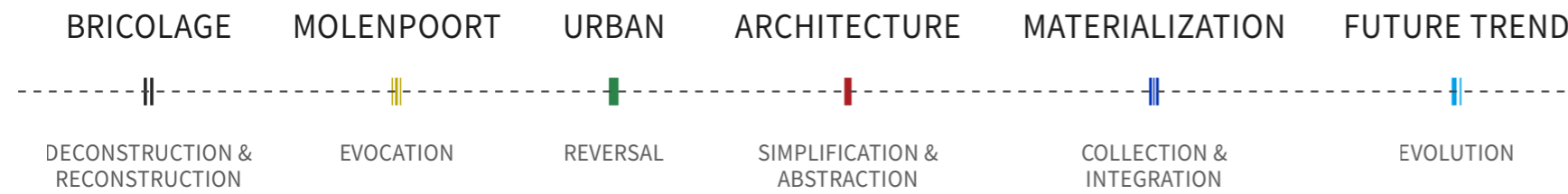


RETAIL ARCHITECTURE

[COMMERCIAL FULFILLMENT CENTER]

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05. MATERIALIZATION

- 5.1. Climate
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"BRICOLAGE"



Bricolage is a way of thinking, researching and designing. In the story of Robinson Crusoe, he survives a shipwreck on a desert island by salvaging supplies from the shipwreck of culture and making the most of nature. Similarly, making architecture is an act of bricolage, using whatever comes to hand and then new things take shape out of the existing.

ARCHITECTURE BRICOLAGE

The bricoleur researches the meaning of existing materials, but also has a keen eye for new meanings and possibilities. From the perspective of architect, we build our realm using the existing constructing logic and limited materials, to make something different and new from the old, which seems to be a low-key but efficient way for building renovation of Passage de Molenpoort.



Process Method	Prototype	Typology	Typology	Typology	Typology
Deconstruction and reconstruction					
Simplification and abstraction					
Collection and integration					
Reversal					
Evolution					
Evocation					

Figure 1: Different methods of bricolage, drawn by author

Process
Method

Prototype

Typology

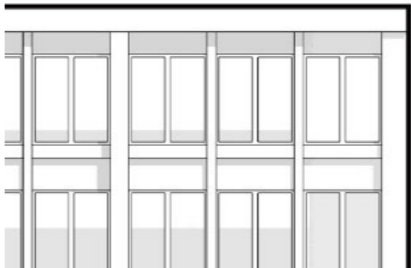
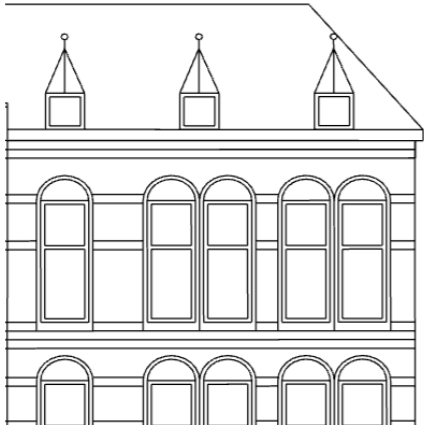
Typology

Typology

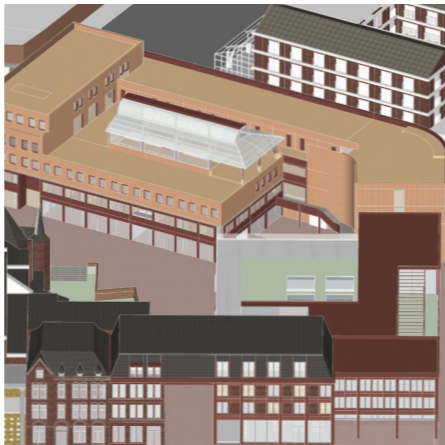
Deconstruction and reconstruction



Simplification and abstraction



Collection and integration



Process
Method

Prototype



Typology



Typology



Typology



Typology



Reversal



Evolution



Evocation

"RETAIL MOLENPOORT"



Retailing architecture



Hongkong



London



New York

De Molenpoort



Molenpoort, 1972



Molenpoort, 2020

1. Typology of retailing architecture

2. Distribution and positioning of shops

3. Commercial collective space

4. Future plan



Problem Statement

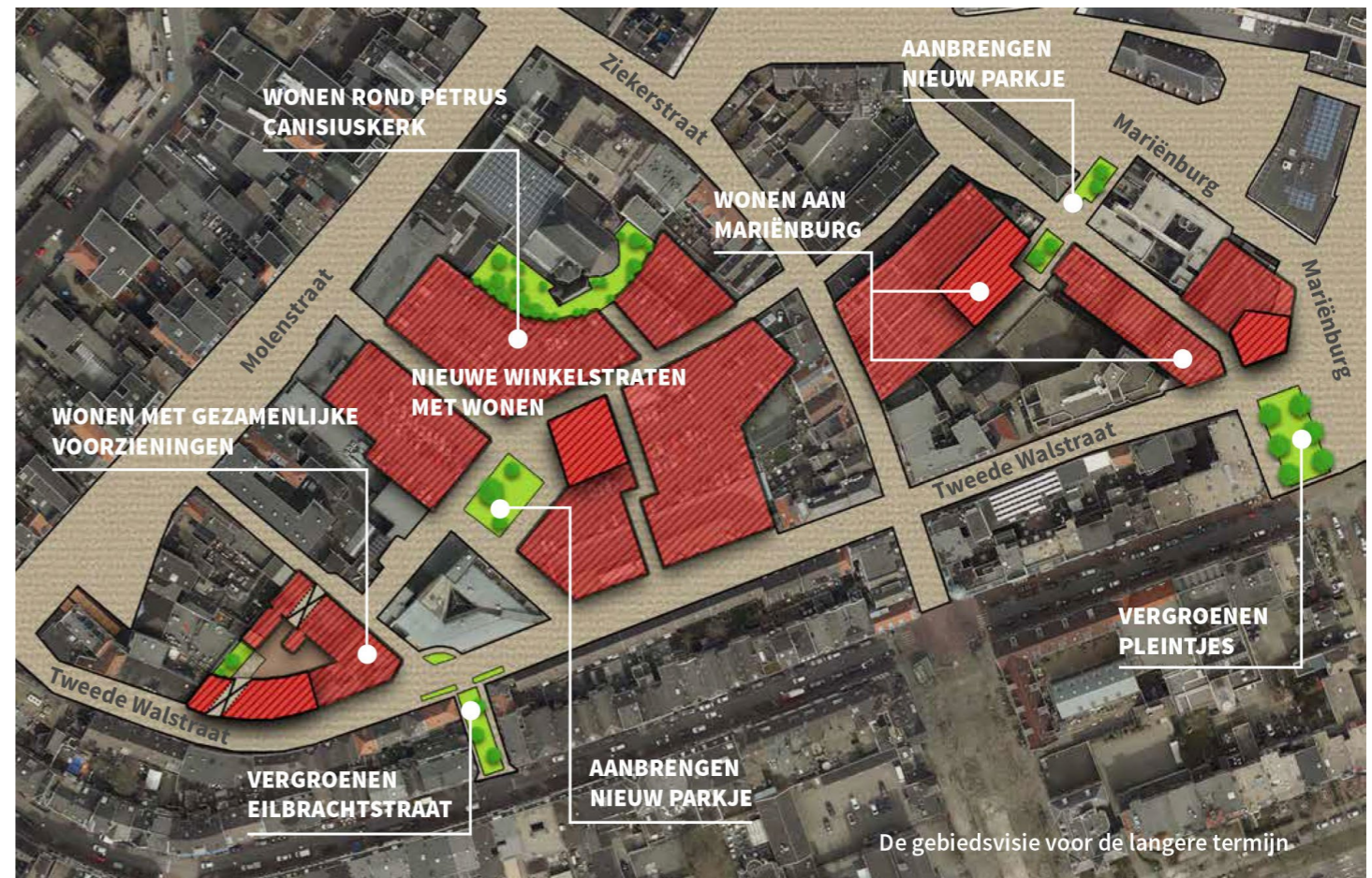
- 1. Typology of retailing architecture
- 2. Distribution and positioning of shops
- 3. Commercial collective space
- 4. Future plan



- 1. Typology of retailing architecture
- 2. Distribution and positioning of shops
- 3. Commercial collective space
- 4. Future plan



- 1. Typology of retailing architecture
- 2. Distribution and positioning of shops
- 3. Commercial collective space
- 4. Future plan



Problem Statement

It's almost like a prison wall

There are not a lot of nice shops in my opinion

I think The Molenpoort doesn't have a good reputation

People enter, go to the Coop, and leave...

An American investor...

For years shops are leaving, it's getting emptier and emptier...

It's a big... wall

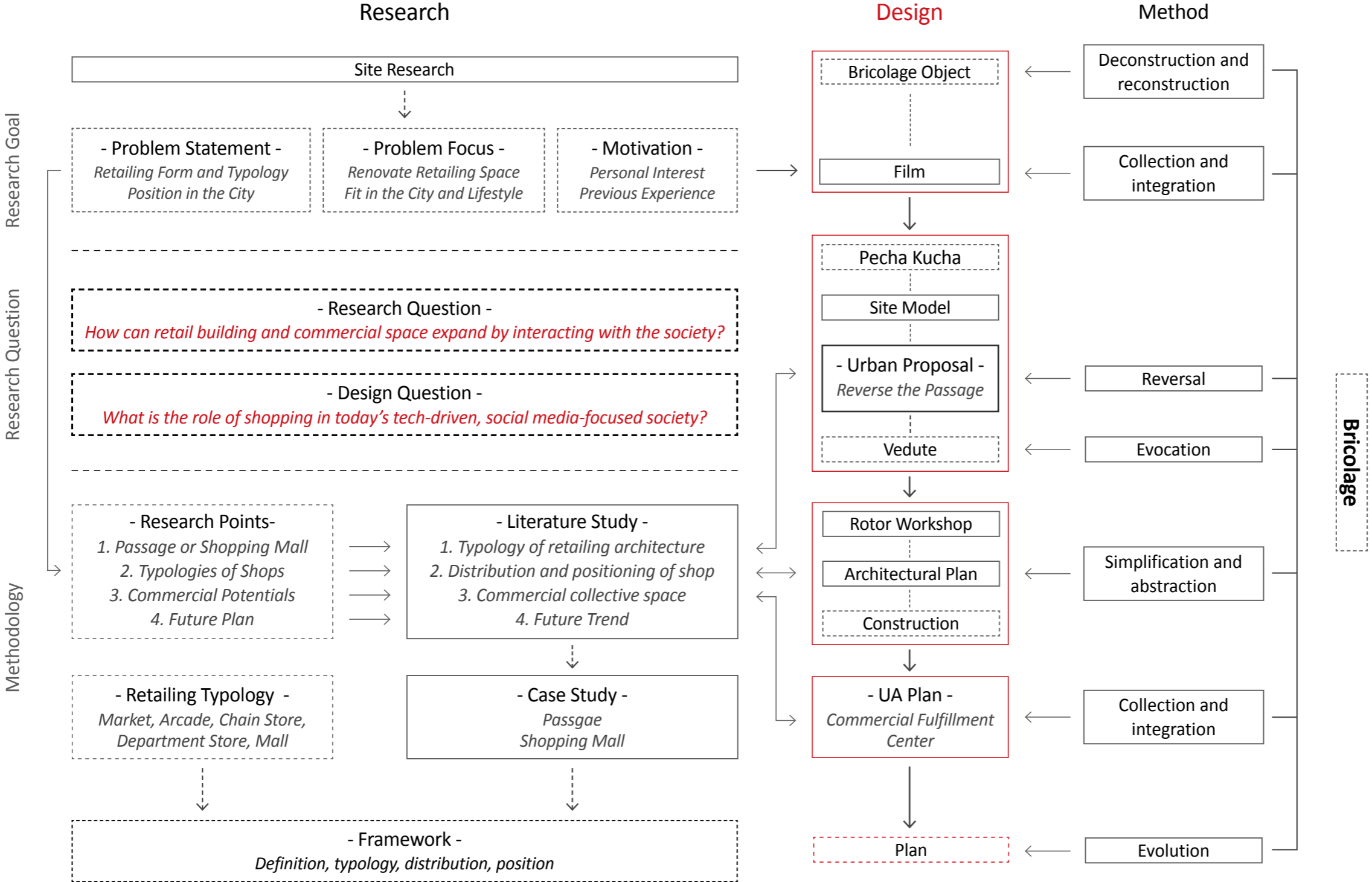
It's not very inviting to go inside

Covered shopping centres are outdated

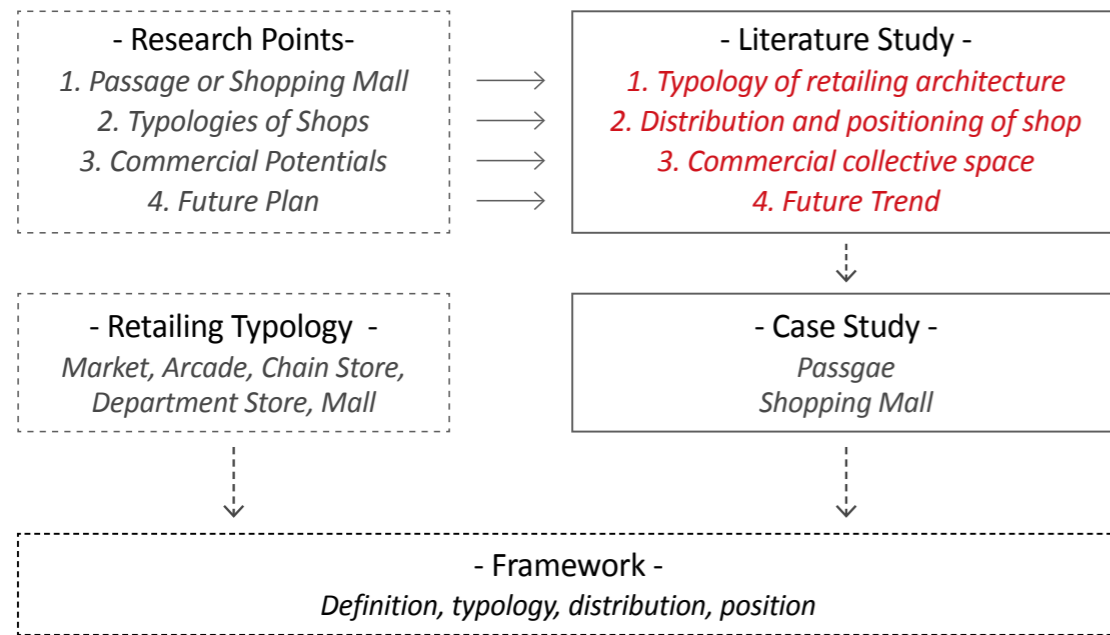
It's mostly because of the online

Sometimes there are junkies or homeless people

Research & Design Structure



Research & Design Methodology

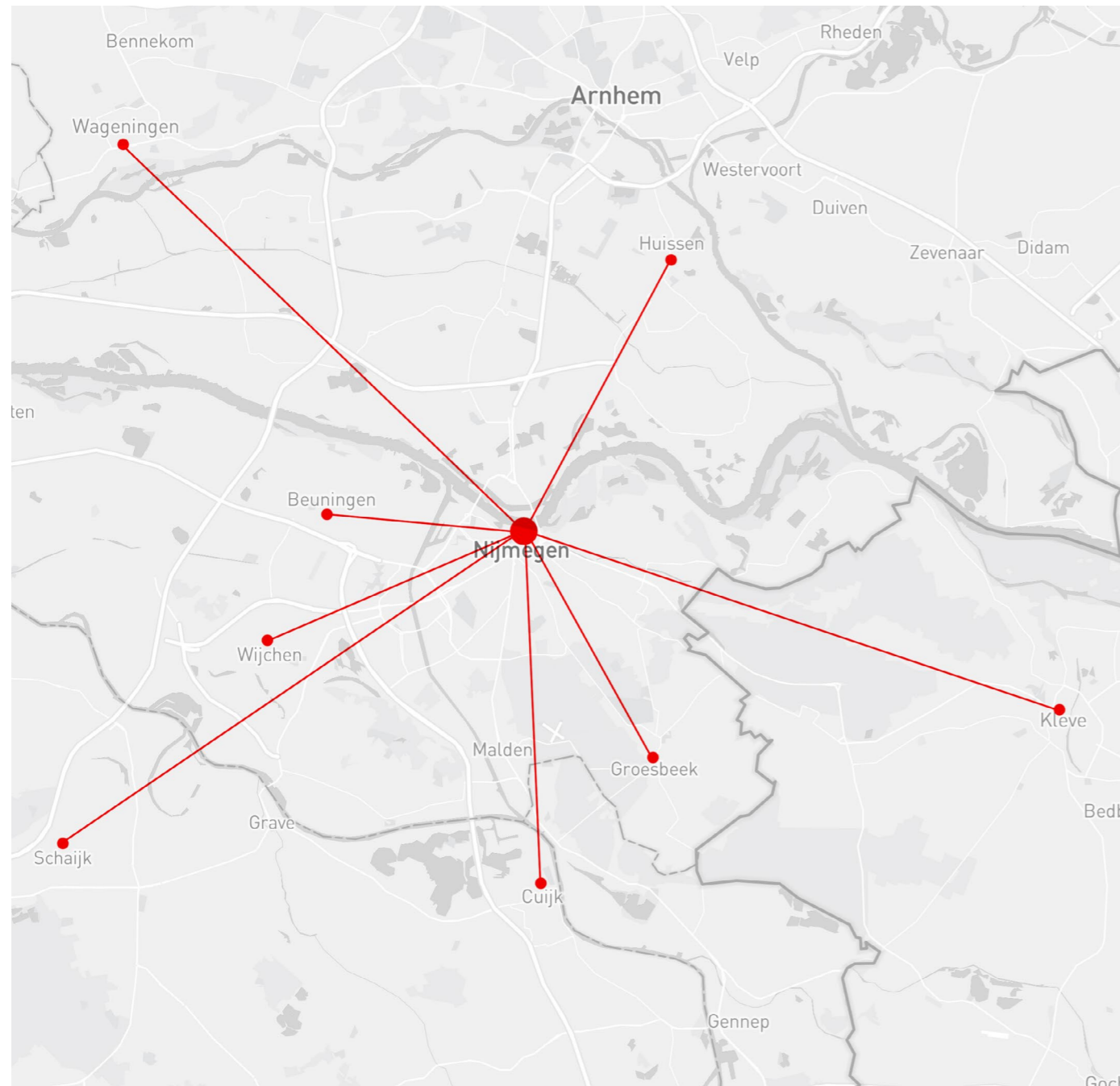


	Field	Theme	Design
1. Typology	<i>Is Molenpoort a passage or shopping mall?</i>	<i>Genealogy of retailing typologies</i>	<i>A multifunctional space with ambiguity and flexibility</i>
2. Positioning	<i>A center for small entrepreneurs</i>	<i>Retailing mode and layout of shops</i>	<i>A center for interaction, innovative practice and brand engagement.</i>
3. Commercial space	<i>Indoor and outdoor public space of Molenpoort</i>	<i>Commercial potentials for collective space</i>	<i>Transitional spaces like courtyard, roof garden and undefined interior spaces</i>
4. Future trend	<i>The unsatisfactory "future plan" by the government</i>	<i>Evolutionary process of retailing buildings</i>	<i>Commercial Fulfillment Center</i>

"URBAN"



Commercial Potential



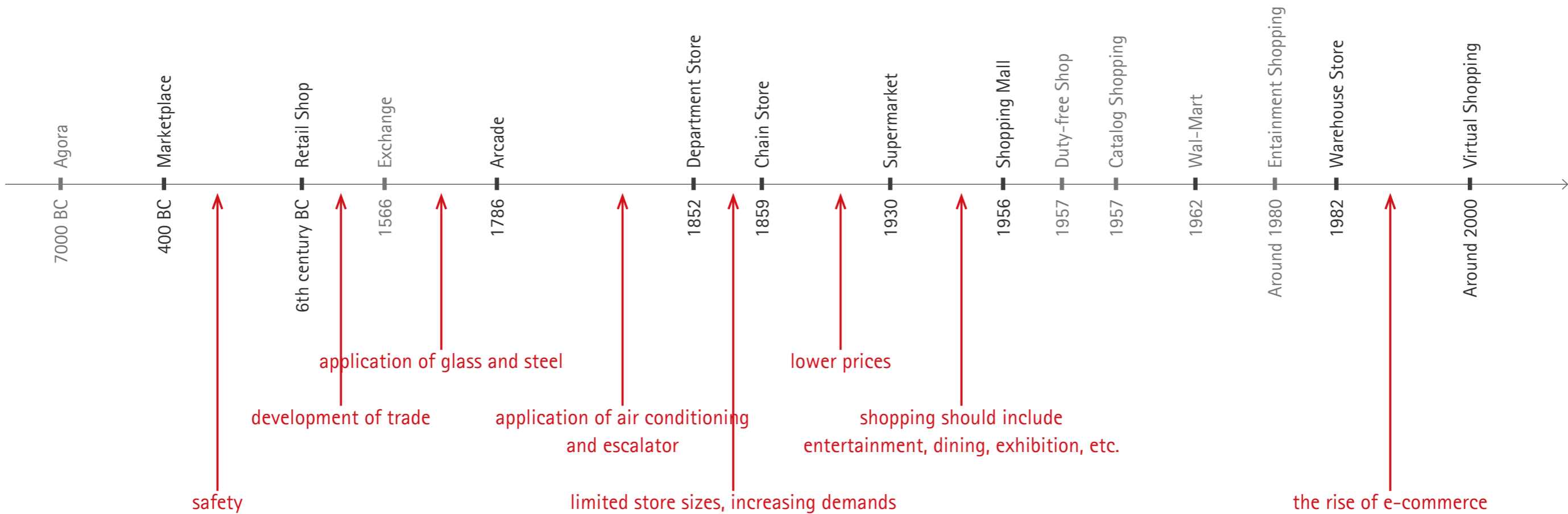
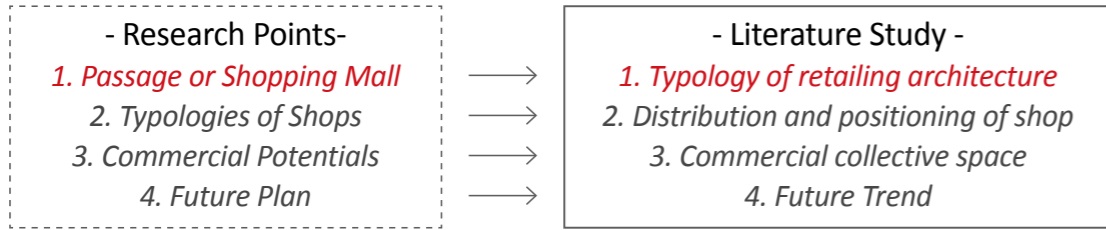
Shopping Radiation



When I come to Nijmegen and I want shop a little bit, this is quite easy parking. I mean on top of a building instead of on the streets. There are basically a few convenience small shops here. There is a Xenos, there is a huppeldepup Bazaar, or something. So when nowadays I need a little chalkboard or something, then that is easy to find here instead of that I need to drive to who knows where.

--Customer of the Molenpoort, coming from Elst

Research part 1 - Typology of retailing architecture



Mapping





Reverse of passage





Urban Plan



Shopping Street - the Inner Ring



Shopping Street - the Outer Ring



Shopping Street - the newly-built street



Square





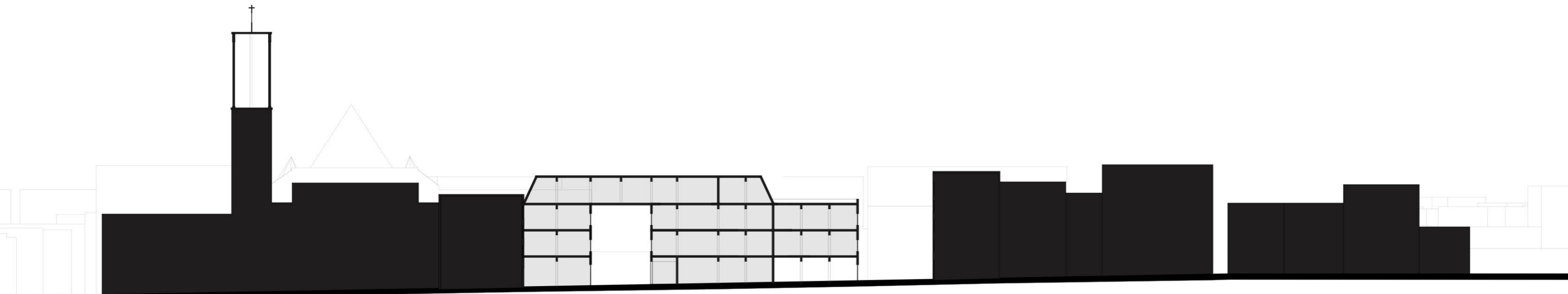
--- Commercial route
Public space

Program

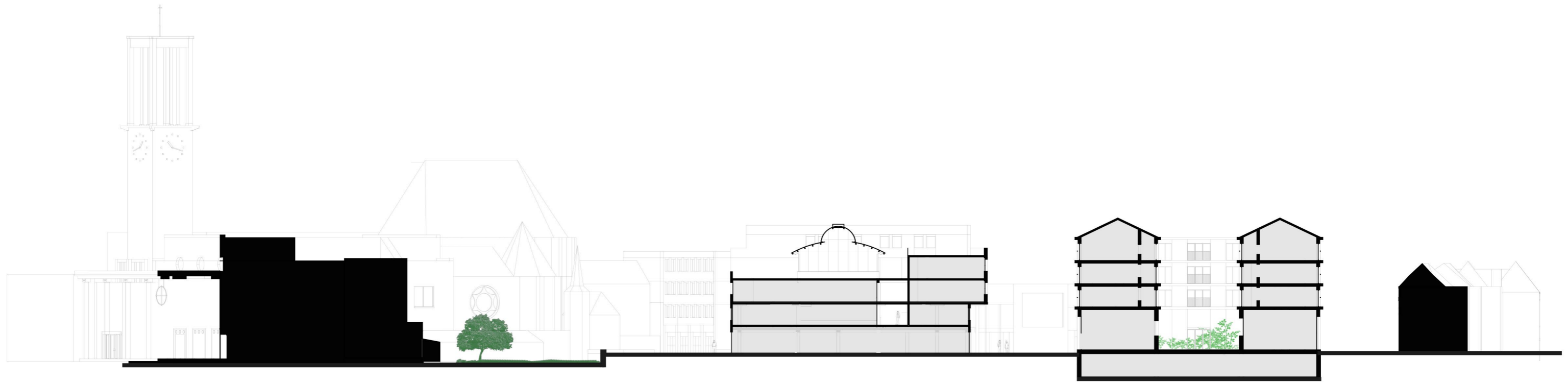


- Residence
- Retailing

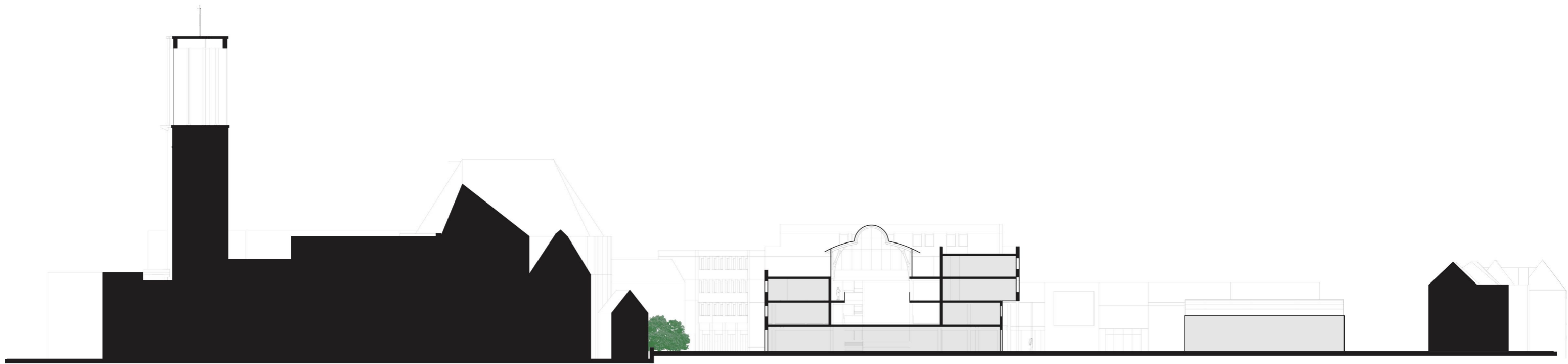
Section



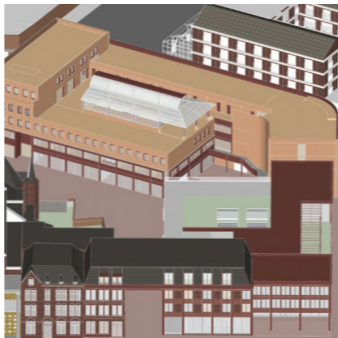
Section



Section



"ARCHITECTURE"





4F
3F
2F
3F

4F
3F
5F
4F
4F

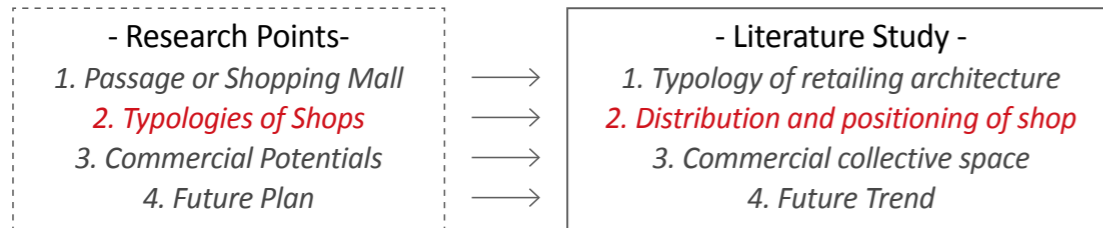
2F
2F

1F
4F
4F
1F
4F

0 10 20 30 40 50m



Research part 2 - Distribution and positioning of shop



"Magnet stores" and small shops in the Molenpoort

- Retailing mode and distribution: heterogeneous commercial clusters --> homogeneous commercial clusters;
- The positioning of shops is expected to interlock with the innovative function and together contribute to center for interaction, innovative practice and brand engagement.



"Commercial Fulfillment Center"

Position	A commercial fulfillment center with physical and virtual space for interaction and brand engagement
Target groups	Small entrepreneurs and start-ups, collaborate with young artists and architects
Activities	Formal commercial activities and informal activities like workshop, exhibition, fashion show, etc.

Program

Interaction

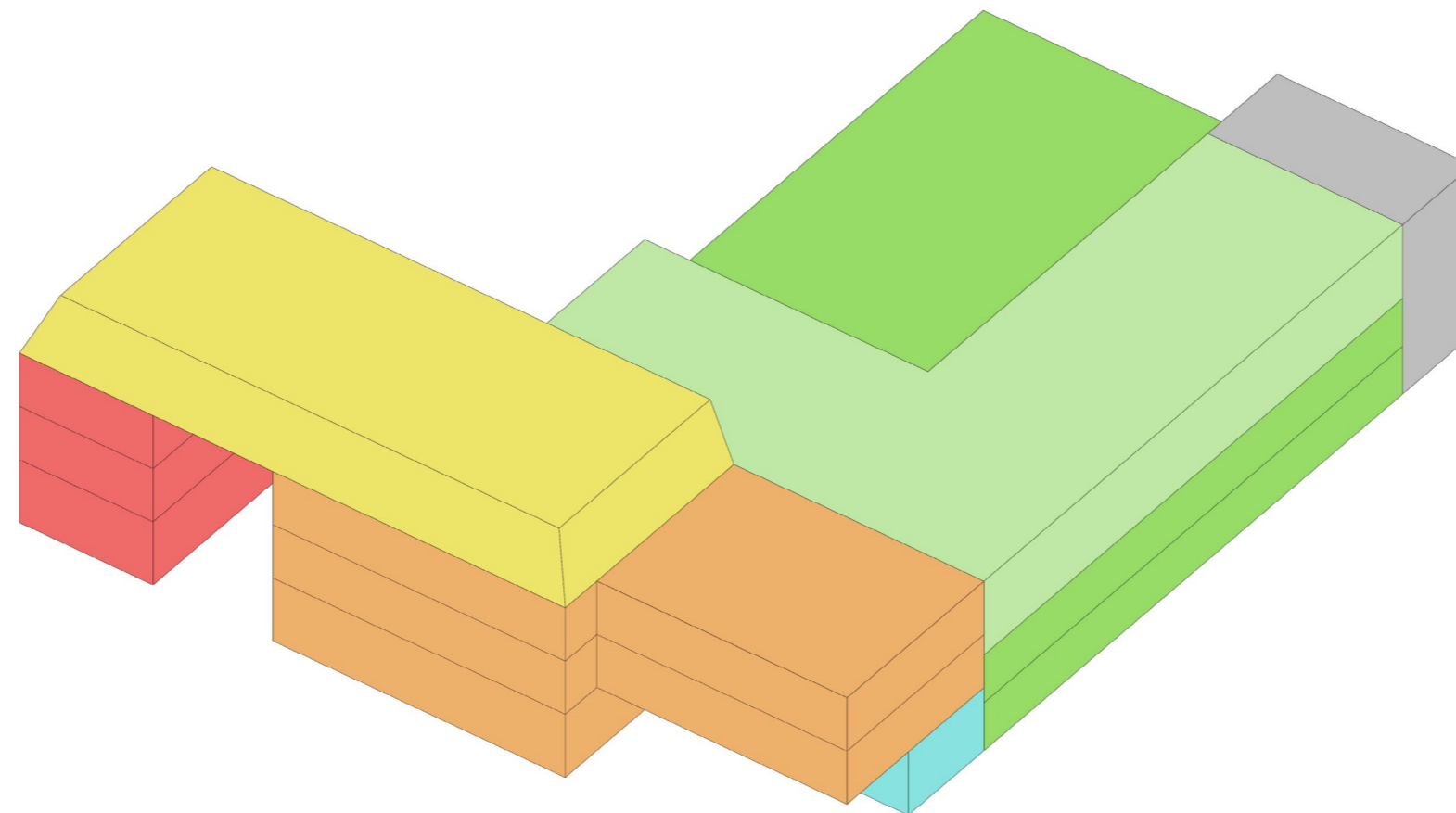
- immersive experience center
- 3rd floor
- 450 sqm

Customer Center

- info, product service, archive
- 0-2th floor
- 350 sqm

Innovative Center

- retail, workshop, product development and experience
- 0-2th floor
- 730 sqm



Logistics

- freight, storage and office
- 0-2th floor
- 220 sqm

Gallery

- exhibition (products & works)
- 2th floor
- 650 sqm

Shop/workshop

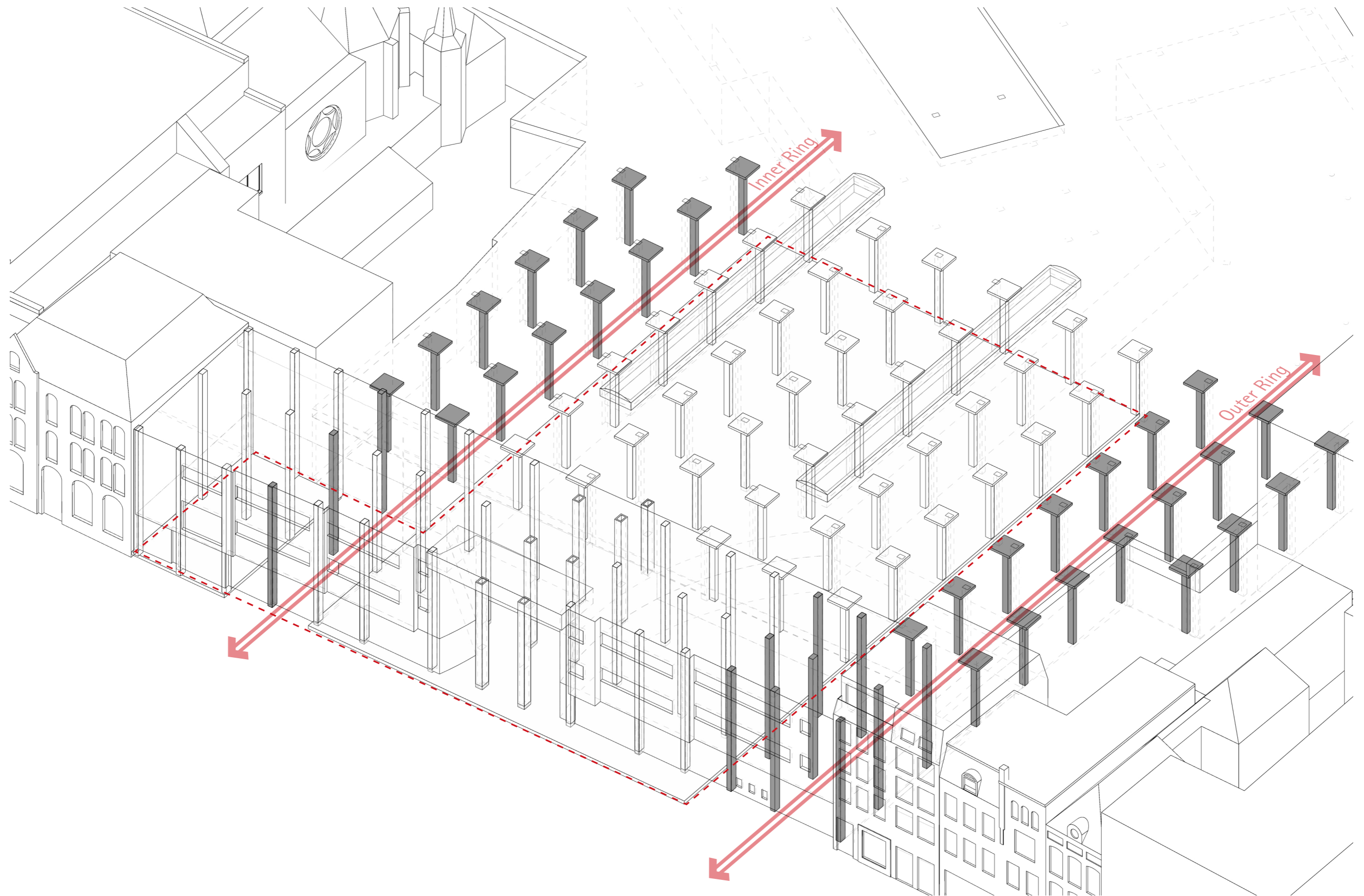
- clothes and daily necessities
- 0-1st floor
- 2300 sqm

Entrance

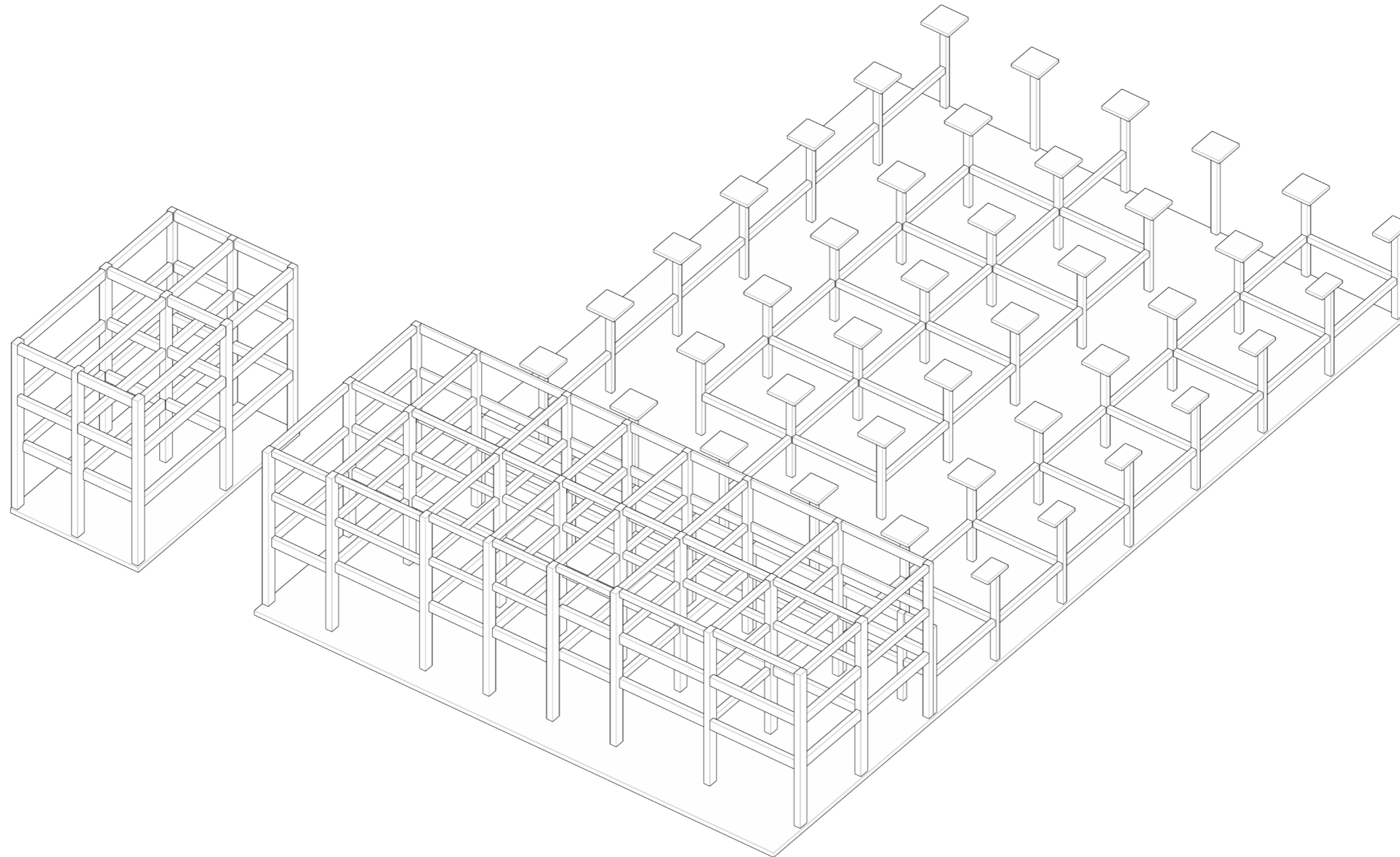
- hall, reception
- 0 floor
- 90 sqm

Commercial Fulfillment Center

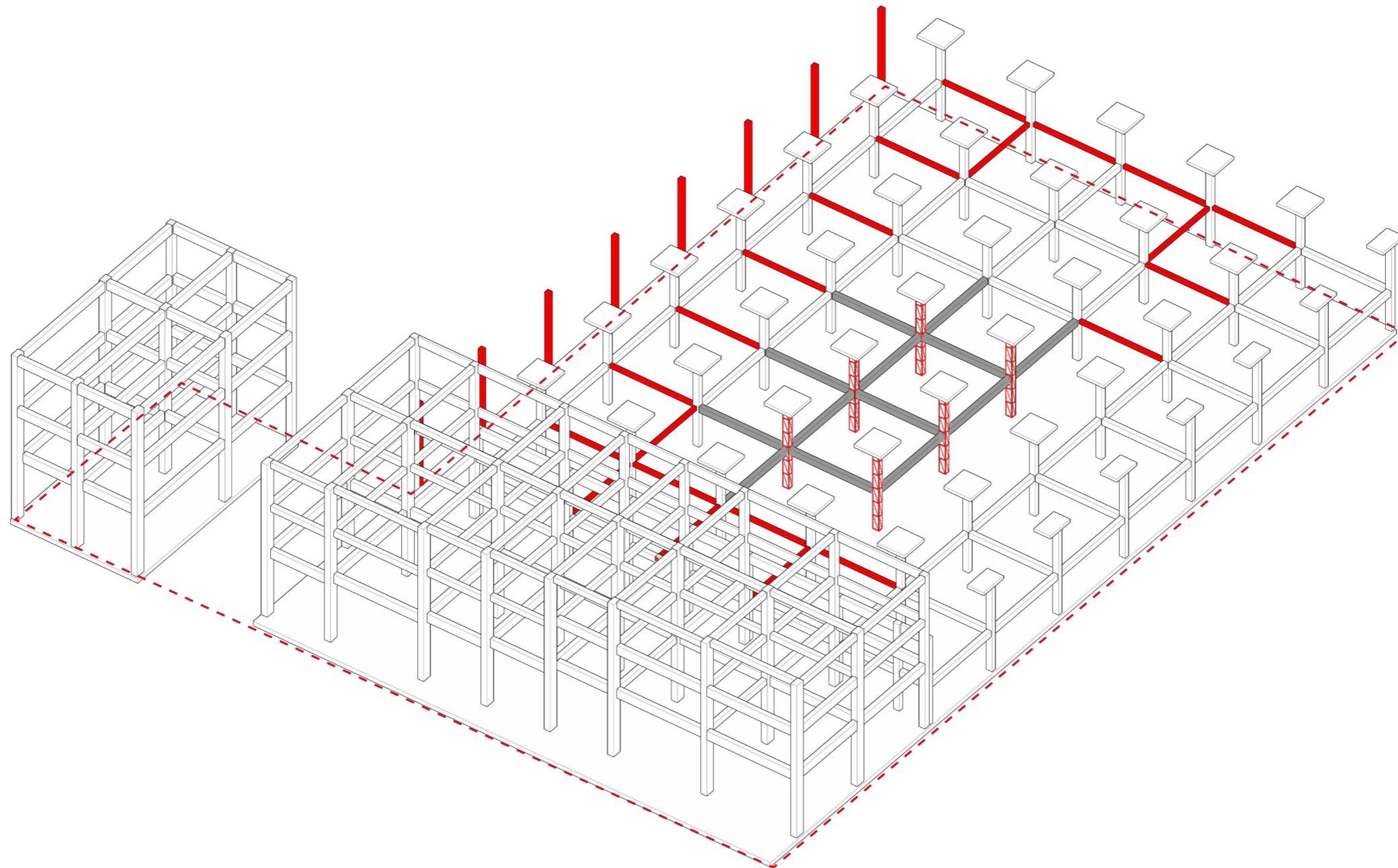
(4800 sqm)



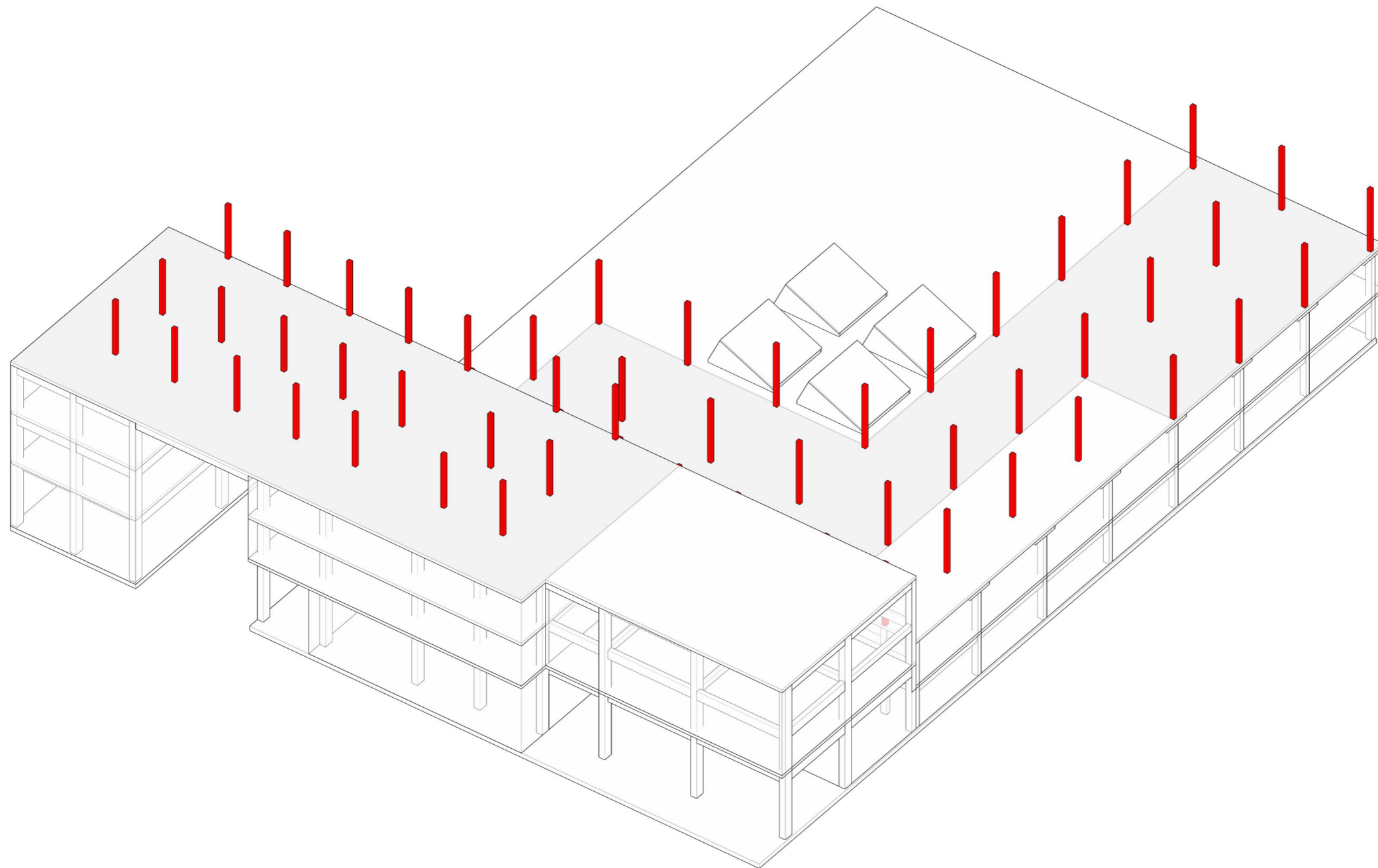
1. Demolish the structures according to the urban design



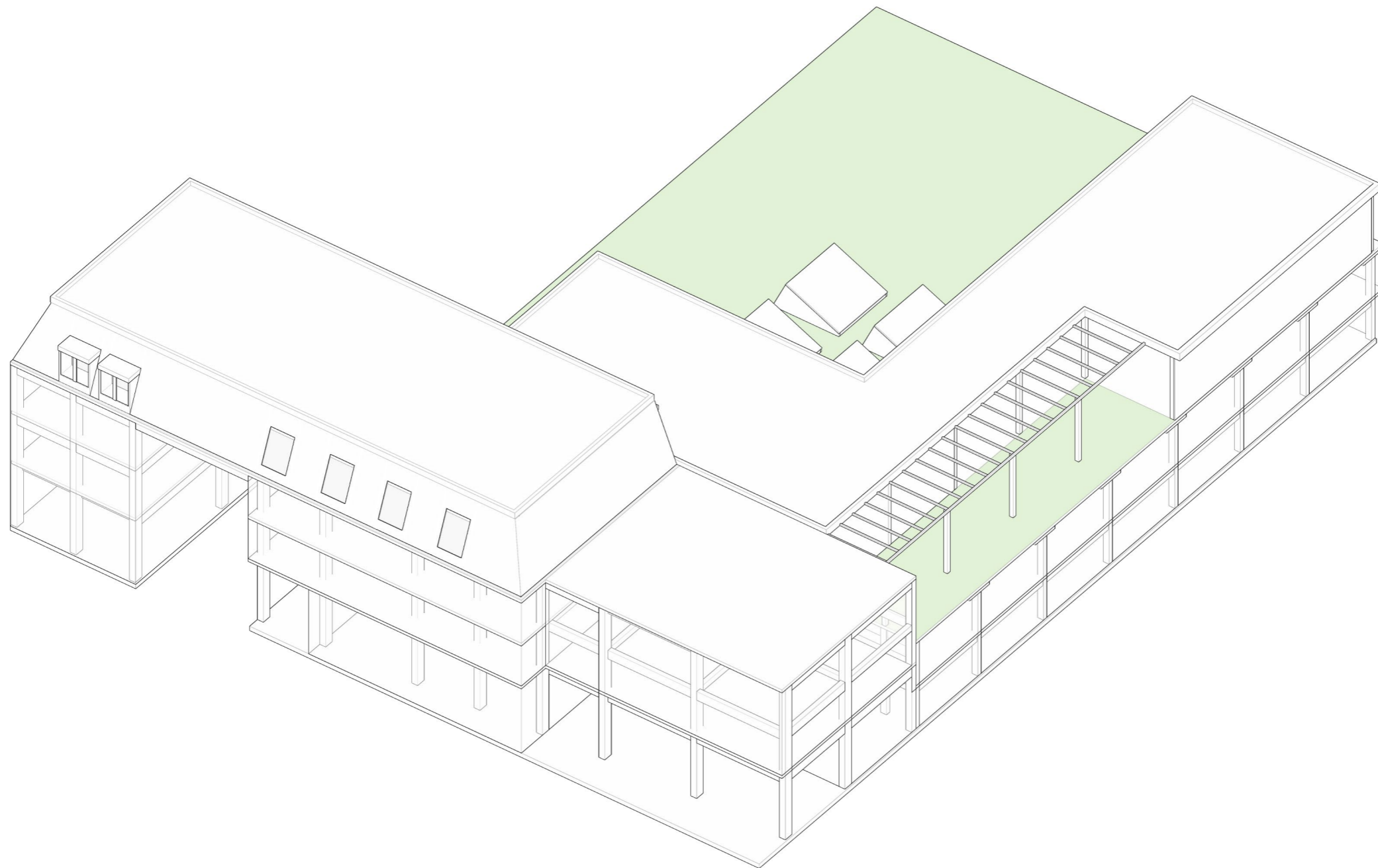
2. Existing structure system



3. Remove some beams in the center and add new structures

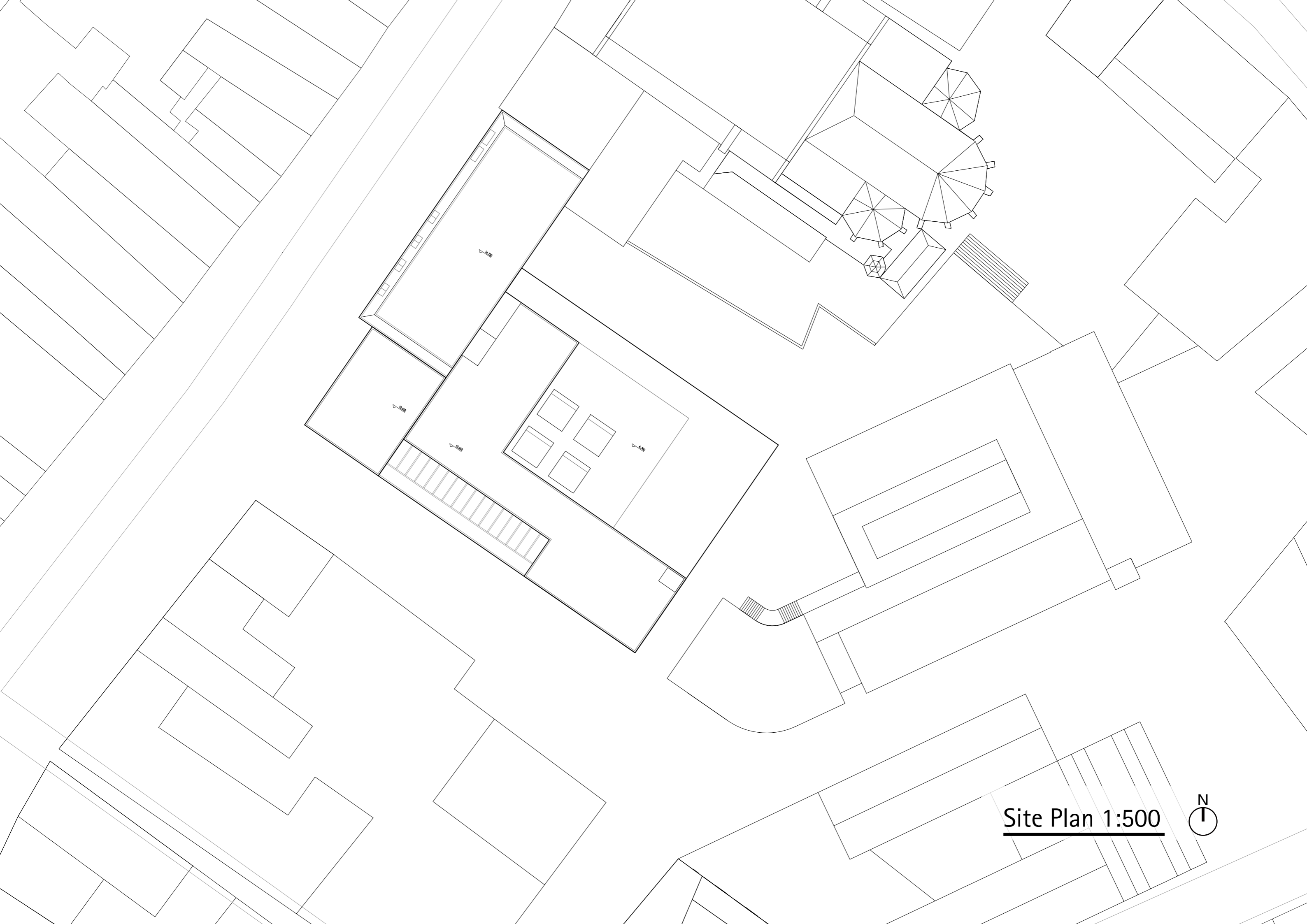


4. Construct skylights, add one more layer on top



5. Green roof

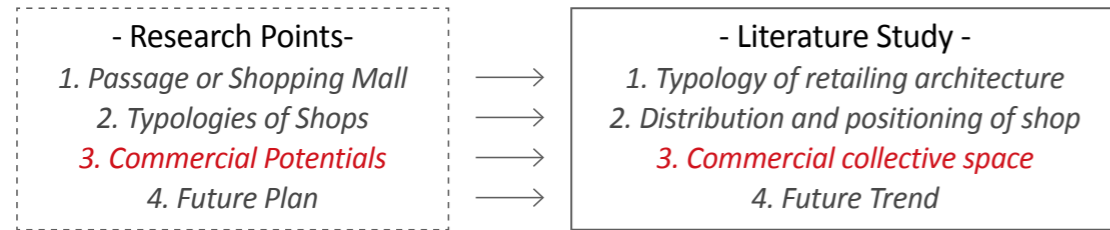




Site Plan 1:500

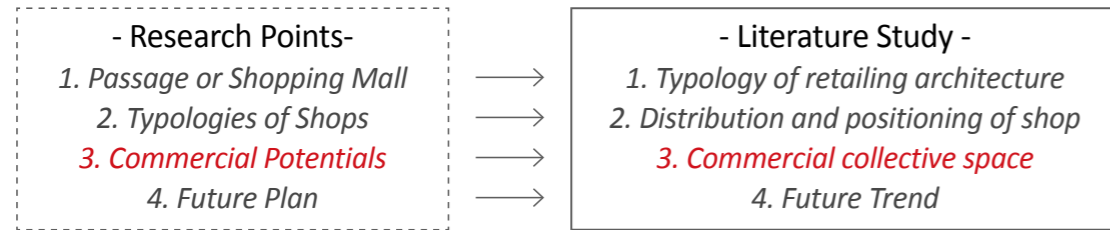


Research part 3 - Commercial Collective Space



- Private-owned passage: allows informal commercial activities even outside the shops;
- The advantage of shopping mall: the inner collective spaces like atrium, the pond (demolished), circulation space;
- Facilities around: church garden, streets and squares.

Research part 3 - Commercial Collective Space



- 1. Openness and privacy
- 2. Ambiguity
- 3. Diversity



Site Plan (ground floor level) 1:500



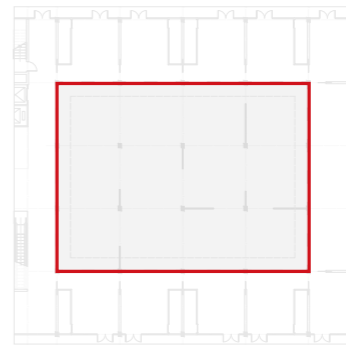
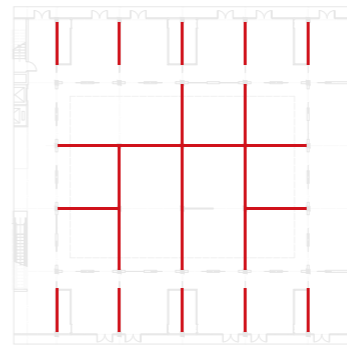
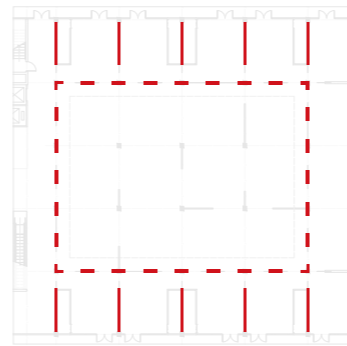
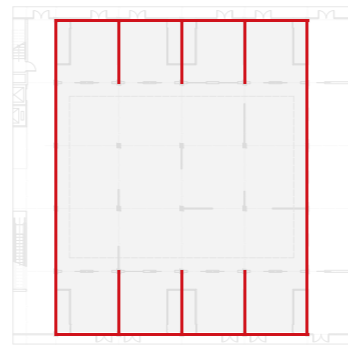
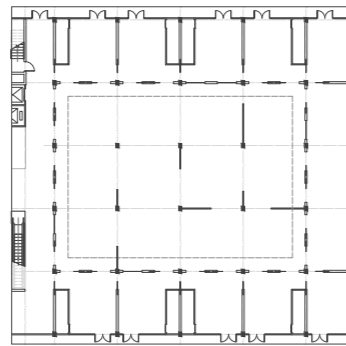


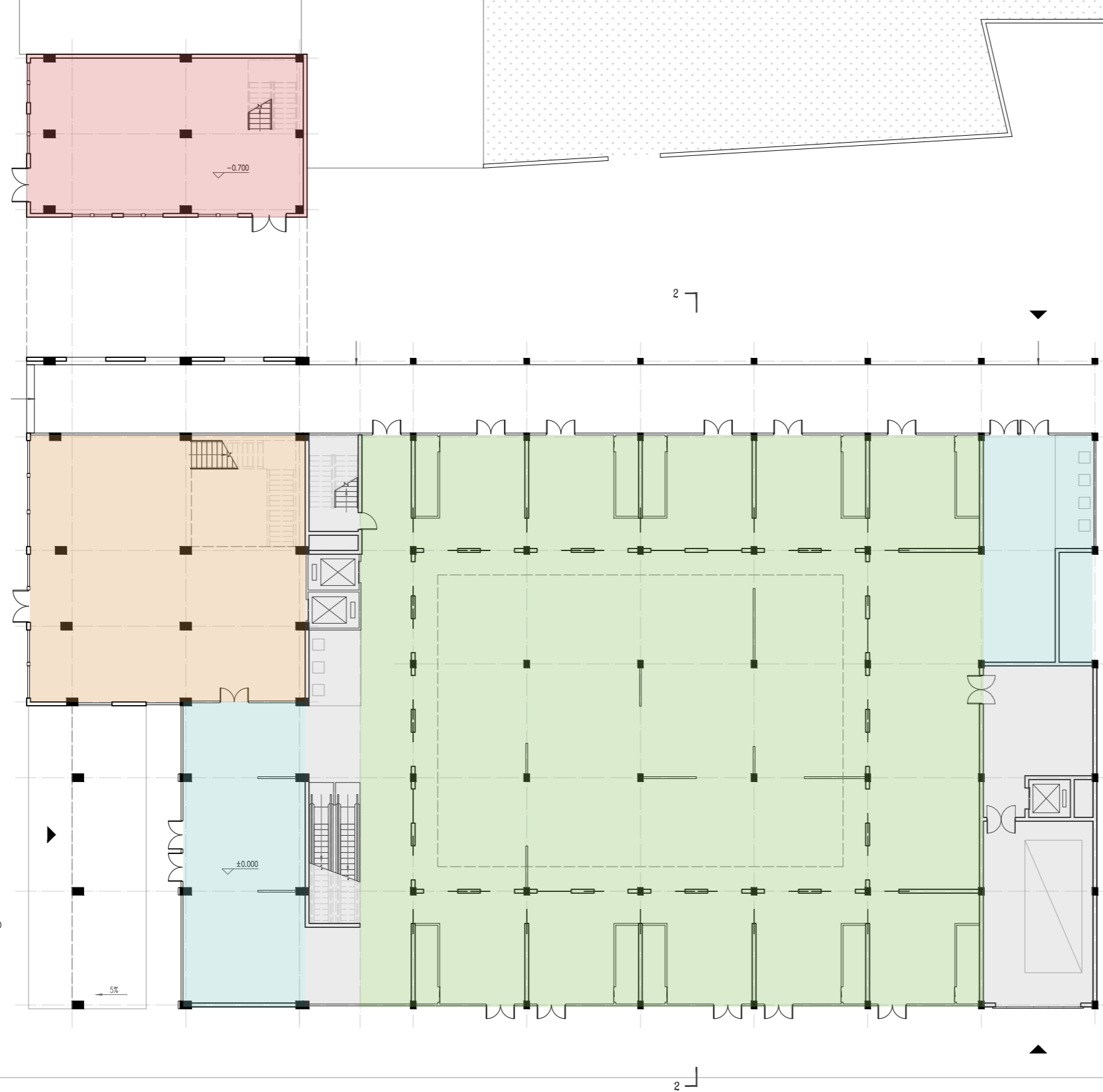


Site Plan (ground floor level) 1:500

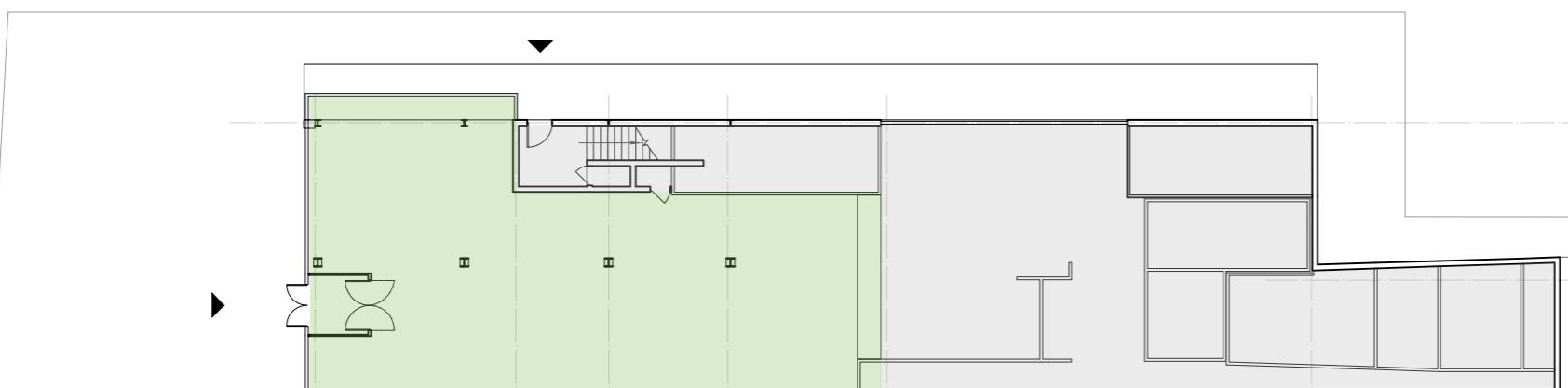






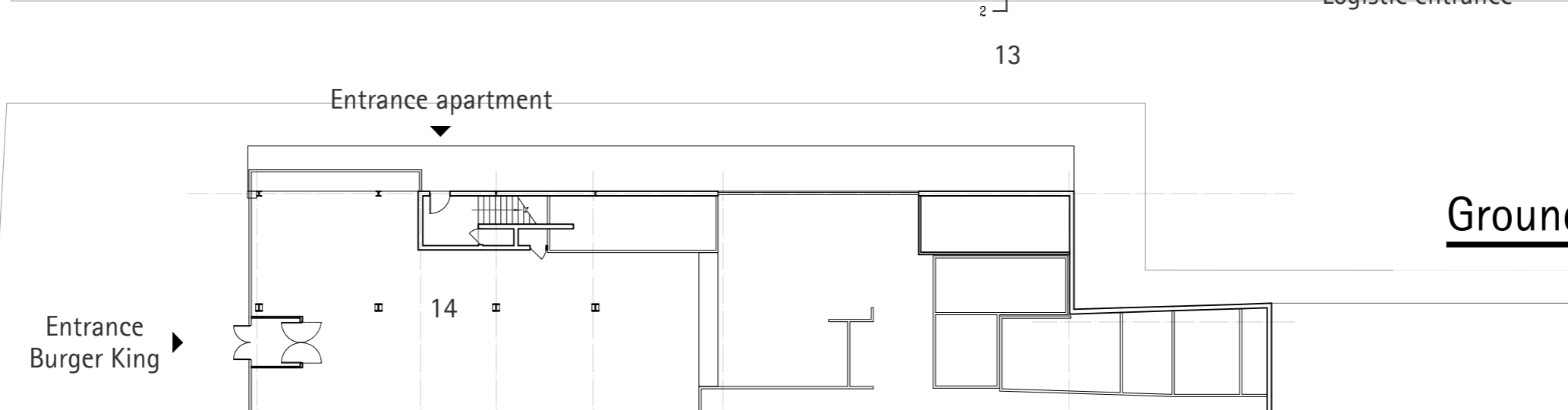
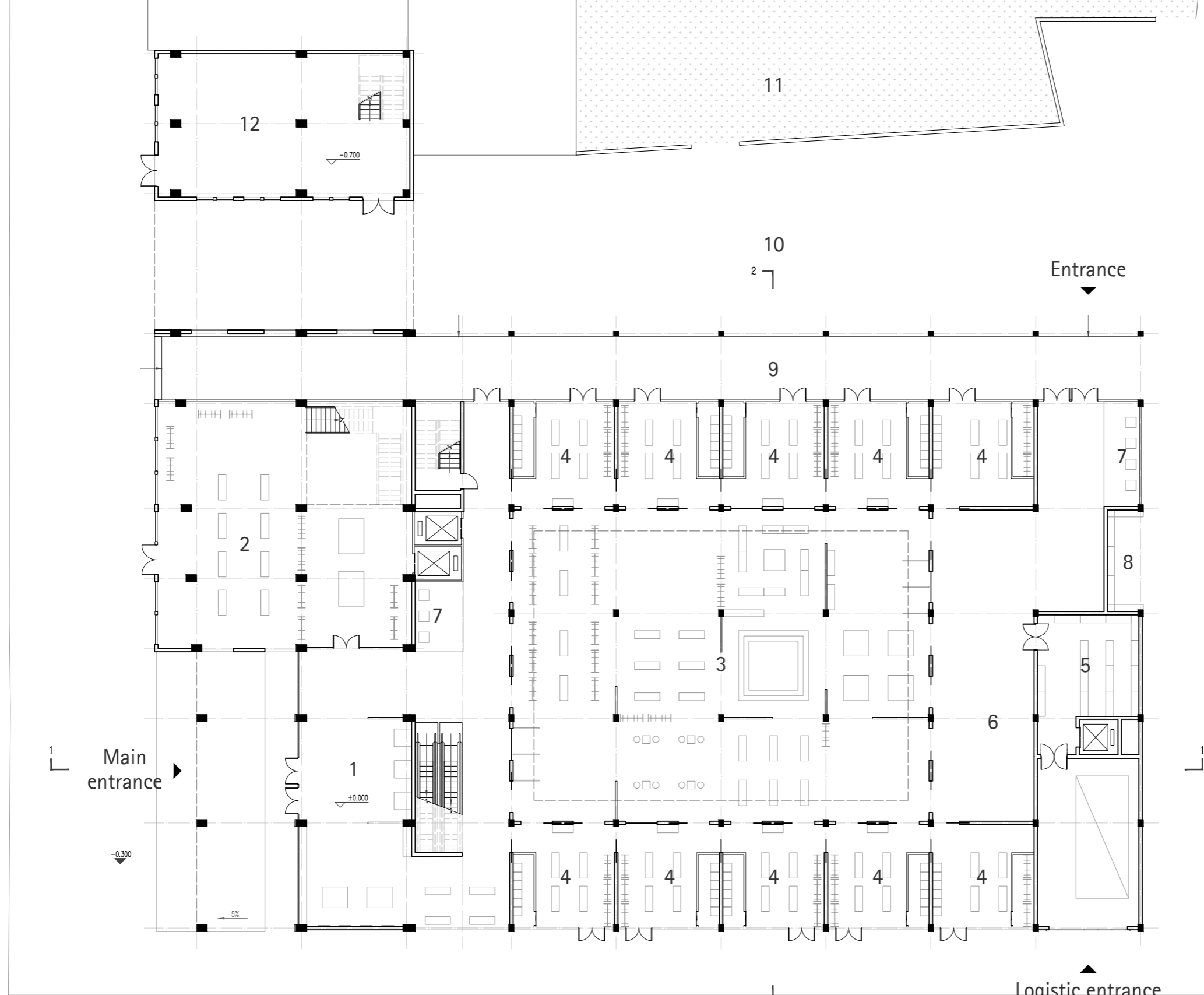


- Customer Center
- Innovative Center
- Entrance
- Shop
- Transportation & Logistics



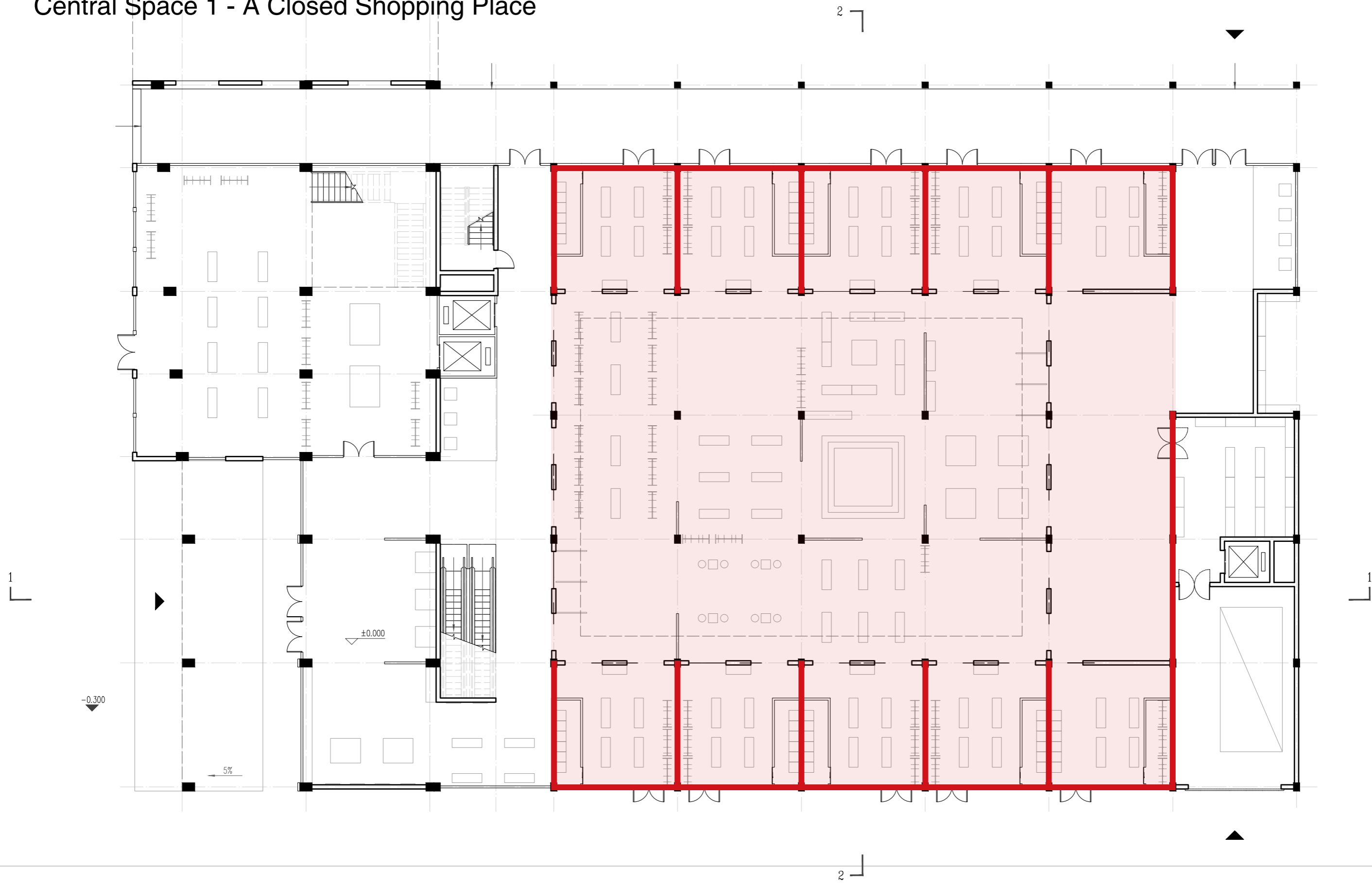
Ground floor plan 1:300 N

- 1. Interactive area (reception)
- 2. Innovative center (retail)
- 3. Multifunctional center
- 4. Shop
- 5. Logistics service
- 6. Exhibition / leisure
- 7. Interactive device
- 8. Parcel locker
- 9. Arcade
- 10. Inner ring
- 11. Church garden (communal)
- 12. Customer center (info)
- 13. Outer ring
- 14. Burger King (renovated)



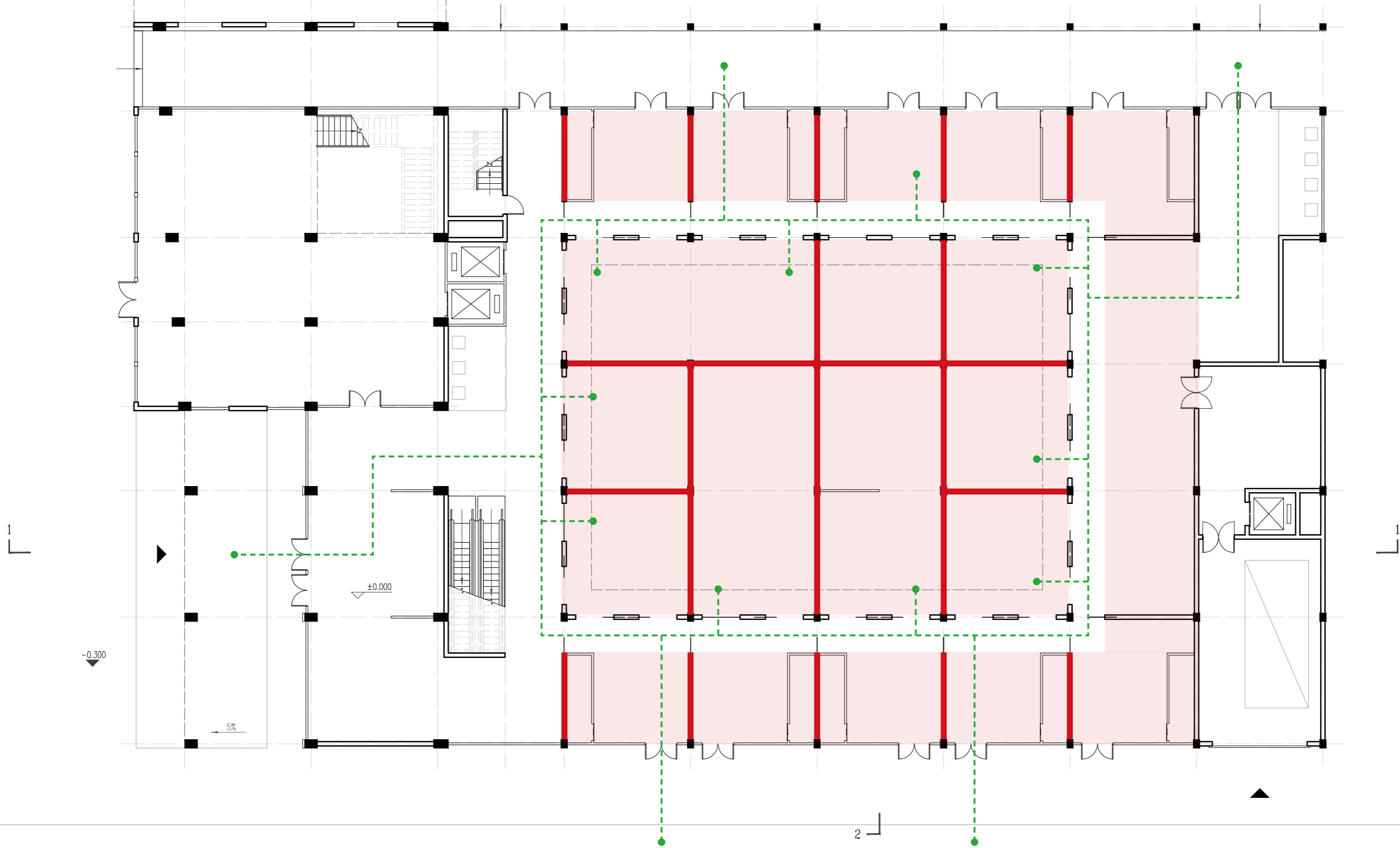
Ground floor plan 1:300

Central Space 1 - A Closed Shopping Place



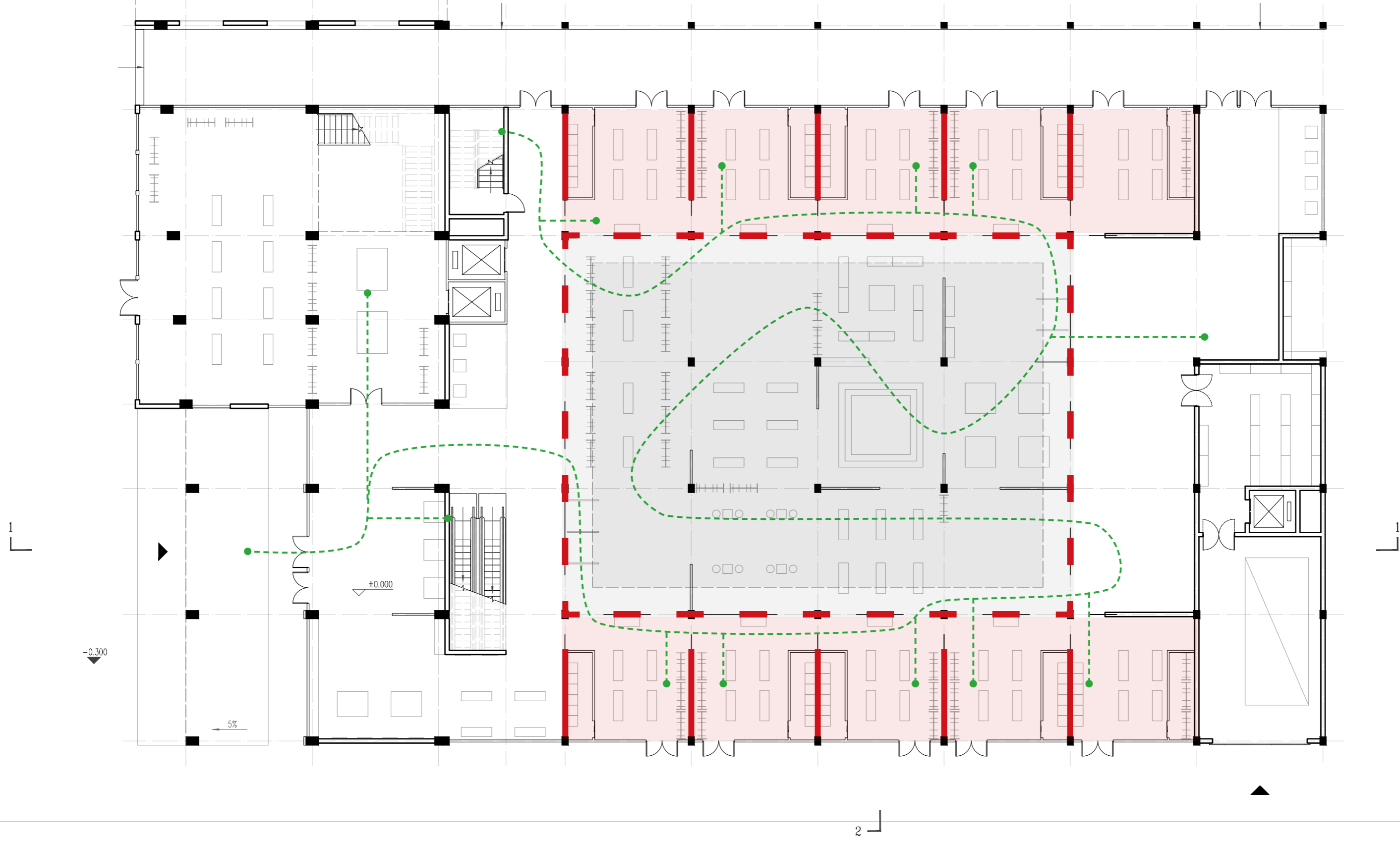
Central Space 2 - Corridor with shops on both sides

2

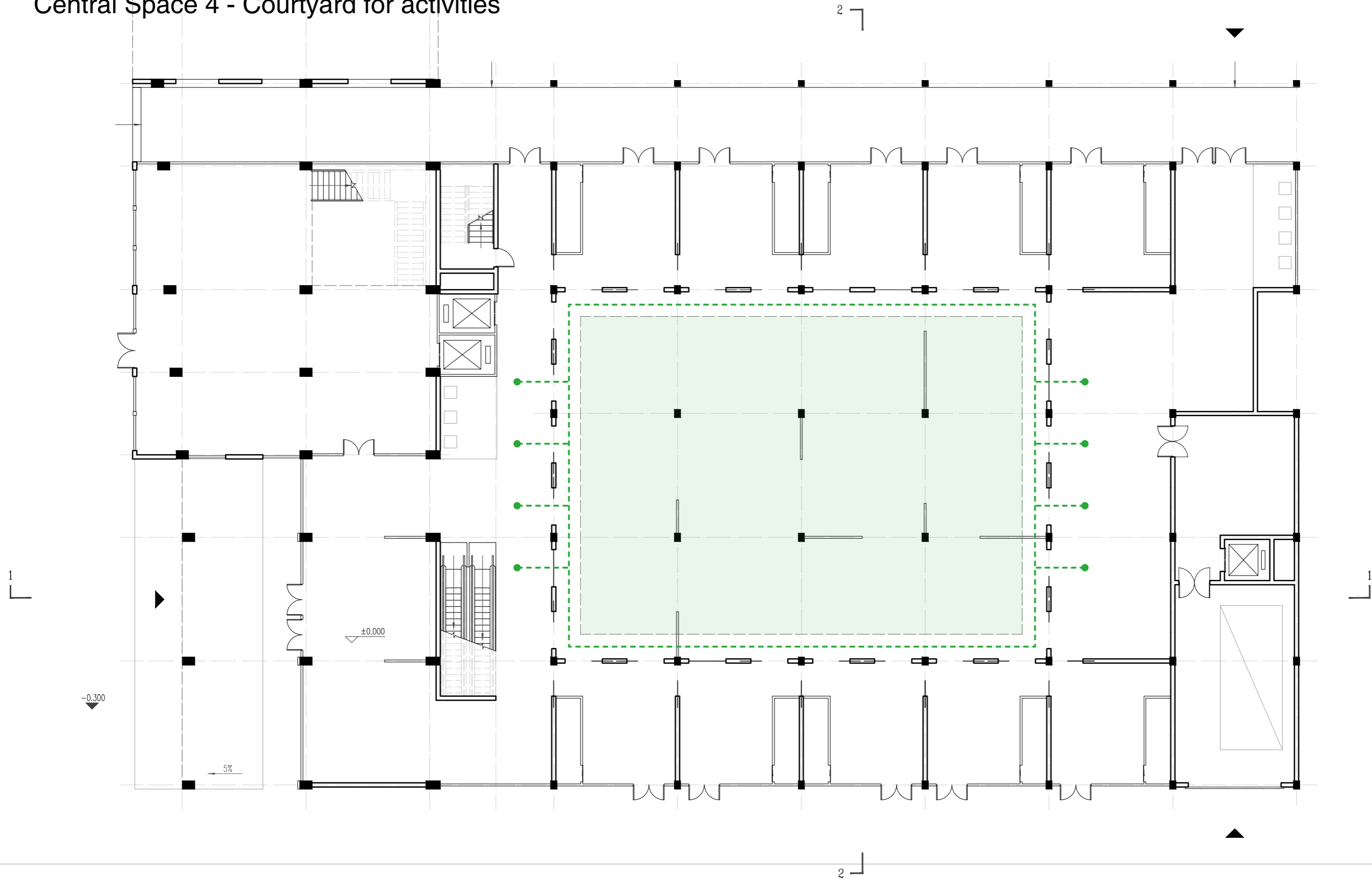


Central Space 3 - Ambiguity and Flexibility

2



Central Space 4 - Courtyard for activities









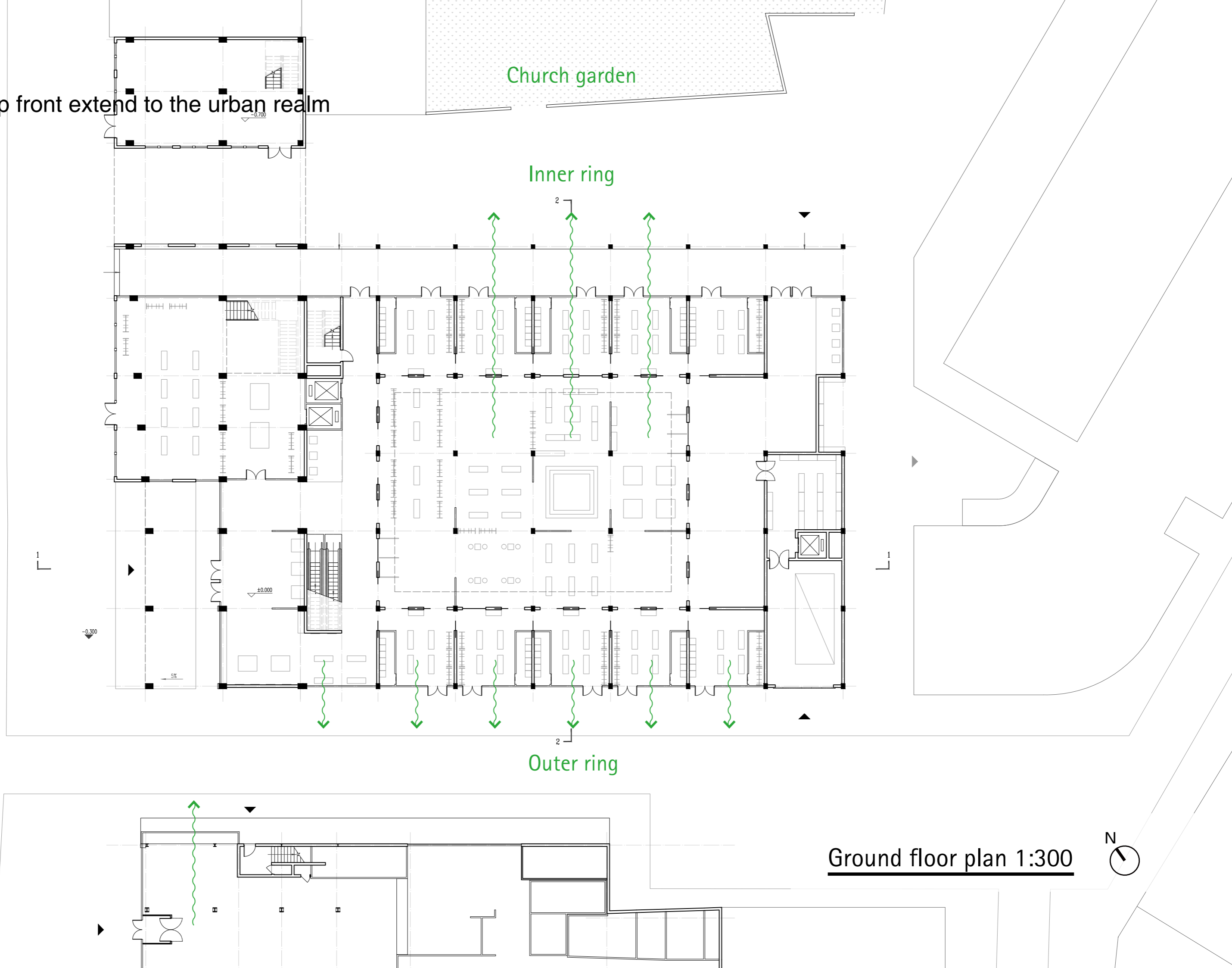
Shop front extend to the urban realm

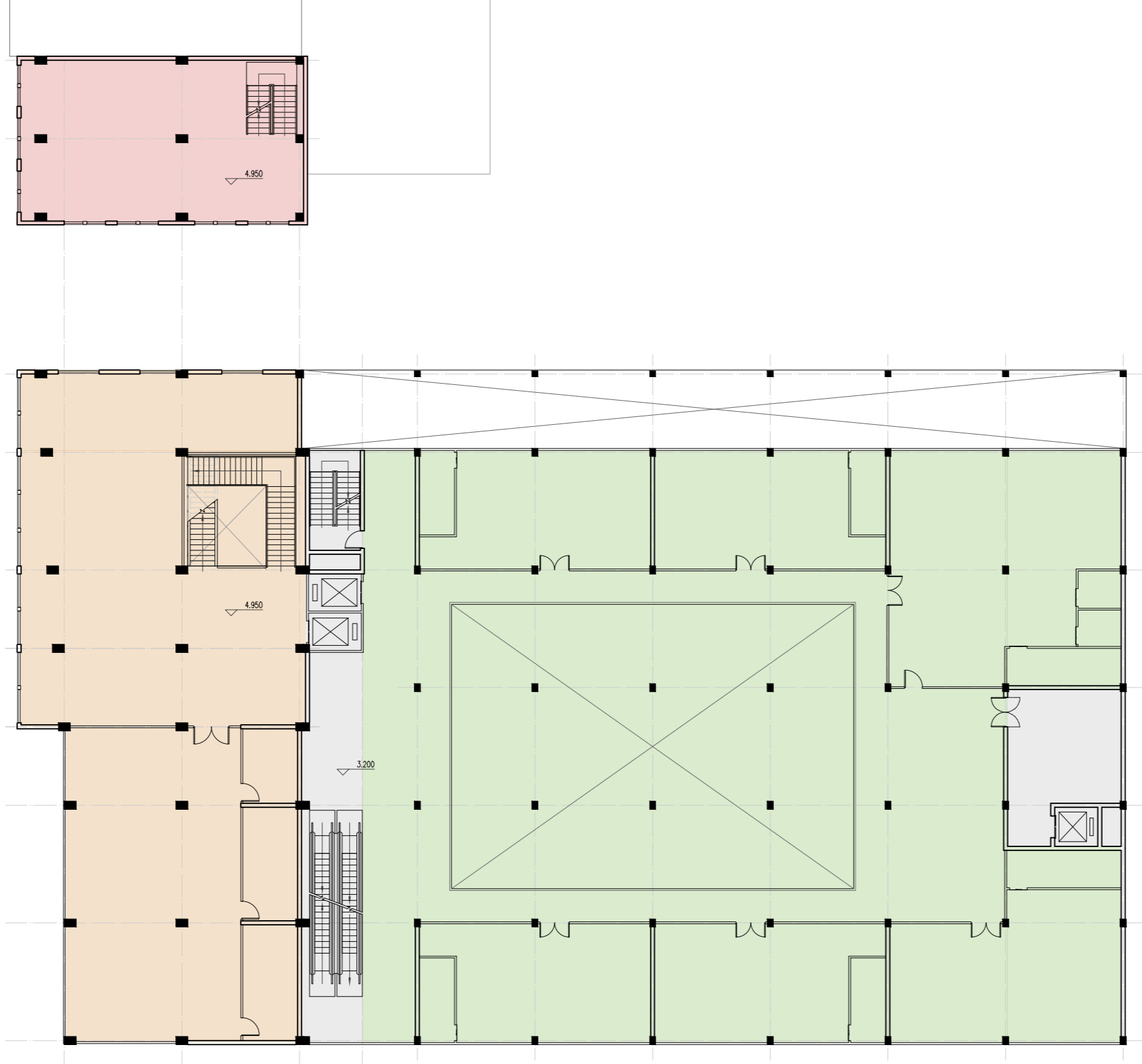
Church garden

Inner ring

Outer ring

Ground floor plan 1:300



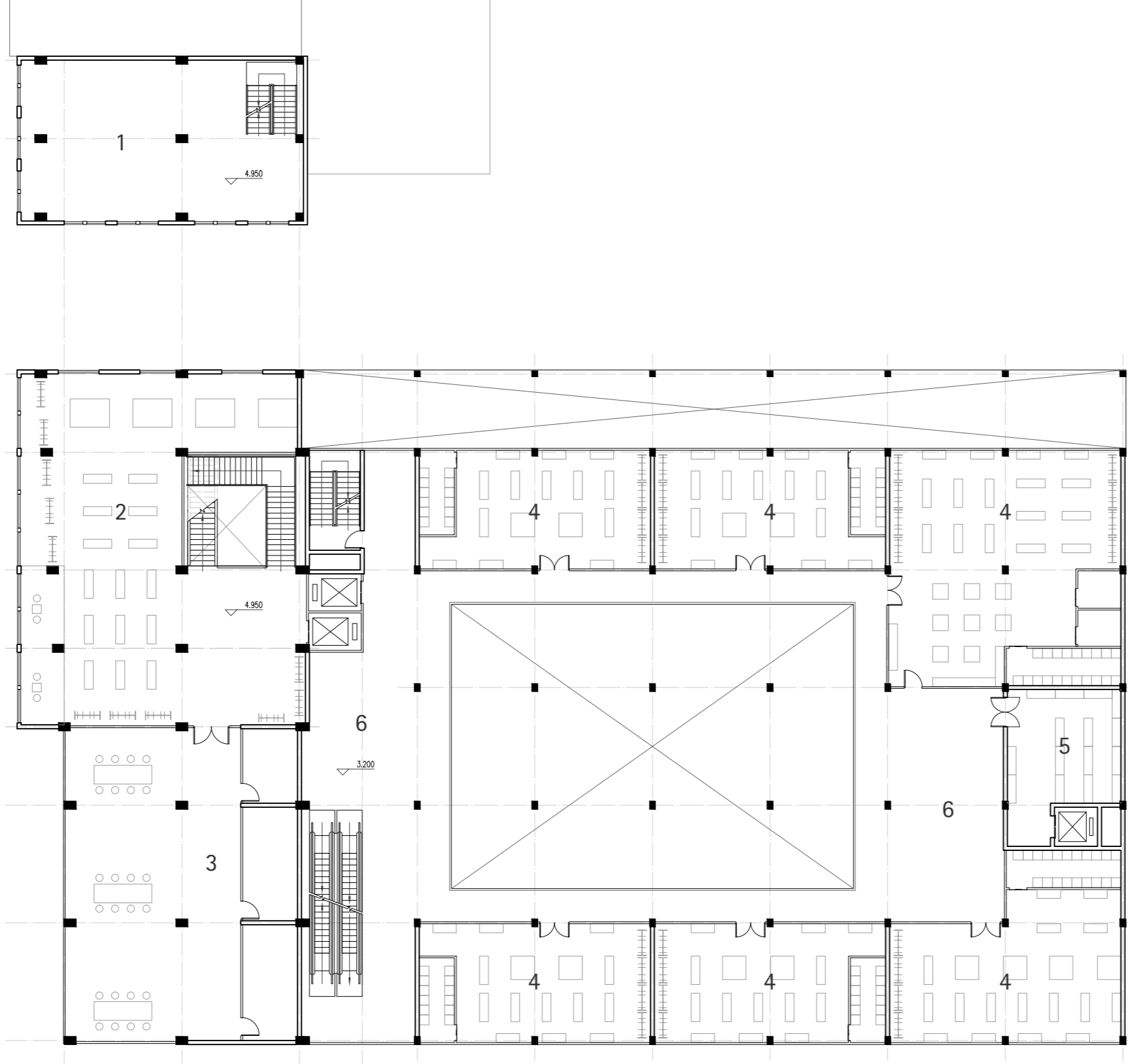


- Customer Center
- Innovative Center
- Shop
- Transportation & Logistics

First floor plan 1:300

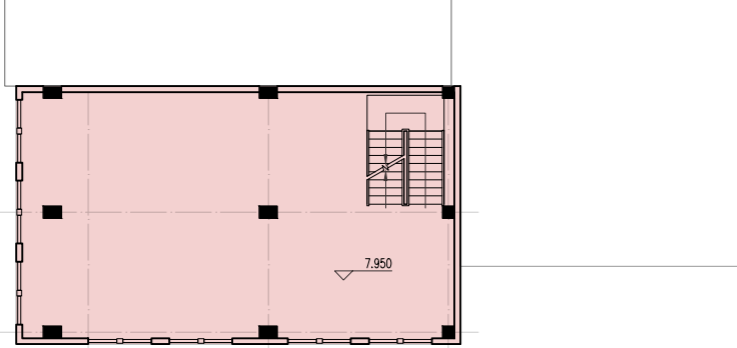


1. Customer center (product service)
2. Innovative center (product experience)
3. M-lab (bespoke workshop)
4. Shop
5. Logistics service
6. Exhibition / leisure



First floor plan 1:300

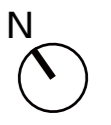




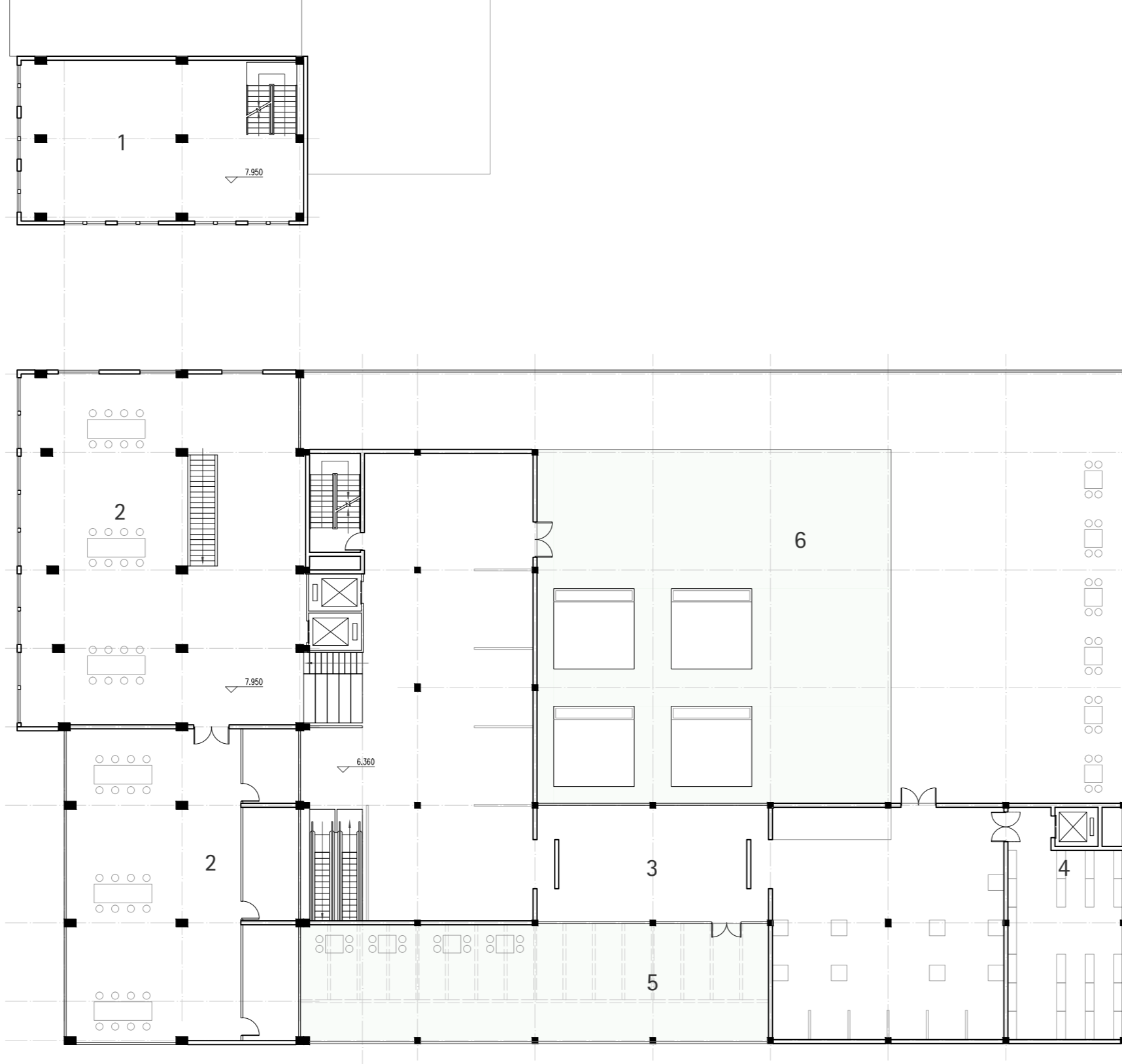
- Customer Center
- Innovative Center
- Gallery
- Transportation & Logistics



Second floor plan 1:300

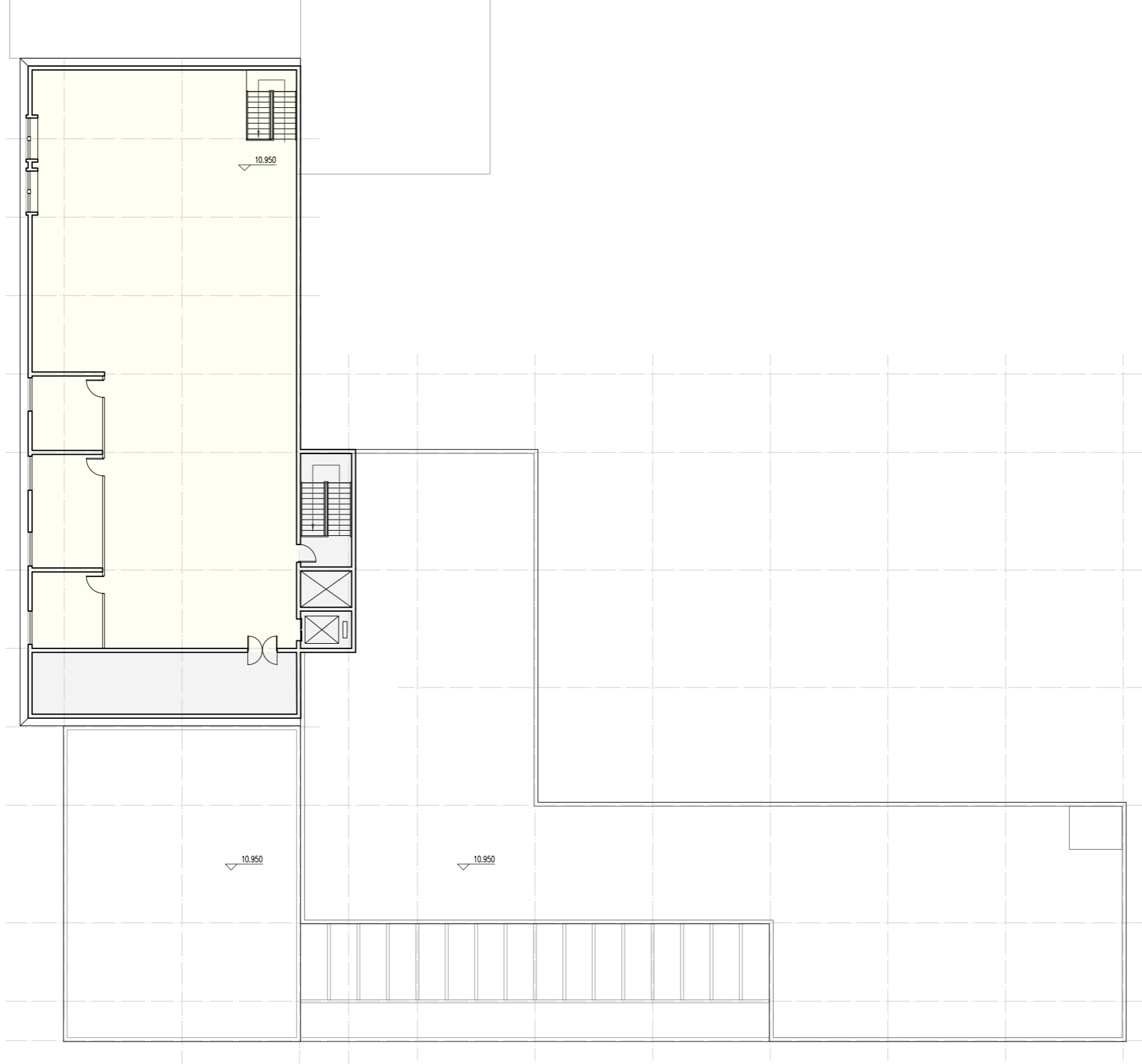


1. Archive
2. Innovative center (product development)
3. Gallery (product exhibition)
4. Logistics service
5. Terrace (cafe)
6. Roof garden (outdoor exhibition / party)



Second floor plan 1:300

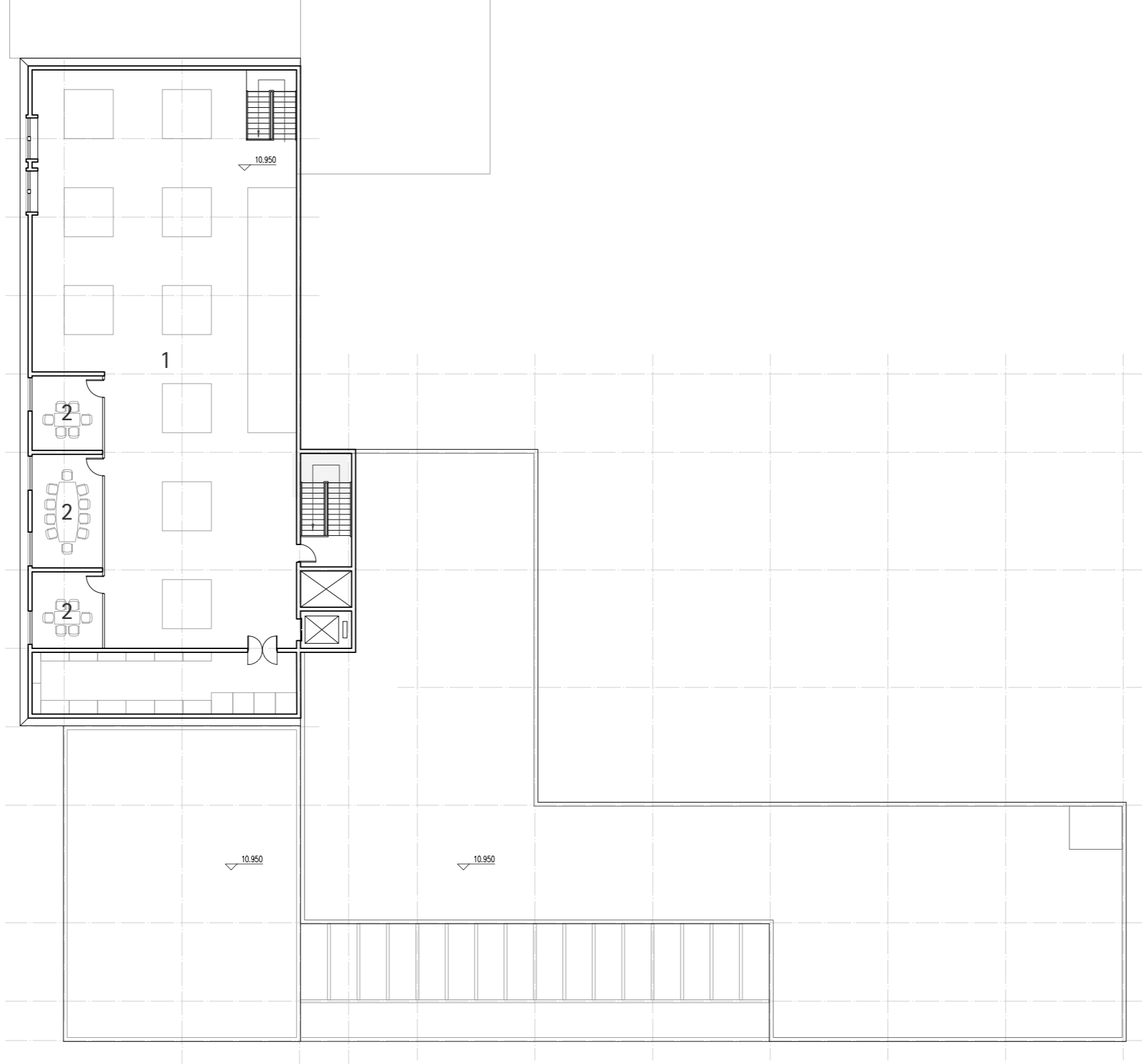




Customer Center
Transportation & Logistics

Third floor plan 1:300

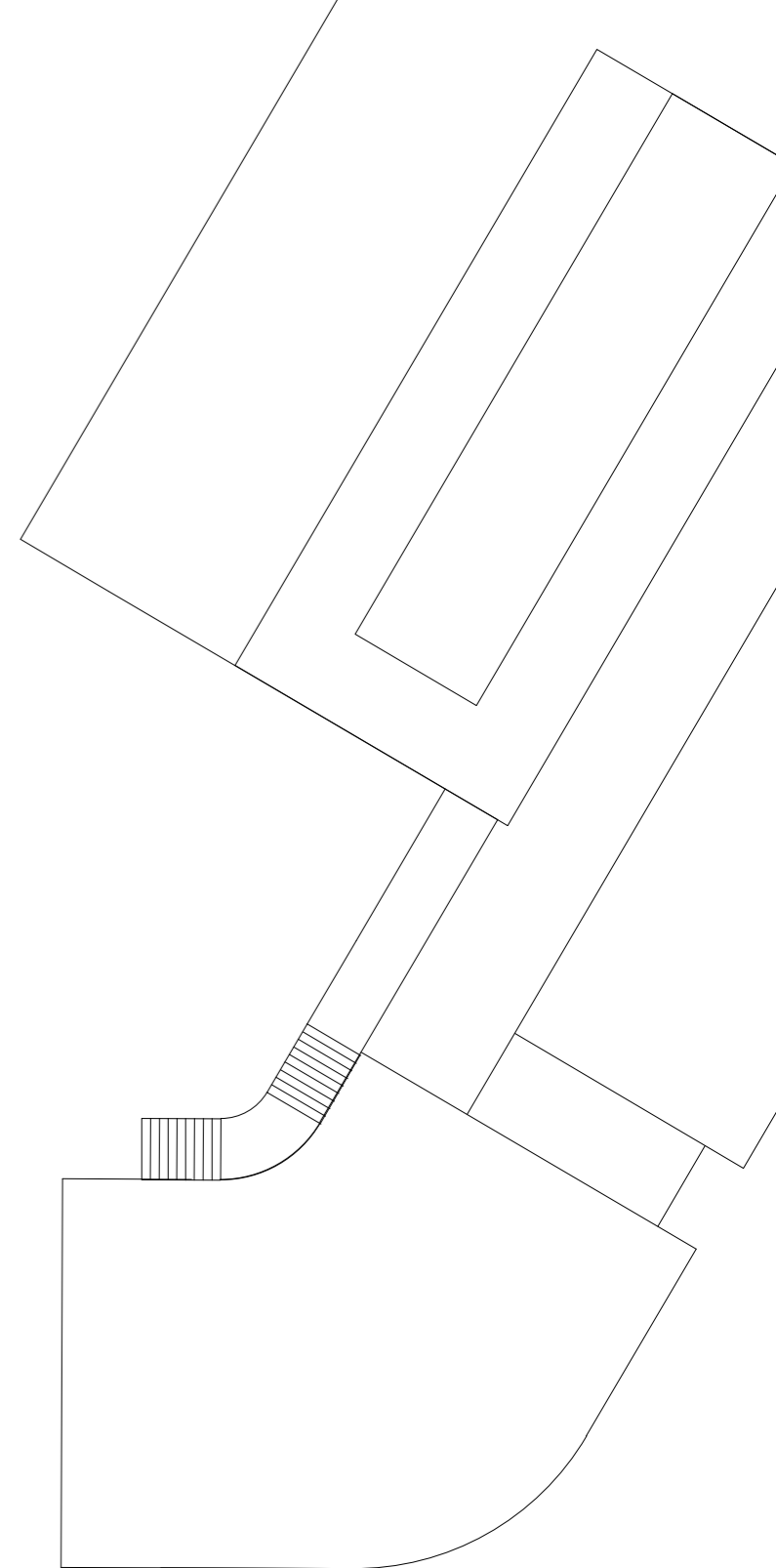




- 1. Immersive experience center
- 2. Meeting rooms
- 3. Logistics service

Third floor plan 1:300

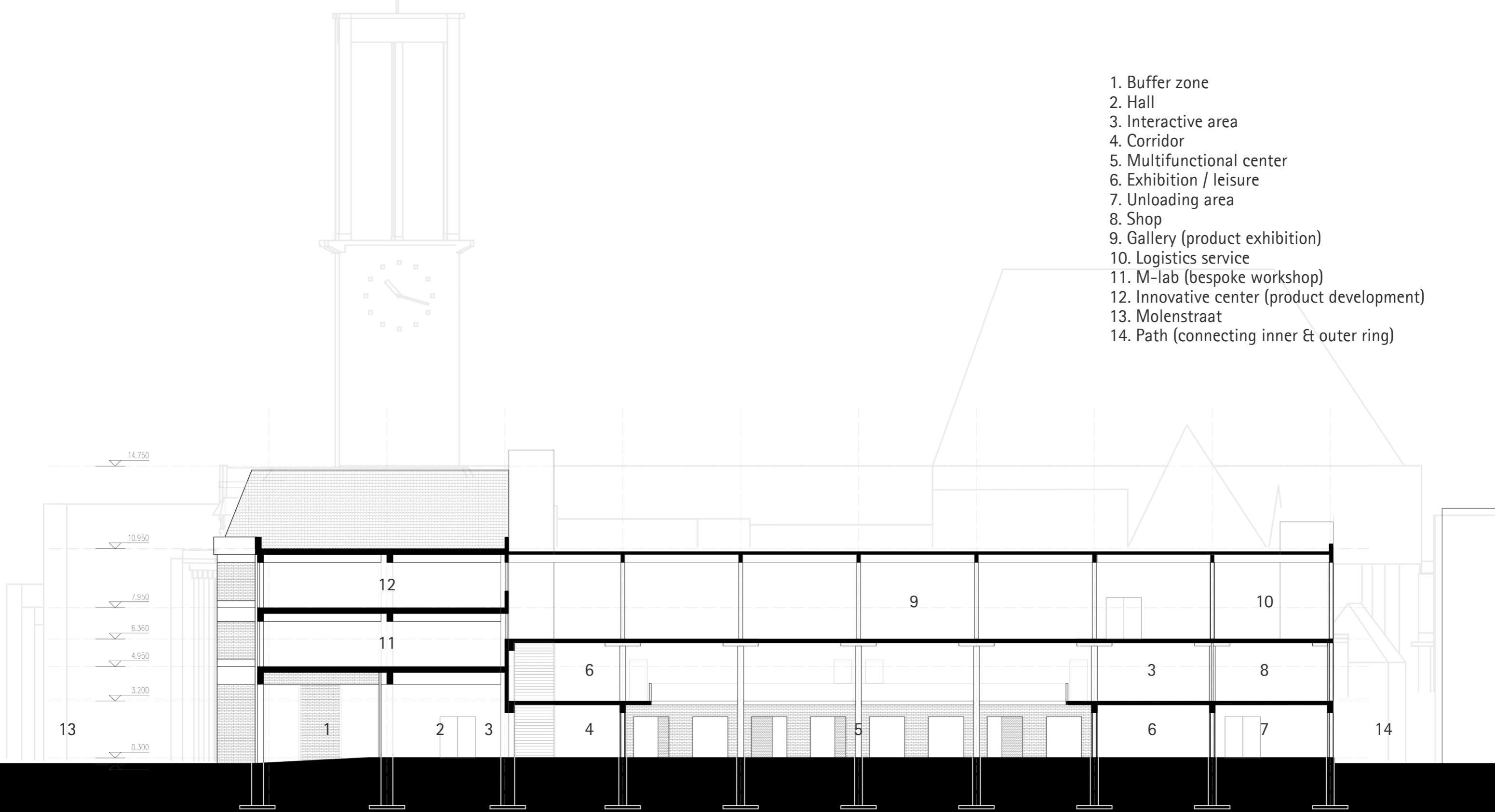




Roof floor plan 1:300



- 1. Buffer zone
- 2. Hall
- 3. Interactive area
- 4. Corridor
- 5. Multifunctional center
- 6. Exhibition / leisure
- 7. Unloading area
- 8. Shop
- 9. Gallery (product exhibition)
- 10. Logistics service
- 11. M-lab (bespoke workshop)
- 12. Innovative center (product development)
- 13. Molenstraat
- 14. Path (connecting inner & outer ring)



14.750
 10.950
 7.950
 6.360
 4.950
 3.200
 0.300

13

1

2

3

4

5

9

6

7

14

12

11

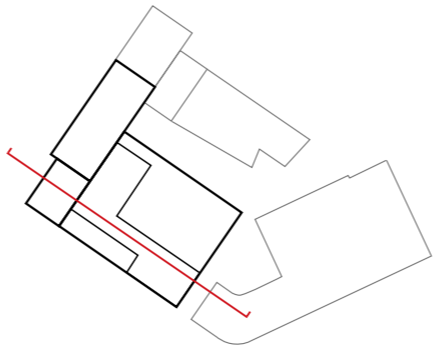
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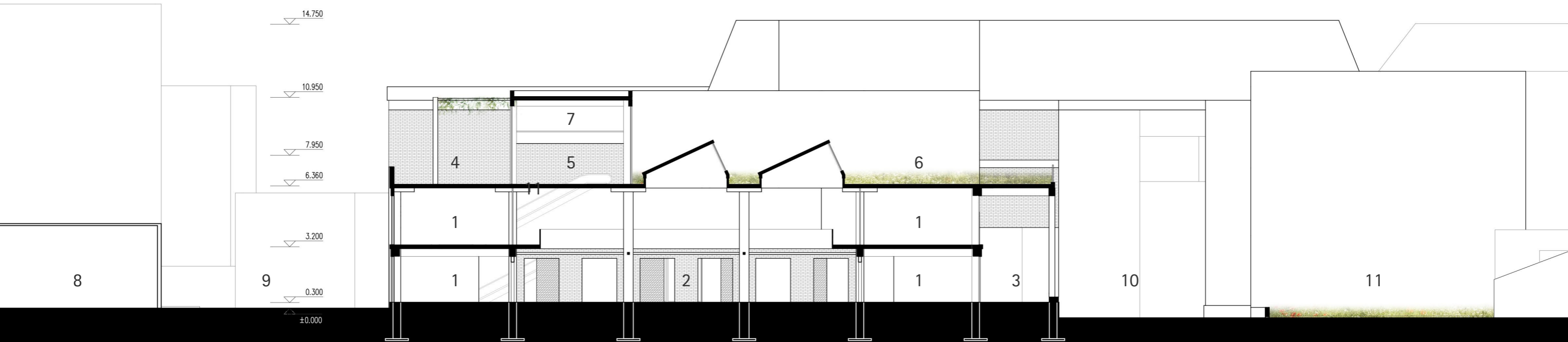
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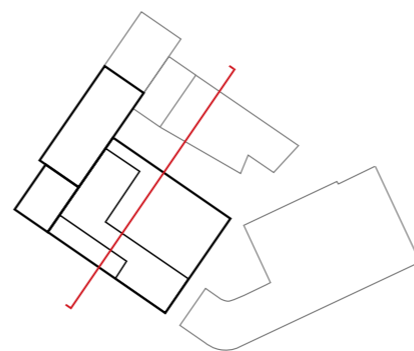
Section 1-1 1:200

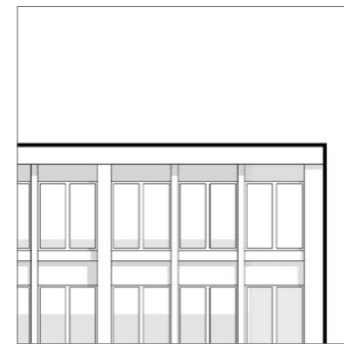
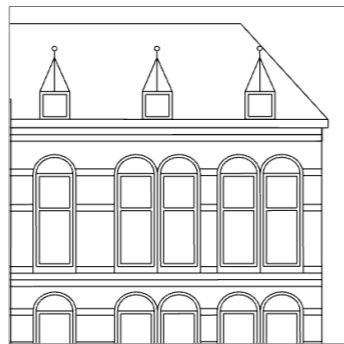


- 1. Shop
- 2. Multifunctional center
- 3. Arcade
- 4. Roof garden (for gallery)
- 5. Gallery (product exhibition)
- 6. Roof garden
- 7. Innovative center
- 8. Burger King (renovated)
- 9. Inner ring
- 10. Outer ring
- 11. Church garden



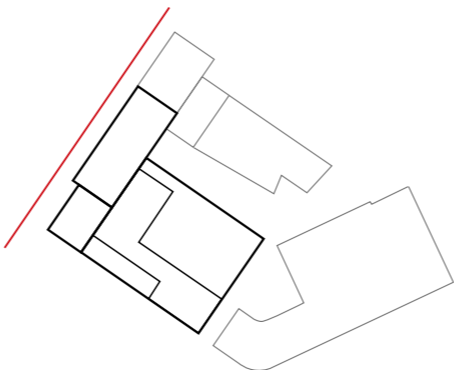
Section 2-2 1:200





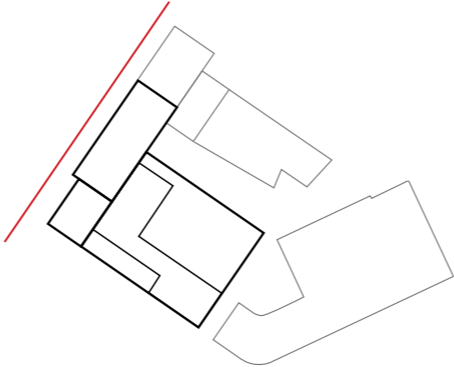


Northwest Elevation

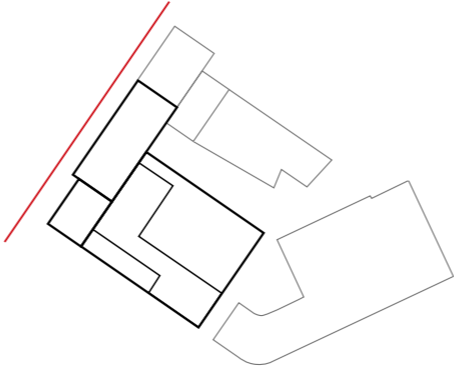
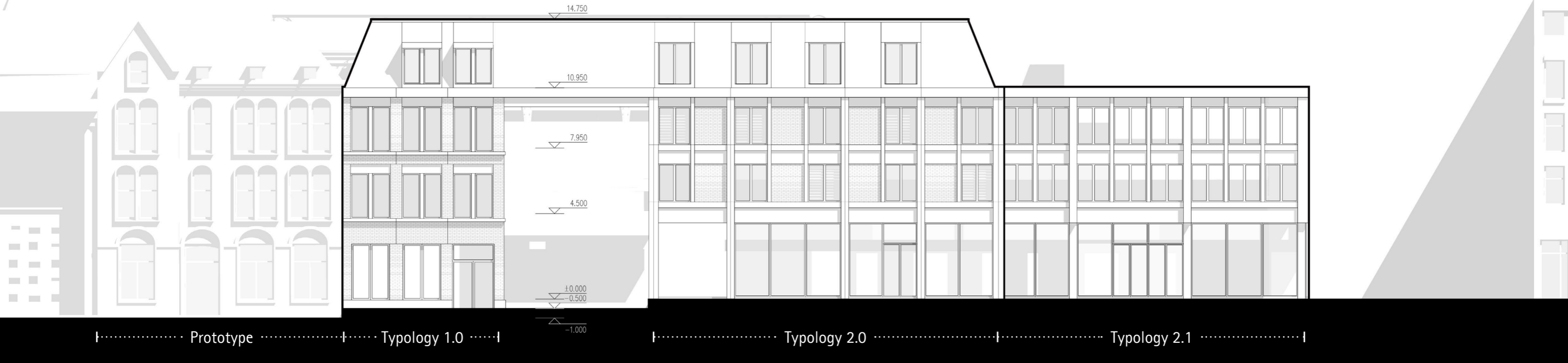




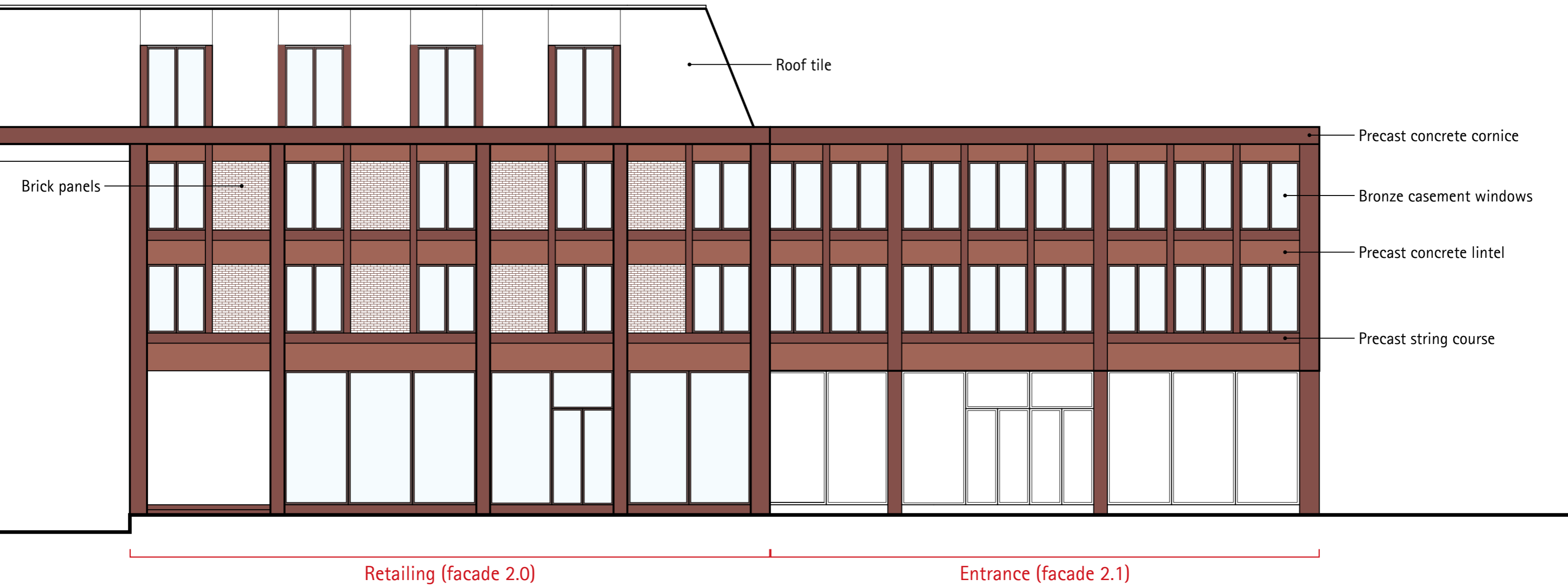
Northwest Elevation

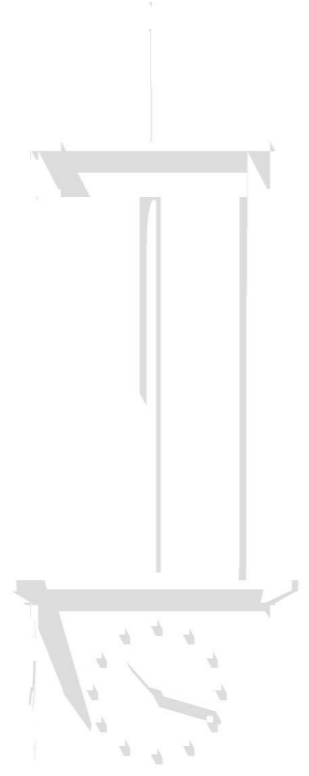


Rectory | Customer Center | Inner Ring | Innovative Center | Entrance | Outer Ring





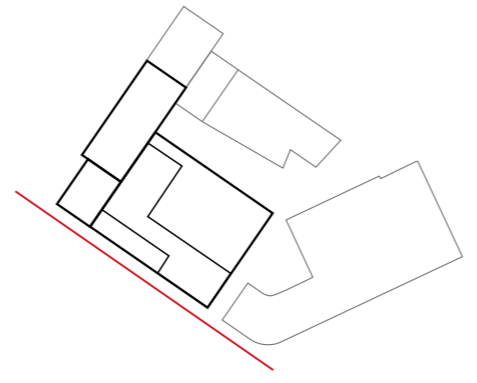


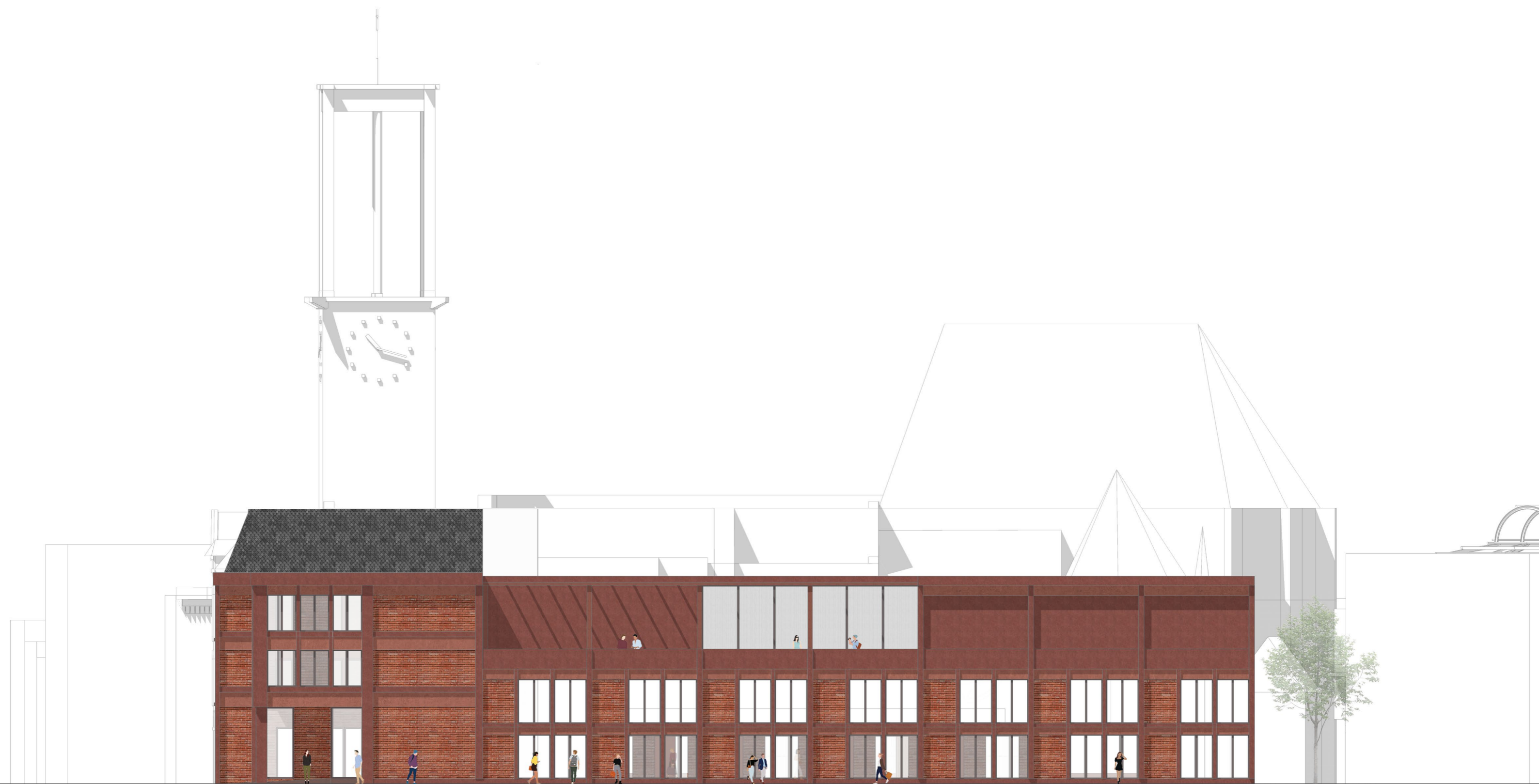


14.350
10.950
7.950
4.950
0.300
±0.000

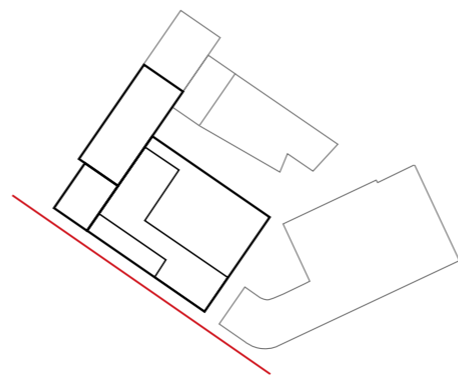


Southwest Elevation





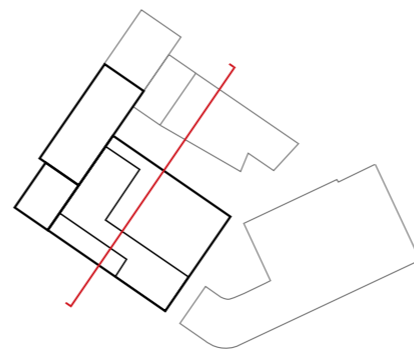
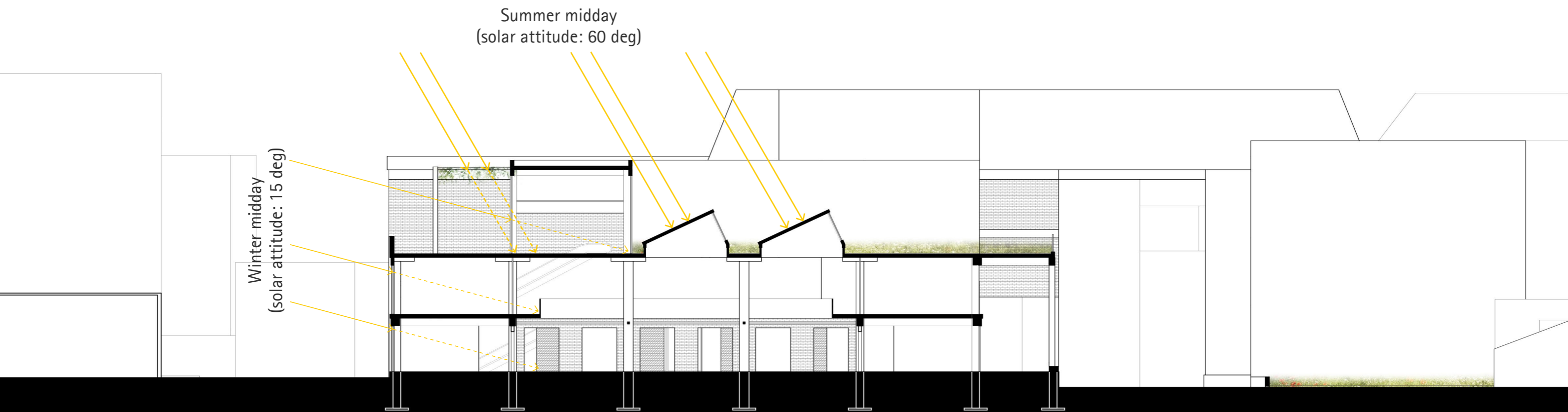
Southwest Elevation



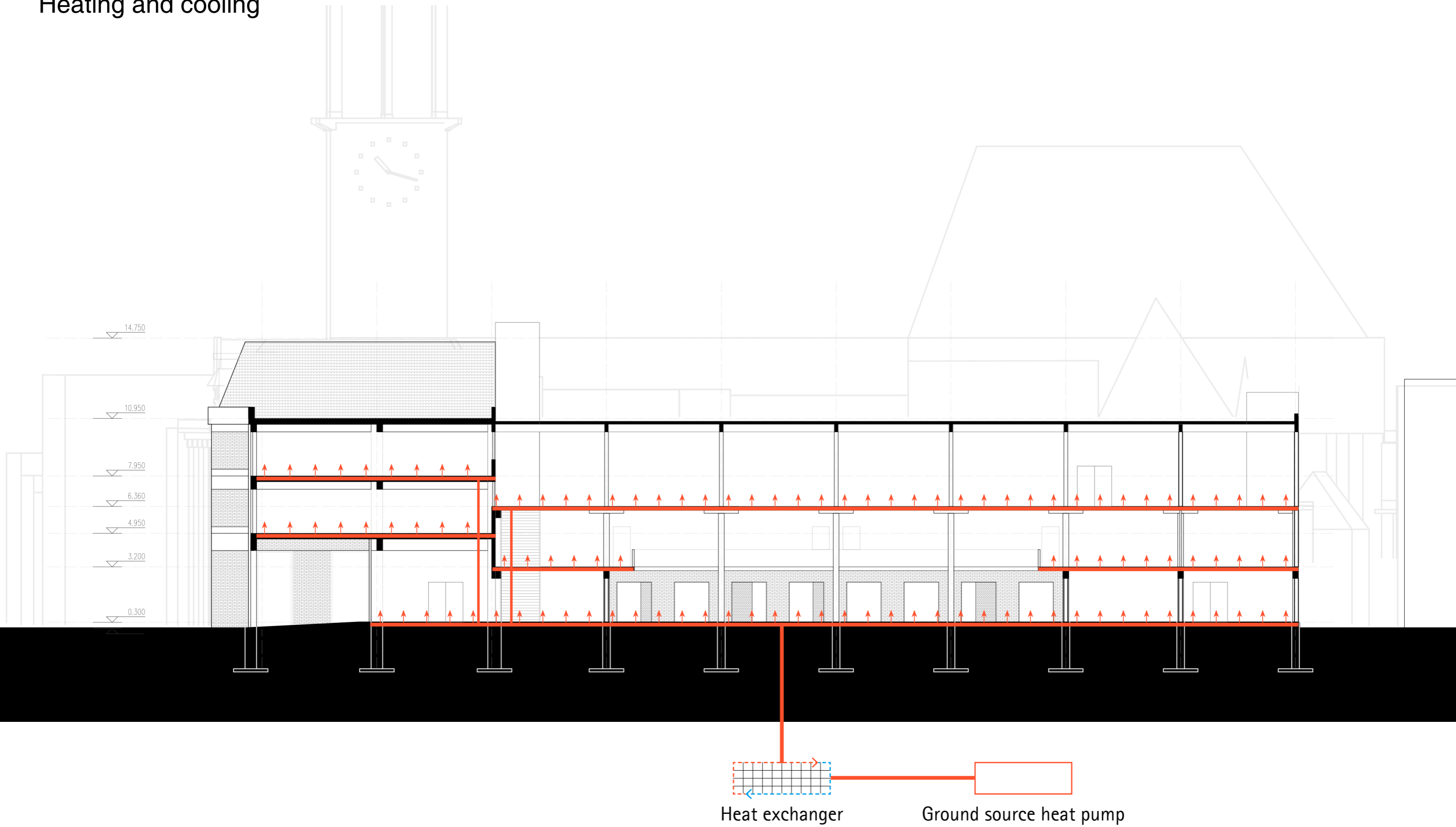


"MATERIALIZATION"

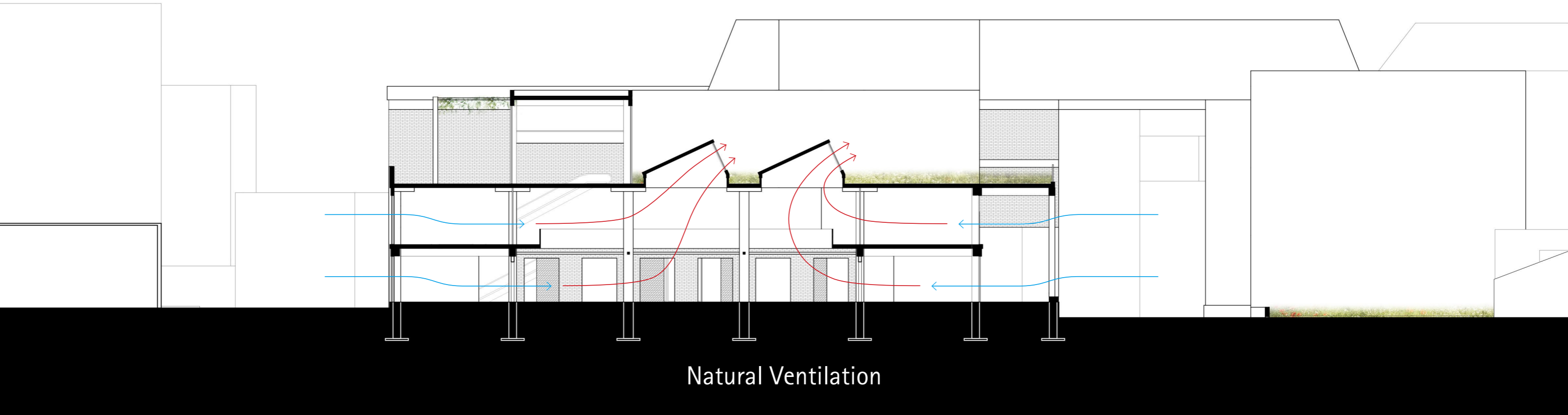
Daylight Analysis



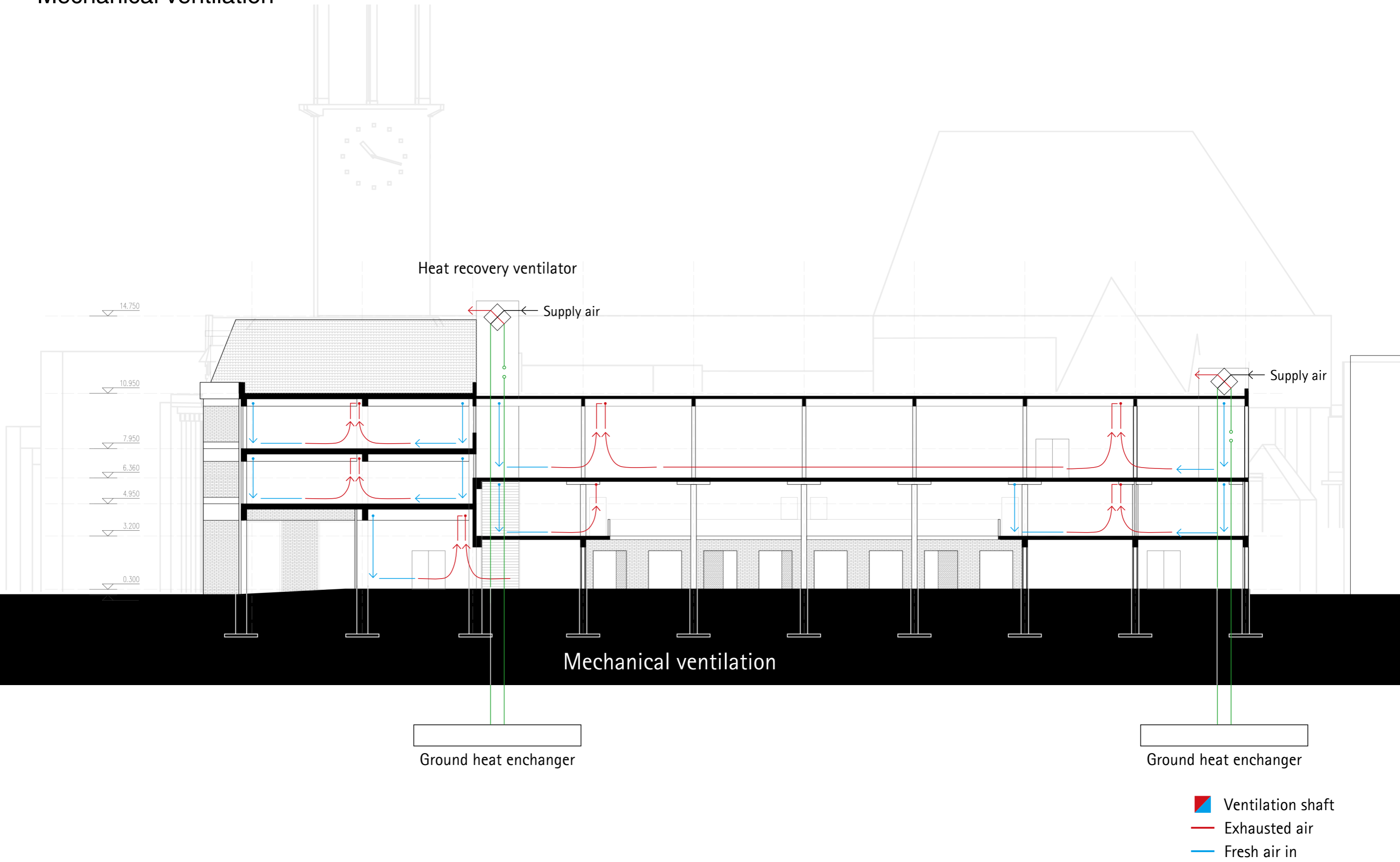
Heating and cooling



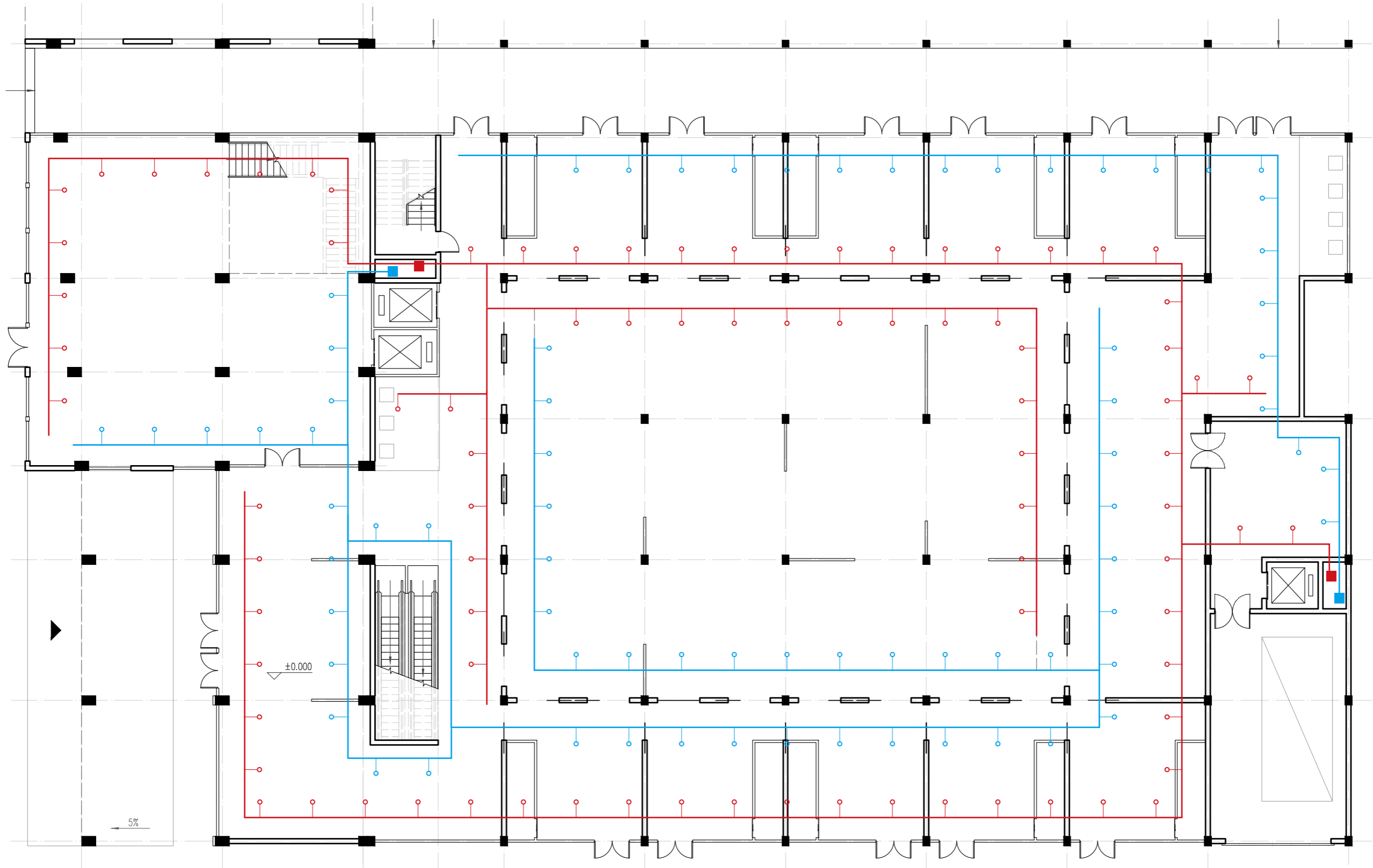
Natural ventilation



Mechanical ventilation



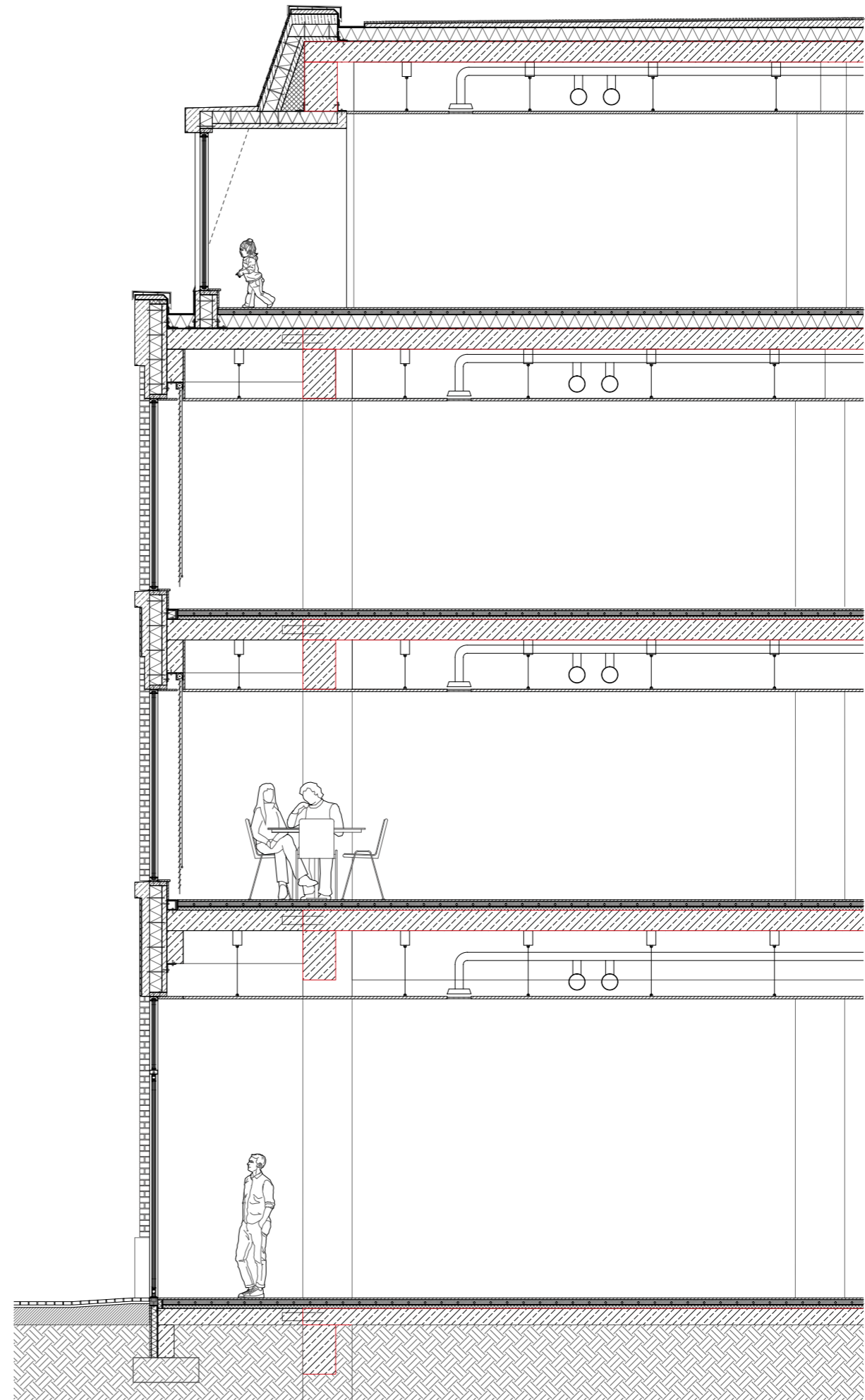
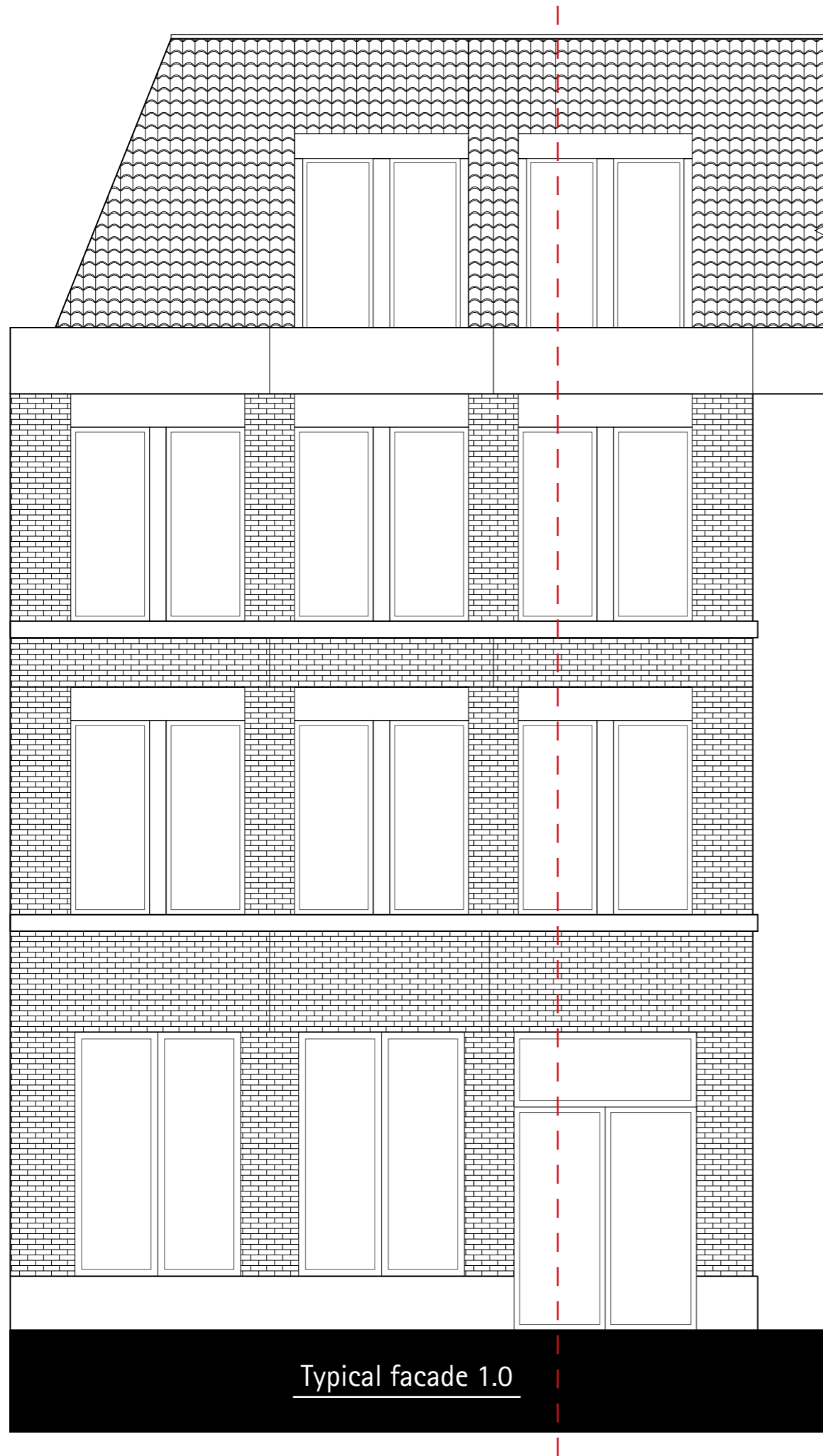
Mechanical ventilation

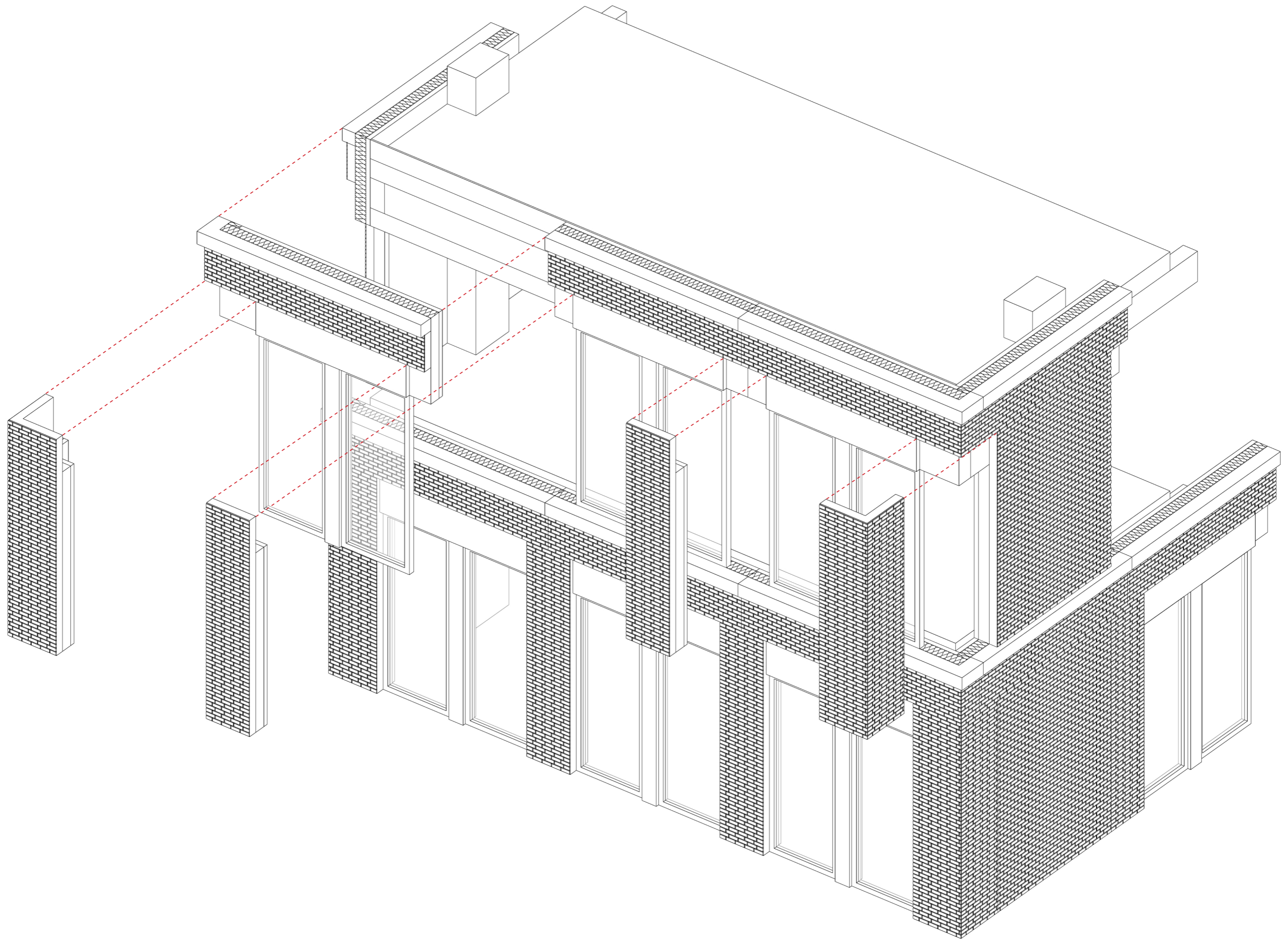


- Ventilation shaft
- Exhausted air
- Fresh air in



Typical facade 1.0



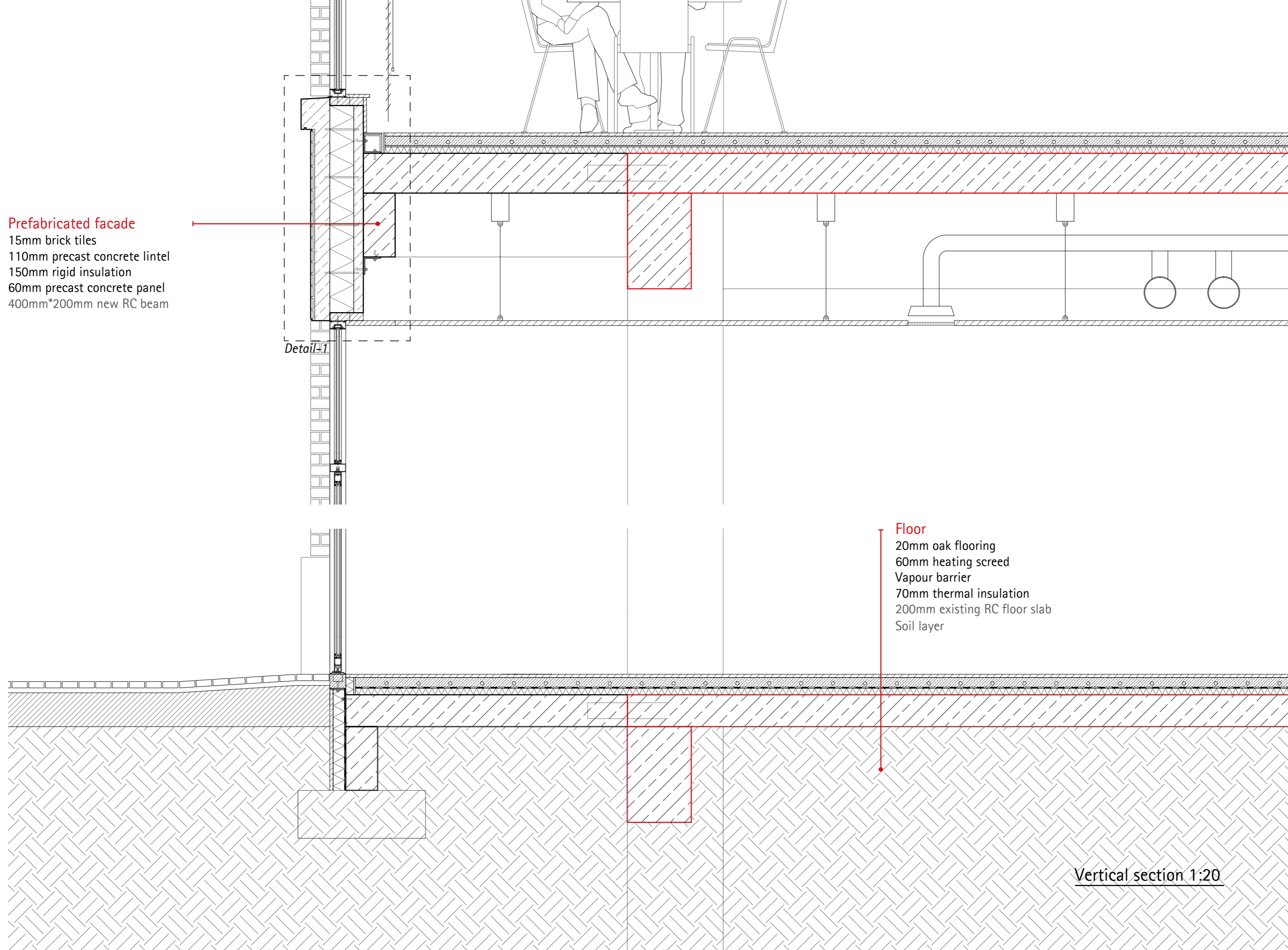


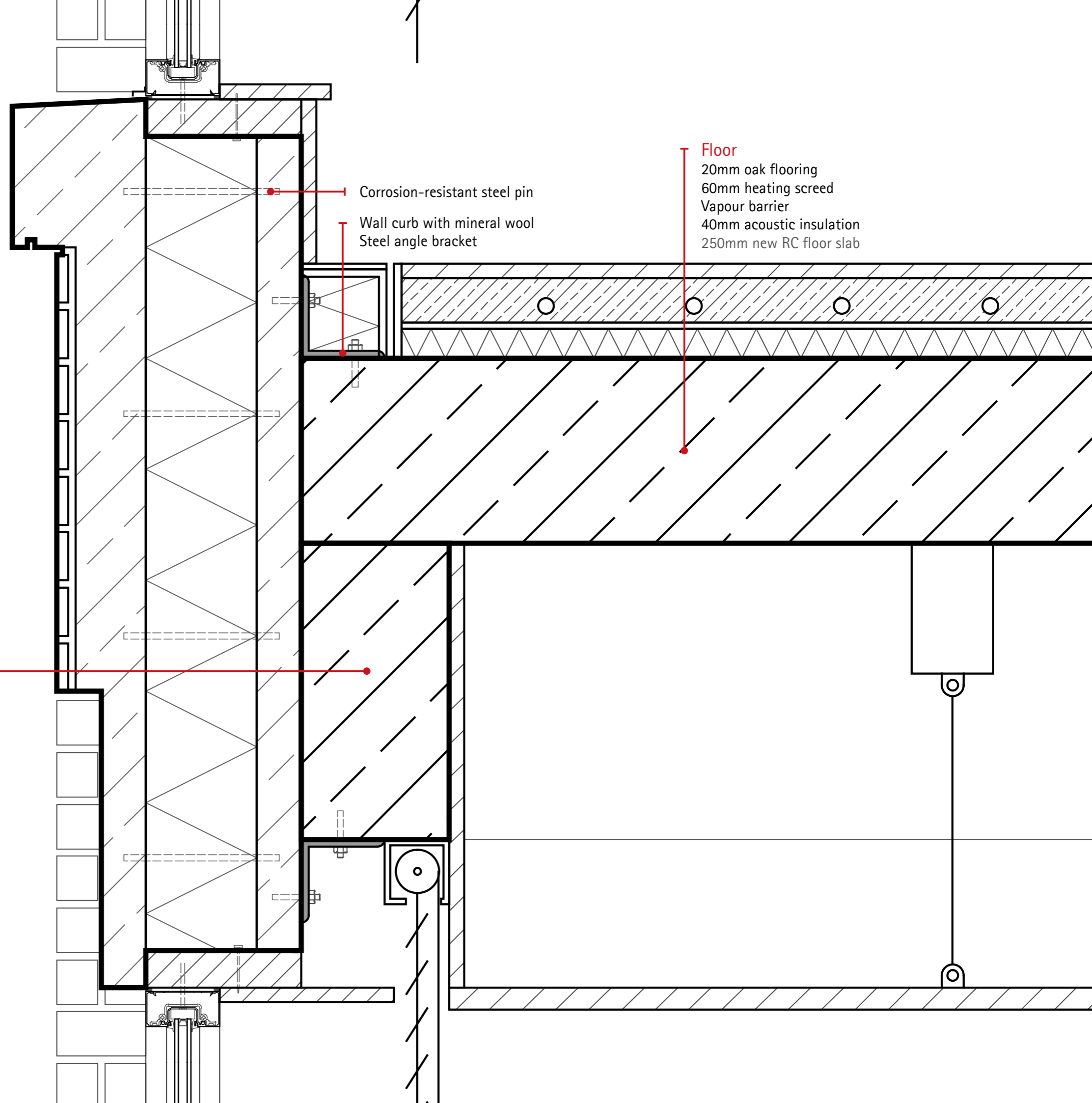
Prefabricated facade
15mm brick tiles
110mm precast concrete lintel
150mm rigid insulation
60mm precast concrete panel
400mm*200mm new RC beam

Detail-1

Floor
20mm oak flooring
60mm heating screed
Vapour barrier
70mm thermal insulation
200mm existing RC floor slab
Soil layer

Vertical section 1:20





Prefabricated facade
15mm brick tiles
110mm precast concrete lintel
150mm rigid insulation
60mm precast concrete panel
400mm*200mm new RC beam

Corrosion-resistant steel pin

Wall curb with mineral wool
Steel angle bracket

Floor
20mm oak flooring
60mm heating screed
Vapour barrier
40mm acoustic insulation
250mm new RC floor slab

Prefabricated roof (upper part, type1)

- Roof tiles
- Roof tile batten
- 110mm precast concrete
- 150mm rigid insulation
- 60mm precast concrete panel
- 250mm existing RC floor slab

Prefabricated dormer

- 180mm precast concrete cornice
- 150mm rigid insulation
- 60mm precast concrete panel

Prefabricated facade (top)

- 180mm precast concrete cornice
- 150mm rigid insulation
- 60mm precast concrete panel

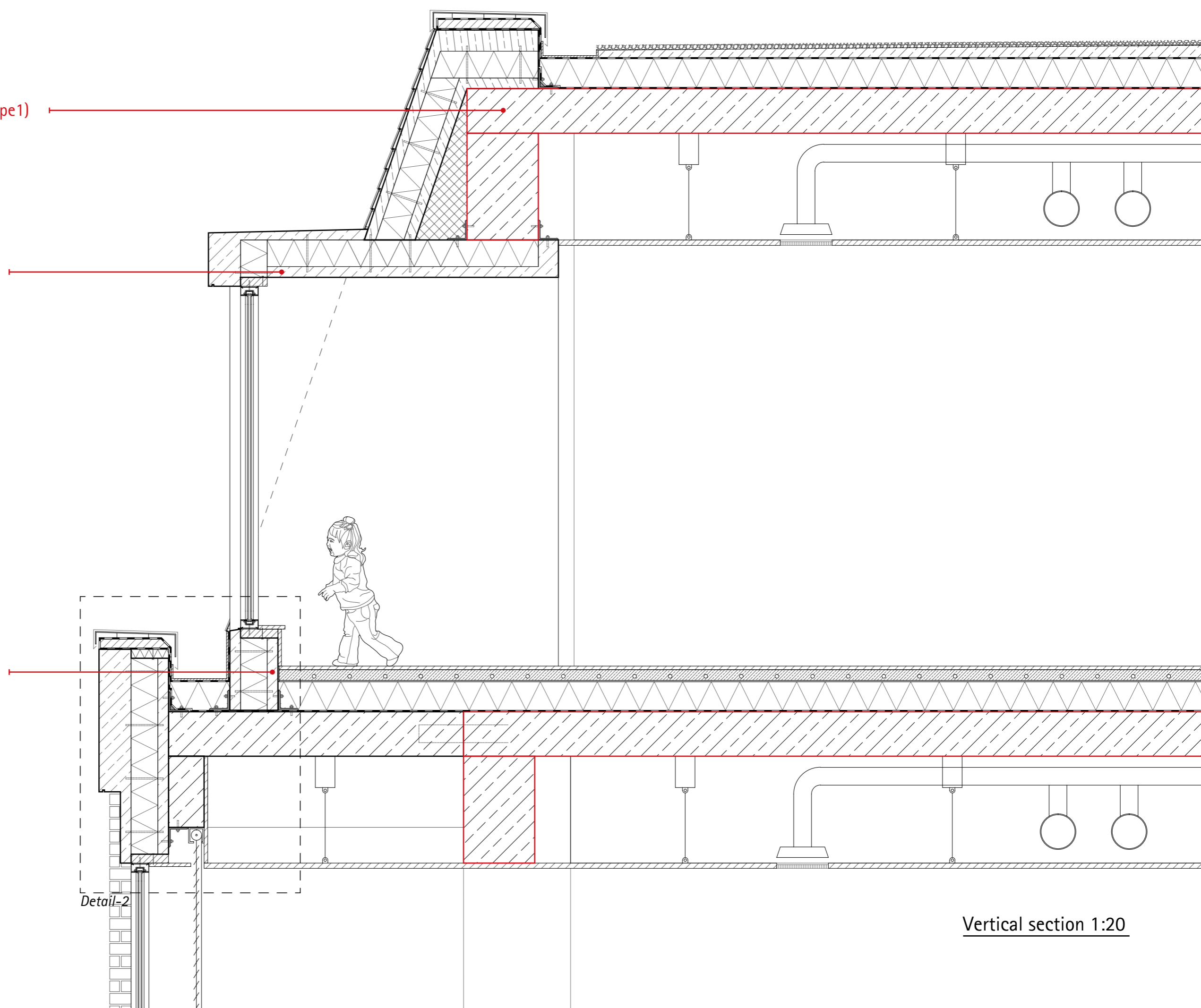
- Waterproof layer
- Gutter
- Waterproof layer

Prefabricated roof (lower part)

- 60mm precast concrete panel
- 150mm rigid insulation
- 60mm precast concrete panel

Detail-2

Vertical section 1:20



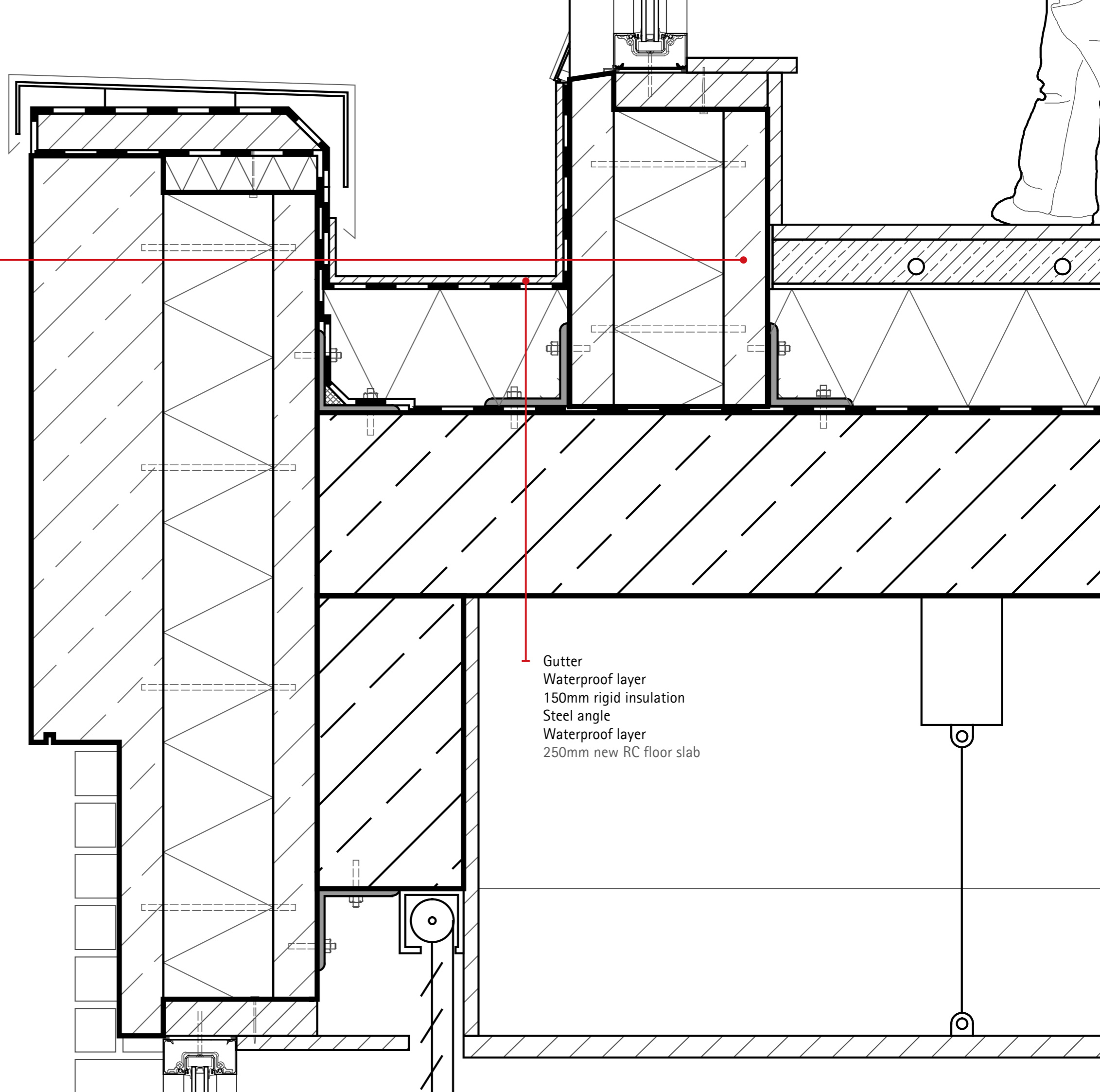
Prefabricated facade

- 180mm precast concrete cornice
- 150mm rigid insulation
- 60mm precast concrete panel
- Waterproof layer (two layers)
- Gutter
- Waterproof layer

Prefabricated dormer (lower part)

- 60mm precast concrete panel
- 150mm rigid insulation
- 60mm precast concrete panel

- Gutter
- Waterproof layer
- 150mm rigid insulation
- Steel angle
- Waterproof layer
- 250mm new RC floor slab

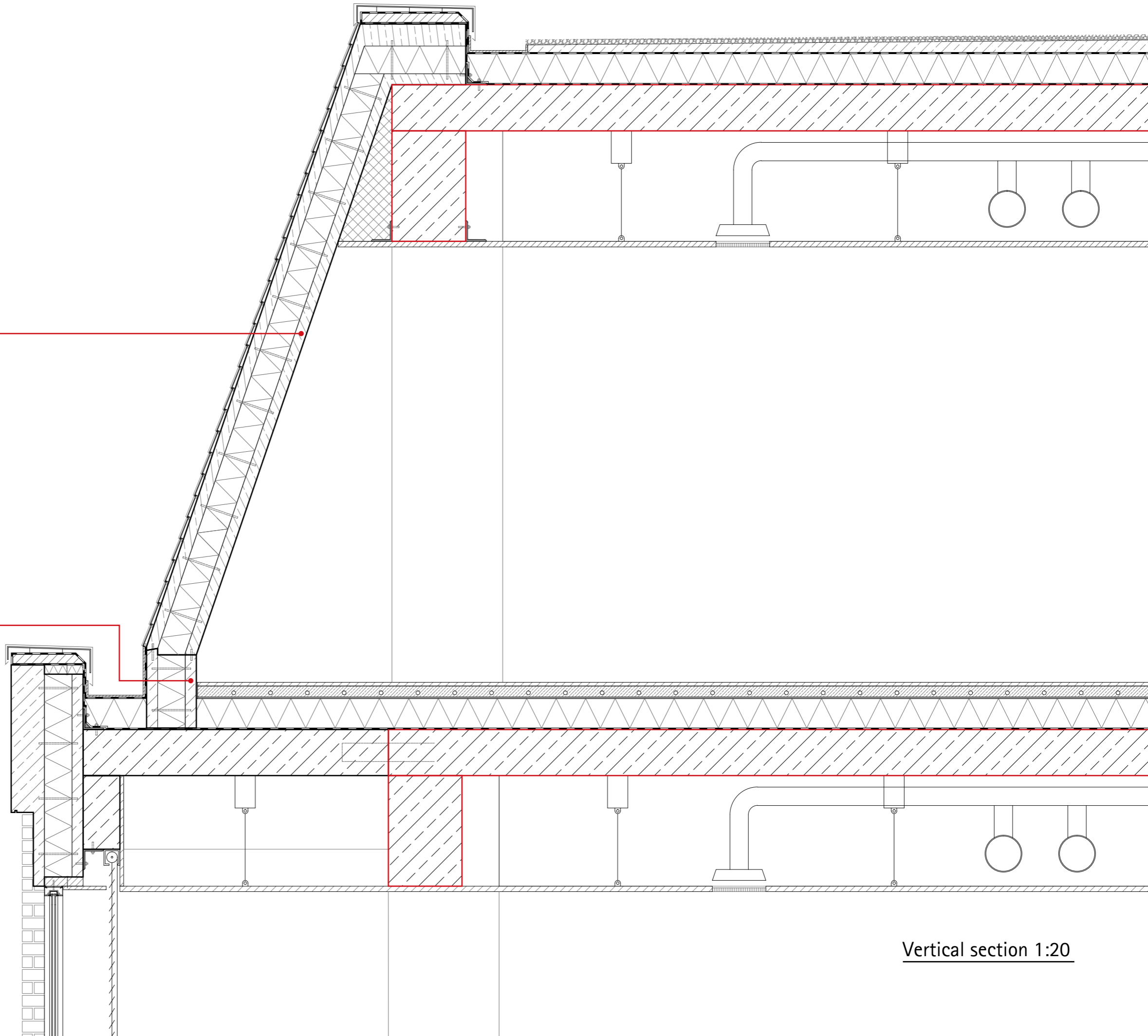


Prefabricated roof (upper part, type2)

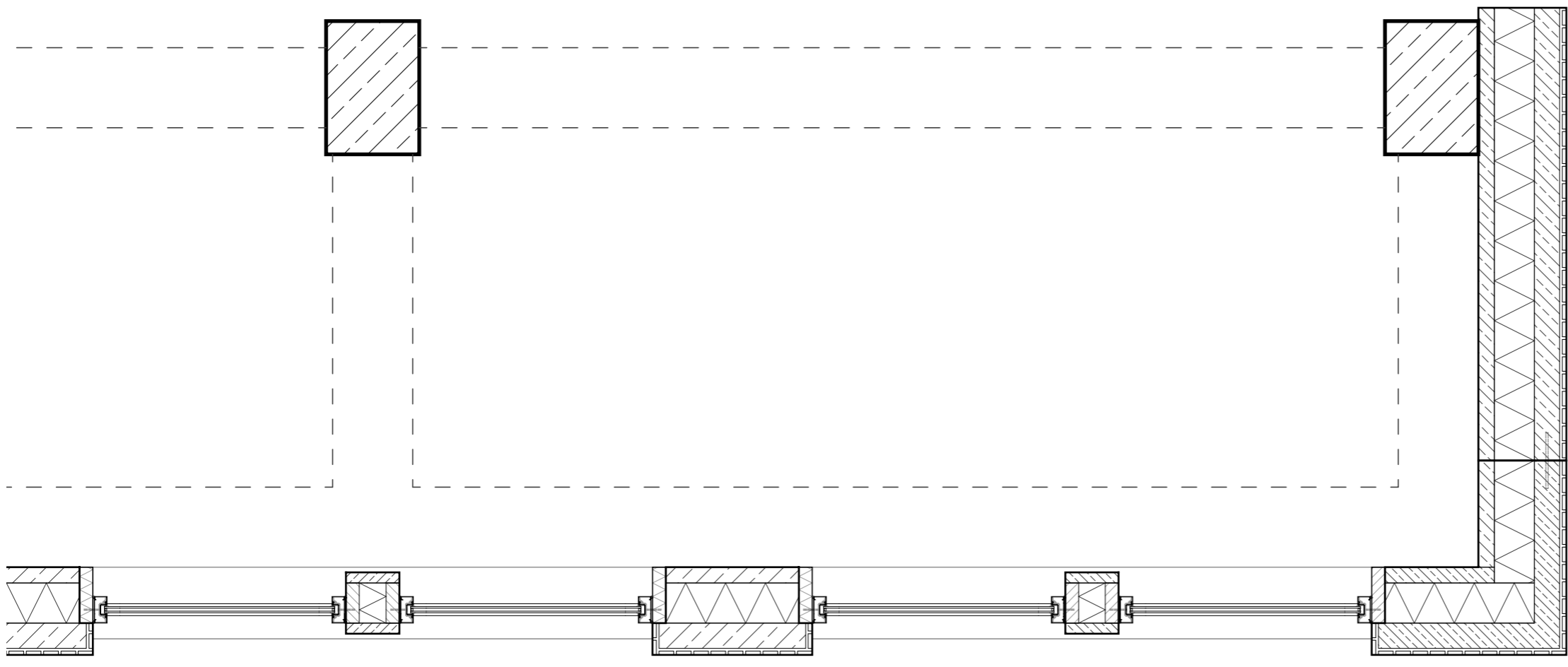
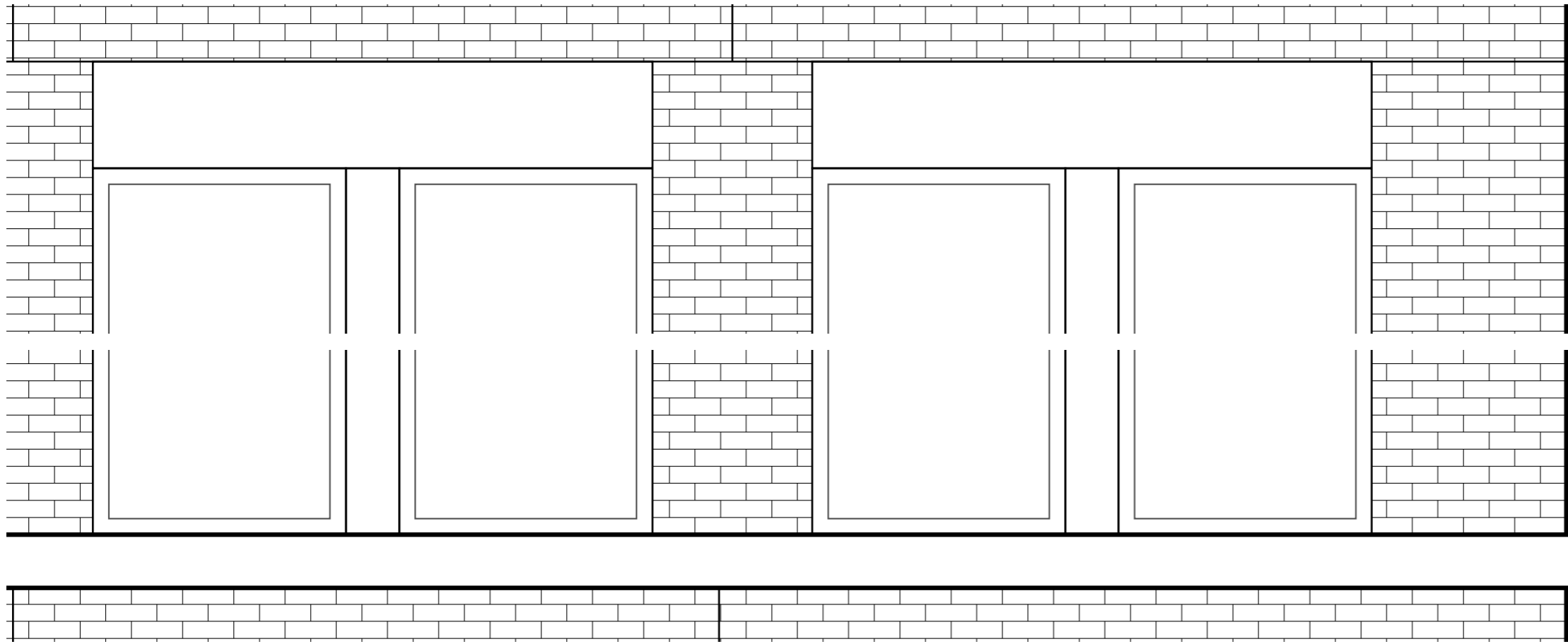
- Roof tiles
- Roof tile batten
- 110mm precast concrete
- 150mm rigid insulation
- 60mm precast concrete panel
- 250mm existing RC floor slab

Prefabricated roof (lower part)

- 60mm precast concrete panel
- 150mm rigid insulation
- 60mm precast concrete panel



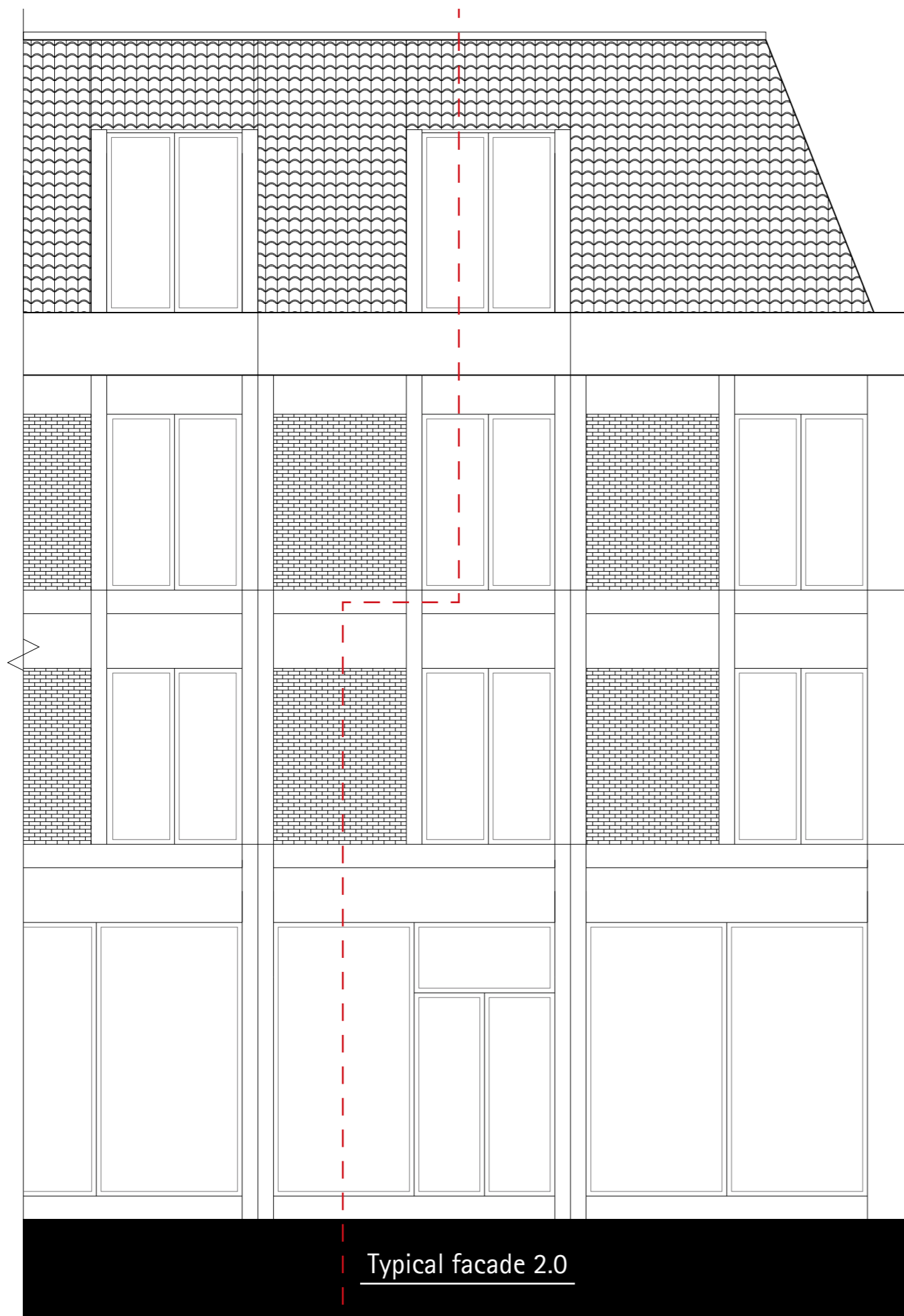
Vertical section 1:20



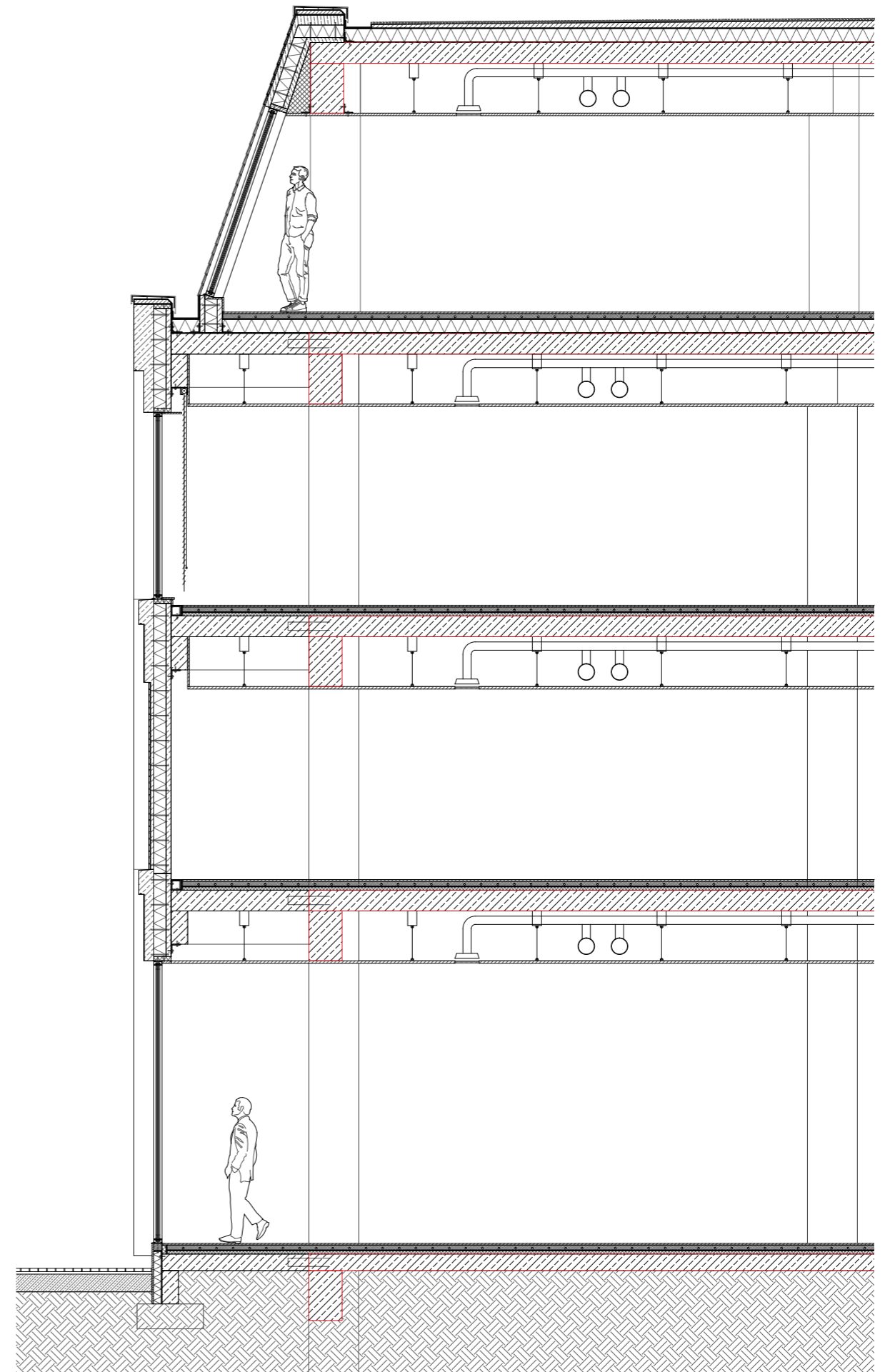
Horizontal section 1:20

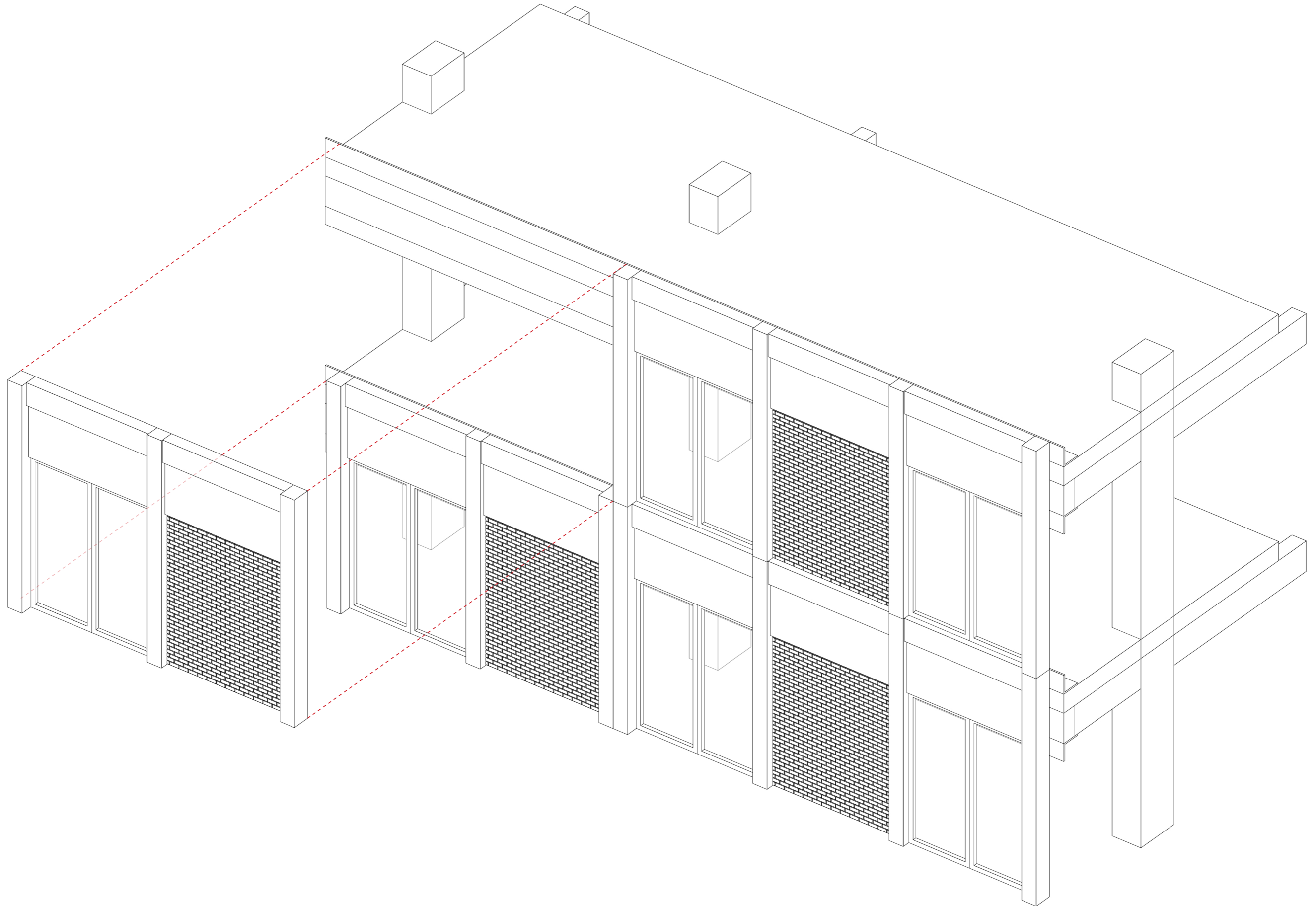


Typical facade 2.0



Typical facade 2.0



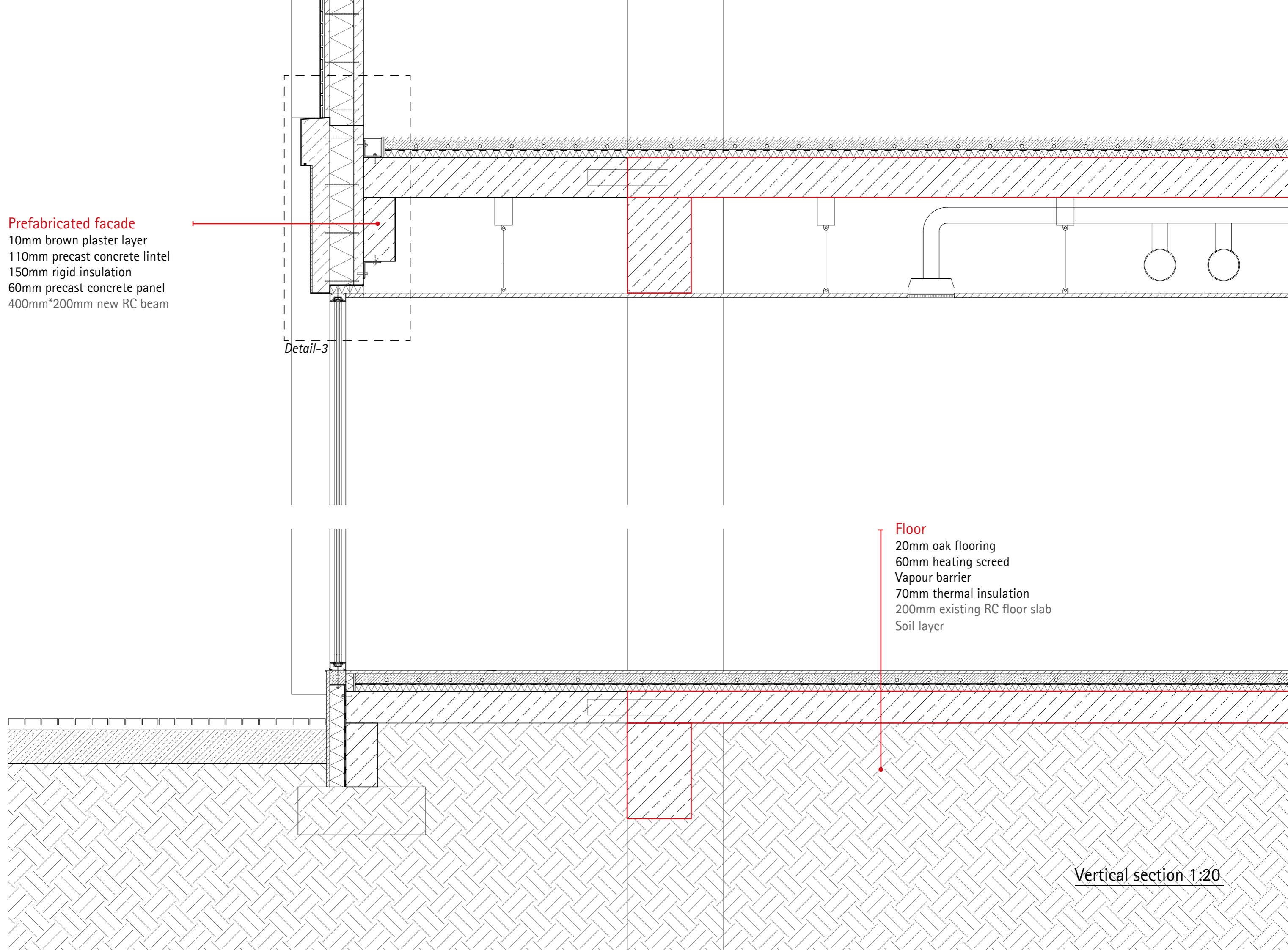


Prefabricated facade
10mm brown plaster layer
110mm precast concrete lintel
150mm rigid insulation
60mm precast concrete panel
400mm*200mm new RC beam

Detail-3

Floor
20mm oak flooring
60mm heating screed
Vapour barrier
70mm thermal insulation
200mm existing RC floor slab
Soil layer

Vertical section 1:20

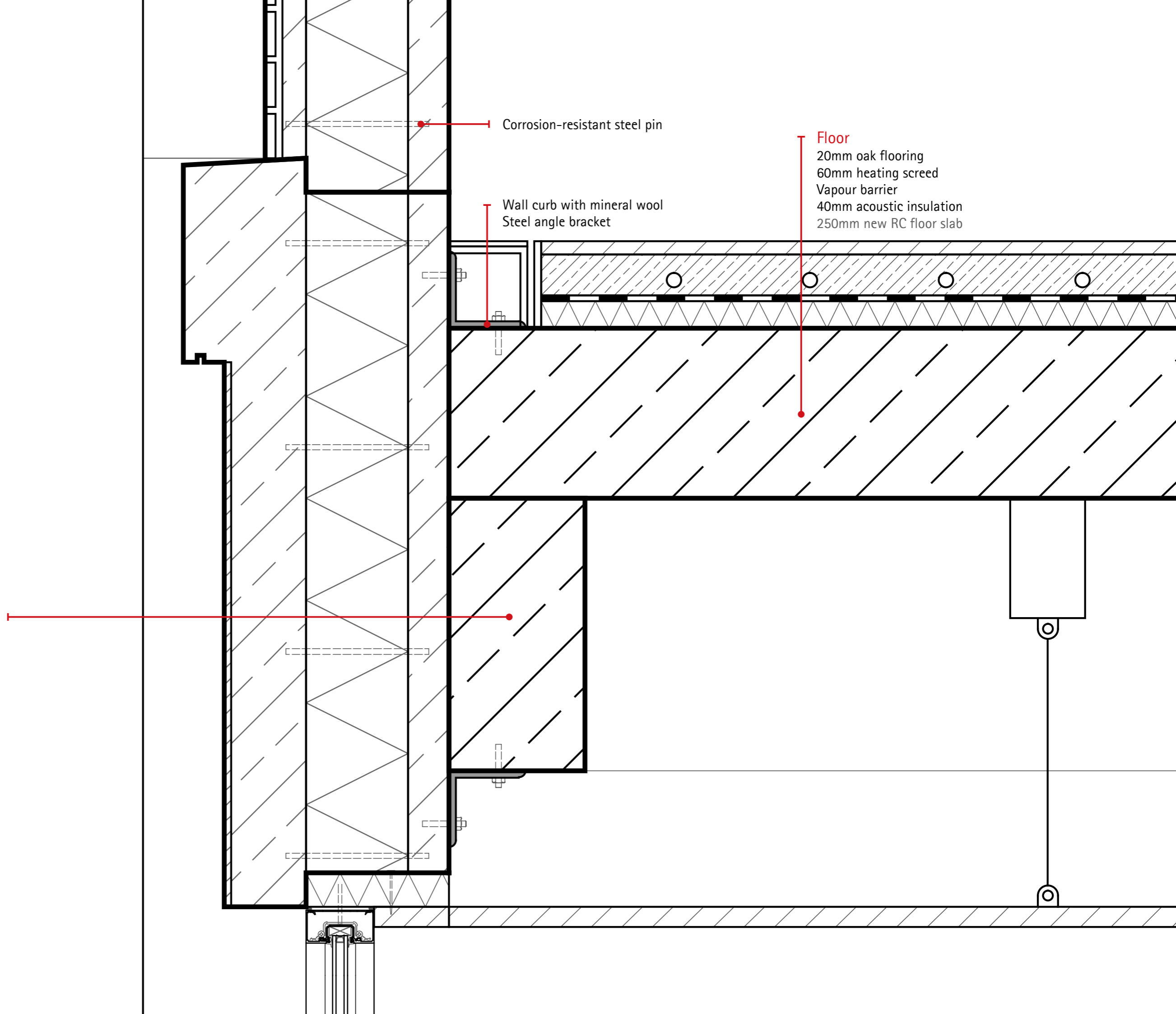


Prefabricated facade
10mm brown plaster layer
110mm precast concrete lintel
150mm rigid insulation
60mm precast concrete panel
400mm*200mm new RC beam

Corrosion-resistant steel pin

Wall curb with mineral wool
Steel angle bracket

Floor
20mm oak flooring
60mm heating screed
Vapour barrier
40mm acoustic insulation
250mm new RC floor slab



Prefabricated roof (upper part, type3)

- Roof tiles
- Roof tile batten
- 110mm precast concrete
- 150mm rigid insulation
- 60mm precast concrete panel
- 250mm existing RC floor slab

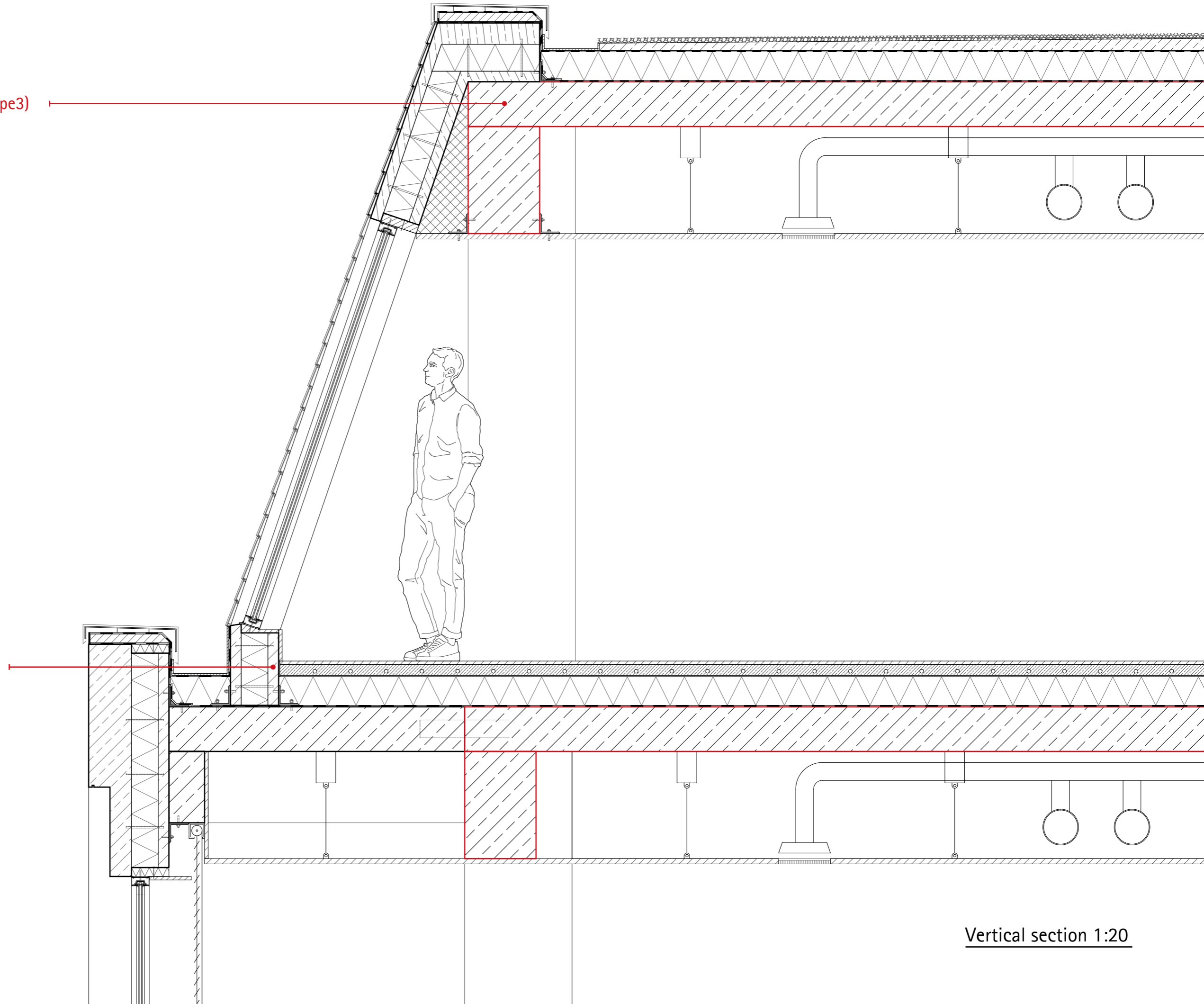
Prefabricated facade (top)

- 180mm precast concrete cornice
- 150mm rigid insulation
- 60mm precast concrete panel

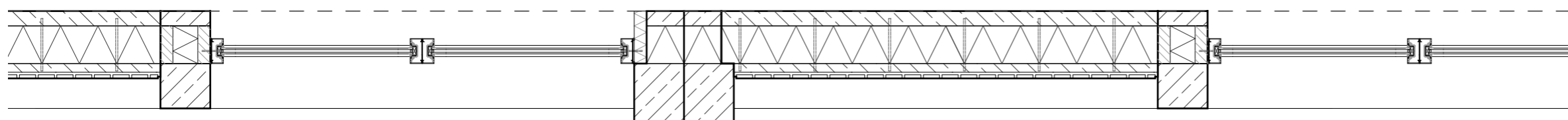
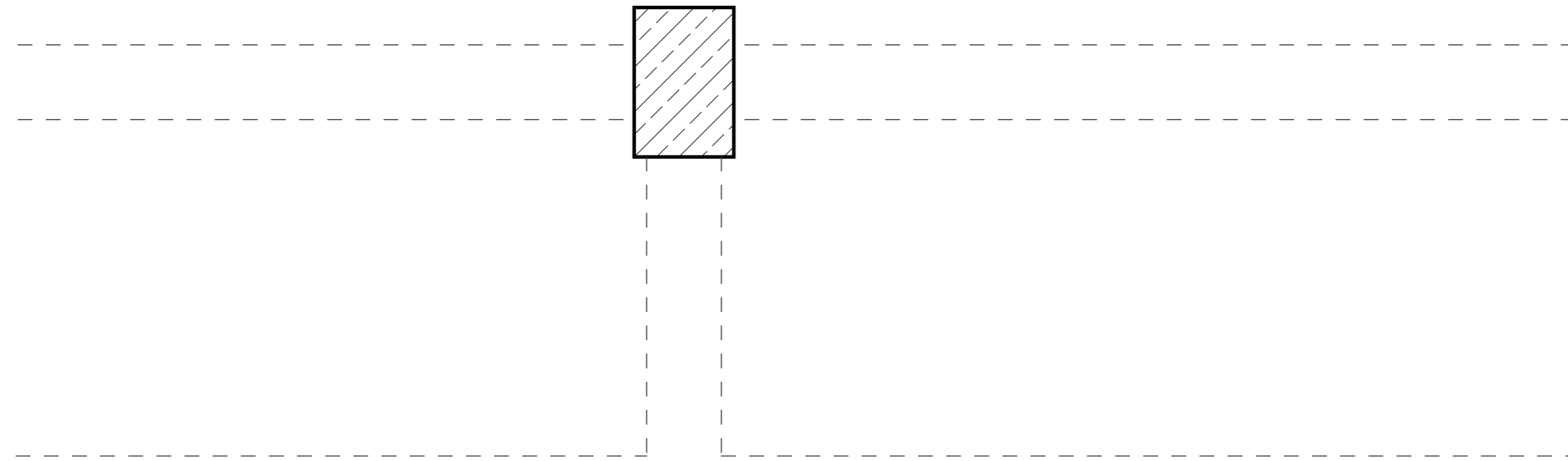
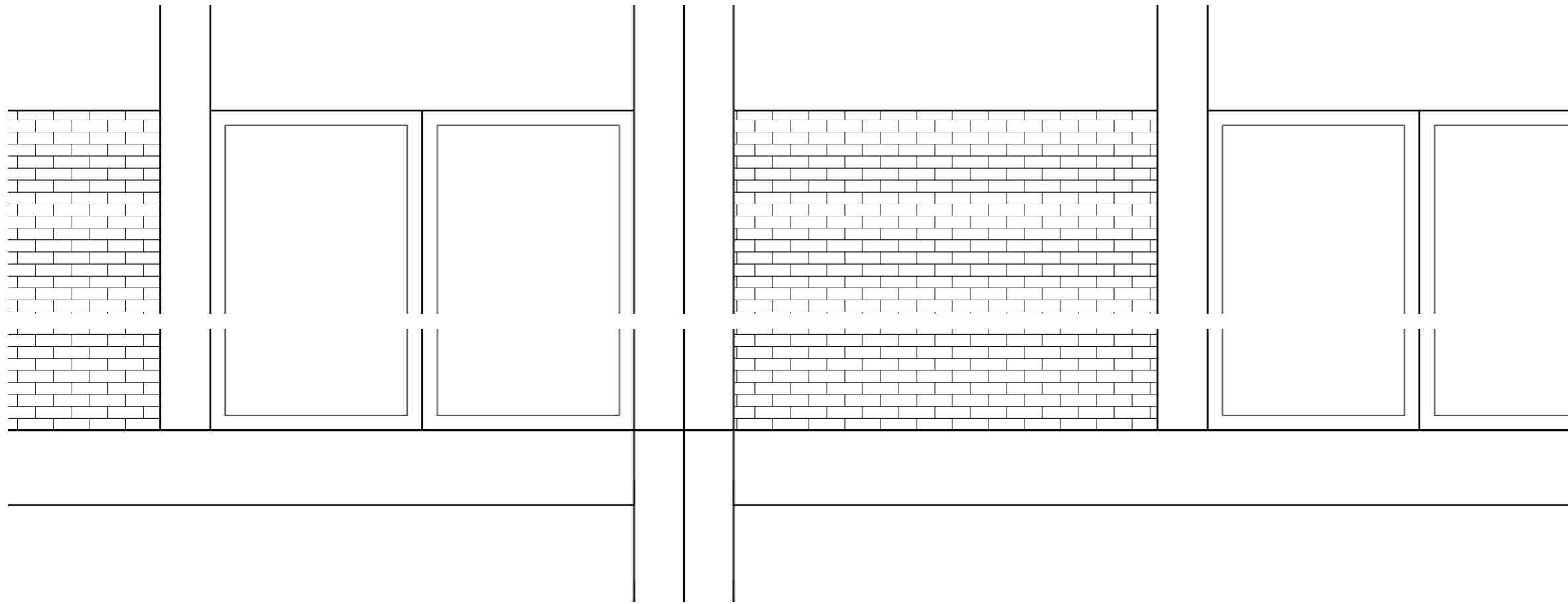
- Waterproof layer
- Gutter
- Waterproof layer

Prefabricated roof (lower part)

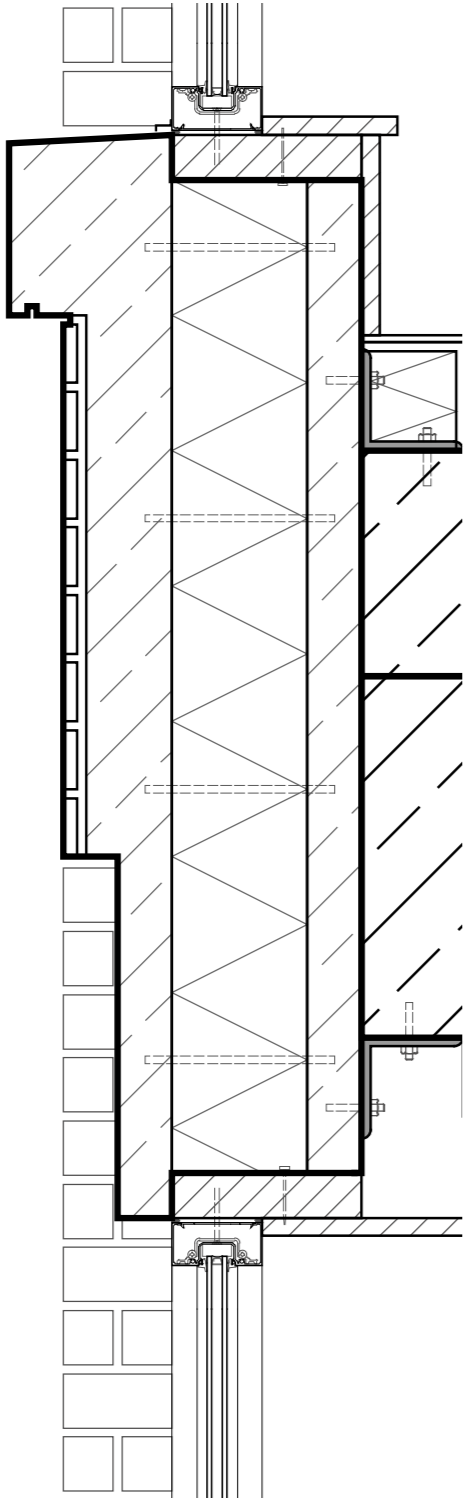
- 60mm precast concrete panel
- 150mm rigid insulation
- 60mm precast concrete panel



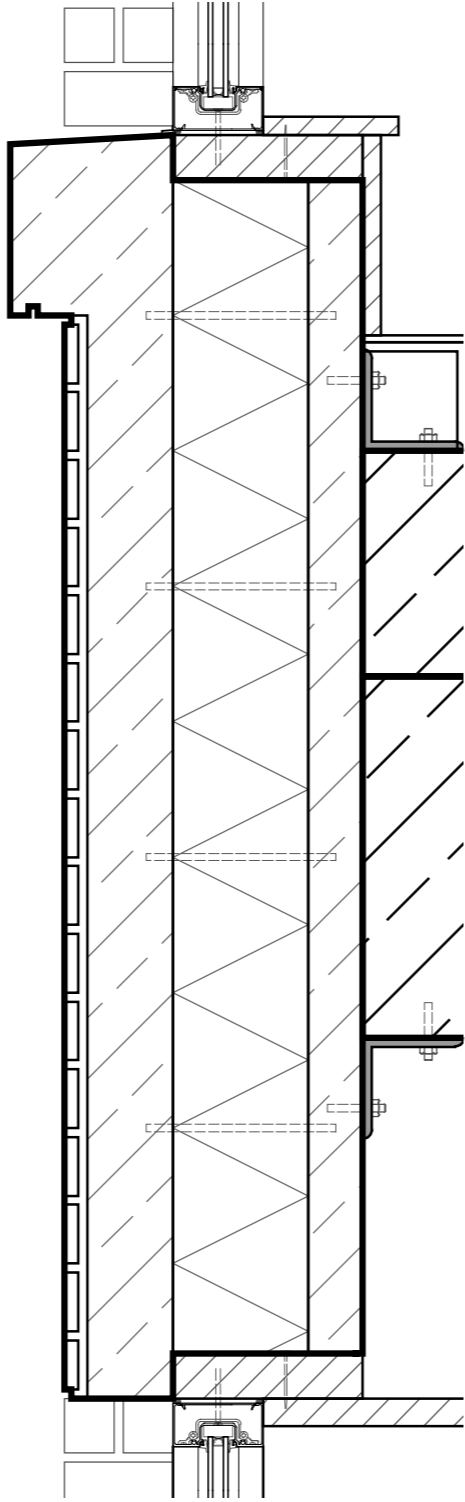
Vertical section 1:20



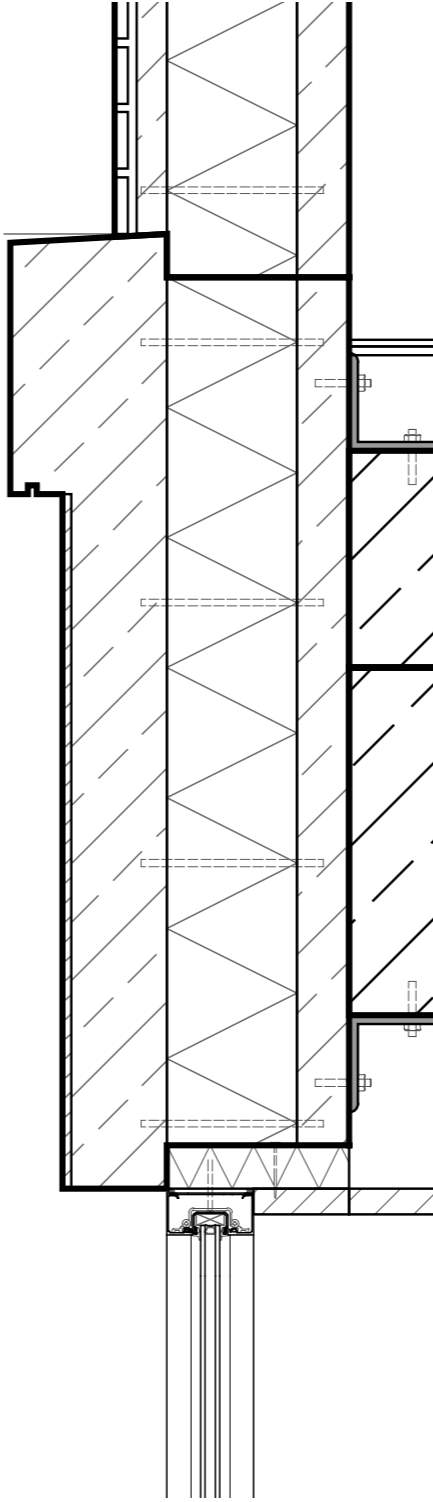
Horizontal section 1:20



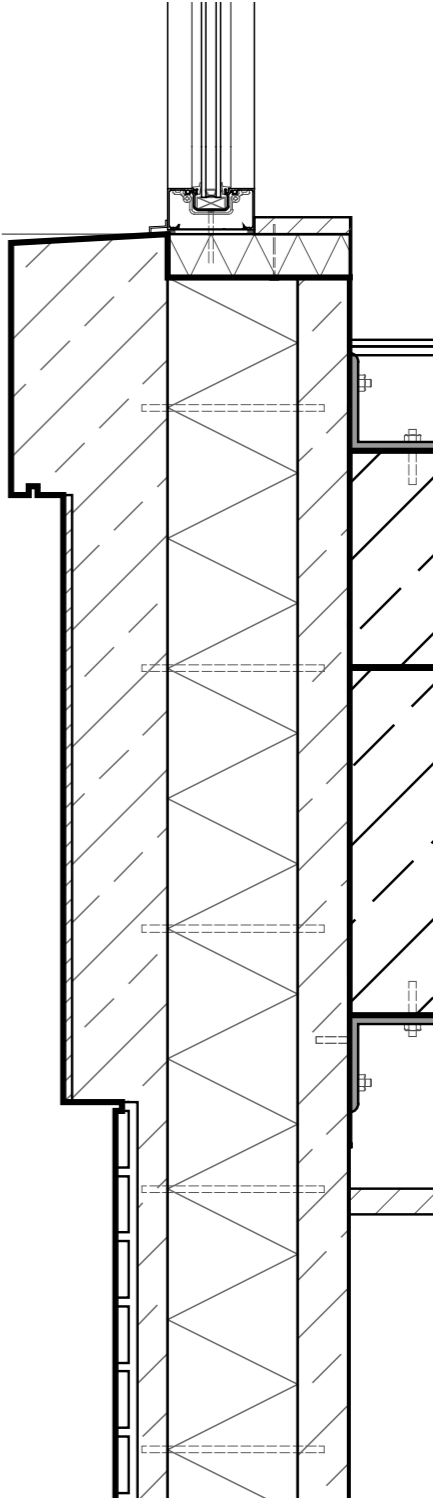
Prefabricated facade 1.0 (type1)



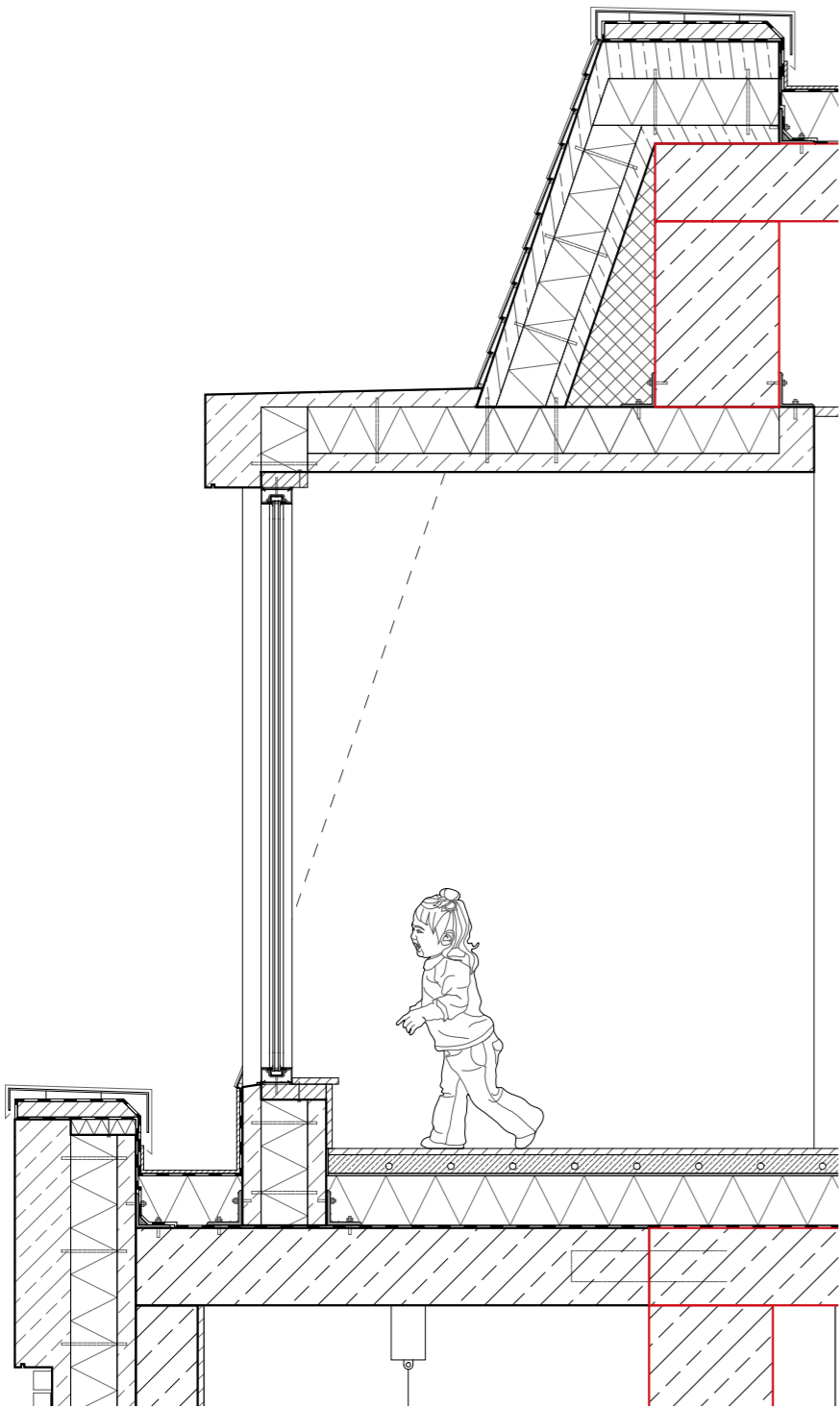
Prefabricated facade 1.0 (type2)



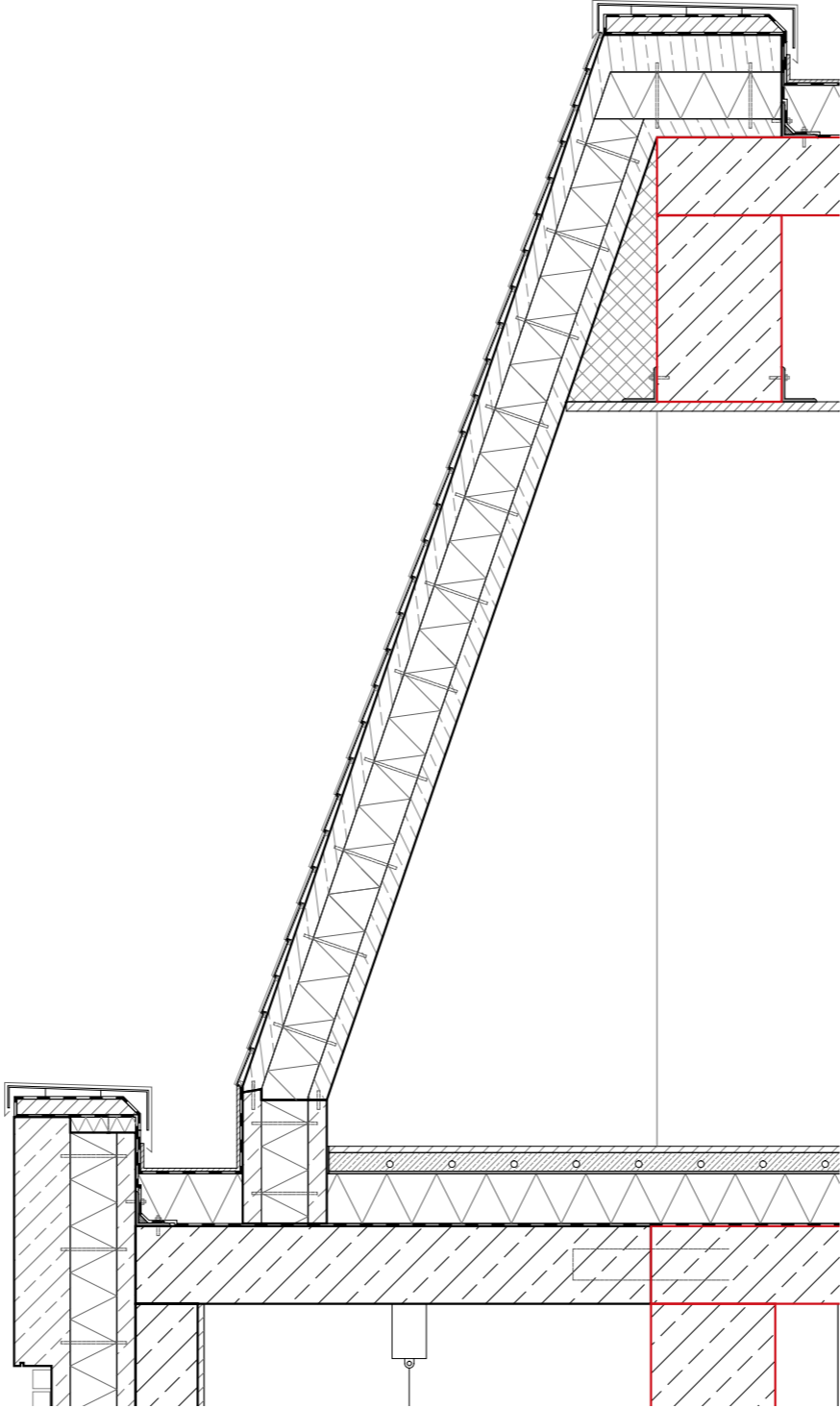
Prefabricated facade 2.0 (type1)



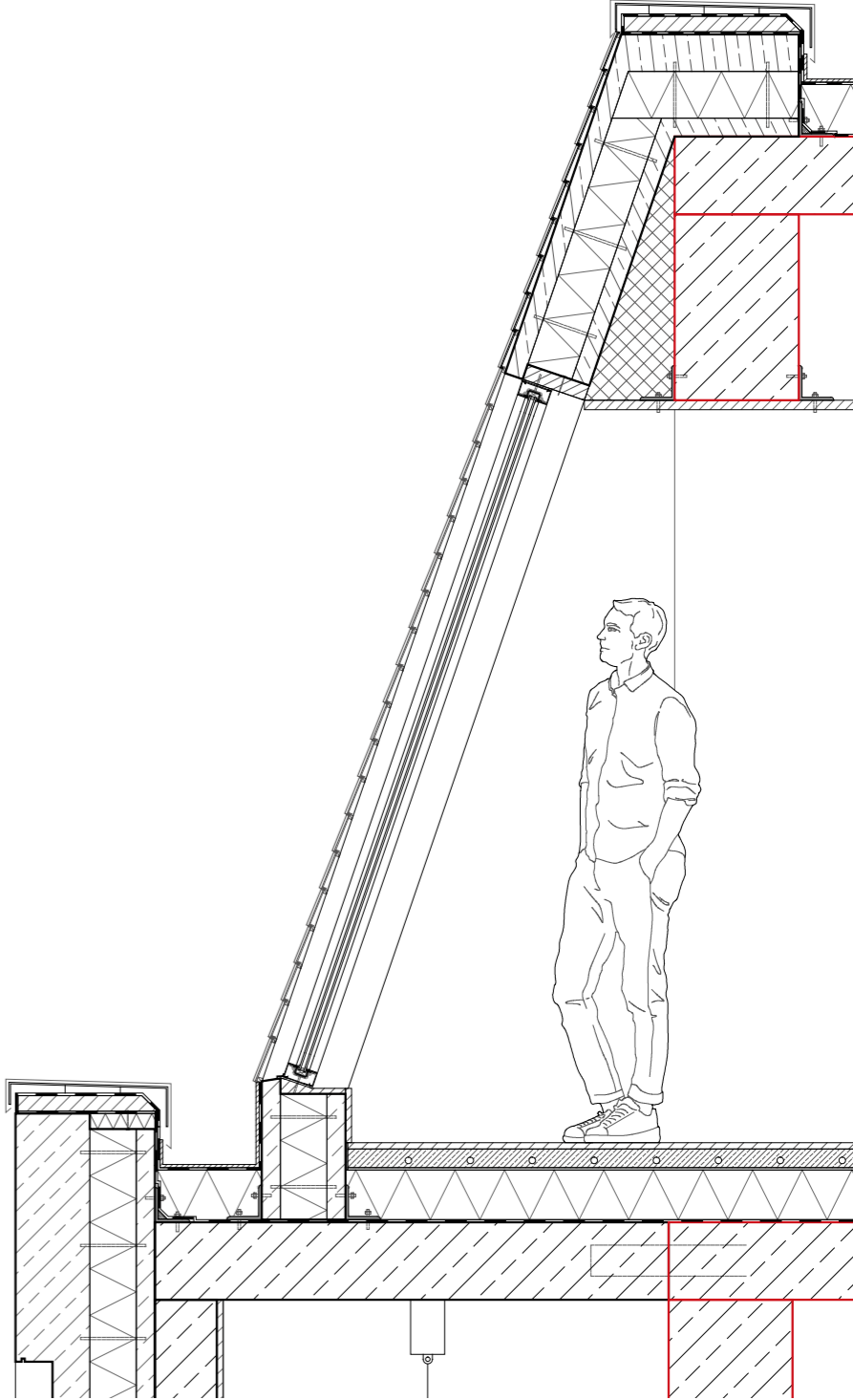
Prefabricated facade 2.0 (type2)



Prefabricated roof (type1)



Prefabricated roof (type2)



Prefabricated roof (type3)

"FUTURE TREND"

"COMMERCIAL FULFILLMENT CENTER"