

Final presentation

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Delft University of Technology

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Third mentor: Robbert Guis

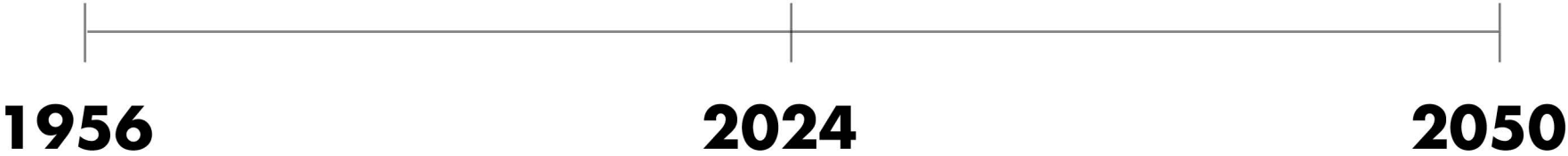
January 2024

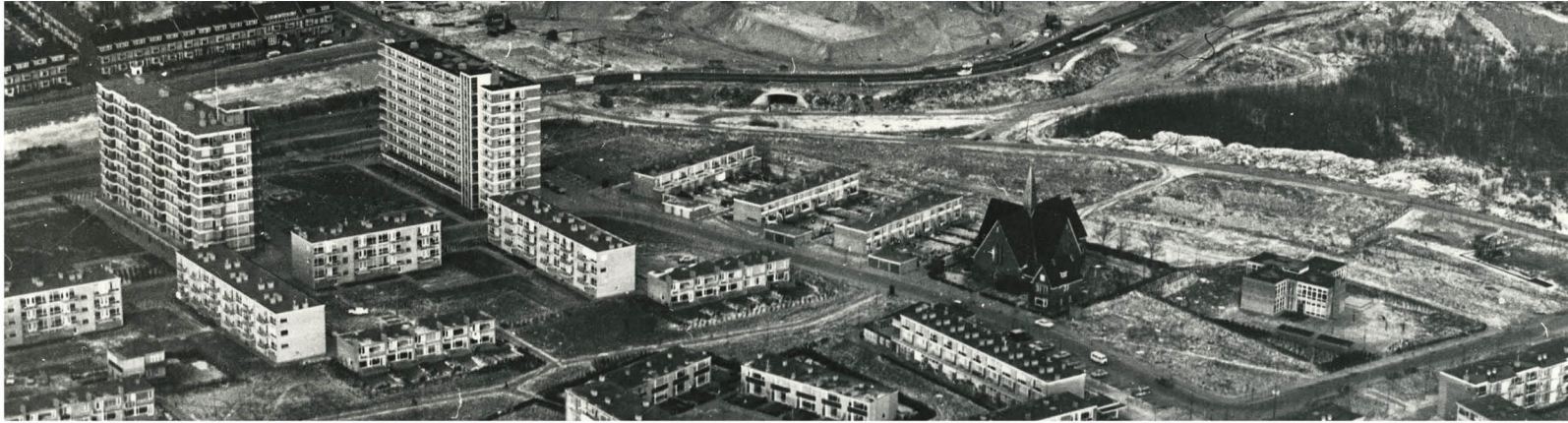
How to Maintain / Enhance the Sense of
Community in Post-War Neighborhoods
Which are going through regeneration process

Past

Present

Future



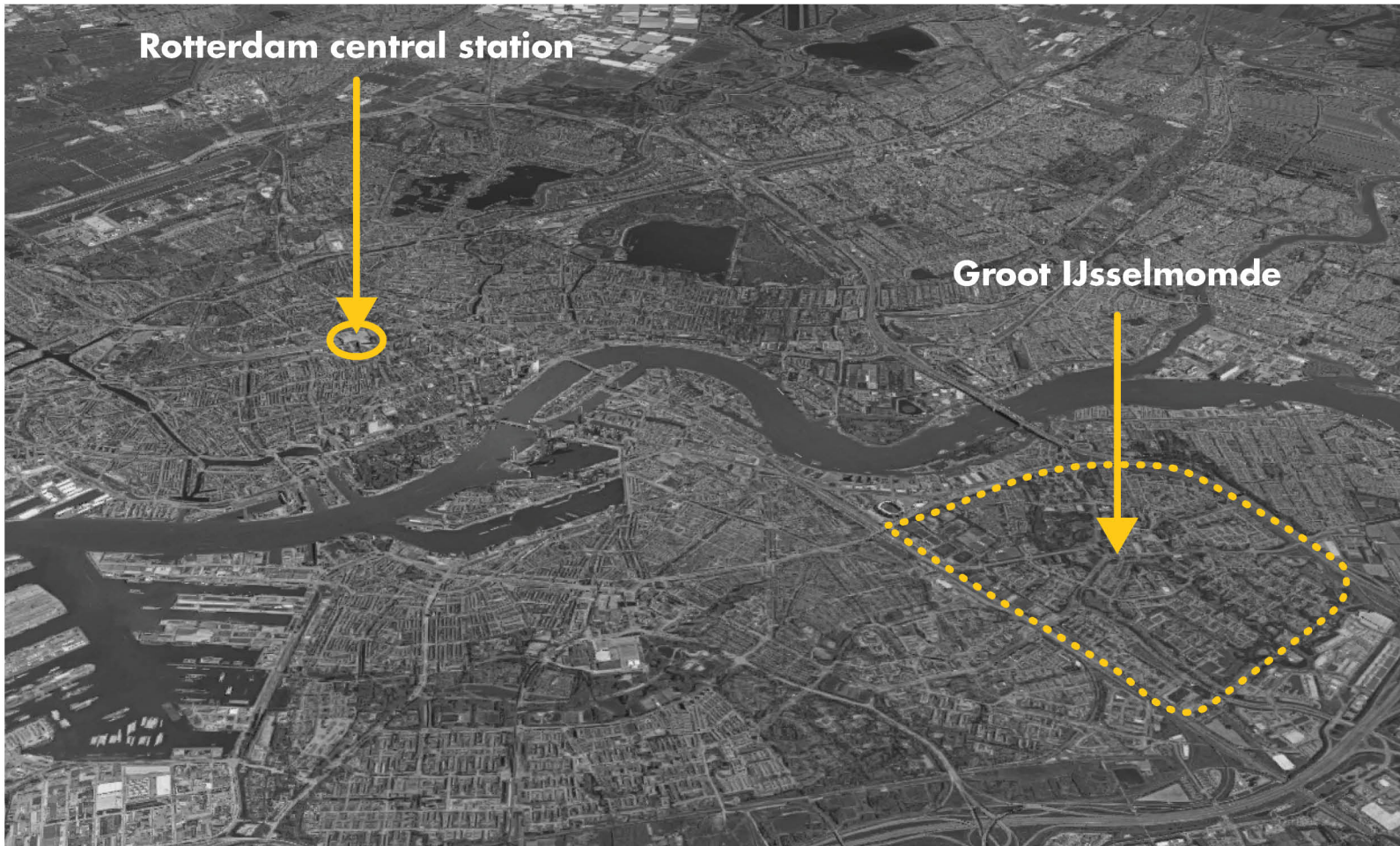


Past

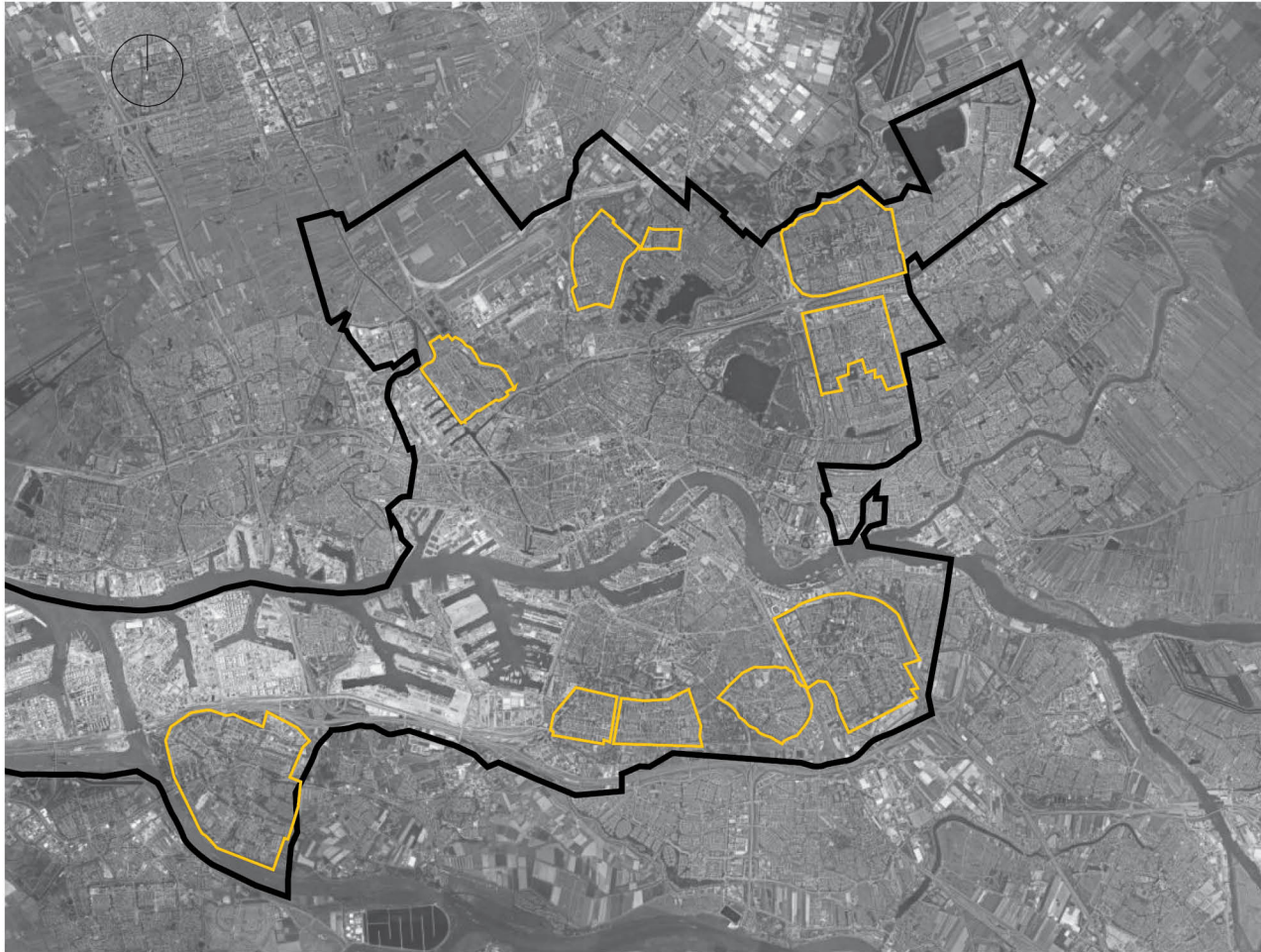
Present

Future

1956



Groot IJsselmonde - Location



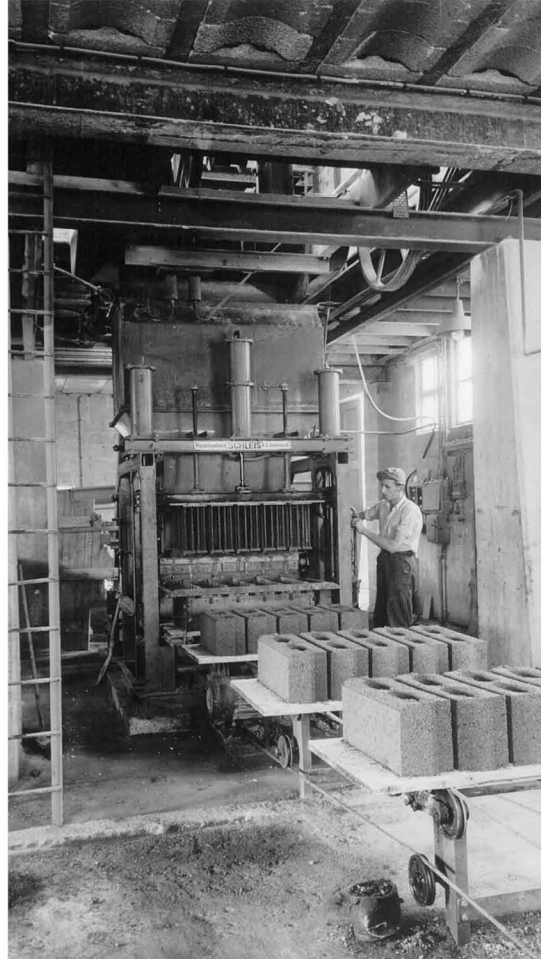
- Ommoord
- lage Land
- 110- Morgen
- Schiebroek
- Overschie
- Ijsselmonde
- Lombardijen
- Zuidwijk
- Pendrecht
- Hoogvliet

Rotterdam - post-war neighborhoods

Characteristics of post war construction:



Fast



Cheap

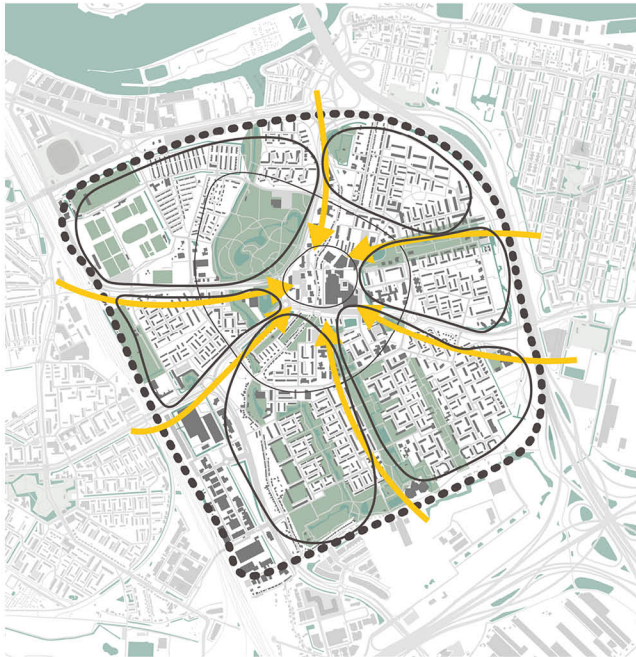


Many



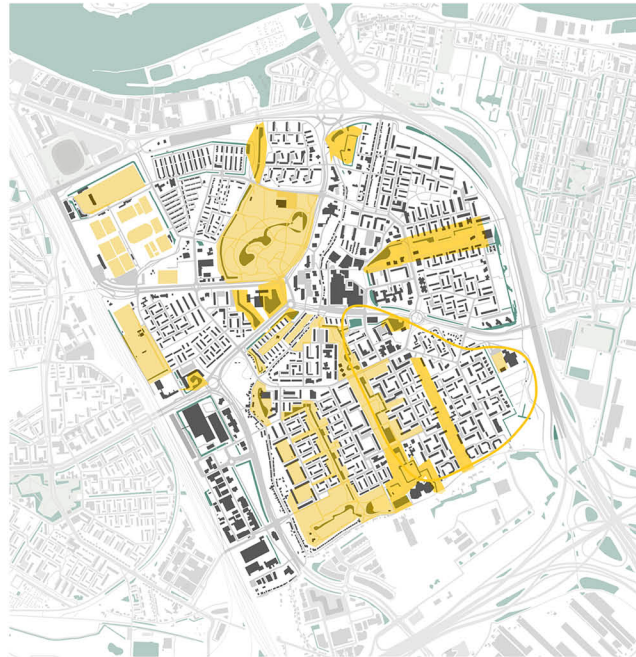
Garden City concept

Groot IJsselmonde - Garden City neighborhood



Division to neighborhoods

All connectors meet at the center



Large green areas



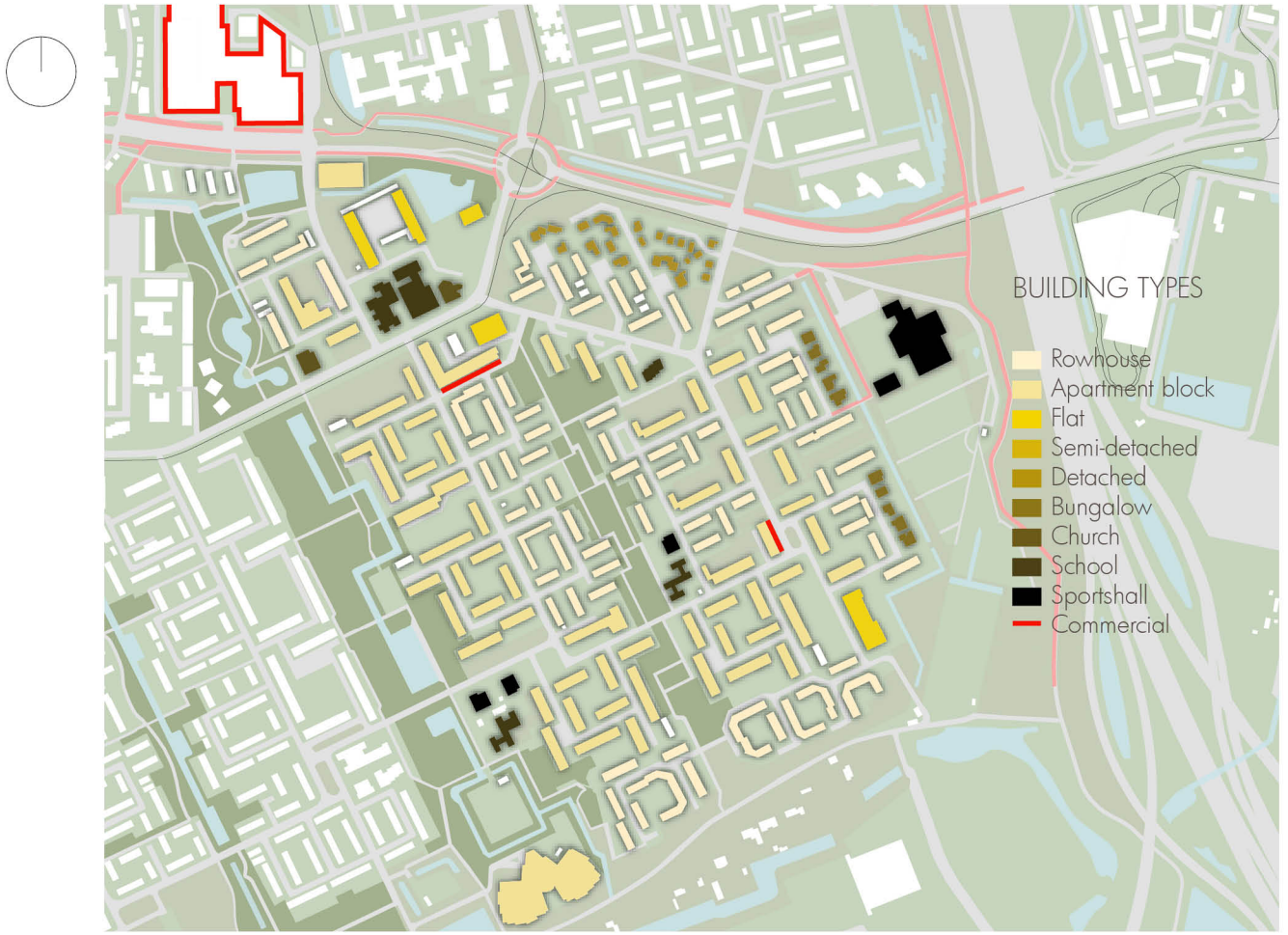
Repetitive urban structures



Reyerwaard



Urban structure



Building types

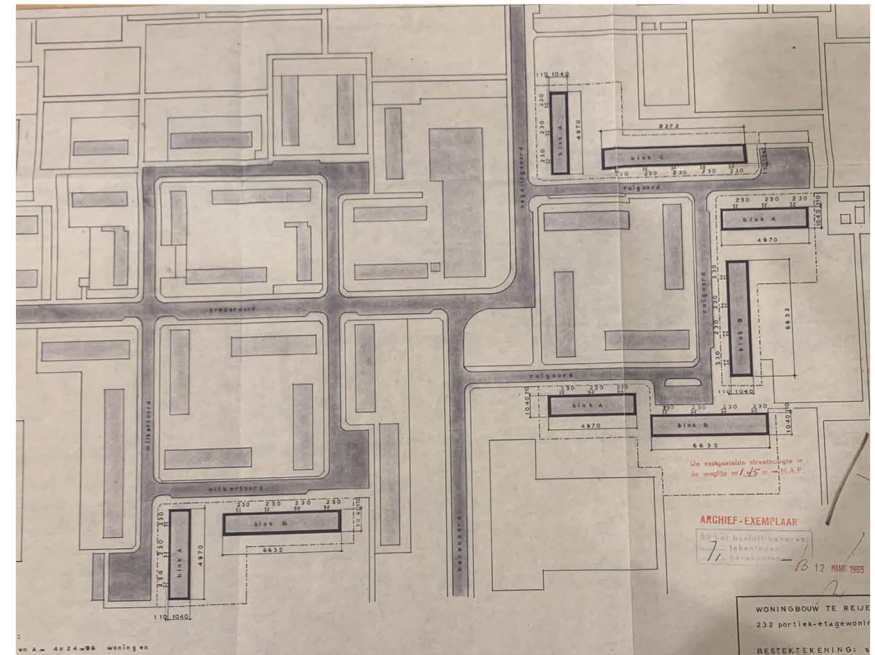
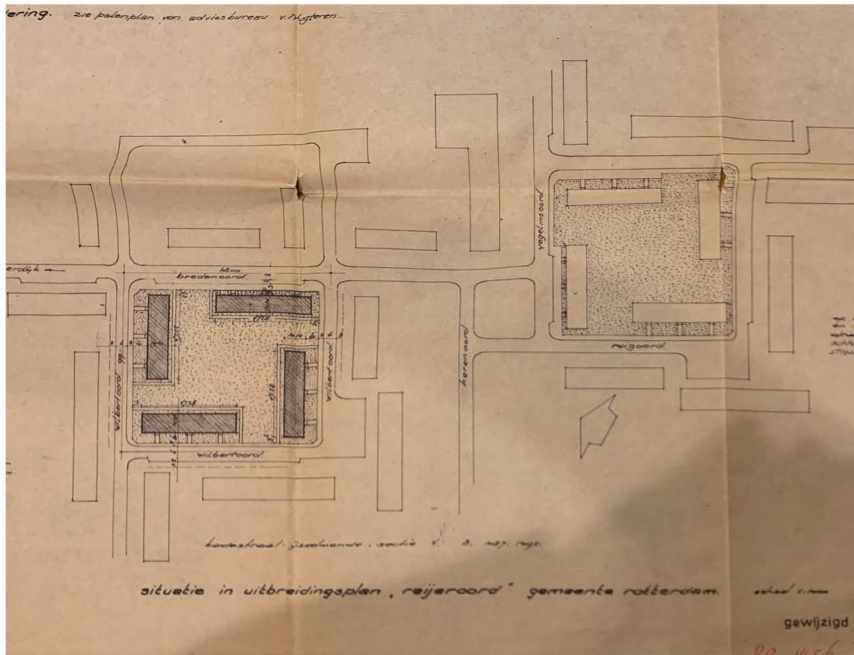


Courtyard typology

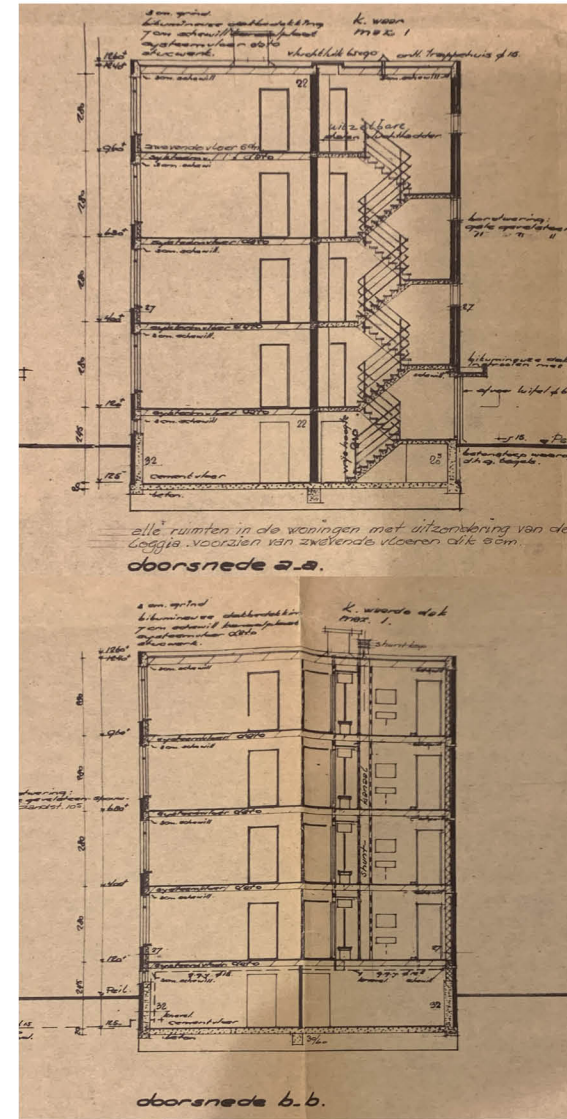
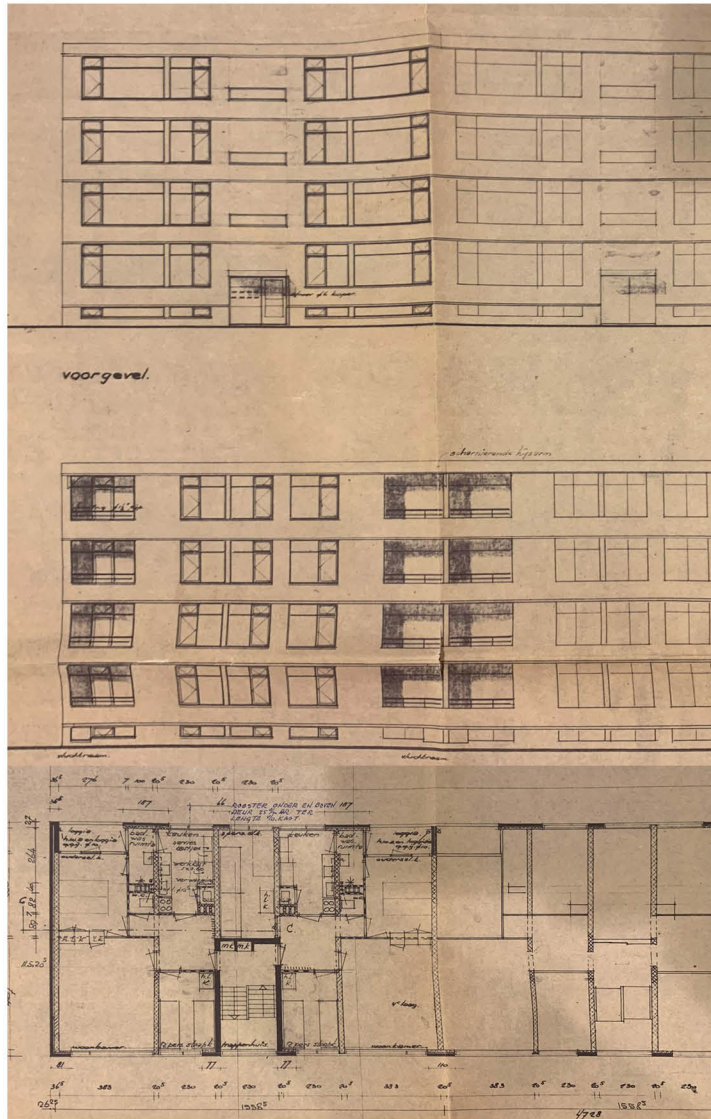


Chosen site

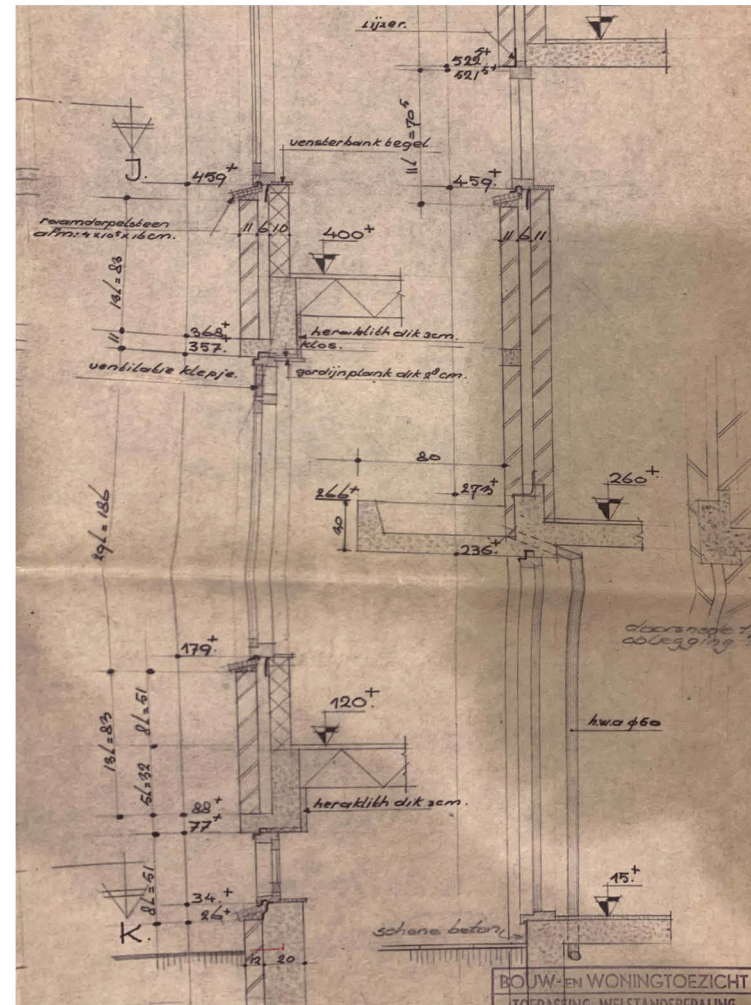
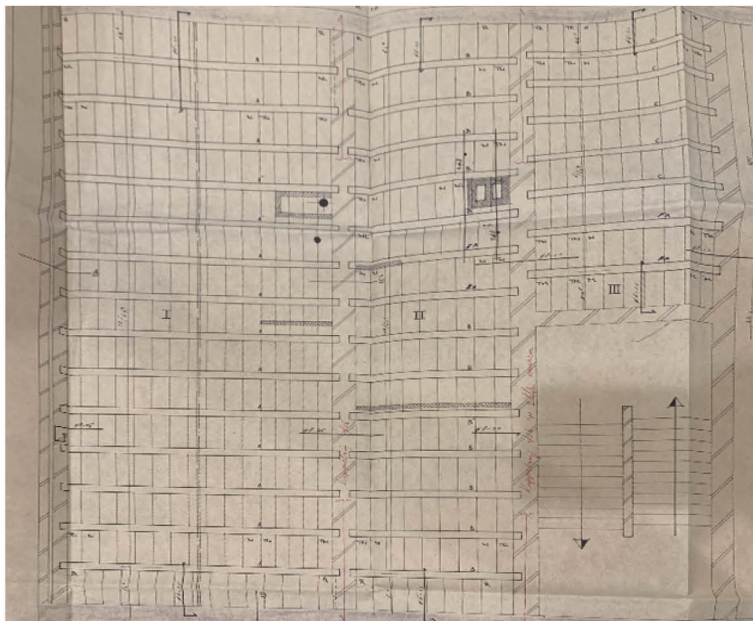
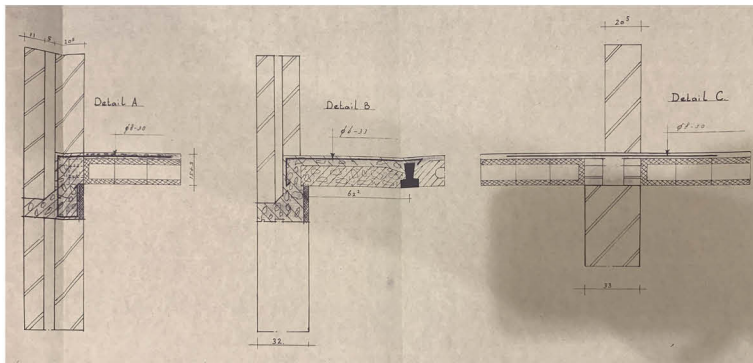
Original plans overview



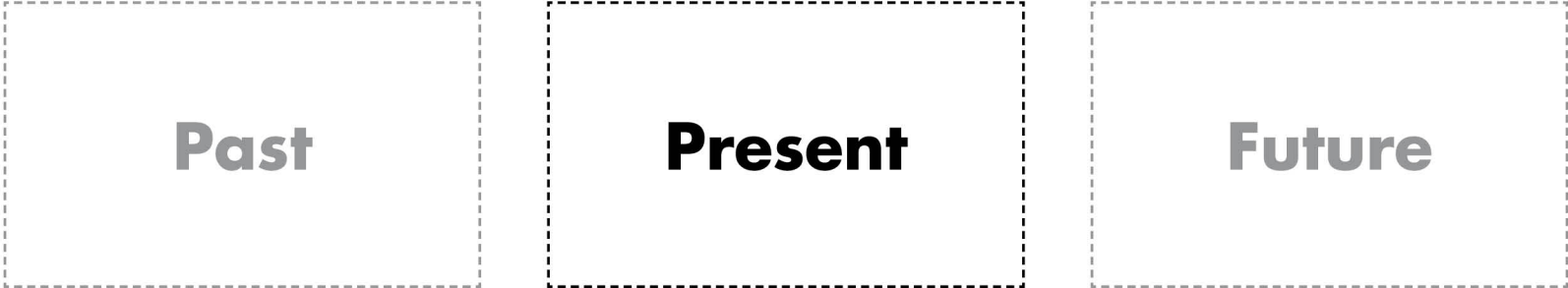
Master plan



Interior layout and circulation areas



Construction Methods



2024

What is a regeneration process?

How to densify an existing built environment?

What could be the problems in regeneration?

Who is going to live there?

Can the design be repeatable in all part of the neighborhood? And in other neighborhoods as well?

Dilemmas



What is sense of community?

How to maintain / enhance sense of community?

How is it represented in the built environment?

How to combine old and new?

How to diversify residential typologies?

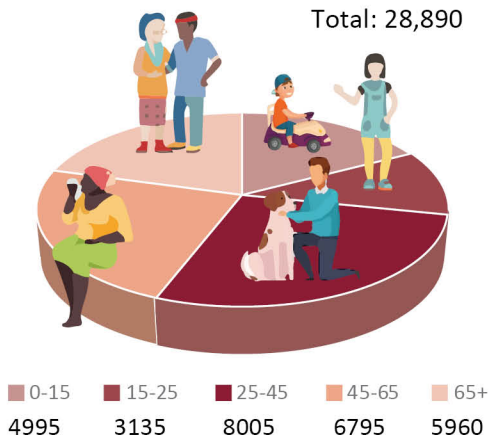
How to build sustainable?

“Neighborhood is a state of being in a relationship. More than anything, the human environment is about relationships: relationships between people and planet, relationships between people and place, and relationships between people and people.”

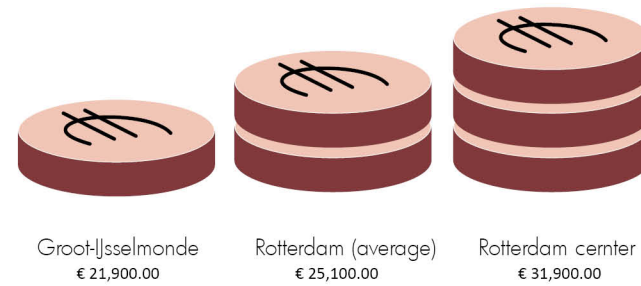
(David Sim, *Soft city*, 2019, page 11)

Population Demographics

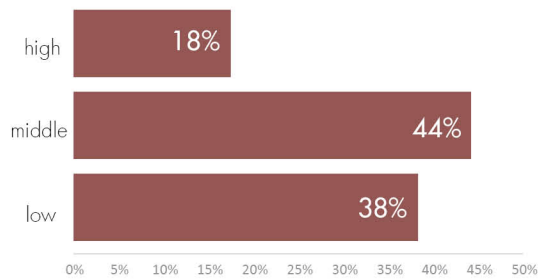
Age



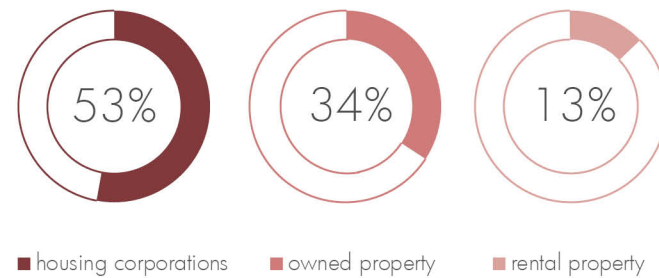
Income



Education



Property

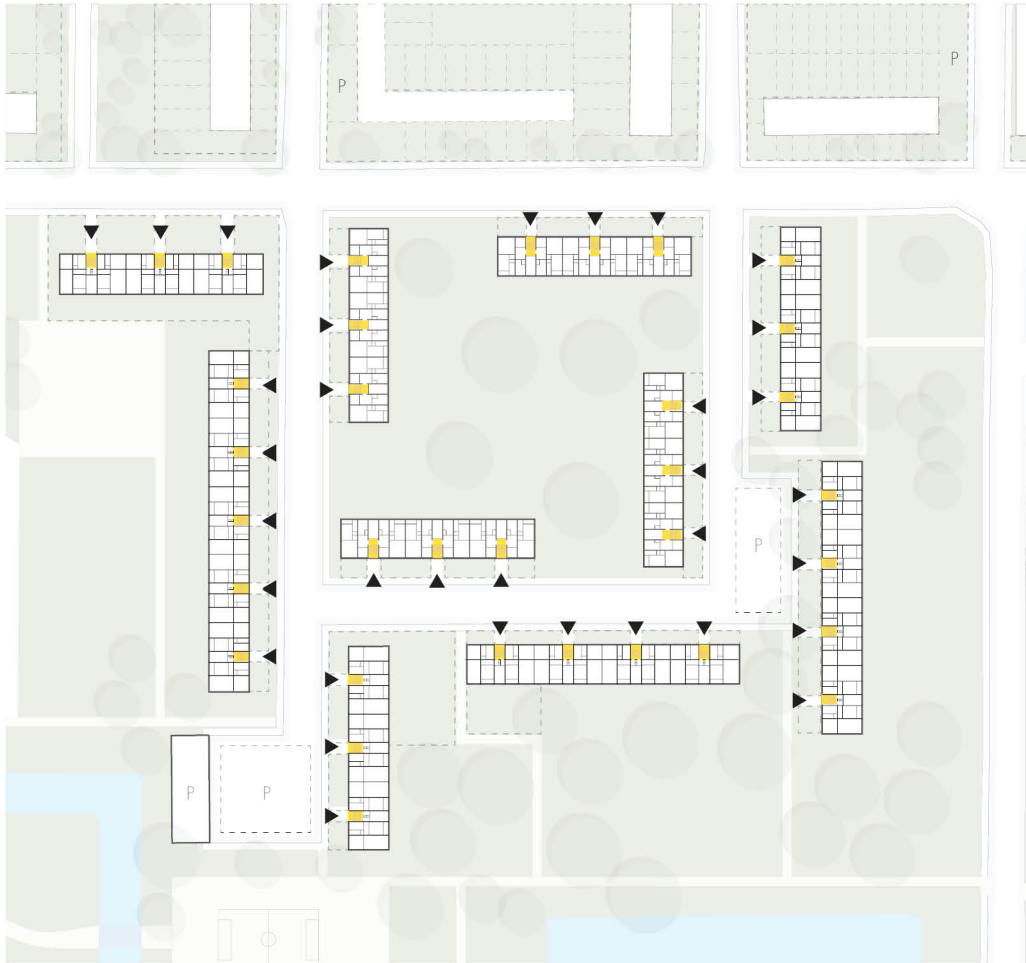


Built environment



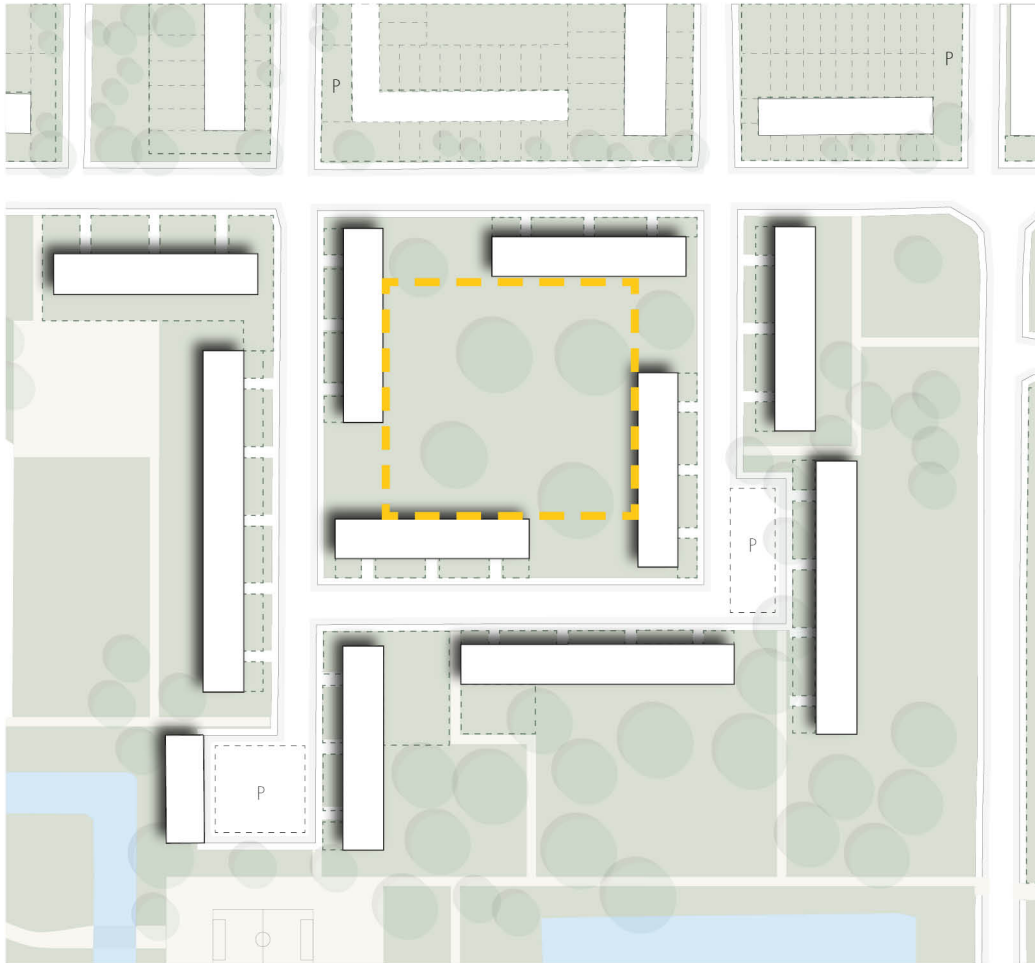
Repetitive Built environment

Entrances and Streets

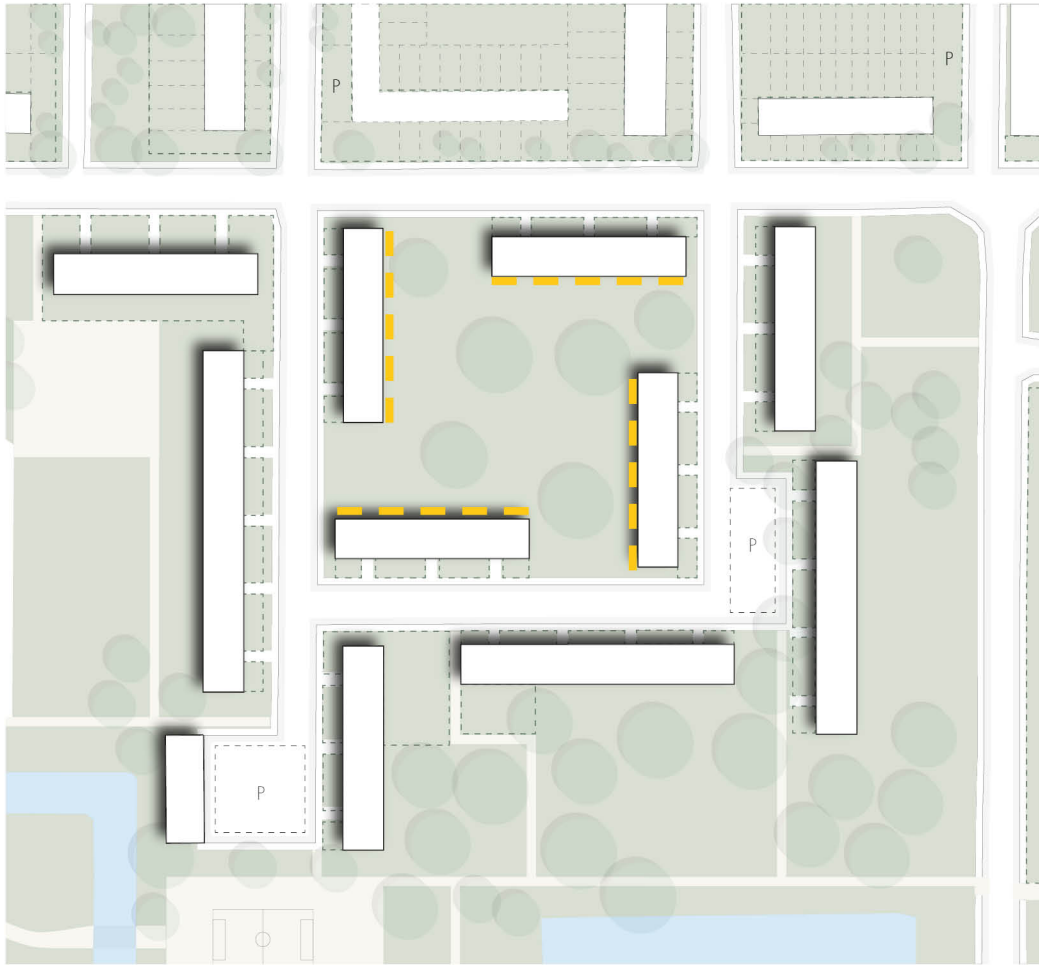


Entrances facing the road - short way for potential interactions

Open spaces



Enclosed courtyard



Back yards

Changes



Additional balconies



Closed off loggias

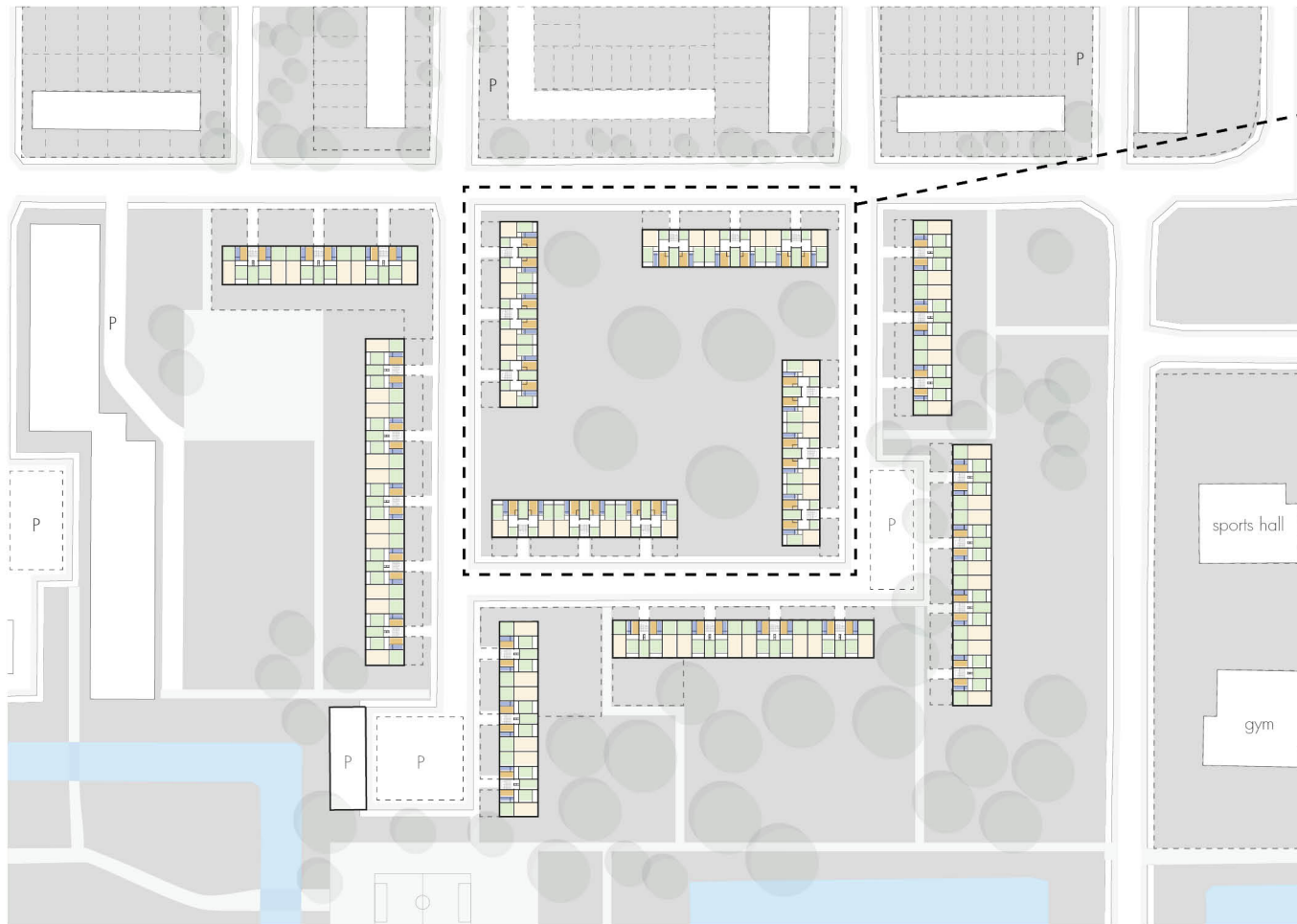


Bicycle parking



Sitting area

Low diversity of residential typologies



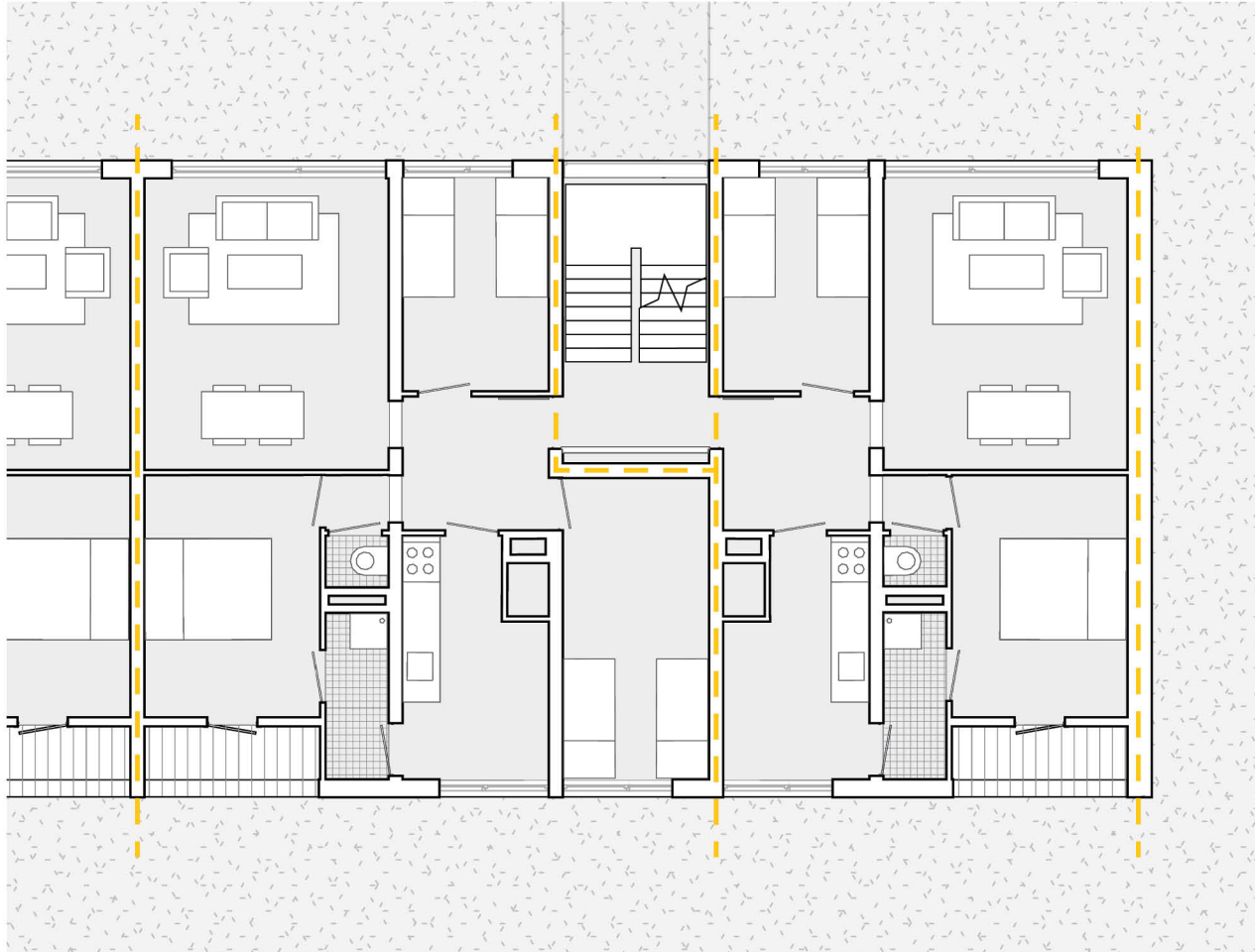
2 BEDROOMS
48 units
[3 persons per unit] x 48
= 144 potential residents

3 BEDROOMS
48 units
[4 persons per unit] x 48
= 192 potential residents

TOTAL
96 apartments
336 potential residents

Living room Bedroom Bathroom Kitchen

Internal layout



3 BEDROOMS | 1 BATH

2 BEDROOMS | 1 BATH

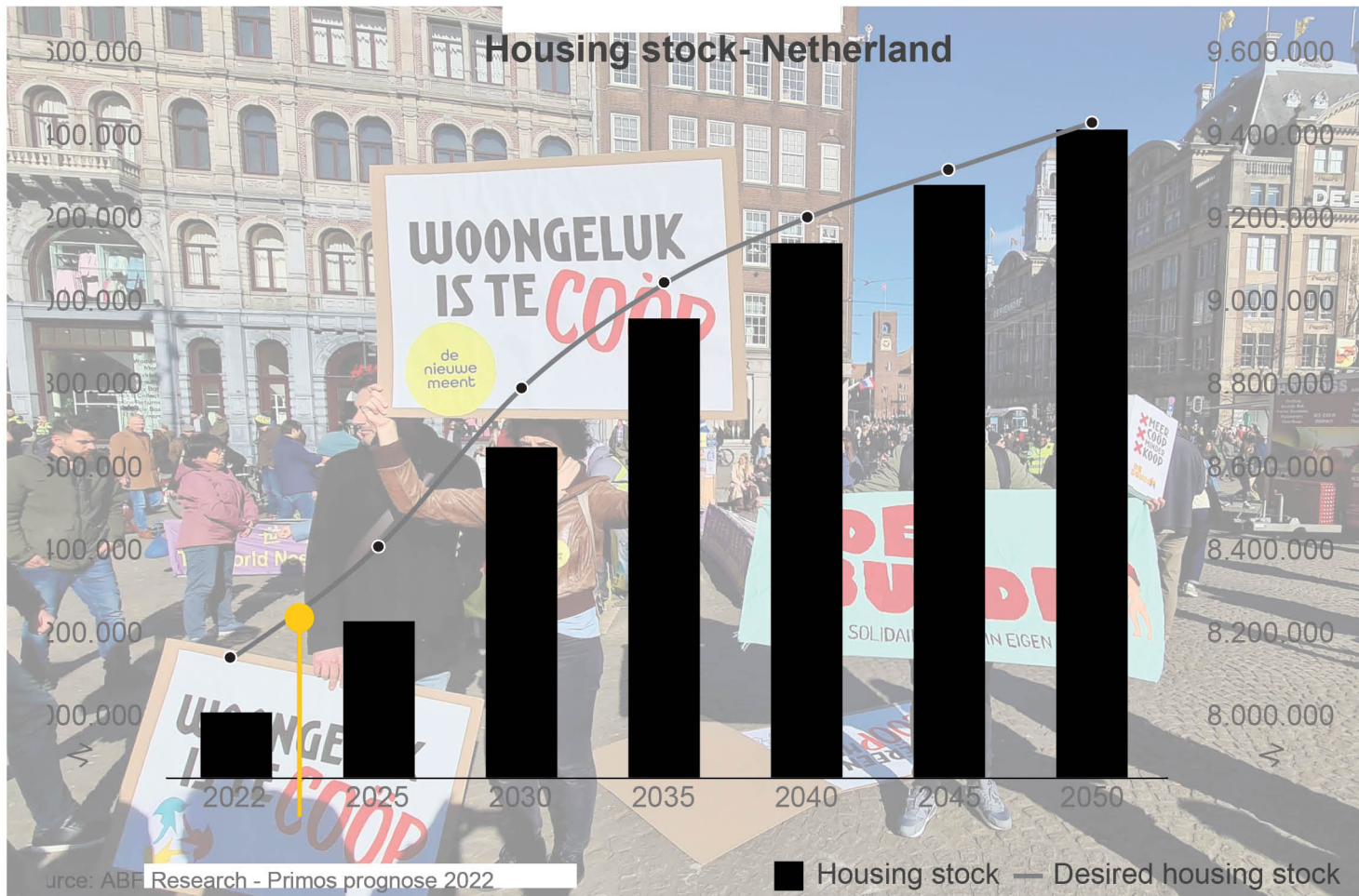


Past

Present

Future

2050

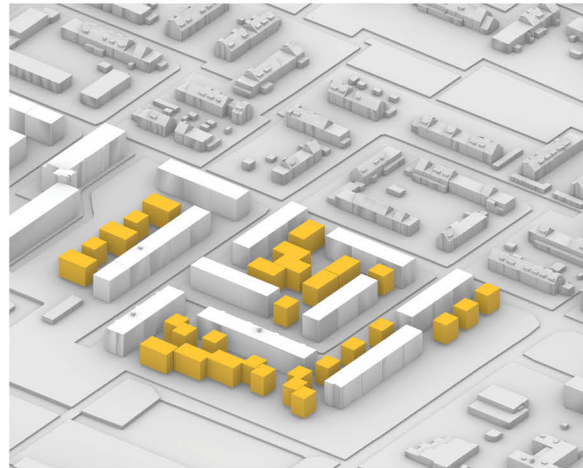


The housing crisis in The Netherlands

How to densify an existing built environment and reuse as much as possible



Top up



Building around



Demolish and build new

Densification strategies

Reasons people remain in unsuitable apartments

Can not
afford to move

Proximity to
work

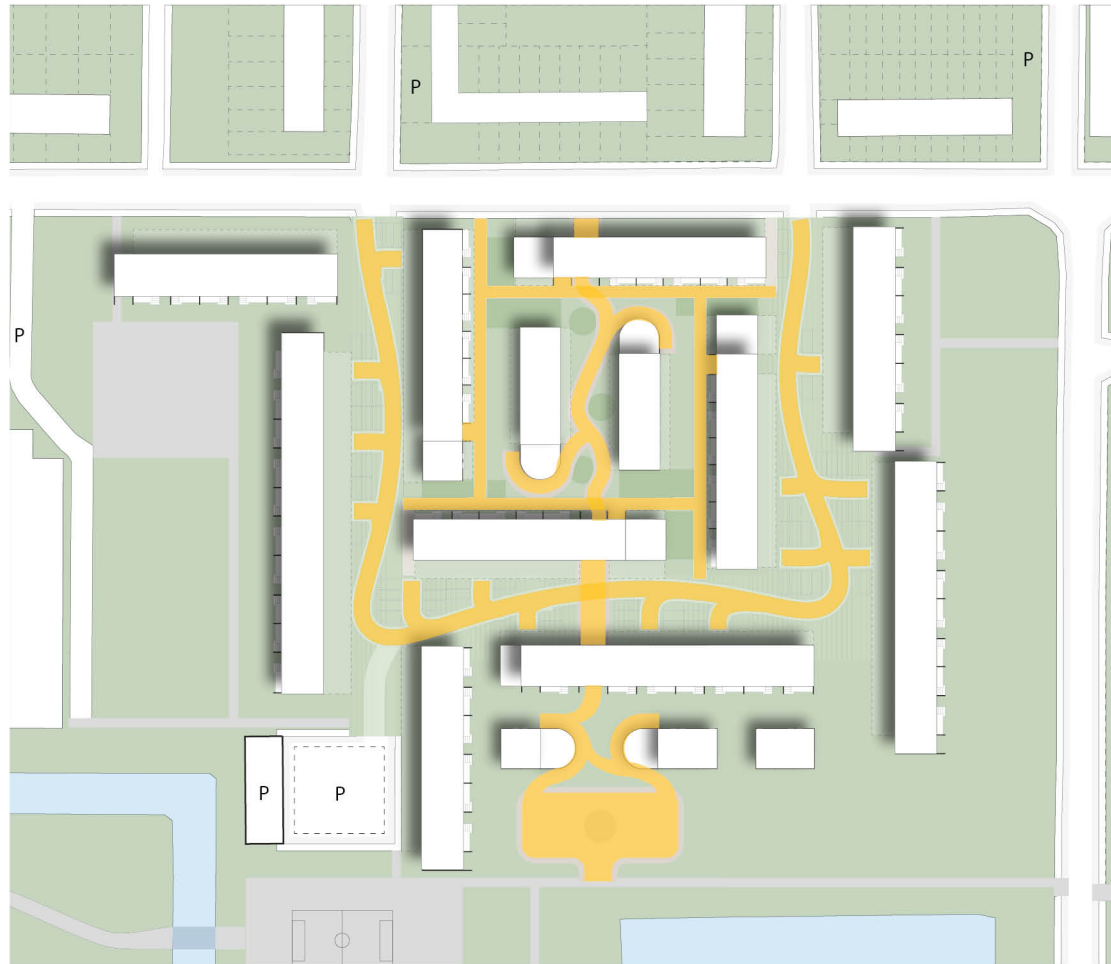
Familiar with the
neighborhood

Community

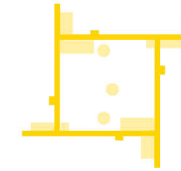
Design strategies

- 1** | Design shared spaces in various scales
- 2** | Combination of old and new
- 3** | Diversify residential typologies

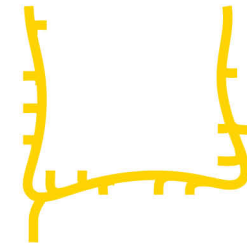
Enhancing connectivity - Pathes



Master plan



Entrances route



Relation with the street



Public path
Shared spaces

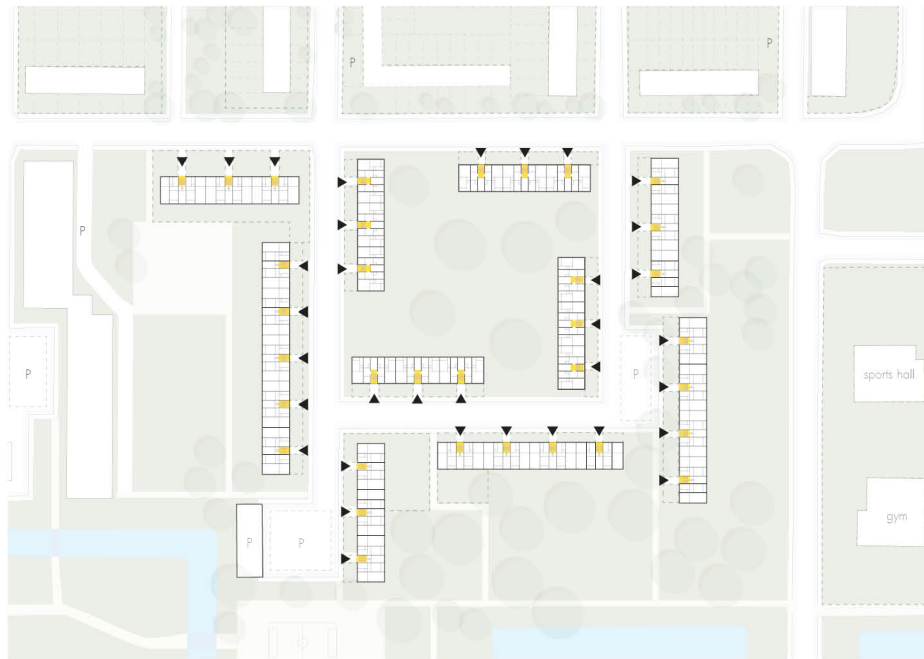
Entrances and access routes



Entrances and access routes



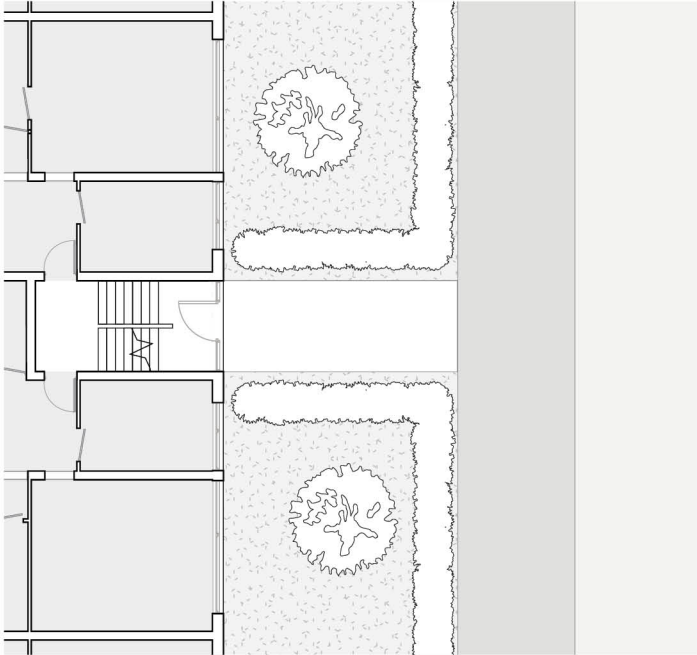
Before



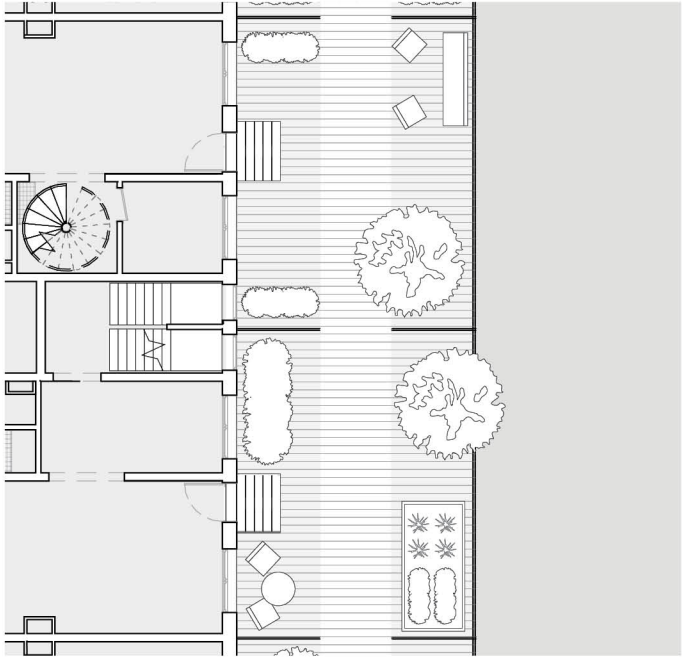
After



Appropriation of the semi-shared spaces



Before

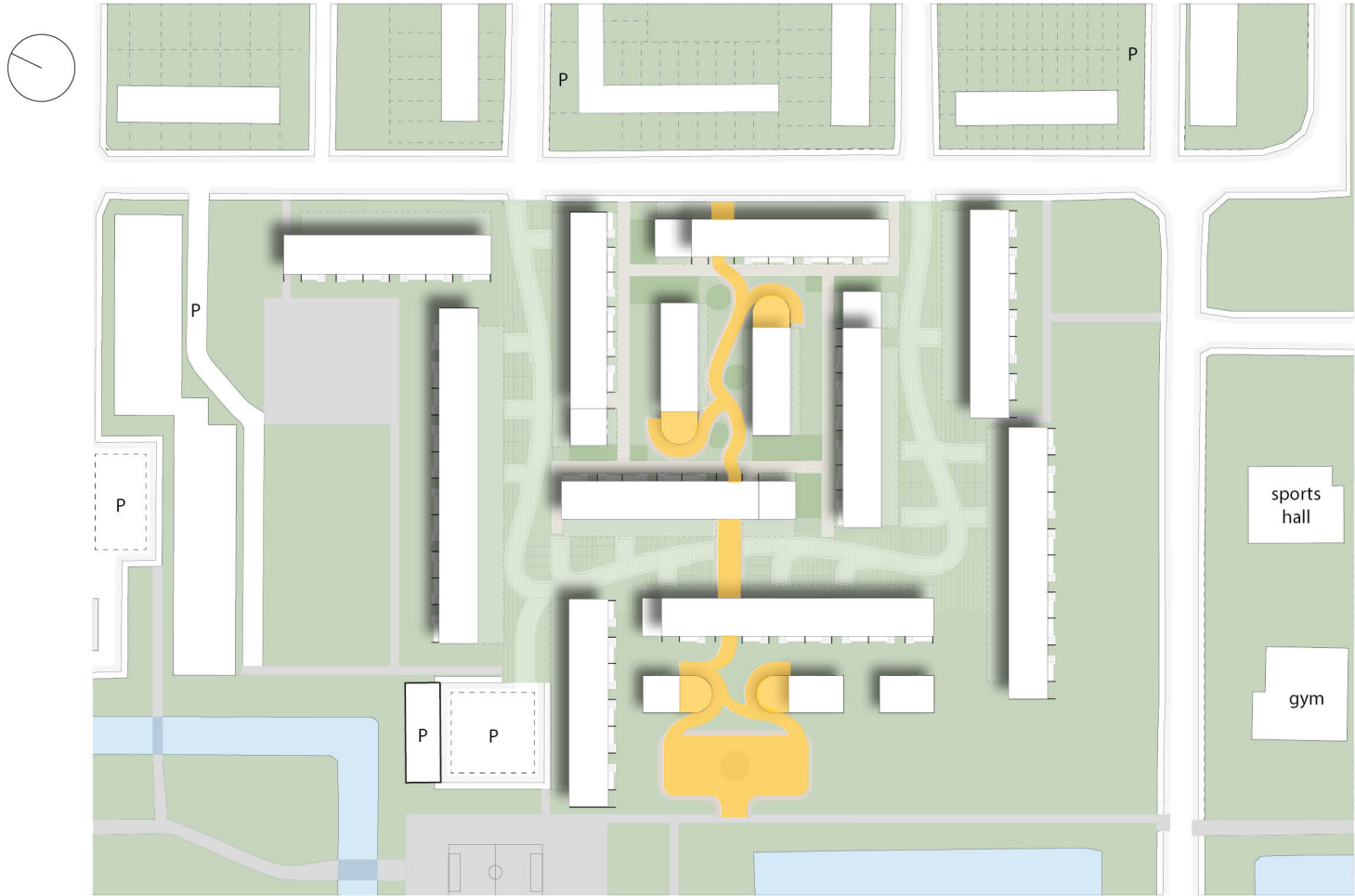


After

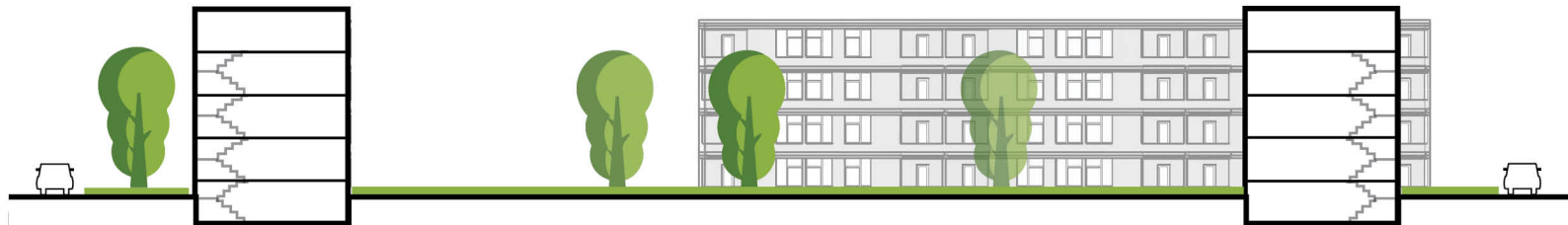
Multifunctional Public path and Shared spaces



Multifunctional Public path and Shared spaces



Enhancing transparency and visual connection



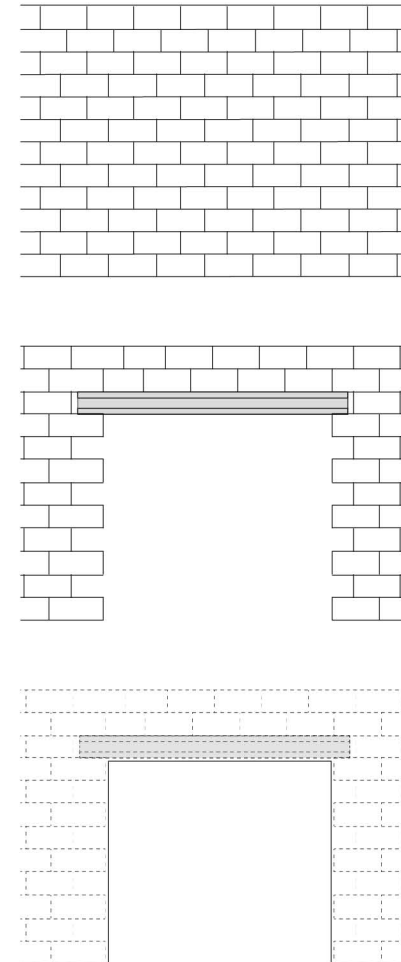
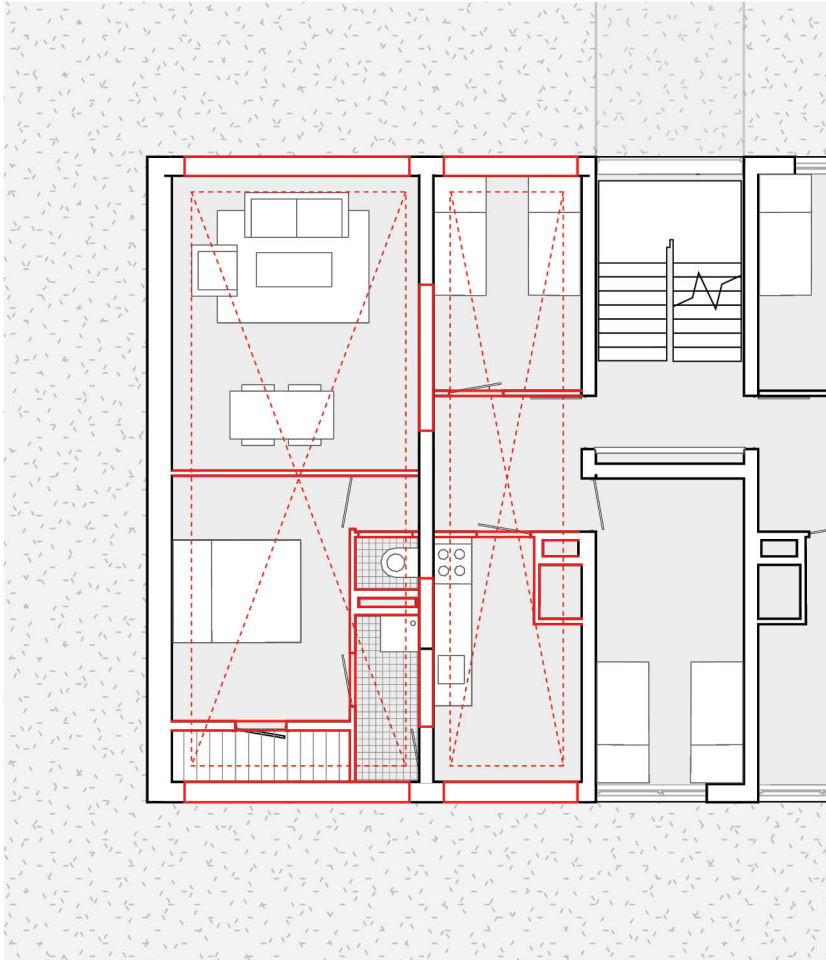
Before



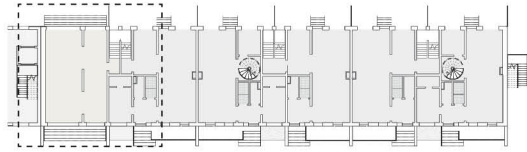
After



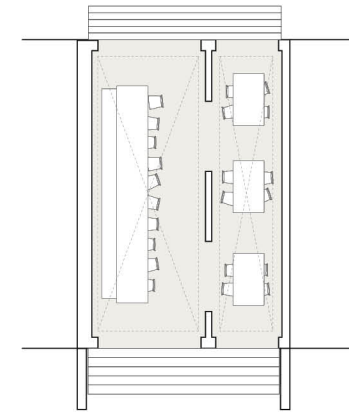
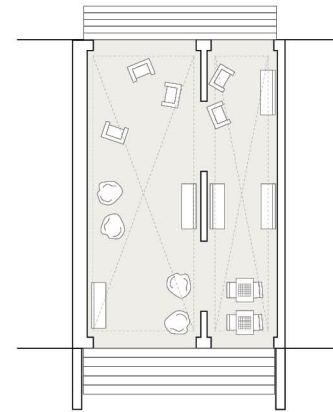
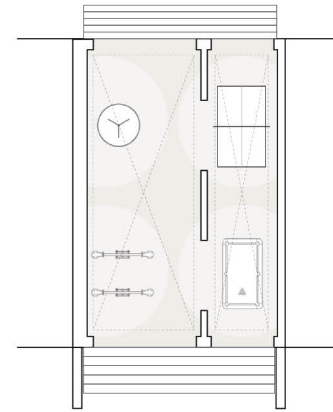
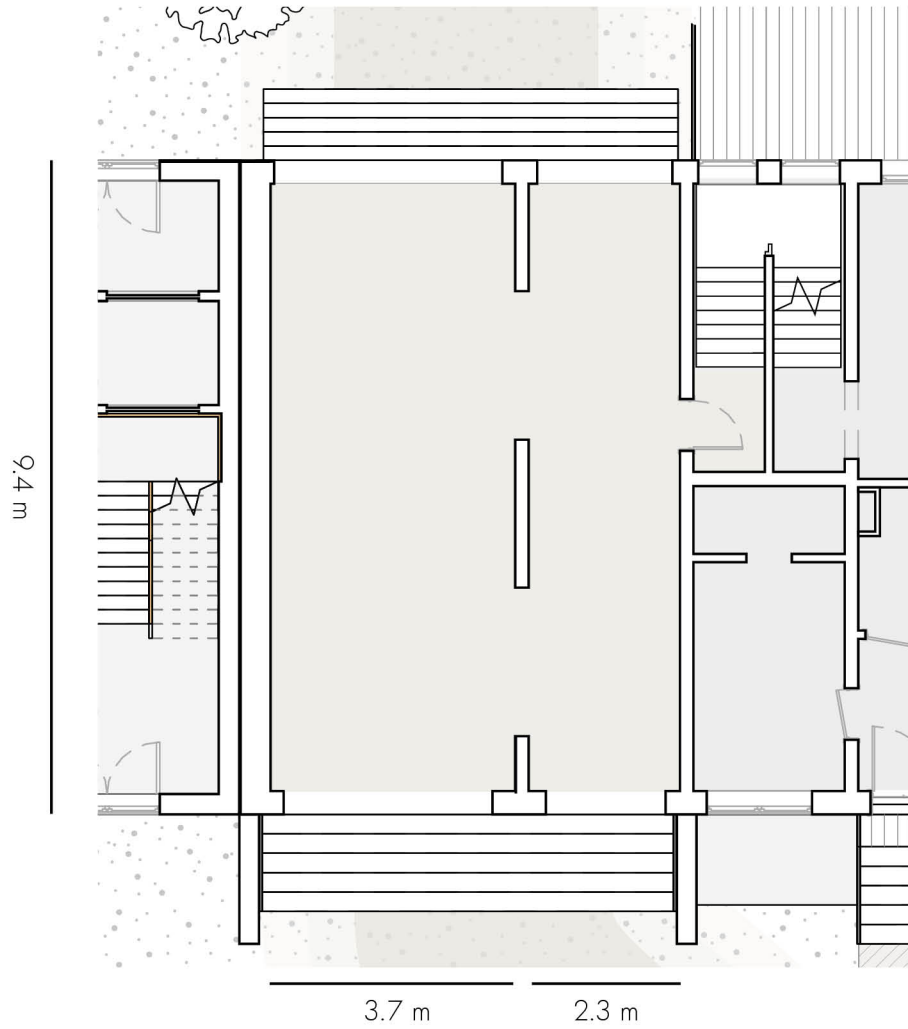
Urban path



Demolition Plan | Ground Floor

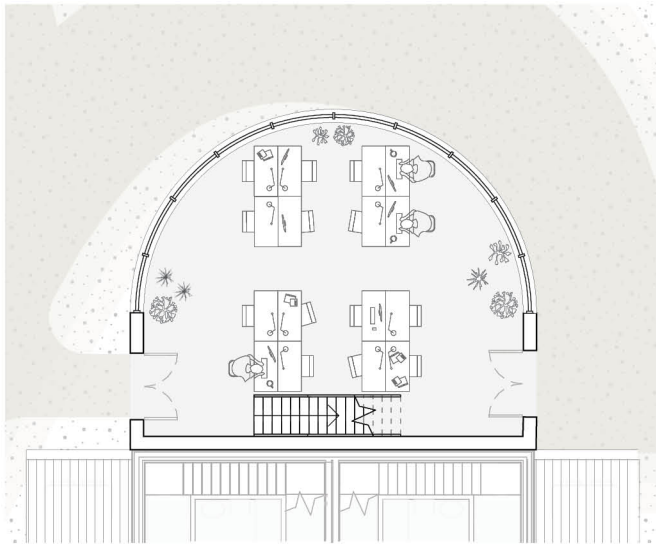


Urban path



Shared spaces

7.7 m

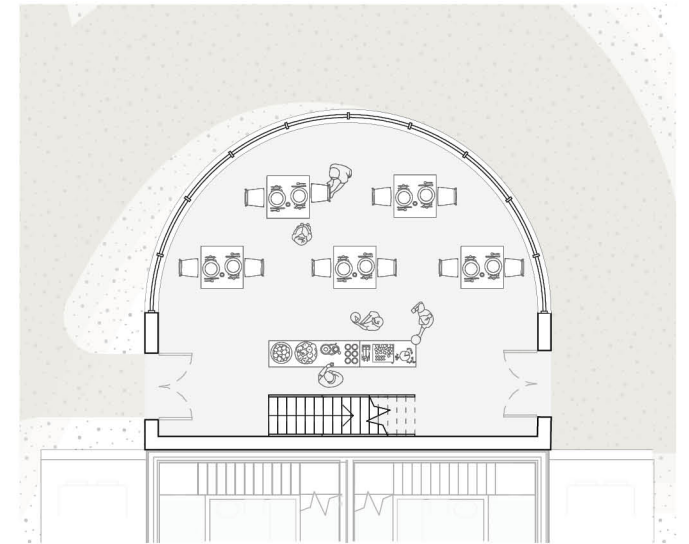


9.1 m

Productive spaces



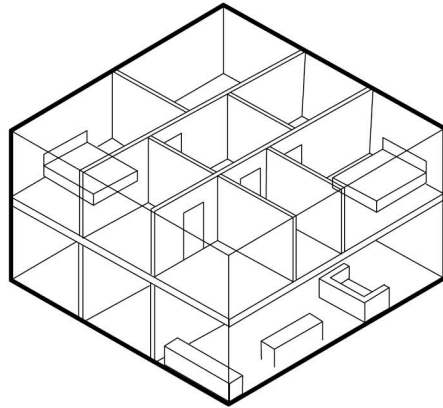
Flexible spaces



Public spaces

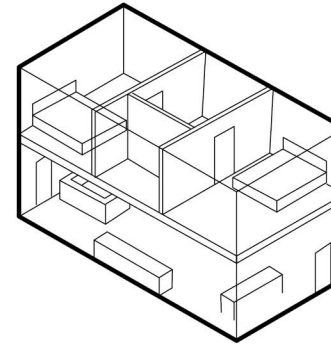
Various residential typologies

Renovation

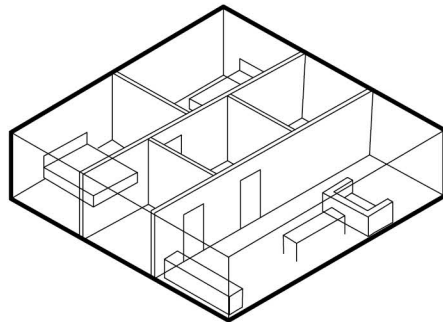


Duplex apartment

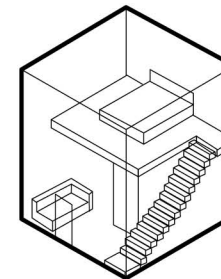
New construction



Single family house

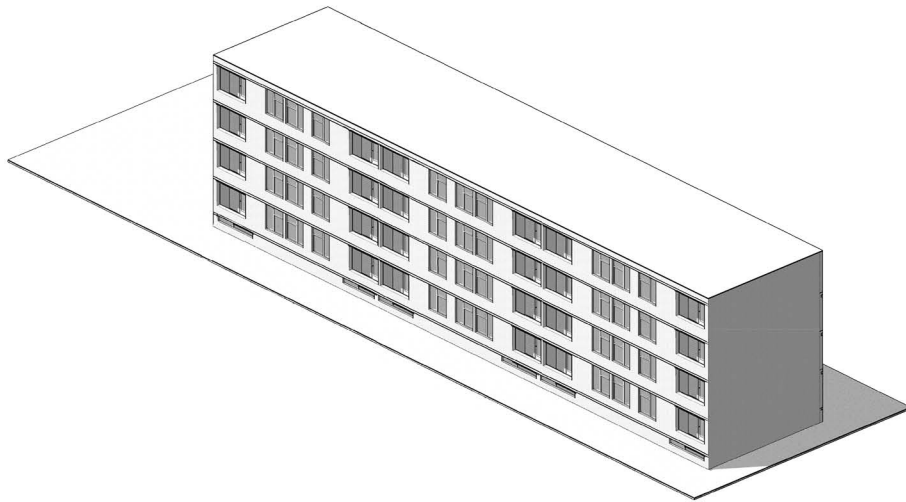


2 or 3 Bedrooms apartment

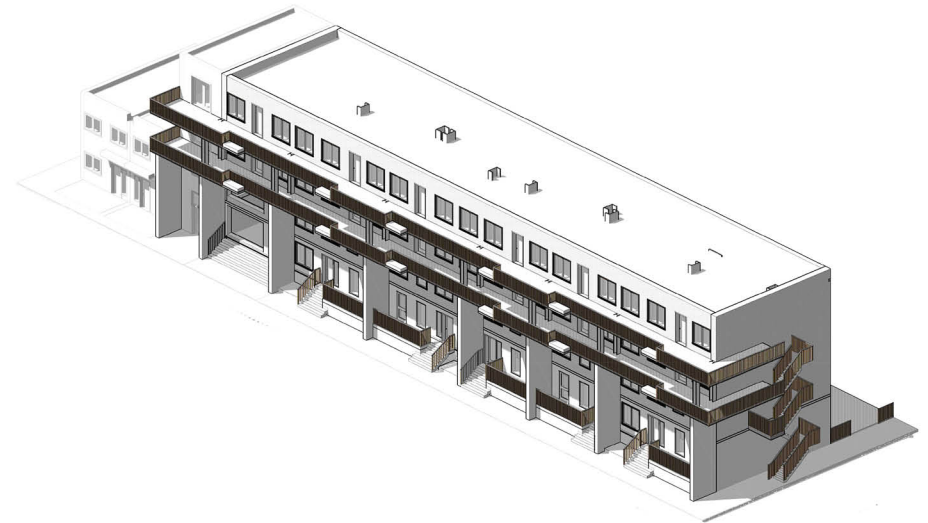


Studio

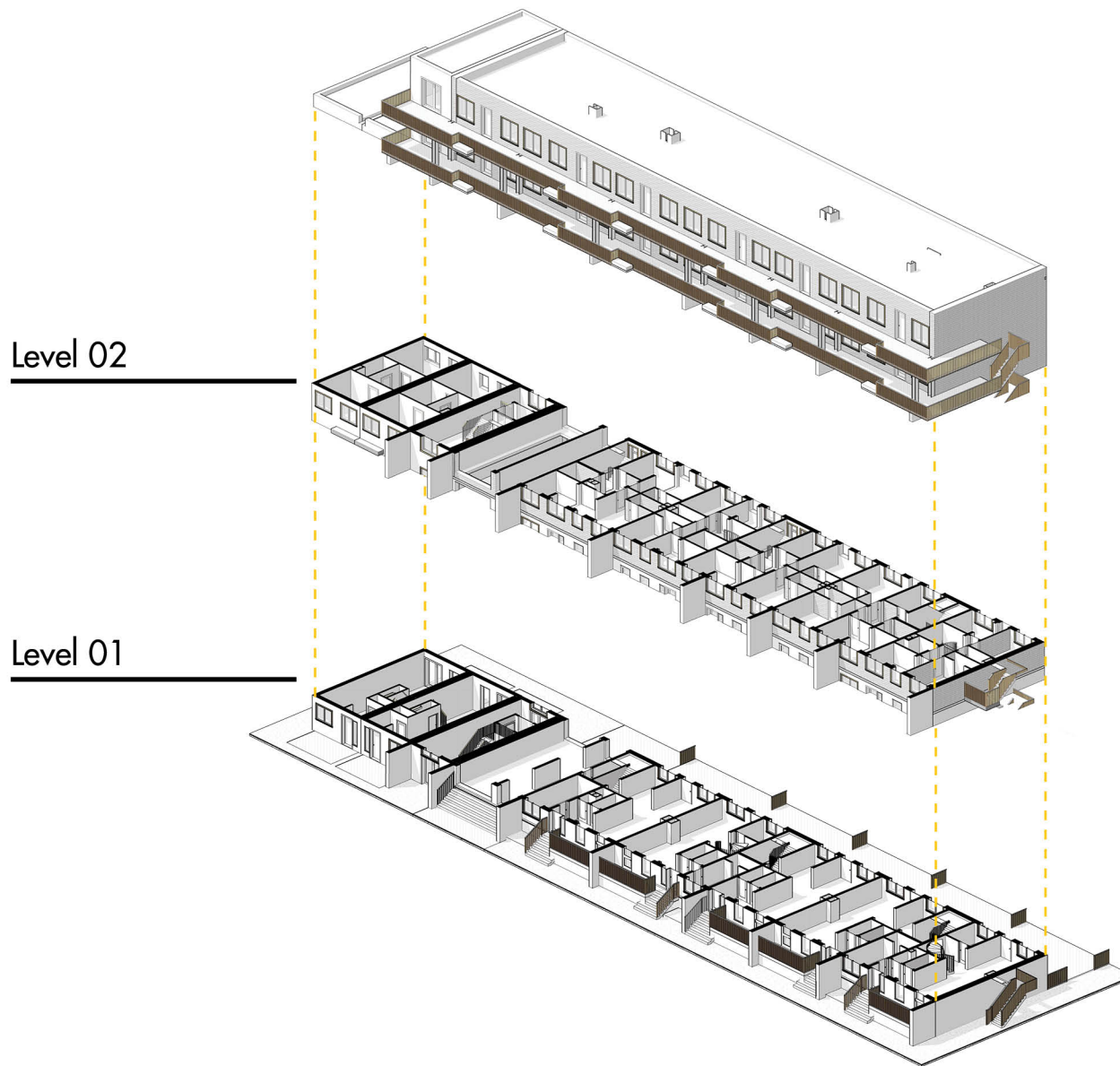
Regeneration process to a 4 storey apartment building



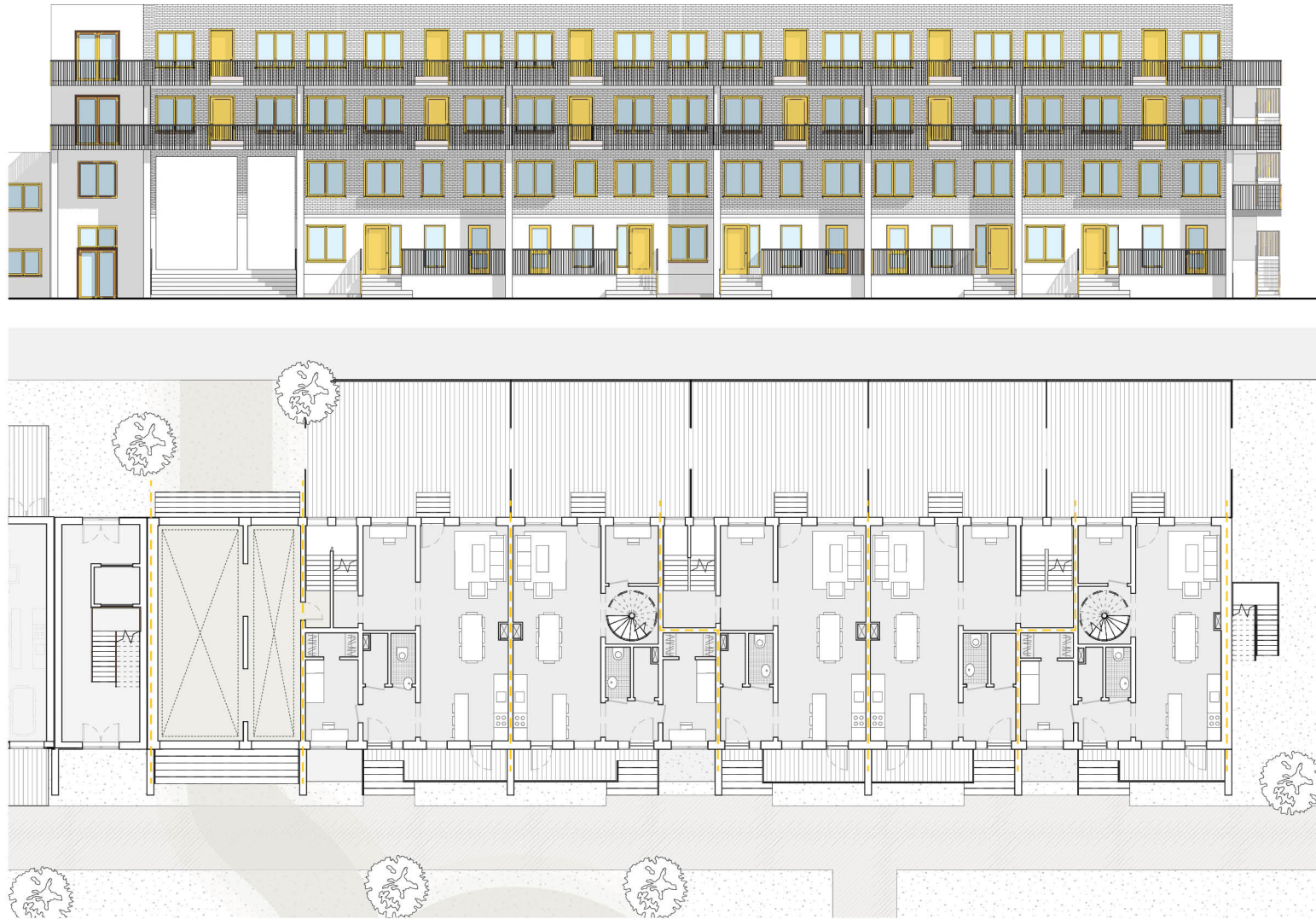
Before



After

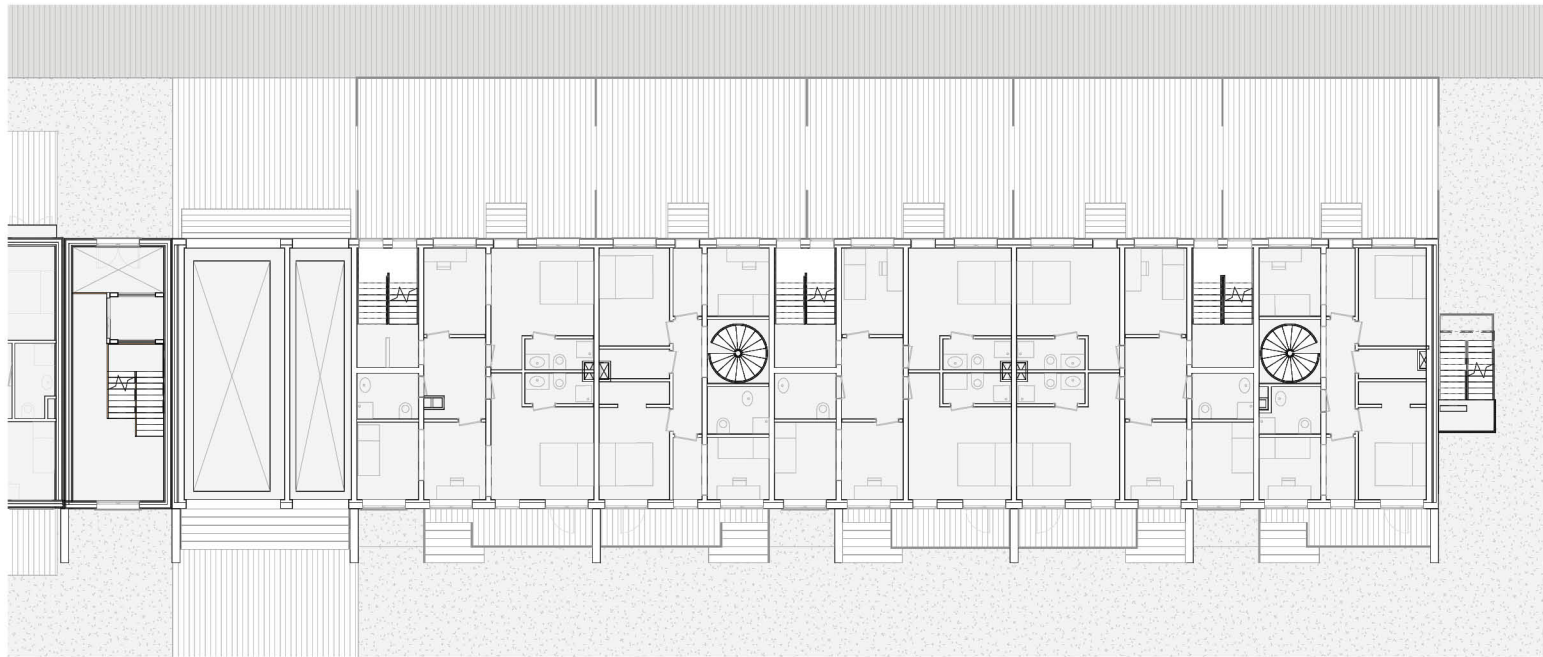


Duplex apartments



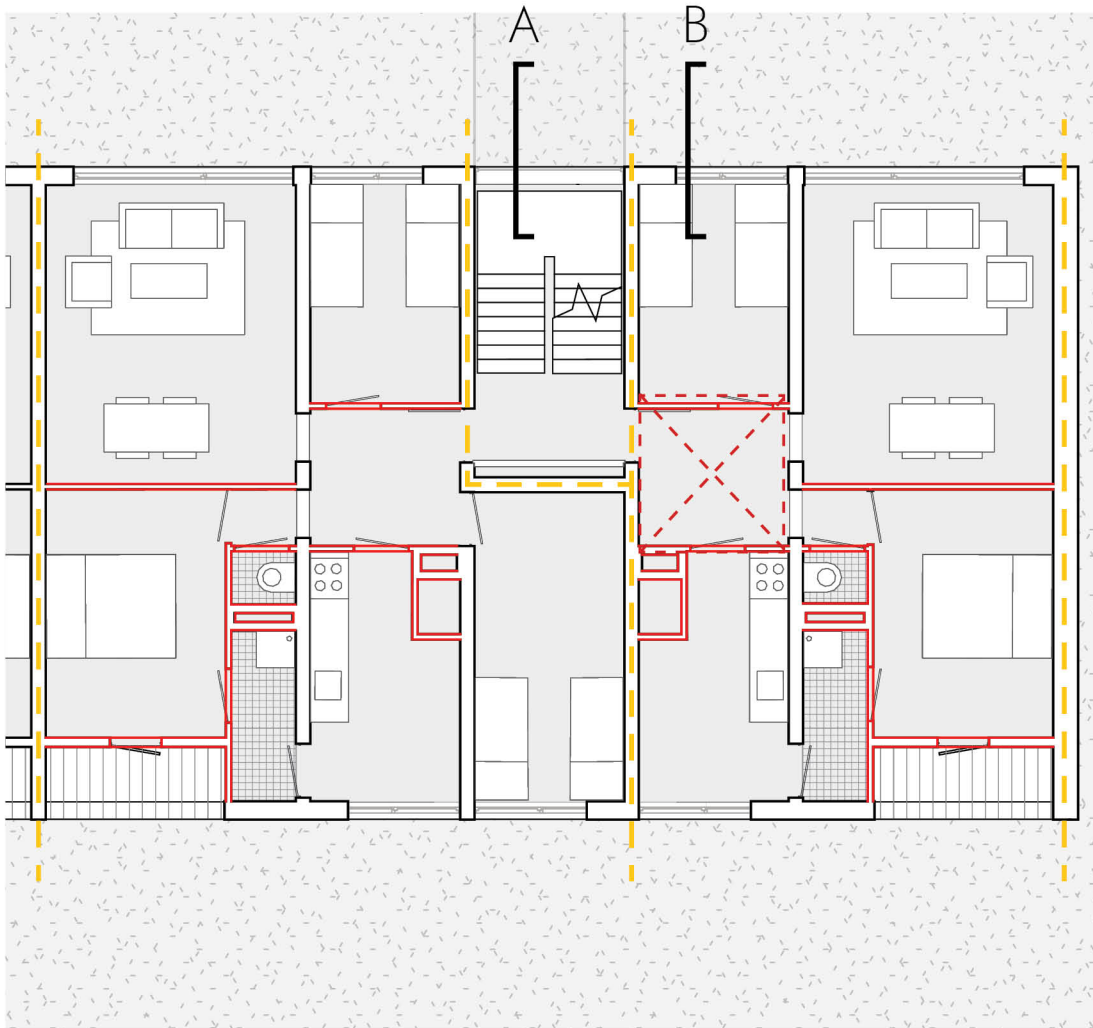
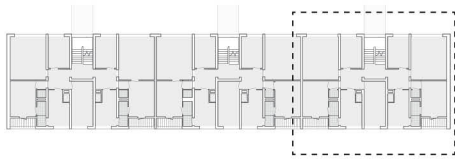
Level 01

Duplex apartments

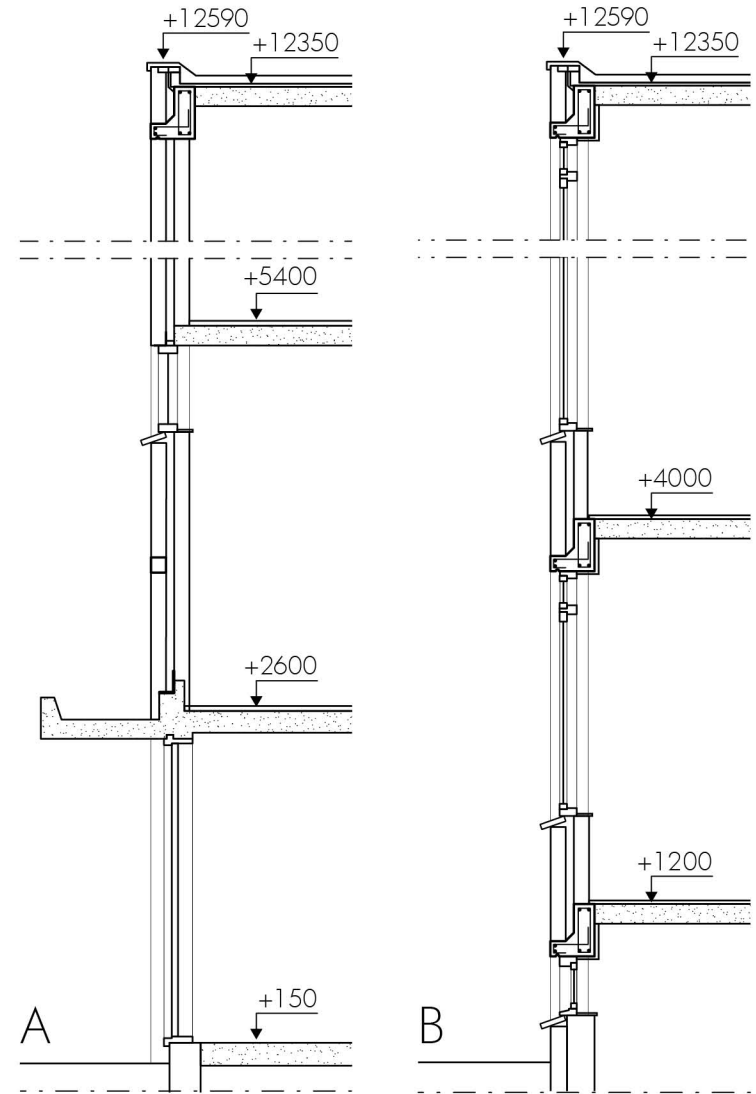


Level 02

Before renovation

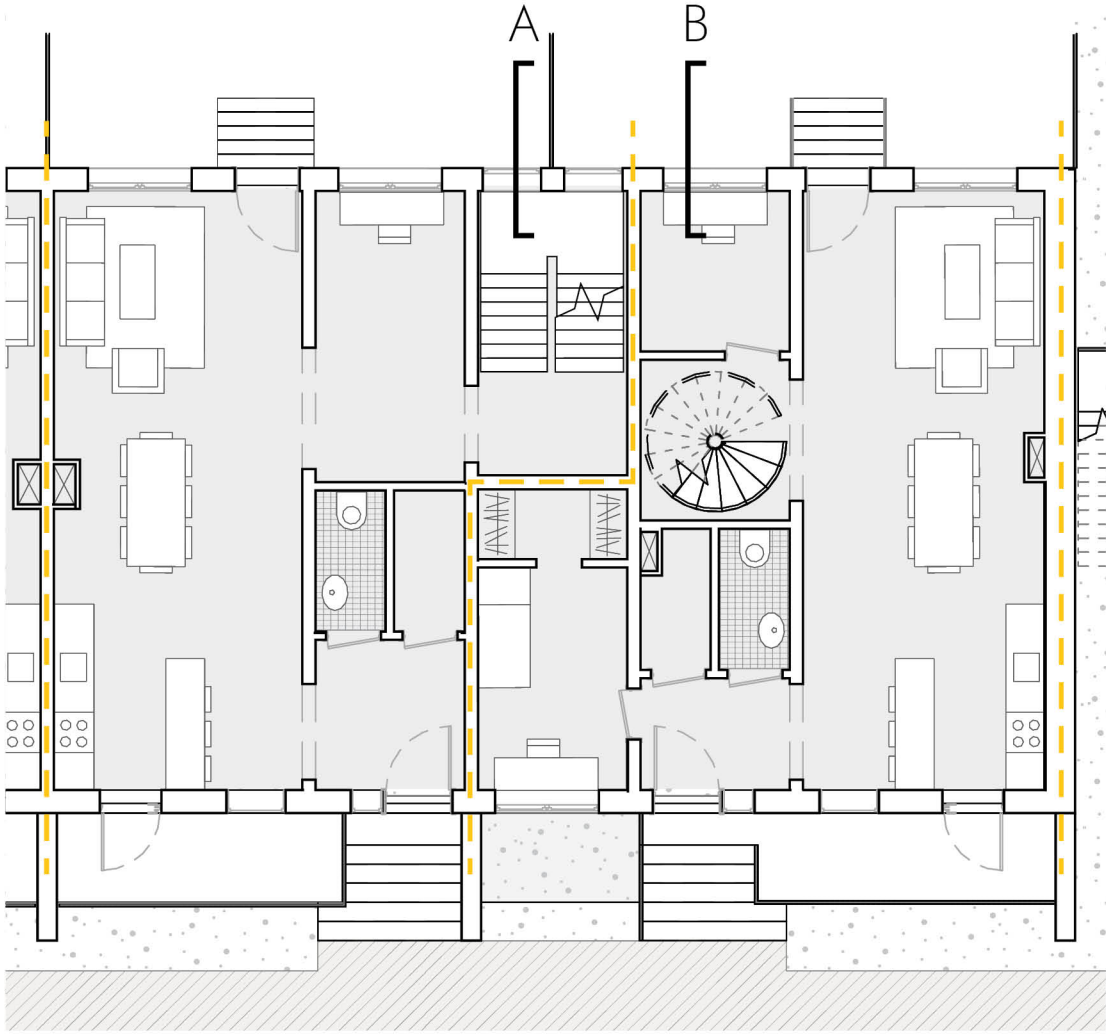
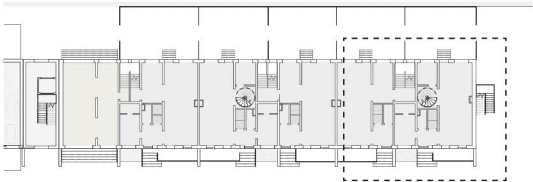


Demolition plan - level 01

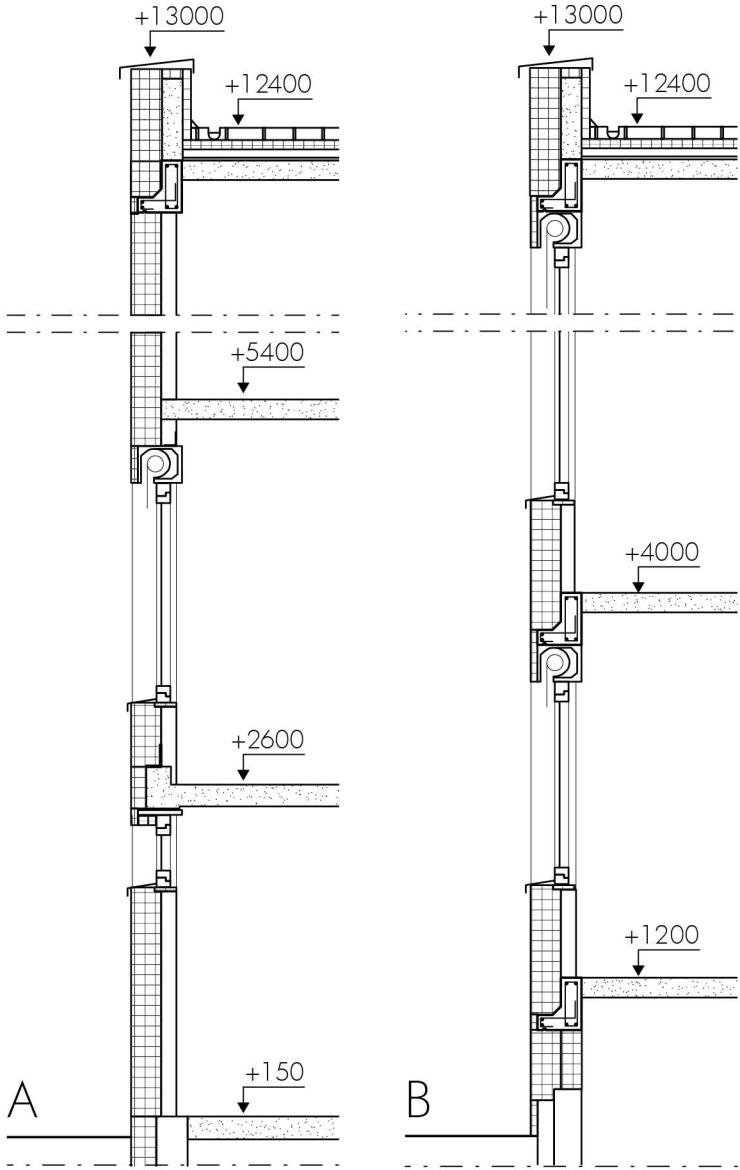


Renovation details 1:50

After renovation

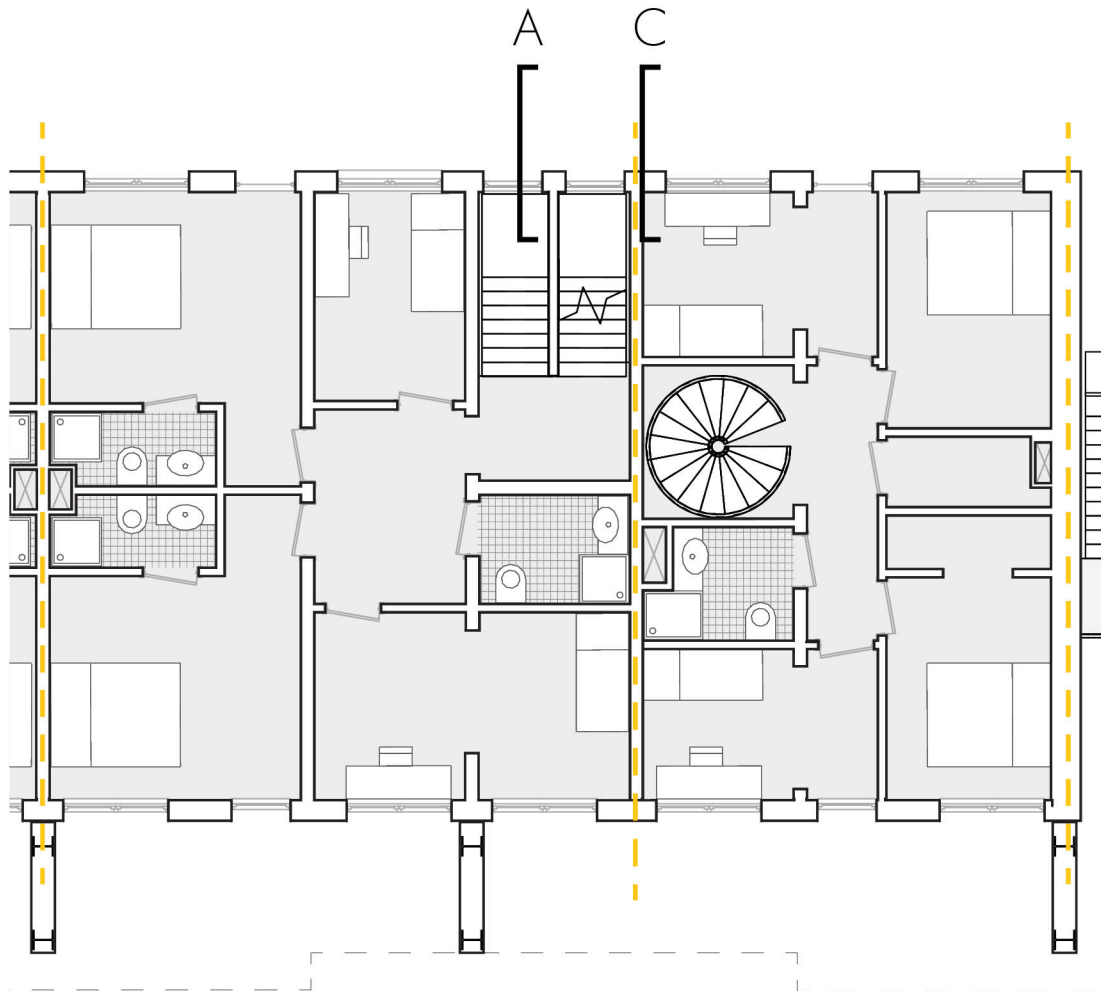
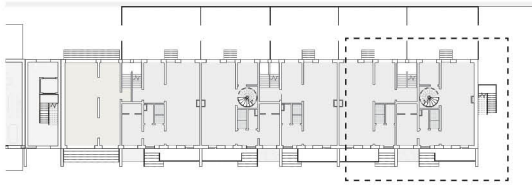


New plan - level 01

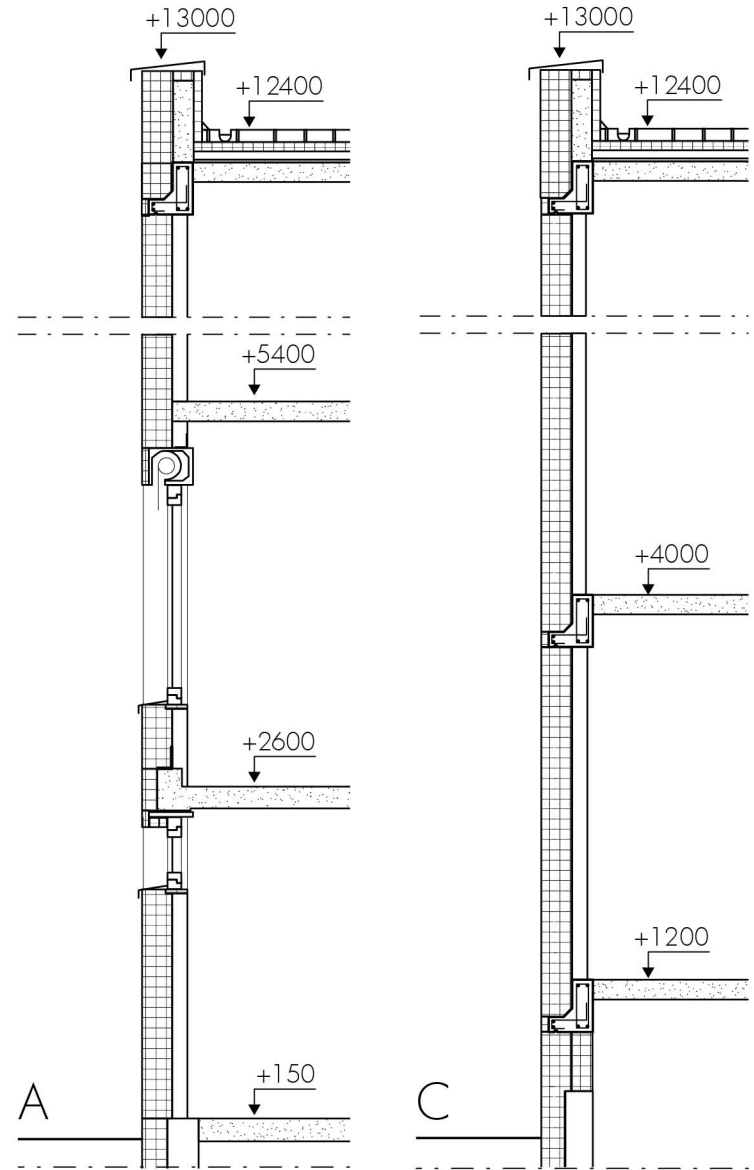


Renovation details 1 : 50

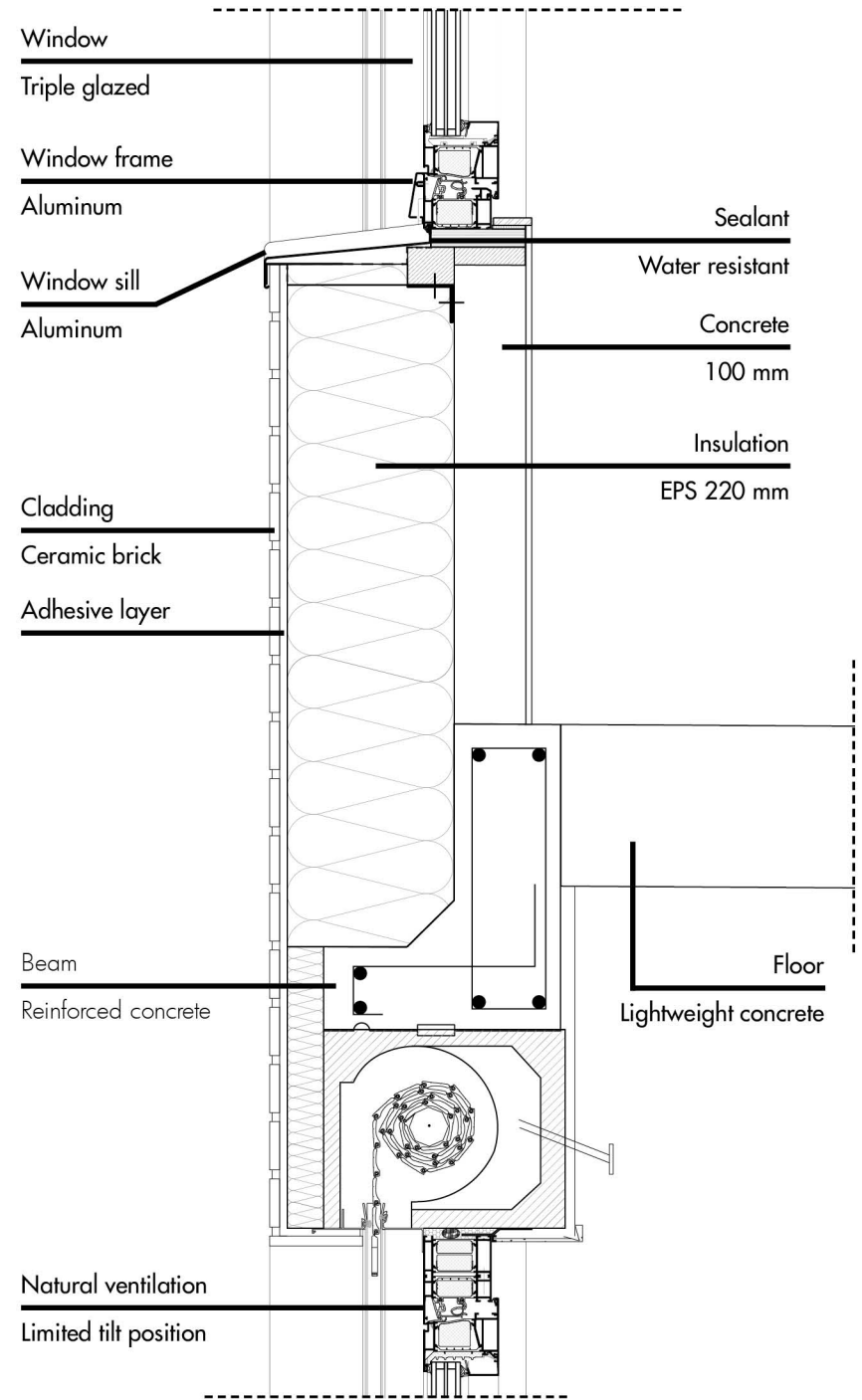
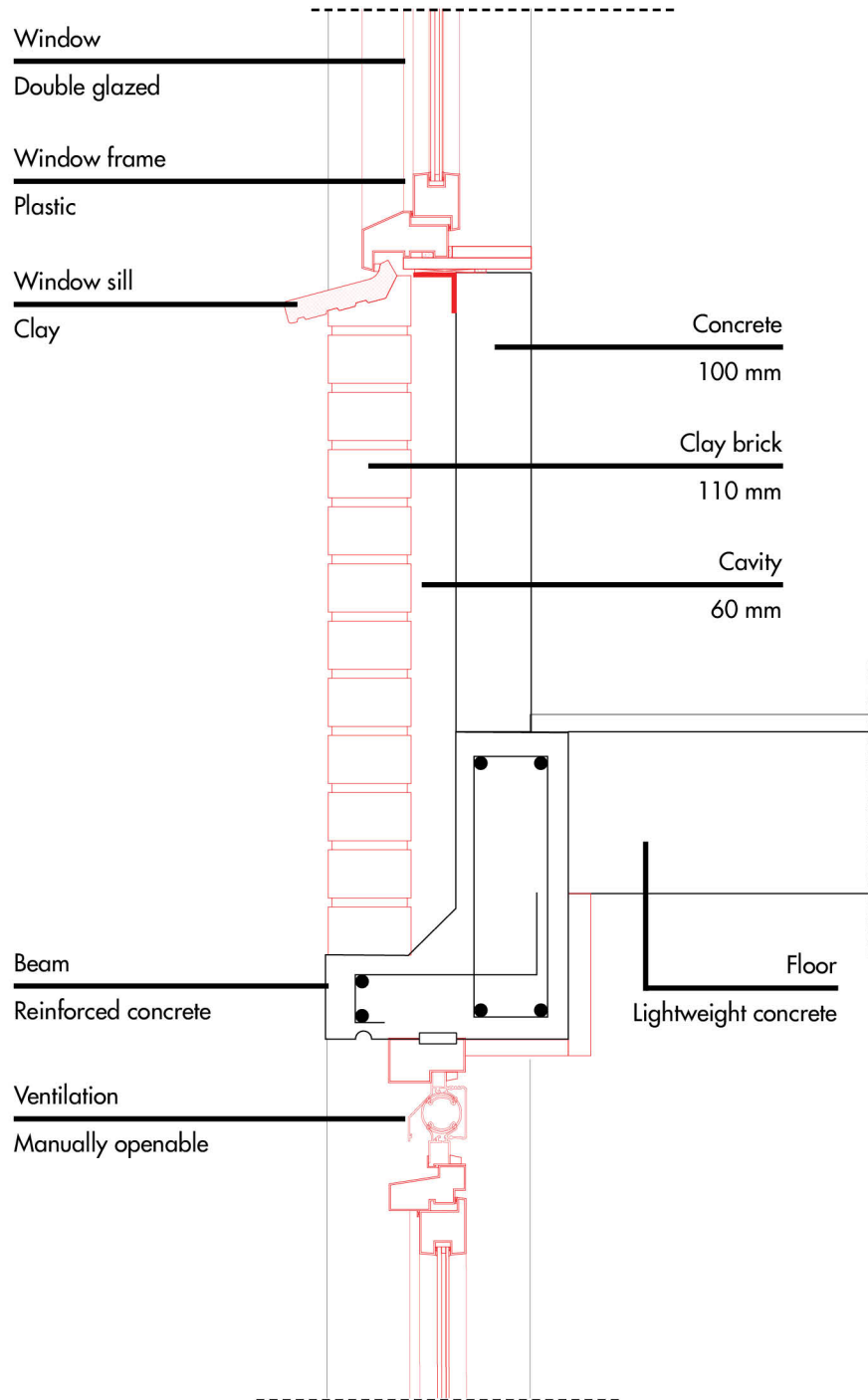
After renovation

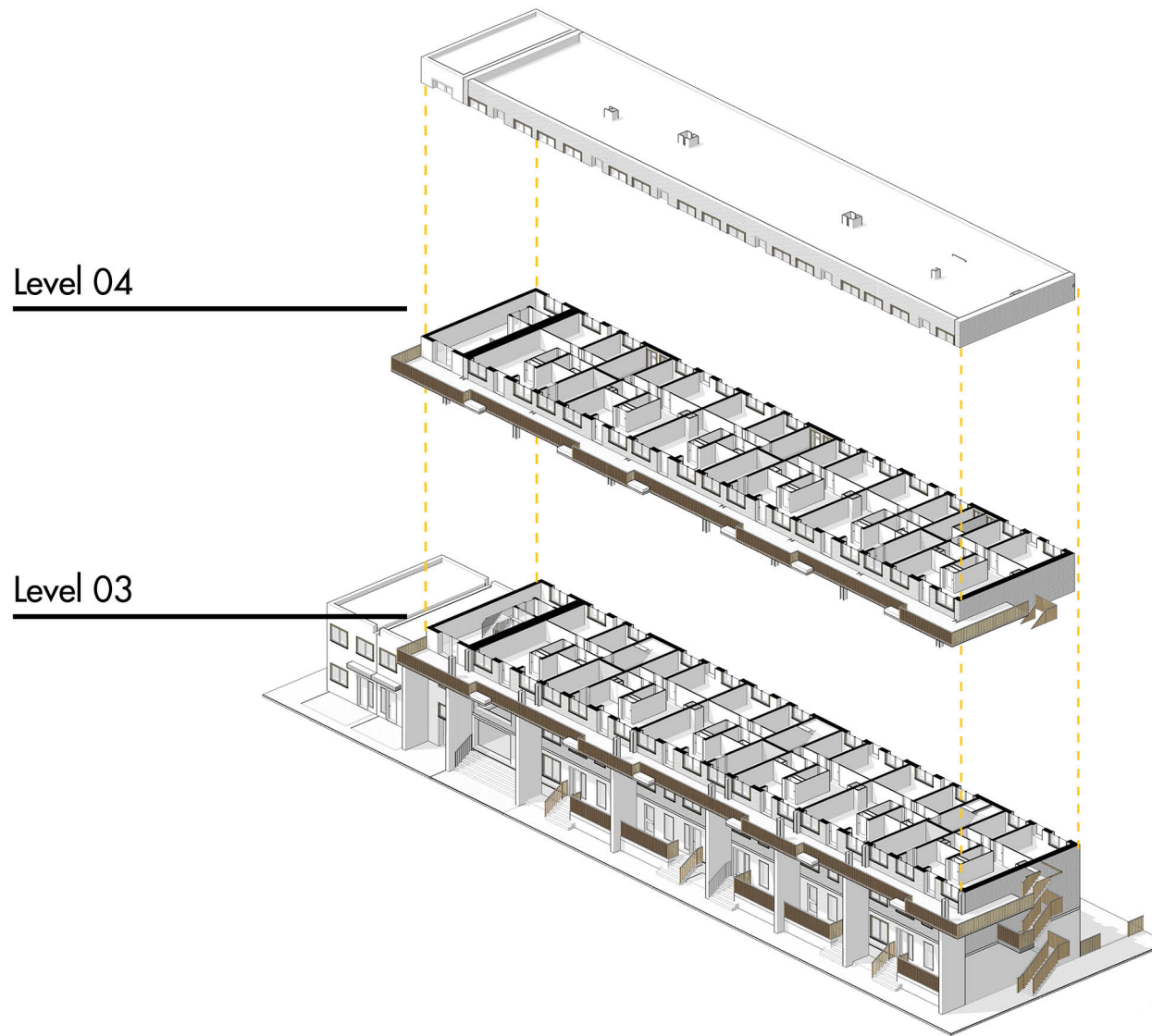


New plan - level 02

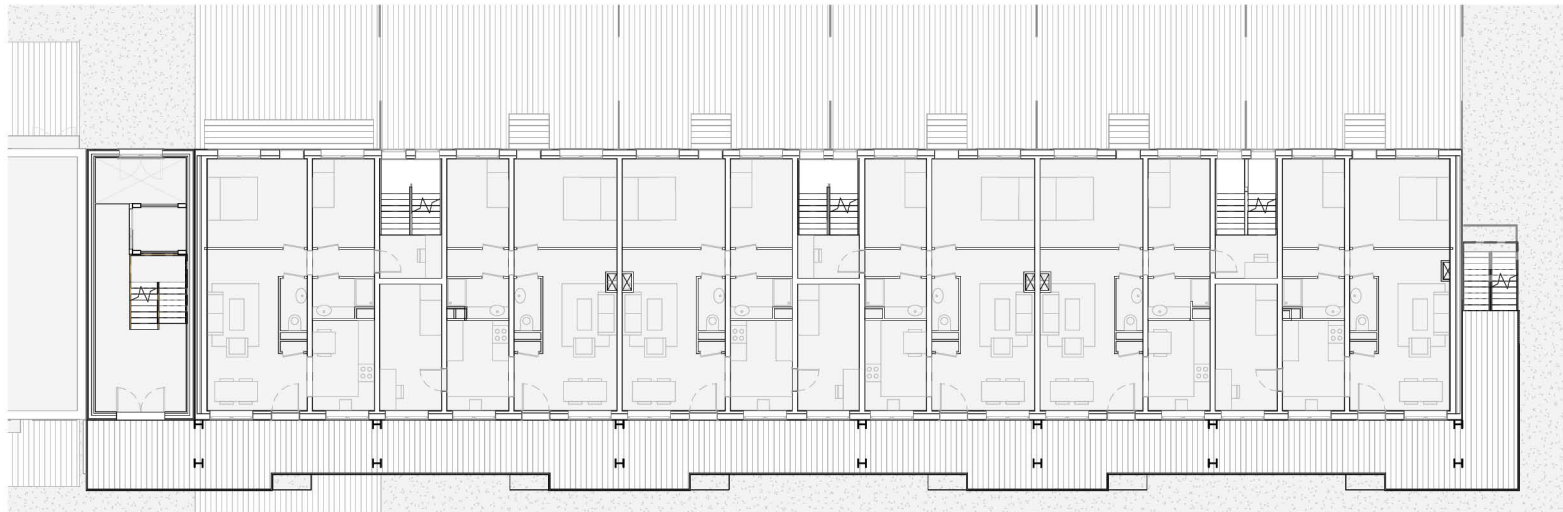


Renovation details 1: 50



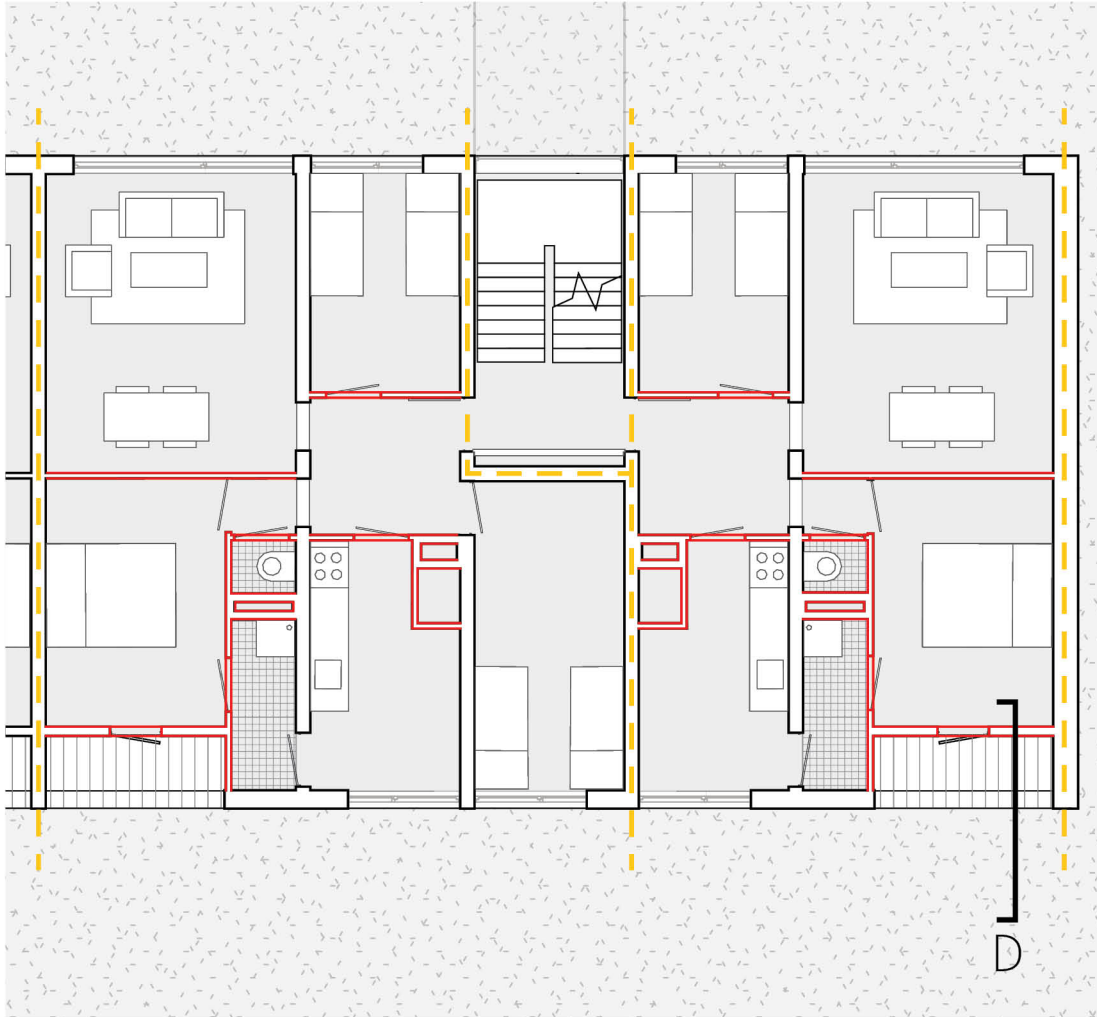
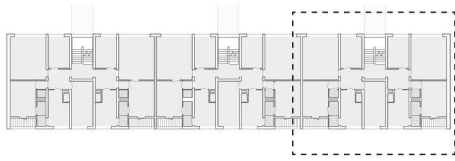


Additional gallery - a street in the sky

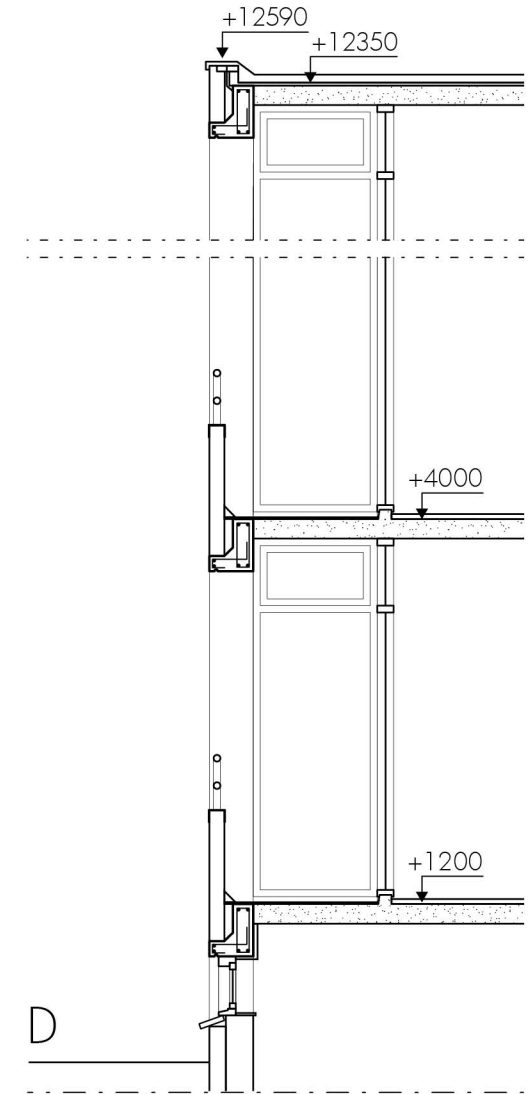


Level 03 and Level 04

Before renovation

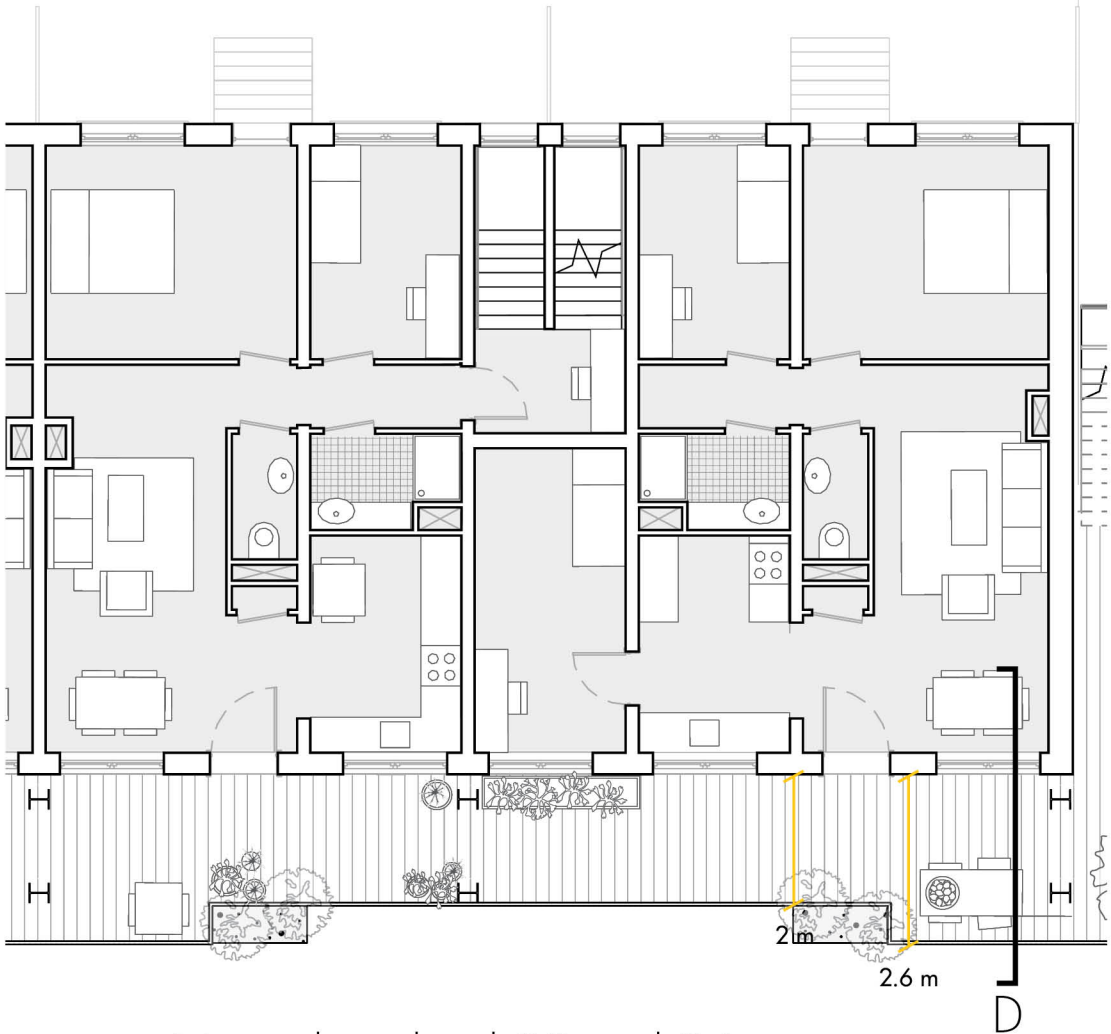
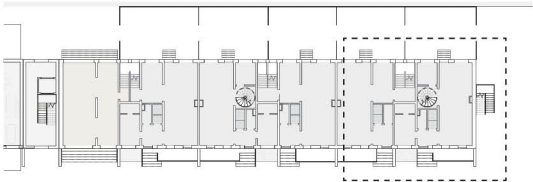


Demolition plan - level 03 and 04

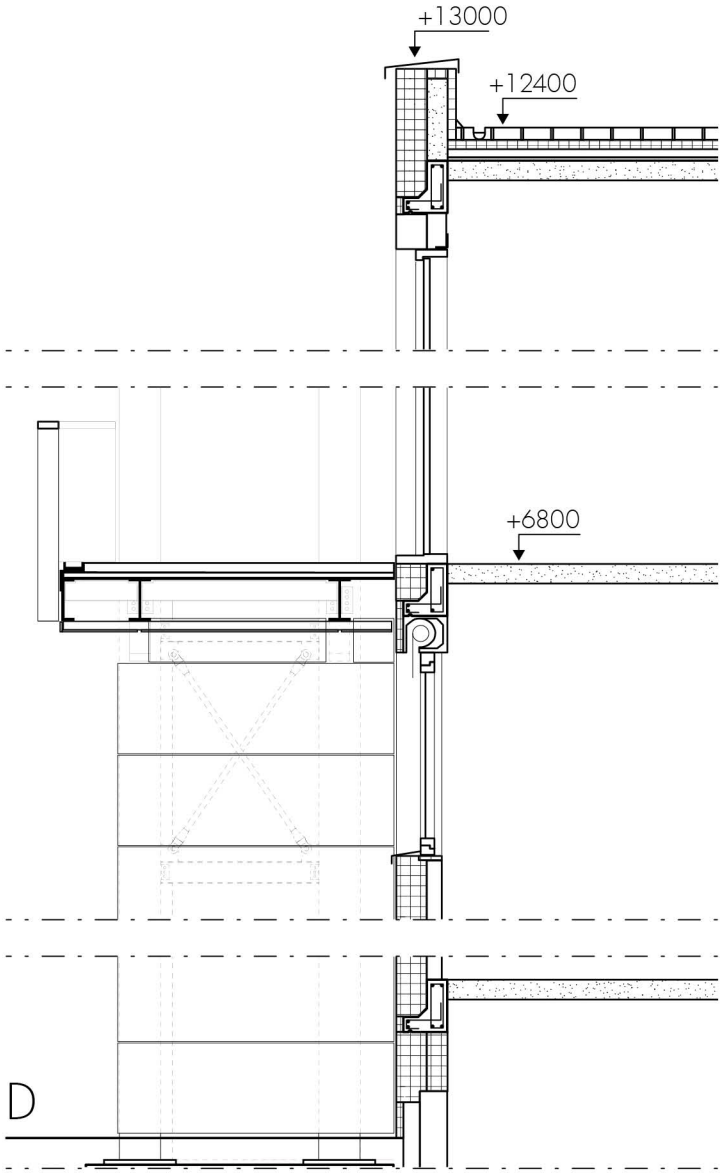


Renovation details 1: 50

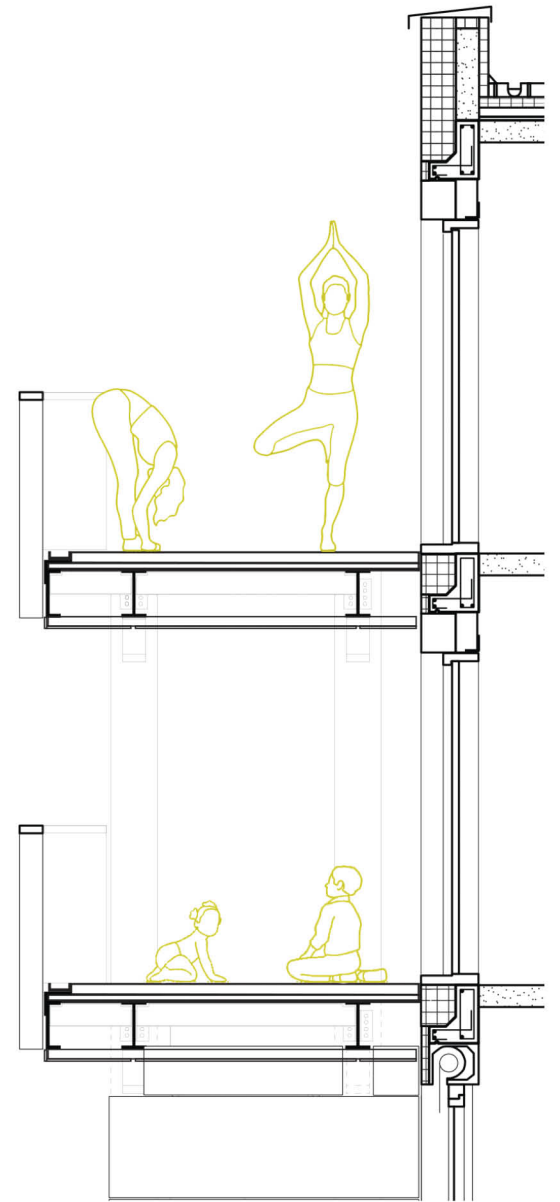
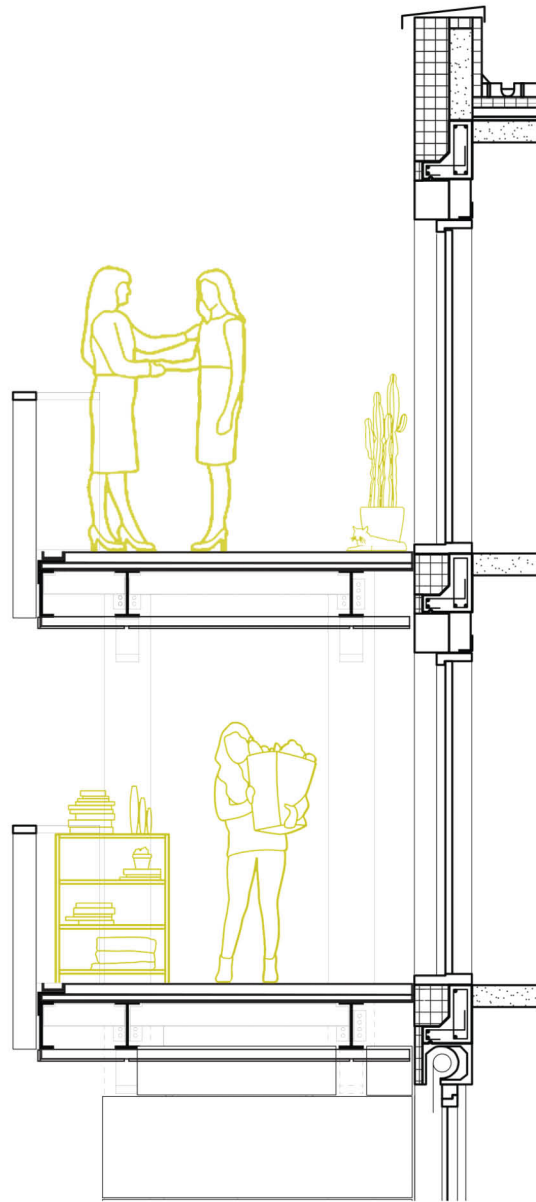
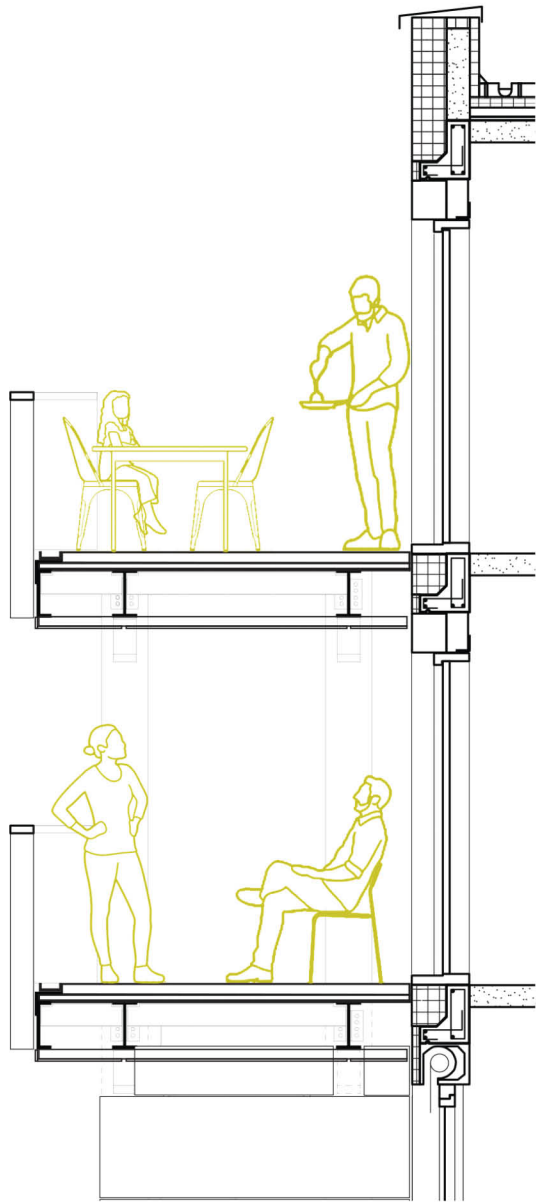
After renovation

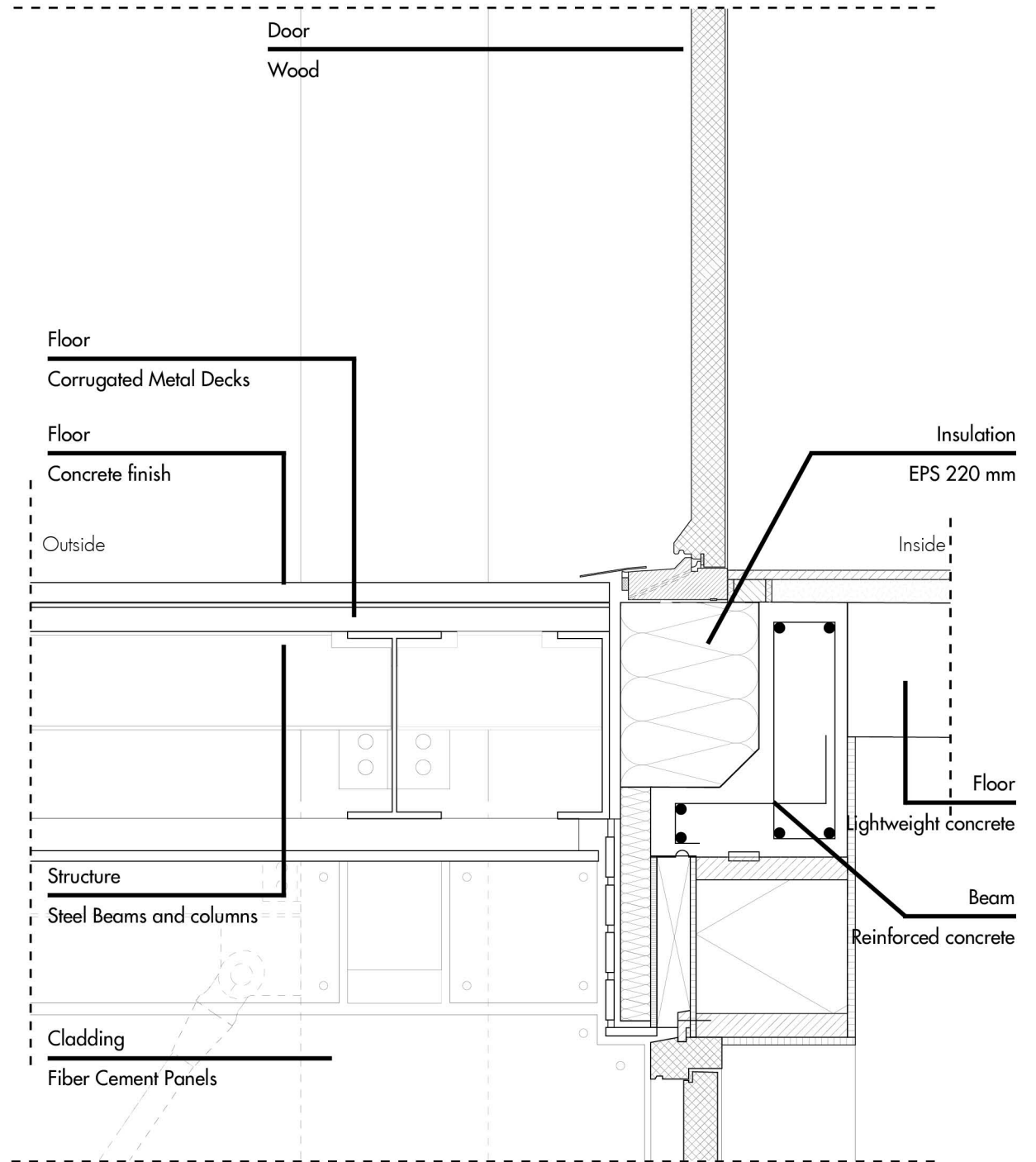
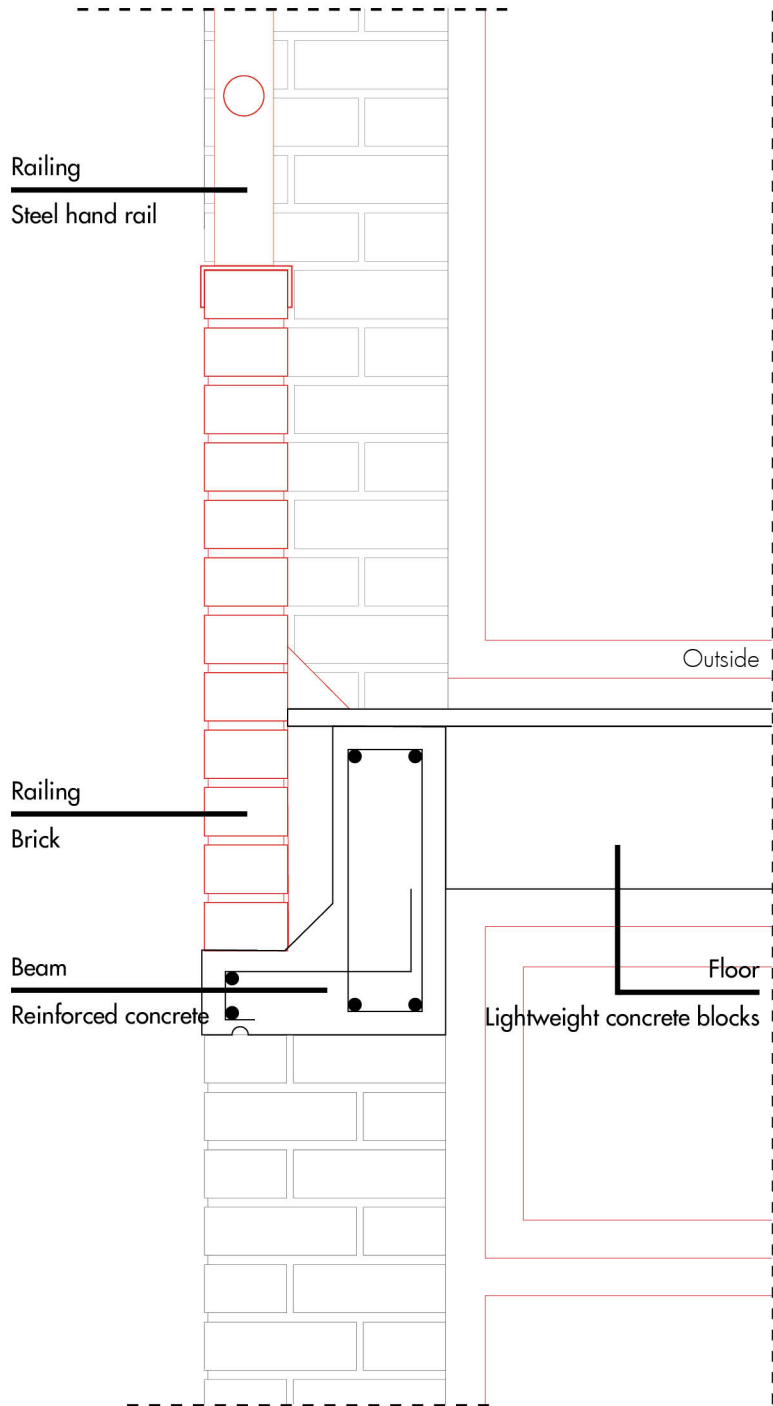


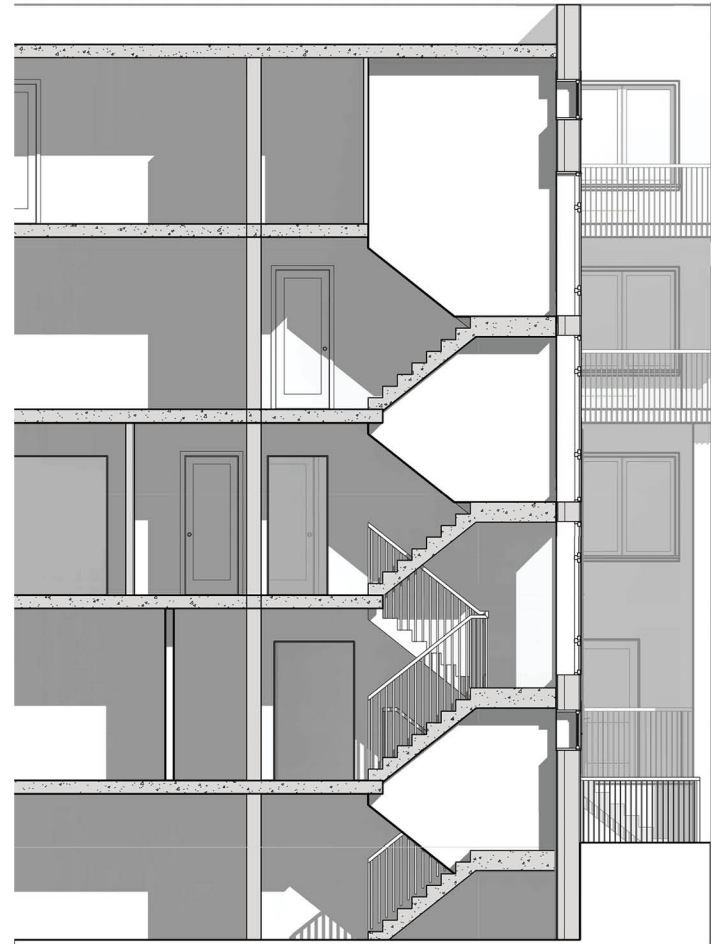
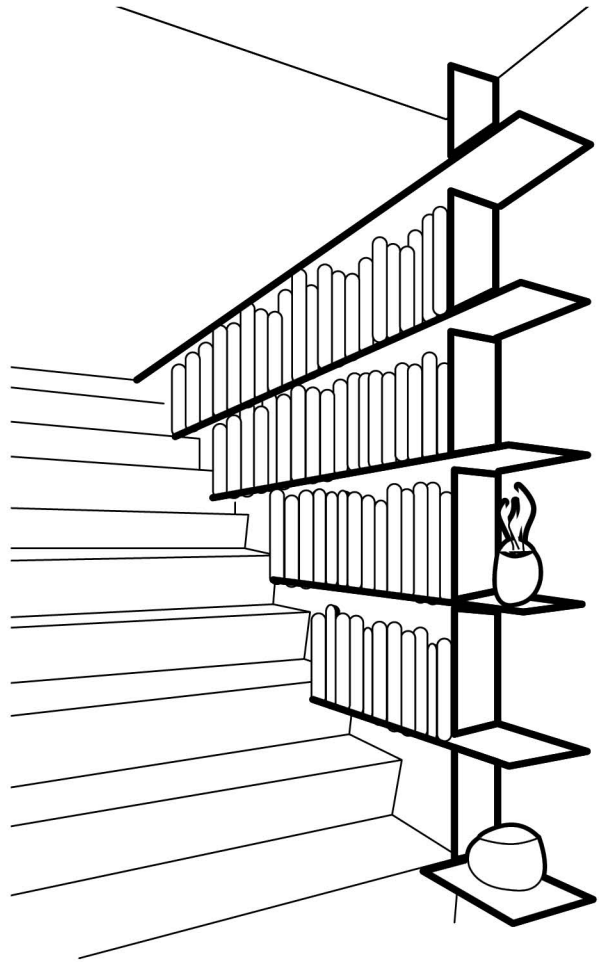
New plan - level 03 and 04



Renovation details 1: 50

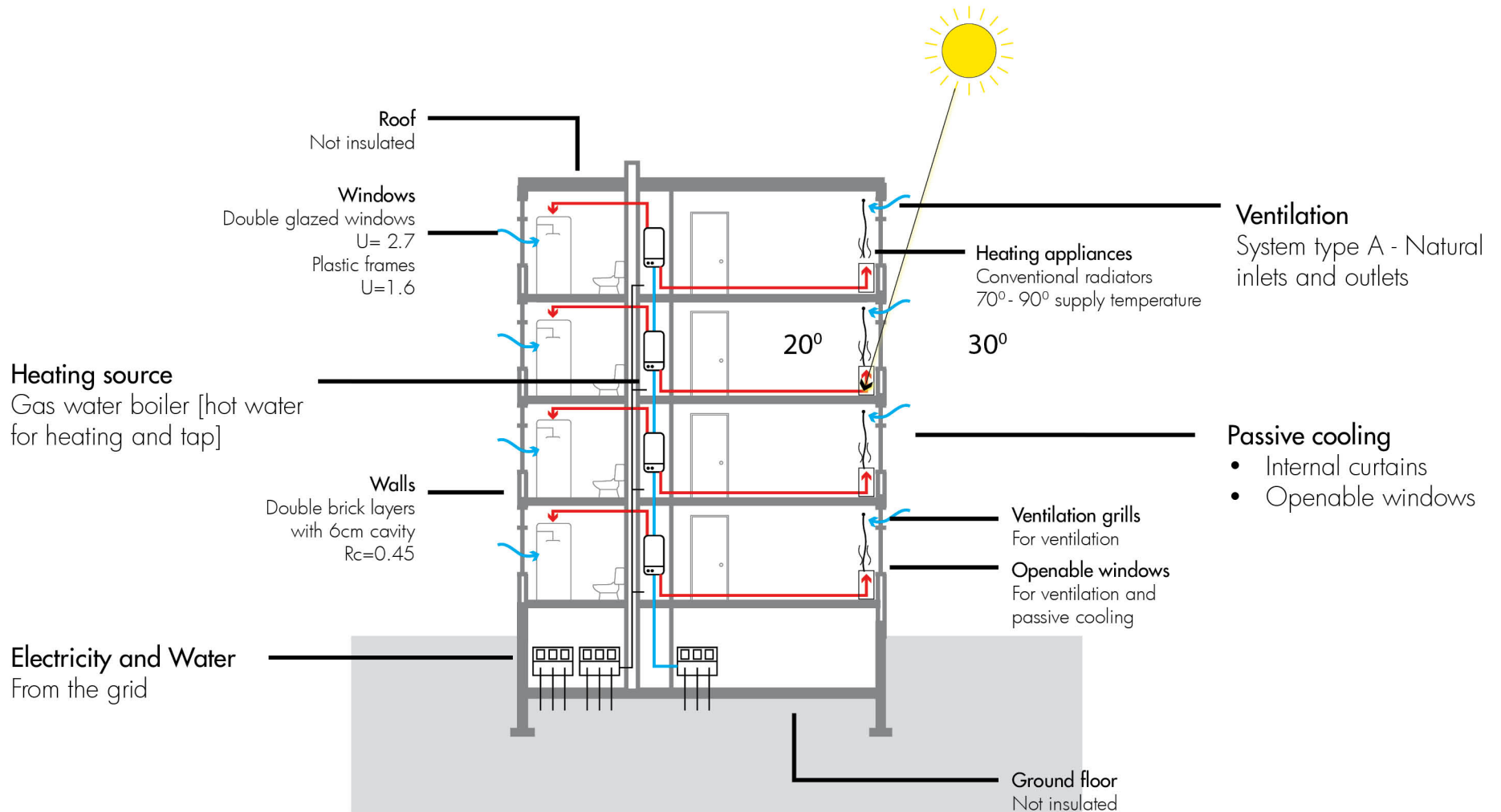




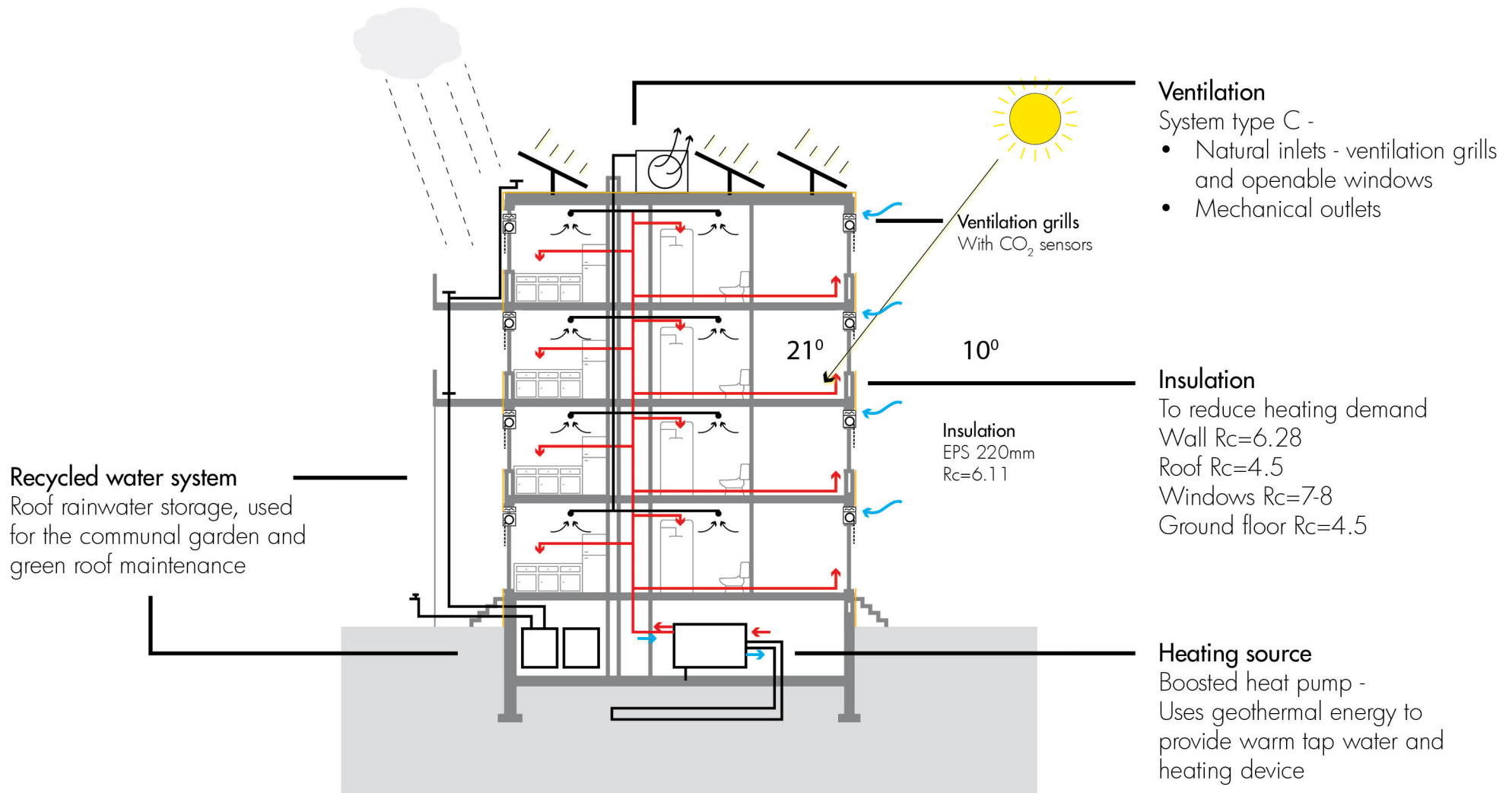




Current climate situation



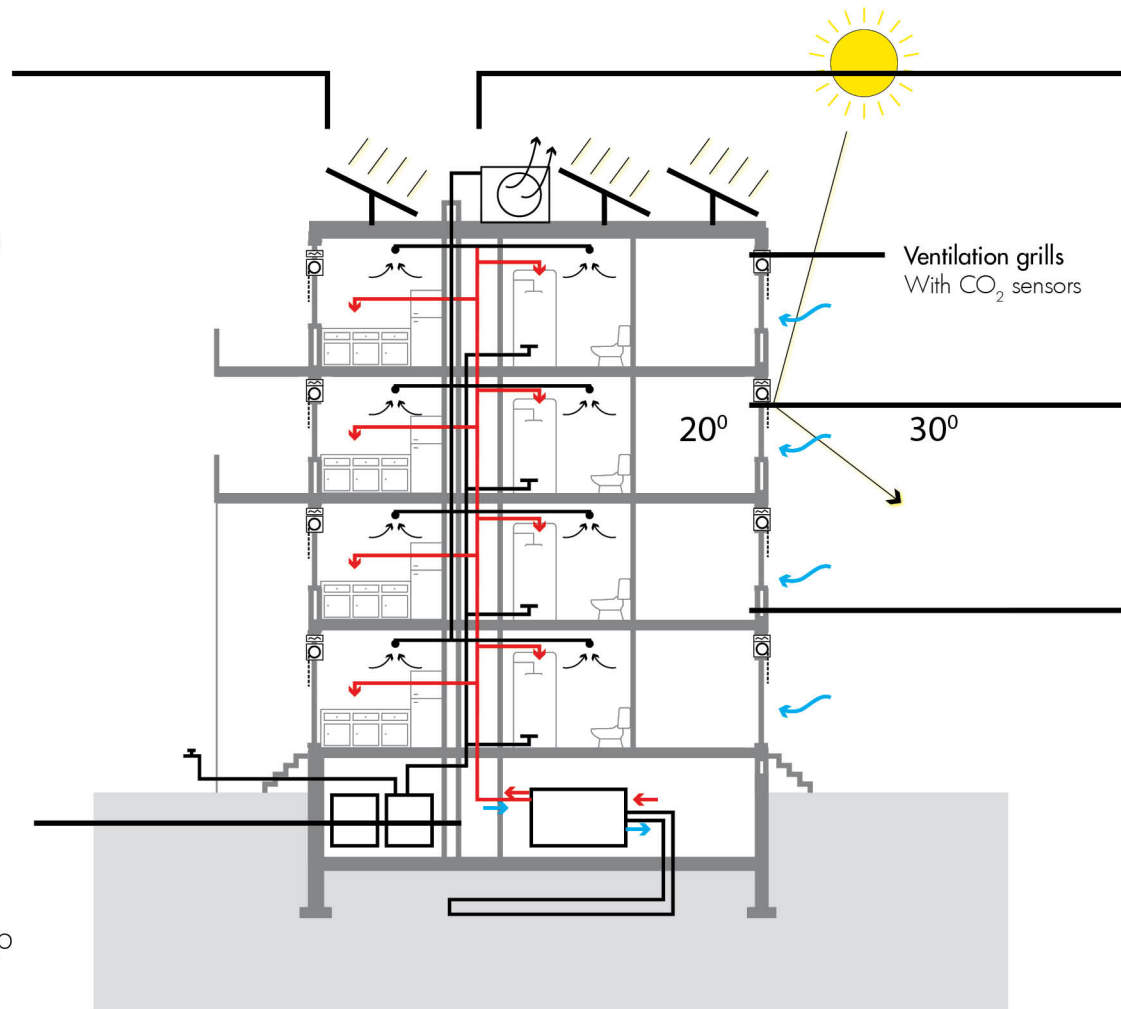
Winter climate concept



Summer climate concept

Electricity generation

PV panels as source for renewable energy
Orientation - East/West
Quantity - depends on the building orientation



Ventilation

System type C -

- Natural inlets - ventilation grills and openable windows
- Mechanical outlets

Passive cooling

External shades,
Reducing heat gain

Insulation

Wall $R_c=6.28$

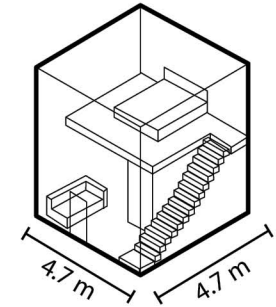
Heating source

Boosted heat pump -
Uses geothermal energy to
provide warm tap water tap

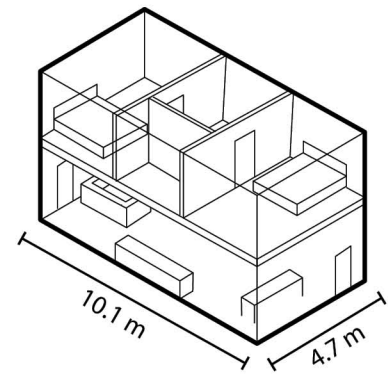
New housing typologies



New housing typologies

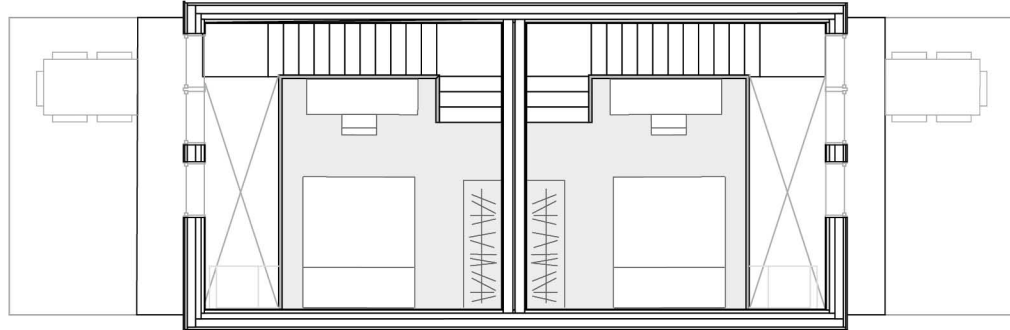


Type A

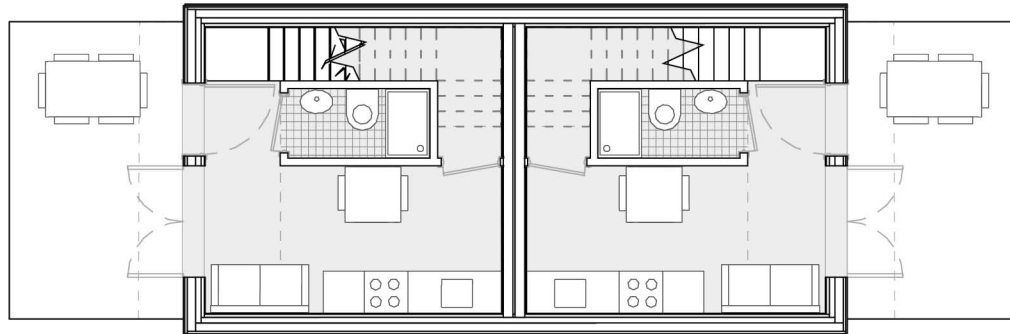


Type B

Type A | Studio



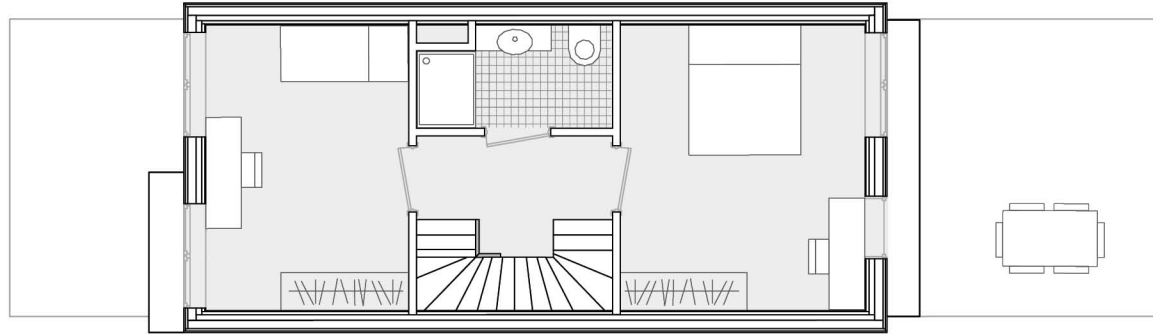
Level 01



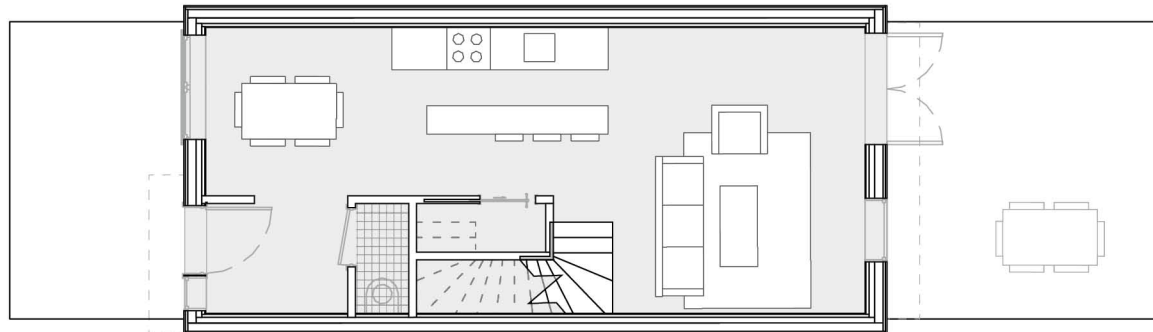
Level 00

Floor plans

Type B | Single family house

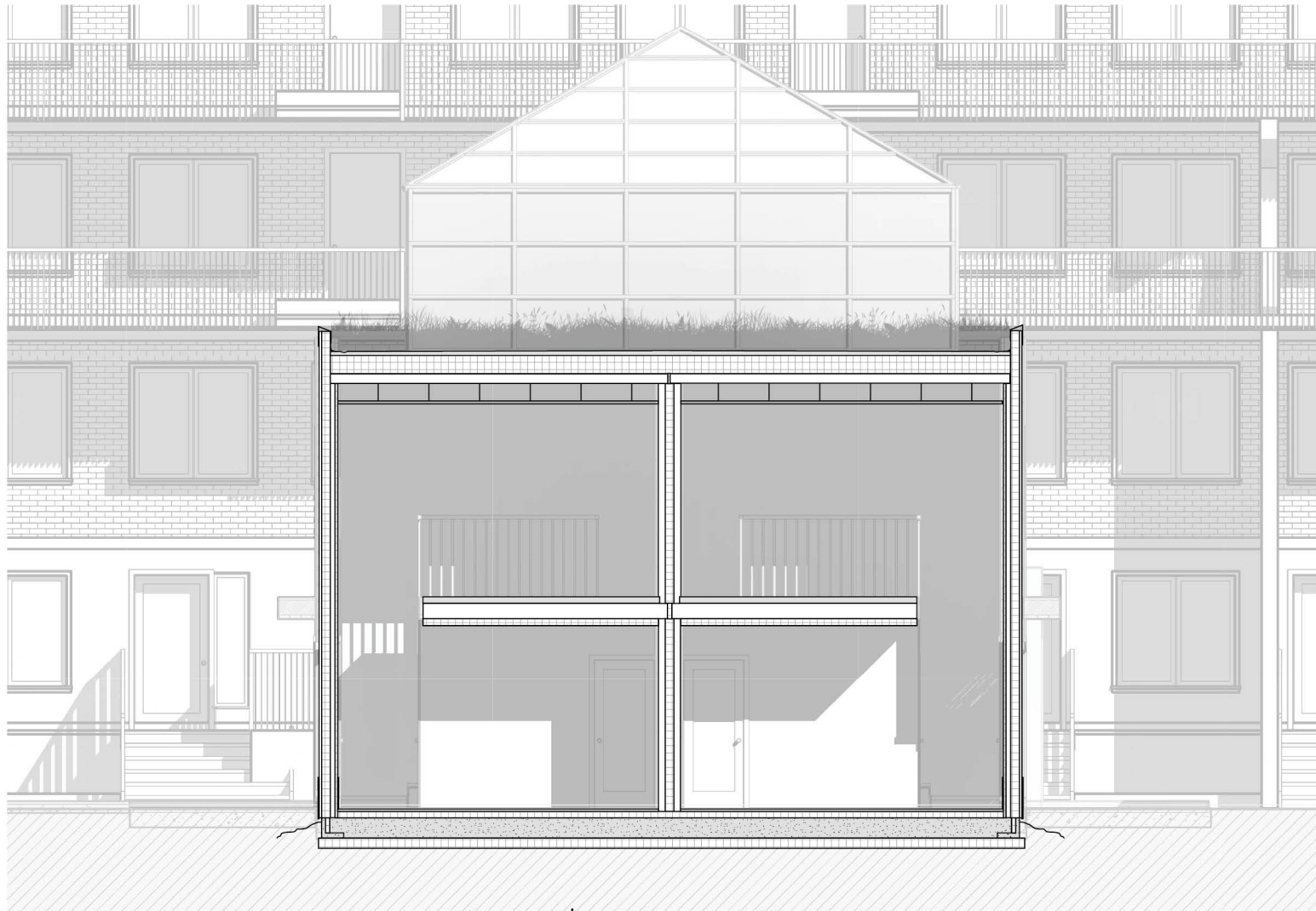


Level 01



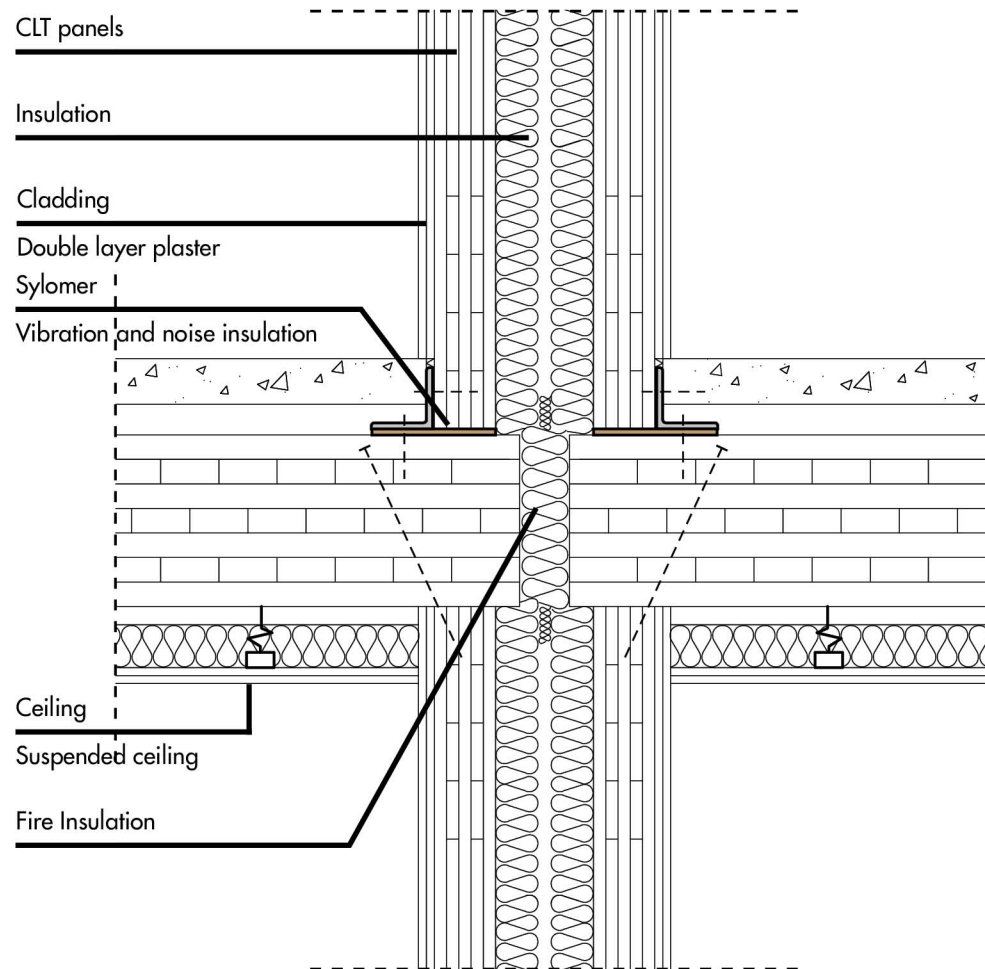
Level 00

Floor plans



Example section - Type A

Structural concept



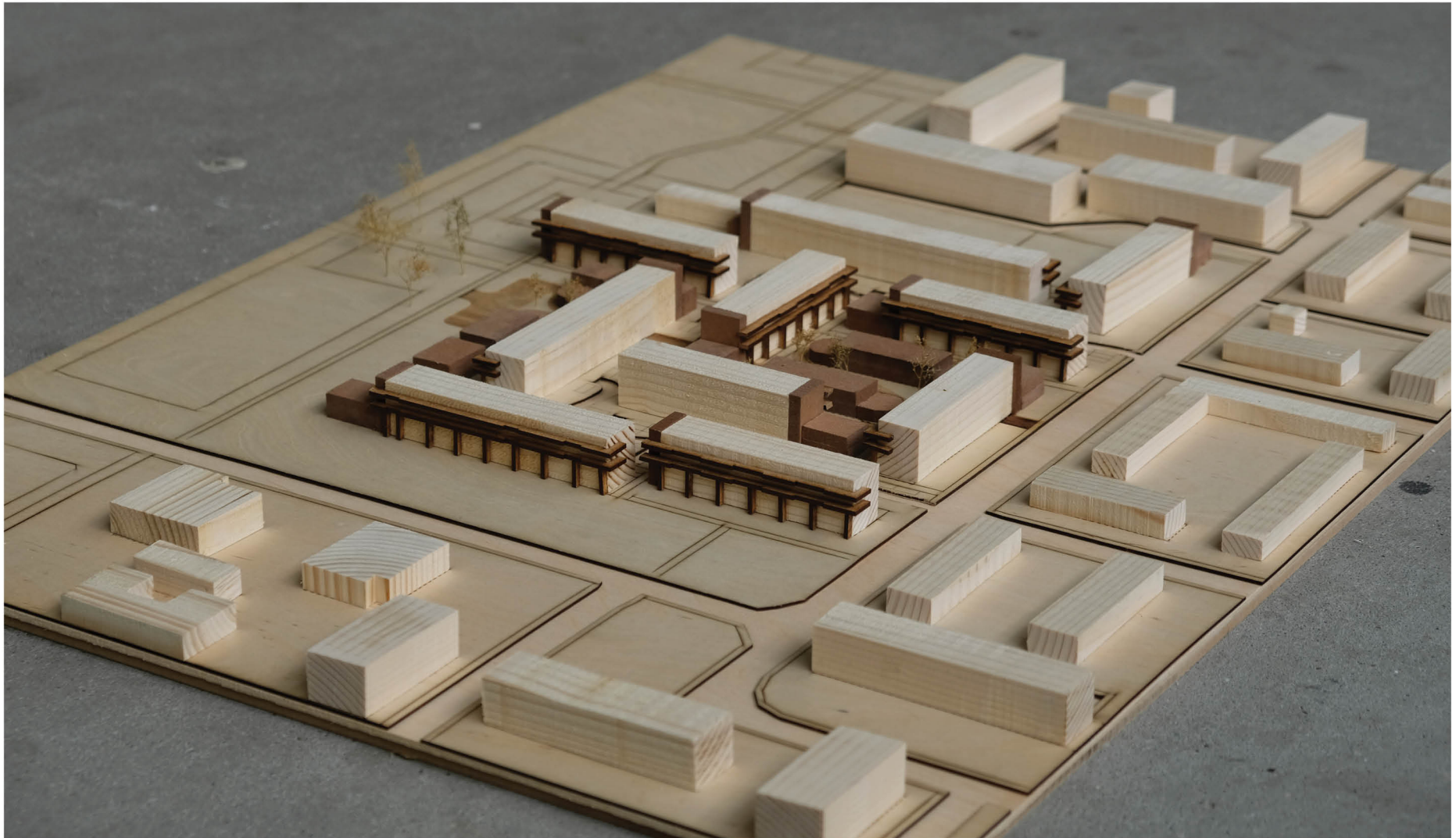
Green areas



Before



After



Reflection

Sense of achievement



2 BEDROOMS
24 units
[3 persons per unit] x 24
= 72 potential residents

3 BEDROOMS
24 units
[4 persons per unit] x 24
= 96 potential residents

4 BEDROOMS
10 units
[5 persons per unit] x 10
= 50 potential residents

5 BEDROOMS
10 units
[6 persons per unit] x 10
= 60 potential residents

UNIT A
24 units
[2 persons per unit] x 24
= 48 potential residents

UNIT B
8 units
[3 persons per unit] x 8
= 24 potential residents

TOTAL
100 apartments
350 potential residents
[previously 335]

Sense of community

Personal connection
Study conclusions
Role of architect
Challenge



Thank you!

Mentors:

Harald Mooij
Florian Eckardt
Robbert Guis

Family
Friends
Colleagues