



In between panelák houses of

SÍDLIŠTĚ BOHNICE

a selected area as a model for the larger sídliště environment

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Master thesis
in Architecture and Urbanism

ARCHIP
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To my parents, my sisters, my dog, my best friend and my love — for everything!

To my mentor — Pavel Nasdil — for sparking the flame of love to architecture.

To my studio leaders — Yaroslav Wertig and Jakub Kopecký — for not letting lose this fire even on the rainiest days.

To my teachers — who became my friends.

And to my friends — who became my teachers.



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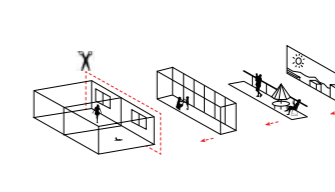
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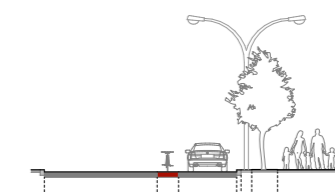
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INTRODUCTION

Issues in re-development and public spaces
in modernist housing estate
in Prague

The need to solve the housing problem, which had risen sharply, appeared in the first years after the Second World War, even before the Communist regime came. All European countries had to deal with such a problem. In contrast to the States of Western Europe, the countries of the Eastern block (which fell under Soviet influence) went the way of serial panel housing.

The largest Czechoslovak experiment, conceived by architects, urbanists, sociologists and even psychologists-the so-called large-scale construction of panel houses in the 70-80 years was held throughout the country. As a result, at the moment 10,677,540 people are living in the Czech Republic of which one third call their home modernist residential districts or "collective housing". In Prague, this number is almost half of all its 1,30,132 inhabitants. That's why I have chosen the topic "Issues in re-development and public spaces in modernist housing estates in Prague" that I will explore on the example of the Sídliště Bohnice in Prague. The settlement was created in 1972-1980 according to the designs of the architect Václav Havránek for 33,000 inhabitants in 9,567 apartments.



PURPOSES

How can solve problems of public spaces in those areas, such as misuse of public space, car-oriented infrastructures and make them more attractive to people and change the fact that in the daytime they are empty, and seemingly even dead?

In order to further answer these questions and change the state of the areas, first of all it is necessary to identify the main problems that cause the most discomfort and negatively affect the quality of life of the inhabitants of these areas.

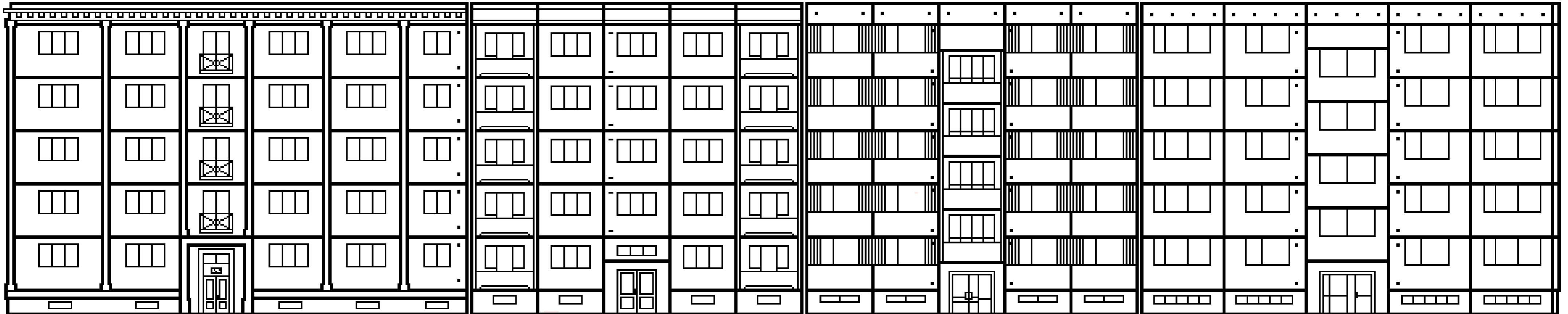
This thesis is aimed at finding, identifying and further studying important questions about and issues in the organization of public spaces and living environment, their future urban development in the context of the needs of the modern world and society, as well as their architectural qualities. The result will be a final list of the main problems of these areas, which will help in the future to come up with a proposal for possible solutions to these problems.

SIGNIFICANCE

The main reason for the study is to carry out the basic principles of possible approaches to a long-term strategy for the development of this neighbourhood.

The advantage of all panel neighborhoods is a large area allocated for public space. On the former vacant lots between the houses can be built sports facilities and children playgrounds, jogging tracks, there are also can be built green areas as a parks. In Prague's "sleeping" area Ladvi, among the huge blocks of multi-storey buildings, was built an outdoor swimming pool with a beach, which in the hot summer months helps many residents of the area to relax. In the Dablice district has created an artificial pond with flamingos - this project was awarded the UNESCO prize.

The service life of panel houses is much longer than it was assumed in the nineties of the last century - then high-rise buildings were given 25-30 years. But it turned out that if you follow the weaknesses of these houses – and those are the numerous connections of the panels - they are, according to some experts, durable. Panel houses have a future, and public spaces have potential. That's why we should focus on it more, because the views from the window, as well as the streets and courtyards, are no less important than the apartments in which people lives.





HISTORY

Bohnice is a district in the north of Prague, located in Prague 8, some 5 km north of city centre. extended from the small village at the end of the 19th century to becoming part of Prague with its communist complex by the 20th century.

The district is home to a large psychiatric hospital and a large panel housing estate in which all of the streets are named after cities or regions of Poland.

For many Czechs that place name has a metaphorical meaning of "madhouse". That is because between 1906 and 1911 when Bohnice was still a tiny village north of Prague, a large mental hospital was built there, with small houses scattered around a large English-style park, centred around an Art Nouveau church - all up to the standard of the time.

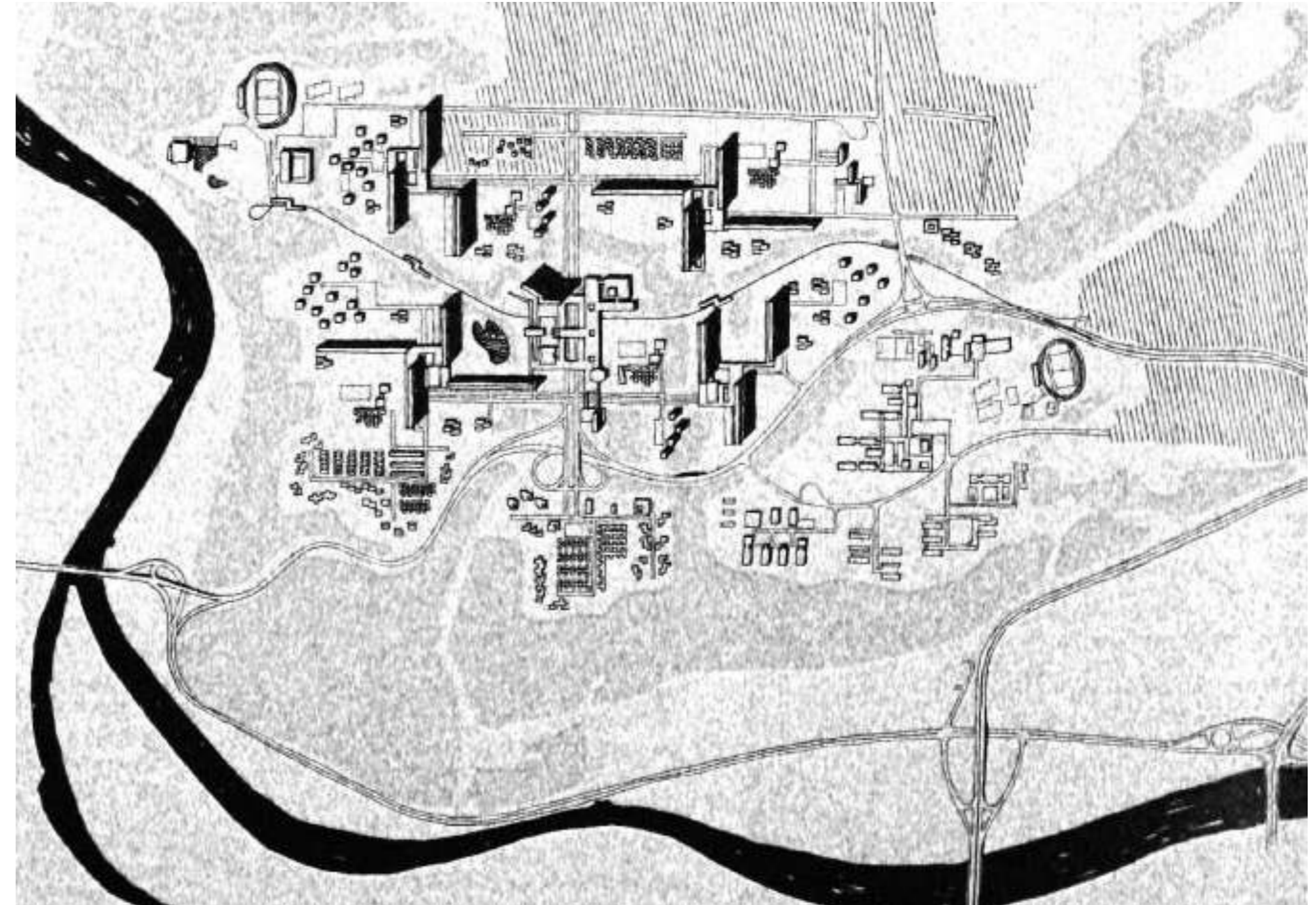


ORIGINAL DESIGN OF SÍDLIŠTĚ BOHNICE

The topic of typical buildings is often discussed by modern urbanists. At the moment the issue of marginalization and segregation of society, caused by depressive environment.

They do not imply a developed infrastructure, residents of such areas come only to sleep, and in the morning they leave in an attempt to get out, even at least to the mall. Most people associate themselves separately from their place of residence and practically do not know their neighbors. Areas lost the functionality of the communication space.

The reason often lies, for example, in the fact that the initial projects of the architects were not implemented during the construction. The authors in many cases offered very interesting urban and architectonic solutions (such as experiments with landscape architecture and a variety of architectural forms for both public structures and ordinary residential buildings), but due to the pressure of the construction lobby, as well as for political and financial reasons, the projects were significantly cut. Somewhere in the neighborhood did not build a center of household services, and this was saved more often and most of all, somewhere they refused non-standard solutions, preferring standard panels.



BY VÁCLAV HAVRÁNKA
1972



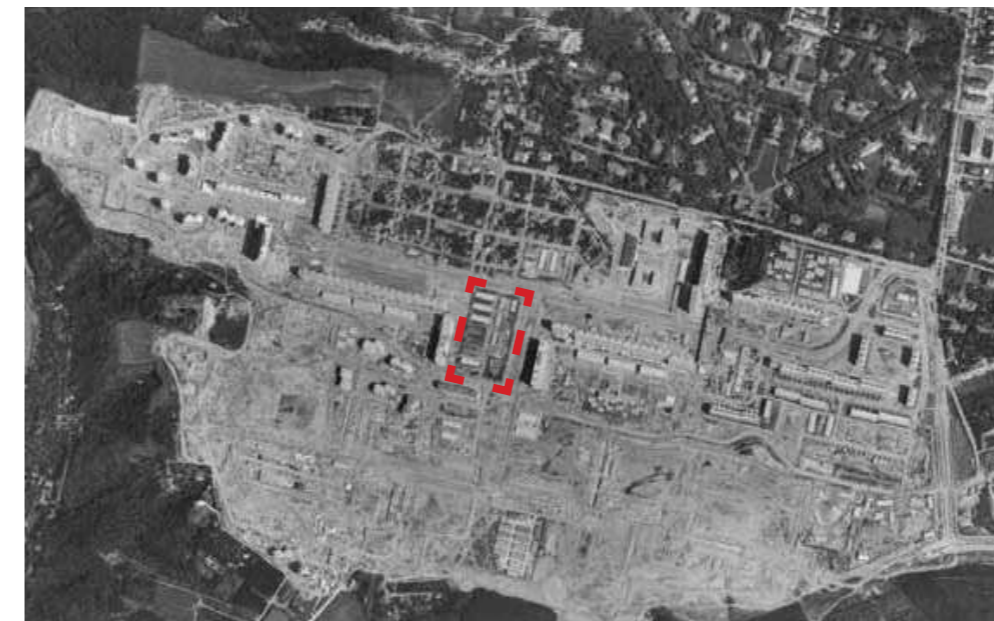
1977



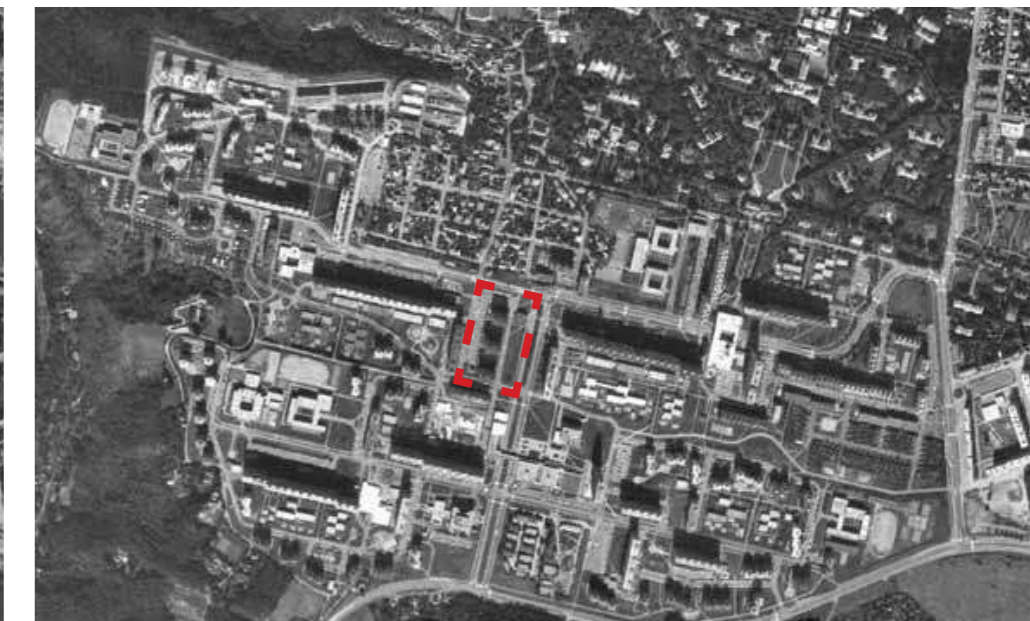
1938



1953



1975



1988

CURRENT STATE

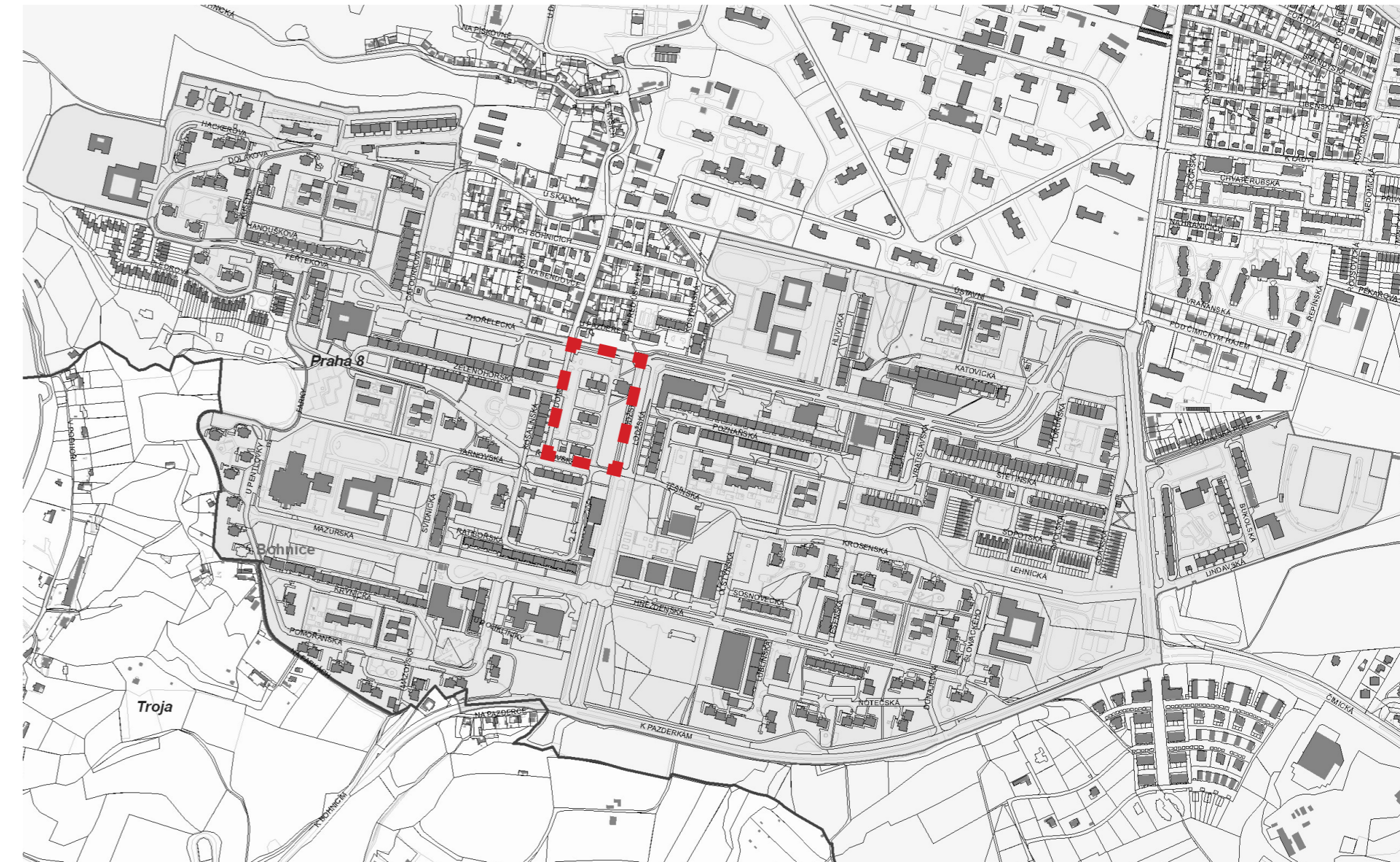
AREA
163,72 HA

The settlement was designed for approximately 30,000 residents, and about 10,000 apartments were built. Along with the estate Čimice, Kobylisy, Ďáblice and Prosek creates an almost continuous belt, which is sometimes called North Town.

Sídlíště Bohnice was built in honor of the Czech-Polish friendship, and therefore is a big part of the streets named after Polish cities (e.g. Dejvická, Žhořecká, Hnězdenská). Only rarely was the name used after Polish politicians (Rokossovsky), so the names were mostly unchanged after 1989.

The cultural center of the city is a Cultural house Krakow, where is located the branch of the city library and several concert halls where concerts of mainly folk music bands are happening. The second natural cultural nod is a psychiatric hospital, which adjoins the housing estate tightly. Next to hospital and near shopping complex Odra lies the Gymnasium, part of which is specialized in teaching Italian. There is also a three-storey shopping mall,

On the estate there is the longest panel house in the Czech Republic – a house in Zelenohorská street, which measures 300 meters and has 18 entrances. Series of high prefabricated buildings (street Poznaňská, Krynická, Feřteková etc.) visually create the illusion of some kind of modern-day “walls” on the outskirts of Prague from the point of view of the city centre.



ARRIAL VIEW

CITY
CONTEXT

PHOTOS BY
MICHAL SVÁČEK, MAFRA
2015

For the architect Vaclav Havránek, who is a residential complex in 60 years of planning, there could not be a better place: an almost unpopulated, flat piece of land above Prague could be formed the way he wanted.

Unfortunately, this means that there is almost nothing left of the historic field roads and gardens. The lines of the original highways do not correspond to the two main new streets. Forming a bird's-eye view of the letter T, the largest local intersection from an urban point of view does not make any logical sense.



INCREDIBLY CLOSE

The Bohnice housing estate for 30 thousand people is well thought out, although its giant dimensions can frighten many



PSYCHIATRIC HOSPITAL BOHNICE

The shady garden is a paradise for runners and moms with strollers



THE CHURCH OF ST. WENCESLAS

by Václav Roštlapil from 1914 is a gem of Art Nouveau architecture



HUDDLED IN THE VALLEY

The old Bohnice houses line the road leading to the Church of St. Peter and Paul



GREENARY AROUND

Absolutely any house here is located at 10 minutes walk distance from the park or forest

MORPHOLOGY

DIVERSITY OR SEGREGATION?

From the schwartzplan of the site surrounding the diversity of build form is visible and due to its historical development it is very segregated. This comes as one of the challenges of the project as well as problem to solve. Redevelopment should consider changes in build environment and reflect its scale and character in the design for better integration in the context.

Recommended approach to the site is outside - in thinking: starting from the understanding of each typology separately and reflecting upon it, then creating new roads as continuation to old one, which in a way will "stitch" it together.



PHOTOS BY
MICHAL SVÁČEK, MAFRA



SCHWARTZPLAN
<http://app.iprpraha.cz/apl/app/atlas-praha-5000/>

INTRODUCTION OF THE SITE

The project site is located in the North part of Sídliště Bohnice - already on a border with Old Bohnice.

The plot length is around 200 meters between Lodžská and Radomská streets, the width is around 130 meters between Zhořelecká street/Old Bohnice and Řešovská street.

The plot area is 27,870 square meters.

Every building has 72 apartment units. In total is 216 apartments on the site.







BUILDINGS ON THE SITE:
VVÚ ETA

1971 – 1992
DESIGNED BY
VÝZKUMNÝ A VÝVOJOVÝ ÚSTAV STAVEBNÍCH ZÁVODŮ PRAHA

“An example of the rigidity of the system may be the implementation of the VVÚ ETA system into practice. This system was tested in 1974 as a large-scale “open element system”, designed for construction in particular in Prague. “Open” here meant that the basic assortment of elements, according to the requirements, will be gradually replenished with new ones. On the one hand, therefore, the cost requirements, on the other hand, however, limits to technical progress and modernization of the production base – here you already see the problem of that “openness” limited innovative potential and mainly economic potential of the socialist state. Although the system was supposed to provide 70% of the volume of Prague construction since 1974, no innovations of the panellar plants that produced the elements were envisaged until 1978. Also, the future transfer to the combination of 6m and 3m module caused problems.

Guide for designers working with the system VVÚ ETA reflects this quandary: “the Designer is therefore referred to the possibility of using a few standardized sections. However, this, on the other hand, does not mean that he is not constrained by anything in his creative activity. It is still necessary to take into account the possibilities of the production base. It is assumed that for a certain period of time, the frequency and generality of the elements and the main downstream structures will remain in principle unchanged.”

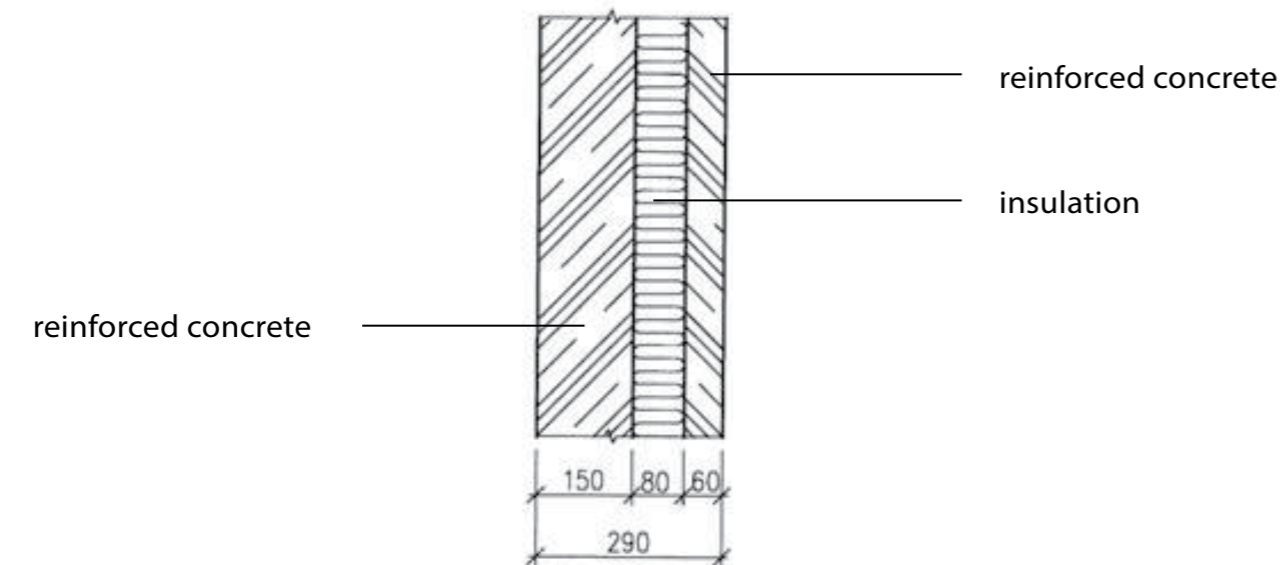
TEXT FROM
<http://panelovedomy.ekowatt.cz>

BUILDINGS ON THE SITE:
VVÚ ETA

“This type of panel house was named after its developer factory Research and Development Institute of Construction Plants Prague (Výzkumný a vývojový ústav Stavebních závodů Praha). Its basis is a transverse wall system with a breakdown of 3000 or 6000 mm walls.

In Prague were used reinforced concrete laminated, shielded, facade of all-wall or parapet panels with Inter-window liners. Facade panels of the above-ground floors tl. 240 mm (after revision in 1979 - 100 mm reinforced concrete + 80 mm polystyrene + 60 mm reinforced concrete, before revision 100 mm reinforced concrete + 40 mm polystyrene + 50 mm reinforced concrete). Gable panels of the above-ground floors tl. 290 mm (after revision in 1979 - 150 + 80 + 60 mm, before revision 150 + 40 + 50 mm).

The composite height of the floors is 2800 mm. Ceiling panels are unpretentious, relieved by cavities and have a thickness of 190 mm. There are also pre-tightened ceiling panels. The perimeter shell is made up of parapet panels and Inter-window inserts, or of perimeter all-wall panels with windows. Loggia panels are only available as sandwiches. As a rule, the staircases are single-arm, but they can also be two-arm with an intermediate path.”

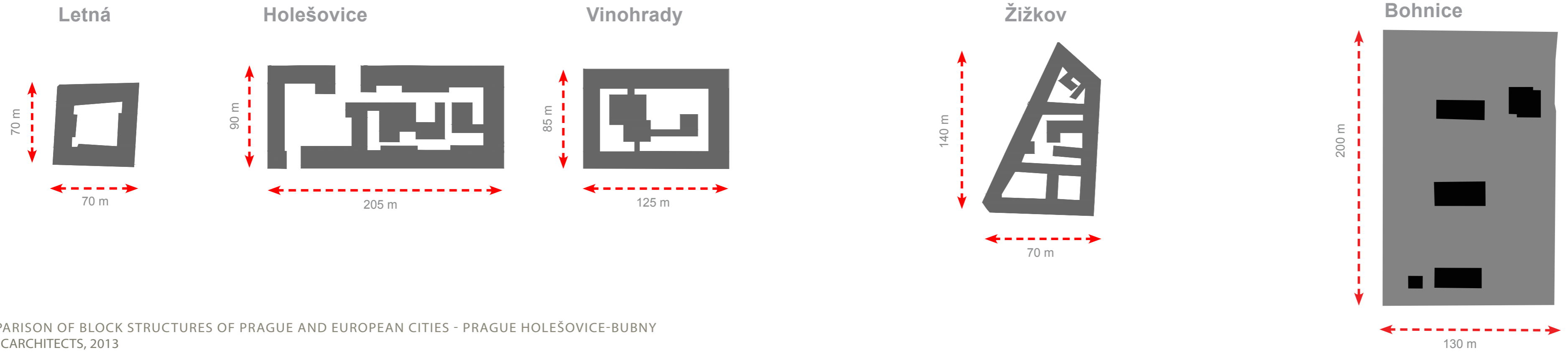


WALL SECTION AND TEXT FROM
<http://panelovedomy.ekowatt.cz>



VVÚ ETA TYPICAL FLOOR PLAN
<https://www.estav.cz>

SCALE COMPARISON

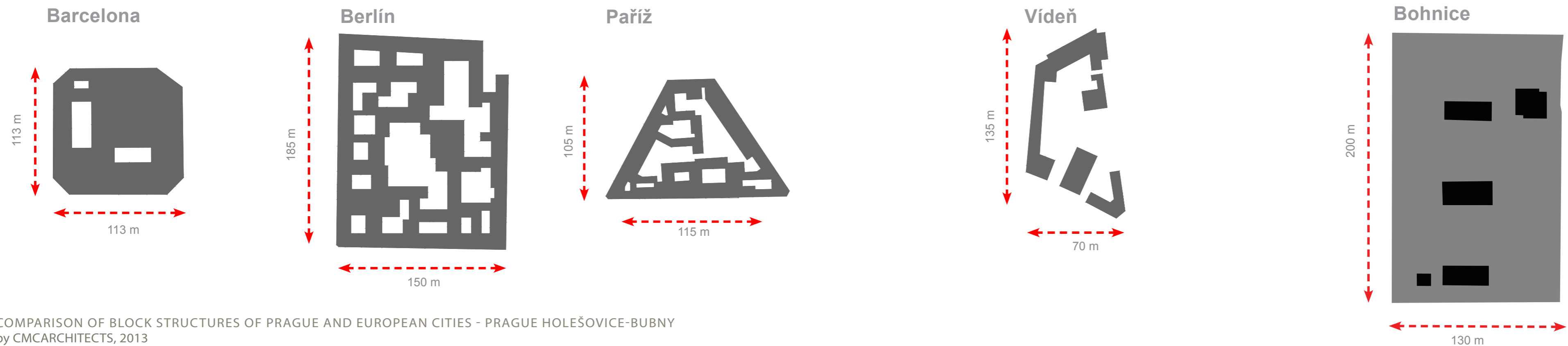


COMPARISON OF BLOCK STRUCTURES OF PRAGUE AND EUROPEAN CITIES - PRAGUE HOLEŠOVICE-BUBNY
by CMCARCHITECTS, 2013

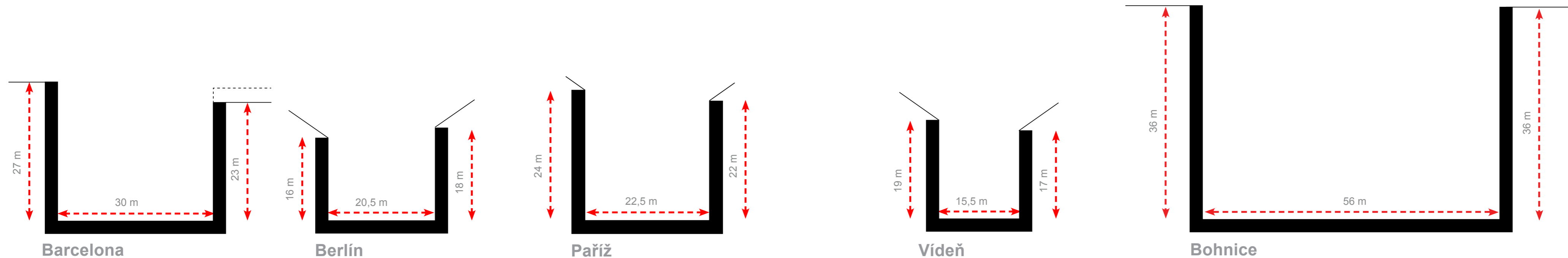


COMPARISON OF STREET PROFILES OF PRAGUE AND EUROPEAN CITIES -PRAGUE HOLEŠOVICE-BUBNY
by CMCARCHITECTS, 2013

SCALE COMPARISON



COMPARISON OF BLOCK STRUCTURES OF PRAGUE AND EUROPEAN CITIES - PRAGUE HOLEŠOVICE-BUBNY by CMCARCHITECTS, 2013

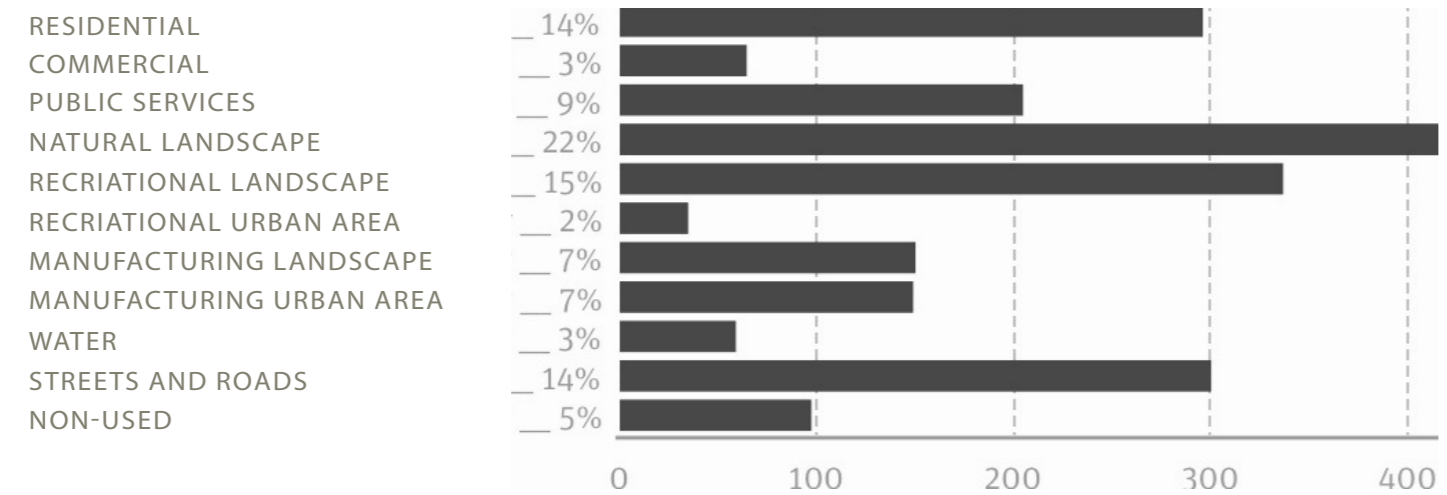


COMPARISON OF STREET PROFILES OF PRAGUE AND EUROPEAN CITIES -PRAGUE HOLEŠOVICE-BUBNY by CMCARCHITECTS, 2013

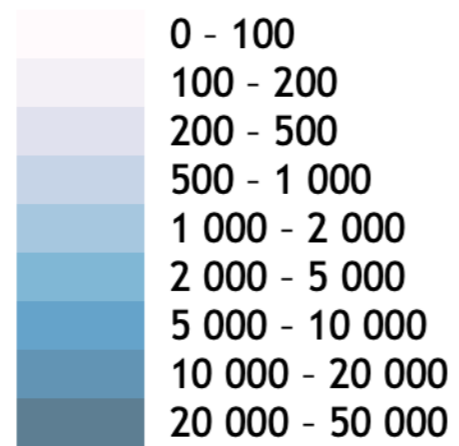
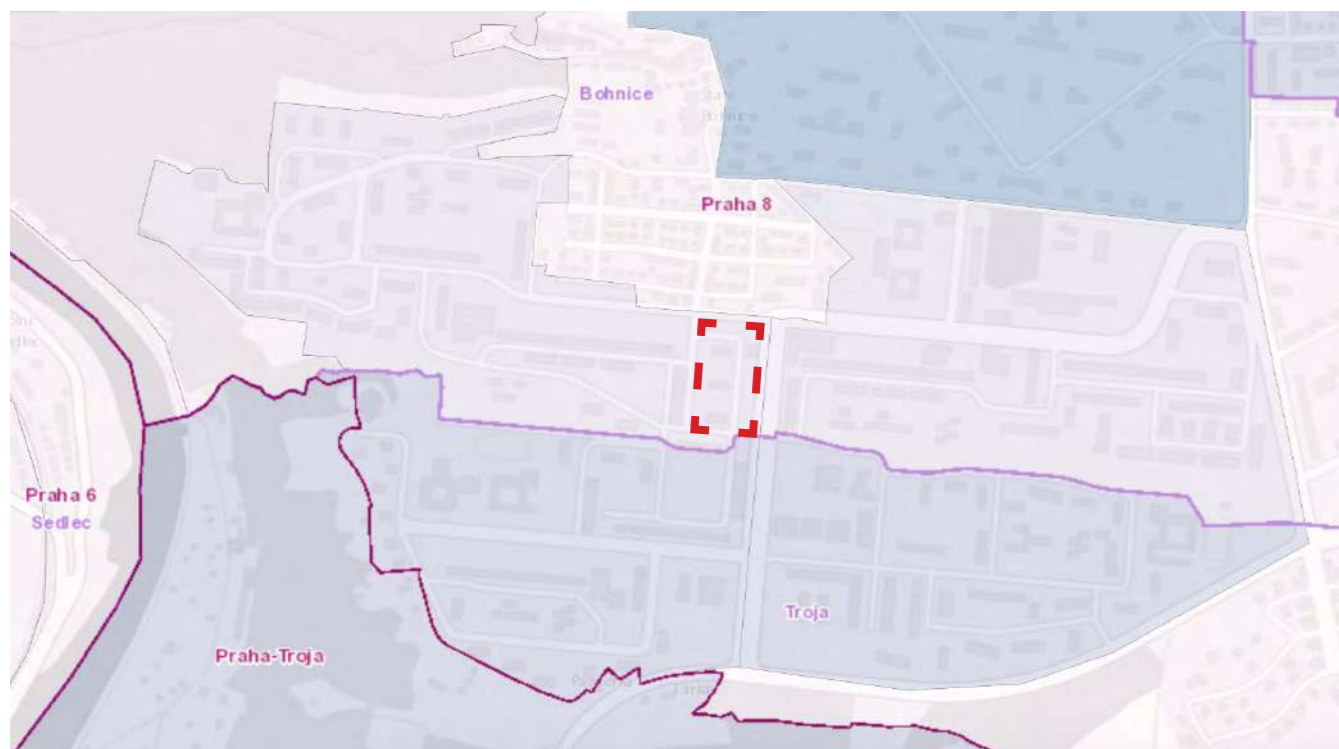
LAND USE

From land-use plan we can see we can see all of the different uses which influence our site future development.

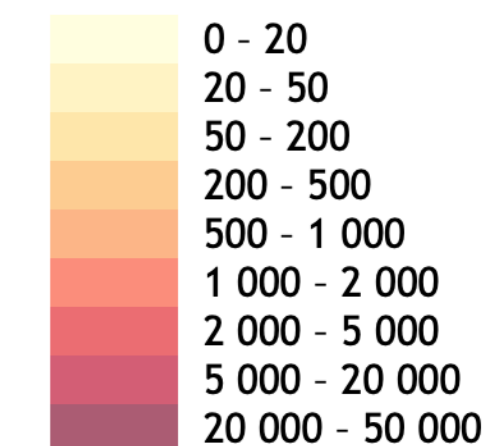
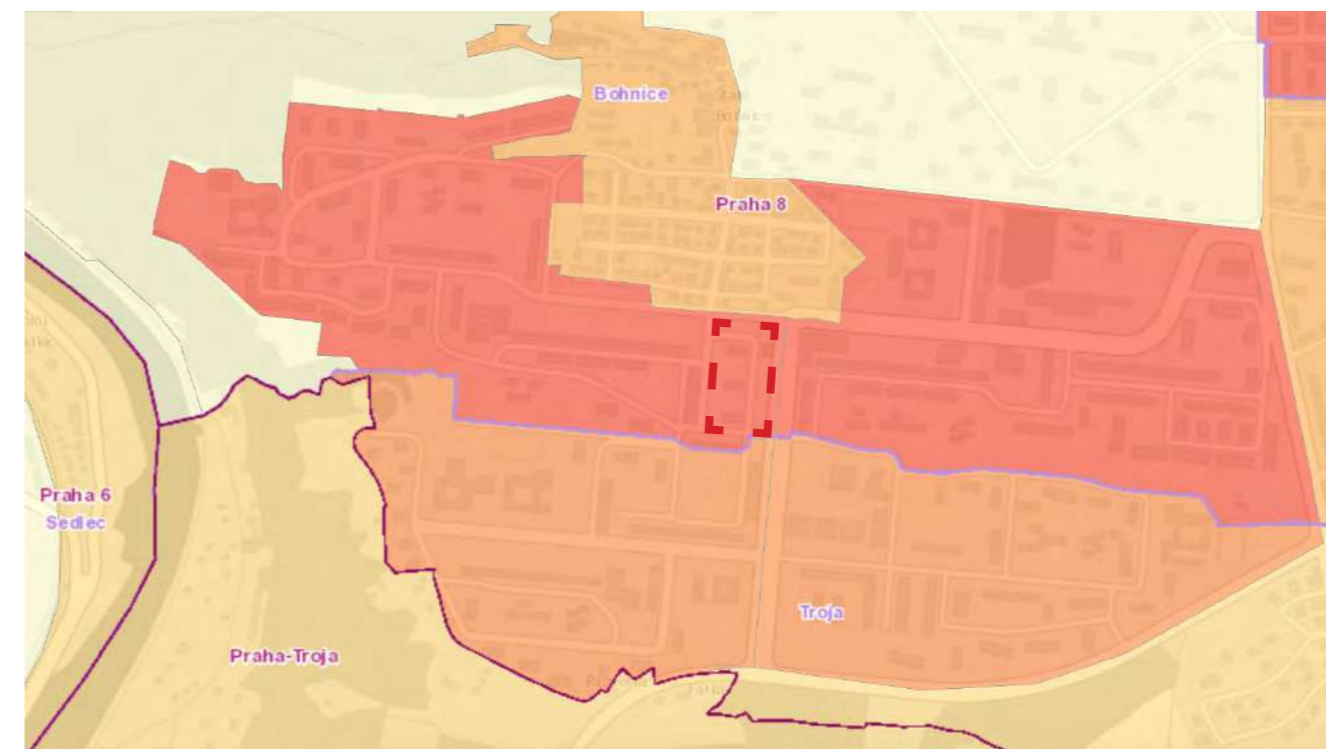
Important existing programs on the site are residential and public services. The amount and typologies of residential houses around should be considered for the future program and design of the area - to understand how many people for the surrounding will use new facilities. Commercial enterprises should be considered as well to not create any competitive or repetitive uses and to only complement existing once or work with absolutely new fields.



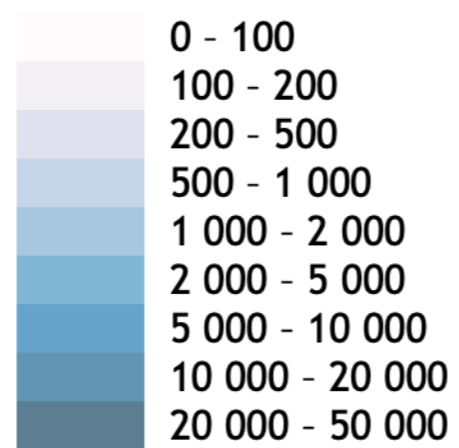
POPULATION DYNAMICS



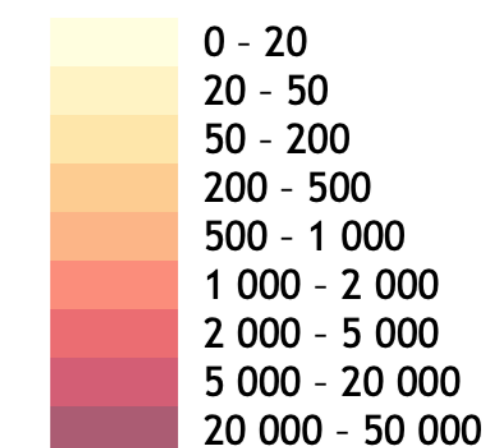
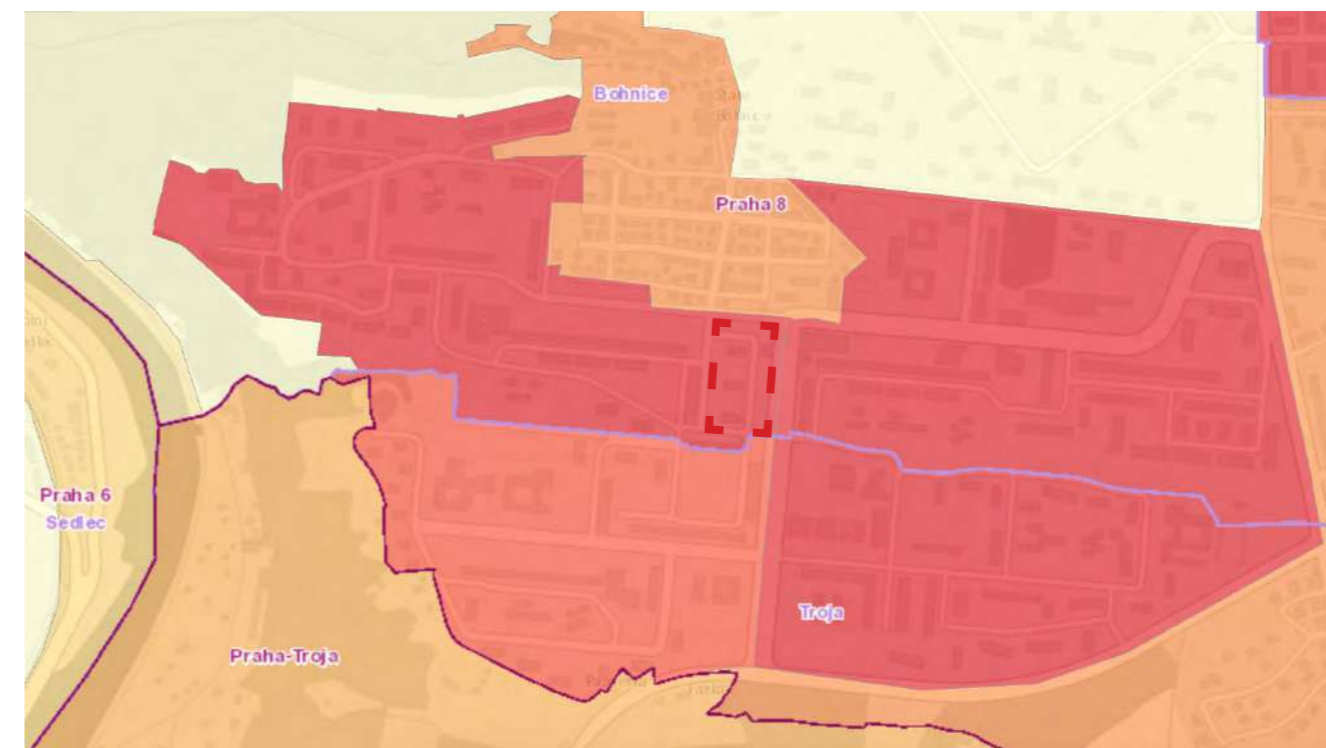
WORKERS
12 AM WORKING DAY



RESIDENCE
12 AM WORKING DAY



WORKERS
8 PM WORKING DAY



RESIDENCE
8 PM WORKING DAY



■ prefabricated houses with a length of about 250 m



■ large open spaces without use



■ barriers on the site



■ outdoor sitting on benches, pensioners and people with small children



■ cycling (very rarely and without bike paths)



■ dog walking



■ in some places, trees and terrain divide the space between the blocks



■ family houses, the human scale of the street in which people can easily orientate



■ contrast between large and medium scale



■ people waiting for the bus



■ shopping center-in the afternoon there were mainly pensioners shopping



■ people spending time outside the game room / restaurant



■ efforts to "cozy up" the transportation hub space



■



DIFFERENT ACTIVITIES on the site



■ sports-despite fact that there're not enough space here are no suitable places



DIFFERENT SCALE of the area



TRANSFORMATION OF THE HOUSING BLOCK

Paris 17^e,
Tour Bois le Prêtre
Druot, 2011

8 900 m² existing + 3 560 m² extension

“Built in the early sixties along the ring road of Paris, this high rise block of 16 storeys includes 96 apartments. The demolition, firstly envisaged, has been avoided and a project of transformation decided. The project propose a generous extension of the apartments.

New floors, built as a self-supporting structure, are added on the periphery of the existing building at every floor, to extend the living rooms, create closeable terrasses and balconies. The existing facades with small windows will be removed and replaced by large transparent openings, so that the inhabitants will profit of the exceptionnal view on Paris all around.”

The architects ' task was to give the residents more space and light. They completed it by adding an additional “layer”to the buildings – such corridors made of balconies that stretch along the entire facade. Small windows of apartments were replaced with large sliding doors that open into the winter garden – it is, according to the creators, should be located on the balcony. External glazing has increased the energy efficiency of buildings, and to prevent apartments from turning into greenhouses, they have been equipped with reflective curtains.

The reconstruction budget (from €40,000 to €60,000 per unit) is significantly less than what can be spent on demolishing the existing building and building a new one. The architects used minimal resources to achieve maximum effect. Renovation gave to all apartments a new quality of space and life.

TEXT FROM THE AUTHORS OF THE PROJECT





ORIGINAL BUILDING
This high rise block of 16 storeys includes 96 apartments



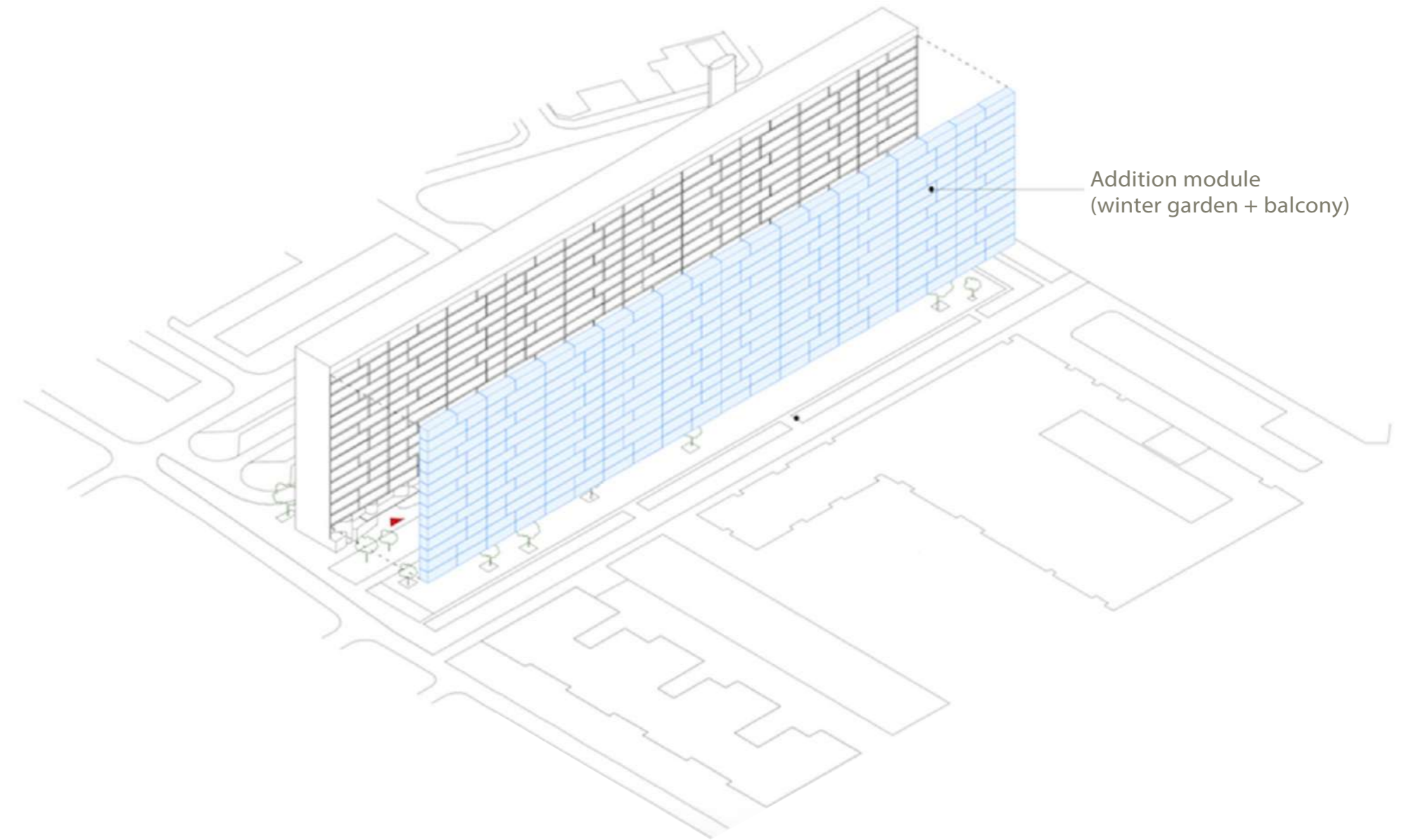
NEW ADDITION
Self-supporting structure are added on the periphery of the existing building at every floor, to extend the living rooms, create closeable terraces and balconies



ORIGINAL APARTMENTS
The existing facades with small windows were removed



RECONSTRUCTED APARTMENT
They were replaced by large transparent openings, so that the inhabitants will profit of the exceptionnal view on Paris all around





SEESTADT ASPERN

TOVATT ARCHITECTS & PLANNERS
2005-...
VIENNA, AUSTRIA

“Lakeside City is one of Europe’s largest urban development projects. Located in Vienna’s fast-growing north-eastern 22nd district, a new urban centre is taking shape – a smart city, designed and considered to accommodate the whole spectrum of life. Built on a foundation of innovative concepts and forward-looking ideas, this city-within-a-city combines high quality of life with economic drive and state of the art innovations.”

Program: 240 ha site, 1 000 000 m² housing 1 000 000 m² offices, retail, social service etc, 50 000 inhabitantsW (25 000 residents + 25 000 workers)

TEXT FROM THE AUTHORS OF THE PROJECT

Seestadt Aspern is located seven kilometers from the center of Vienna in the East of the city. This is one of the largest development projects in Europe - not the usual multi-storey anthills with endless parking lots, but low-rise blocks with good landscaping and proper public spaces. Most of the houses are built on the principle of 5 residential floors above the ground floor of commercial real estate. In addition to housing, a lot of commercial real estate will be built in the area.

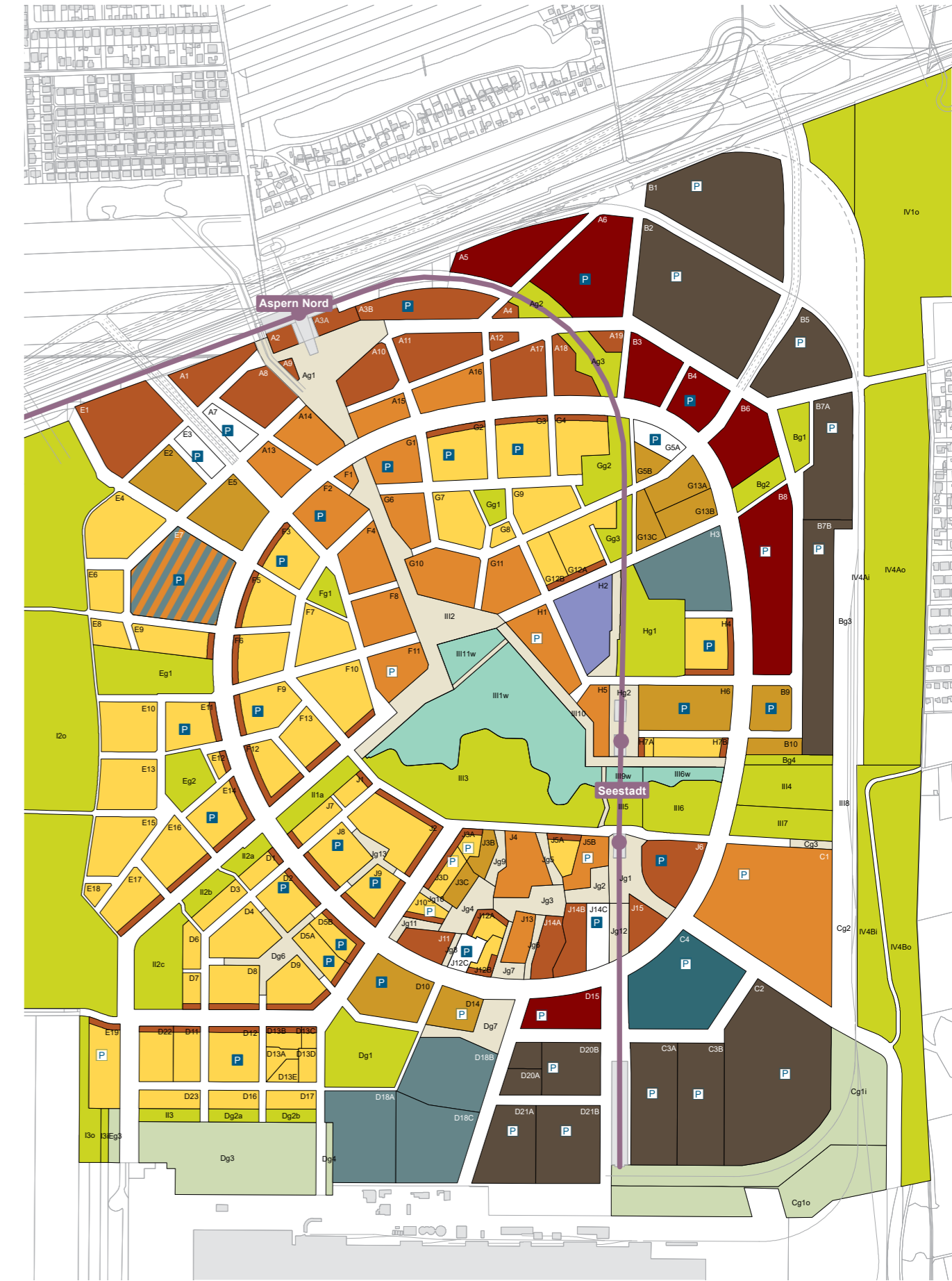
In developed countries, the idea of a “bedroom community” – an area where a person only spends the night, and then goes to work in another place- has long been abandoned. “Bedroom community” are not good because they

provoke a pendulum migration from the outskirts of the city to the center (this implies traffic jams, air pollution, etc.). In addition, it is difficult to develop business in them, there are security problems. Therefore, it is good when real estate in the same area is different-both residential and commercial.

- residential
- flexible use of the ground floor
- predominantly residential, flex use on all floors
- industry
- all uses except commercial and residential
- all uses except commercial
- all uses except residential

- university
- social infrastructure
- cultural
- urban open space
- water
- buffer zone
- green area

- technical infrastructure
- train track
- metro
- P garages/parking spaces in own use
- P collective garages





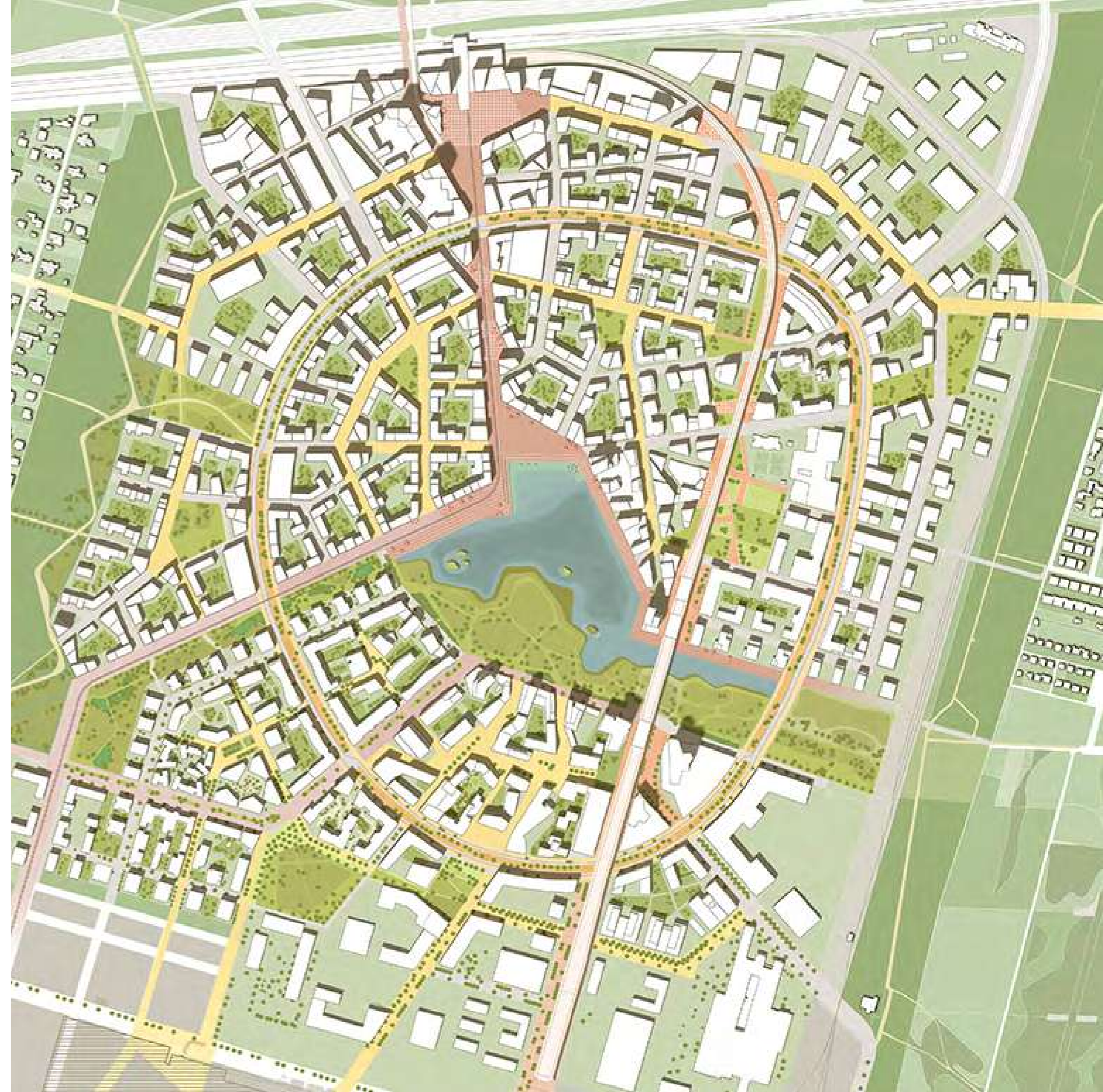
According to the plan, public areas and parks will occupy 50% of the project's territory



Many courtyards have swimming pools and they can be used by any residents of the area



Kindergartens are not made stand-alone here, they are usually located on the first floors of residential buildings. They are small, but each has its own plot of land for walking and playing.





PROJECT THESIS

The aim of the study is to come up with a long-term strategy for the development of this neighbourhood, by looking at a specific section of the wider area, as a case study of a new approach to redevelopment of this type of city environment.

Until now, in the Czech Republic, the society has focused mainly on the revitalization of individual buildings or on raising the construction and technological standards of individual cases. Now it's time to find a solution for the existing buildings that need reconstruction, through transforming empty space around them into a humane and livable place.

The main task is to identify buildings which will bring life to this part of Sídliště Bohnice and other people from outside Bohnice to come, and:

- to create a complete future vision on the site including a new block structures on the sides of the site, public spaces in between, reconstructions of existing buildings and parking re-organisation.

- to build up empty spaces with structures, the program of which can bring new functions to the site (such as offices, commercial and public services facilities).

The project will be an urban study project including reconstruction of the existing buildings, planning for new structures, volumetric massing, functions, public spaces, infrastructure and landscaping, and including a detailed architectural solution for a selected portion of the area.

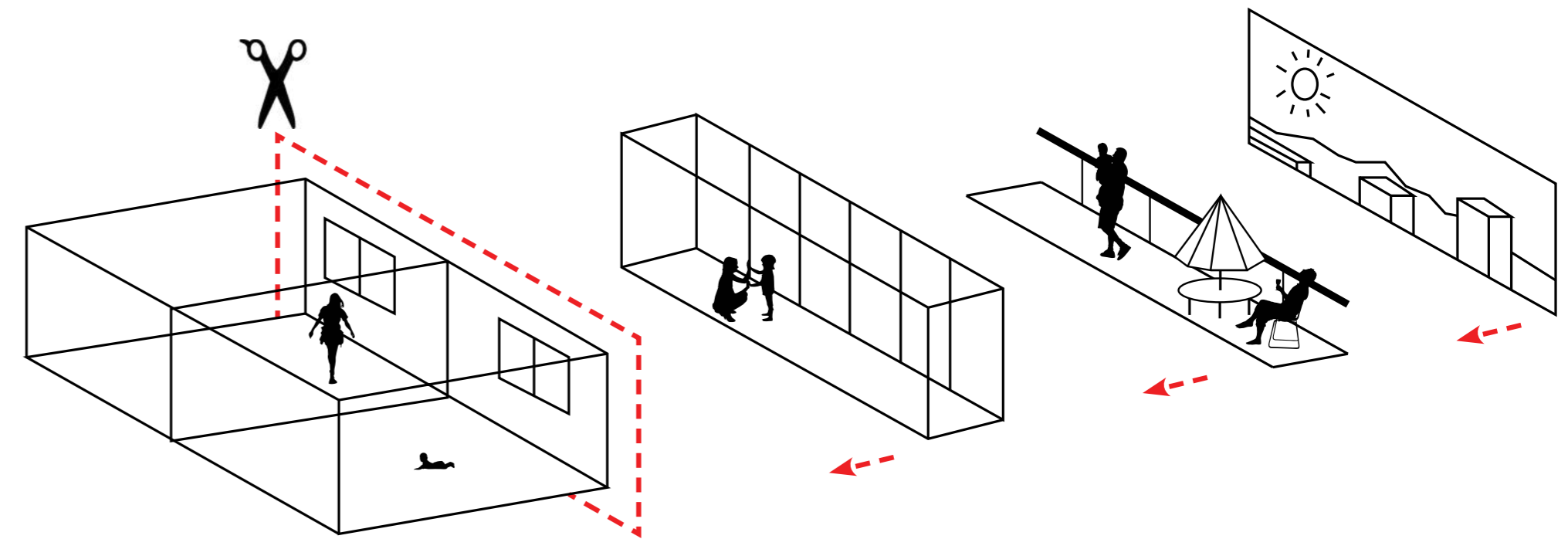
CONCEPT FOR THE EXISTING BUILDINGS ADDED STRUCTURE

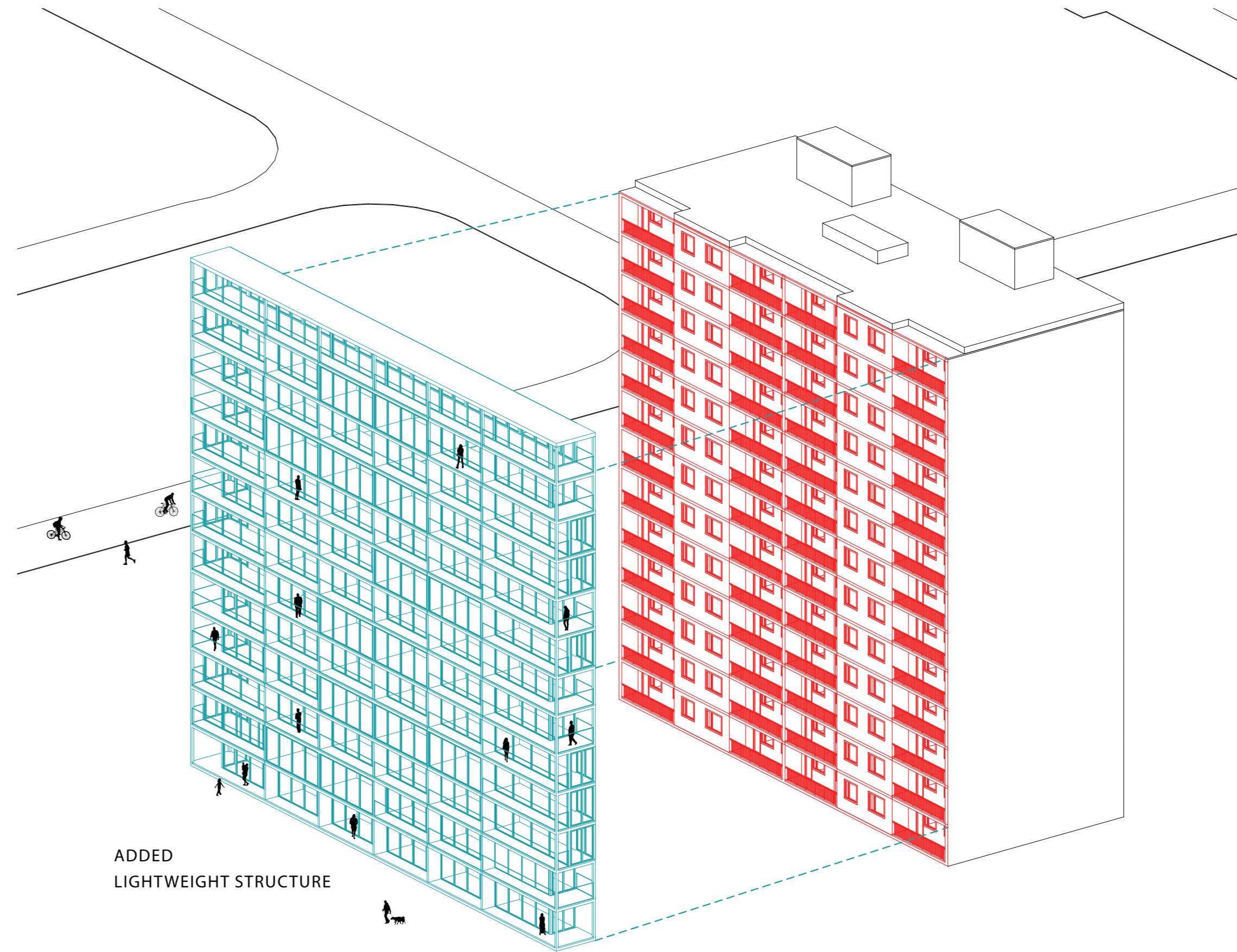
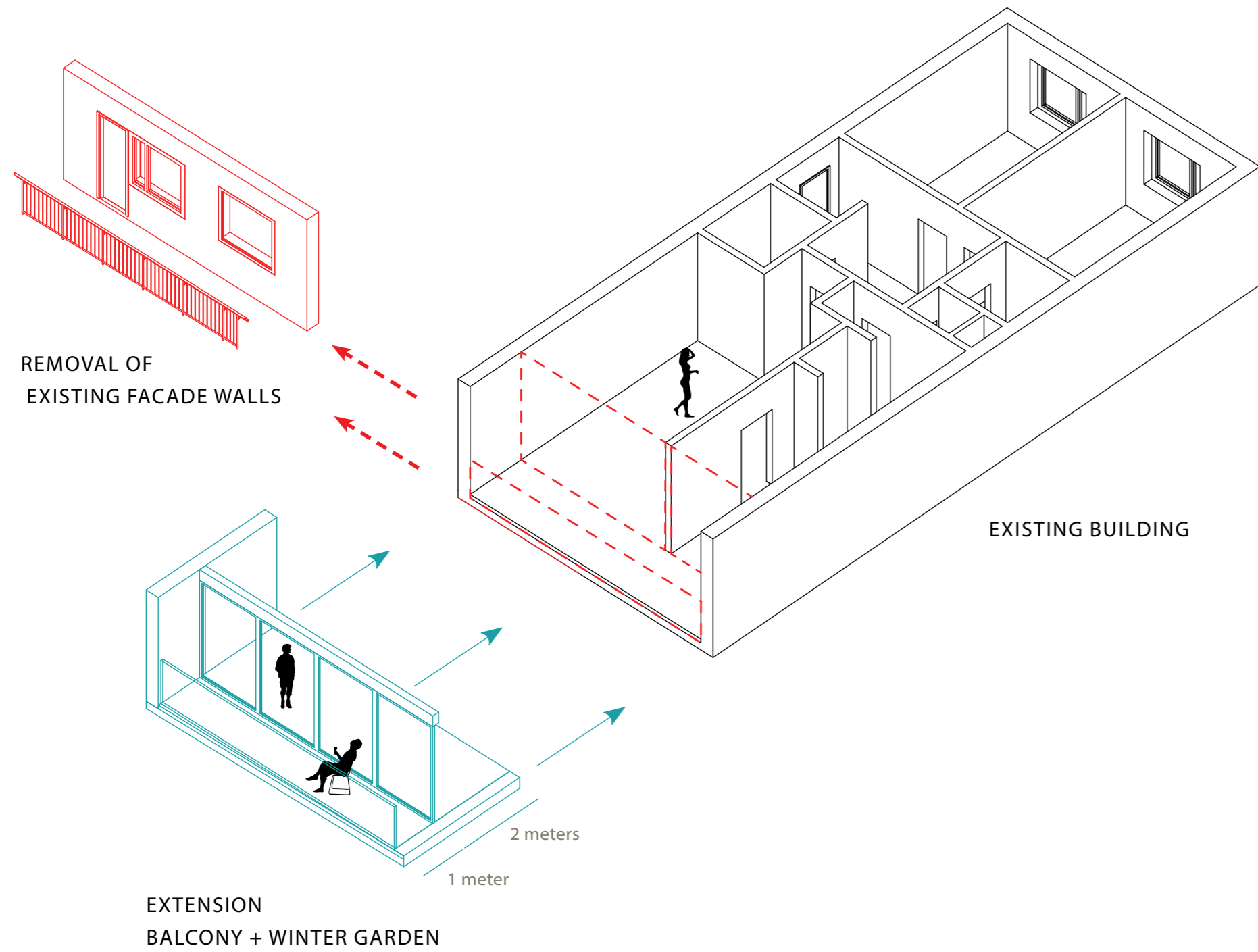
Now many large cities (especially this is common on the territory of the former Soviet Union), where communal housing was widespread, are on the path of complete demolition of entire districts from the face of the Earth and building completely new houses in their place.

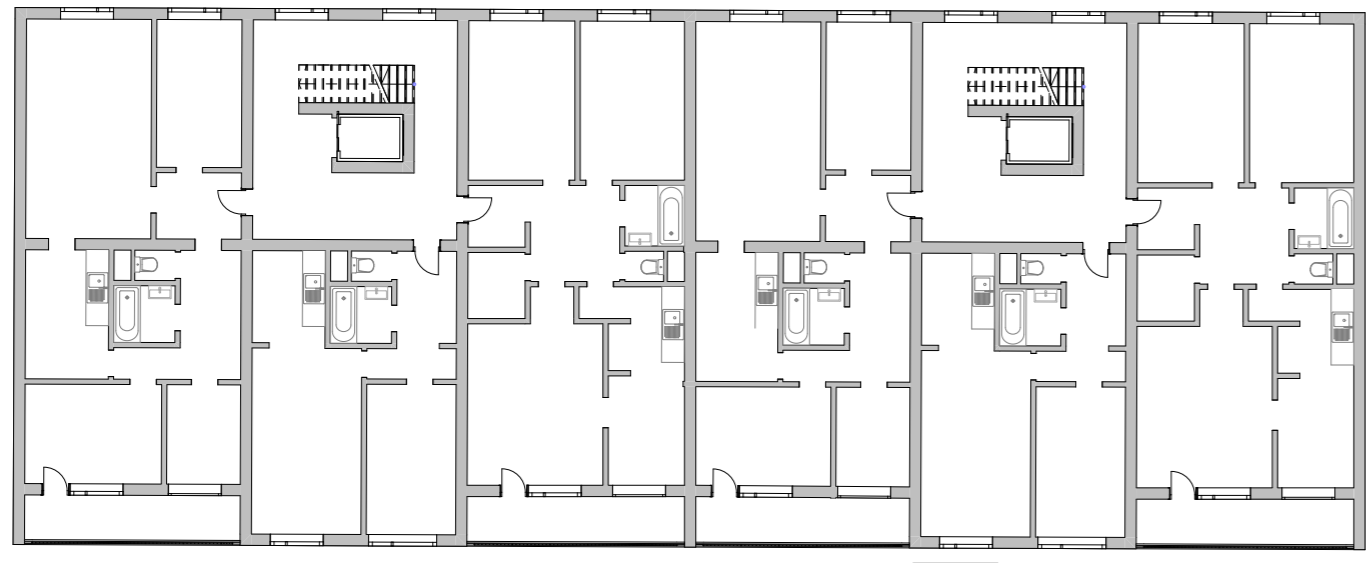
But total demolition followed by new construction is not the only one existing option. The alternative involves making renovation of structure and reorganization of public spaces inside, outside and on the top of the buildings to creating better residential quality of life. Alterations to buildings give them and their environment a new appearance.

In my project, I will follow the next steps to achieve my main goal to help people coexist with the surrounding more, to flood the living area with lights:

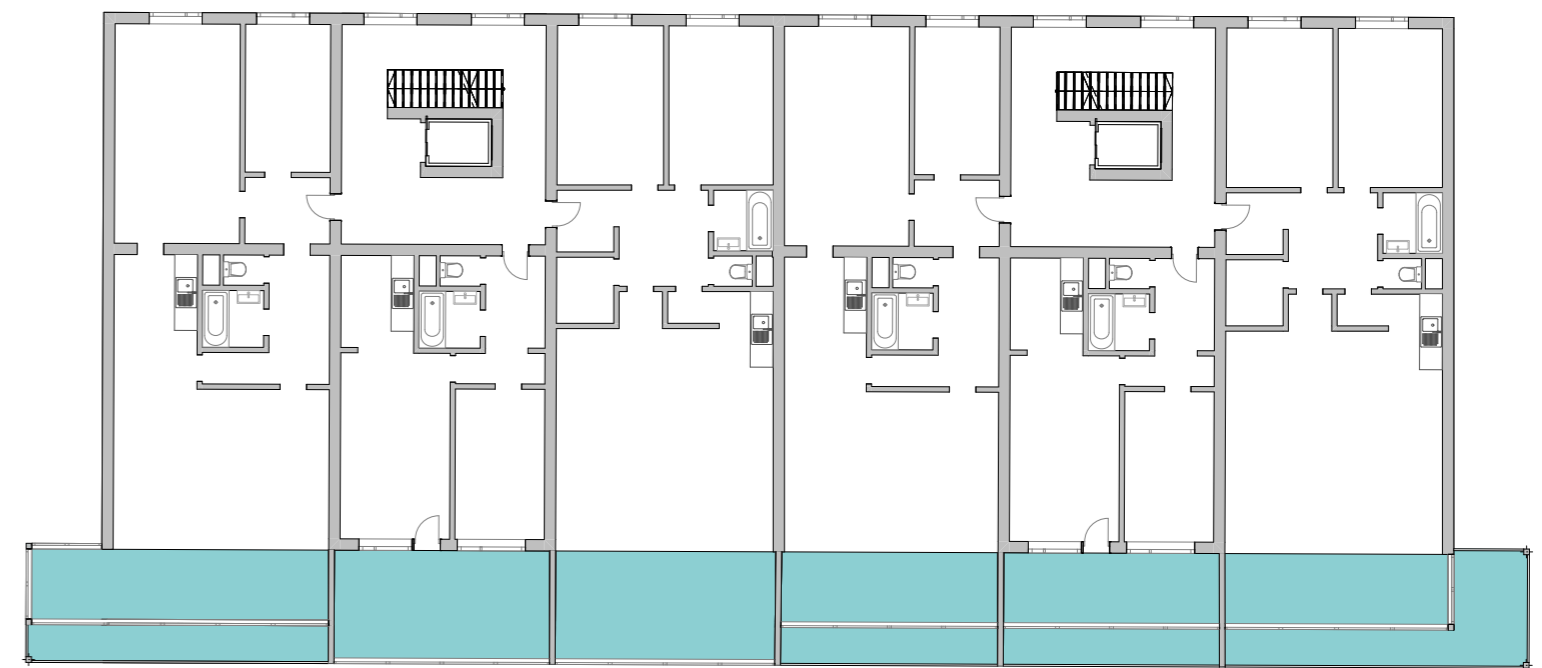
1. Open up the façade and demolish a number of interior walls
2. Add a zone of a three metres to the building in the form of a self-supporting (lightweight) structure
3. Add transparent, glazed outer walls
4. Enlarge rooms by merging them together, opening them up or connecting them to additional structure



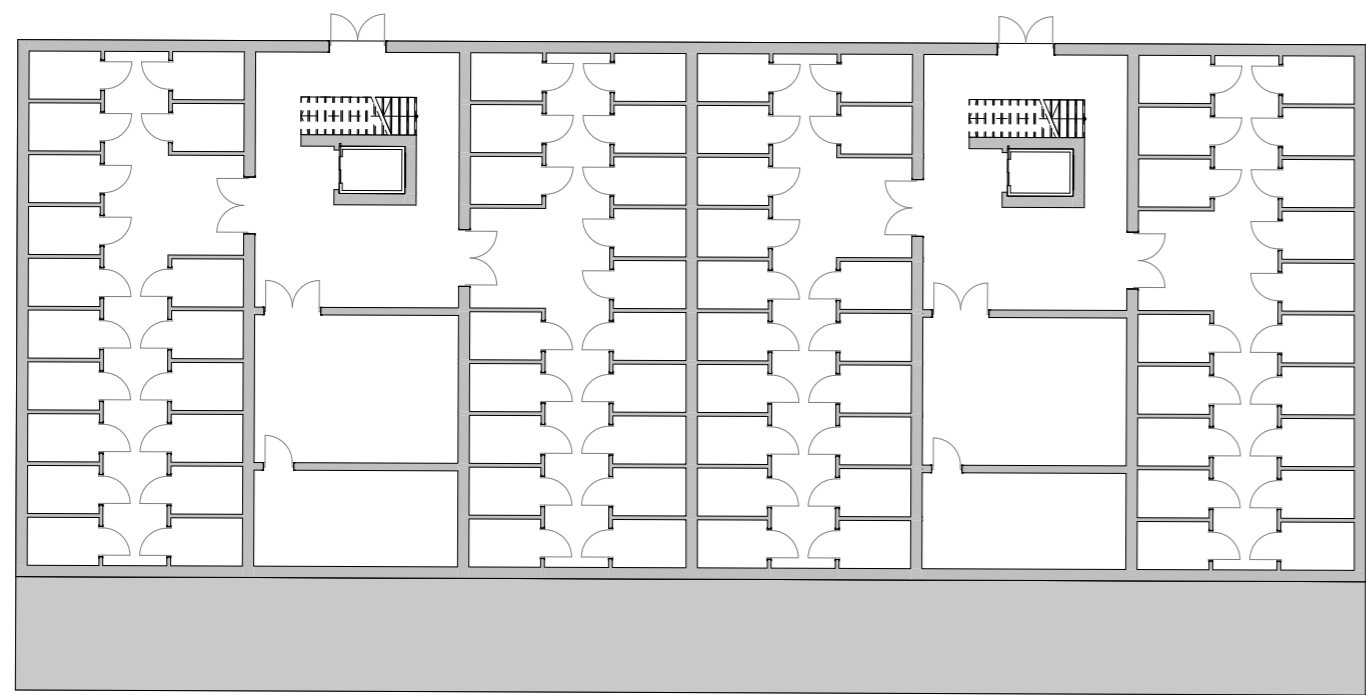




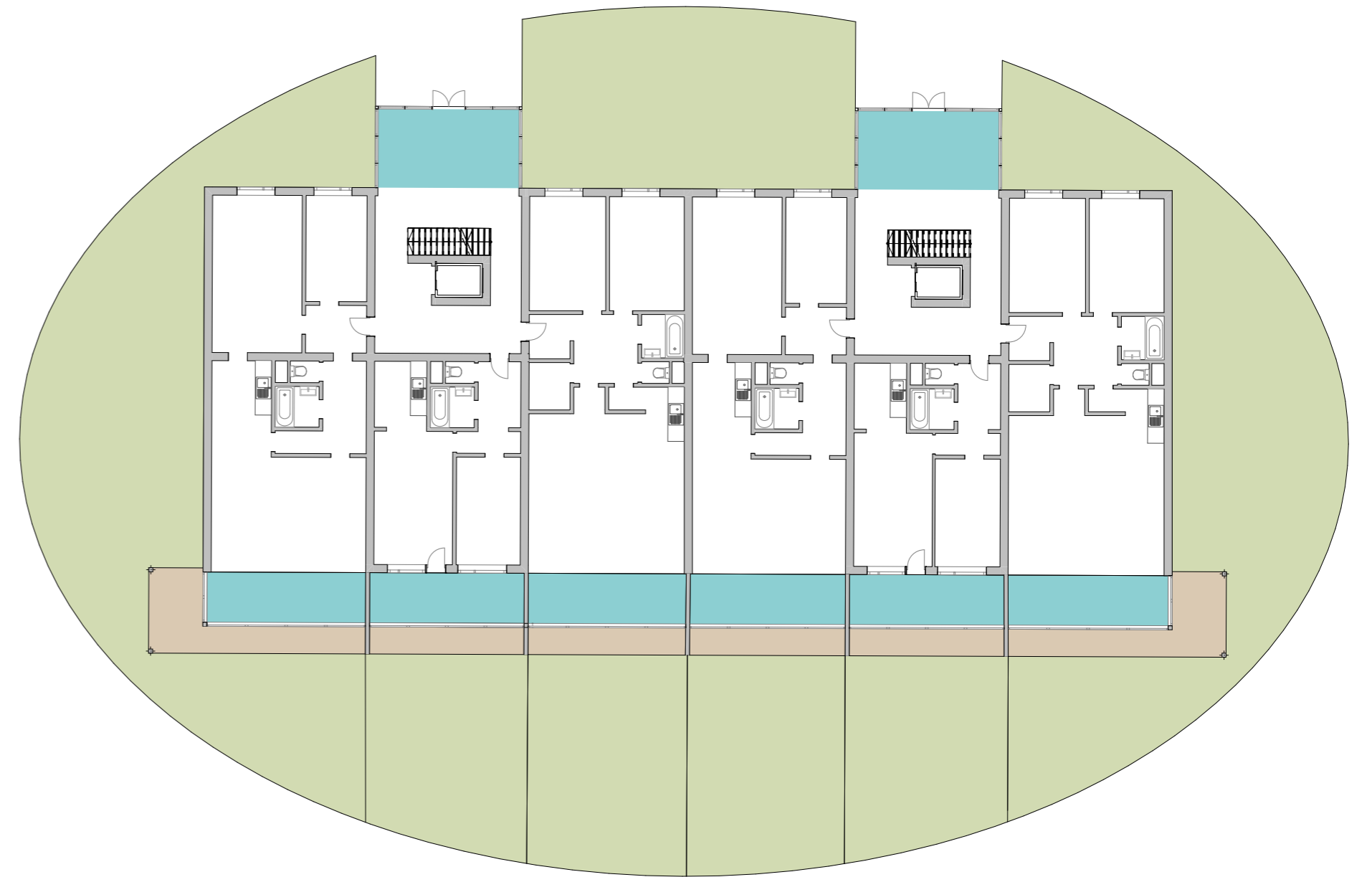
EXISTING TYPICAL FLOOR PLAN
1:200



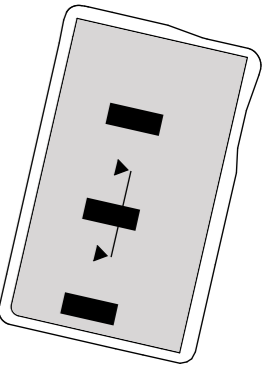
PROPOSED TYPICAL FLOOR PLAN
1:200



PROPOSED 00 LEVEL PLAN
1:200



PROPOSED 01 LEVEL PLAN
1:200



PROPOSAL FOR THE EXISTING BUILDINGS ADDEDED STRUCTURE

Addeted structure not only improves the look of the existing panelak houses but as well bringing from 18 m² to 23 m² of new area to each unit.

A new proposal for the 00 levels gives people a directed connection from the parking lot to their apartment, as well as small storage with size of 2,4 m² for every flat.



PROPOSED CROSS SECTION
1:200

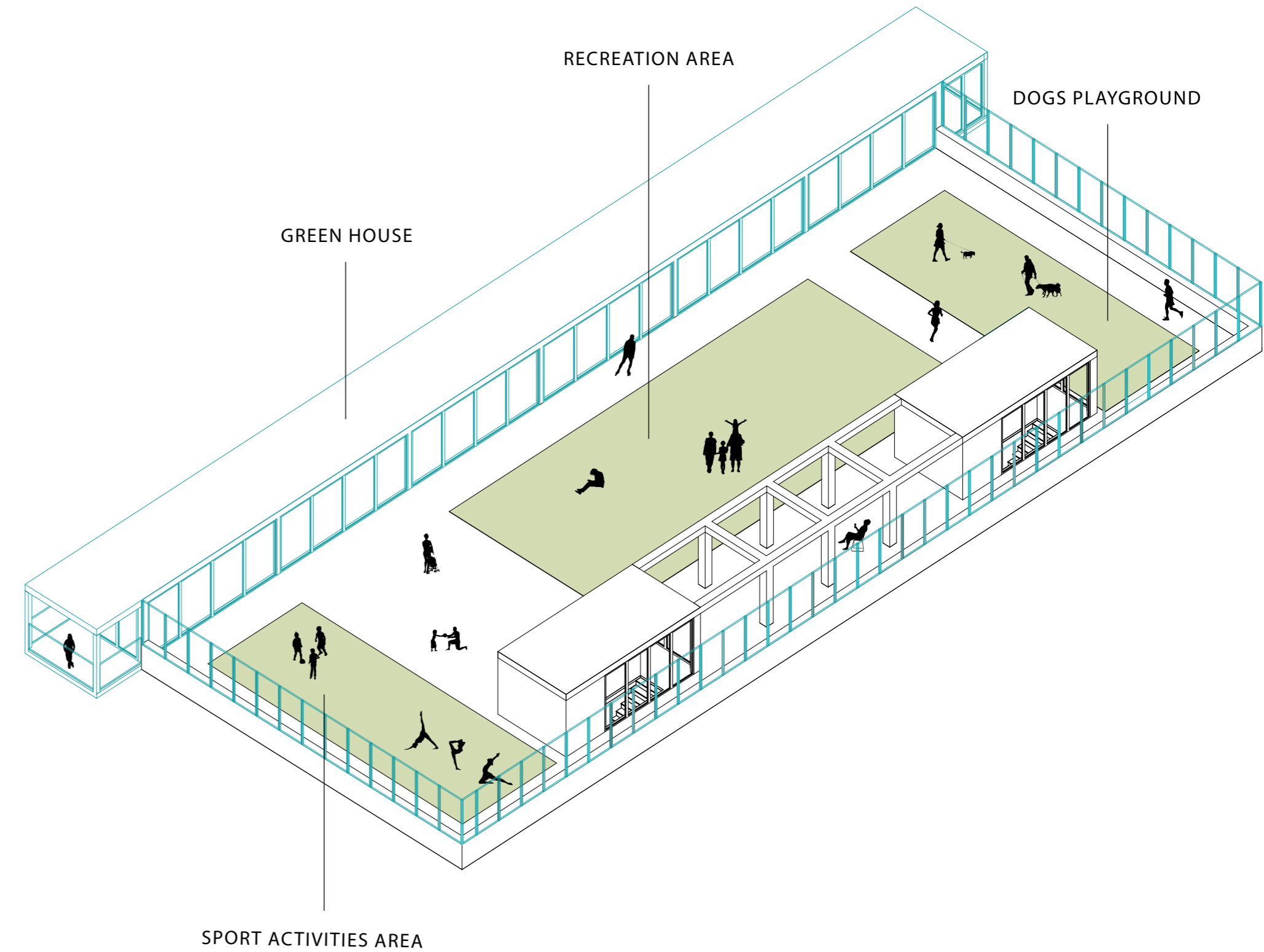
CONCEPT FOR THE EXISTING BUILDINGS ROOFTOP

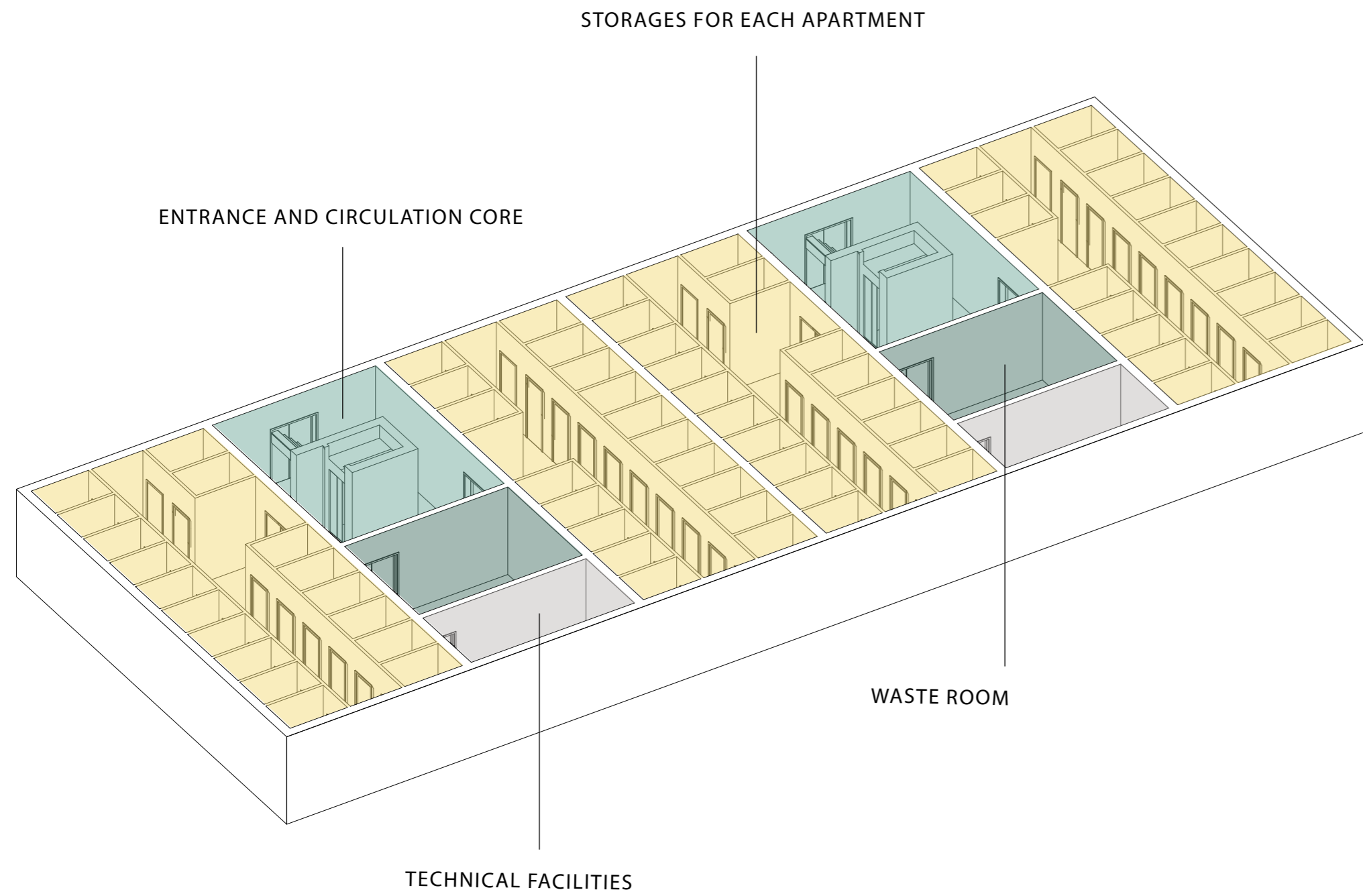
The regime of self-isolation and strict quarantine helped to identify the things that are so easy to organize in this type of home, but which would be so useful at a time when people are forced to stay at home for a long time without walking or fresh air and will never be superfluous in quiet times

Czech building codes allow you to turn the roofs of apartment buildings into recreation areas. I suggest using this opportunity to create a summer park on the roof.

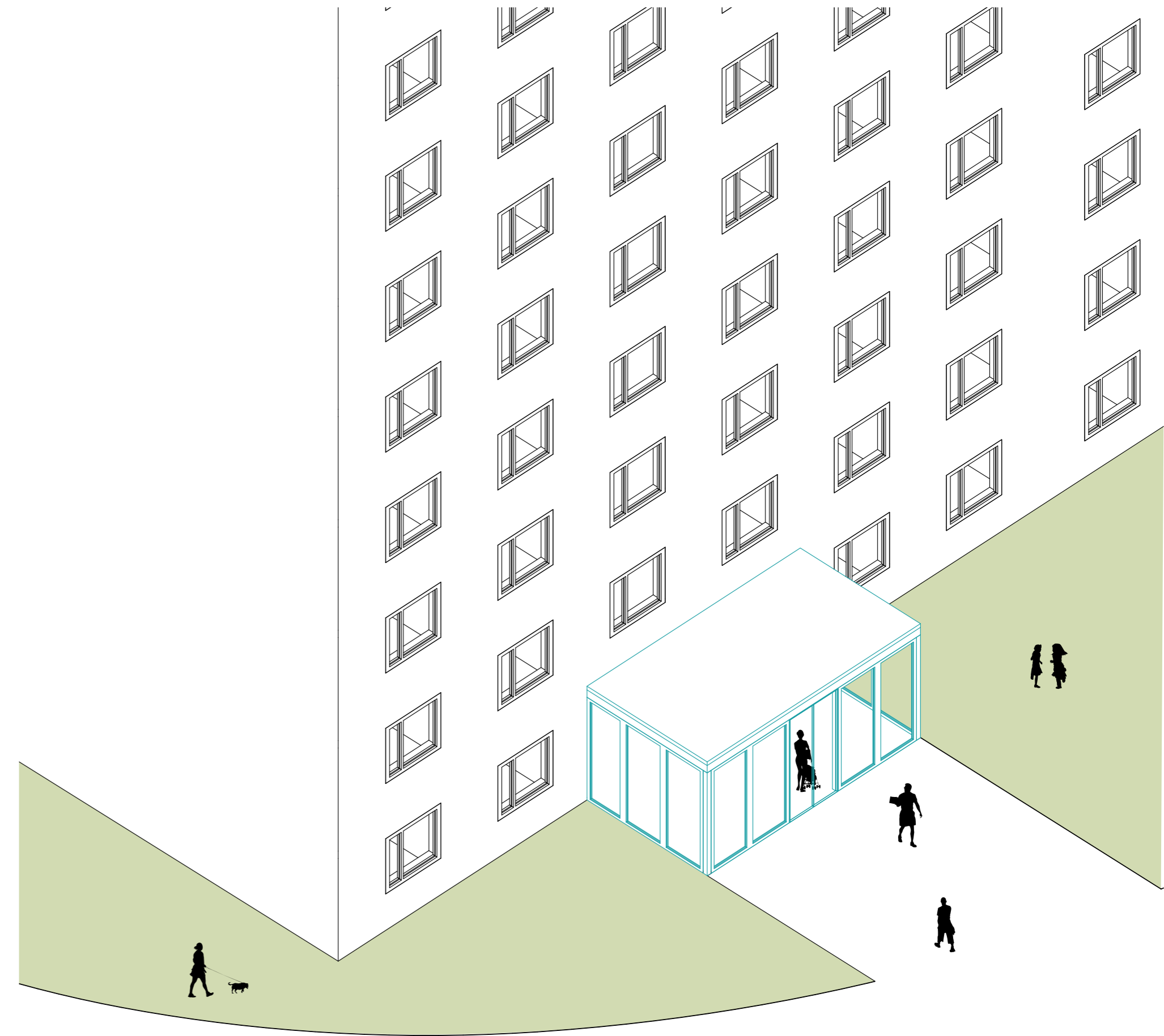
This mini park is suitable for sports, dog training and for regular recreation. And the greenhouse is ideal for people who are fond of farming, but do not have a country house to grow their own vegetables and fruit. In times of pandemics, residents can agree on the time of use of each of the zones just in social networks.

One of the important features of the roof park is that this space is only partially public. Only residents of the building have access to the roof. This approach is particularly important in the fight against the spread of the disease, since it restricts access to strangers who have not passed quarantine.

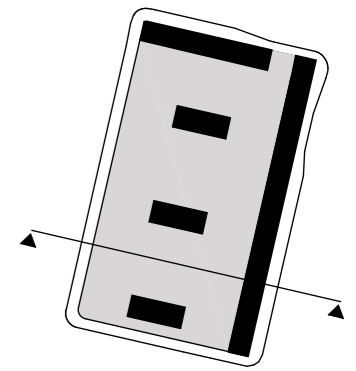




PROPOSAL FOR THE 00 LEVEL REORGANIZATION



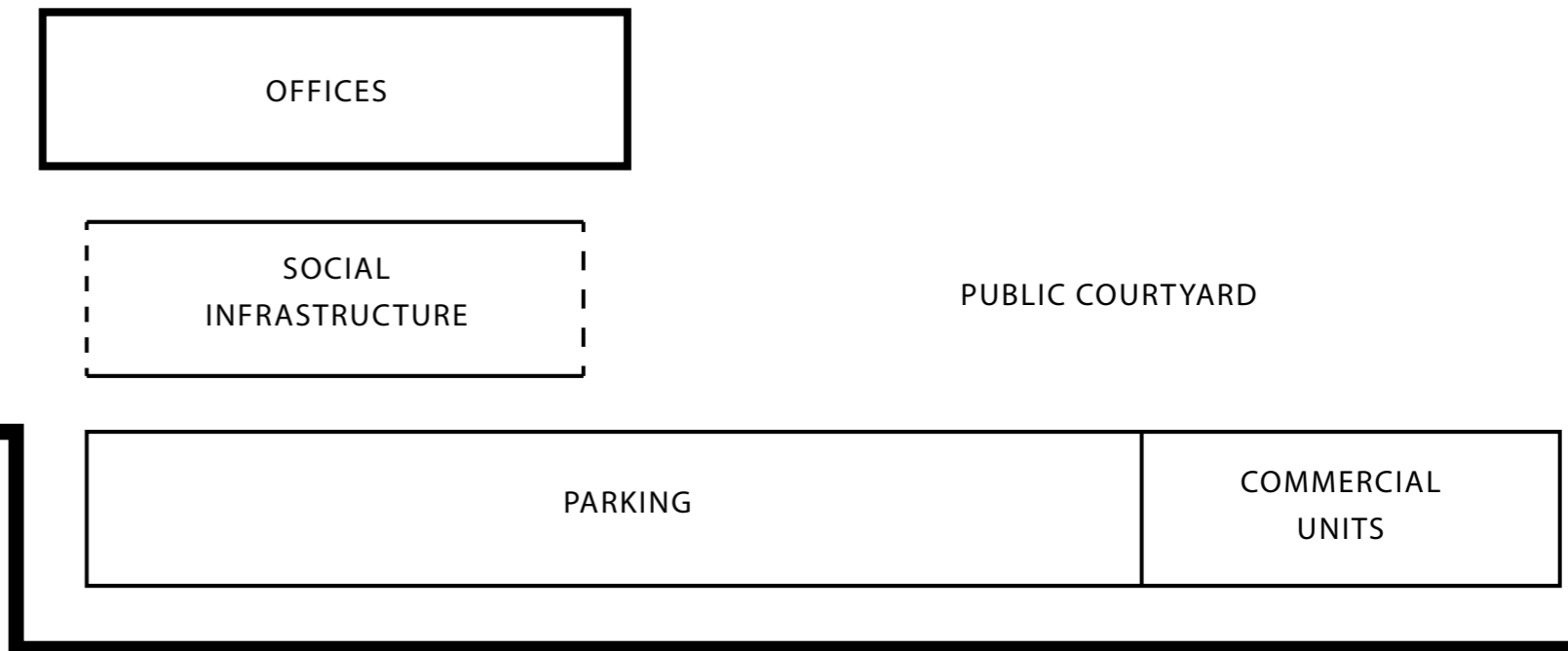
PROPOSAL FOR THE NEW ENTRANCE FOYER

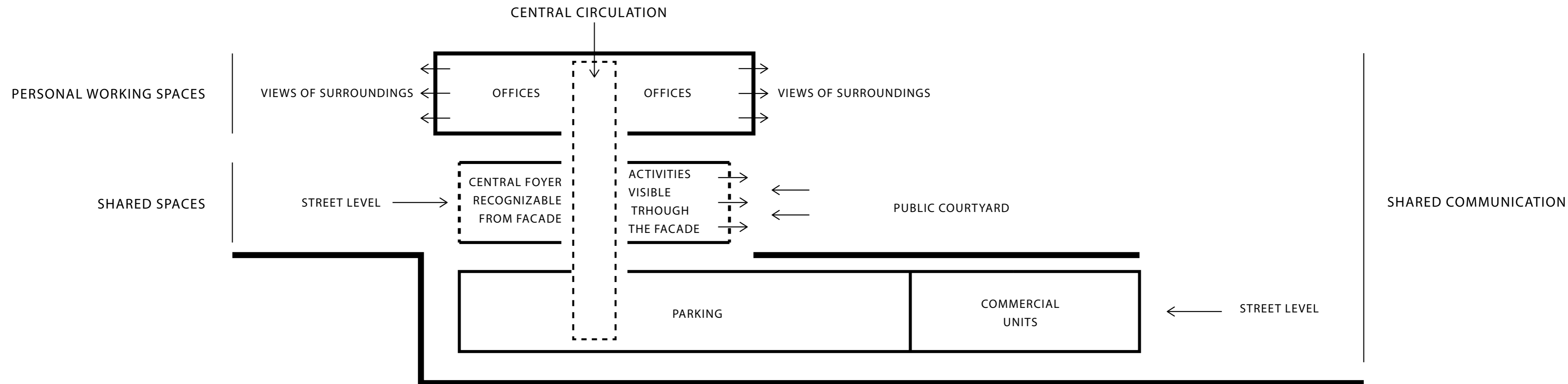
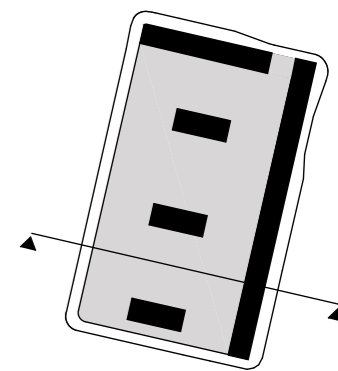


CONCEPT FOR THE NEW STRUCTURE

Additional structure on the site combines different uses: offices, social infrastructures and finally the underground parking, as well as a public space on a top of it.

Two buildings are configured into an I-Shape, creating corner L-shape structure, which enclosing inside three existing buildings, inner public space and private gardens that connect visually and functionally all the complex.





PROGRAM

00 Level

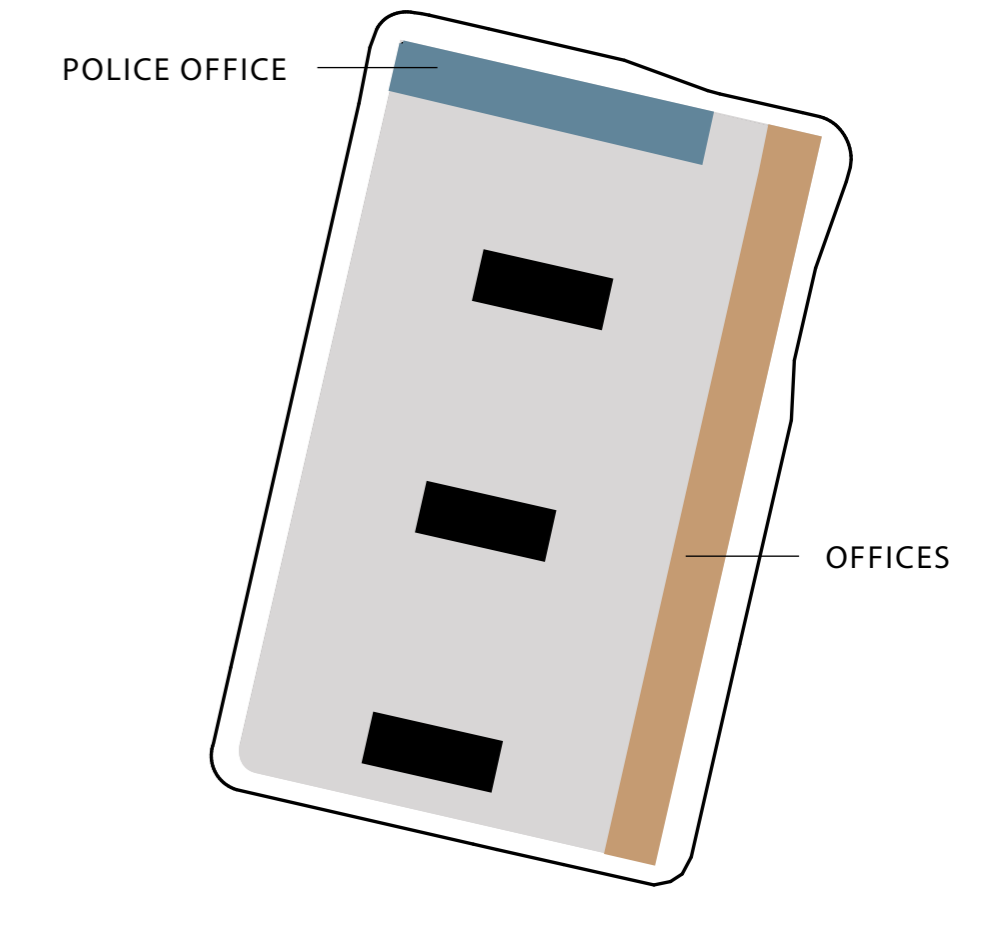
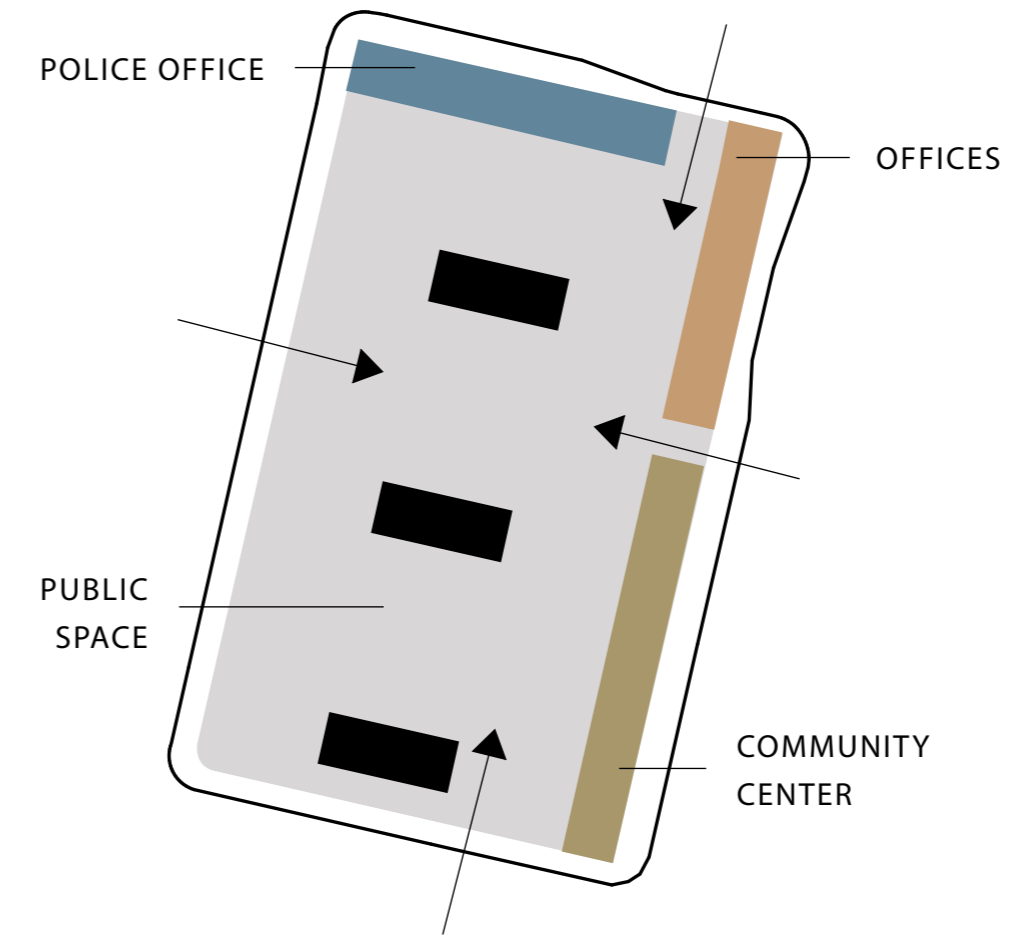
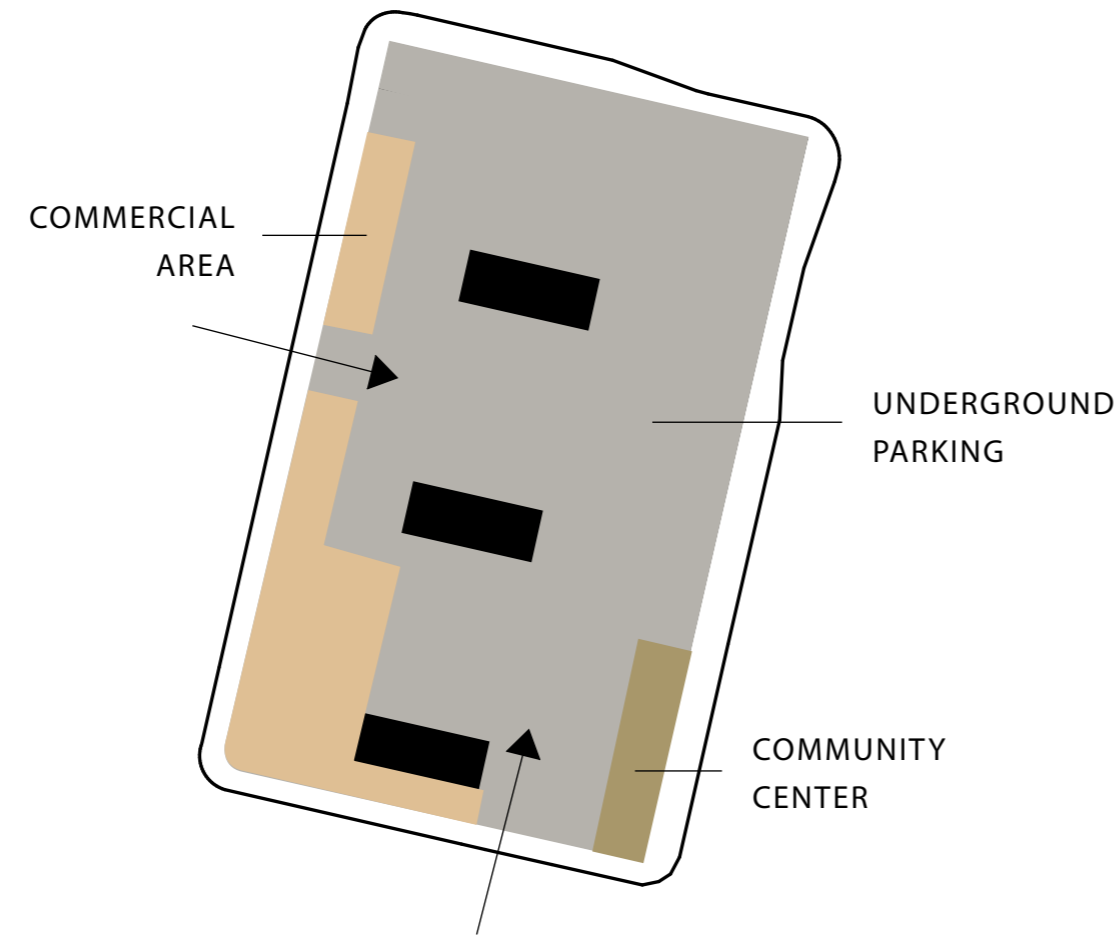
The ground level has parking with the two entrances to it and a new entrances to the panelaks. Two ramps started on the ground level lead to the big open space public platform on level 01. Here as well located public hall. On the South and the West facades located commercial spaces.

01 Level

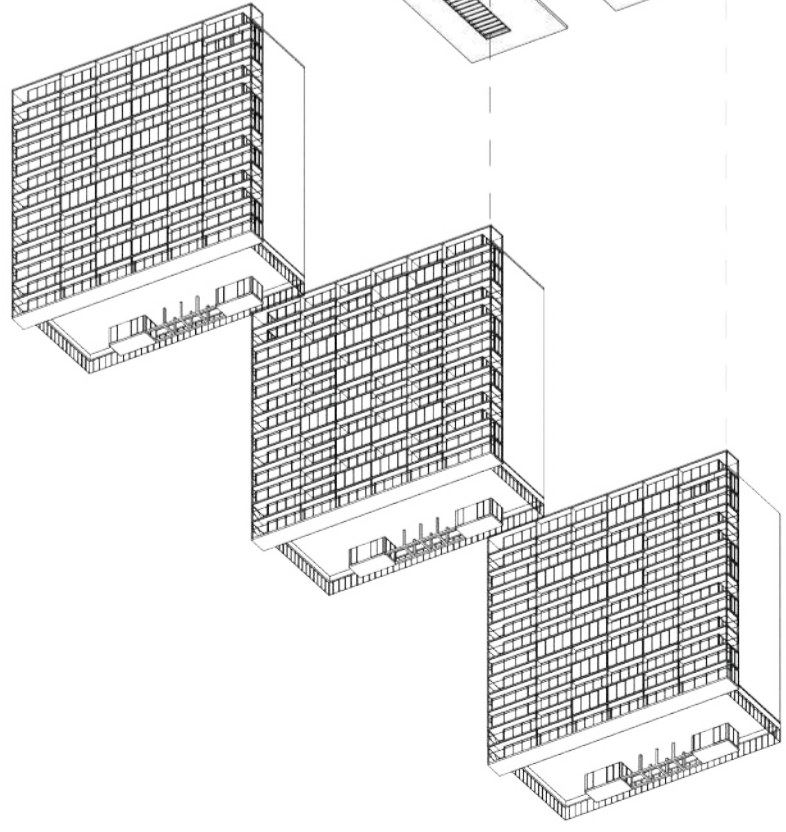
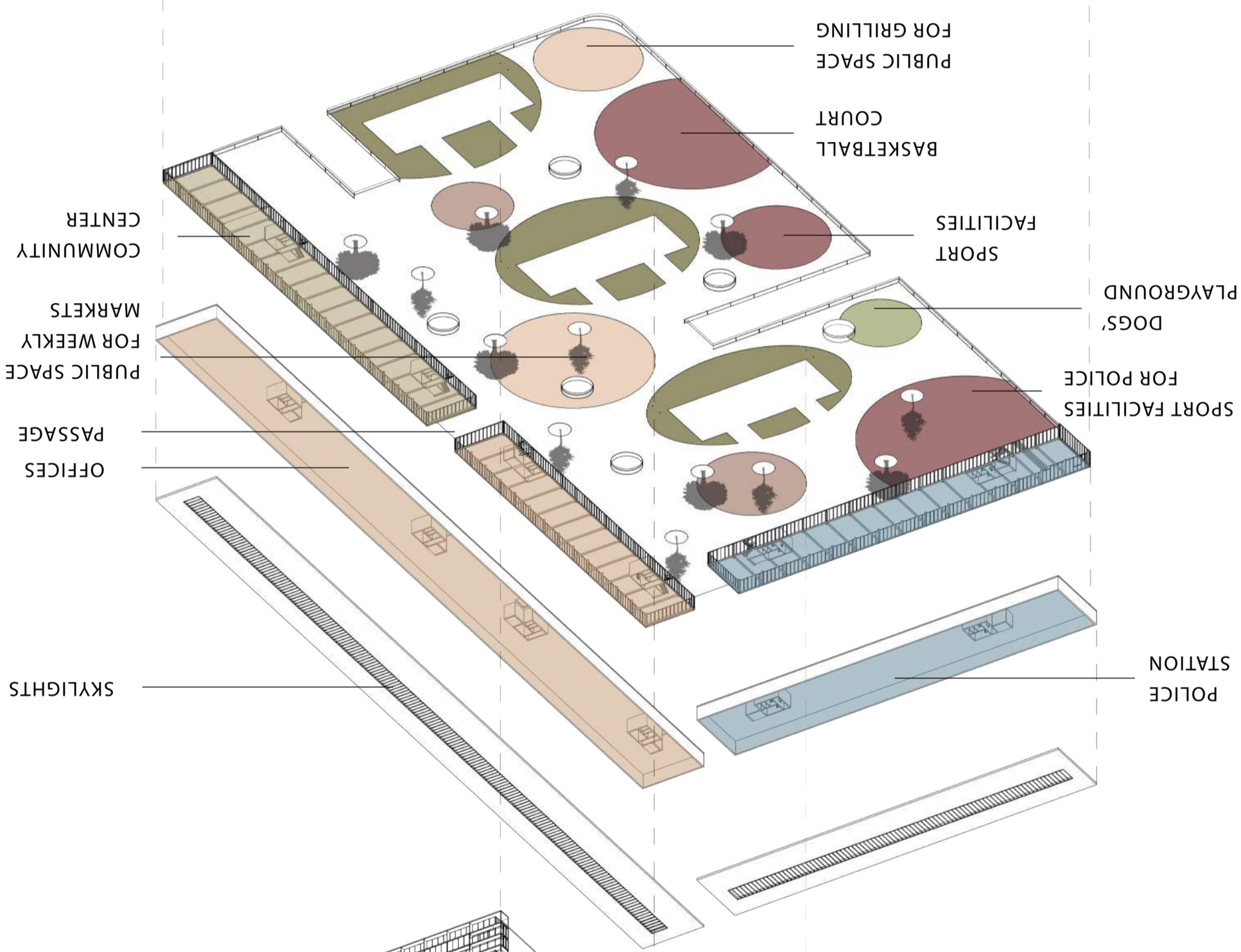
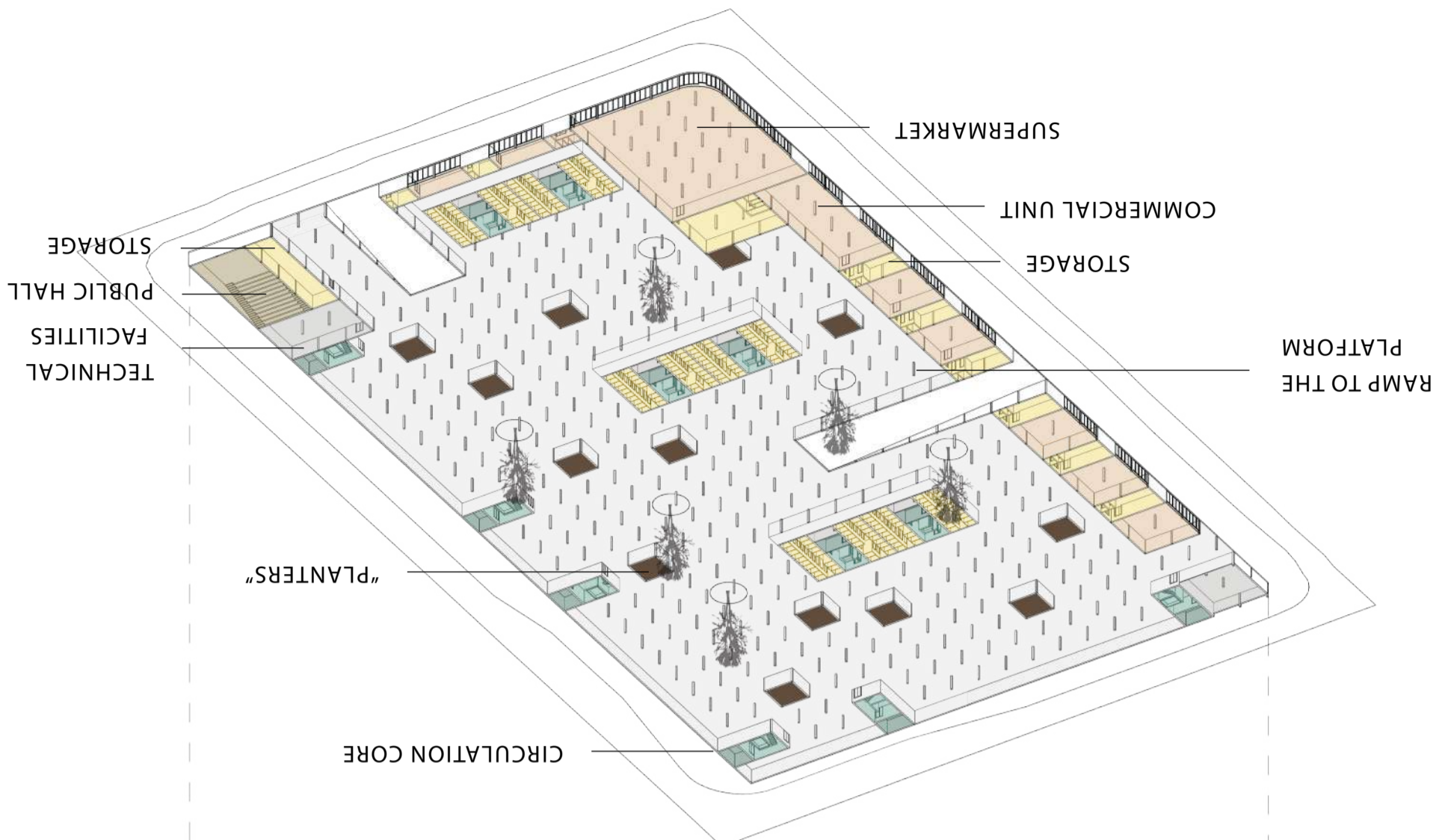
One part of the L - shaped corner structure working as a police station, the other one combine different usages: offices, community center, public hall. Two entrances through the passages leads to the the platform.

02 Level

This level is working as offices with a open floor plan for both structures.







00 LEVEL PLAN

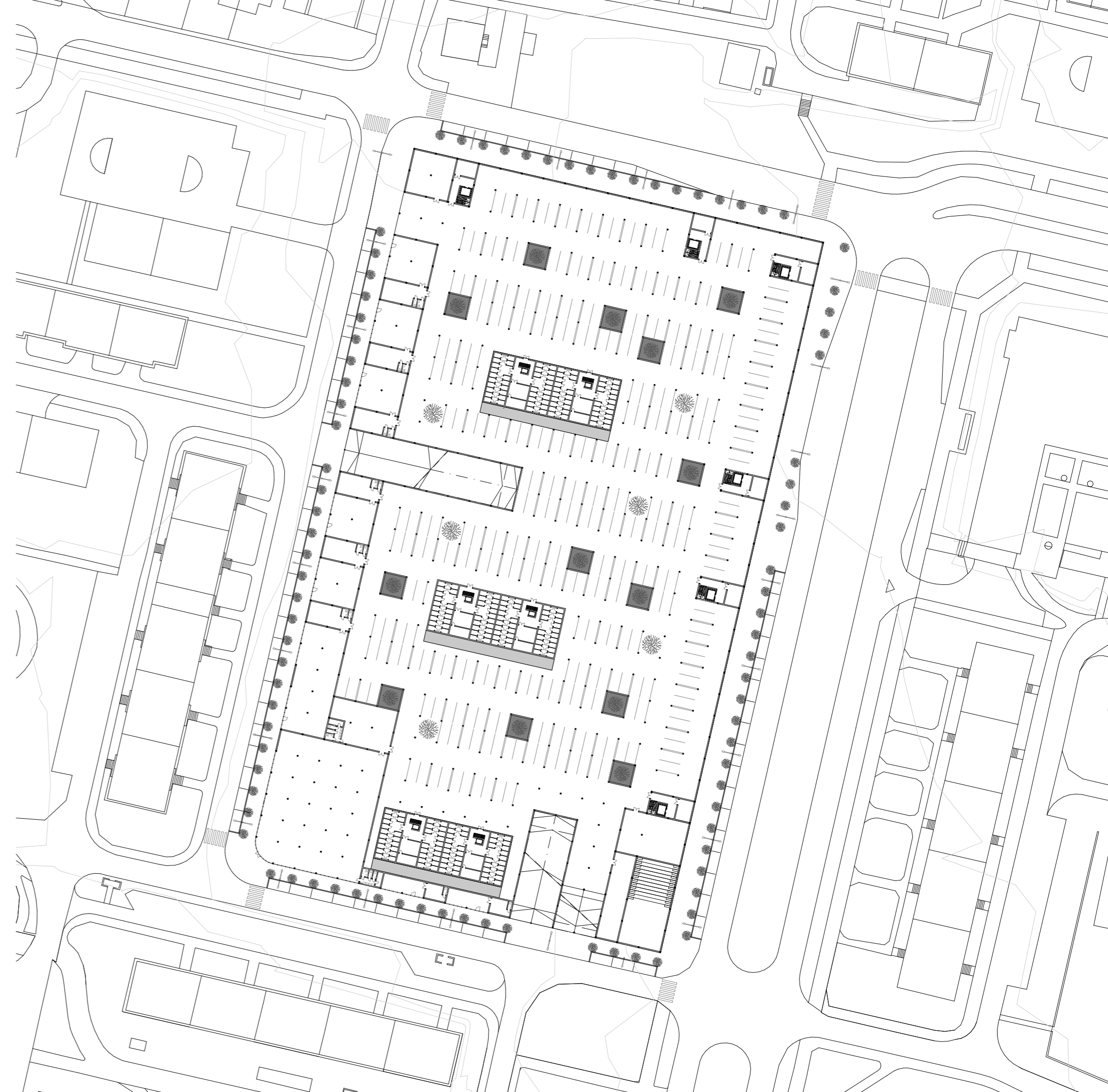
1:1000

On this level located indoor parking lot for 348 cars, 216 of them will be used by the residents of the site, the other 132 by workers and visitors. Outdoor parking spaces around the whole site can accommodate another 63 cars.

On the South-East corner located public hall with a capacity of around 200 people for public lectures, performances, debates, and presentations might be held in this shared space.

On the South and the West side of the structure located 7 smaller commercial units, 1 bigger commercial unit, and supermarket. All commercial units equipped with their own storage and sanitary facilities.

All technical facilities located on the ground level.

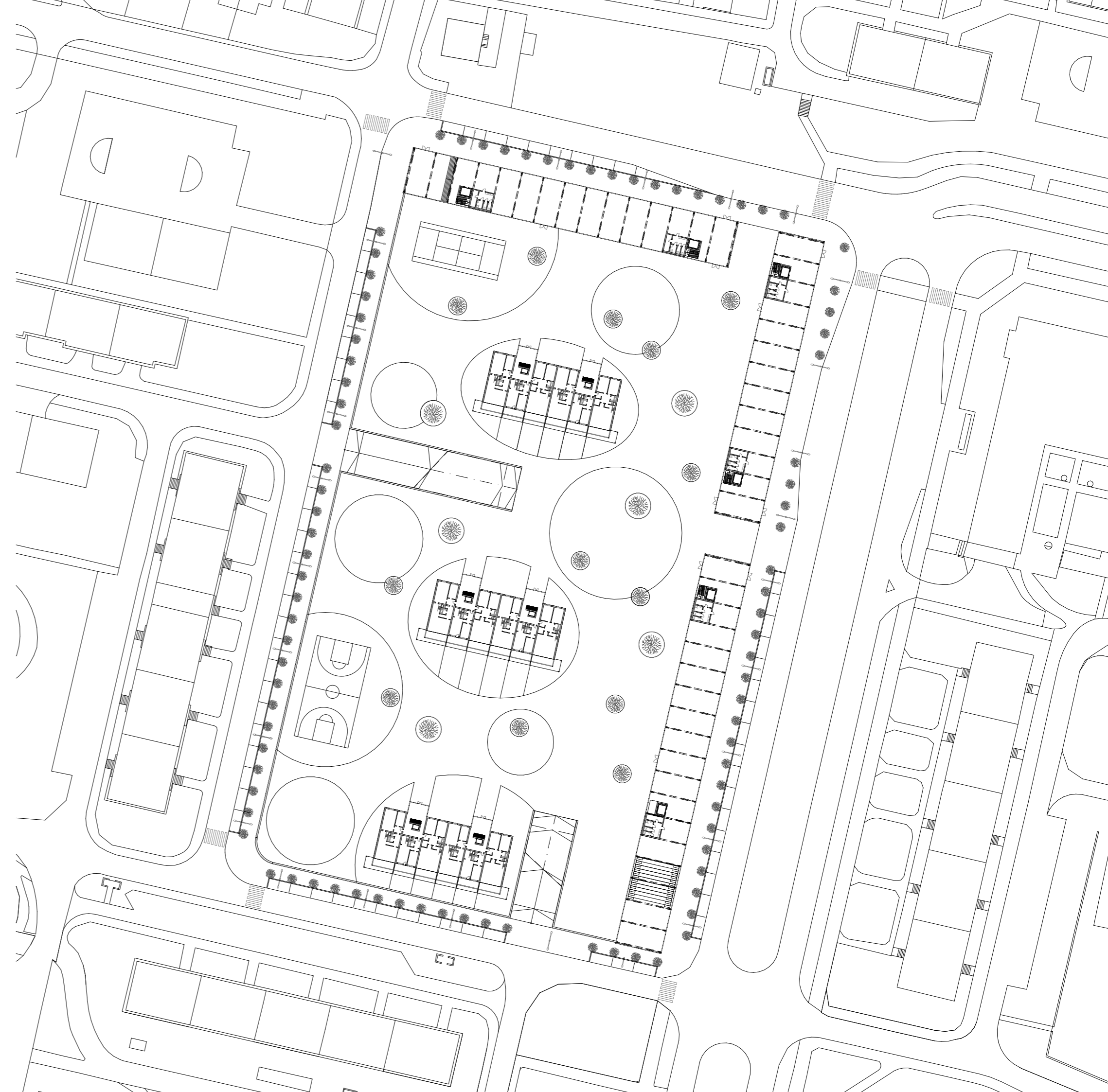


01 LEVEL PLAN

1:1000

On this level located community center, as well as police station with working places for 50 people and office area with working places for 44 people.

Two entrances through the passages leads to the the platform, where situated outdoor public spaces: place for weekly markets, two children playgrounds, dogs playgrounds, sport facilities area, basketball court, tennis court, sport area for police station, etc.

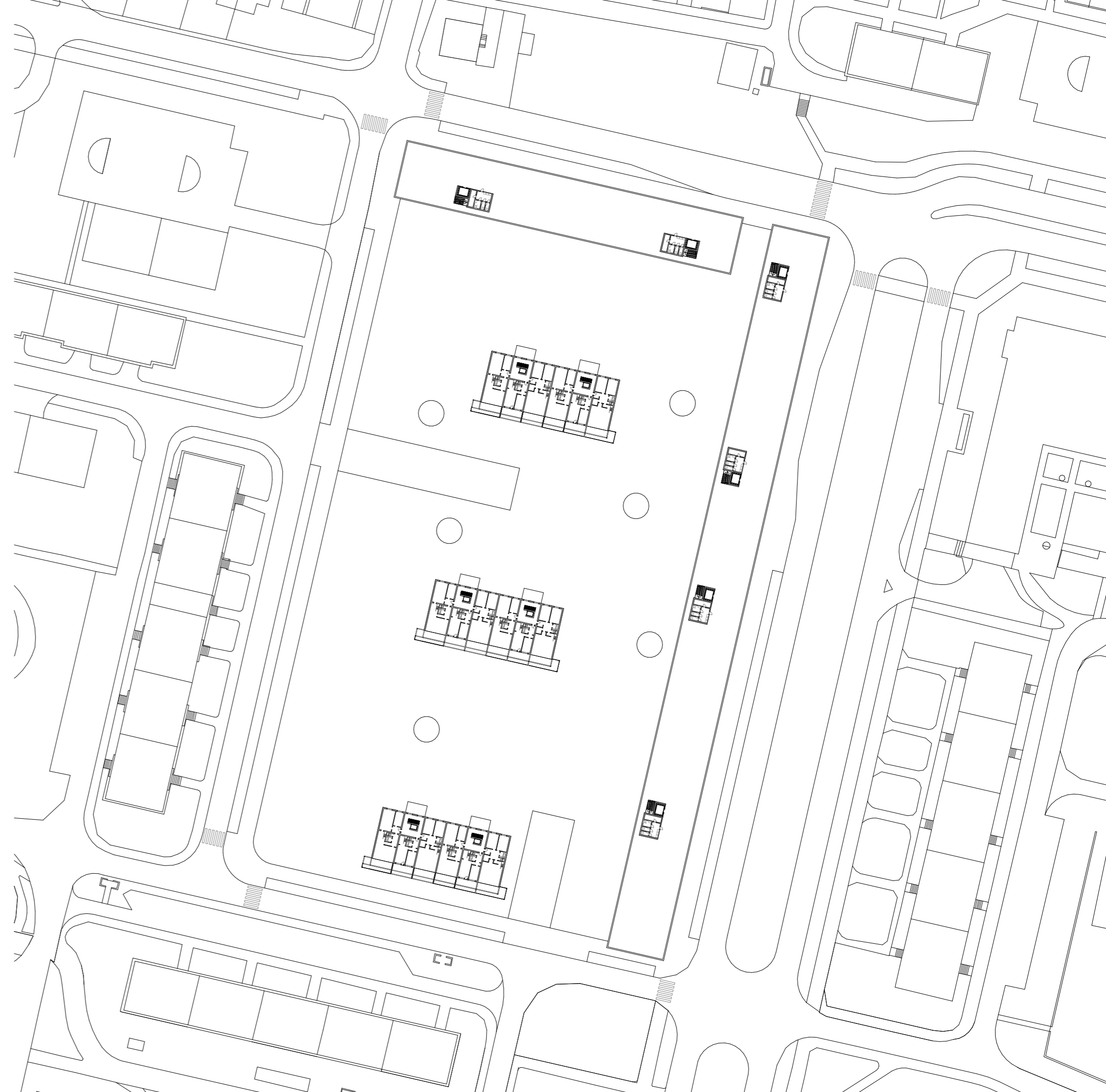


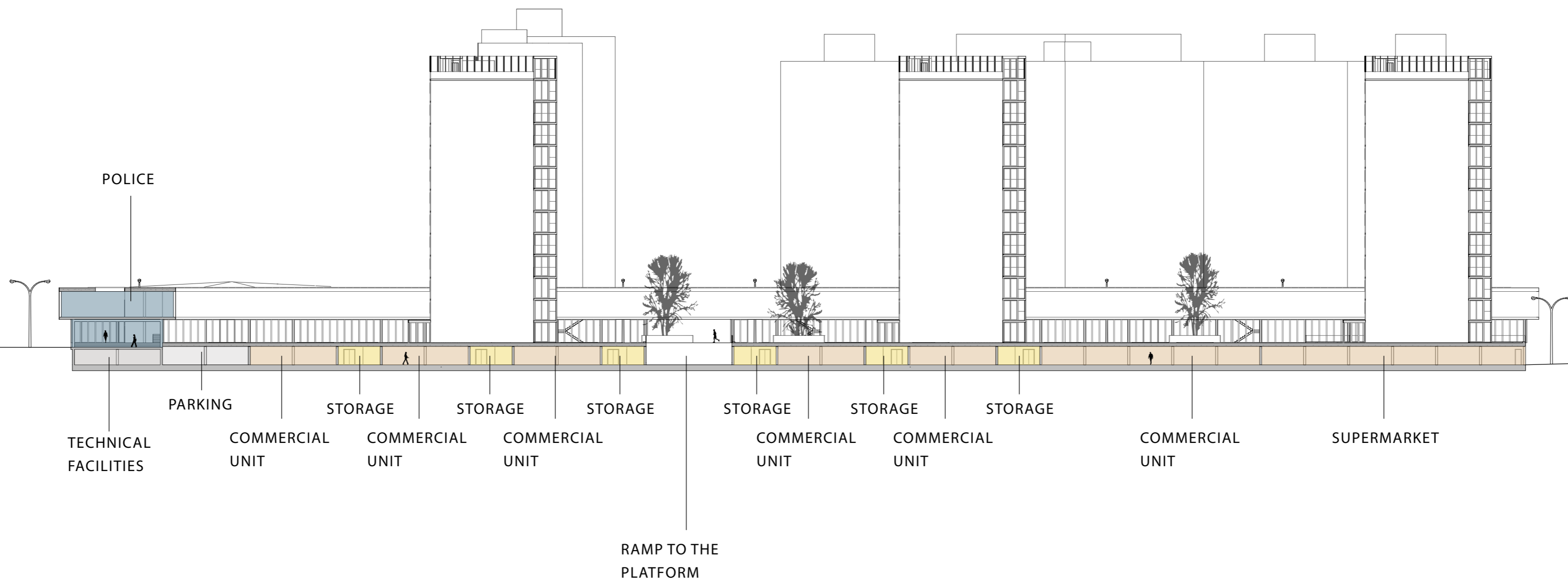
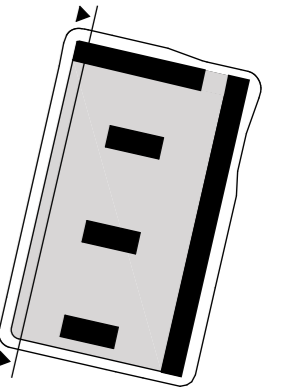
02 LEVEL PLAN

1:1000

This level is working areas with a open floor plan for both structures - police station and offices.

Police station has 94 working places, and office building has 207 working places.





POLICE

TECHNICAL FACILITIES

PARKING

COMMERCIAL UNIT

COMMERCIAL UNIT

COMMERCIAL UNIT

STORAGE

STORAGE

STORAGE

STORAGE

STORAGE

STORAGE

COMMERCIAL UNIT

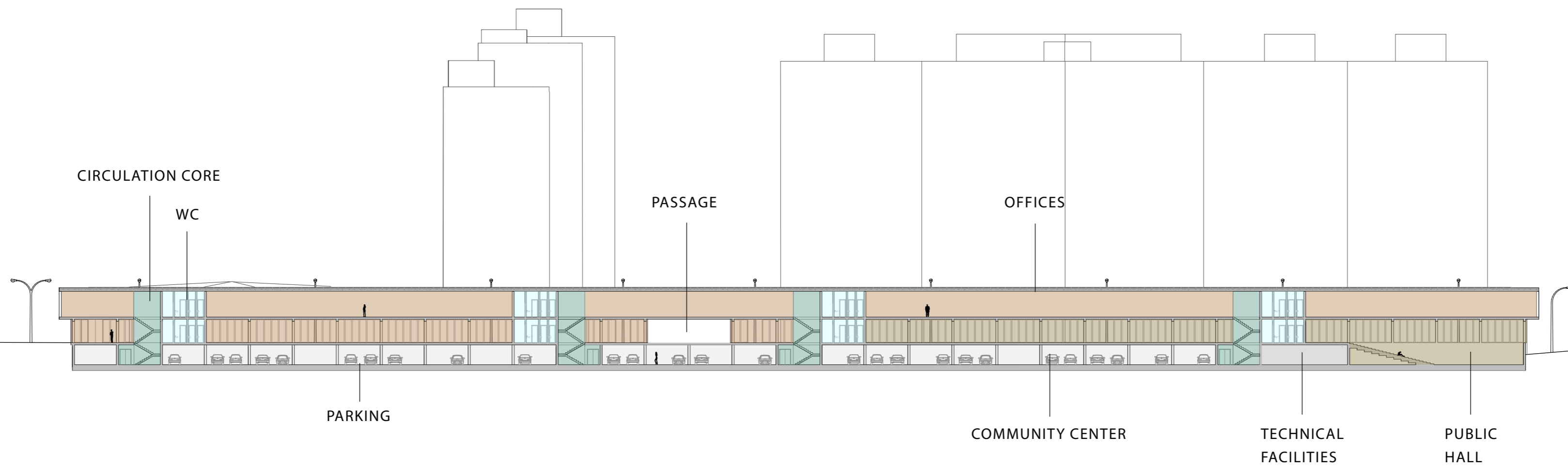
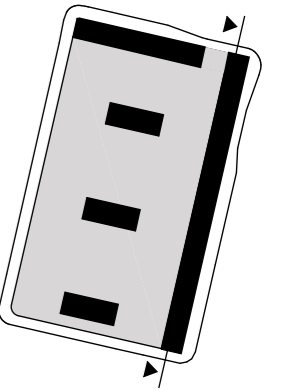
COMMERCIAL UNIT

COMMERCIAL UNIT

SUPERMARKET

RAMP TO THE PLATFORM

LONGITUDINAL SECTION
1:500



CIRCULATION CORE

WC

PASSAGE

OFFICES

PARKING

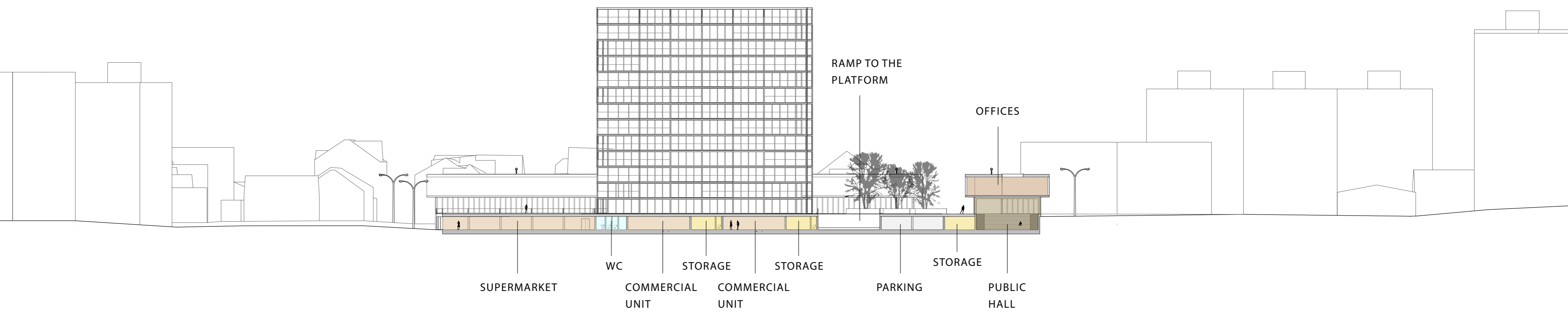
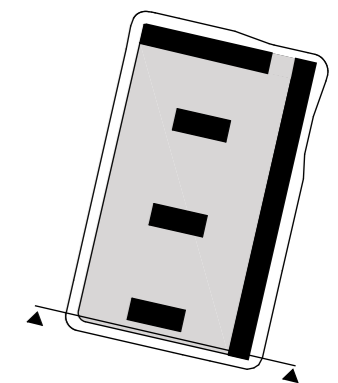
COMMUNITY CENTER

TECHNICAL FACILITIES

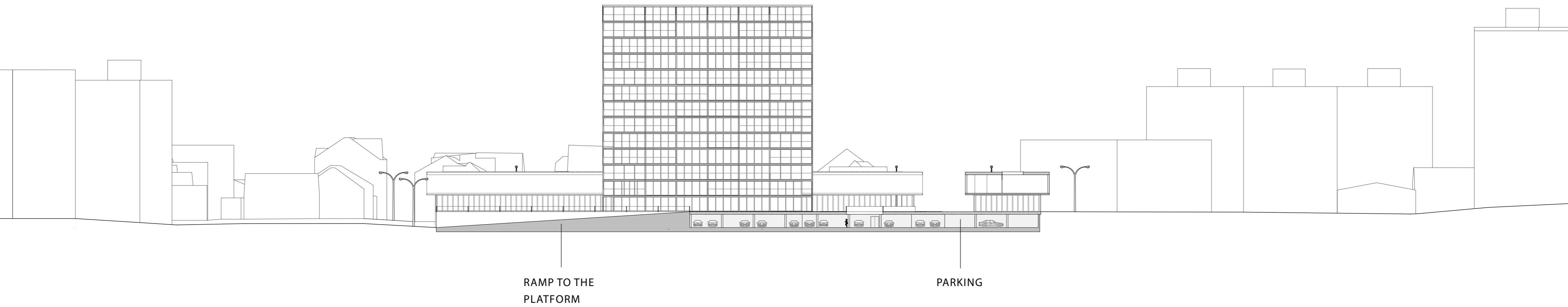
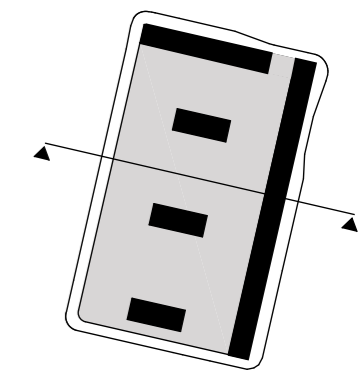
PUBLIC HALL

LONGITUDINAL SECTION
1:500

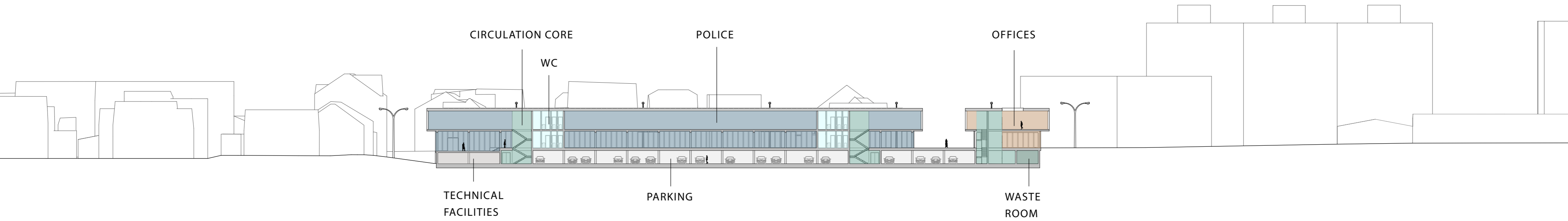
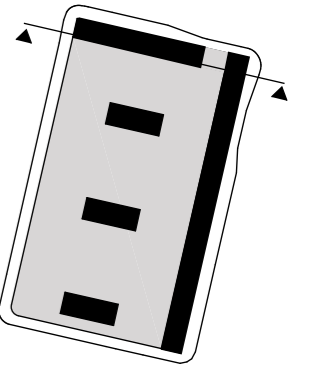
RAMP TO THE
PLATFORM
Page 84 | In between panelák houses



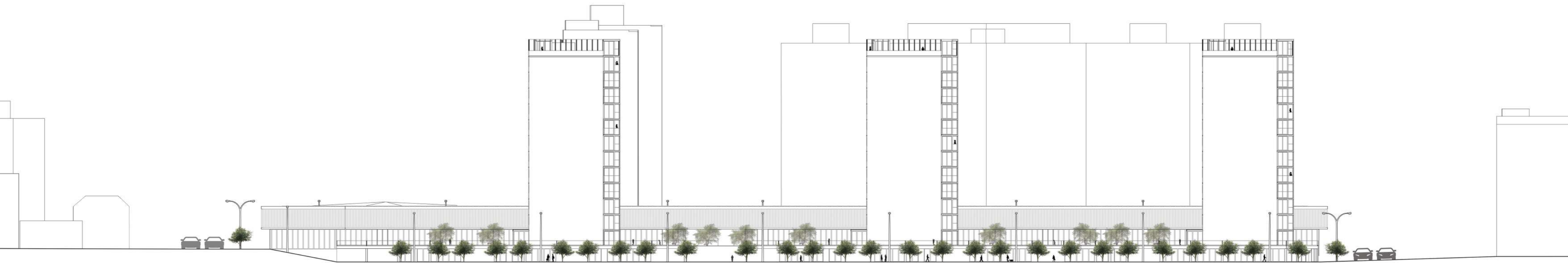
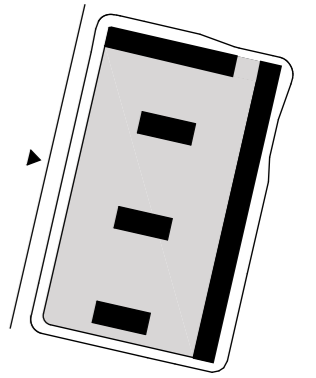
CROSS SECTION
1:500



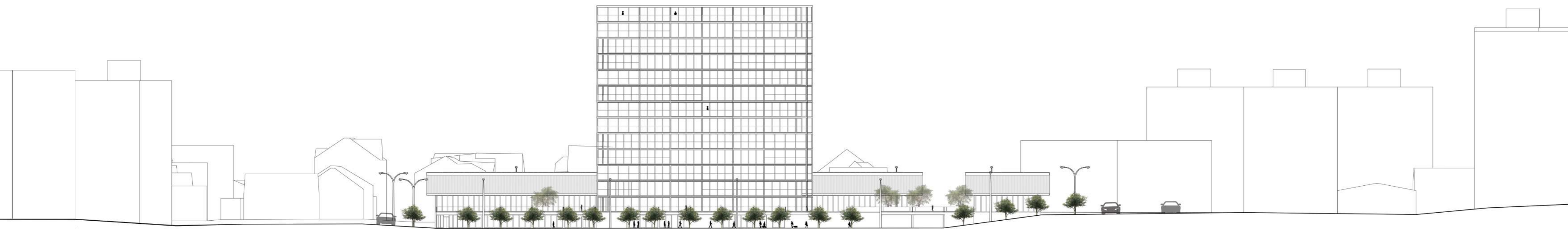
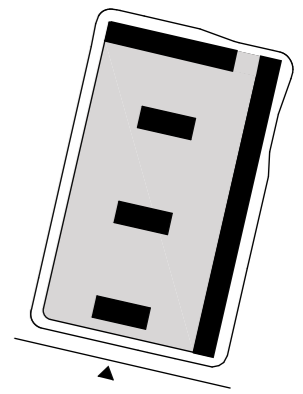
CROSS SECTION
1:500



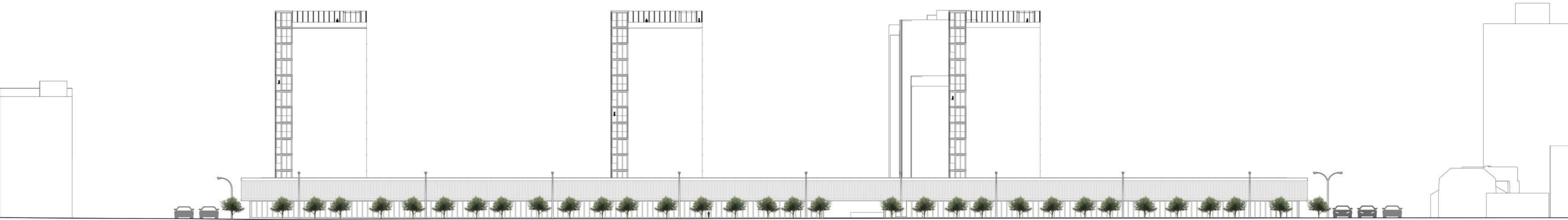
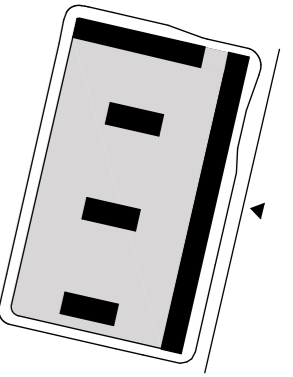
CROSS SECTION
1:500



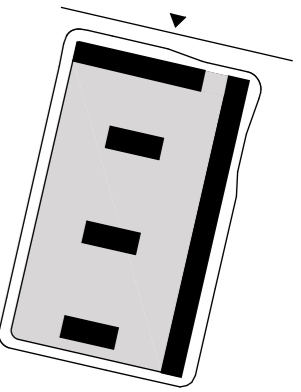
WEST ELEVATION
1:500



SOUTH ELEVATION
1:500



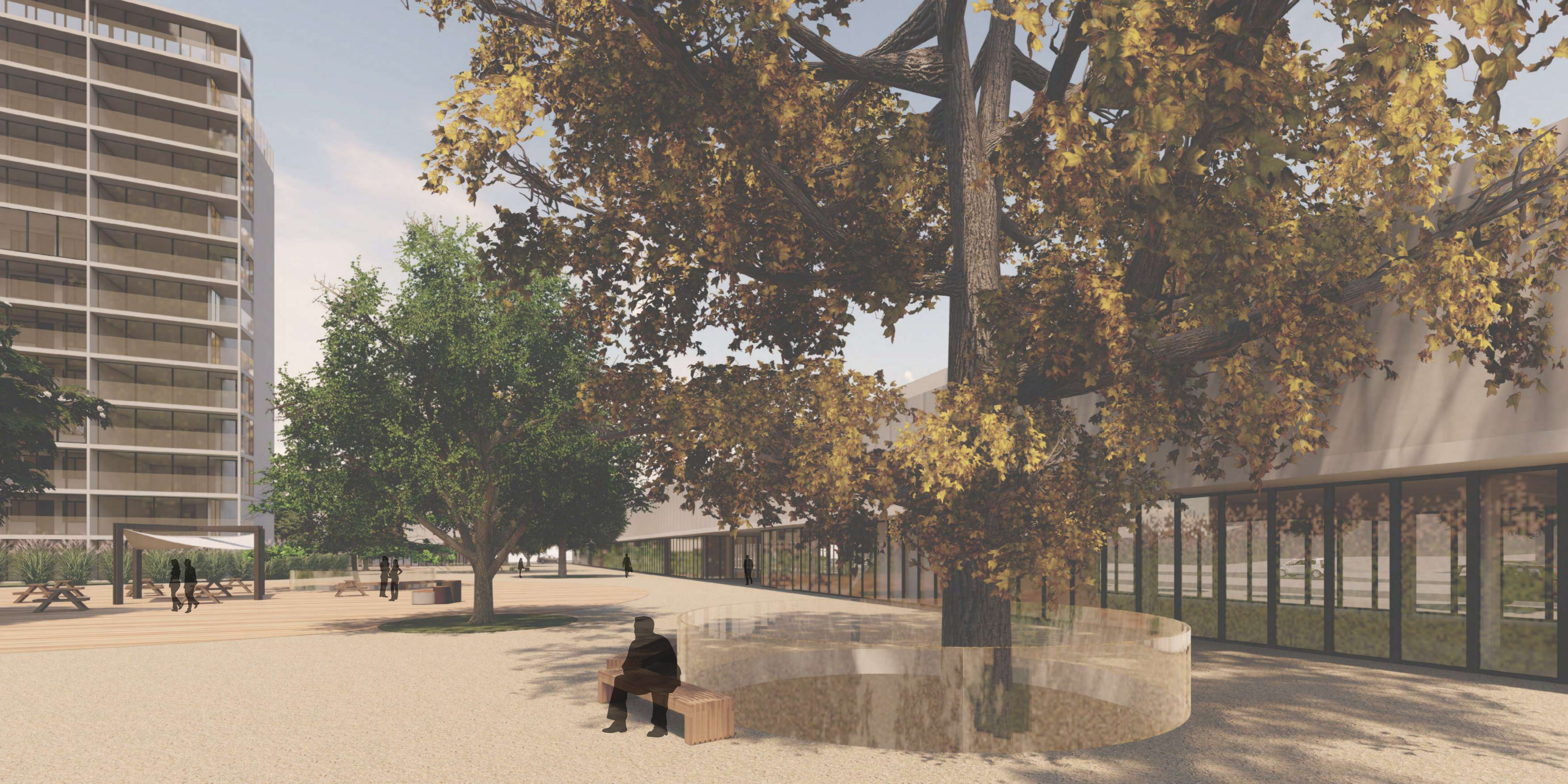
EAST ELEVATION
1:100



NORTH ELEVATION
1:500









CHILDREN PLAYGROUND



SPORT FACILITIES



ENTRANCE TO THE PLATFORM THROUGH THE RAMP FROM THE WEST
(RADOMSKÁ STREET)



ENTRANCE TO THE PLATFORM THROUGH THE PASSAGE FROM THE EAST
(LODŽSKÁ STREET)



NORTH-EAST CORNER OF THE BUILDING



ENTRANCE TO THE UNDERGROUND PARKING AND TO THE PLATFORM THROUGH THE RAMP FROM THE SOUTH
(ŘEŠOVSKÁ STREET)



PUBLIC HALL INSIDE THE COMMUNITY CENTER



VIEW FROM THE INSIDE OF THE NEW BUILDING TO THE COURTYARD



CONCLUSION

The main objective of the project was to change the quality and aesthetic parameters of the area, as well as to create new job places, commercial units and public spaces. The example of Druot, Lacaton and Vassal confirms that the quality of life in houses after reconstruction becomes better, and the funds spent on reconstruction are much less than the funds that could have been spent on demolishing existing buildings and building new ones. In the project, I used the model of a self-serving mini-district, where all residents can find a job, a place for active and passive recreation, as well as meet their social and consumer needs.

TECHNICAL REPORT

1. Identification data Al plot. A rectangular piece of land 200m by 130m.

Project name: IN BETWEEN PANEL HOUSES OF SÍDLIŠTĚ BOHNICE: a selected area as a model for the larger sídliště environment
Architect: Yelyzaveta Shovikova
Location: Czech Republic, Prague, Bohnice, Lodžská street
Type of building: Multifunctional building
Architectural studio: Wertig/ Kopecký ARCHIP

2. Concept

Underground parking lots covered by platform creating perfect possibilities for public space. And two new buildings creating L-shape corner structure, which enclosing inside three existing building, inner public space and private gardens that connect visually and functionally all the complex.

3. Site

The area has been being developed since the beginning of 1970s and has a lot of potential in future.

3.1. Location

Plot is located on Lodžská street street, in area called Bohnice, part of Prague 8 district.

3.2. Accessibility

Bus stop « Zhořelecká» is in front of the site.

3.3. Neighborhoods

3.3.1. North

Zhořelecká street. The old Bohnice residential houses.

3.3.2. West

Radomská street.

3.3.5. South

Řešovská street.

3.3.6. East

Lodžská street.

3.3. Plot

3.4. Climate

The city of Prague lies between oceanic climate and humid continental climate. The winters are relatively cold with average temperatures at about freezing point, and with very little sunshine. Summers usually bring plenty of sunshine and the average high temperature of 24 °C. Prague is also a windy city with common sustained western winds.

4. Structures

Two building is configured into an I-Shape, creating corner L-shape structure, covered by the glass walls on the ground floor and concrete creates a feeling of a broken volume. The shape makes it narrow enough not to put columns in the middle.

4.1. Dimensions

Length: 200m

Width: 130m

Height: 12m

Footprint: 27,800 m²

4.2. Structure

The building structure consists of 3 structural floor elements which are carried by columns, loadbearing walls and a concrete foundation.

4.2.1. Columns

Columns are placed with 6 meters grid. Columns are four-sided. Each one is 40cm width.

4.2.2. Glass wall

1m glass windows are covering the entire 01 level. They're fixed to floor slabs with metal mullions.

4.2.3. Foundation

Foundation with spot footing would and will provide the stable foundation by reinforced concrete pylons that will support the building stresses. Since new structure is maximum 12m high there is no need in the deep foundation.

4.2.4. Slabs

Hollowcore slab ceiling was chosen, as a cost-ef-

fective method this one carry wires for lighting, heating and communication. A hollowcore allow a cheap option for large spaces, fast assembly due to prefabrication, lighter weight equals lower transportation costs and hollow interior can be used for heating, wiring, and communication cables.

4.2.5. Skylight roof

The roof consists of skylights situated in the middle of the roof along the whole roofs of both buildings. With thickness of 300mm, width 1m and length 4m. Also the roof is equipped with a drainage system, where the drained water is piped to the water collection system for later use in watering of green areas.

4.2.6. Walls

The loadbearing walls are used to separate all other spaces and circulation, as well as toilets and to support the elevator mechanism, so the shaft is also a bearing structure. These walls are 0.4m thick and are constructed of hollow concrete bricks recovered with more concrete lining.

4.3. Levels

4.3.1. 00 Level

The ground level has parking with the two entrances to it and a new entrance to the panelaks. Two ramps started on the ground level lead to the big open space public platform on level 01. Here as well located public hall with a capacity of around 200 people. On the south and the west facades located 7 smaller commercial units, 1 bigger commercial unit, and supermarket. This part of the structure is covered by the glass windows and concrete walls which creates a feeling of a broken volume. All commercial spaces equipped with their own storage and sanitary facilities. All technical facilities located on the ground level.

4.3.2. 01 Level

L - shaped corner structures are covered by the glass windows. The shape makes it narrow enough not to put columns in the middle. One part of the L - shaped corner structure working as a police station, the other one combine different usages: offices, community center, public hall

Two entrances through the passages leads to the platform, where situated outdoor public spaces: playgrounds, sport facilities, place for weekly markets, etc.

4.3.3. 02 Level

Second floor working as offices with an open floor plan for both structures. All walls done from Pilkington glass to bring scattering light to the offices

5.5. Circulation

5.5.1. Staircases

Inside the structure located 6 circulation units with staircases and elevator.

5.5.2. Elevator

The closed elevator is the other element of circulation for this structure, it goes from the 00 level to the 02 level. This one is a traction electrical elevator and the dimensions are 2.1 m x 2.6 m deep.

5.4. Sanitary facilities

Next to every circulation unit situated a sanitary facility with 3 unisex toilets, as well as 1 toilet for disabled persons. All commercial units' storages equipped with their own toilet.

5.6. Materials

Main material will be pre-stressed concrete, which will help in overcoming the weakness of concrete structures in tension. Double glazed glass windows that work as insulators from the street noise. Reinforced concrete is used for the beams as well - the only horizontal loadbearing elements.

6. Insulation

All windows in the building are energy efficient. The hot air stream system is applied to every entrance not to lose the heat in winter

6.1. Thermal Insulation

The thermal insulation will be in accordance to the Czech Republic Standards. The windows are double-glazed to prevent cold from entering inside, vapor barrier and also waterproof insulation on the top of the platform and on all roofs to

prevent moisture and leakage inside.

6.2. Waterproofing

The entire building is waterproof; the platform and all roofs has a waterproof plastic membrane, and a damp proof system.

6.3. Fireproofing

All building spaces is equipped with fire alarm and sprinkles placed on every floor that are activated by smoke detectors inside.

6.4. Drainage system

The drainage system is taking place around the platform and all roofs and thanks to the small tilt of roof surface and it makes water collect in drainage and flush downwards to the water collection system. The use of gray water will also have a significant impact on the sustainability of the project, considering the huge number of new trees and green area that will appear on the site.

7. Services

7.1. Ventilation

Natural ventilation is provided as much as possible. All windows as well as skylights are openable. There are also shafts providing ventilation next to circulation cores and sanitary facilities.

7.2. Electricity

The building will be connected to Prague electricity network.

7.4. Water supply

Water supplied to the building will be used in cafeteria and bathrooms plumbing fixtures.

7.6. Waste

Containers will be placed next to the parking lots and on the 00 level of the existing buildings. Containers will be divided for paper, metal, plastic, and food.

7.5. Maintenance

Every Monday a maintenance company will work to clean the windows and take out all accumulated trash.

7.6. Security System

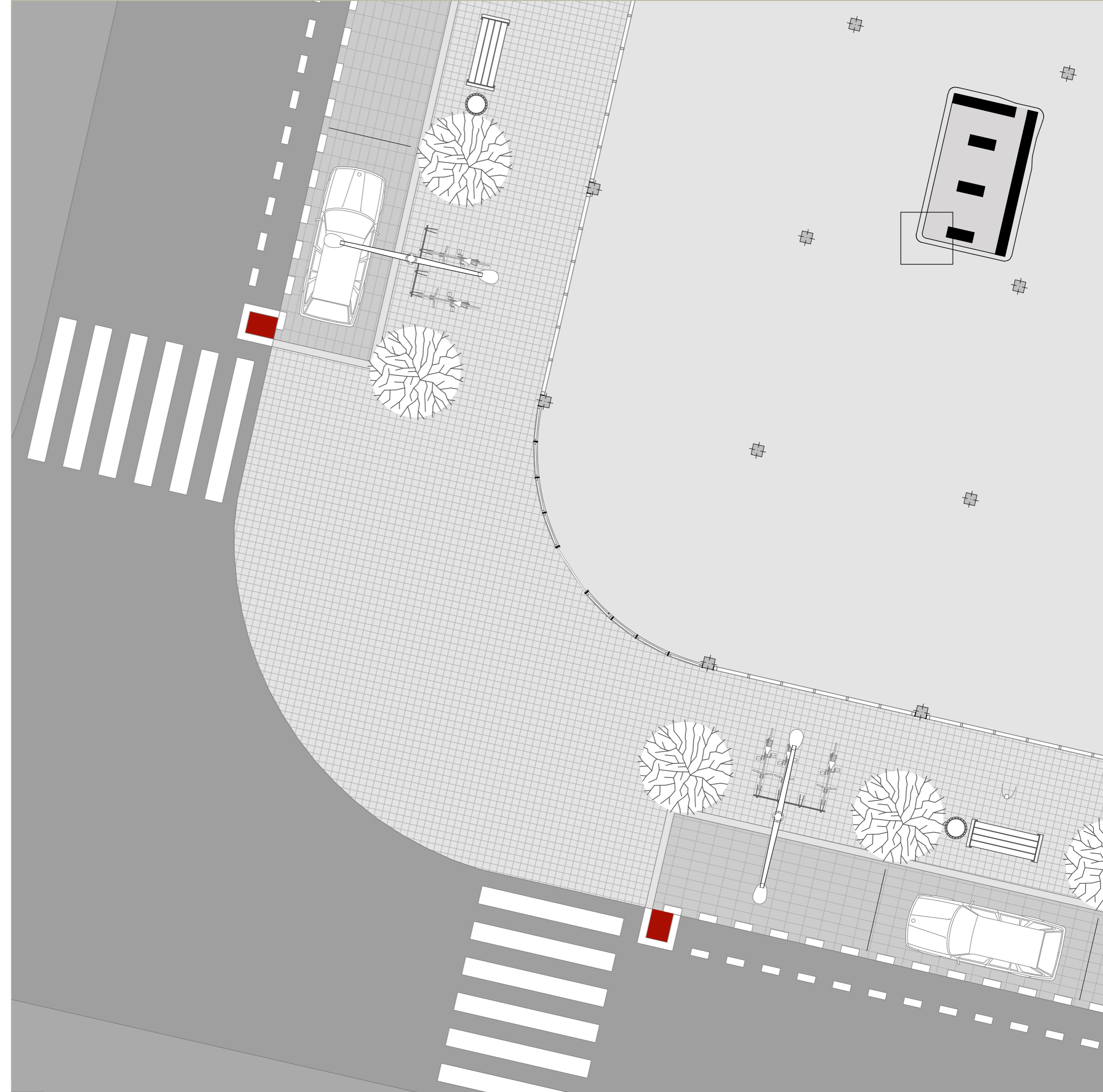
Cameras are located around the building to provide early warning, and an alarm system inside the building.

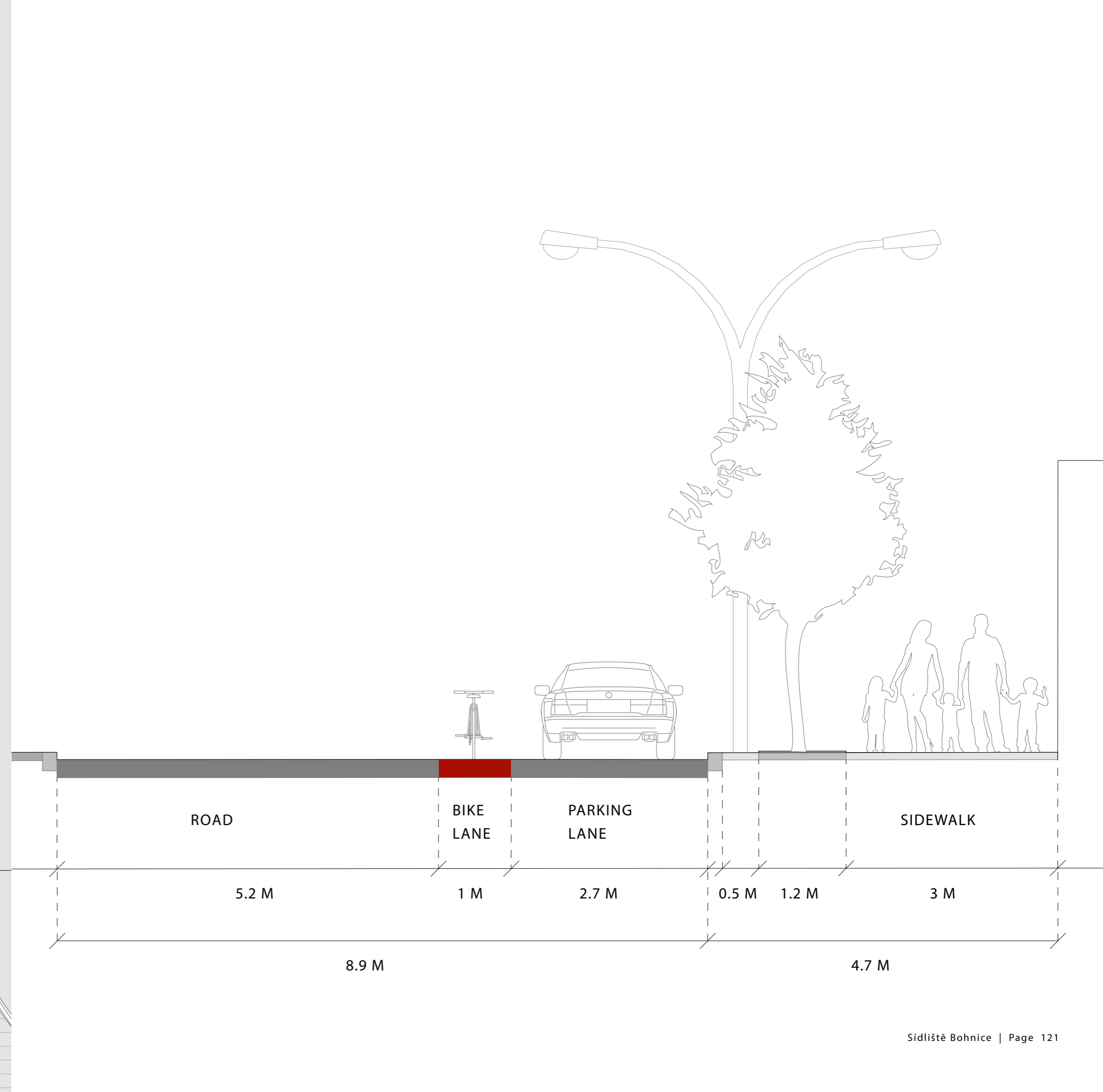
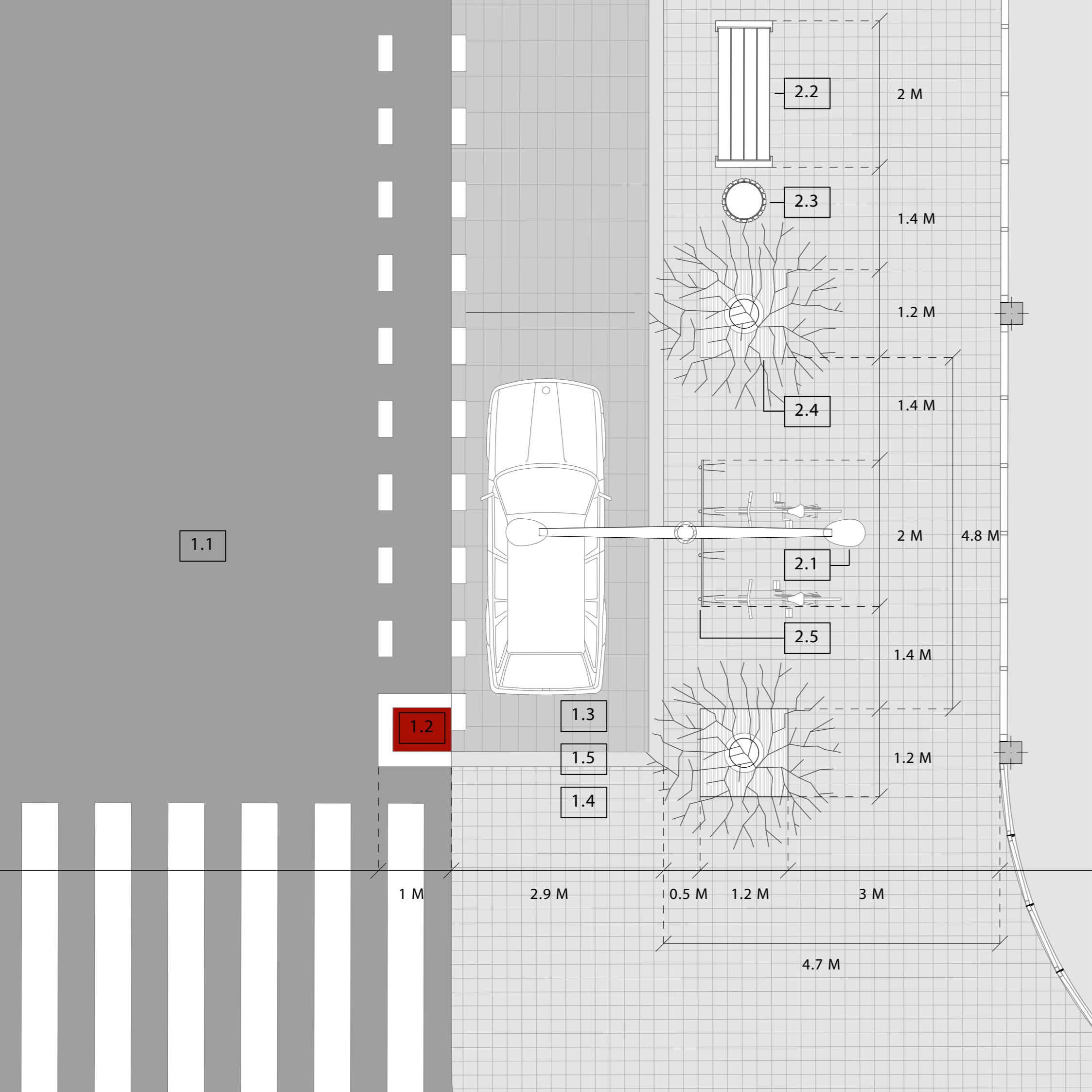
7.7. Parking

New underground parking lot can accommodate 348 cars, and outdoor parking around the site is suitable for another 63 cars.

CONCEPT FOR THE STREET LAYOUT

In order to create a perception of the whole area as a whole, all street furniture was chosen from «mmcite» company (layout, references, and models are on the future pages). Street lighting supplied by «Eltodo» company. The main material for sidewalks is based on the Prague mosaic, which corresponds to the whole appearance of Prague and can be easily renovated.





MATERIALS



1.1

ASPHALT



1.2

ASPHALT BIKE LANE COLOURED IN RED



1.3

GRANITE PAVING TILES

produced by Mramor Bohemia s. r. o.



1.4

PRAŽSKÁ MOZAIKA

produced by Mramor Bohemia s. r. o.



1.5

GRANITE CURB

produced by Mramor Bohemia s. r. o.

STREET FURNITURE

STREET LIGHTING

produced by ELTODO, a.s.

Lighting fixture for pedestrians, cyclists and drivers.

2.1

OP 03



SEATING BENCH - RADIUM

produced by MMCITÉ, designed by David Karásek, Radek Hegmo

Steel structure made of bent steel sheet, seat made of wooden lamellas. Unique design of this product range is based on the aesthetics of bent steel sheet.

2.2

LRA130



LITTER BIN - NANUK

produced by MMCITÉ, designed by David Karásek, Radek Hegmo

Steel frame, covered with wooden lamellas, anchoring onto the ground, 45l. Extremely sparing in terms of shape, structurally simple, materially diverse – an example of smart design.W

2.3

SL505



TREE GRID - ARBOTTURA

produced by MMCITÉ, designed by David Karásek, Radek Hegmo

Steel structure. A traditional element of the urban space in a contemporary concept. Suitable for various locations, whether historical or completely modern.

2.4

ART321



BICYCLE STANDS - LOTLIMITE

produced by MMCITÉ, designed by David Karásek, Radek Hegmo

Steel structure. This modest bicycle stand essential contours can be easily integrated into any potential project. The stand reflects both contemporary and historical architecture.

2.5

NNK111



REFERENCES

PANELÁK 3 – MICHAL DROZEN, 2017

In the third edition of this book are many examples of panel houses of the same period of construction as Sídliště Bohnice, which are now under reconstruction.

LEGENDA O SÍDLIŠTI – MARKÉTA MRÁČKOVÁ, BARBORA ŠIMONOVÁ, VIKTOR VEJVODA, 2014, ISBN 978-80-87108-53-6

The book contains interviews about "Panelak" Sídliště(s) with famous Czech architects, historians, anthropologists and residents of these neighborhoods.

PANELÁCI 1: PADESÁT SÍDLIŠŤ V ČESKÝCH ZEMÍCH – LUCIE SKŘIVÁNKOVÁ, ROSTISLAV ŠVÁCHA, EVA NOVOTNÁ, KAROLINA JIRKALOVÁ, 2014, ISBN: 978-80-71-01-161-3

The book introduces the circumstances and causes of the construction, architecture and urbanism of these complexes, as well as the personalities of their authors.

PANELÁCI 2: HISTORIE SÍDLIŠŤ V ČESKÝCH ZEMÍCH 1945–1989 – LUCIE SKŘIVÁNKOVÁ, ROSTISLAV ŠVÁCHA, EVA NOVOTNÁ, KAROLINA JIRKALOVÁ, 2018, ISBN: 978-80-7101-169-9

The second edition of the book delves into the urbanism and architecture of these buildings in more detail through the anthropology, history and demography of this period.

HOUSING ESTATES, WHAT'S NEXT? – PROF. ING. ARCH. MICHAL KOHOUT, DOC. ING. ARCH. DAVID TICHÝ, PH.D., ING. ARCH. FILIP TITTL, ING. ARCH. JANA KUBÁNKOVÁ, ING. ARCH. ŠÁRKA JAHODOVÁ, 2016, ISBN 978-80-01-06074-2

This is a complex research on the Communists' Sídliště(s) which was carried out for several years and organized by Faculty of architecture of CTU.





Resume

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