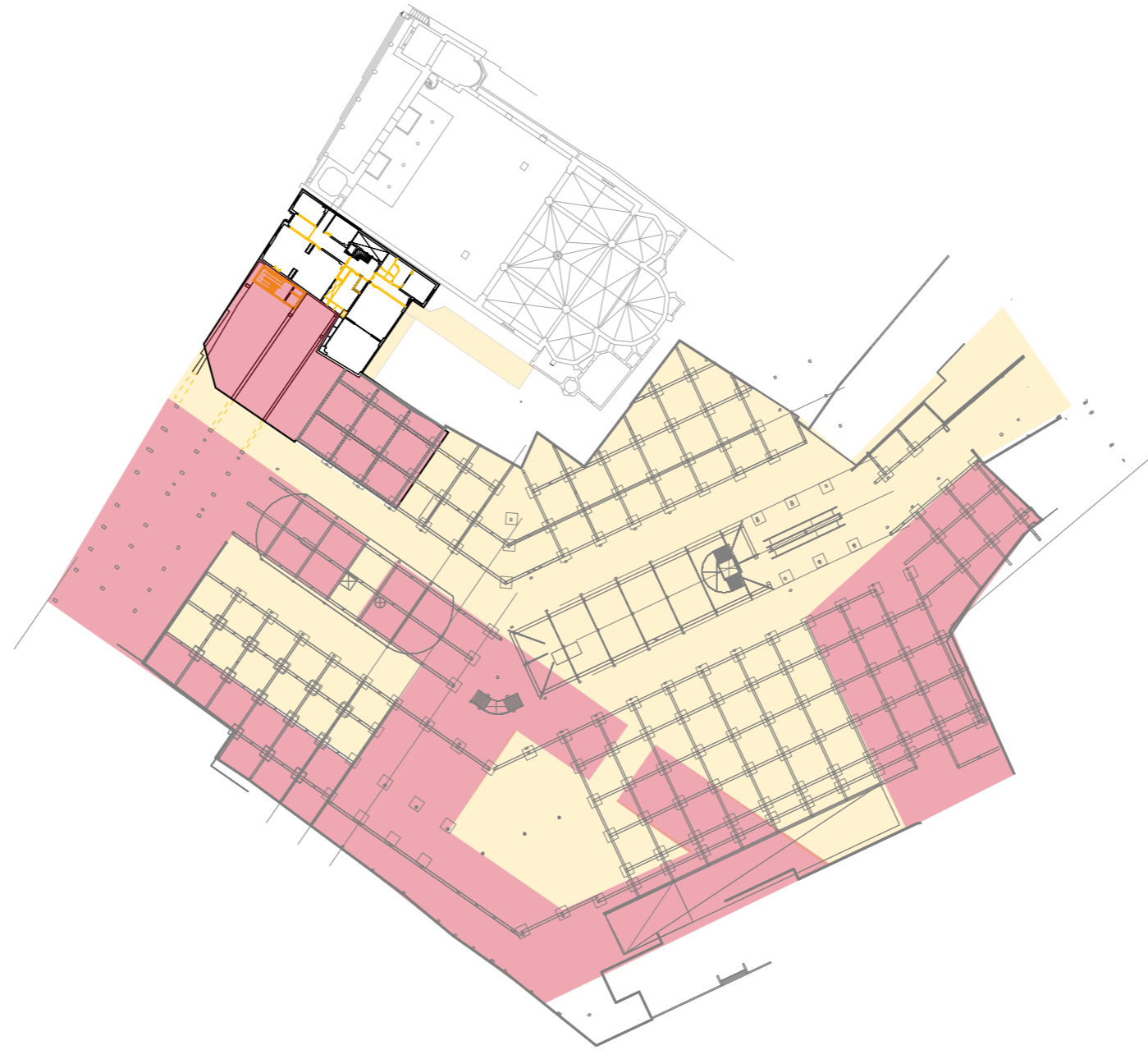


Art Gallery of Nijmegen
Booklet Building Technology

Roséane Cathy Singotani

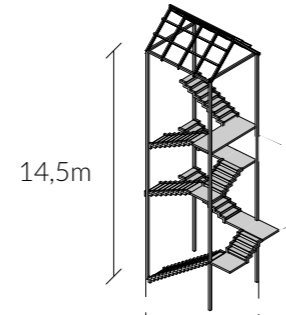
P5 Presentation
Urban Architecture Graduation Studio
November 5th, 2021

- Structure to keep
- Structure to demolish

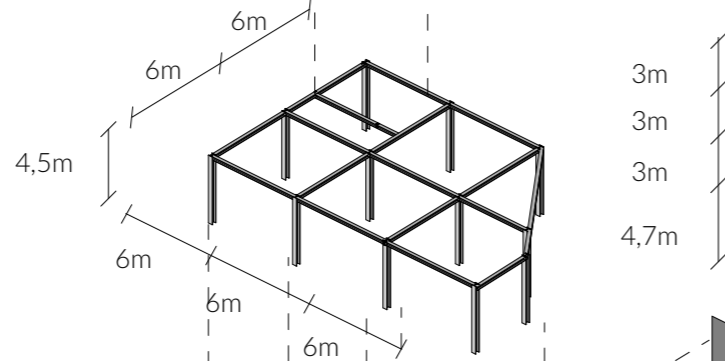


Demolition plan

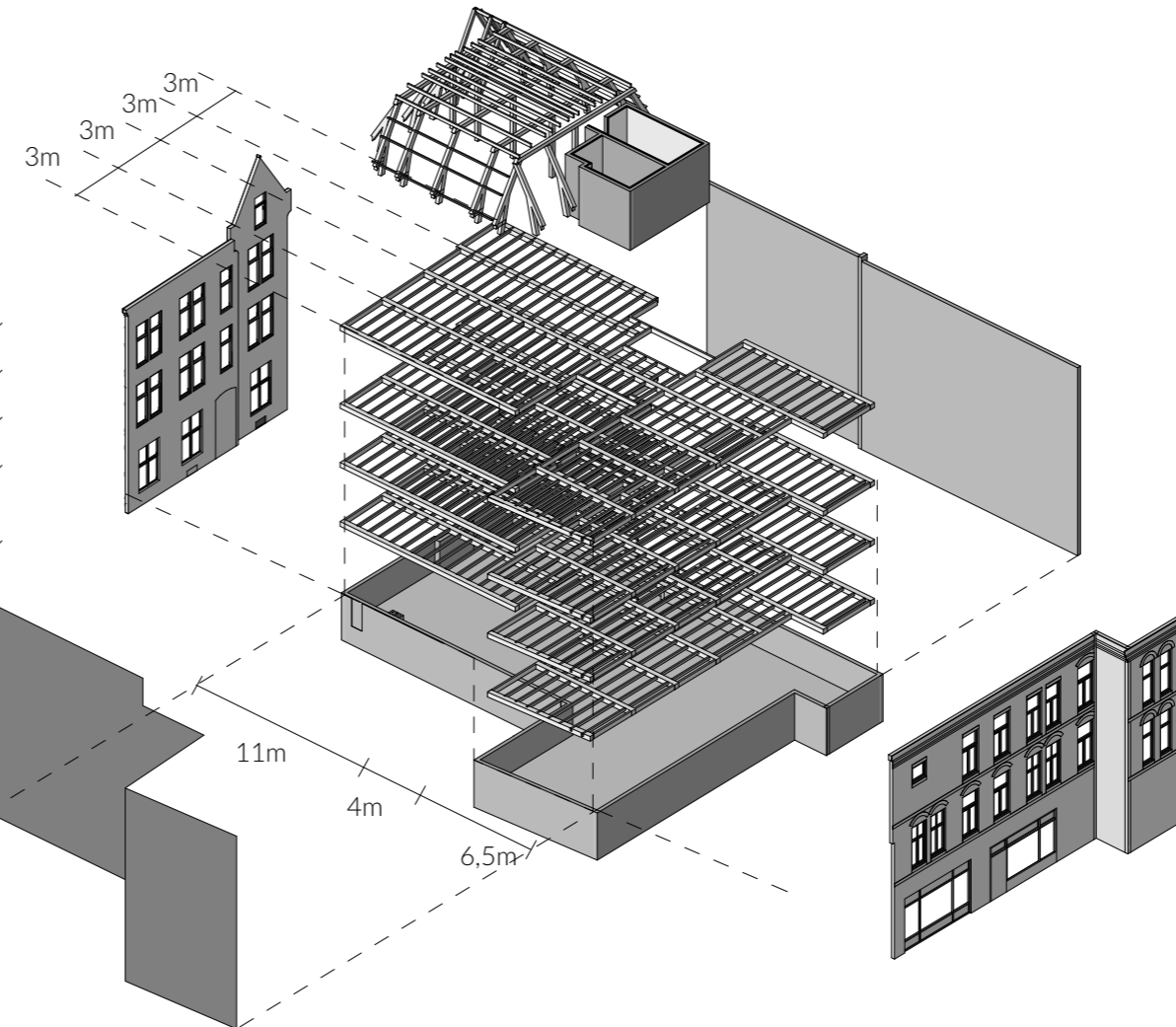
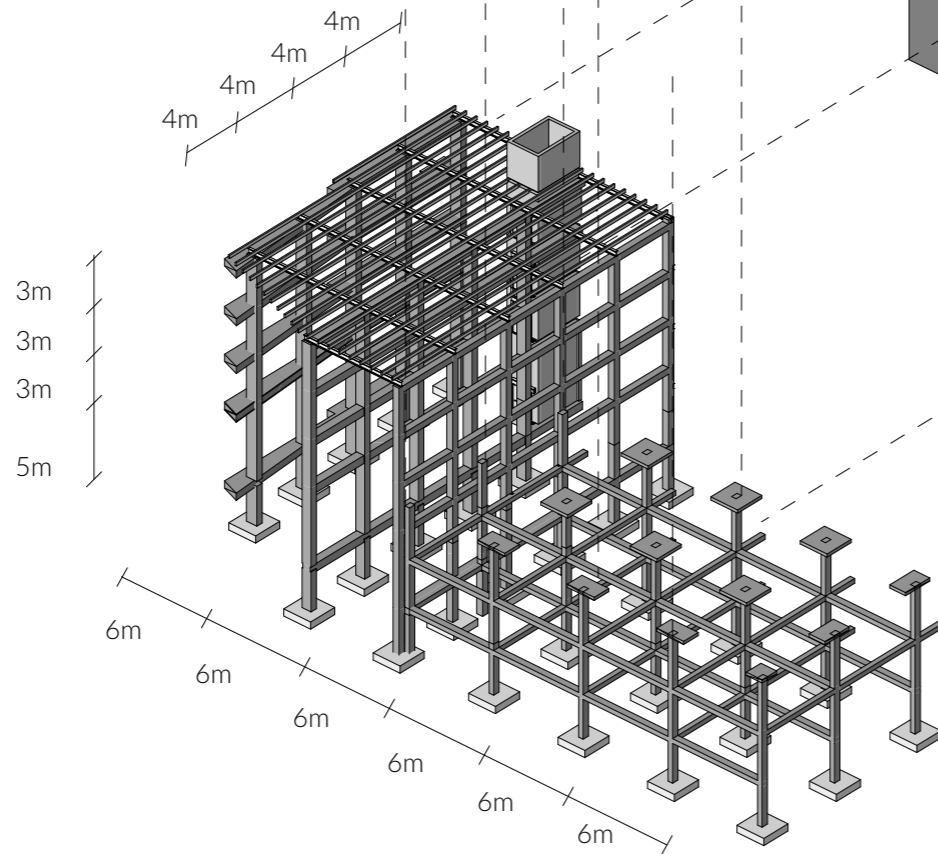
Addition of staircase in steel construction



Addition of lightweight steel structure assembled to existing concrete structure of Molenpoort

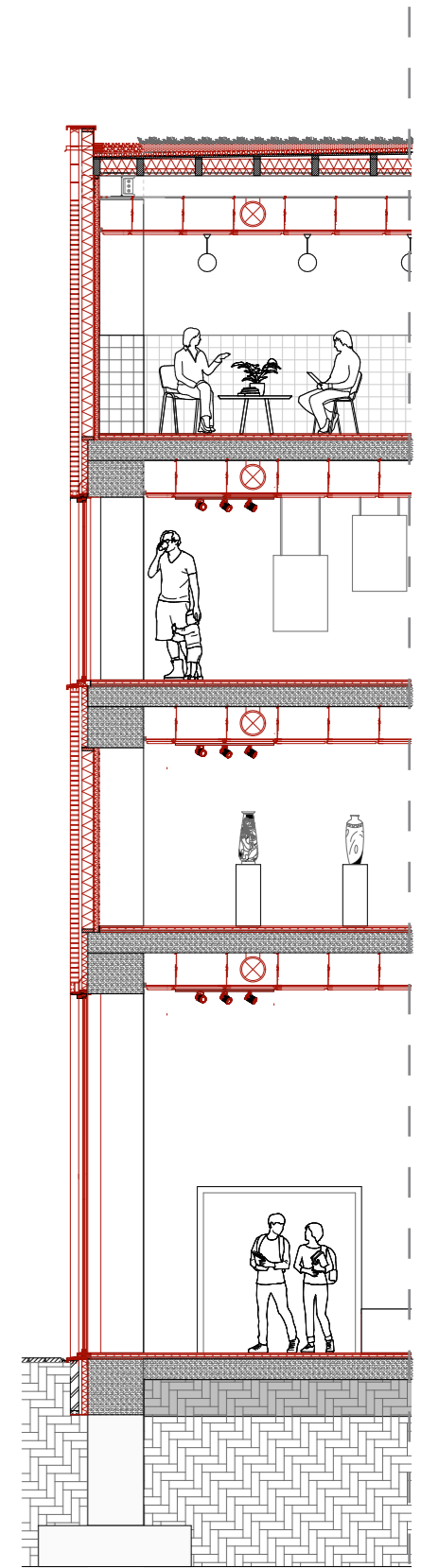
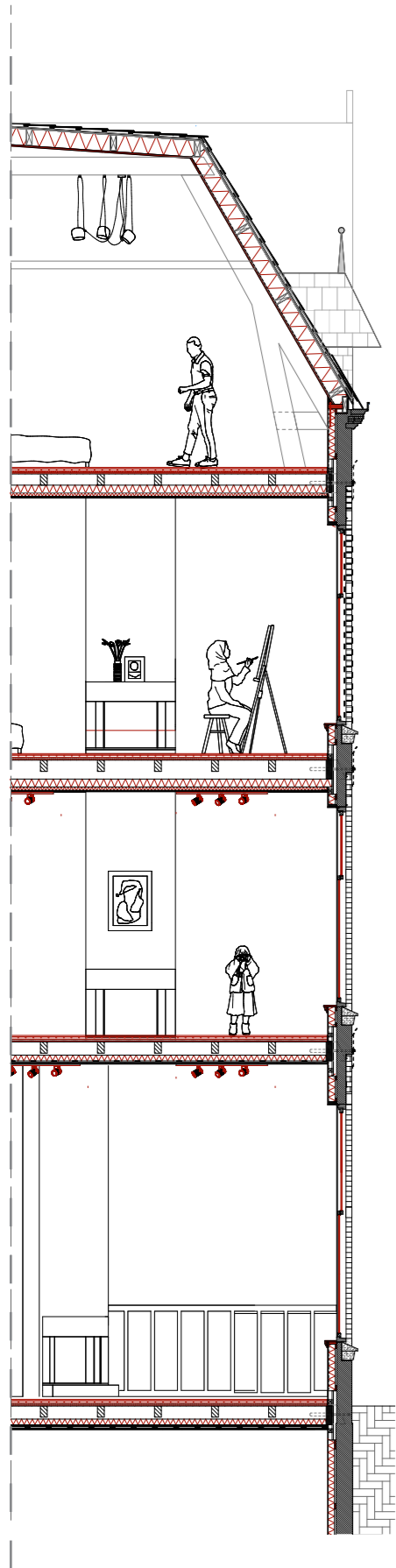


Existing Molenpoort structure



Parish hall construction existing of Concrete basement with combined wooden floor construction (moer- and kinderbalk construction) and load bearing masonry walls

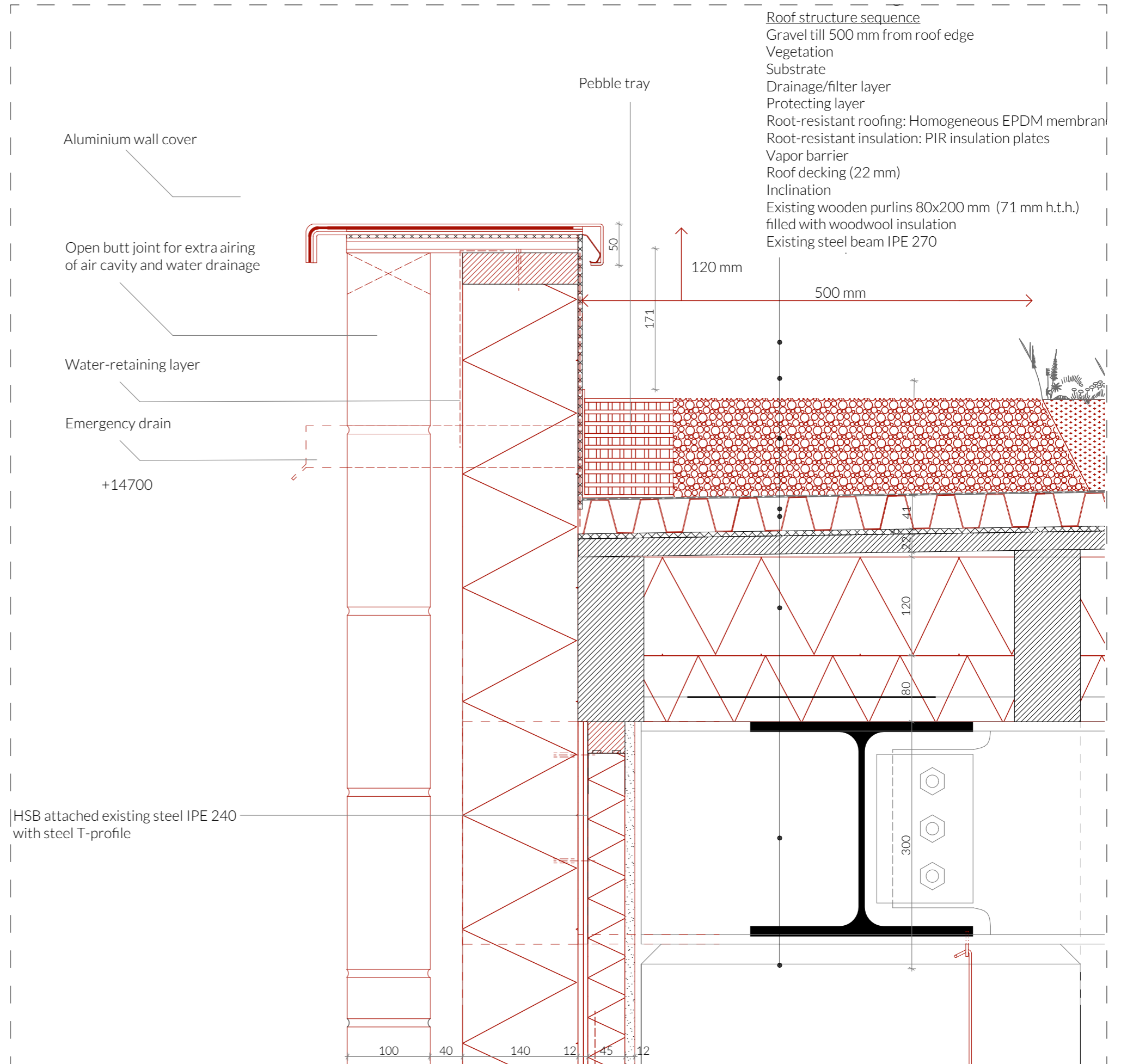
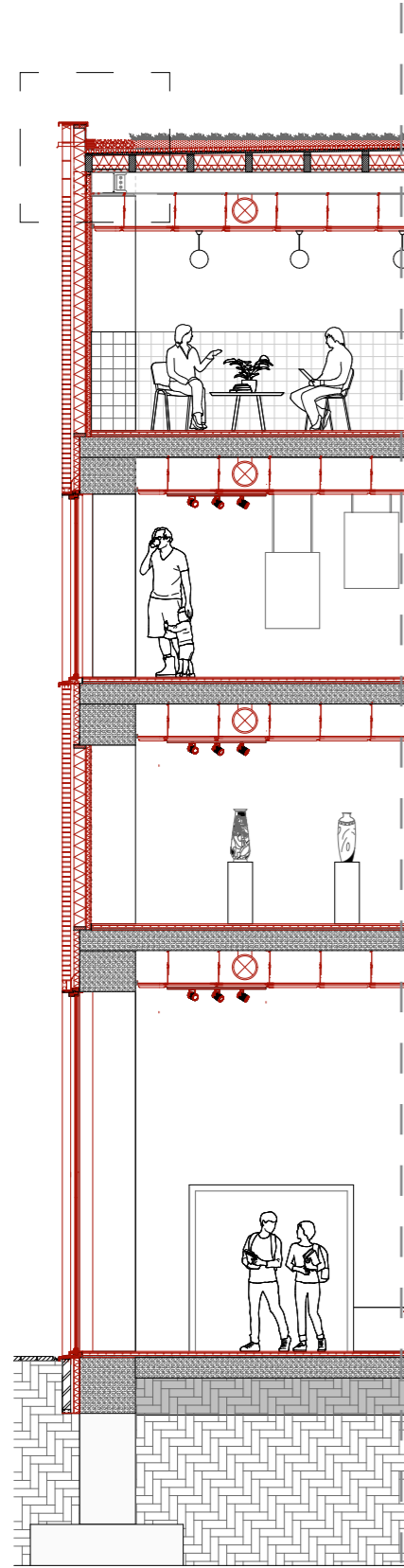
Structure assembly



Detailing - 'Differing in necessities'

Molenpoort

B1

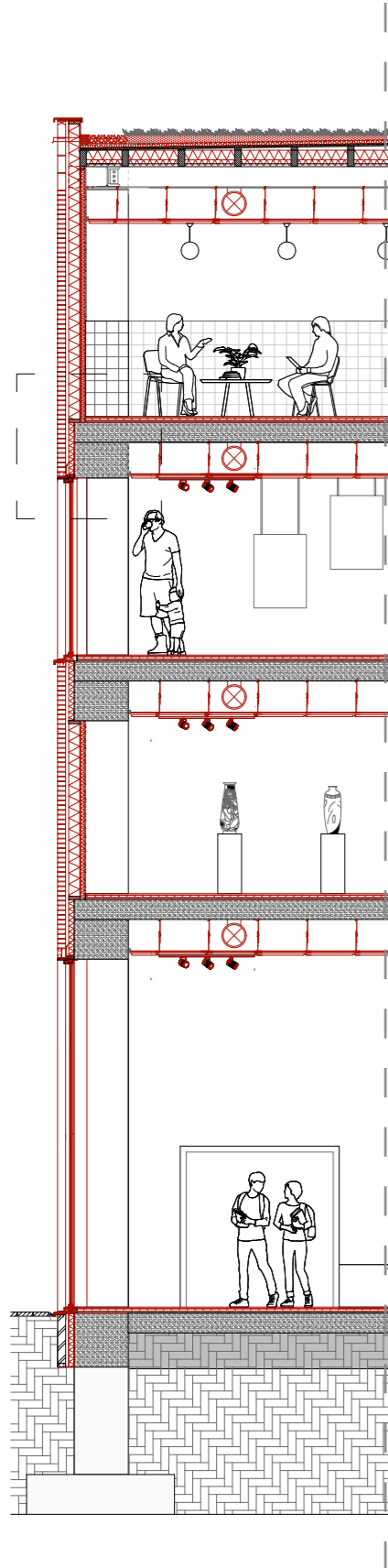


- Roof structure sequence
- Gravel till 500 mm from roof edge
 - Vegetation
 - Substrate
 - Drainage/filter layer
 - Protecting layer
 - Root-resistant roofing: Homogeneous EPDM membrane
 - Root-resistant insulation: PIR insulation plates
 - Vapor barrier
 - Roof decking (22 mm)
 - Inclination
 - Existing wooden purlins 80x200 mm (71 mm h.t.h.) filled with woodwool insulation
 - Existing steel beam IPE 270

HSB attached existing steel IPE 240 with steel T-profile

B1 Detail 1:5 | Roof detail

B2

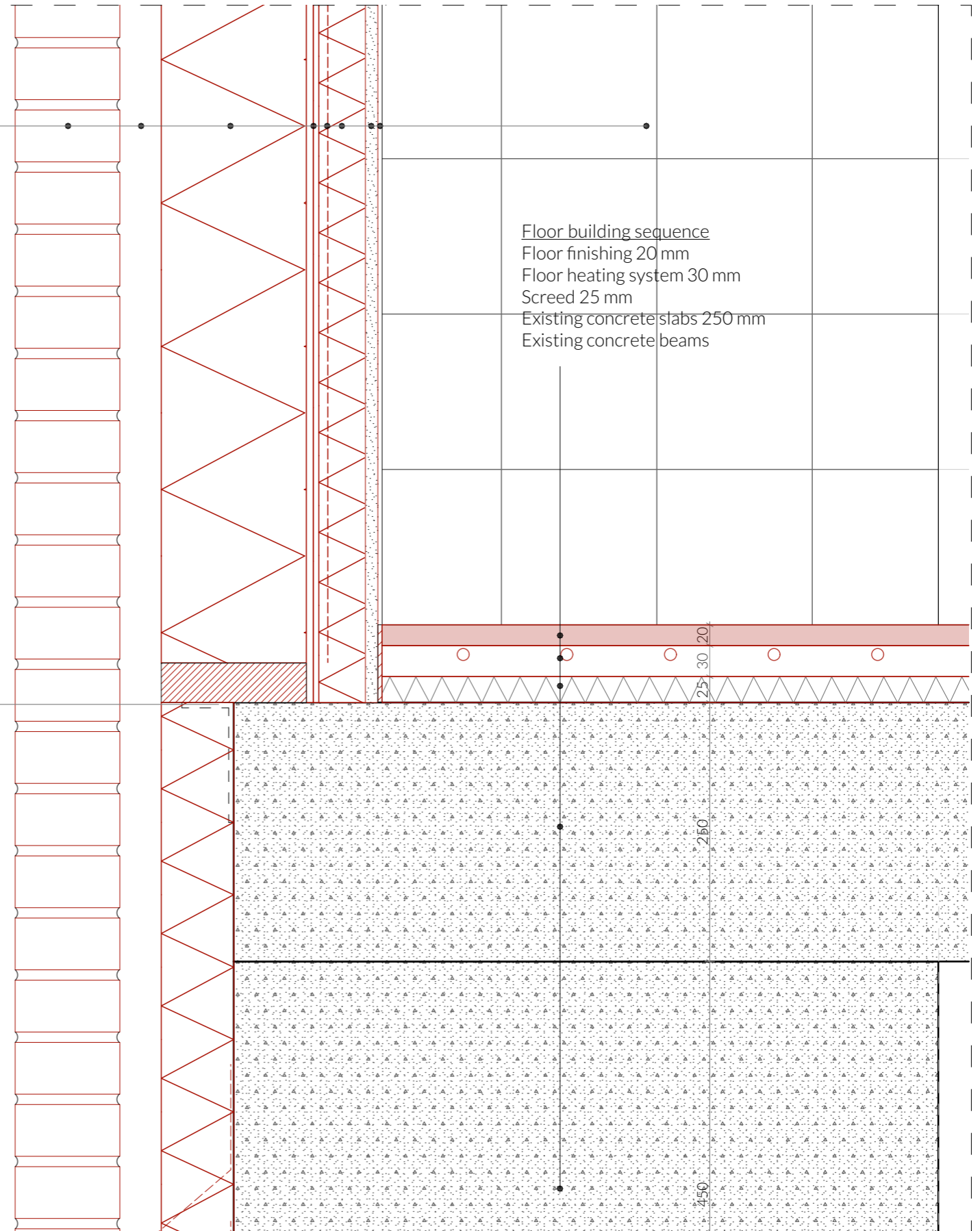


Wall building sequence
Wienerberger bricks Cradle-to-Cradle certified
Air cavity (40 mm)
Water repellent and vapor permable
Wooden posts (38x140mm)
Woodwool insulation (140 mm)
Vapor barrier
Plating (12 mm)
Pipe cavity filled with woodwool (45 mm)
Inner plate (12.5 mm)
Existing concrete column

Dilitation at +11000 mm

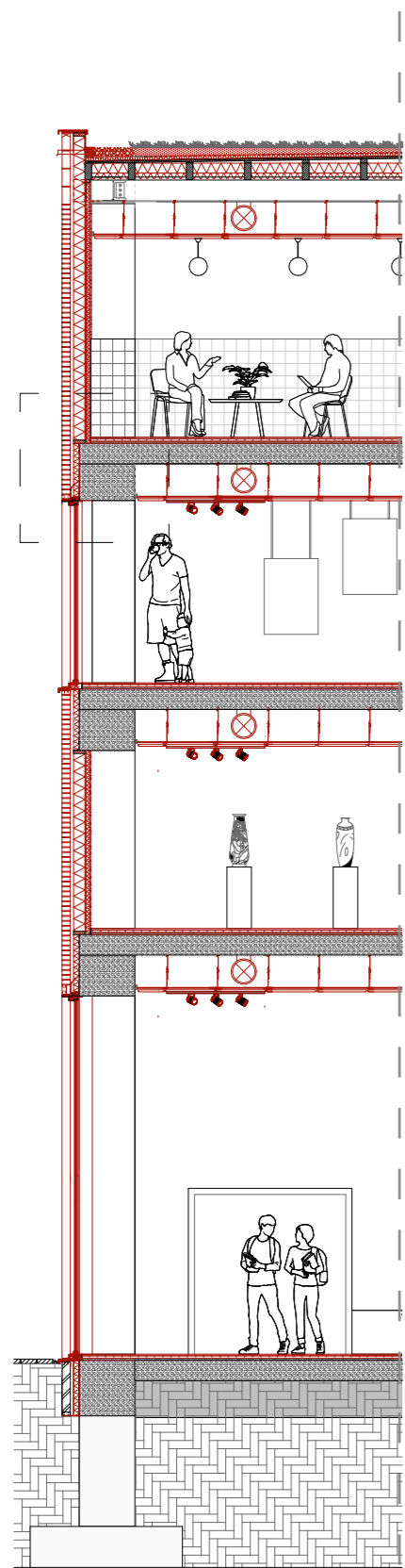
Shackles h.t.h. 400 mm

Floor building sequence
Floor finishing 20 mm
Floor heating system 30 mm
Screed 25 mm
Existing concrete slabs 250 mm
Existing concrete beams



B2 detail 1:5 | Third Floor

B2



Dilatation at +11000 mm

Shackles h.t.h. 400 mm

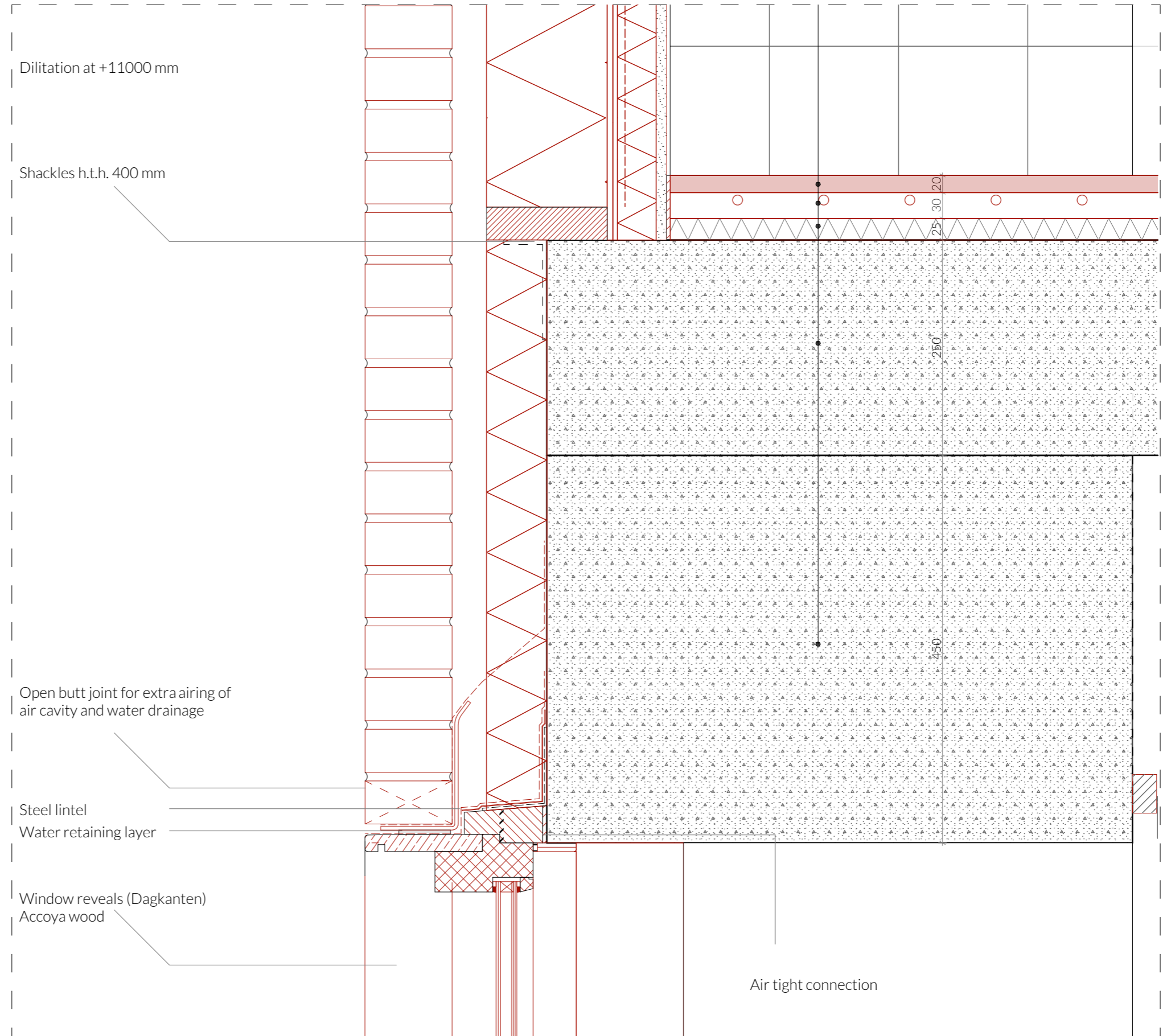
Open butt joint for extra airing of
air cavity and water drainage

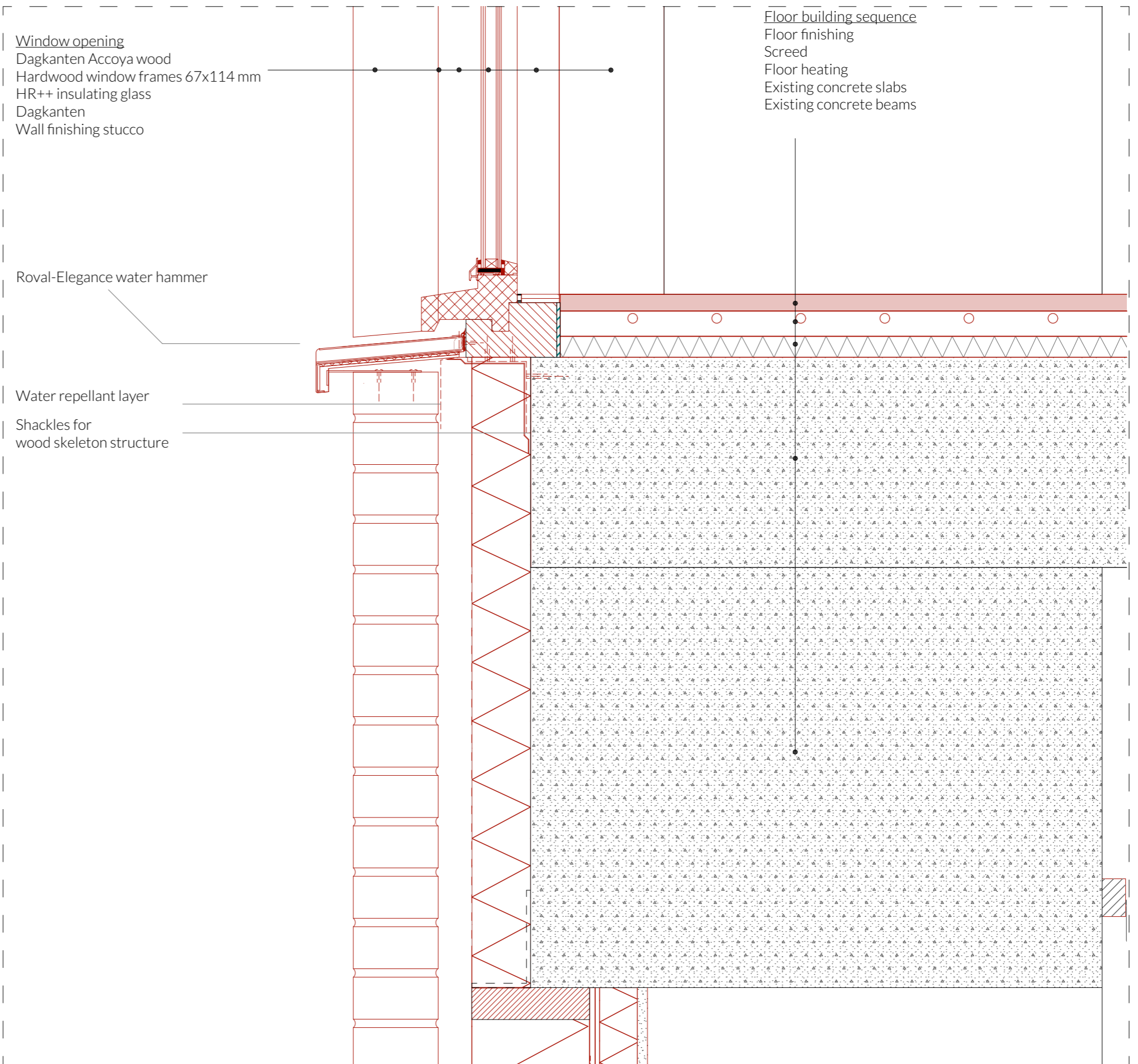
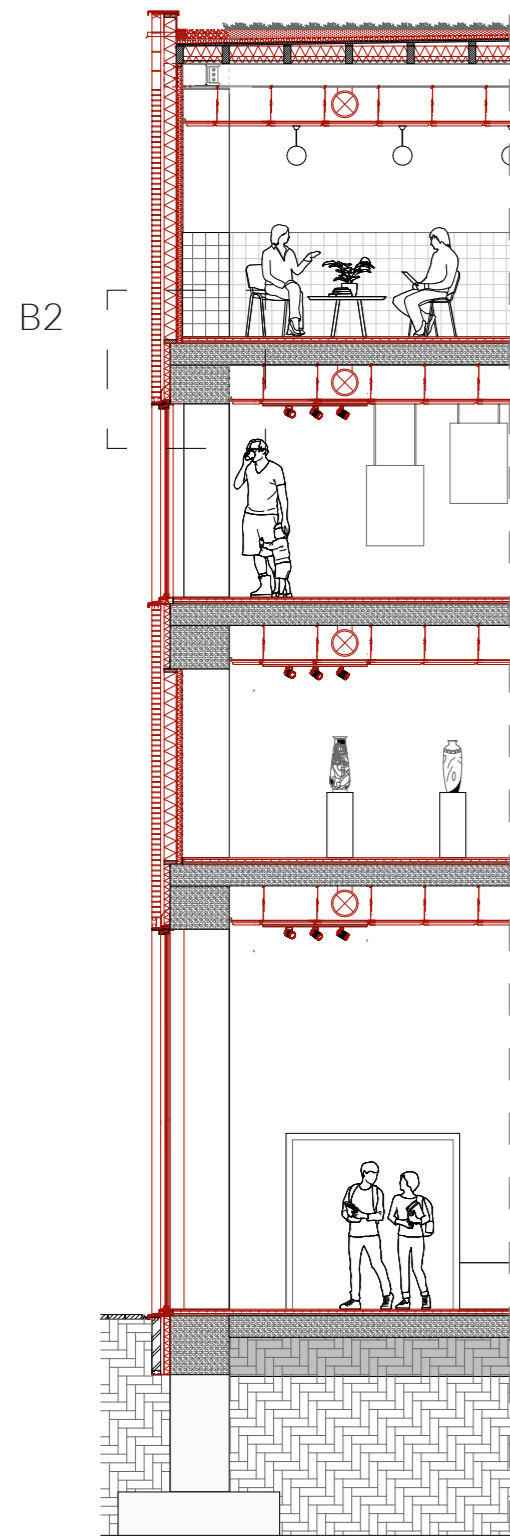
Steel lintel
Water retaining layer

Window reveals (Dagkanten)
Accoya wood

Air tight connection

B2 detail 1:5 | Top window frame





Window opening
 Dagkanten Accoya wood
 Hardwood window frames 67x114 mm
 HR++ insulating glass
 Dagkanten
 Wall finishing stucco

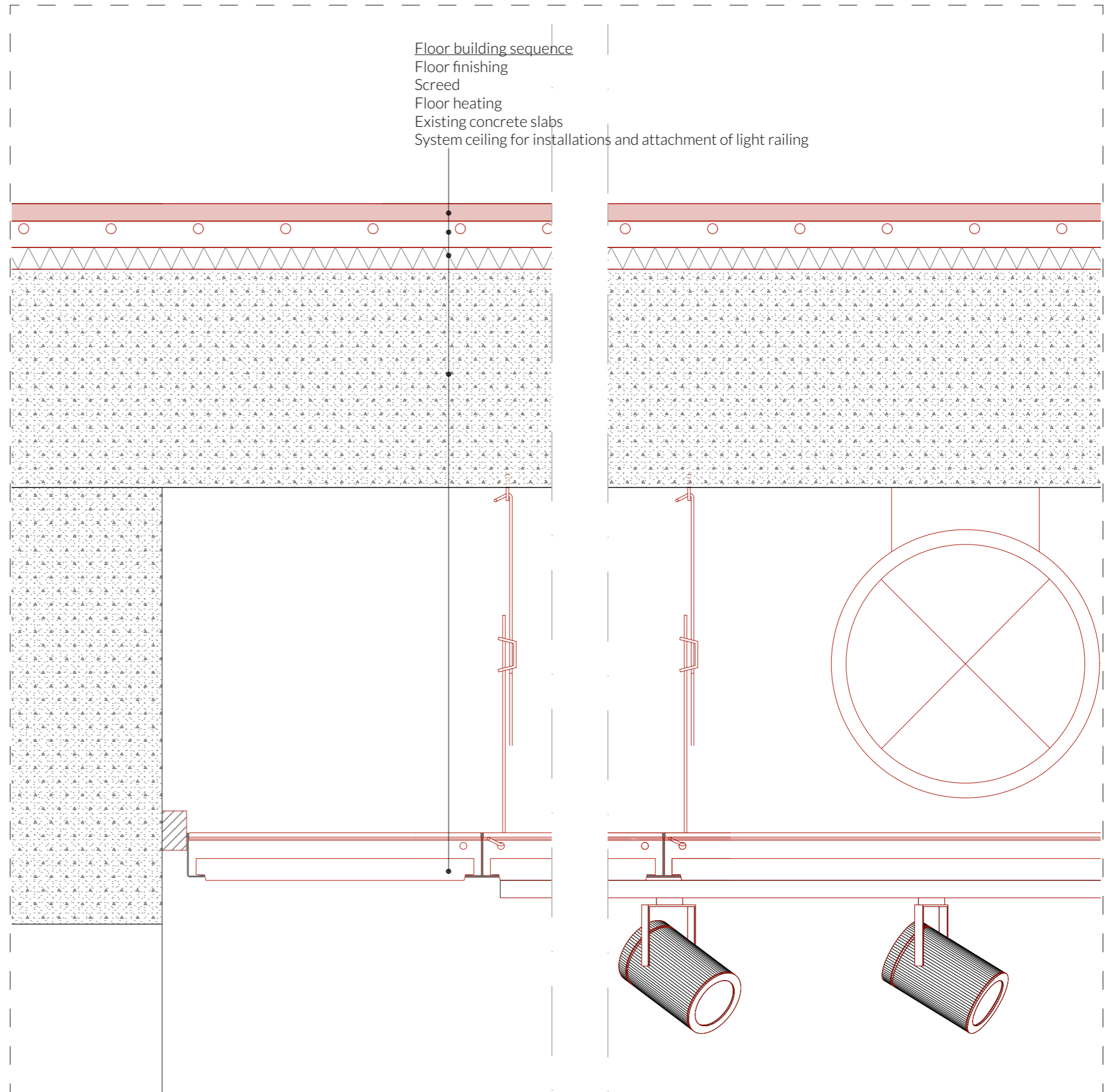
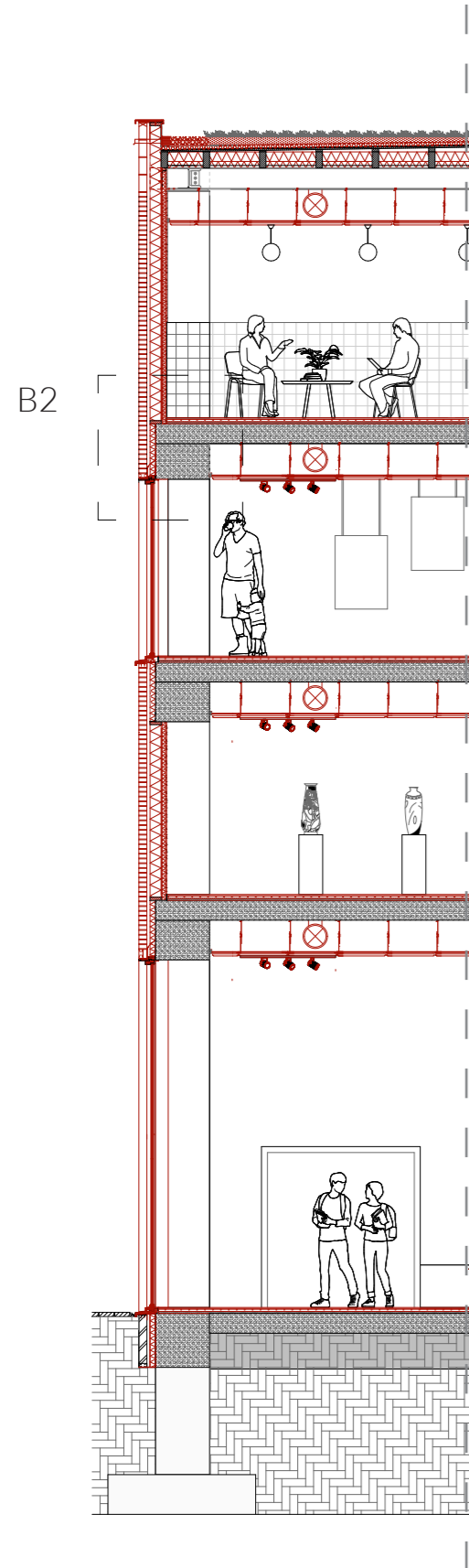
Floor building sequence
 Floor finishing
 Screed
 Floor heating
 Existing concrete slabs
 Existing concrete beams

Royal-Elegance water hammer

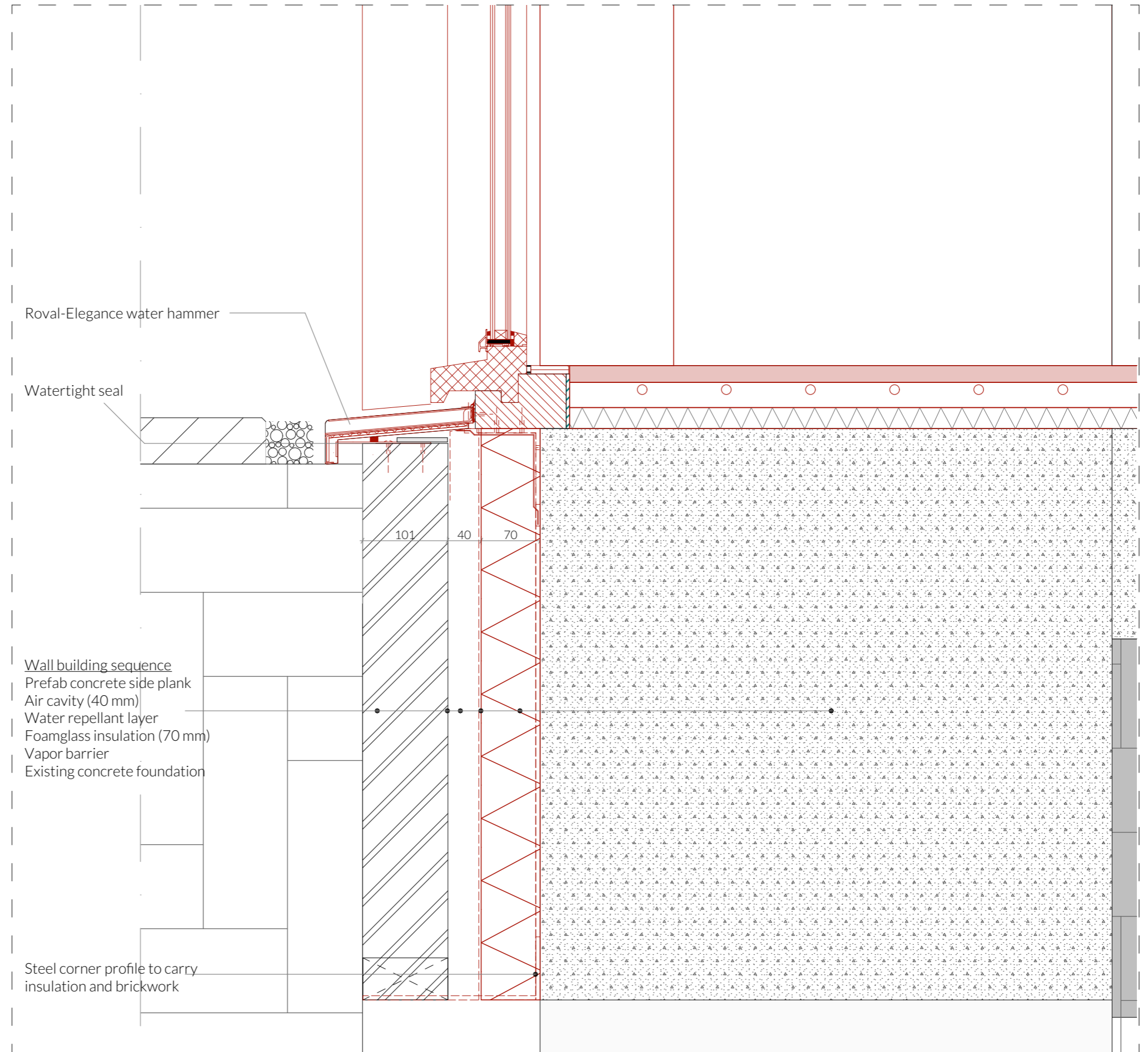
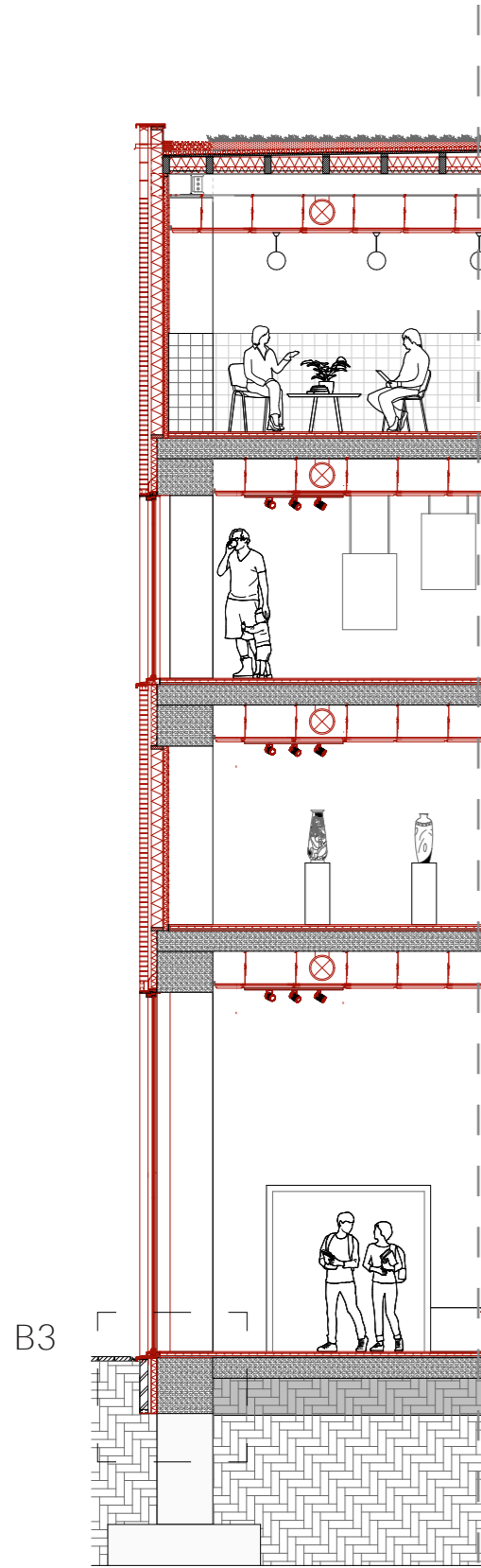
Water repellent layer

Shackles for
 wood skeleton structure

B2 Detail 1:5 | Bottom window frame



B2 detail 1:5 | Ceiling



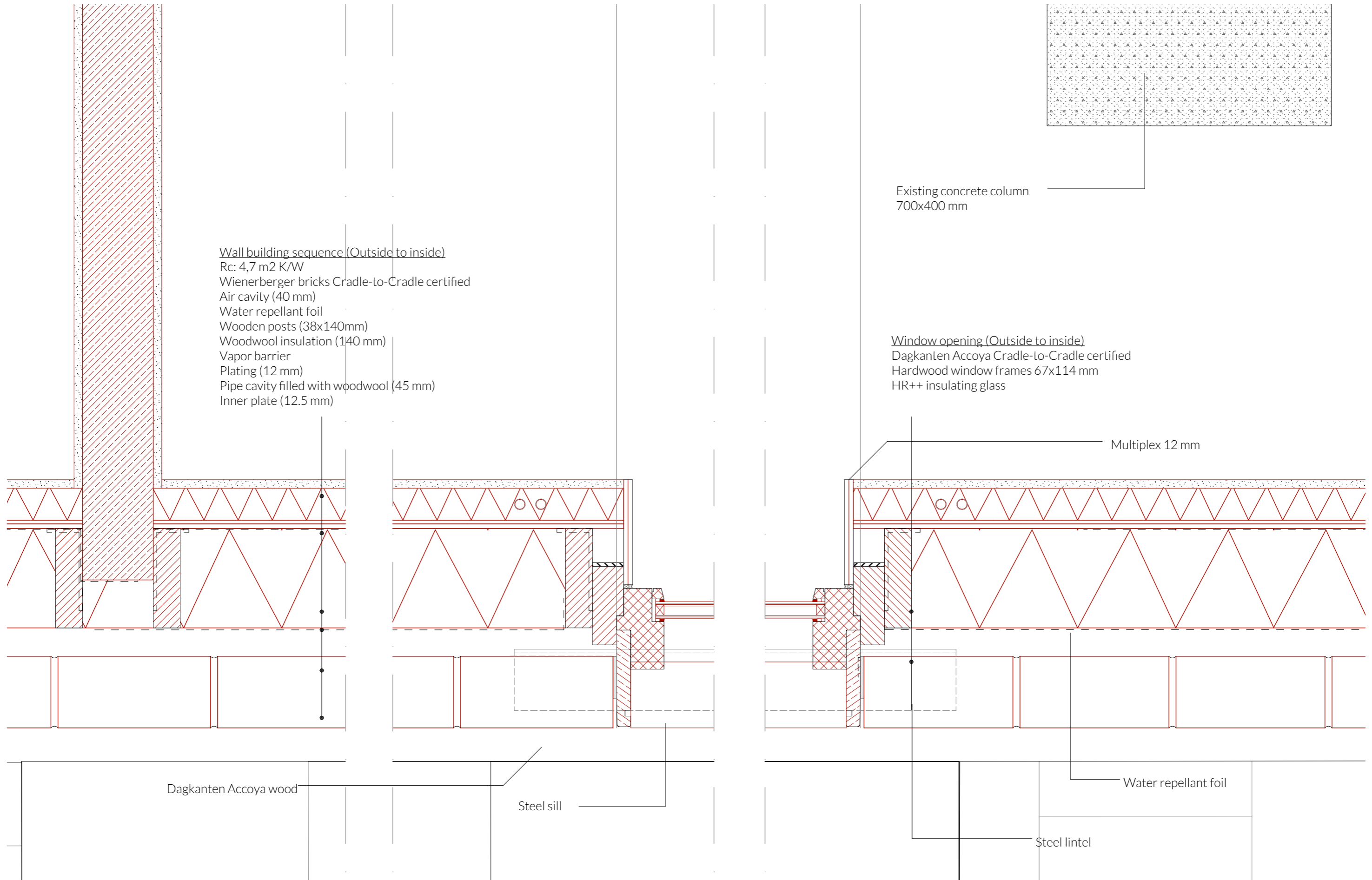
Roval-Elegance water hammer

Watertight seal

Wall building sequence
 Prefab concrete side plank
 Air cavity (40 mm)
 Water repellent layer
 Foamglass insulation (70 mm)
 Vapor barrier
 Existing concrete foundation

Steel corner profile to carry
 insulation and brickwork

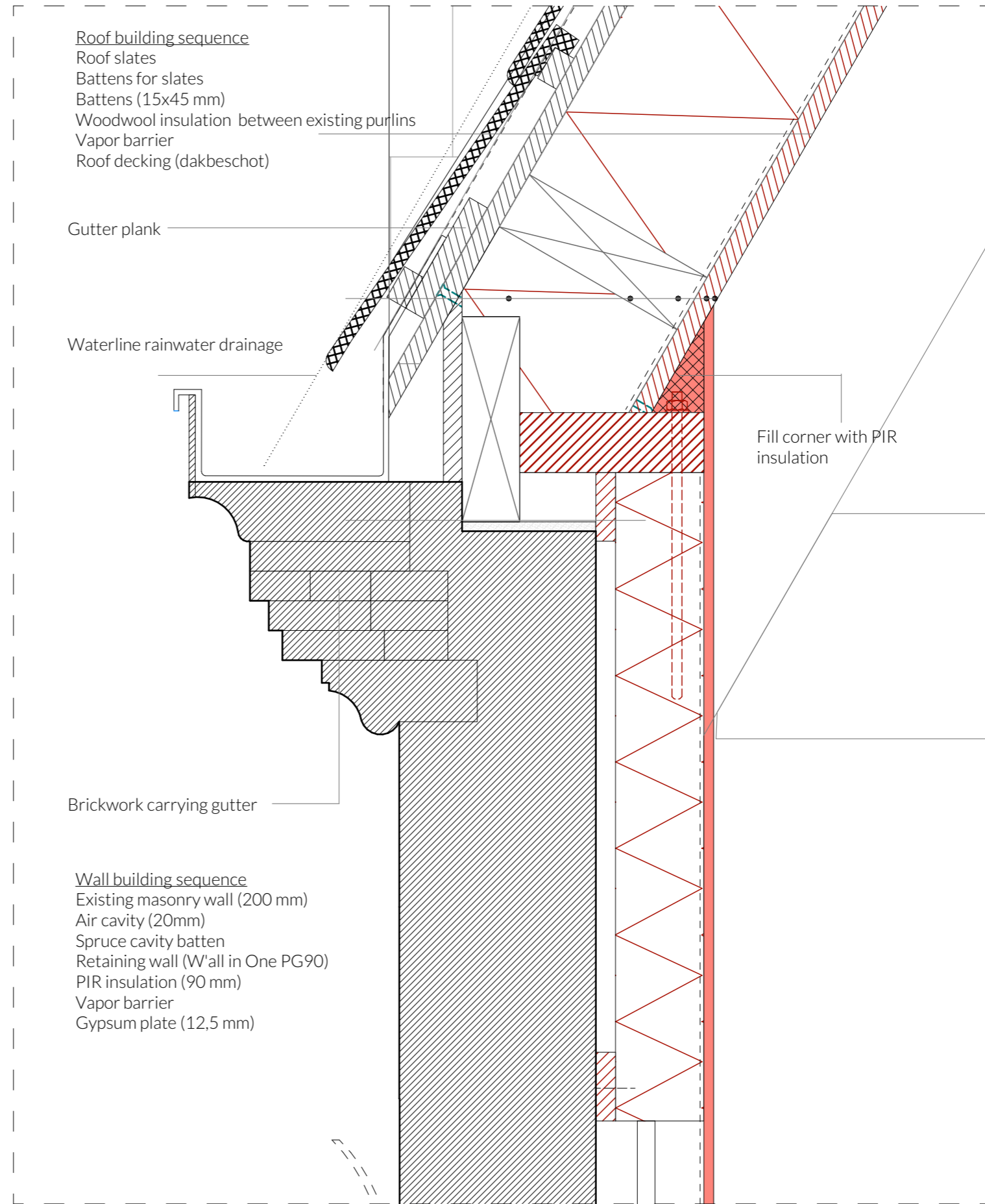
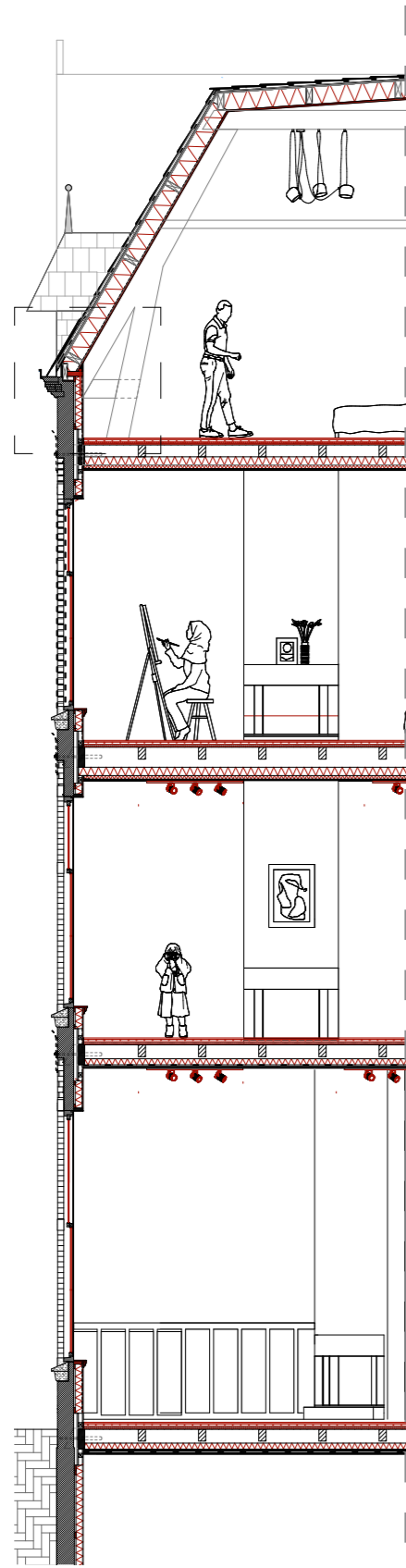
B3 detail 1:5 | Foundation



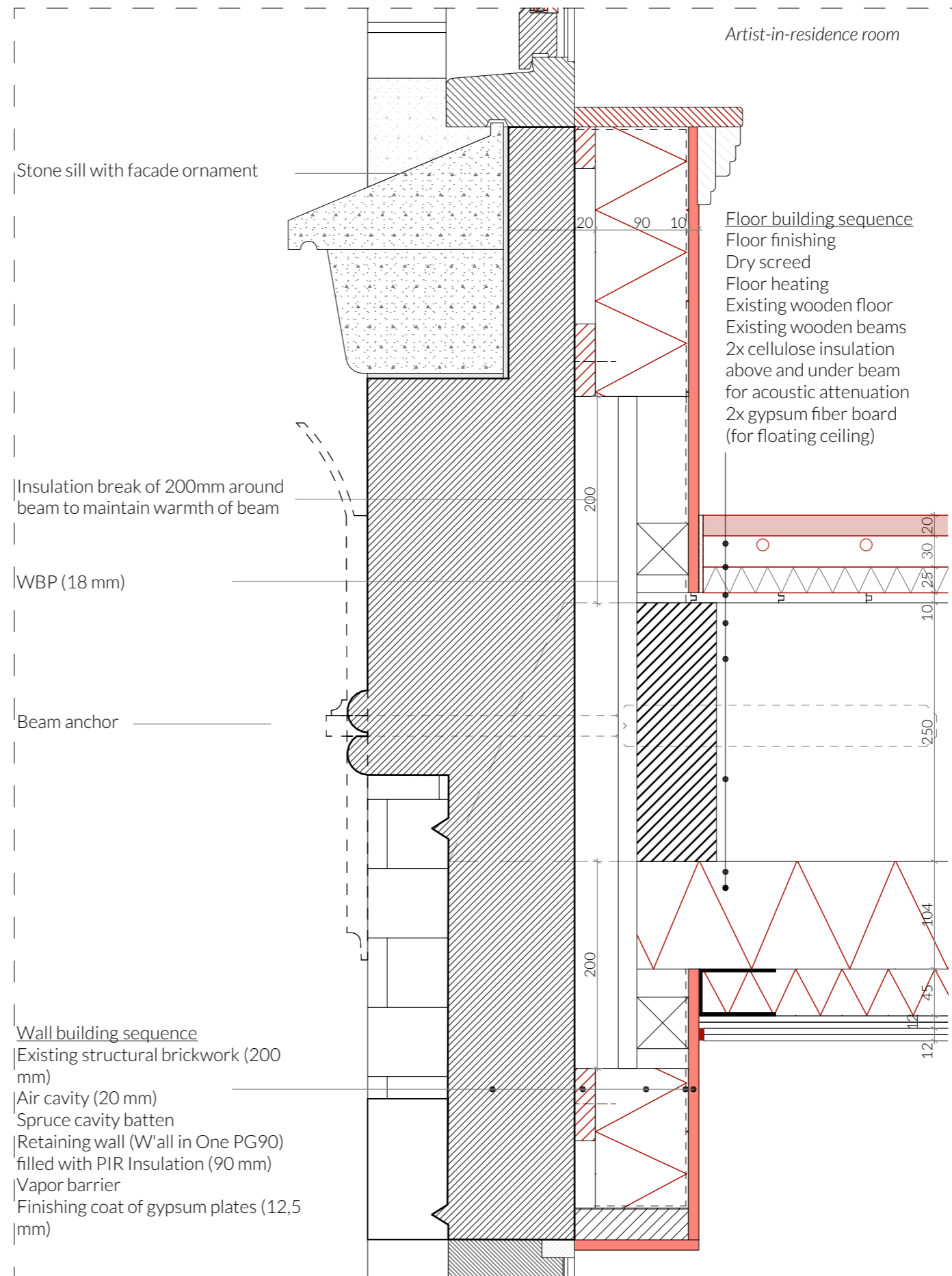
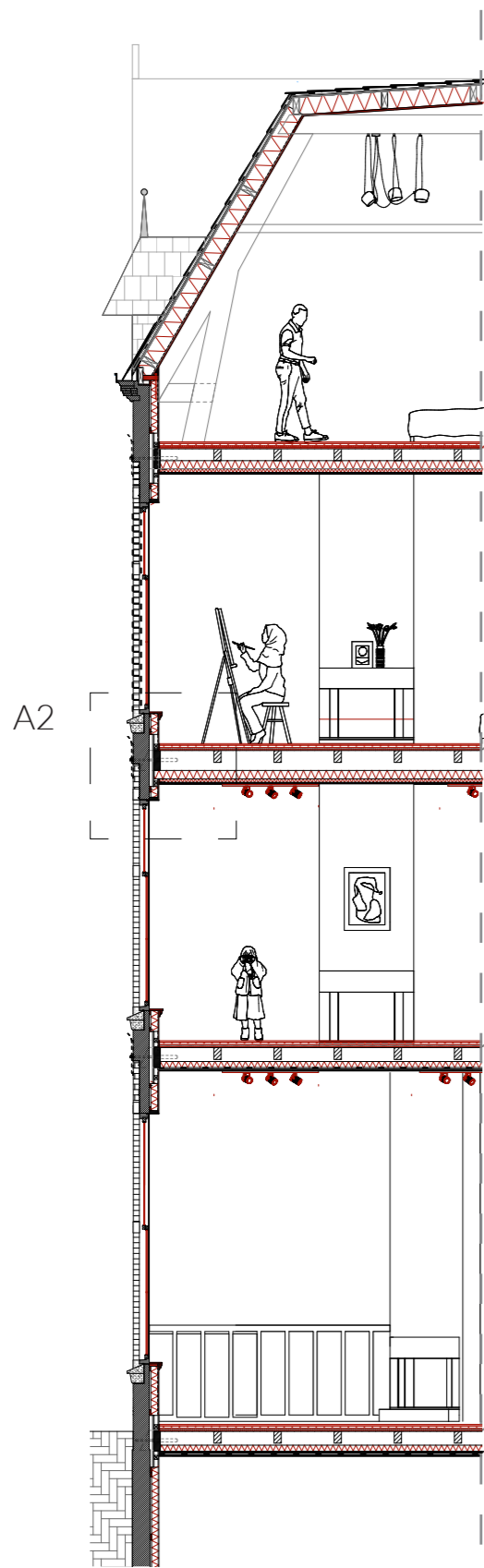
Horizontal detail 1:5

Parish Hall

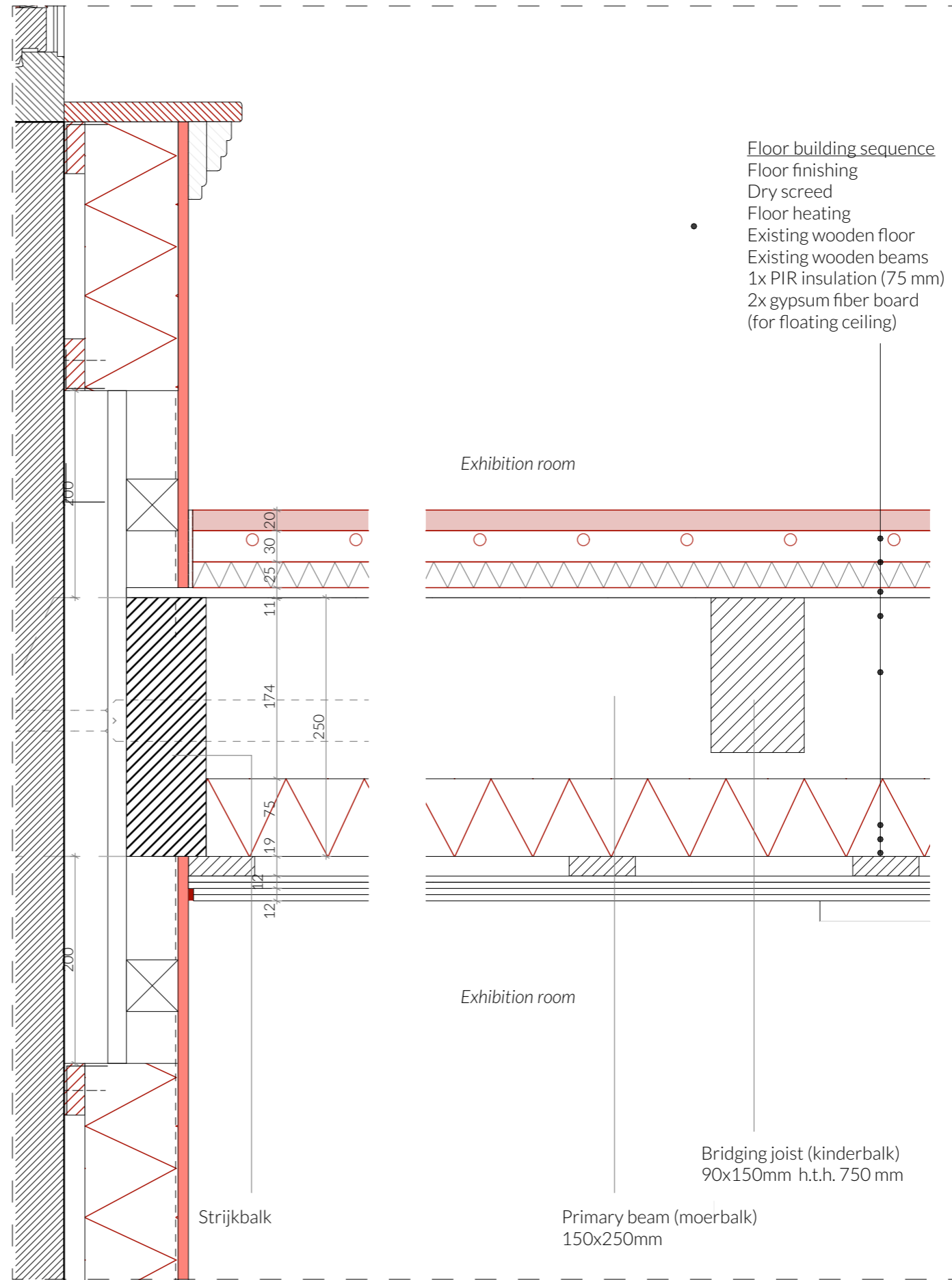
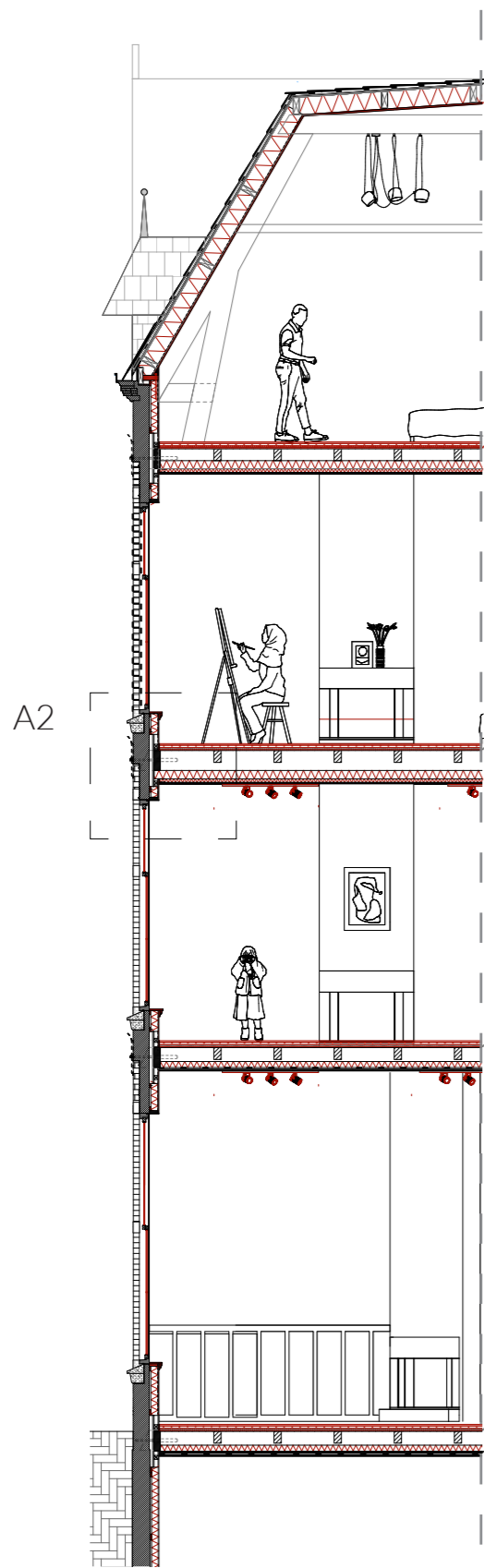
A1



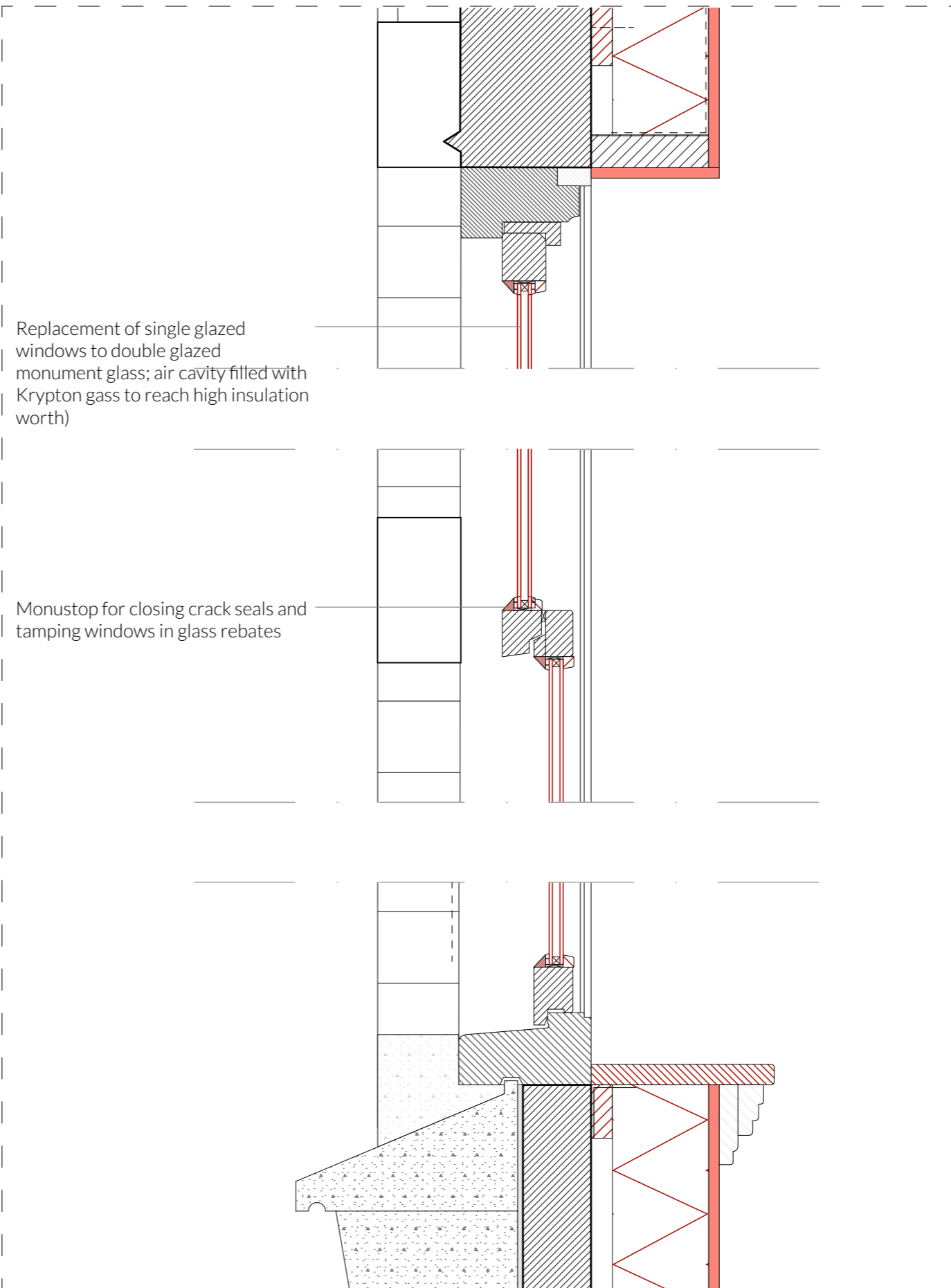
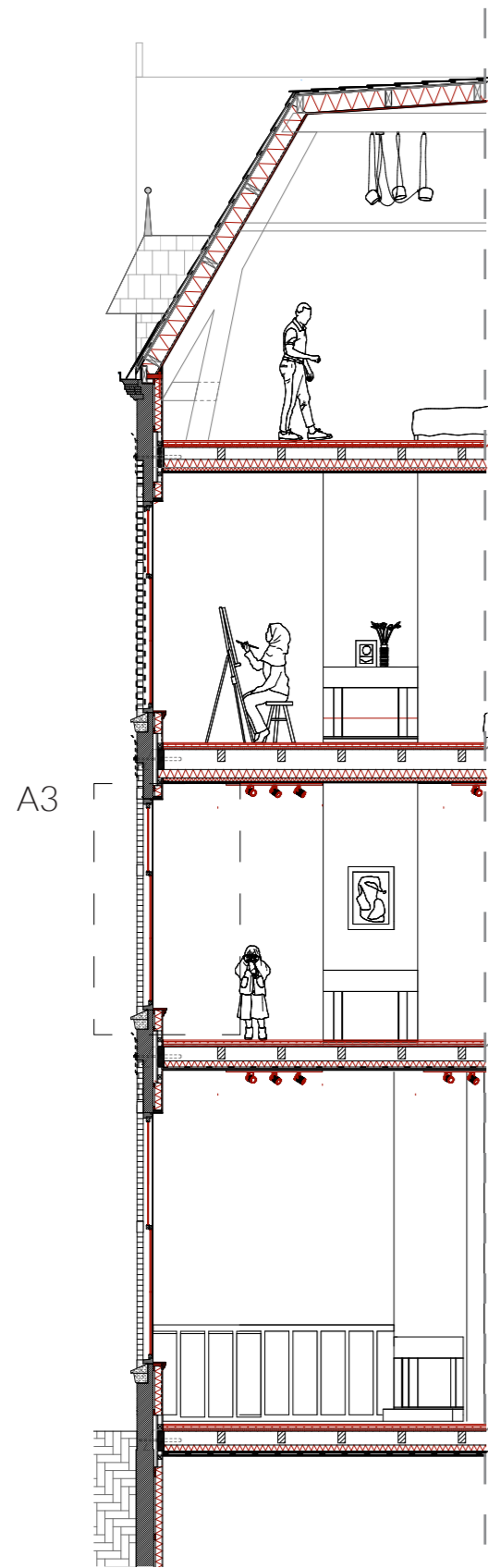
A1 detail 1:5 | Roof



A2 detail 1:5 | The critical point of the beam



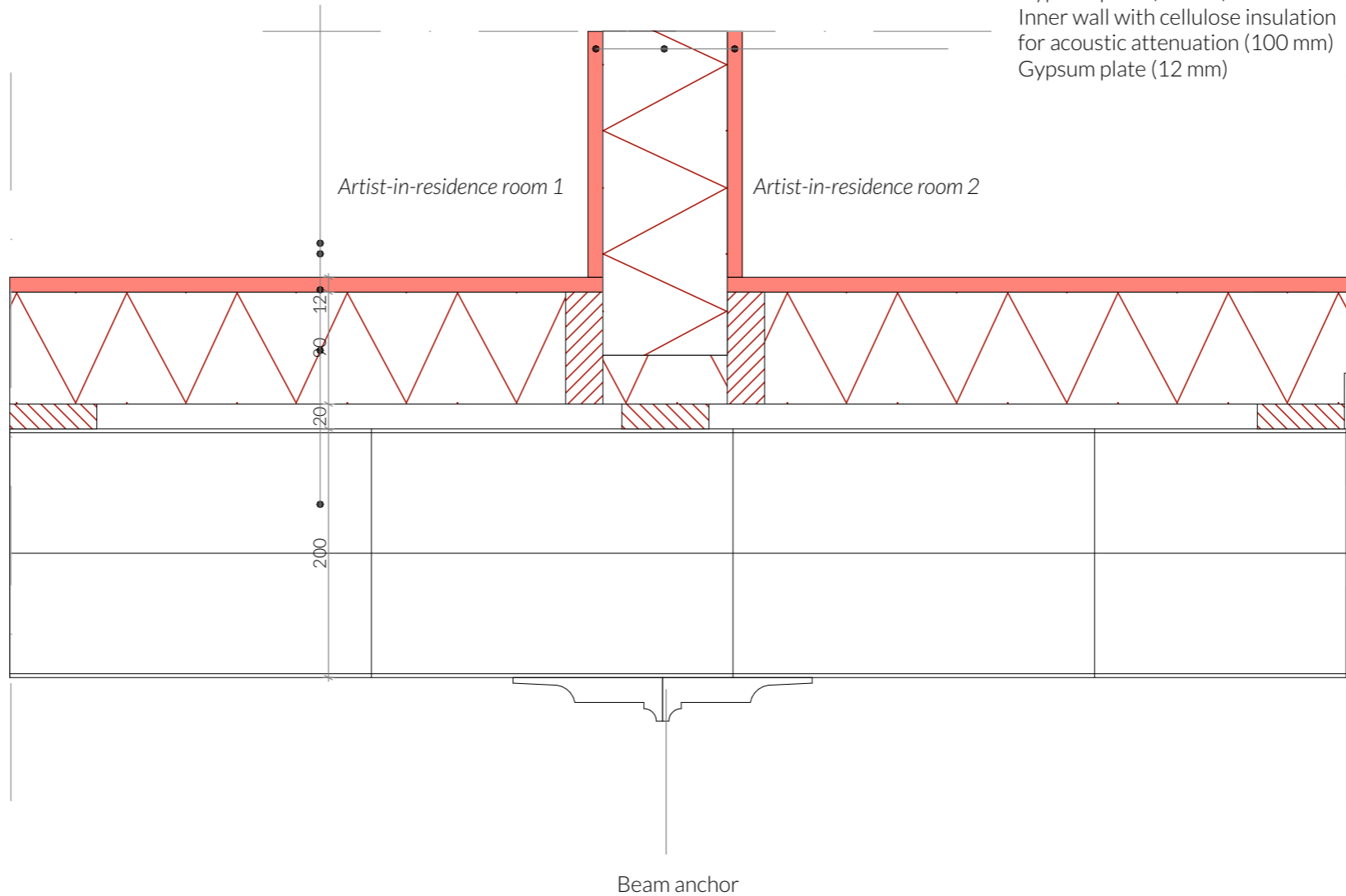
A2 detail 1:5 | Second Floor



A3 Detail 1:5 | Monument-glas

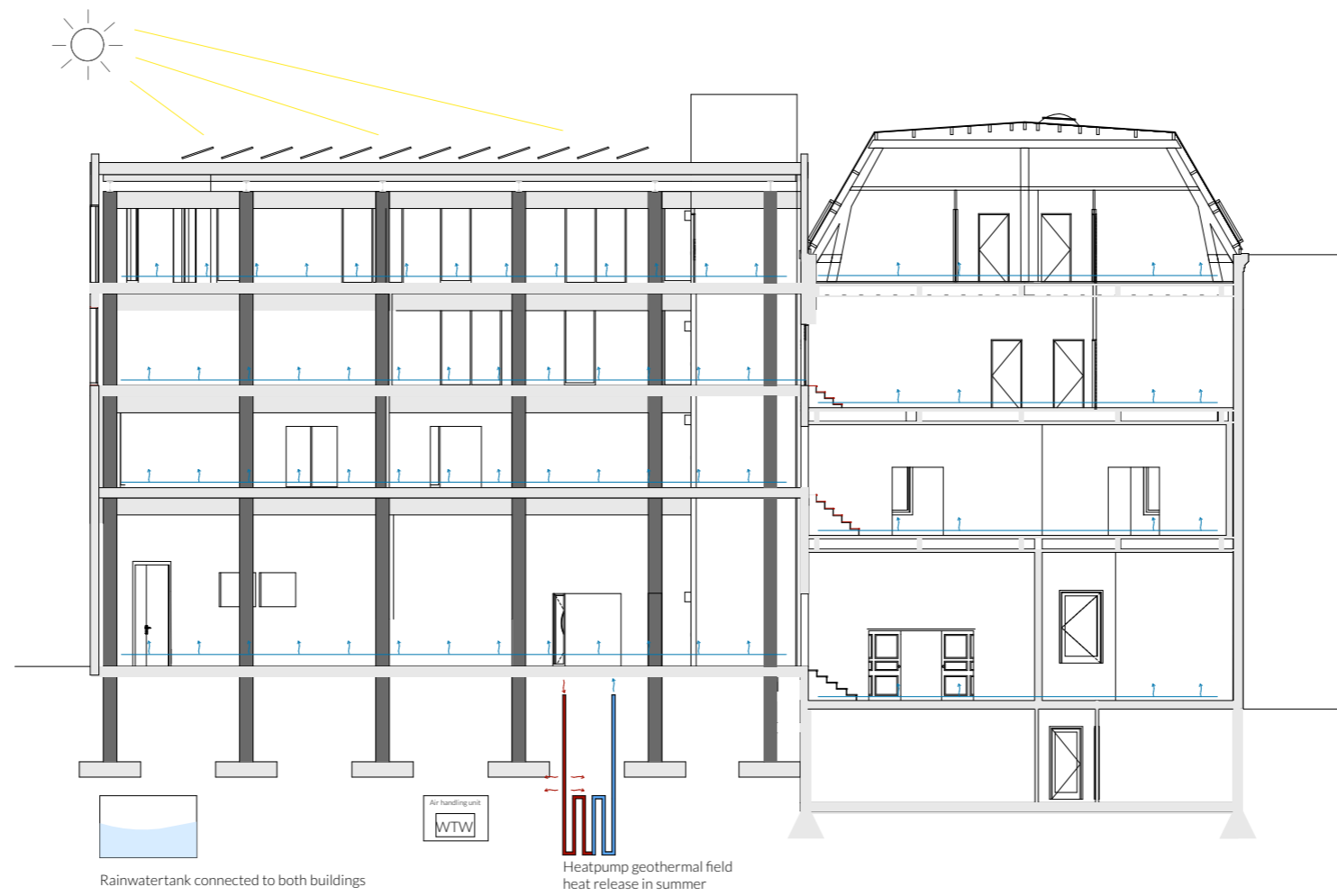
Wall building sequence
 Existing structural brickwork (200 mm)
 Air cavity (20 mm)
 Spruce cavity batten
 Retaining wall (W'all in One PG90)
 filled with PIR Insulation (90 mm)
 Vapor barrier
 Finishing coat of gypsum plates (12 mm)

Wall building sequence
 Gypsum plate (12 mm)
 Inner wall with cellulose insulation
 for acoustic attenuation (100 mm)
 Gypsum plate (12 mm)



Horizontal detail 1:5

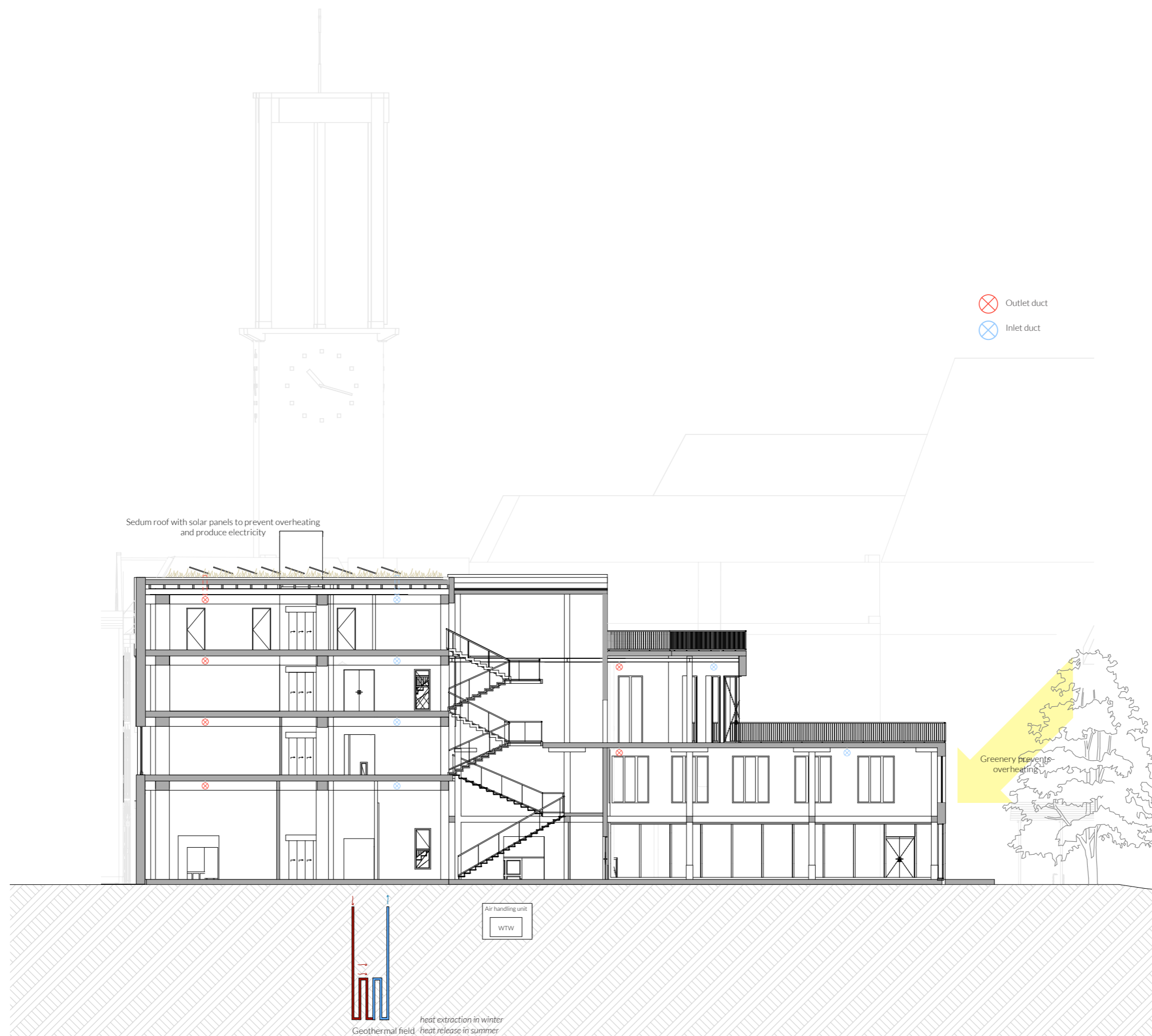
Climate Design



Section Climate principle Summer | 1:200



Section Climate principle Winter | 1:200



Mechanical ventilation in Molenpoort 1:200