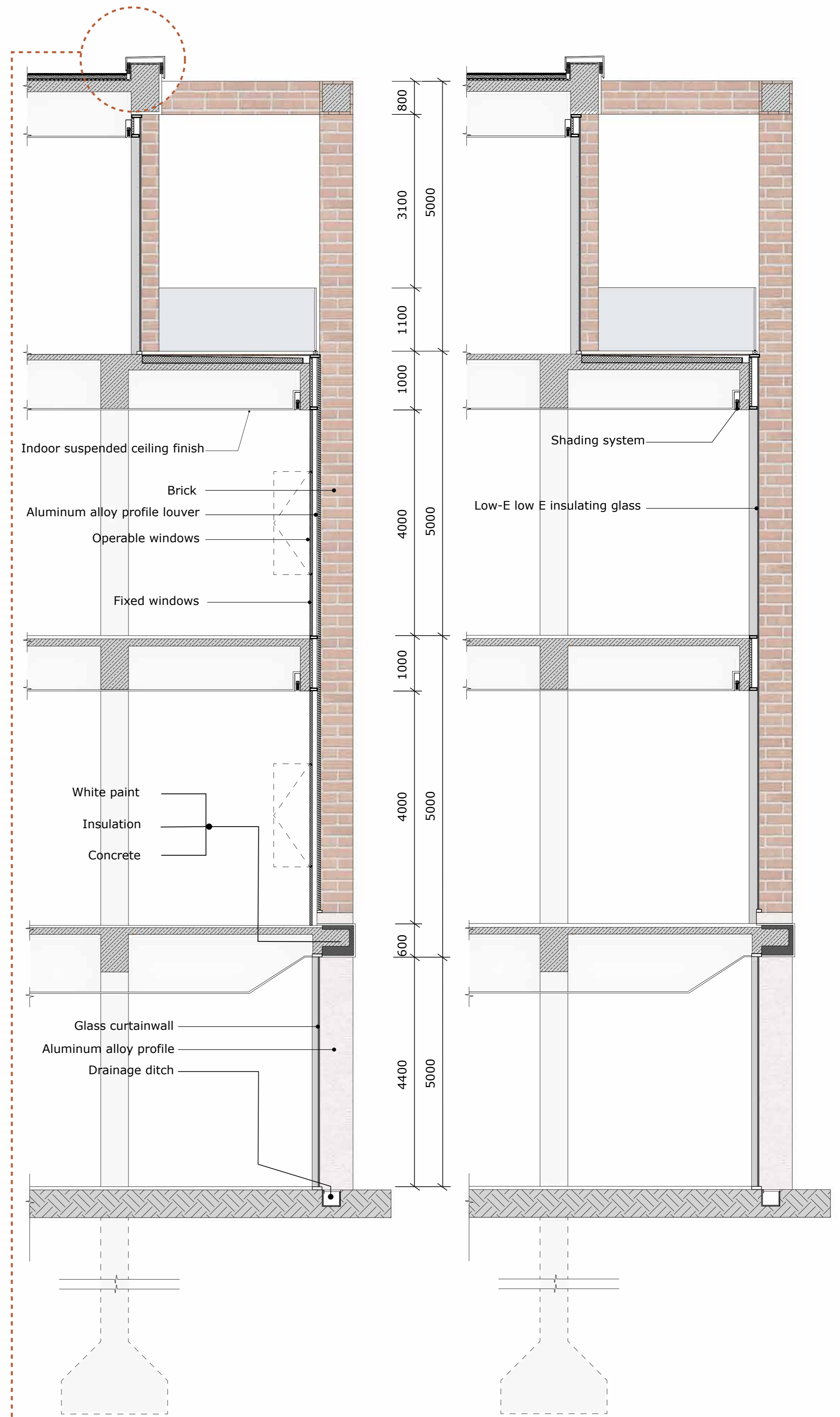
17th floor roof garden green terrace



Perspective section

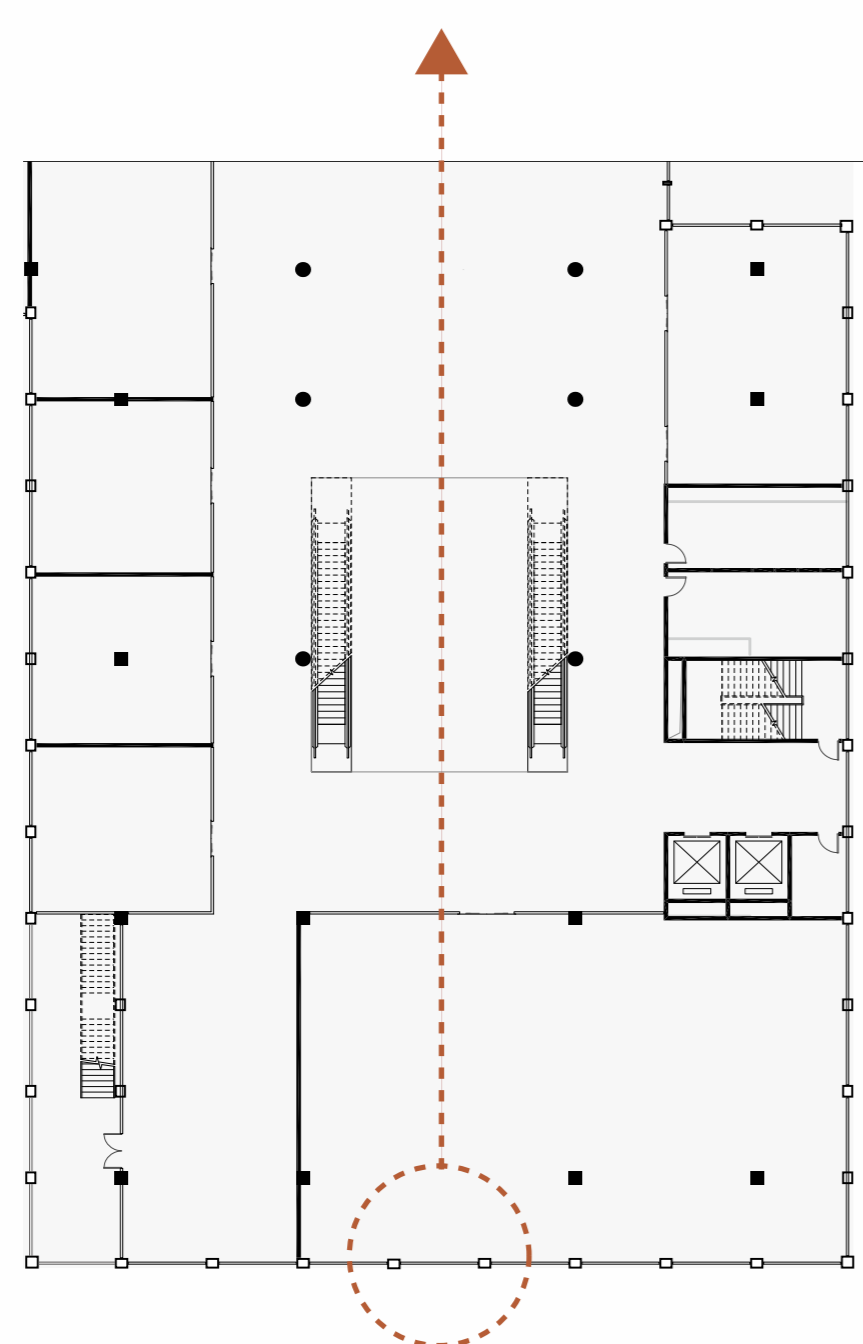


Facade Detail 1:50

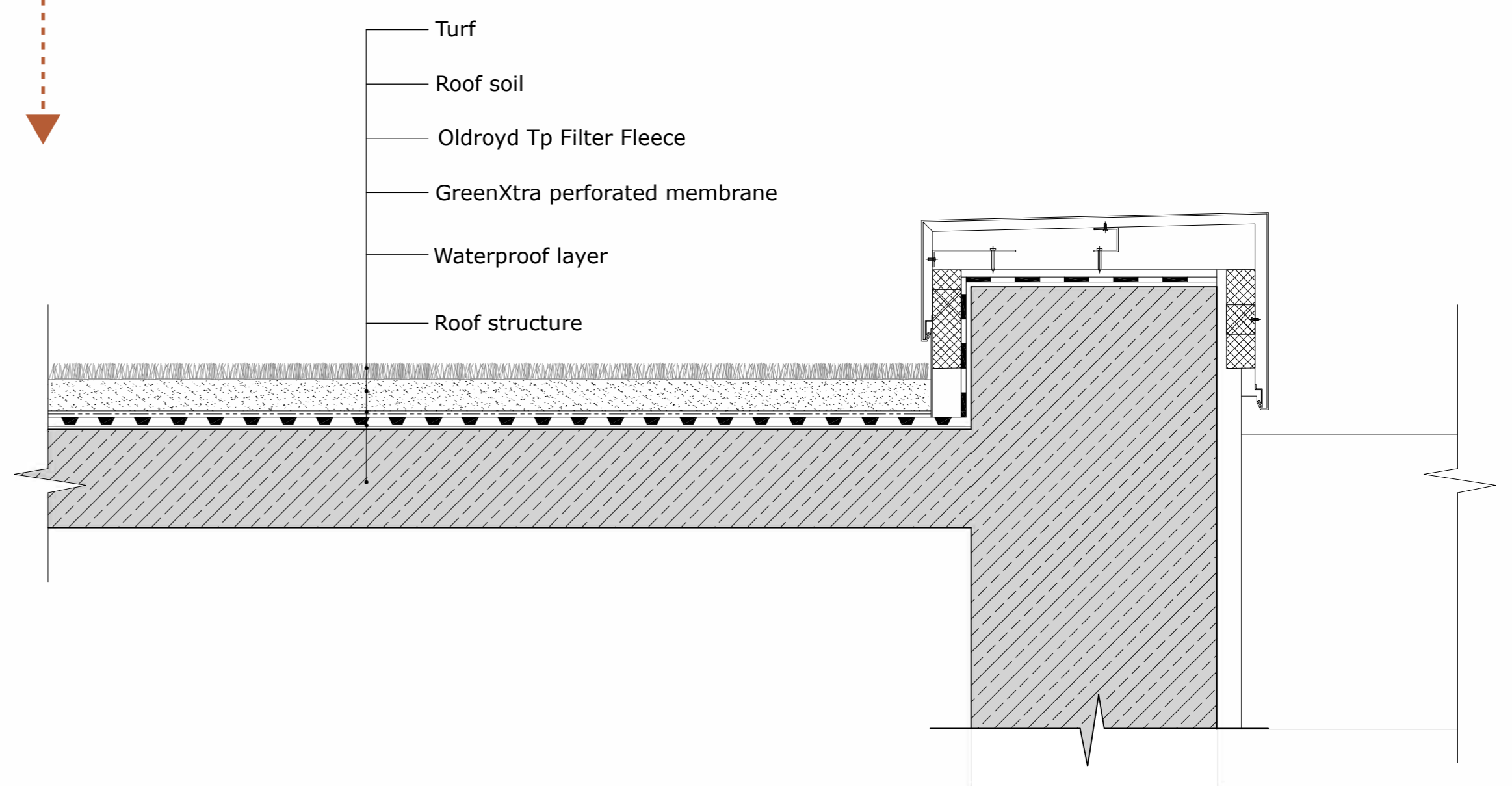


Section 2-2 1: 50

Section 2-2 1:50



Navigator



Turf roof Construction detail 1:5



View from 1943 park



South Elevation



View from market square



Section A-A



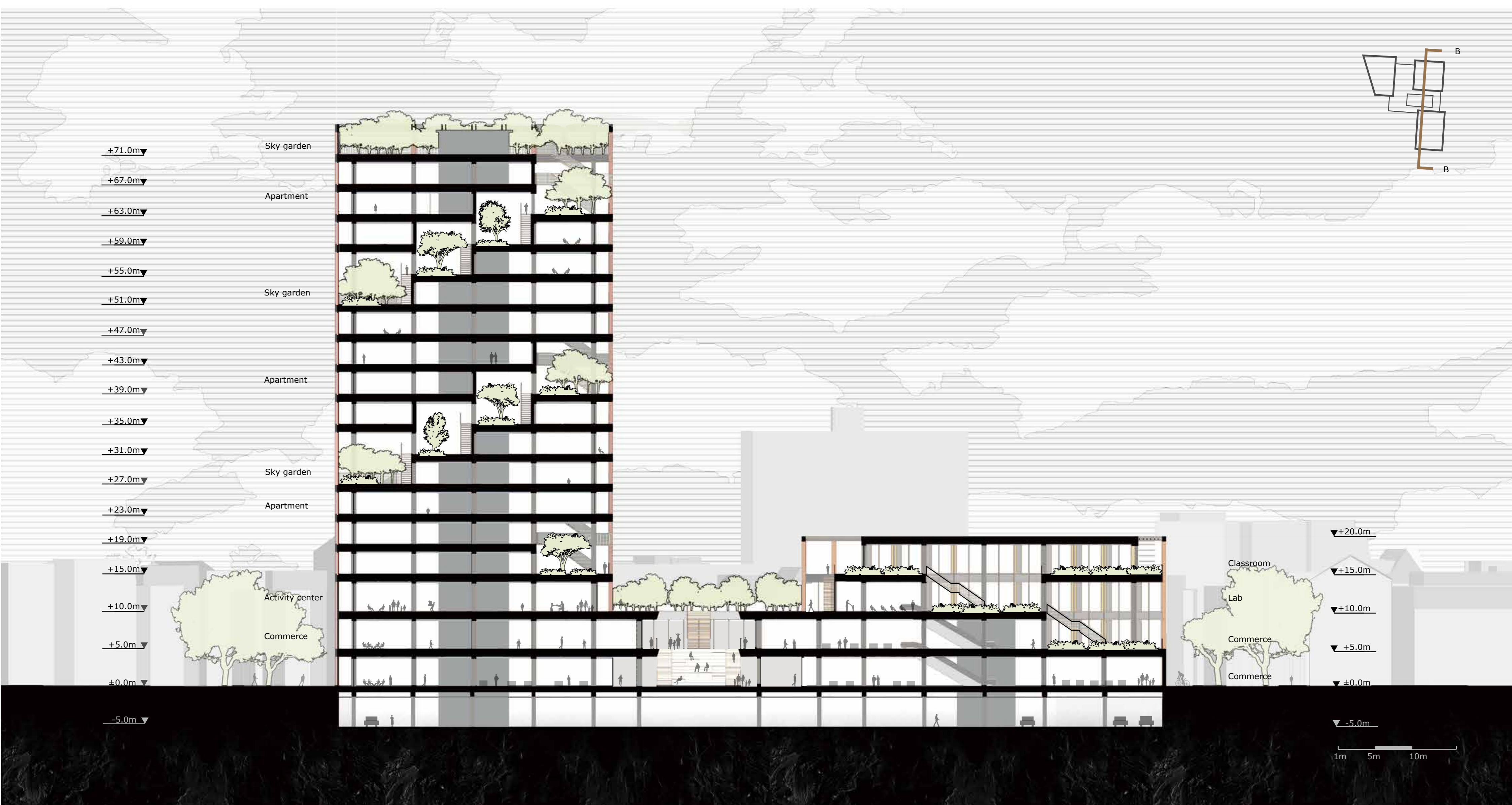
View to the courtyard



West Elevation



Top view



Section B-B