

# TALLINN TIMBER - THE POTENTIAL OF KALASADAMA

P5

ENZO REE BOETER

28/06/2024





# ***I. PROJECT THEME***

## TALLINN TIMBER

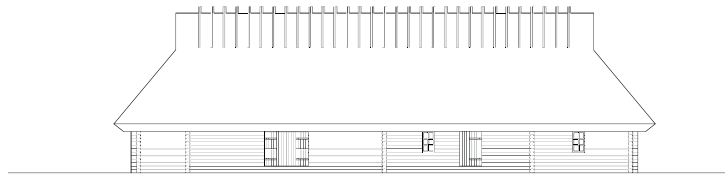


52,7% of Estonia is forest  
11,1% of The Netherlands is forest

*Forest 2014. (FAO)*







**1000 - 1850**  
**REHIELAMU**  
*"Drying Barn Dwelling"*

*Agrarian Typology  
Untill Industrial Revolution; Less Agriculture  
Living + Working  
Central "Rehetuba" Heated for Sleeping & Drying*



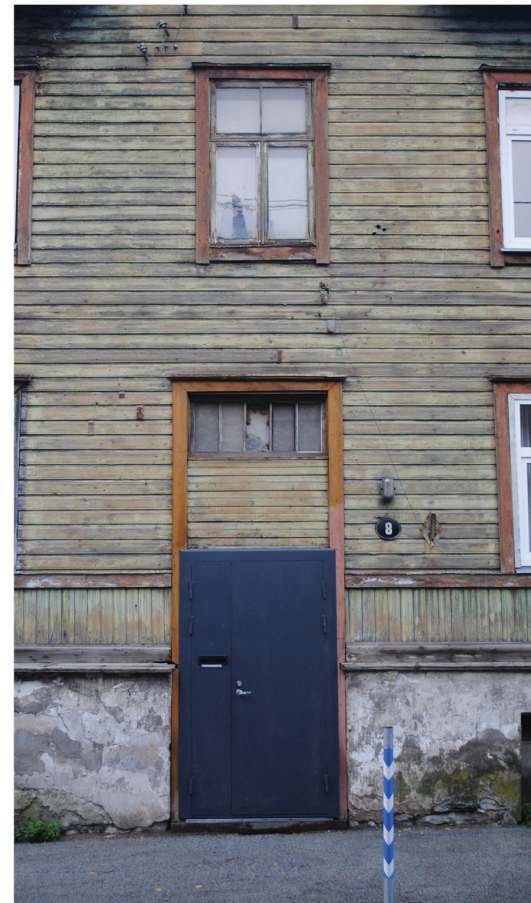
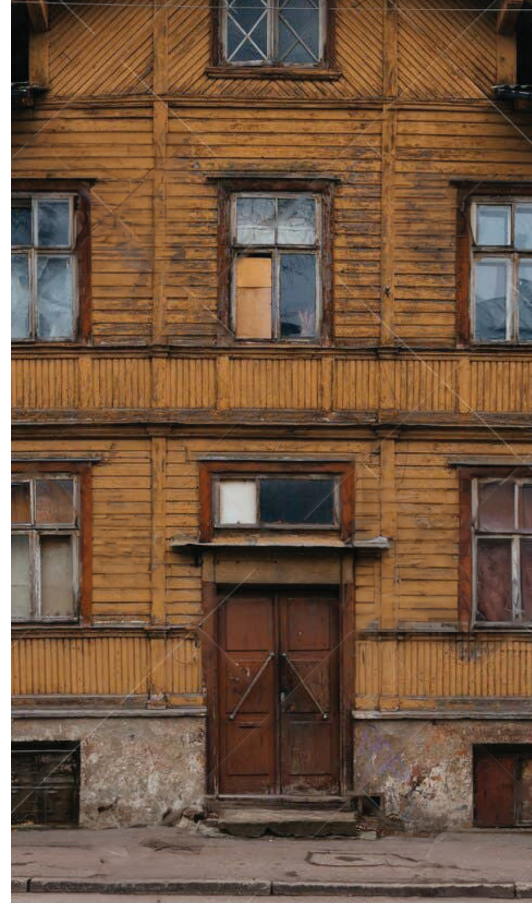
**1880 - 1920**  
**LENDERI MAJA**  
*"Lender Style House"*

*Urban Growth Typology  
8 Log Apartments on top of Limestone Base  
Double Staircase for Fire Regulation  
Communal Toilet in Staircase and Shared Heating*



**1920 - 1940**  
**TALLINNA MAJA**  
*"Tallinn Style House"*

*Urban Growth Typology  
Taller Plinth for Commercial Functions, on top a Timber  
Frame Instead of Log; Cheap & Quick  
Single Stone Staircase  
More Luxurious; Private Toilet, More Rooms & Electricity*



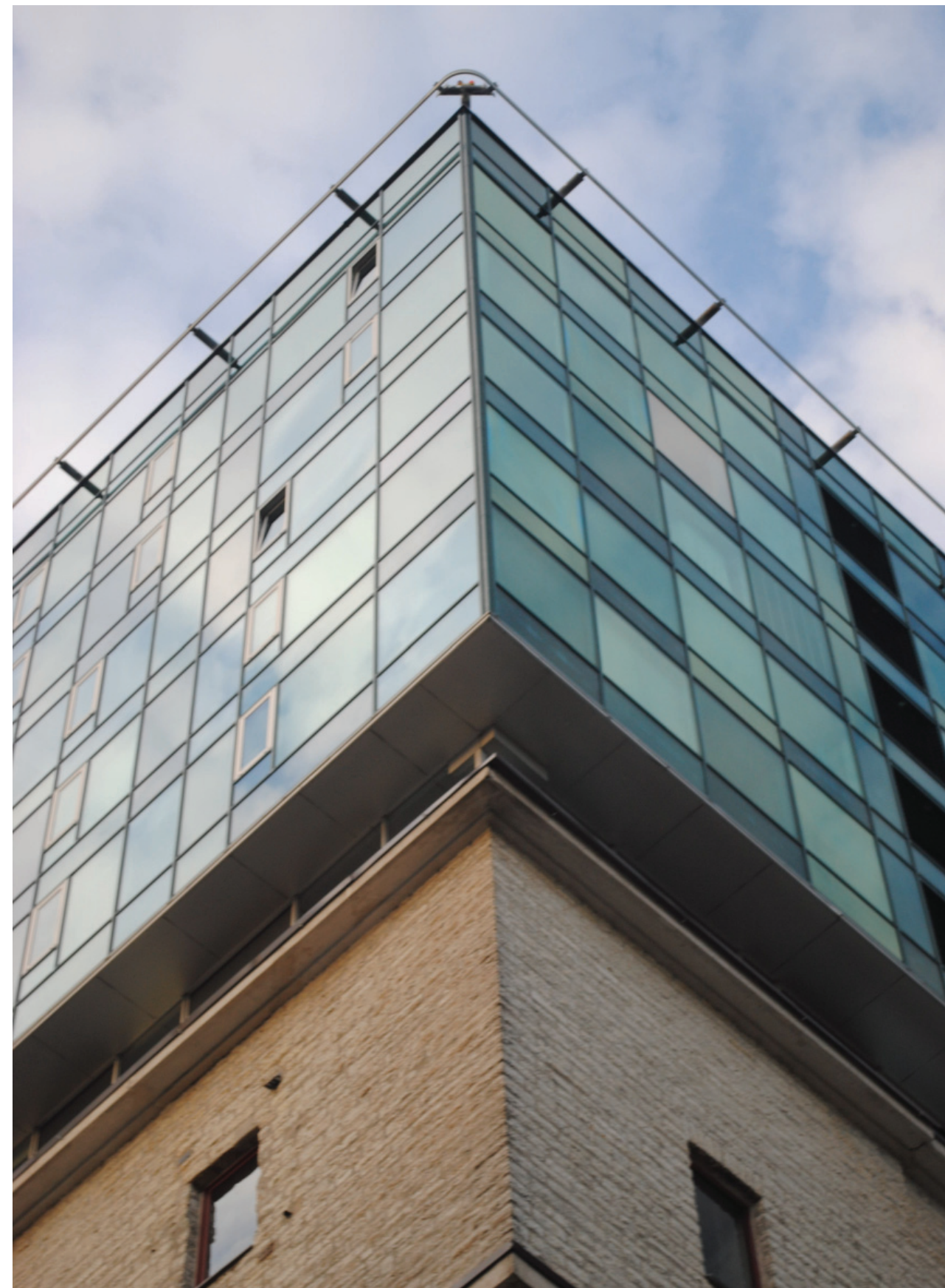


*Väike-Õismäe, Port & Meelak. (1968)*





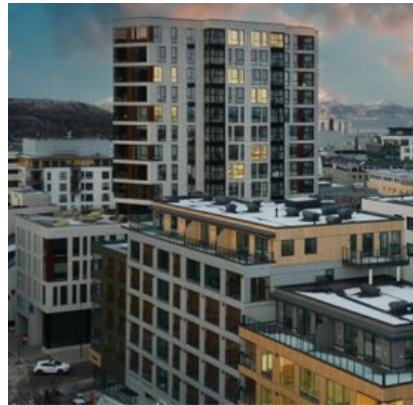
Väike-Õismäe, Port & Meelak. (1968)



Fahle Maja, KOKO Architects. (2007)



*Vara Saeveski Sawmill. (Raul Mee)*



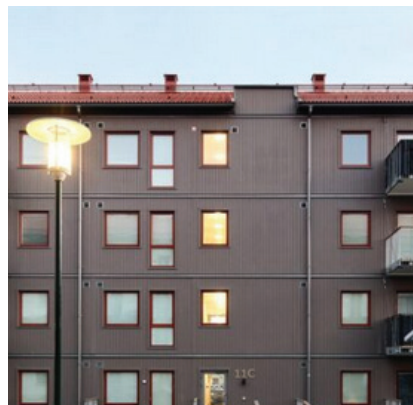
Kvartal 25  
Norway



Hotel/conference centre  
Norway



Medical center  
Norway



Apartment building  
Sweden



Private house  
Norway



Vällingby housing  
Sweden

*'Estonian' Timber References. (Woodhouse Estonia)*



*Treet, Bergen. (Woodhouse Estonia)*

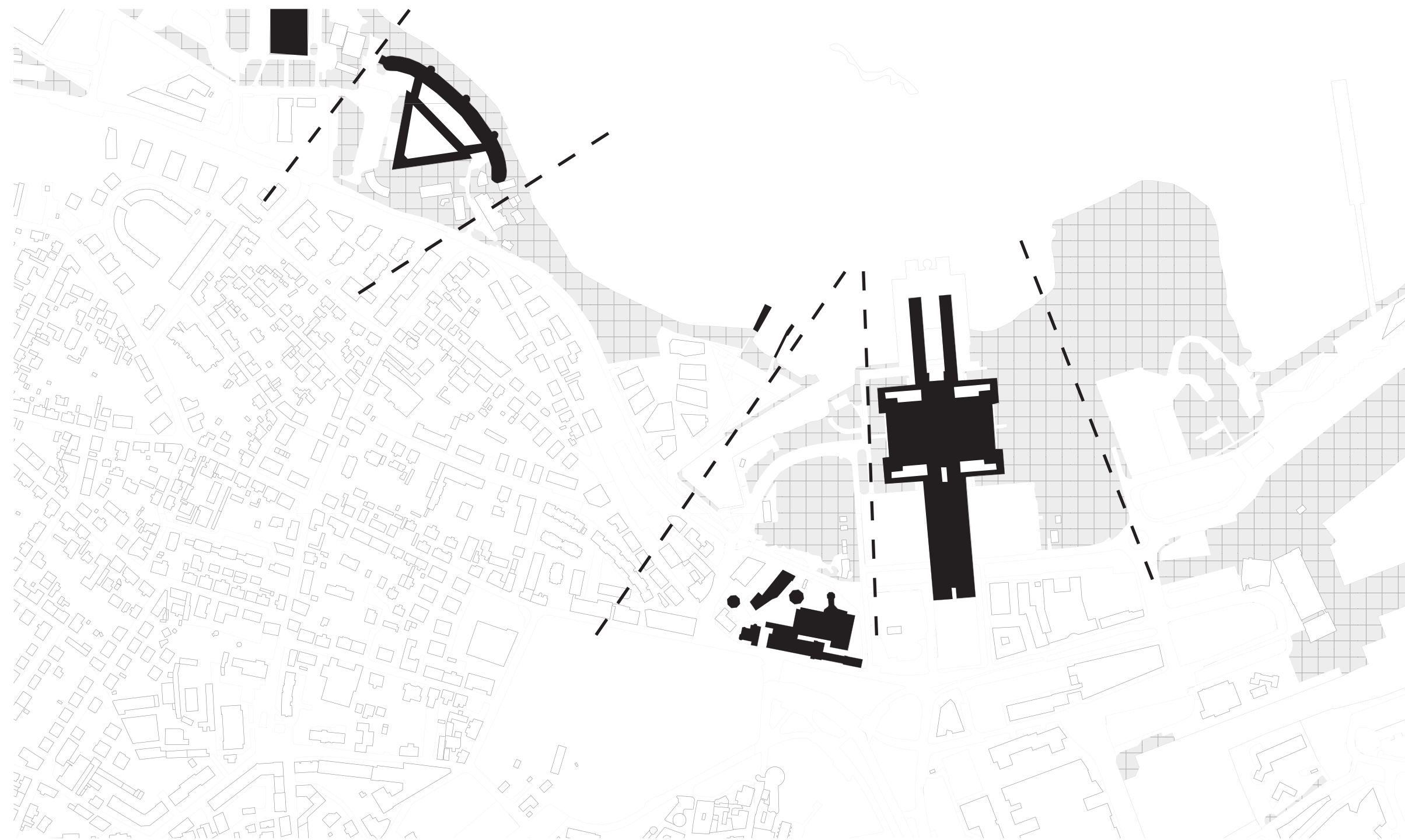
Estonian timber is ***exported as a cheap commodity*** rather than ***adding spatial value*** to its built environment

A **contemporary flagship timber project** that represents  
the rich construction industry and -tradition,  
reintroducing timbers' **spatial and functional quality** to the  
urban network of Tallinn

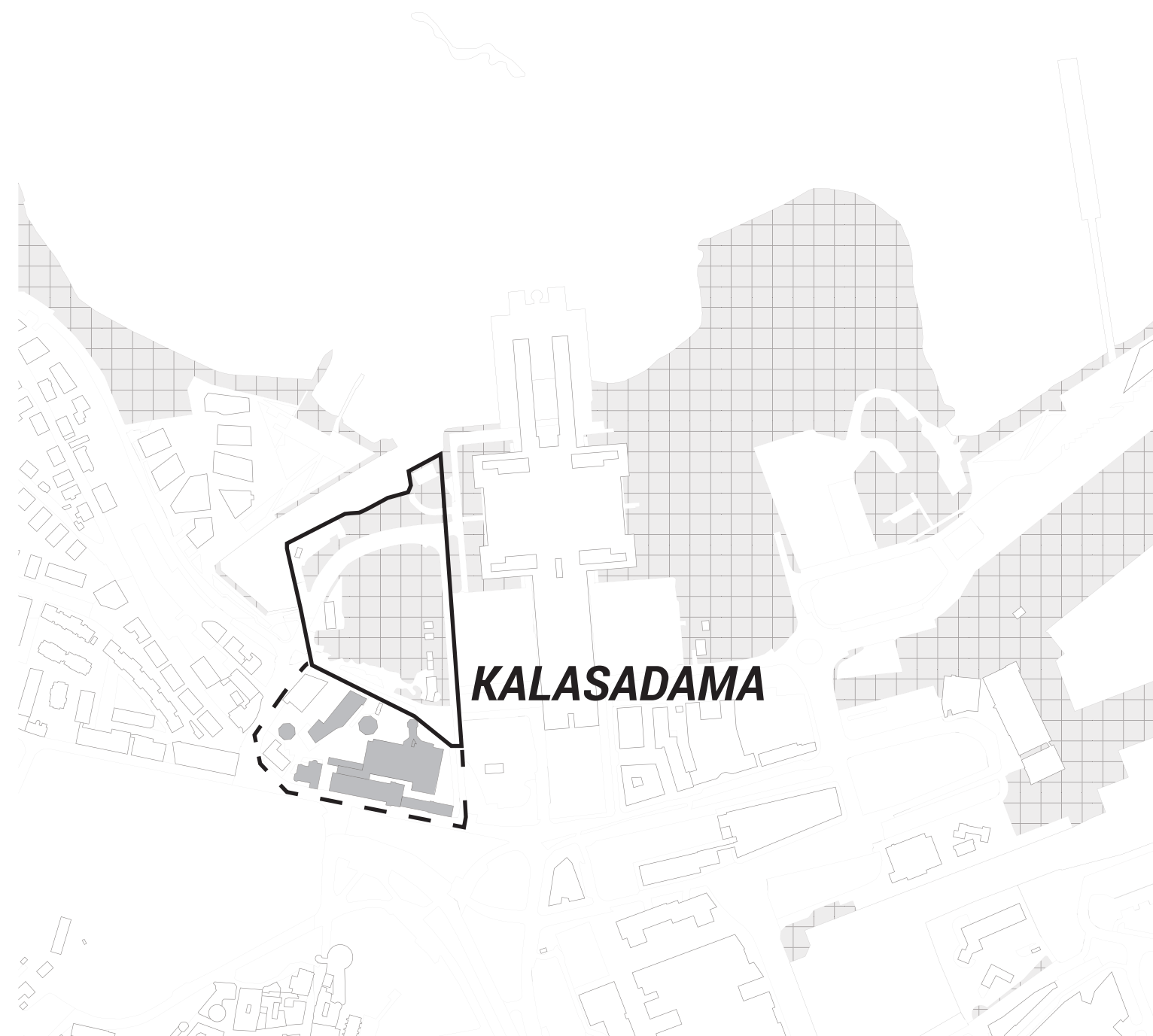
## II. PROJECT SITE

### COASTAL ZONE











### III. PROJECT CONCEPT

## INTERACT WITH TALLINN



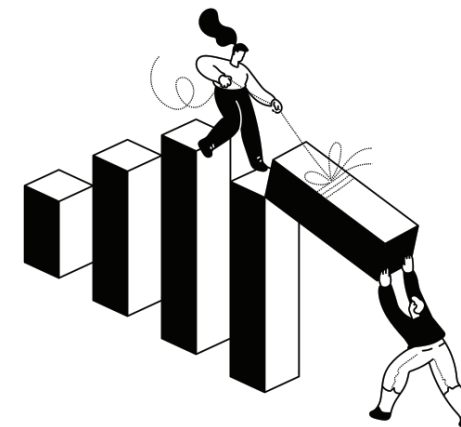
#### CLUSTER

KNOWLEDGE INTERACTION



#### VISIBLE

VISUAL INTERACTION



#### MAKING

PHYSICAL INTERACTION

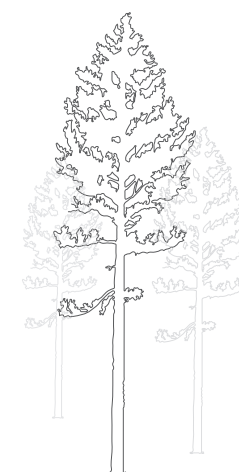
## FACETS OF TIMBER



**INDUSTRIAL**



**RESIDENTIAL**



**NATURAL**

INDUSTRIAL



RESIDENTIAL



NATURAL



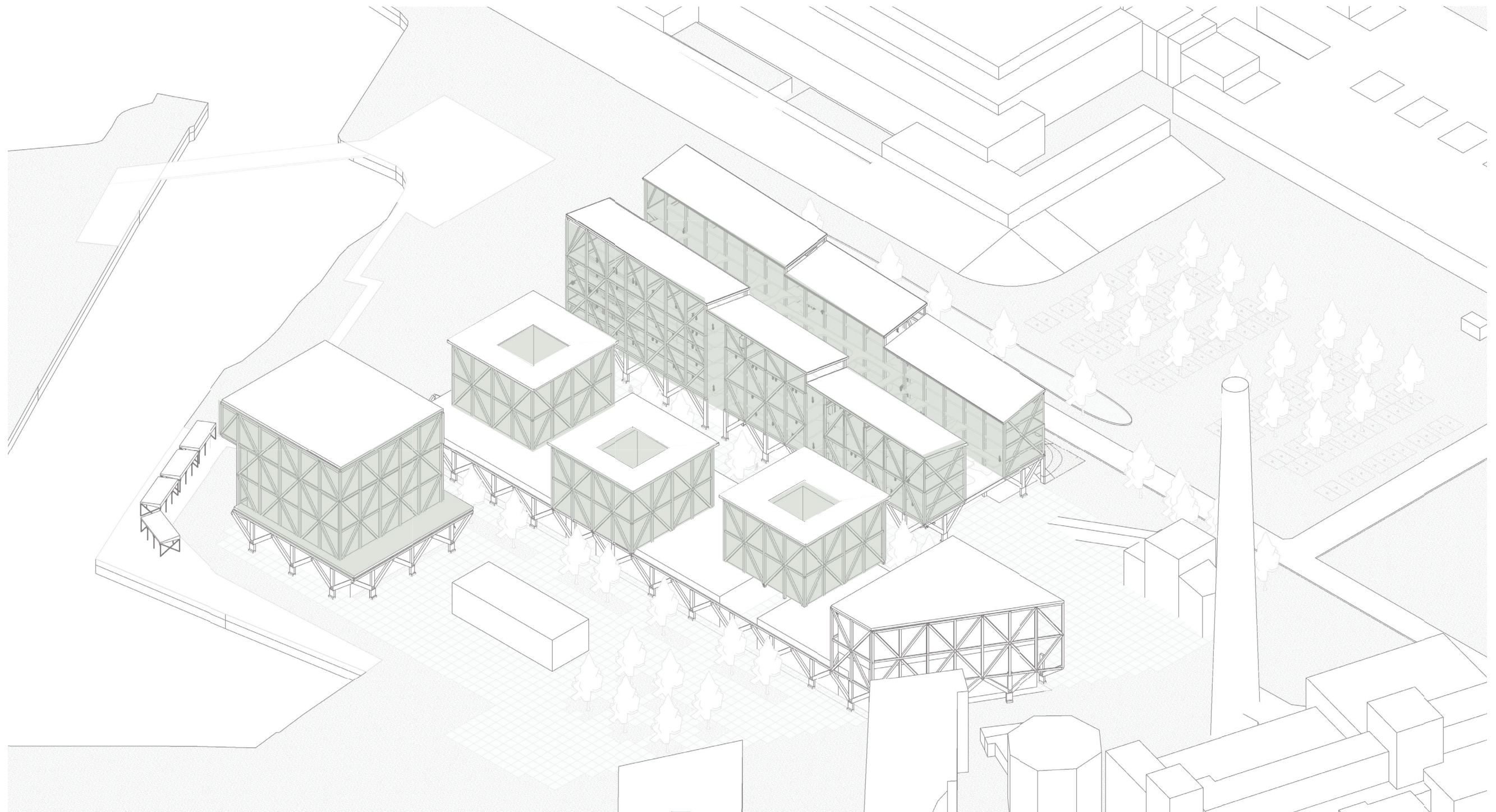
INDUSTRIAL



RESIDENTIAL



NATURAL



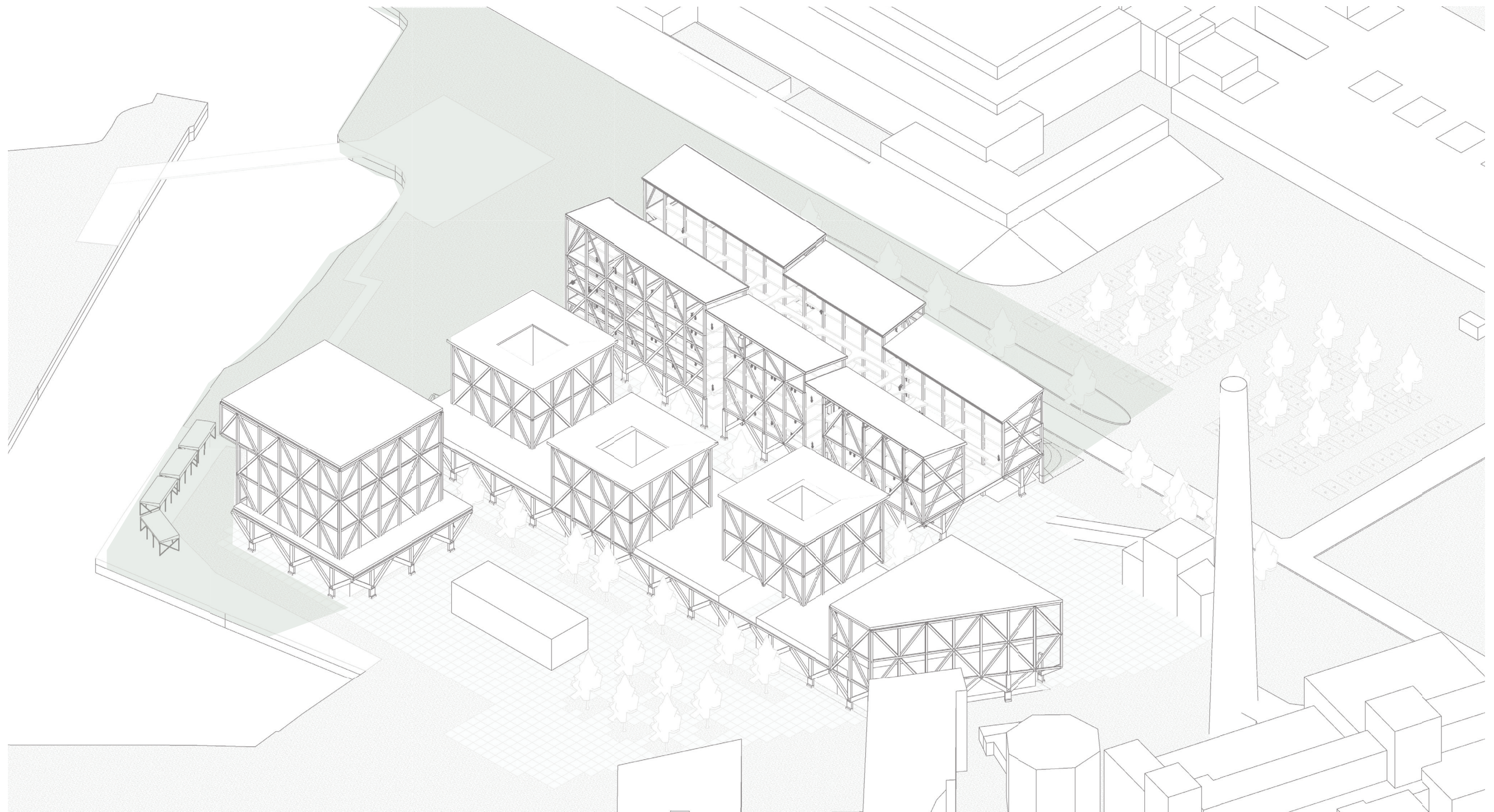
INDUSTRIAL



RESIDENTIAL



NATURAL





5m 25m



Site plan  
1:1000



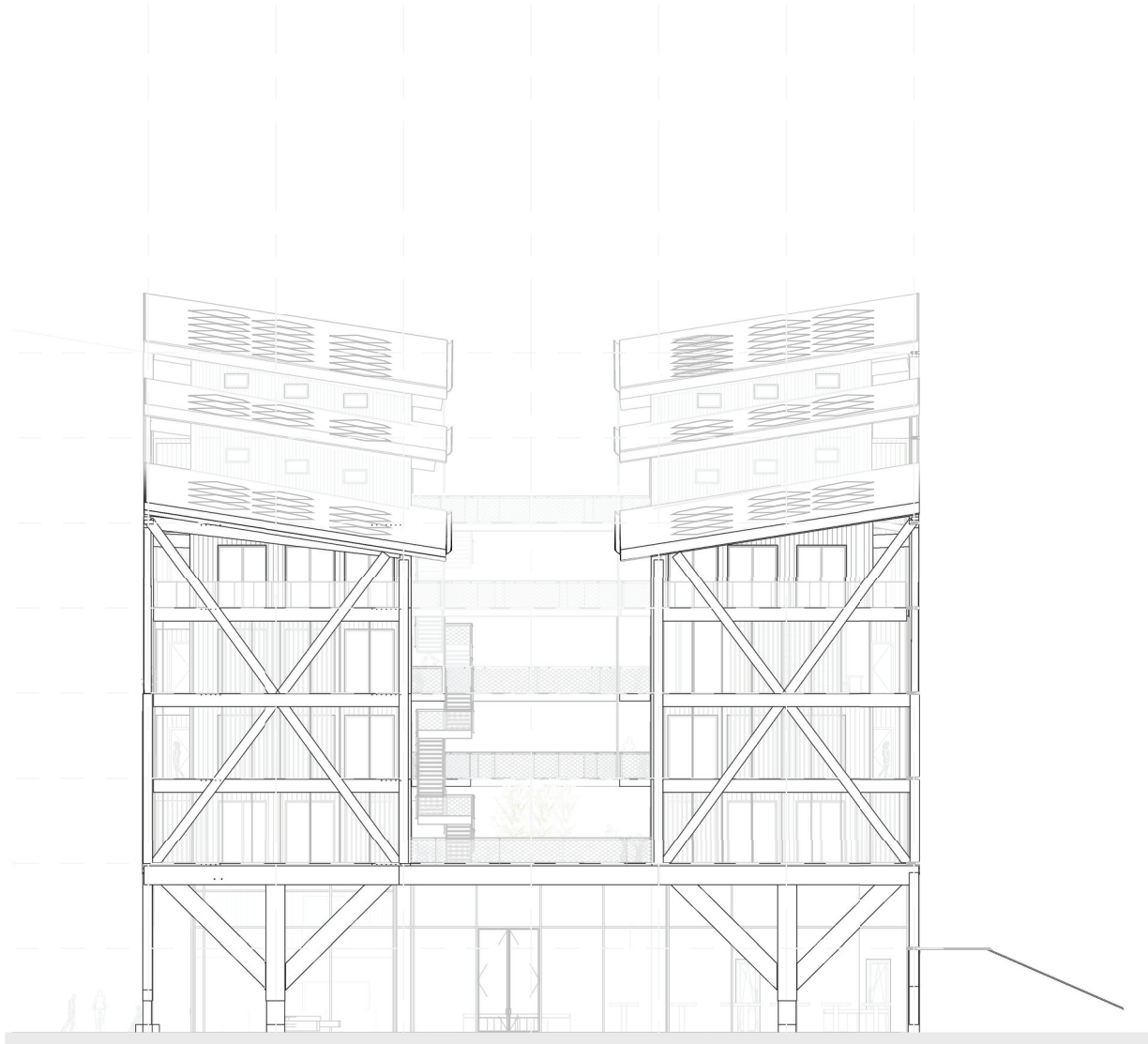


Site plan  
1:1000

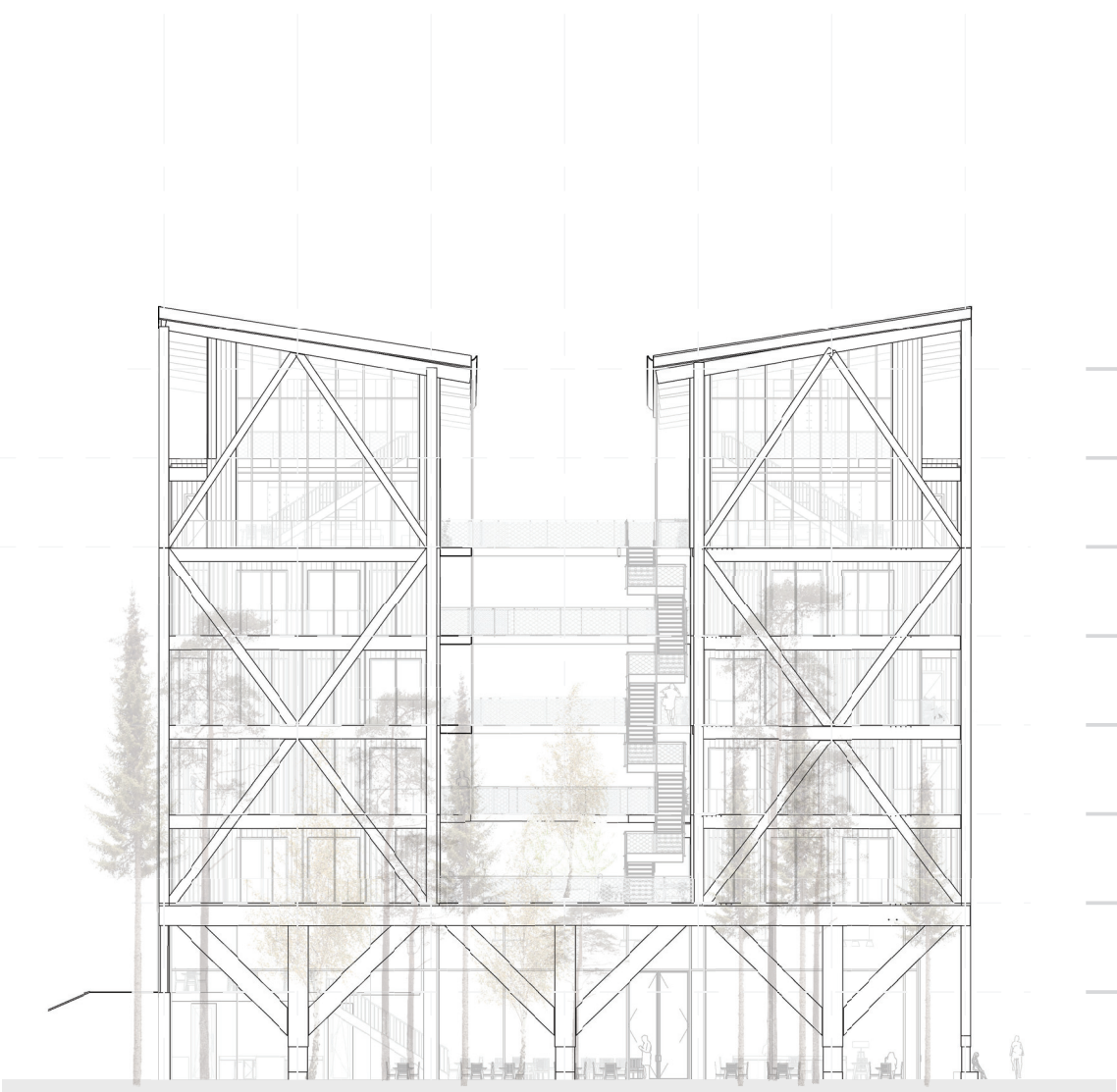






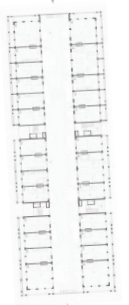


South

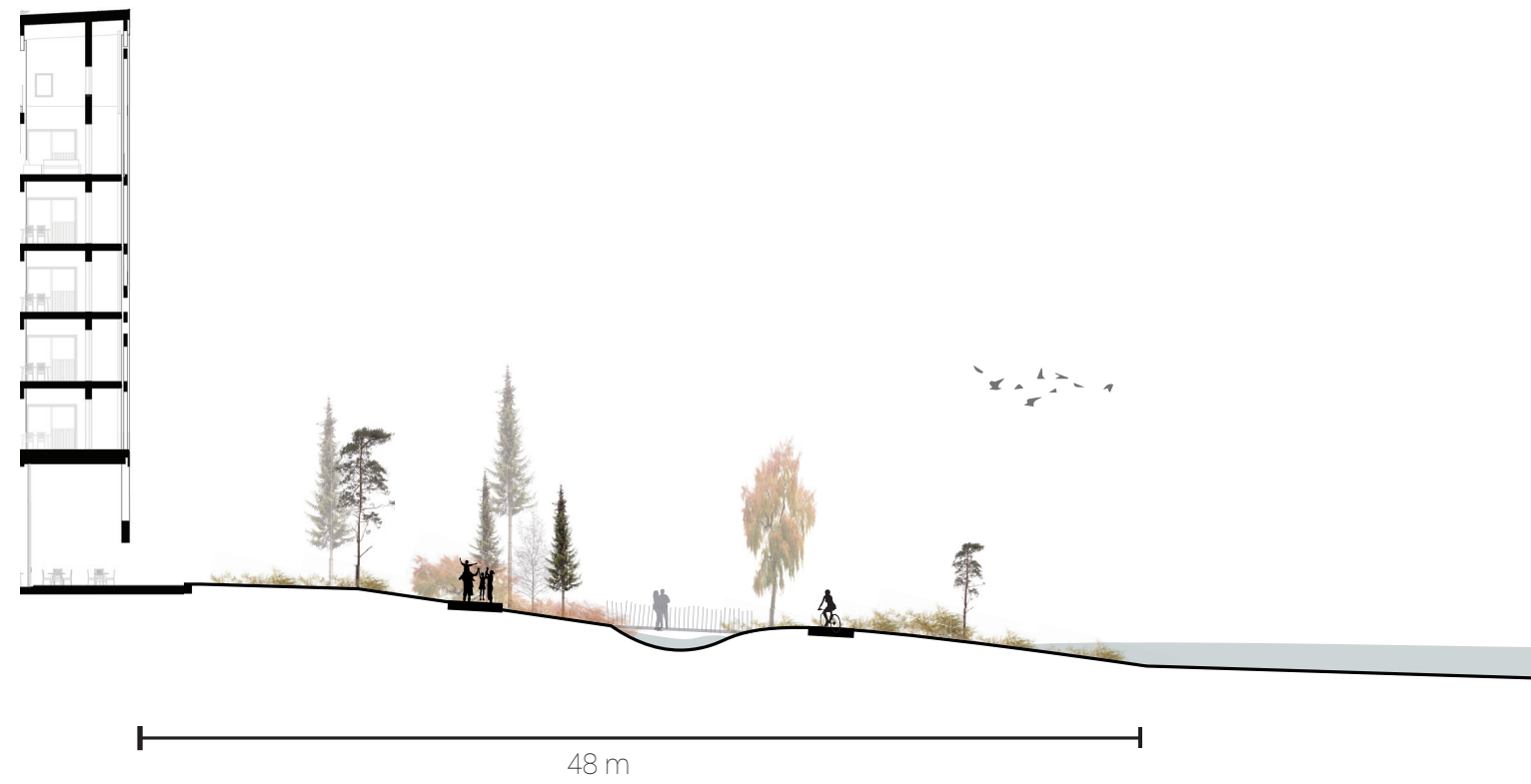


North

- Roof  
28800 +P
- Seventh floor  
25200 +P
- Sixth floor  
21600 +P
- Fifth floor  
18000 +P
- Fourth floor 04  
14400 +P
- Third floor 03  
10800 +P
- Second floor 02  
7200 +P
- First floor 01  
3600 +P



1m 5m  
1:300



*Waterfront*



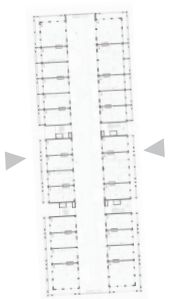
*Bog boardwalk excursion*



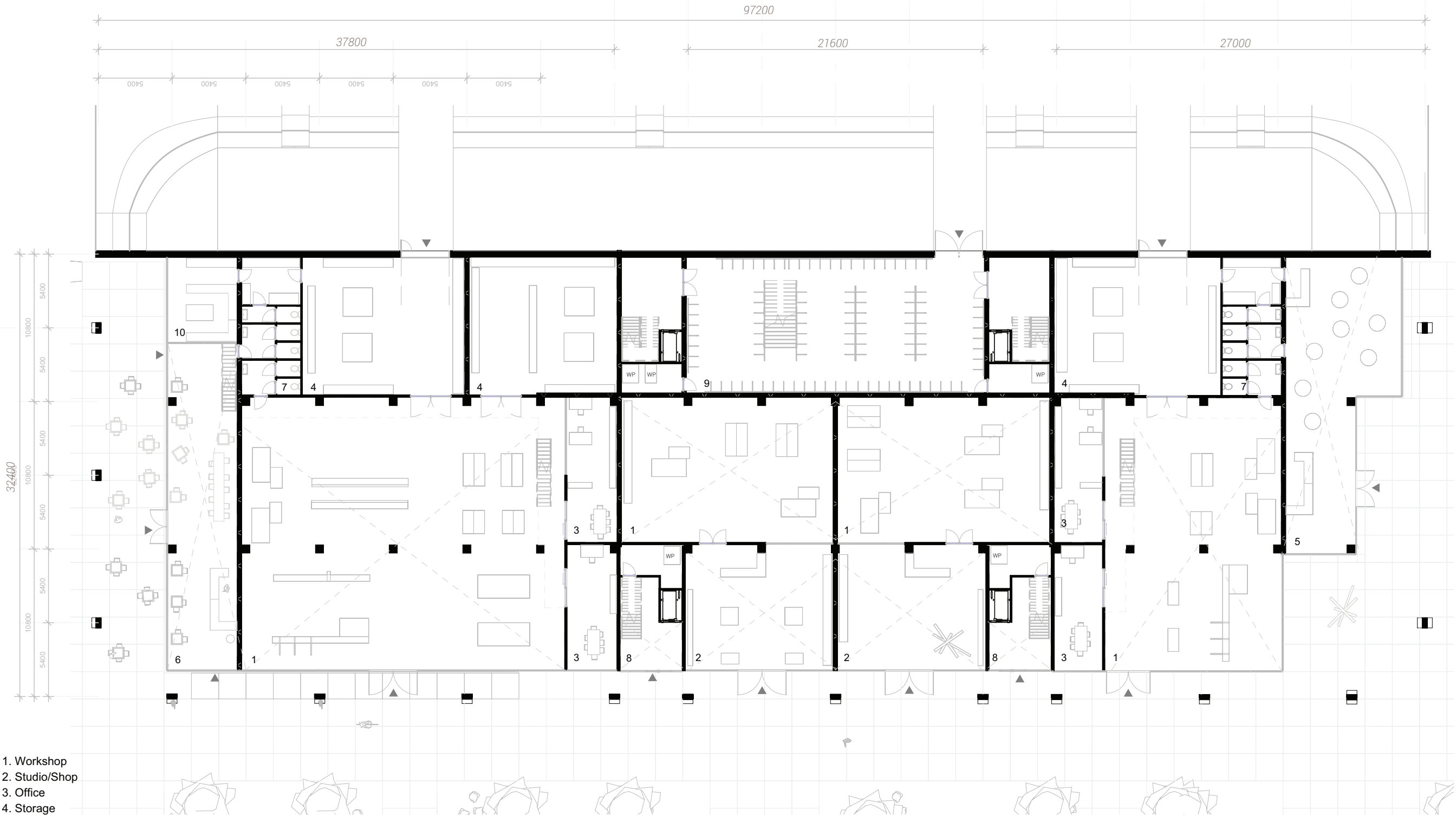
East





West



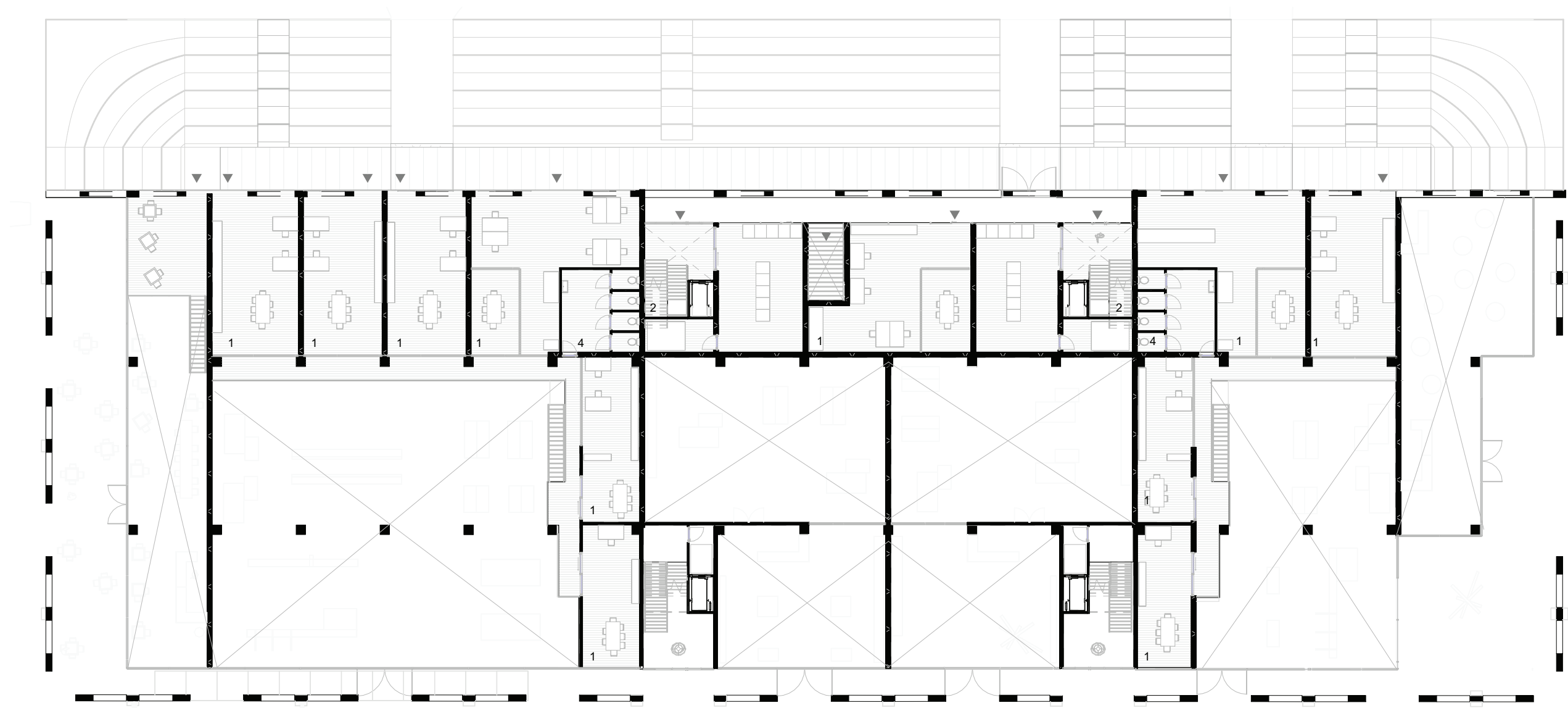
1m 5m  
1:300



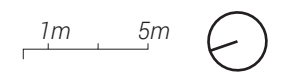
- 1. Workshop
- 2. Studio/Shop
- 3. Office
- 4. Storage
- 5. Event Space
- 6. Restaurant/Bar
- 7. Toilet
- 8. Residential entrance
- 9. Bike storage
- 10. Kitchen

  
 00 Ground Floor  
 1:300  


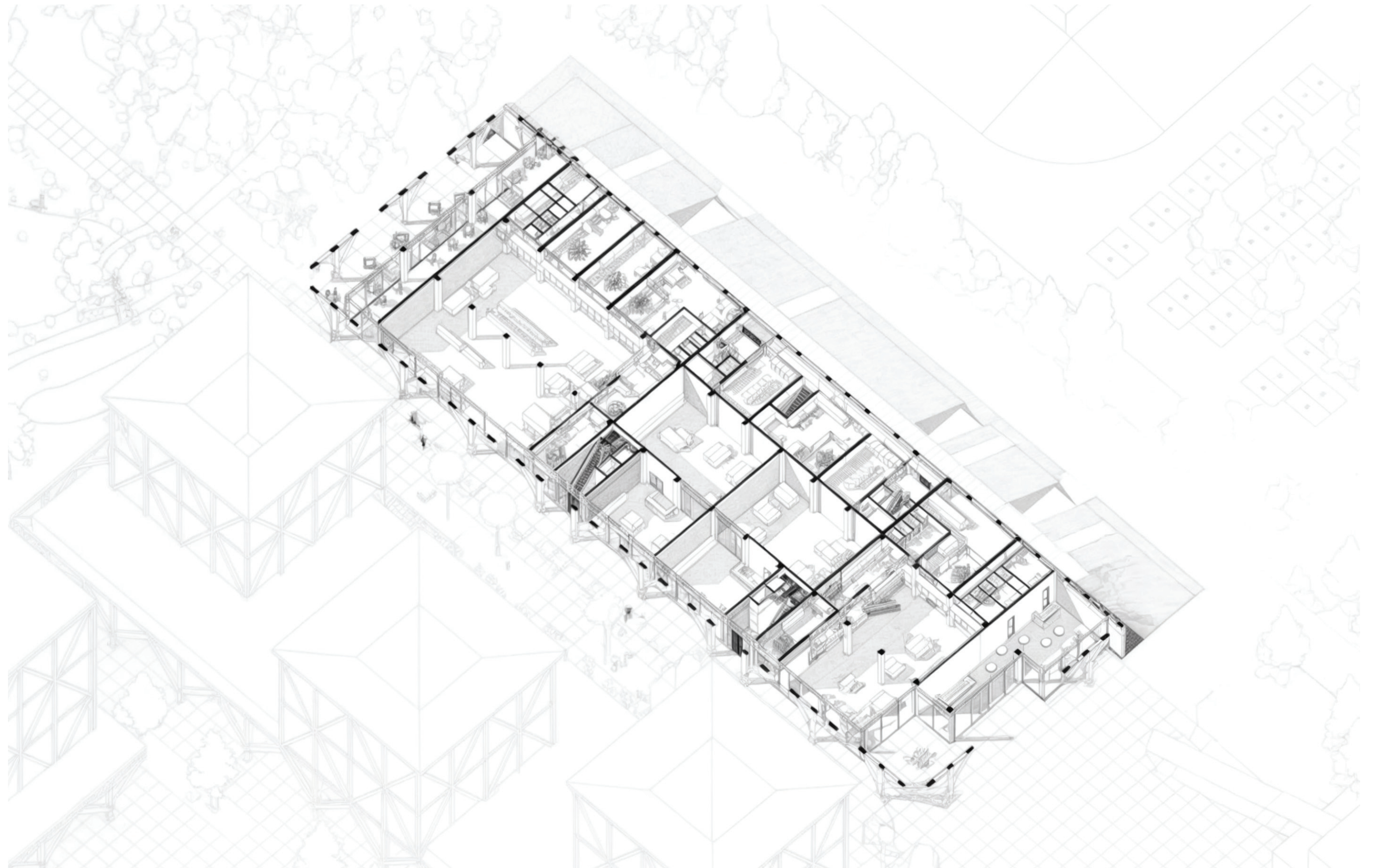




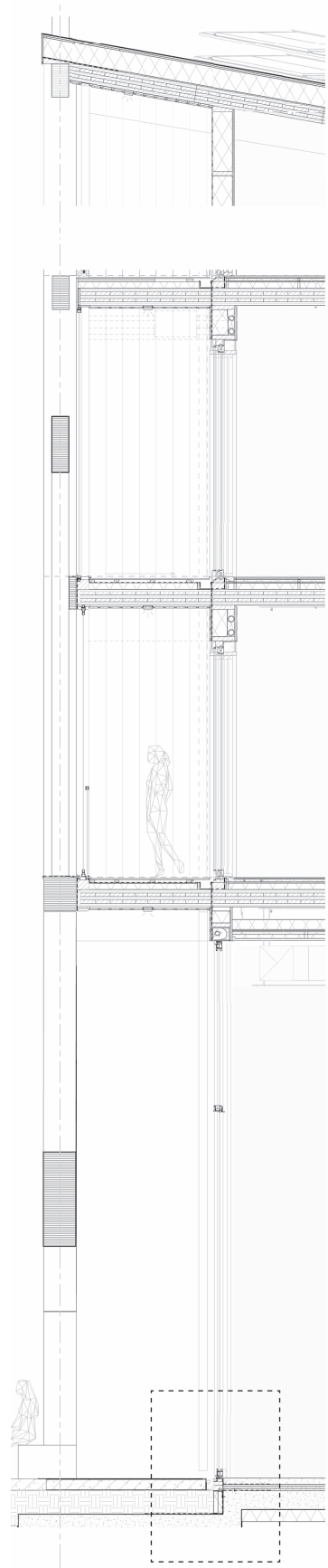
- 1. Office
- 2. Residential entrance
- 4. Toilet



01 First Floor  
1:300



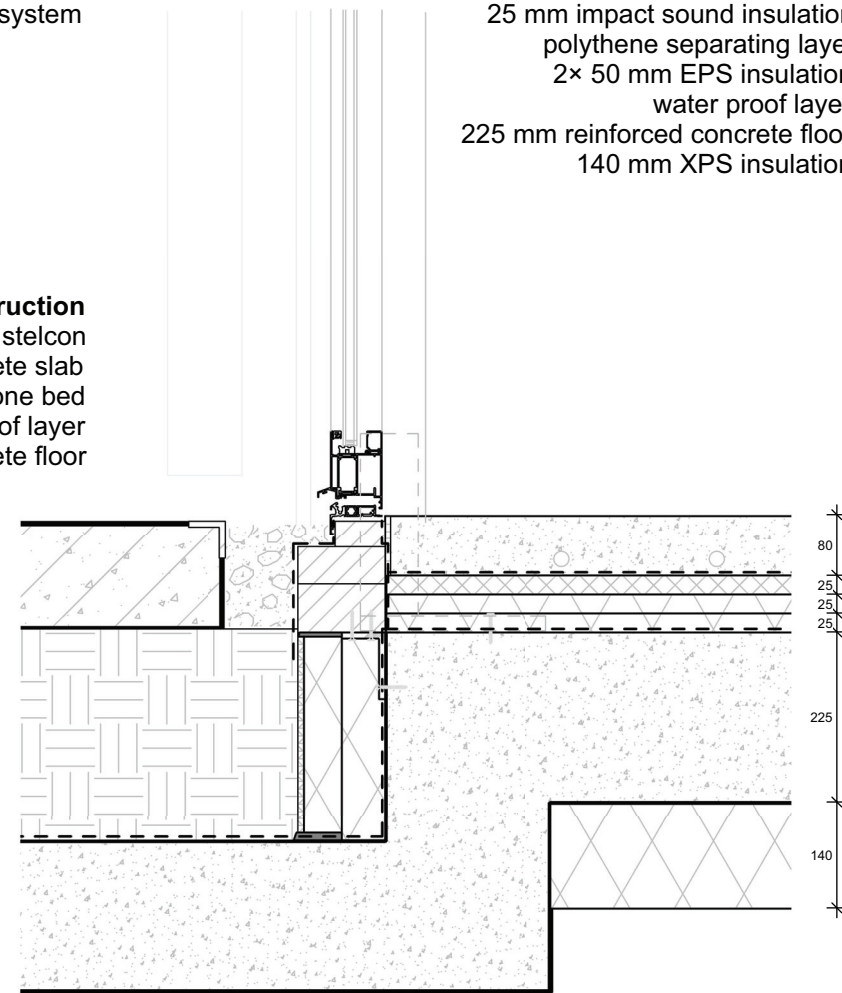


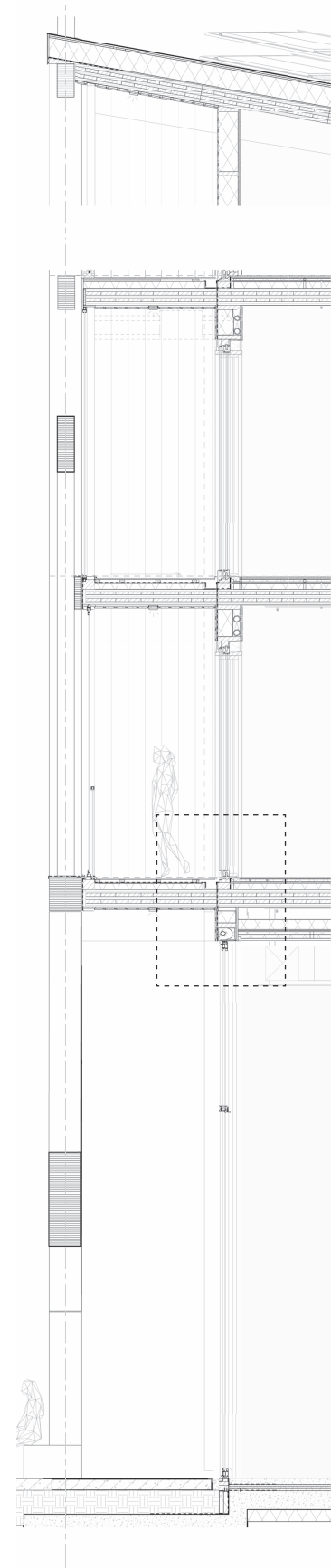


**Curtain Wall Facade Rc 5,5**  
double glazing in 50/175 mm  
aluminium mullion-transom  
system

**520 mm Ground Floor Rc 5,0**  
80 mm underfloor heating screed  
polythene separating layer  
25 mm impact sound insulation  
polythene separating layer  
2x 50 mm EPS insulation  
water proof layer  
225 mm reinforced concrete floor  
140 mm XPS insulation

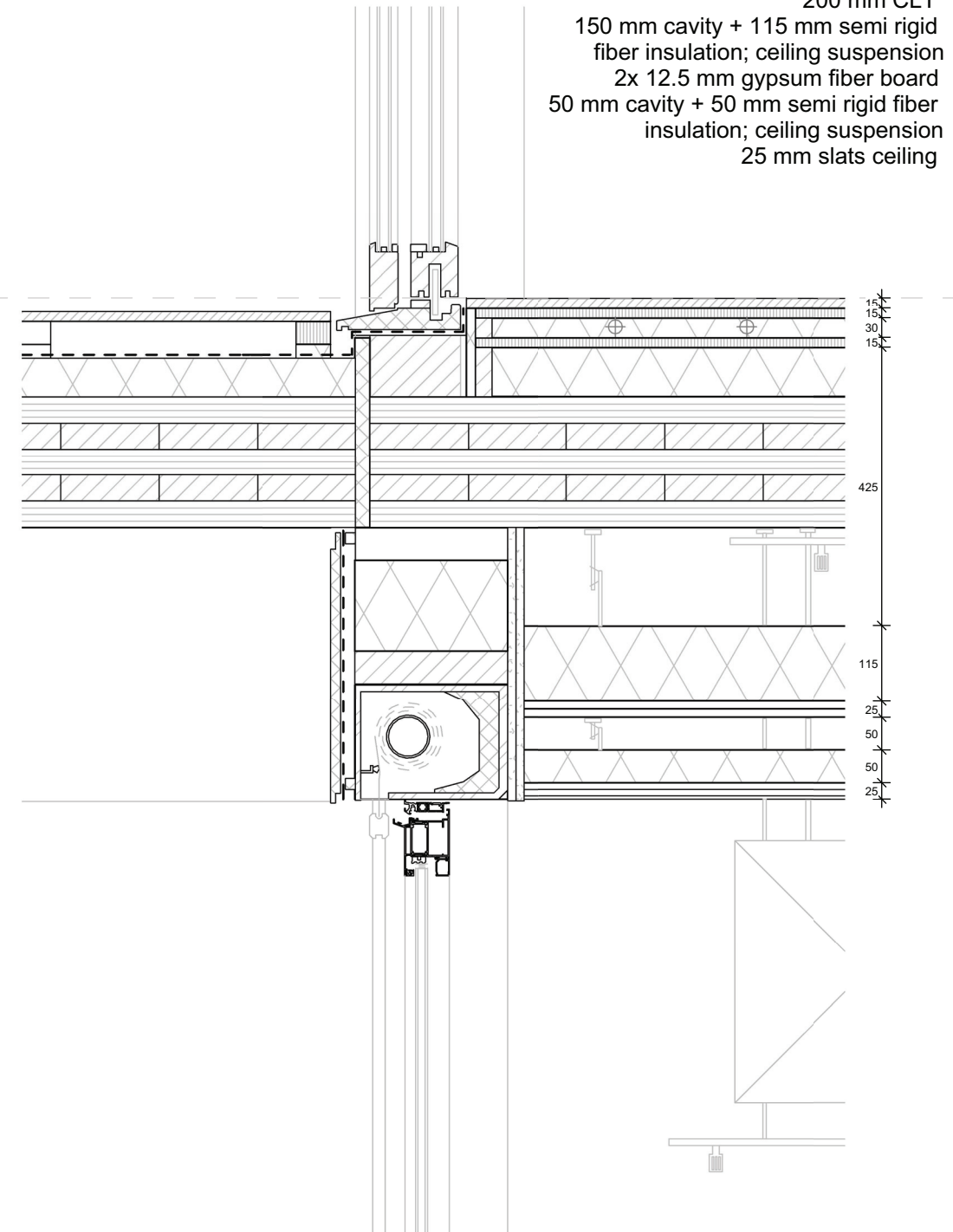
**Pavement construction**  
2000x2000x140 mm stelcon  
concrete slab  
280 mm crushed stone bed  
water proof layer  
225 reinforced concrete floor

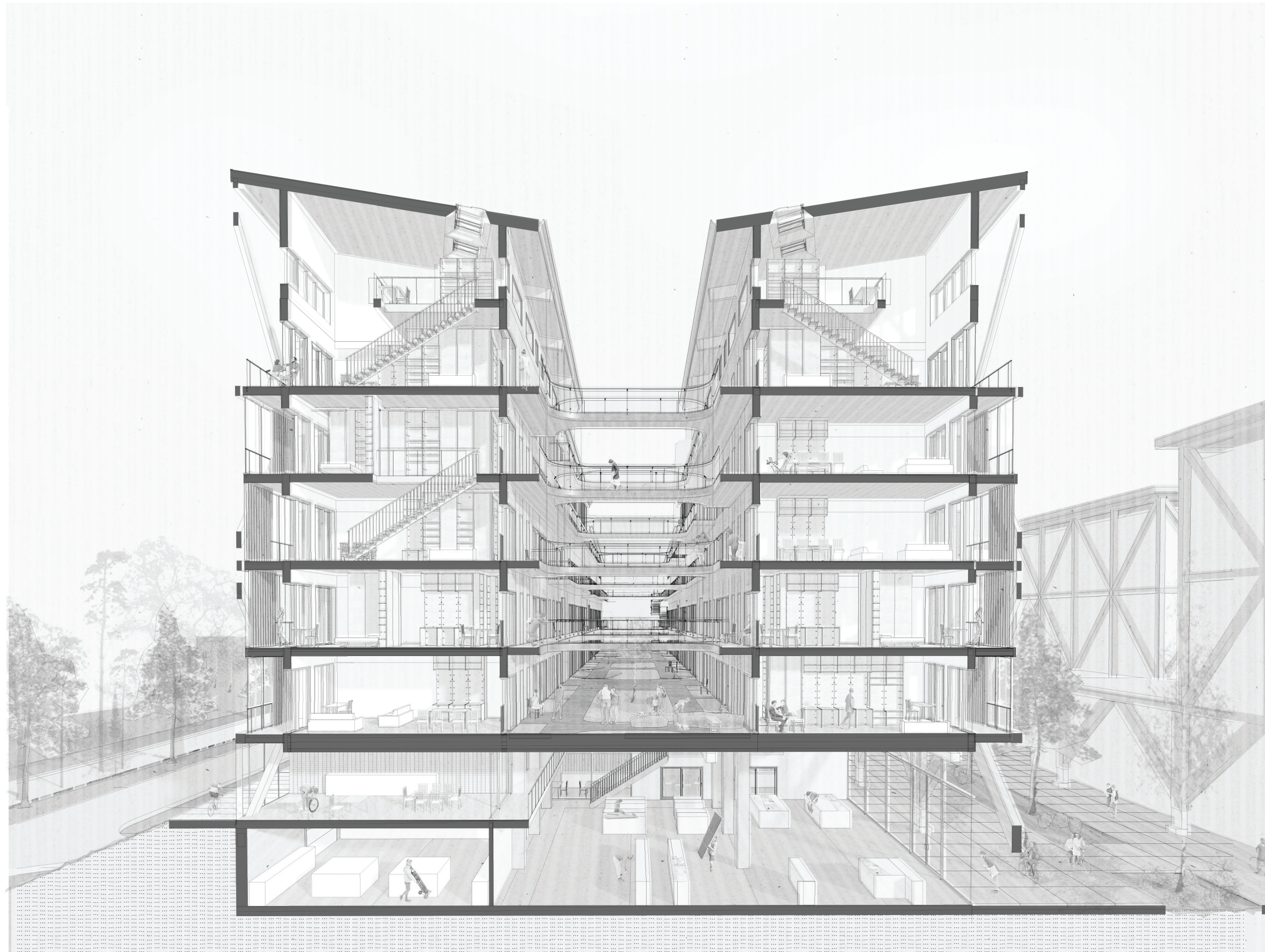




**765 mm Apartment/Workshop Floor**

- 15 mm wood flooring
- 15 mm fiberboard, floating
- 30 mm grooved insulation; Ø15 mm floor heating
- 15 mm impact insulation
- 75 mm wood fiber insulation
- 200 mm CLT
- 150 mm cavity + 115 mm semi rigid fiber insulation; ceiling suspension
- 2x 12.5 mm gypsum fiber board
- 50 mm cavity + 50 mm semi rigid fiber insulation; ceiling suspension
- 25 mm slats ceiling



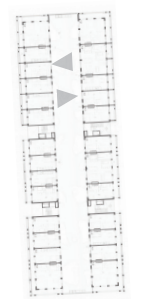


Section AA

1:200



Interior East



1m 5m

Interior West

1:300



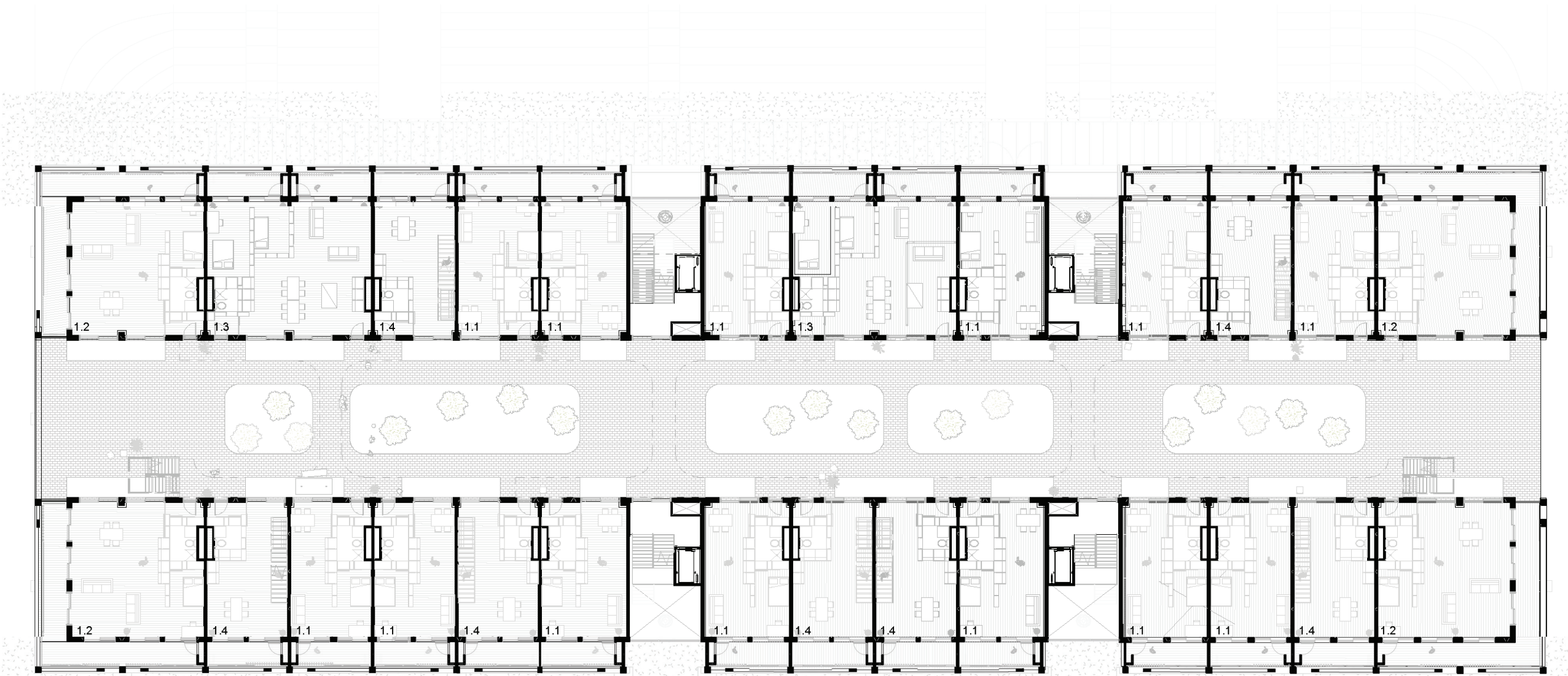
2m 10m

Interior East

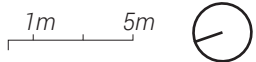
1:150



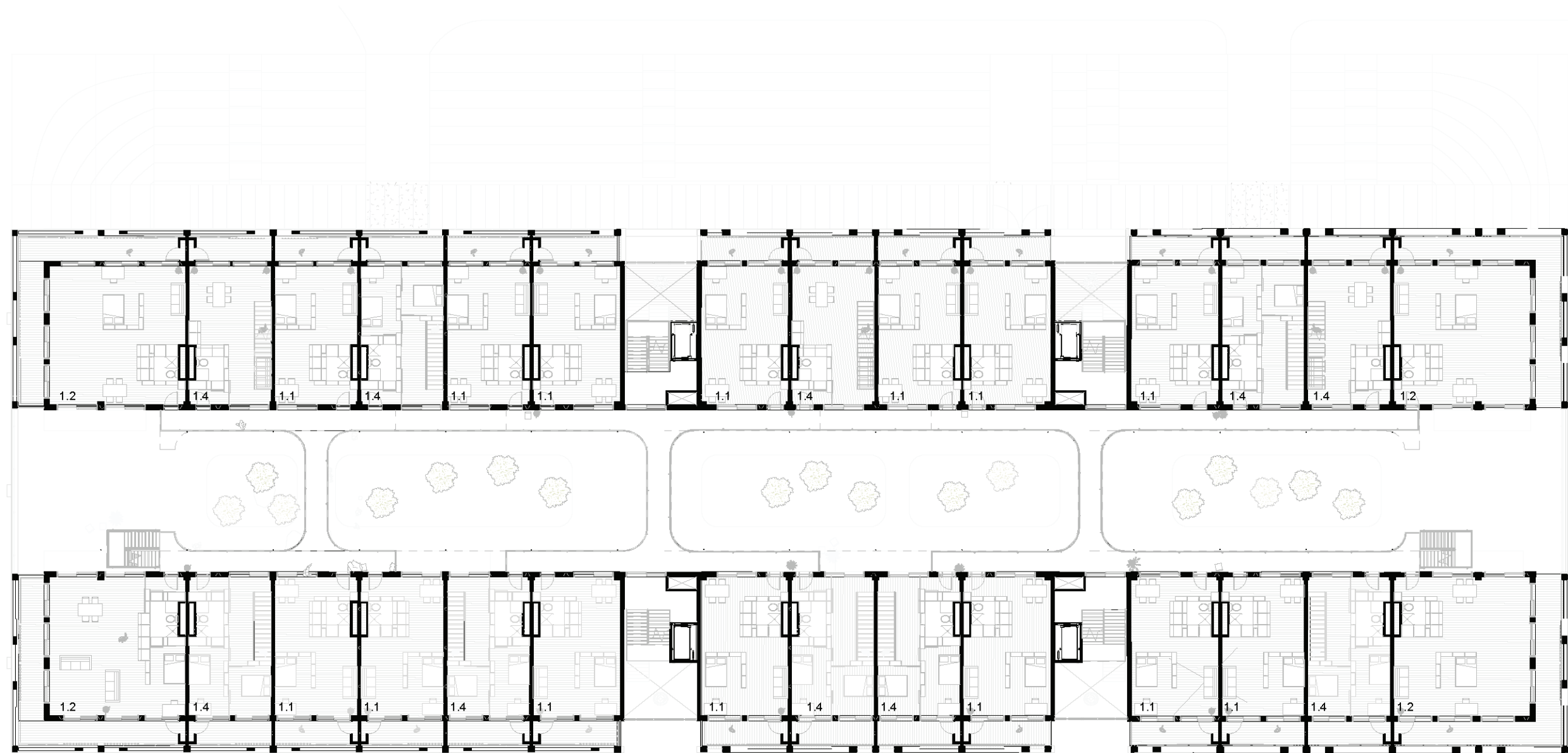




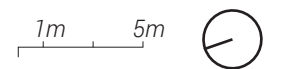
- 1.1. Studio apartment 45 m<sup>2</sup>
- 1.2. Corner apartment 75 m<sup>2</sup>
- 1.3. Loft apartment 90 m<sup>2</sup>
- 1.4. Maisonette apartment 85 m<sup>2</sup>



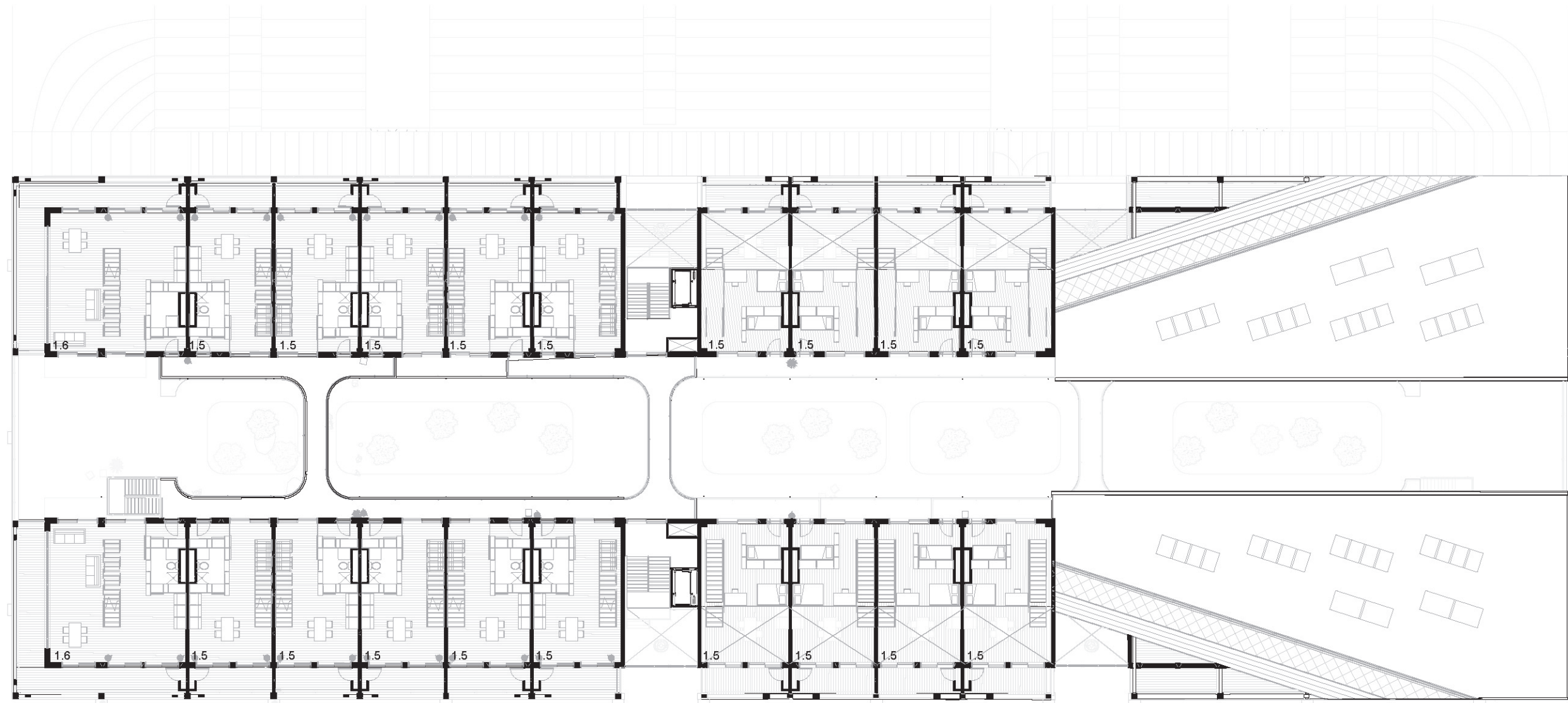
02 Second Floor  
1:300



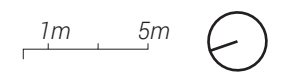
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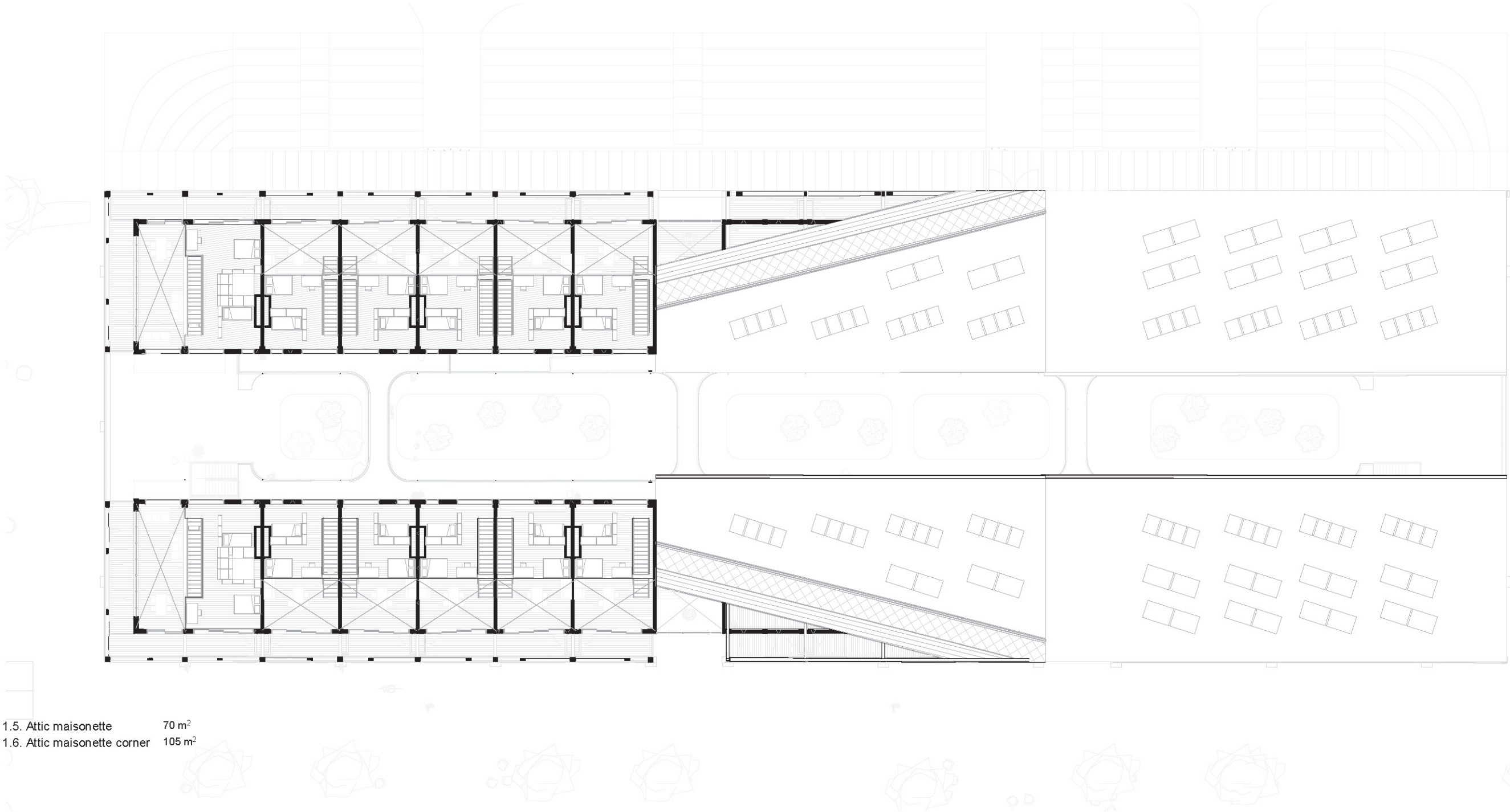
03 Third Floor  
1:300



1.5. Attic maisonette 70 m<sup>2</sup>  
1.6. Attic maisonette corner 105 m<sup>2</sup>



06 Sixth Floor  
1:300

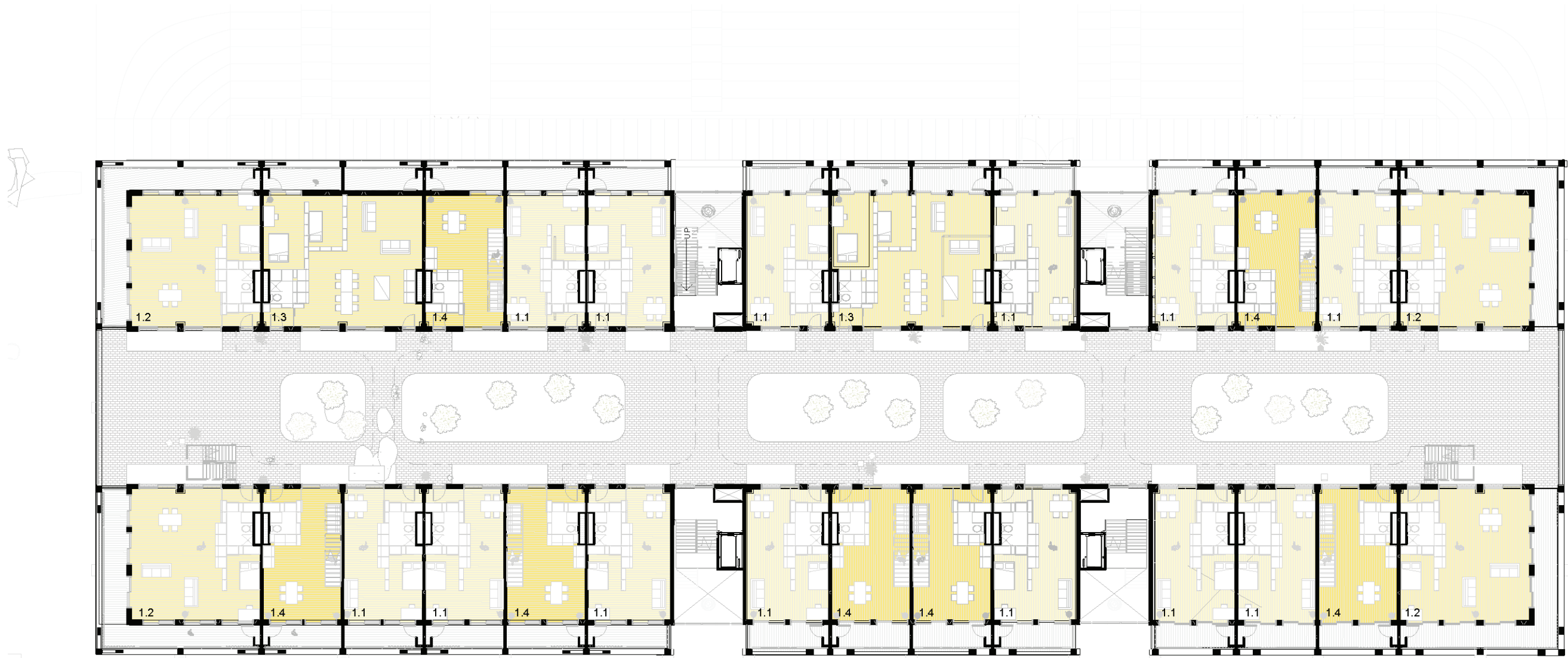


1.5. Attic maisonette 70 m<sup>2</sup>  
 1.6. Attic maisonette corner 105 m<sup>2</sup>

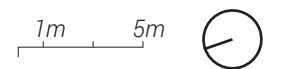
1m 5m



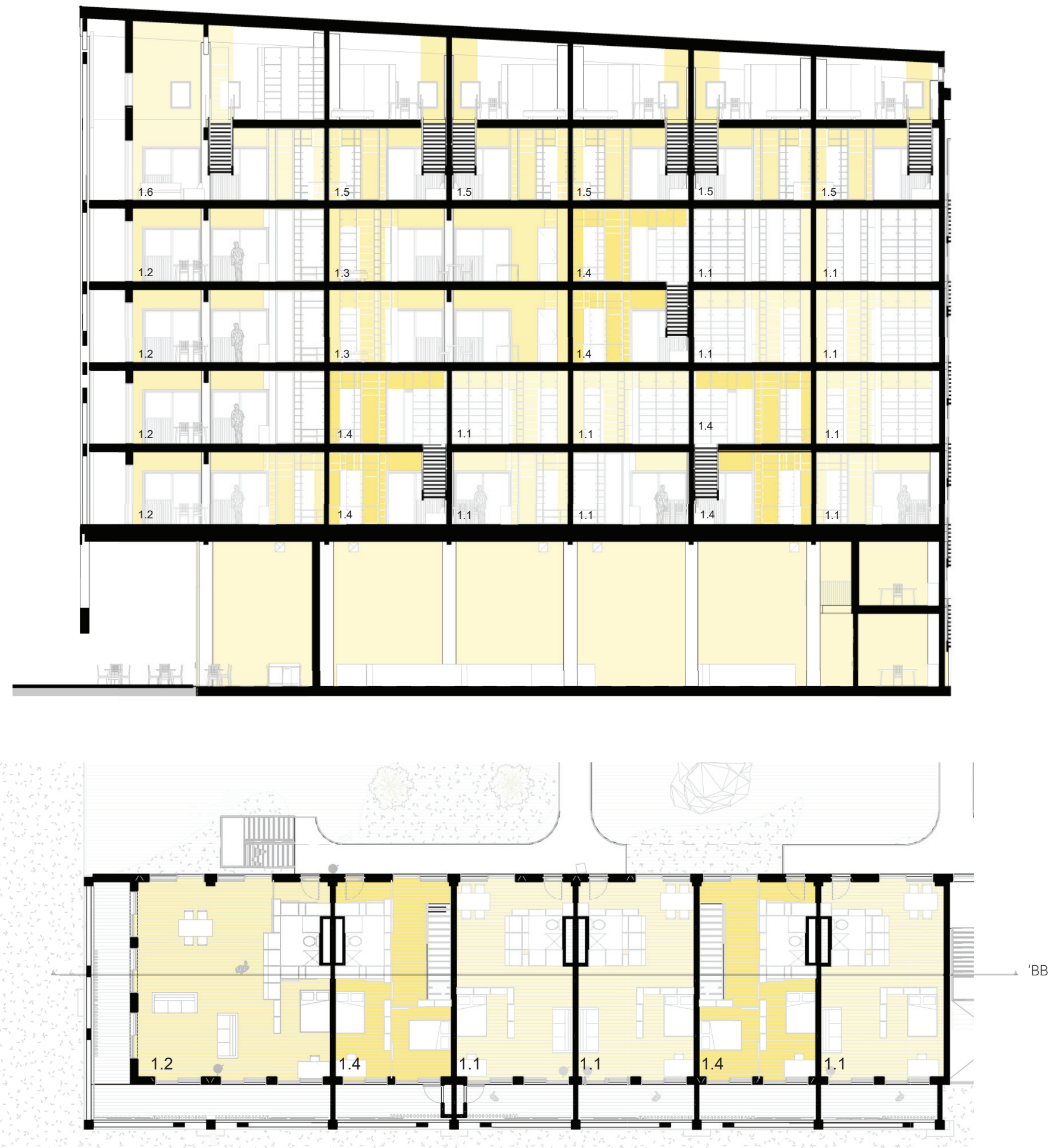
07 Seventh Floor  
 1:300

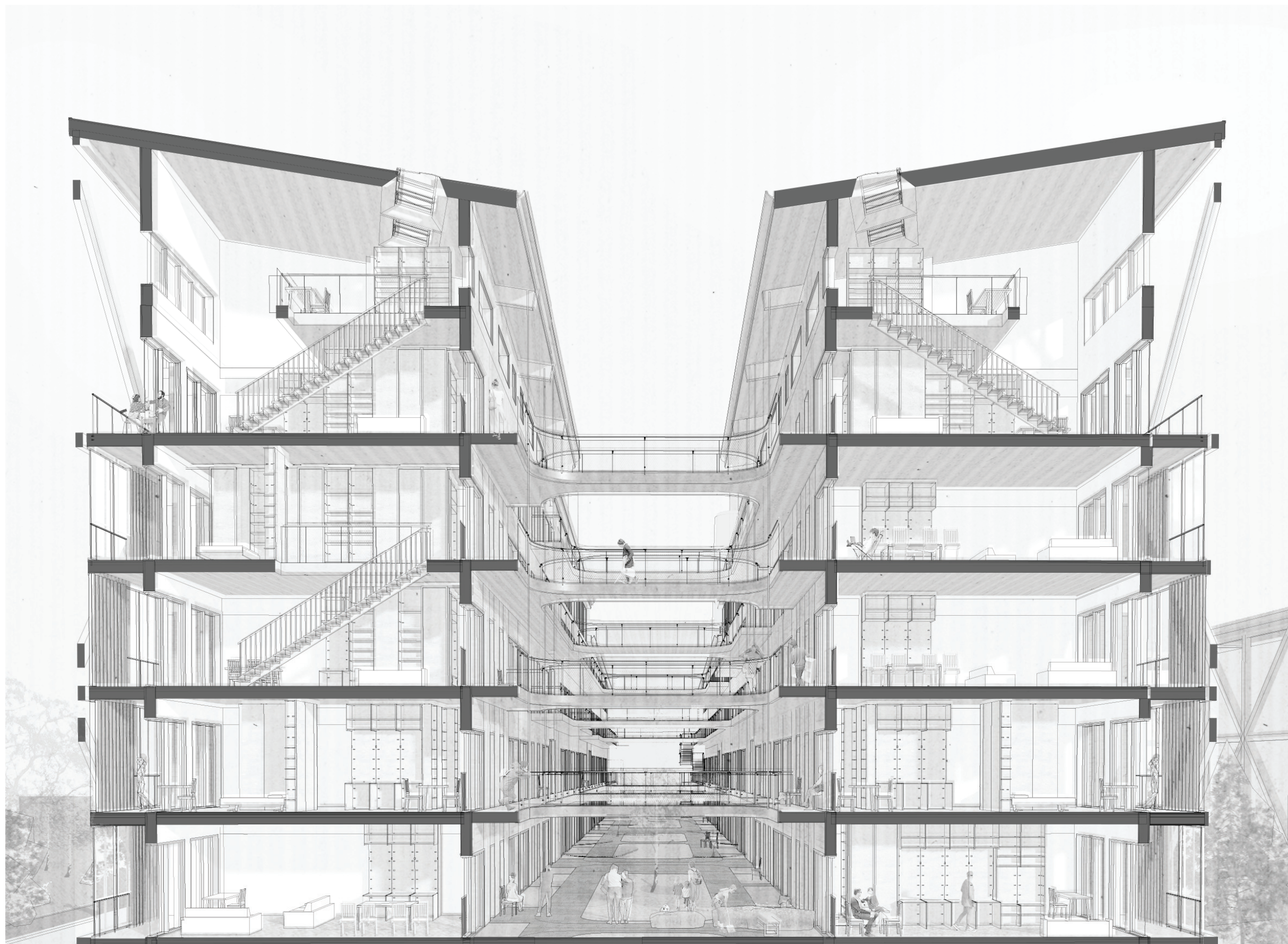


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- Corner apartment 75 m<sup>2</sup>
- Loft apartment 90 m<sup>2</sup>
- Maisonette apartment 85 m<sup>2</sup>



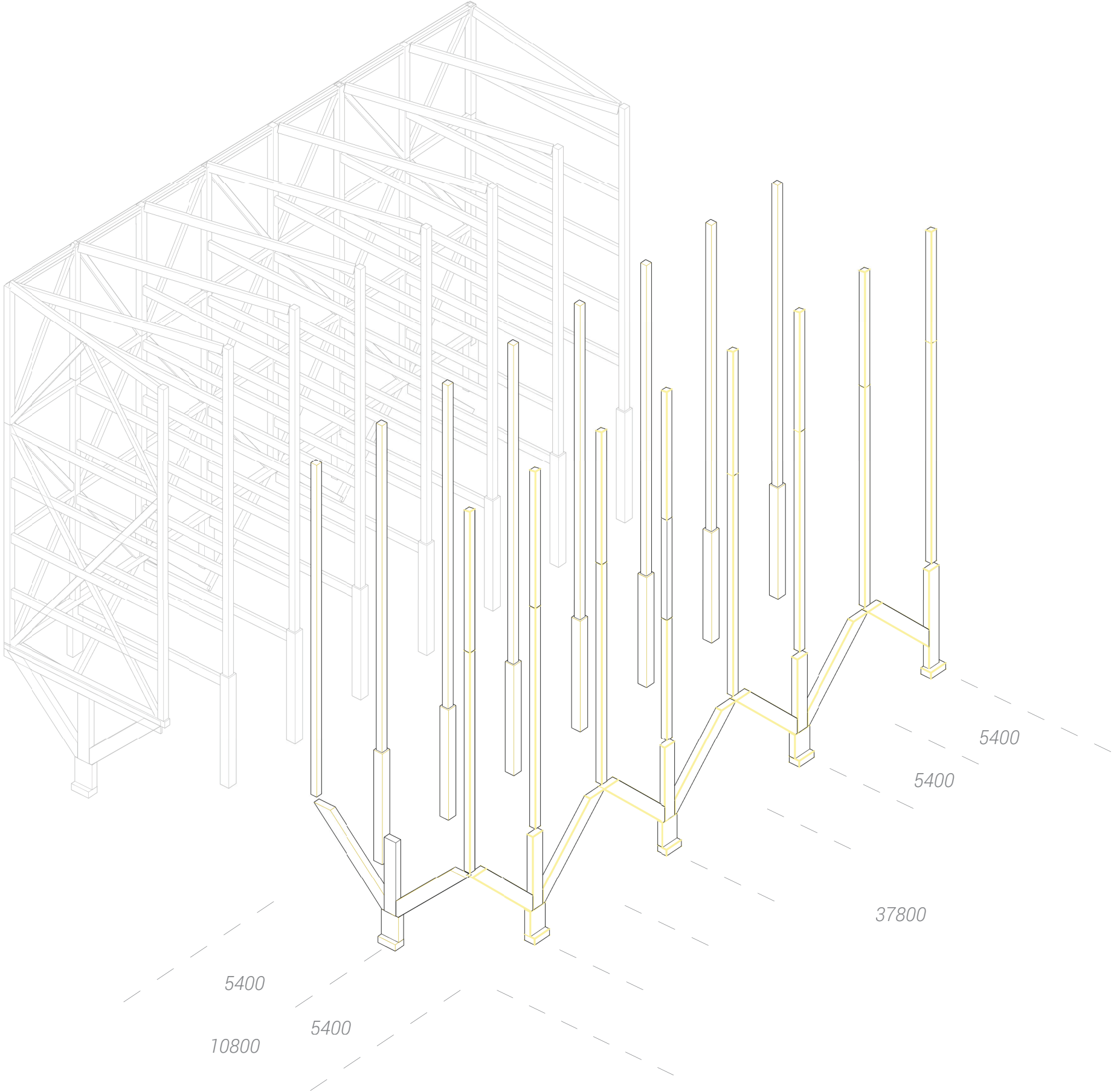
02 Second Floor  
1:300

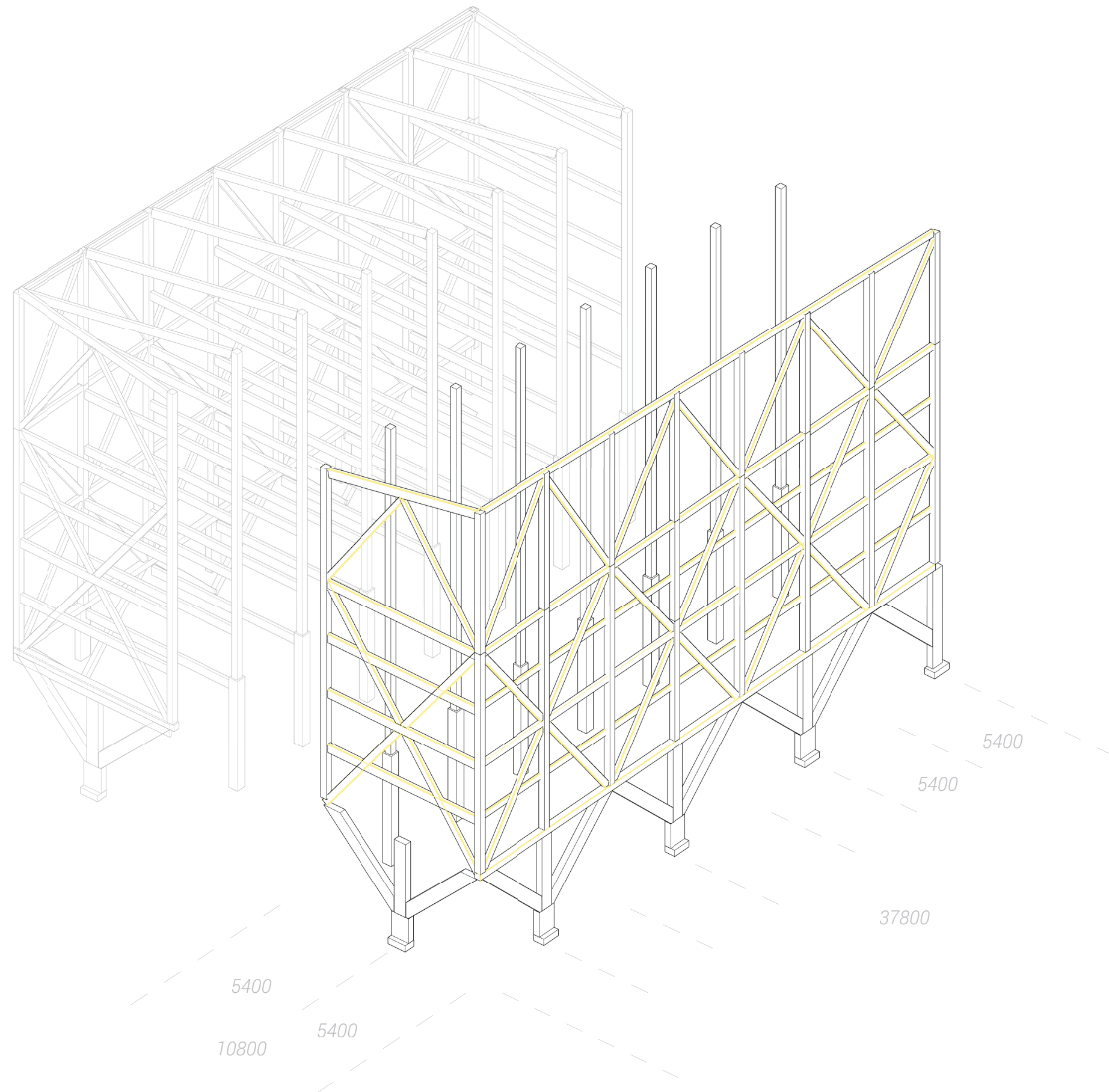


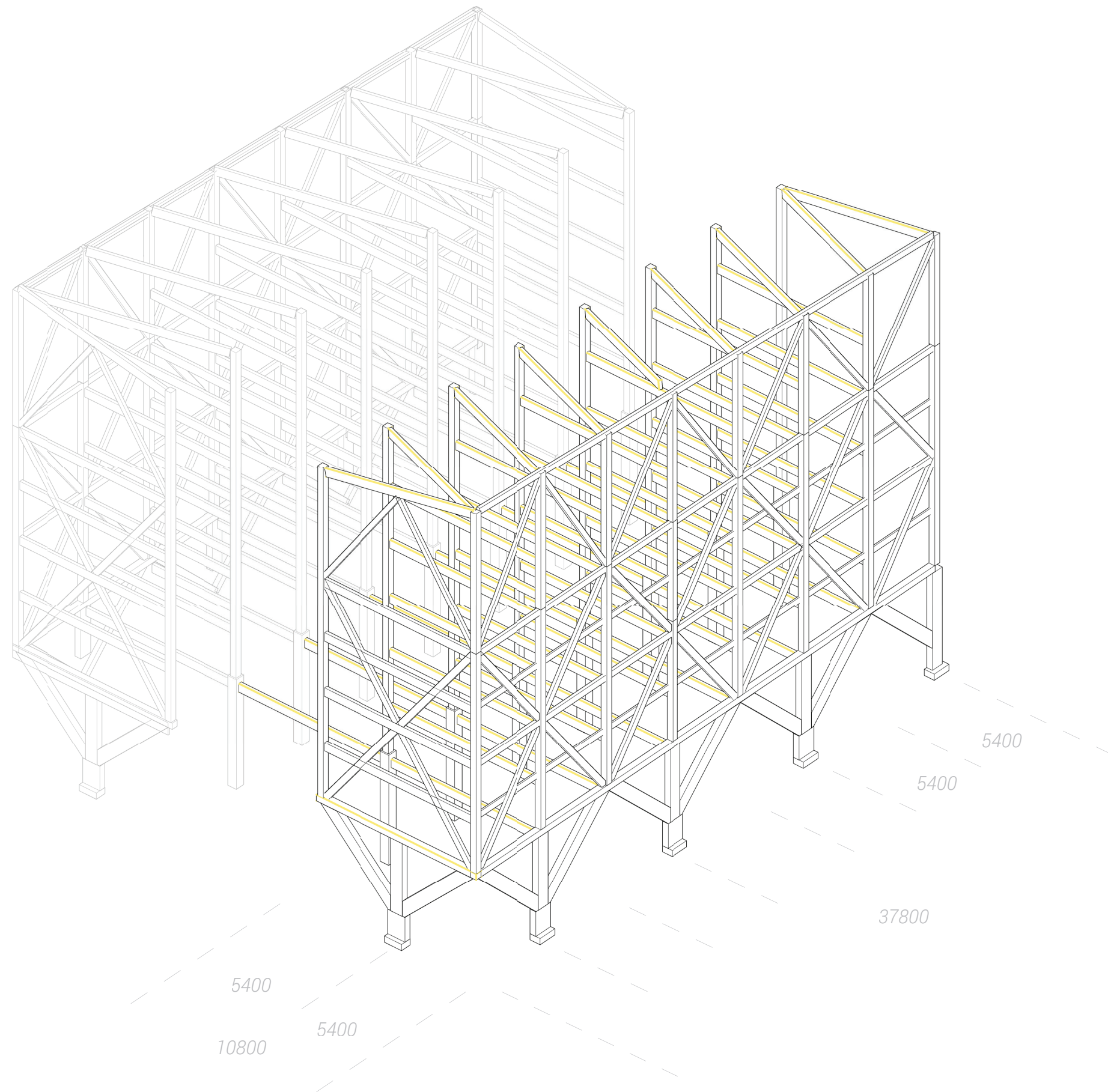


Section AA





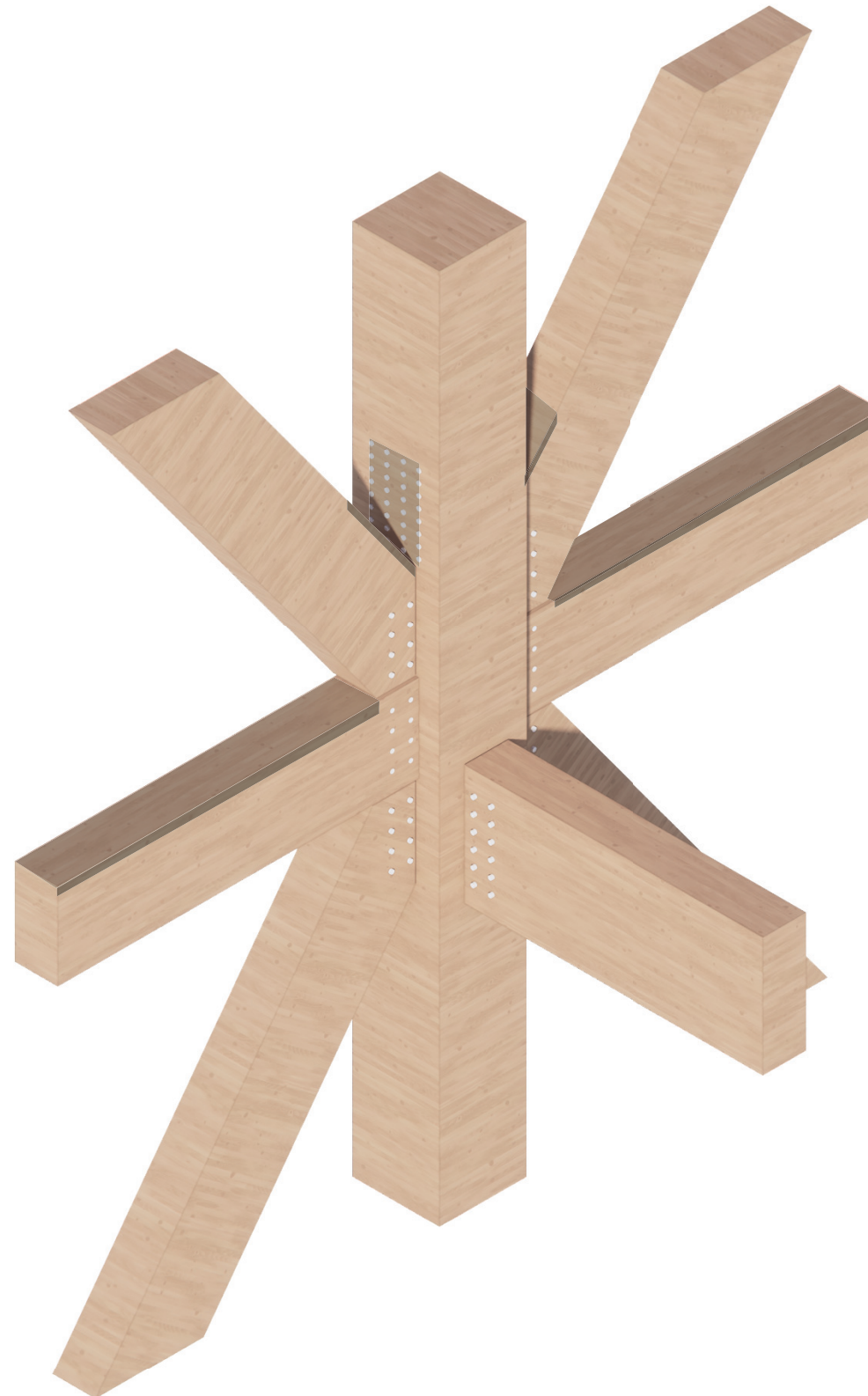




**Glulam Column**  
400x400 mm  
pressure-treated

**Glulam Beam**  
200x400 mm  
pressure-treated

**Glulam Truss**  
200x400 mm  
pressure-treated

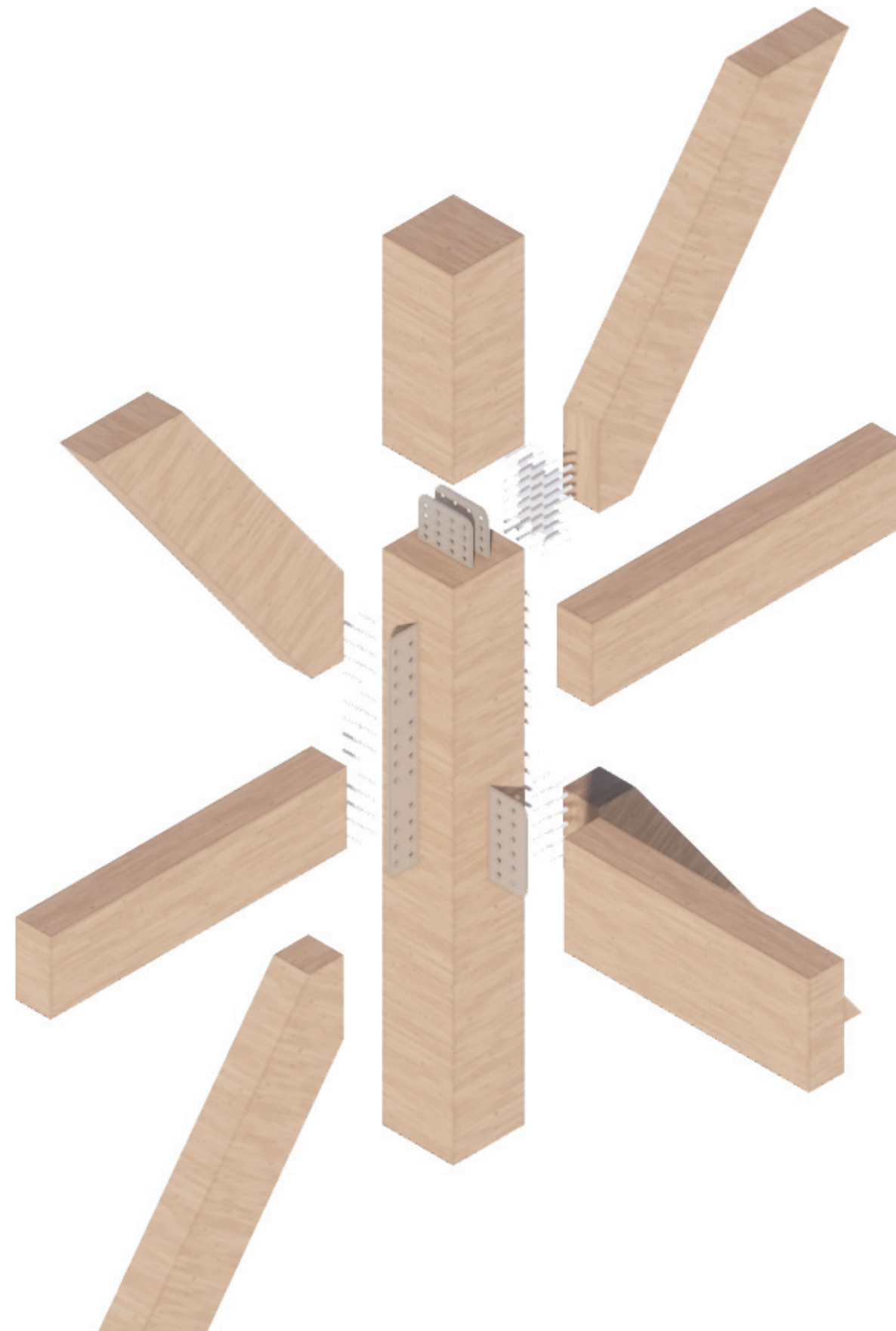


**Waterproof flashing**  
at horizontal surfaces and edges;  
invisible from street-level

**Glulam Beam**  
200x550 mm

**Fire Safety:**  
2x 40mm overdimensioning  
on all beams columns

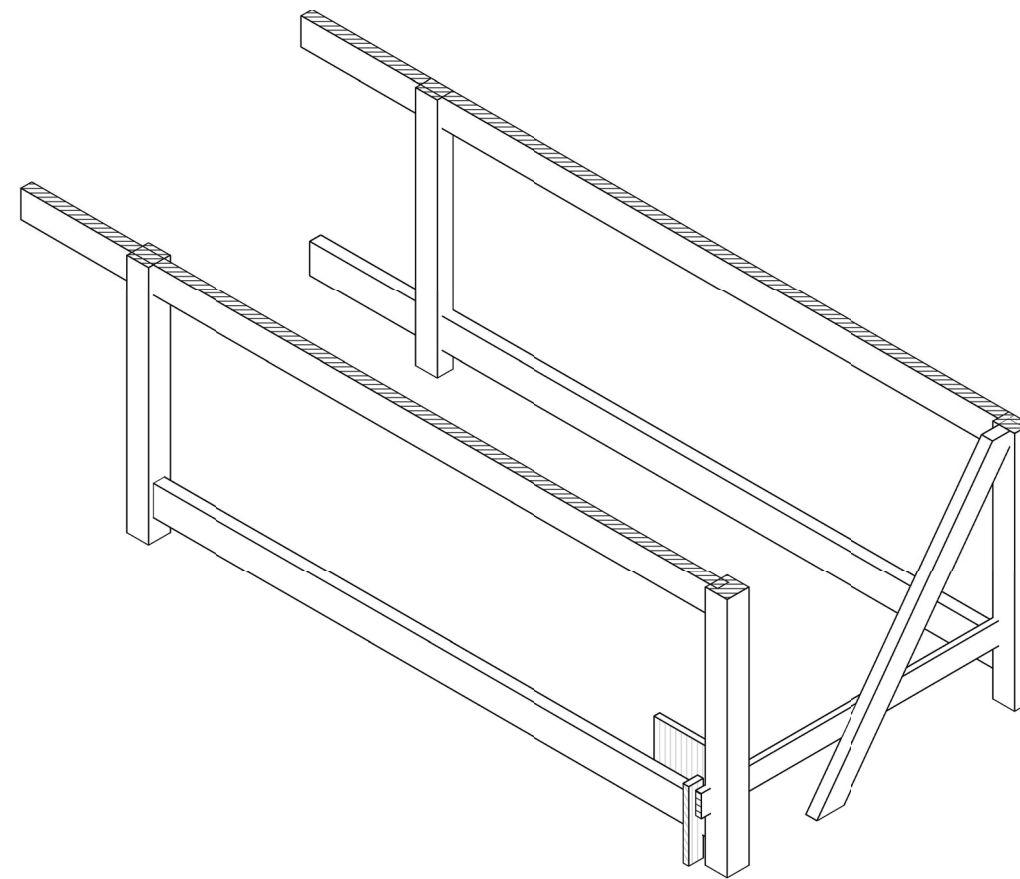
**Horizontal force**  
*transfer plate column*

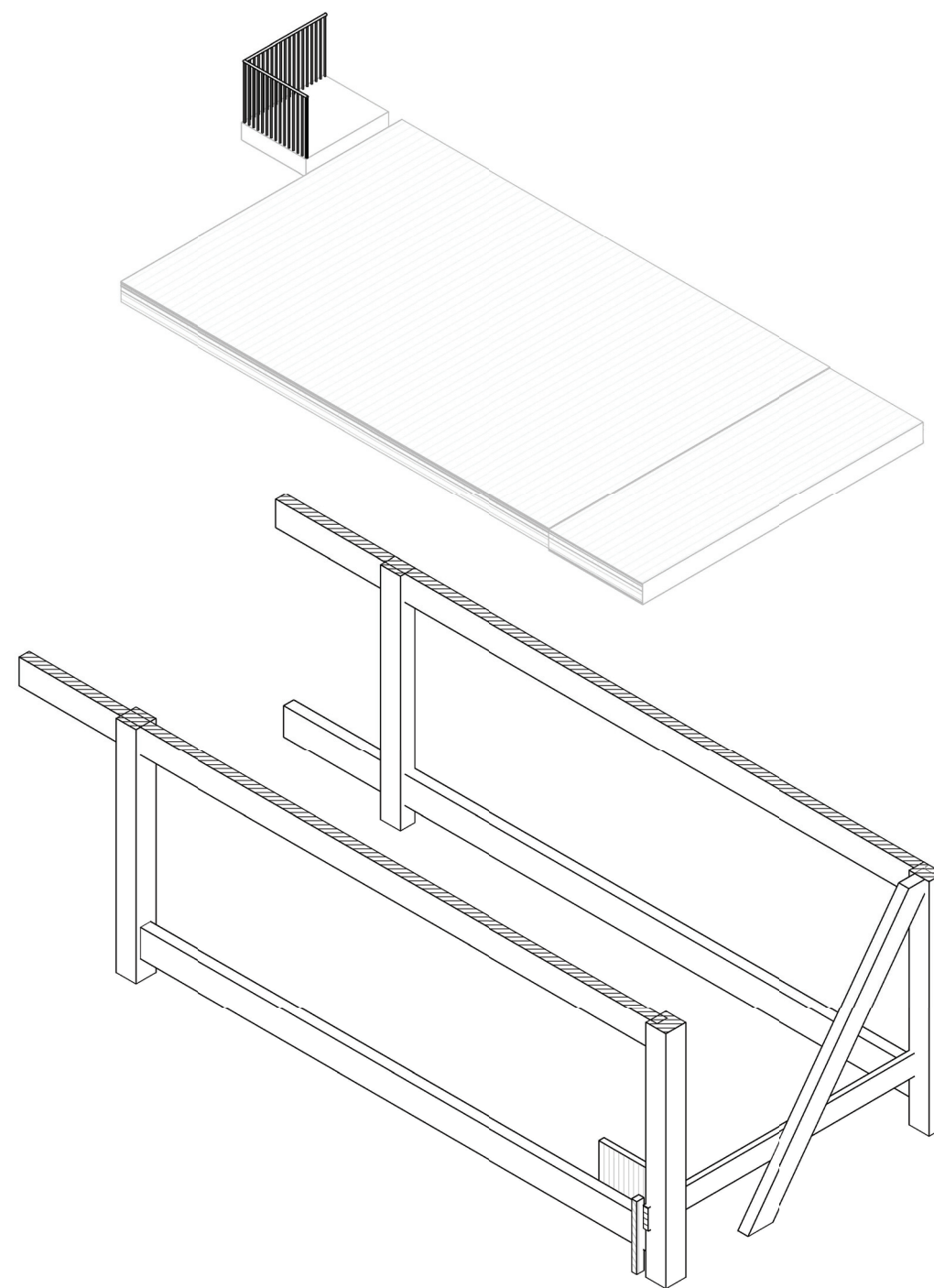


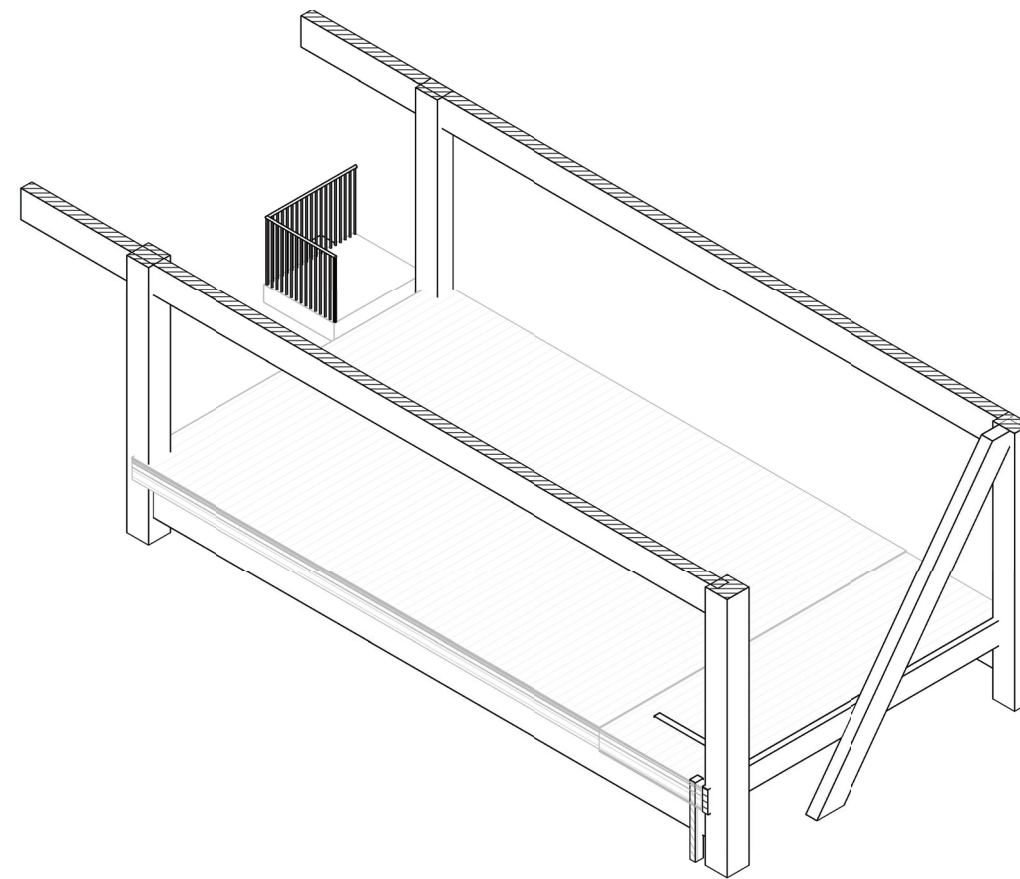
**Steel Plates**  
*slotted in wood*

**Dowel Pins**

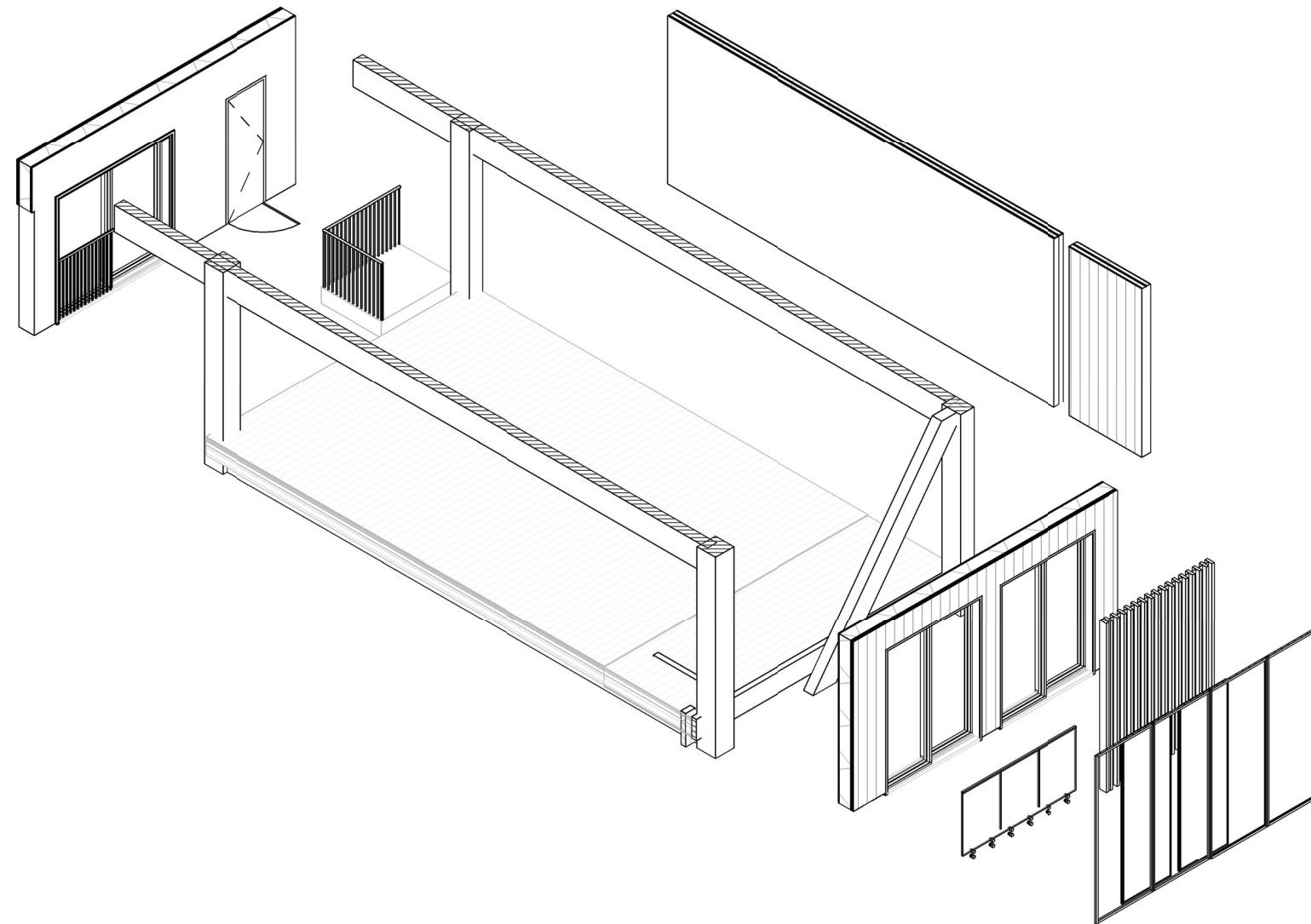
**Pre-Drilled Holes**  
*in Glulam elements*

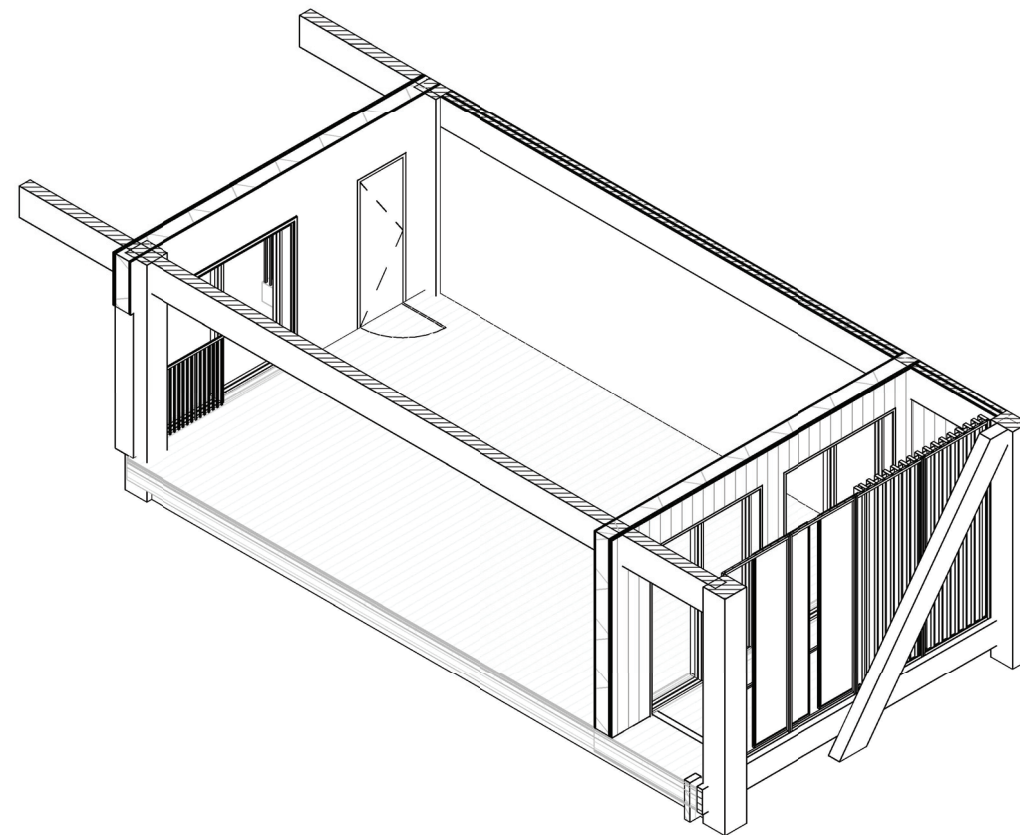


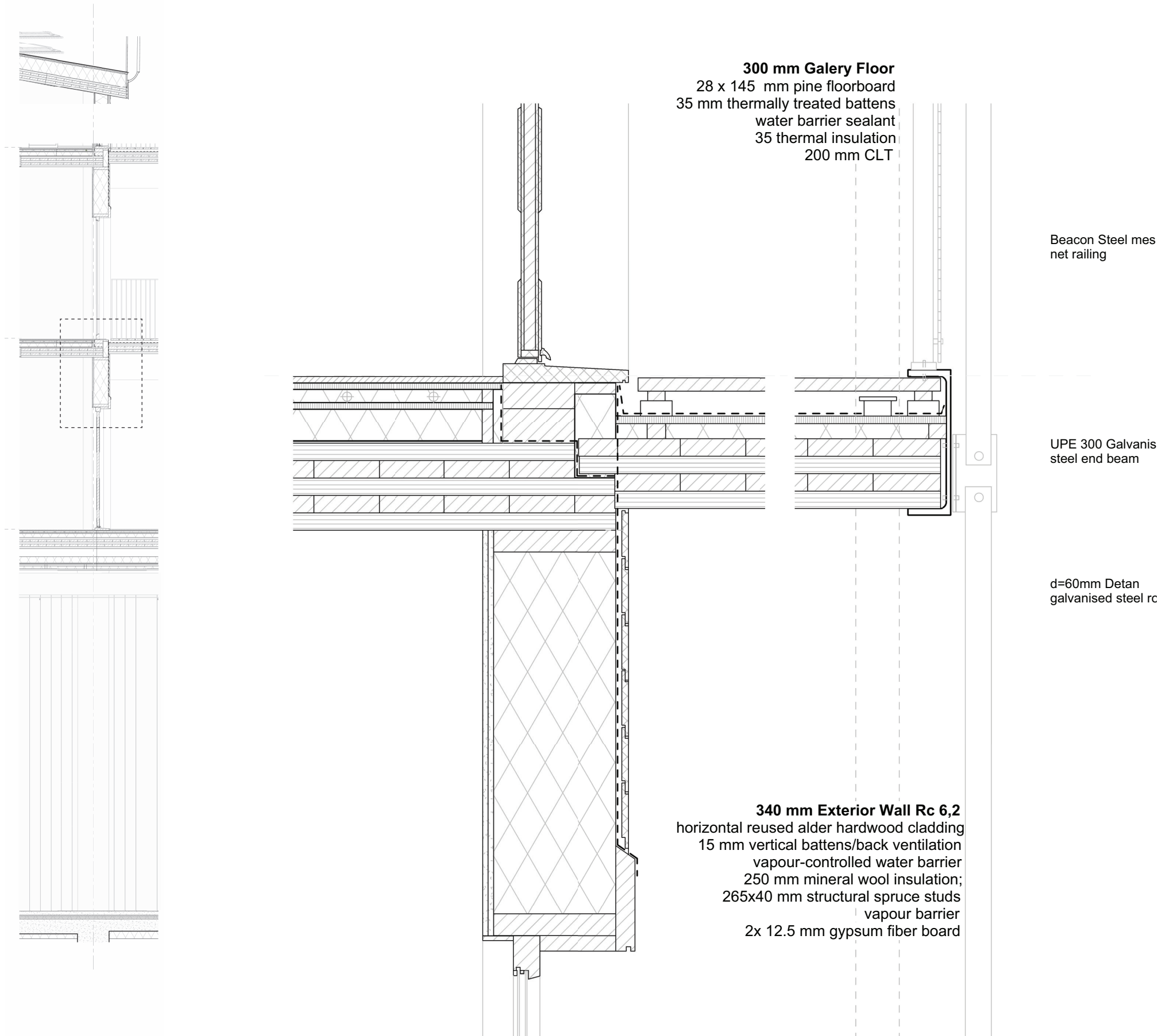


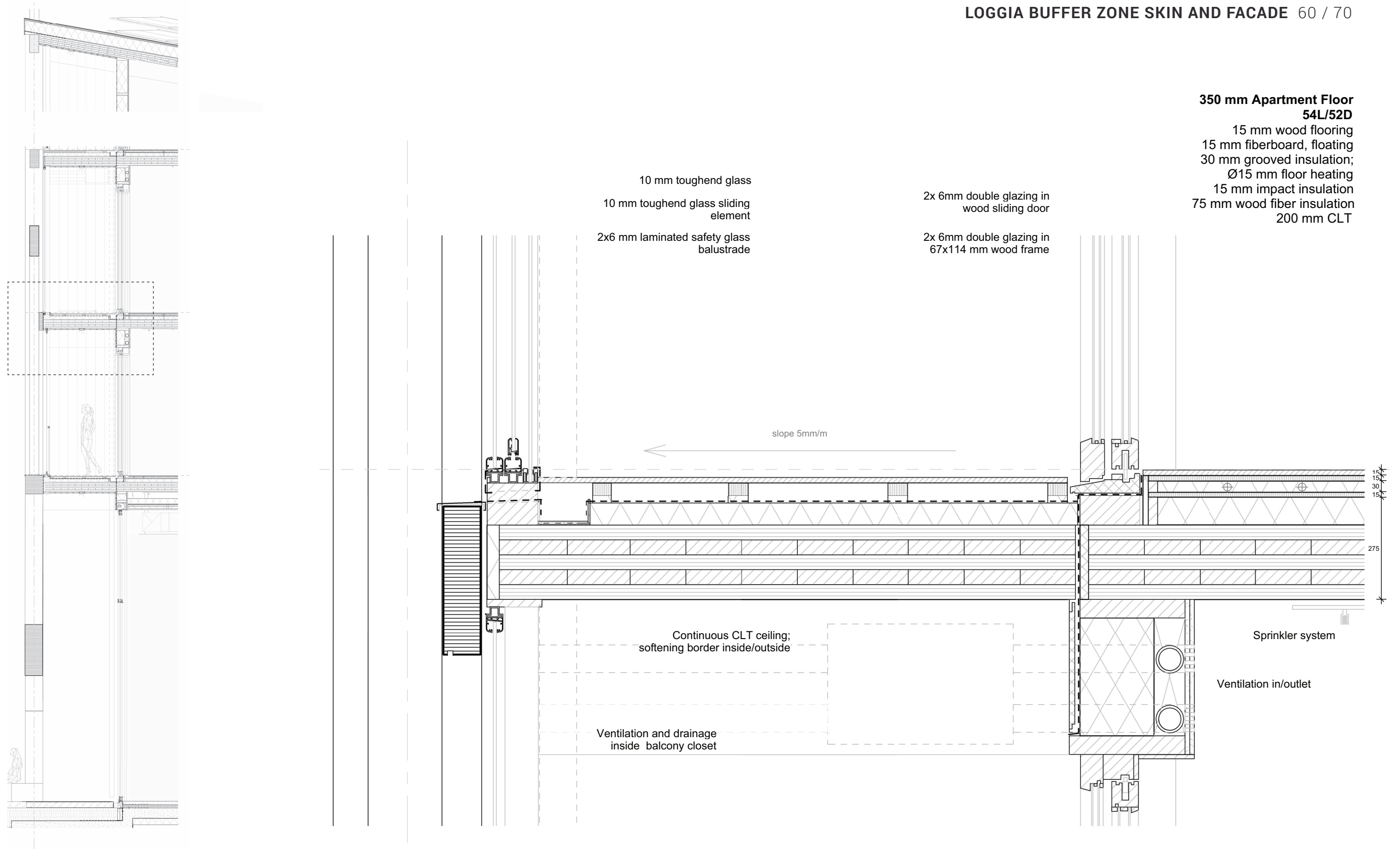




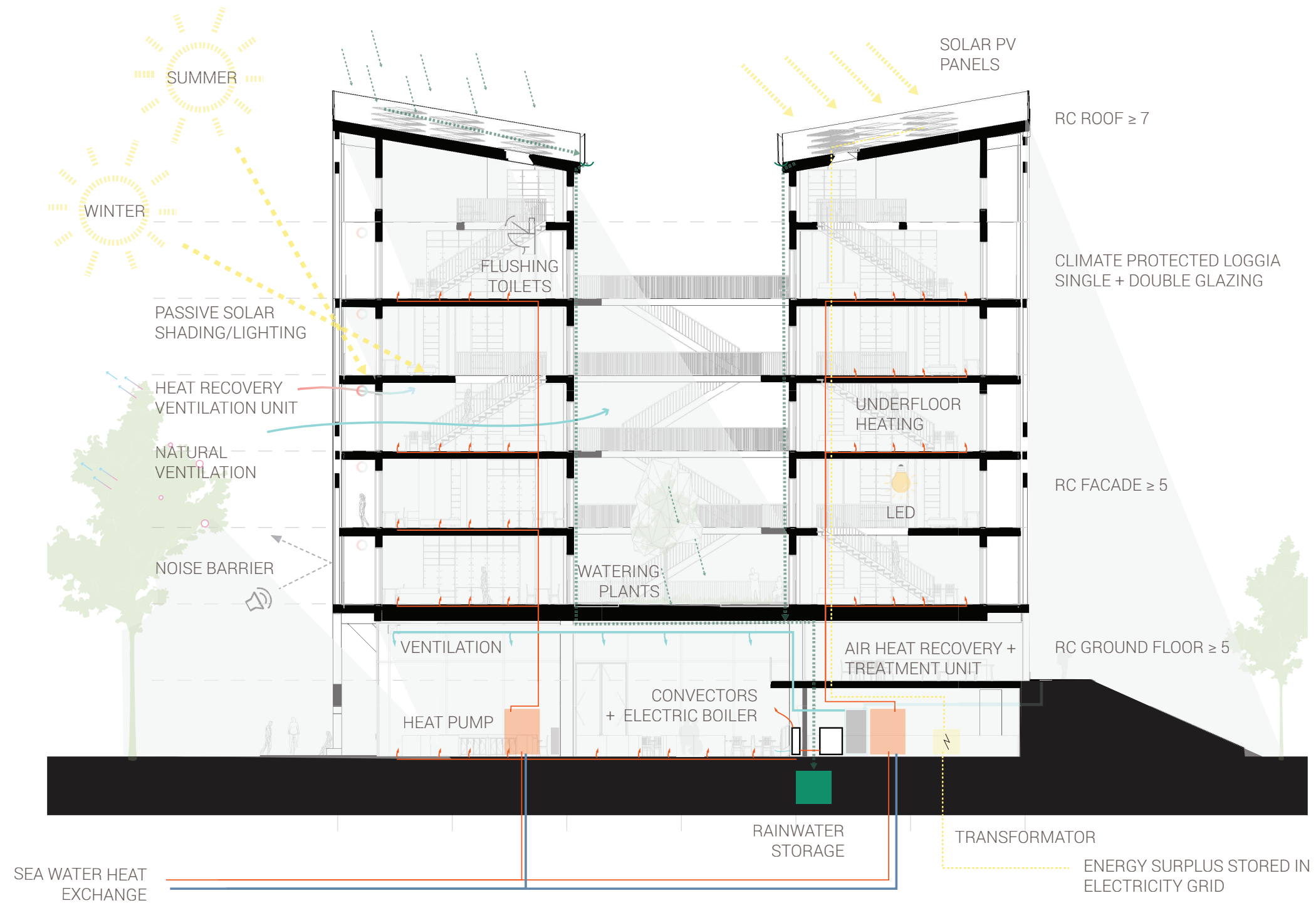


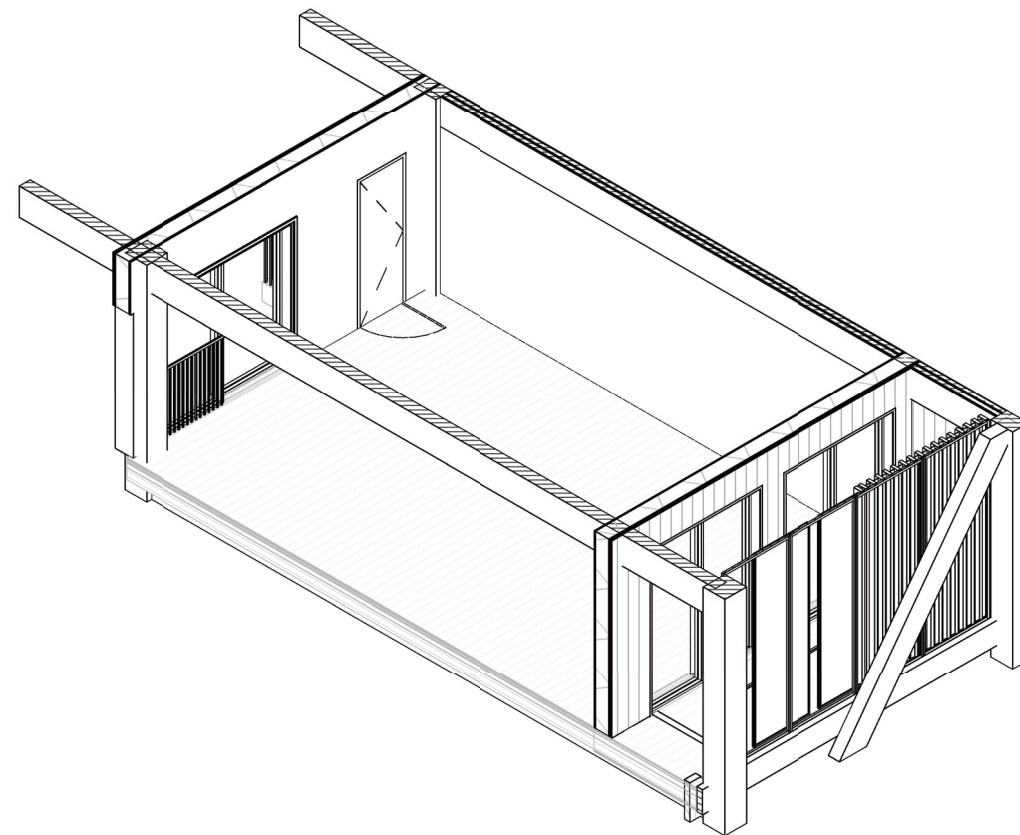


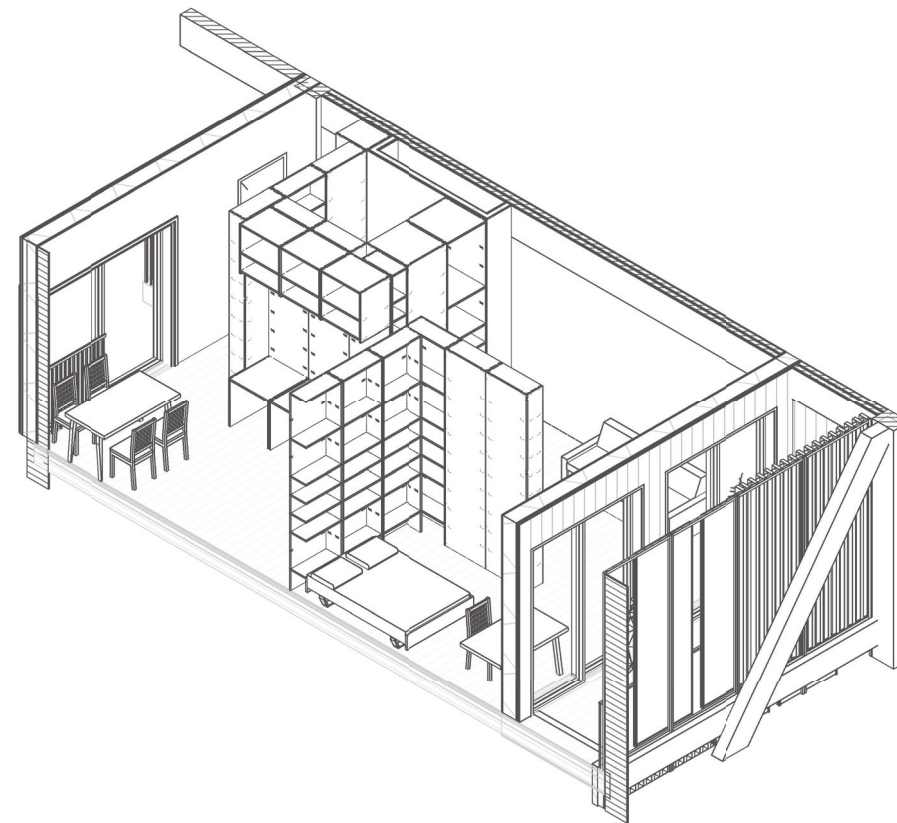




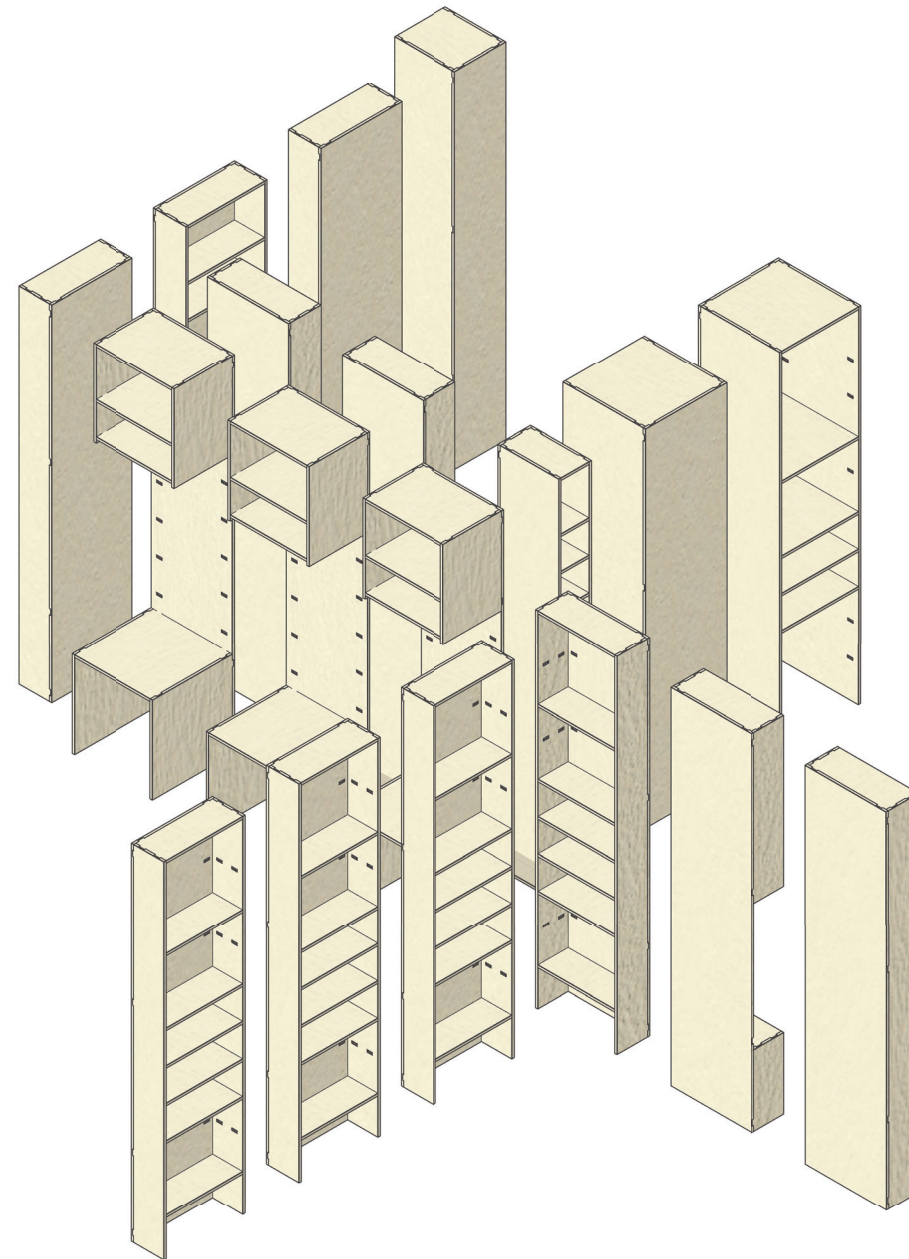


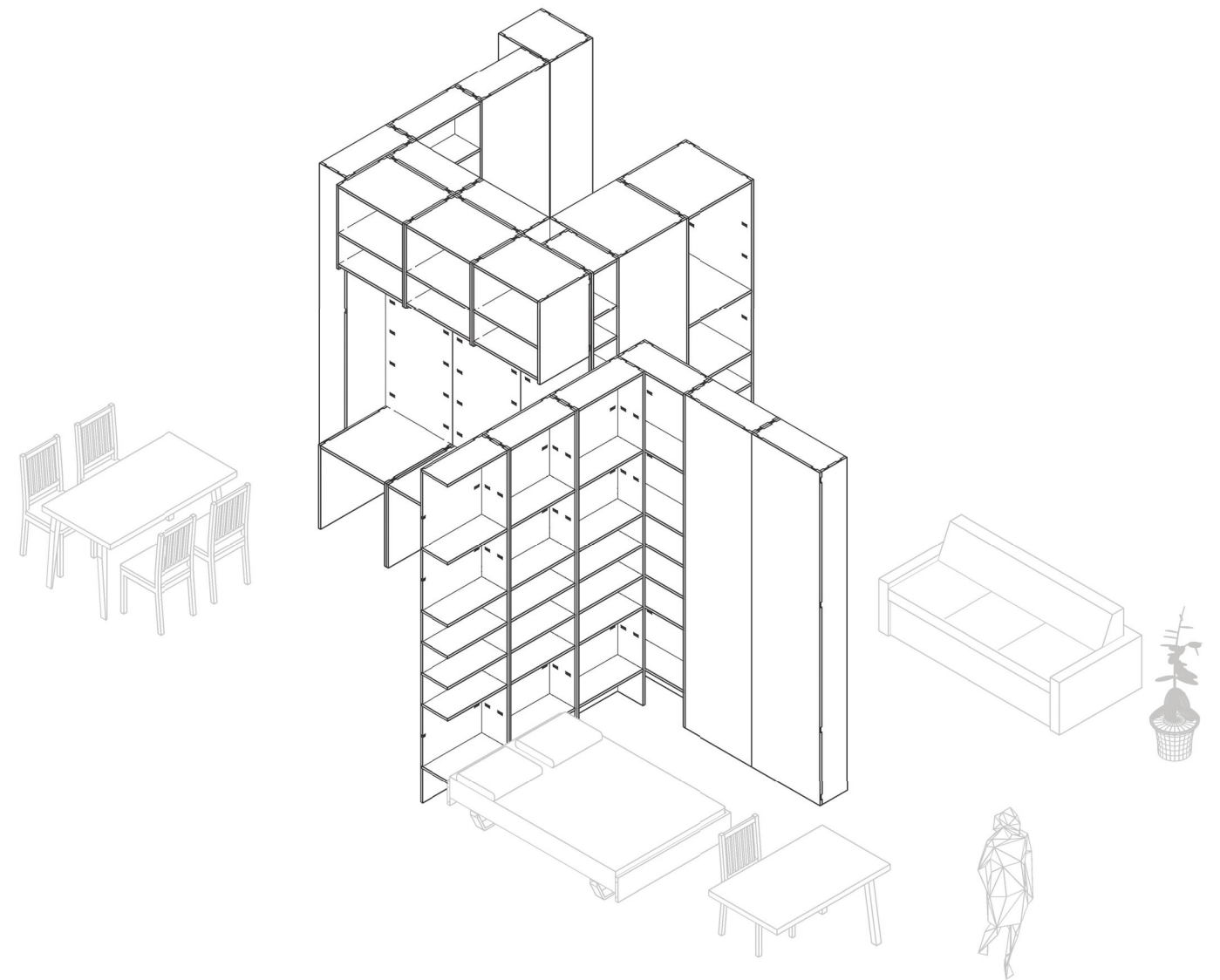
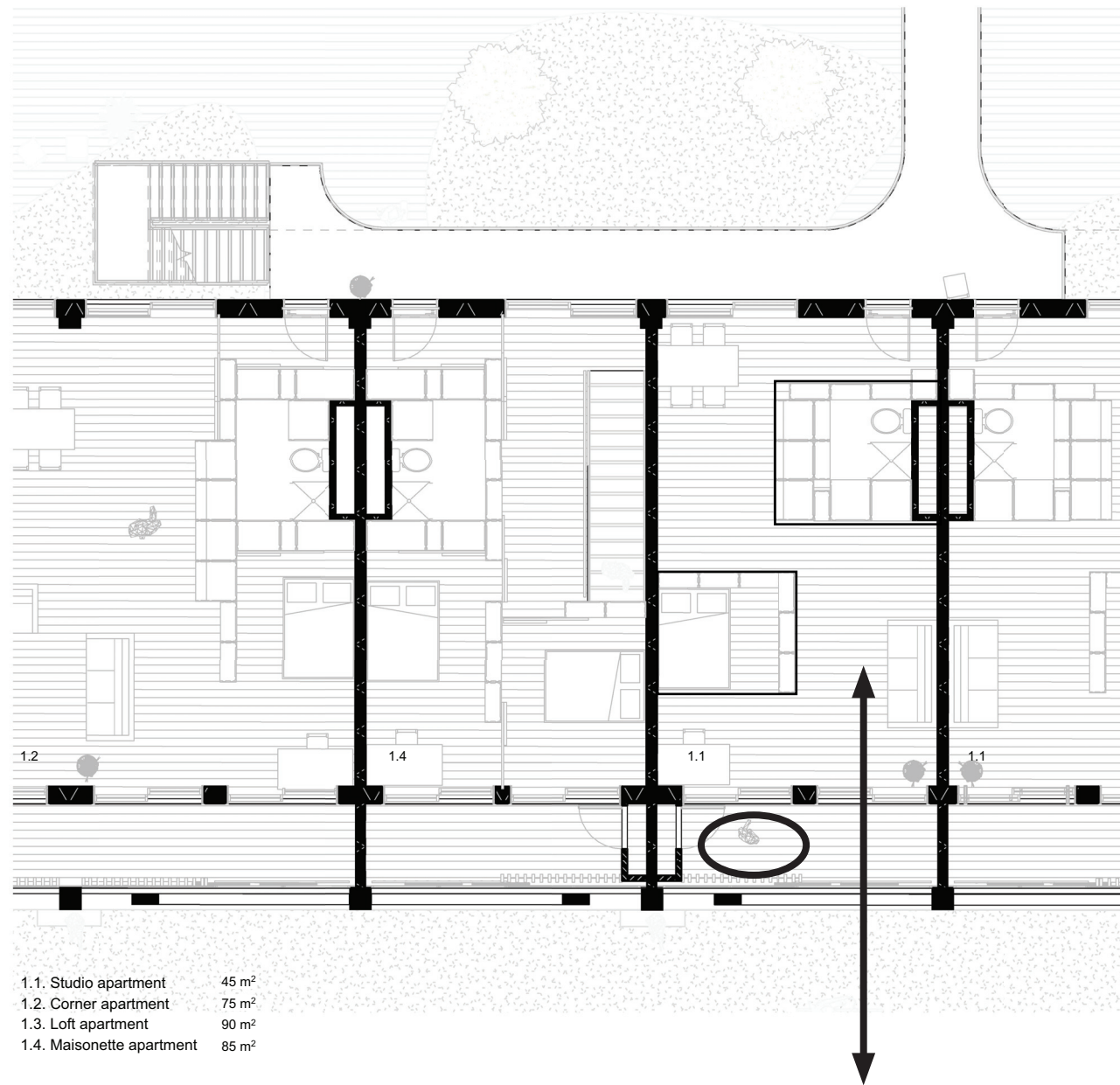


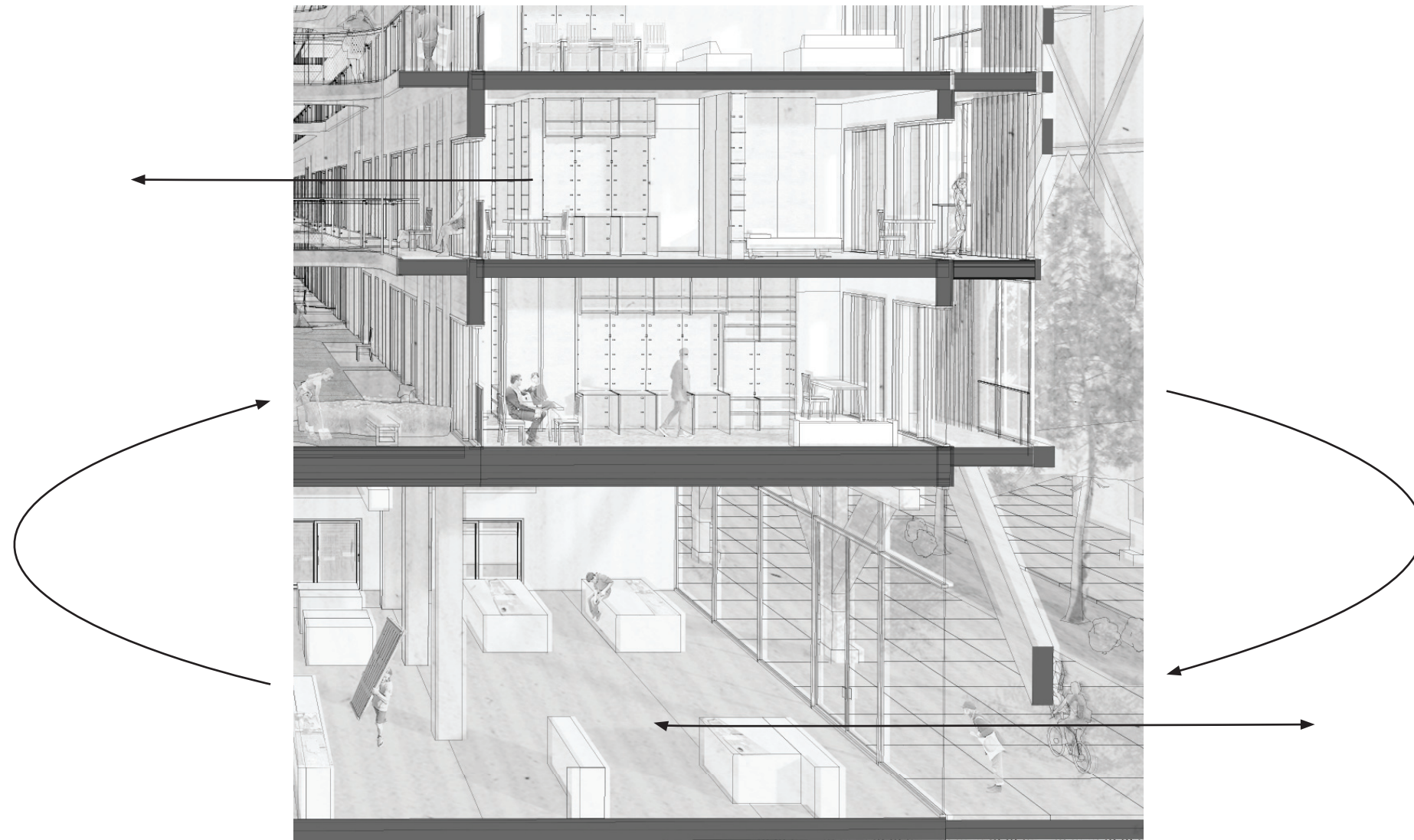


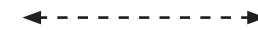
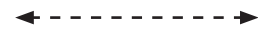














# TALLINN TIMBER - THE POTENTIAL OF KALASADAMA

P5

ENZO REE BOETER

28/06/2024





**29%**

**Scots pine**  
*Pinus sylvestris*

Softwood  
Height: 20-45 m  
Diameter: 0.5-1.5 m



**26%**

**Norway spruce**  
*Picea abies*

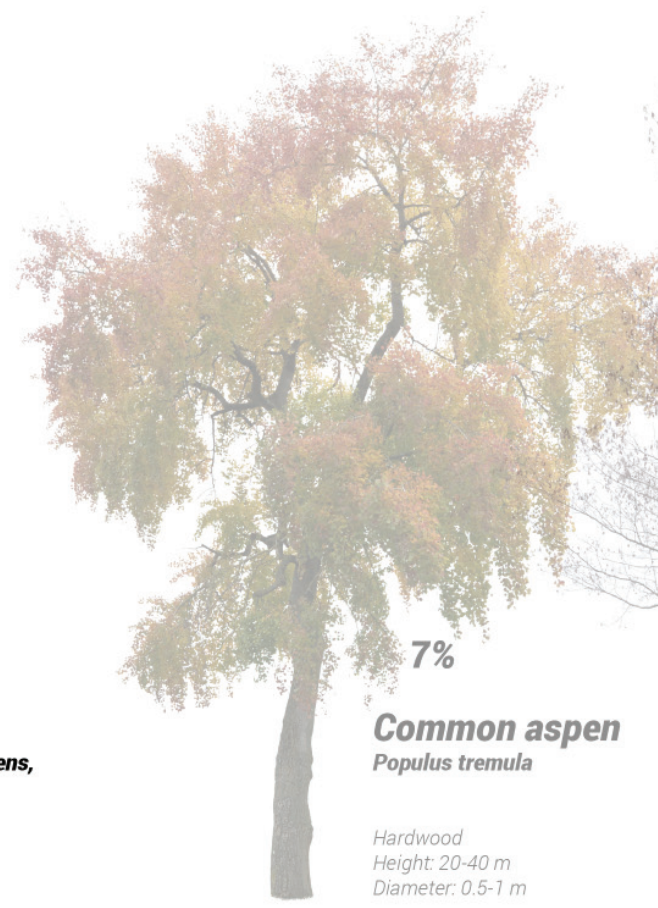
Softwood  
Height: 20-45 m  
Diameter: 0.5-1.5 m



**23%**

**Birch**  
*Betula pendula, - pubescens,*  
*- humilis, - nana*

Hardwood  
Height: 1-30 m  
Diameter: 0.1-1 m



**7%**

**Common aspen**  
*Populus tremula*

Hardwood  
Height: 20-40 m  
Diameter: 0.5-1 m



**6%**

**Grey alder**  
*Alnus incana*

Hardwood  
Height: 10-25 m  
Diameter: 0.1-1 m

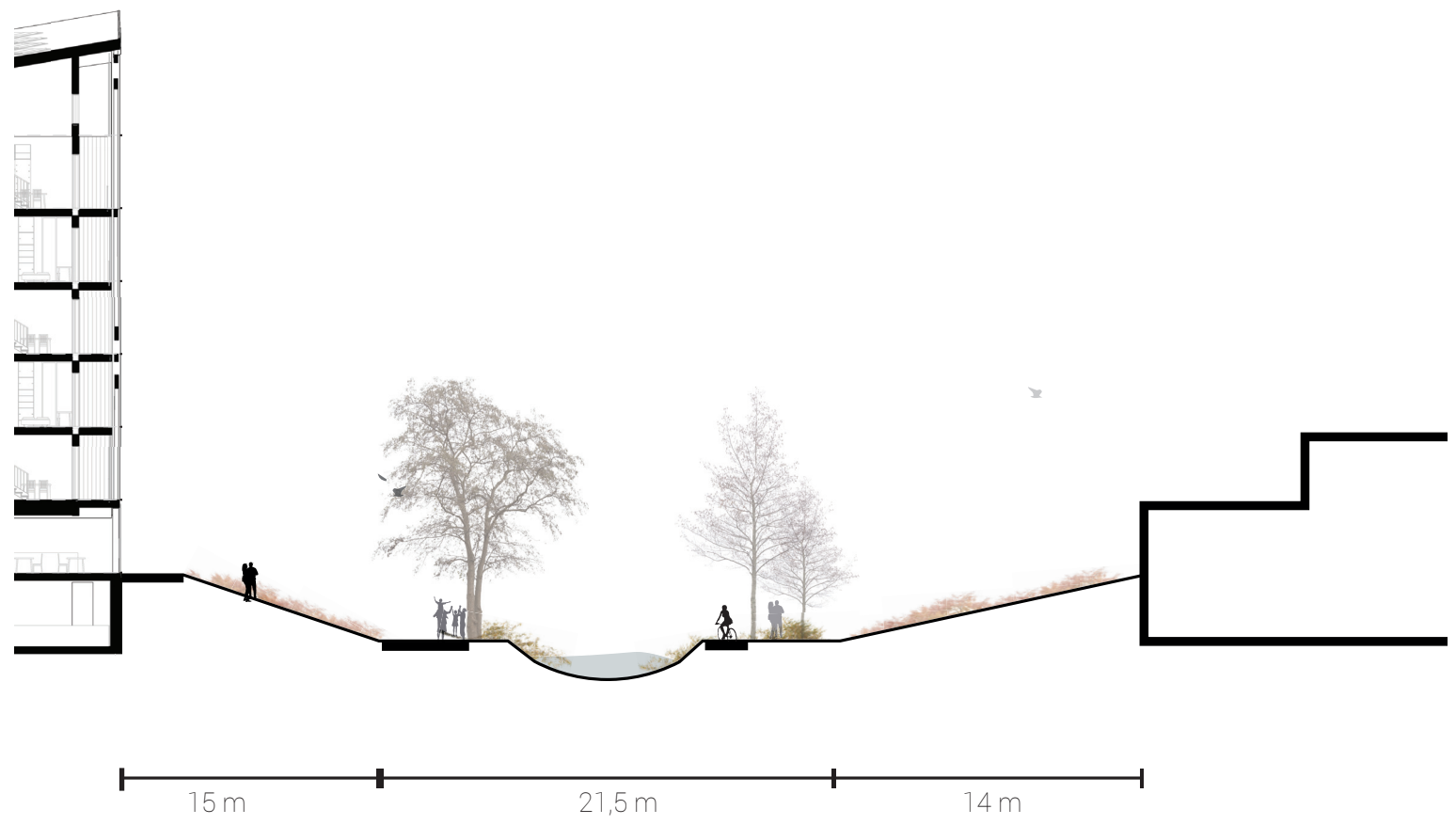


**5%**

**Black alder**  
*Alnus glutinosa*

Hardwood  
Height: 10-30 m  
Diameter: 0.1-1 m



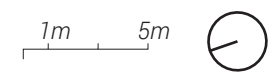
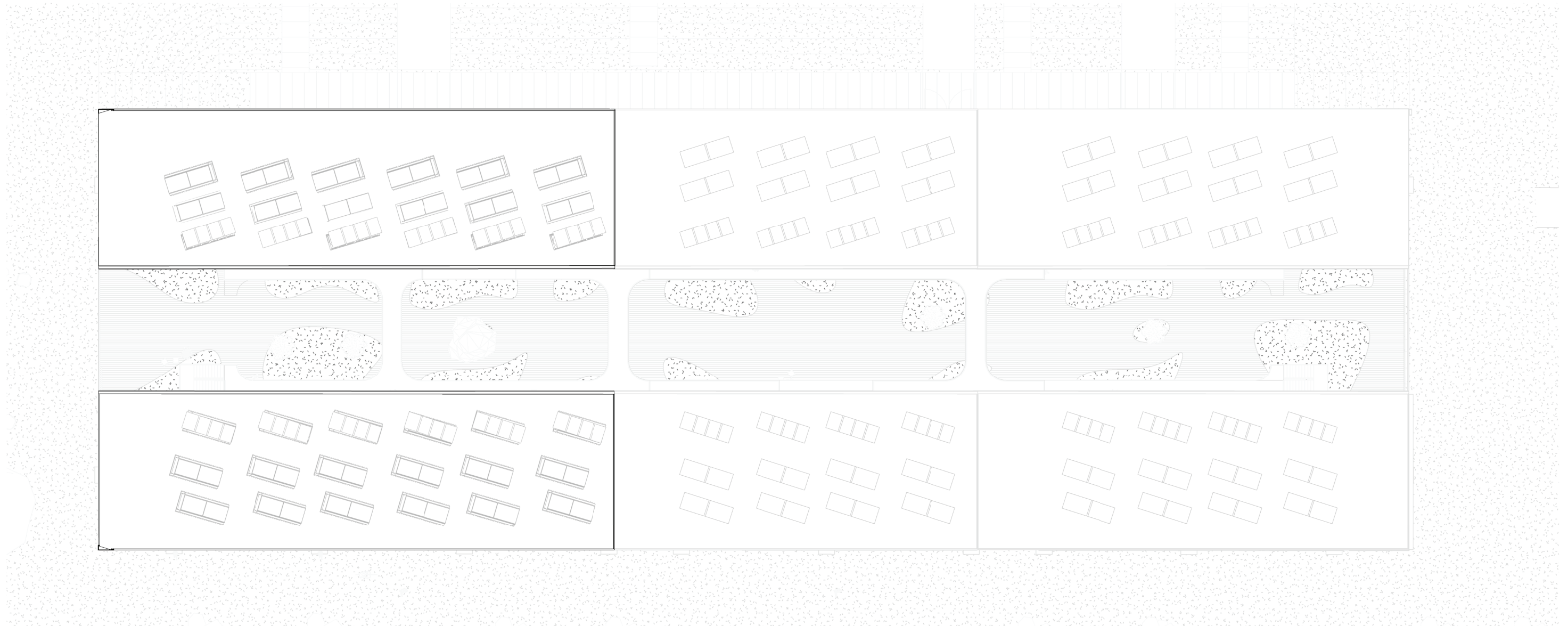


*New slope*

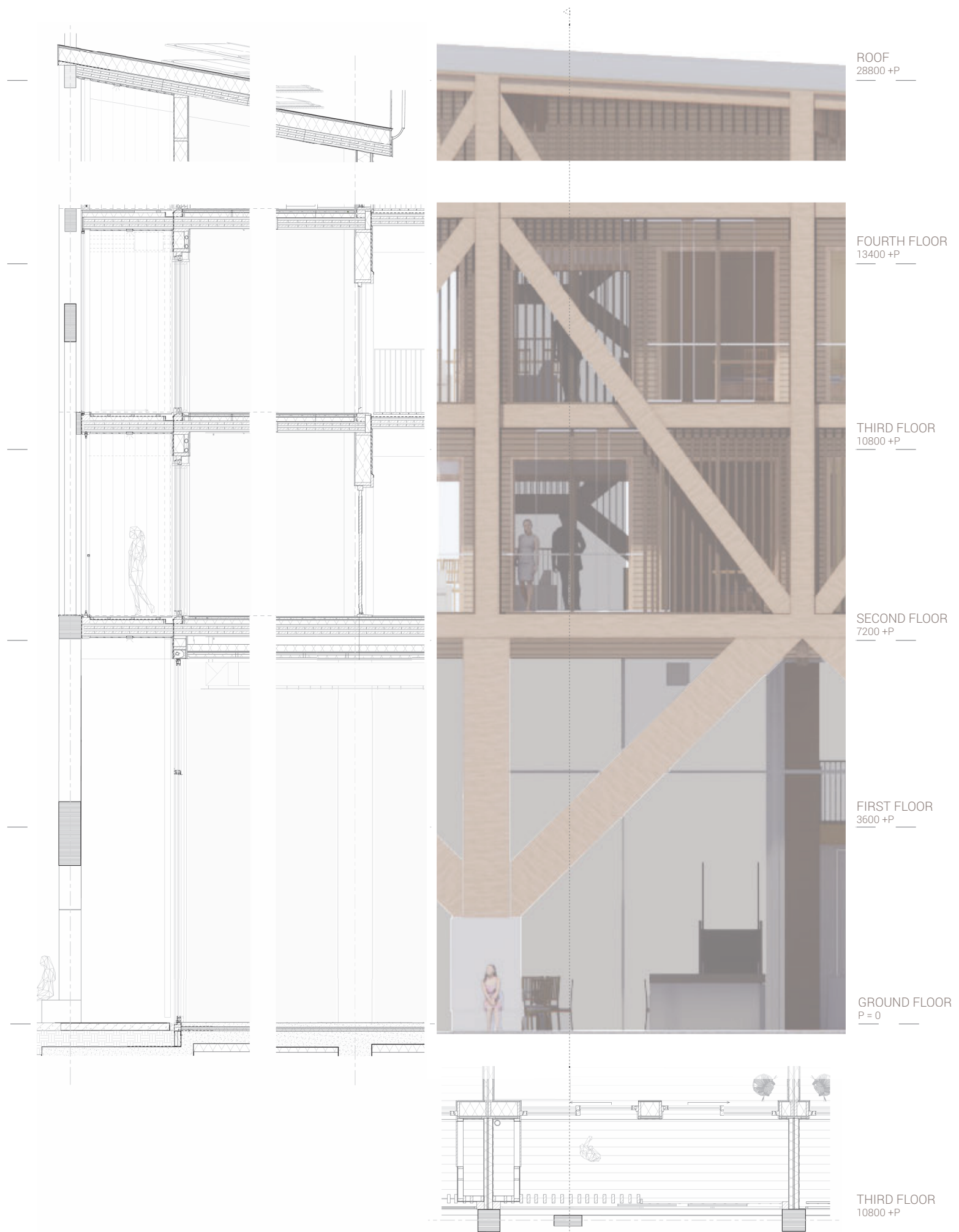


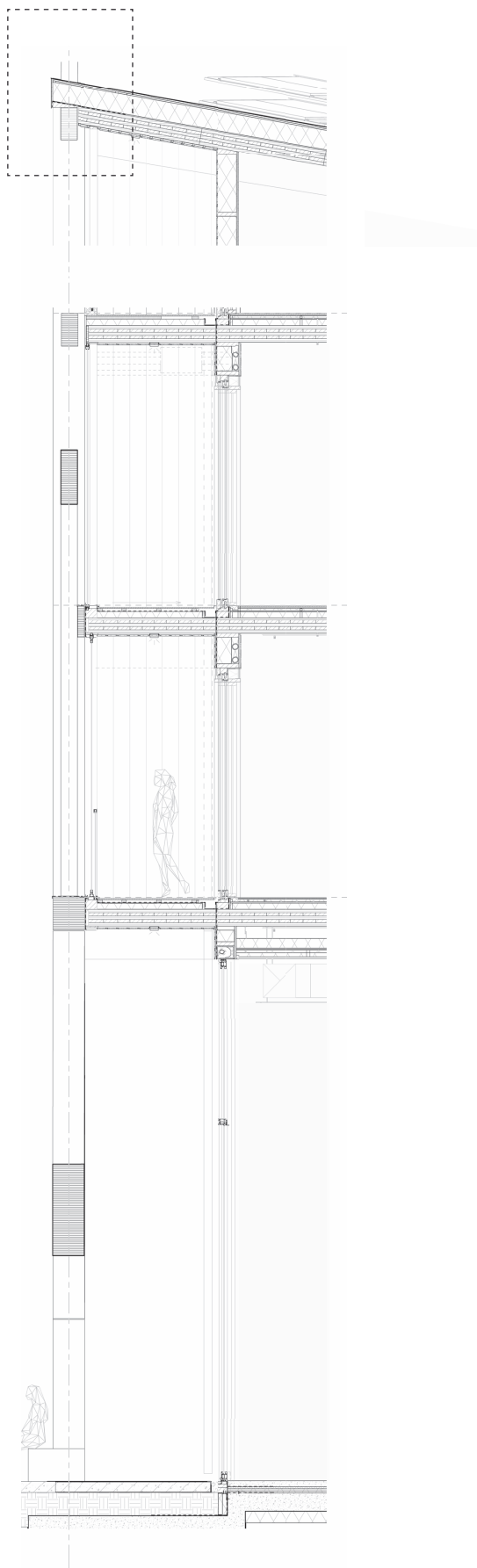
*Linnahall slope*



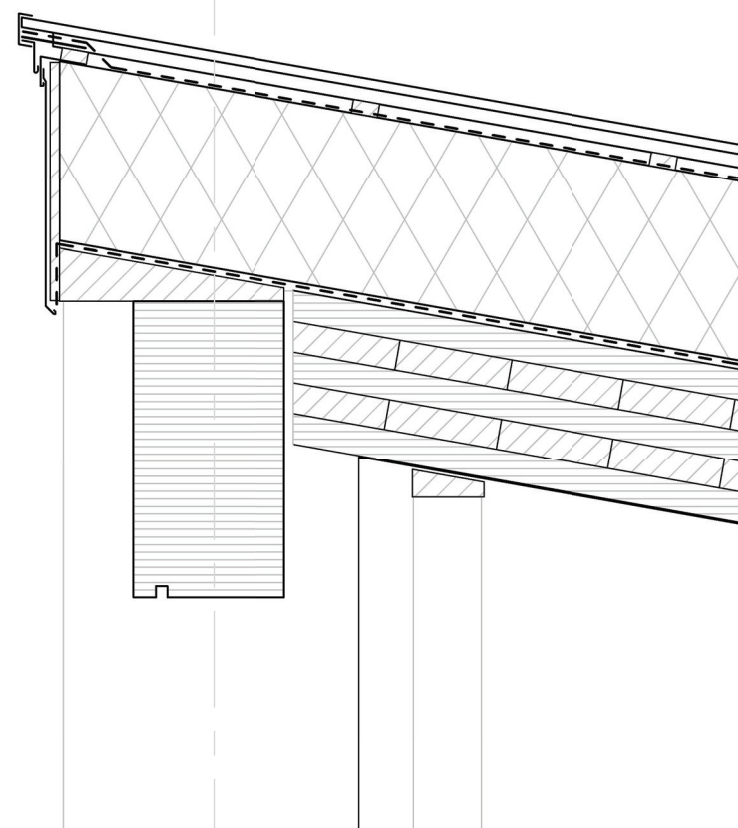


08 Roof  
1:300





**550 mm Roof Rc 7,2**  
solar panels  
10 mm standing seam zinc roofing  
20 mm fiberboard  
20 mm ventilated joist layer  
vapour controlled water barrier  
250 mm wood fiber insulation;  
250x40 mm floor joists  
vapour barrier  
200 mm CLT

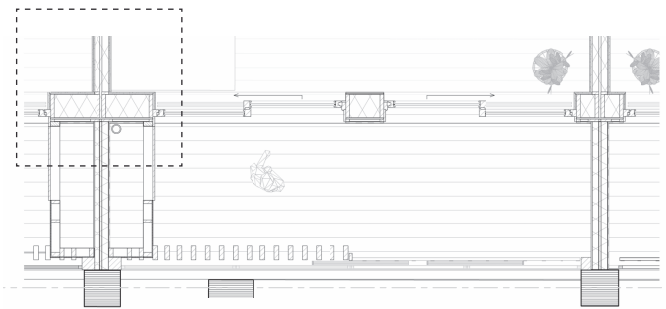
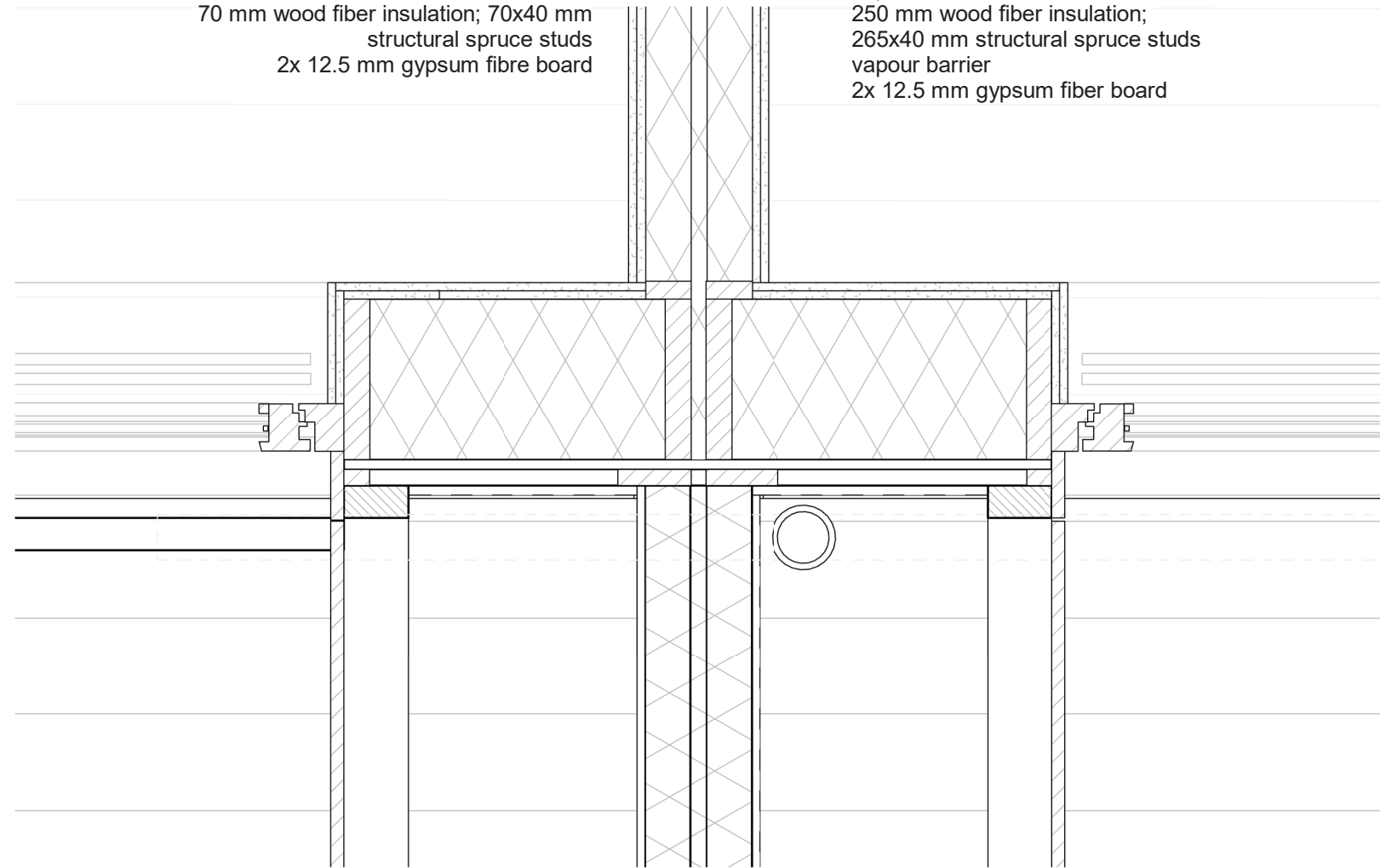


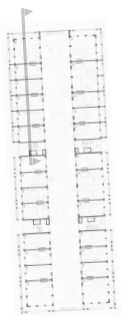
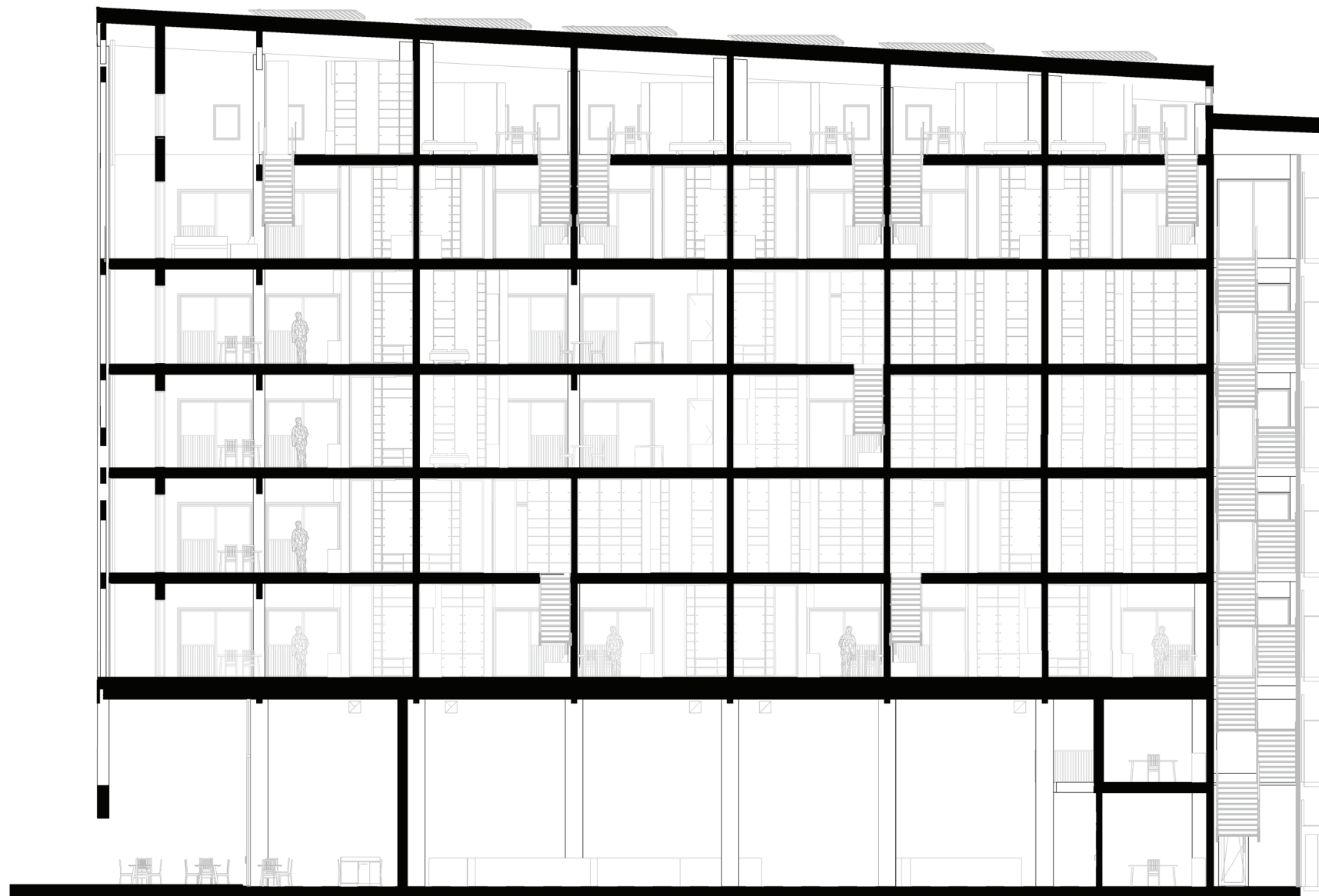
**215 mm Apartment Partition Wall Rw 60**

2x 12.5 mm gypsum fiber board  
70 mm wood fiber insulation; 70x40 mm  
structural spruce studs  
25 mm wood fiber insulation  
70 mm wood fiber insulation; 70x40 mm  
structural spruce studs  
2x 12.5 mm gypsum fibre board

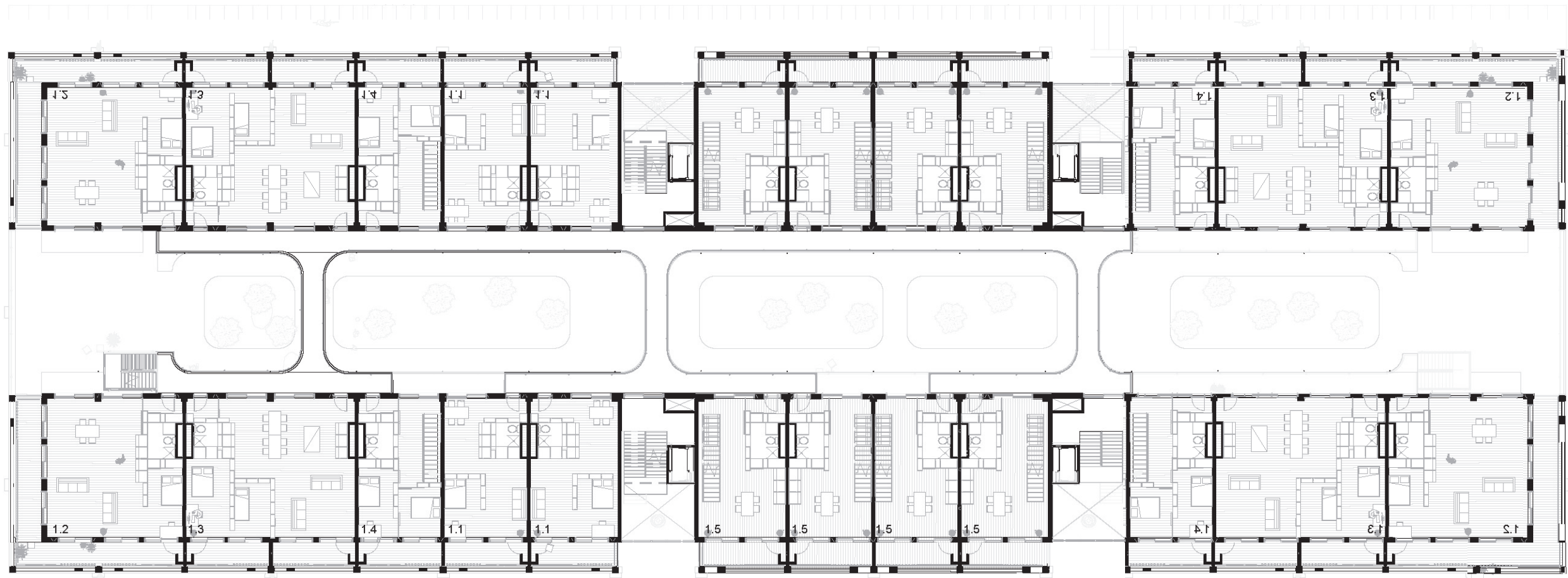
**330 mm Exterior Wall Rc 5,62**

vertical larch siding  
25 mm horizontal battens  
15 mm vertical battens/back ventilation  
vapour-controlled water barrier  
250 mm wood fiber insulation;  
265x40 mm structural spruce studs  
vapour barrier  
2x 12.5 mm gypsum fiber board



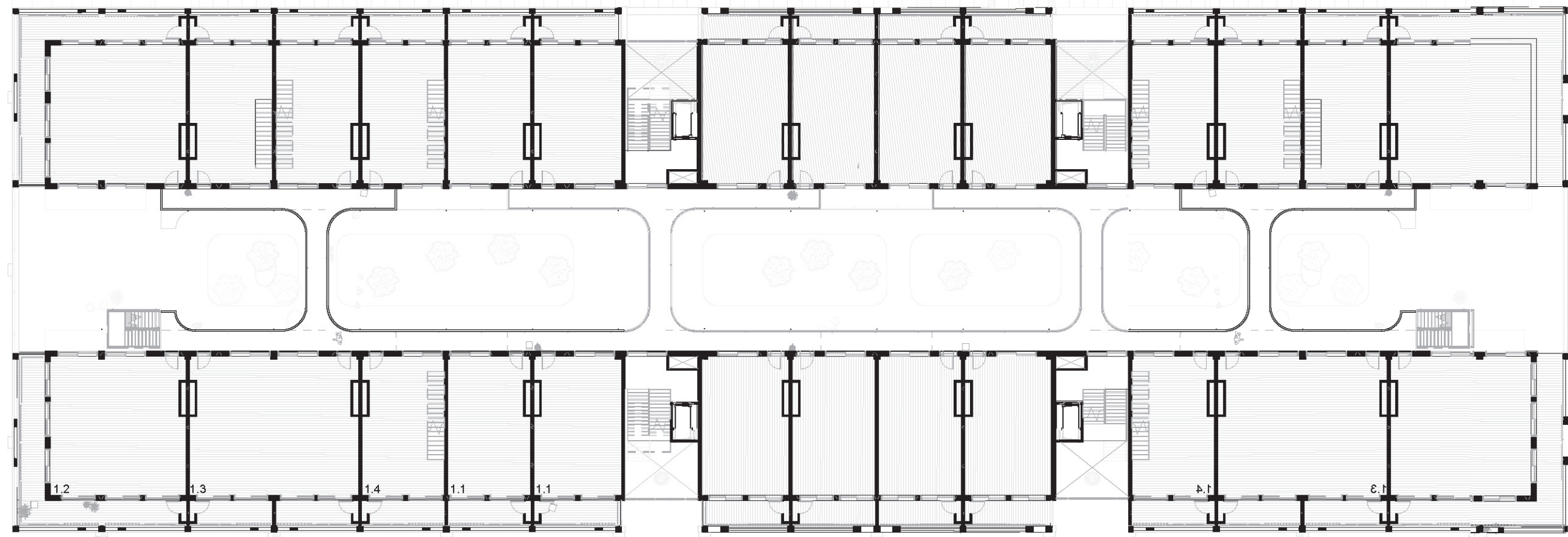


Section BB  
1m 5m  
1:200



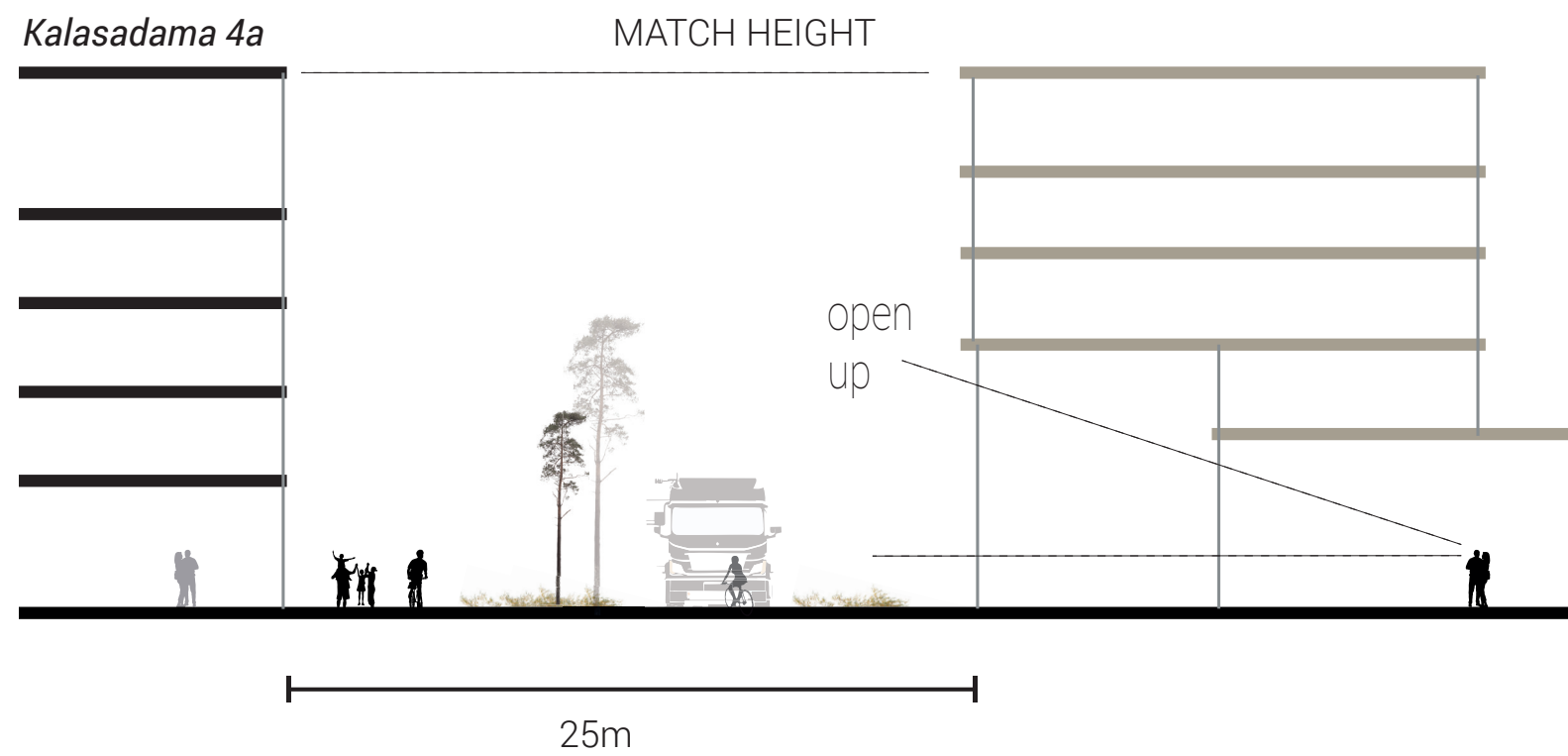
04 Fourth Floor

1:300



05 Fifth Floor

1:300



*Relation with Culture Quarter*



*Kalasadama 4a*