



TOWARDS AN EVER-LASTING ARCHITECTURE

The construction industry is a major contributor to climate change. To create sustainable and resilient architecture longevity should play a major role, as the initial embodied carbon can be used for longer. Furthermore, the lifespan of Dutch dwellings needs to be extended to counteract the low annual net addition of new buildings and the housing shortage.

To address these problems this multi functional design (housing + education) on campus rethinks the typical timescales of architecture and aims to provide a sustain-

able alternative to construction methods with a low initial carbon footprint such as timber construction.

The combination of an „ever-lasting“ concrete structure that merges with the site, and can be seen as new land, with temporal building elements guarantees that the building is able to adapt to new functions and requirements over its long service life. The site, which is currently used as a parking lot, can be actively used as part of the campus where living, teaching, nature and leisure meet.

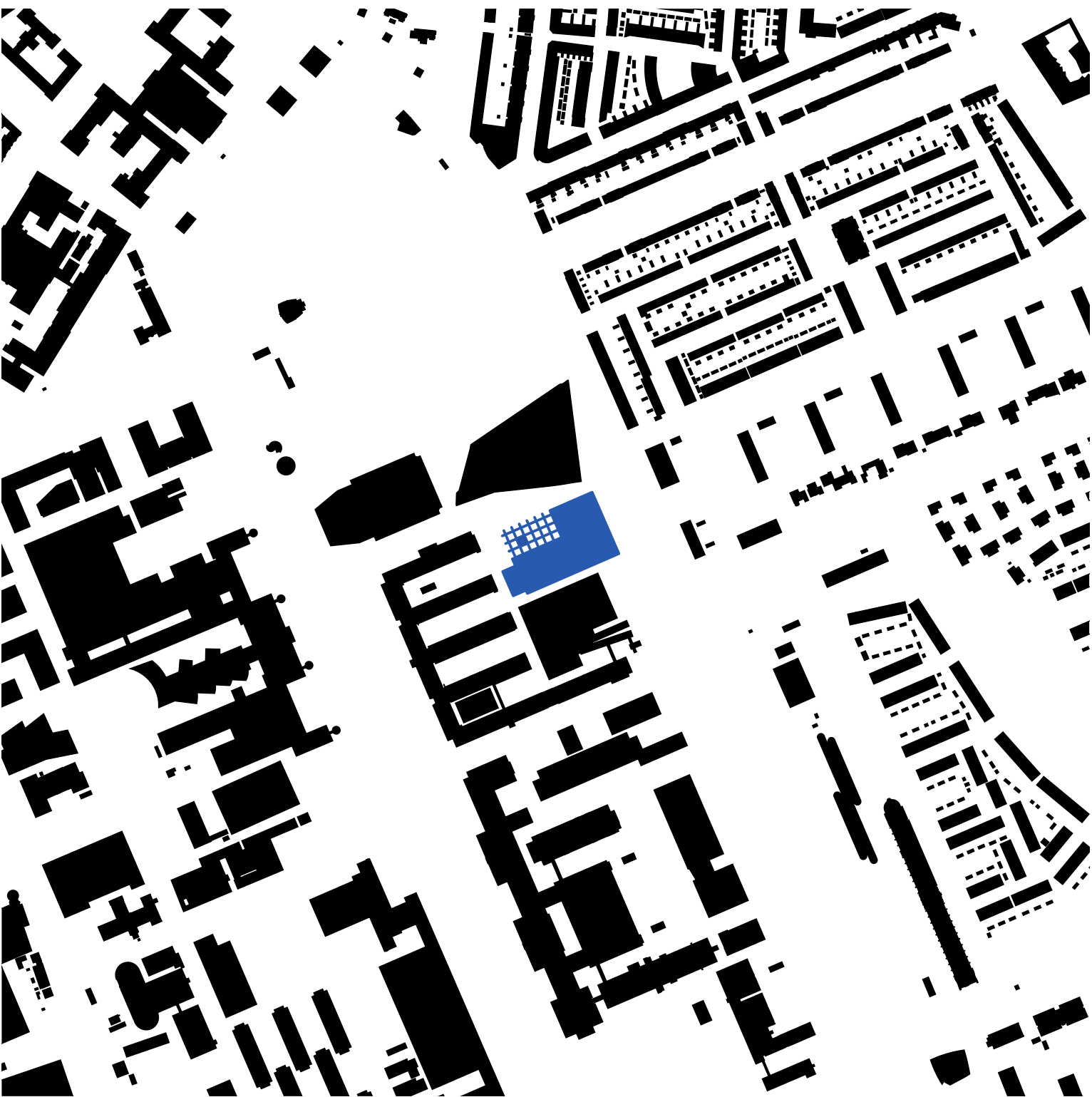
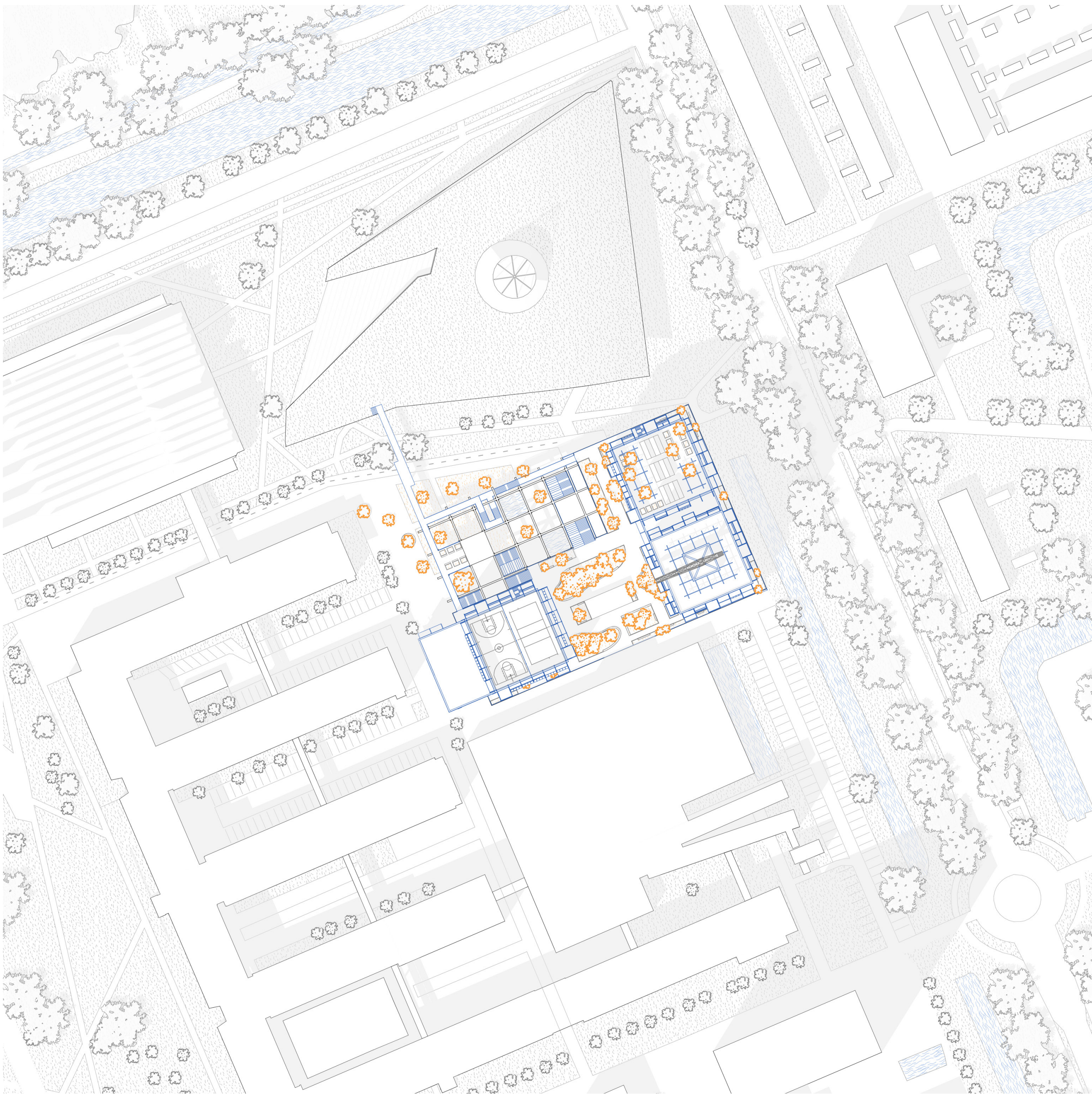
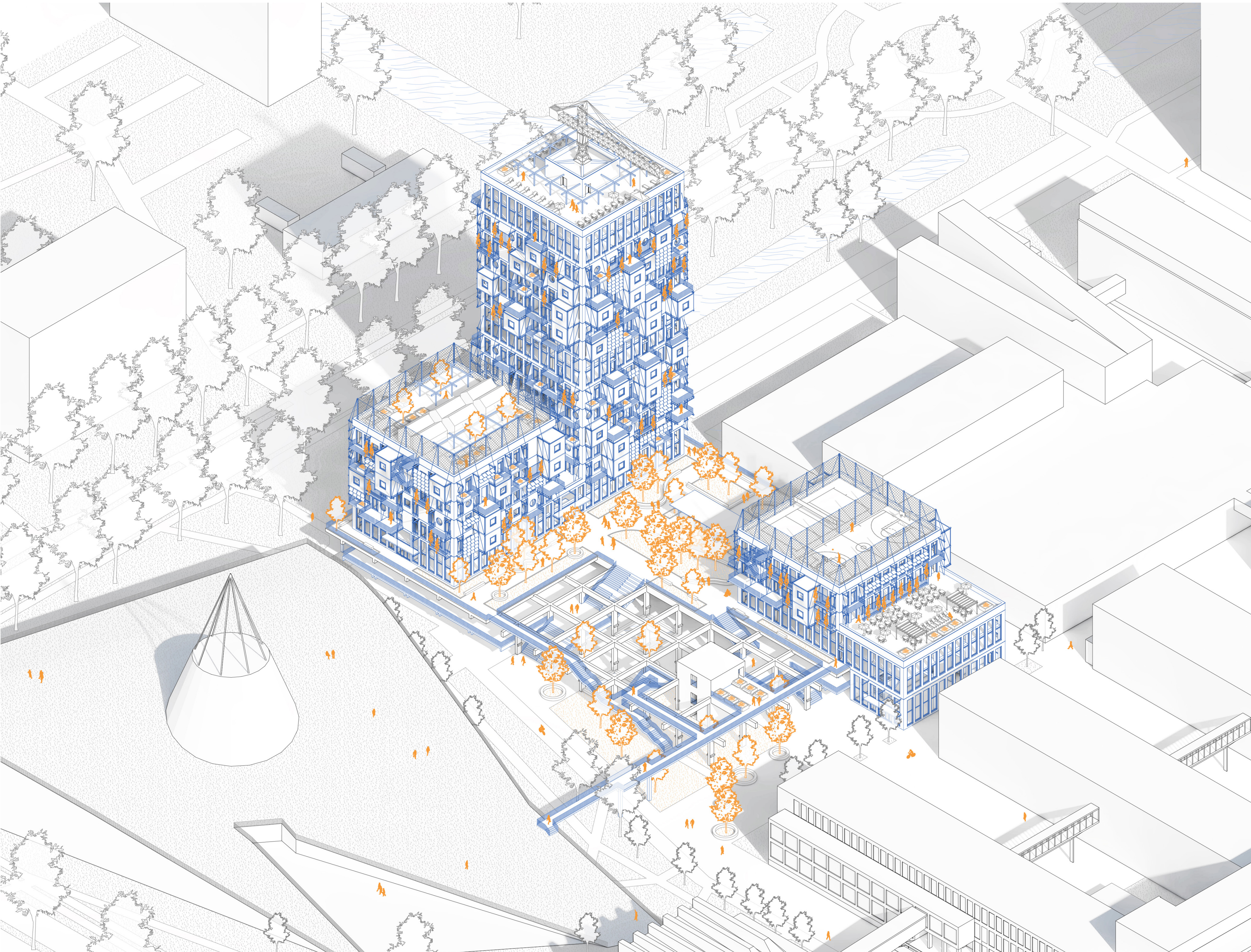


figure ground plan 1|5000

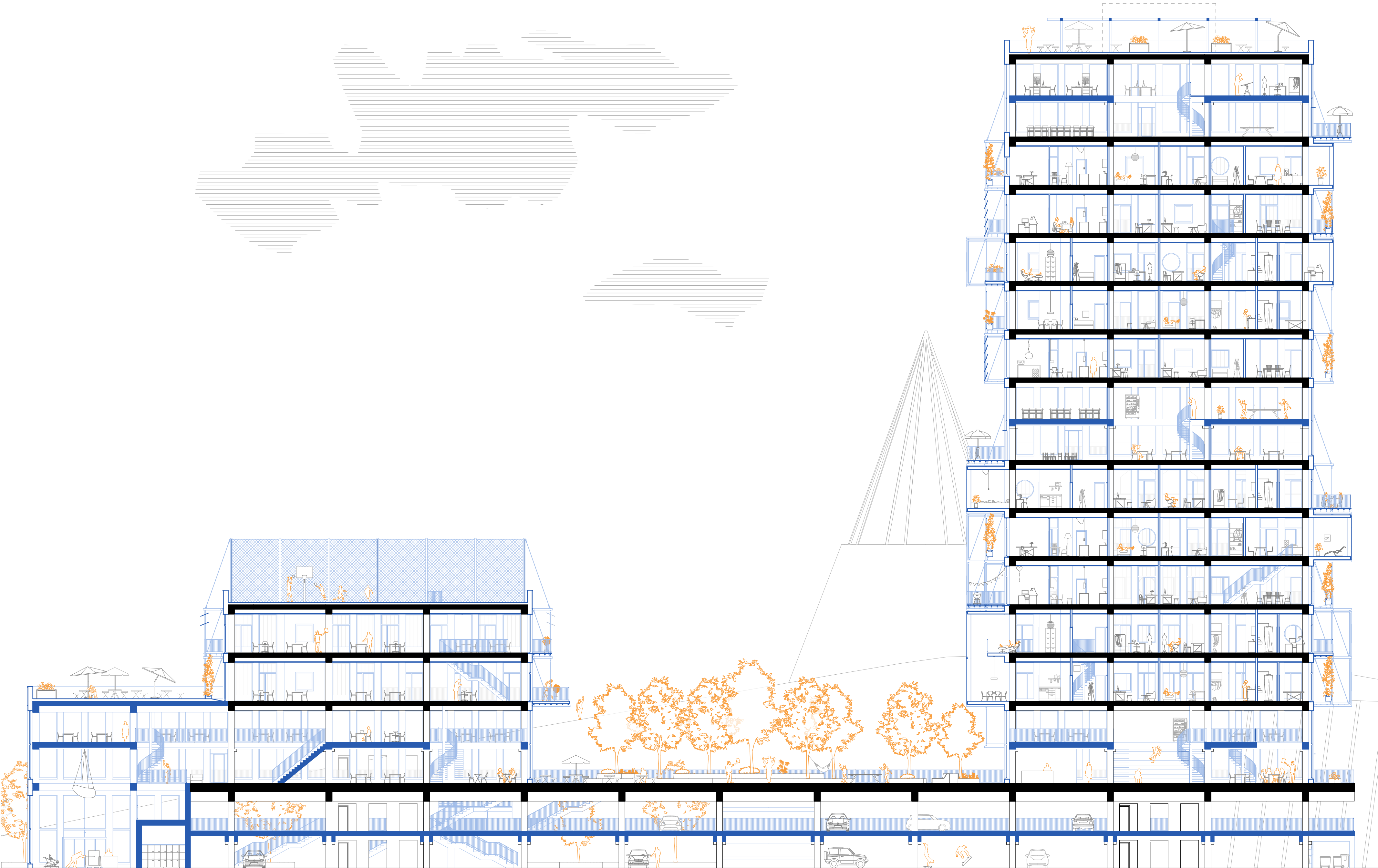


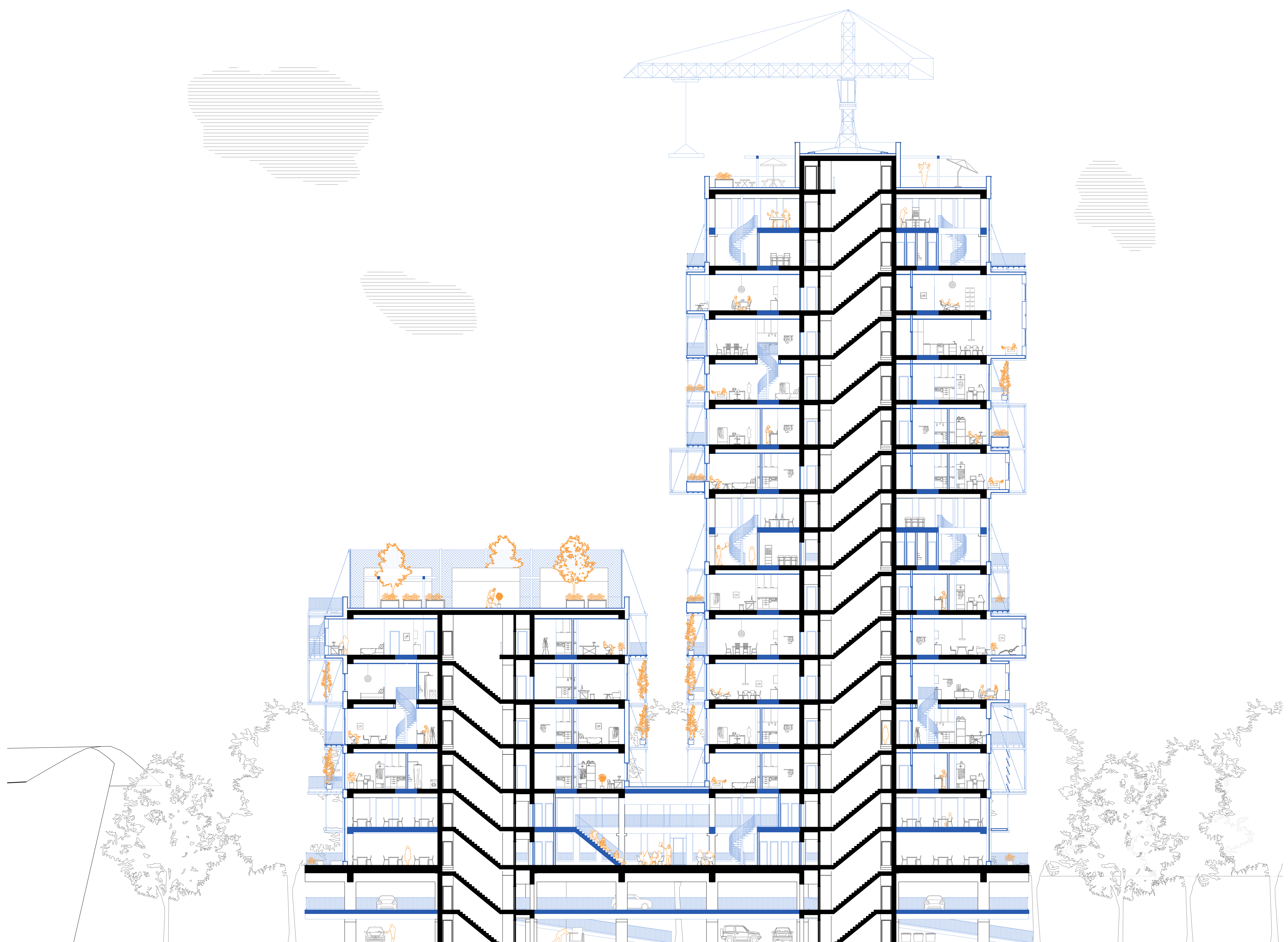
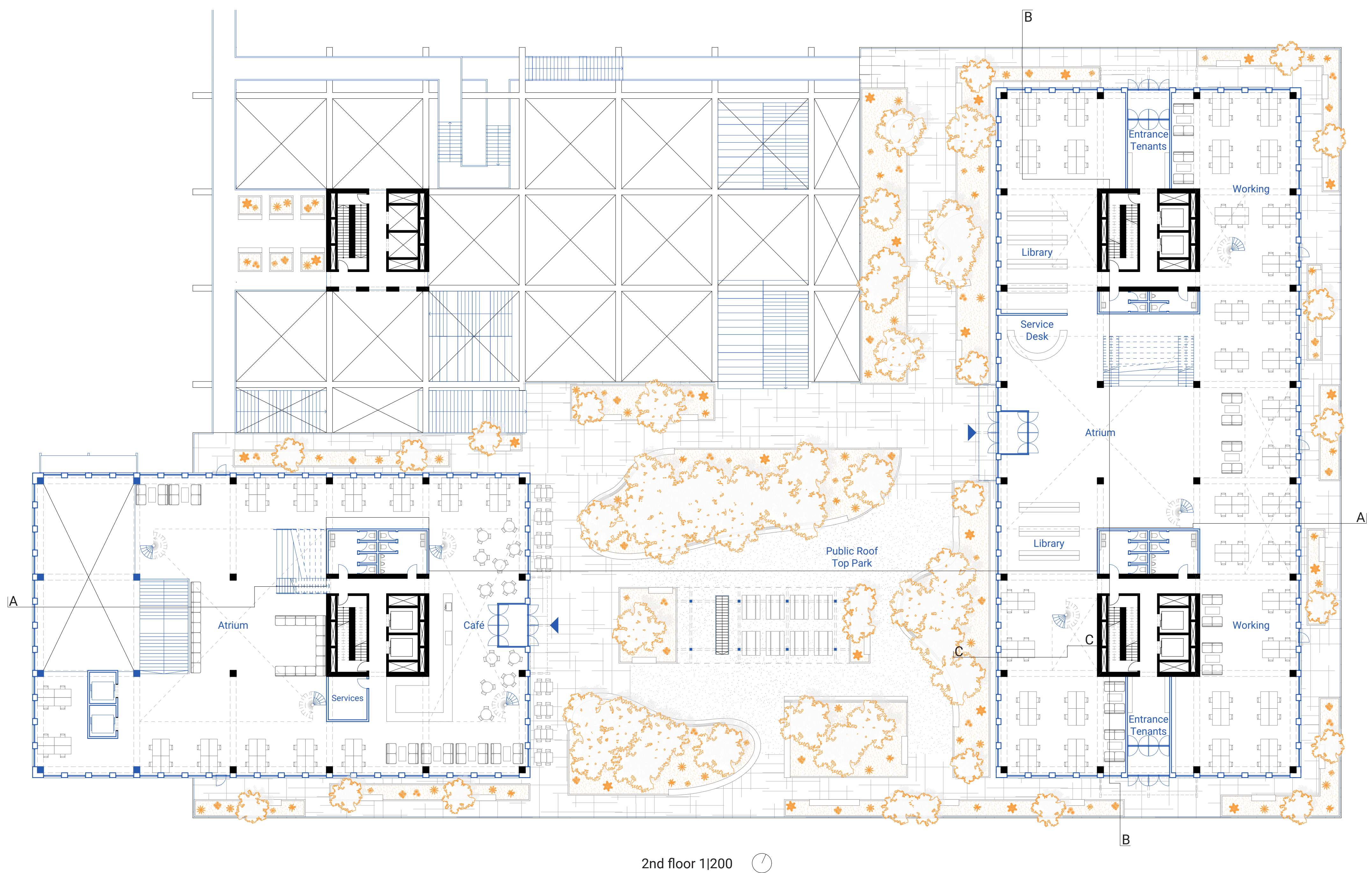
site plan 1|1000

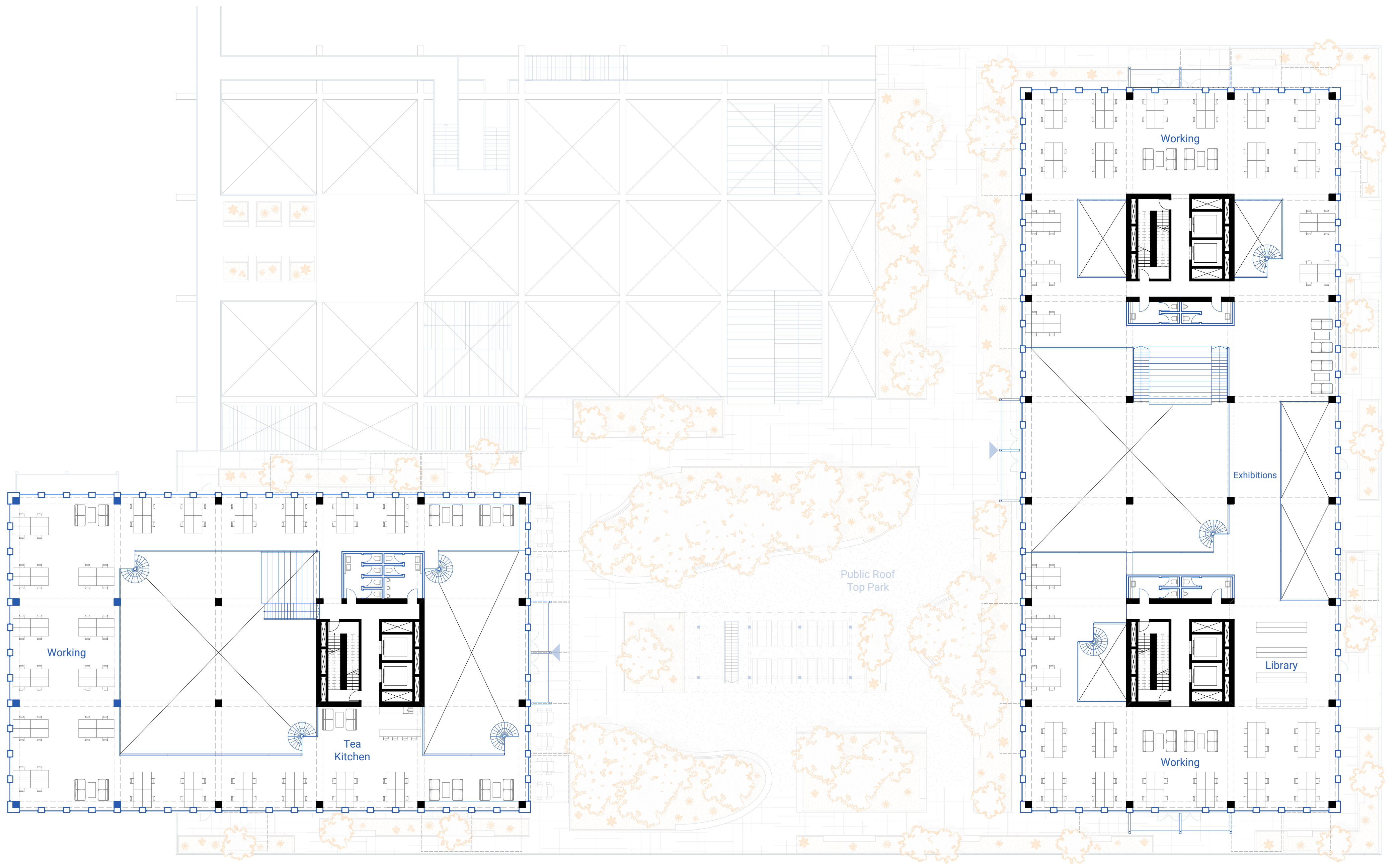




ground floor 1|500

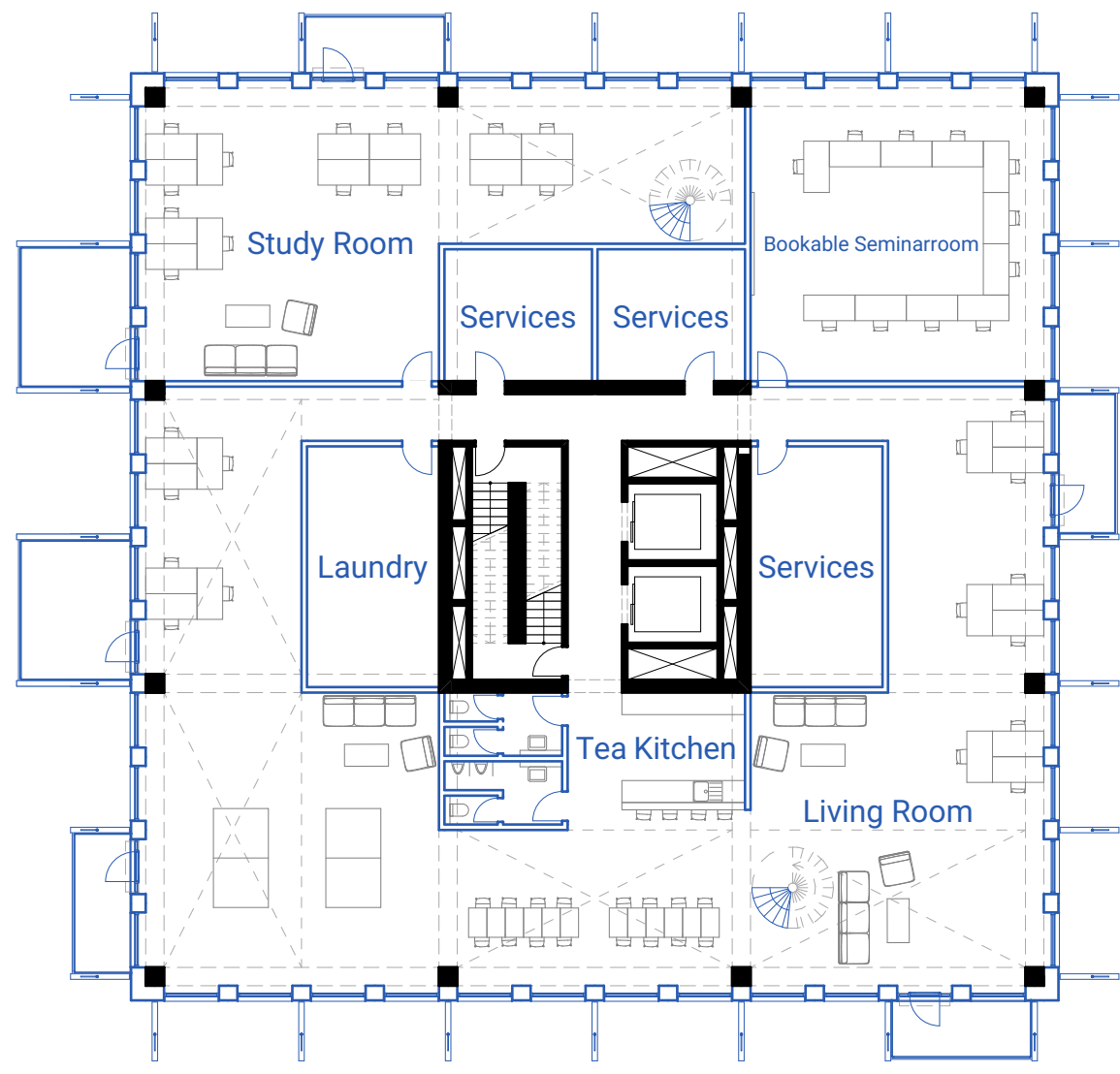




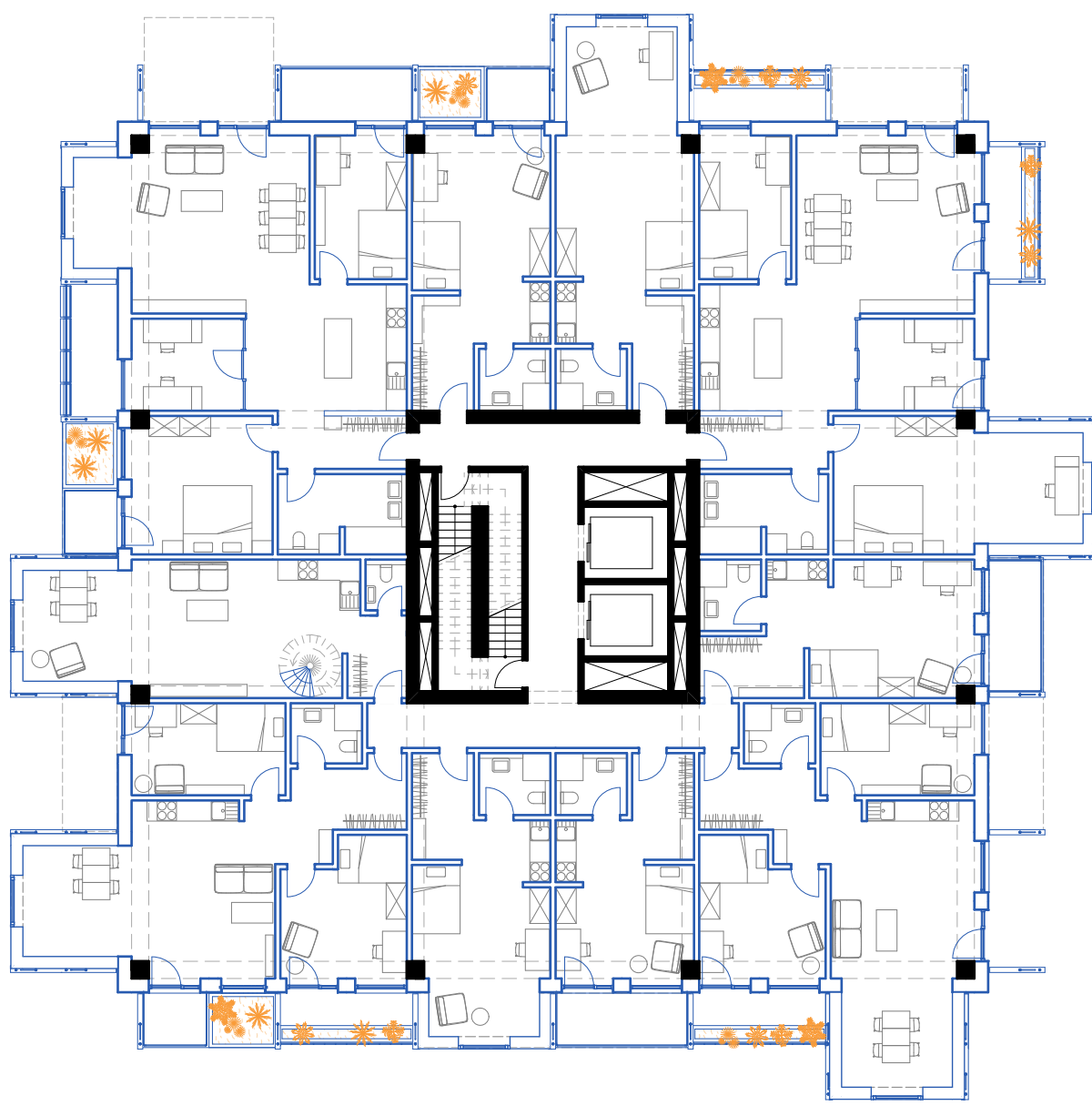


3rd floor 1/200

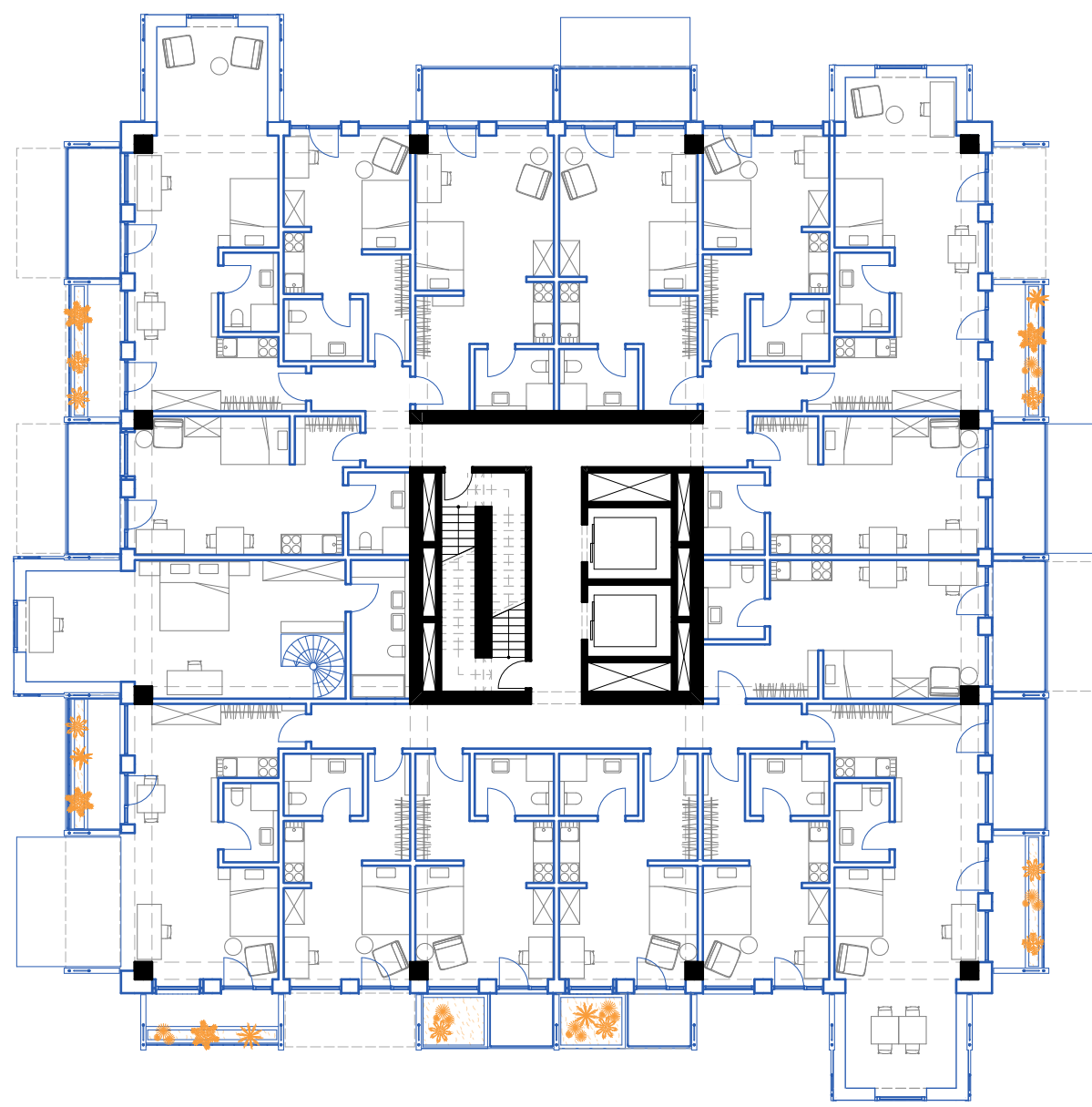




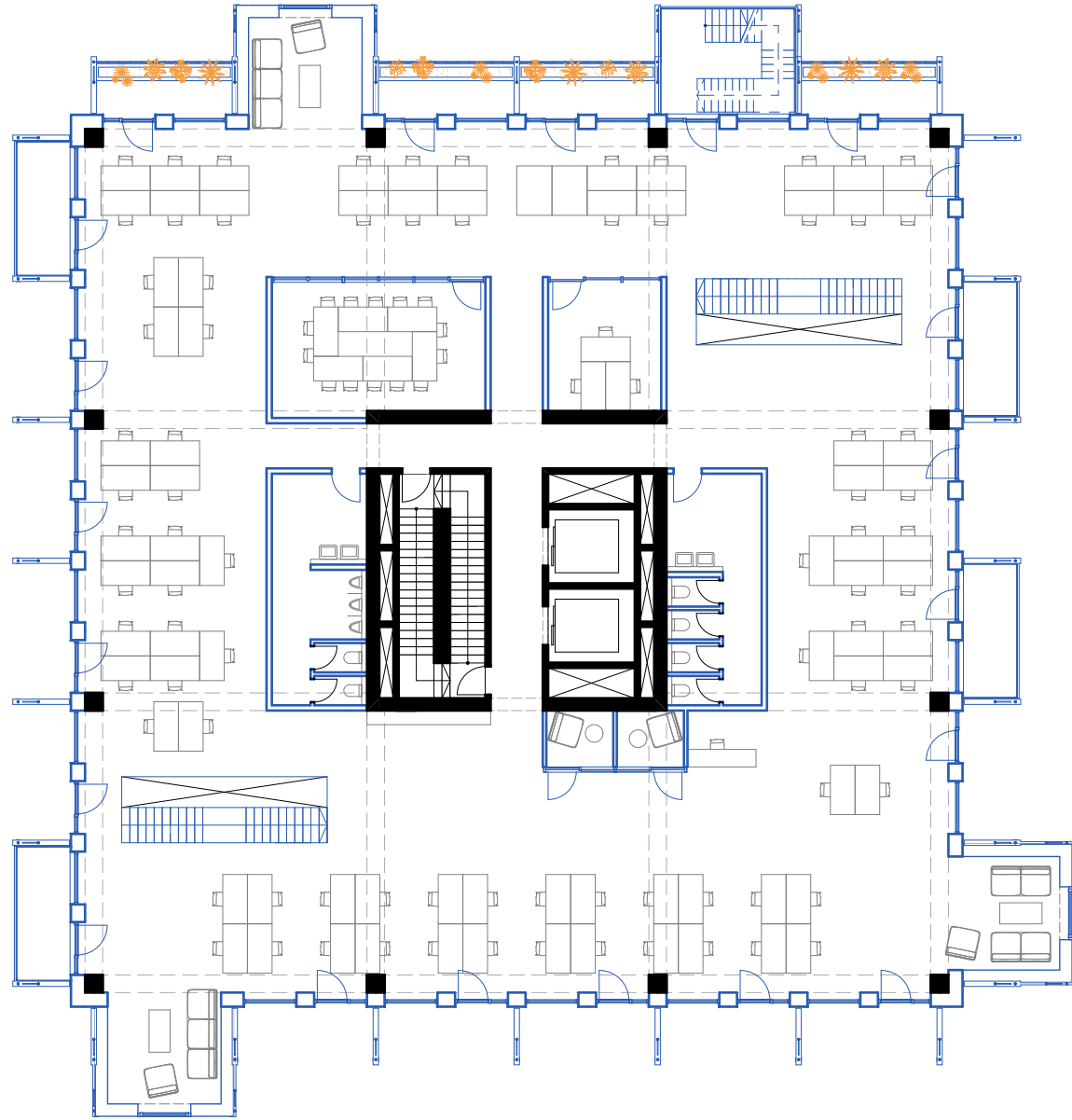
9th floor, communal space 1|200



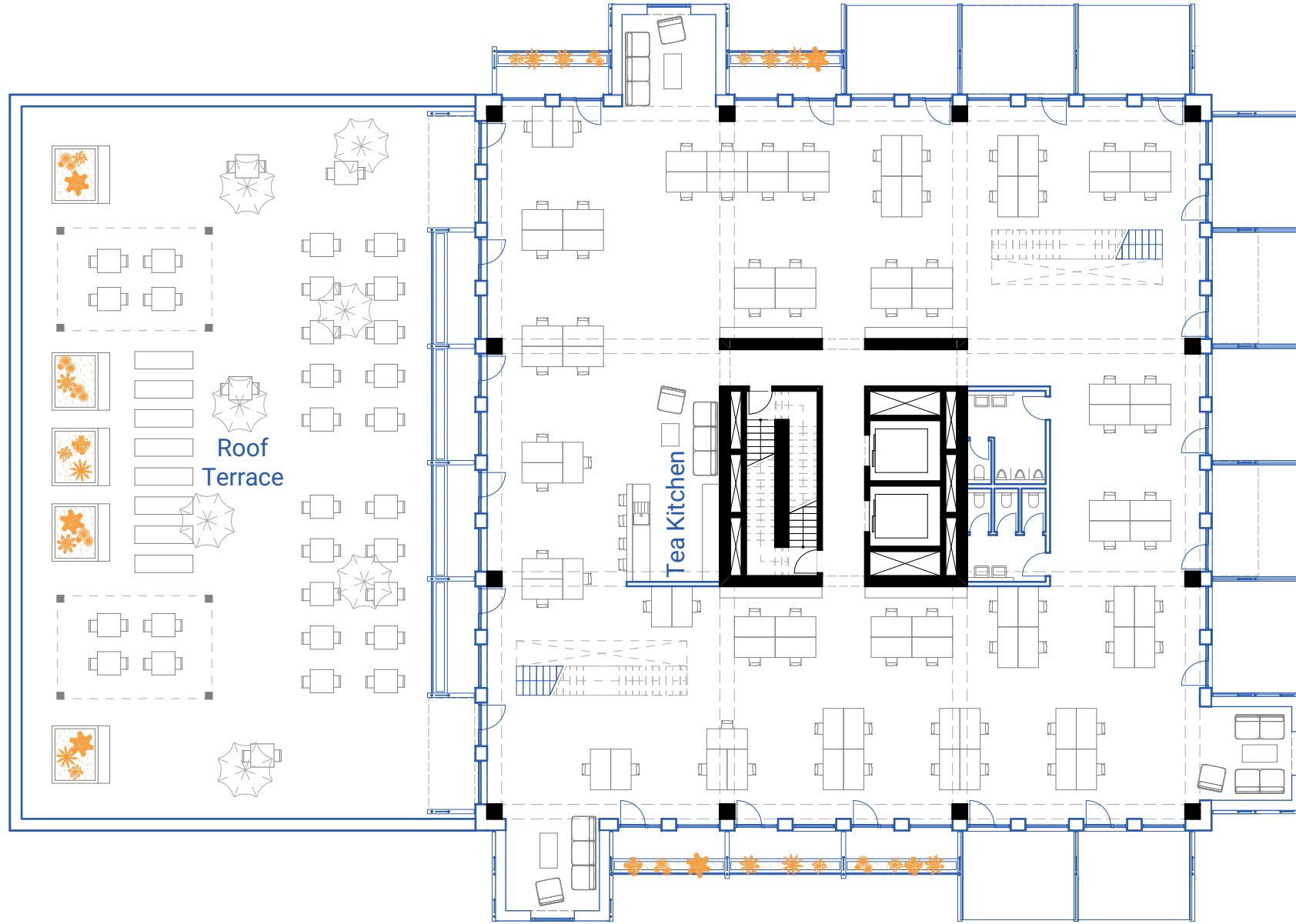
11th floor, 10 units different sizes 1|200



12th floor, 16 units same size 1|200

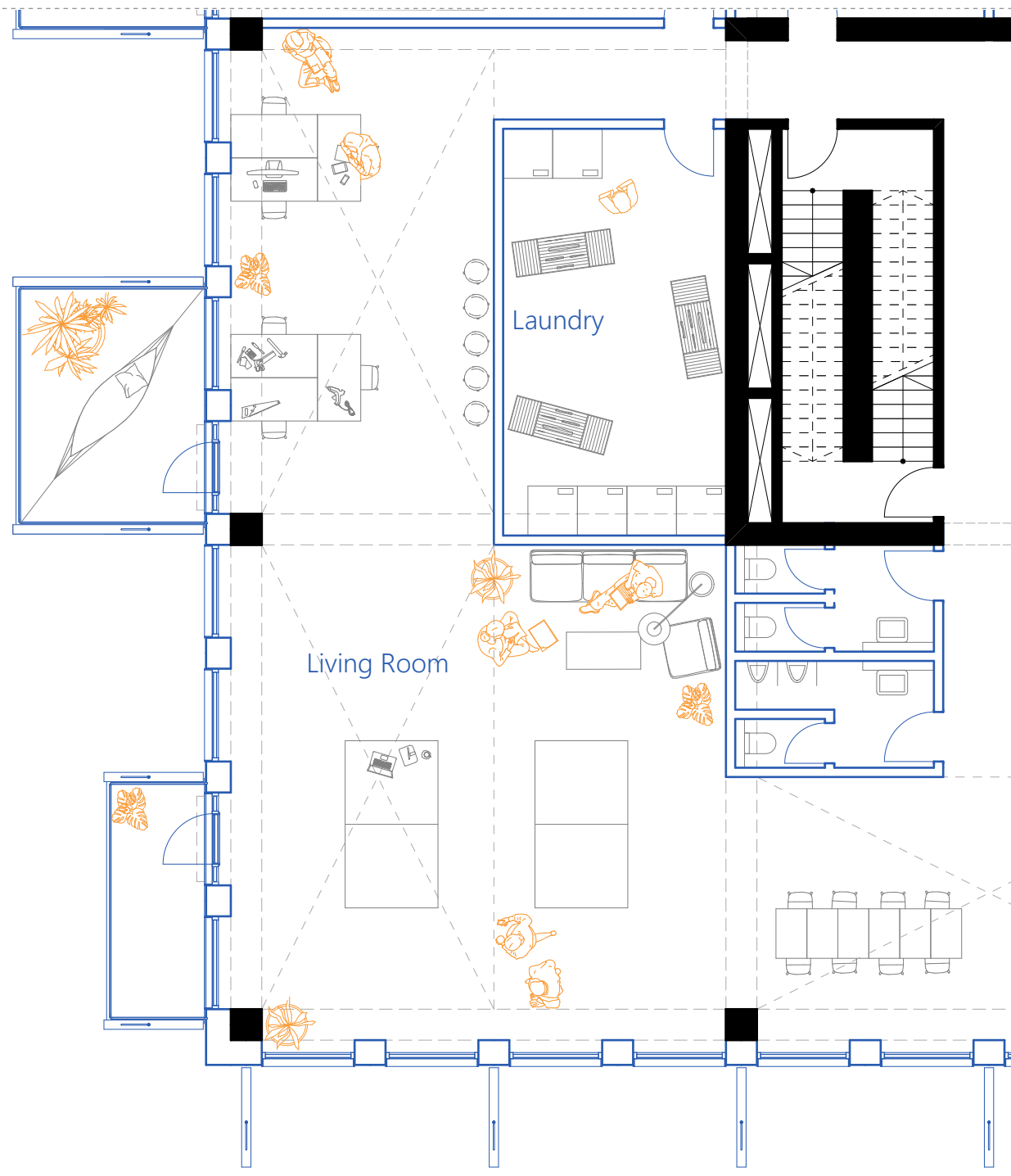


5th floor, educational / pot. office 1|200

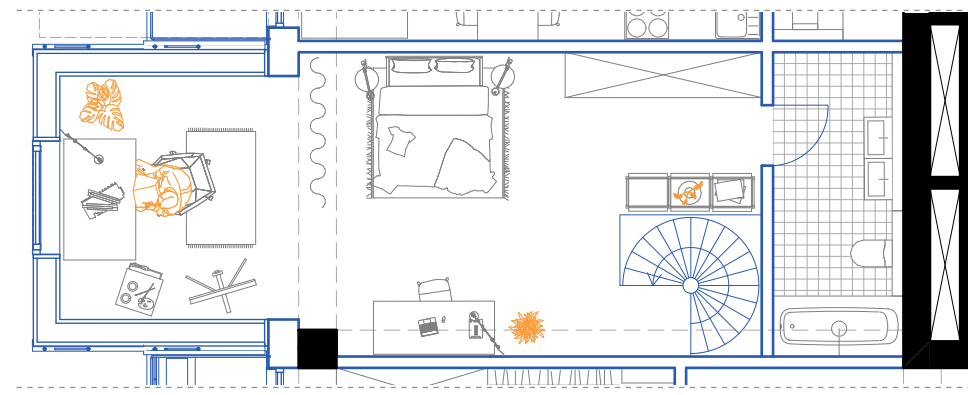


4th floor, educational with roof terrace 1|200

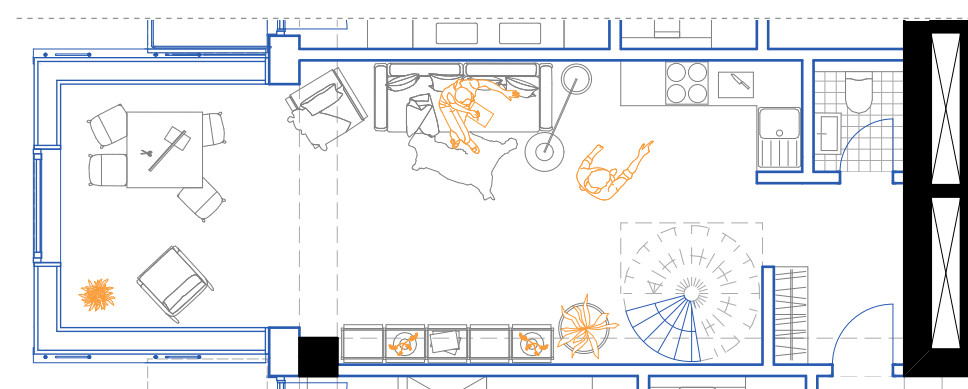




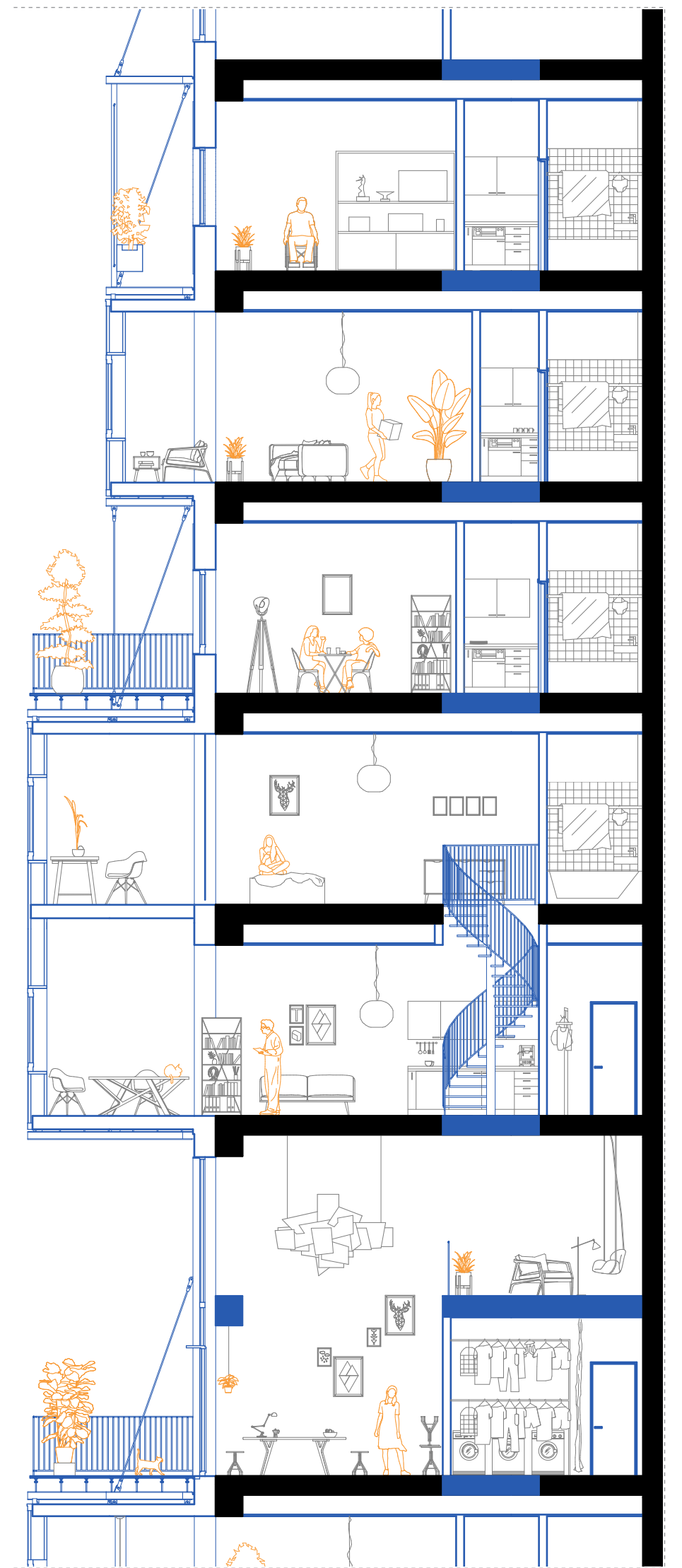
9th floor, common spaces 1|100



12th floor, maisonette flat 1|100



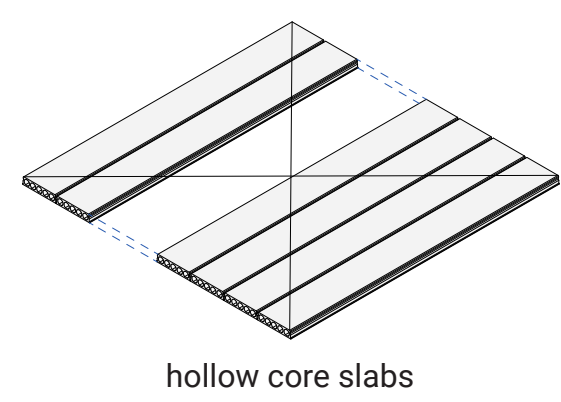
11th floor, maisonette flat 1|100



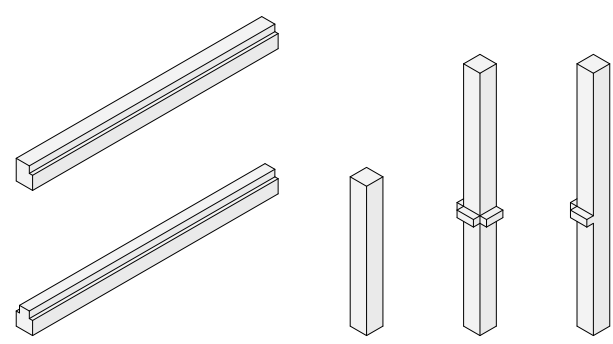
section C-C

eternal

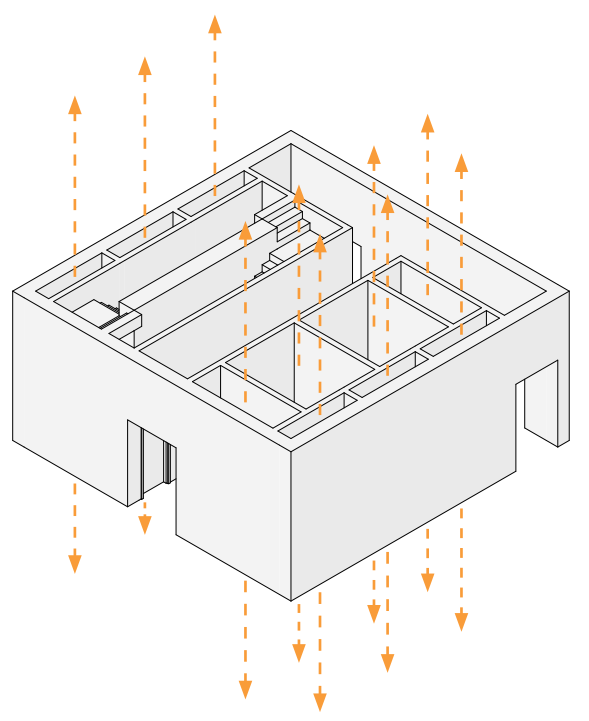
temporal



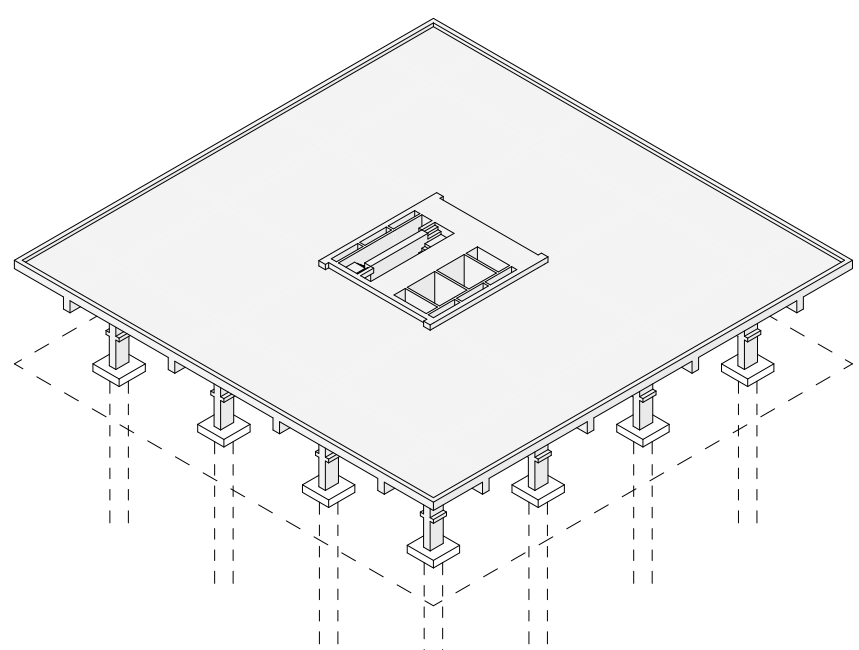
hollow core slabs



prefab concrete columns/beam

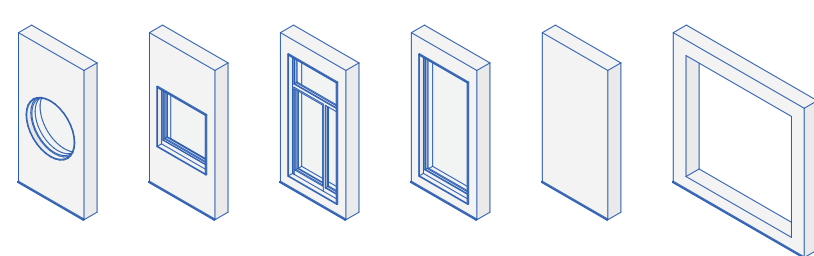


casted concrete core / provides vertical connections

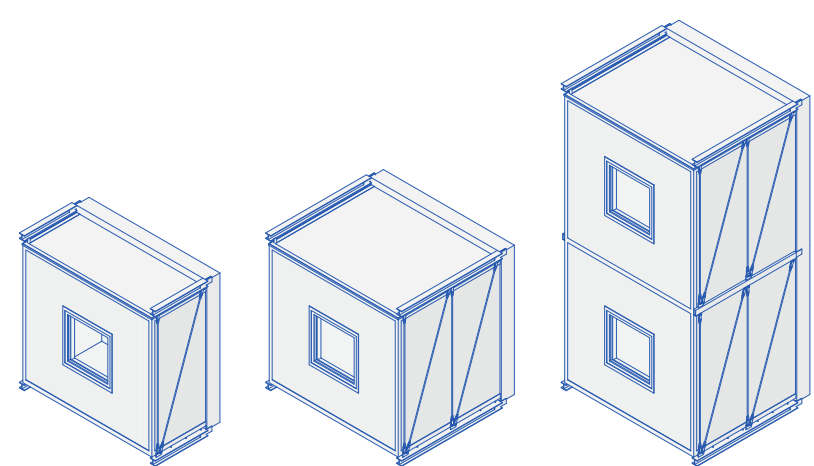


casted concrete table/foundation

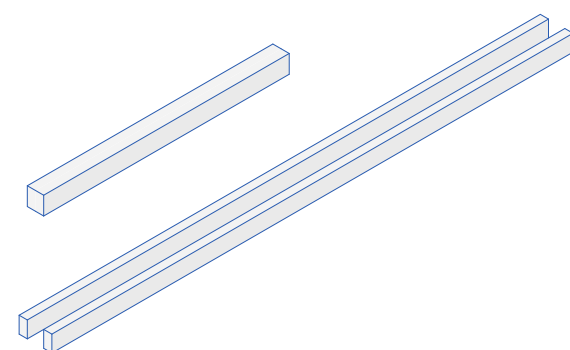
low carbon



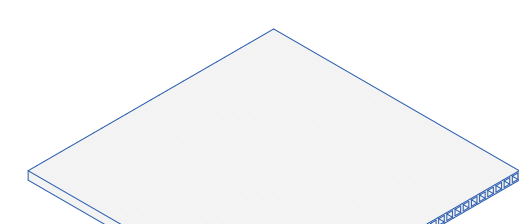
prefab timber frame facade elements



prefab polycarbonate/timber frame boxes, assembly on site

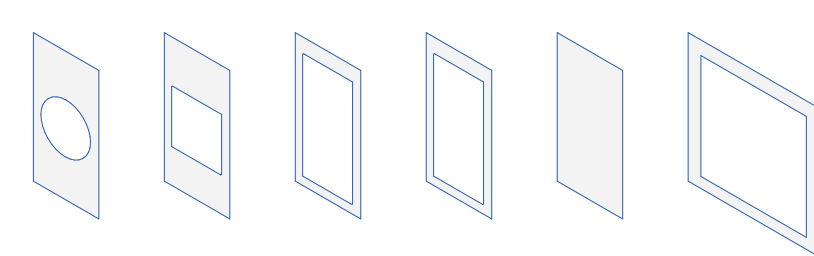


wooden beams



wooden box element slab

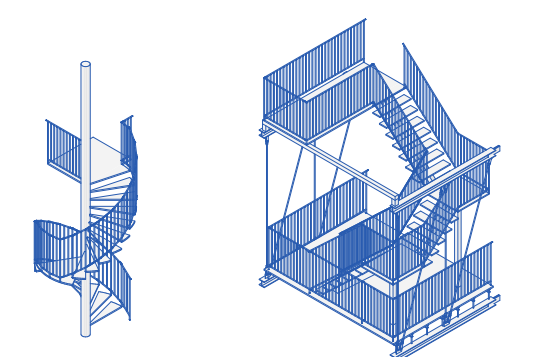
modular, reusable



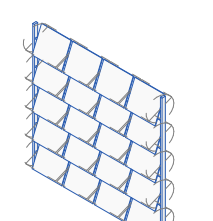
hollow core slabs for parking



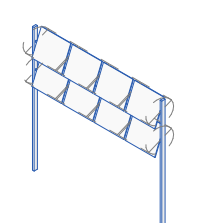
cladding: fibre cement board



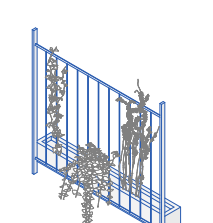
steel stairs



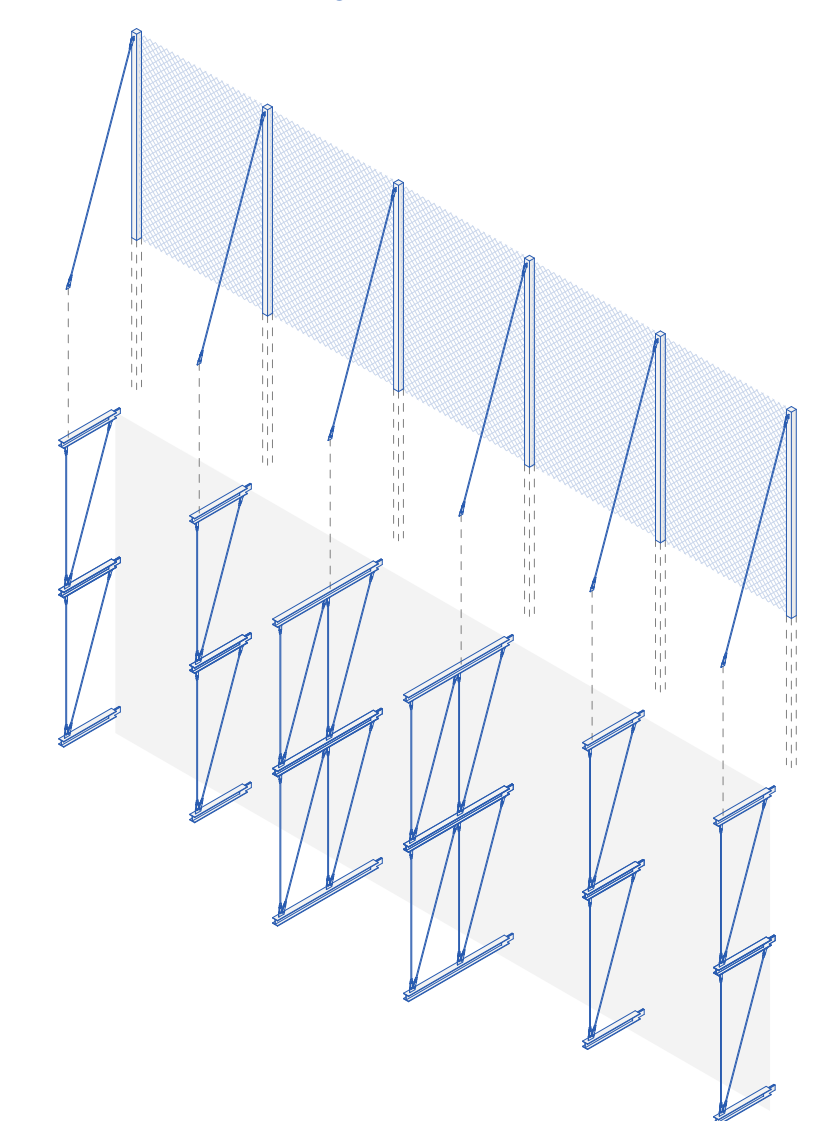
solar panel element 1



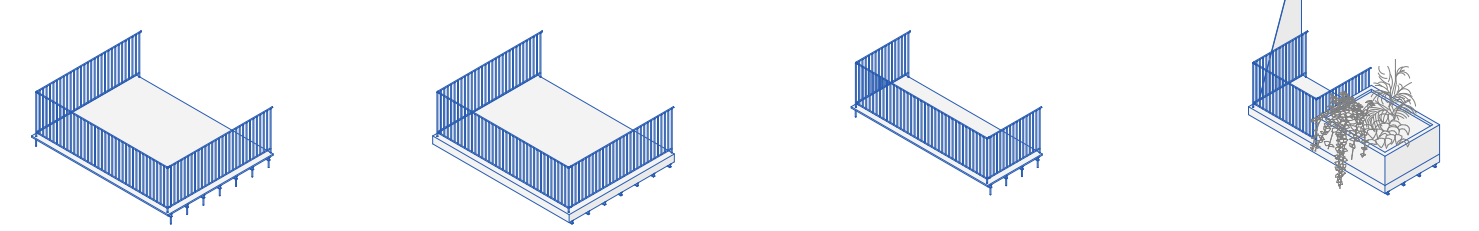
solar panel element 2



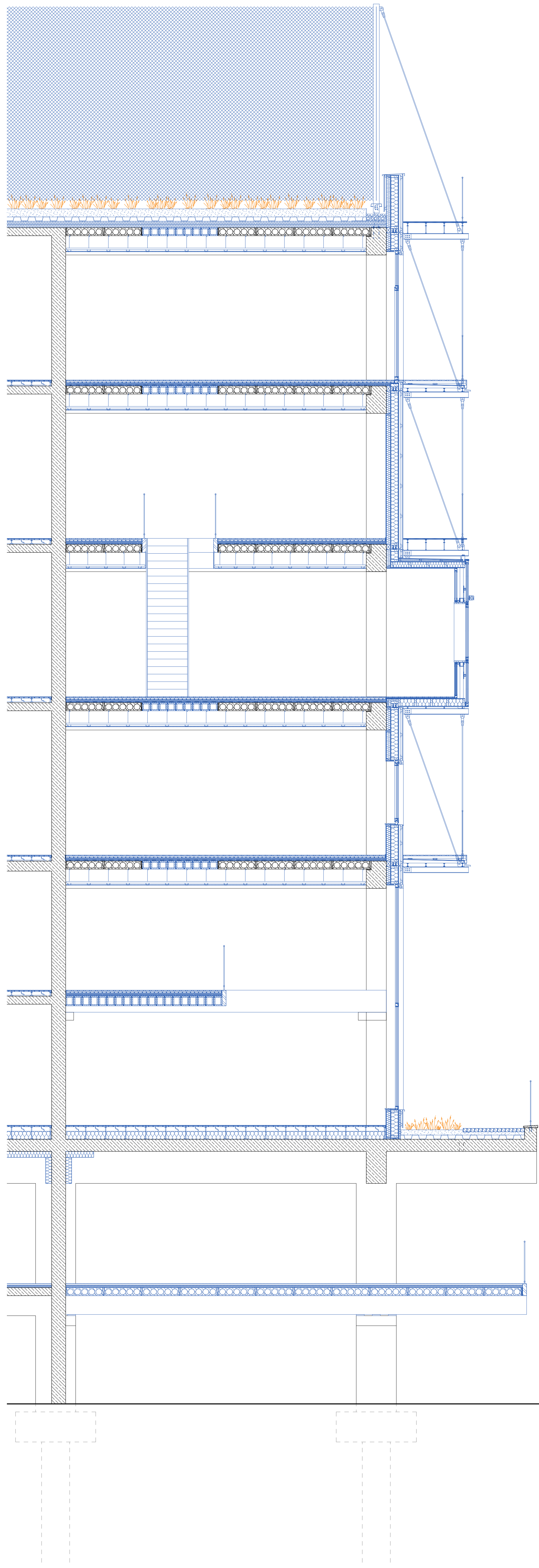
facade greening element

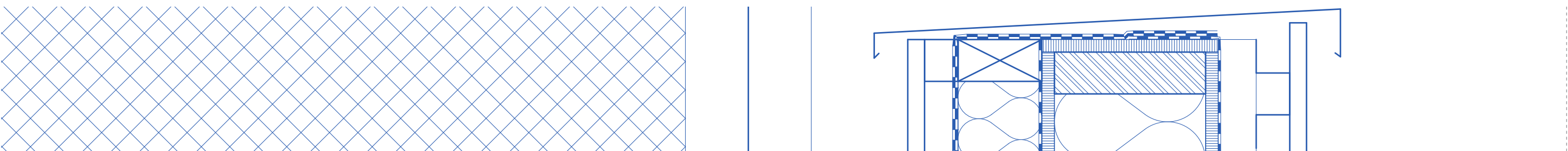


steel skeleton

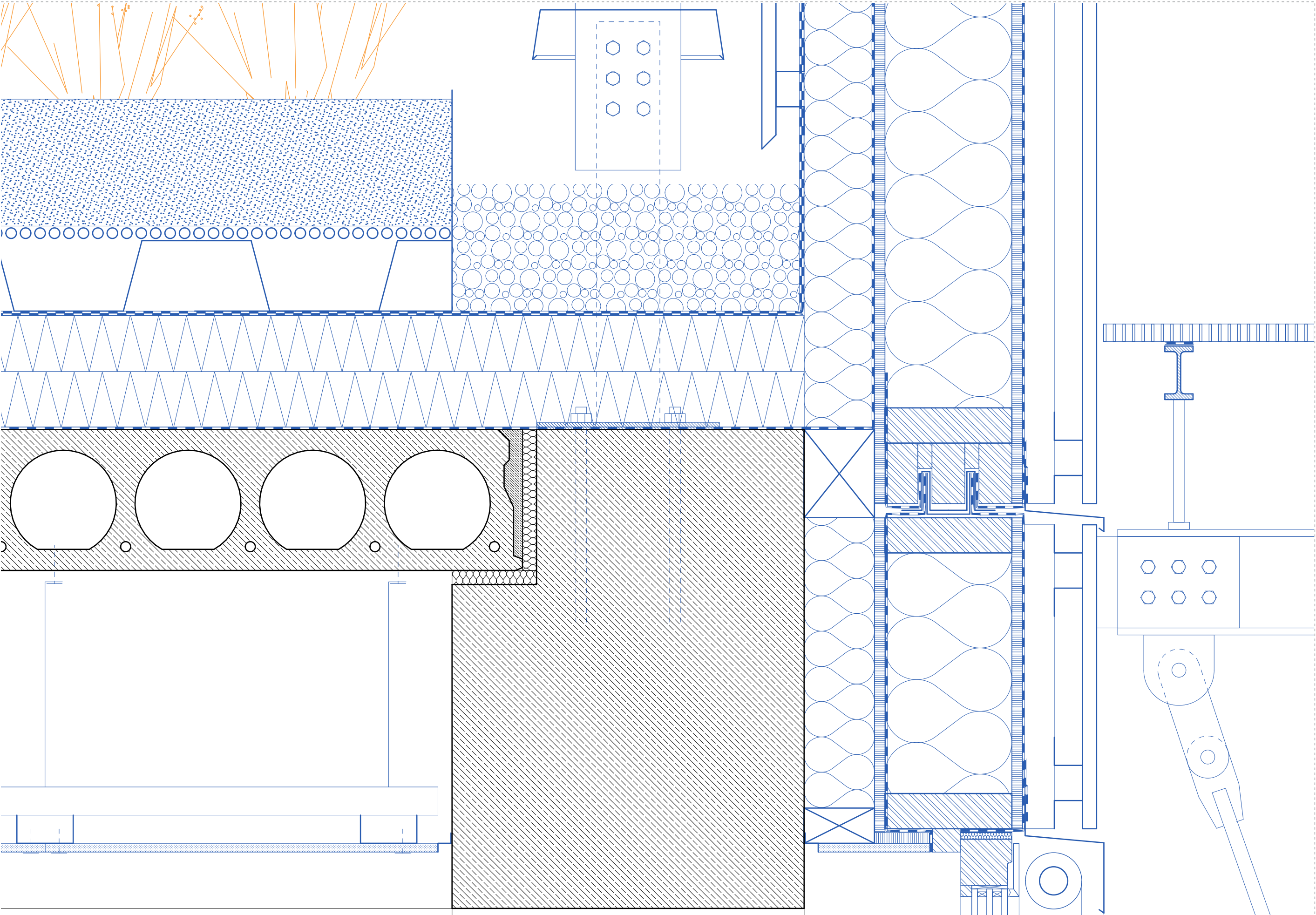


balconies in different sizes and executions, permeable/water-tight, integrated privacy screen + plant pot

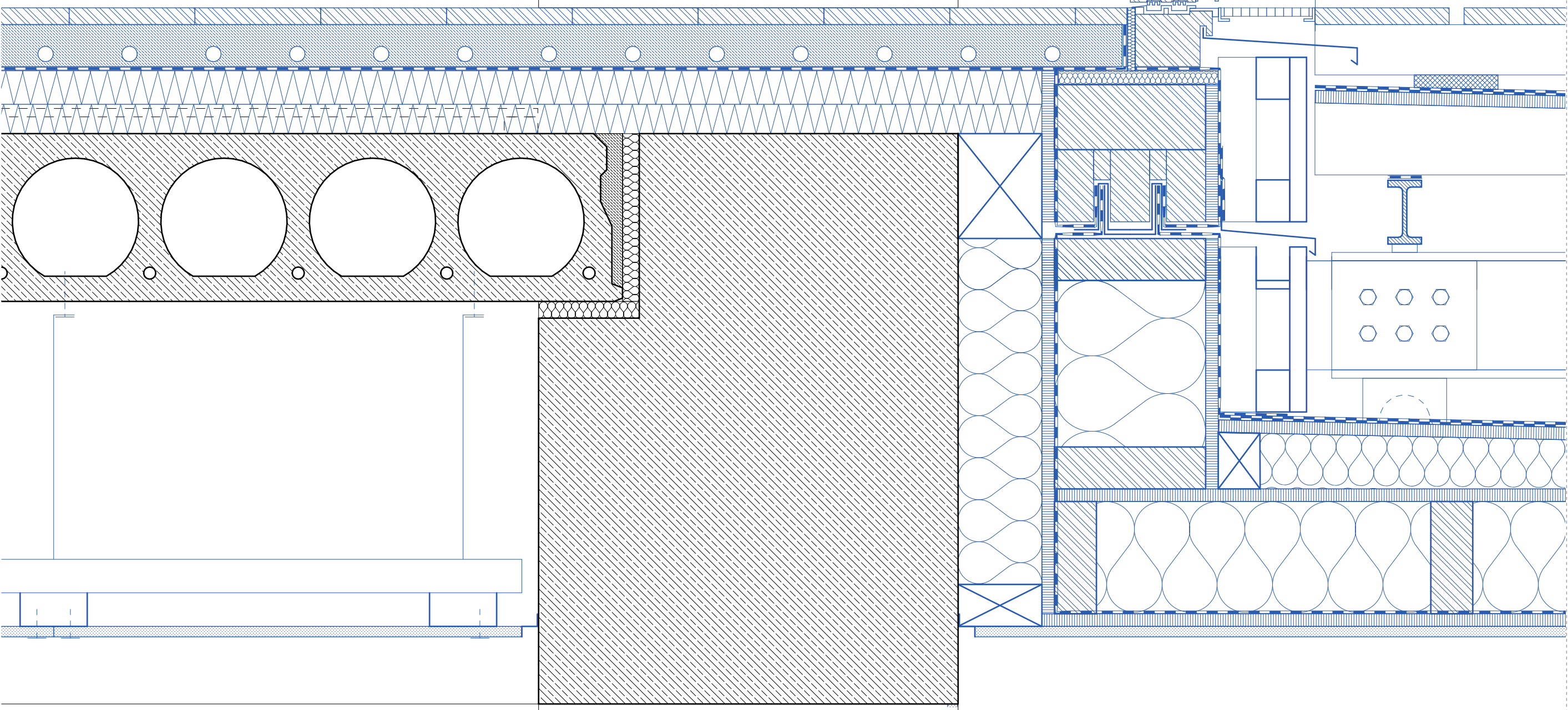




- Roof:
- substrate, 200mm
 - filter fleece
 - drainage mat, 100mm
 - double-layer bitumen membrane
 - foam glass insulation, 2x 100mm
 - single-layer membrane
 - hollow floor slab, 200mm
 - suspended ceiling for installations

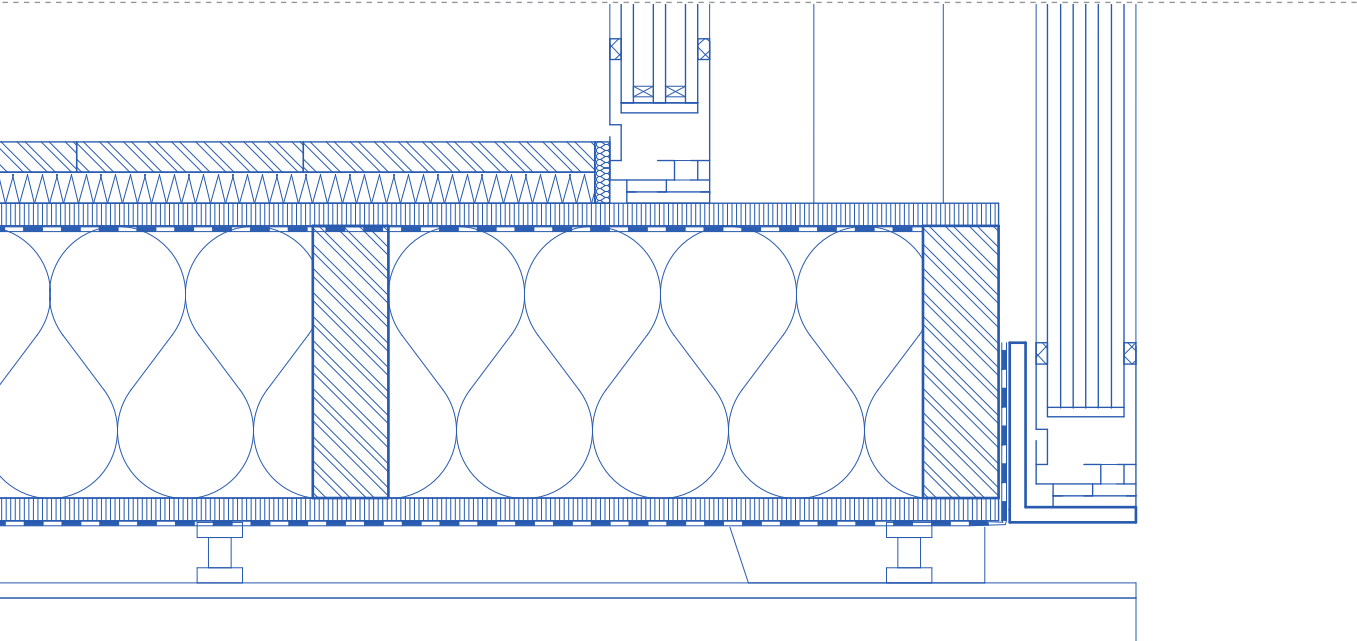
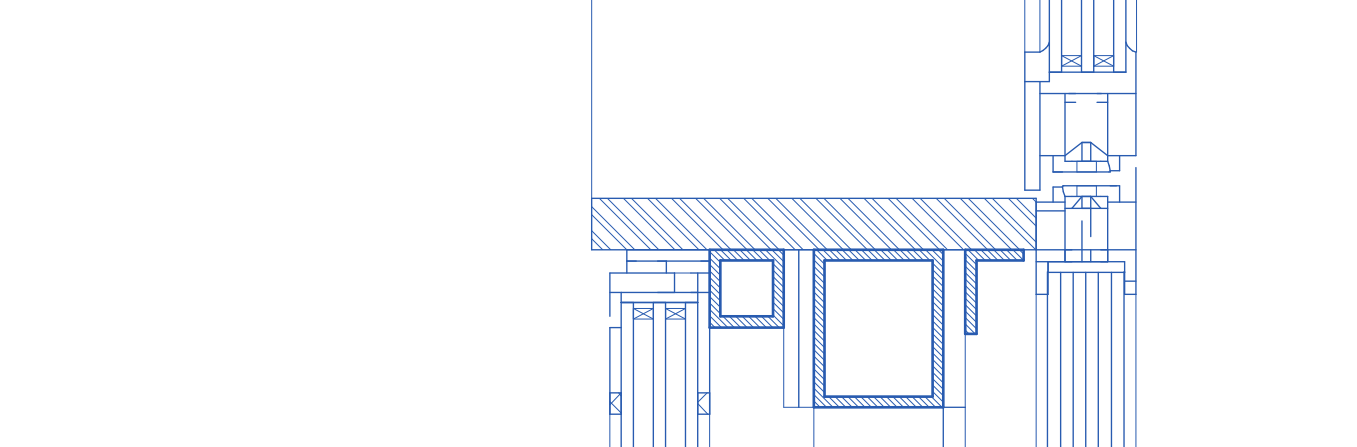
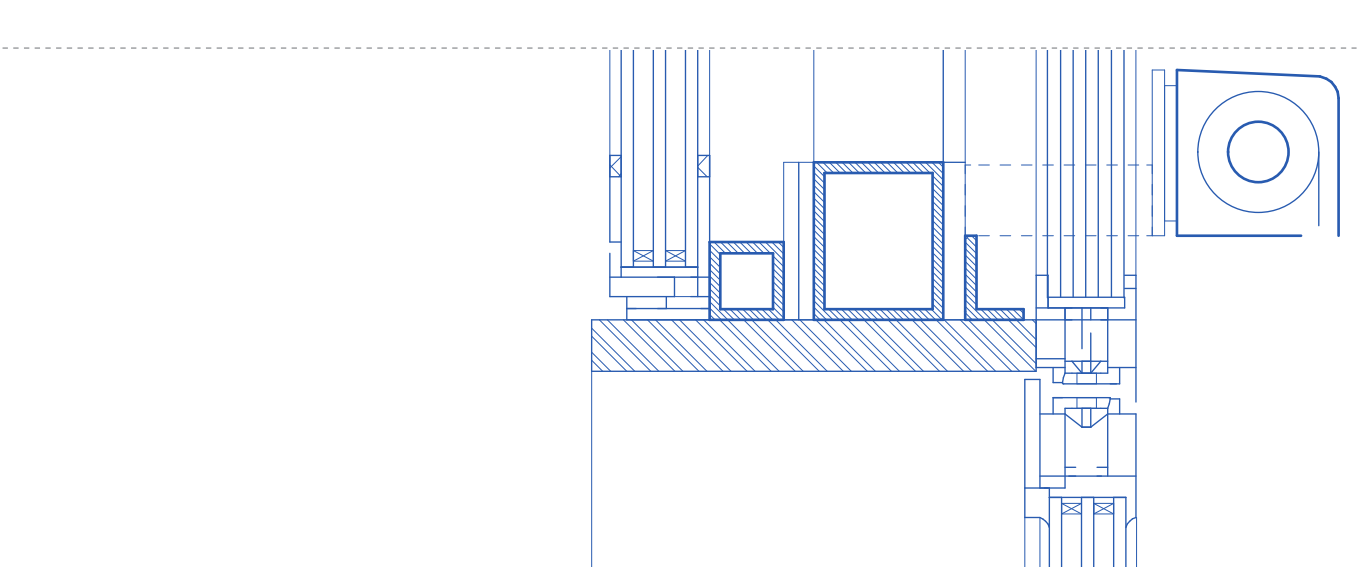
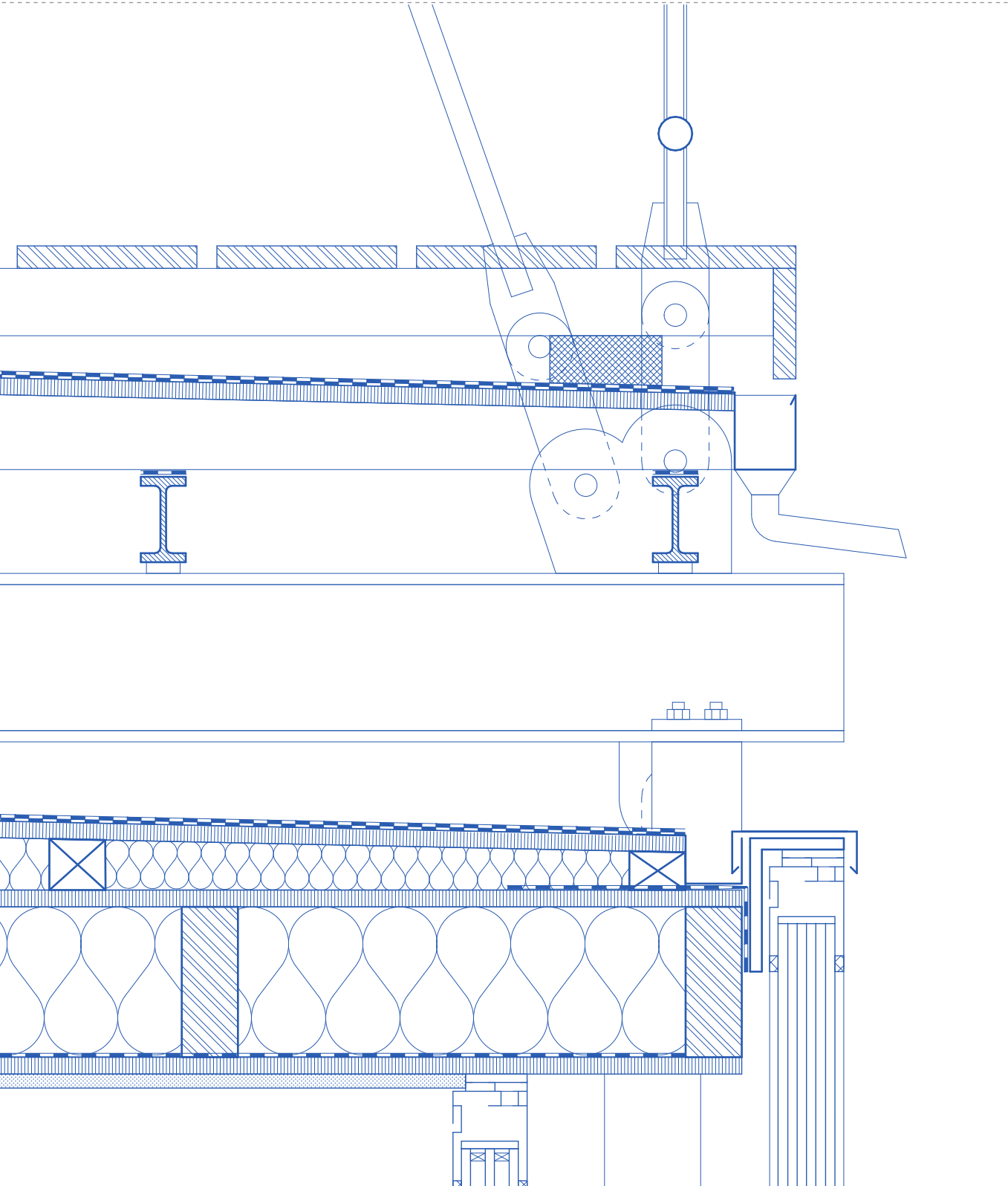
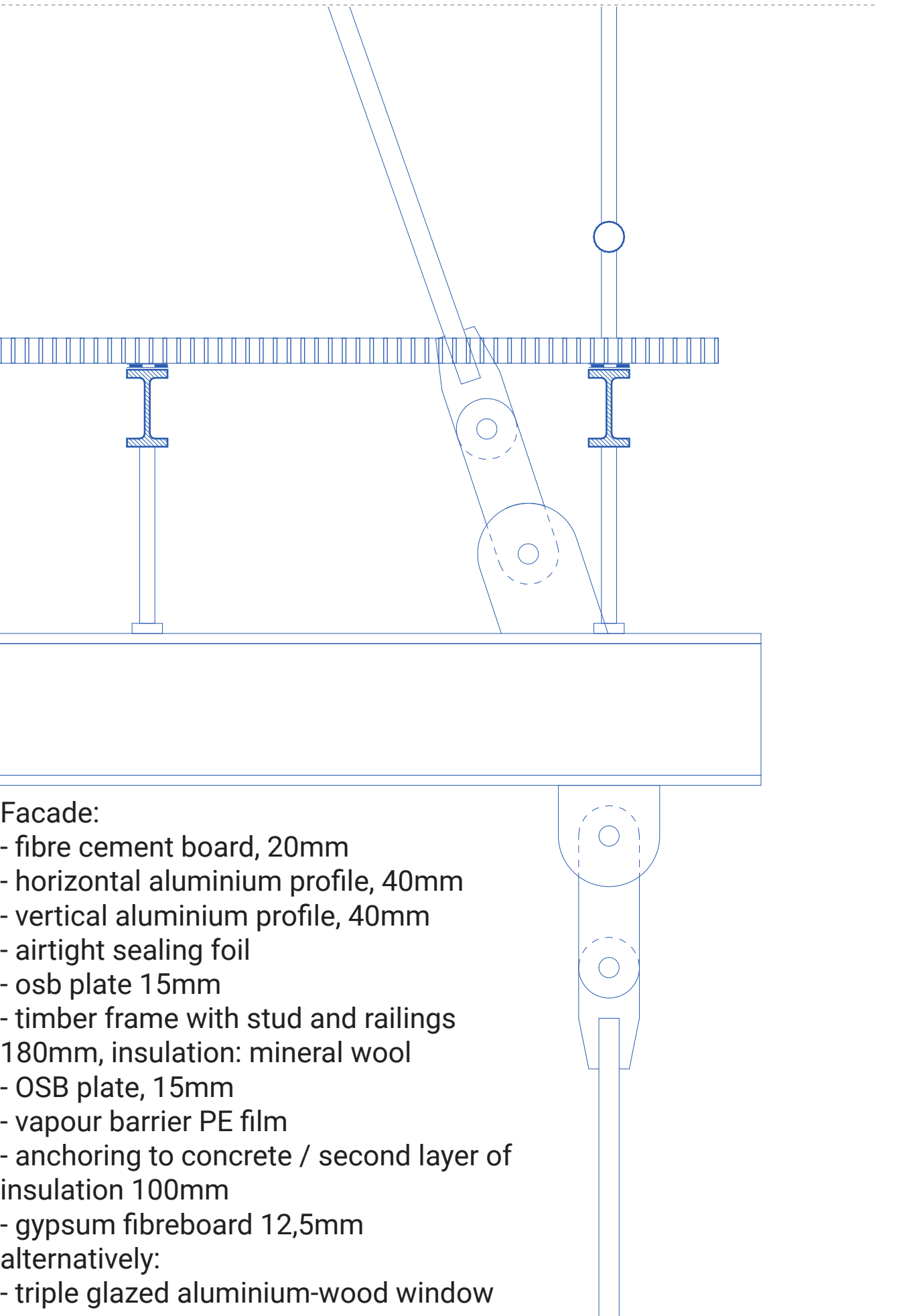
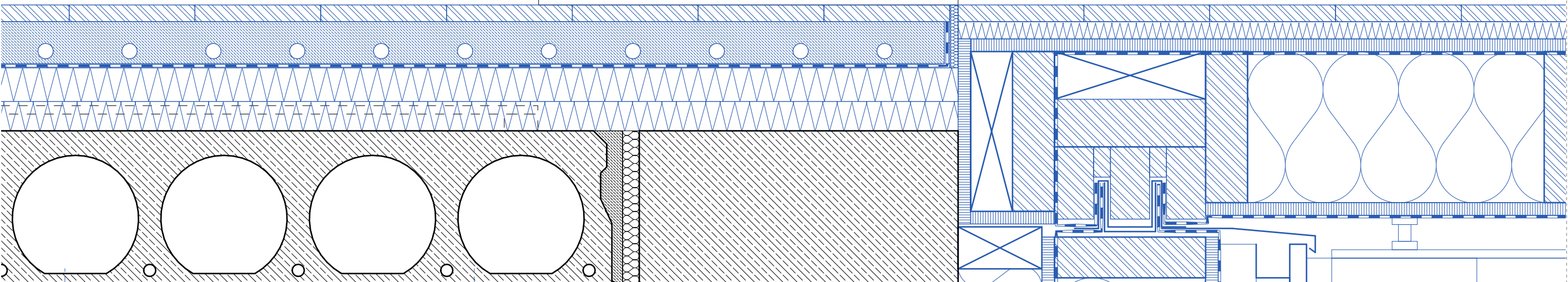


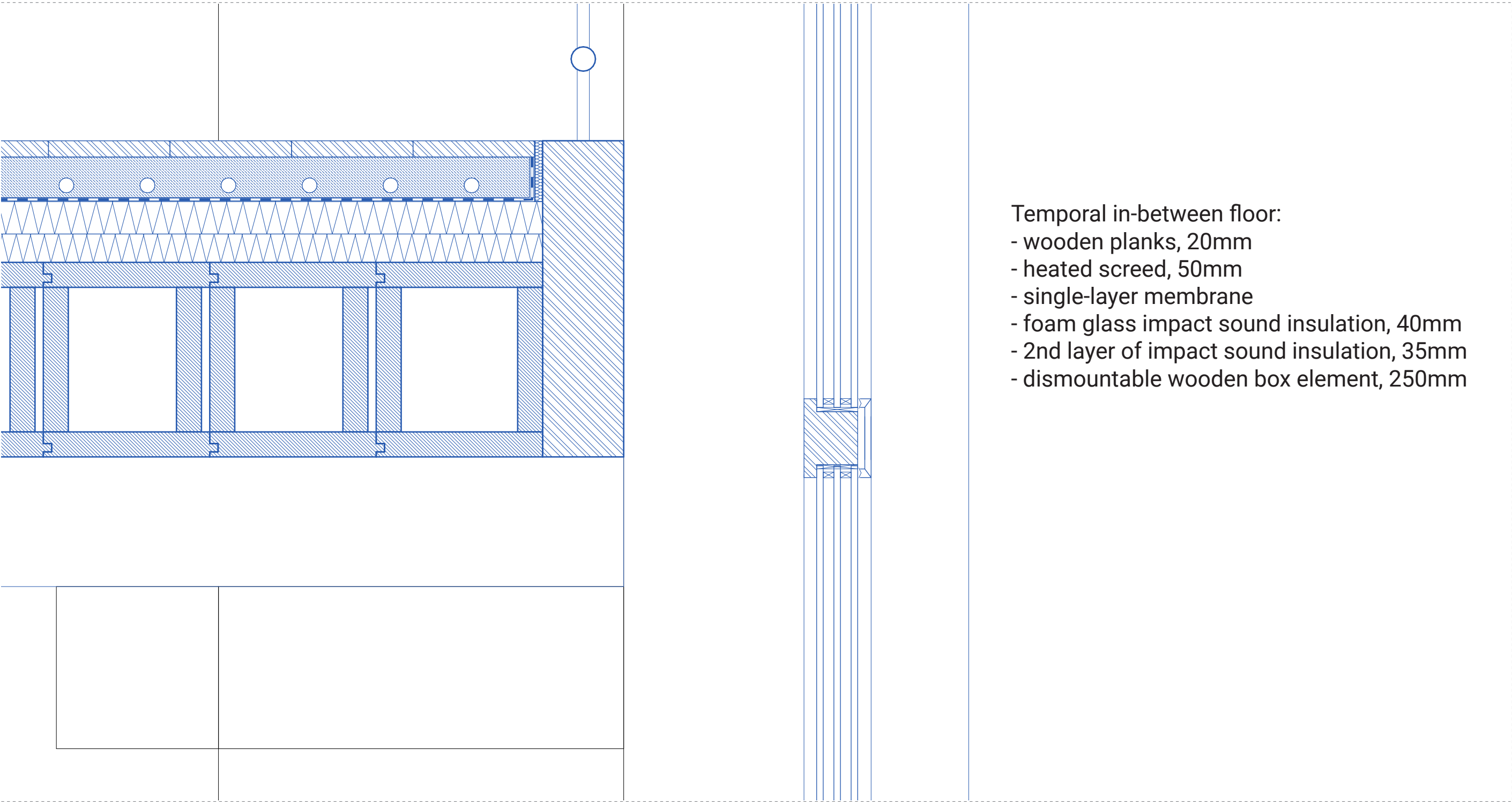
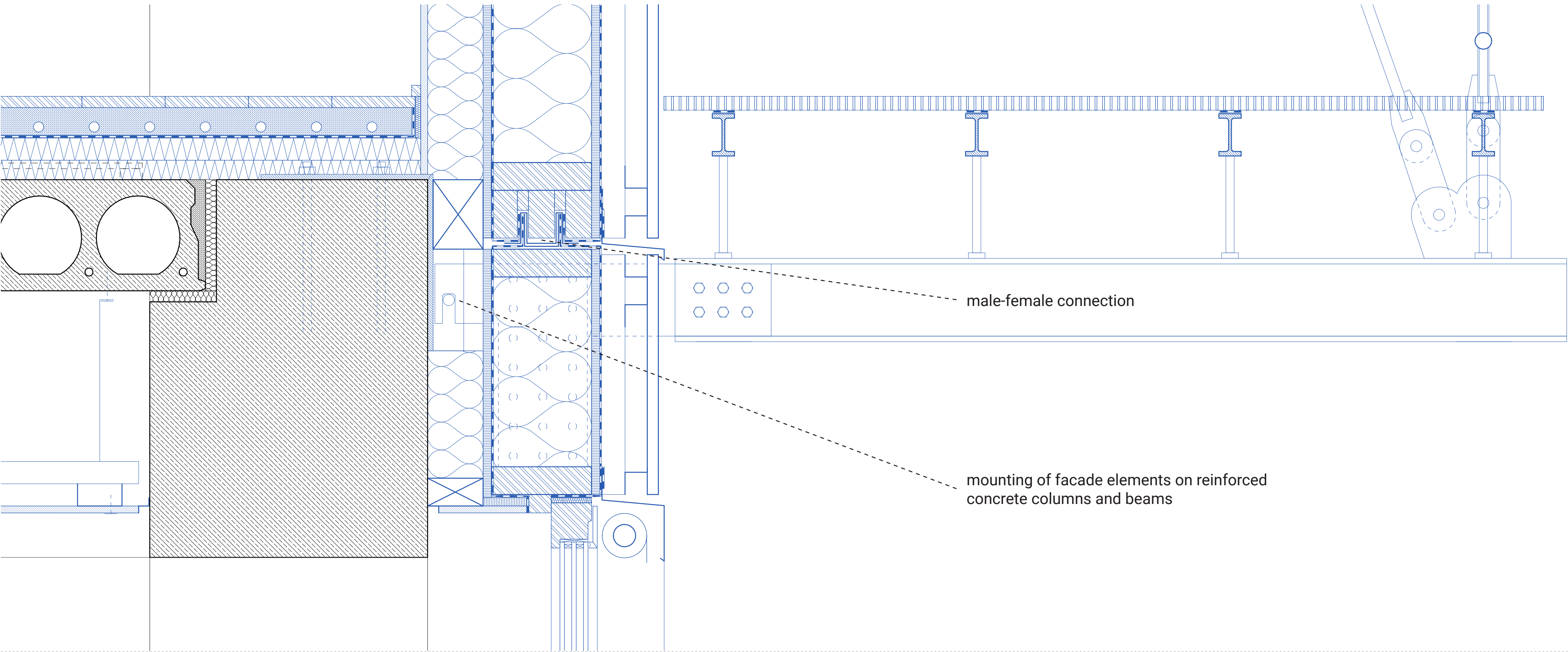
- Facade:
- fibre cement board, 20mm
 - horizontal aluminium profile, 40mm
 - vertical aluminium profile, 40mm
 - airtight sealing foil
 - osb plate 15mm
 - timber frame with stud and railings 180mm, insulation: mineral wool
 - OSB plate, 15mm
 - vapour barrier PE film
 - anchoring to concrete / second layer of insulation 100mm
 - gypsum fibreboard 12,5mm
 - alternatively:
 - triple glazed aluminium-wood window



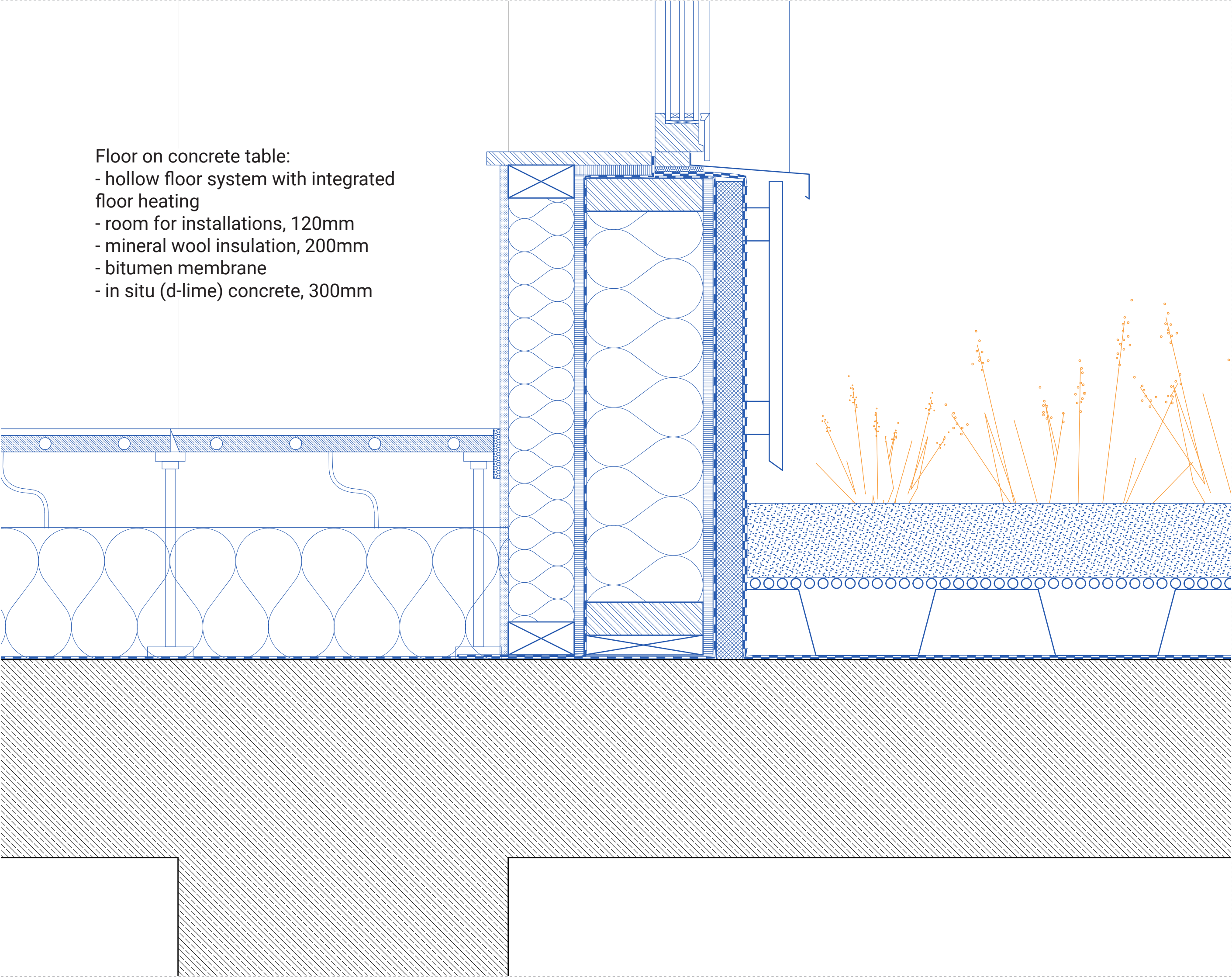
- Floor flats:
- wooden planks, 20mm
 - heated screed, 50mm
 - single-layer membrane
 - foam glass impact sound insulation, 40mm
 - 2nd layer of impact sound insulation, 35mm + embedded stiffening for hollow core elements
 - pre stressed hollow core concrete planks 200mm

- Hung-in extension box:
- six-layer polycarbonate multi-wall sheeting with tonged + grooved joints 40 mm (1.1-1.2 W/m2K)
 - square hollow-section aluminium supporting construction, 50/50/4 mm
 - steel flat supports, 10 + 10 mm
 - steel RHS column, 180/100 mm
 - steel flat supports, 10 + 10 mm
 - triple glazed Okatherm (by Okalux) fixed glazing, reduced UV transmission (0.5 W/m2K)
 - alternatively:
 - triple glazed aluminium window

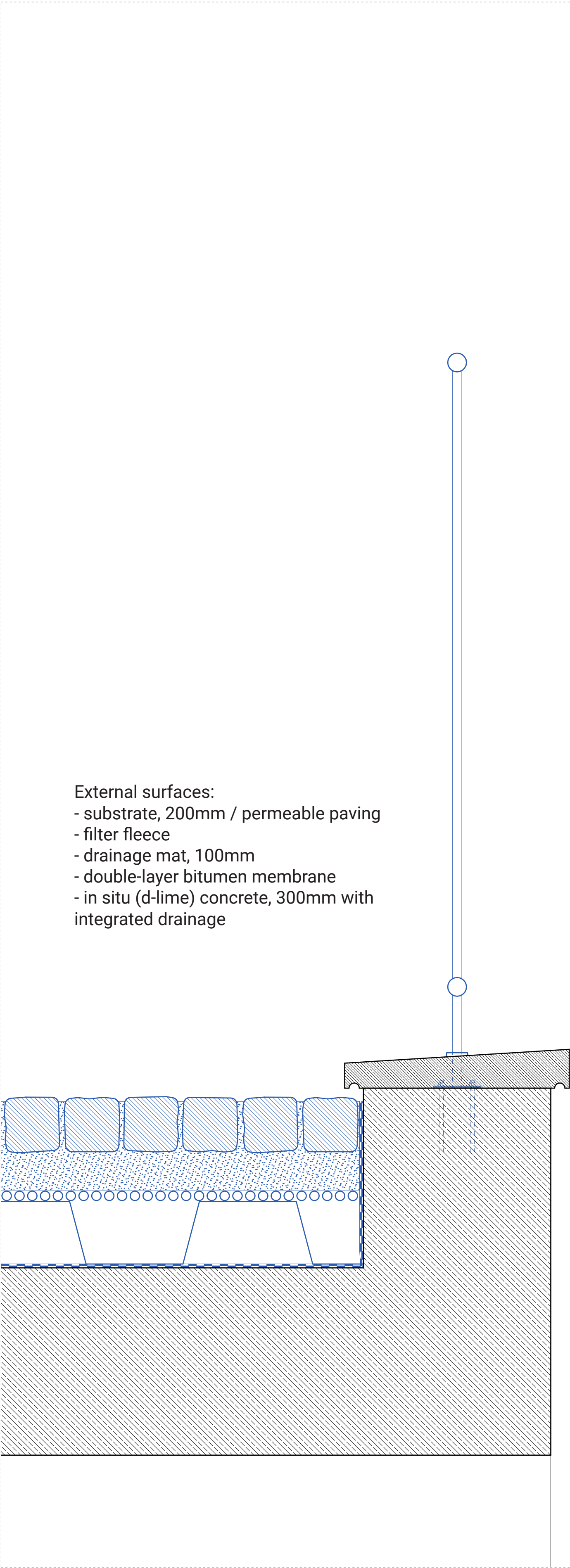




Temporal in-between floor:
- wooden planks, 20mm
- heated screed, 50mm
- single-layer membrane
- foam glass impact sound insulation, 40mm
- 2nd layer of impact sound insulation, 35mm
- dismountable wooden box element, 250mm



Floor on concrete table:
- hollow floor system with integrated floor heating
- room for installations, 120mm
- mineral wool insulation, 200mm
- bitumen membrane
- in situ (d-lime) concrete, 300mm



External surfaces:
- substrate, 200mm / permeable paving
- filter fleece
- drainage mat, 100mm
- double-layer bitumen membrane
- in situ (d-lime) concrete, 300mm with integrated drainage

