

Re-envisioning New Belgrade's Superblock Neighbourhoods

P5 presentation

AR3MET105 Methods and Analysis Graduation Studio

Sem van der Straaten
4652657

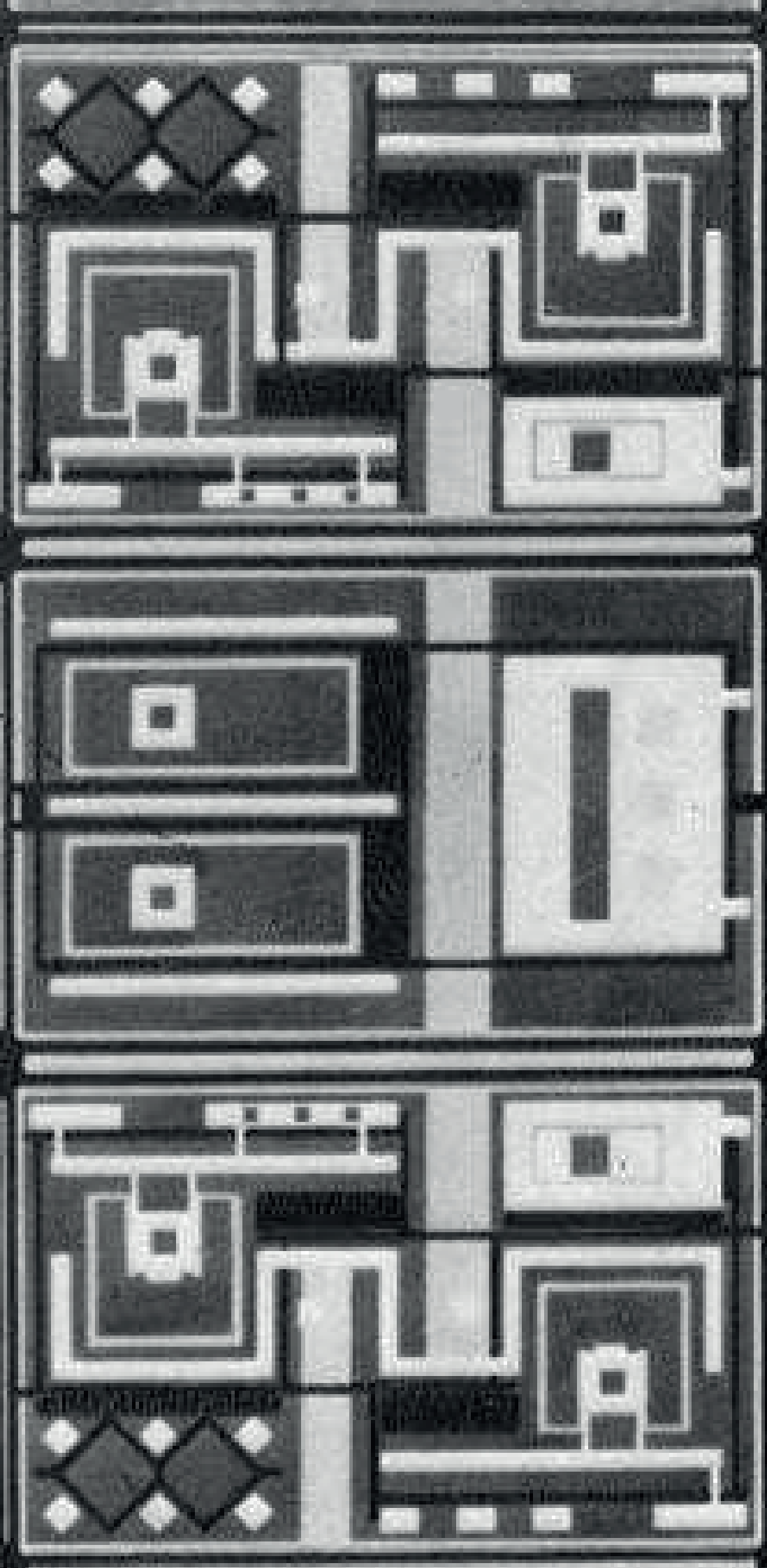


Table of Contents

1) Introduction

Serbia

New Belgrade

9 central blocks

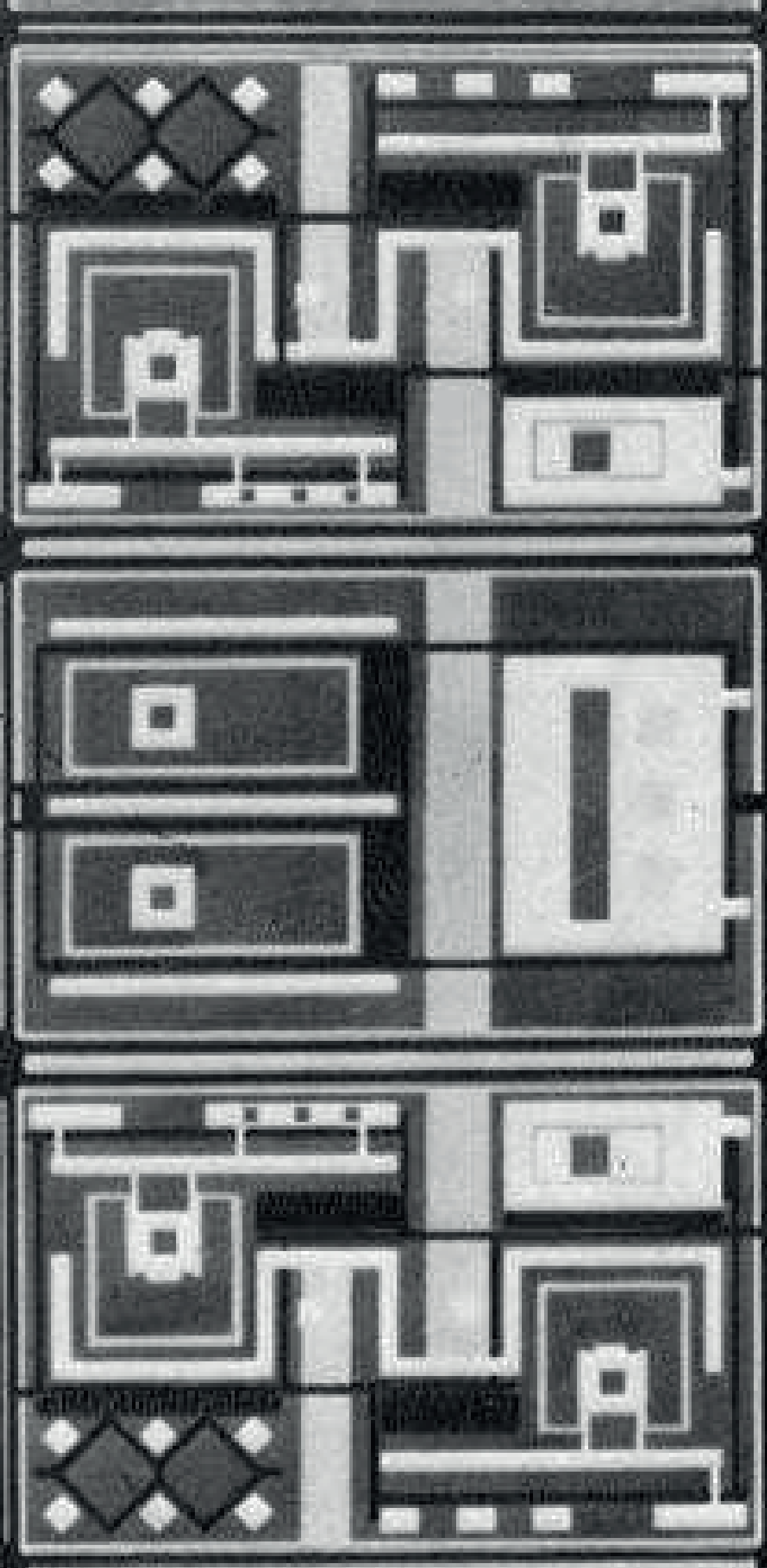


Table of Contents

1) Introduction

Serbia

New Belgrade

9 central blocks

2) Research

Streets

Block 23

Block 26

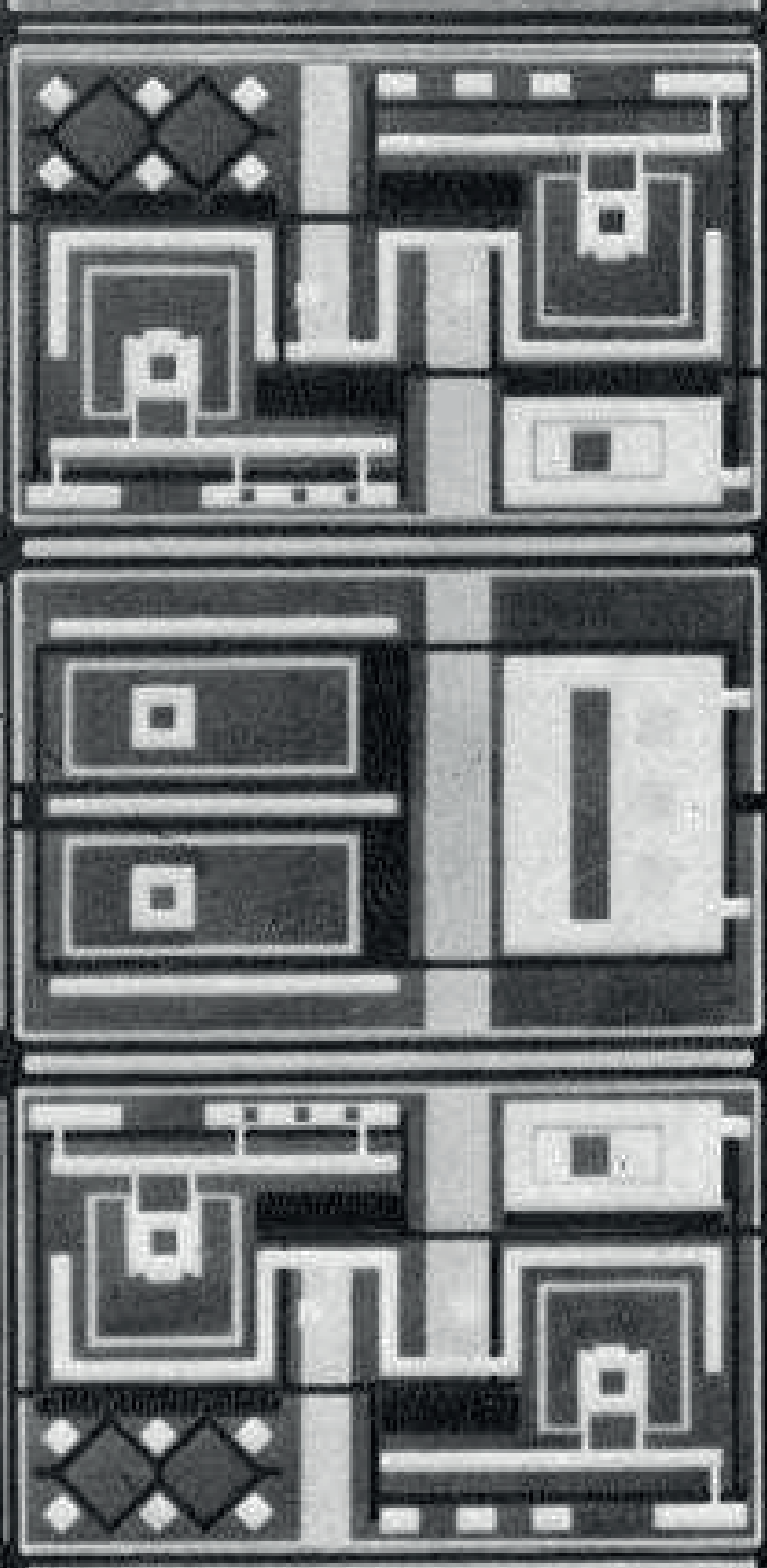


Table of Contents

1) Introduction

Serbia

New Belgrade

9 central blocks

2) Research

Streets

Block 23

Block 26

3) Problem statement

Problems

Project intentions

Overarching theme

AR3MET105 Methods and Analysis Graduation Studio

Sem van der Straaten
4652657

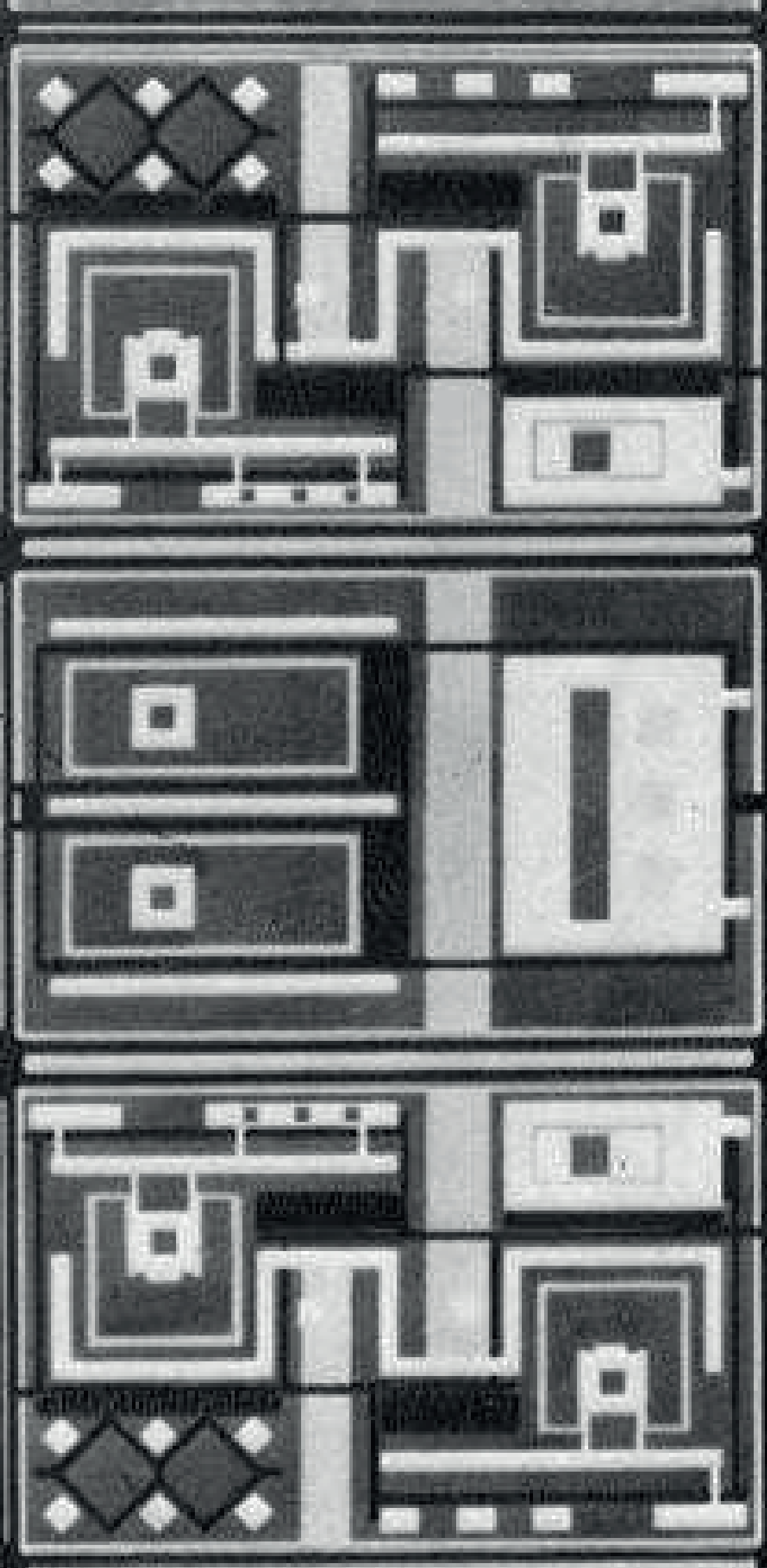


Table of Contents

1) Introduction

Serbia
New Belgrade
9 central blocks

2) Research

Streets
Block 23
Block 26

3) Problem statement

Problems
Project intentions
Overarching theme

4) Principles

Urban
Building
Unit

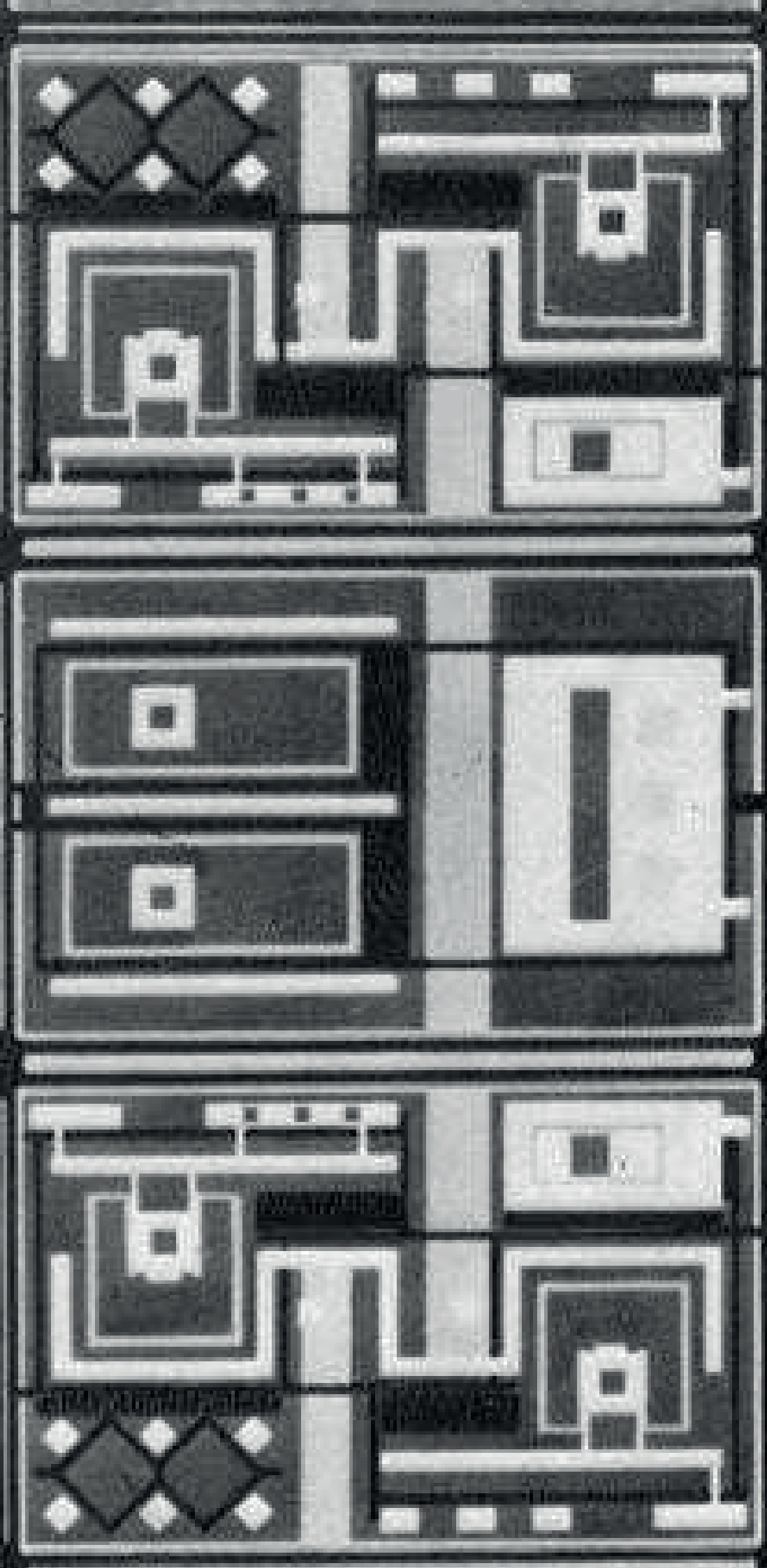


Table of Contents

1) Introduction

Serbia
New Belgrade
9 central blocks

2) Research

Streets
Block 23
Block 26

3) Problem statement

Problems
Project intentions
Overarching theme

4) Principles

Urban
Building
Unit

5) Design

Site
Pavilion
Row house
Courtyard

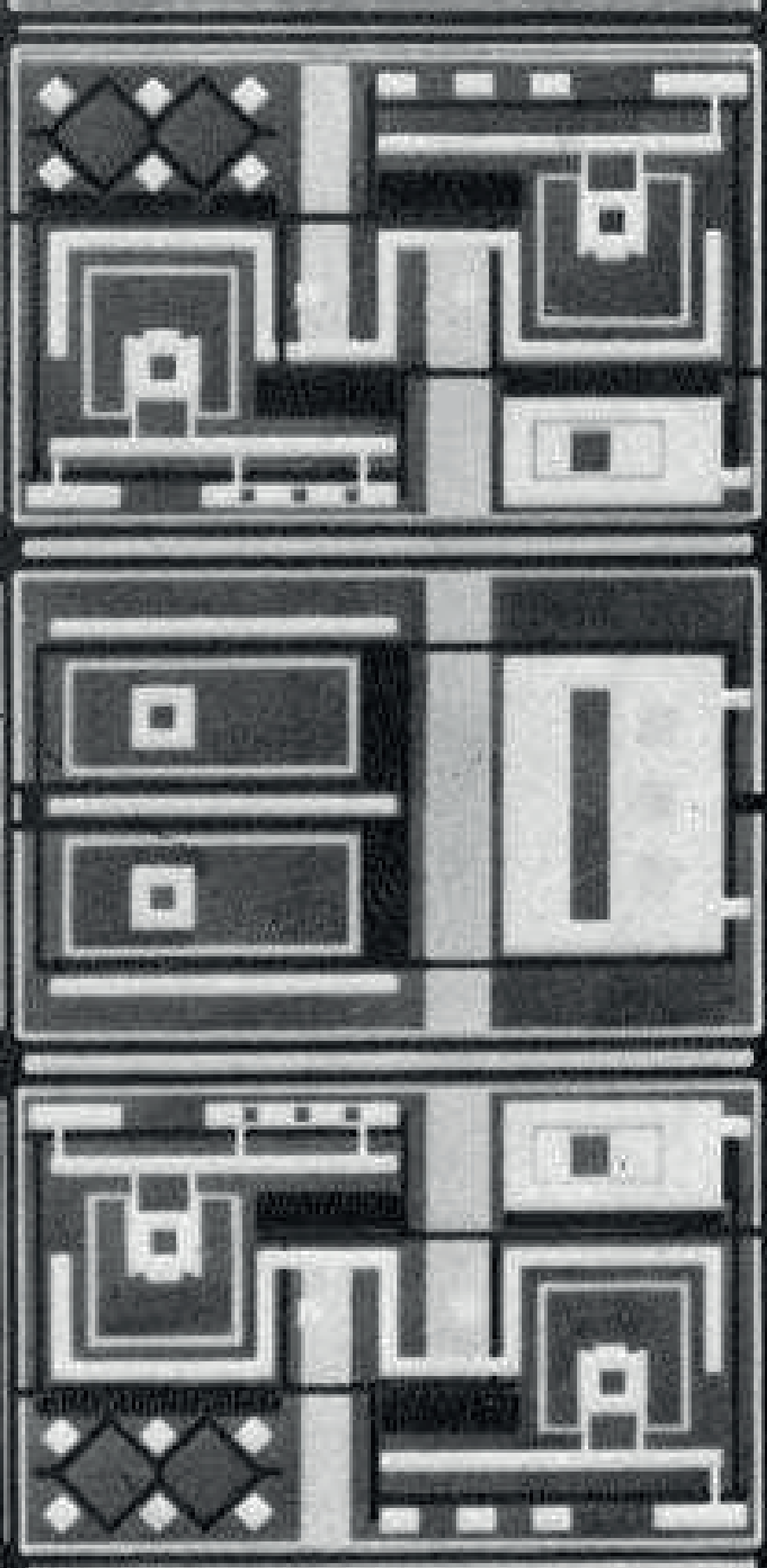


Table of Contents

1) Introduction

Serbia
New Belgrade
9 central blocks

2) Research

Streets
Block 23
Block 26

3) Problem statement

Problems
Project intentions
Overarching theme

4) Principles

Urban
Building
Unit

5) Design

Site
Pavilion
Row house
Courtyard

6) Technical

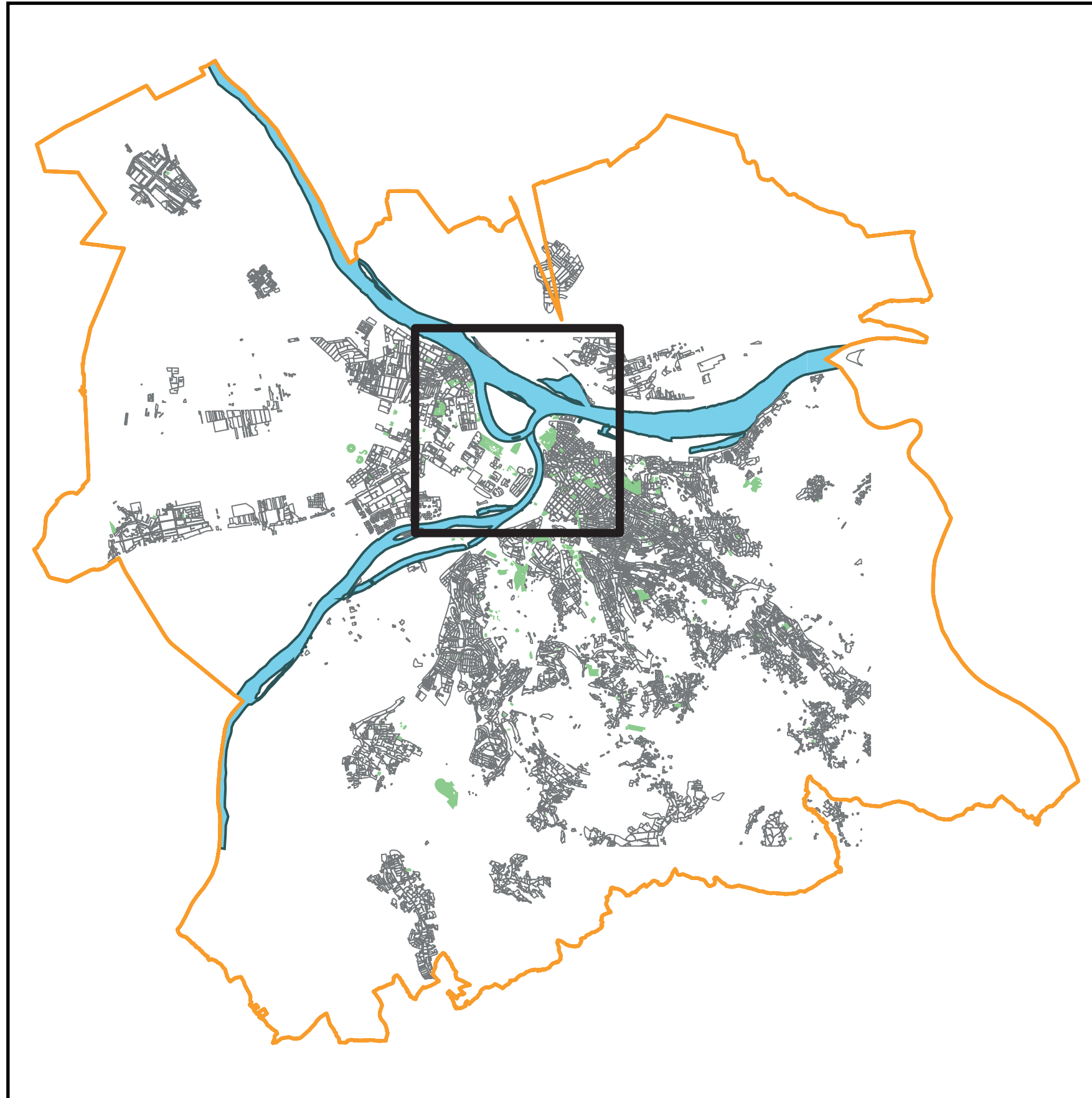
Facade build-up
Climate section
Details

1) Introduction

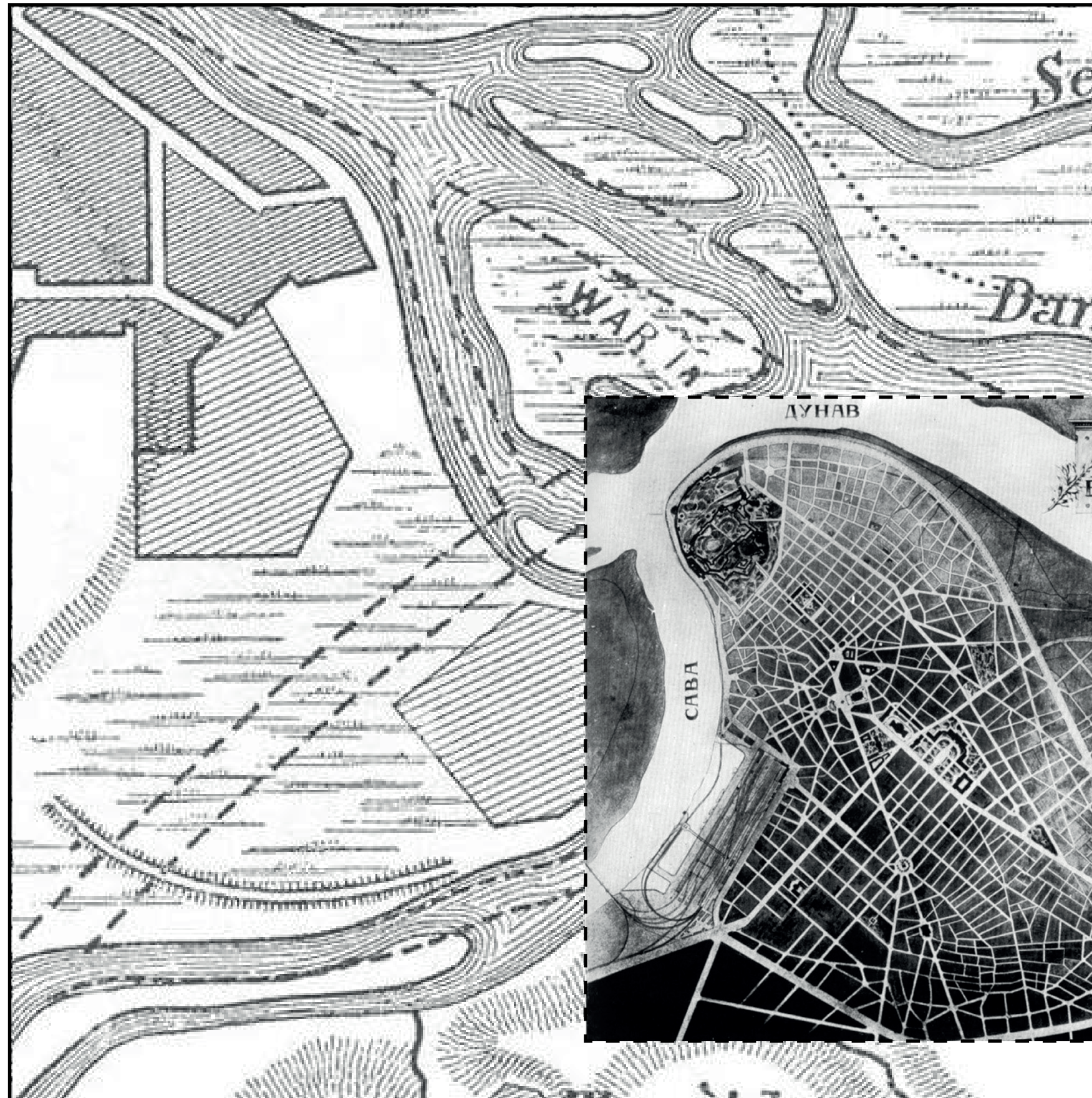
Serbia



City of Belgrade



Belgrade 1885

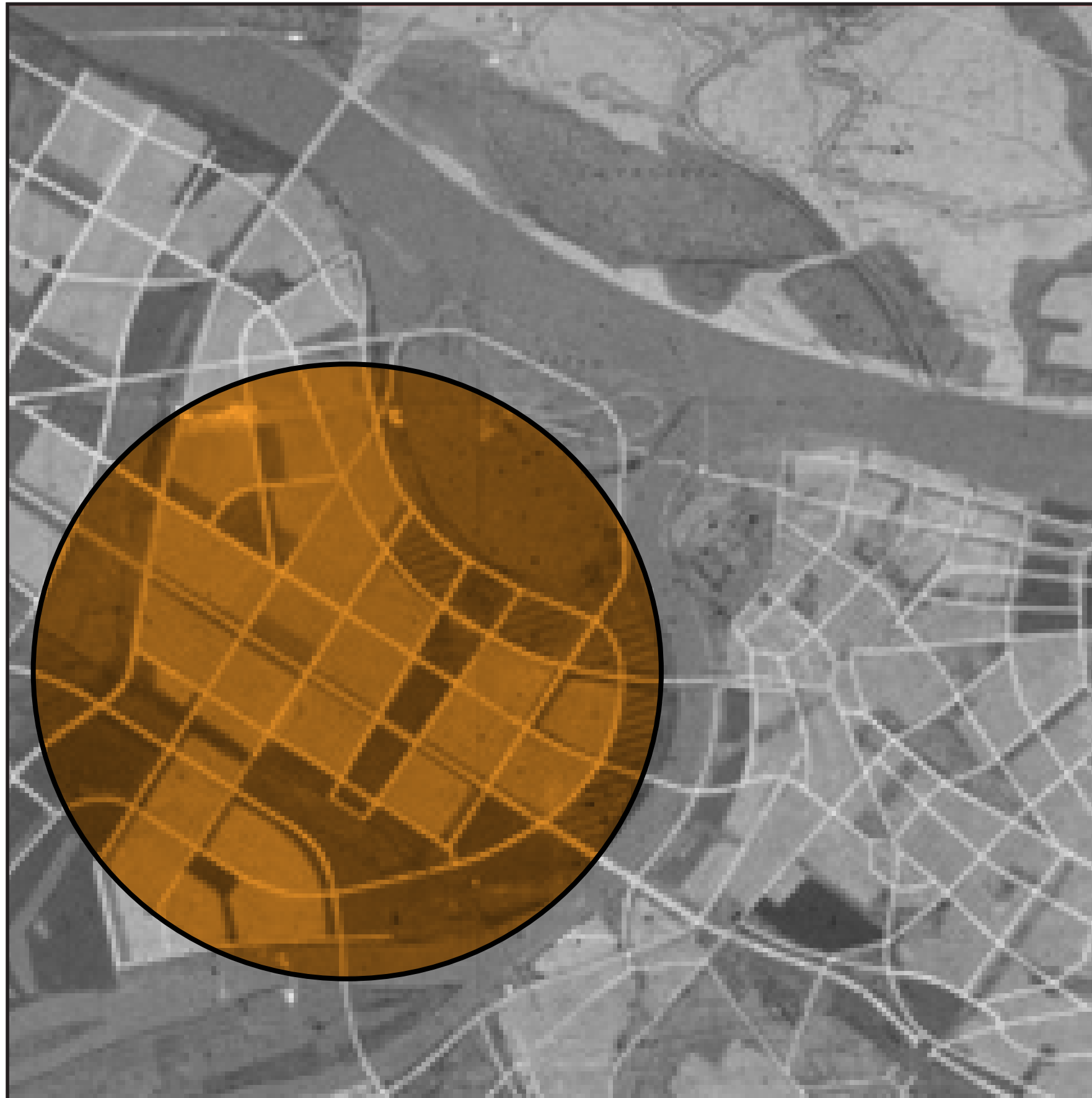


2000 m

Belgrade 1961



Master plan New Belgrade 1950



⌚ 2000 m

Old & New Belgrade 2021

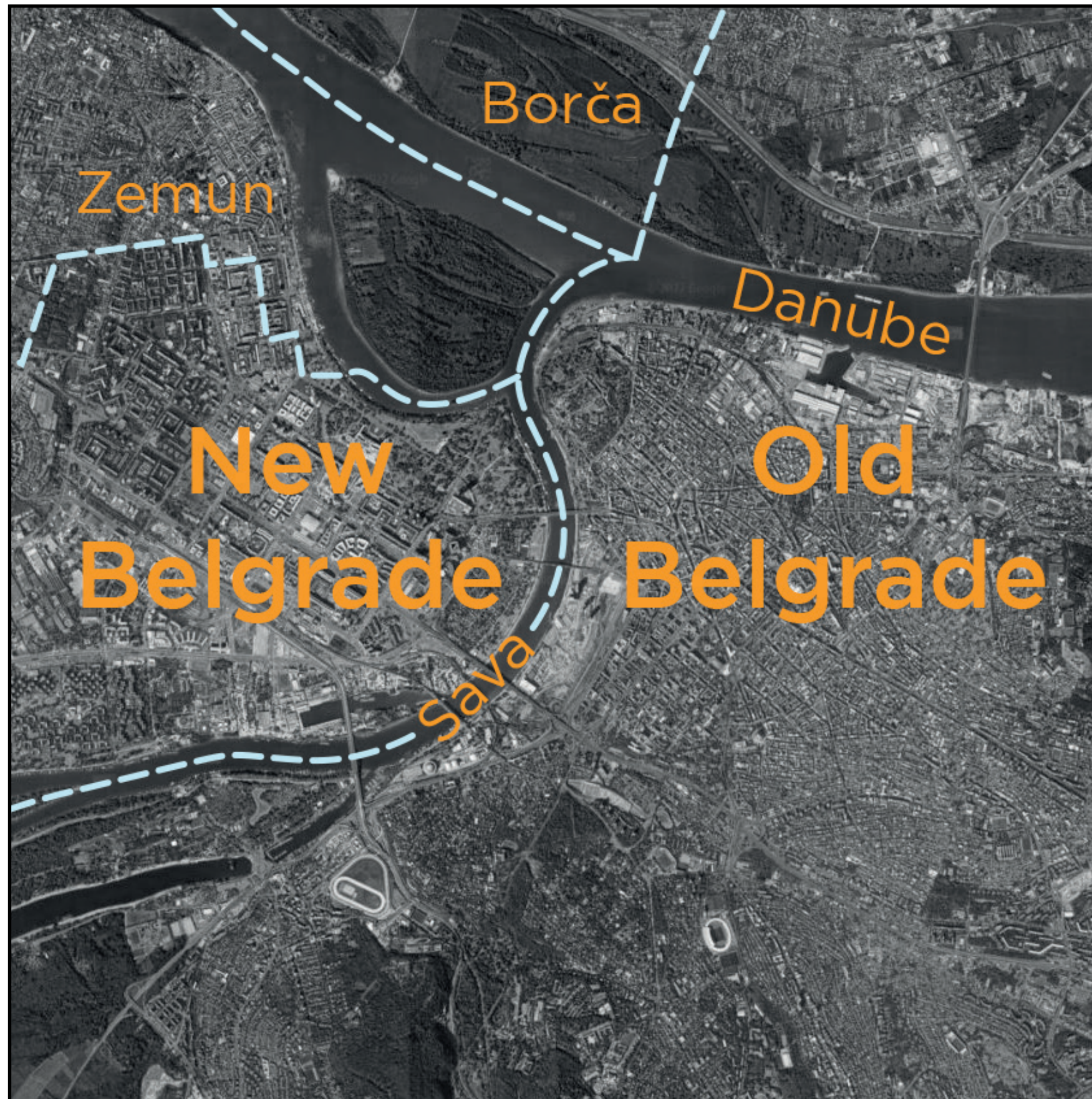
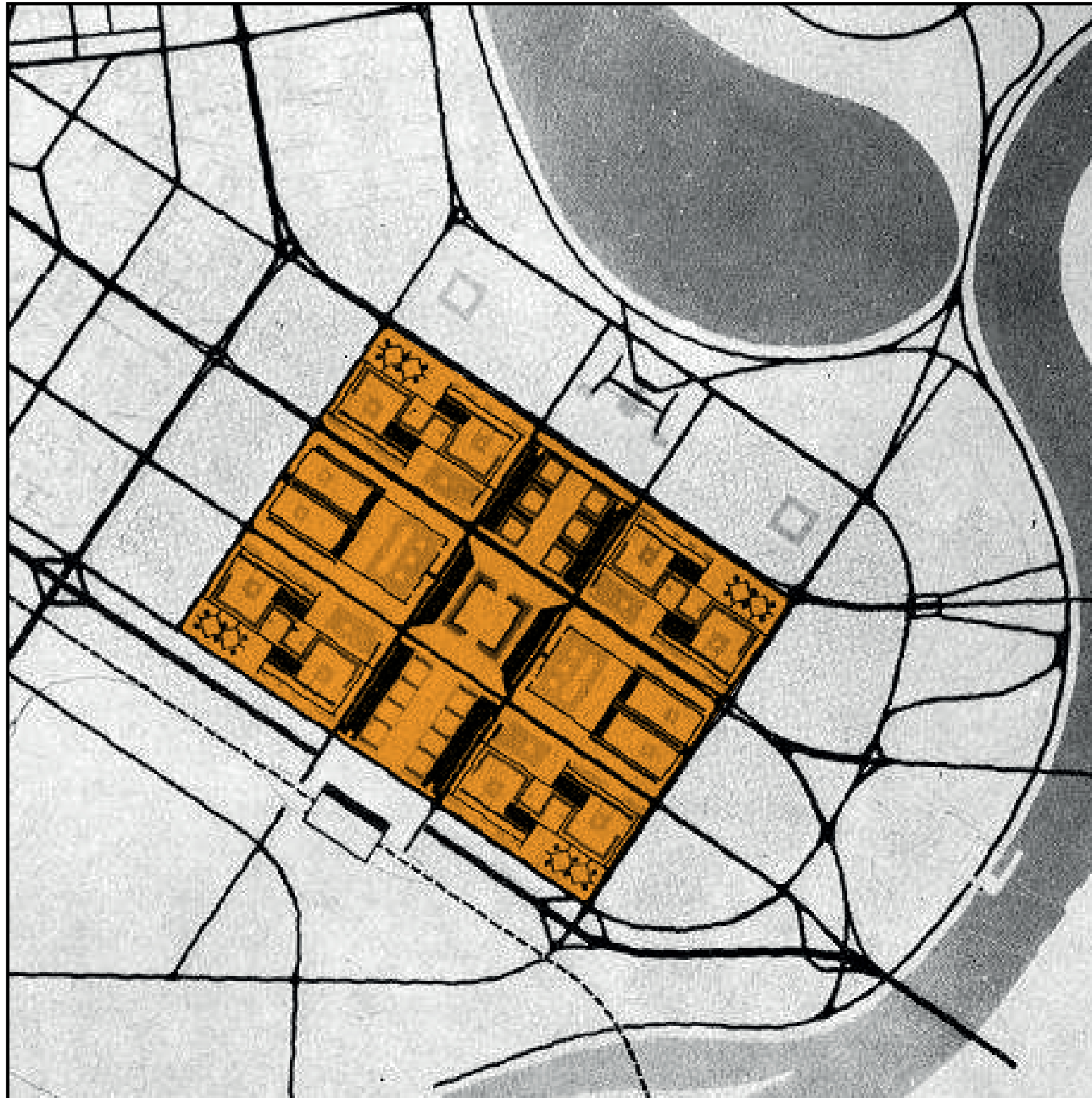


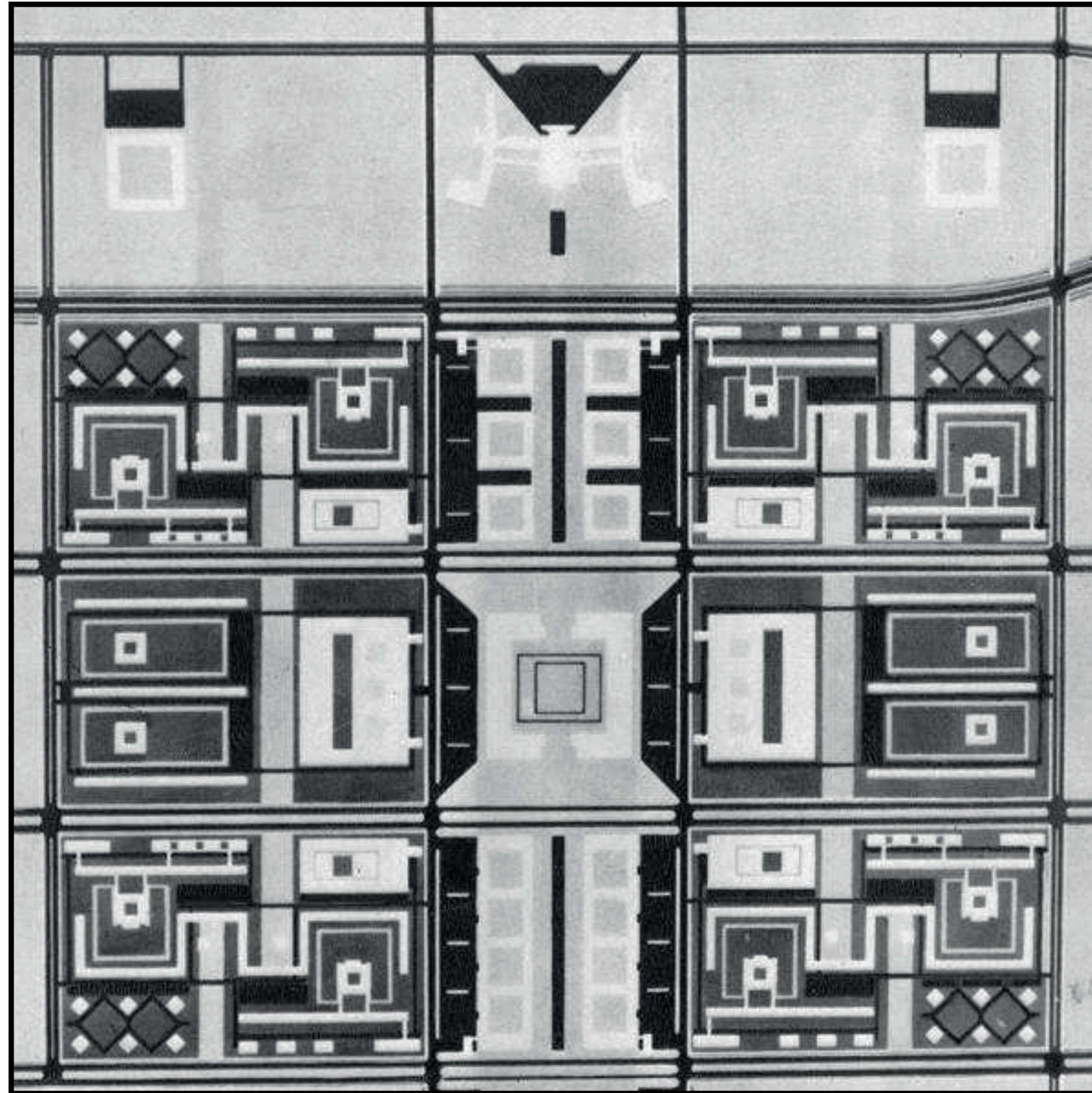
Image: Map of Belgrade, 2021

🕒 2000 m

Nine central blocks of New Belgrade




Nine central blocks 1950




Nine central blocks zoning 1950

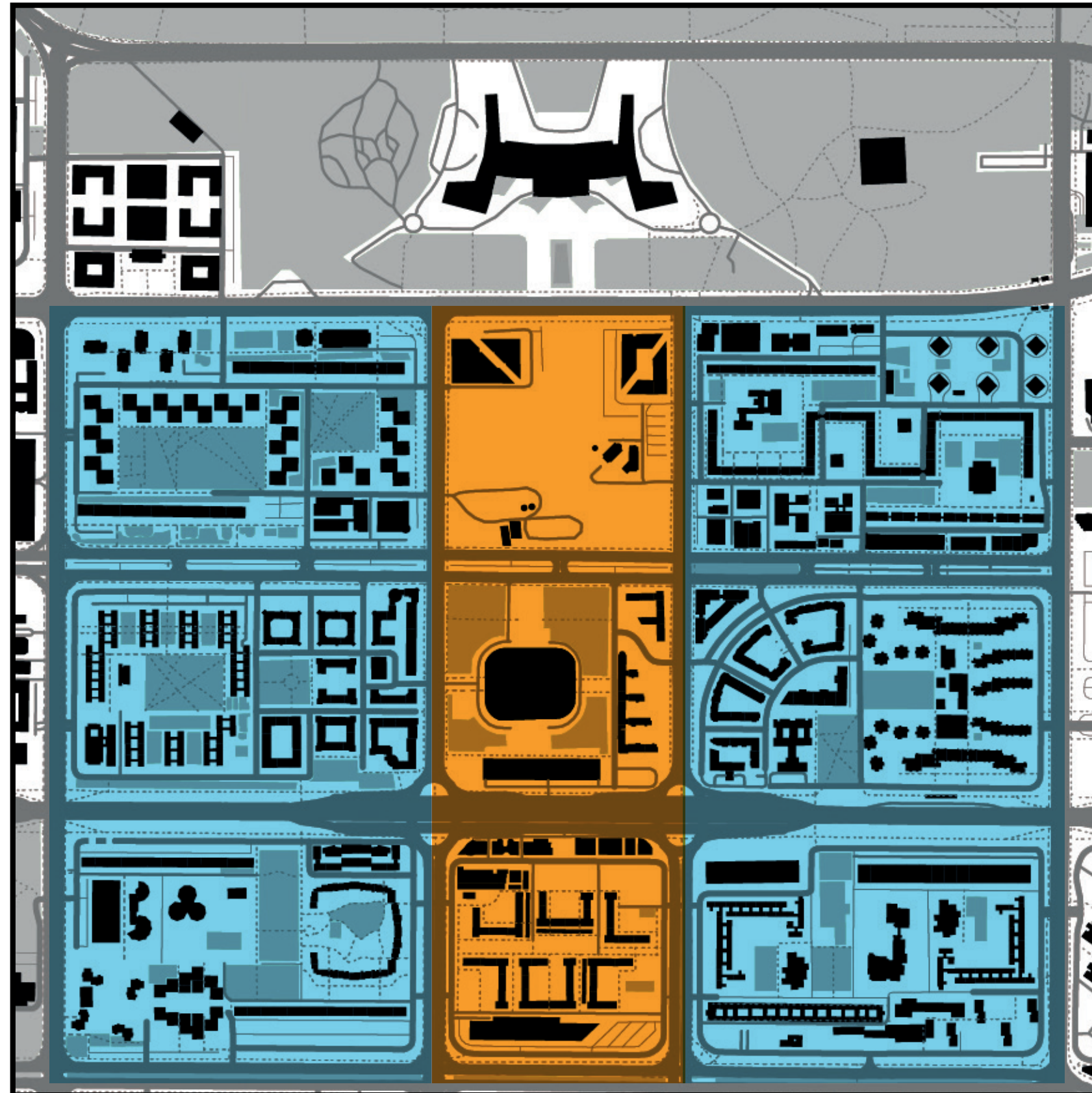


Legend:

 = Housing

 = Functions

Nine central blocks zoning 2022



Legend:

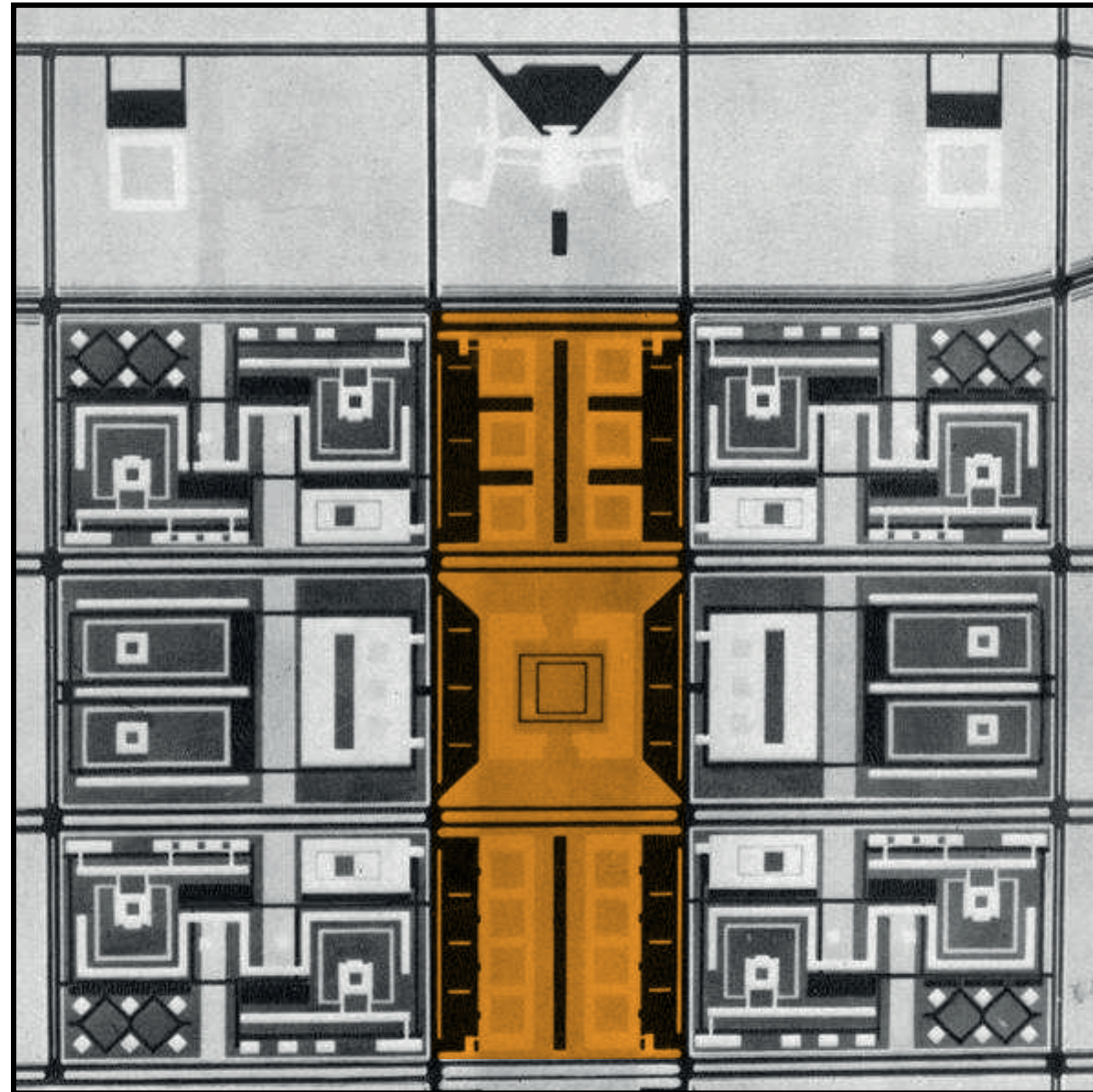


= Housing



= Functions

3 Central squares concept

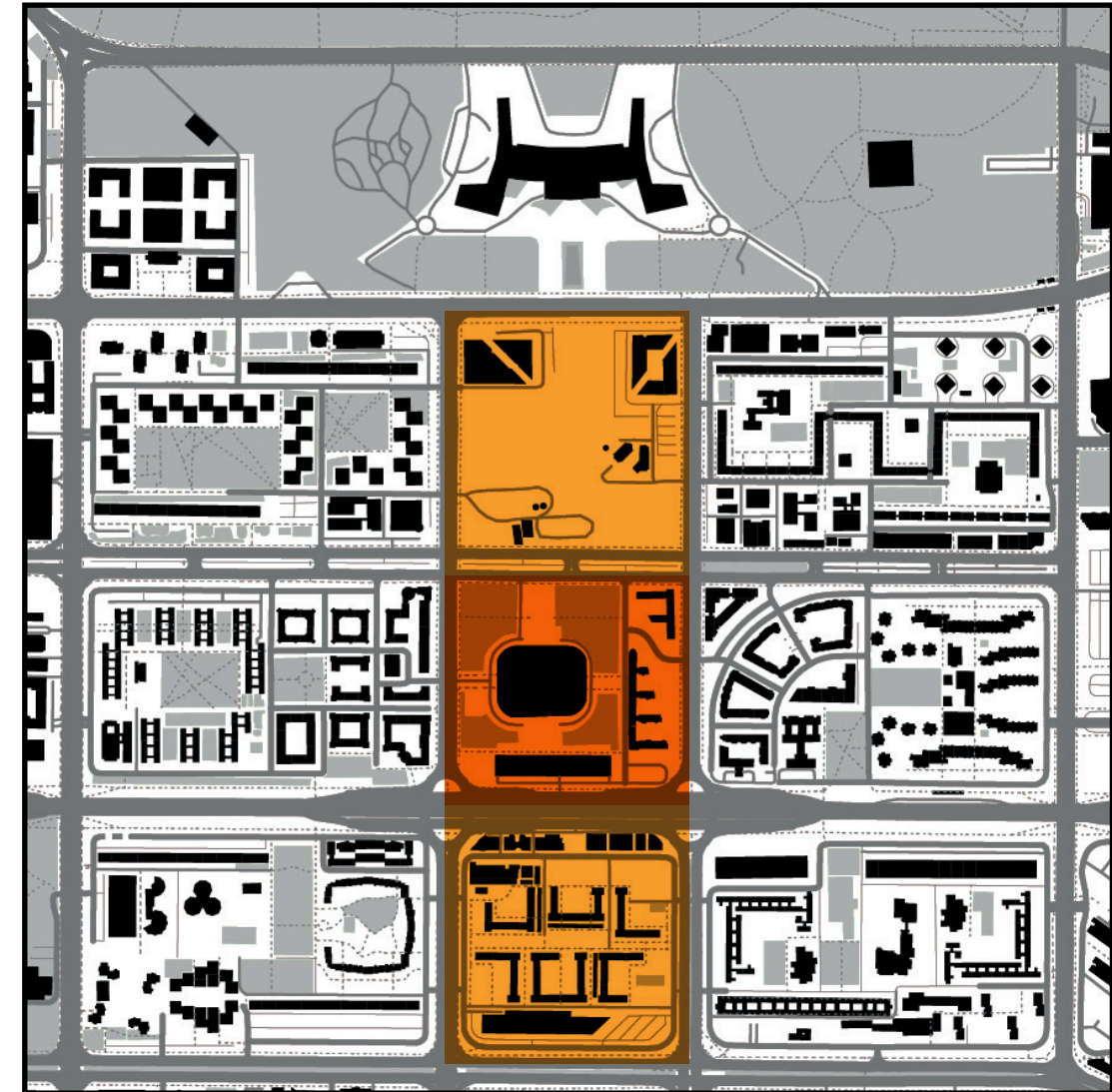


1950

manifestation square,
central square, and
railway station square

“six housing mega-blocks of soleil, espace, verdure character on each side of the central spine.”¹

¹ Ljiljana Blagojevi, “Back to the Future of New Belgrade: Functional Past of the Modern City,” Academia, 2021, p. 6.



2022

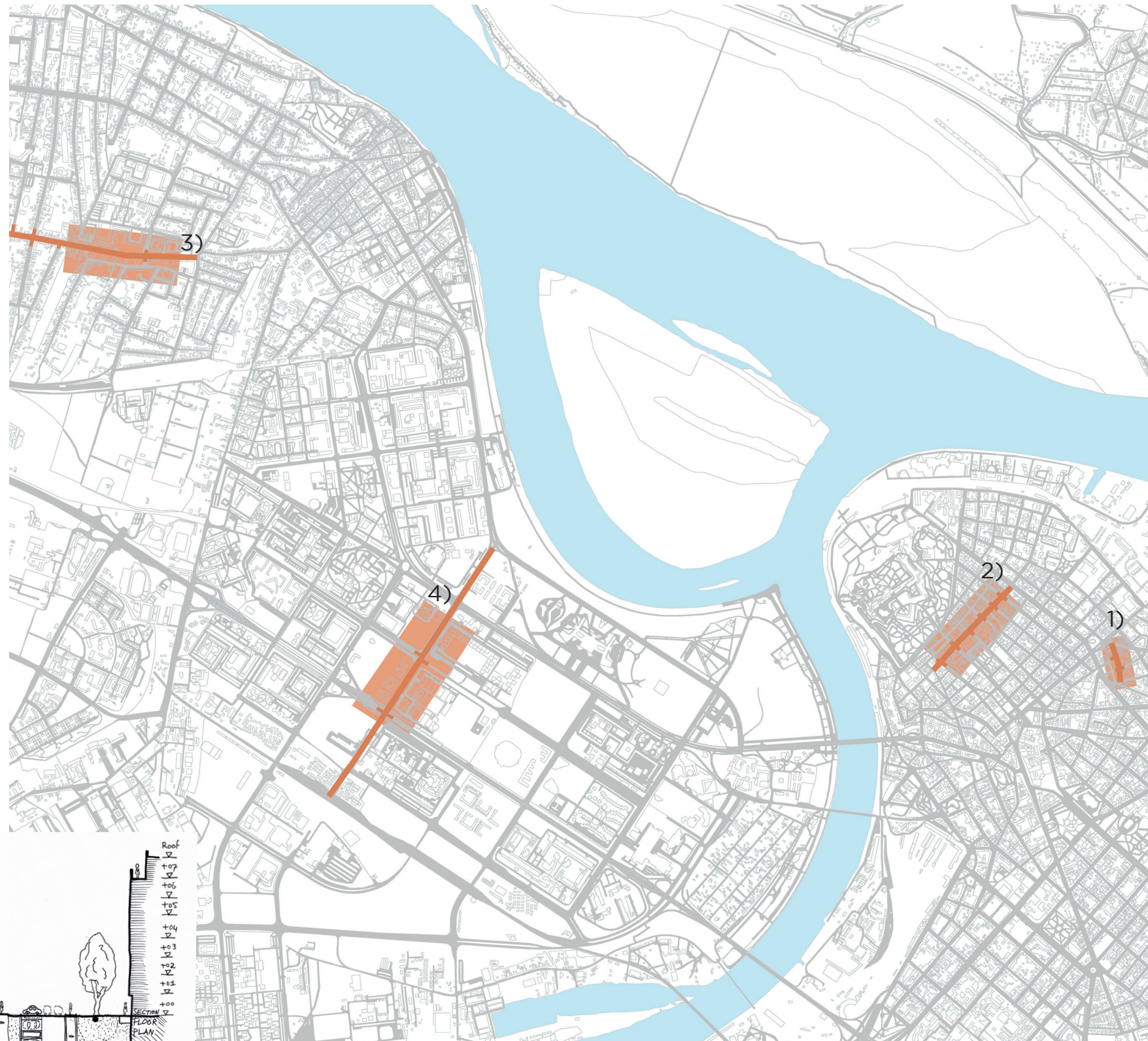
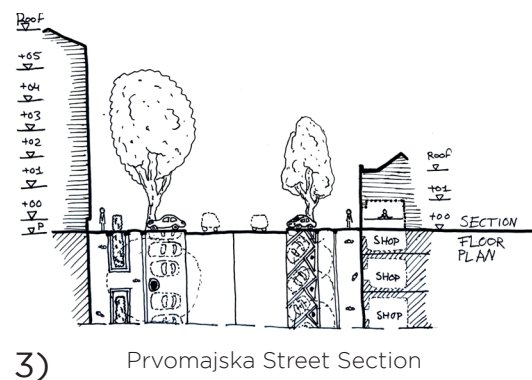
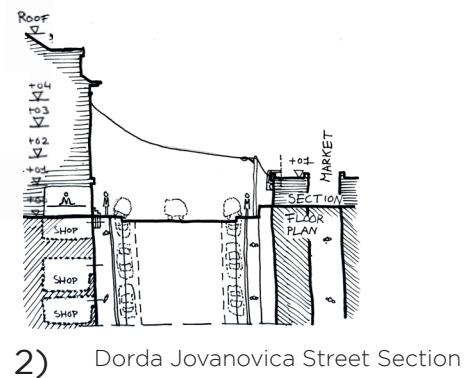
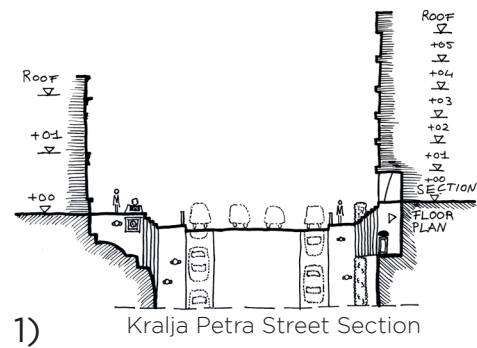
Unbuild block 26 → **Project location**
Štark Arena
Housing block 24

“With the change of political de-centralization, in the mid 1950s, the central three squares were never realised.”¹

¹ Blagojevic, Ljiljana. “New Belgrade: The Capital of No-City’s Land.” Art-e-Fact, Strategies of Resistance 4 (2004), p. 5.

2) Research

Street research



Lessons

Main actions in public space:
Walking - Standing - Sitting

Conclusion praxeological episteme:

Ownership over streets:

1. Leisure actions
Sitting + Implementation of new seating
2. Utilitarian actions
Outline areas, new routes, and existing objects for support
3. Work-related actions
Informal street vendors + merchants

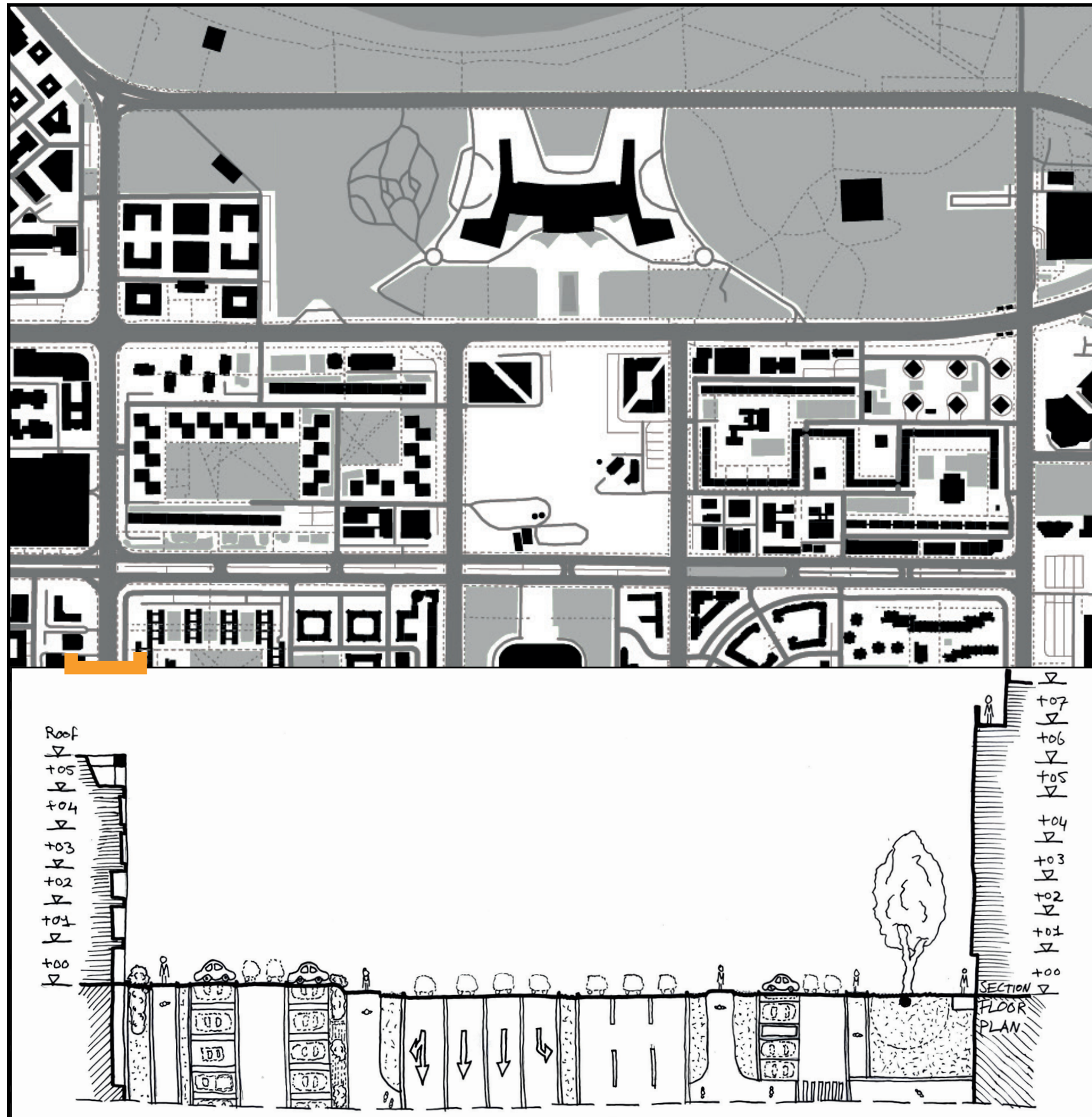
Conclusion morphological episteme:

Amount of street ownership:

1. Street type
More appropriation with lower traffic speed
2. Function
Influences amount of 'home extension'
3. Commercial spaces
Impact appropriation, Commercial space extends into streets and public space into shops
4. Facade openness
Stimulate slower movement, creates opportunities and purpose for people to stand and sit

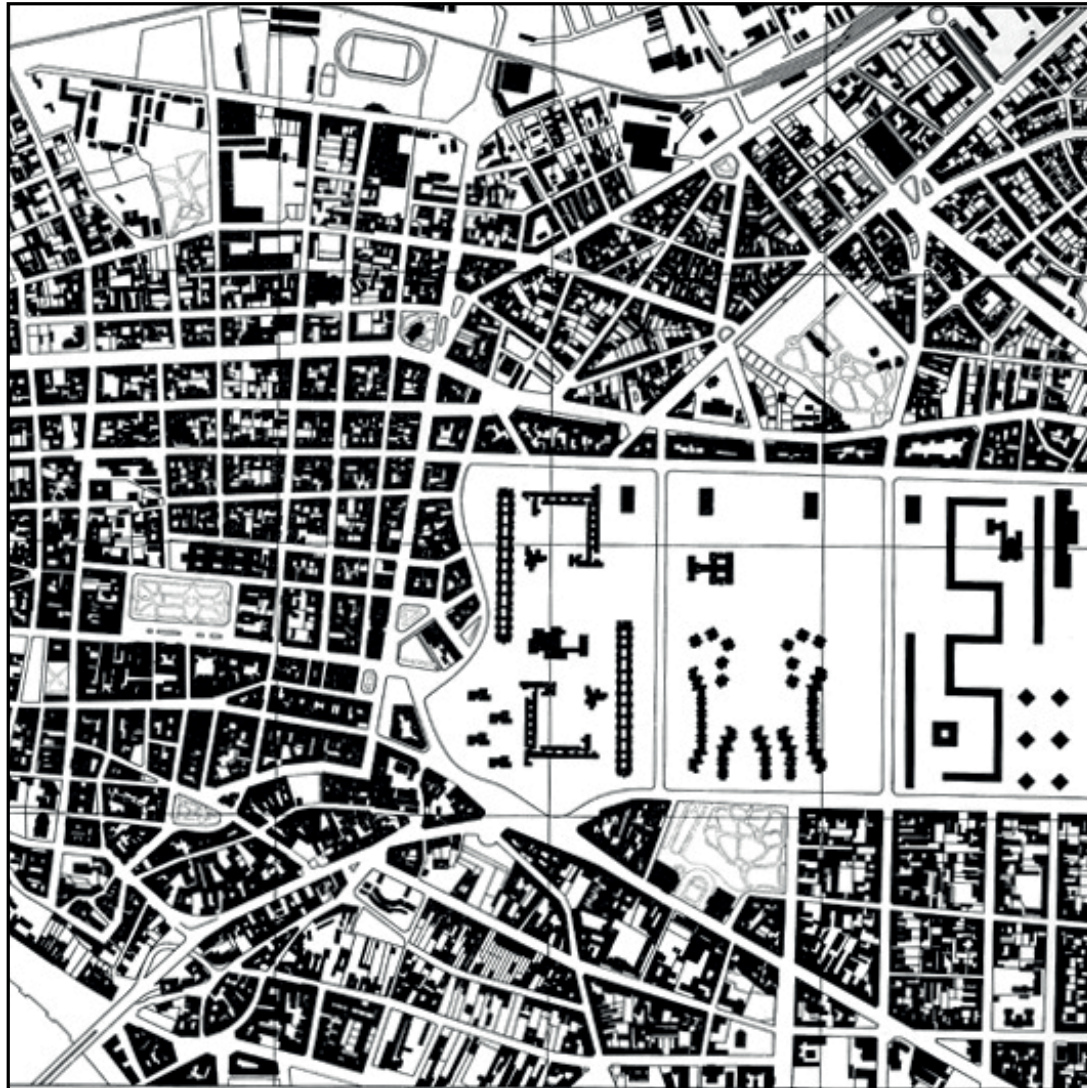
🕒 1:2500

Bulevar Umetnosti Street Profile



100m

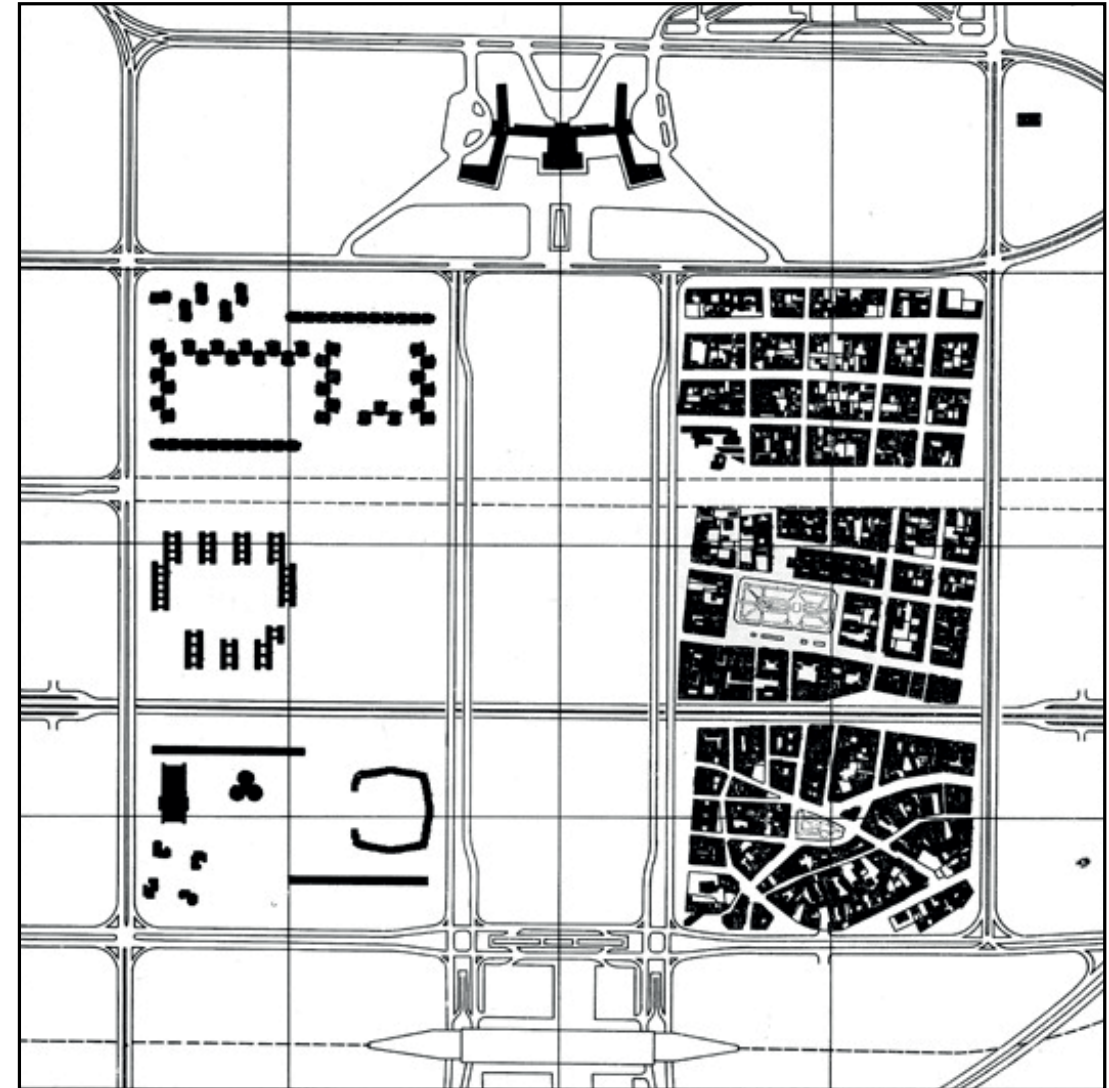
Scale research



Old Belgrade with New Belgrade's Urban Fabric

"The result is a tedious, rambling space with completely lost human scale, the space that looks more like a scheme, or a sketch that has been built, then as part of the city in which people should live."¹

¹ Schrenk, Manfred & Popovich, Vasily & Zeile, Peter & Milakovi, Mira & Vukmirovic, Milena. (2011). New Life of Modern Cities: Transformation and Renewal of Public Spaces in New Belgrade, p. 661.



New Belgrade with Old Belgrade's Urban Fabric

"Absence of human dimension is at the basis of criticism of cities based on the principles of Athens Charter"²

Problem: The urban scale of New Belgrade is non-human like.

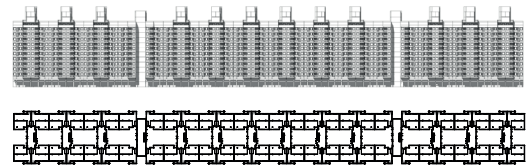
² Maric, Igor & Nikovic, Ana & Manic, Božidar. (2010). Transformation of the New Belgrade urban tissue: Filling the space instead of interpolation. Spatium. 2010. 47-56. 10.2298/SPAT1022047M., p. 54.

Block 23 research

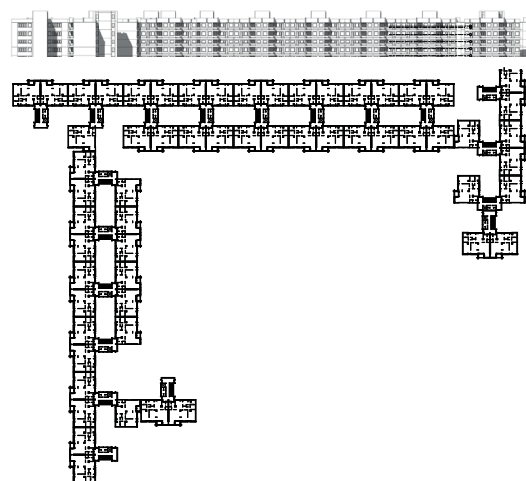


Block 23 research

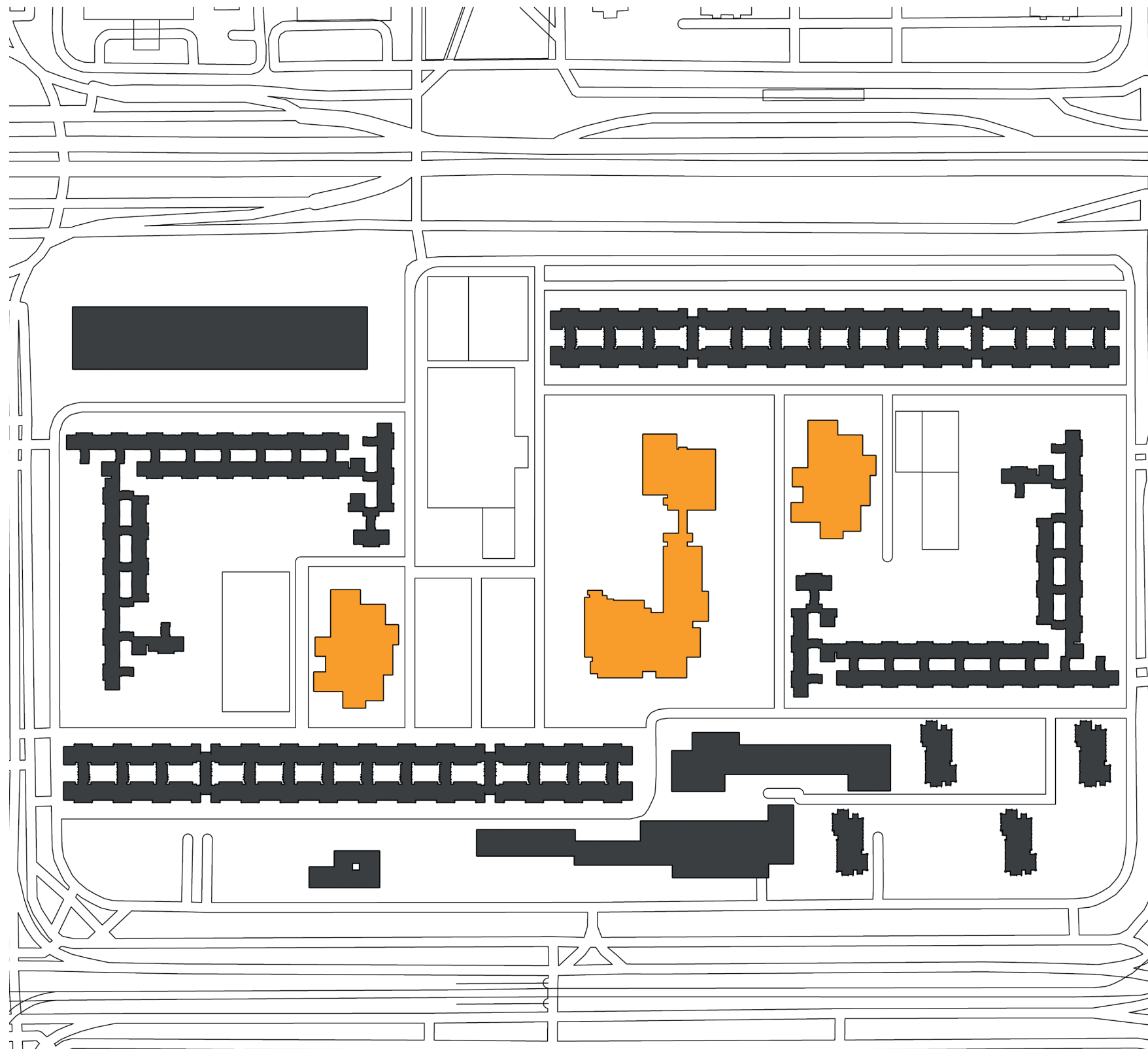
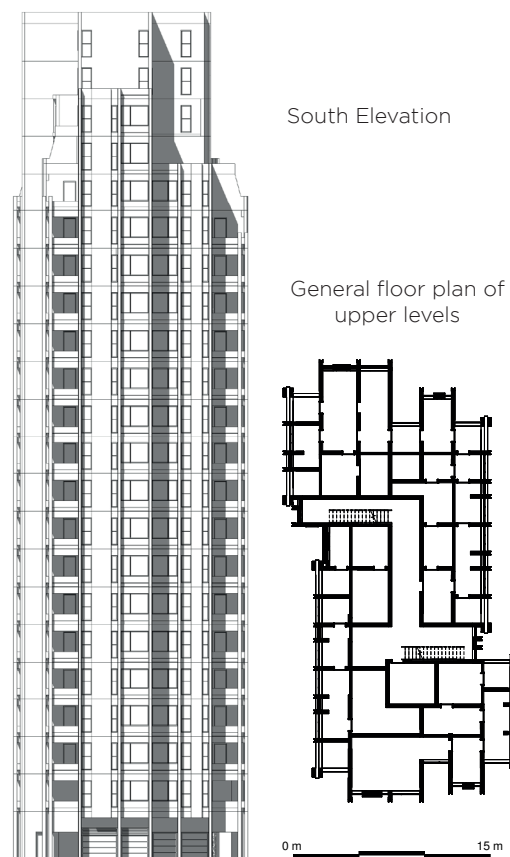
Slab Type (A)



Meander Type (B)



Tower Type Residential Blocks (C)



Lessons

Mass housing project

Goal:
Improve living standards +
access to housing

Western modernist concept
of the neighbourhood unit &
microrailon

Prefabricated construction
system

3 typology buildings:
> the slab
> the meander
> the tower

Central core

Semi-open ground levels, for
commercial functions

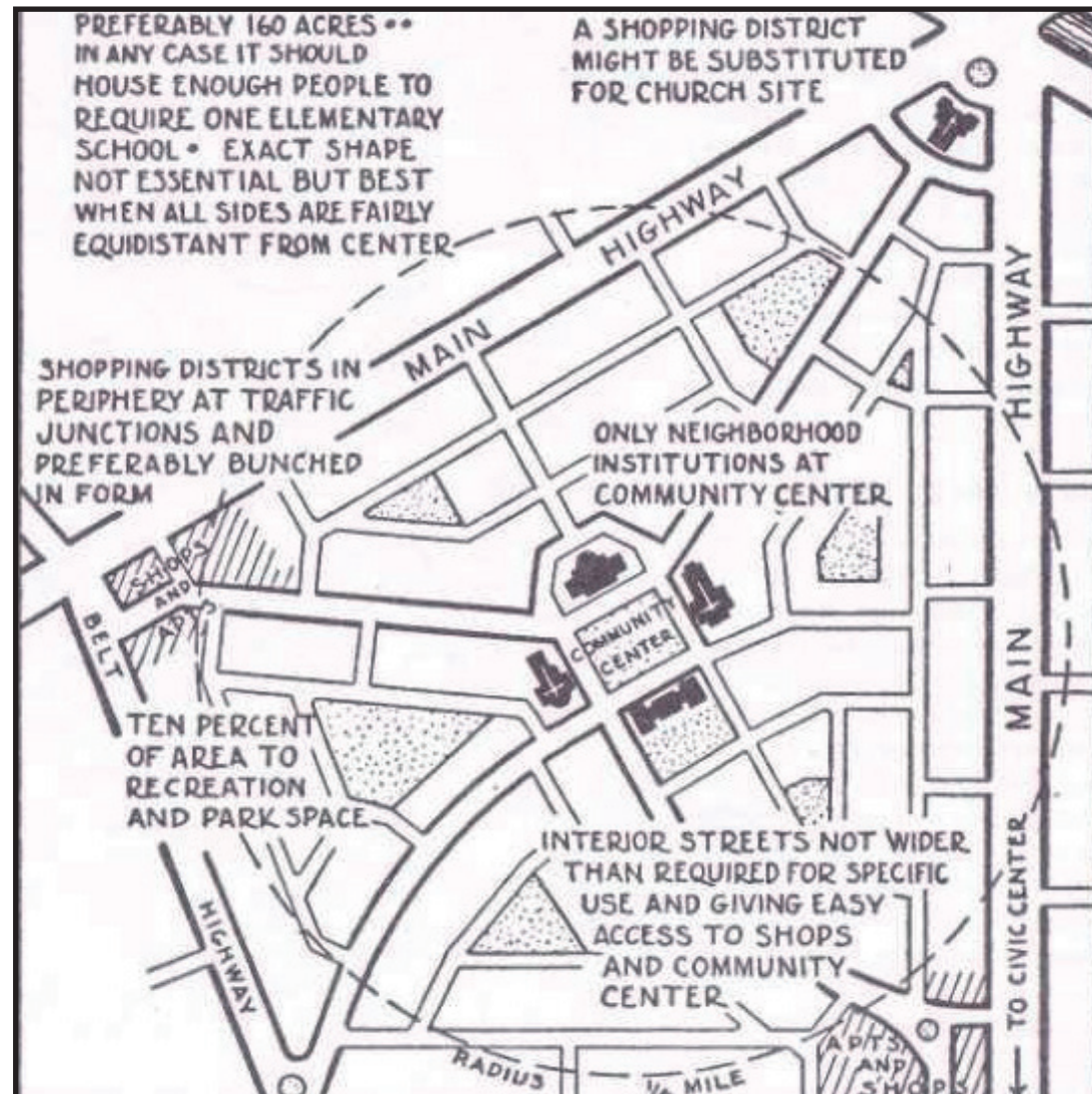
Underground parking

60 mm insulation
Internal climate issues
User adaptations

Architectural and elemental
repetition

Designs were produced based
on manufacturer catalogues
of elements

Microdistrict concept

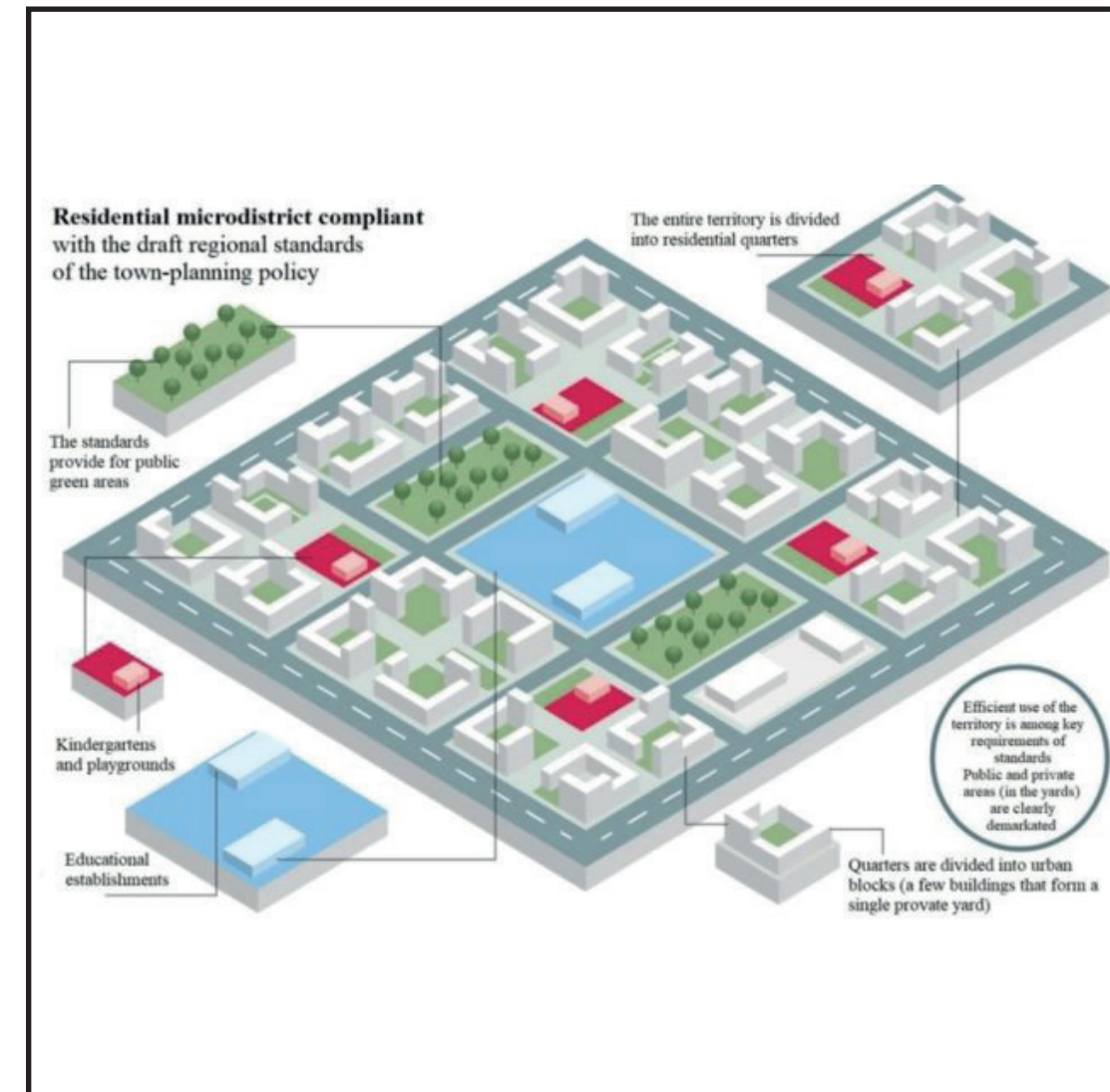


Neighborhood unit concept by Clarence Perry, 1923.

The neighborhood unit concept is a self-contained neighborhood bounded by streets and served by a single school and local shops¹, with the size bound by walking distance to schools.

Perry combined neighborhood-unit with superblock in 1939.²

¹ Le Normand, Brigitte. Designing Tito's capital. 98.
² Le Normand, Brigitte. Designing Tito's capital. 98.



Microrailon concept.

The microrailon concept is a cluster of residential buildings surrounding a centre with shops, services, elementary education and health¹, to form a small neighbourhood (microdistrict).

Problem: The microdistrict is too large for a neighbourhood and too small for a district.

¹ Prokopljec, Jelena. "Do Not Throw Concrete Blocks! Social and Public Housing in New Belgrade and Their Representations in Popular Culture." Fusion Journal, no. 6 (2015): 1-18. <https://search.informit.org/doi/10.3316/informit.227676294430398>. 15-16.

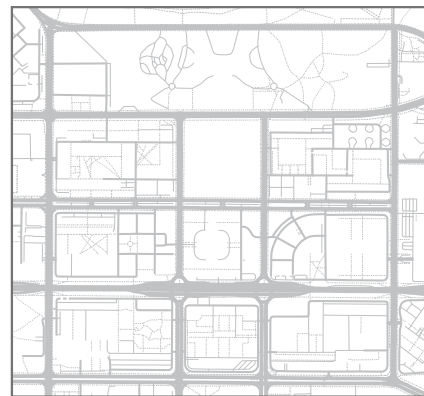
Block 26 project location



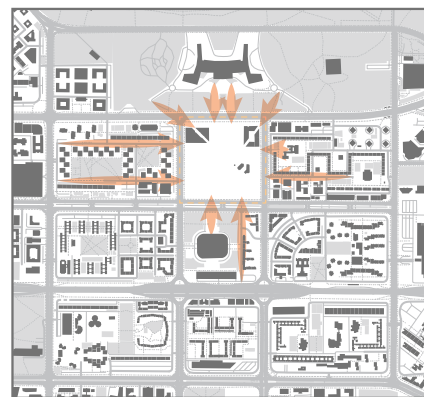
Block 26 location research



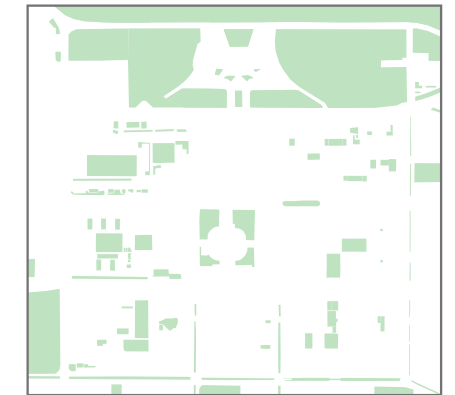
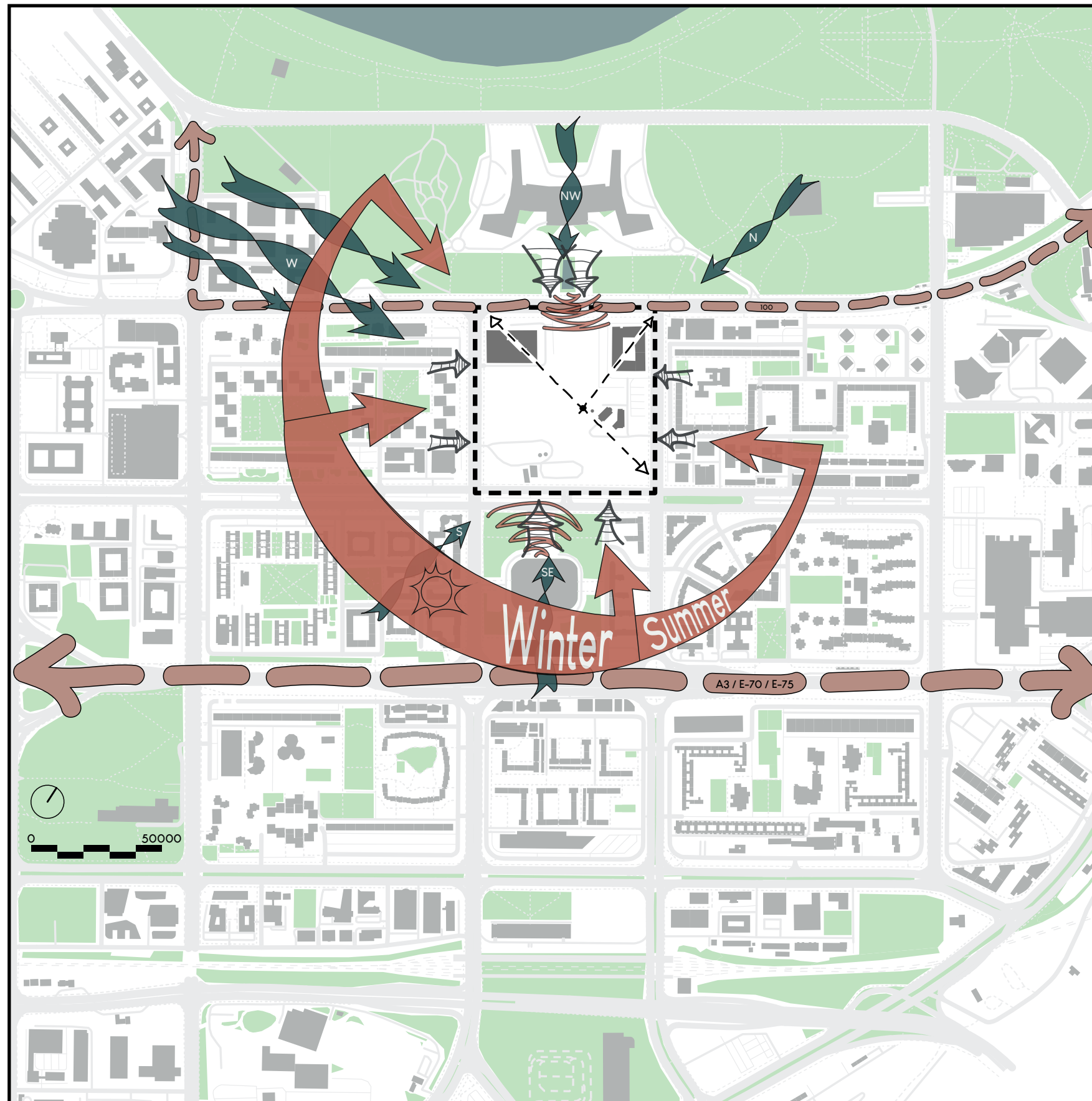
Water analysis



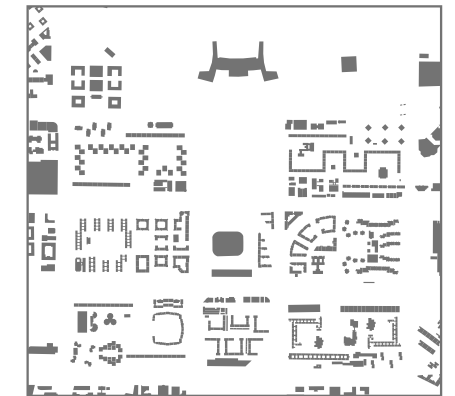
Infrastructure analysis



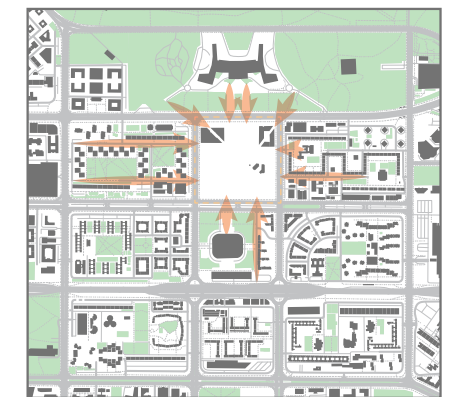
Site access analysis



Greenery analysis



Building form analysis



Total analysis

3) Problem statement

Problem statement

1

Non-human scale of super-blocks

2

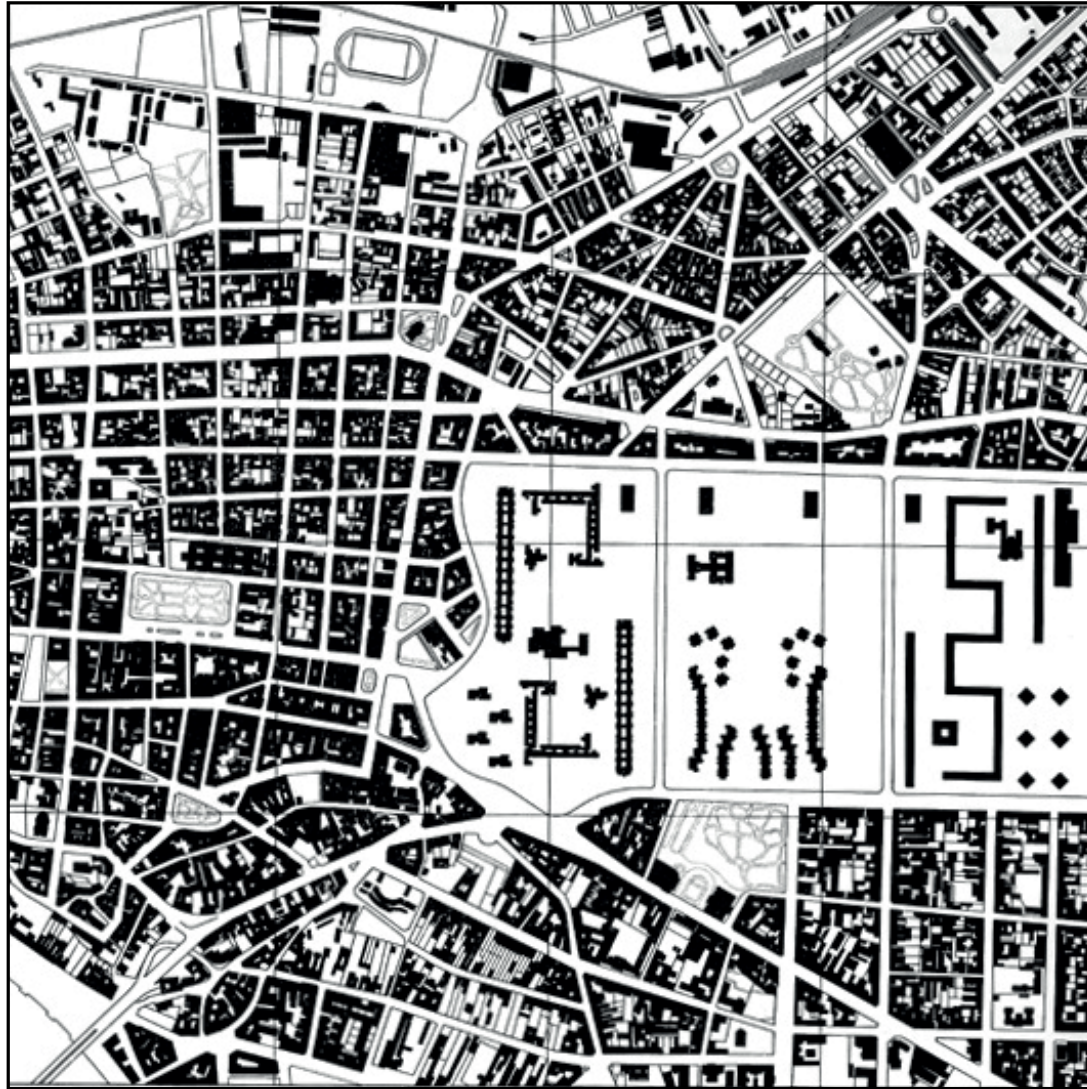
Big dormitory // Separation of functions

3

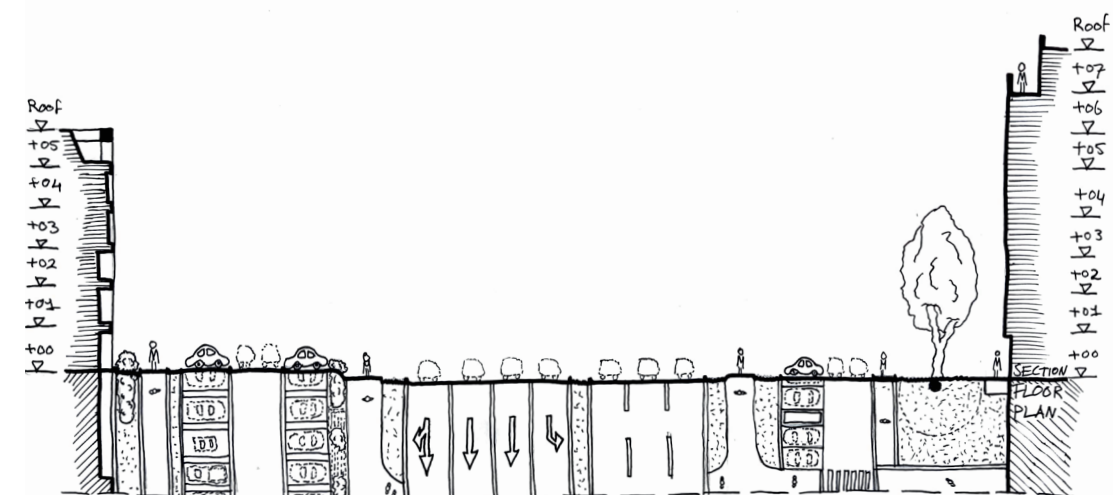
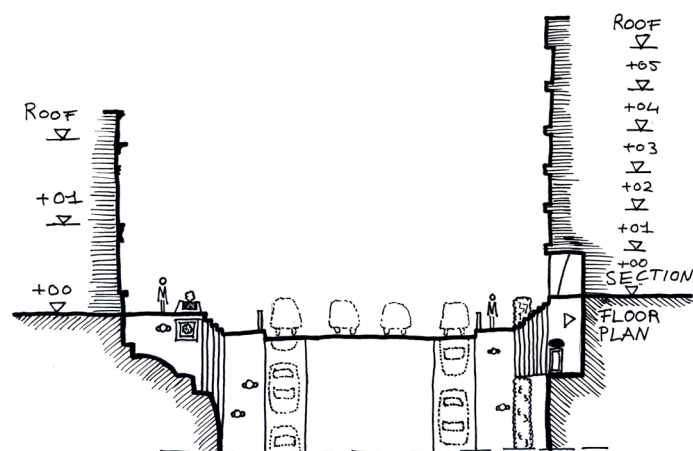
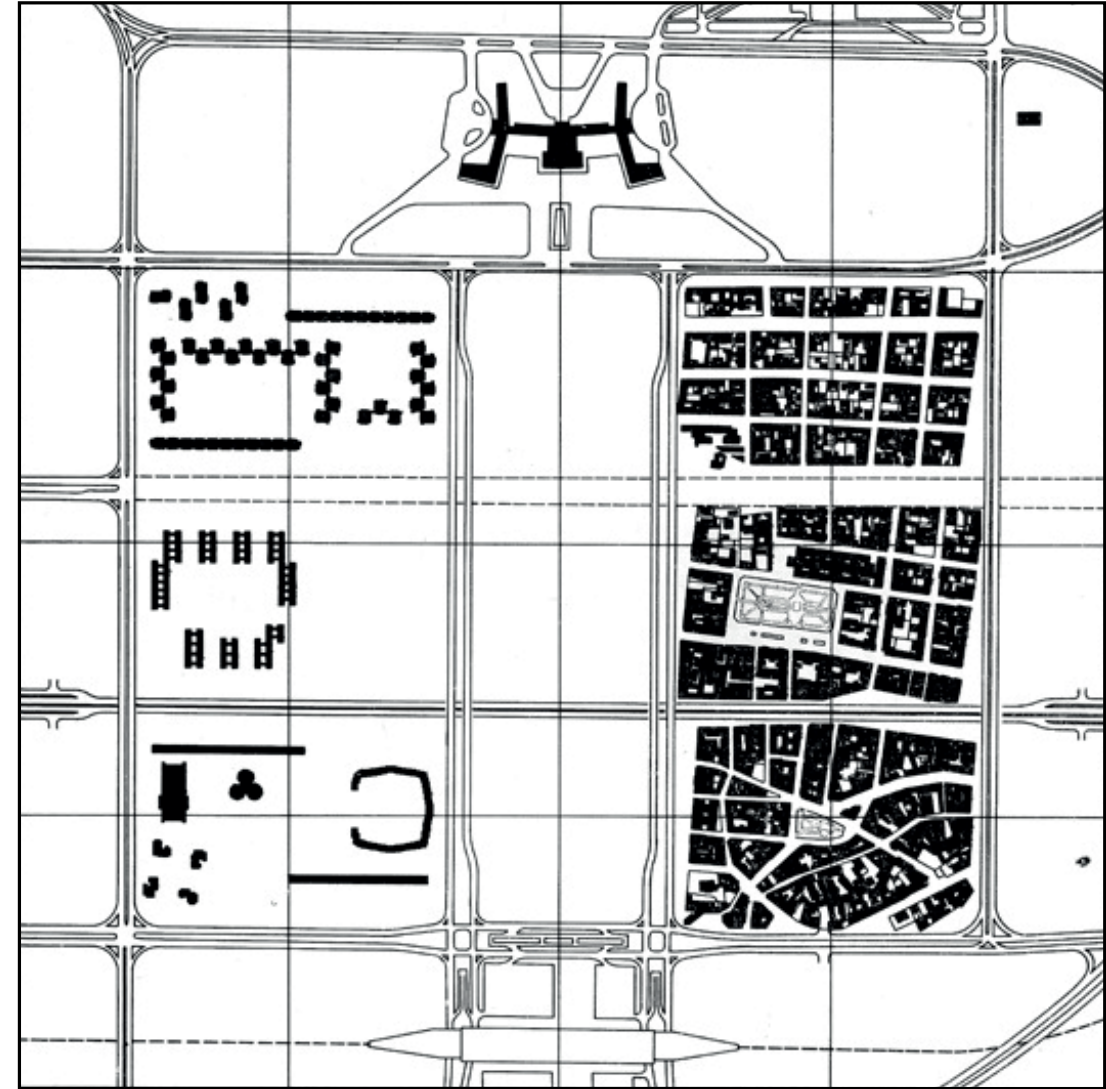
Change in community

1 Non-human scale of super-blocks

Old Belgrade



New Belgrade

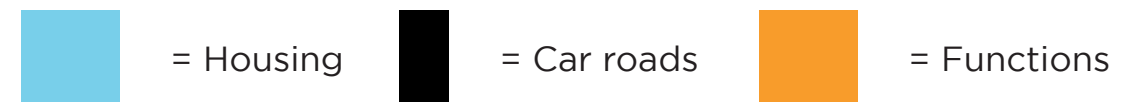
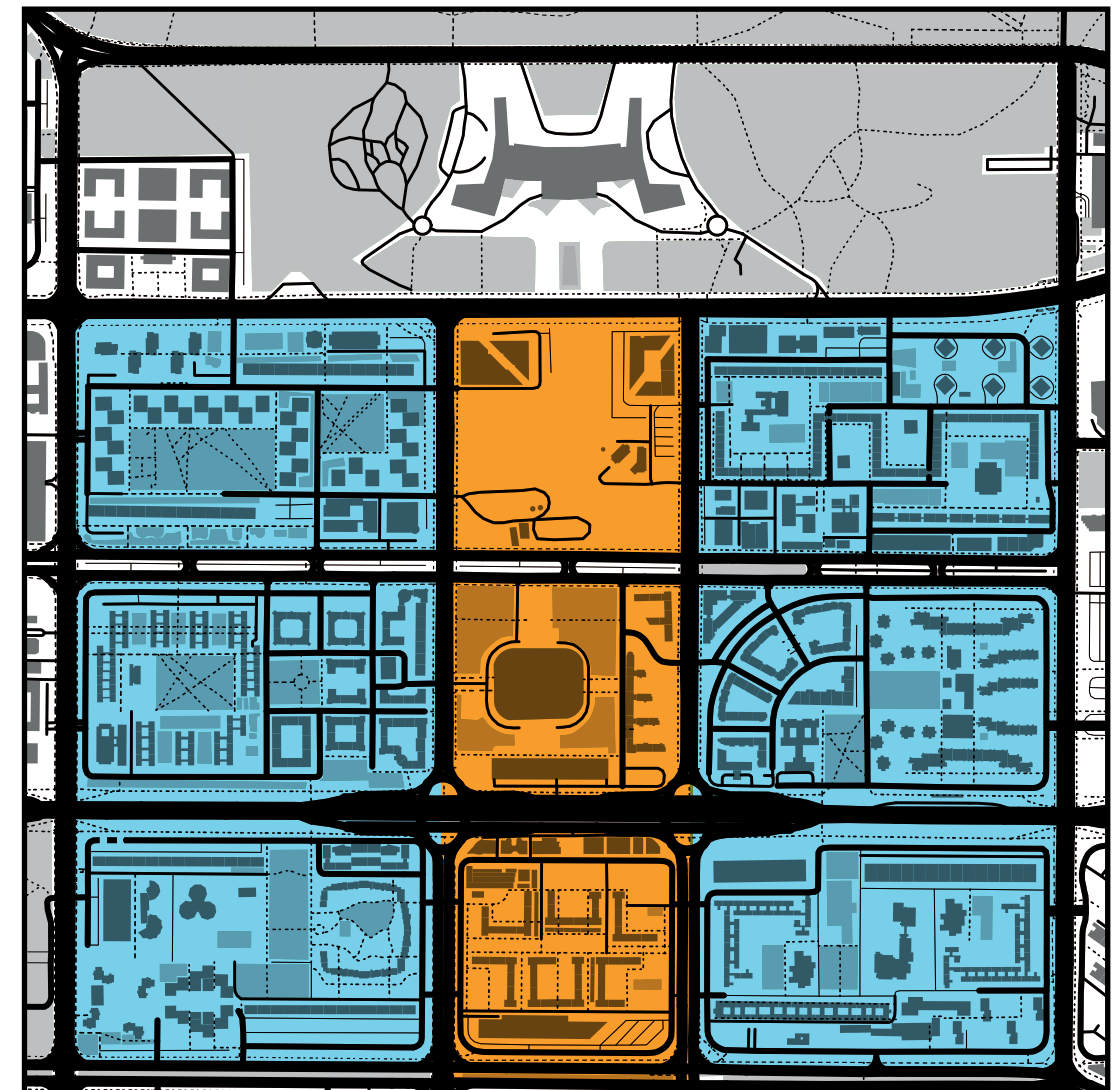


2 Big dormitory // Separation of functions

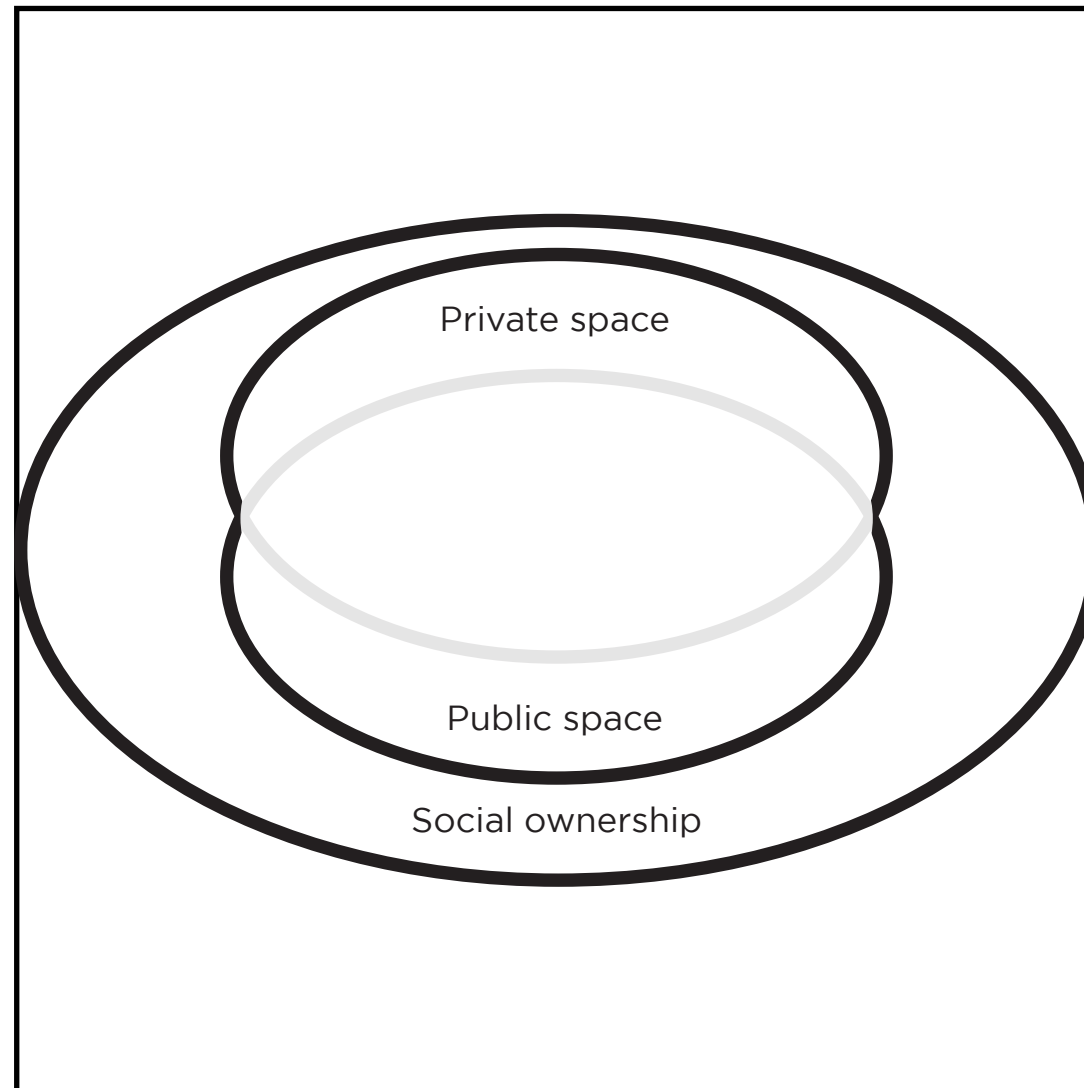
Work/sleep traffic



Seperation of functions



3 Change in community

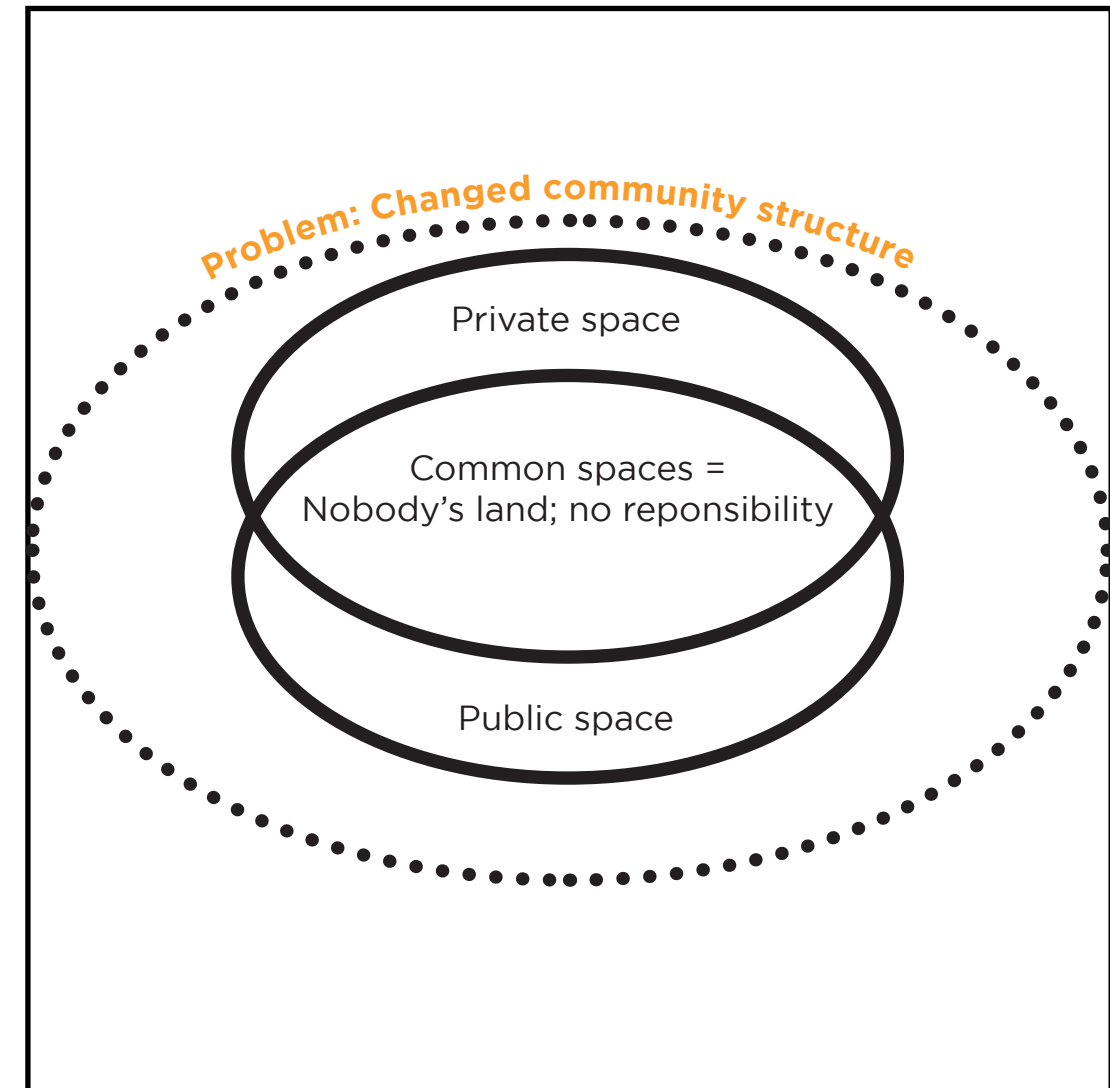


Socialist Community

Buildings not privately owned, but with social ownership;
blurred line between public and private spaces

Social ownership of New Belgrade blocks was “a residence as a
universal right for the common public good”.¹

→
Post-socialist
transformation:
housing
privatisation.



Post-Socialist Community

By the end of 1993, 95% of socially owned housing in Belgrade
had been privatized¹.

Common spaces became nobody's. Now neglected, underused

¹ Dragutinovic et al., “Self-Management of Housing and Urban Commons” , p. 274.

¹ Anica Dragutinovic, Uta Pottgiesser, and Wido Quist, “Self-Management of Housing and Urban Commons: New Belgrade and Reflections on Commons Today,” Urban Planning 7, no. 1 (March 31, 2022): pp. 267-279, <https://doi.org/10.17645/up.v7i1.4746>, 274.

Problem statement

1

Non-human scale of super-blocks

2

Big dormitory // Separation of functions

3

Change in community

Research question

RESEARCH QUESTION:

How can the implementation of polyfunctional and human scale neighbourhood design affect the changing community of the post-socialist superblocks of New Belgrade?

SUBQUESTIONS:

- What is the range of ratios and measurements before humans feel disconnected with the urban scale?
- What are the common ways to achieve a polyfunctional design?
- What aspects can affect the sense of community in the design of a neighbourhood?

Project intentions

Previous research:

1. Street research
2. Block 23 research
3. Courtyard research



Problem statement:

1. Non-human scale
2. Monofunctional/-seperation
3. Change of community

*Research
question*



Project intention:

1. Variety of scales
2. Polyfunctional
3. Sense of community

The project intention is to design a human scale neighbourhood with integrated polyfunctional design and that this project establishes the transition from a socialist community to a post-socialist community. I hope to create a urban village in the last unbuilt superblock in the centre of New Belgrade.

Overarching theme: closeness

Previous research:

1. Street research
2. Block 23 research
3. Courtyard research

Overarching theme: Closeness

1. People - Social relations
2. Space - Spacial sequence
3. Functions - Walkibility

Problem statement:

1. Non-human scale
2. Monofunctional/-seperation
3. Change of community

Research question

Project intention:

1. Variety of scales
2. Polyfunctional
3. Sense of community

Closeness

noun

1. The quality of being only a short distance away or apart in space or time.

“The geographical closeness of our two countries”

2. The quality of affection or intimacy in a relationship.

“Moments of closeness with friends and family members”

Definition from Oxford Languages

Closeness on:

1. People - Social relations
2. Space - Spacial sequence
3. Functions - Walkibility

4) Principles

Principles scales

1

Urban principle

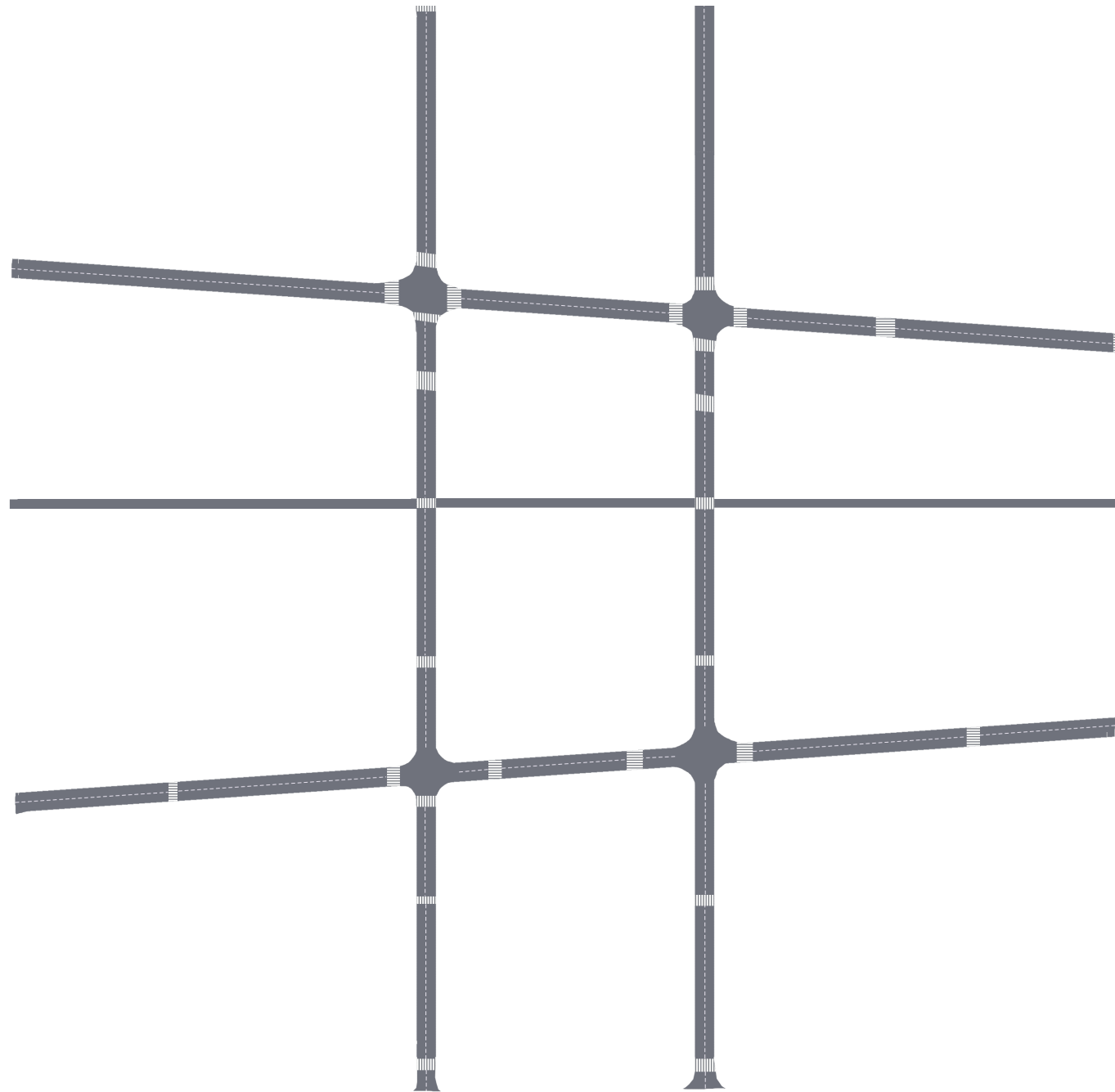
2

Building principle

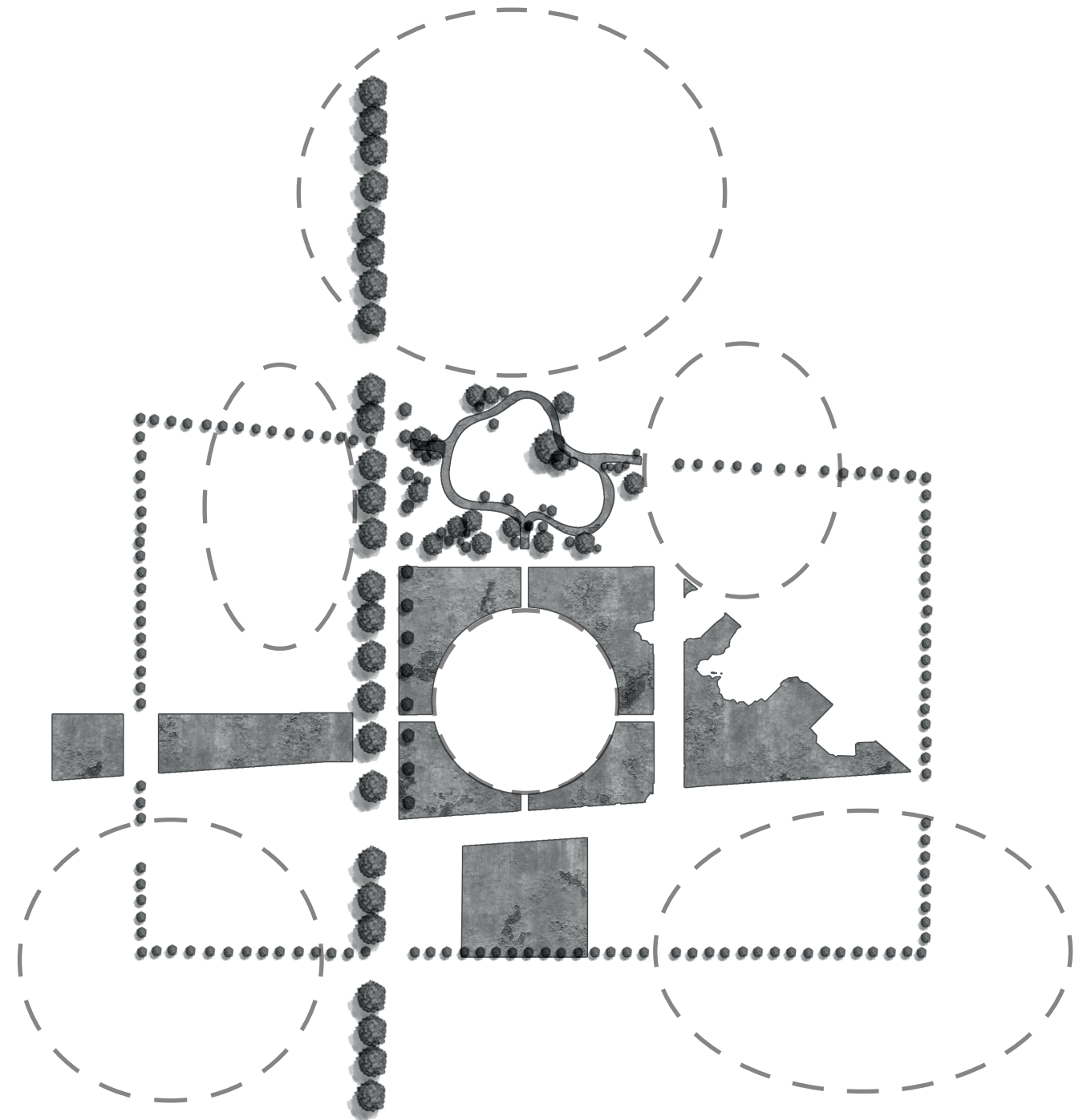
3

Unit principle

Urban principle



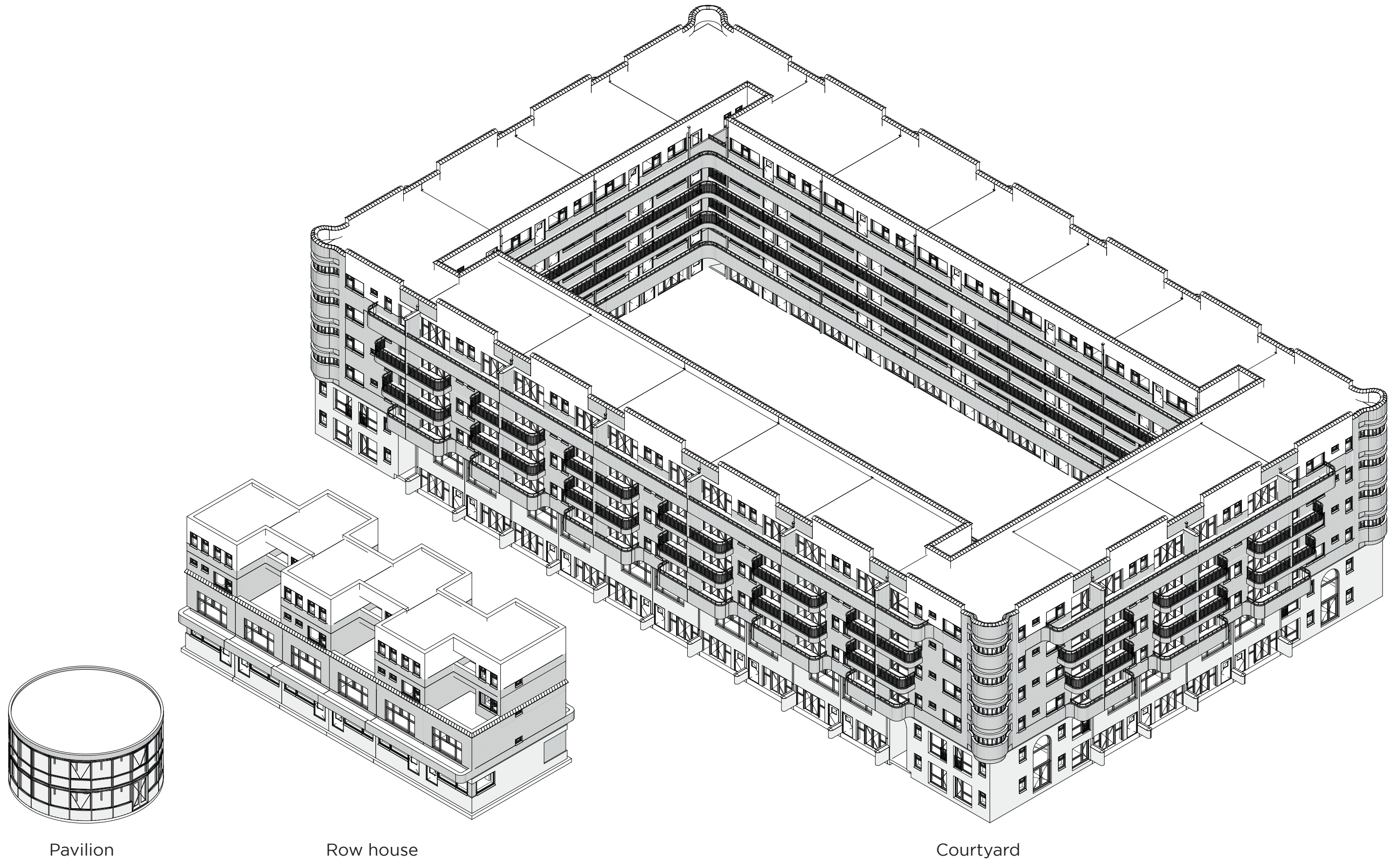
Grid



Interconnected squares
and neighbourhoods

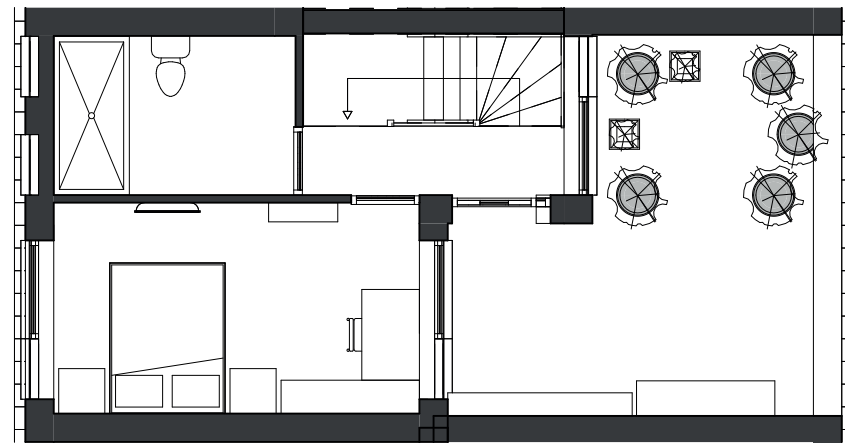


Building principle

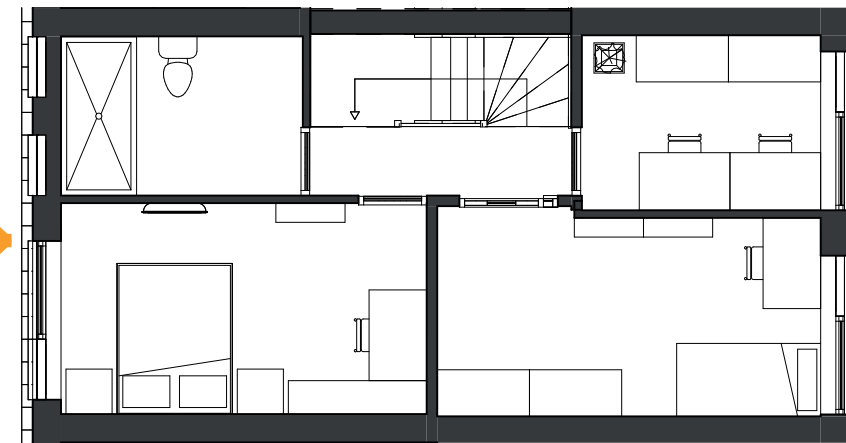


Unit principle

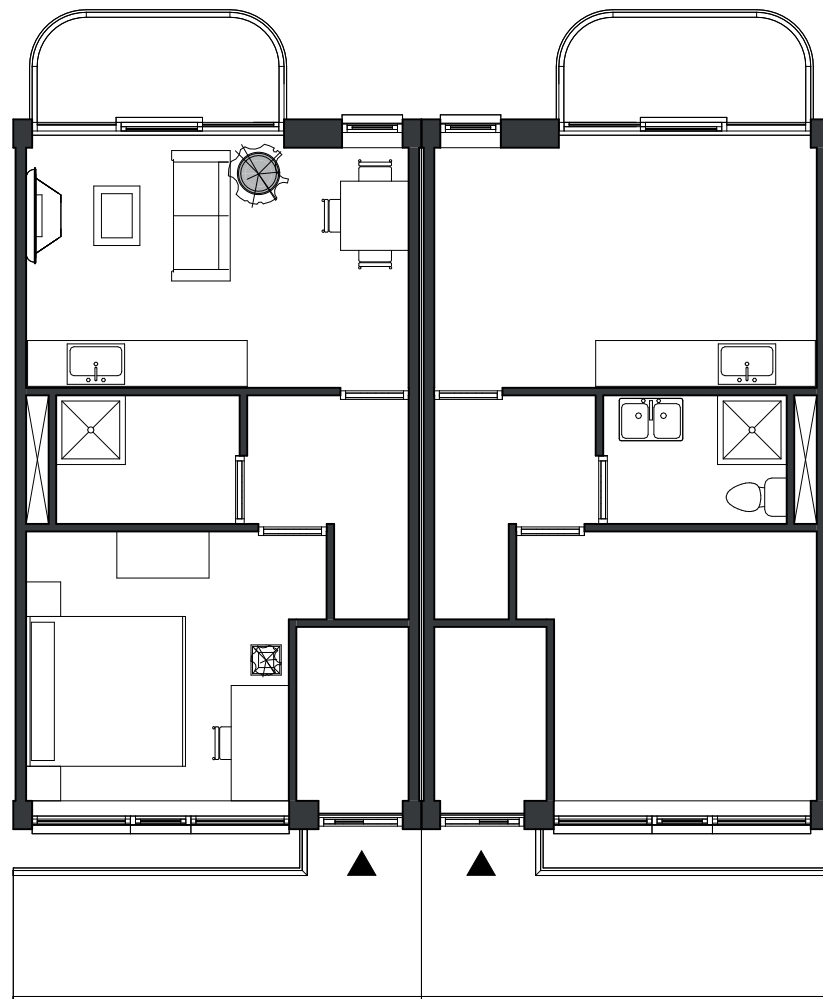
Rowhouse



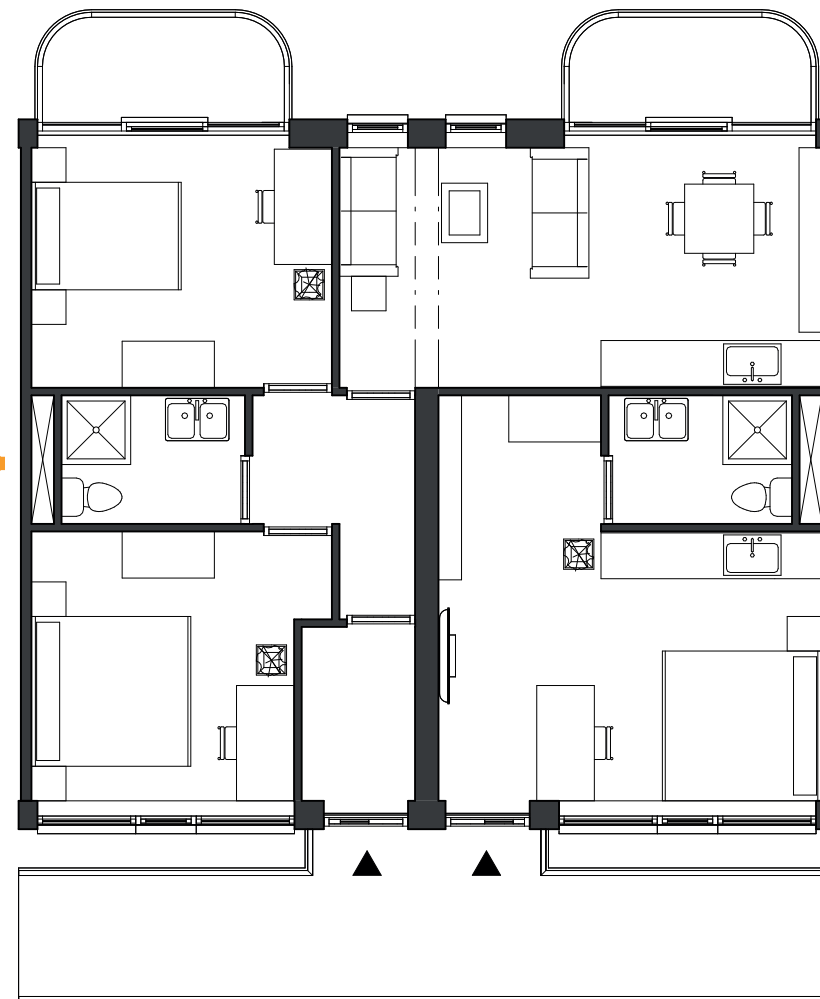
Rowhouse extension



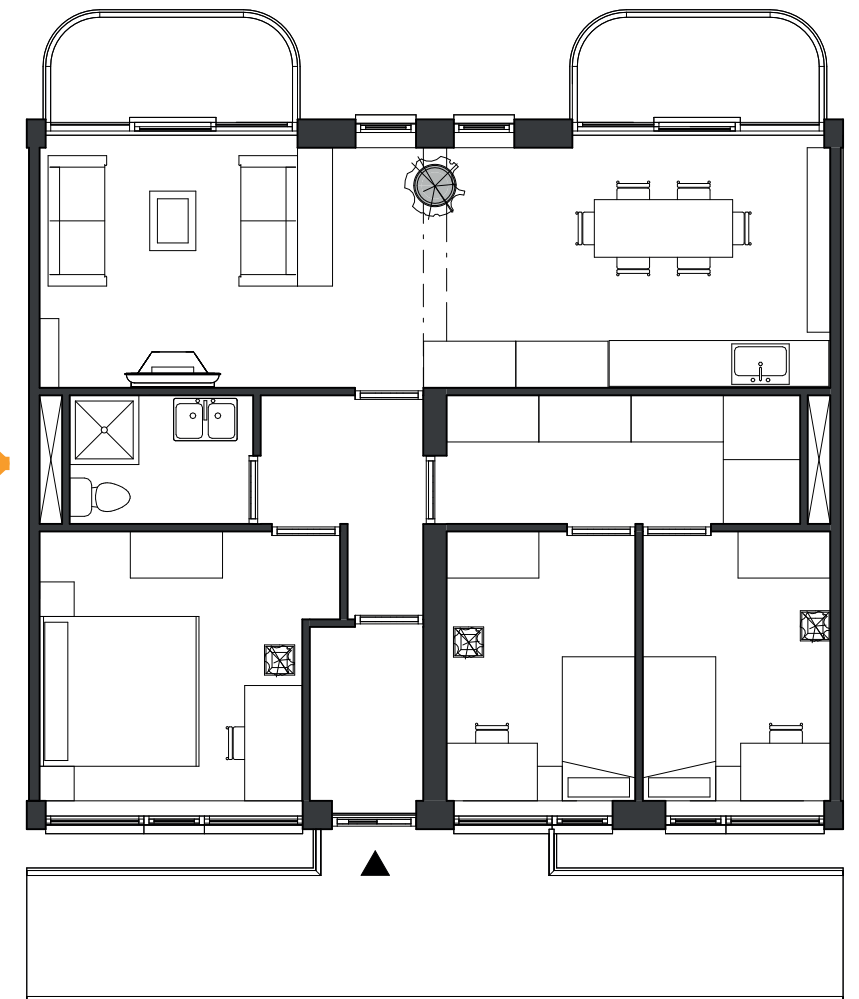
1-Bedroom apartment (45 m²)
1-Bedroom apartment (45 m²)



2-Bedroom apartment (65 m²)
Studio (25 m²)



3-Bedroom apartment (90 m²)



5) Design

5) Design

a) Urban design



b) Building design



c) Unit design

5) Design

a) Urban design

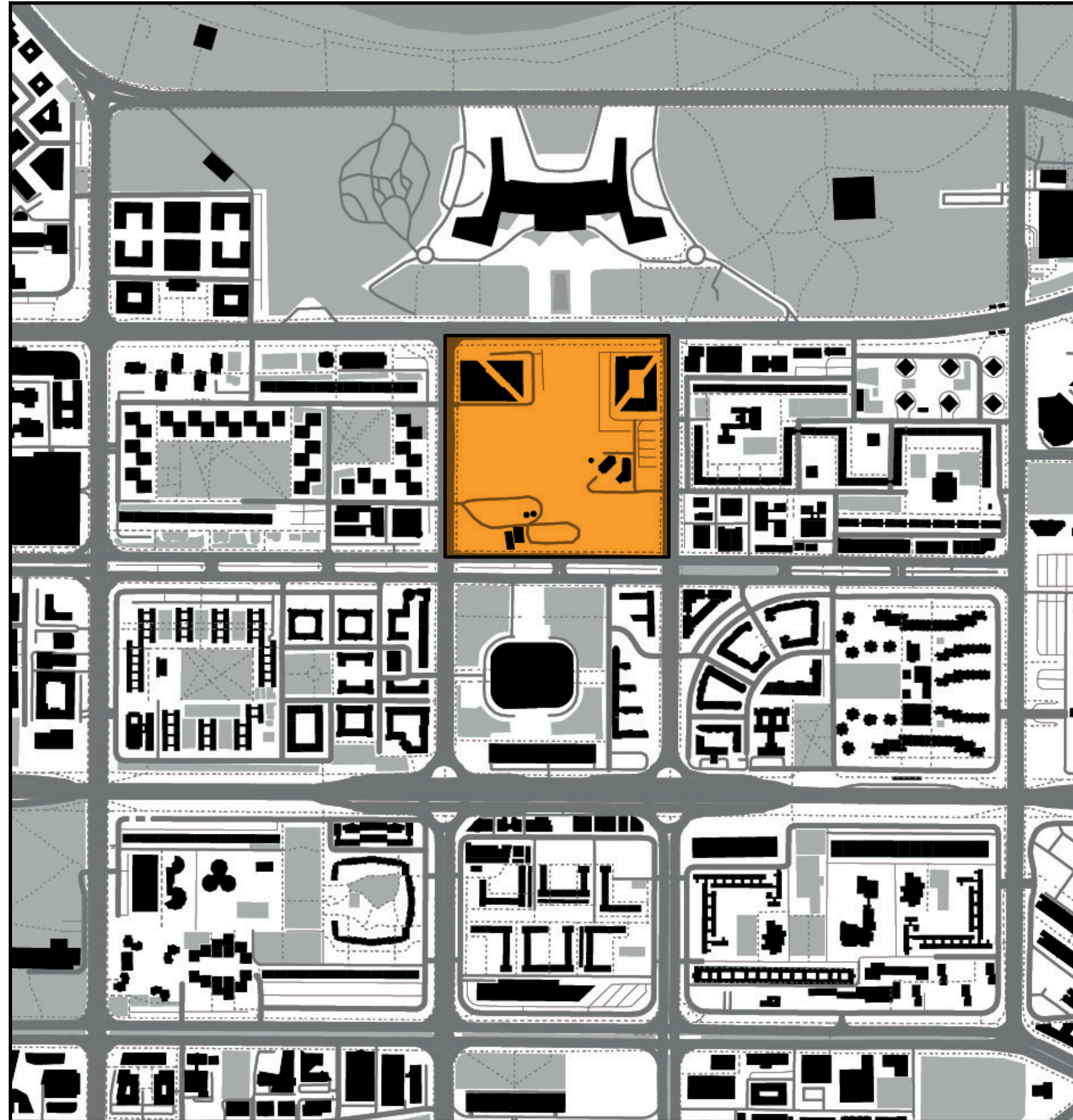


b) Building design



c) Unit design

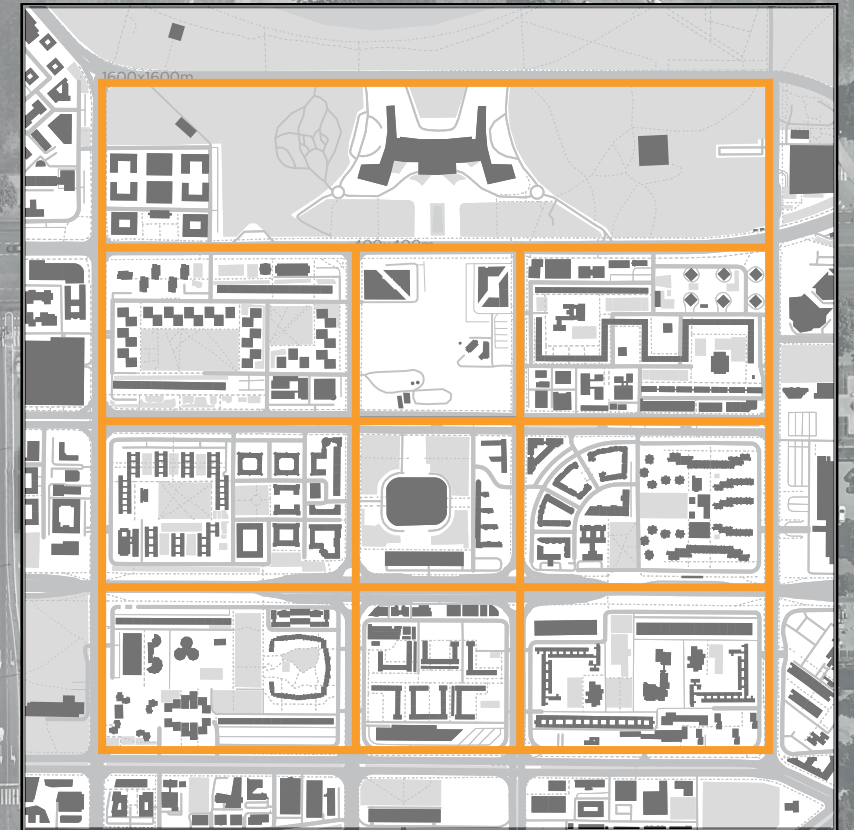
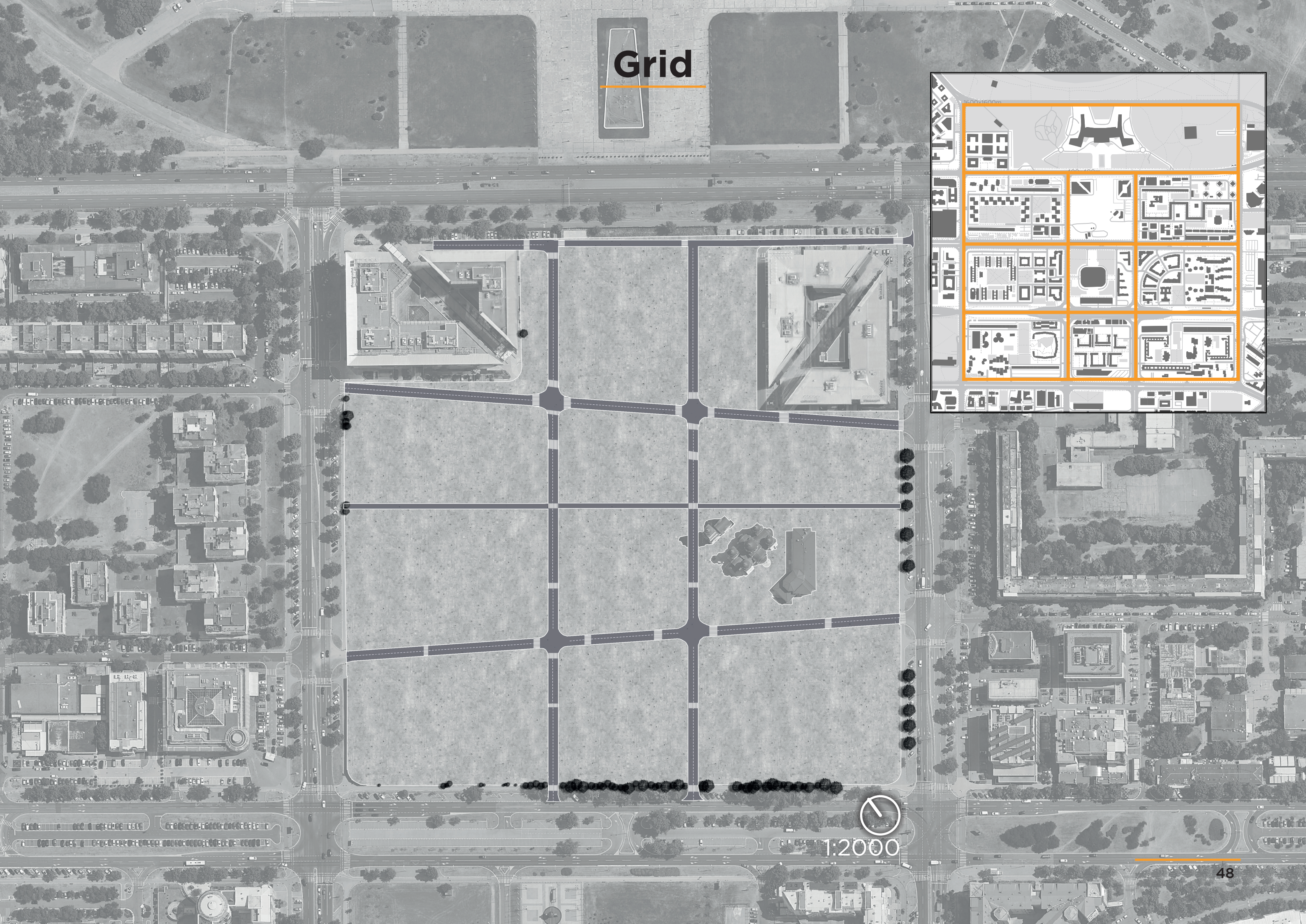
New Belgrade, Block 26



Current situation

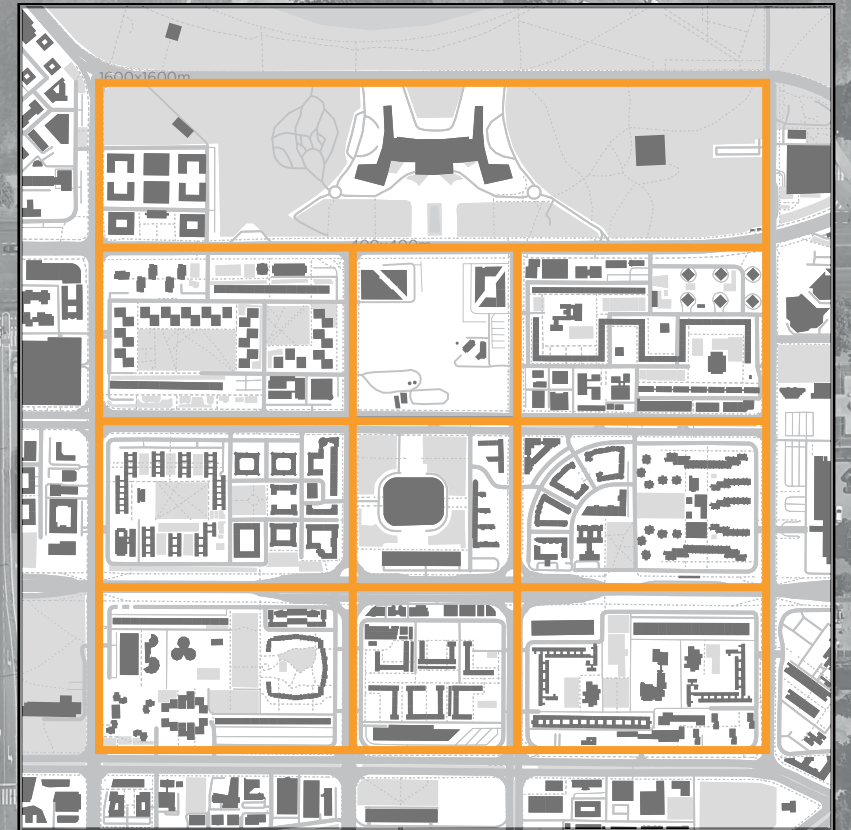
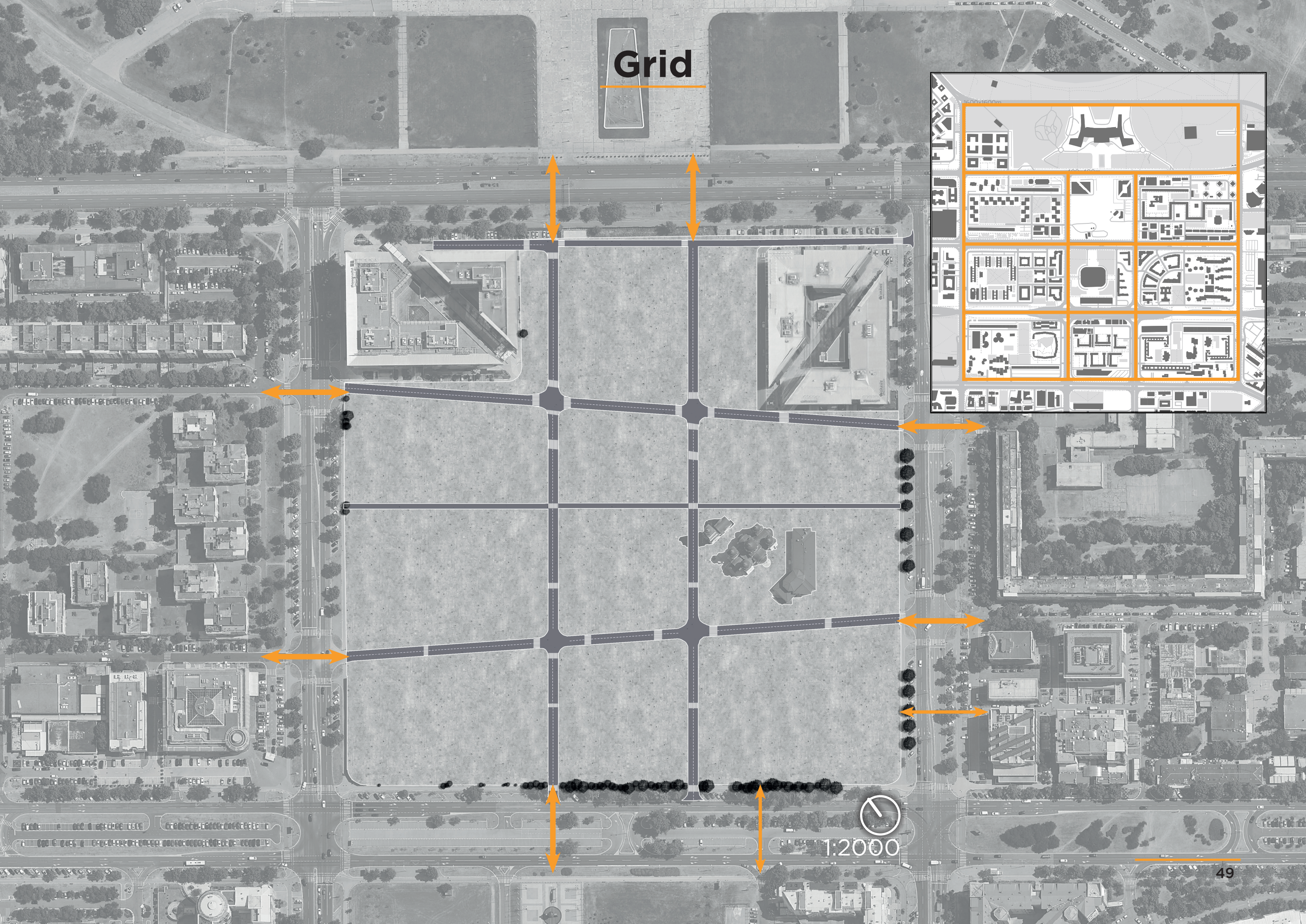


Grid



1:2000

Grid



1:2000

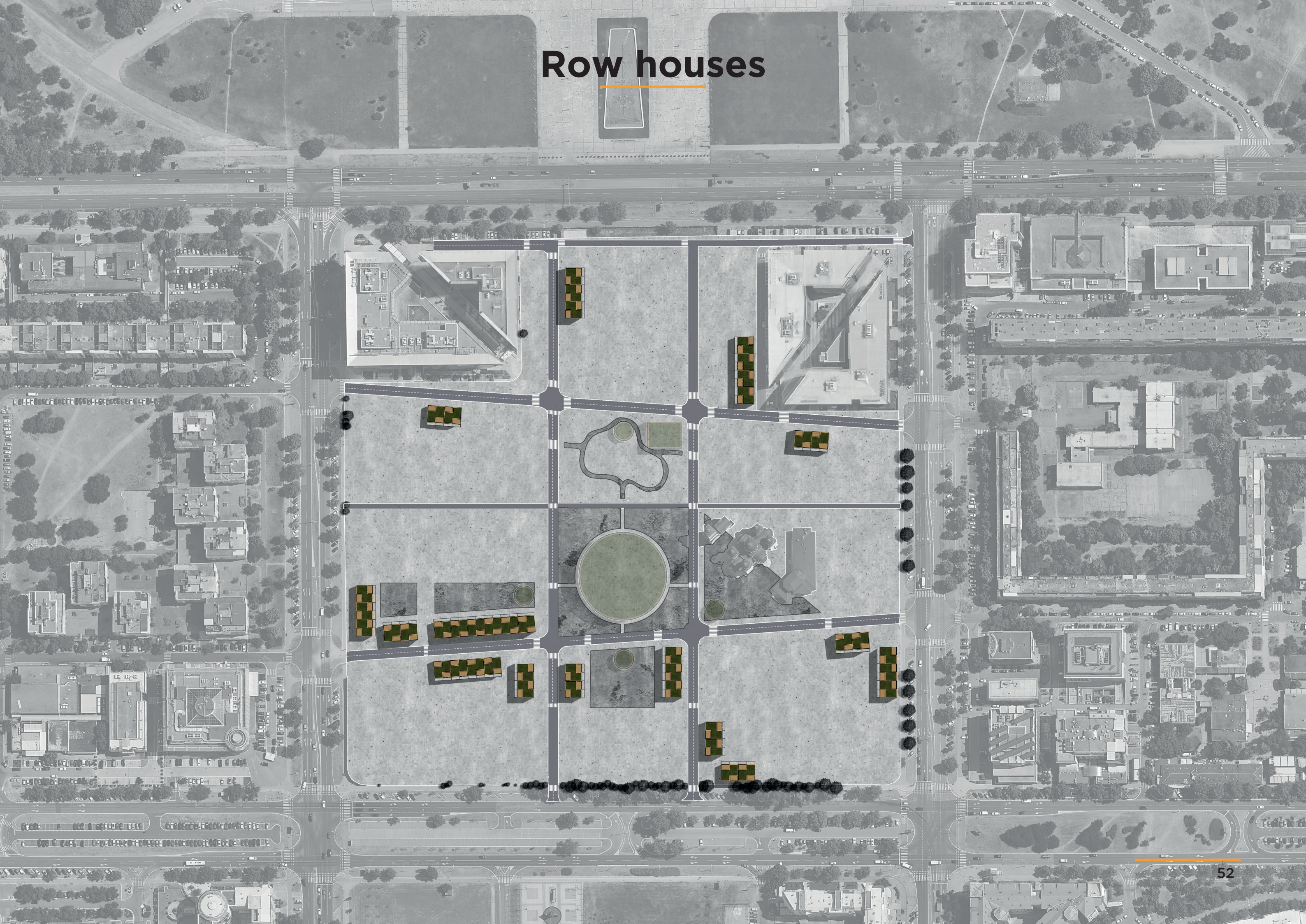
Interlinking neighbourhoods



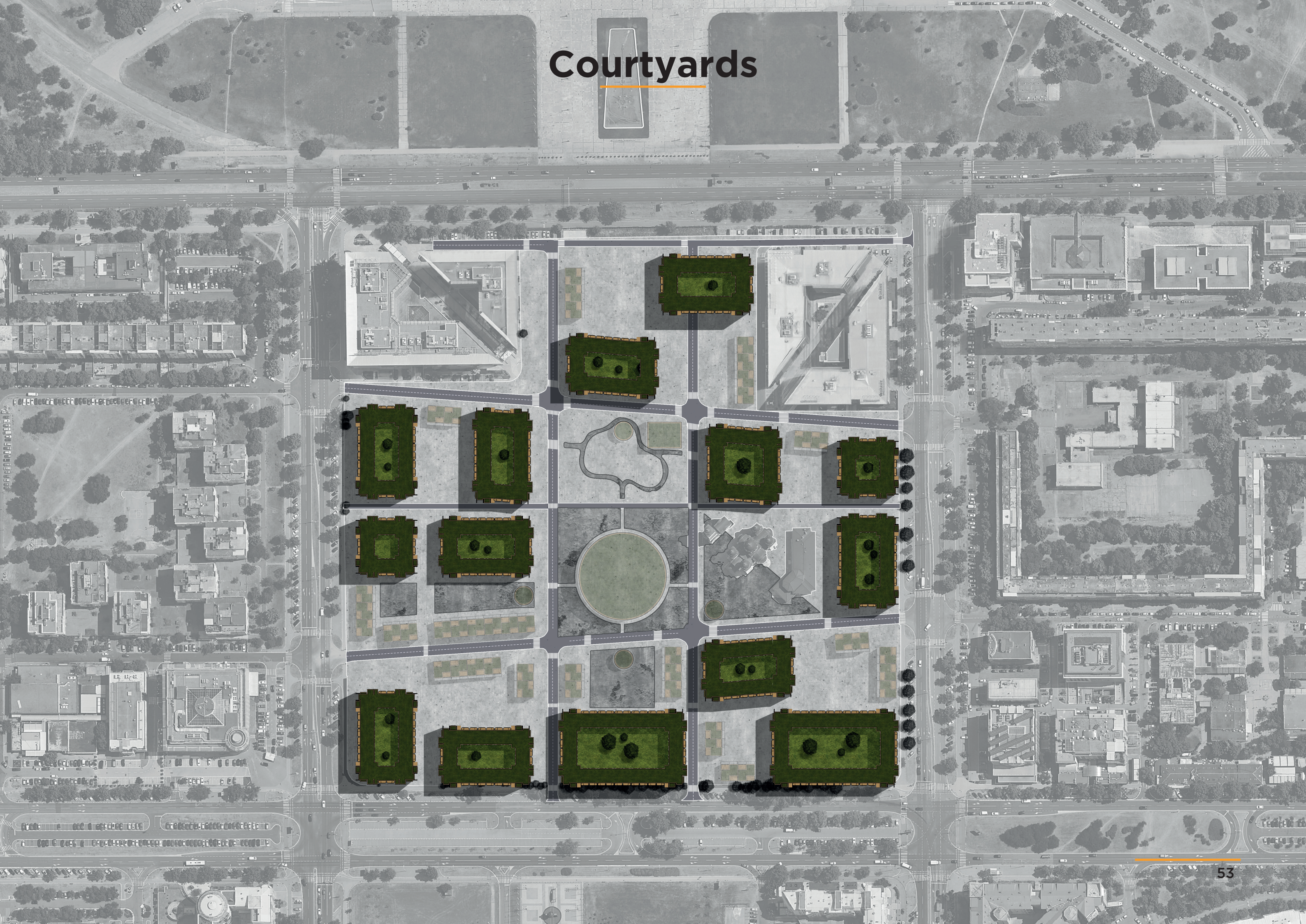
Pavilions



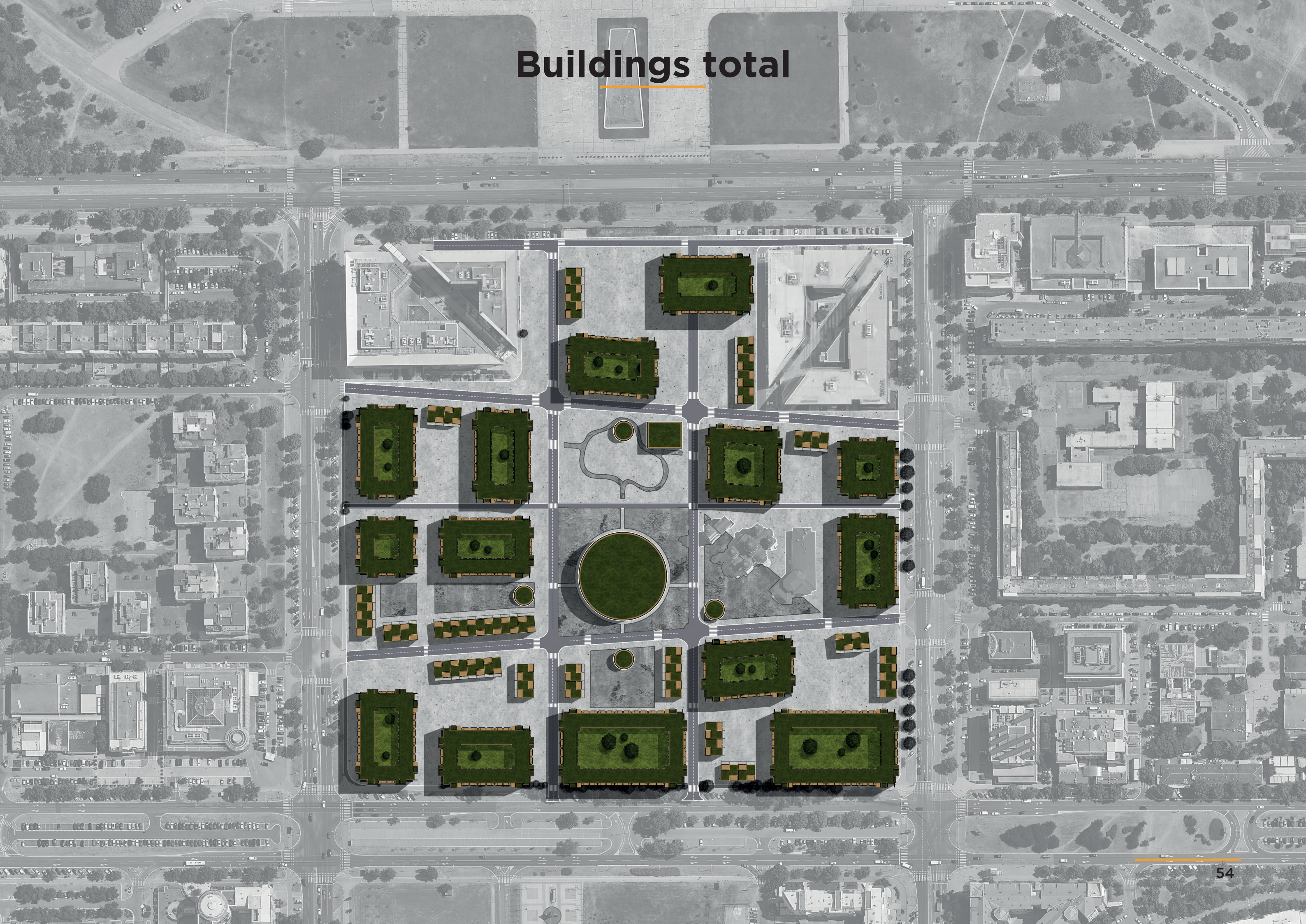
Row houses



Courtyards



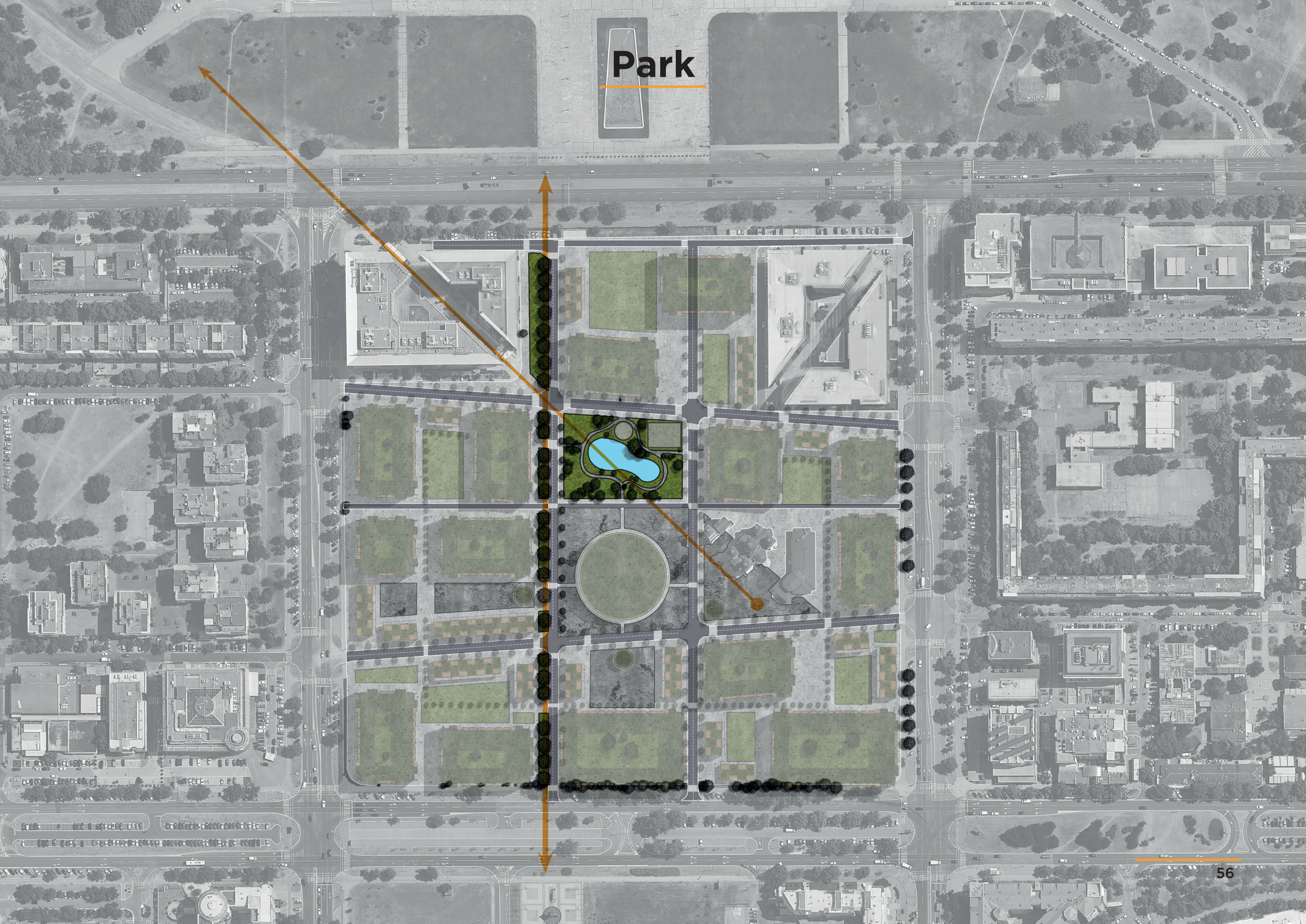
Buildings total



Green neighbourhood squares



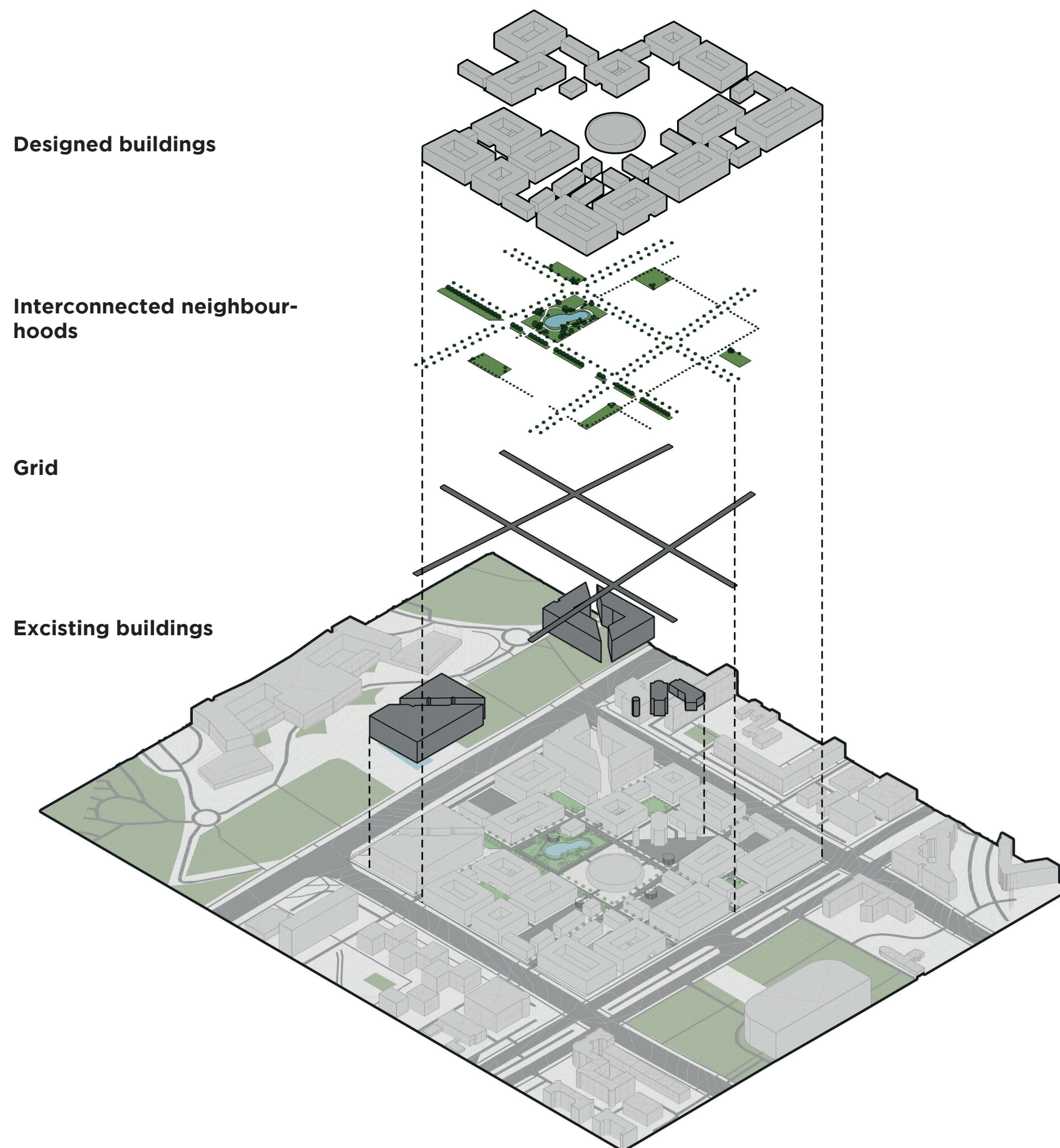
Park



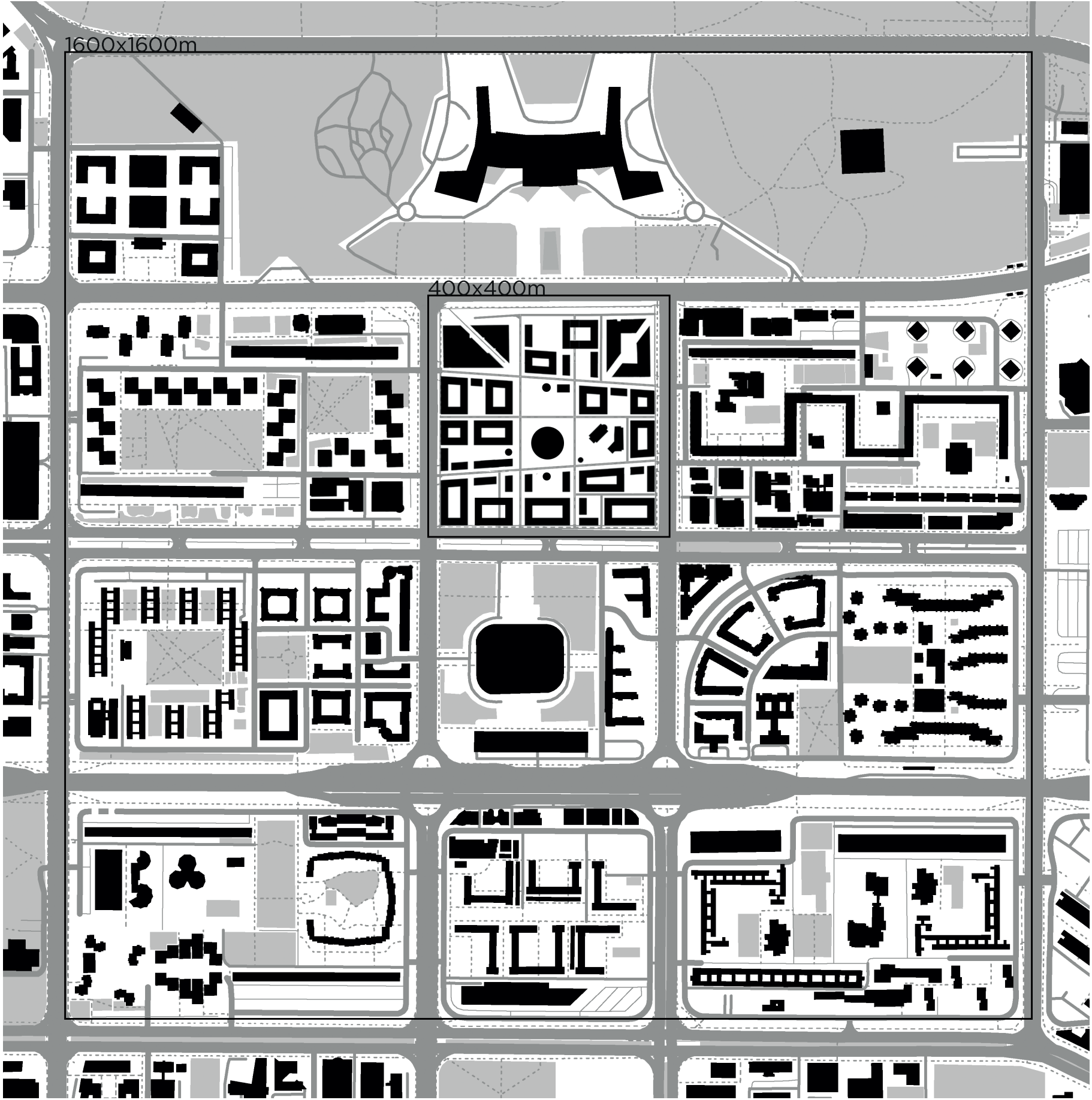
Parking



Block scale



Urban scale



Urban composition

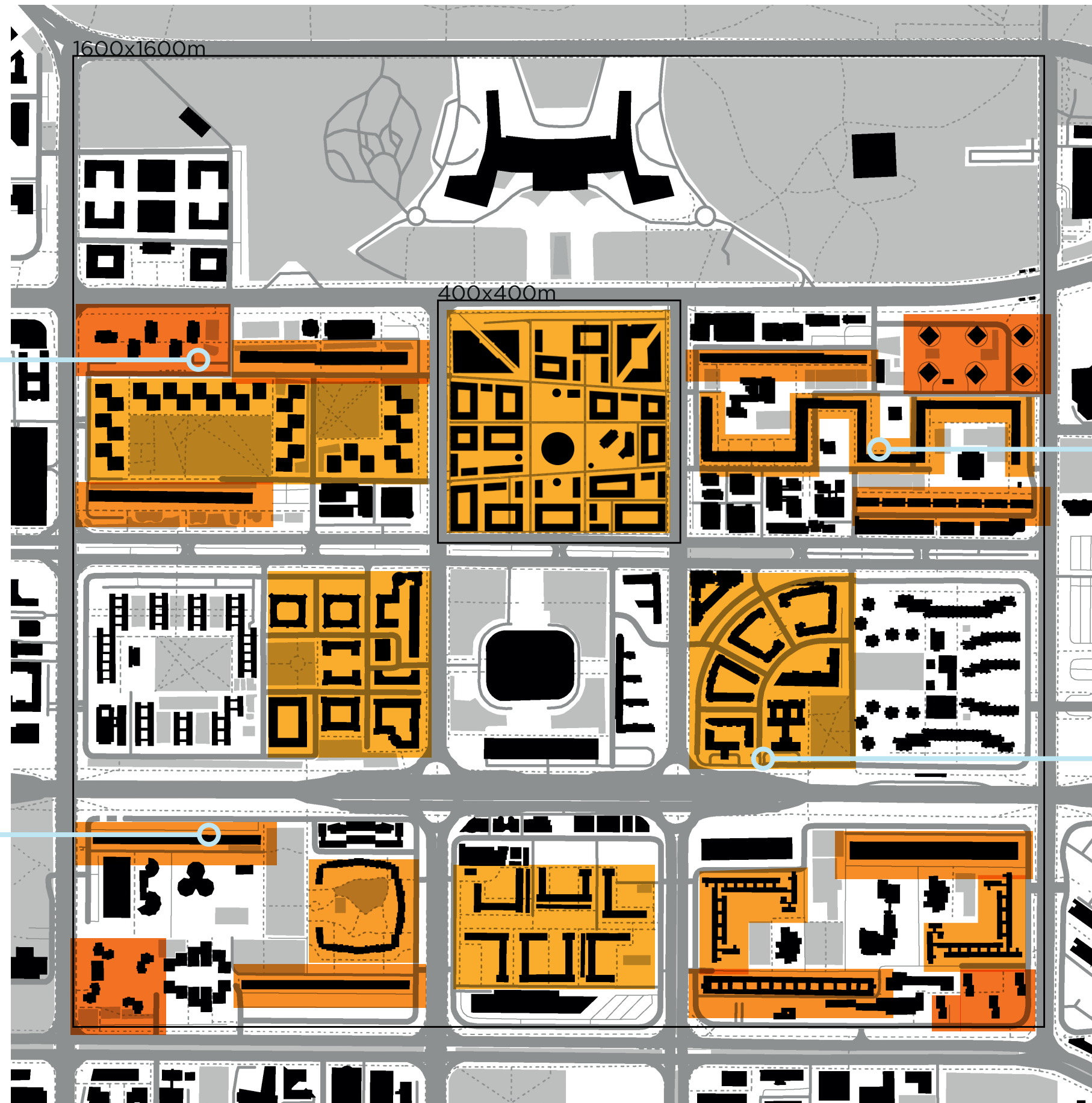
Building Typologies¹,
based on form and position:

- Type 1 – towers:**
sixteen-story buildings positioned on the four corners of the Central zone;
blocks 21, 23, 28, 30

- Type 2 – linear housing:** ten-story buildings positioned along the boulevards;
blocks 21, 22, 23, 28, 30

- Type 3 – meanders:** four-story continual longitudinal buildings positioned in the centre of the block;
blocks 21, 23, 28

- Type 4 – pavilions:** four-story free-standing buildings;
blocks 22, 29, 30

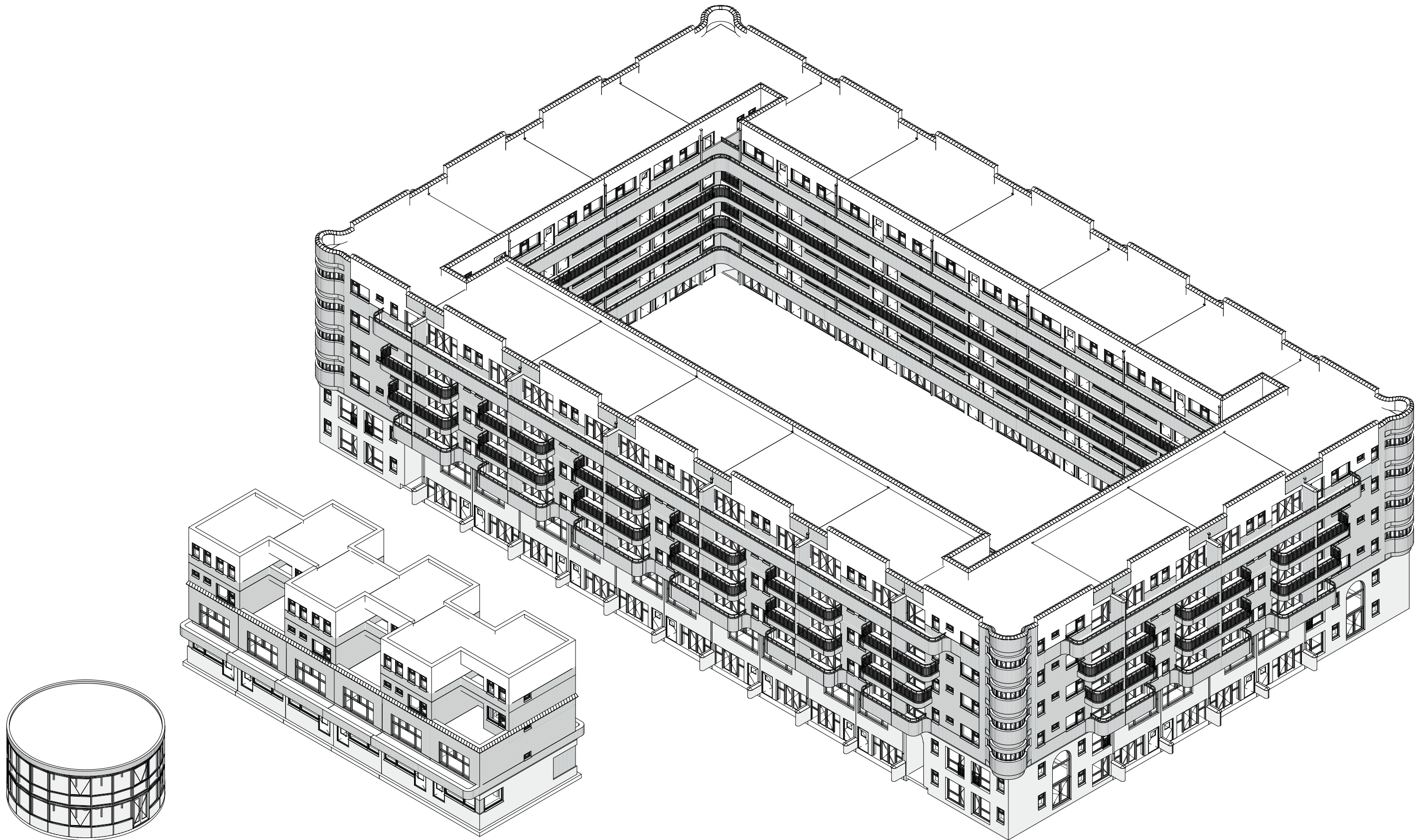


¹ Ksenija, Pesic, and Kusic, "Post-Socialist Urban Development of New Belgrade: Old vs. New Building Typologies against the Backdrop of Current Climate and Ideological Changes," p. 324.

5) Design

a) Urban design → b) Building design → c) Unit design

Building types

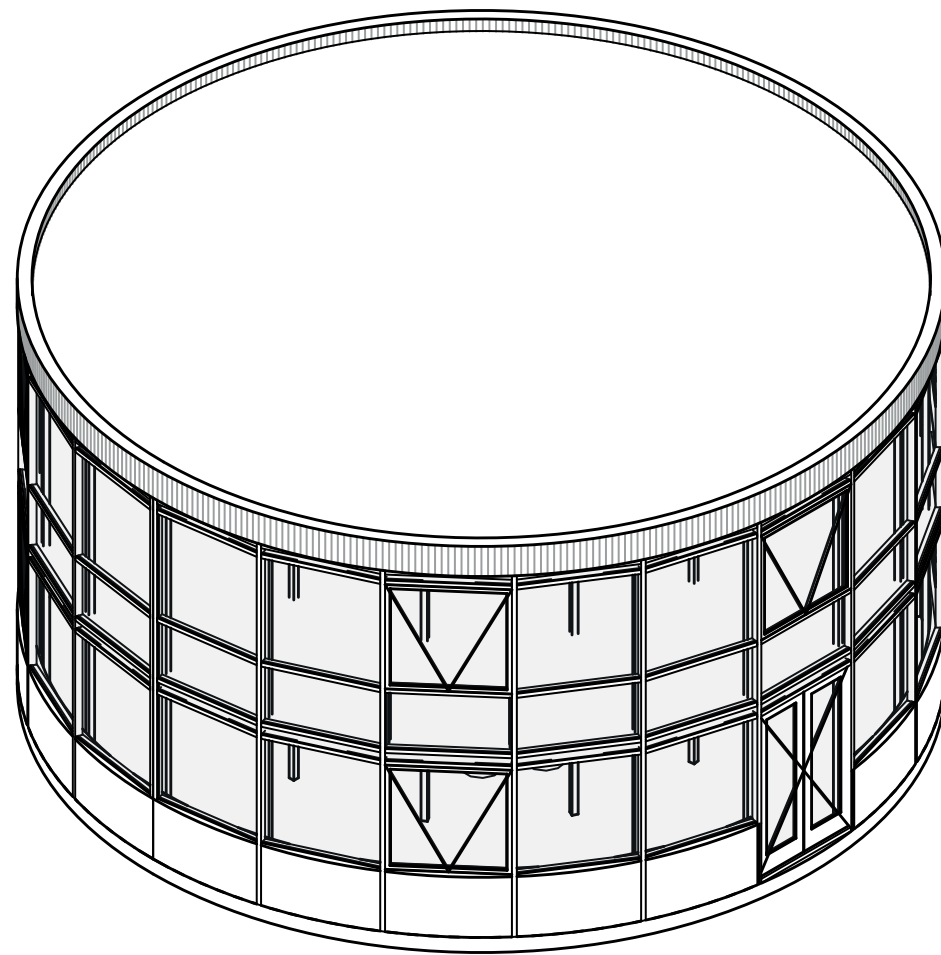


Pavilion

Row house

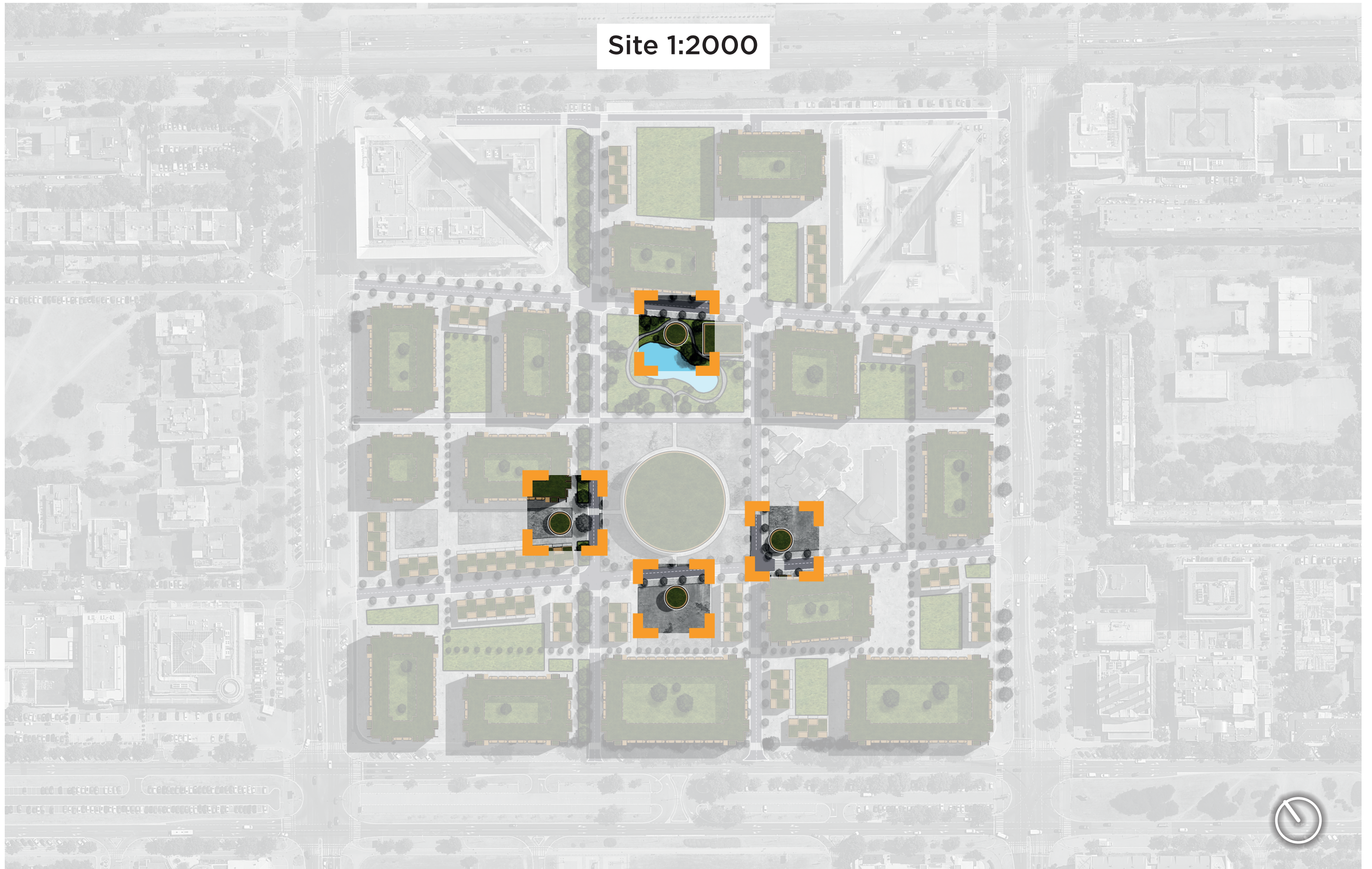
Courtyard

Pavilion

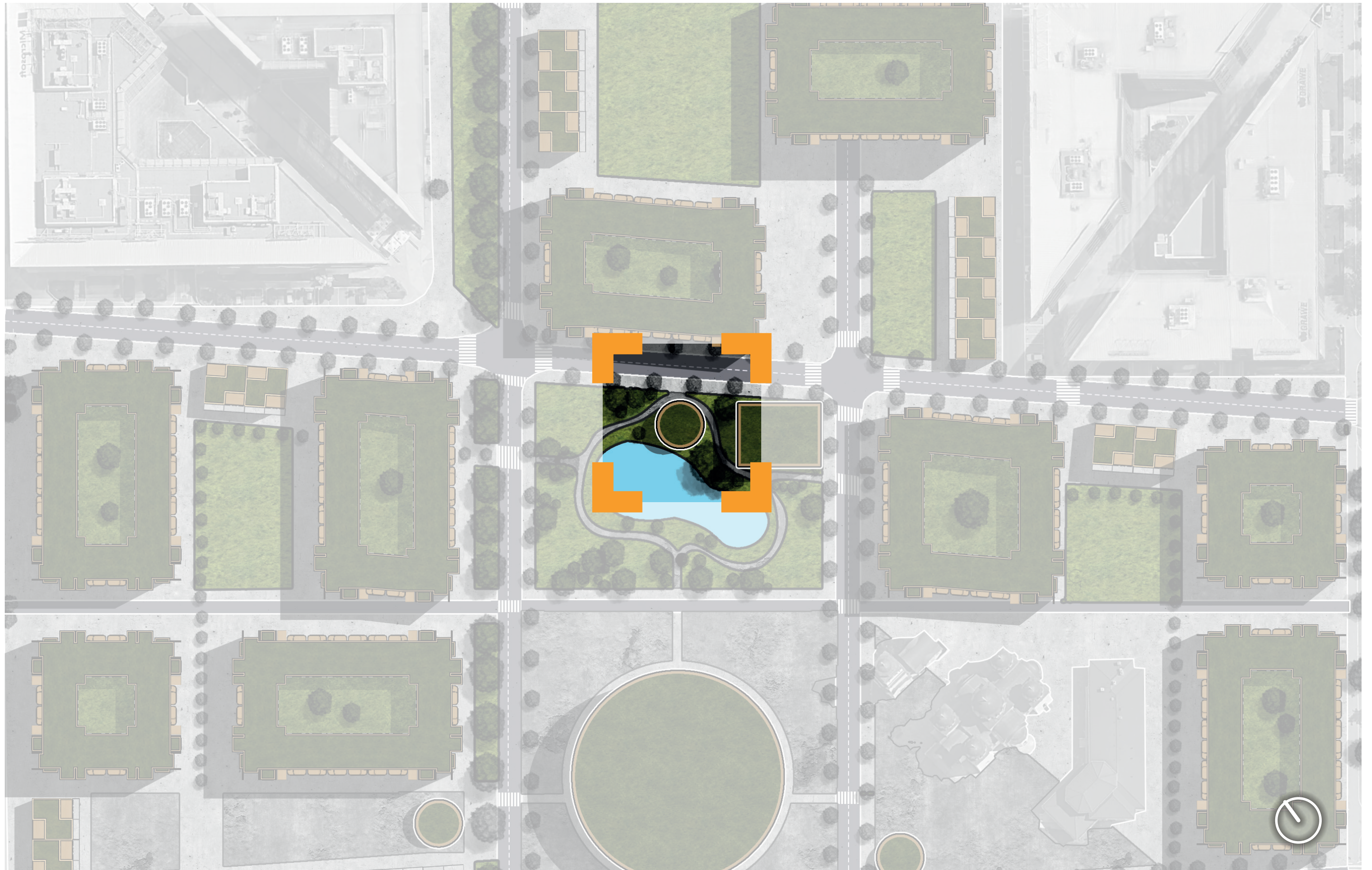


Pavillion

Site 1:2000

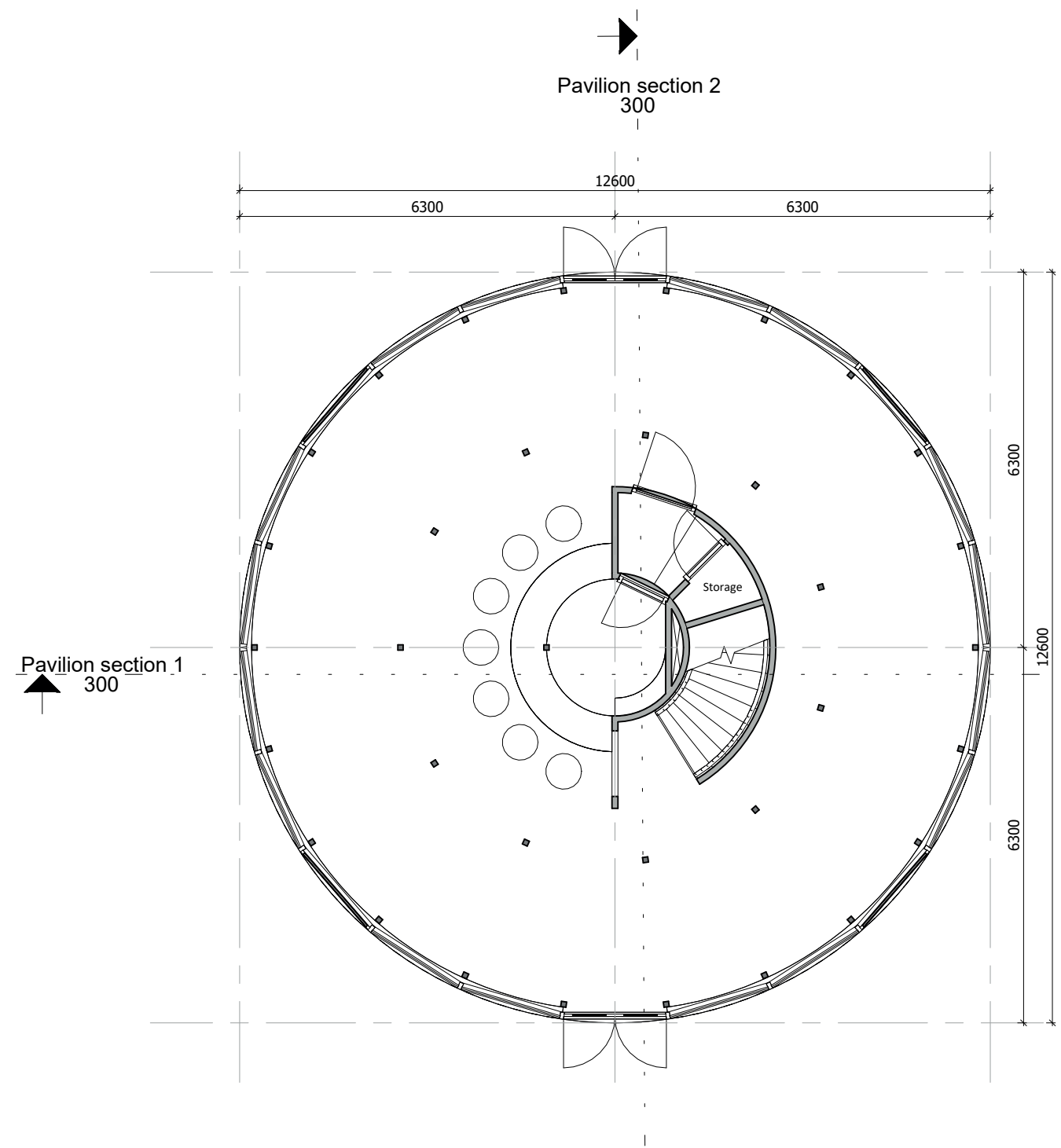


Pavillion



Pavillion Plans

Floor plan +00, 1:100

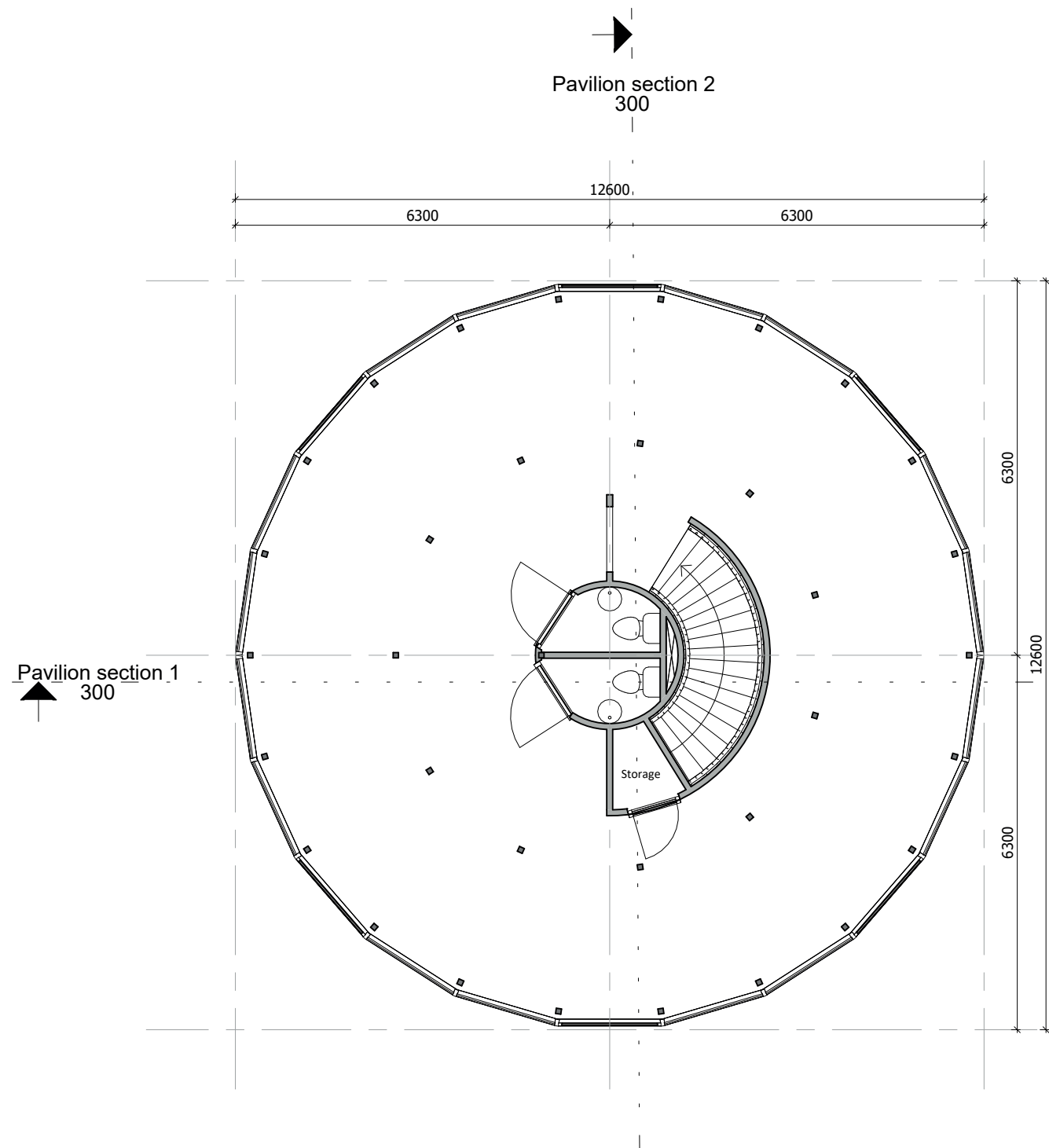


Site Key



Pavillion Plans

Floor plan +01, 1:100

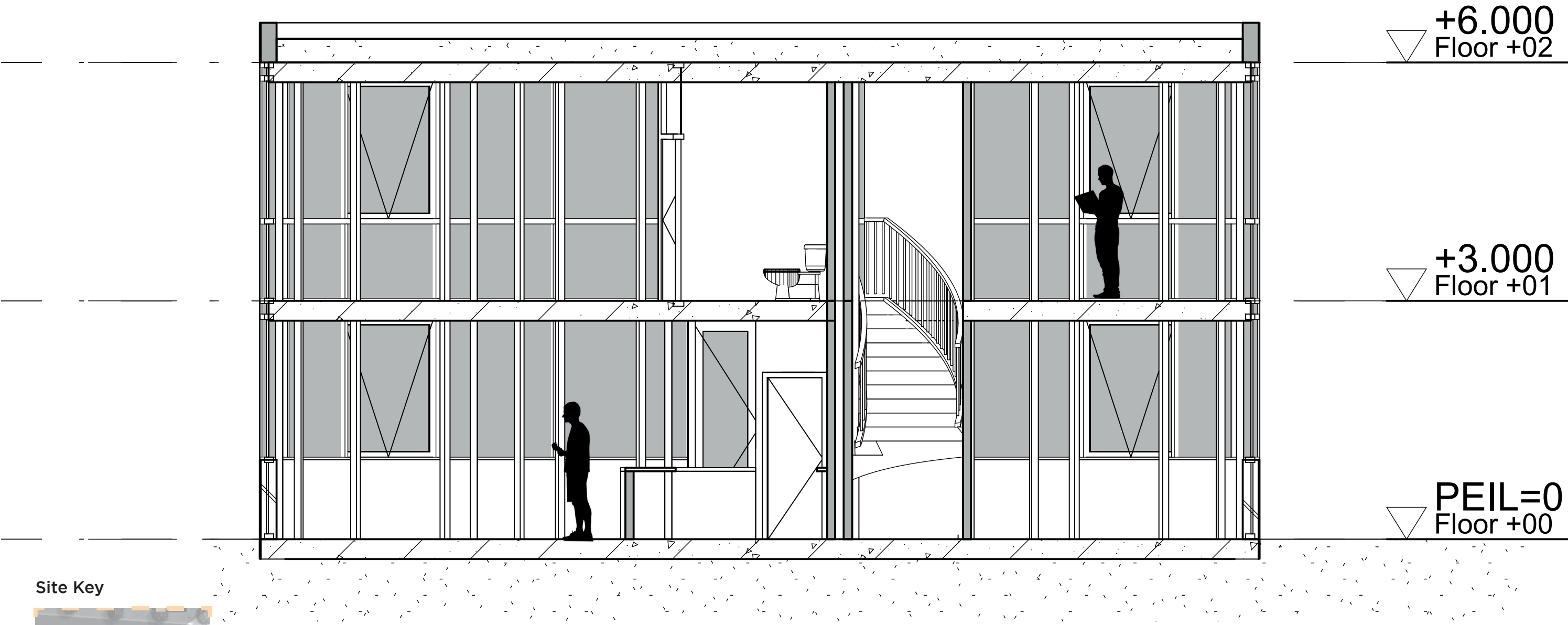


Site Key

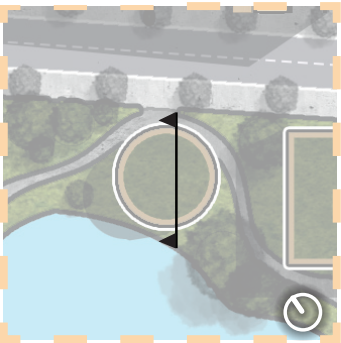


Pavillion Sections

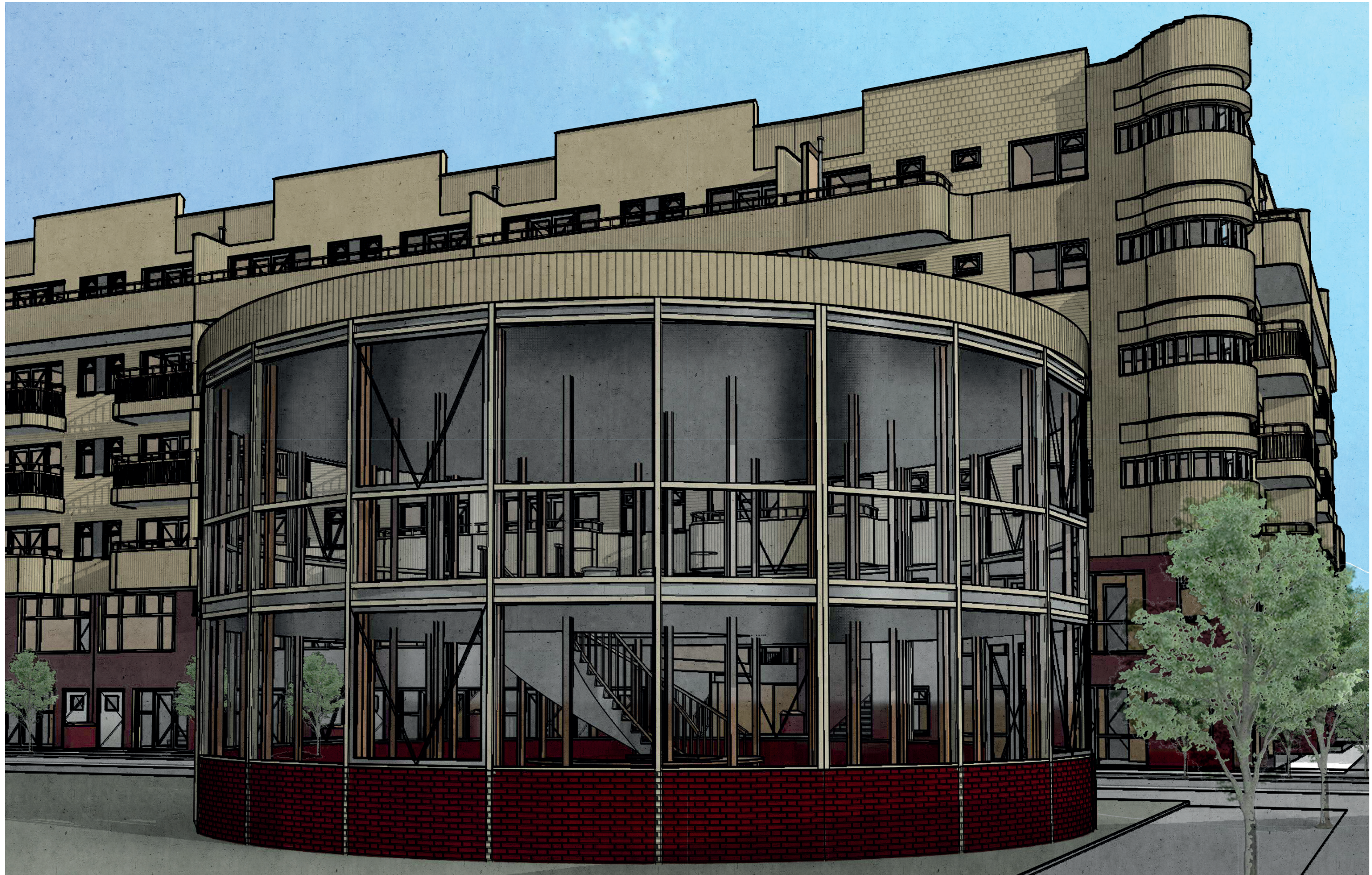
Section, 1:50



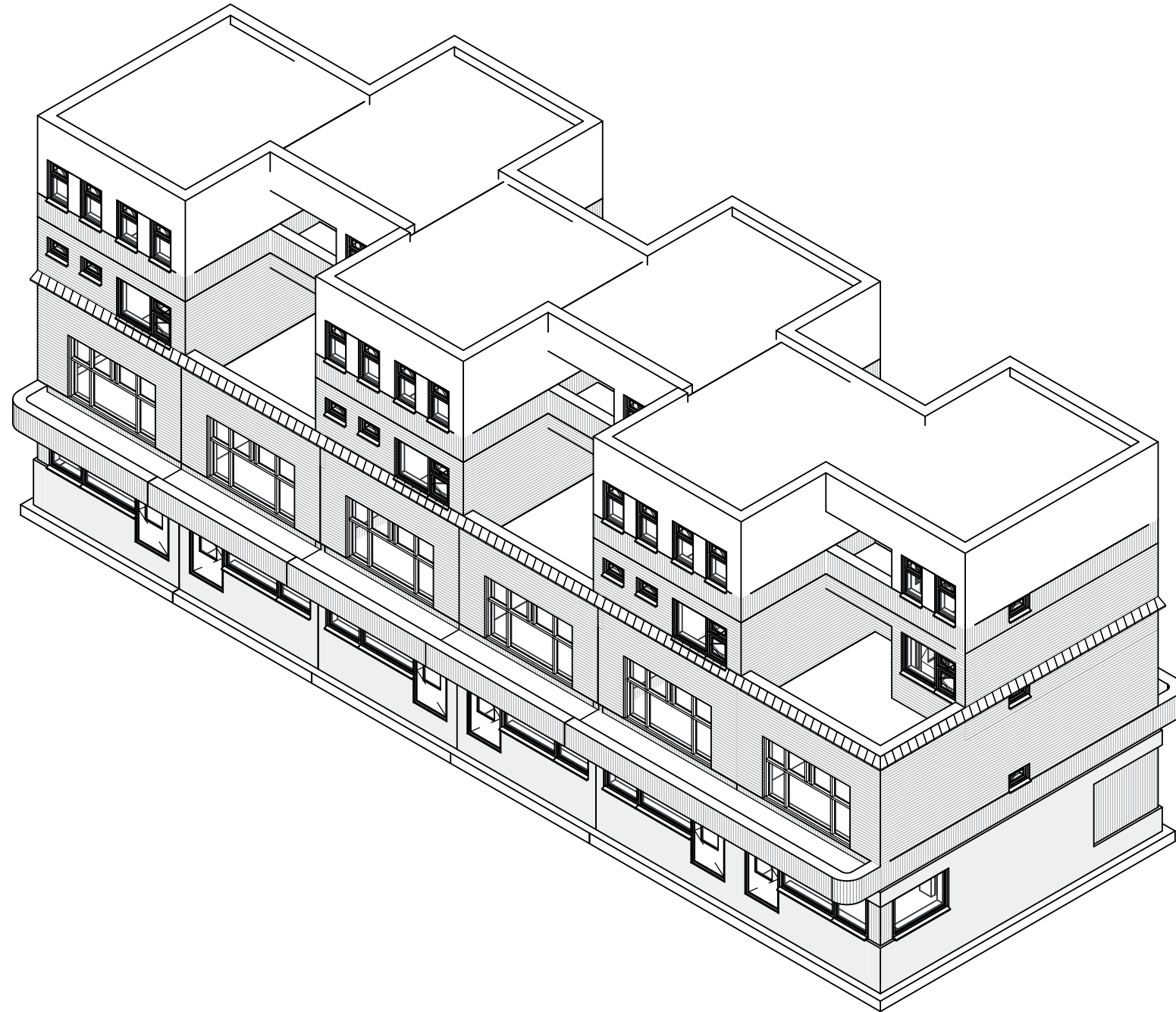
Site Key



Pavillion



Row house



Row house

Site 1:2000



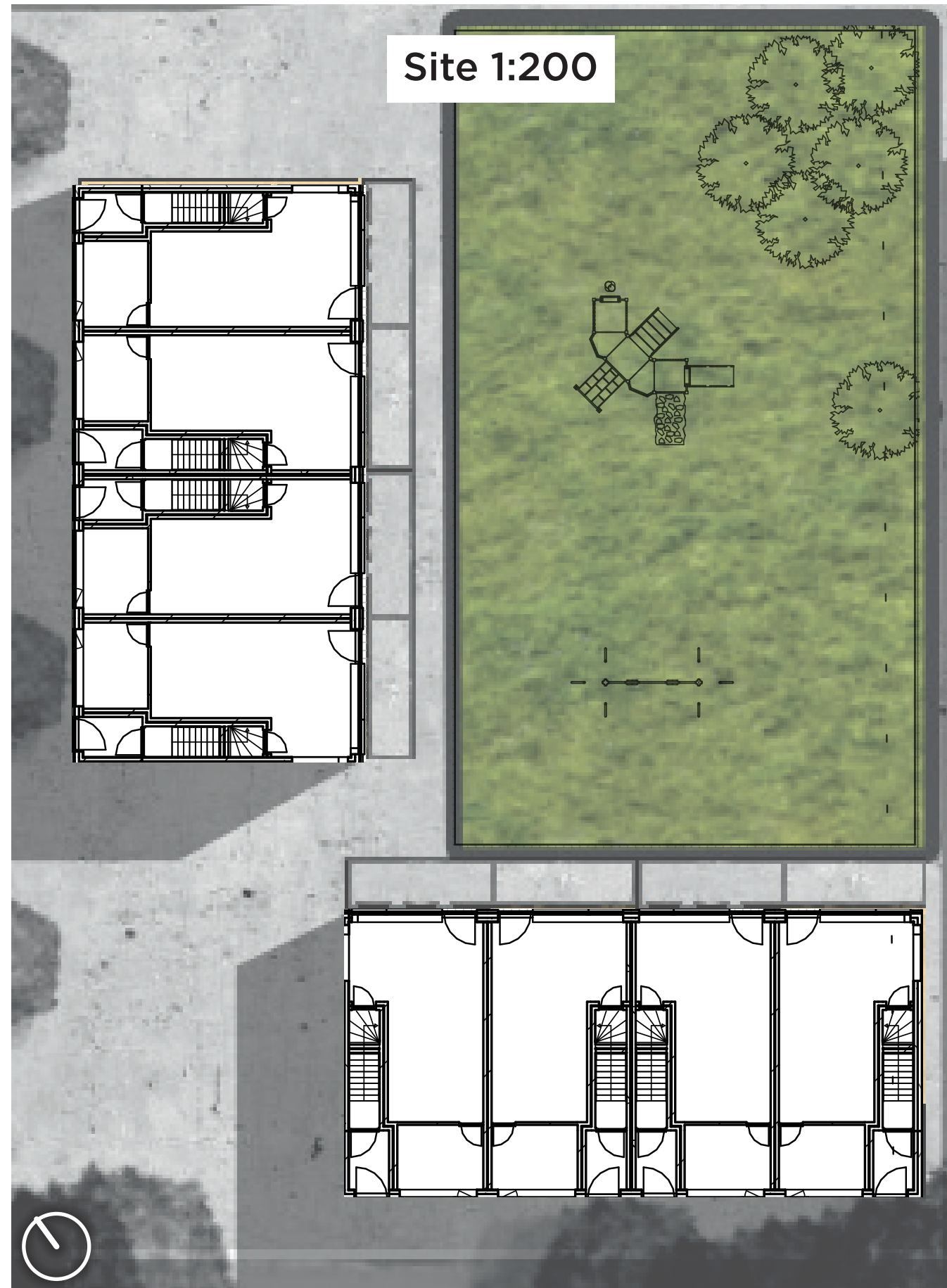
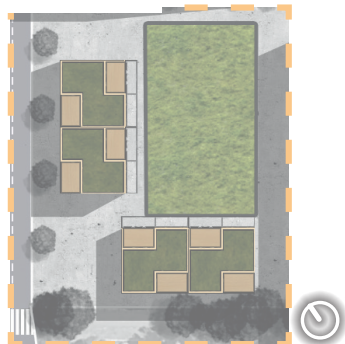
Row house



Row house Plans

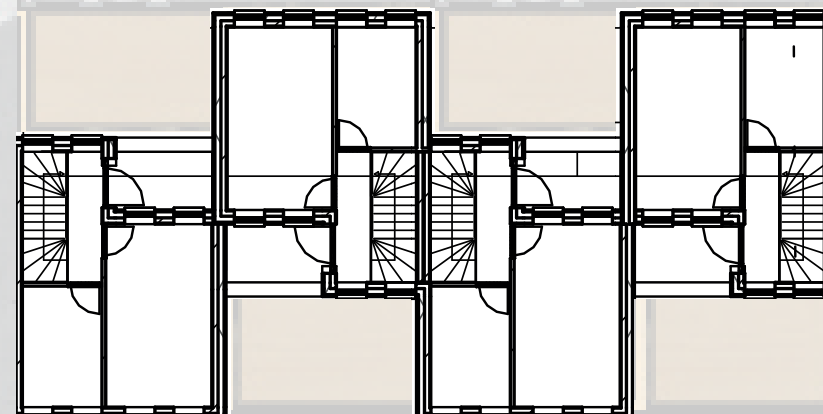
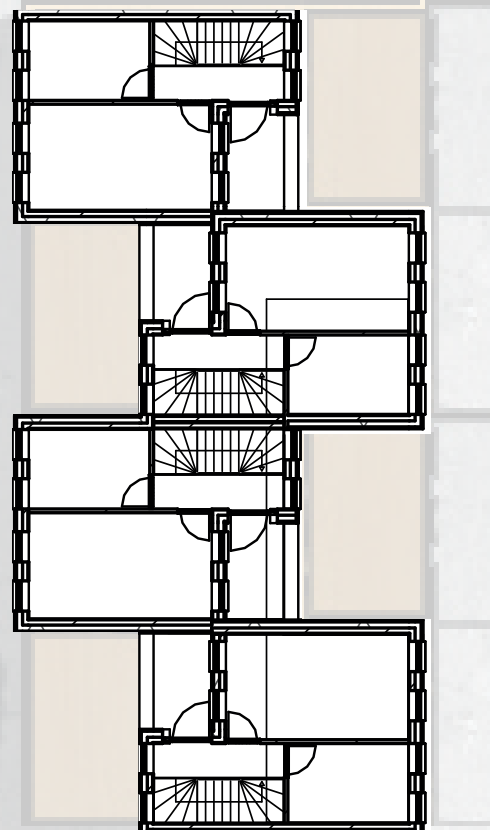
Site 1:200

Site Key

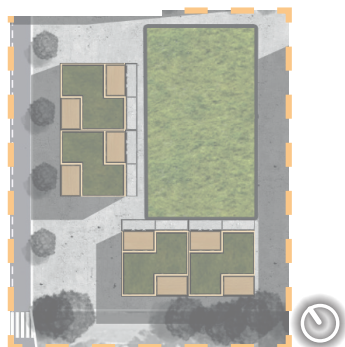


Row house Plans

Site 1:200

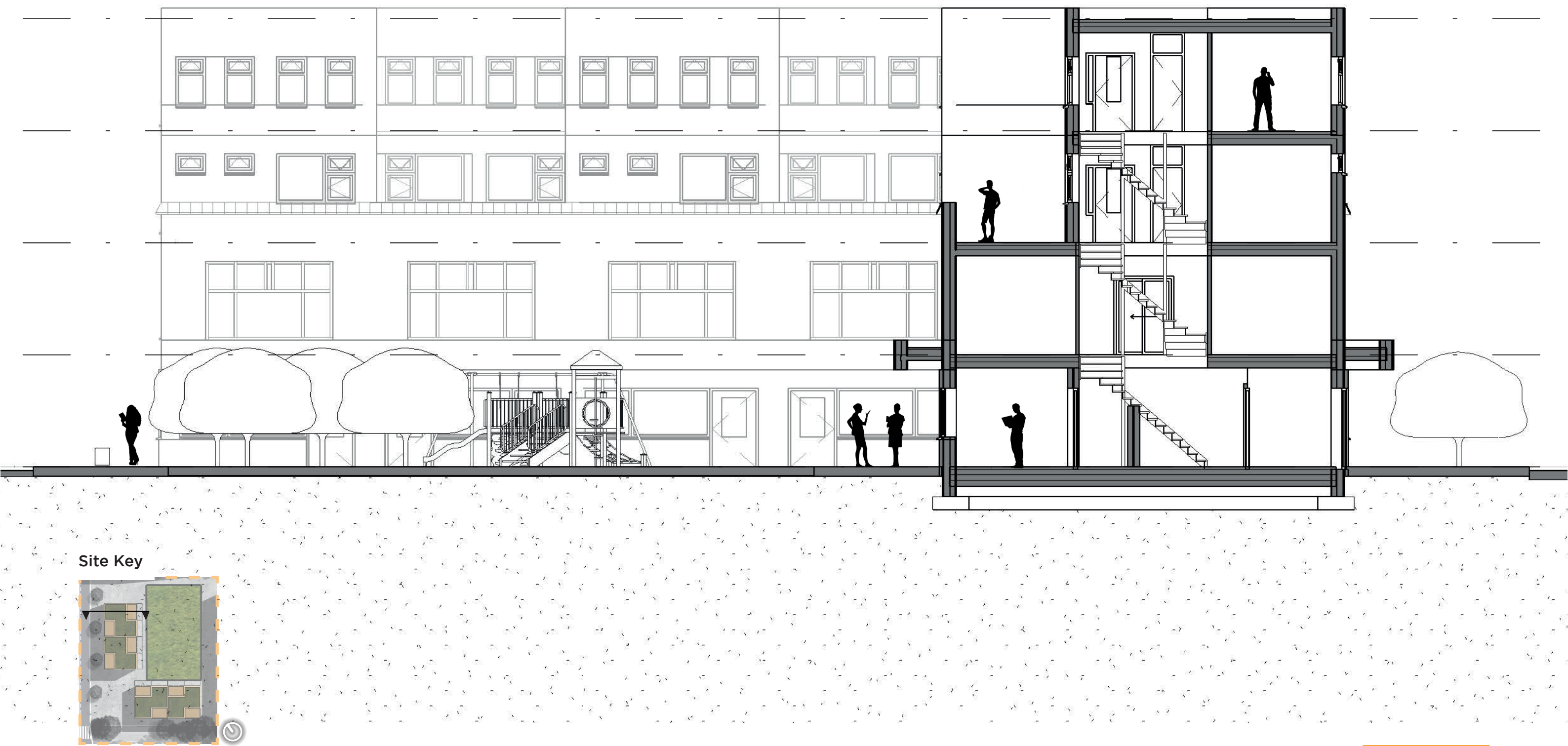


Site Key



Row house Sections

Section 1:100

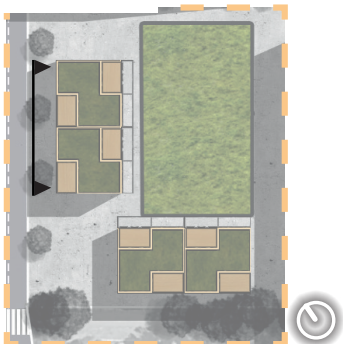


Row house Elevations

Facade 1:100



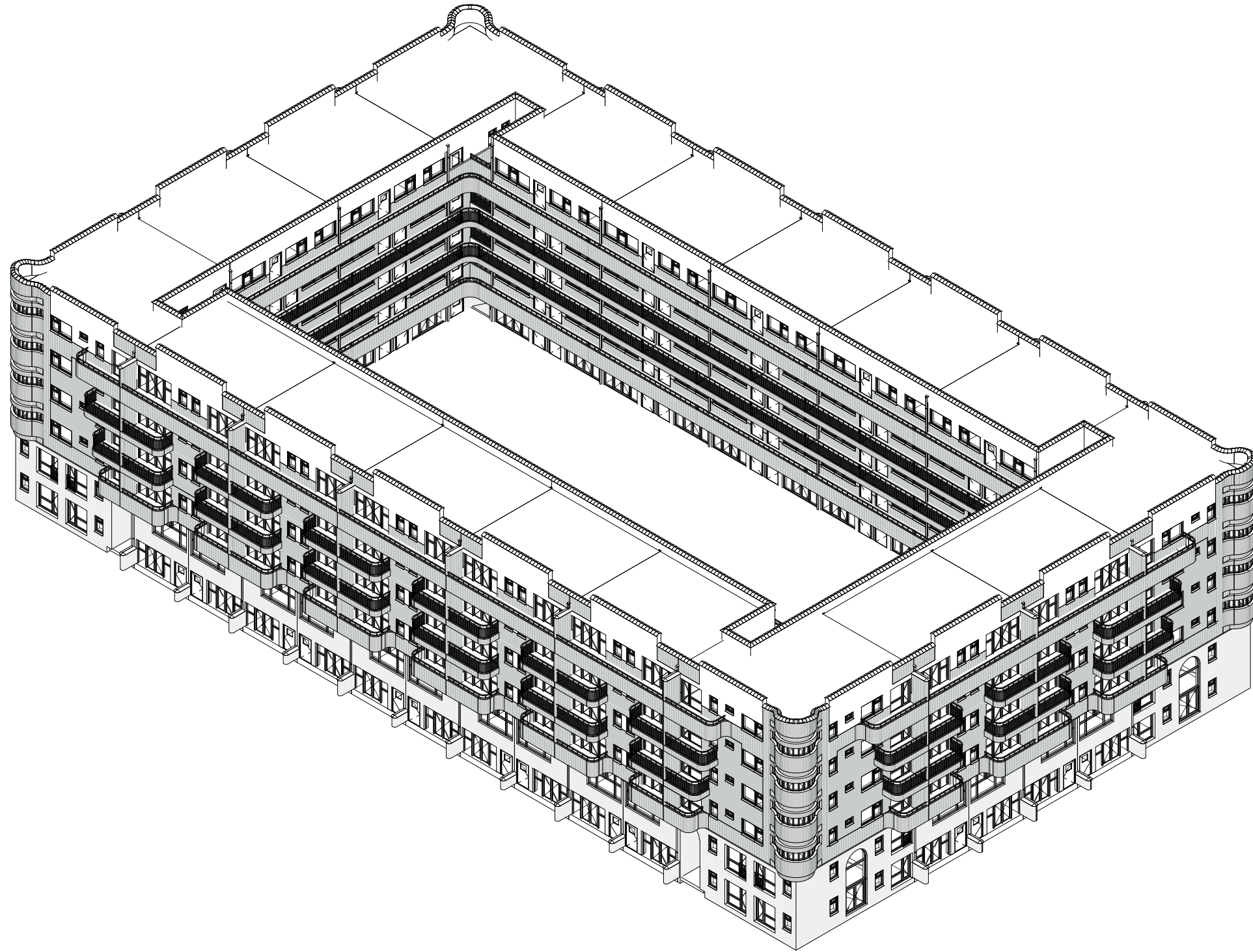
Site Key



Row house

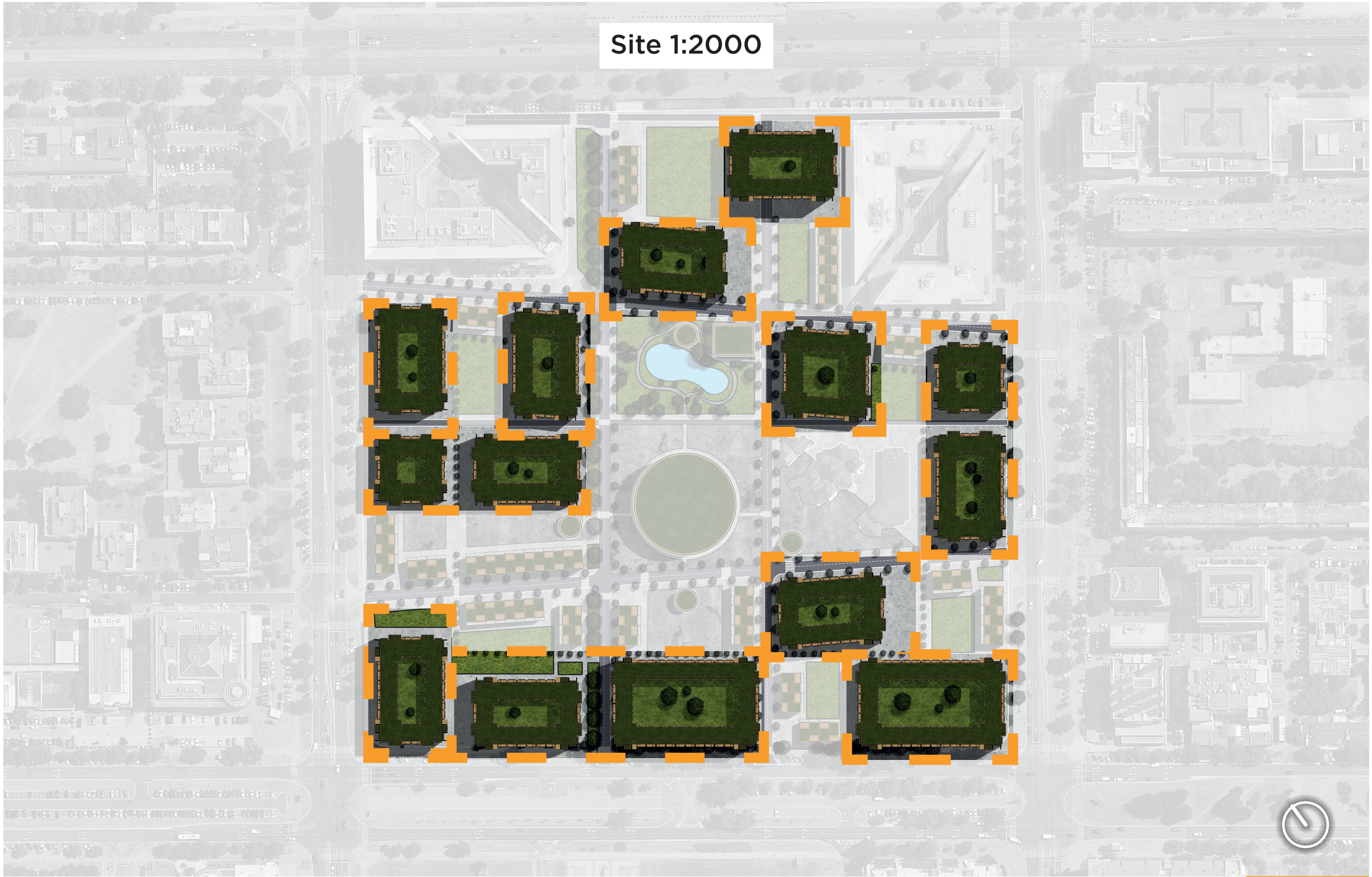


Courtyard

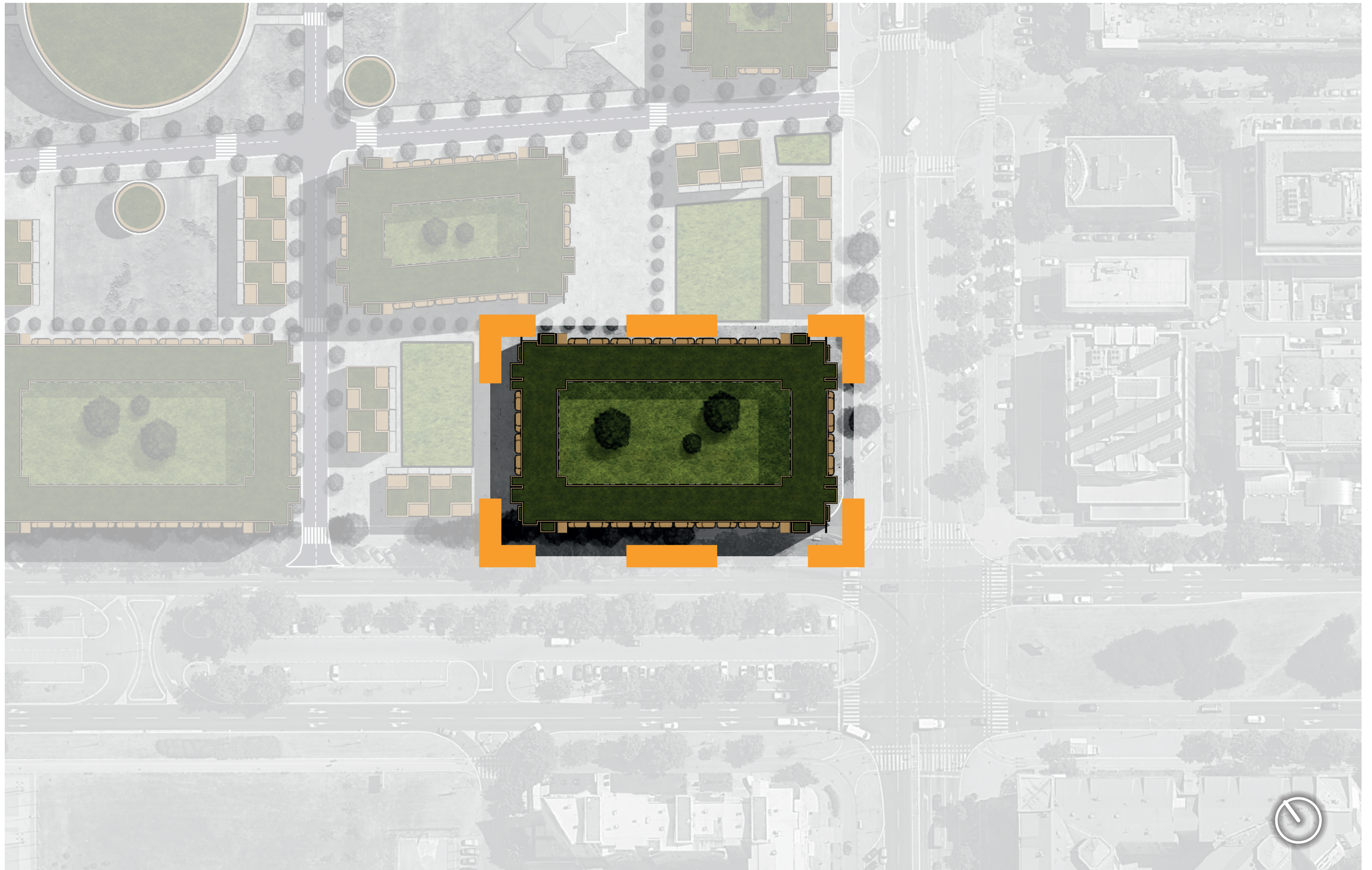


Courtyard

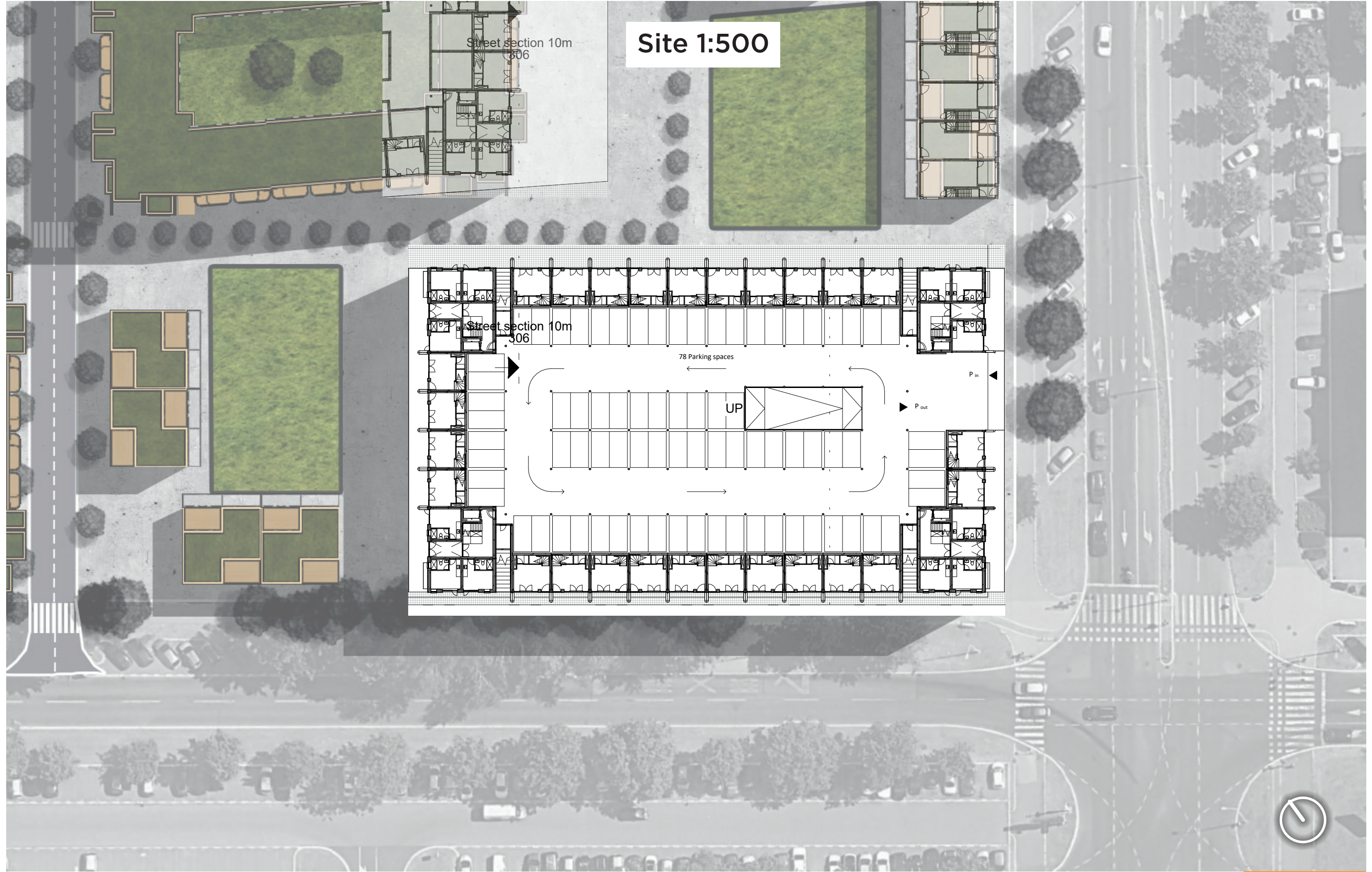
Site 1:2000



Courtyard

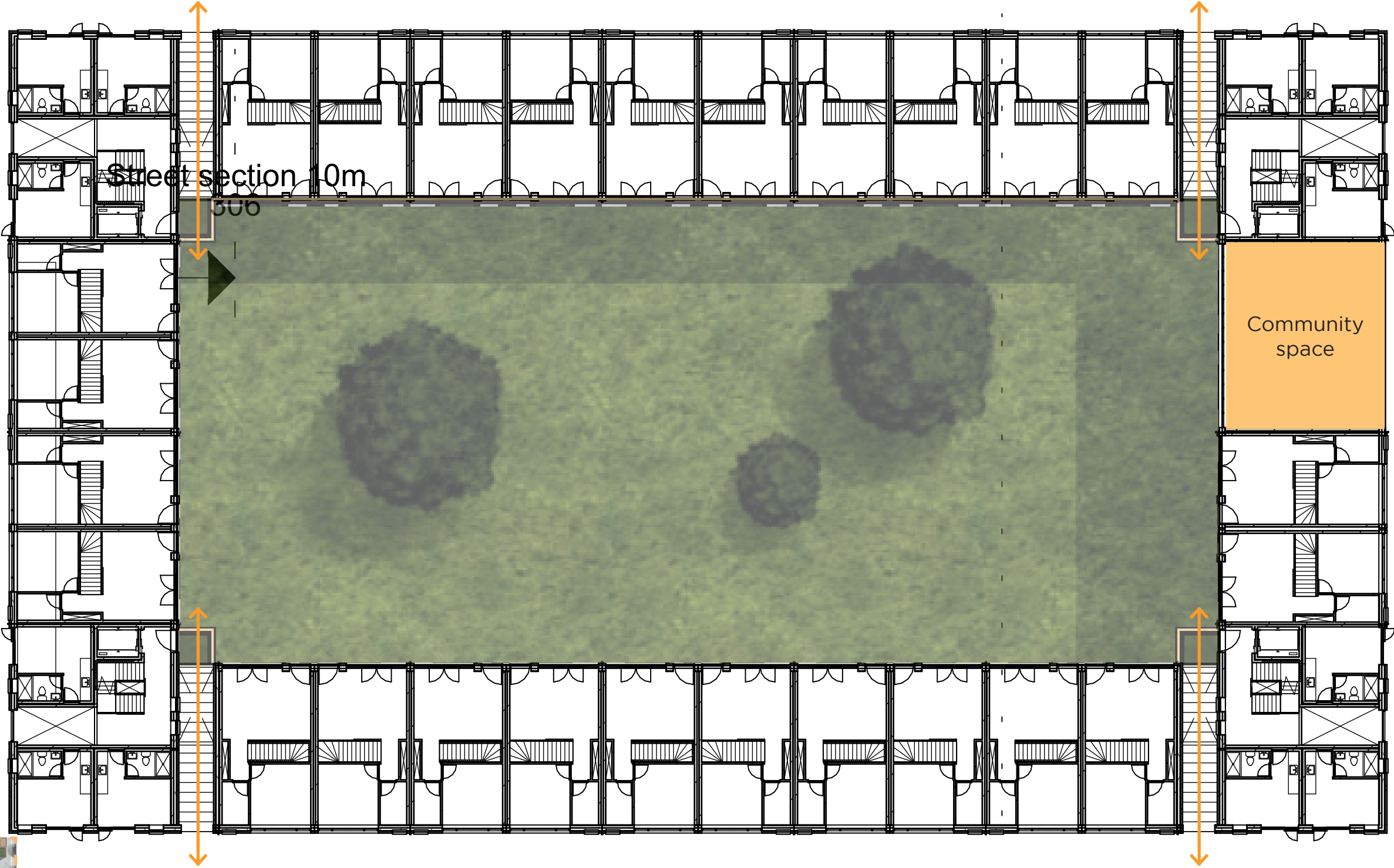


Courtyard Plans

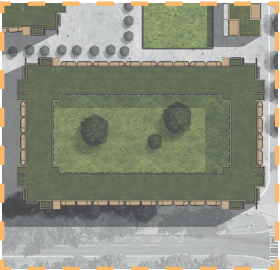


Courtyard Plans

Floor plan +01, 1:250

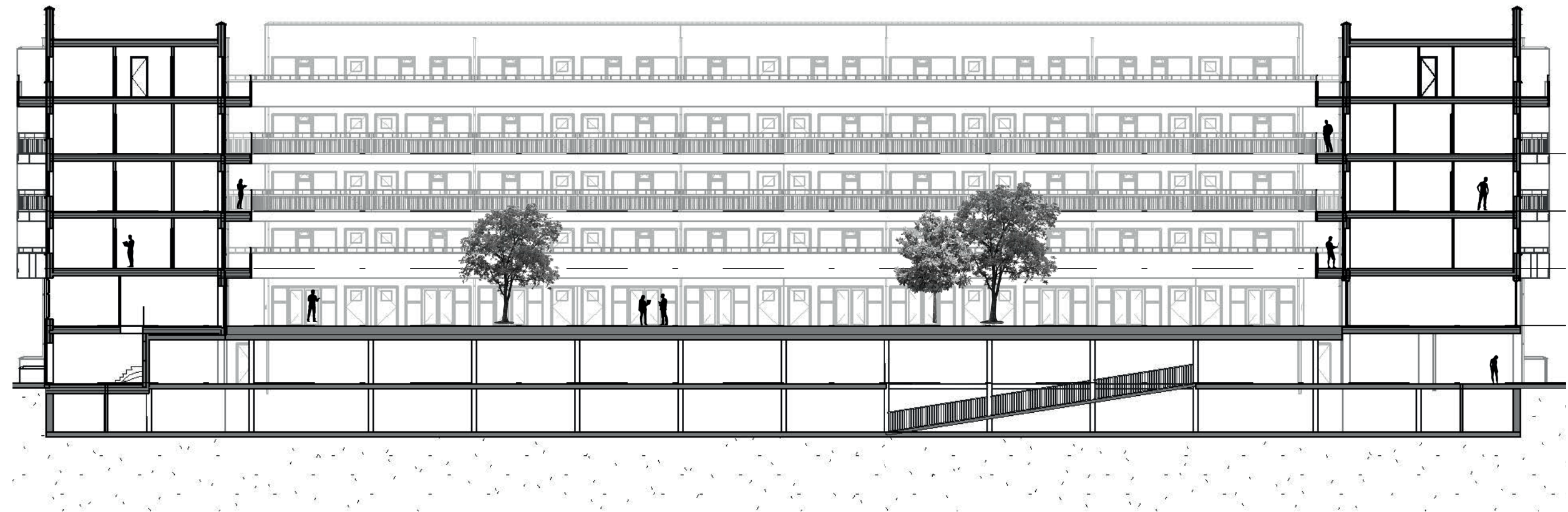


Site Key

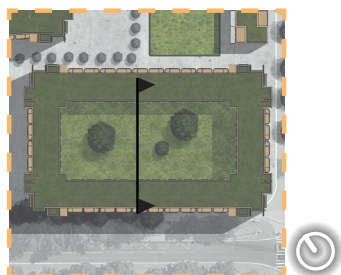


Courtyard Sections

Section 1:250



Site Key



Courtyard Elevations

Facades 1:250



Site Key



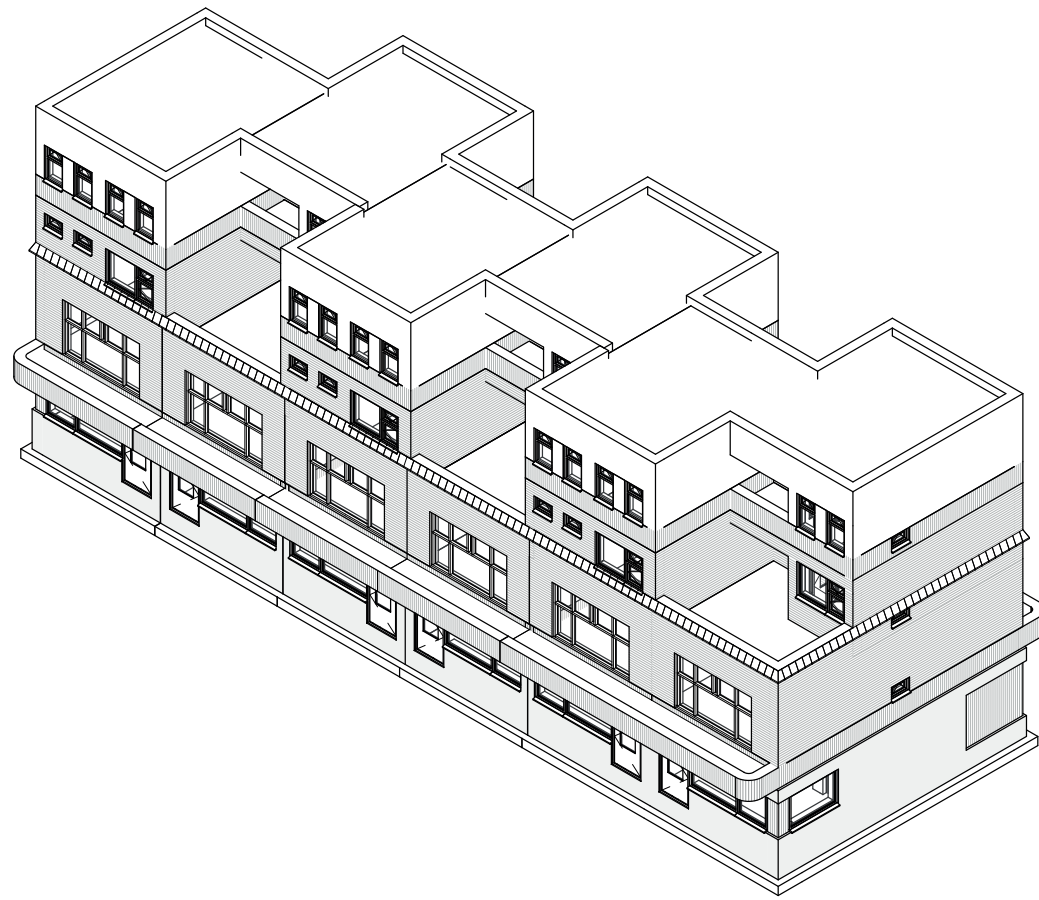
Courtyard



5) Design

a) Urban design → b) Building design → c) Unit design

Row House Units

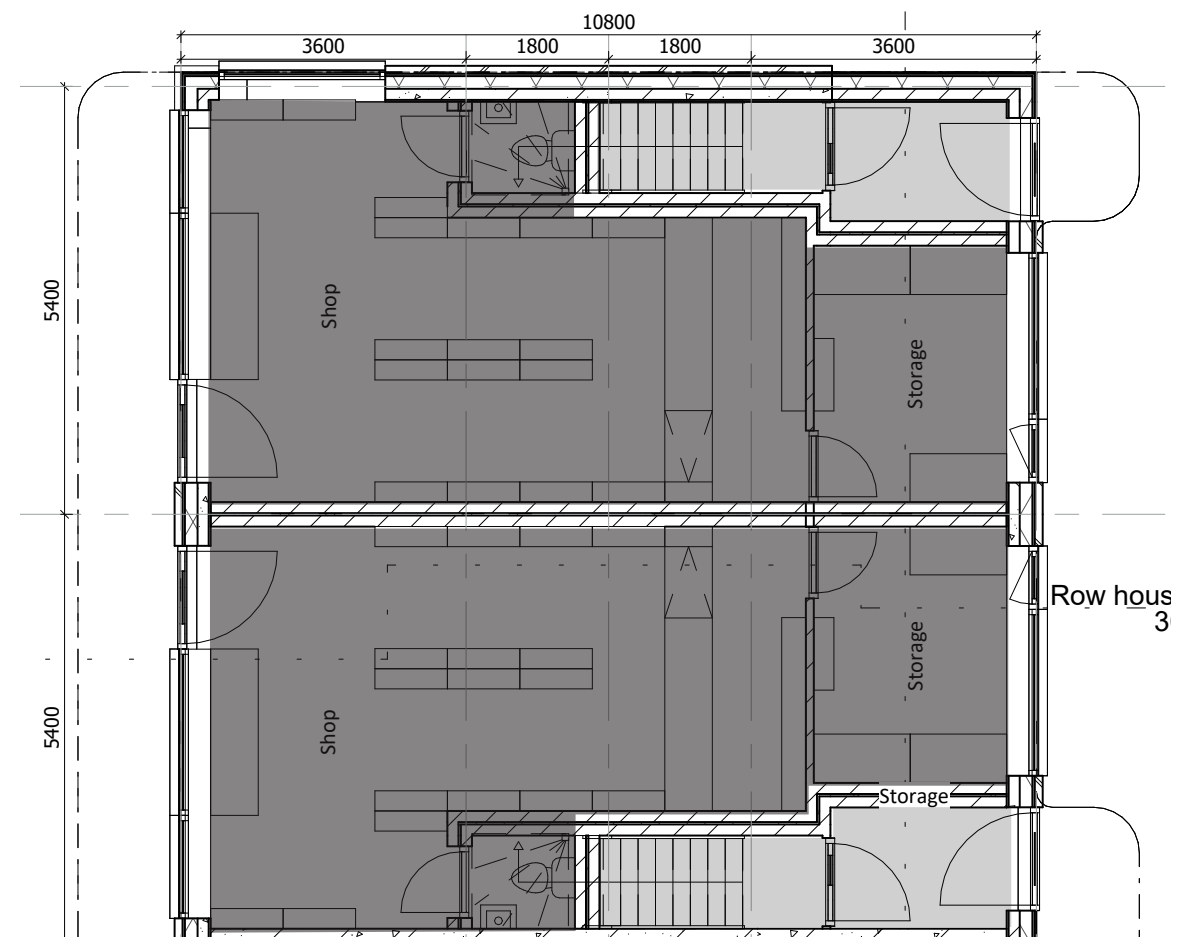


Row House units

- 6 row houses
- 140 m² living space/family house
- Expandable to 180 m²
- 330 m² shop space

Row house Unit

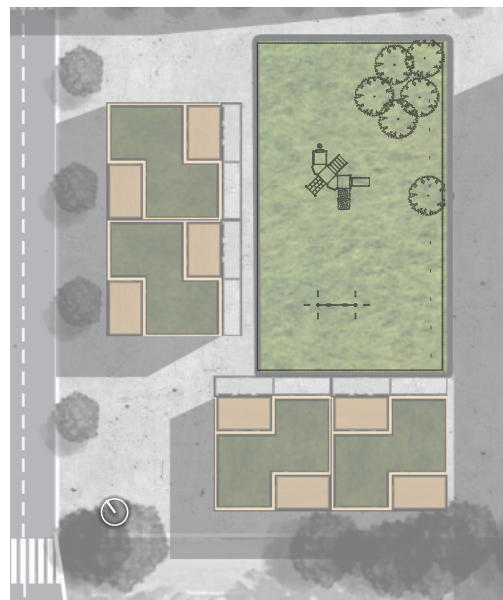
Floor plan +00, 1:100



= Shop

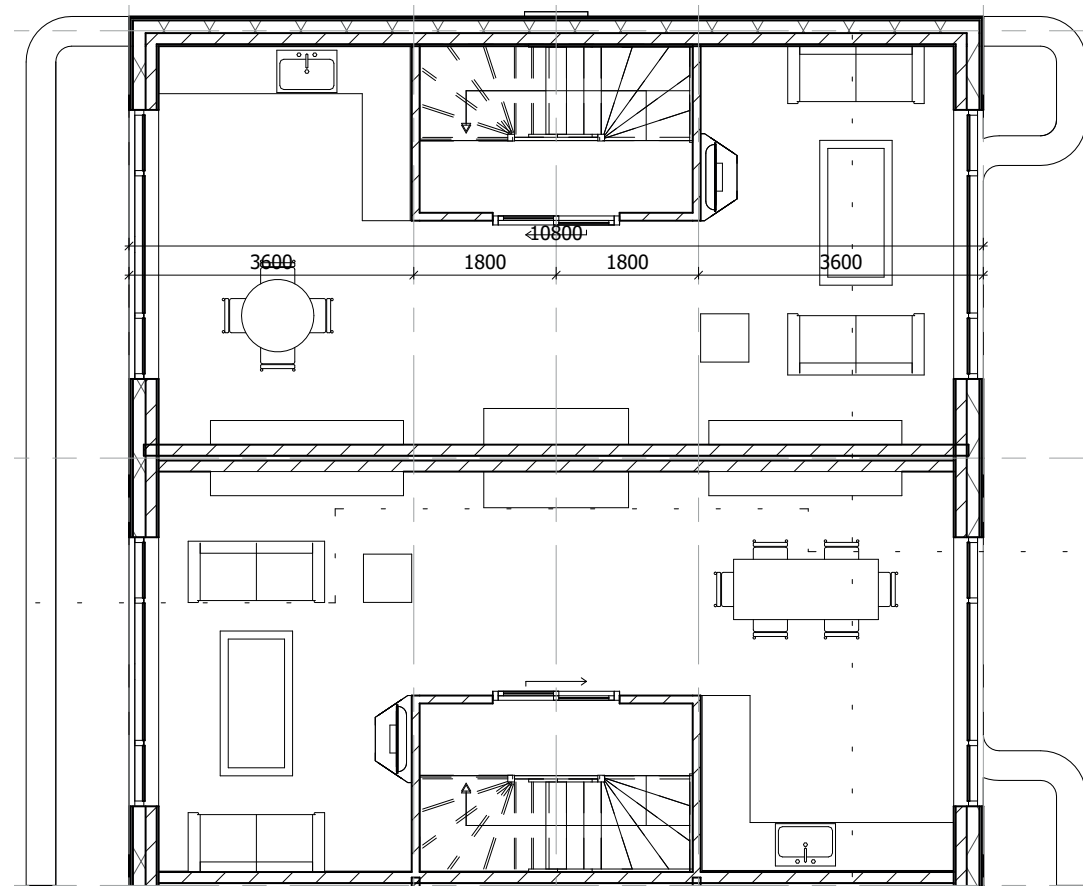


= Row house

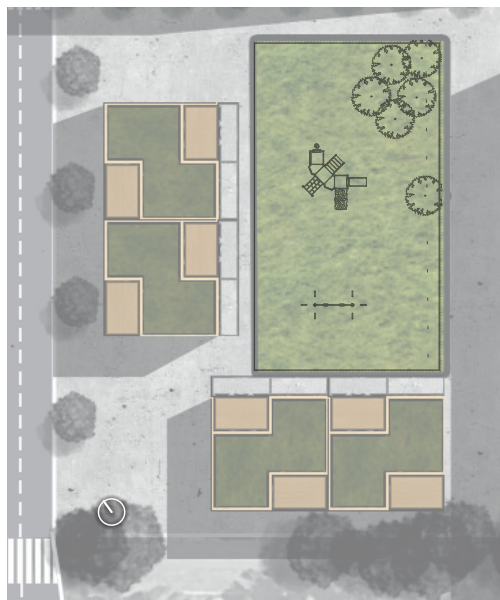


Row house Unit

Floor plan +01, 1:100



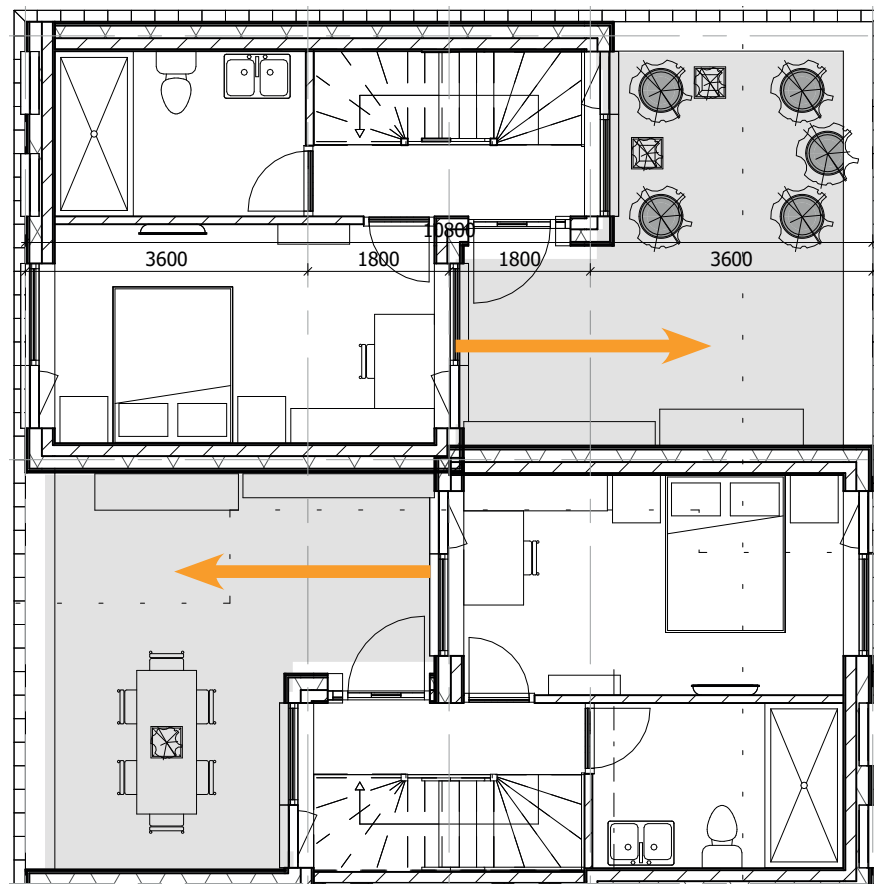
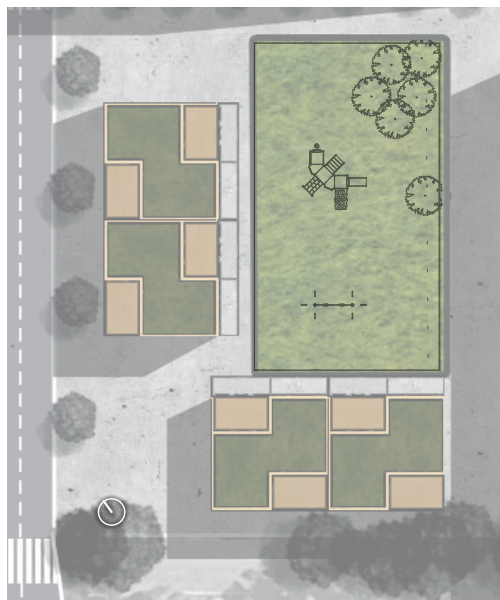
Site Key



Row house Unit

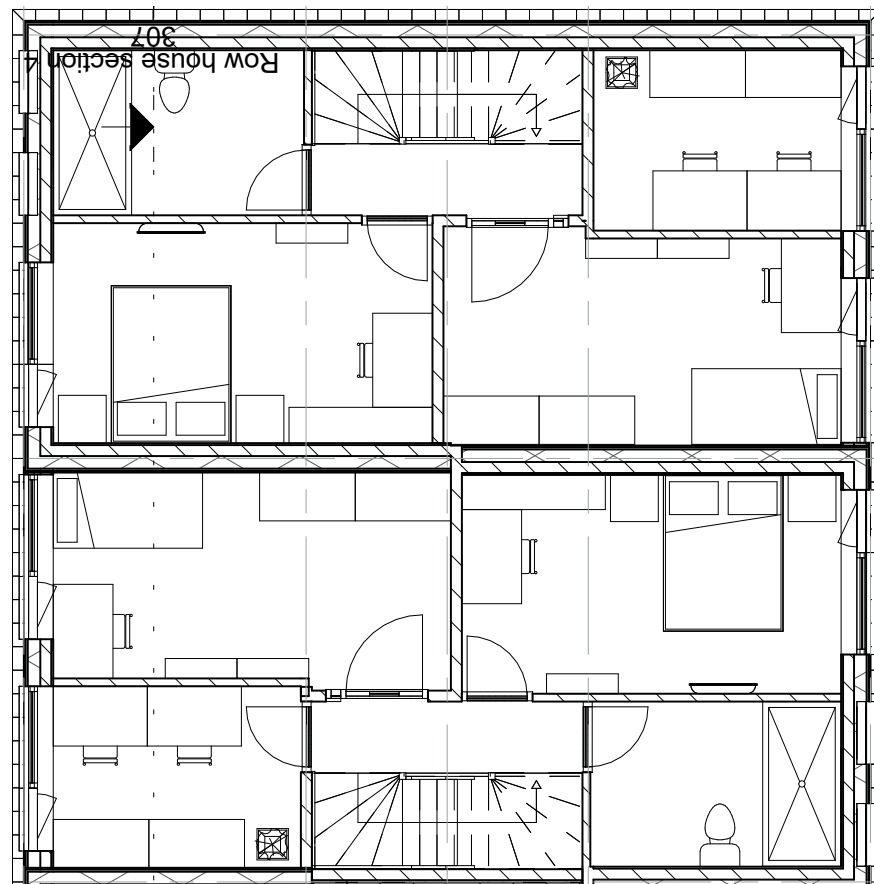
Floor plan +02, 1:100

Site Key

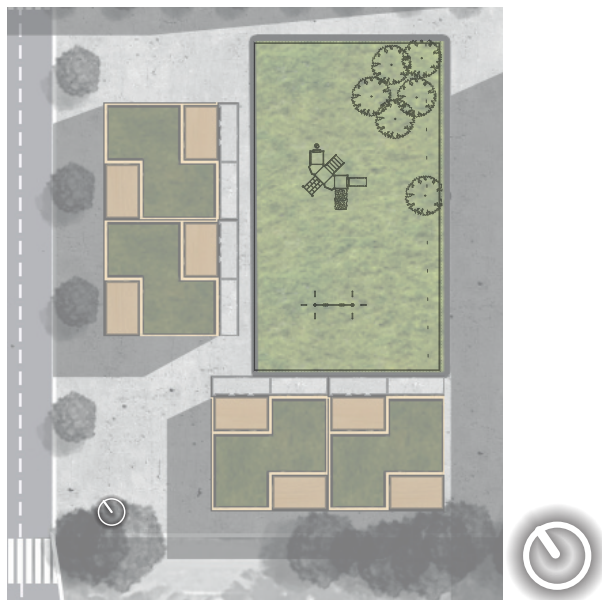


Row house Unit

Floor plan +02 extended, 1:100

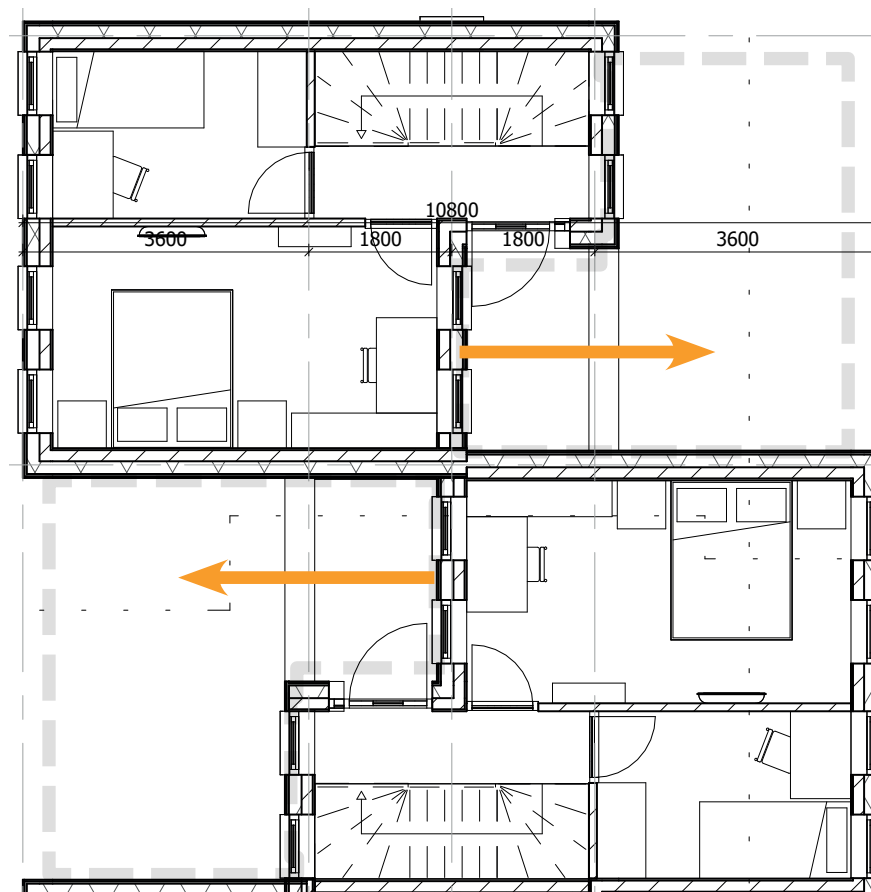


Site Key

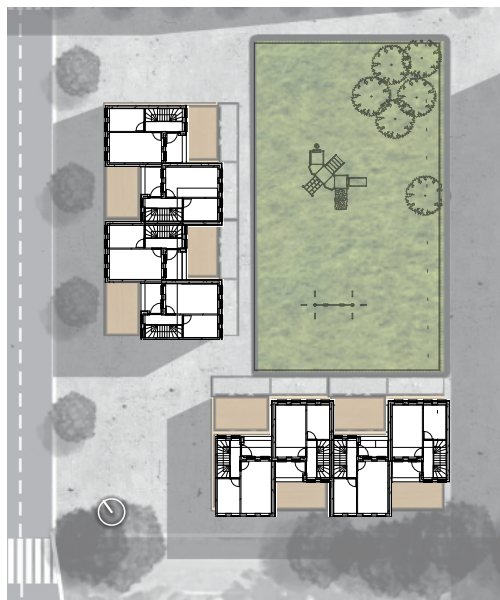


Row house Unit

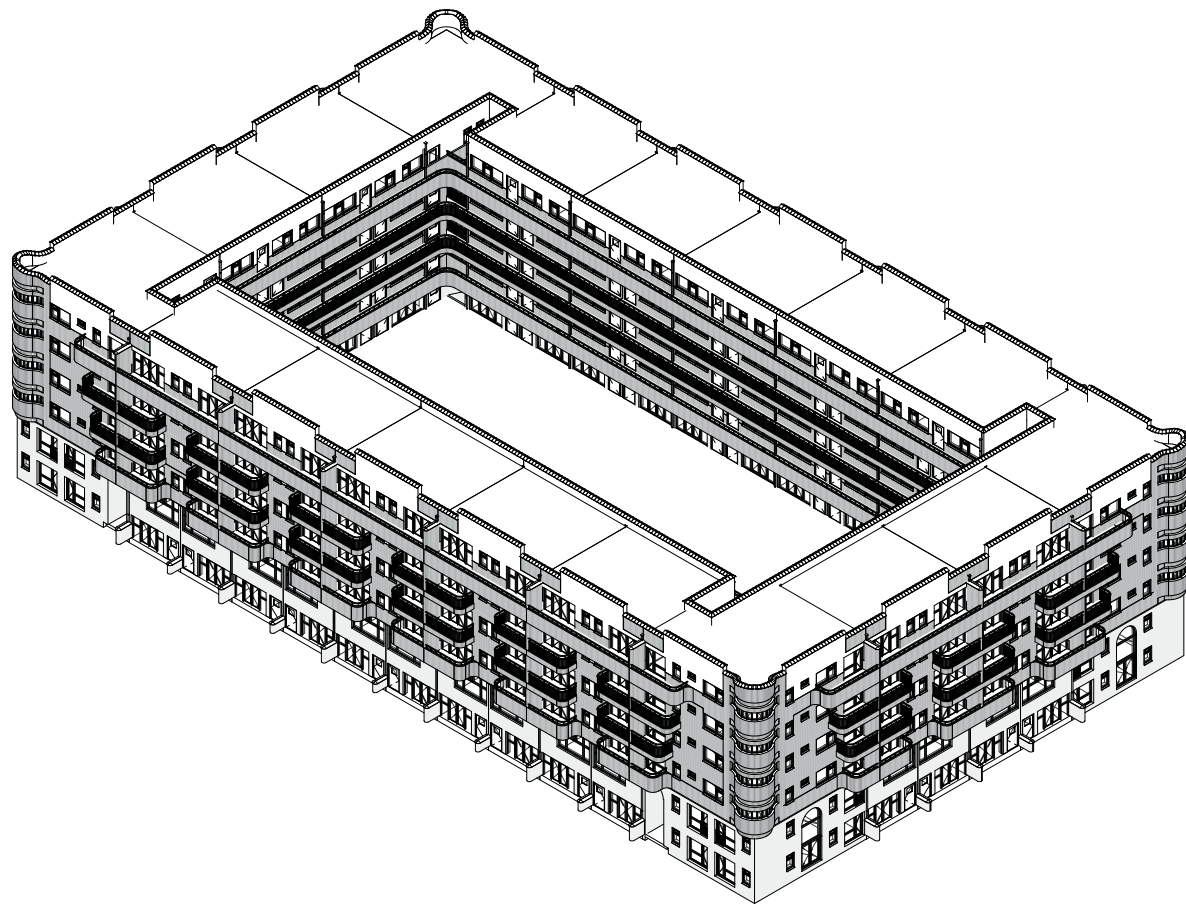
Floor plan +03, 1:100



Site Key



Courtyard Units

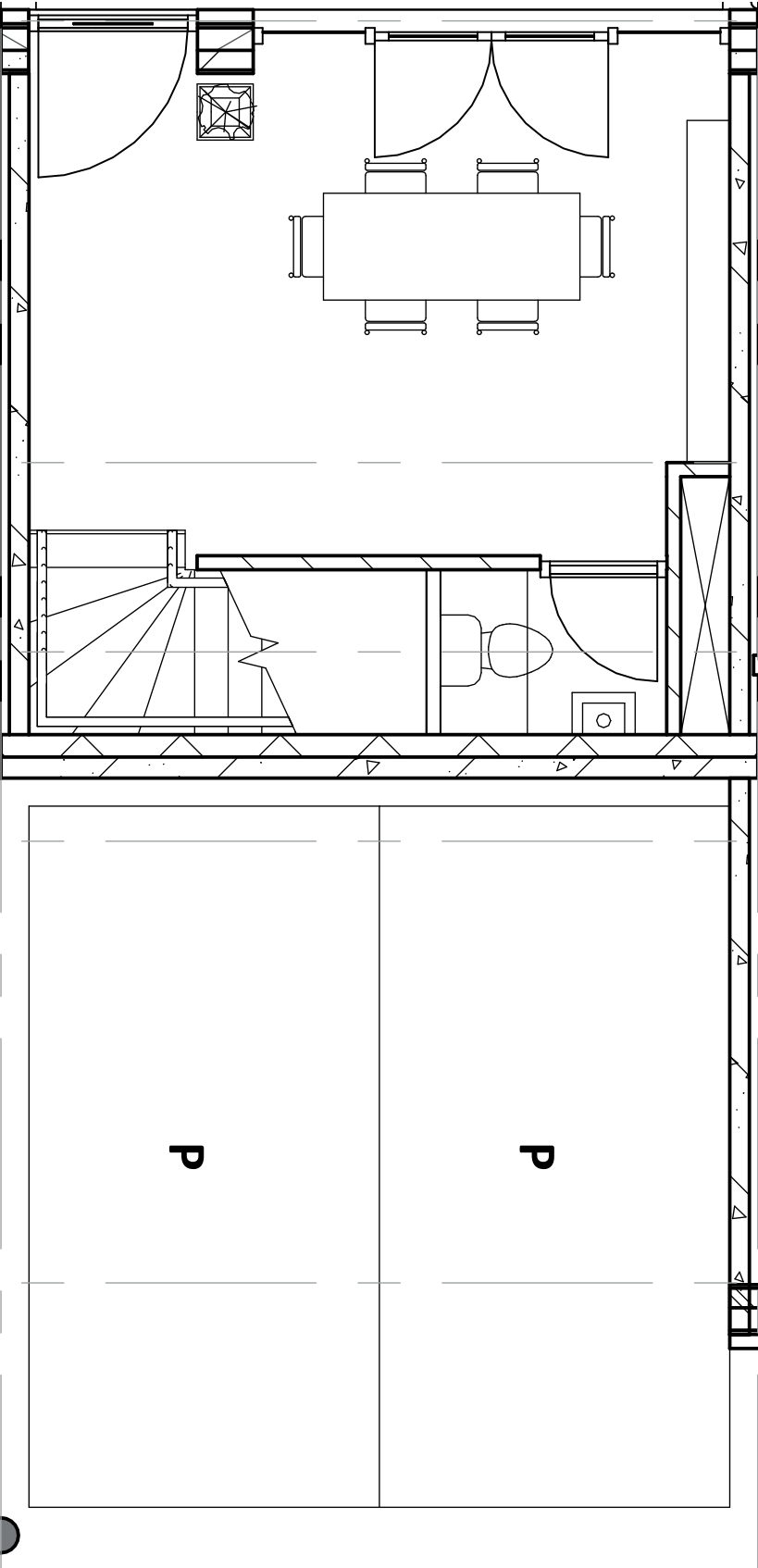


Courtyard units

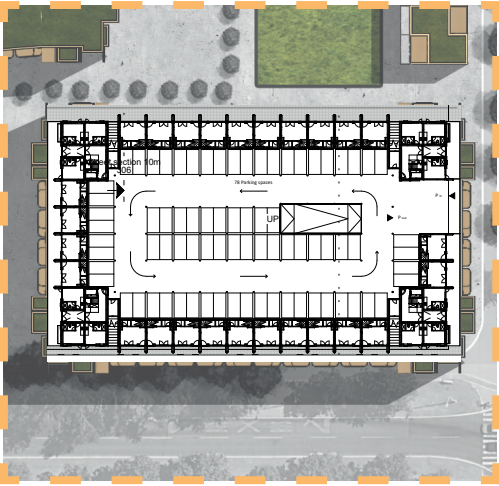
- **28 Maisonettes of 80 m²**
- **92 studio's of 20-38 m²**
- **20 one-bedroom apartments of 45 m²**
- **20 two-bedroom apartments of 62 m²**
- **16 three-bedroom apartments of 90 m²**
- **100 m² Community space**
- **1000 m² Community courtyard**

Courtyard Units

Maisonette
Floor plan +00, 1:50

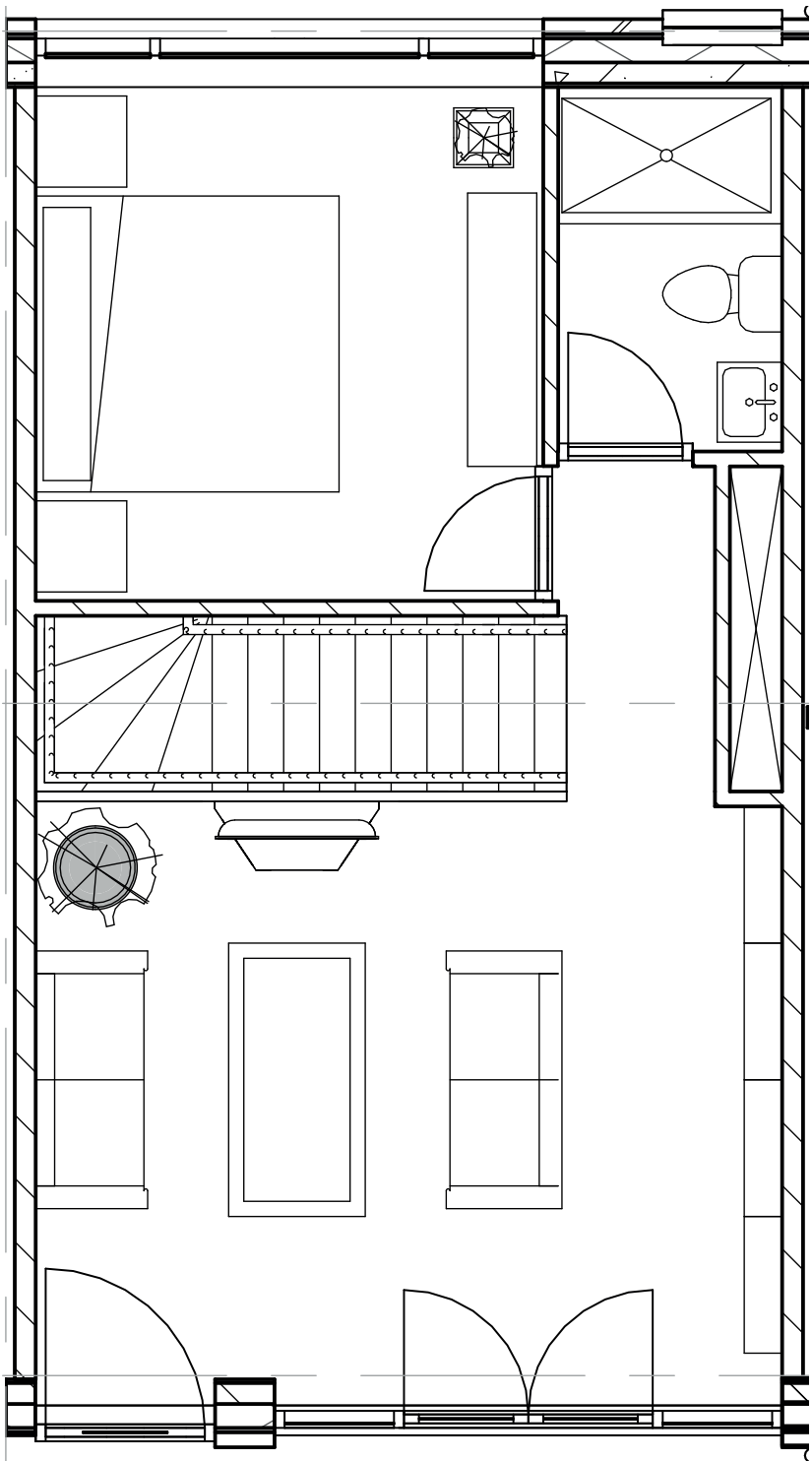


Site Key



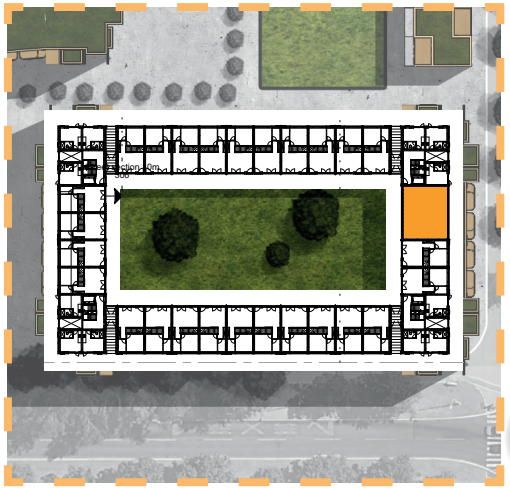
Courtyard Units

Maisonette
Floor plan +01, 1:50



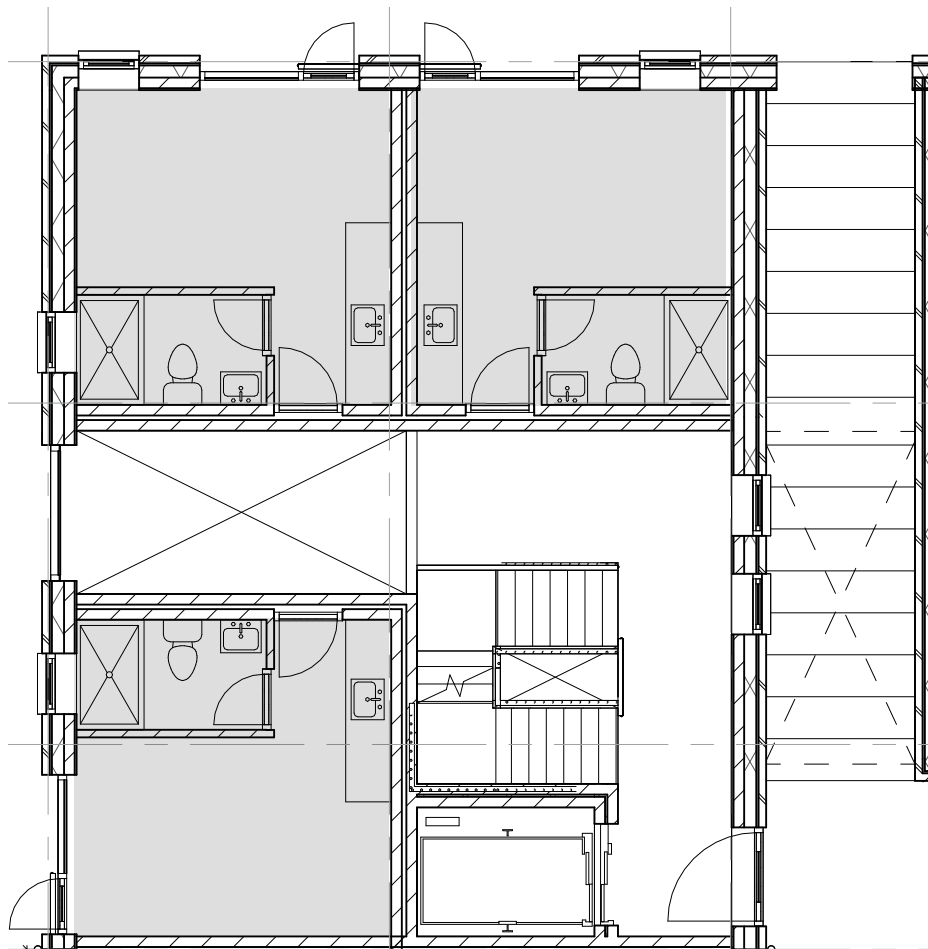
Courtyard

Site Key

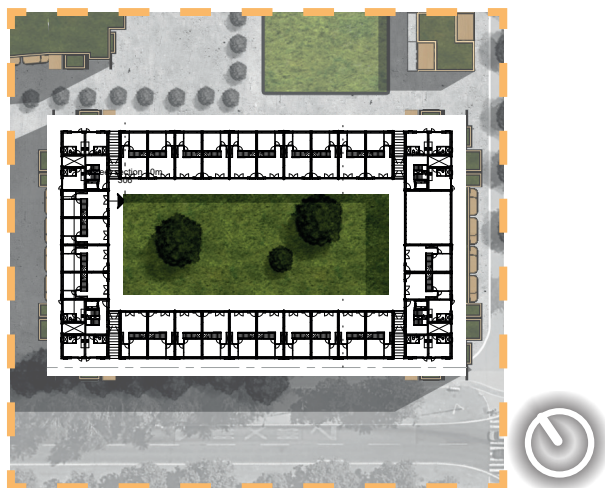


Courtyard Units

Studio's
Floor plans +00 - +05, 1:100



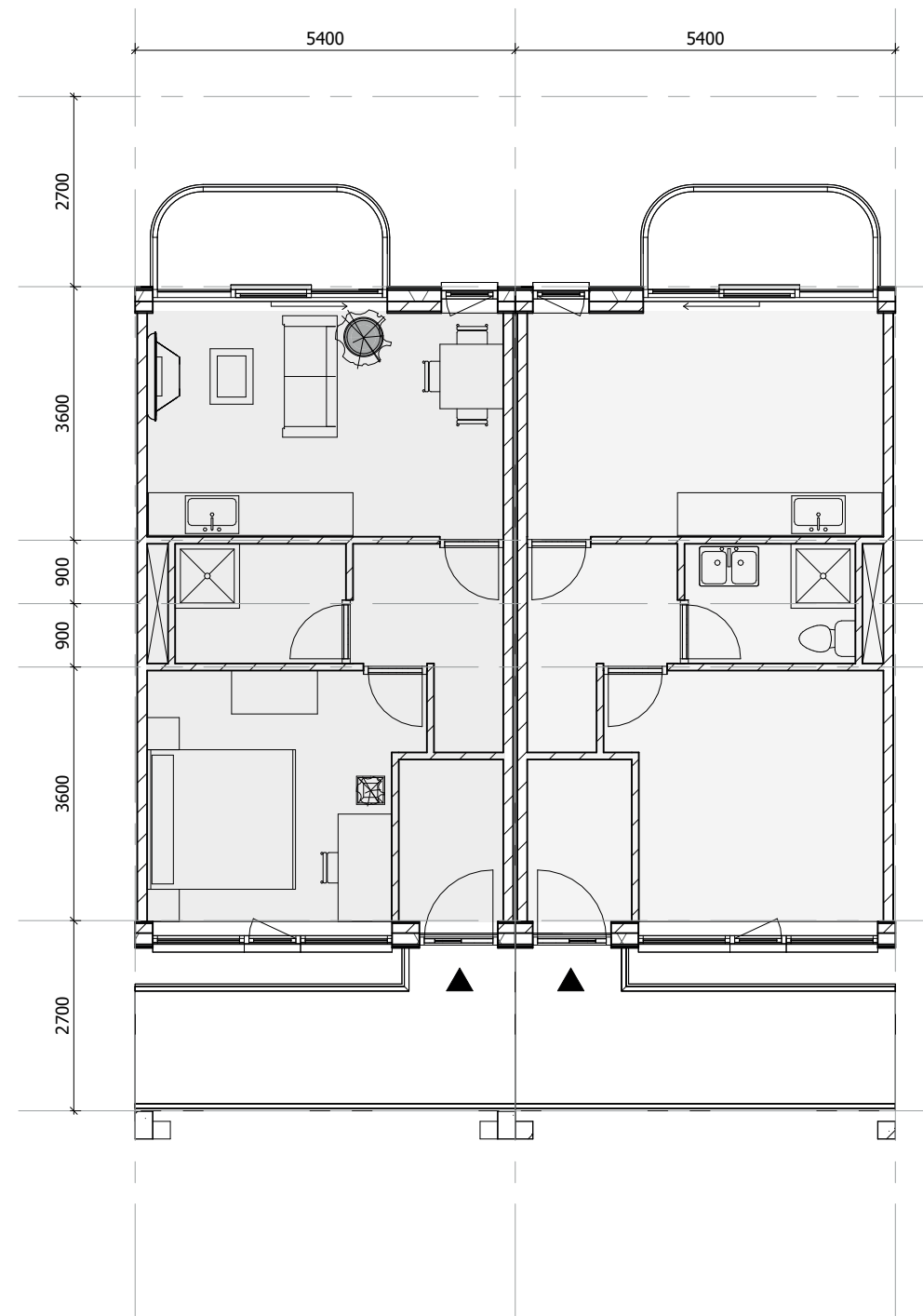
Site Key



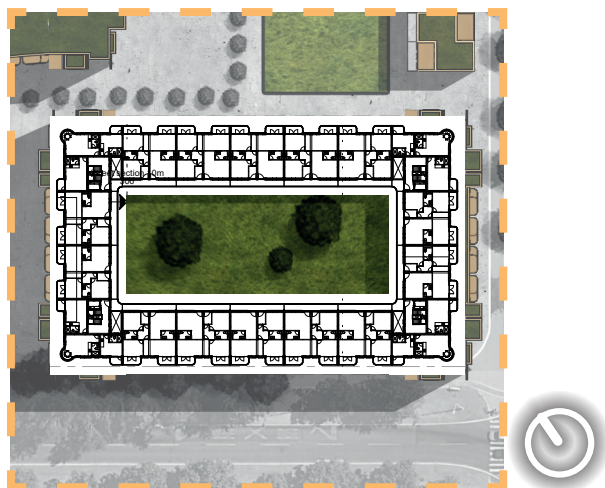
Courtyard Units

Apartments
Floor plans +02 - +05, 1:100

- 1-Bedroom apartment (45 m²)
- 1-Bedroom apartment (45 m²)



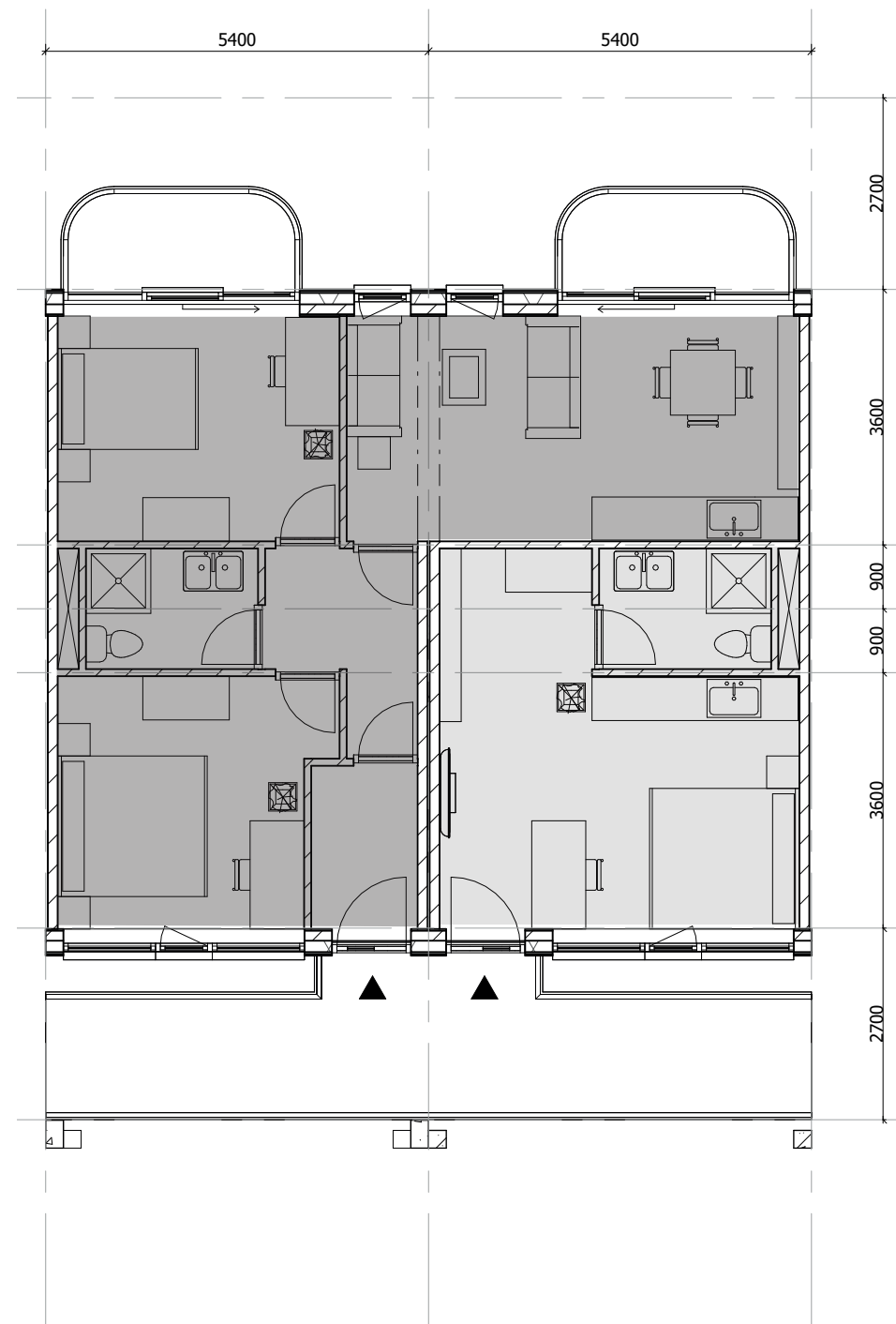
Site Key



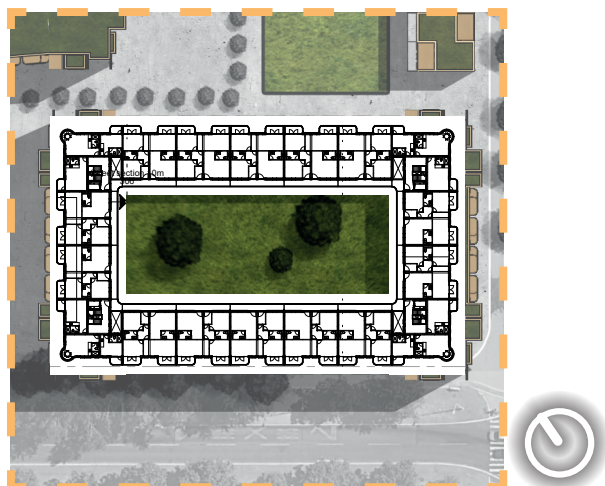
Courtyard Units

Apartments
Floor plans +02 - +05, 1:100

- 2-Bedroom apartment (65 m²)
- Studio (25 m²)



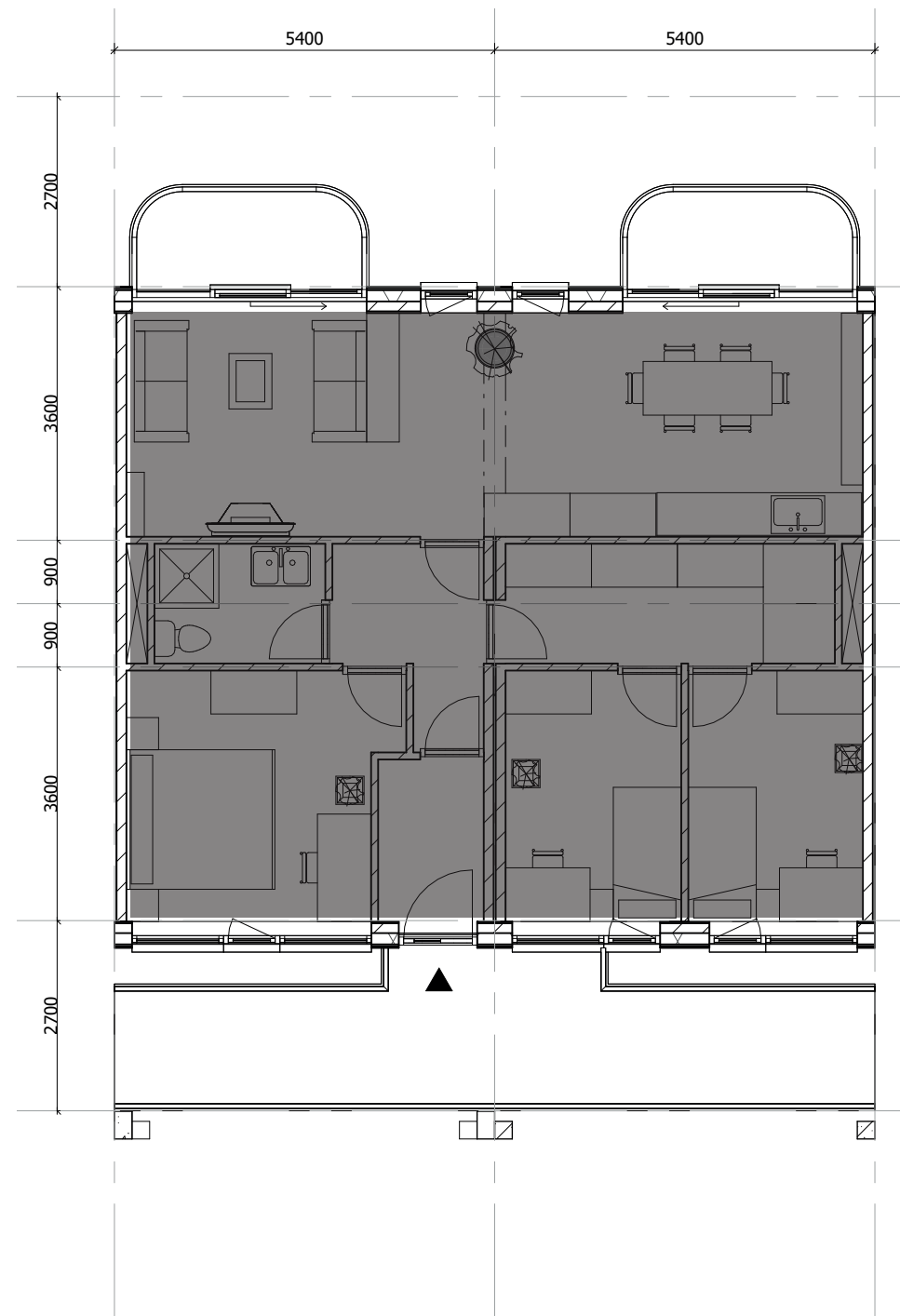
Site Key



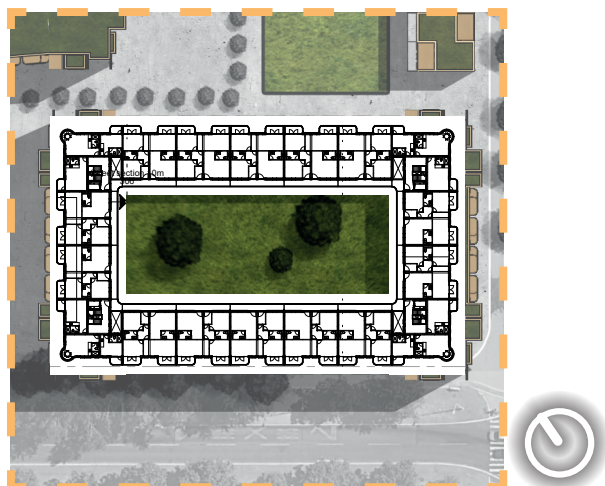
Courtyard Units

Apartments
Floor plans +02 - +05, 1:100

■ 3-Bedroom apartment (90 m²)

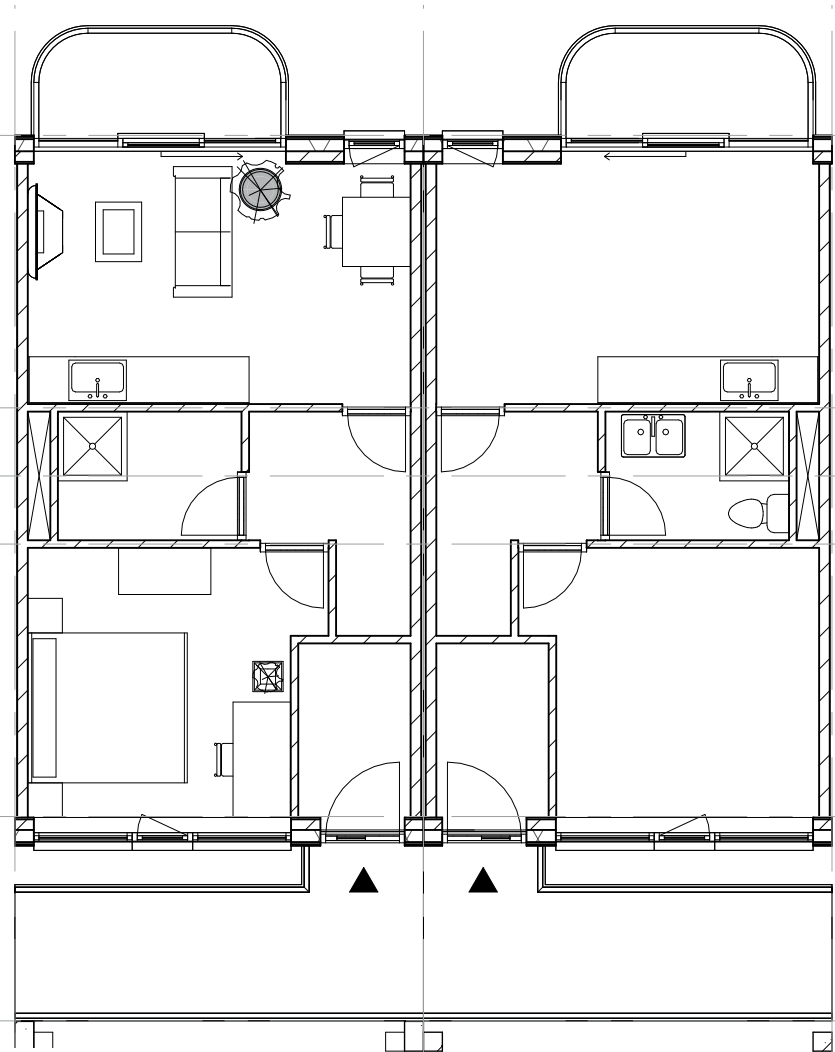


Site Key

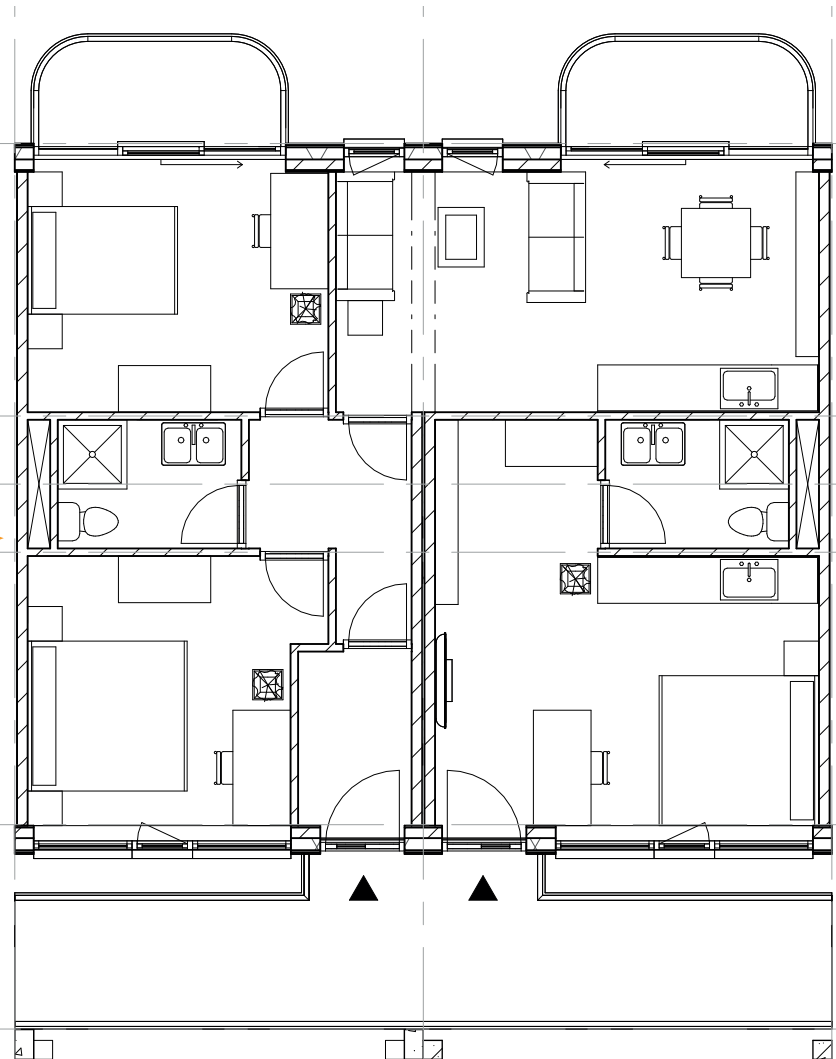


Courtyard Units

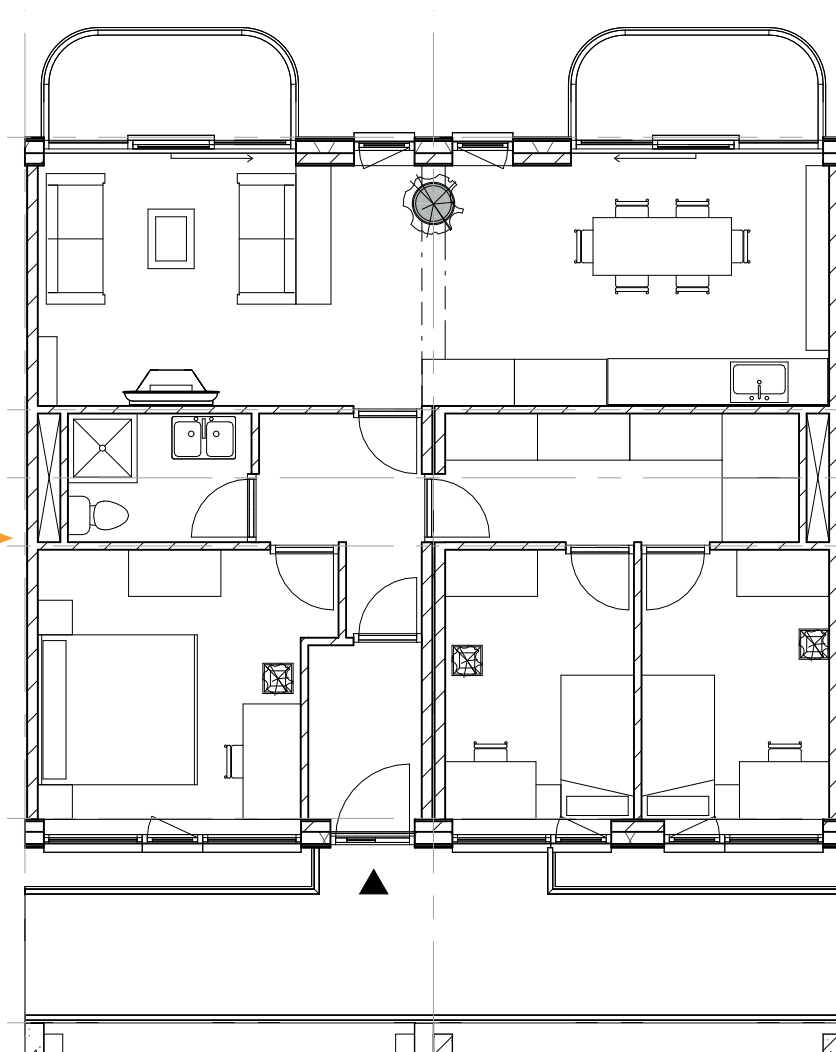
1-Bedroom apartment (45 m²)
1-Bedroom apartment (45 m²)



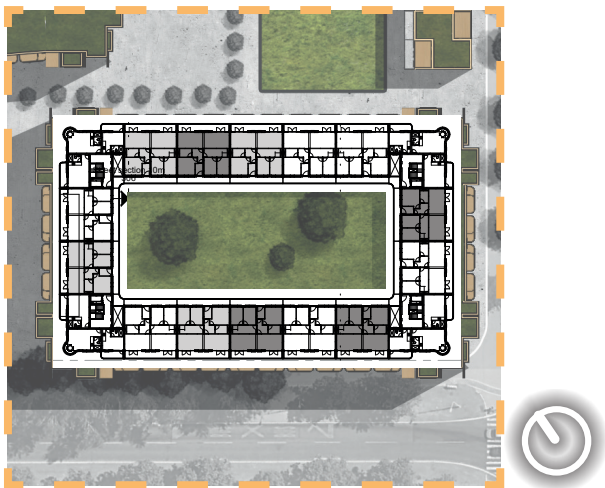
2-Bedroom apartment (65 m²)
Studio (25 m²)



3-Bedroom apartment (90 m²)

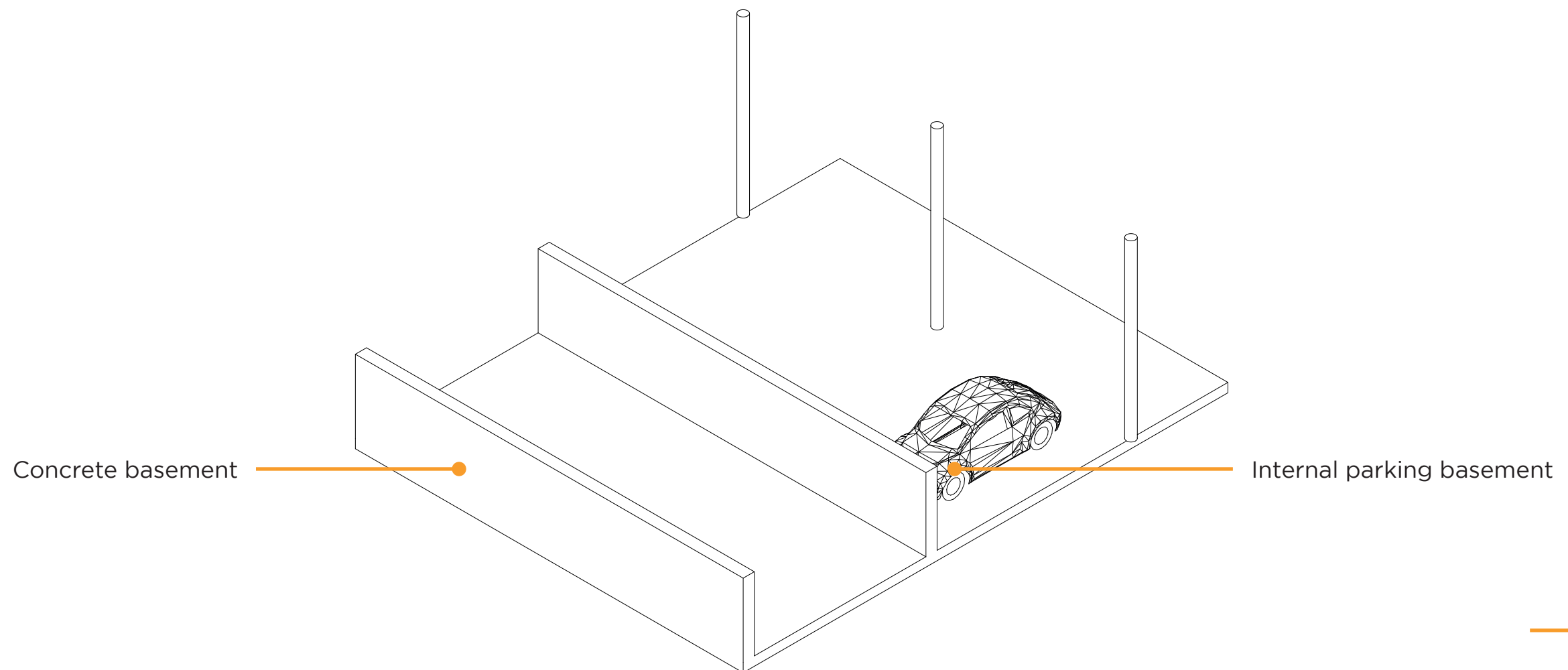


Site Key

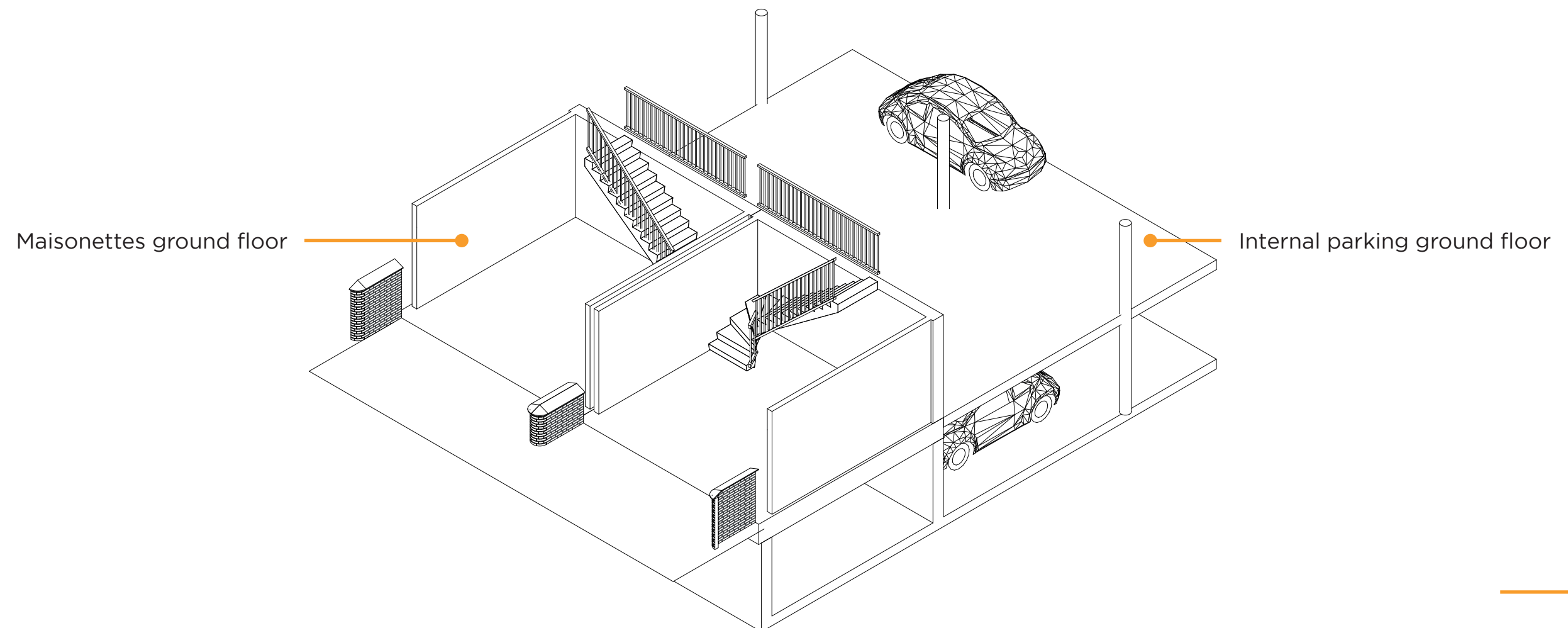


6) Technical

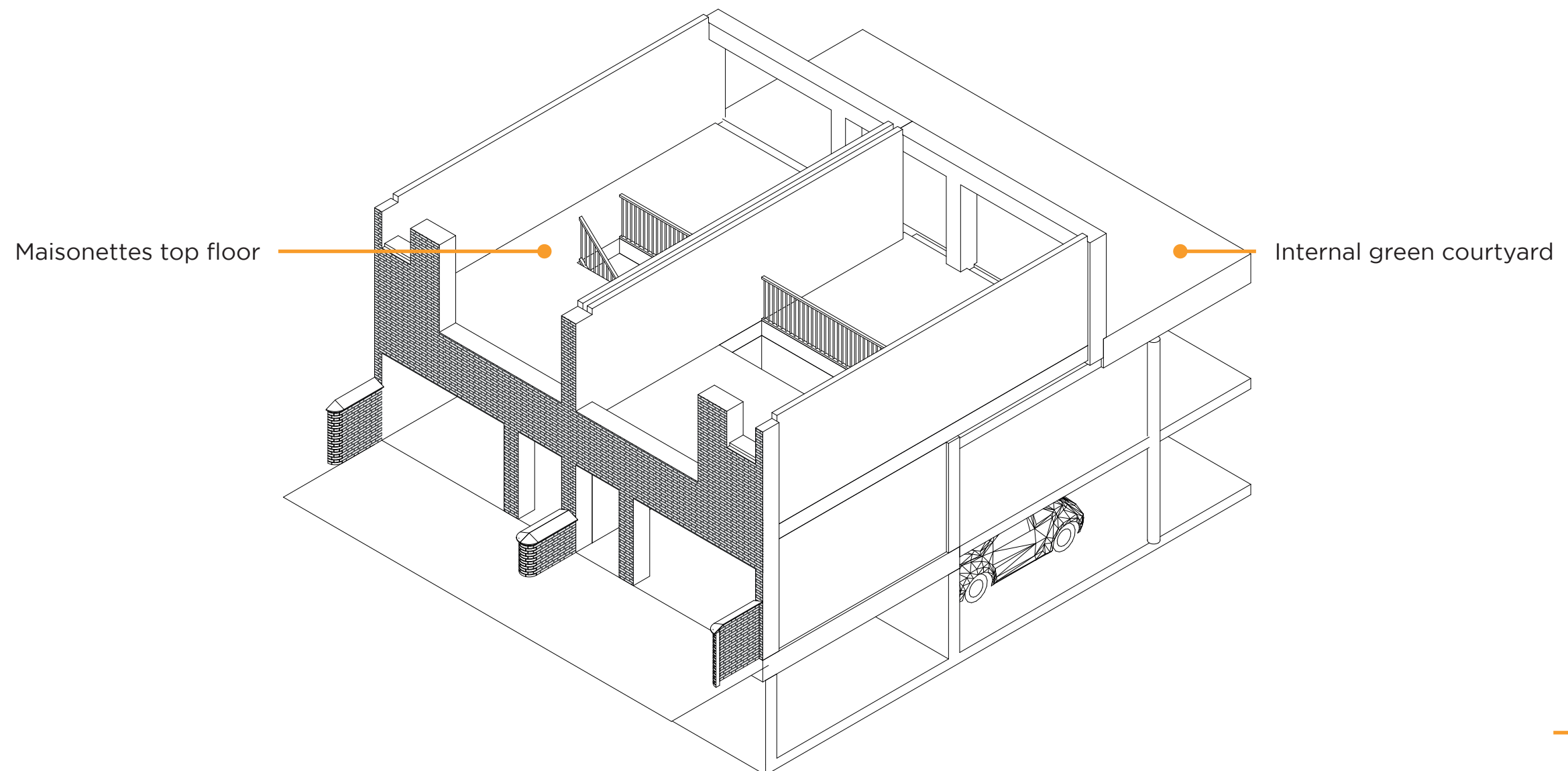
Courtyard isometric: floor -01



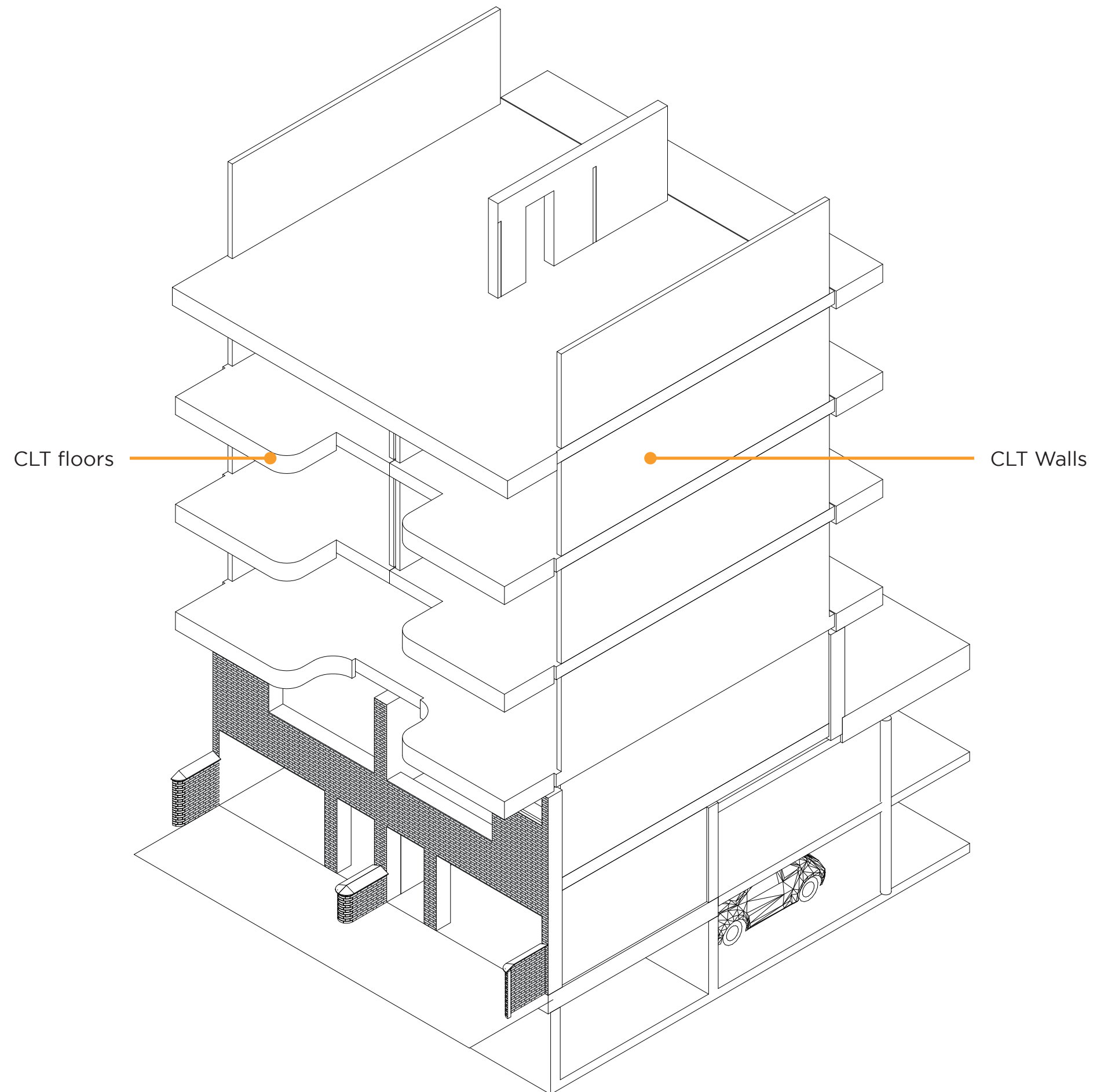
Courtyard isometric: floor +00



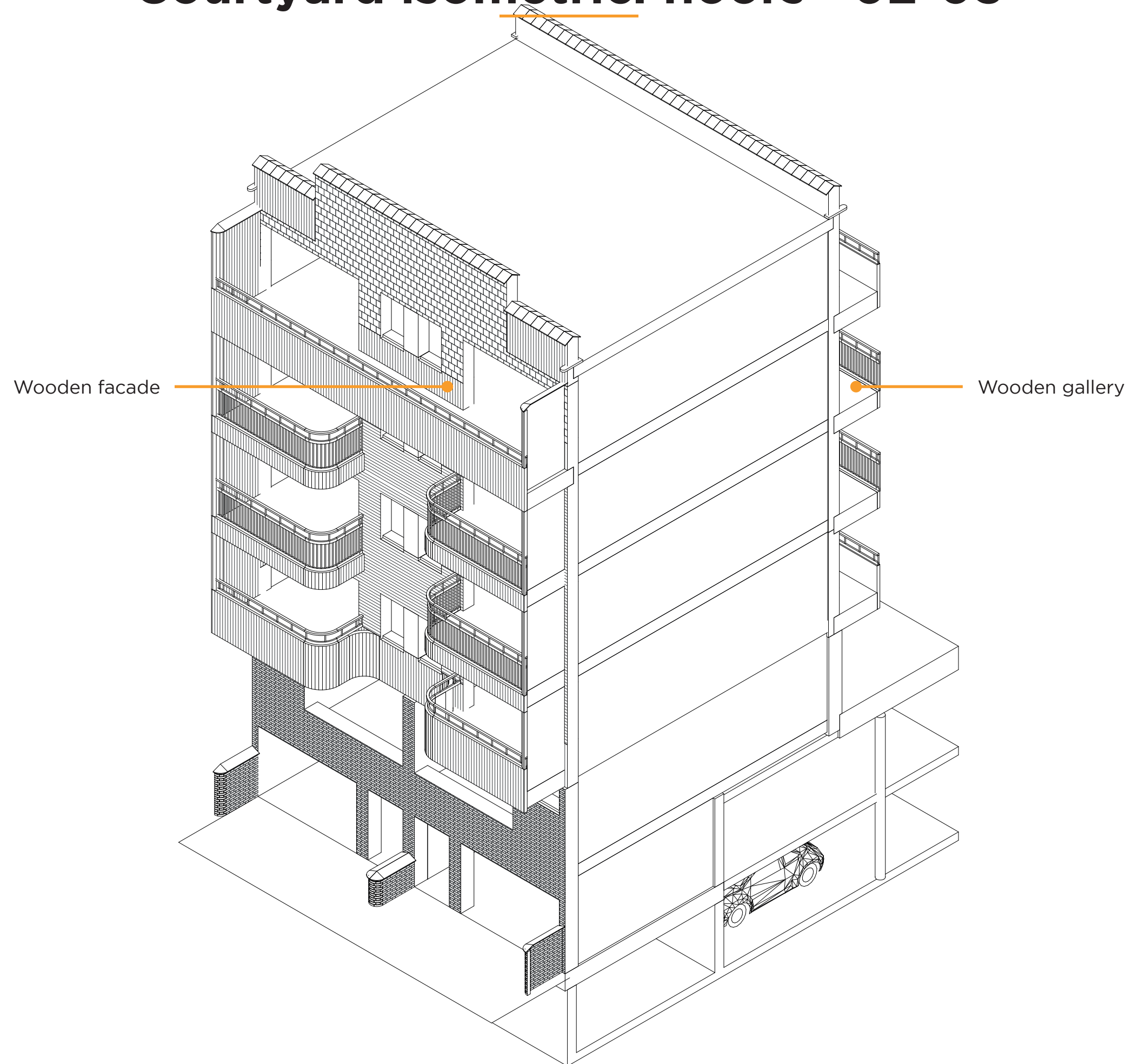
Courtyard isometric: floor +01



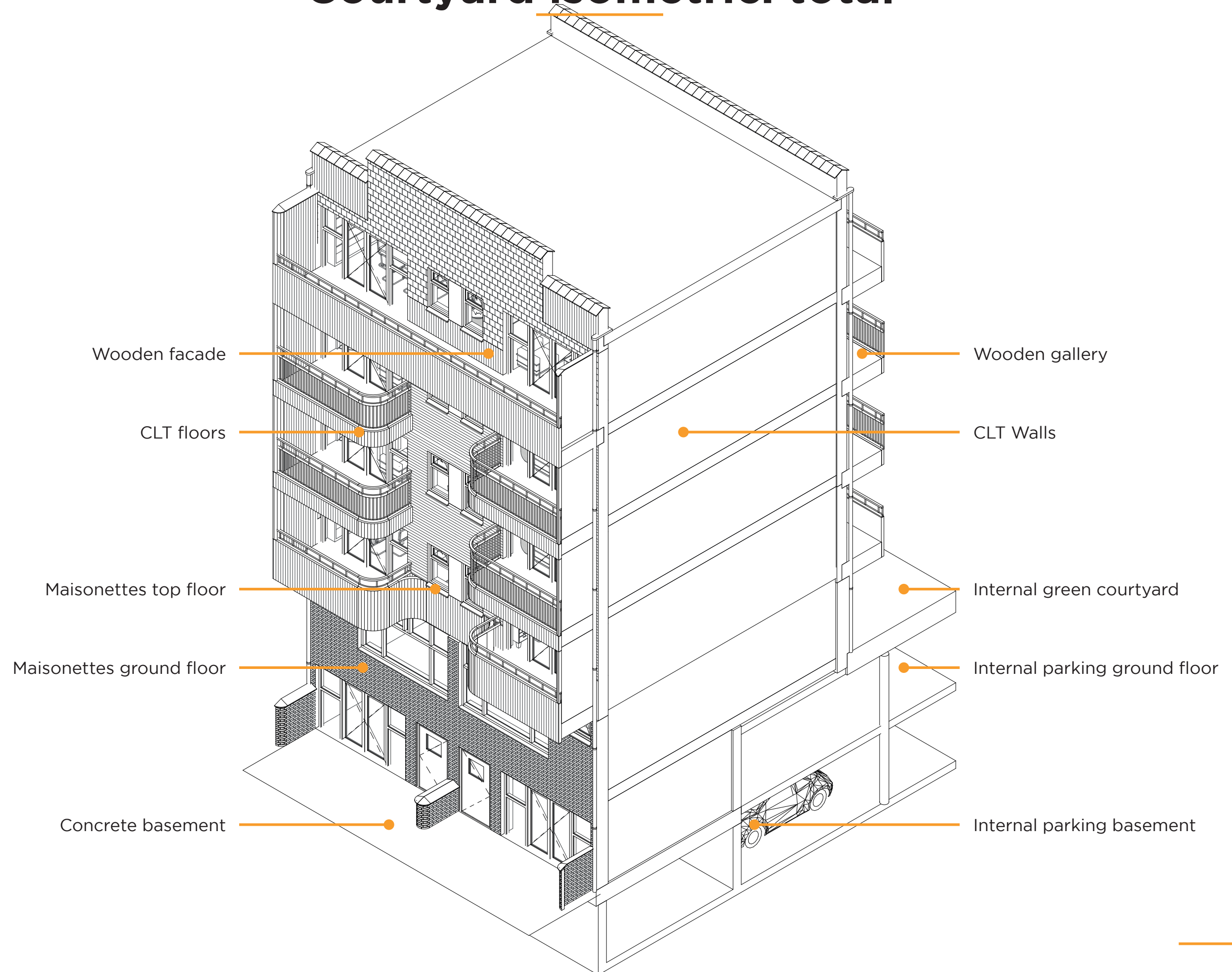
Courtyard isometric: floors +02-05

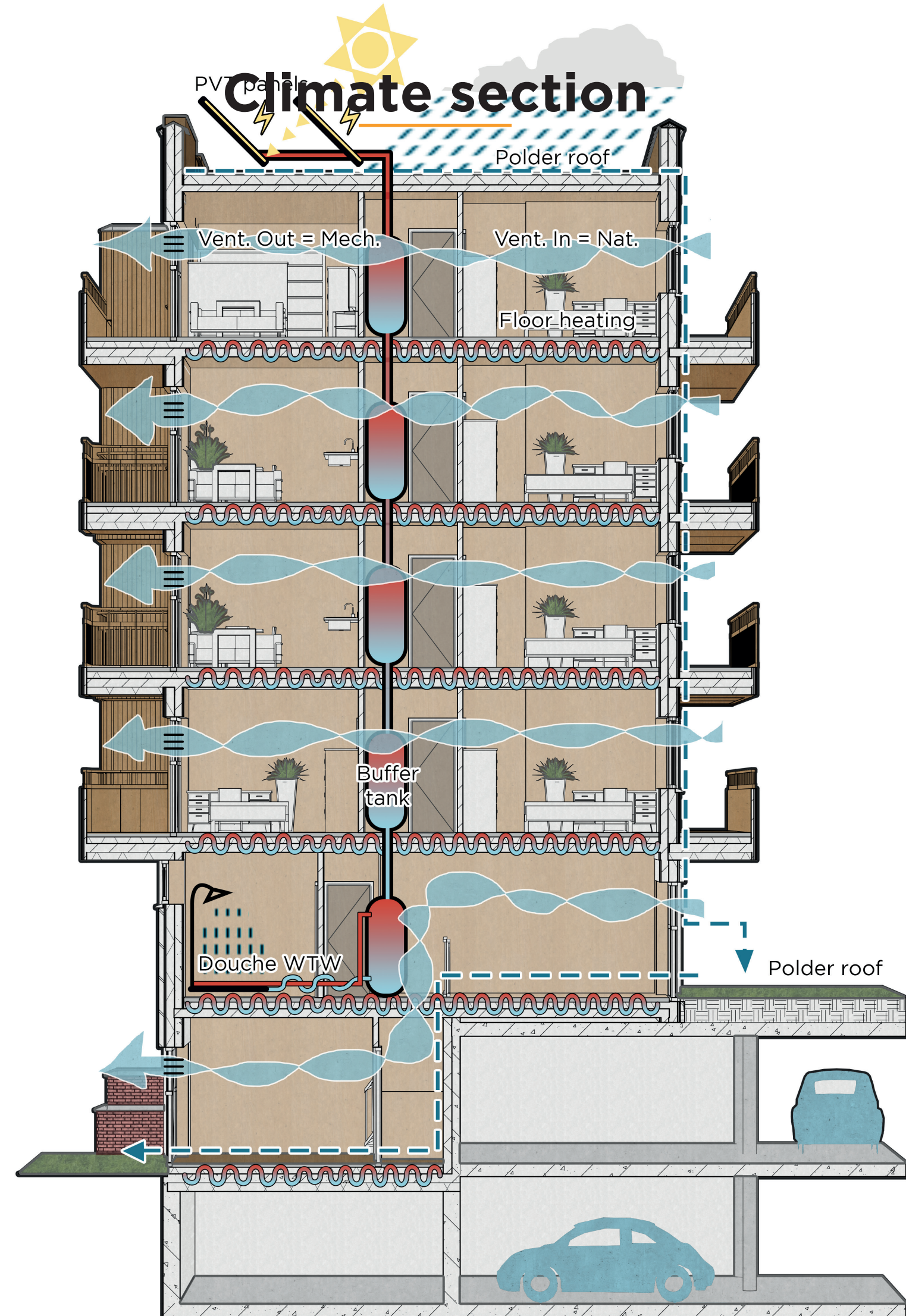


Courtyard isometric: floors +02-05



Courtyard isometric: total

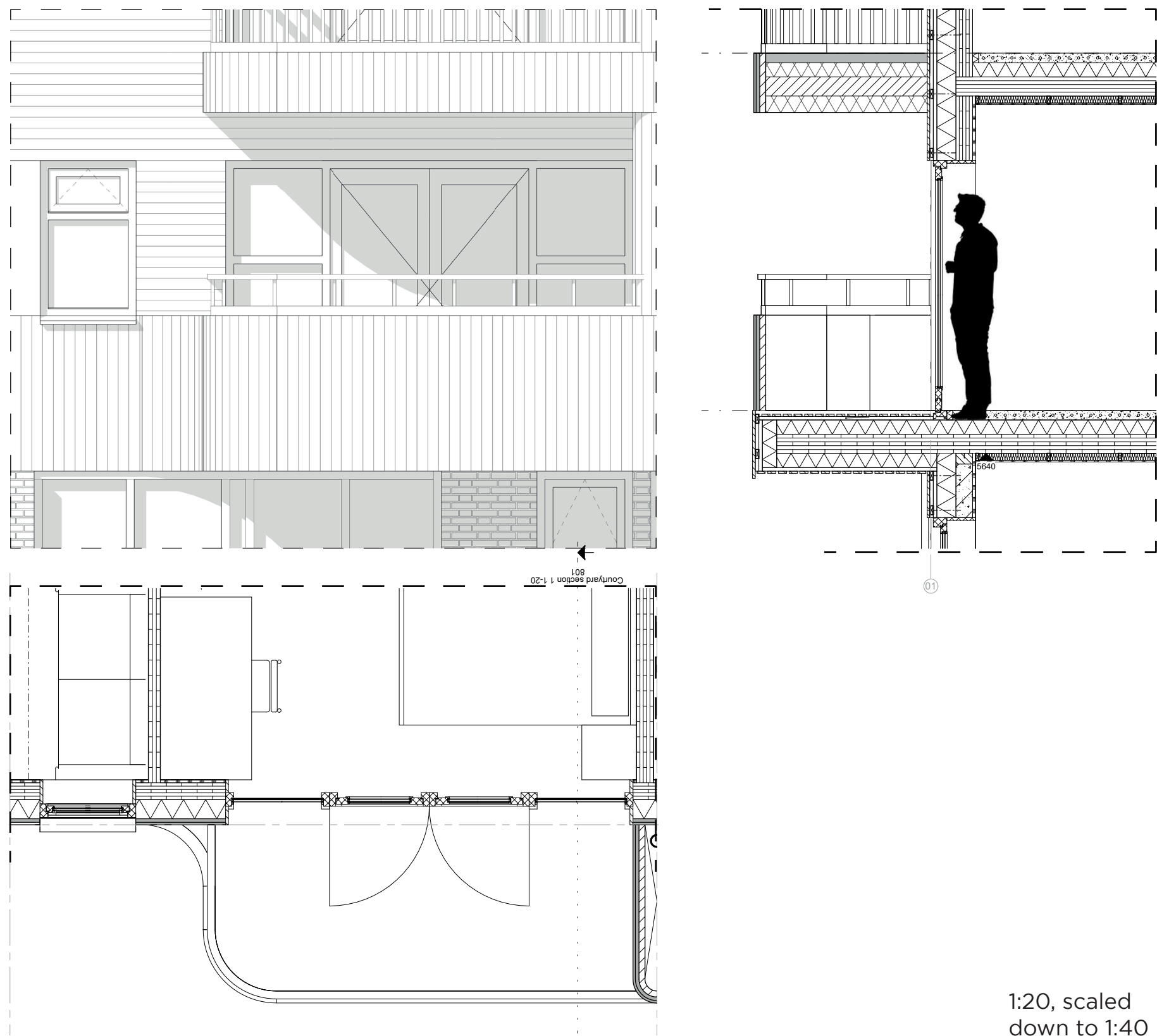




Courtyard facade



1:20 Facade detail



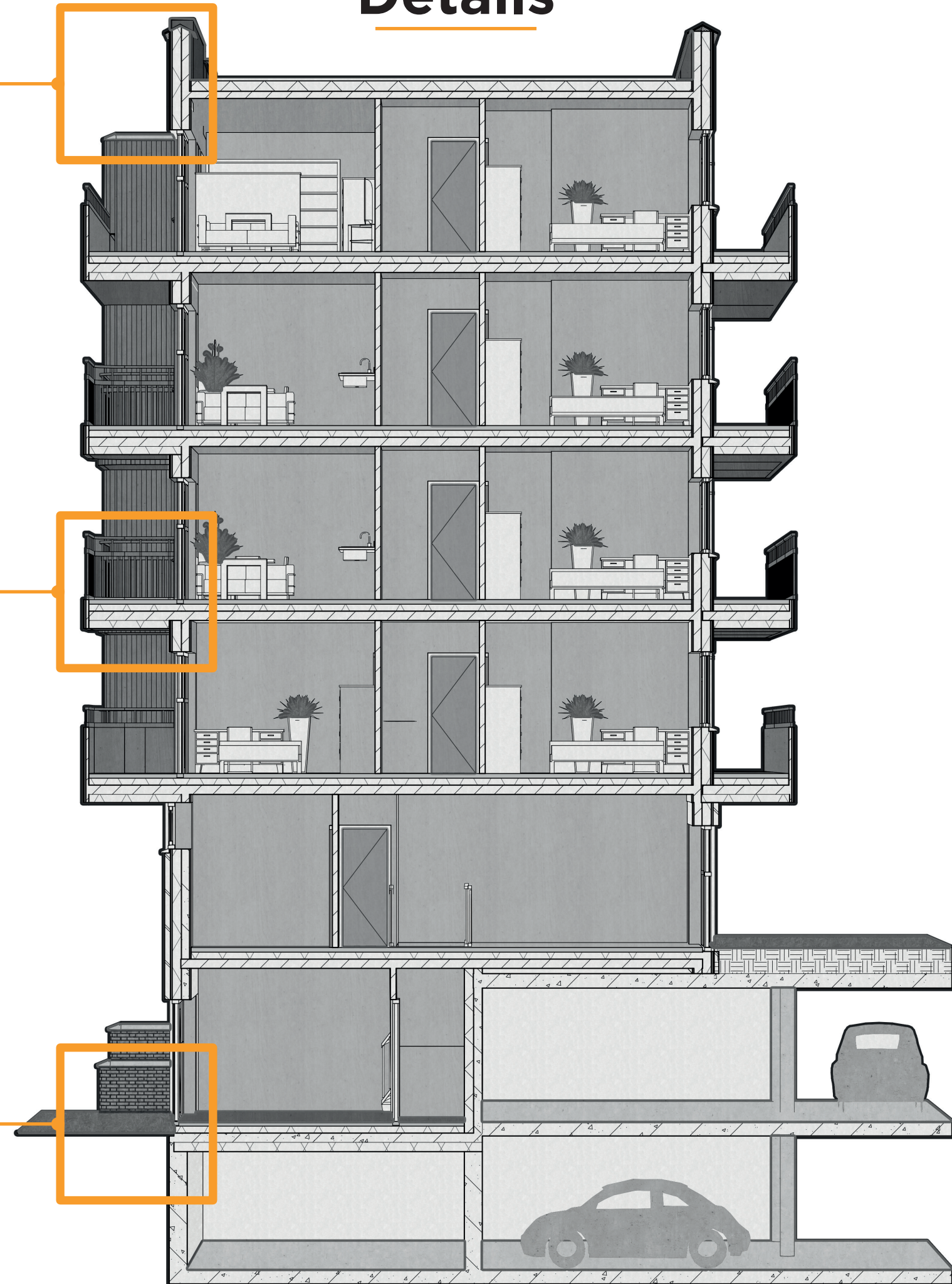
1:20, scaled
down to 1:40

Details

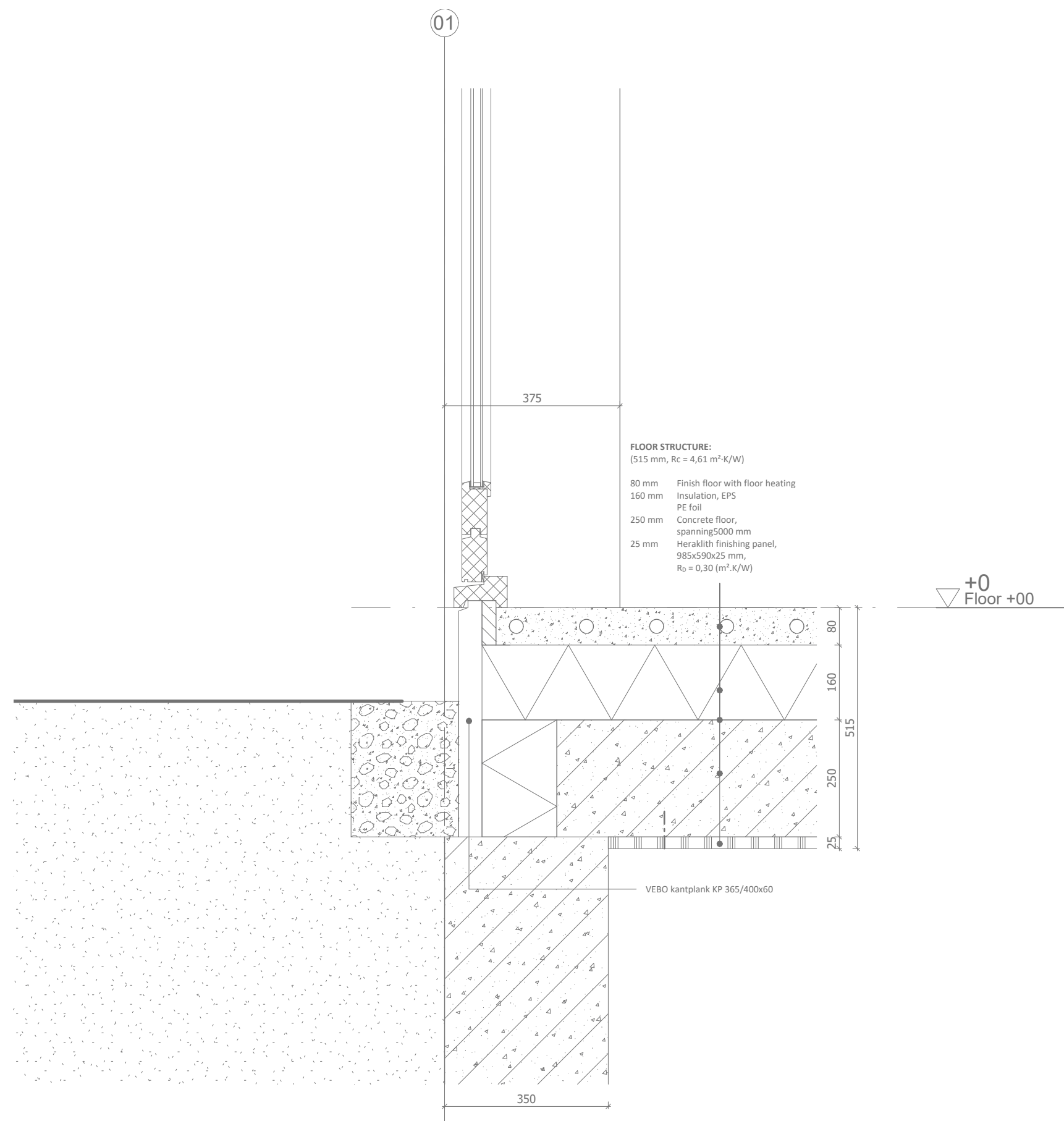
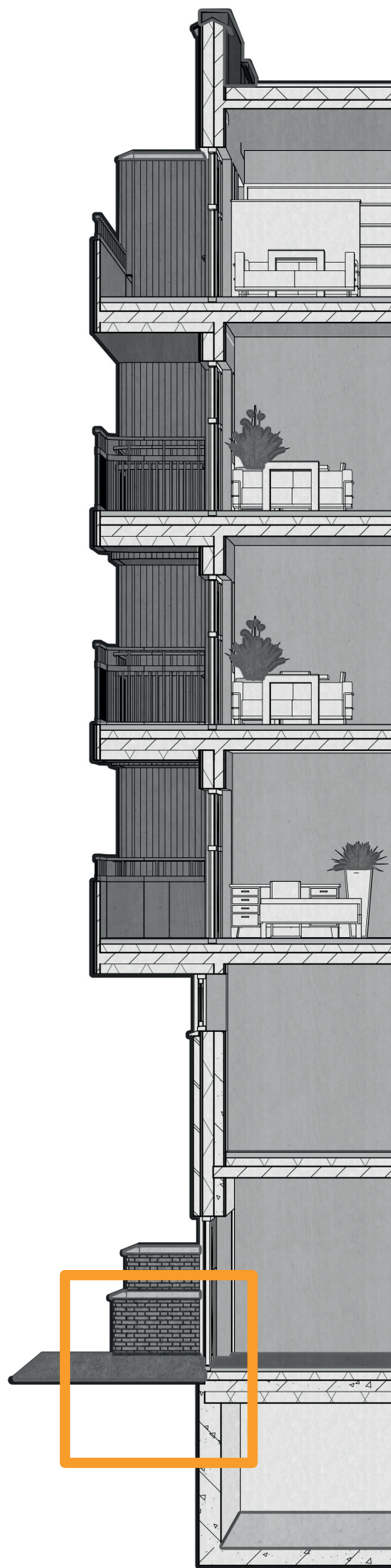
Detail V03: Roof

Detail V02: Balcony

Detail V01: Foundation

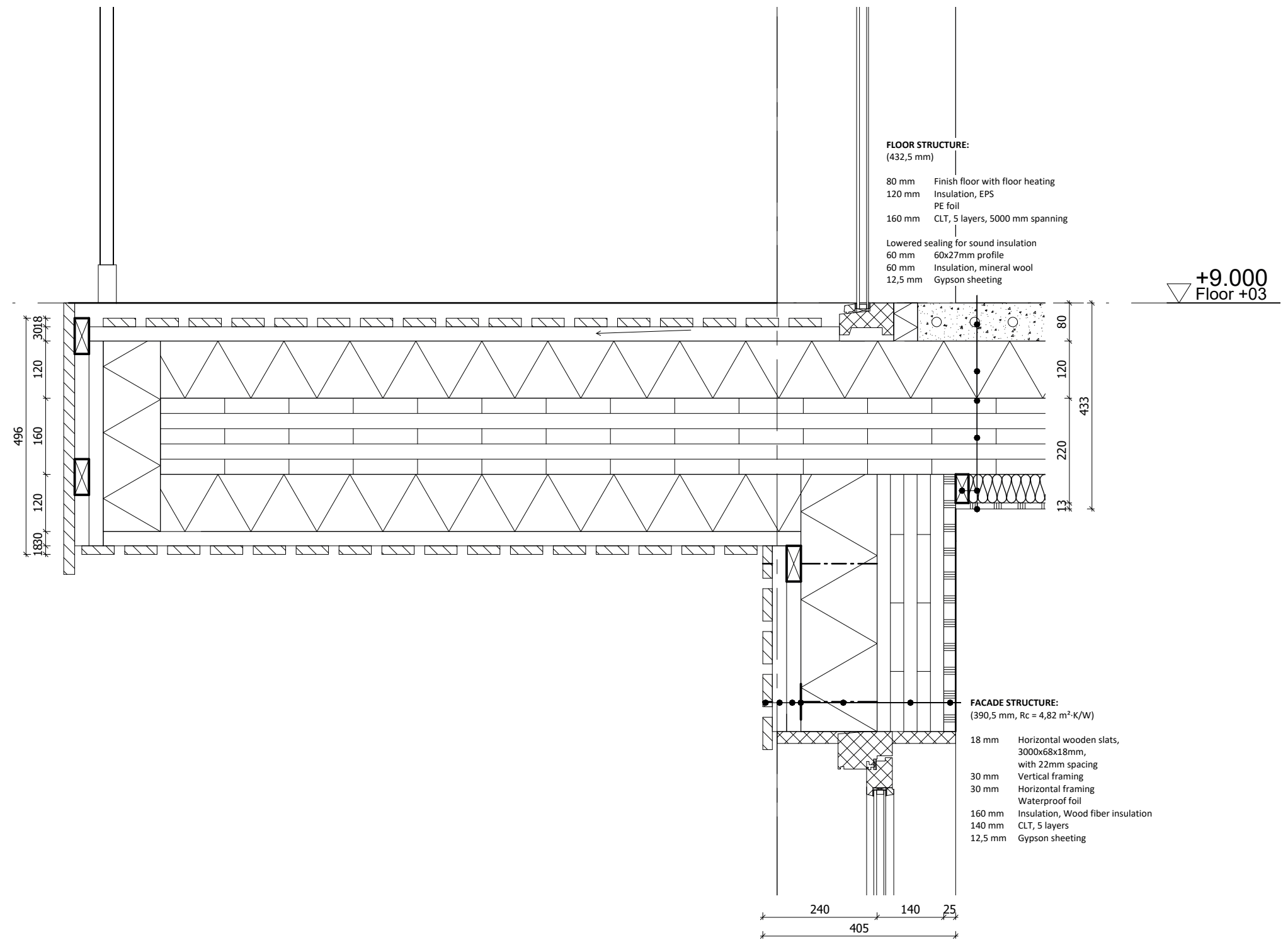
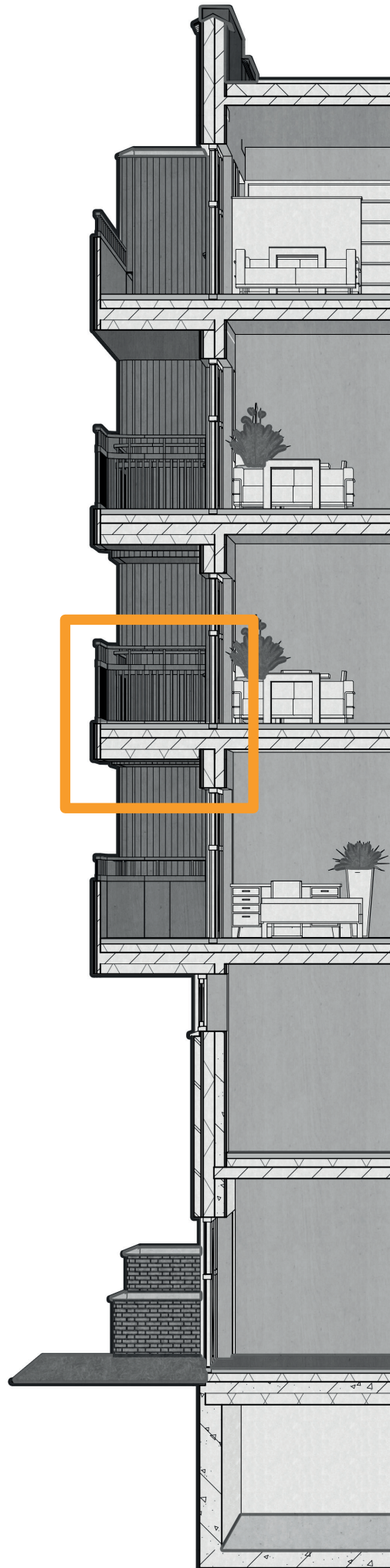


Detail V01: Foundation

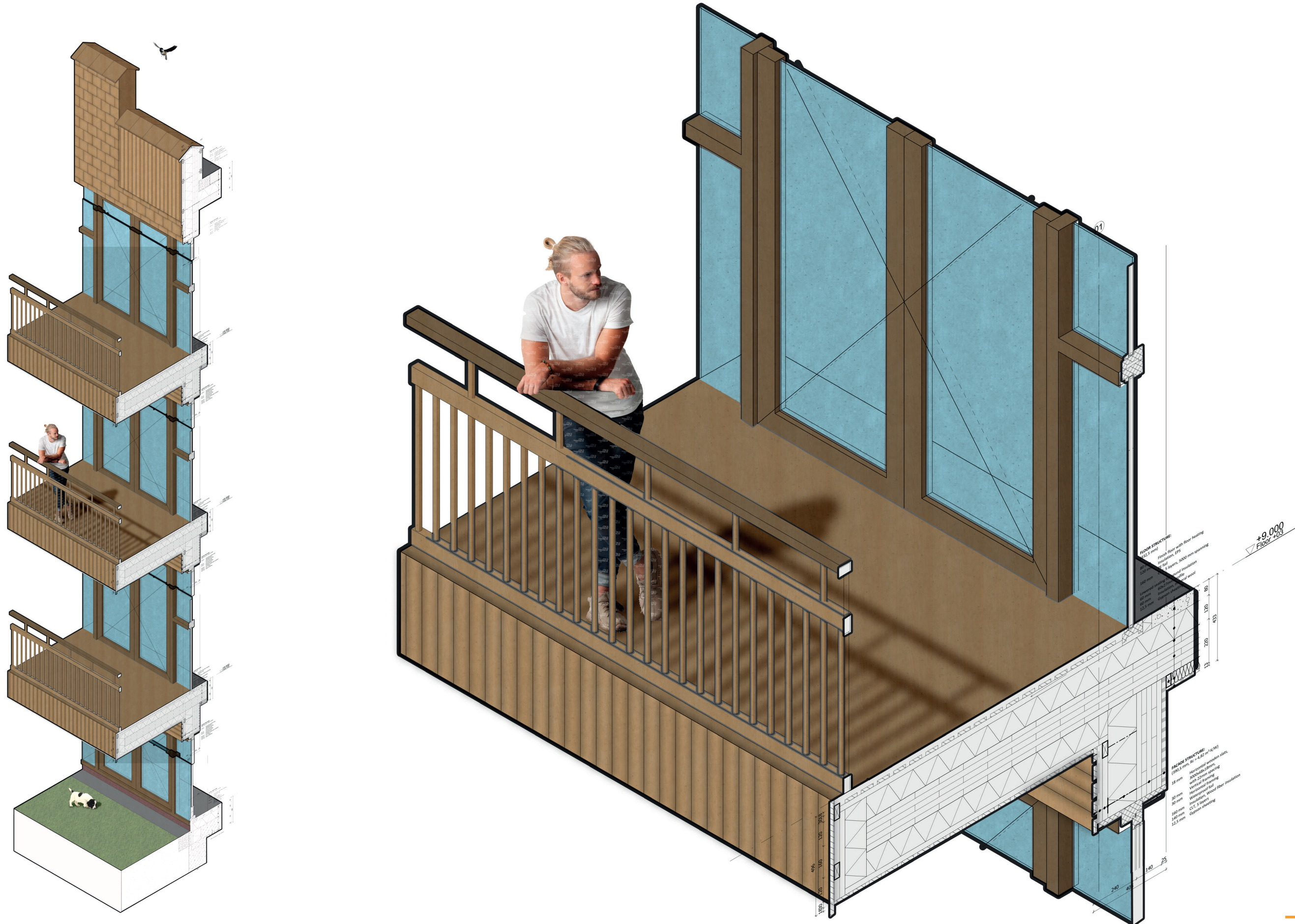




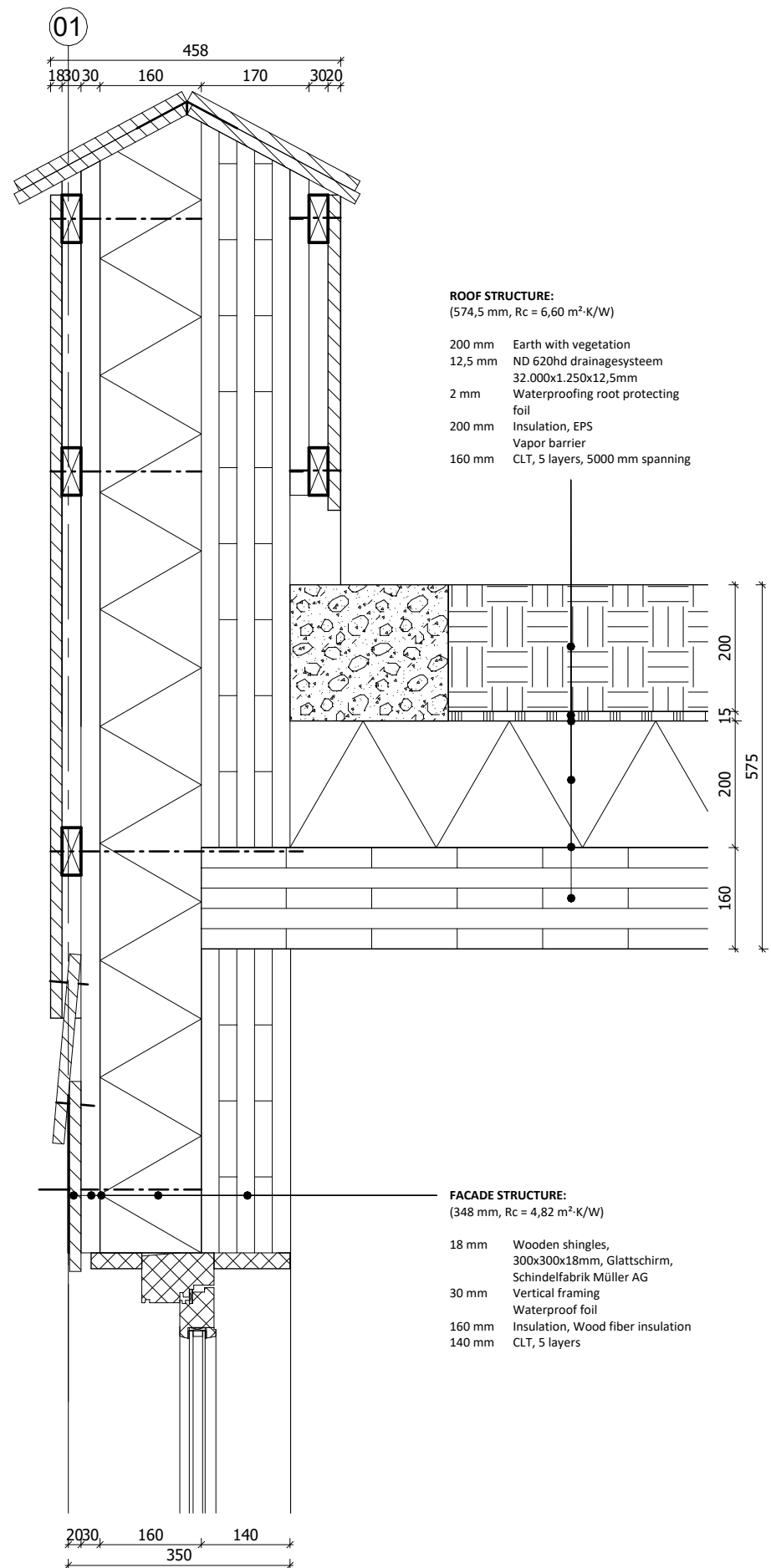
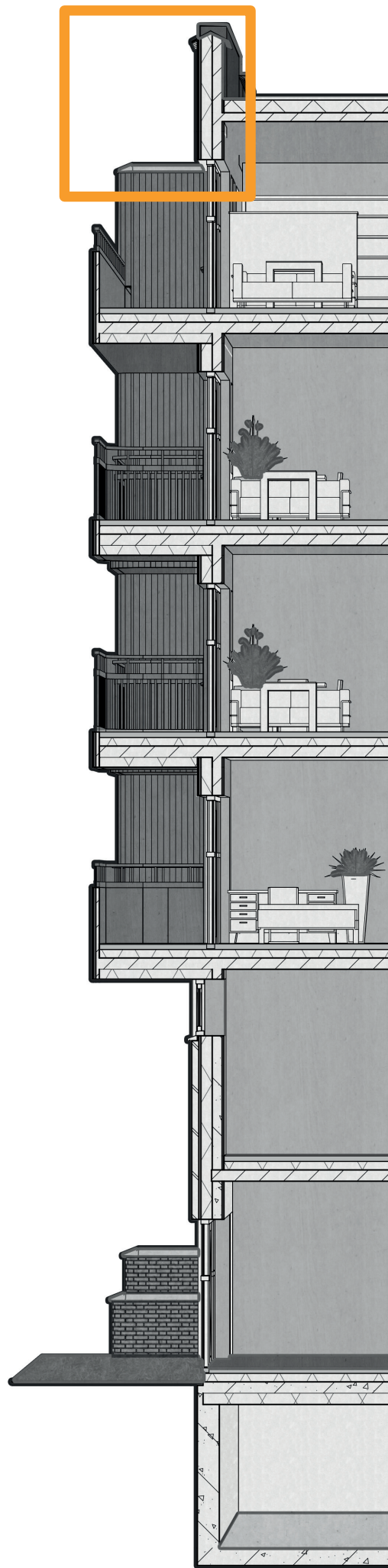
Detail V02: Balcony



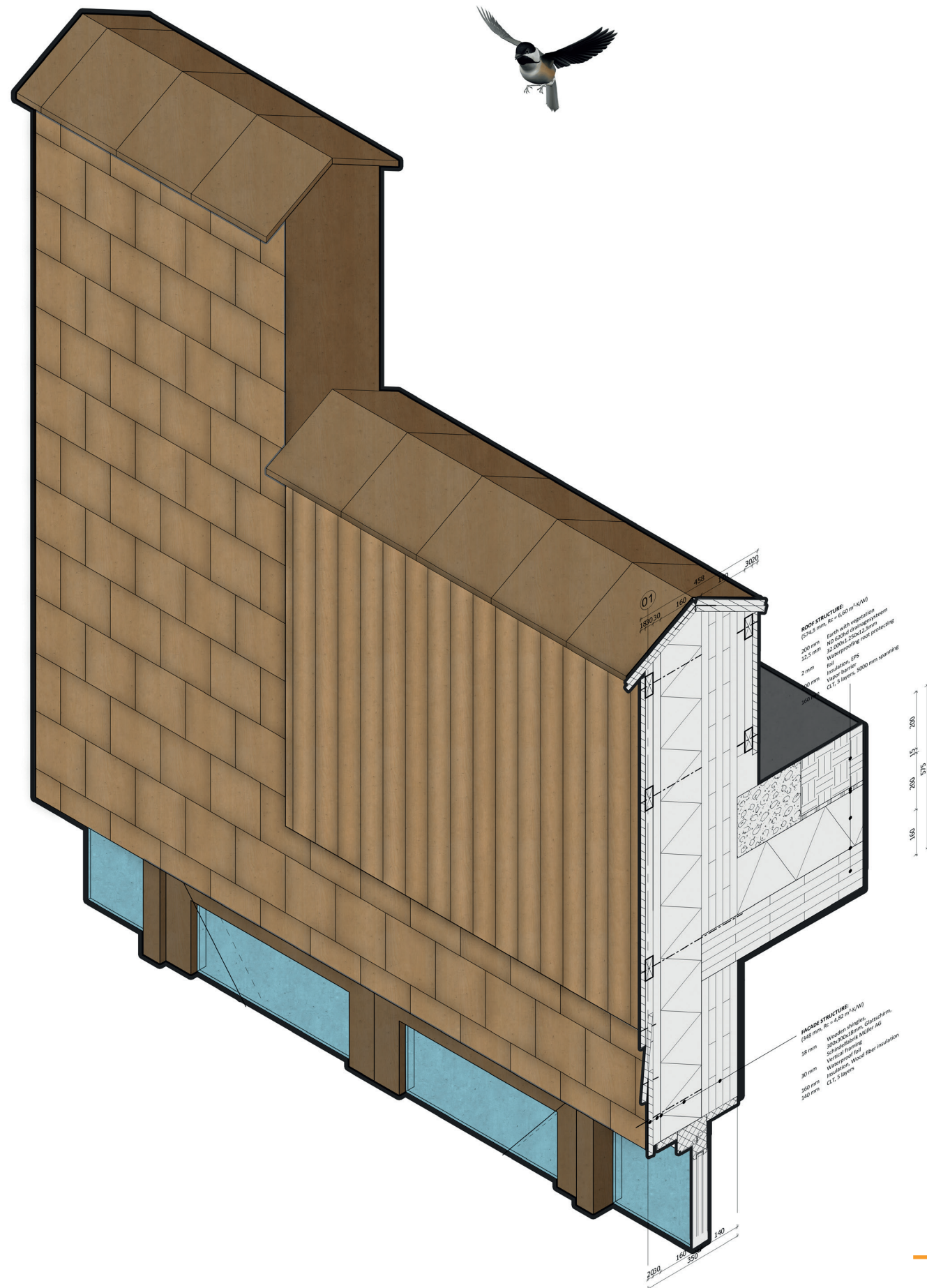
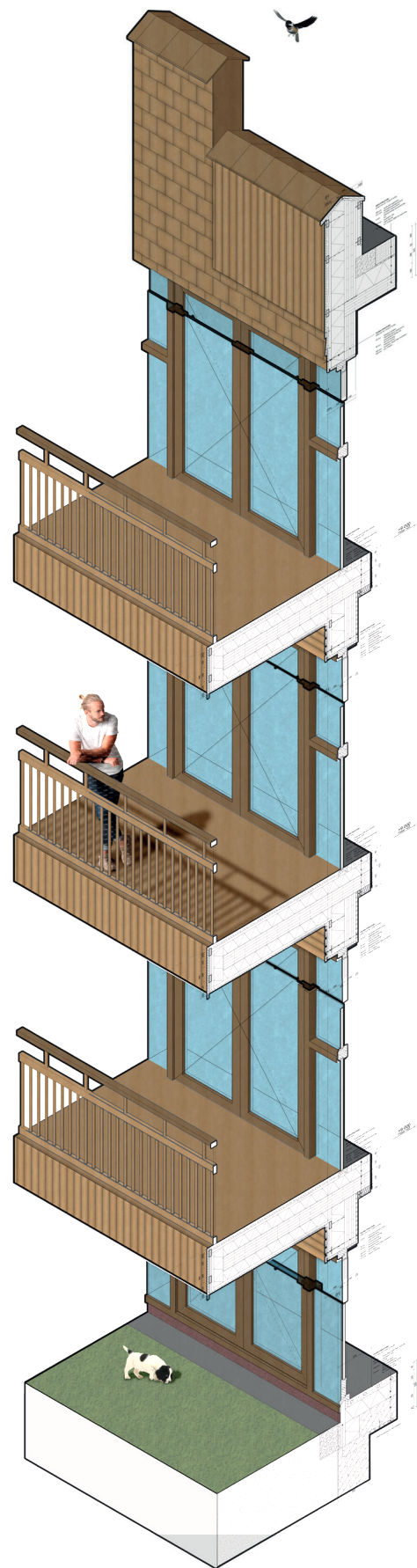
Detail V02: Balcony



Detail V03: Roof

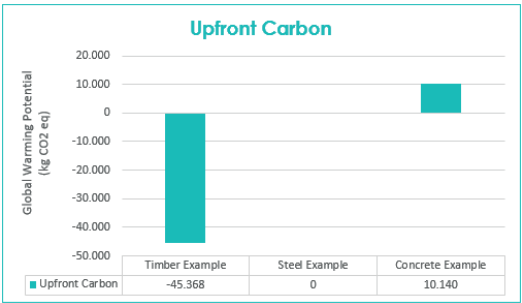
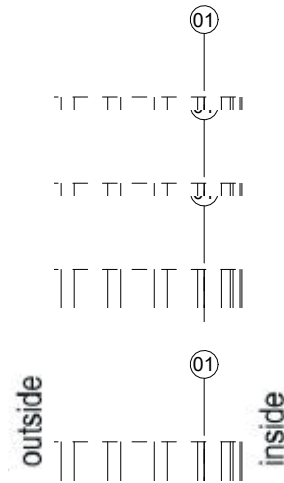
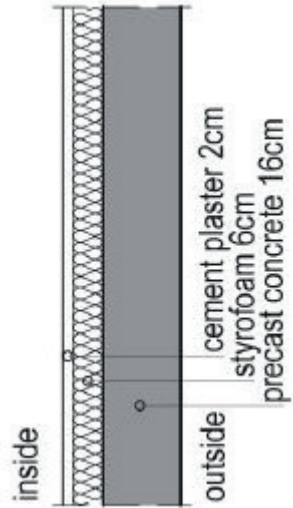
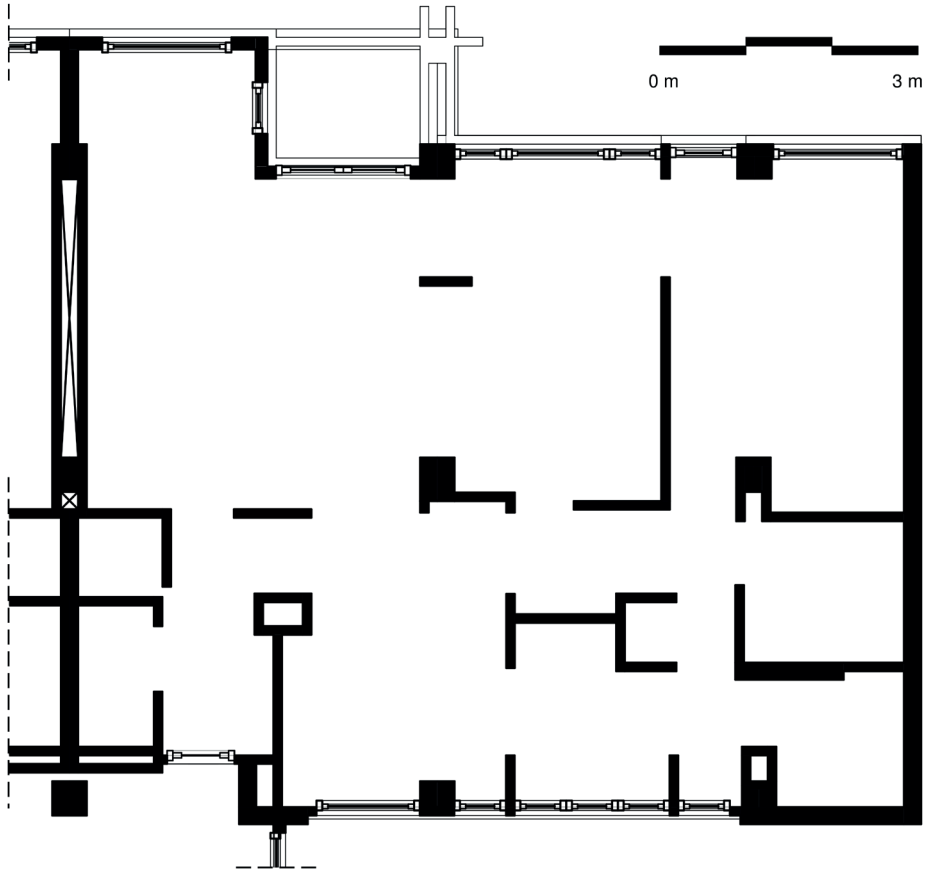


Detail V03: Roof



Carbon footprint

Typical apartment block 23
L-shaped courtyard block
1:100

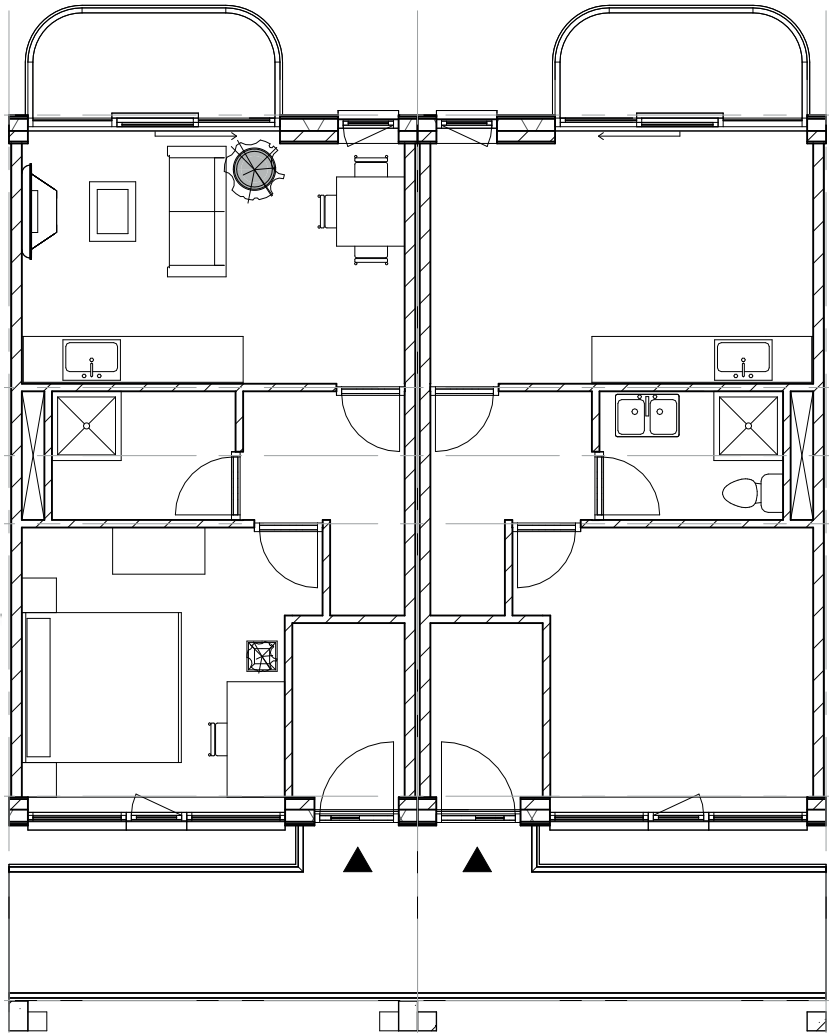


Concrete Construction

Upfront Carbon = -45.368 kgC02eq



Typical apartment block 26
Courtyard block
1:100



CLT Construction

Upfront Carbon = 10.140 kgC02eq

Conclusion

Main square: market



Neighbourhood square



Community courtyard





Thank you

For your attention