

# Part 1: Plans/ Elevations/ Sections

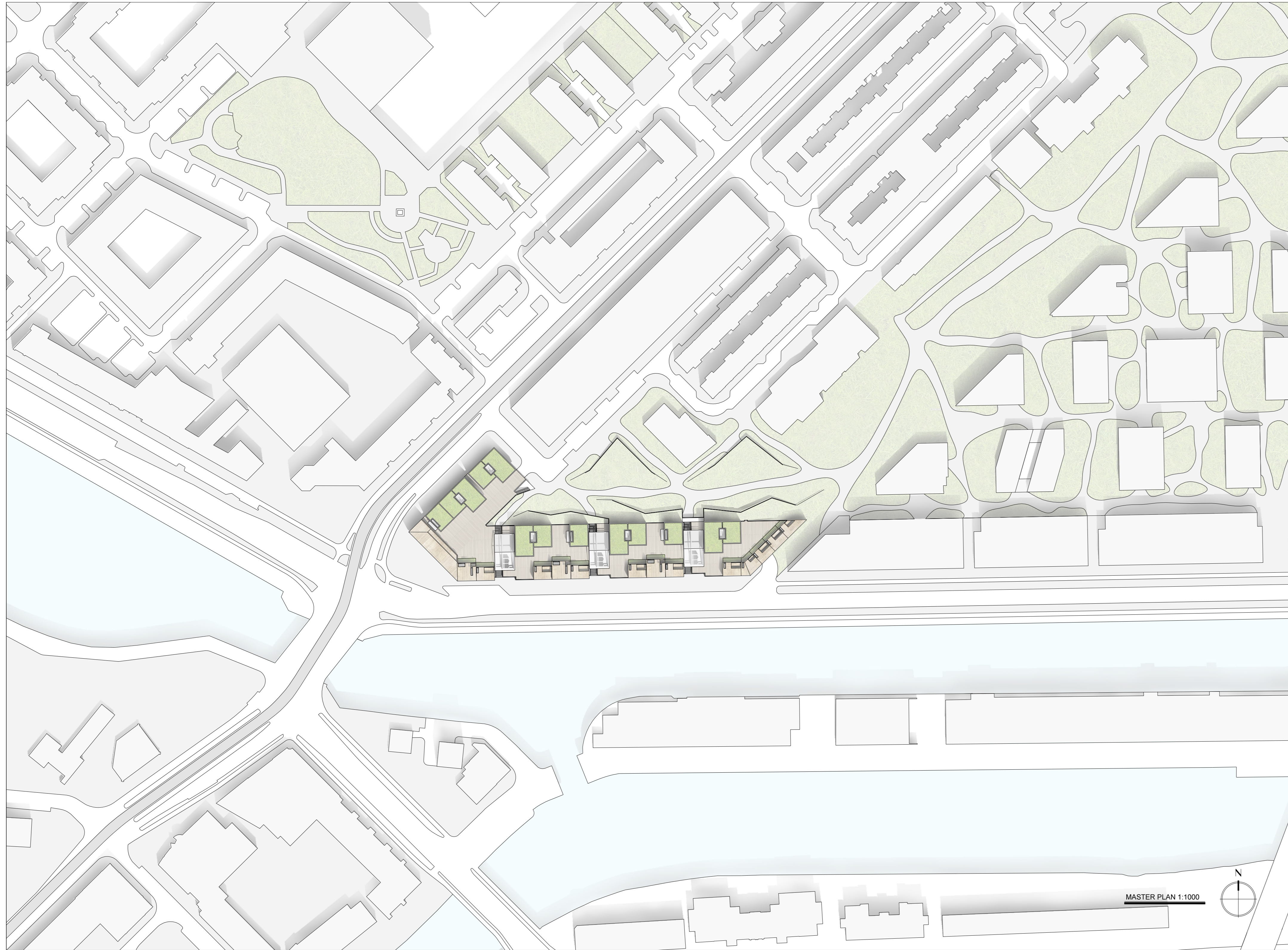
## Dwelling with Interactive In-between Space

AR3AD131 Dwelling Graduation Studio: Dutch Housing  
(2014-2015)

Studio tutors: Birgit Jürgehake;  
Paul Kuitenbrouwer;  
Pierre Jennen

Xiaoyu Yuan 4329074

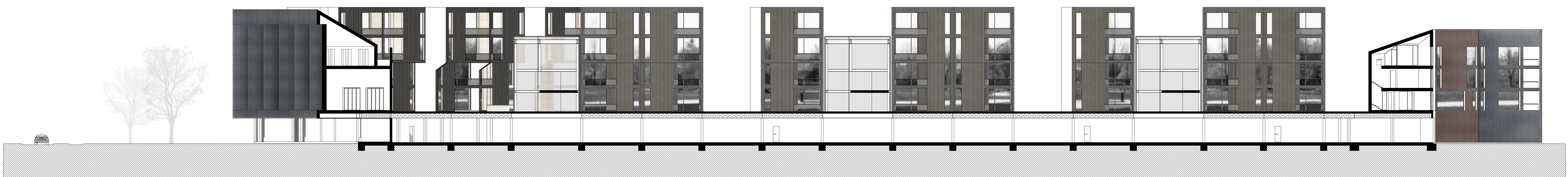
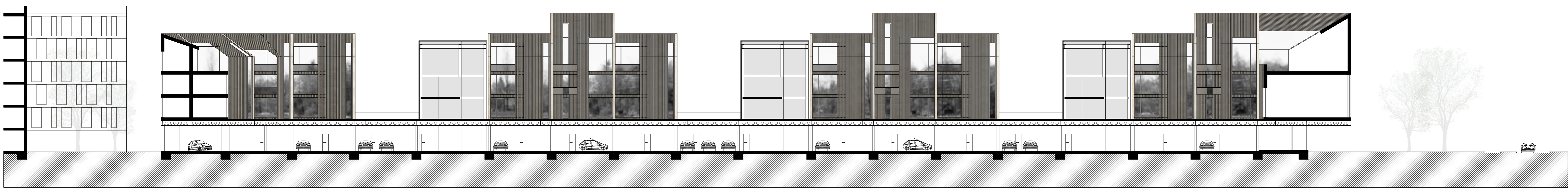
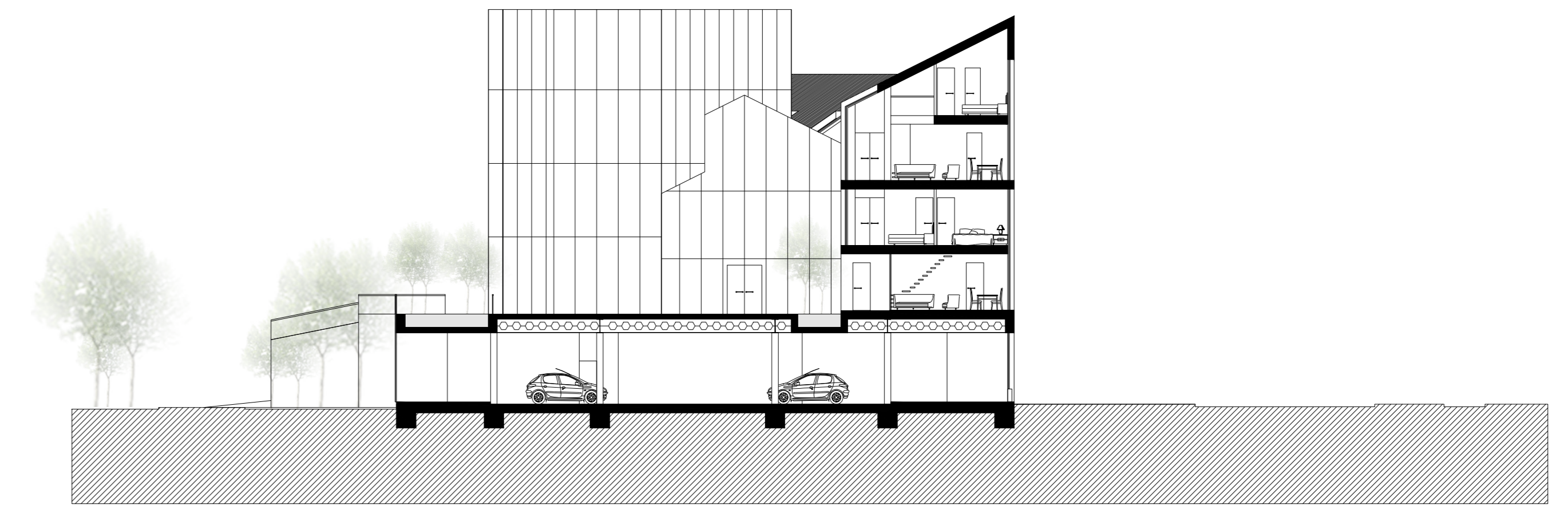


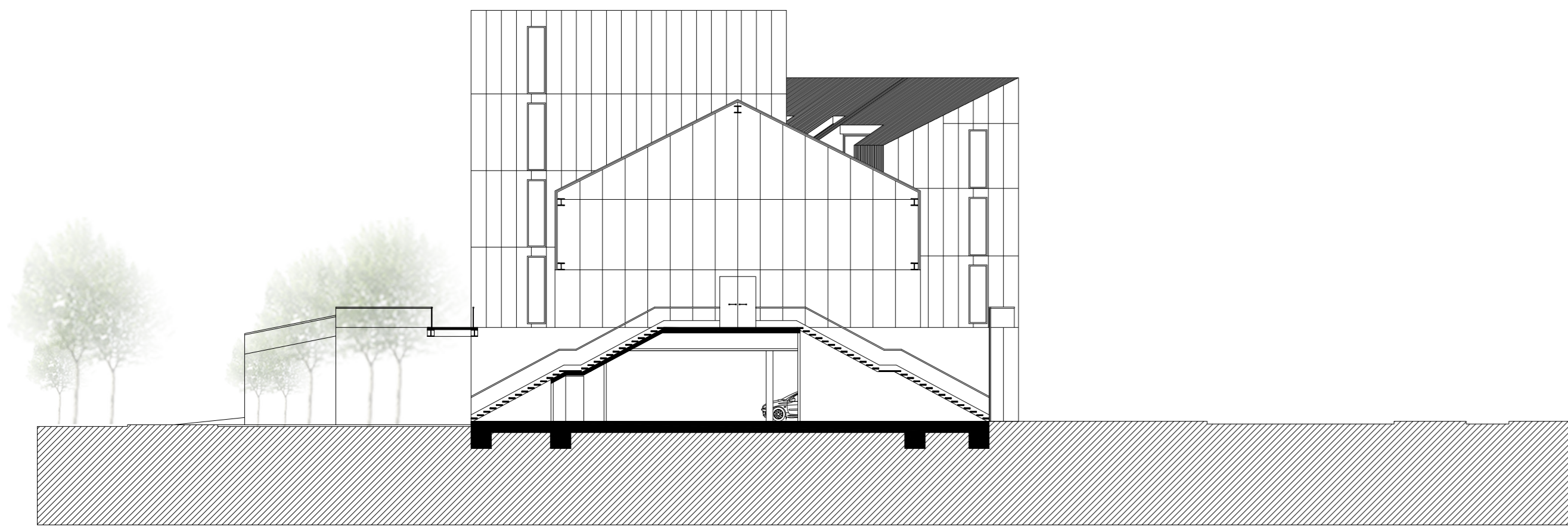


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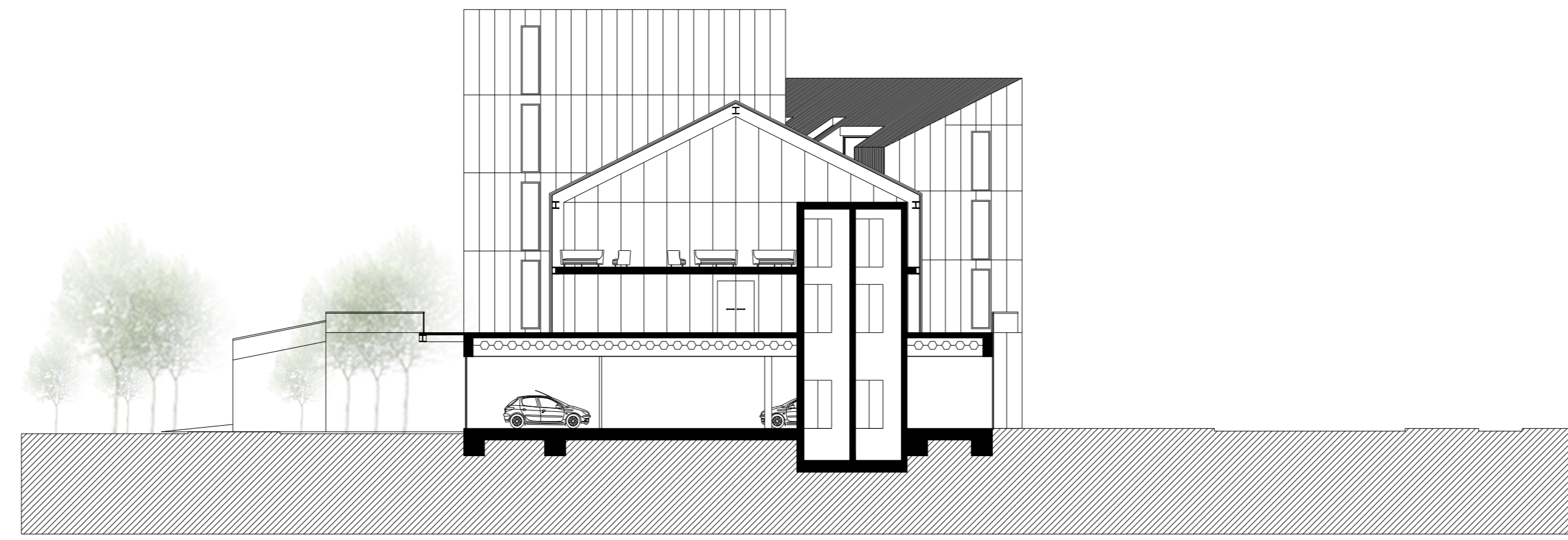
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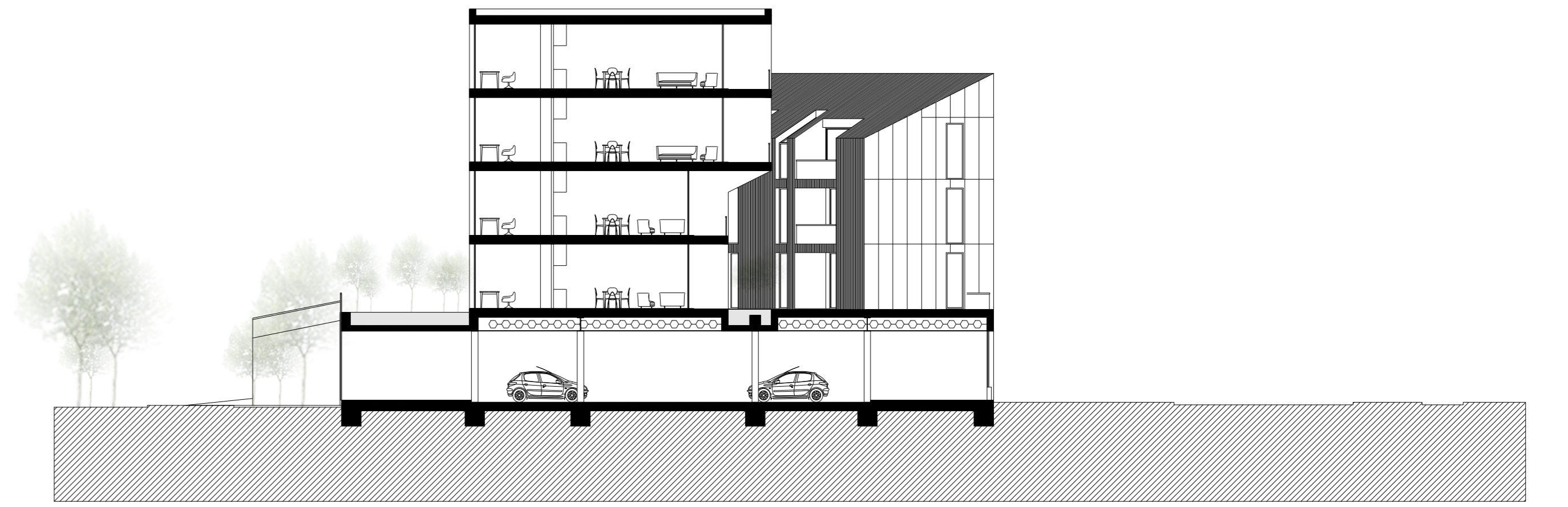




SECTION 5-5 1:200



SECTION 6-6 1:200



SECTION 7-7 1:200



NORTH ELEVATION 1:200



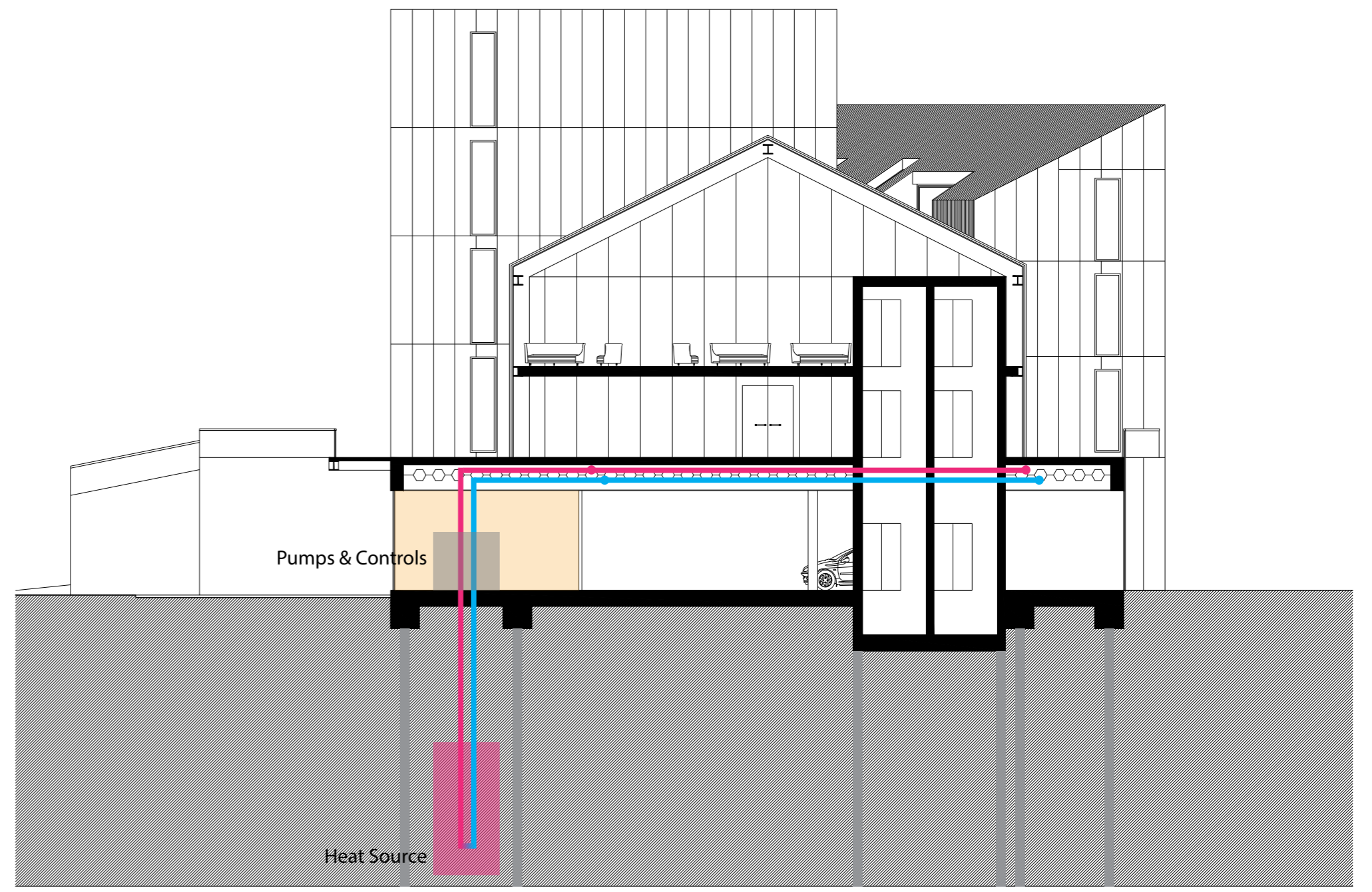
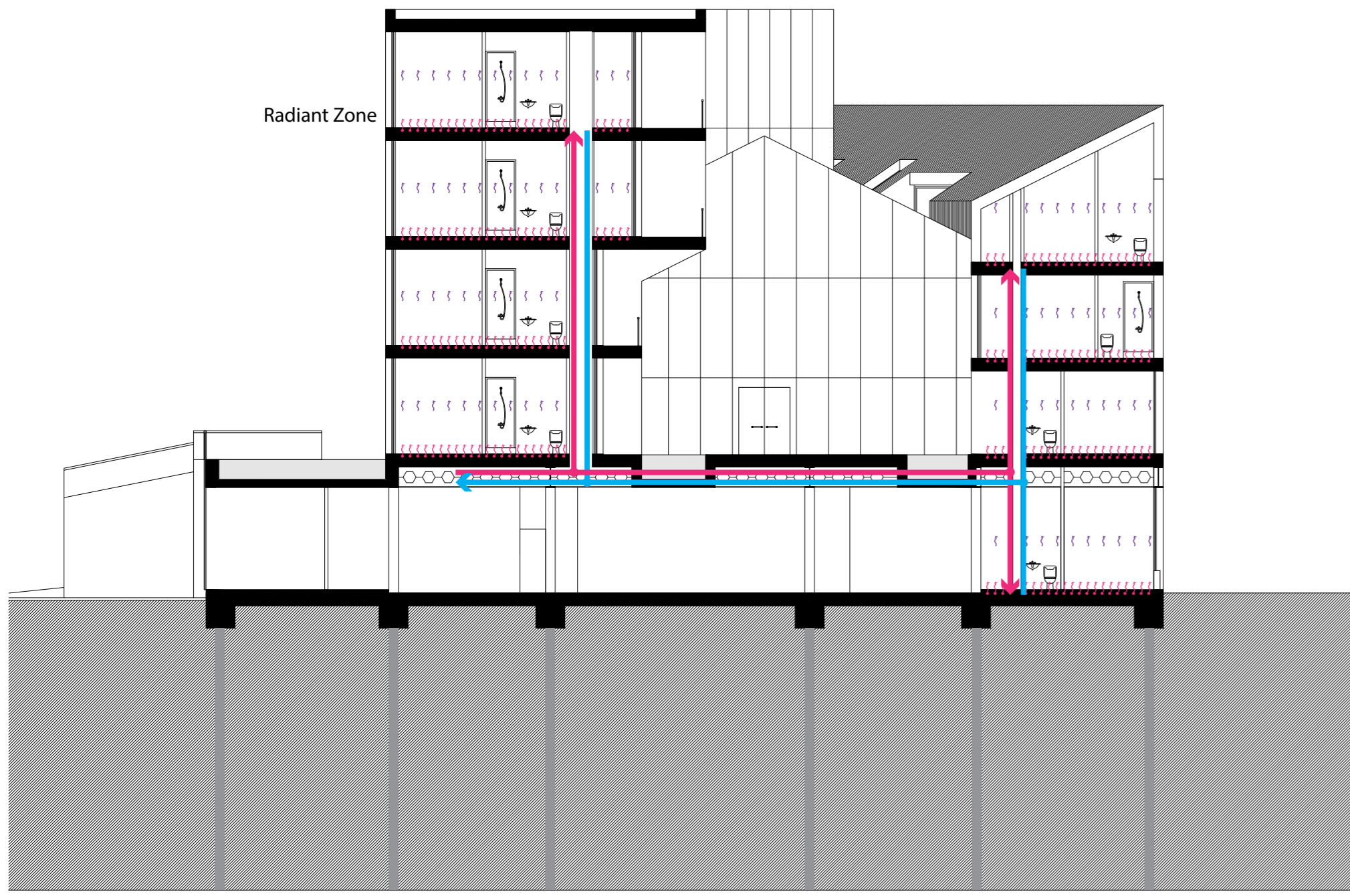
WEST ELEVATION 1:200



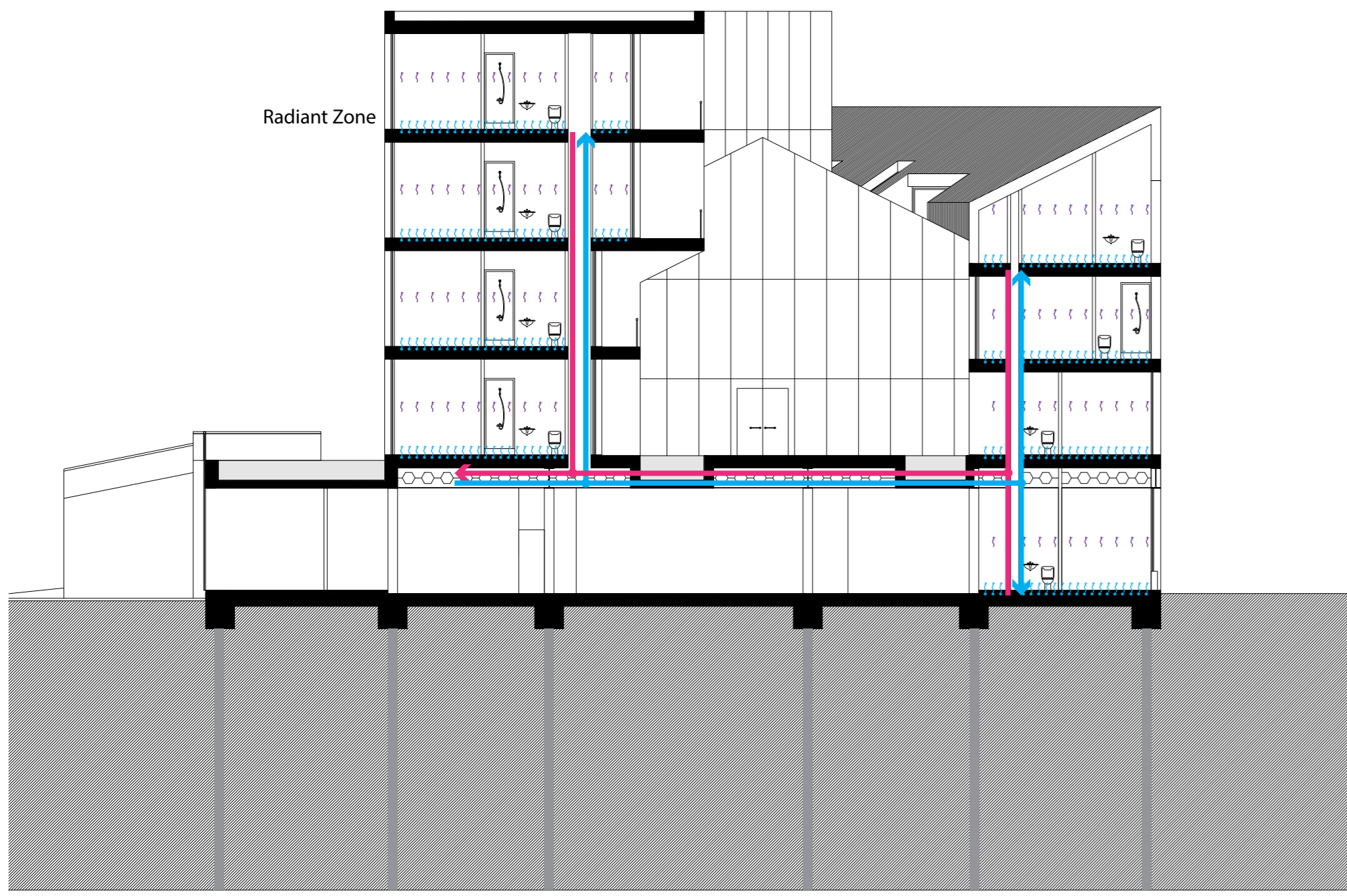
SOUTH ELEVATION 1:200



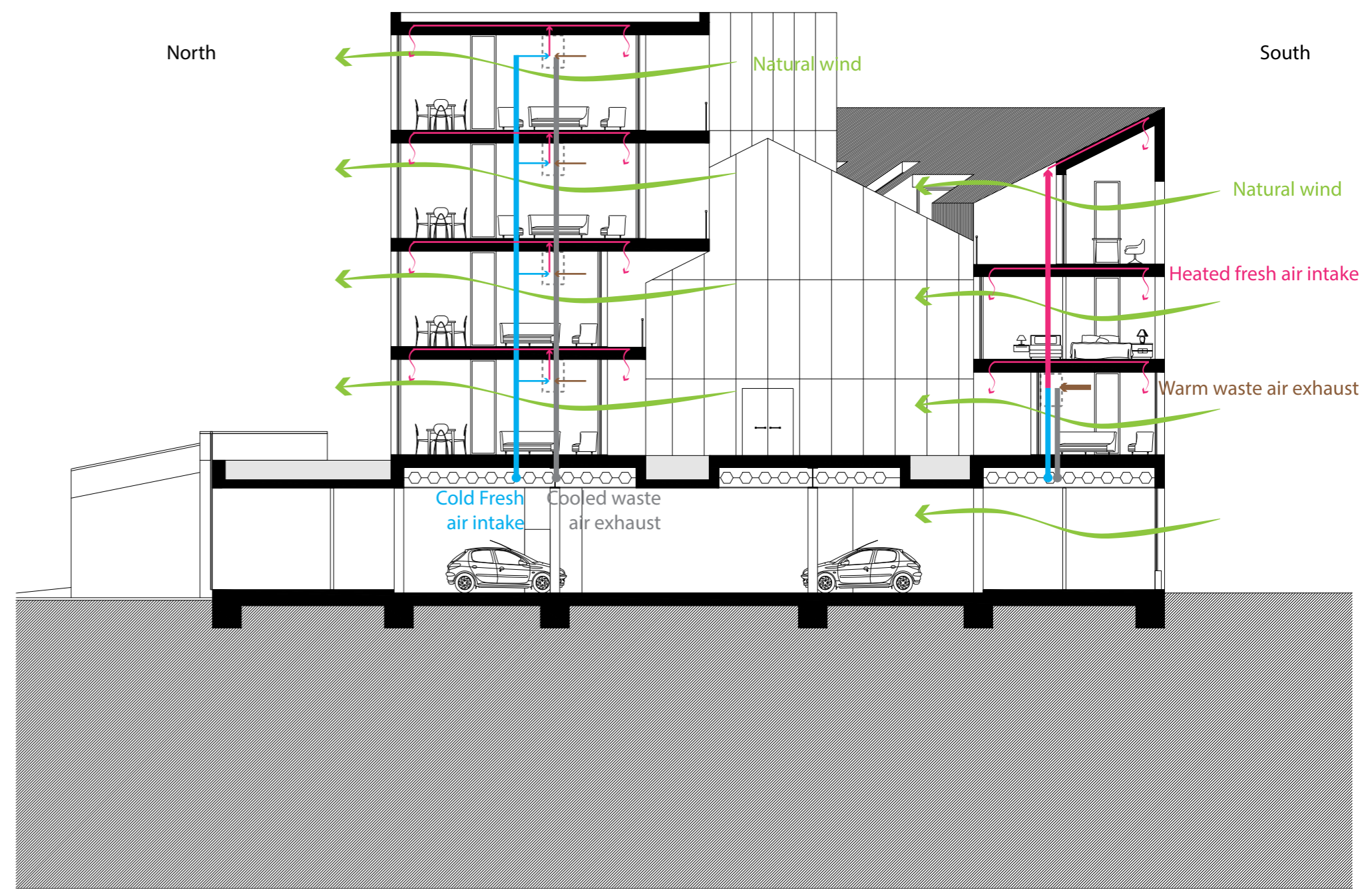
Ground source heat pump for heating and hot water - Heating



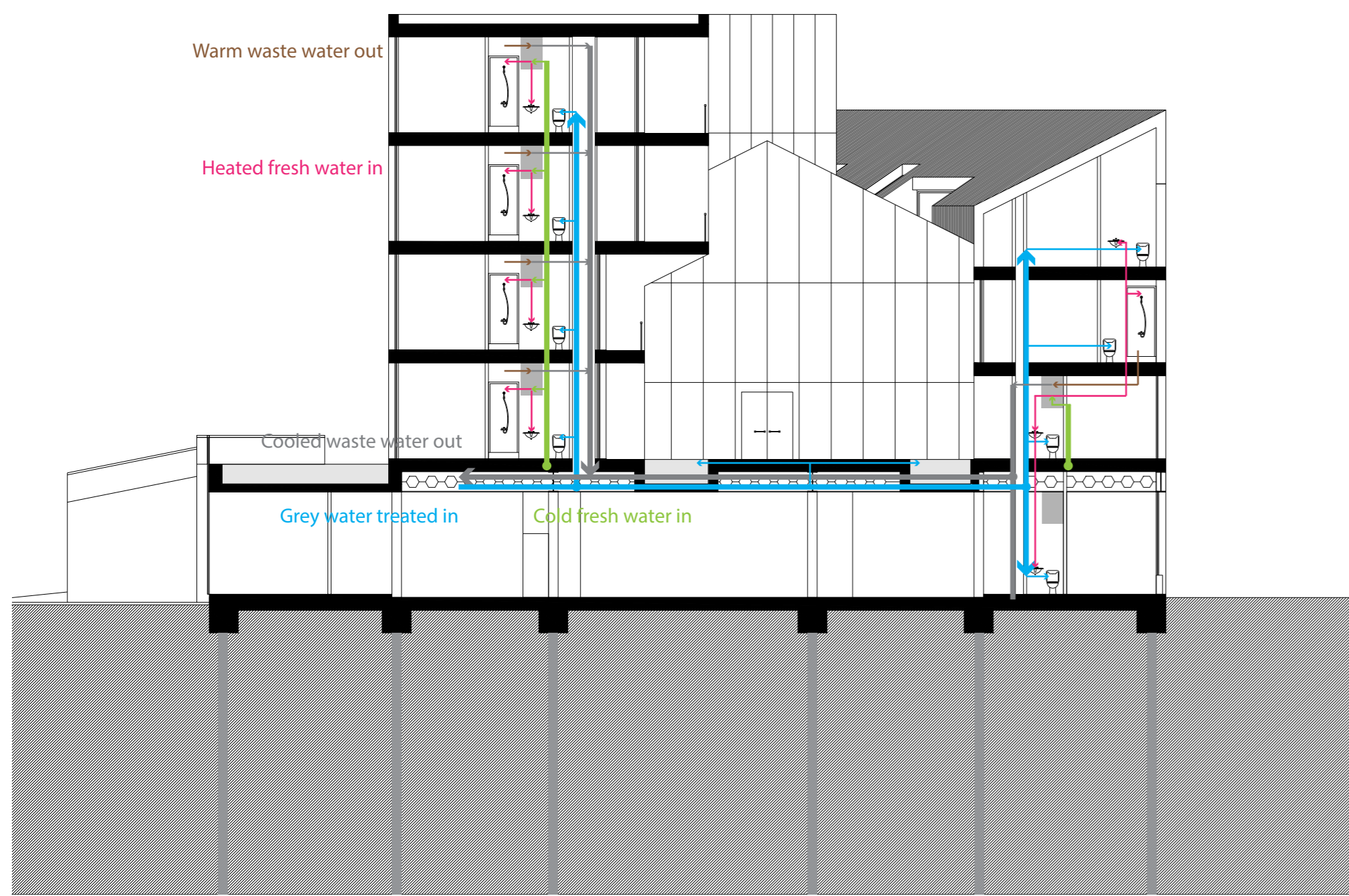
Ground source heat pump for heating and hot water - Cooling



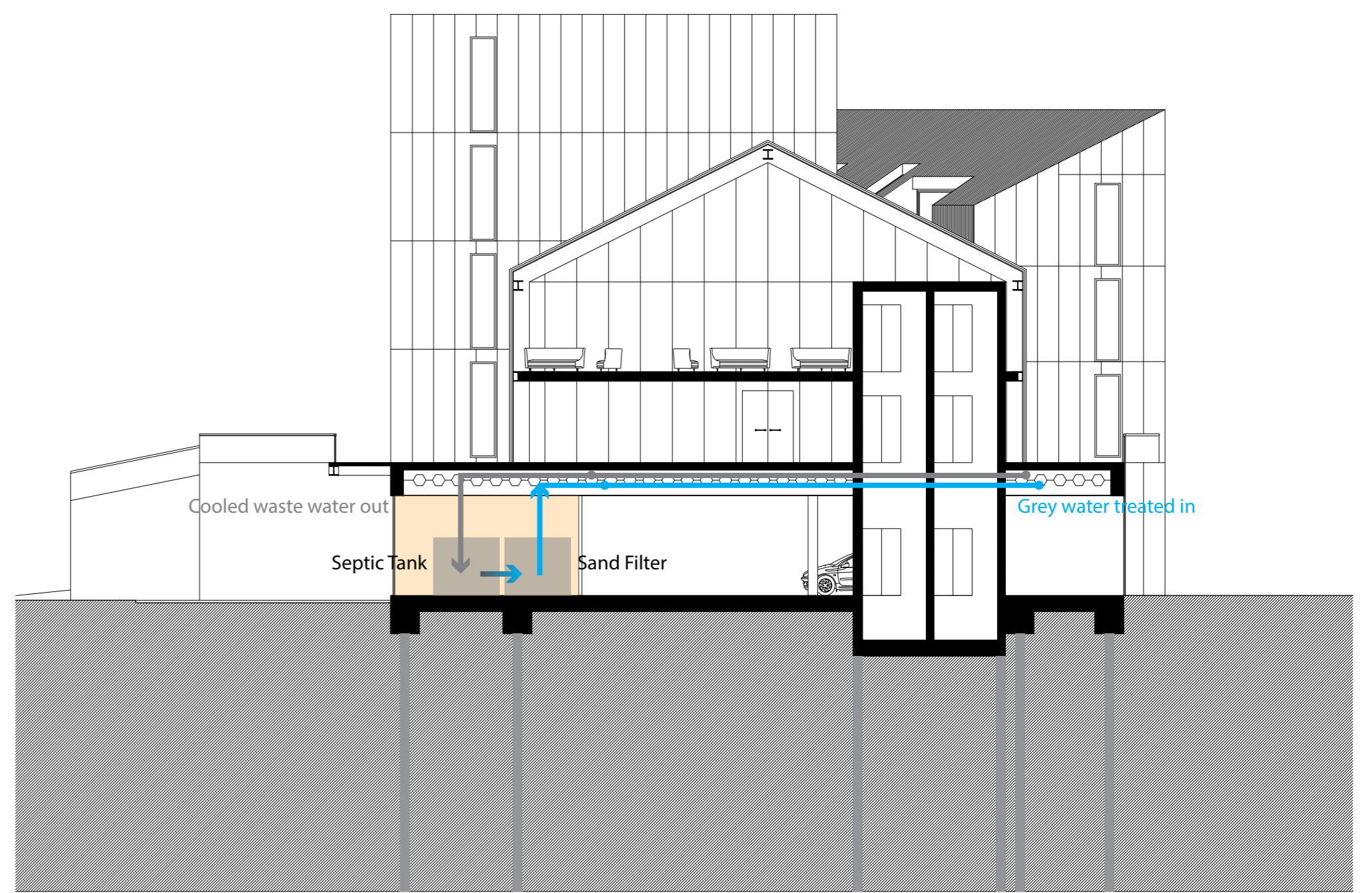
Natural Ventilation/ Heat Exchanger System + Intake/ Exhaust Ventilation



Greywater Recovery System + Heat Exchanger System



Greywater Recovery System + Heat Exchanger System



Living and dining room| Duplex B



Bedroom| Apartment A



Living and dining room| Apartment B



Living and dining room| Duplex A



Corridor space| House A

# Part 3: Climate & Interior

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 Xiaoyu Yuan 4329074

1 50/50 mm acetylated wood  
30/50 mm timber battens  
20/50 mm timber counterbattens  
recycled-aluminum rainscreen  
sarking membrane  
100 mm thermal insulation  
60/100 mm structural squared timber  
100/150 mm structural squared timber  
vapour barrier  
10mm plasterboard

2 automatic roller blinds  
double glazing in steel frame:  
6 mm toughened glass + 14 mm cavity  
+ 6 mm lam. safety glass  
controllable aluminium glazed-in  
window ventilator, DucoTon 80 'SR'

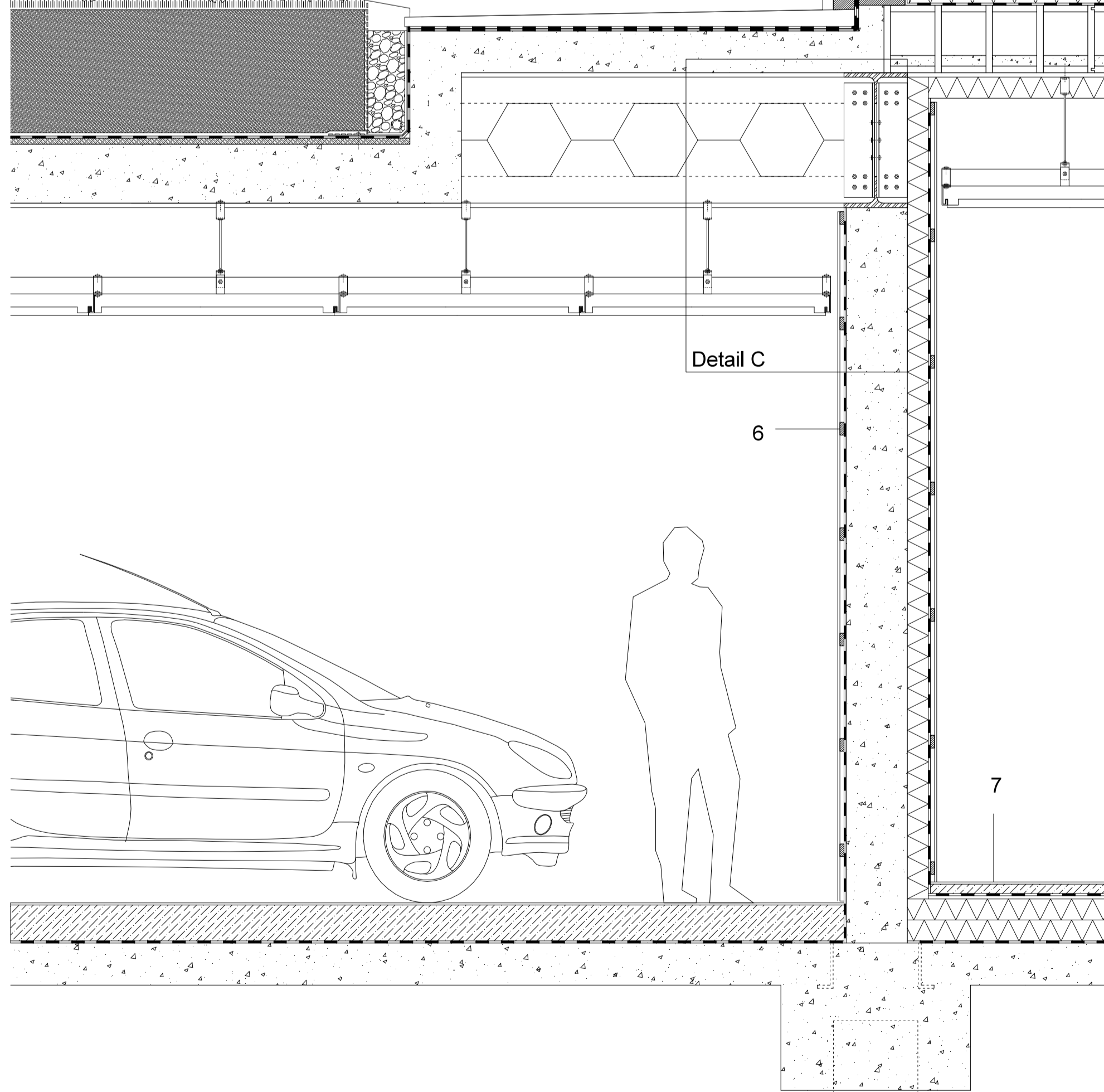
3 balustrade:  
1.5 mm expanded-metal mesh  
welded in steel frame  
(mesh: 40\*17\*2 mm;  
76% transparency)

4 10 mm composite wood floor  
50 mm heating screed  
separating layer  
20 mm impact-sound insulation  
320mm LIGNATUR surface  
element (LFE) with fill 50 kg/m<sup>3</sup>

5 600 mm extensive vegetation  
drainage board and root barrier  
screw with steel and neoprene  
washers  
fluid-applied wp membrane  
25 mm plywood to falls  
260 mm reinforced concrete base  
slab  
840 mm castellated beam (HEA  
450 processed)  
suspended ceiling:  
perforated aluminium plates hook  
on

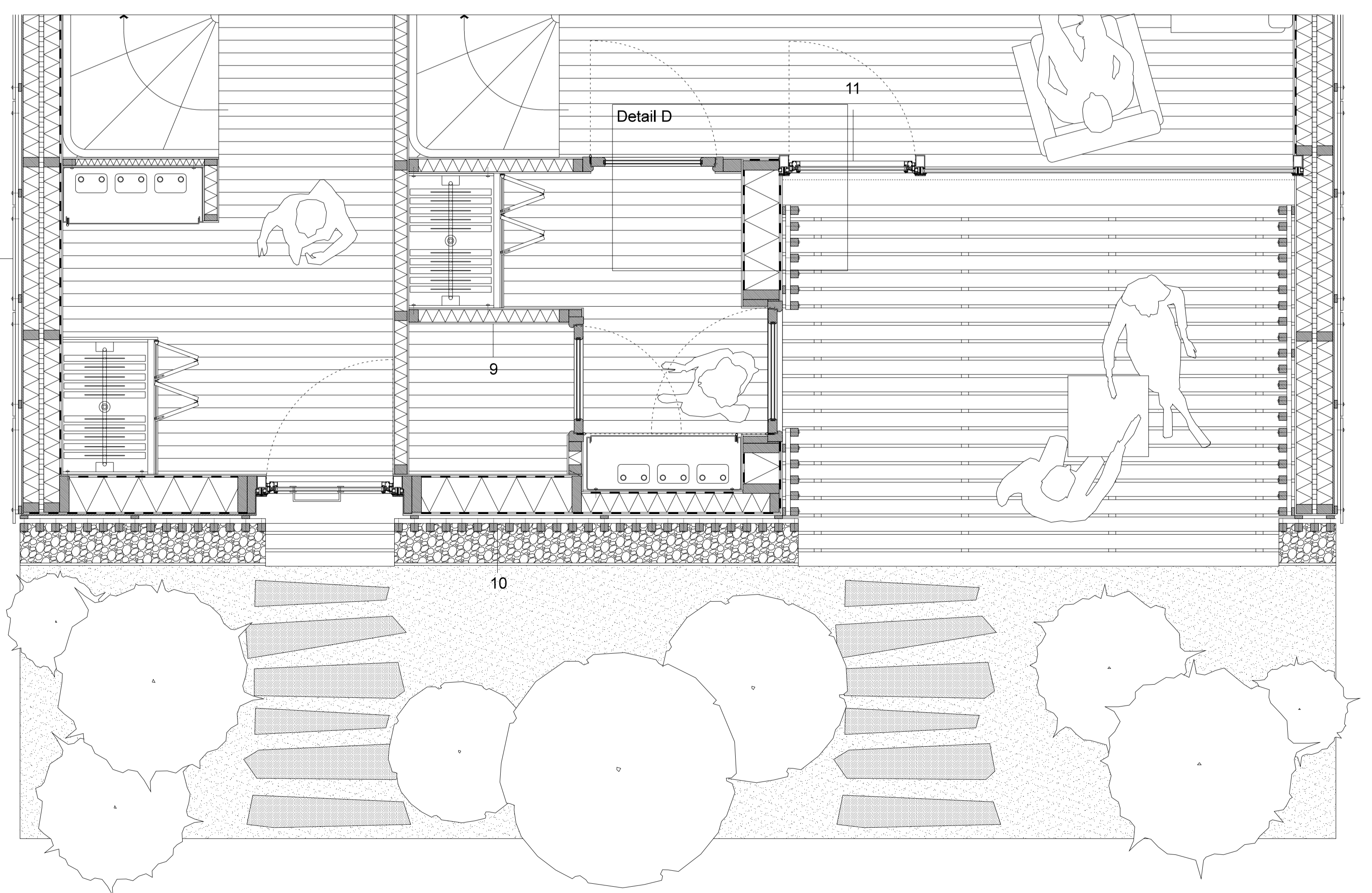
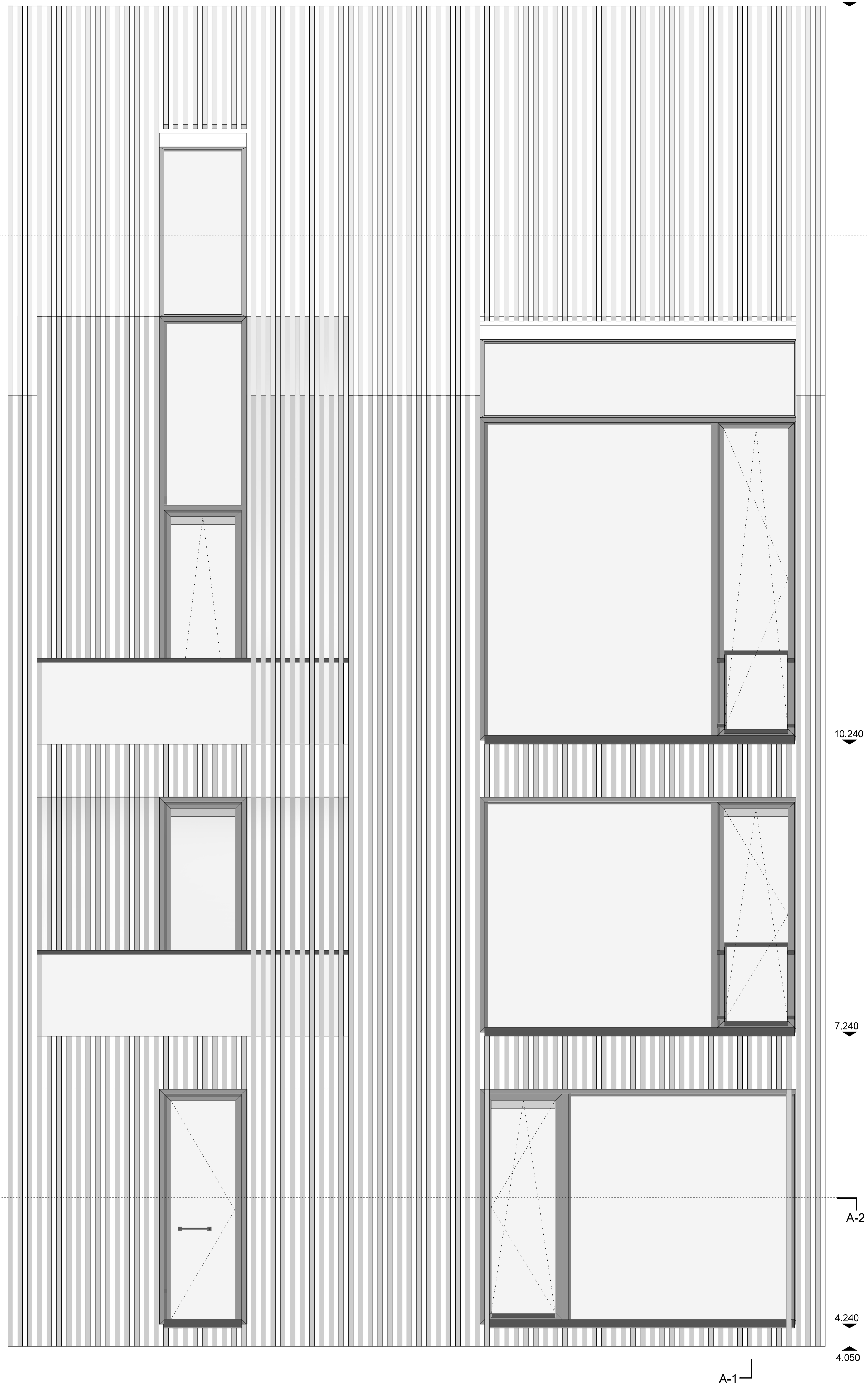
6 10 mm timber board  
20 mm timber battens  
vapour barrier  
290 mm situ concrete  
100 mm thermal insulation  
sarking membrane  
20 mm timber battens  
10 mm timber board

7 10 mm composite wood floor  
45 mm screed  
separating layer  
15 mm impact-sound insulation  
2\*100 mm thermal insulation  
separating layer  
reinforced concrete base slab



▲ A-1 VERTICAL SECTION 1:20

▶ A-2 HORIZONTAL SECTION 1:20



8 15 mm certainteed fiber cement  
lap siding  
50/20 mm timber battens  
50/20 mm timber counterbattens  
10 mm timber board  
solid-wood-panel party wall,  
double-sided, insulated:  
100/60 mm frame  
30 mm lumber-core plywood  
between 100 mm thermal  
insulation sandwiched  
vapour barrier  
15 mm plywood board

9 partition wall:  
2\*10 mm plywood boards on  
60/80 mm timber supporting  
structure  
80 mm rock wool, 23 kg/m<sup>3</sup>

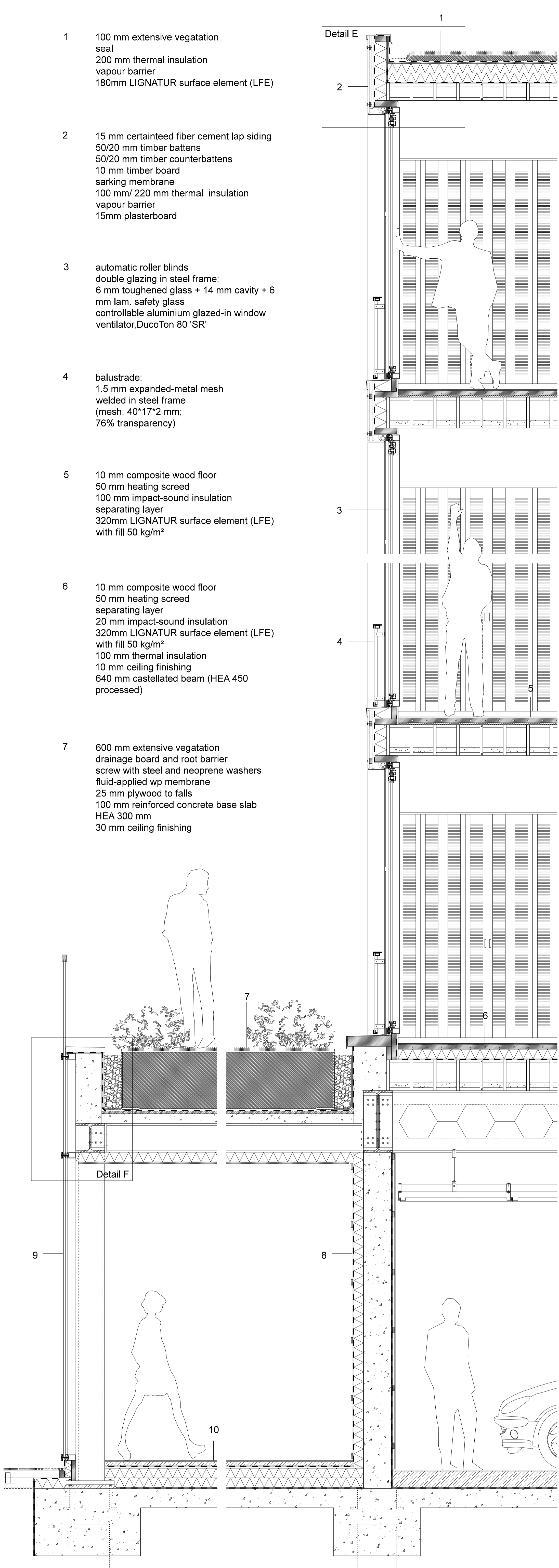
10 50/50 mm acetylated wood  
30/50 mm timber battens  
20/50 mm timber counterbattens  
recycled-aluminum rainscreen  
sarking membrane  
220 mm thermal insulation  
vapour barrier  
15 mm plywood board

11 double glazing in steel frame:  
6 mm toughened glass + 14 mm  
cavity + 6 mm lam. safety glass  
controllable aluminium glazed-in  
window ventilator, DucoTon 80 'SR'

## Part 4: Details in 1:20

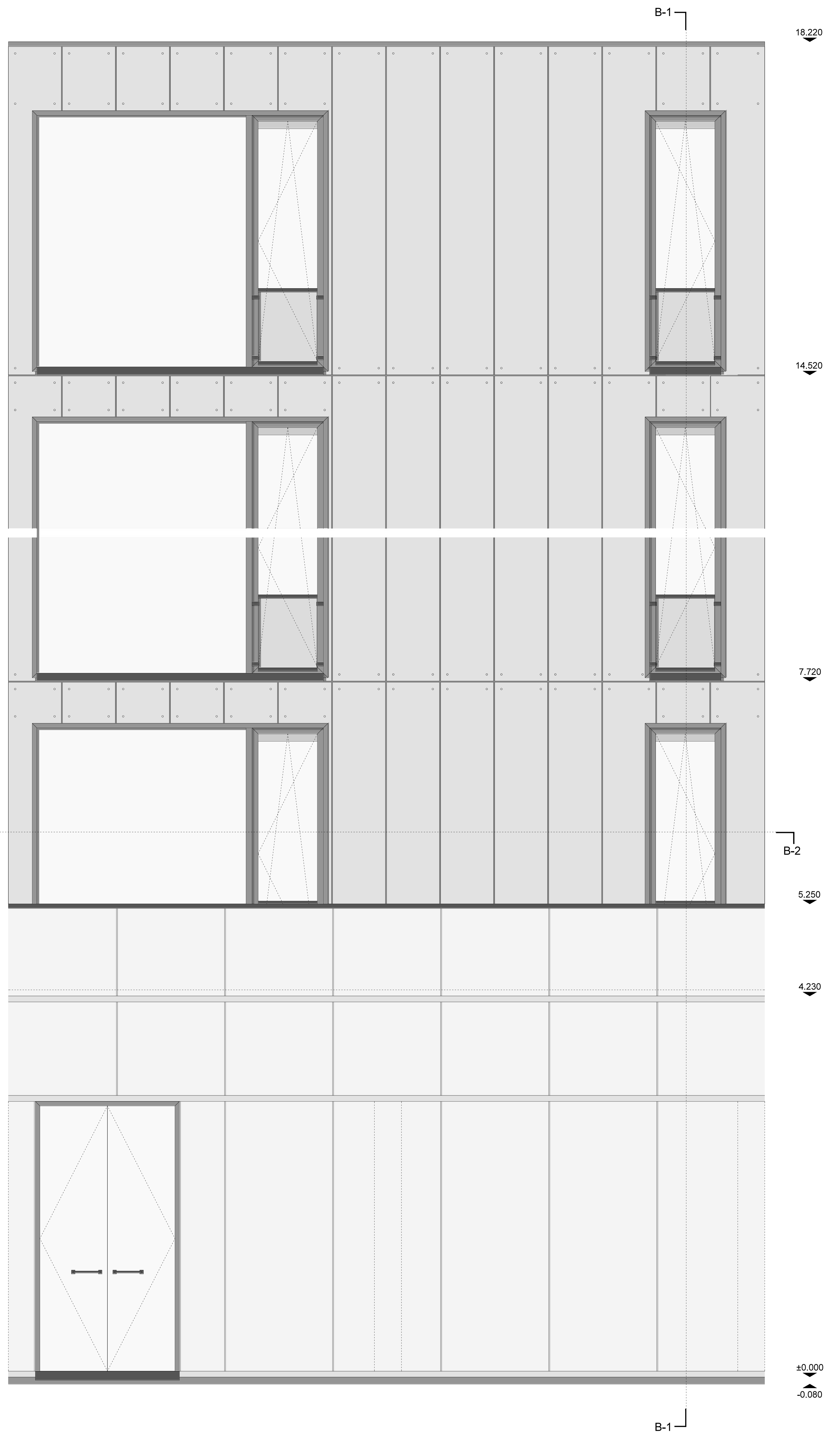
### Dwelling with Interactive In-between Space

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Xiaoyu Yuan 4329074



▲ B-1 VERTICAL SECTION 1:20

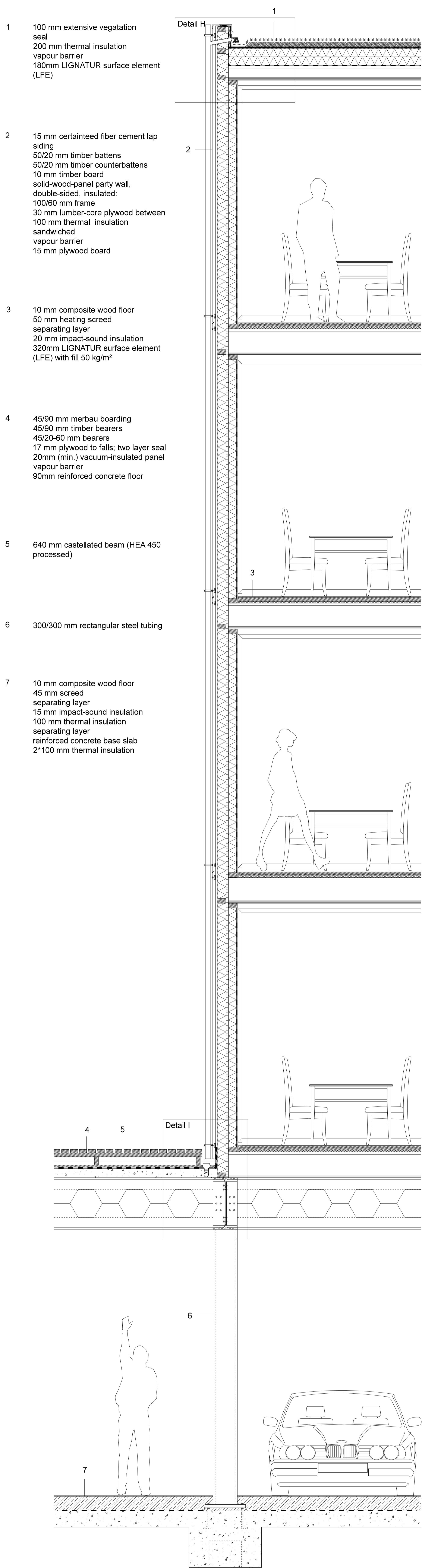
- |   |   |   |
|---|---|---|
| <p>1 100 mm extensive vegetation seal<br/>200 mm thermal insulation<br/>vapour barrier<br/>180mm LIGNATUR surface element (LFE)</p> <p>2 15 mm certainteed fiber cement lap siding<br/>50/20 mm timber battens<br/>50/20 mm timber counterbattens<br/>10 mm timber board<br/>sarking membrane<br/>100 mm/ 220 mm thermal insulation<br/>vapour barrier<br/>15mm plasterboard</p> <p>3 automatic roller blinds<br/>double glazing in steel frame:<br/>6 mm toughened glass + 14 mm cavity + 6 mm lam, safety glass<br/>controllable aluminium glazed-in window ventilator, DucoTon 80 'SR'</p> <p>4 balustrade:<br/>1.5 mm expanded-metal mesh<br/>welded in steel frame<br/>(mesh: 40'17'2 mm;<br/>76% transparency)</p> <p>5 10 mm composite wood floor<br/>50 mm heating screed<br/>100 mm impact-sound insulation<br/>separating layer<br/>320mm LIGNATUR surface element (LFE)<br/>with fill 50 kg/m<sup>2</sup></p> <p>6 10 mm composite wood floor<br/>50 mm heating screed<br/>separating layer<br/>20 mm impact-sound insulation<br/>320mm LIGNATUR surface element (LFE)<br/>with fill 50 kg/m<sup>2</sup><br/>100 mm thermal insulation<br/>10 mm ceiling finishing<br/>640 mm castellated beam (HEA 450<br/>processed)</p> <p>7 600 mm extensive vegetation<br/>drainage board and root barrier<br/>screw with steel and neoprene washers<br/>fluid-applied wp membrane<br/>25 mm plywood to falls<br/>100 mm reinforced concrete base slab<br/>HEA 300 mm<br/>30 mm ceiling finishing</p> | <p>8 10 mm timber board<br/>20 mm timber battens<br/>sarking membrane<br/>100 mm thermal insulation<br/>290 mm situ concrete<br/>vapour barrier<br/>20 mm timber battens<br/>10 mm timber board</p> <p>9 6 mm double glazing in steel frame<br/>100 mm extruded aluminium glazing profile<br/>300/300 mm rectangular steel tubing</p> <p>10 10 mm composite wood floor<br/>45 mm screed<br/>separating layer<br/>15 mm impact-sound insulation<br/>2'100 mm thermal insulation<br/>separating layer<br/>reinforced concrete base slab</p> | <p>11 15 mm certainteed fiber cement lap siding<br/>50/20 mm timber battens<br/>50/20 mm timber counterbattens<br/>10 mm timber board<br/>solid-wood-panel party wall, double-sided,<br/>insulated:<br/>100/60 mm frame<br/>30 mm lumber-core plywood between 100<br/>mm thermal insulation sandwiched<br/>vapour barrier<br/>15 mm plywood board</p> <p>12 15 mm certainteed fiber cement lap siding<br/>50/20 mm timber battens<br/>50/20 mm timber counterbattens<br/>10 mm timber board<br/>sarking membrane<br/>220 mm thermal insulation<br/>vapour barrier<br/>15mm plywood board</p> <p>13 solid-wood-panel party wall, double sided,<br/>insulated:<br/>15 mm plywood board<br/>100/60 mm frame<br/>30 mm acoustic insulation sandwiched<br/>between 30 mm lumber-core plywood (3-ply)</p> |
|---|---|---|



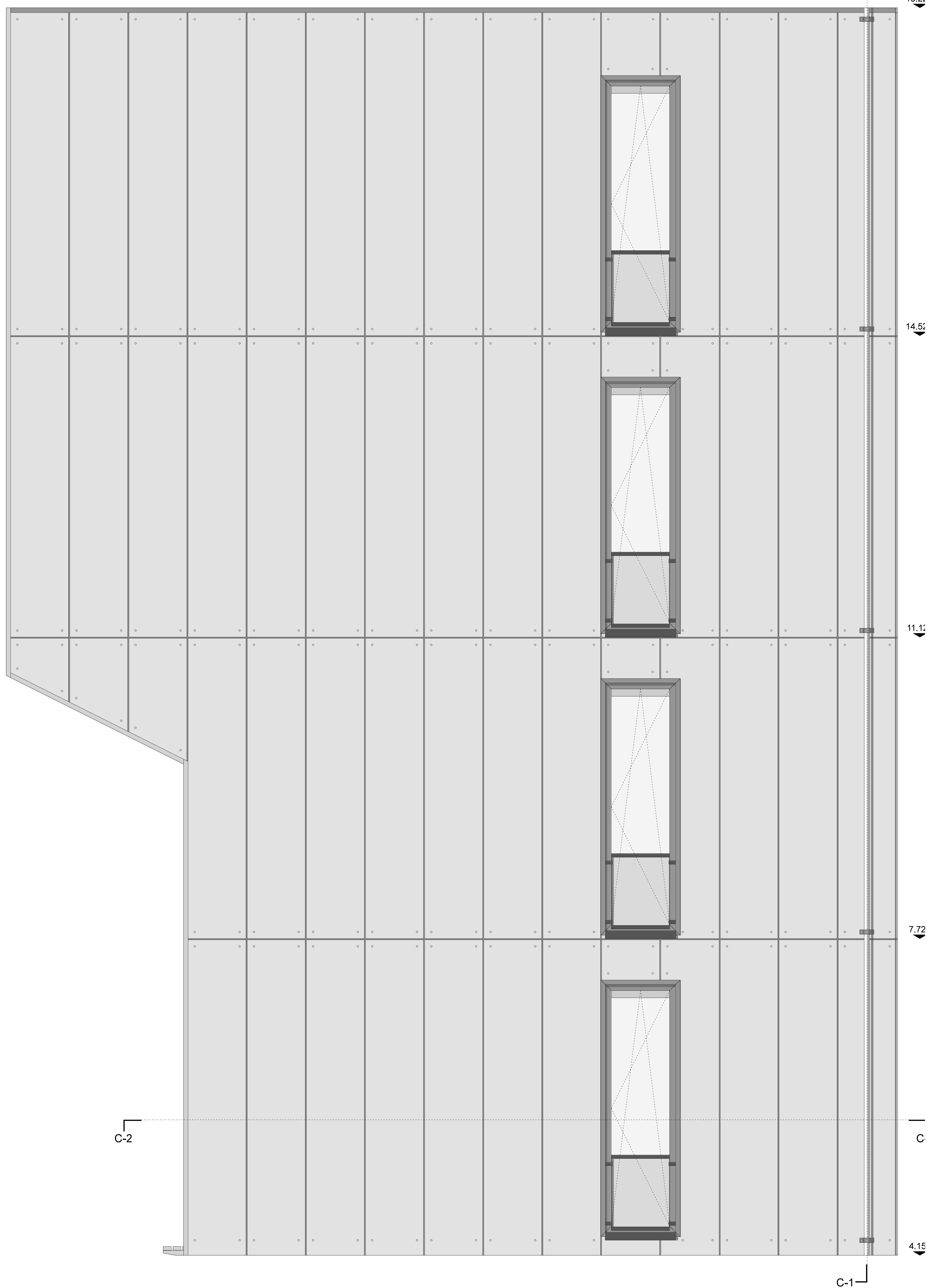
▲ B-2 HORIZONTAL SECTION 1:20

## Part 4: Details in 1:20

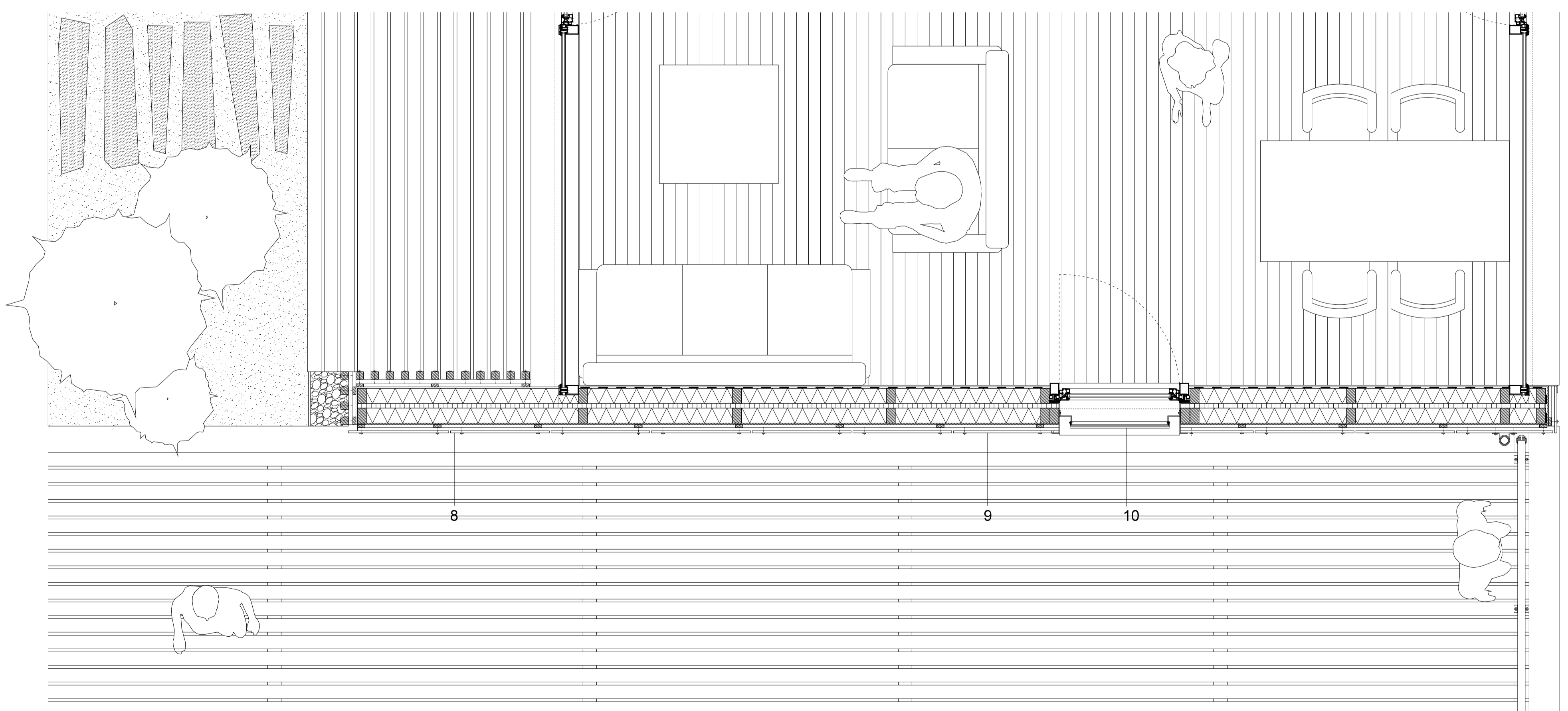
Dwelling with Interactive In-between Space  
 AR3AD131 Dwelling Graduation Studio: Dutch Housing (2014-2015)  
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 Xiaoyu Yuan 4329074



▲ C-1 VERTICAL SECTION 1:20



▲ C-2 HORIZONTAL SECTION 1:20



## Part 4: Details in 1:20

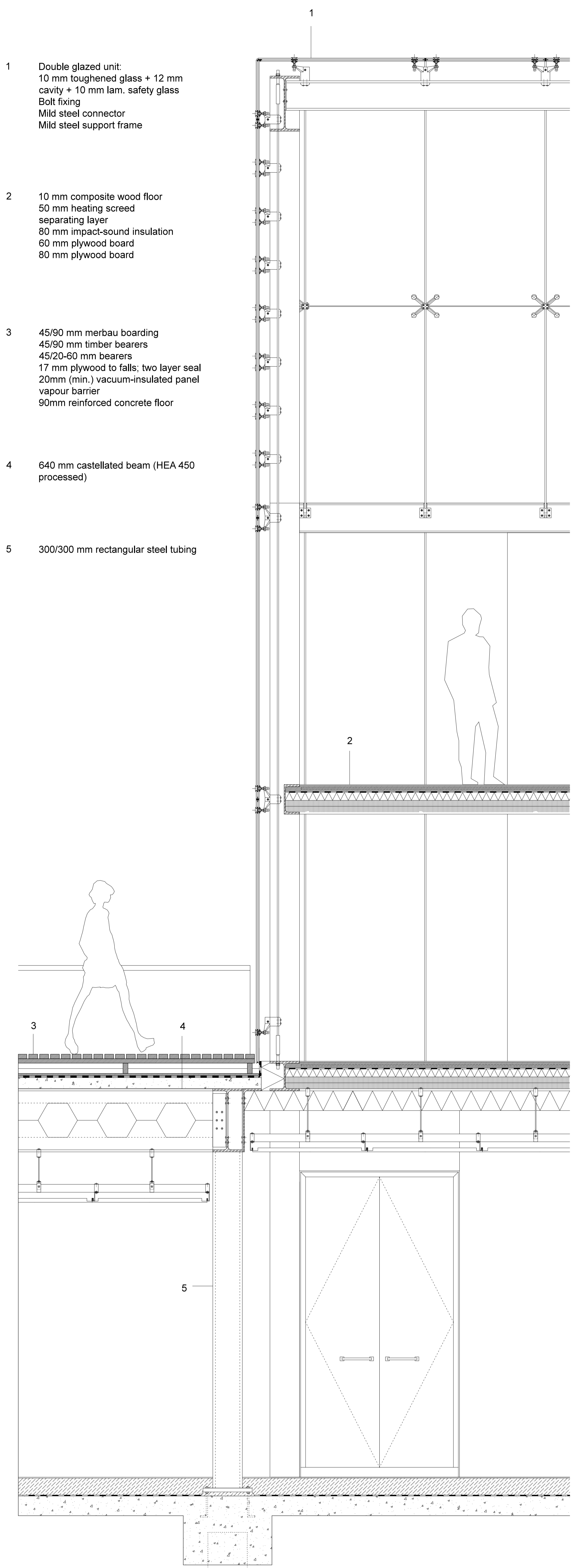
### Dwelling with Interactive In-between Space

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 Xiaoyu Yuan 4329074

8 15 mm certainteed fiber cement lap siding  
 50/20 mm timber battens  
 50/20 mm timber counterbattens  
 10 mm timber board  
 solid-wood-panel party wall, double-sided, insulated:  
 100/60 mm frame  
 30 mm lumber-core plywood between  
 100 mm thermal insulation  
 sandwiched  
 recycled-aluminum rainscreen  
 20/50 mm timber counterbattens  
 30/50 mm timber battens  
 50/50 mm acetylated wood

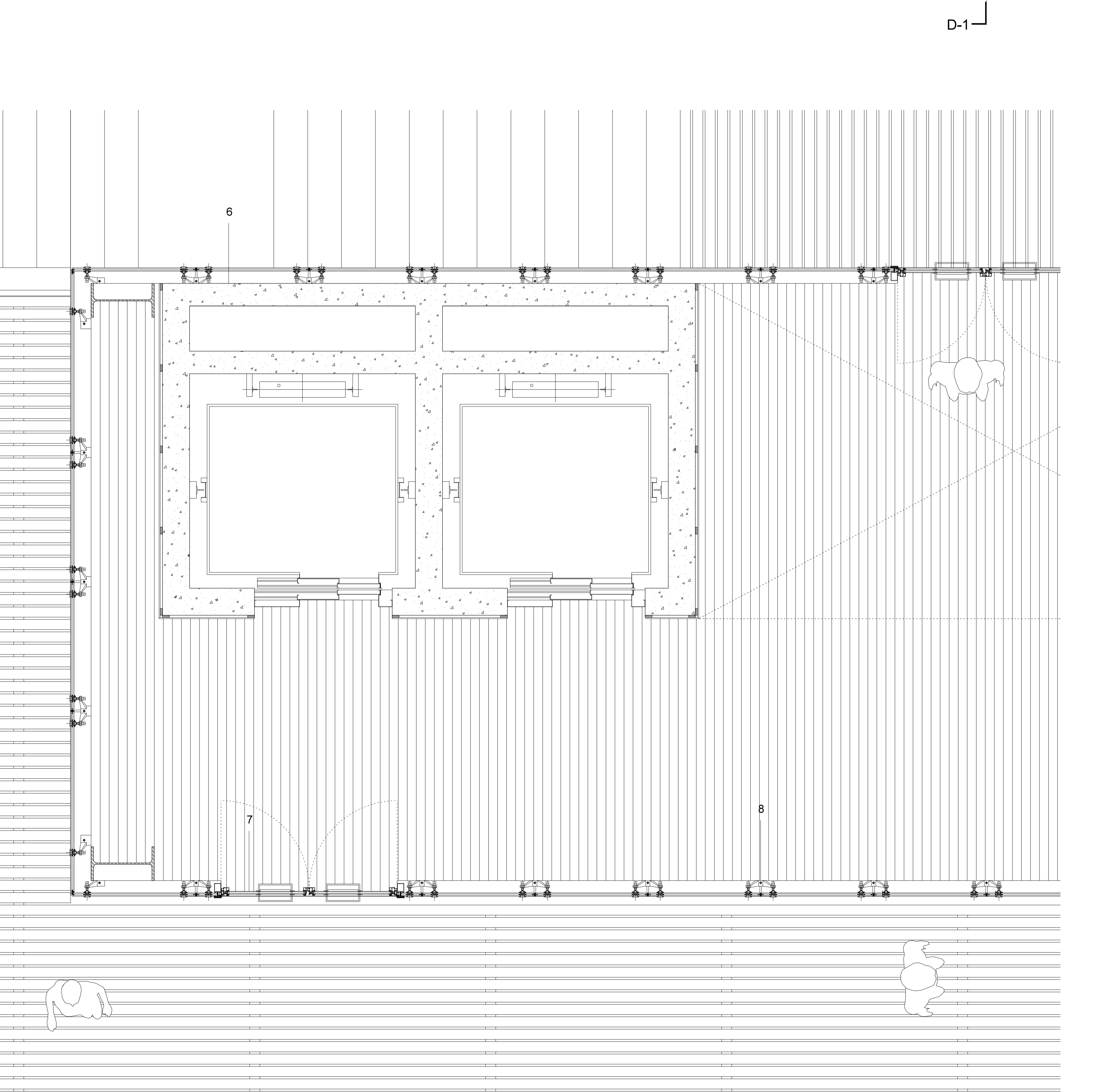
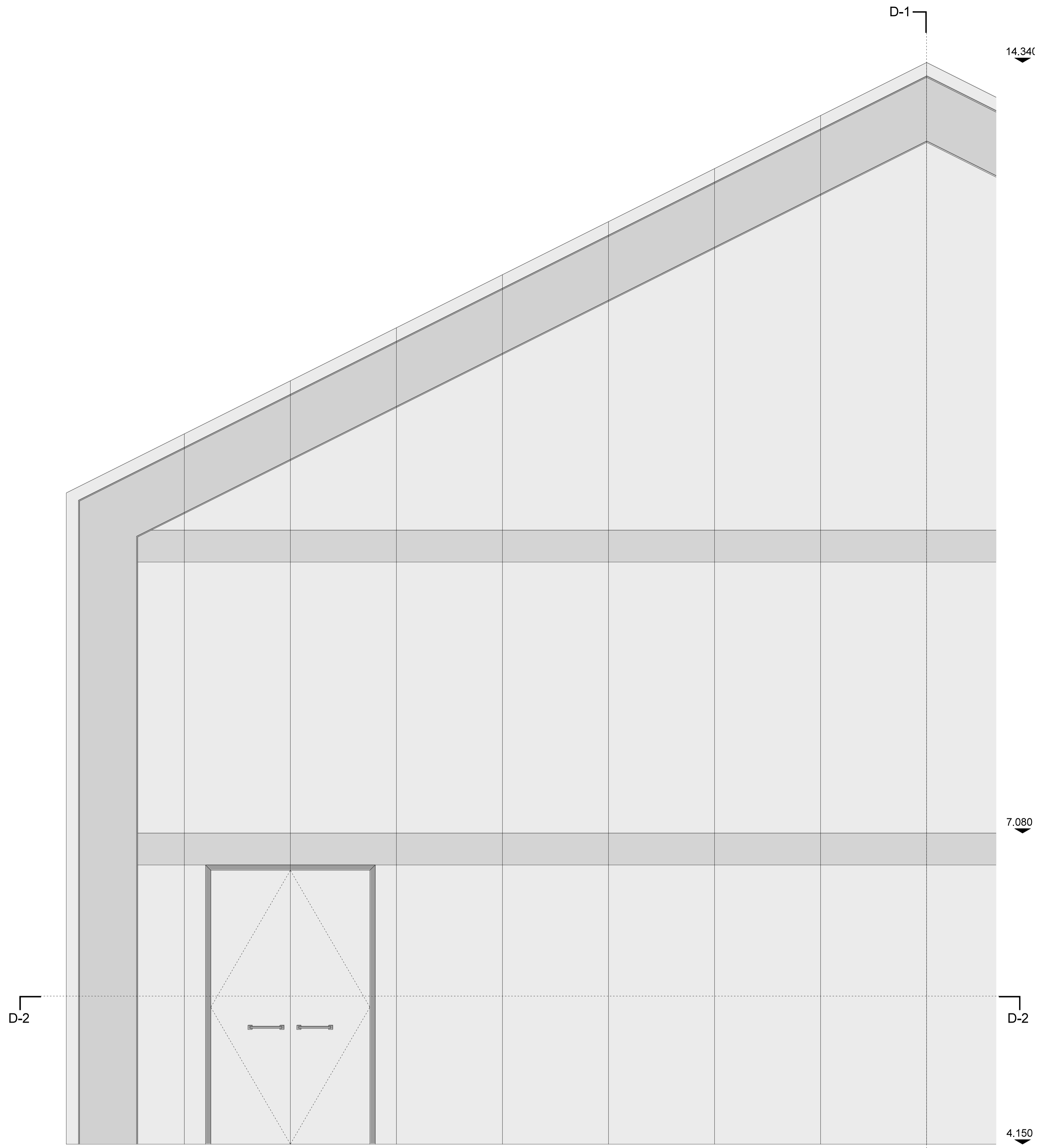
9 15 mm certainteed fiber cement lap siding  
 50/20 mm timber battens  
 50/20 mm timber counterbattens  
 10 mm timber board  
 solid-wood-panel party wall, double-sided, insulated:  
 100/60 mm frame  
 30 mm lumber-core plywood between  
 100 mm thermal insulation  
 sandwiched  
 vapour barrier  
 15 mm plywood board

10 balustrade:  
 1.5 mm expanded-metal mesh  
 welded in steel frame  
 (mesh: 40\*17\*2 mm,  
 76% transparency)  
  
 double glazing in steel frame:  
 6 mm toughened glass + 14 mm cavity  
 + 6 mm lam. safety glass  
 controllable aluminium glazed-in  
 window ventilator, DucoTon 80 'SR'



▲ D-1 VERTICAL SECTION 1:20

- 1 Double glazed unit:  
10 mm toughened glass + 12 mm cavity + 10 mm lam. safety glass  
Bolt fixing  
Mild steel connector  
Mild steel support frame
- 2 10 mm composite wood floor  
50 mm heating screed  
separating layer  
80 mm impact-sound insulation  
60 mm plywood board  
80 mm plywood board
- 3 45/90 mm merbau boarding  
45/90 mm timber bearers  
45/20-60 mm bearers  
17 mm plywood to falls; two layer seal  
20mm (min.) vacuum-insulated panel  
vapour barrier  
90mm reinforced concrete floor
- 4 640 mm castellated beam (HEA 450 processed)
- 5 300/300 mm rectangular steel tubing



▲ D-2 HORIZONTAL SECTION 1:20

## Part 4: Details in 1:20

### Dwelling with Interactive In-between Space

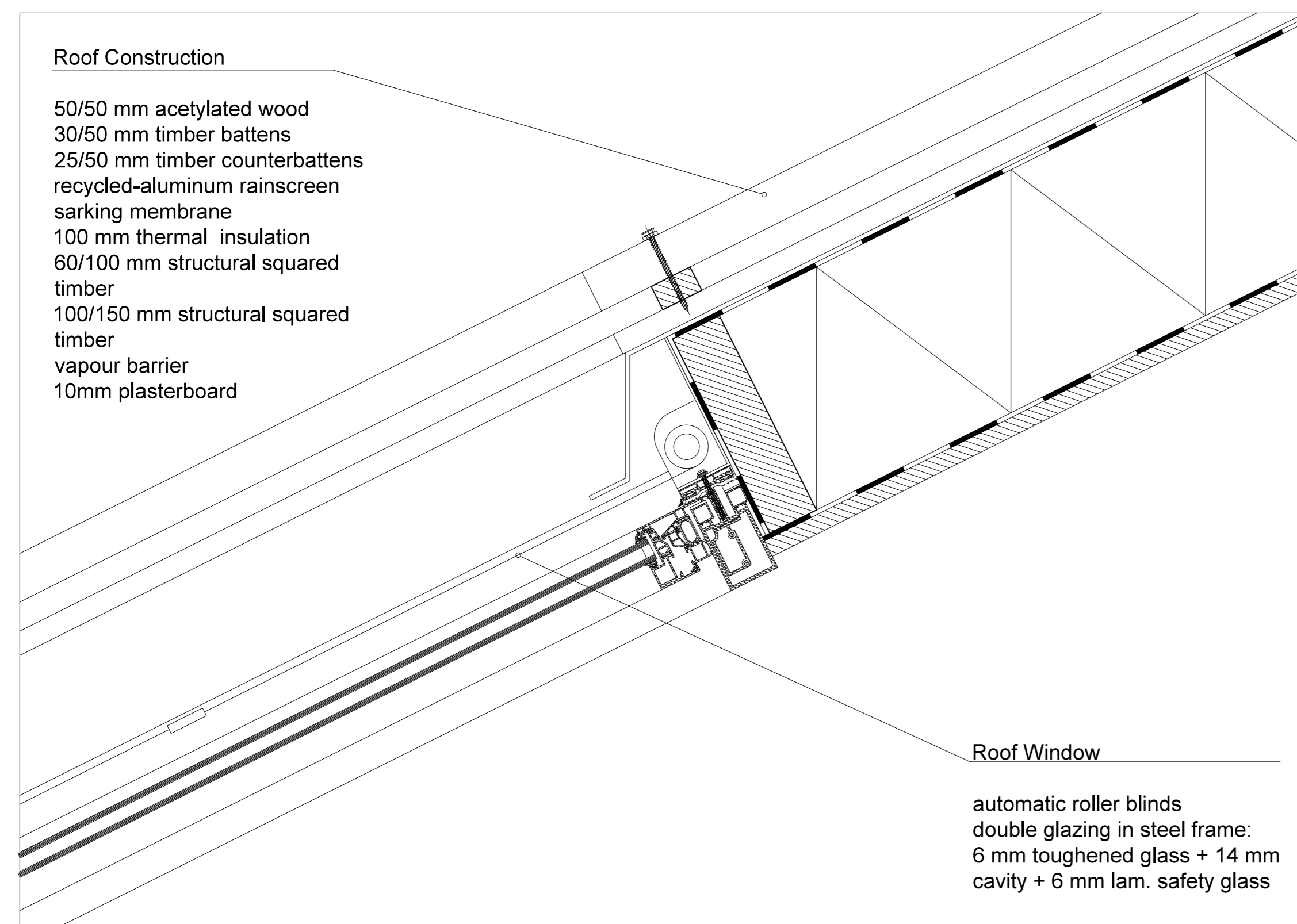
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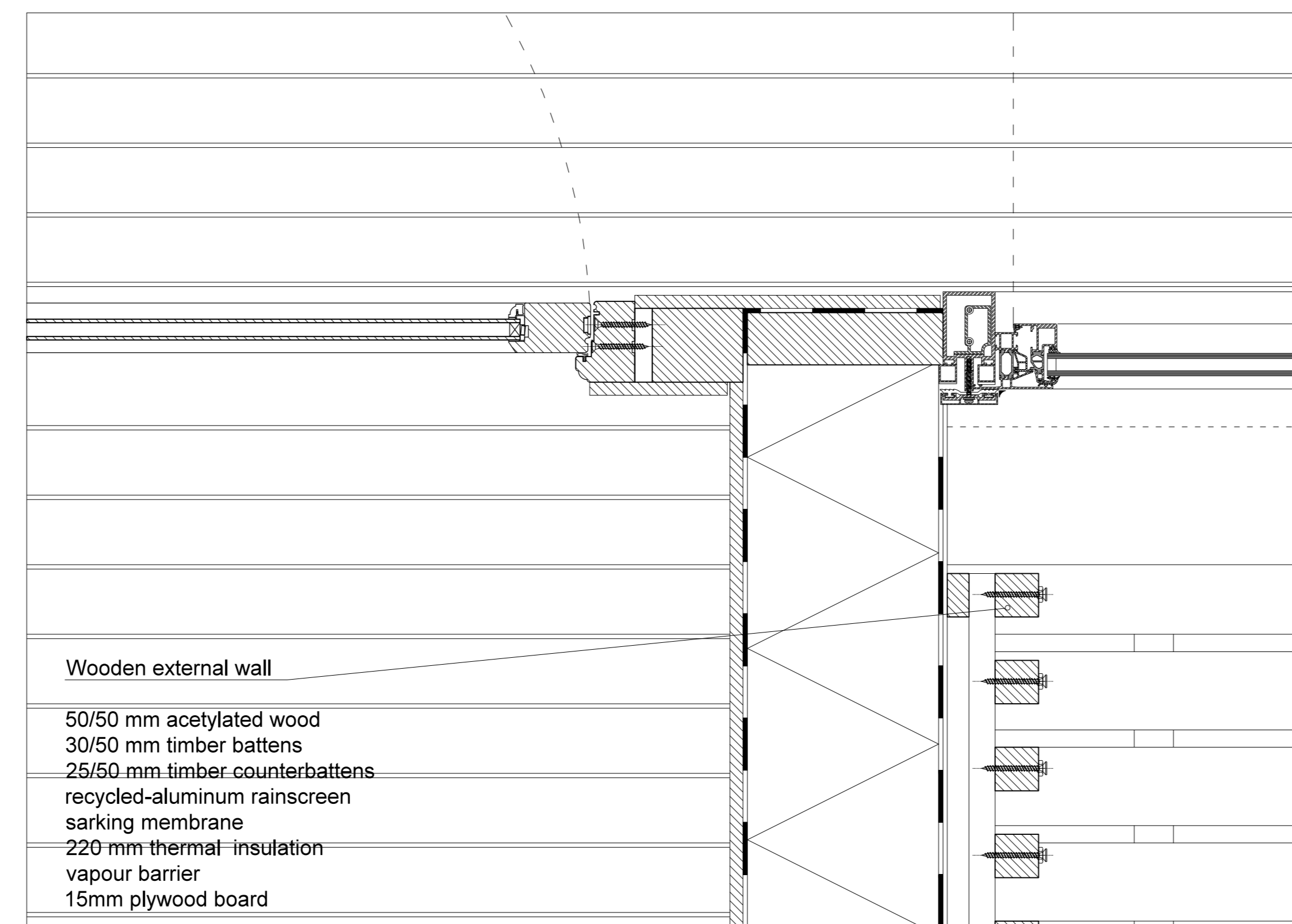
# Part 5: Details in 1:5

## Dwelling with Interactive In-between Space

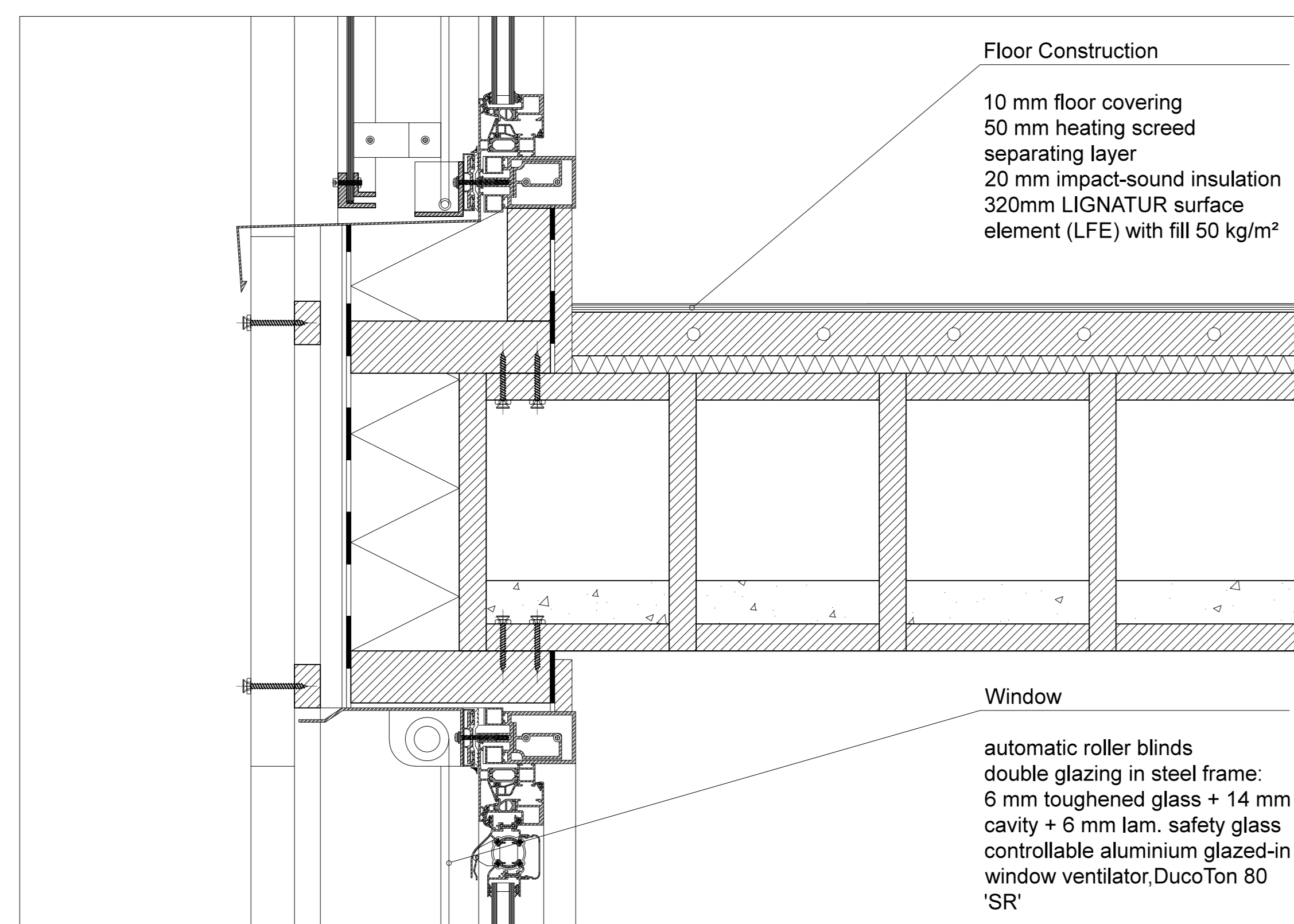
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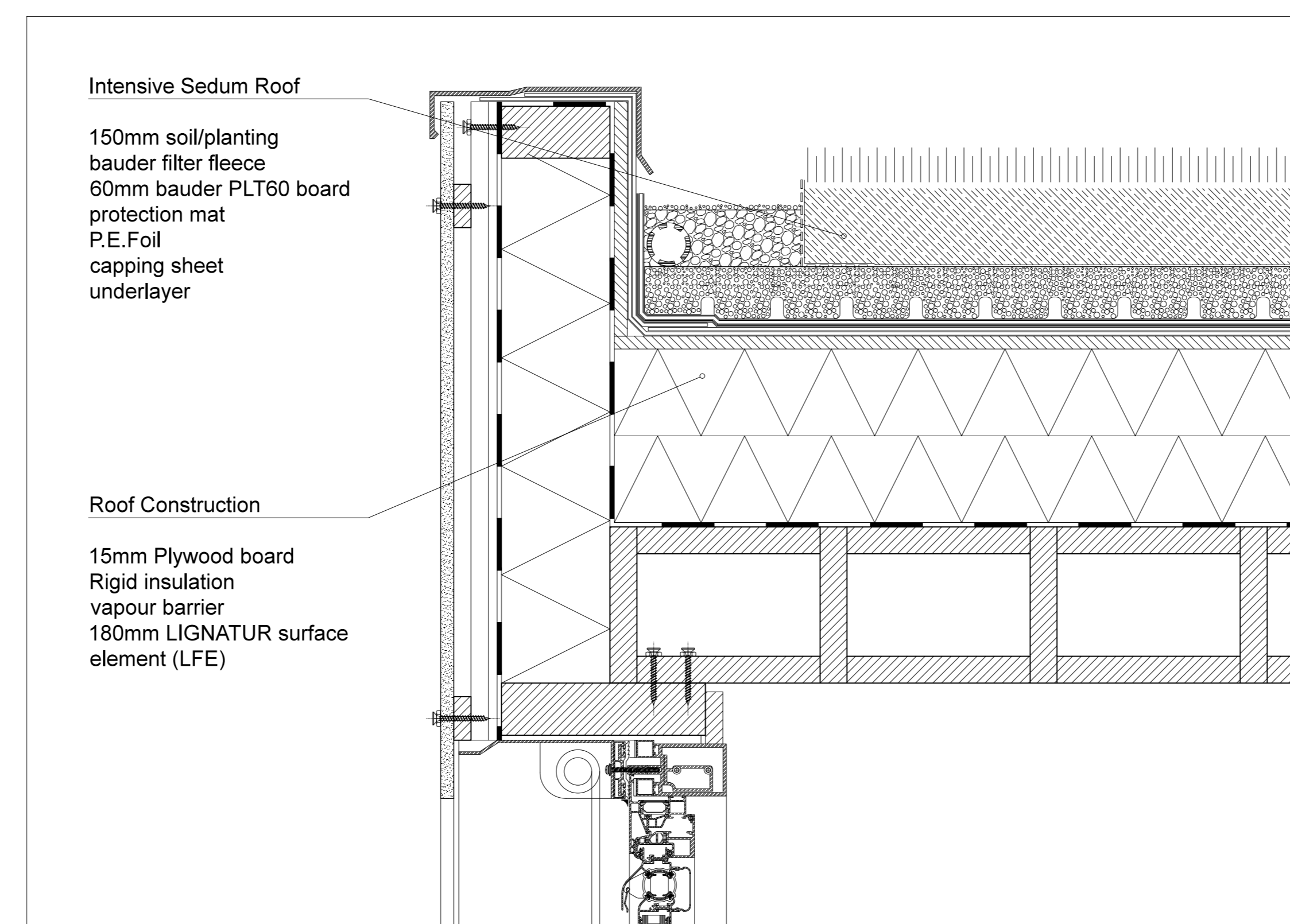
Detail A 1:5



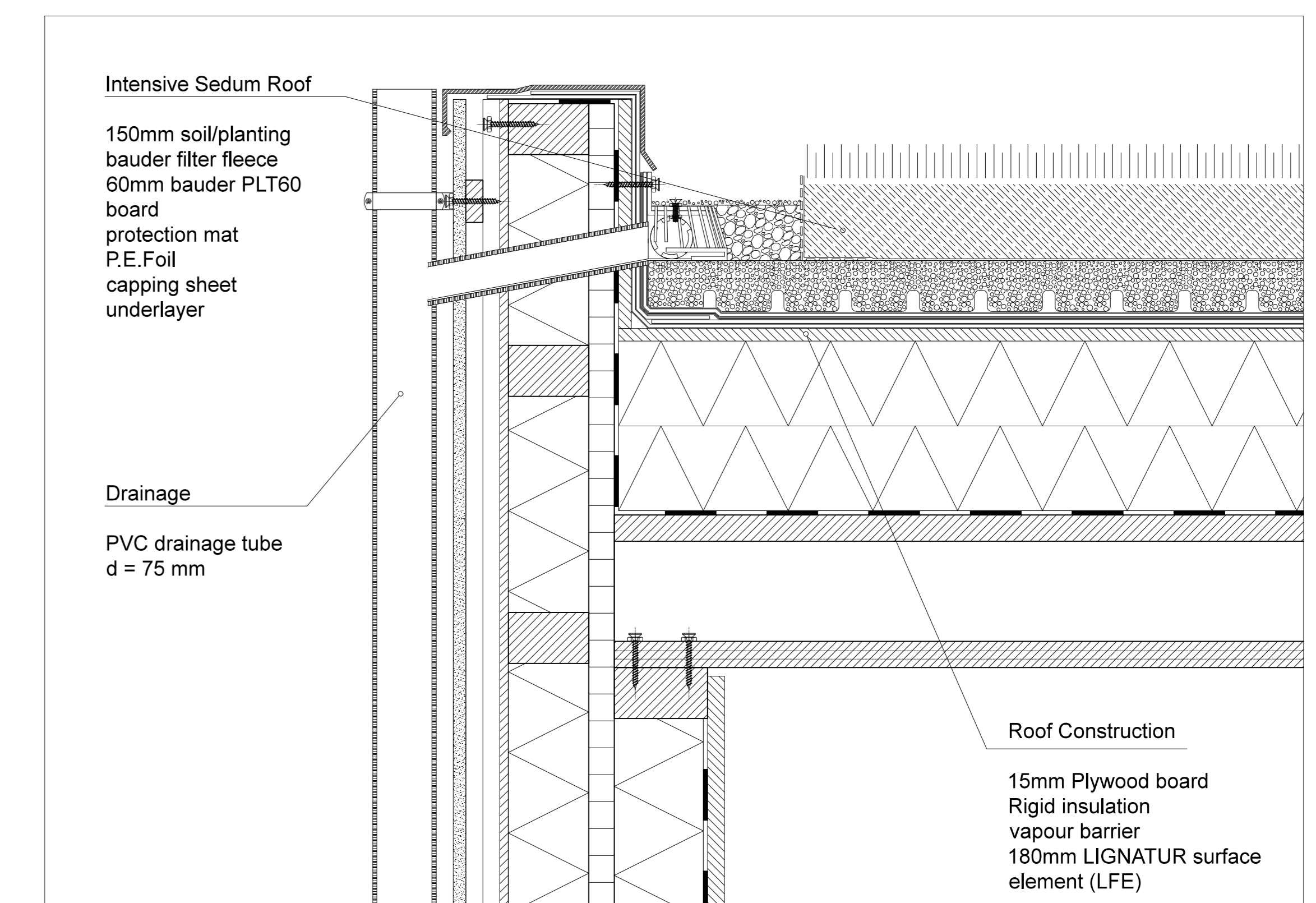
Detail D 1:5



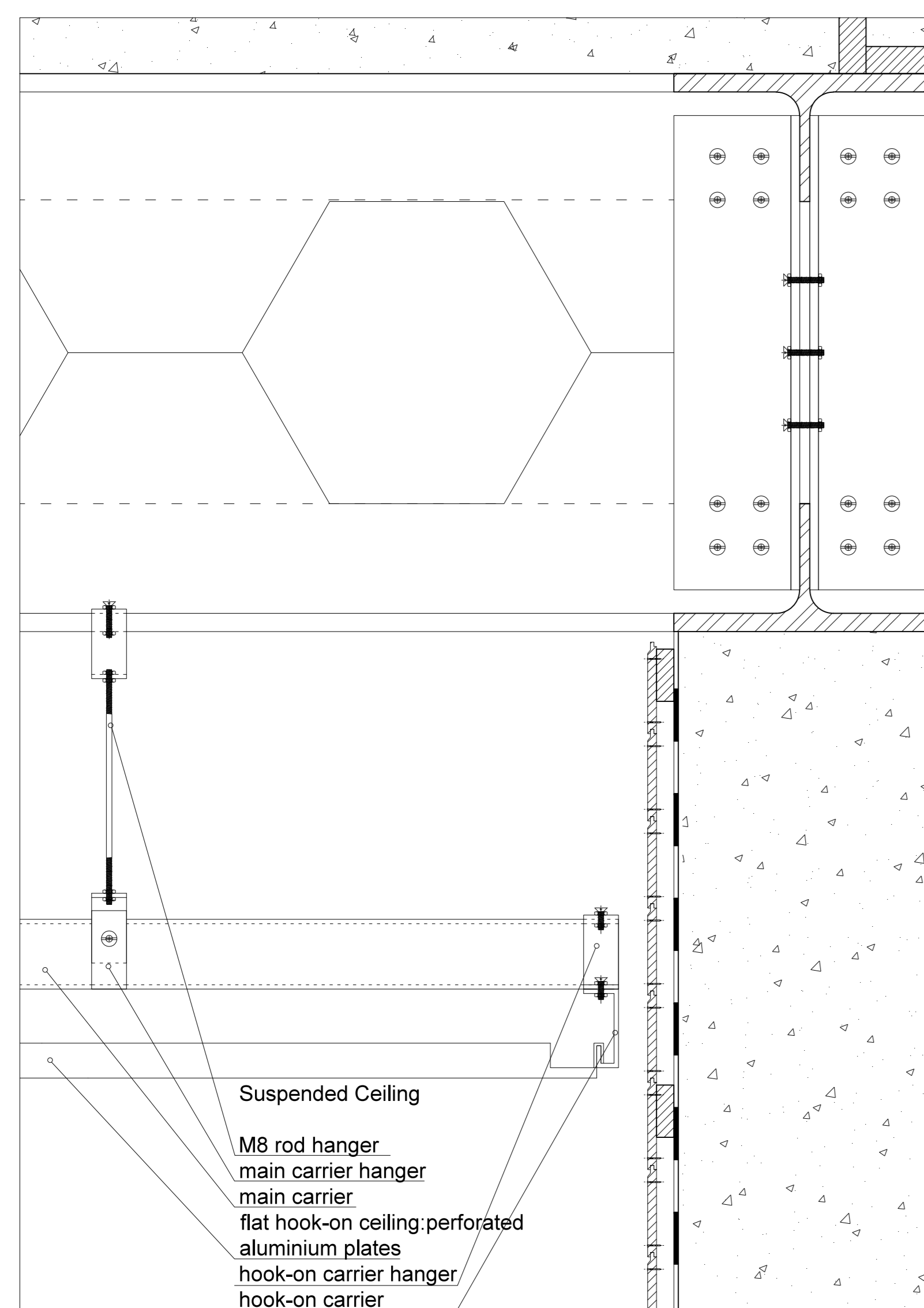
Detail B 1:5



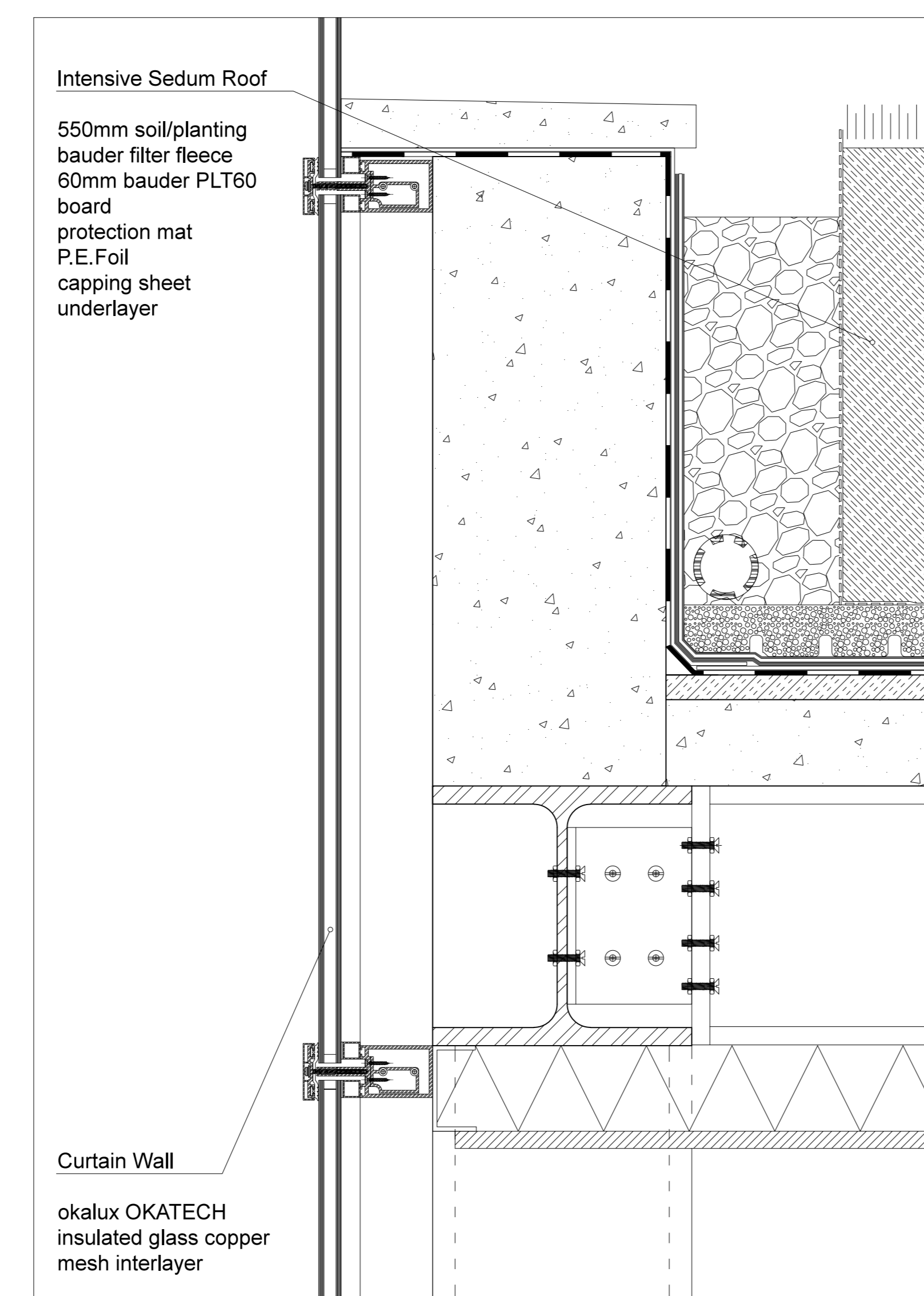
Detail E 1:5



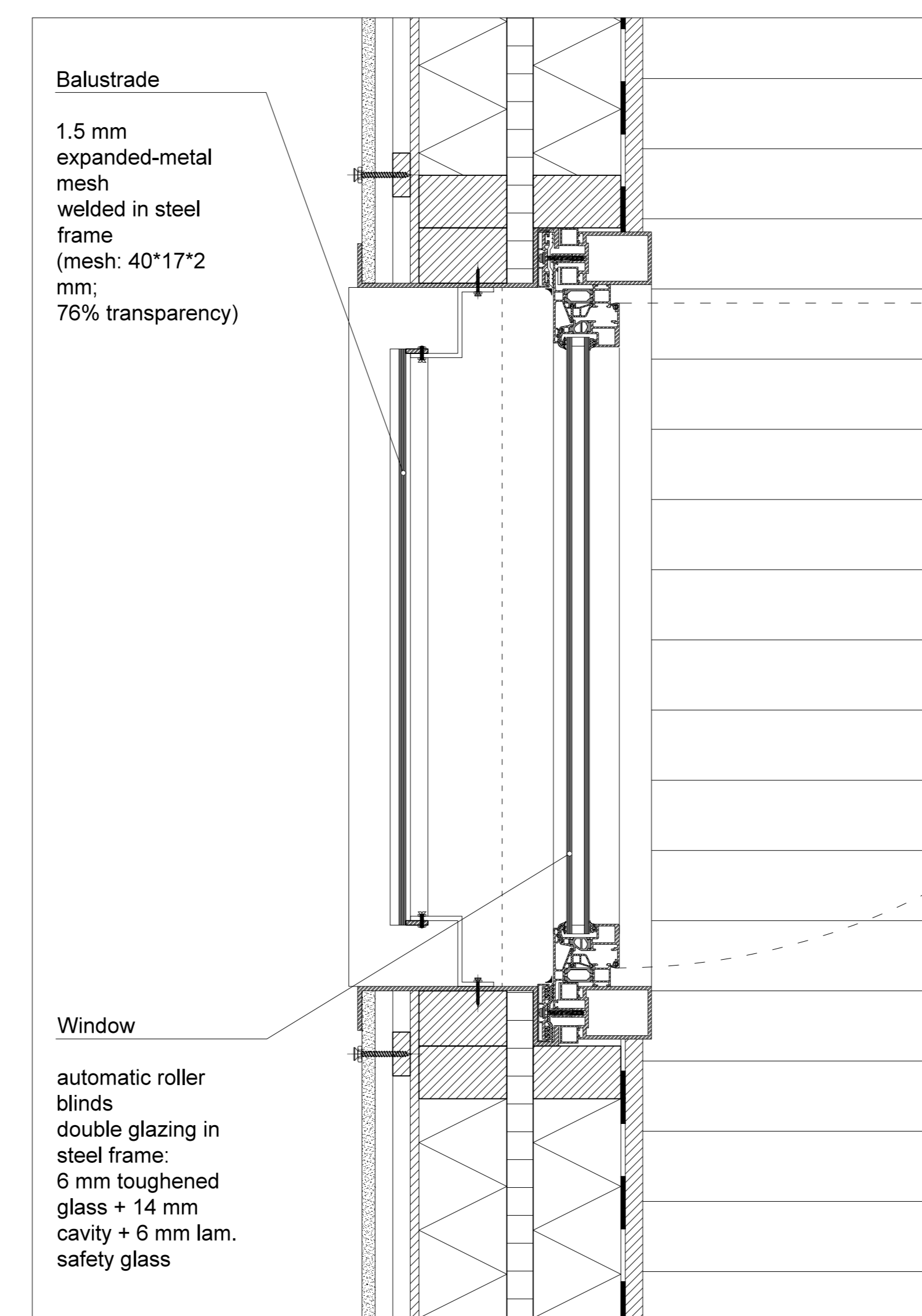
Detail H 1:5



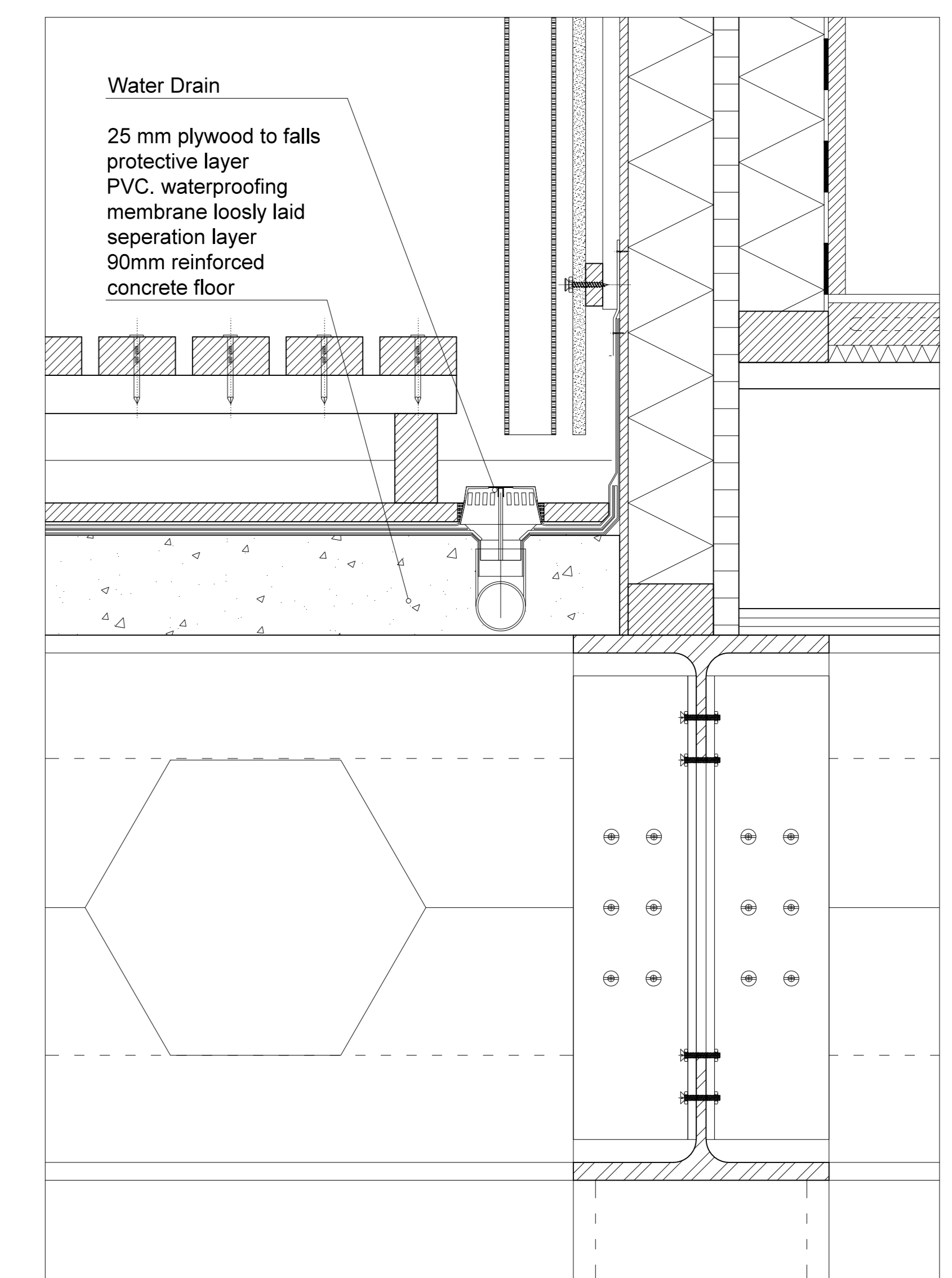
Detail C 1:5



Detail F 1:5



Detail G 1:5



Detail I 1:5