

**Makers Mix Workhome**  
A return of dwelling and fabrication within the city



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Advanced Housing Design Studio

## Index

- Introduction & Motive
- Overview of Research
- Research Conclusions and Starting Points
- Design



## Introduction



*Office in a Small City* (1953)  
by Edward Hopper



Workhome



Workspace shortage



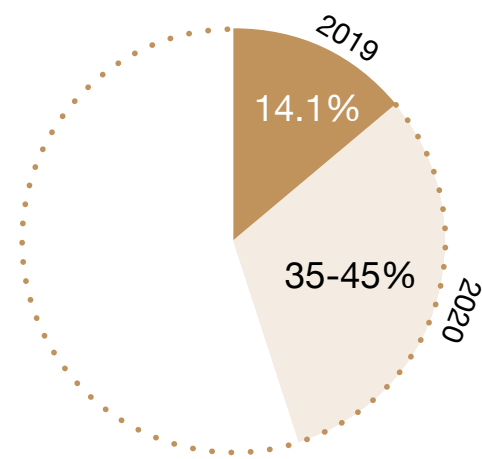
Creatives

### **Research Question**

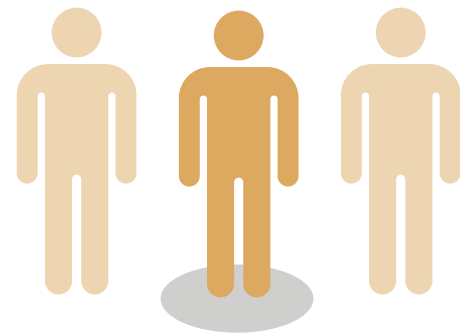
How can the introduction of a workhome typology within Keilekwartier address the global shift in required work-related space within housing while alleviating creative workspace shortages in Rotterdam?

## Trend in Working from Home

The Netherlands - 2019



Working From Home



1 in 3 worked from home occasionally in 2019

1<sup>ST</sup>

Remote Workers Index



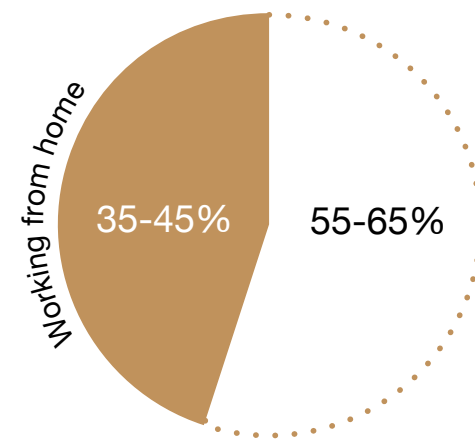
2016 Flexible Work Act



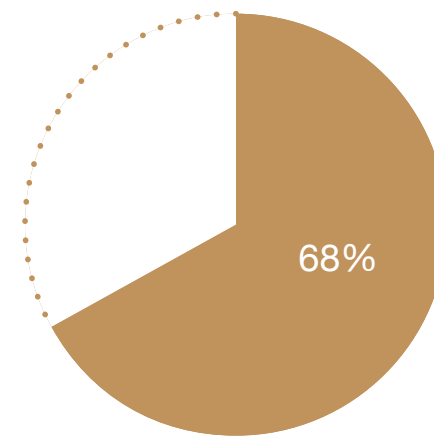
7% Growth annually Working from Home

## Trend in Working from Home

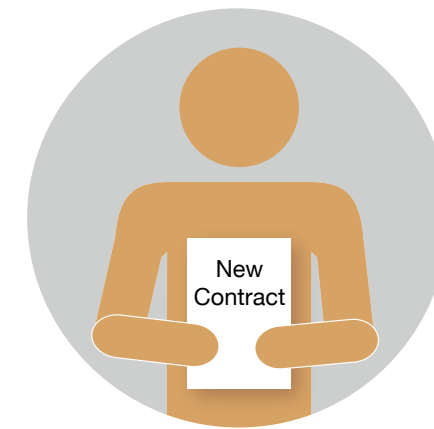
The Netherlands - 2020



Dutch Workforce



Predicted Future Increase in Working from Home



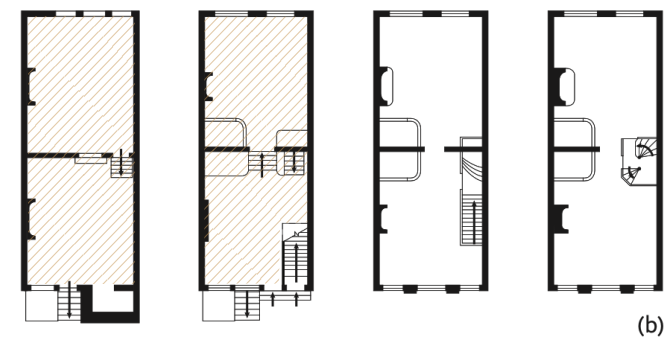
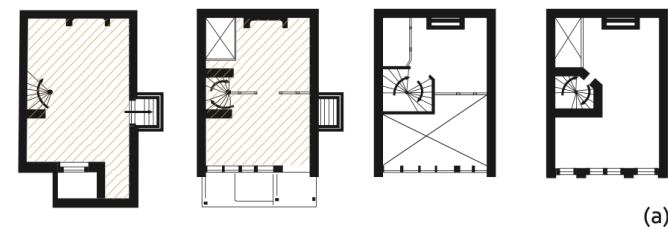
10% want to work from home full-time post COVID-19

# History of Working from Home

## Work Homes in The Netherlands



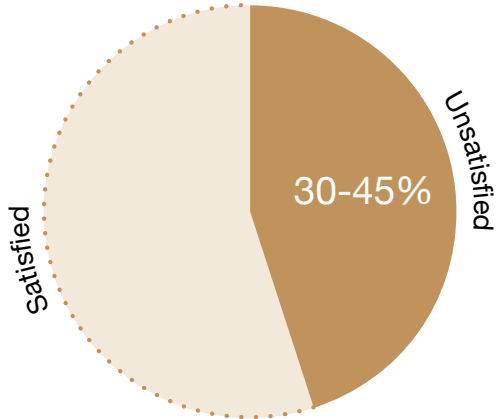
Dutch Merchant House



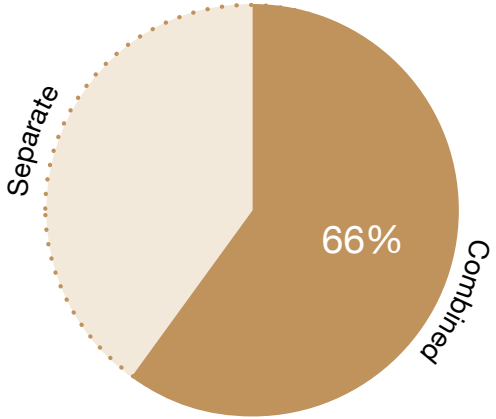
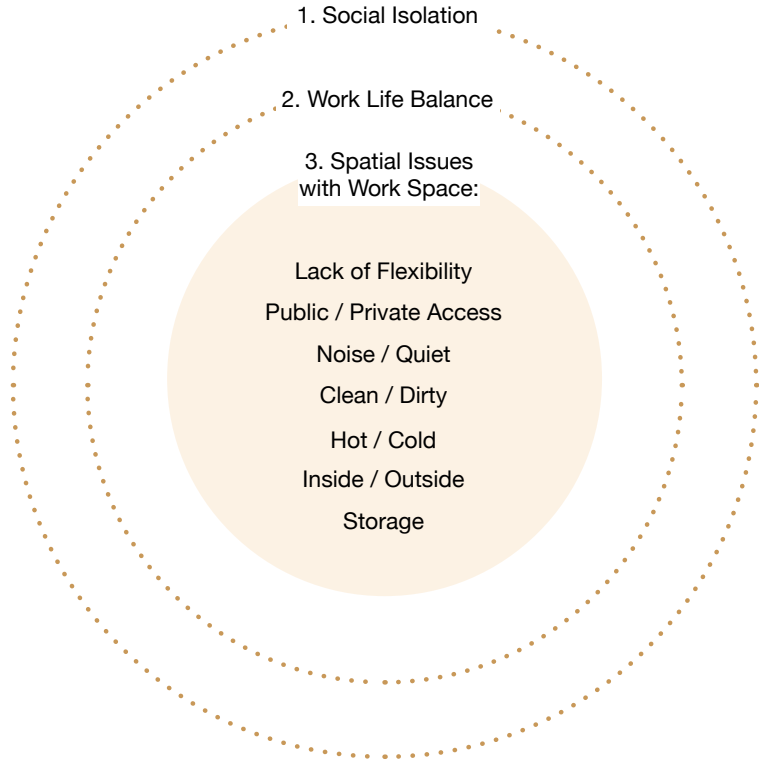
Weavers House



### Issues with working from home



Issue with working from home



Do not have separate work space

**77%** Storage

**52%** Noise & odors

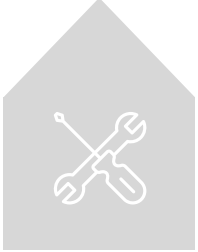
**84%** Inviting Clients

# Workhome Typologies

## Typologies



Home-Dominated



Work-Dominated



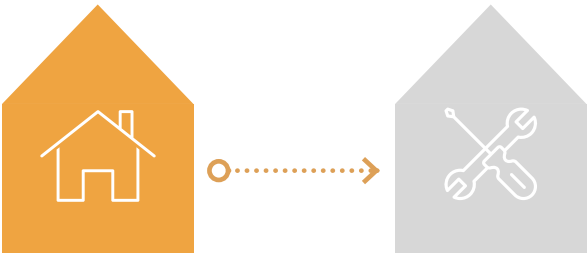
## Spatial Strategies



Live-with

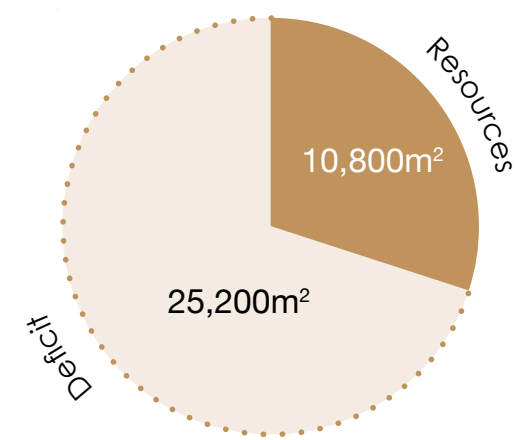


Live-adjacent



Live-nearby

## Workspace Issues in Rotterdam



2025: Required Studio Space

36,000m<sup>2</sup>

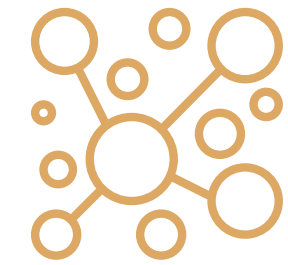


x 560

2025: Creators Needing Workspace



Lack of Traffic Flow



Required Clustering Approach

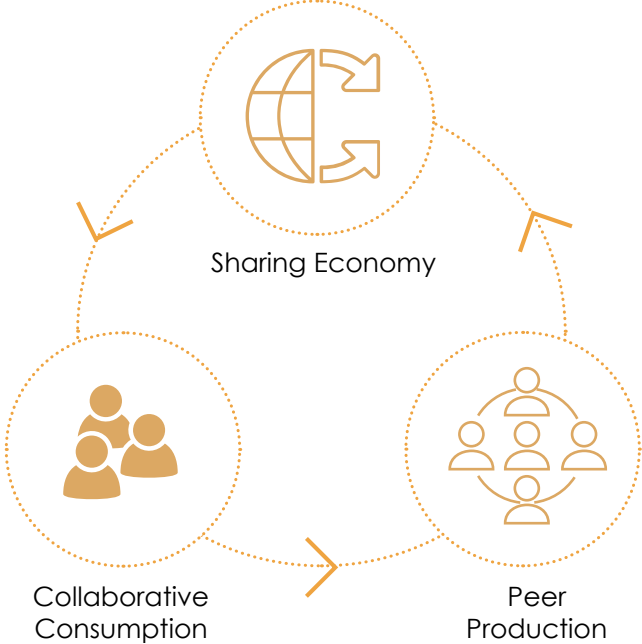


## Rotterdam's Ambition for the M4H Area



# How a Workhome can Achieve Rotterdam's Ambitions for Keilekwartier

Circularity



# How a Workhome can Achieve Rotterdam's Ambitions for Keilekwartier

## Circularity



Fab Lab



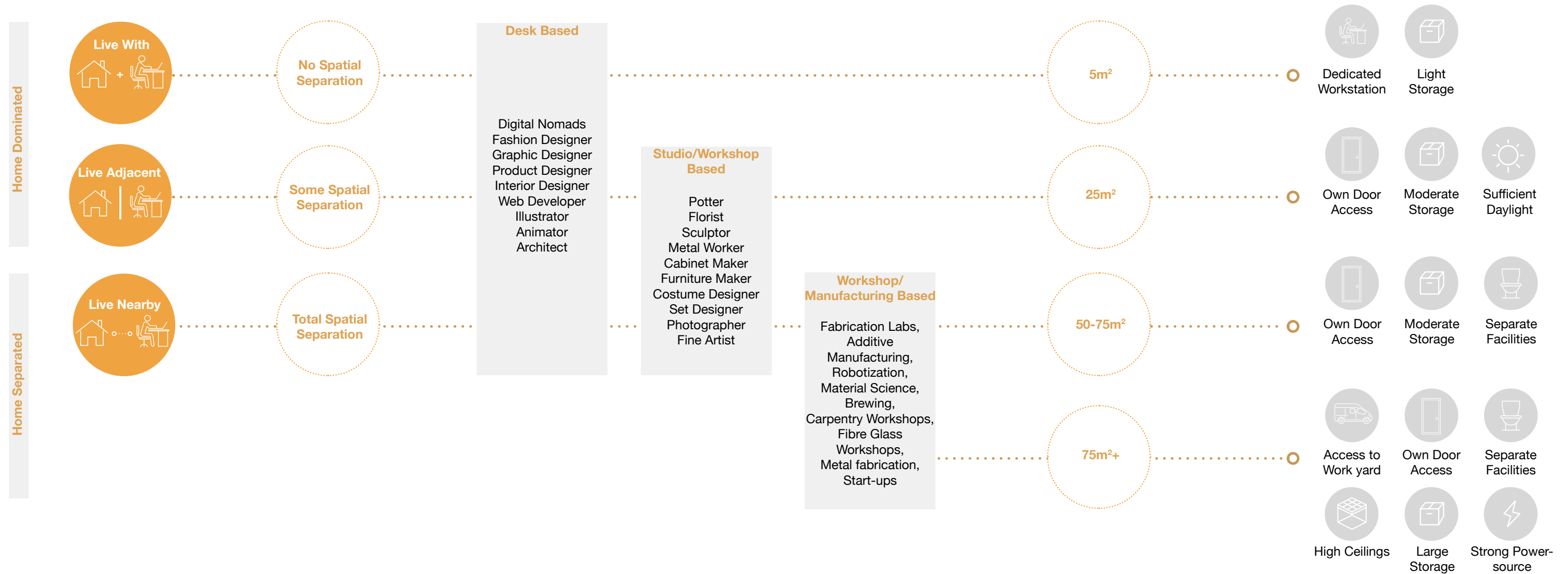
Makerspace



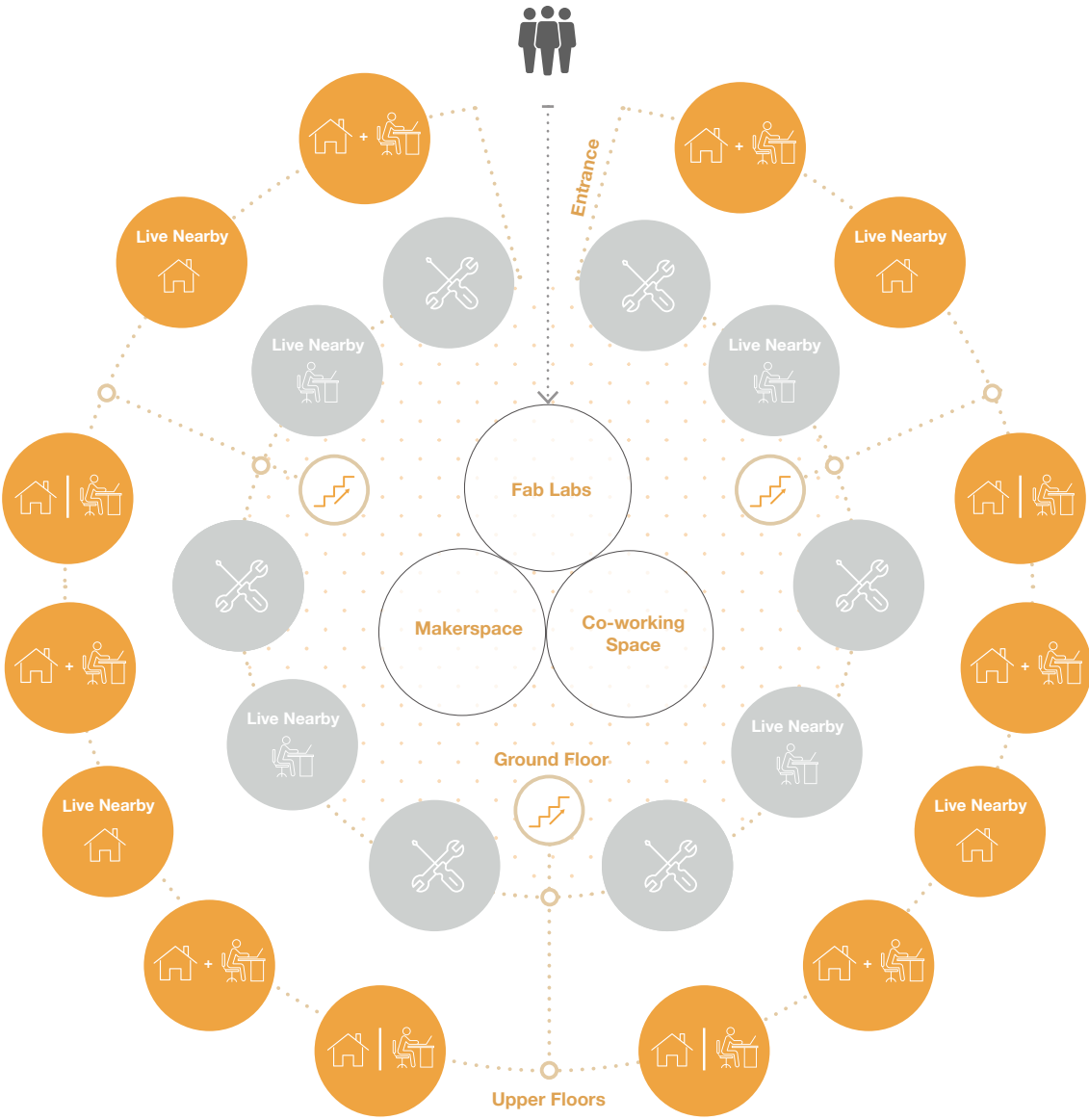
Co-Working Space






## Conclusion

### A Creative Workhome Framework

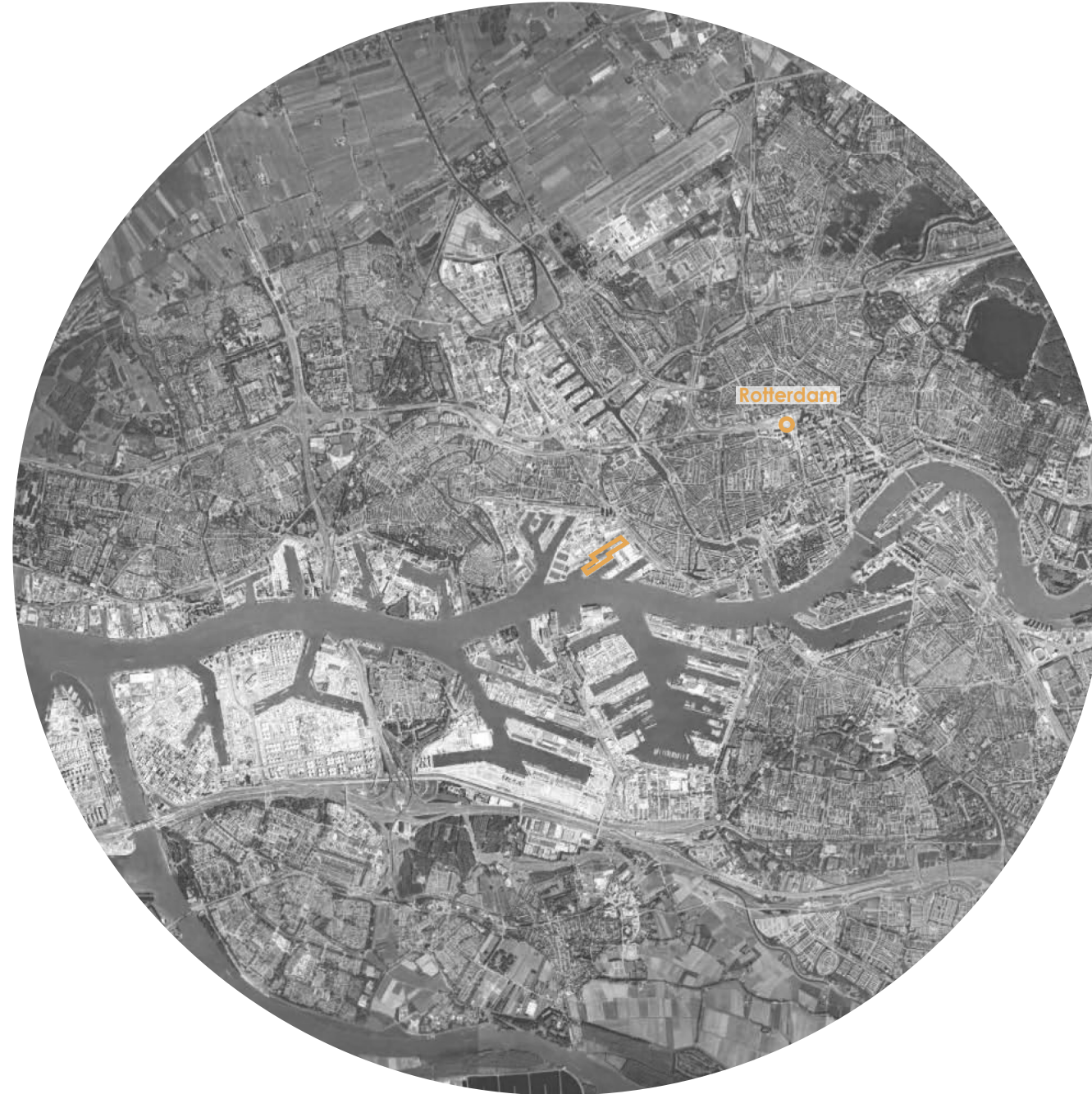


# Design Hypothesis

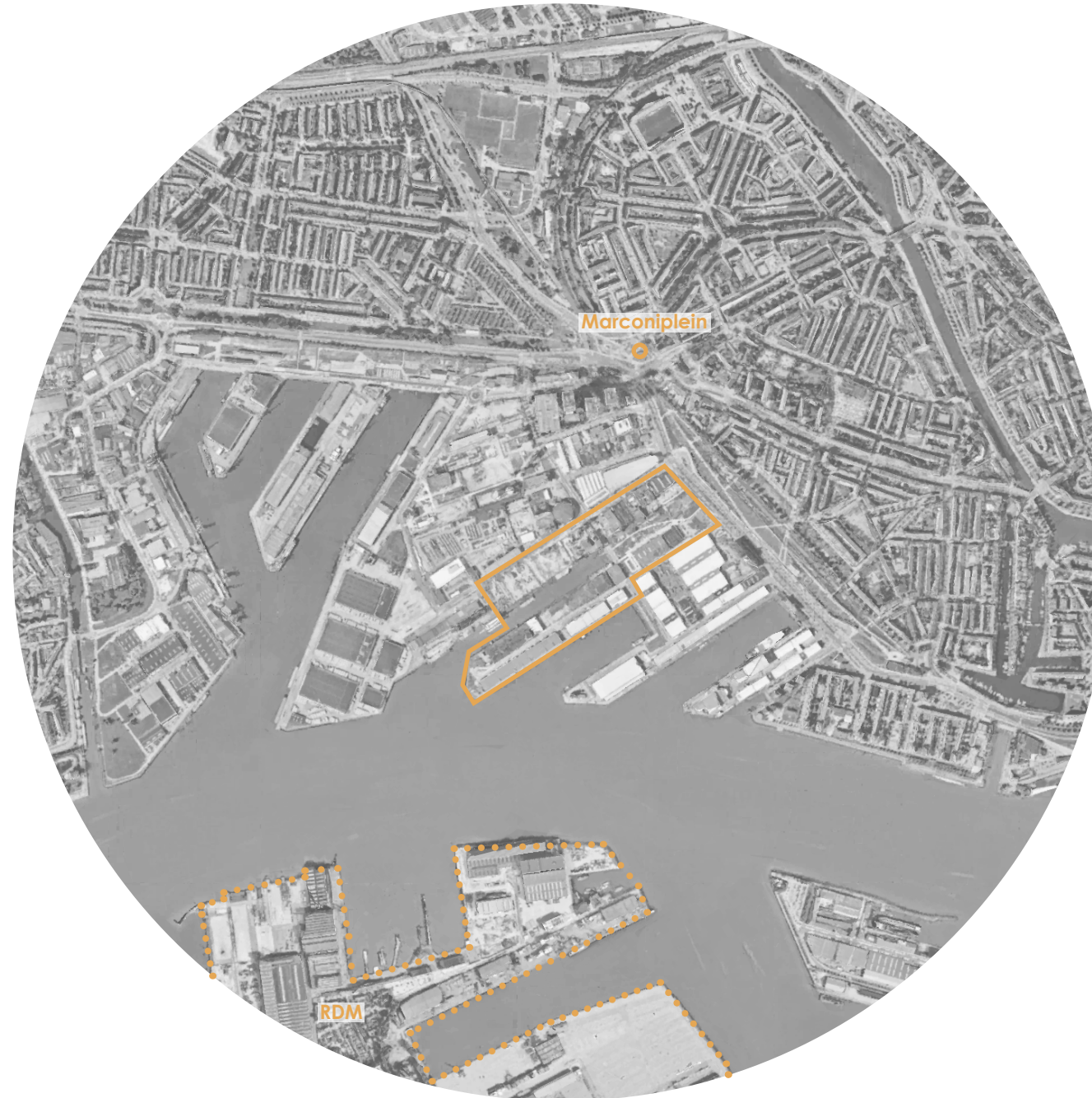


-  Workyard
-  Workshop
-  Live Nearby
-  Live Nearby
-  Live With
-  Live Adjacent

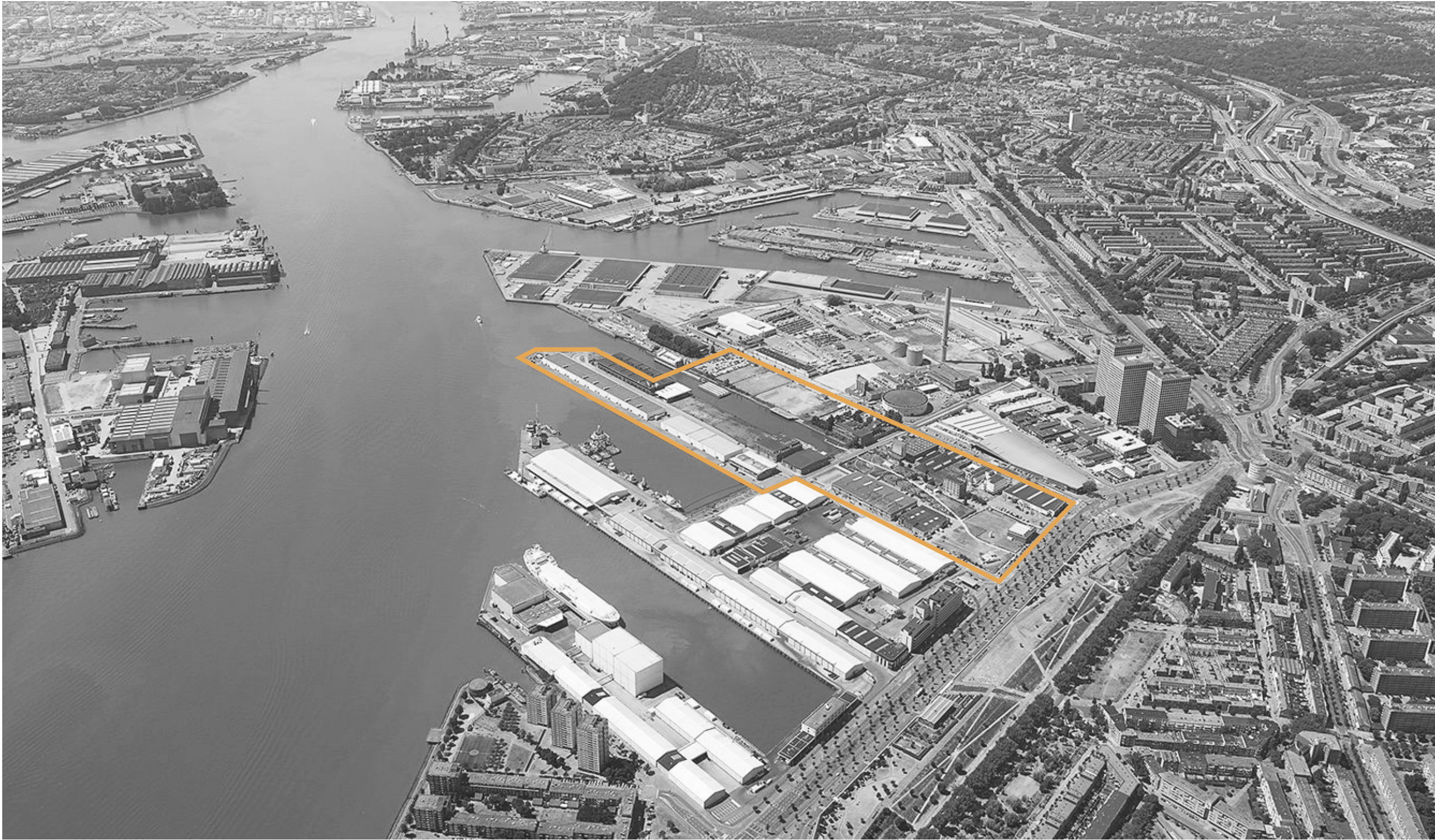
## Site Location





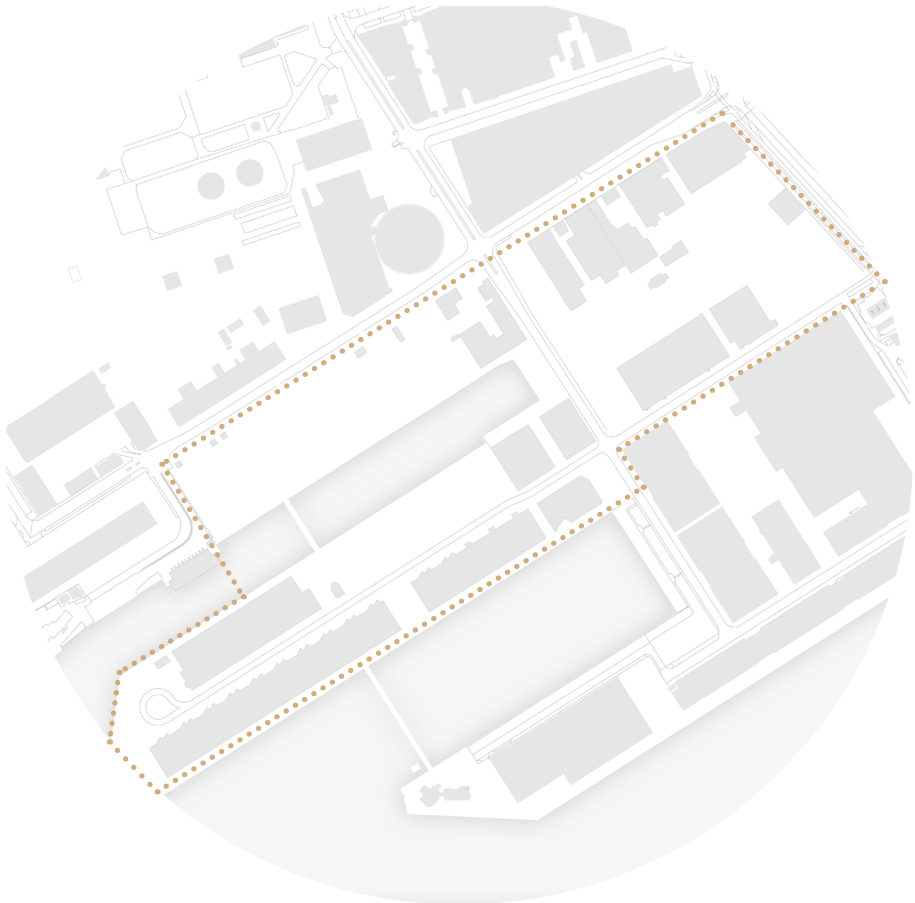






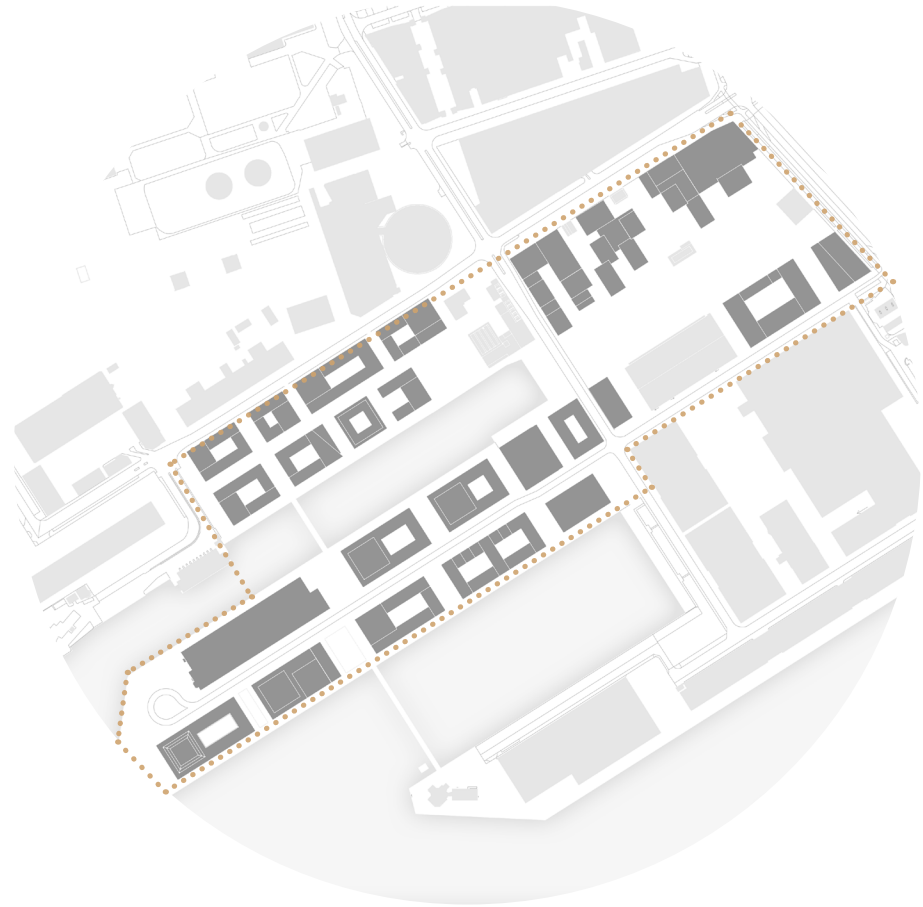


**Area Location**



⌚  
----- Keilekwartier Boundary

**Area Location**



⌚  
..... Keilekwartier Boundary

## Site Location

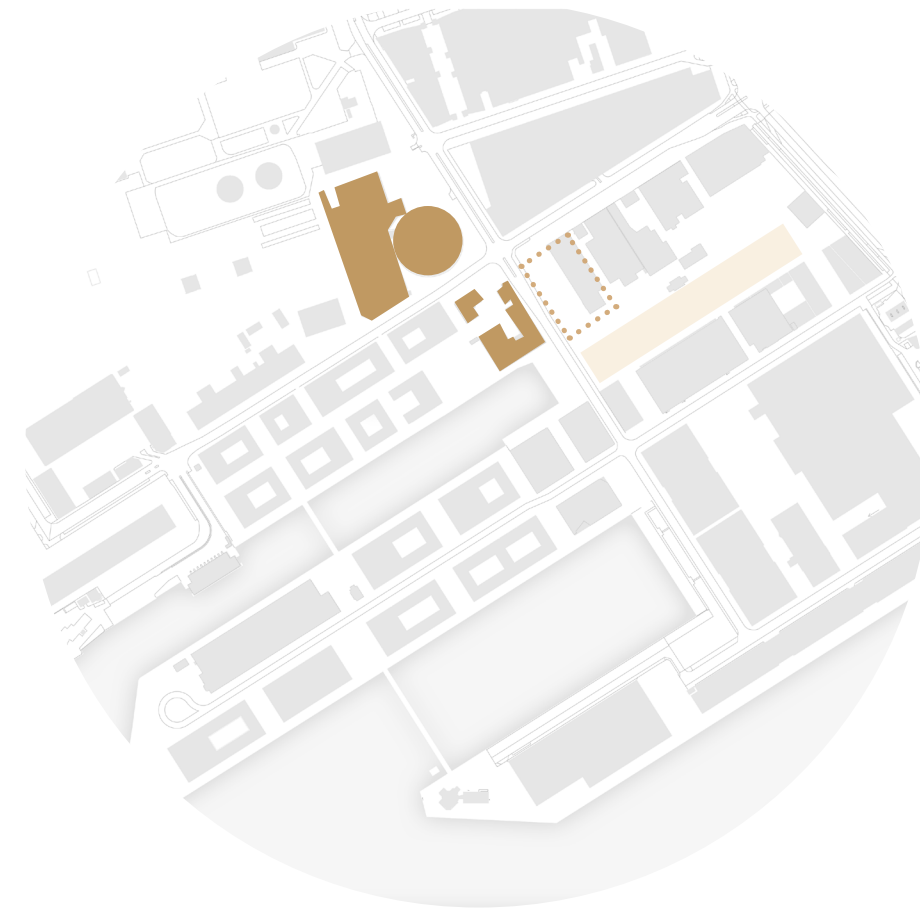




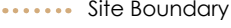
○  
..... Site Boundary

### Road & Pedestrian Networks



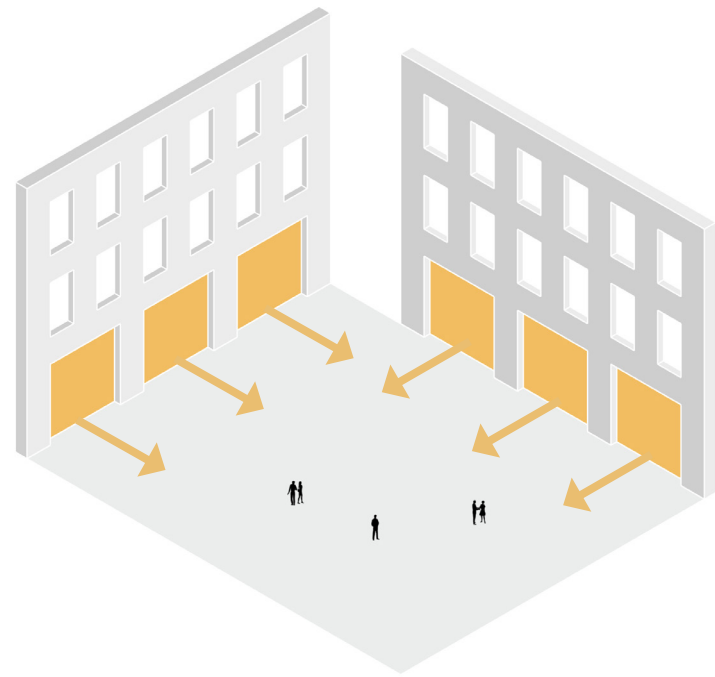
## Site Features



-  Park
-  Monument Buildings
-  Site Boundary

## Concept Design

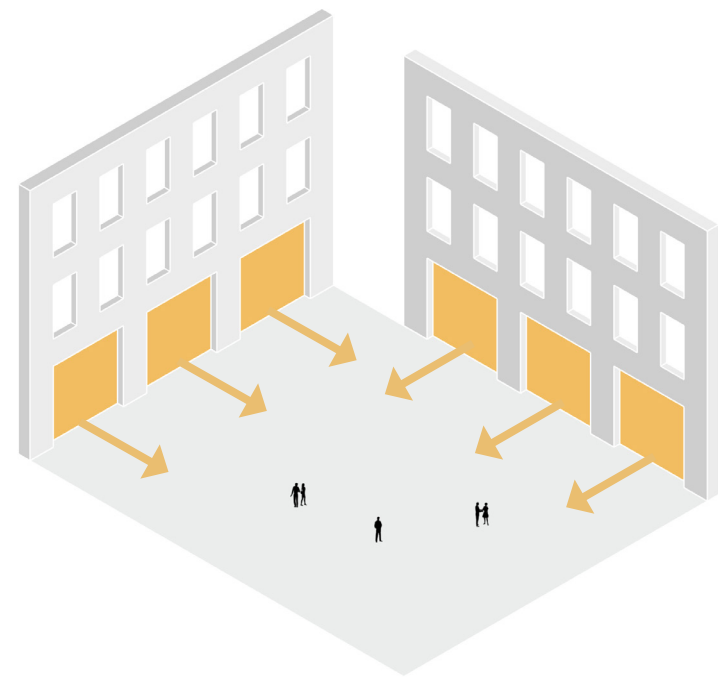
## Concept: The Workyard



Create an active workyard space

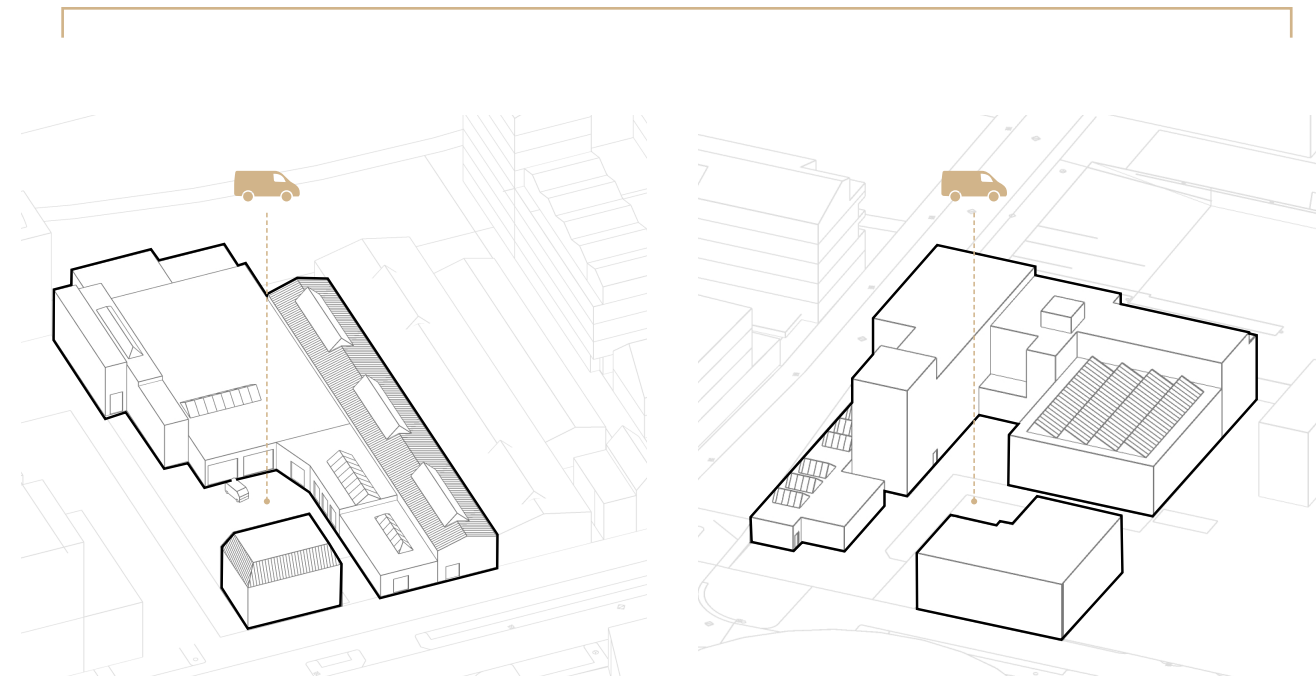


## Concept: The Workyard



Create an active workyard space

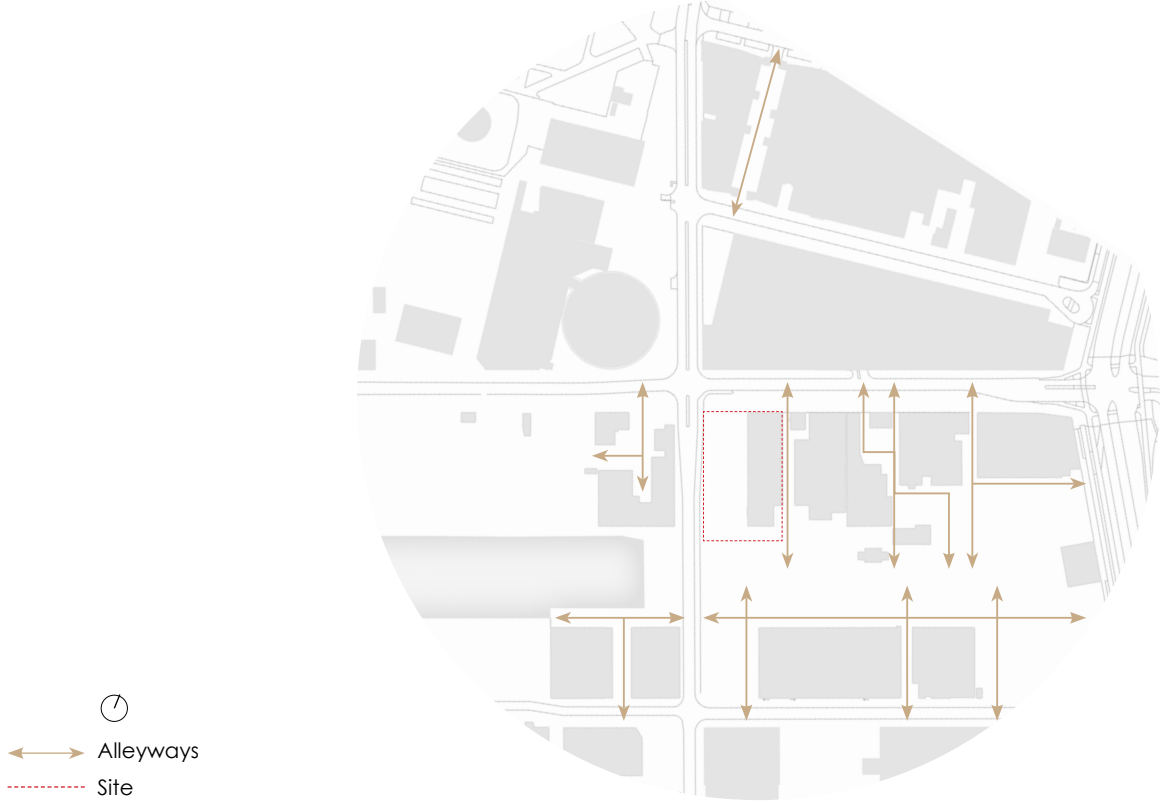
Neighbouring buildings



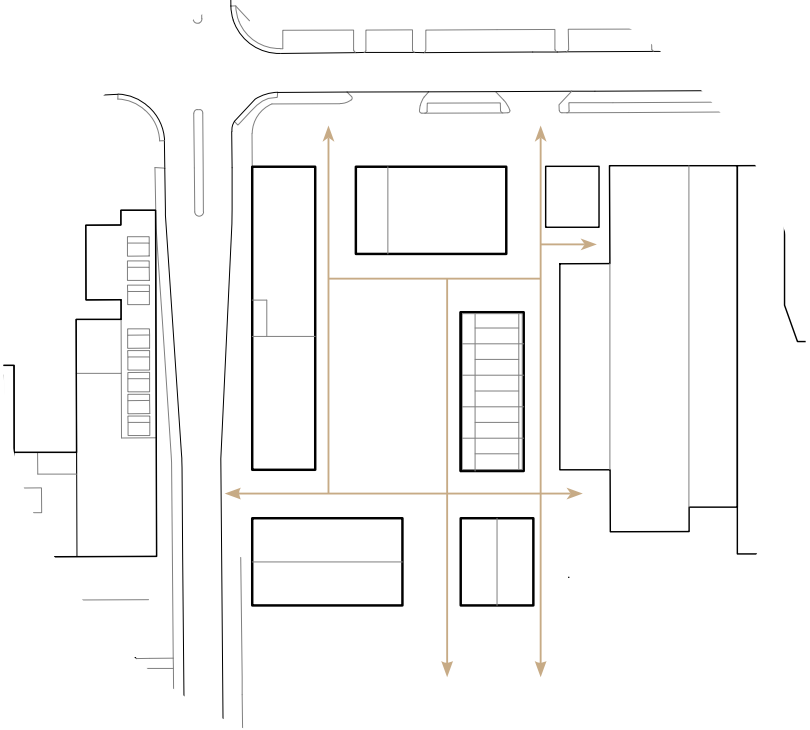
12 Keileweg, Keilekwartier

Kunst & Complex, Keilekwartier

Re-establish the Urban Grain

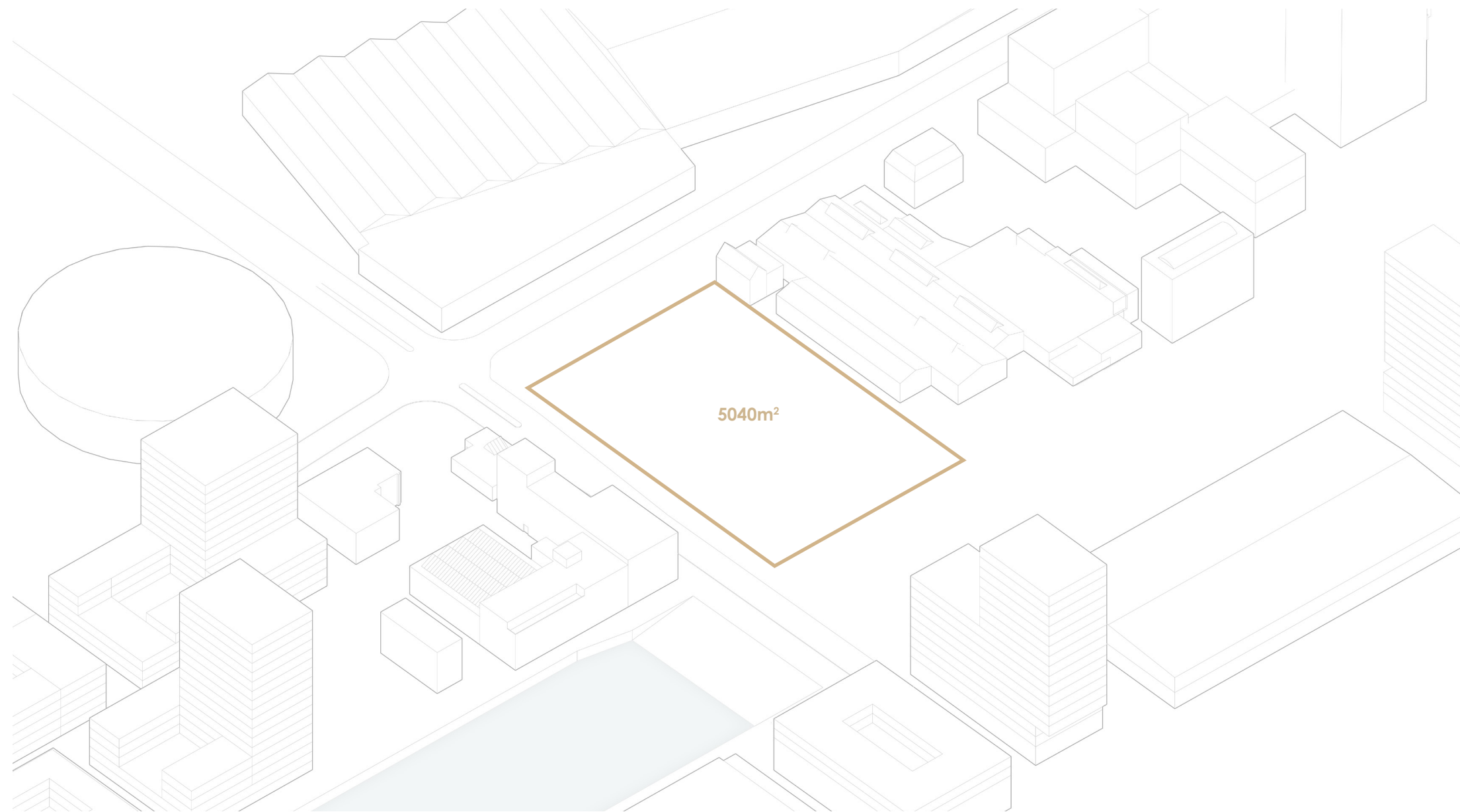


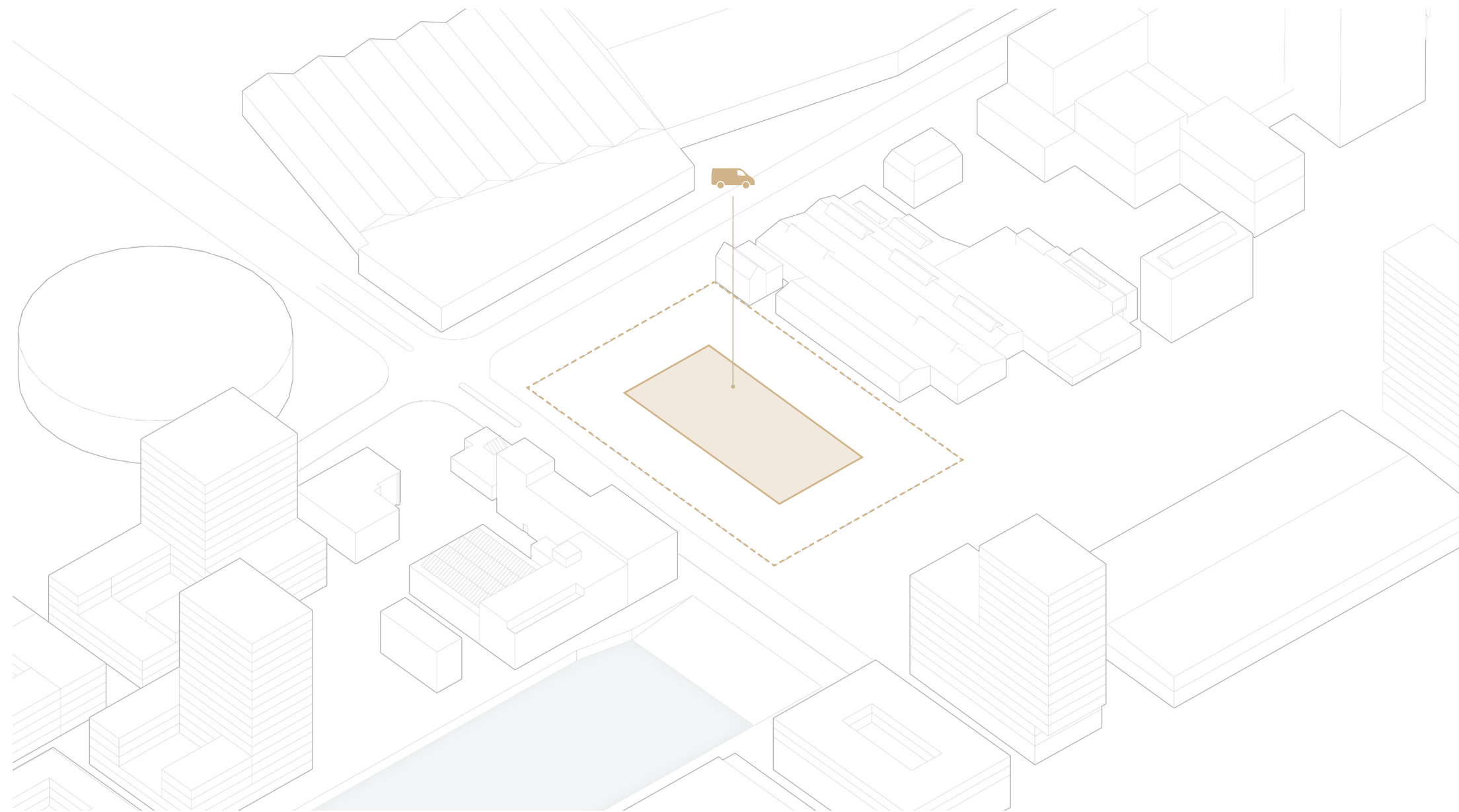
Keilekwartier Site Plan

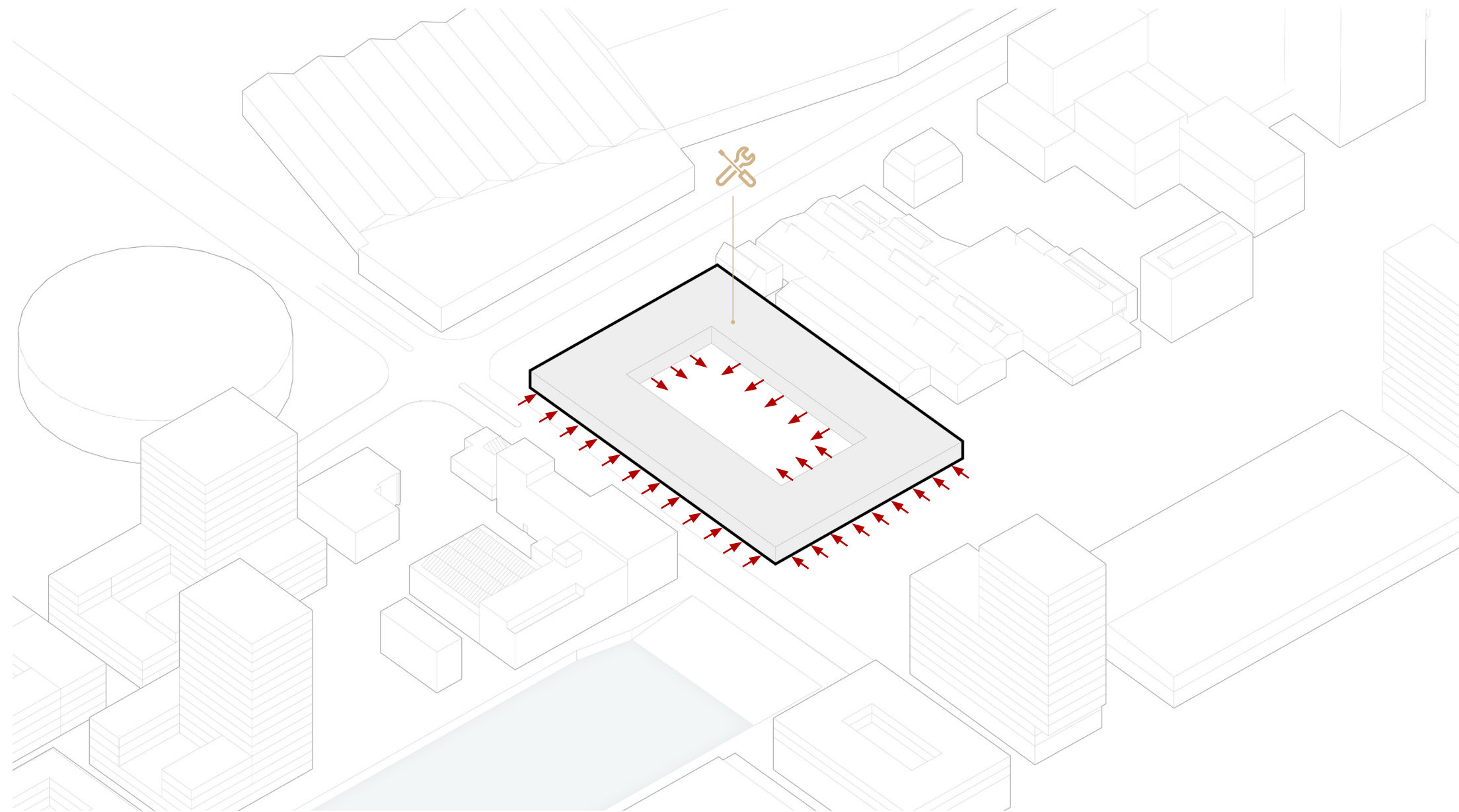


Proposed Block Location

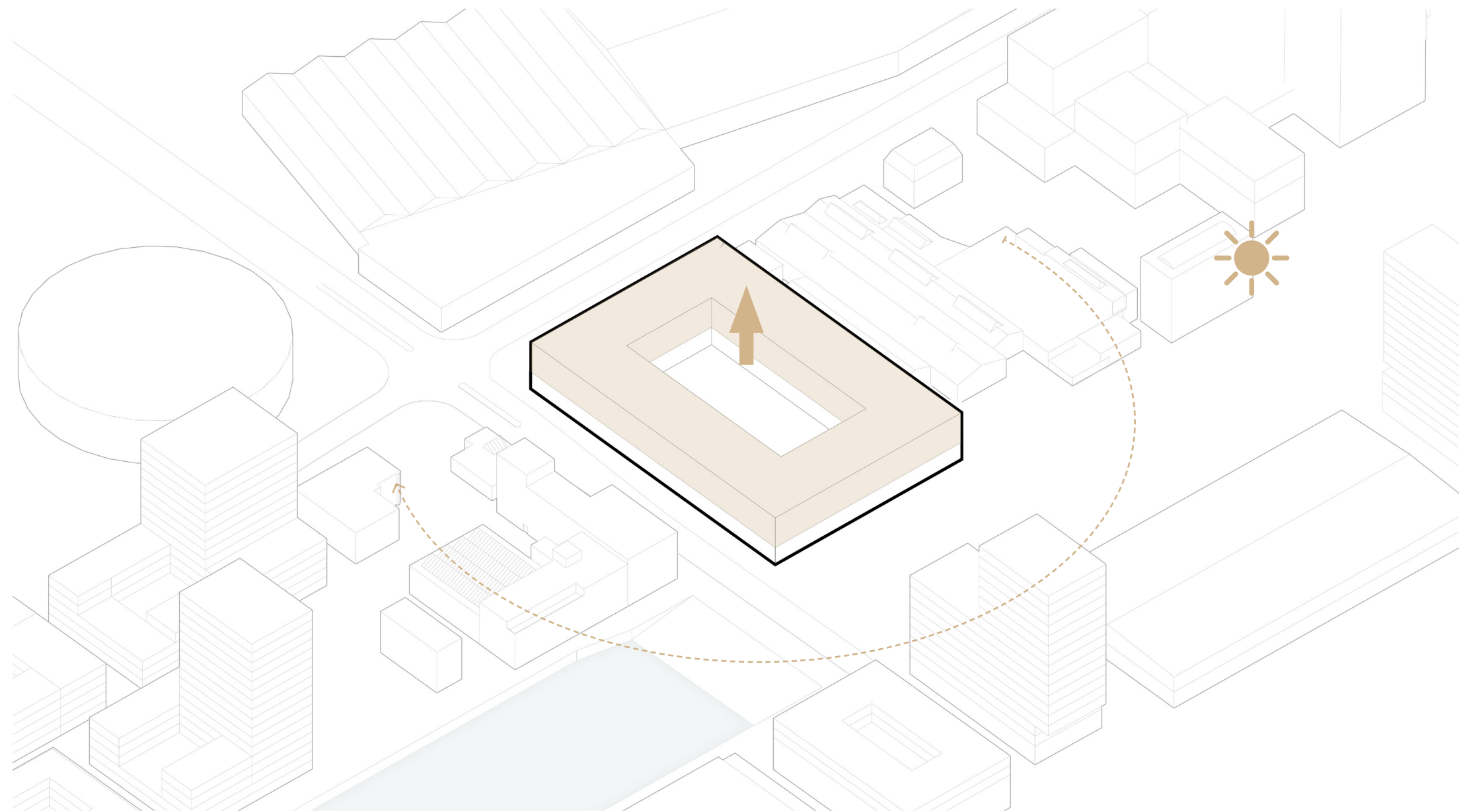
## Massing Sequence

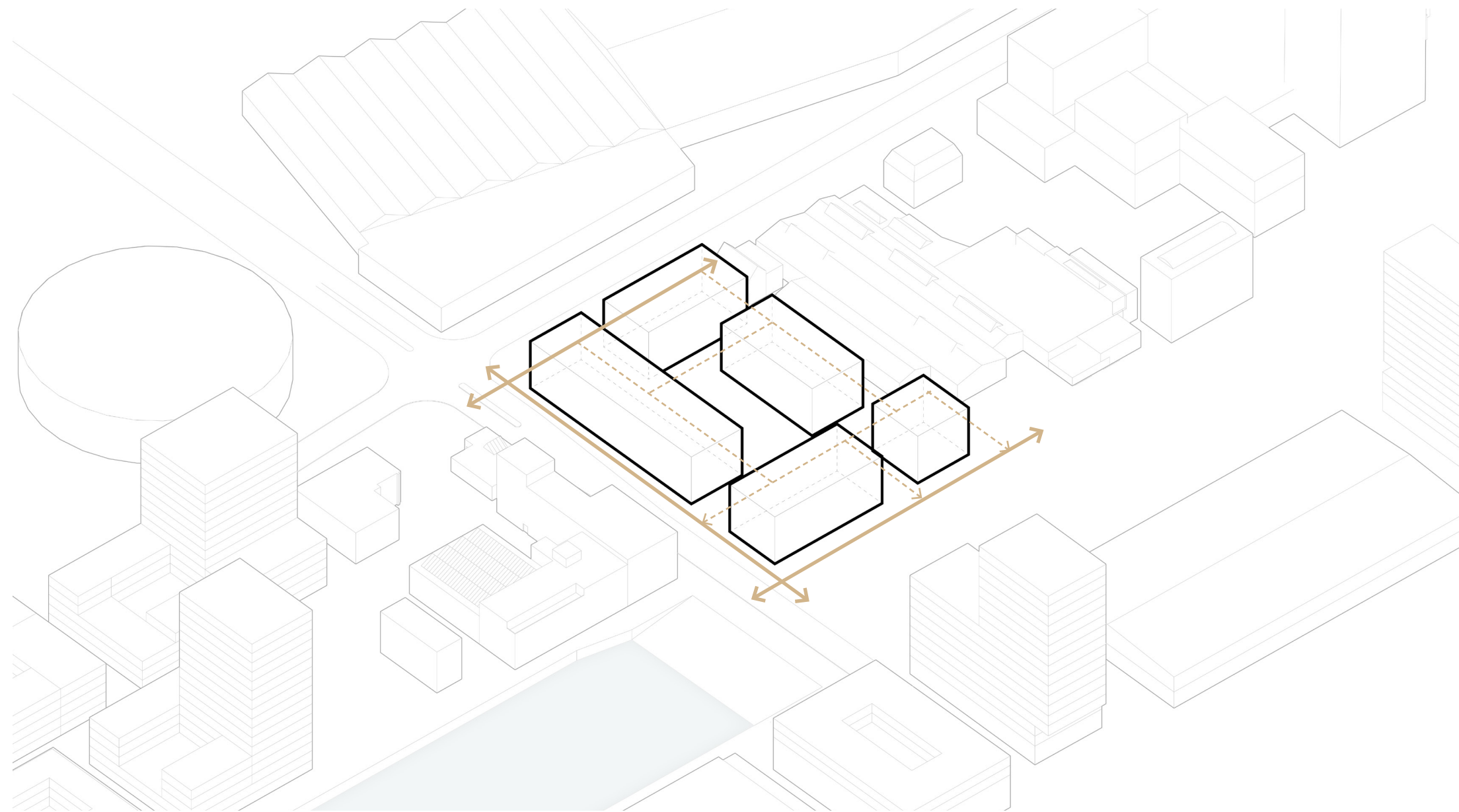


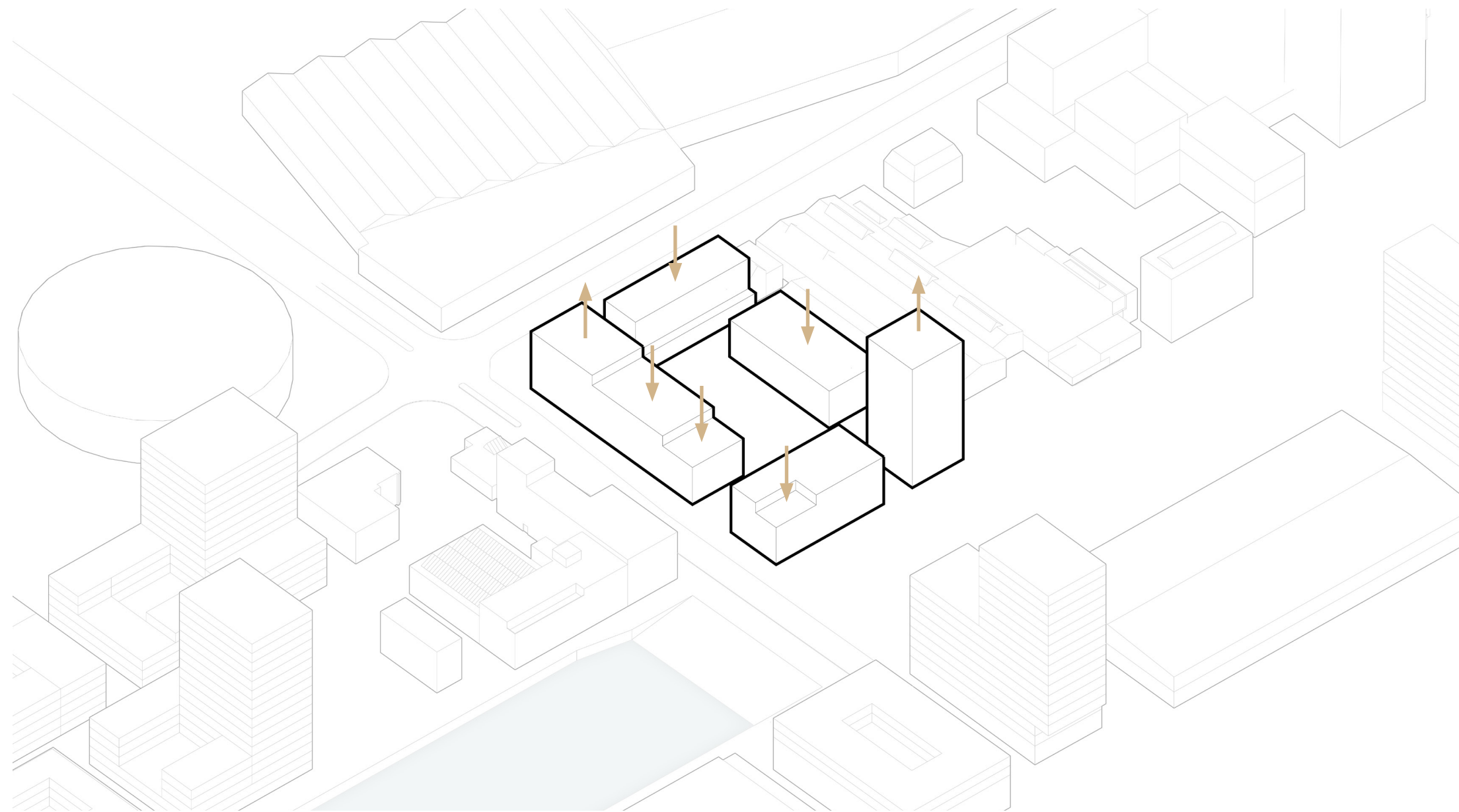




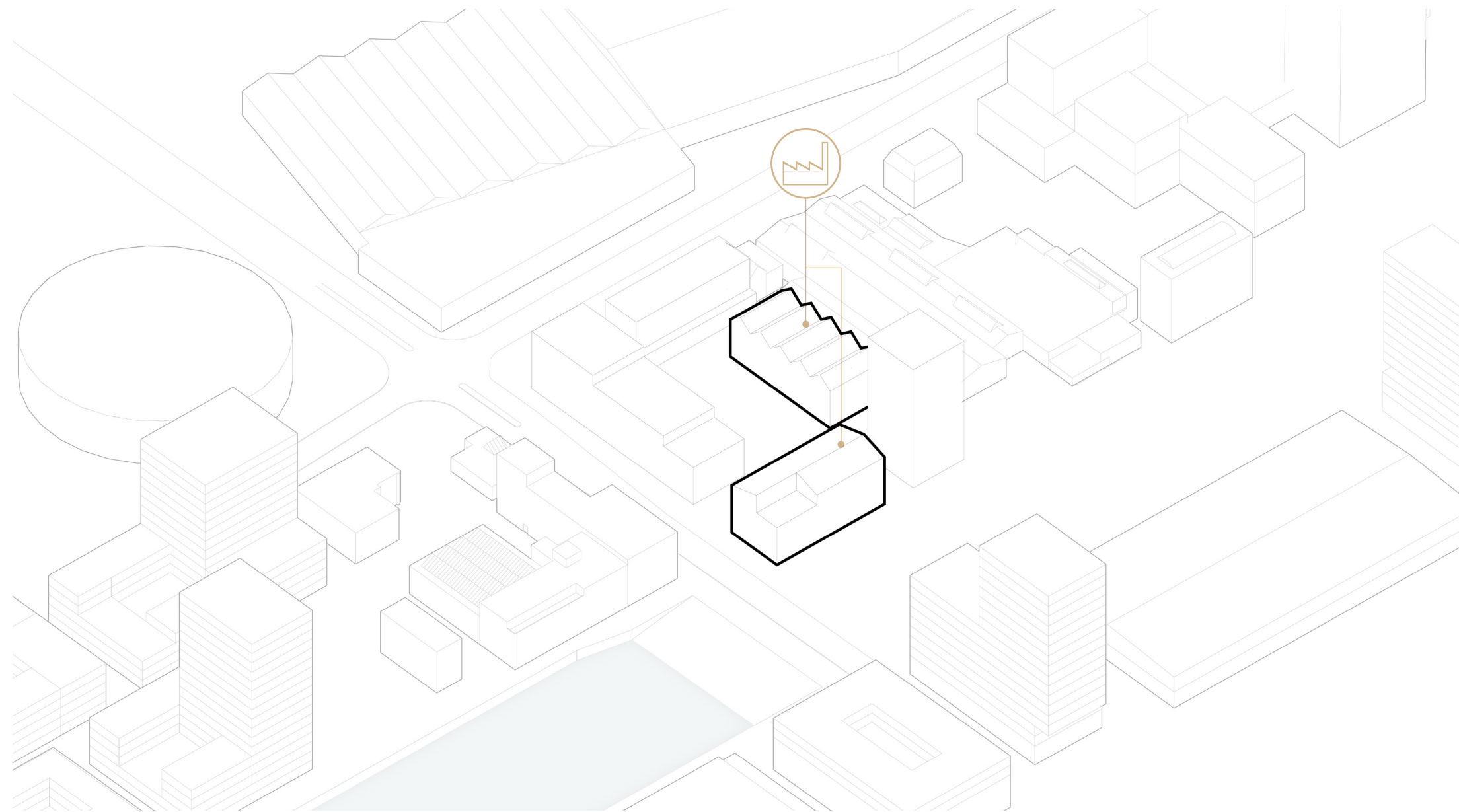


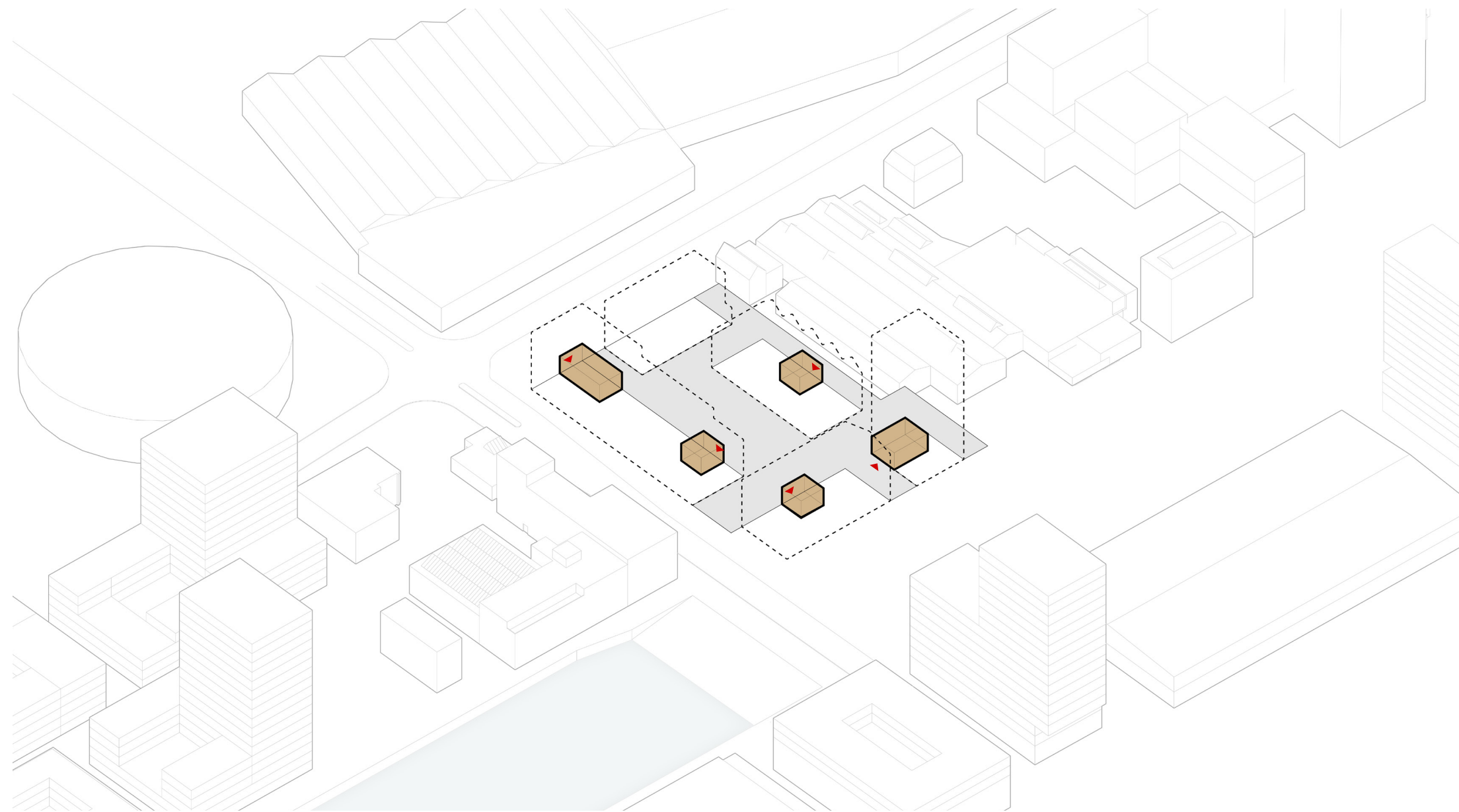




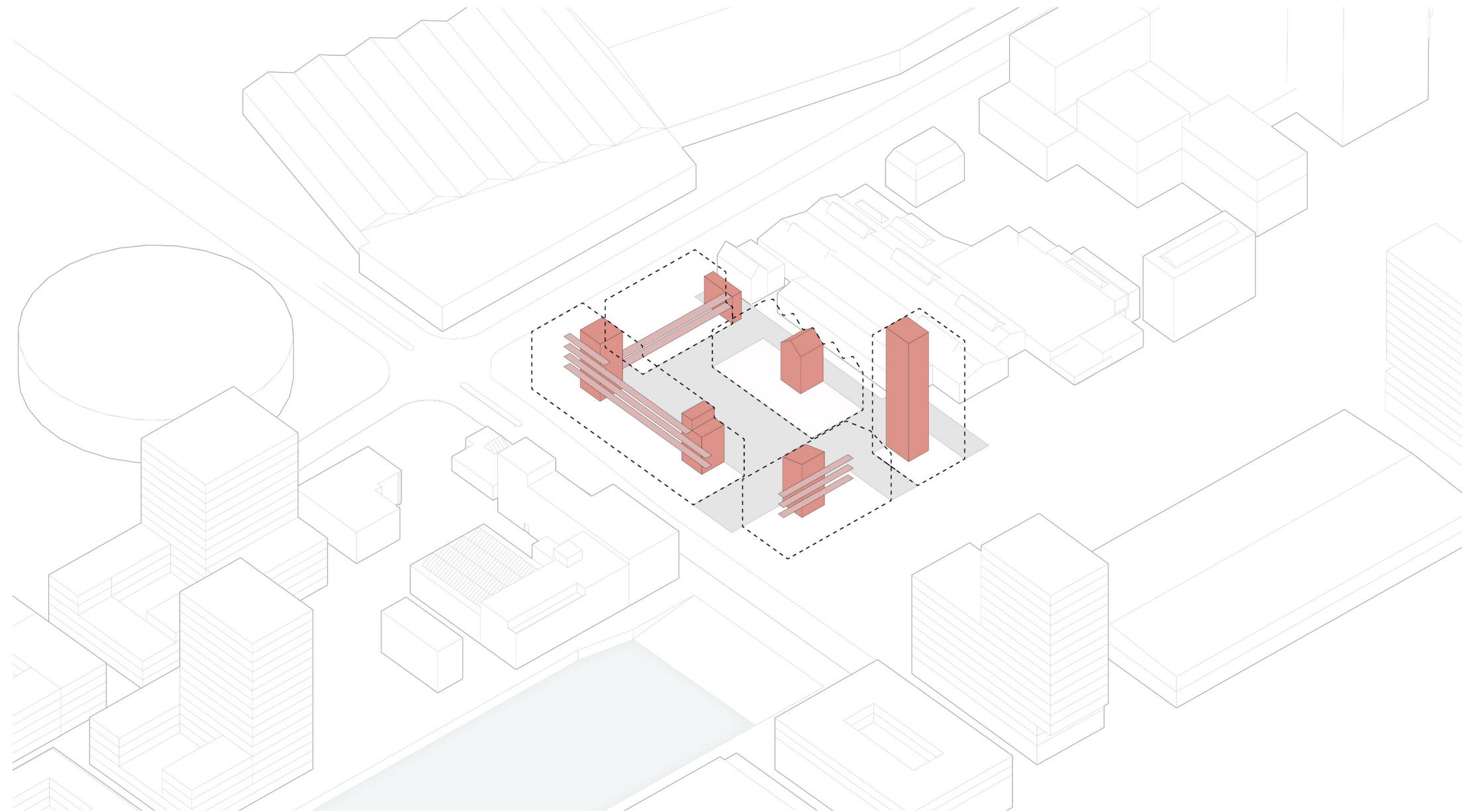




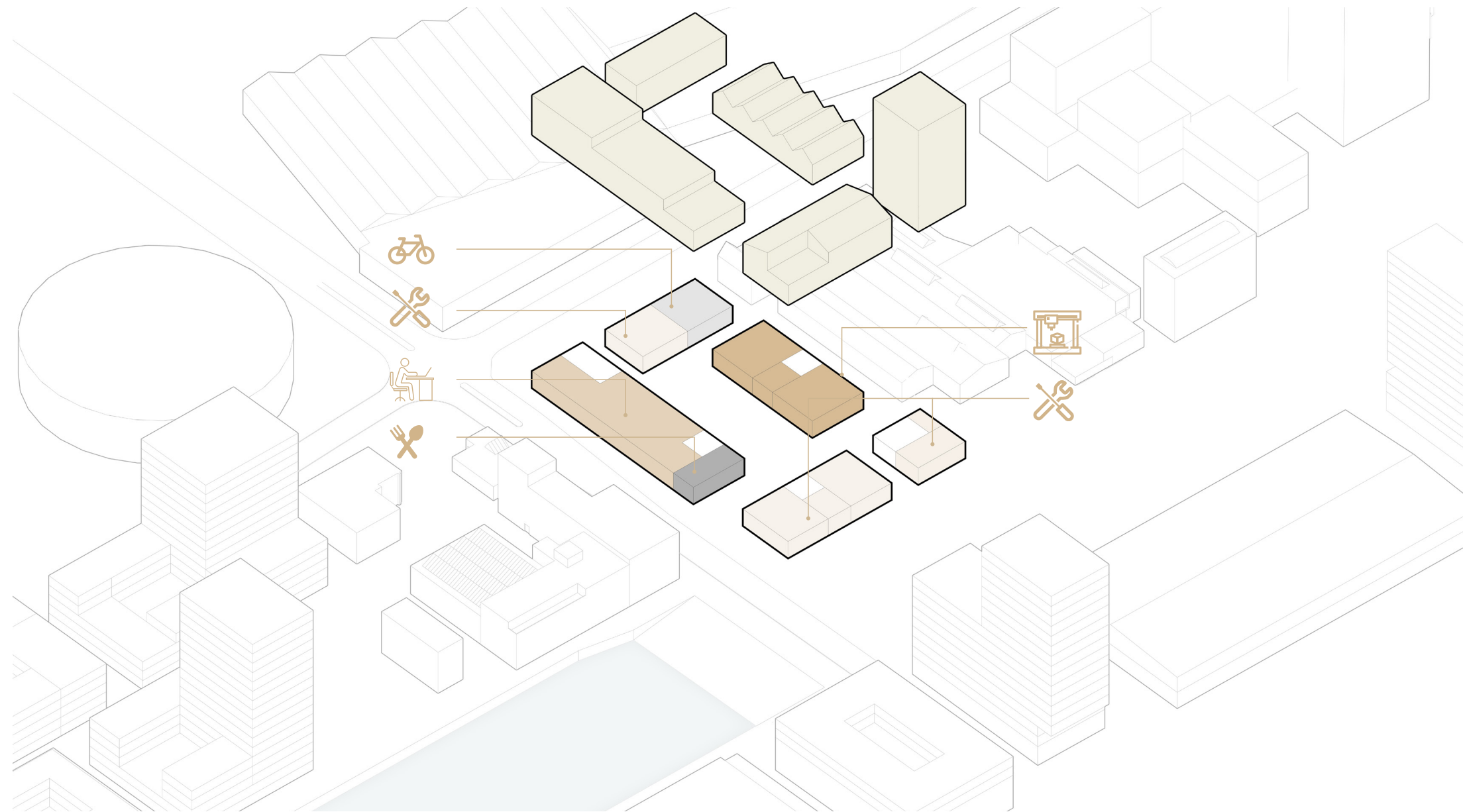




## Circulation

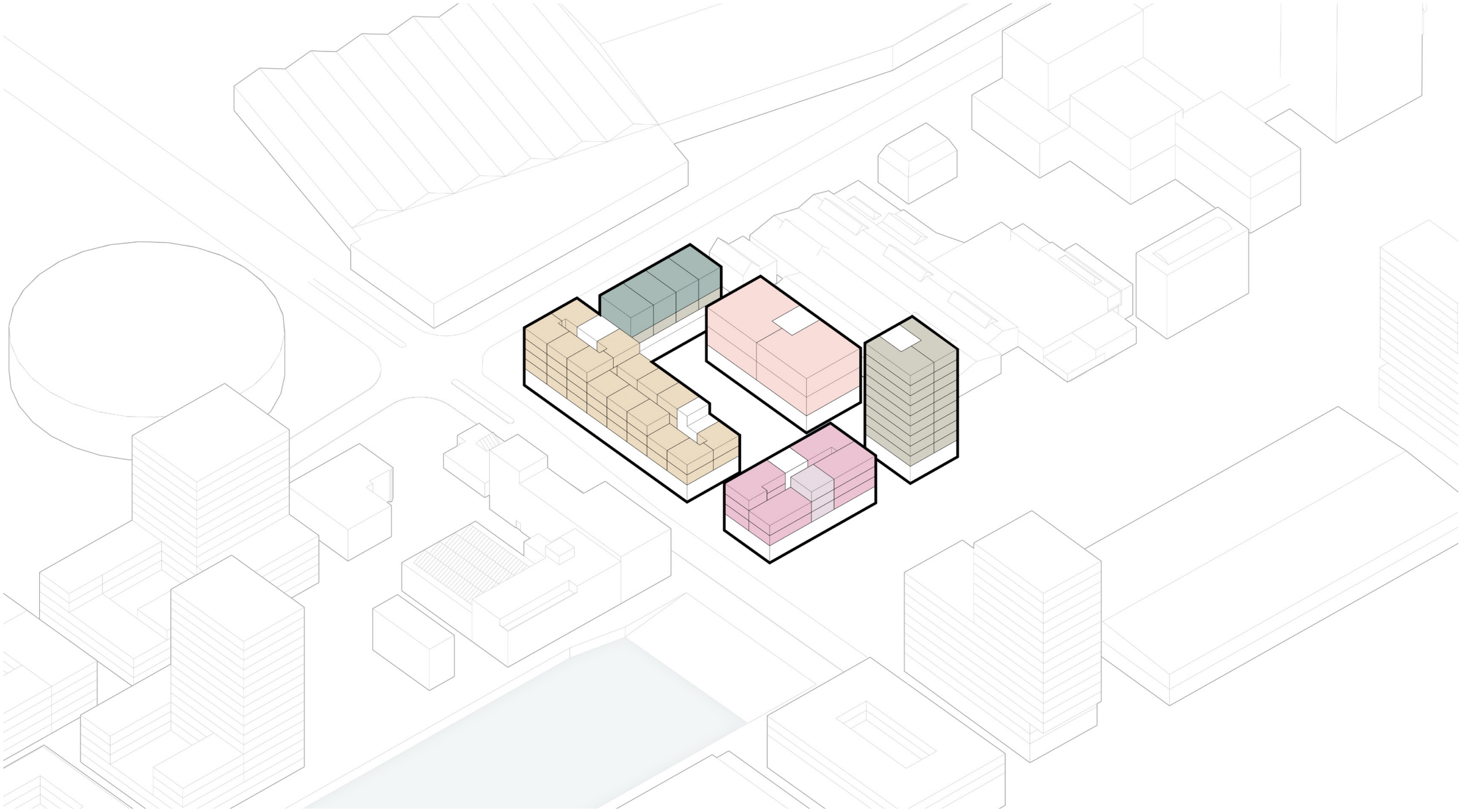


## Workspaces

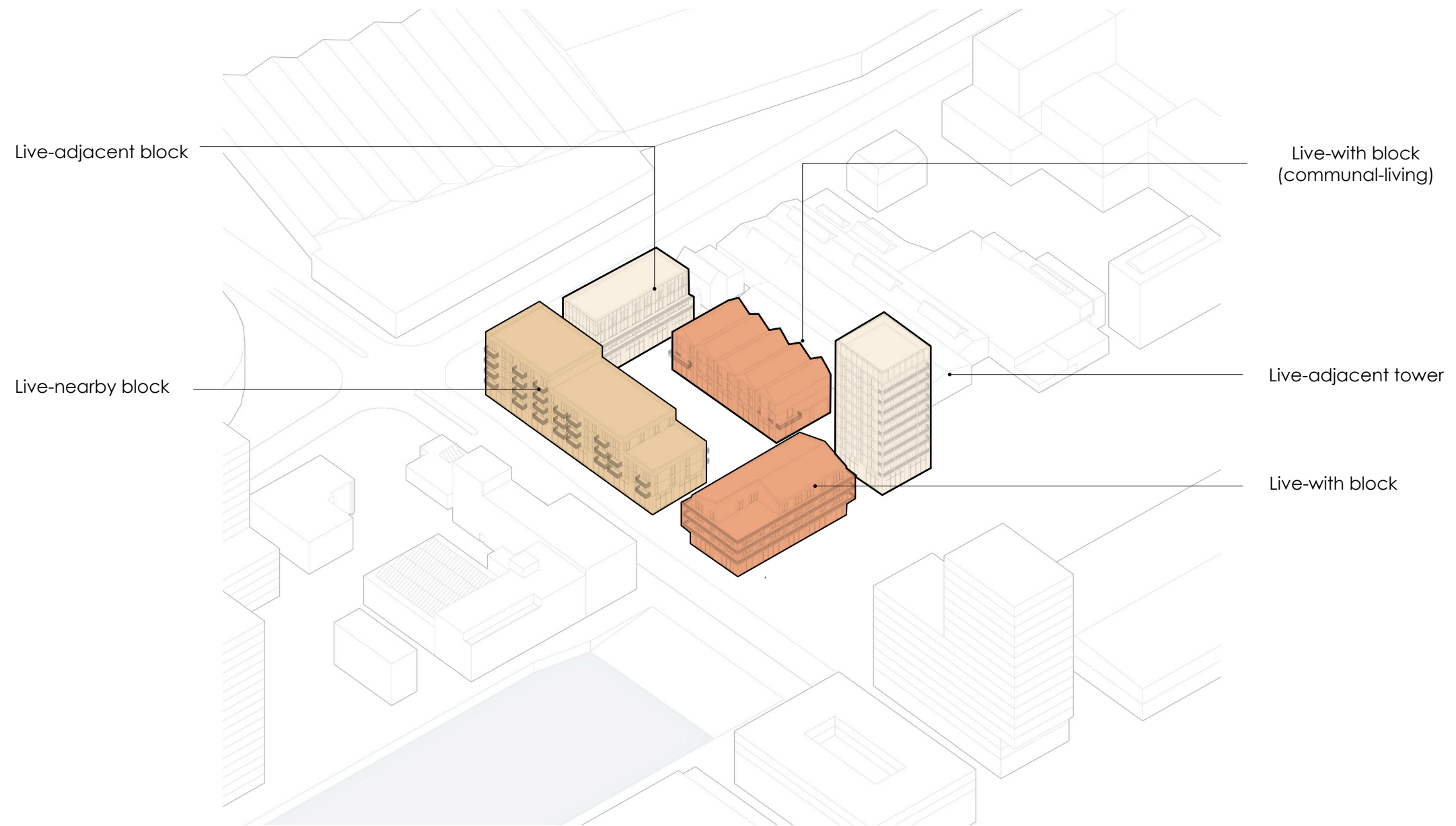




Unit Types



## Live/Work Function



**Contextual Materiality**



Brick Façades



Exposed Steel Structures

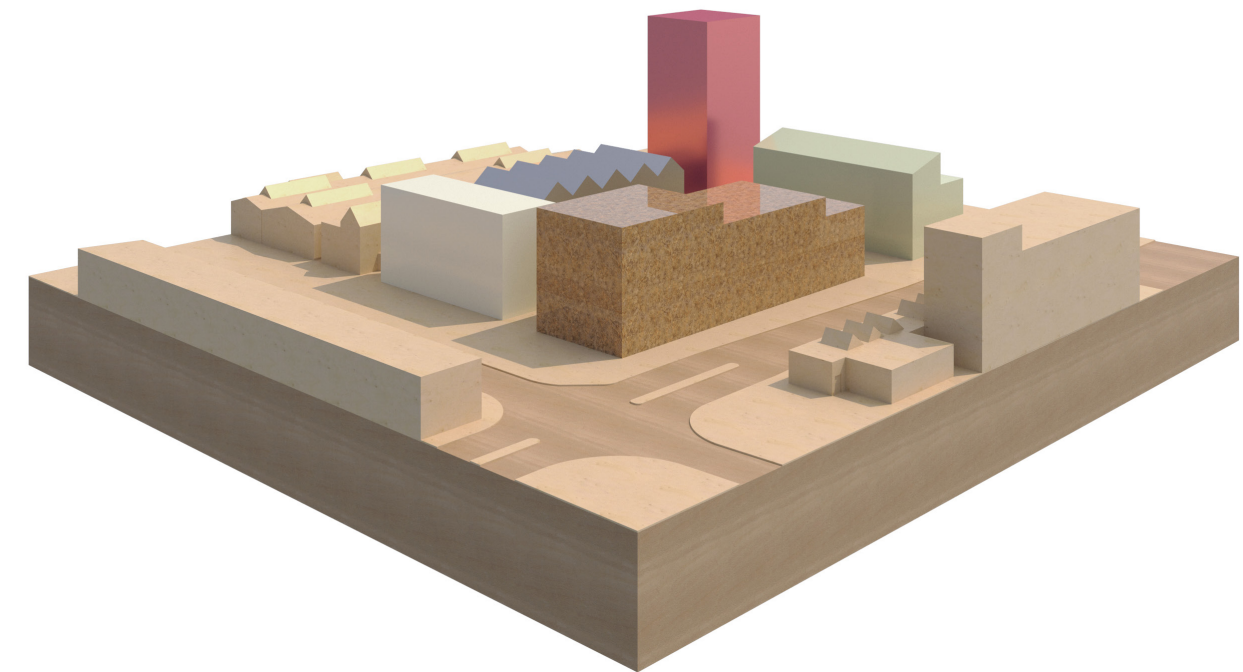
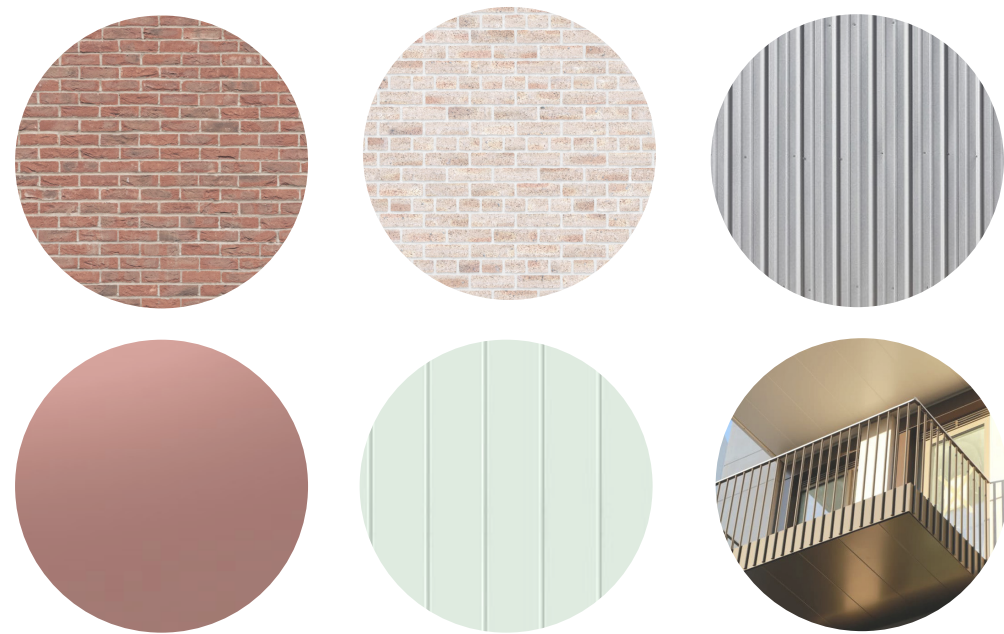


Concrete Panelling



Aluminium Cladding

## Material Palette

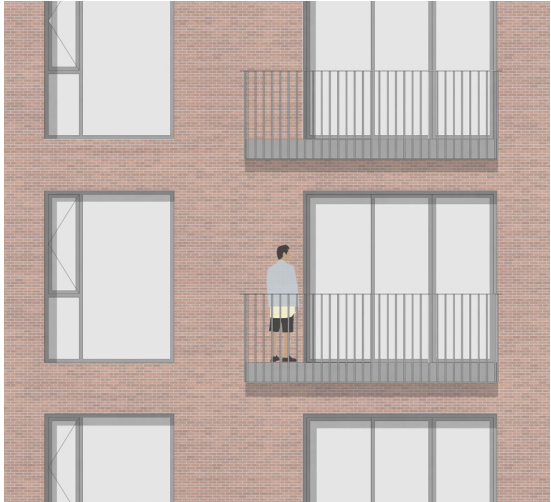




**Facade Treatment**



Light Brick & Steel



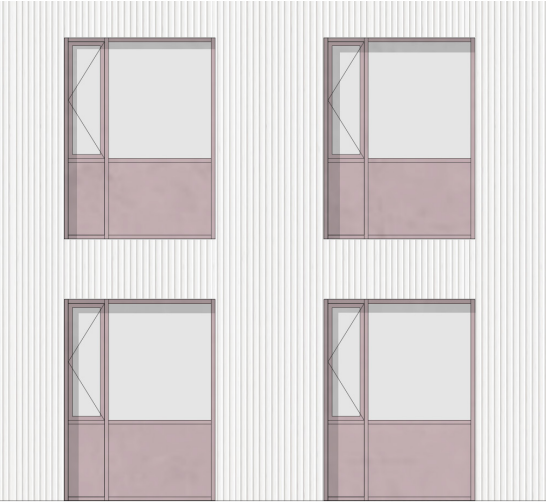
Standard Brick & Steel



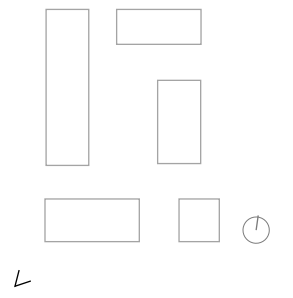
Green Aluminium Panelling



Light Pink Aluminium Panelling



Corrugated Steel Sheetting

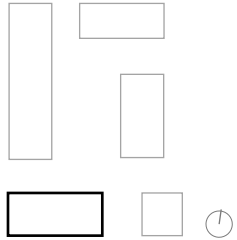
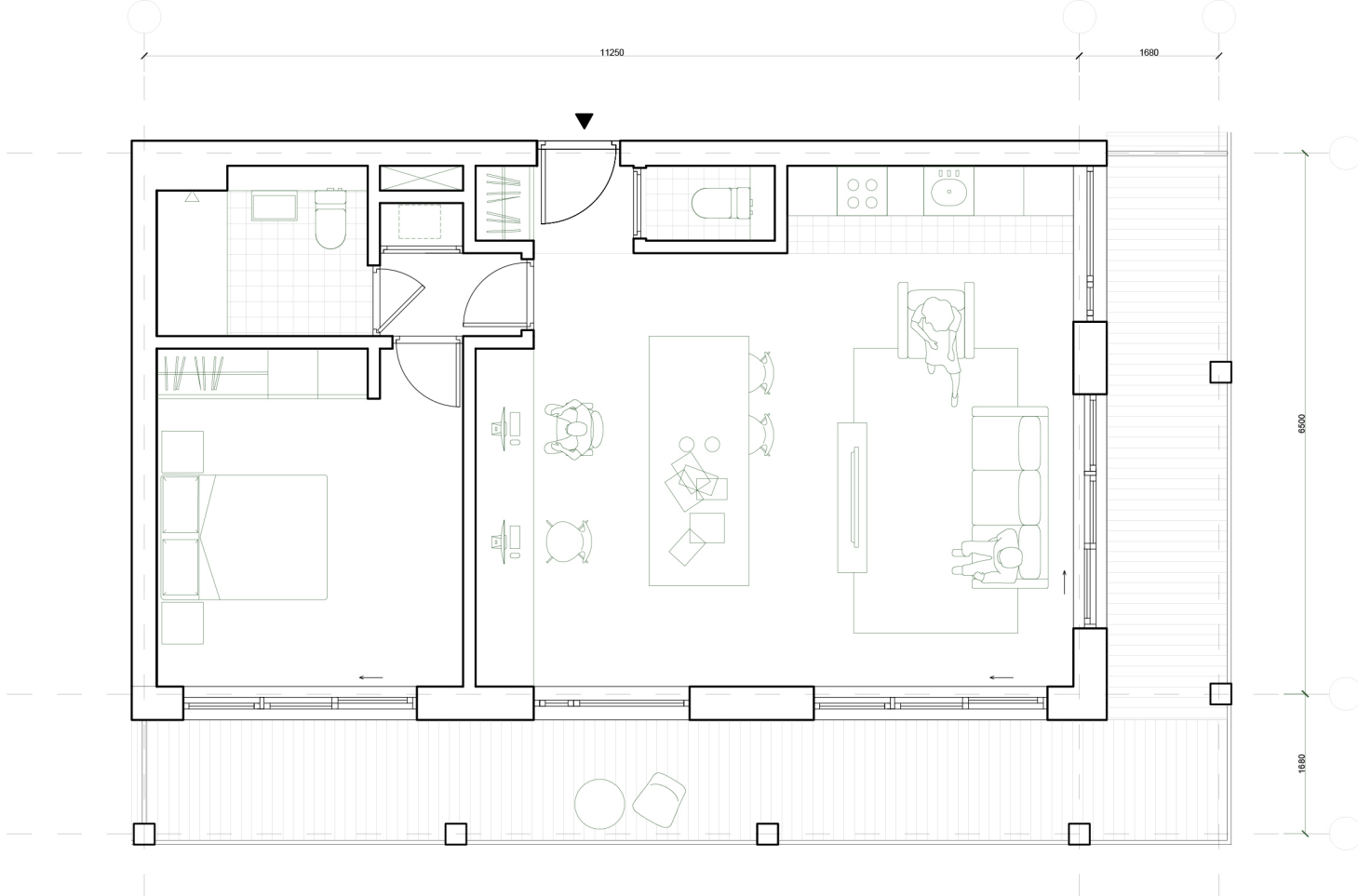


**Unit Types**



**Live-With**

Unit Type 01  
70sqm

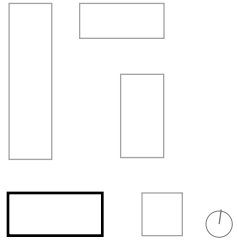
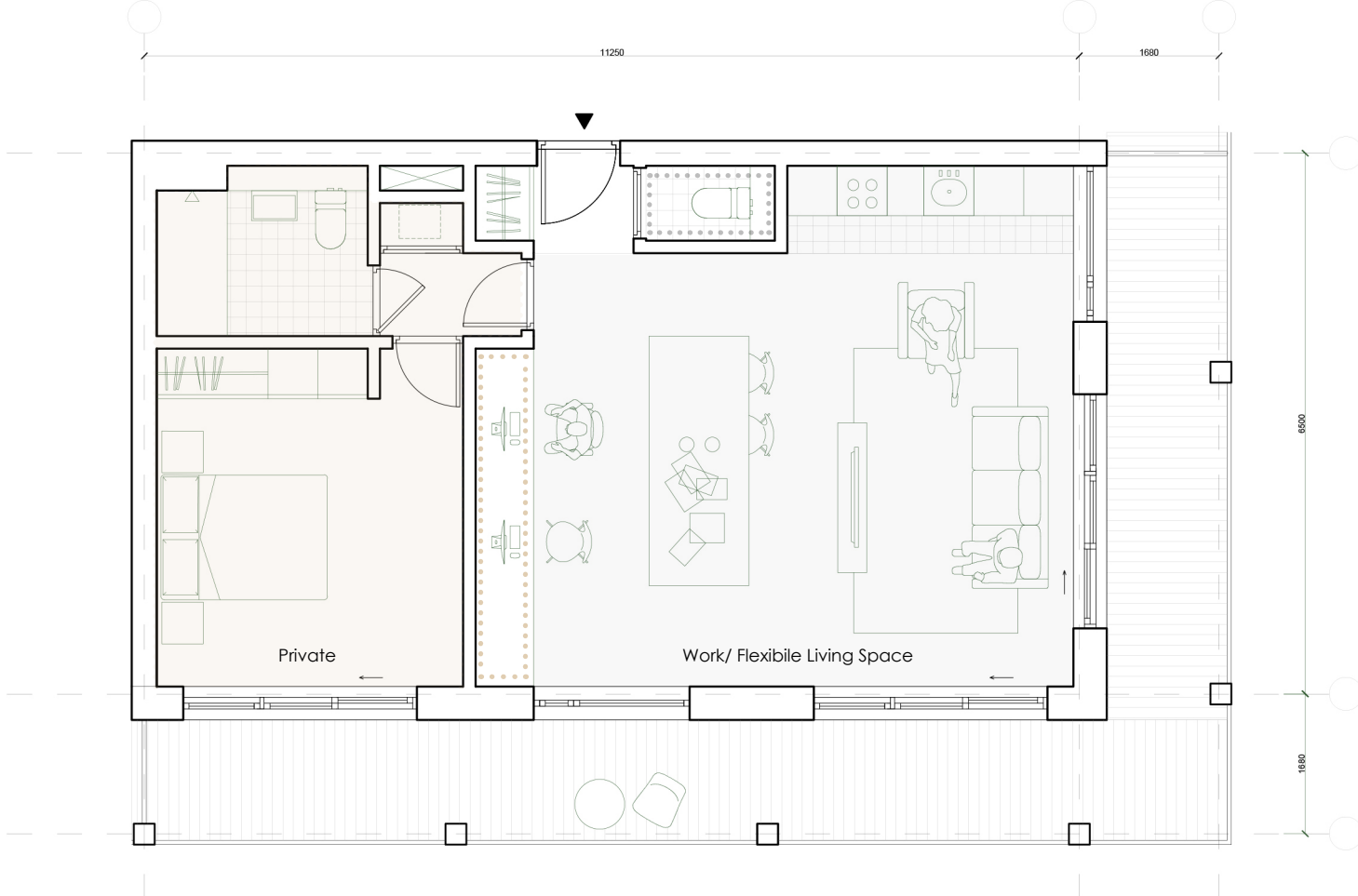


Unit Plan  
0m .5m 1m 2m 1:75



**Live-With**

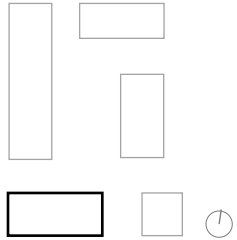
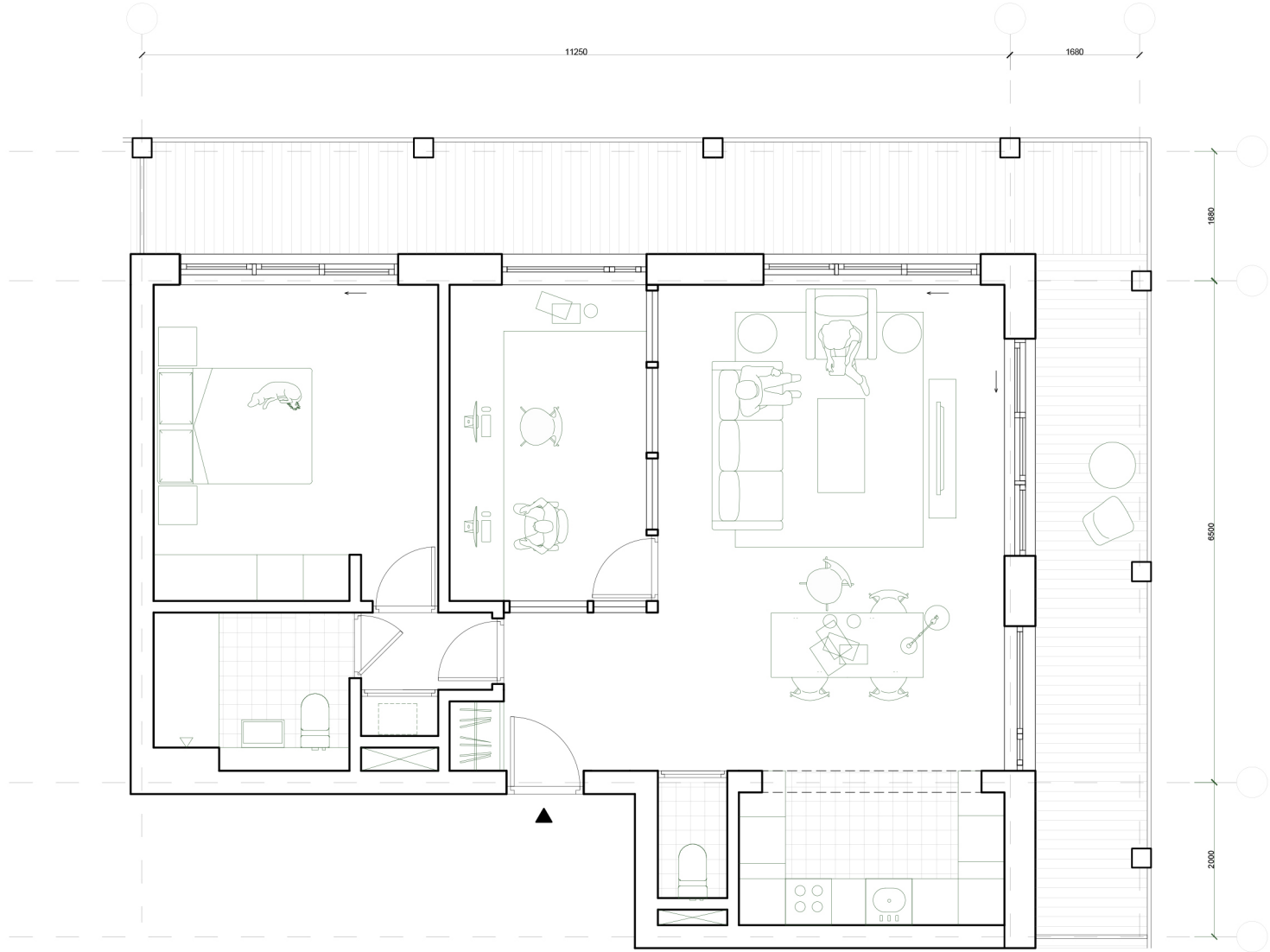
Unit Type 01  
70sqm



Unit Plan  
0m .5m 1m 2m 1:75



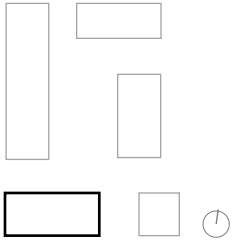
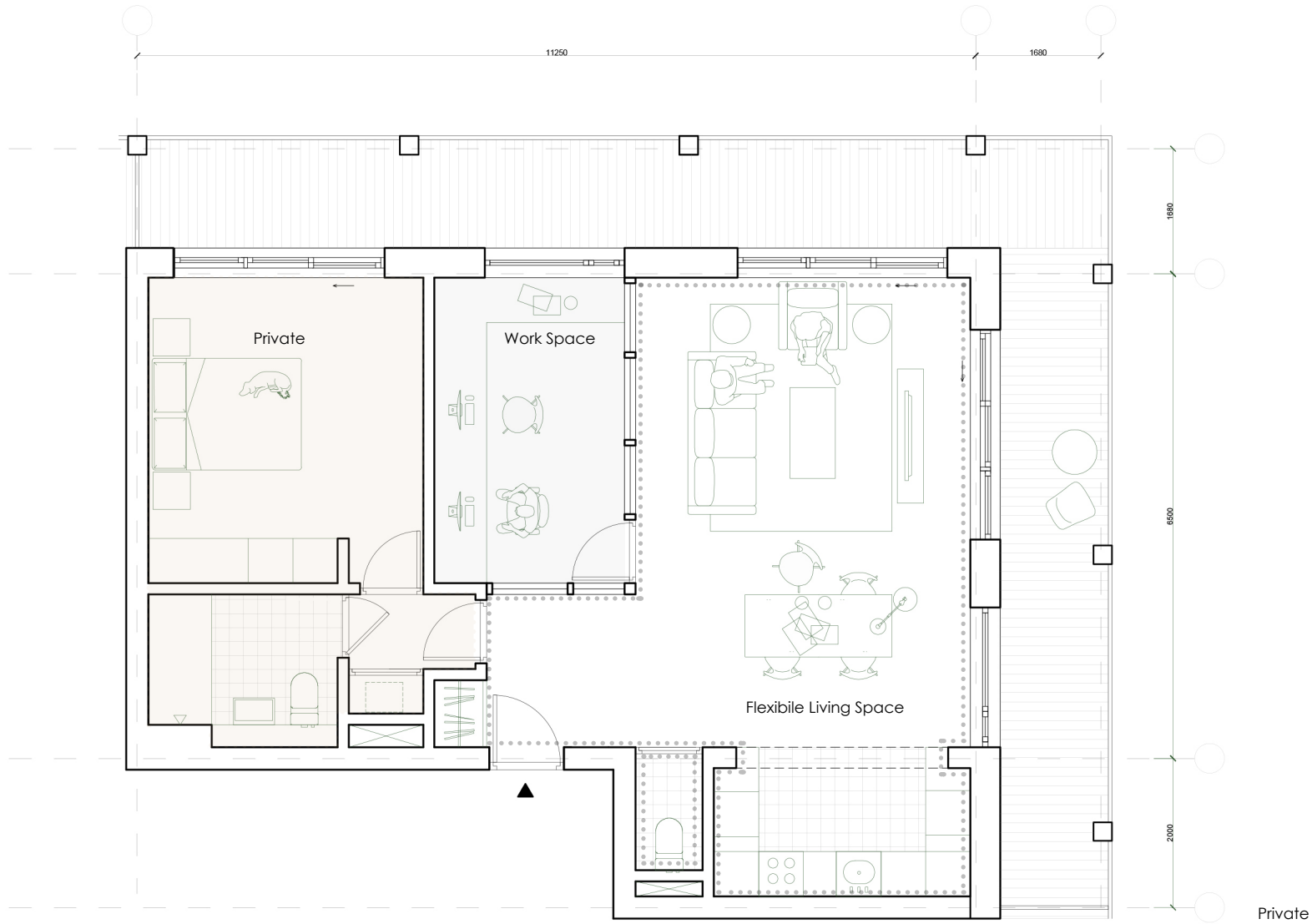
**Live-With**  
Unit Type 02  
80sqm



Unit Plan  
0m .5m 1m 2m 1:75



**Live-With**  
Unit Type 02  
80sqm



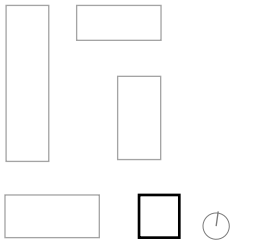
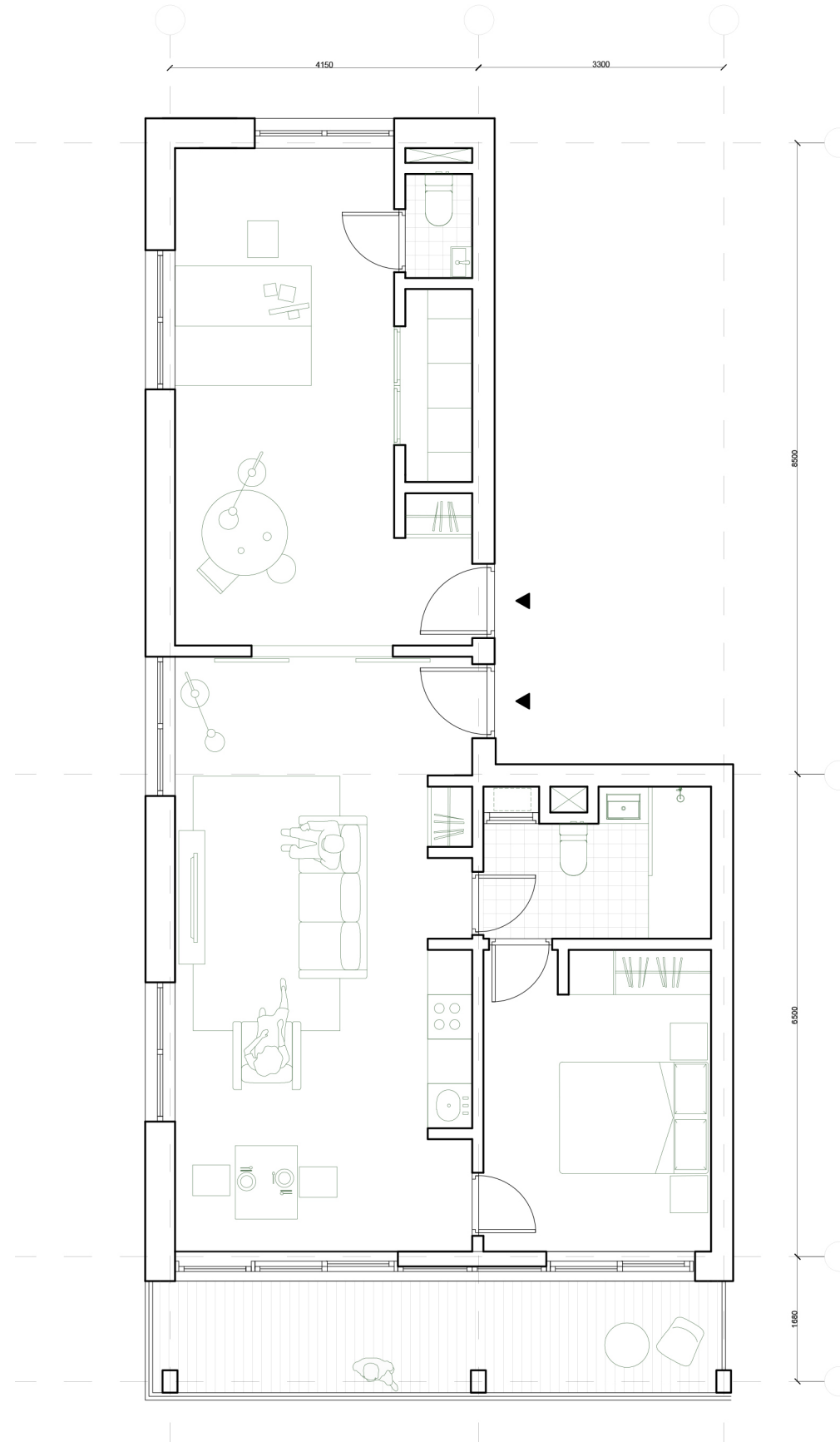
Unit Plan  
0m .5m 1m 2m 1:75

# Live-Adjacent

Unit Type 03

52sqm - Dwelling

25sqm - Workspace

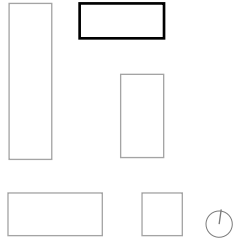
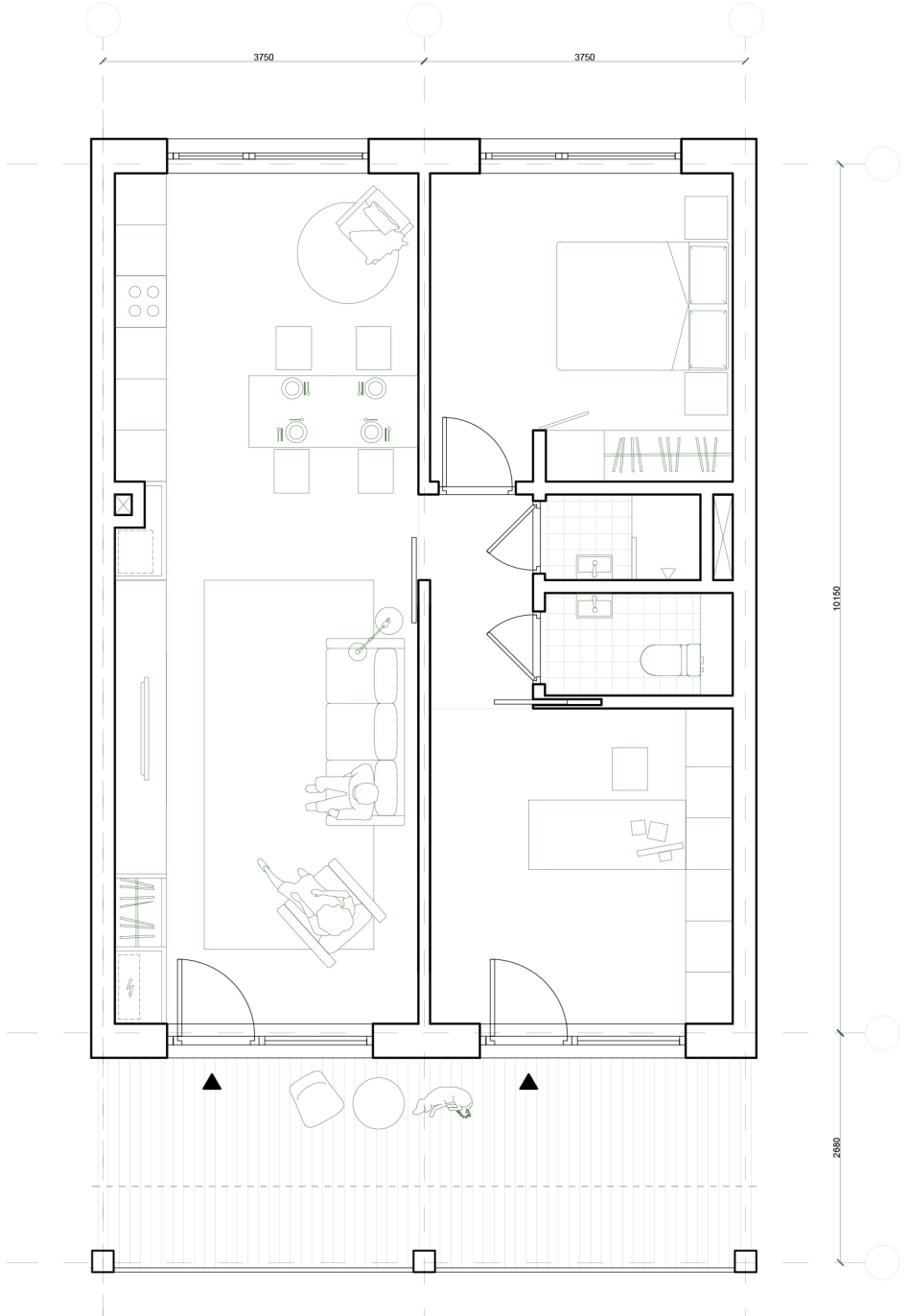


Unit Plan  
0m .5m 1m 2m 1:75



**Live-Adjacent**

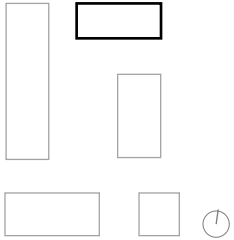
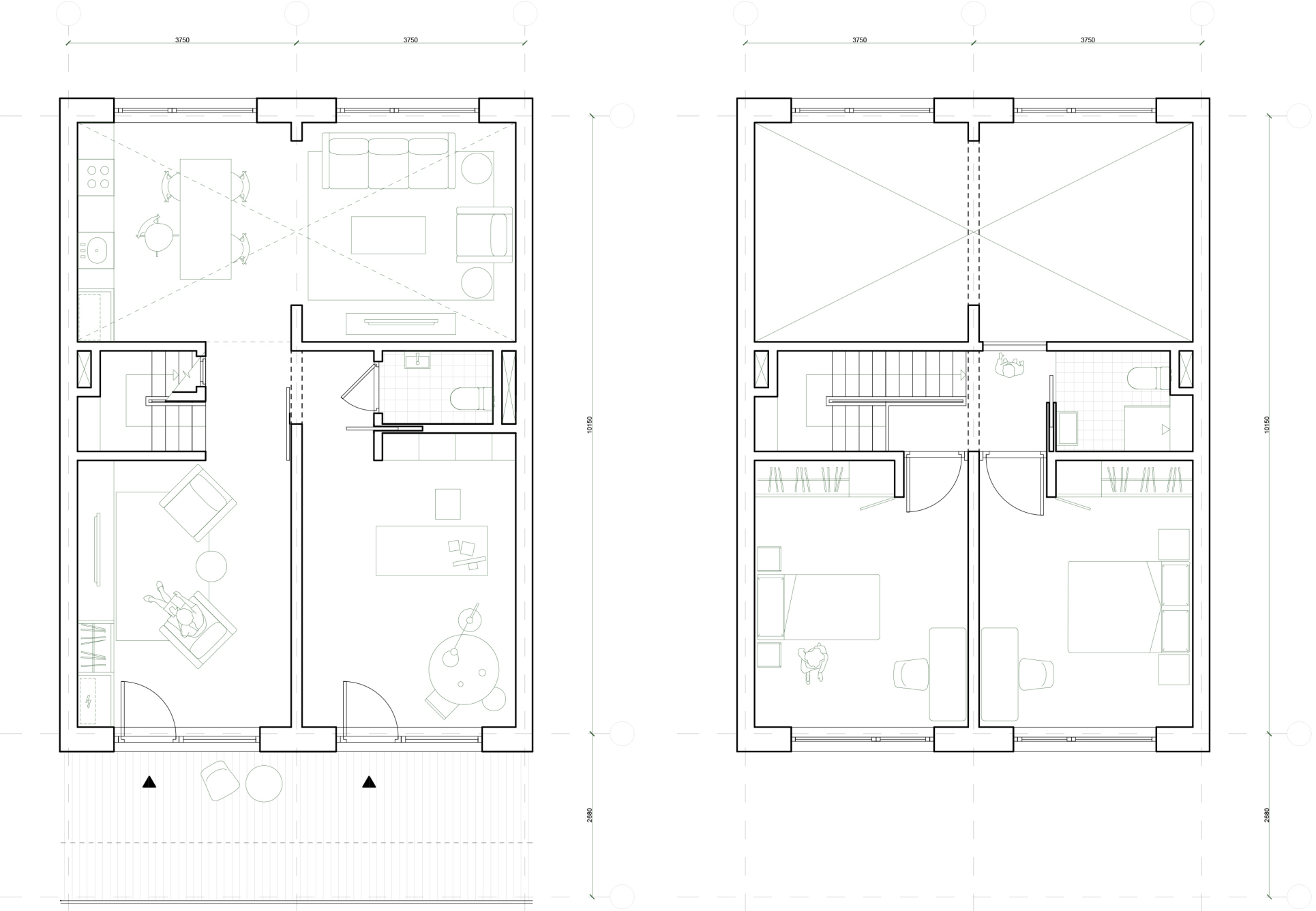
Unit Type 04  
57sqm - Dwelling  
20sqm - Workspace



Unit Plan  
0m .5m 1m 2m 1:75

**Live-Adjacent**

Unit Type 05  
90sqm - Dwelling  
20sqm - Workspace



Unit Plan  
0m .5m 1m 2m 1:75

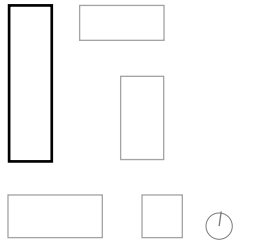
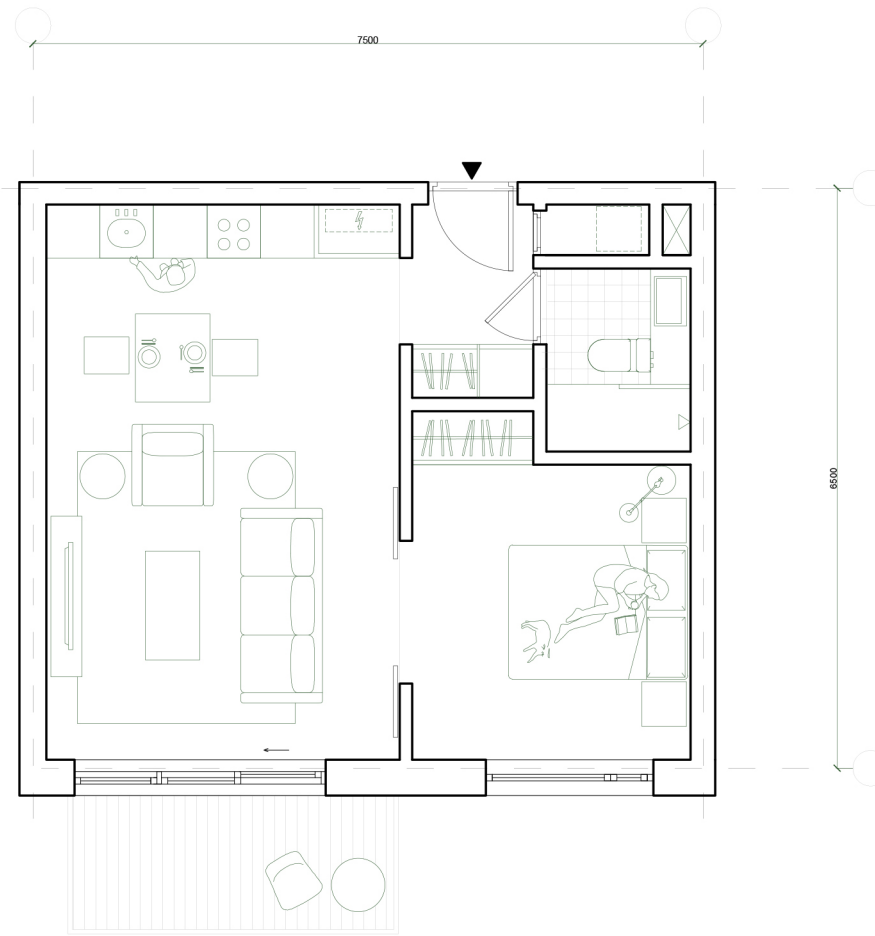




## Live-Nearby

Unit Type 06  
48sqm - Dwelling

Communal Workspaces located  
on the ground floor



Unit Plan  
0m .5m 1m 2m 1:75





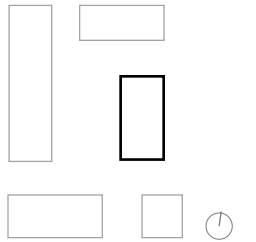
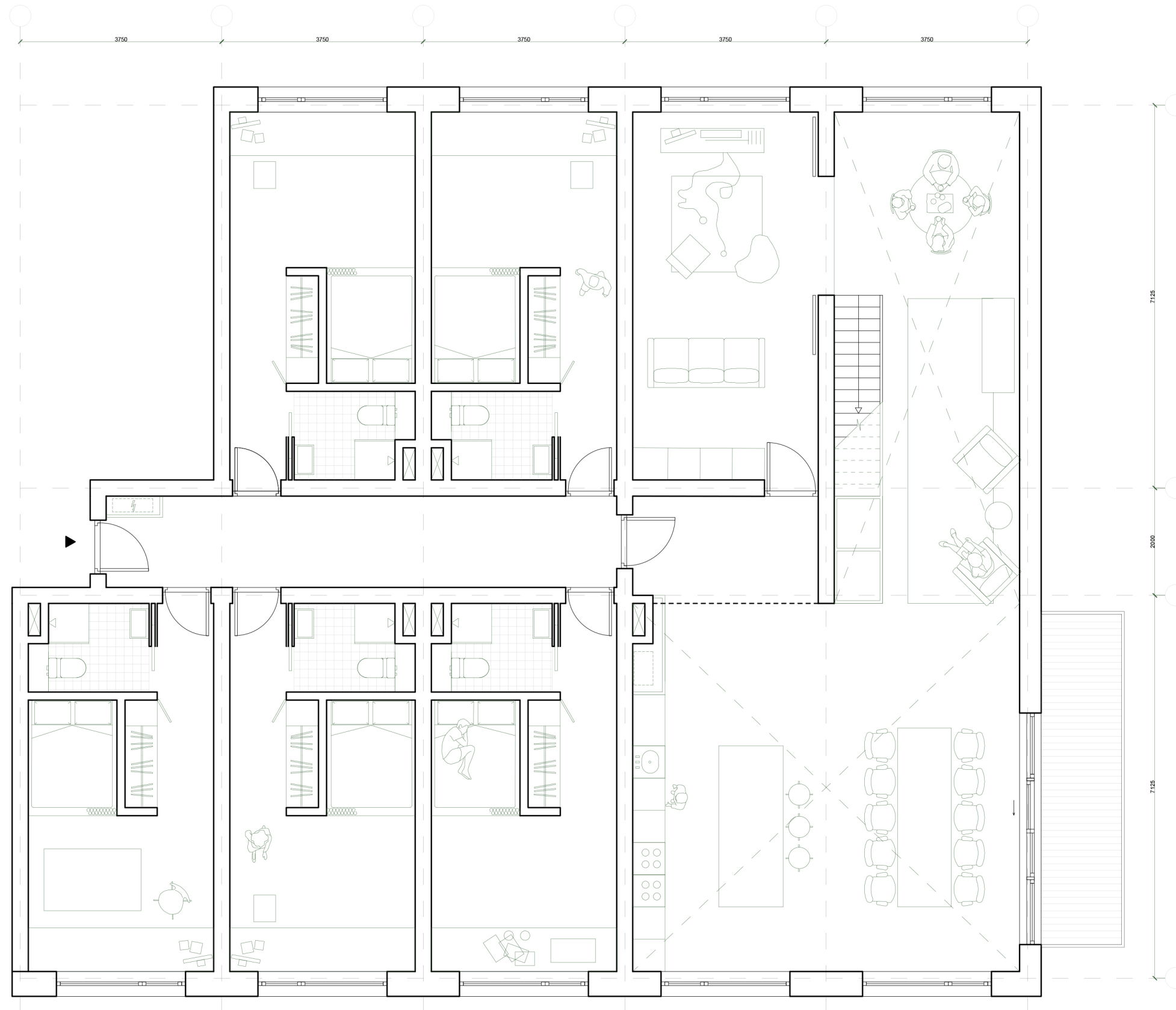
**Live-Nearby/ With (Co-Living)**

Unit Type 07

420sqm

10 Bedrooms per unit

Level 01



Unit Plan  
0m .5m 1m 2m 1:75

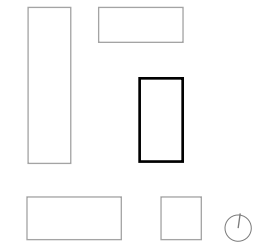
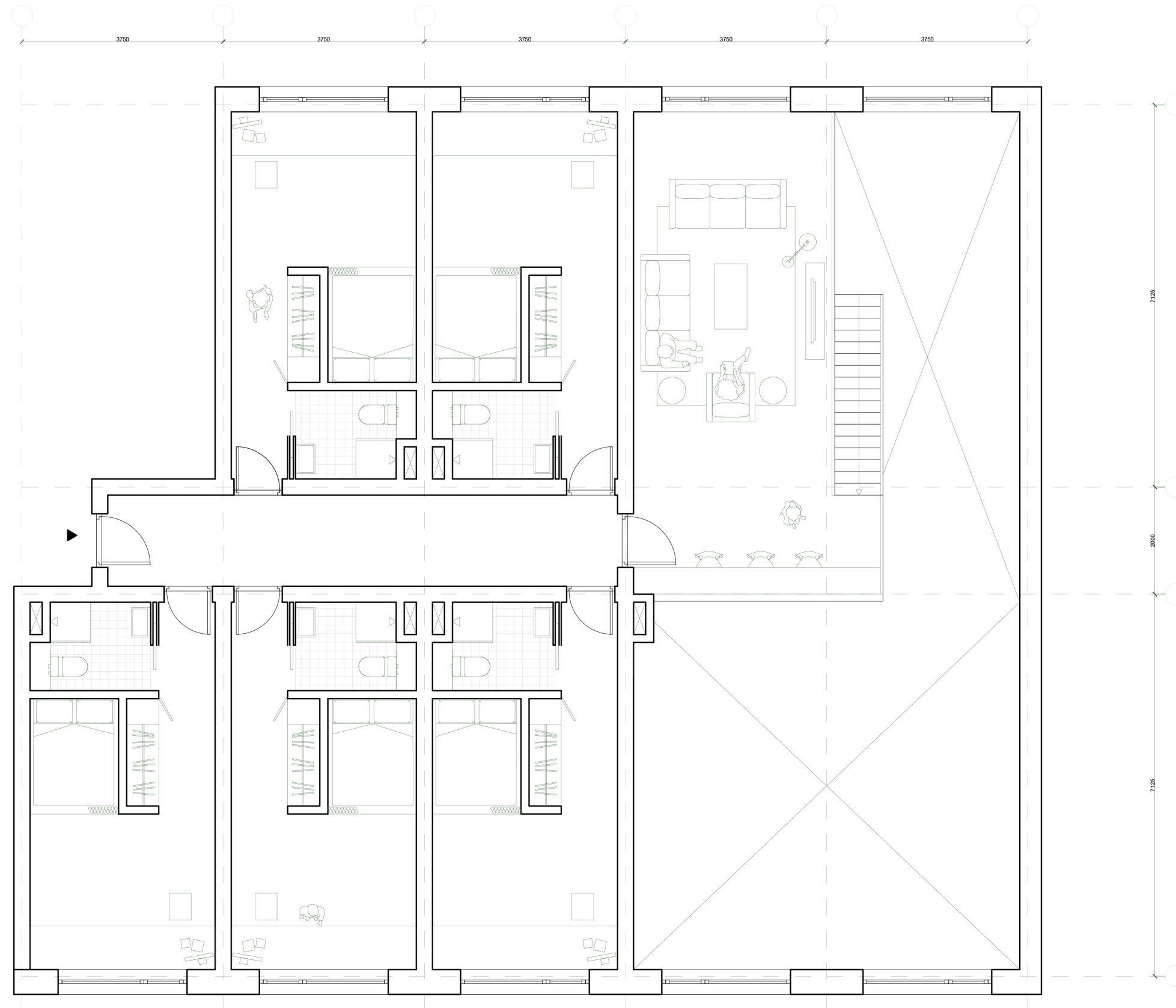
**Live-Nearby/ With (Co-Living)**

Unit Type 07

420sqm

10 Bedrooms per unit

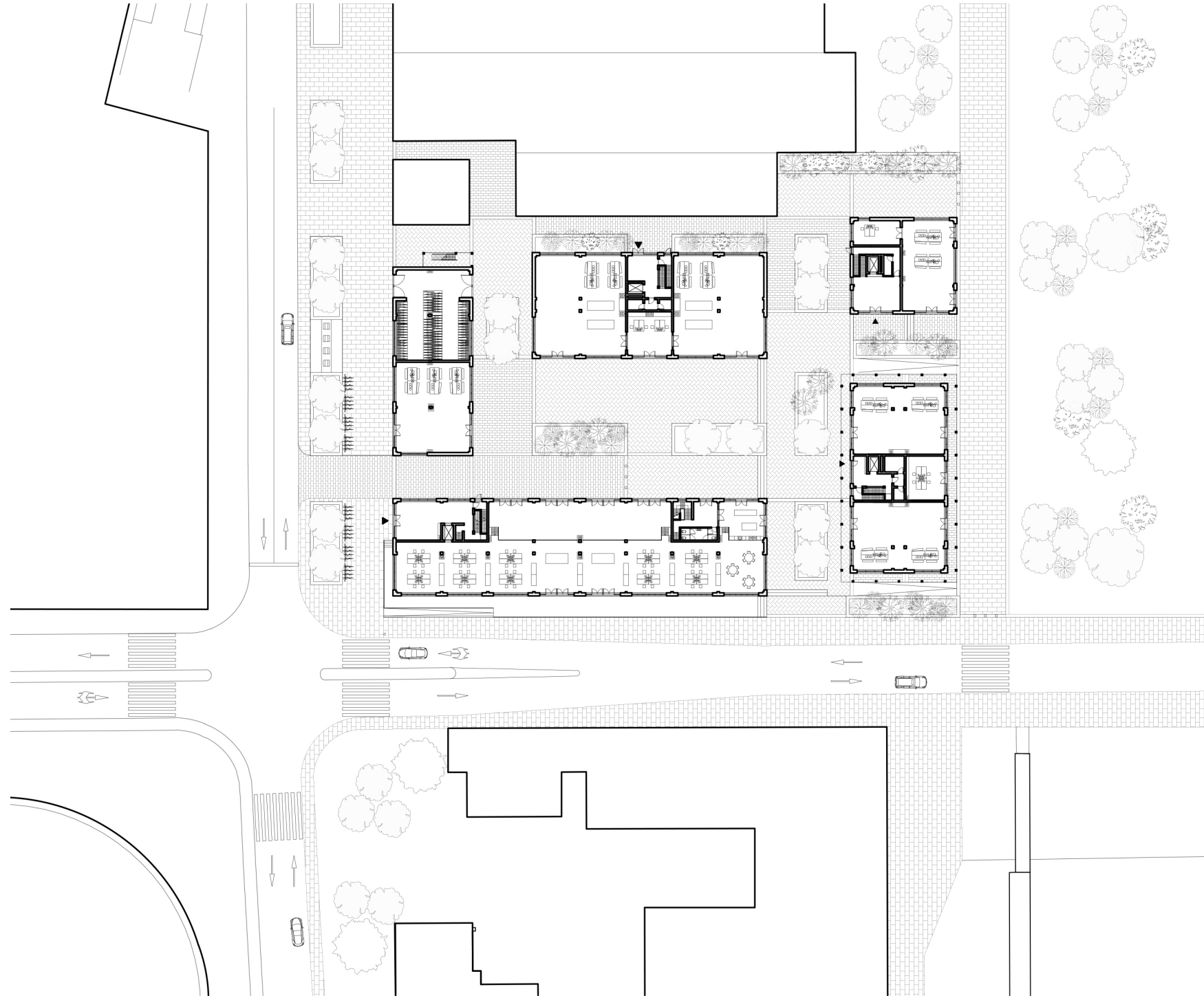
Level 02



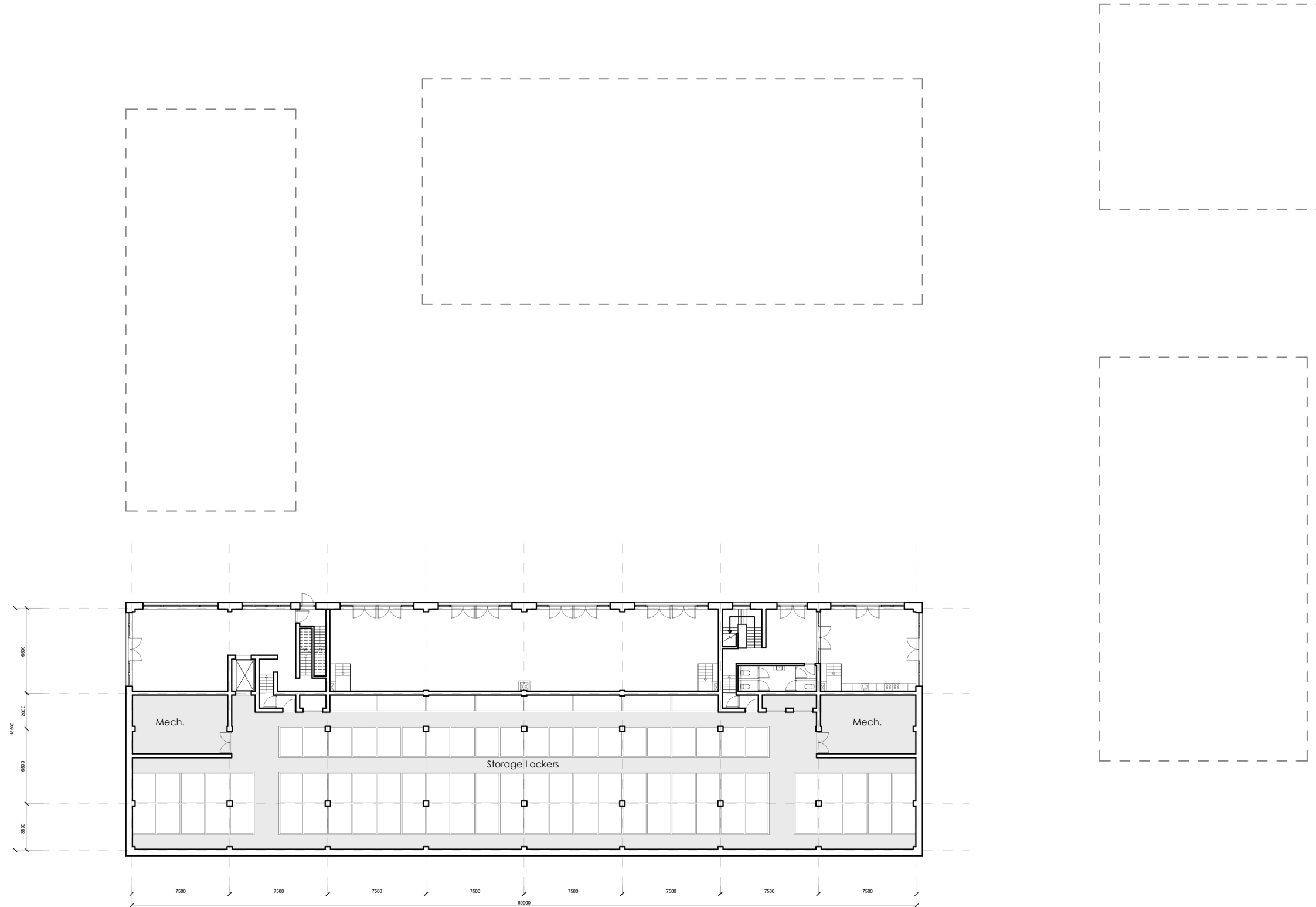
Unit Plan  
0m .5m 1m 2m 1:75





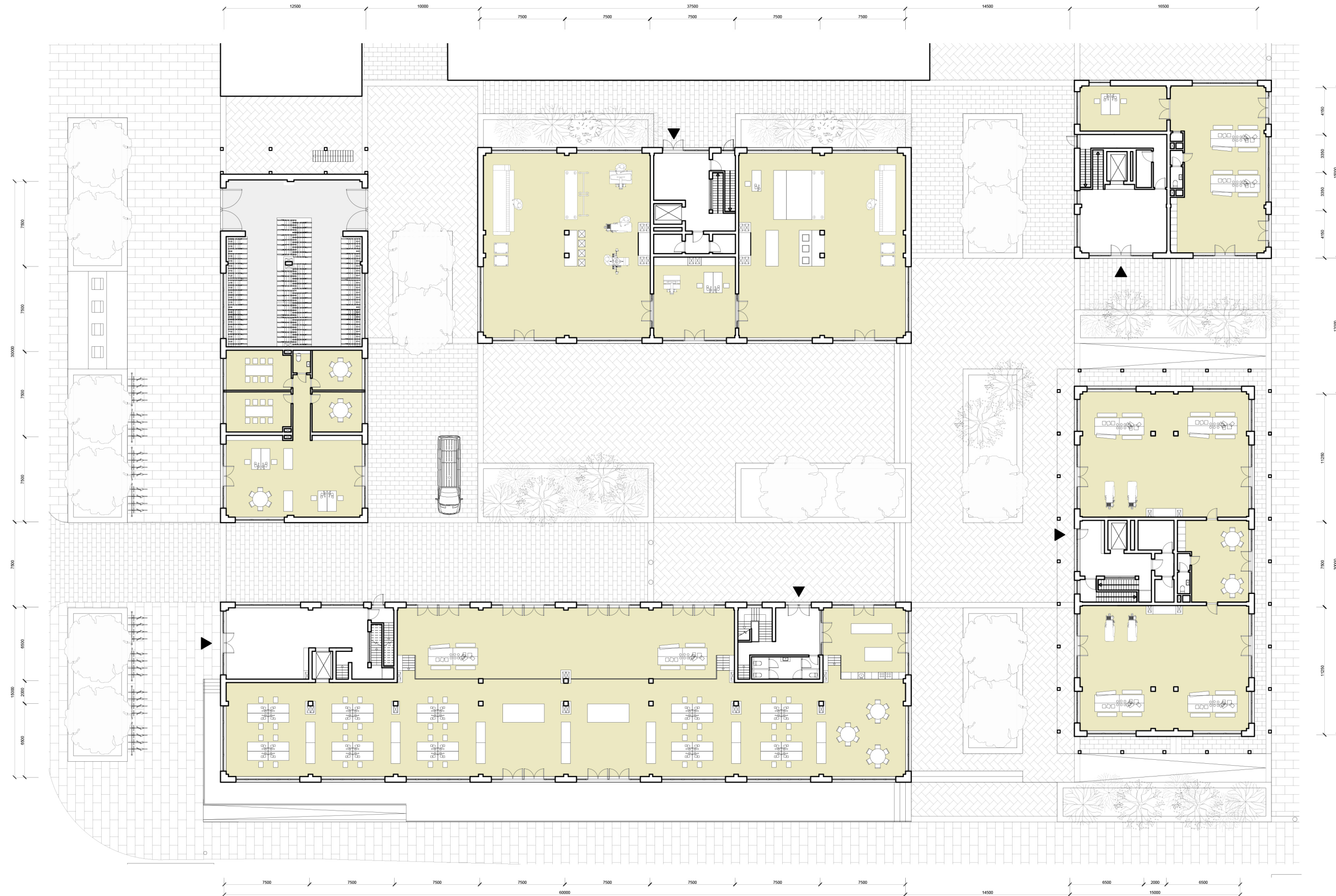


Site Plan  
0m 5m 10m 15m 1:1000



Level -01  
 0m 5m 10m 15m 1:300



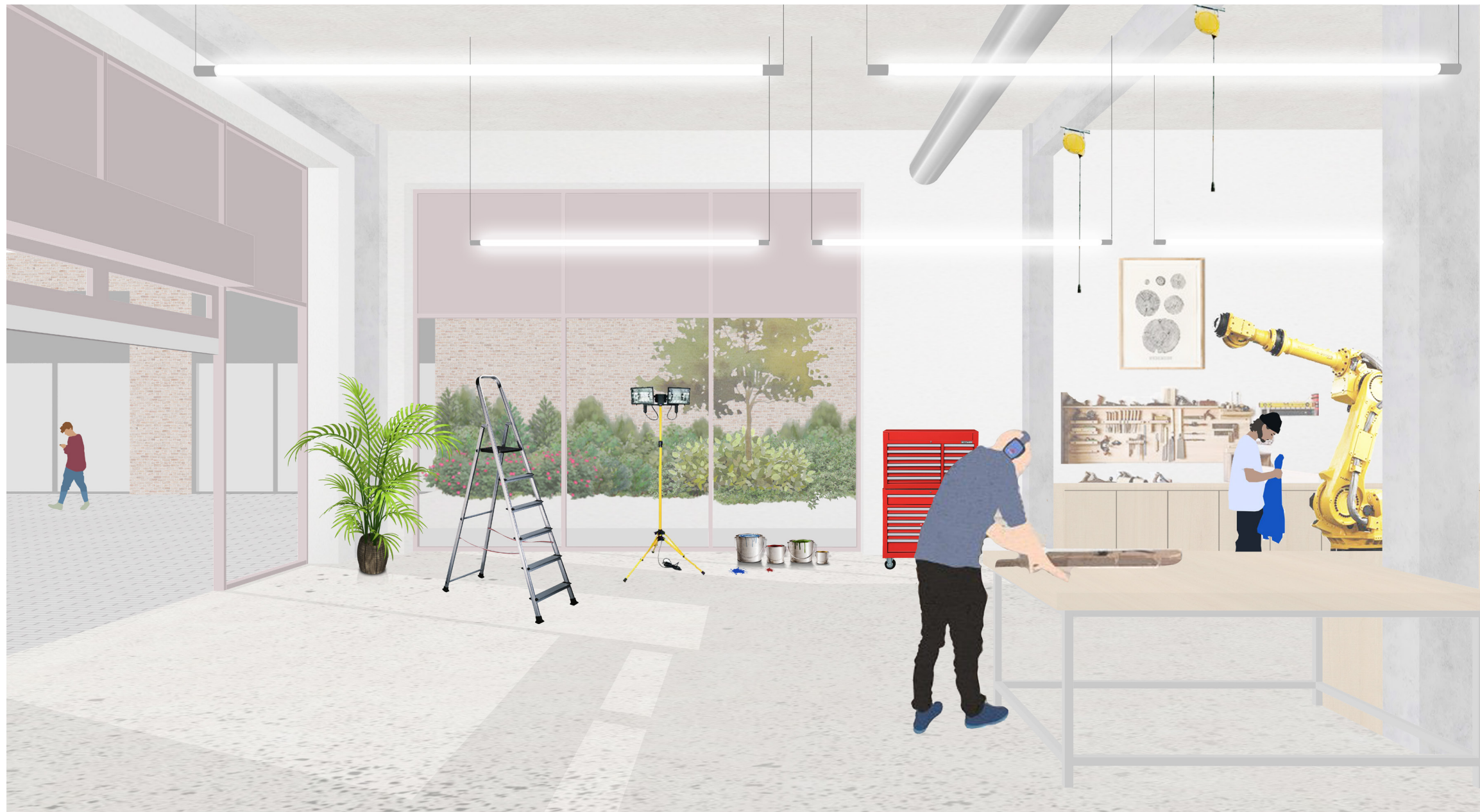


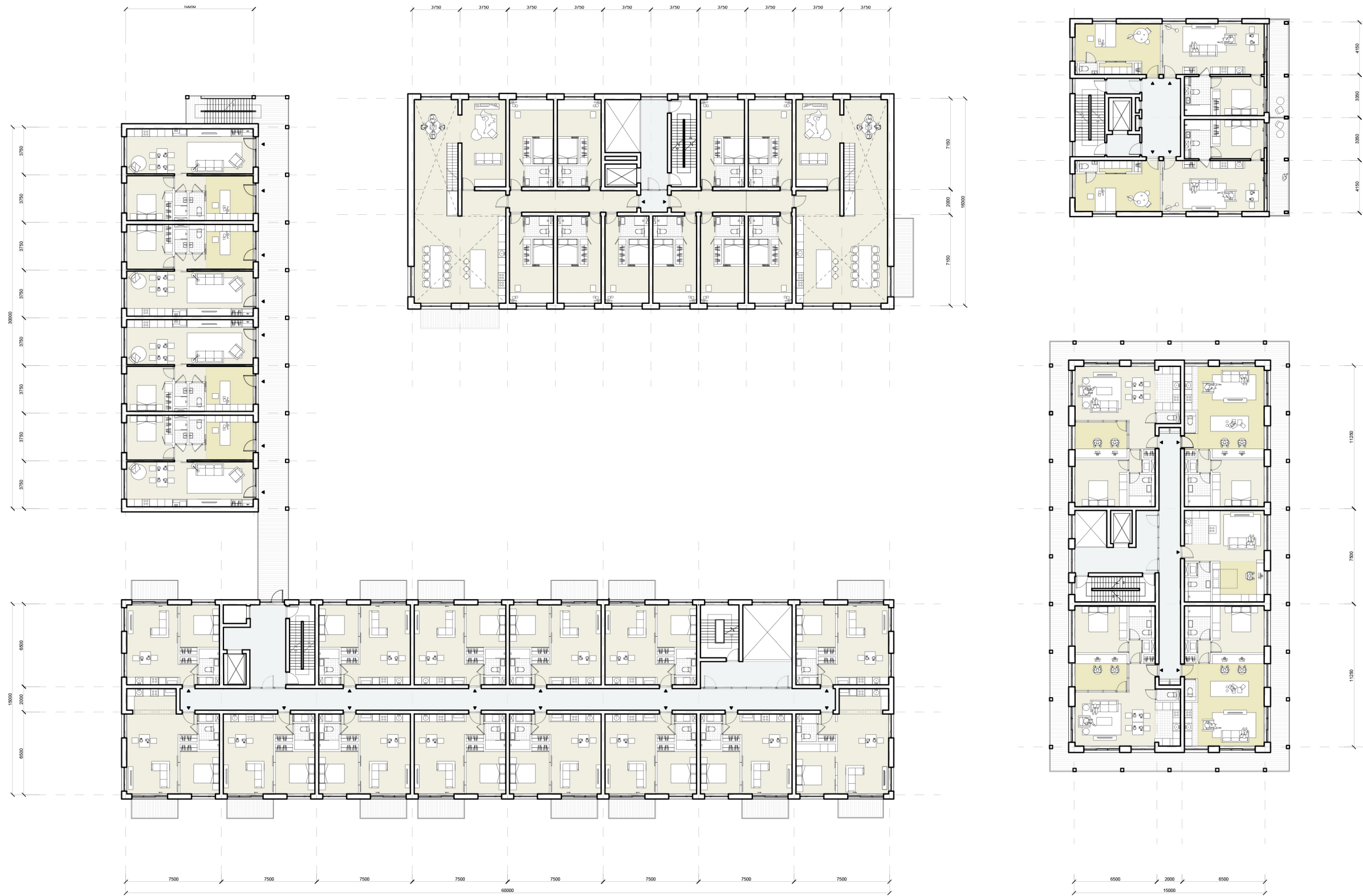
Ground Floor

0m 5m 10m 15m 1:300









Level 01

0m 5m 10m 15m 1:300



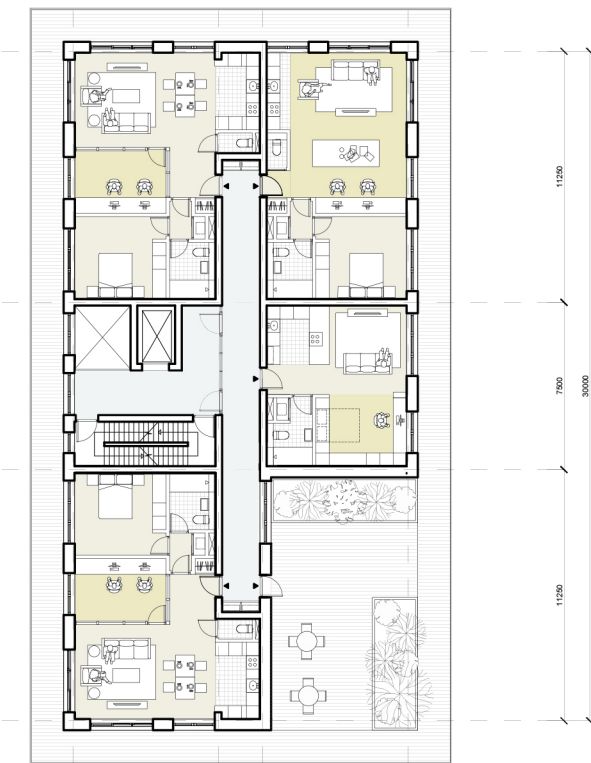
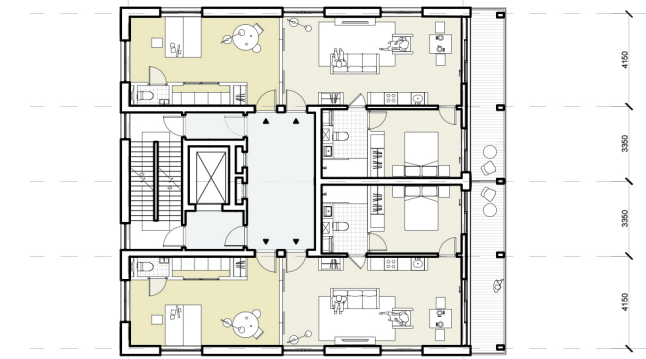
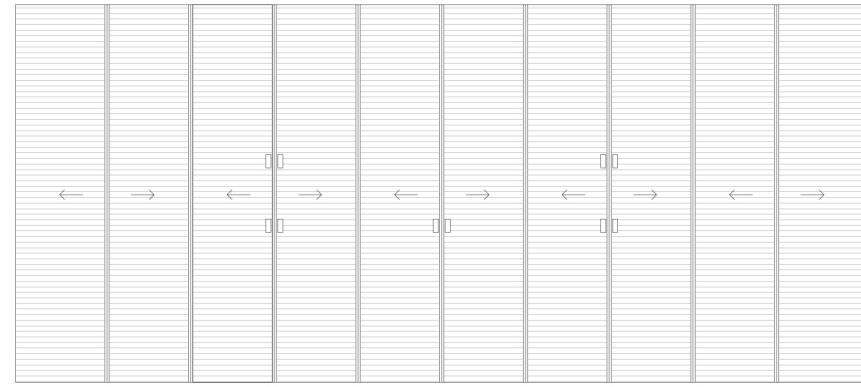






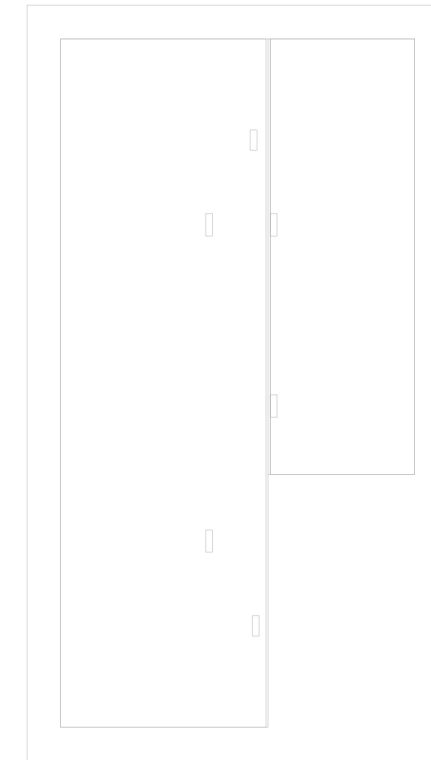
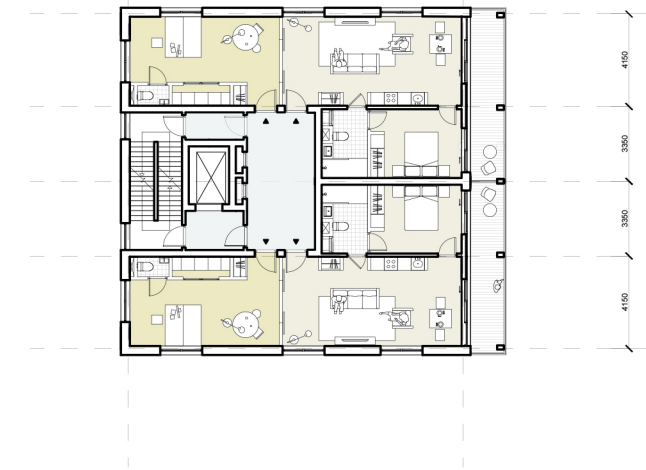
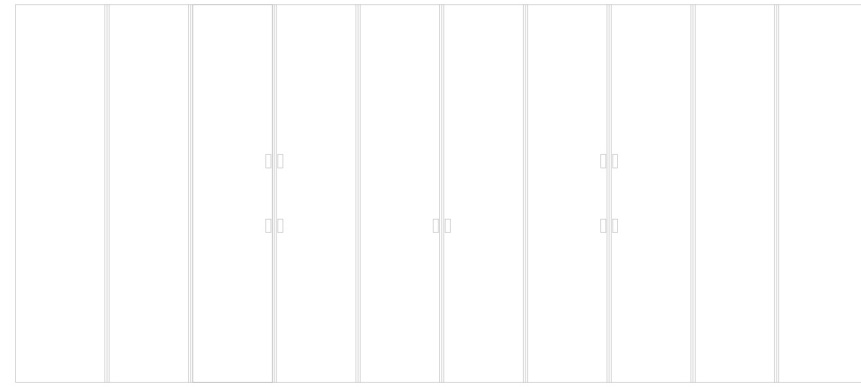
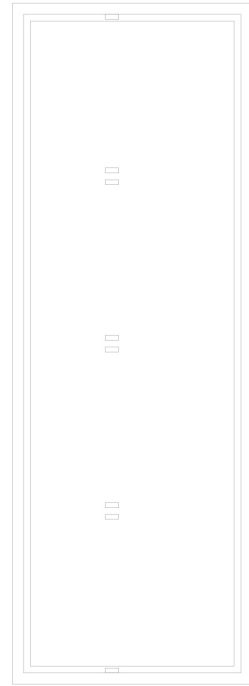
Level 02

0m 5m 10m 15m 1:300



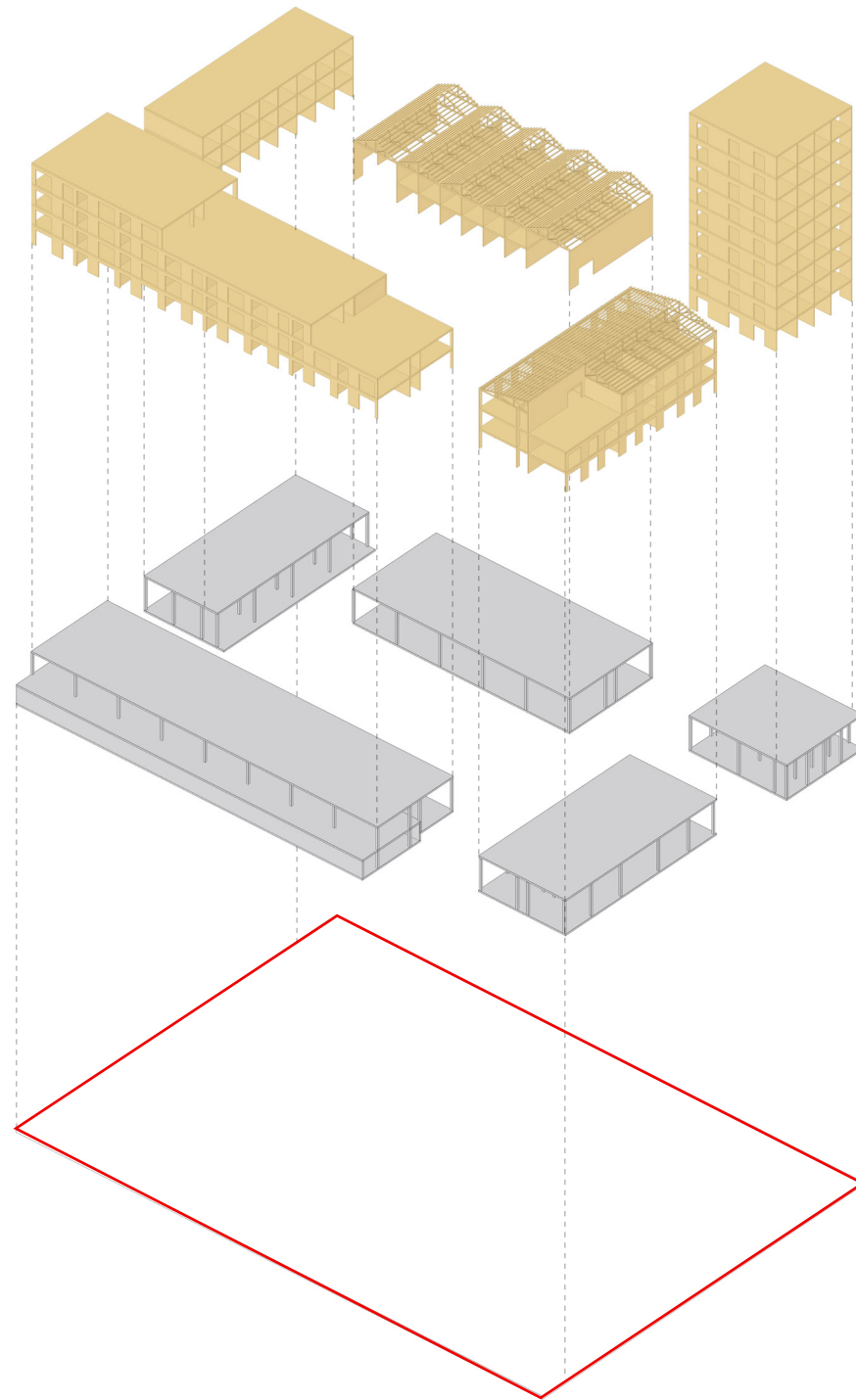
Level 03  
 0m 5m 10m 15m 1:300





Level 05-9





**Structure Lvl 01-09**

CLT Floors & Walls  
Timber Portal Frame Truss  
Reinforced Concrete Cores

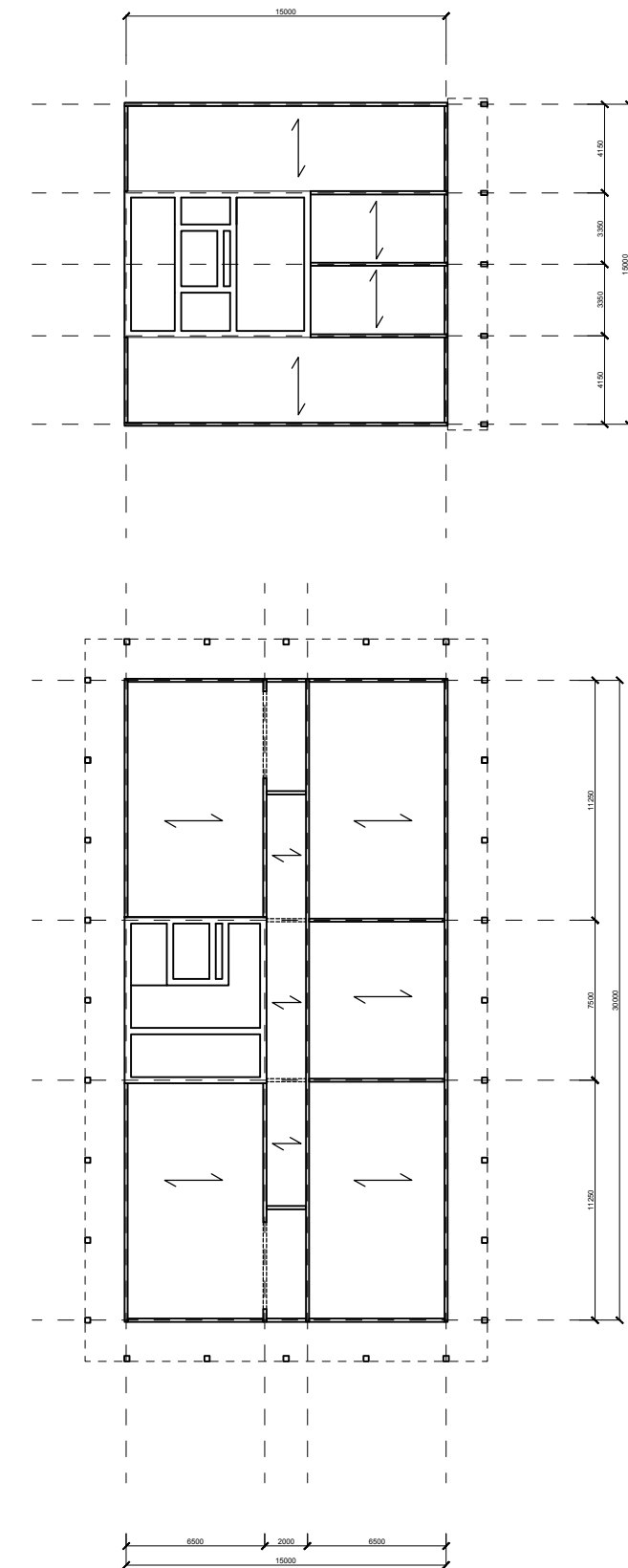
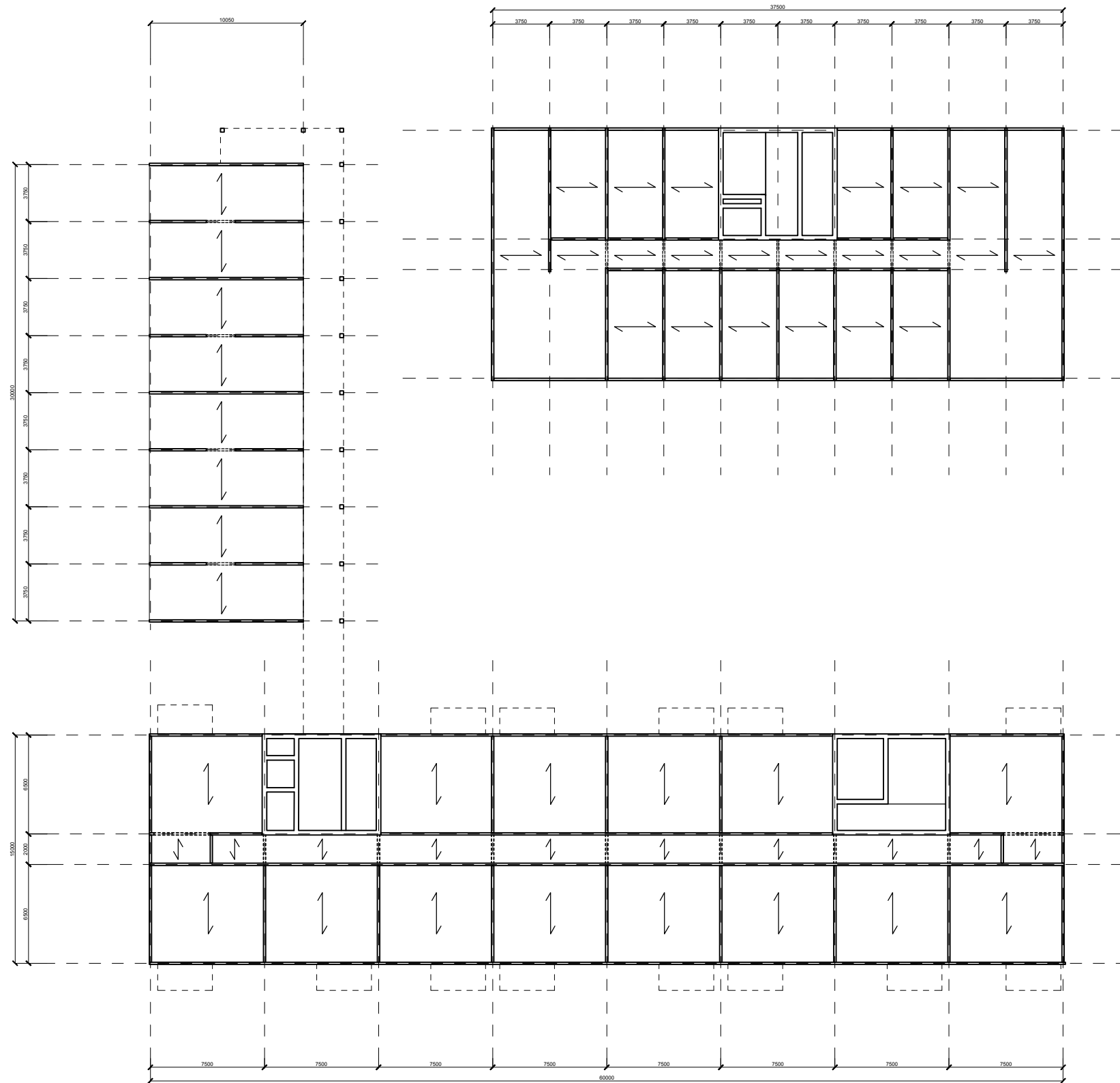
**Structure Lvl -01-00**

Reinforced Concrete Columns  
and Floors

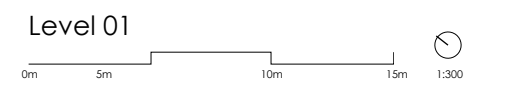
**Site**

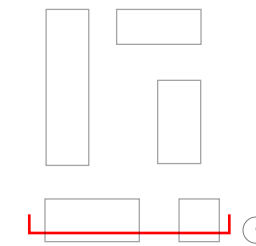
+3m Above sea level



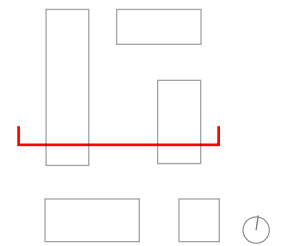


- Structure**
- CLT with Reinforced Concrete Cores
  - Reinforced Concrete Ground Floor





Section A  
0m 5m 10m 15m 1:300



- + 18.75m
- + 15.25m
- + 12.00m
- + 8.75m
- + 5.50m

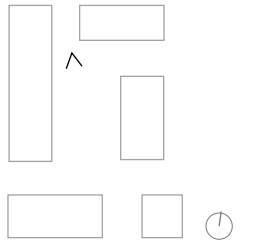
Section B  
 0m 5m 10m 15m 1:300

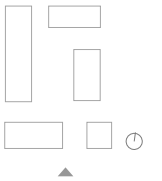
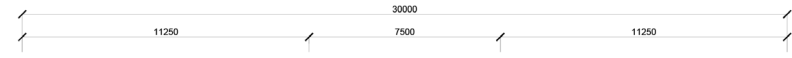




Section D  
 0m 5m 10m 15m 1:300



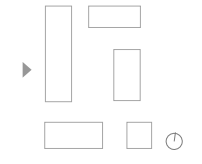
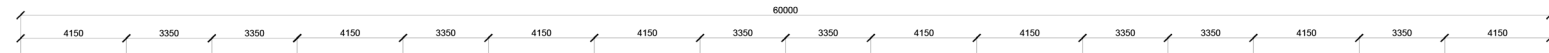




- ▽ + 38.25mm
- ▽ + 31.50mm
- ▽ + 28.25mm
- ▽ + 25.00mm
- ▽ + 21.75mm
- ▽ + 18.50mm
- ▽ + 15.25mm
- ▽ + 12.00mm
- ▽ + 8.75mm
- ▽ + 5.500mm

South Elevation

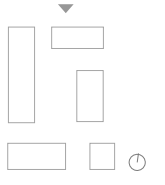
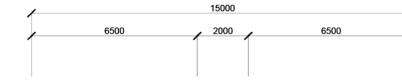
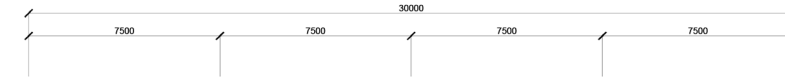




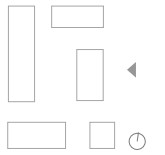
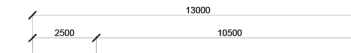
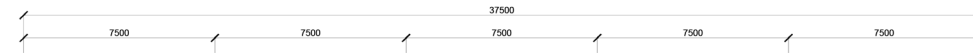
+ 15.25m  
+ 12.00m  
+ 8.75m  
+ 5.500m

West Elevation  
0m 5m 10m 15m 1:300



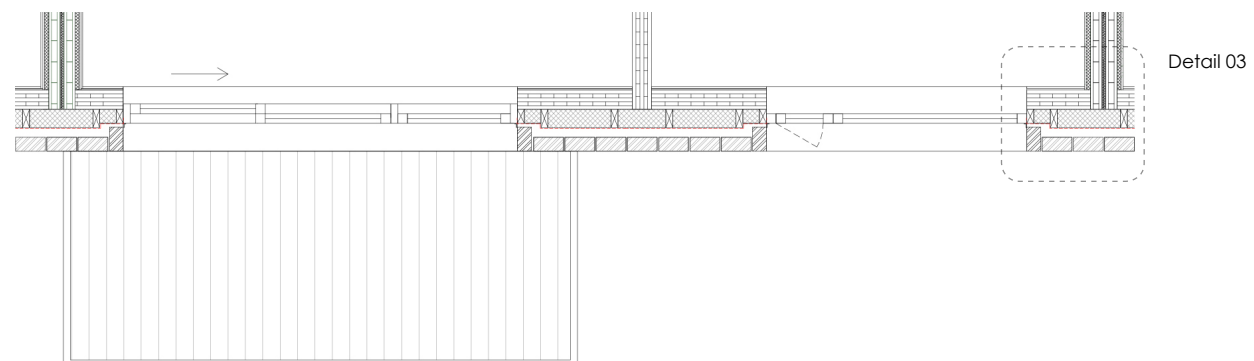
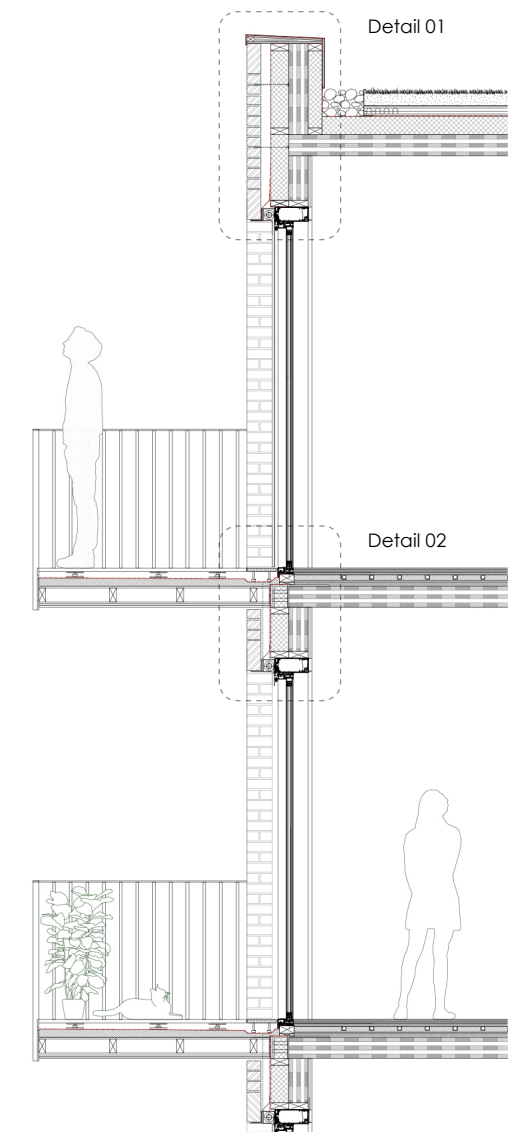


North Elevation  
 0m 5m 10m 15m 1:300

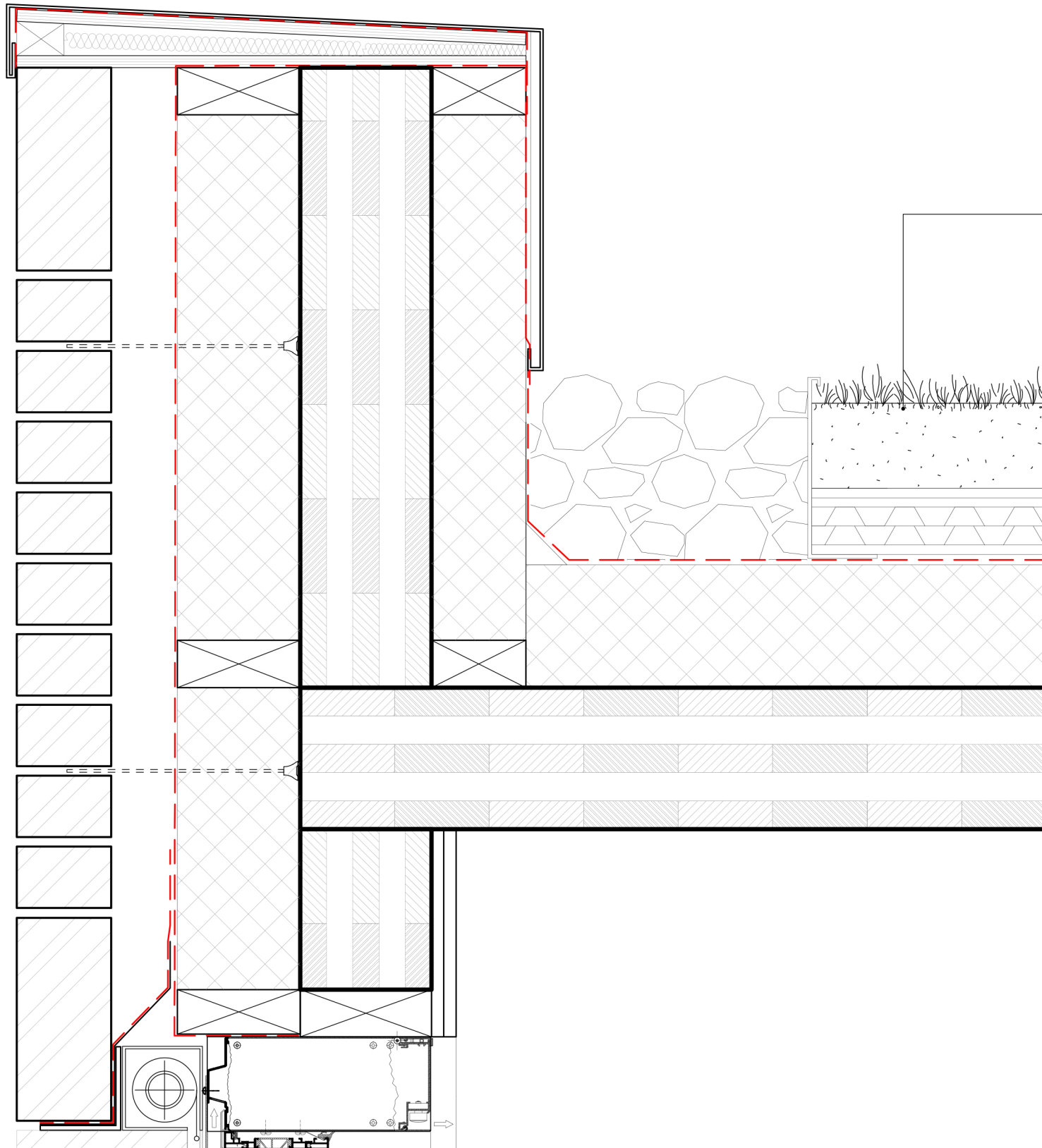


East Elevation  
 0m 5m 10m 15m 1:300



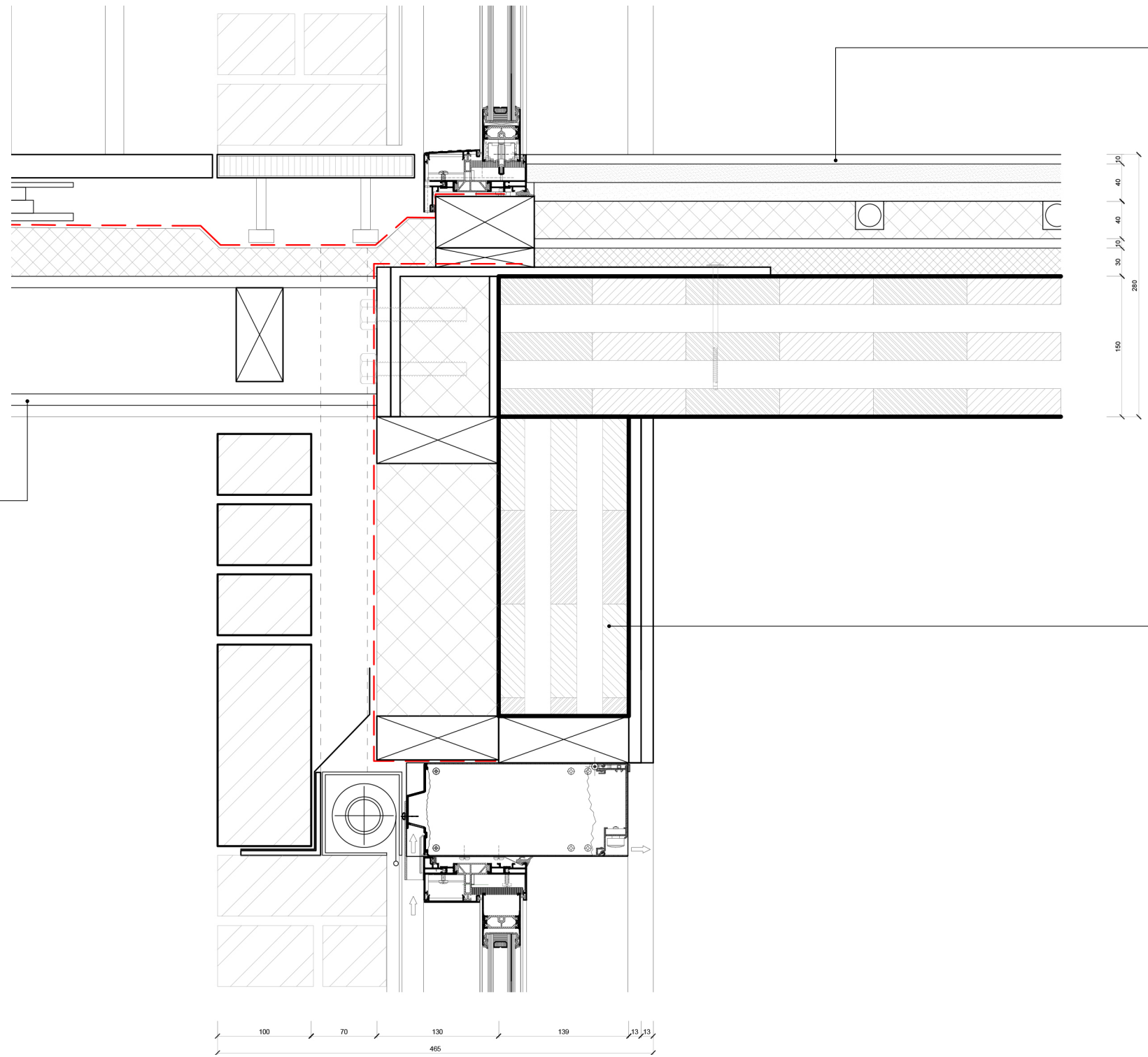


Facade Fragment  
 0m .5m 1m 2m 1:75



- Floor Structure**
- Vegetation
  - 90mm Substrate
  - Filtering Foil
  - 80mm Drainage and buffer system
  - EPDM Roofing
  - 140mm Rigid Insulation
  - 130mm CLT Floorslab

Parapet Detail  
 0m 50mm 100mm 200mm 1:5



**Floor Sturcture**  
 10 mm Floor covering  
 45 mm Prefabricated floor screed element,  
 Heat conductive panel sheet,  
 40 mm Underfloor heating,  
 15 mm Cover plate for load distribution,  
 30mm Additional mass,  
 Trickle protection  
 150 mm CLT Load-bearing structure

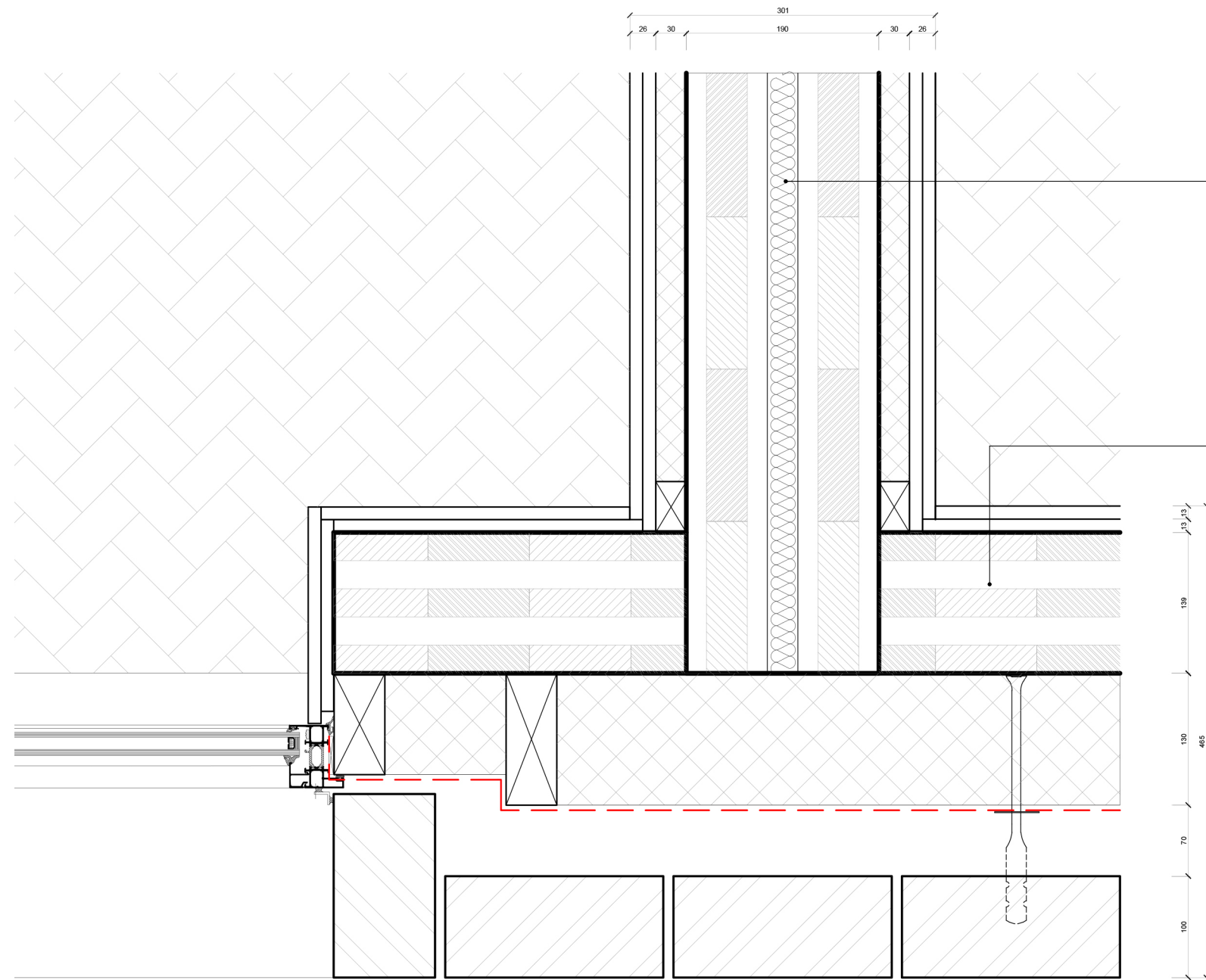
**Exterior Wall Sturcture**  
 100 mm Brick  
 50 mm Air Cavity,  
 DPC Waterproofing sheeet,  
 100 mm Studwall with Rockwool thermal insulation,  
 139 mm CLT Load-bearing structure  
 12.5 mm Plasterboard,  
 12.5 mm Plaster,  
 Kawneer double glazed aluminium window

**Balcony Structure**  
 25mm tiles on angled jacks @ 600mm centers  
 DPC Waterproofing sheet,  
 60mm Kooltherm K3 Insulation  
 150mm steel T-beam fixed to Shoeck Isokorb

Balcony Detail  
 0m 50mm 100mm 200mm

1:5





**Interior Inter-Party Wall Structure**

- 12.5 mm Plaster,
- 12.5 mm Plasterboard,
- 30 mm Sound Absorption Insulation
- 190 mm CLT panel (80mm CLT, 20mm Insulation, 80mm CLT)
- 30 mm Sound Absorption Insulation
- 12.5 mm Plasterboard,
- 12.5 mm Plaster,

**Exterior Wall Structure**

- 100 mm Brick
- 50 mm Air Cavity,
- DPC Waterproofing sheet,
- 100 mm Studwall with Rockwool thermal insulation,
- 139 mm CLT Load-bearing structure
- 12.5 mm Plasterboard,
- 12.5 mm Plaster,
- Kawneer double glazed aluminium window

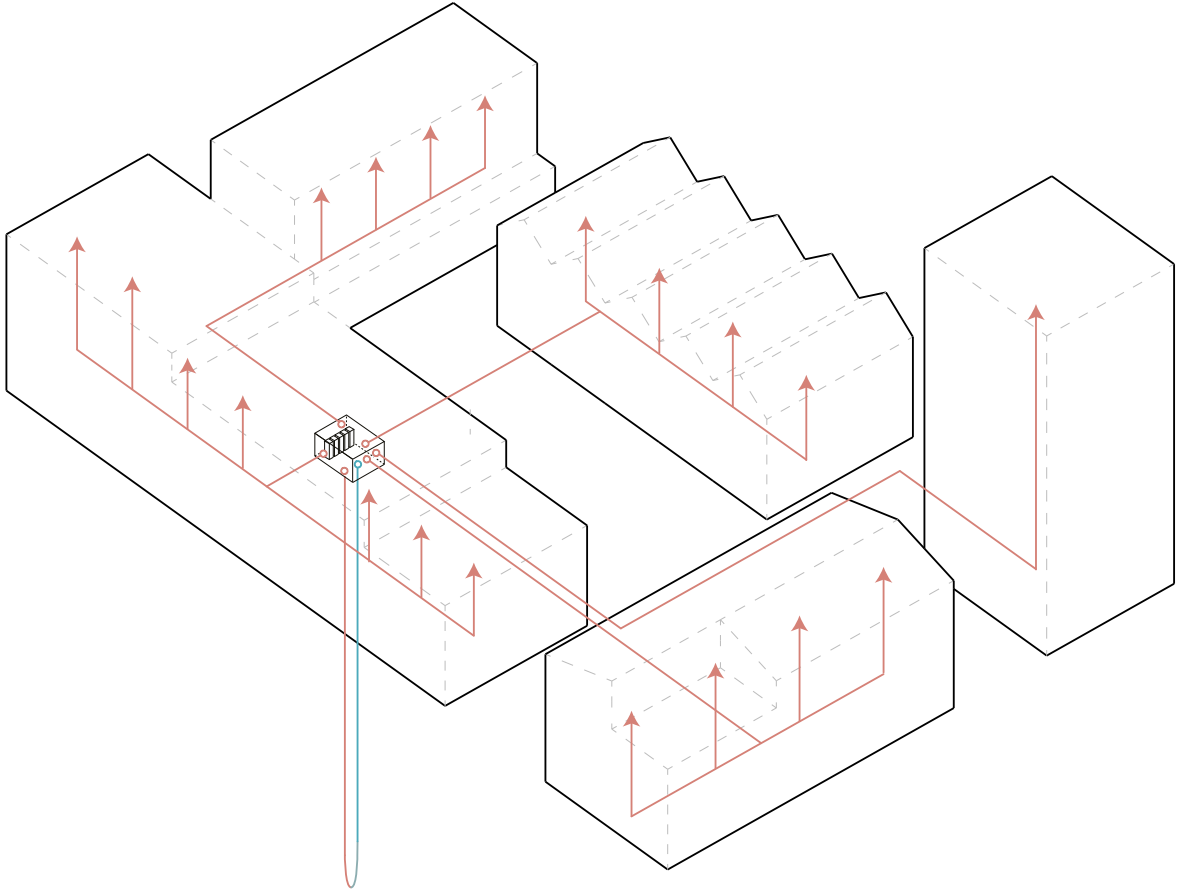
Window Jamb Detail



1:5

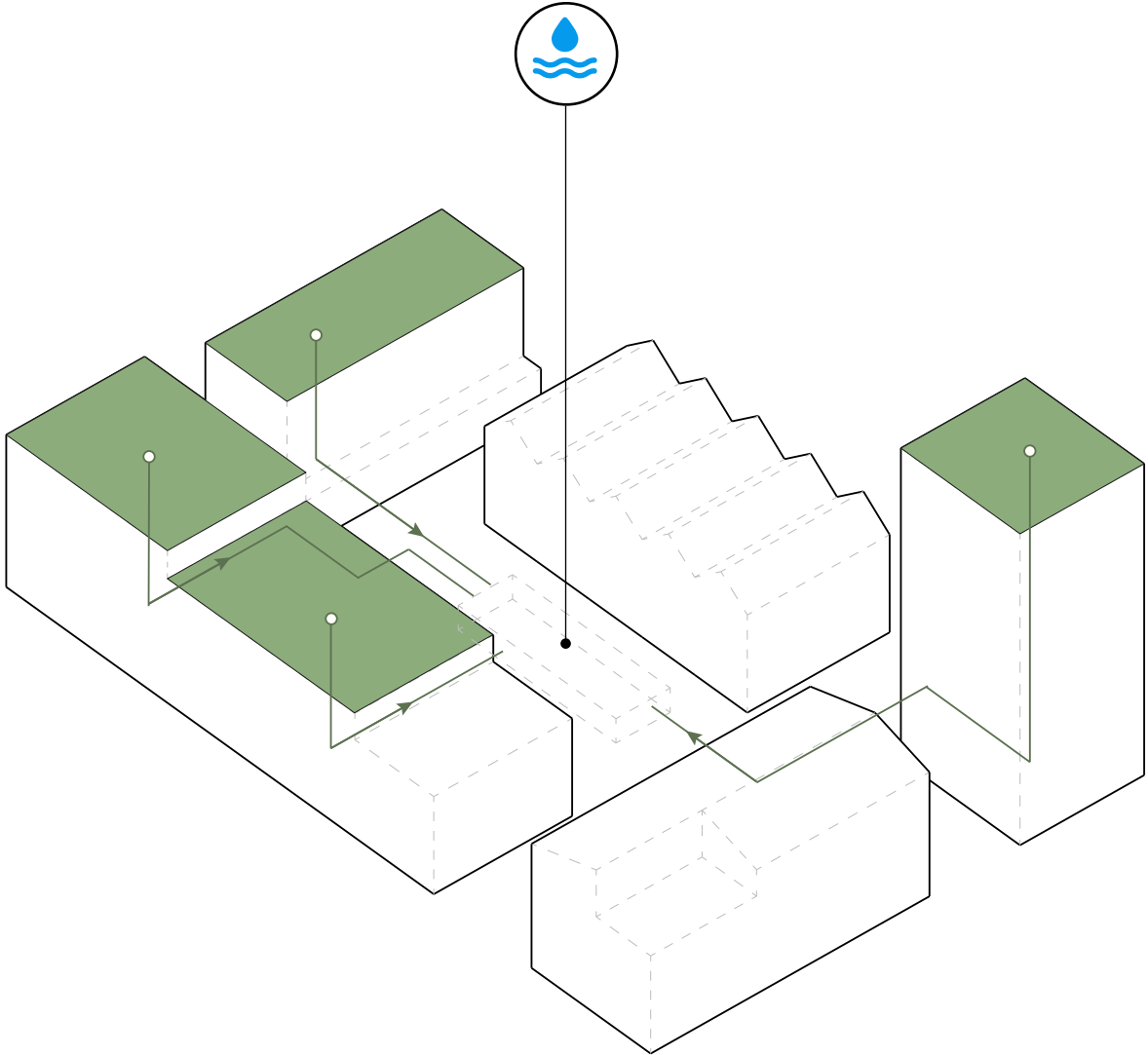
**Sustainability**

Centralised Ground Source Heat Pump



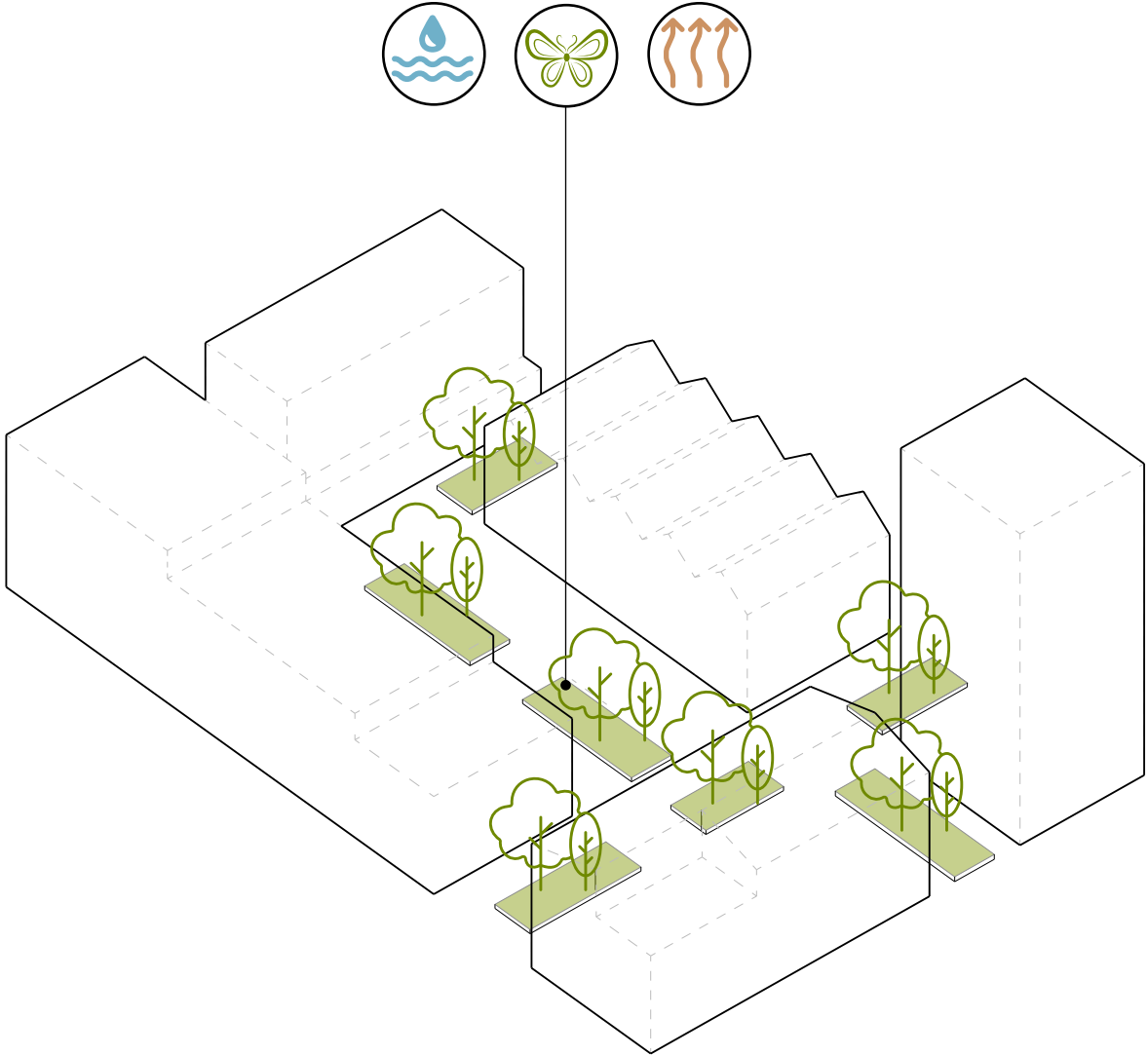


**Sustainability**  
Green Roof & Rainwater Harvesting



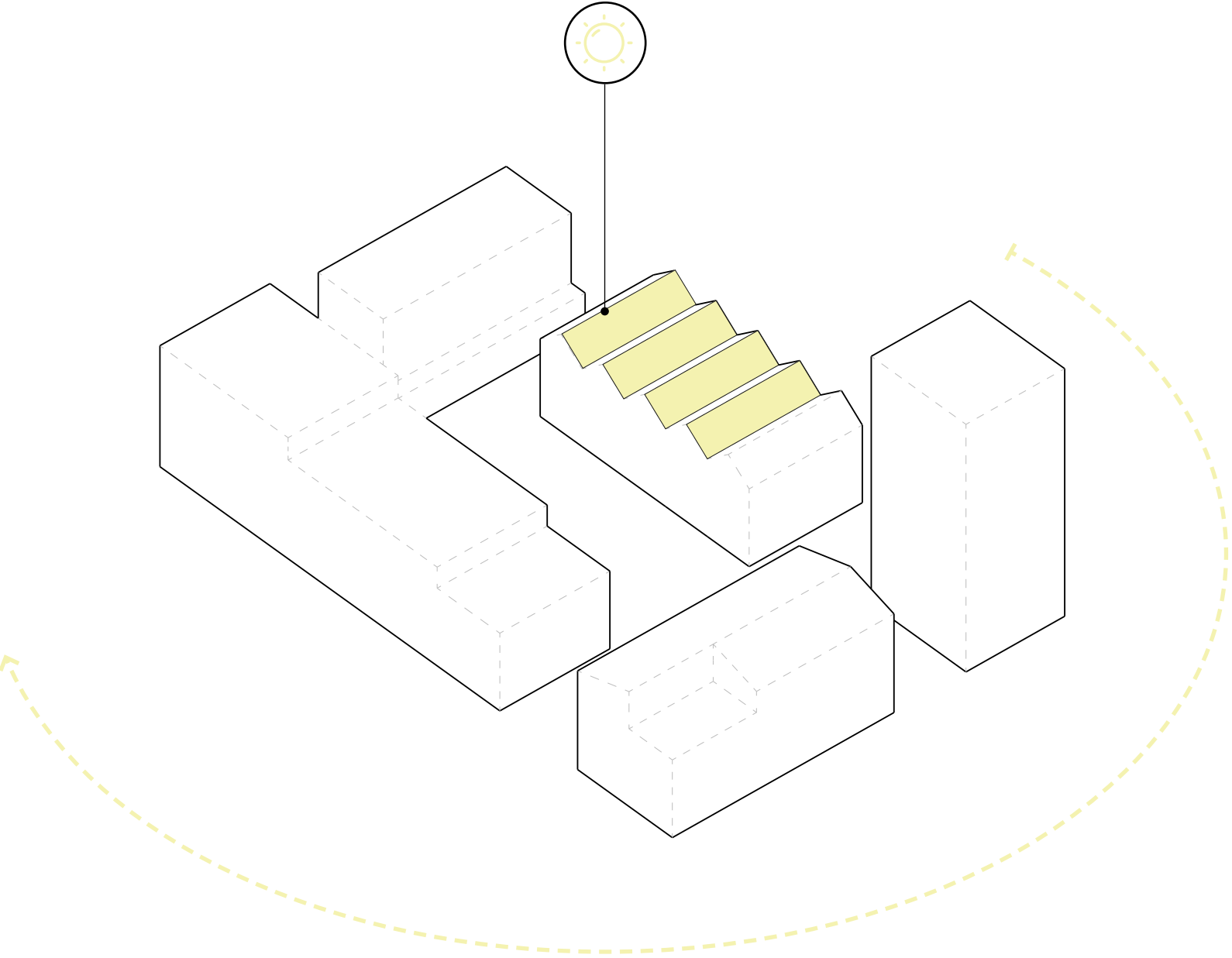
**Sustainability**

Reduced Heat Stress & Water Infiltration

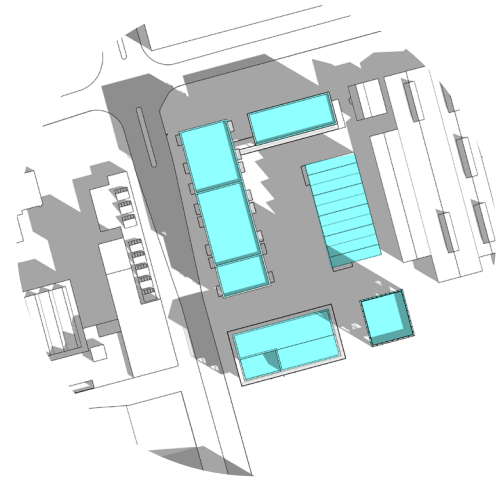


**Sustainability**

Solar Panels on pitched roofs



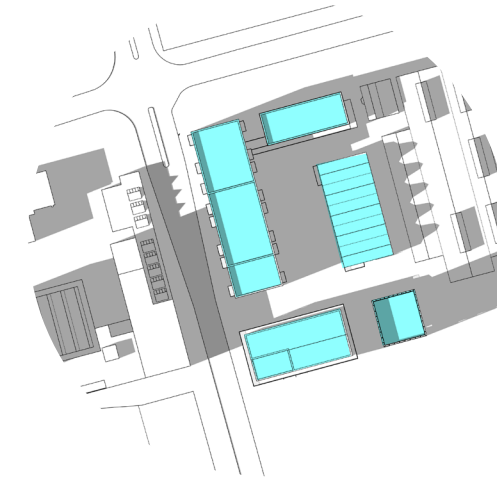
**Spring Equinox**  
20th March



9:00 am

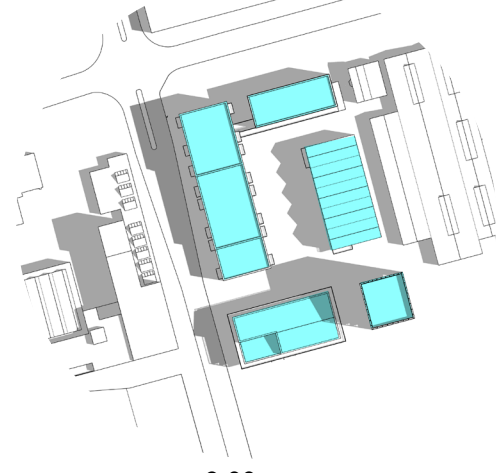


12:00 pm

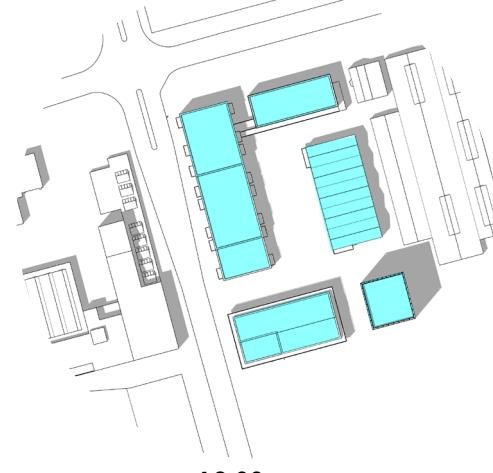


16:00 pm

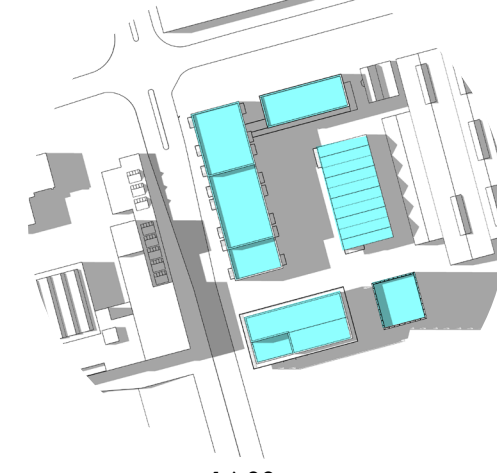
**Summer Solstice**  
21th June



9:00 am

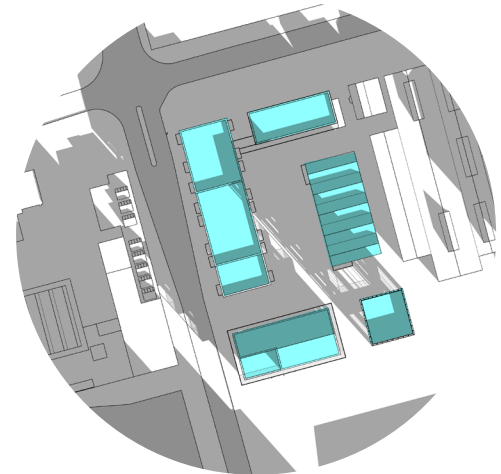


12:00 pm

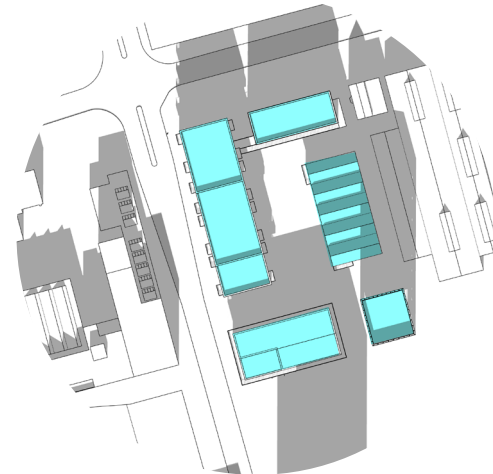


16:00 pm

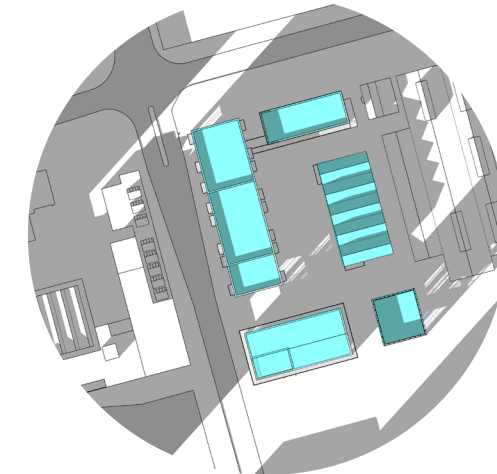
**Winter Equinox**  
20th December



9:00 am

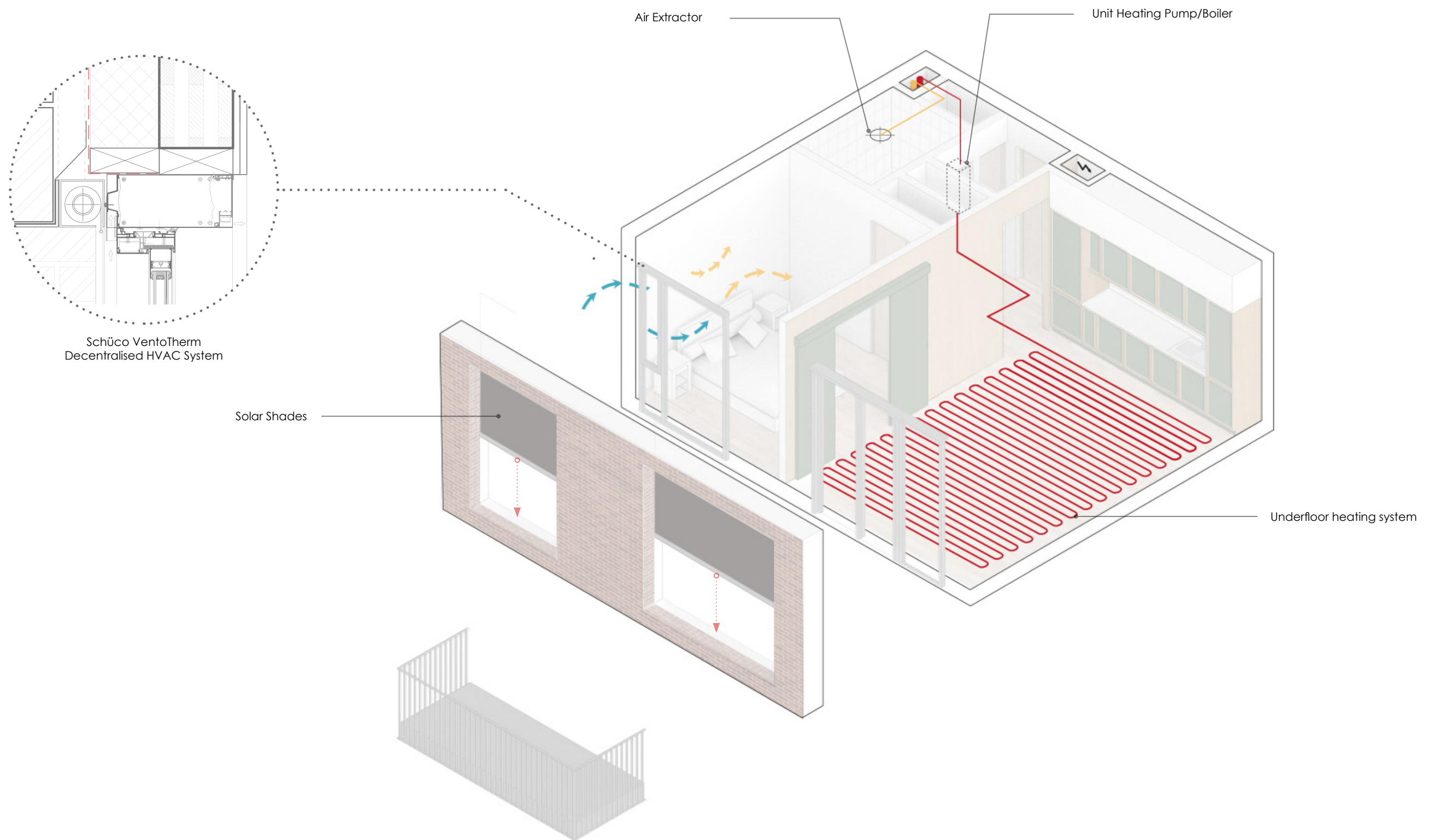


12:00 pm



16:00 pm

**Climate Design**  
Typical Unit





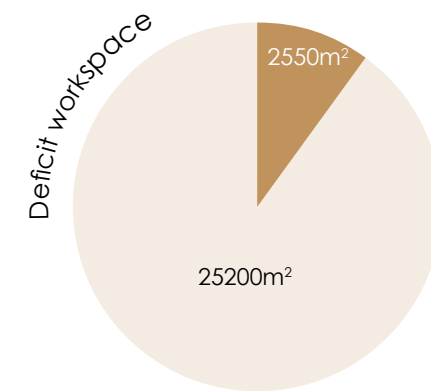
## Conclusion



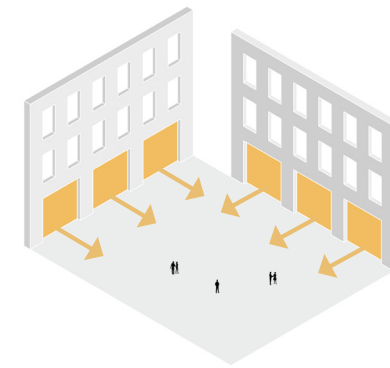
x 85



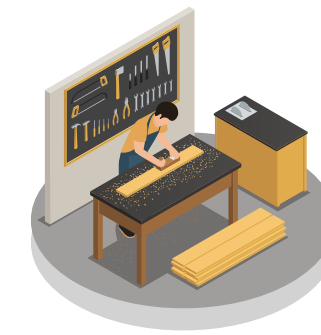
x 107



+10%



Active Ground Floor



Communal workshops



Clustered Community

Thank You

