

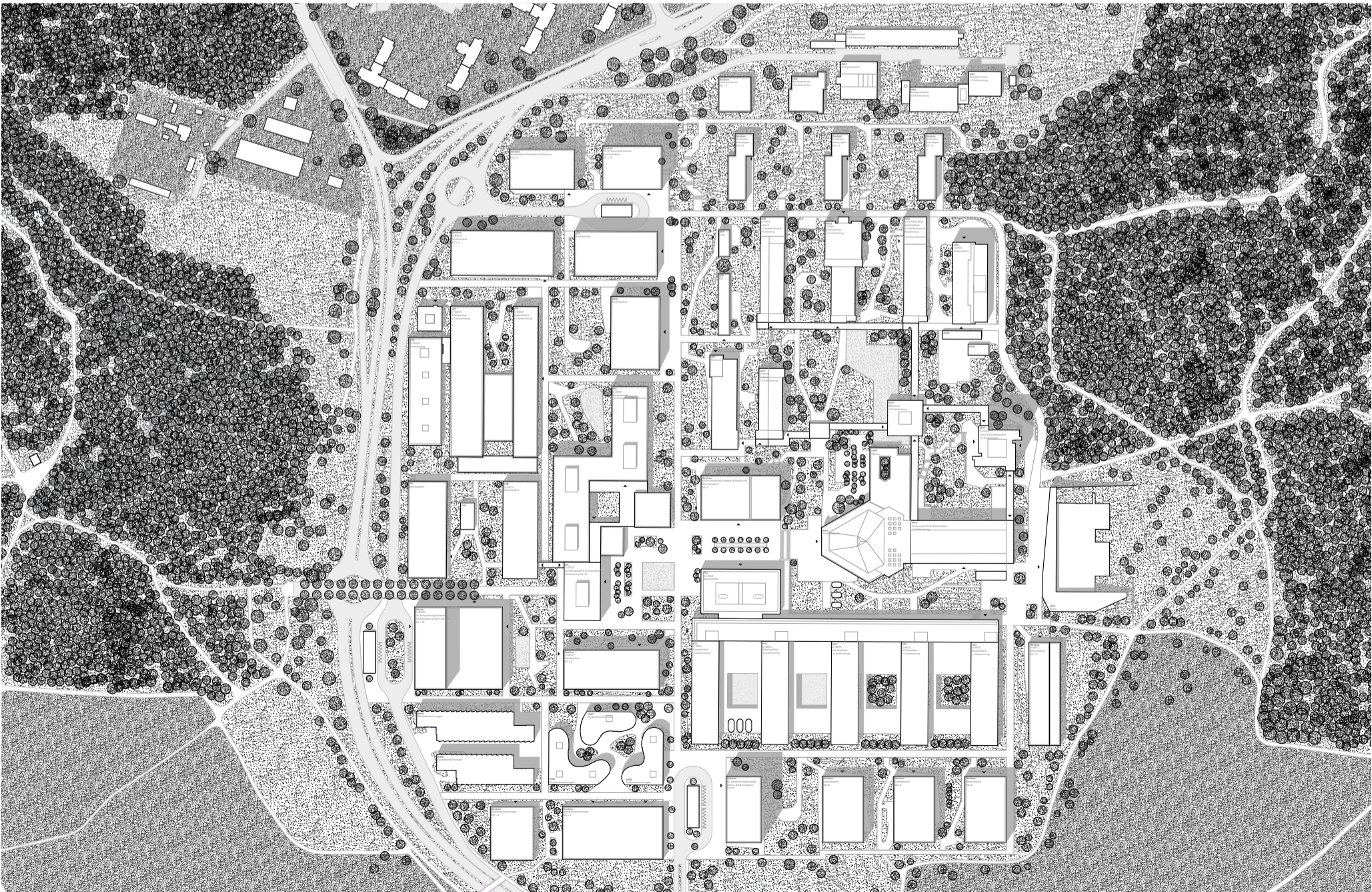
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AMÉLIE CHIFFELLE



FS 2023
master thesis

SITUATION & CONTEXT



site plan of the projected campus, horizon 2040

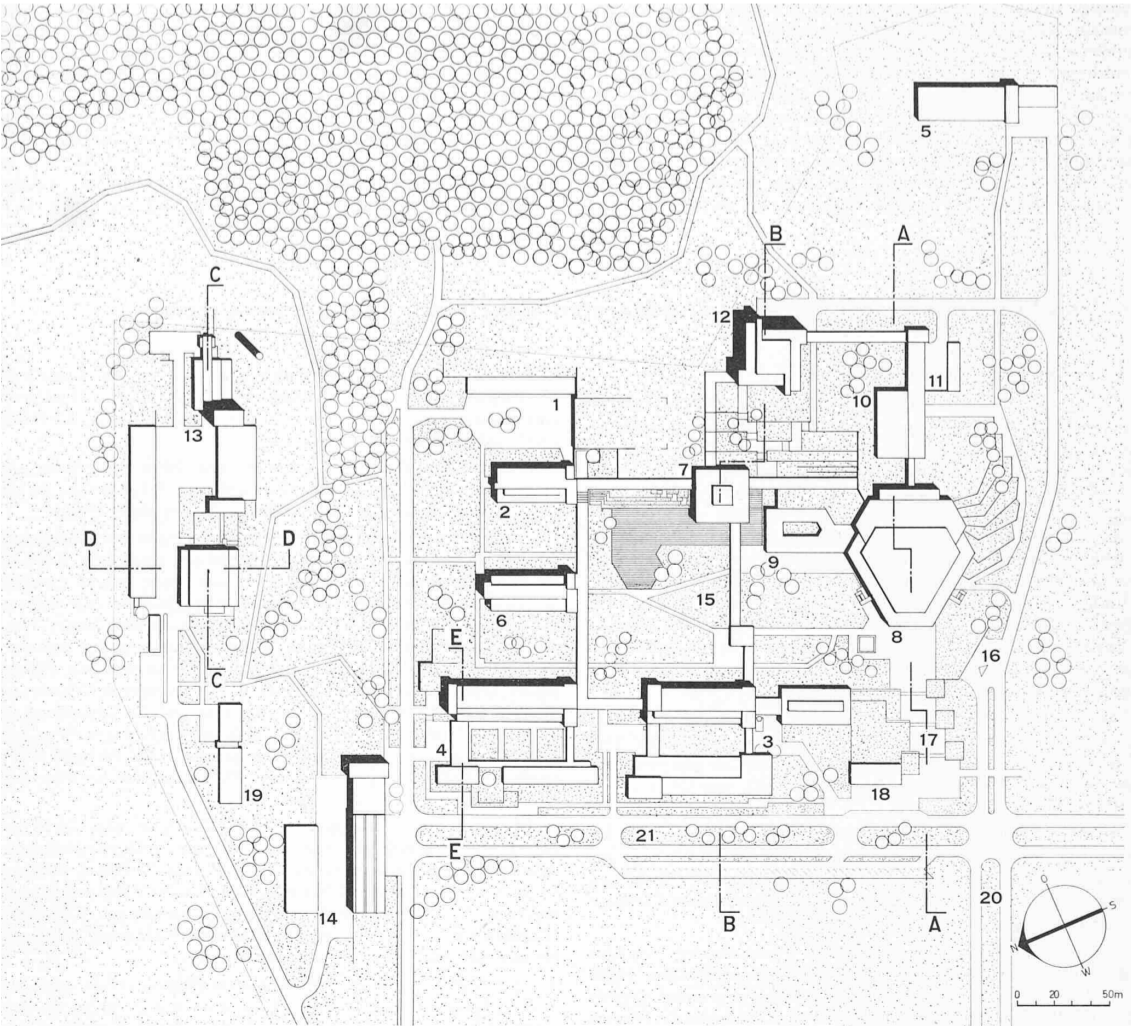


context & construction

as the capacity of the ETH Hnggerberg is becoming increasingly limited, the desire to densify within the existing buildings in the campus was taken, as a first phase for the future ace of the campus. thus, the HPF building is densified in its height, continuing the internal logic of laboratory distribution, while adapting to the new standards required for the creation of such spaces. responding to the building at the rear of the HPF, the HPM, the building also adopts a «Kopfbau», creating an alley aligned at the head of these. the extension seeks to understand and rewrite the language of Steiner buildings, while creating its own language and asserting itself as a modern addition. thus, a facade with a very slight relief, but underlined by arched concrete elements, is added to the existing body. the materiality and form of these elements are reminiscent of the interior concrete vaults covering the various work areas, which are punctuated by a simple and logical steel structure.

the desire to transform the machine halls into two pavilions (a caf and a restaurant) was to be able to offer and open to the public a place so specific to the Steiner buildings, which is nevertheless used by very few people.

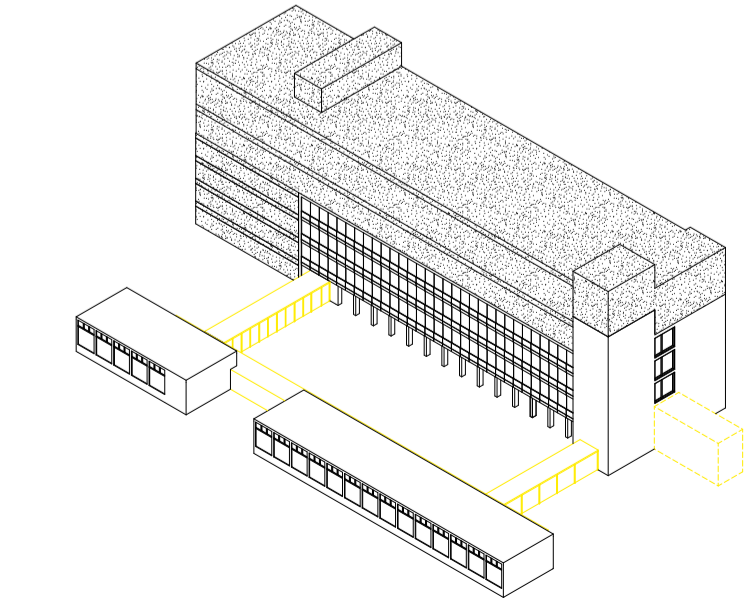
in the second part of the planning process, which is based on an external densification of the campus, three newly built housing buildings face the view of the Affoltern landscape. as with the student housing buildings on the opposite side of the campus, a completely unique language was pursued. the construction technique and the materials used are an innovation on the campus. as with the HPF extension, the construction logic of the accommodation is simple to understand at first glance; beams clamped between two vertical posts, one after the other, braced by DLT floors, all in wood, providing a warm and intimate space. the south faade has a «Laubengang», maintaining the relationships between the various inhabitants of the building and allowing a circulation entirely open.



site plan of the physics buildings (execution project), 1987 (from: archives gta, NL Steiner)

farewell to Steiner

Albert Steiner’s buildings have the particularity of being part of a strong ensemble, but at the same time they can be distinguished by small details, whether it is a projection of the façade, an almost sculpted internal staircase or the surrounding nature. the HPF building is a crystallization of all this. the Steiner-Garten is wedged between two pavilions, two machine halls. it goes almost unnoticed by the student or employees used to the campus. however, a majestic tree overhangs the space and offers various spaces, between intimacy, shade and changes of level. the plants growing there are highly resistant to their environment, yet delicate in their form. it was a conscious choice to keep this part, which also provides a natural barrier (literally) between the busy public space on the north side of the HPF and the quieter, more settled space behind the two machine halls.

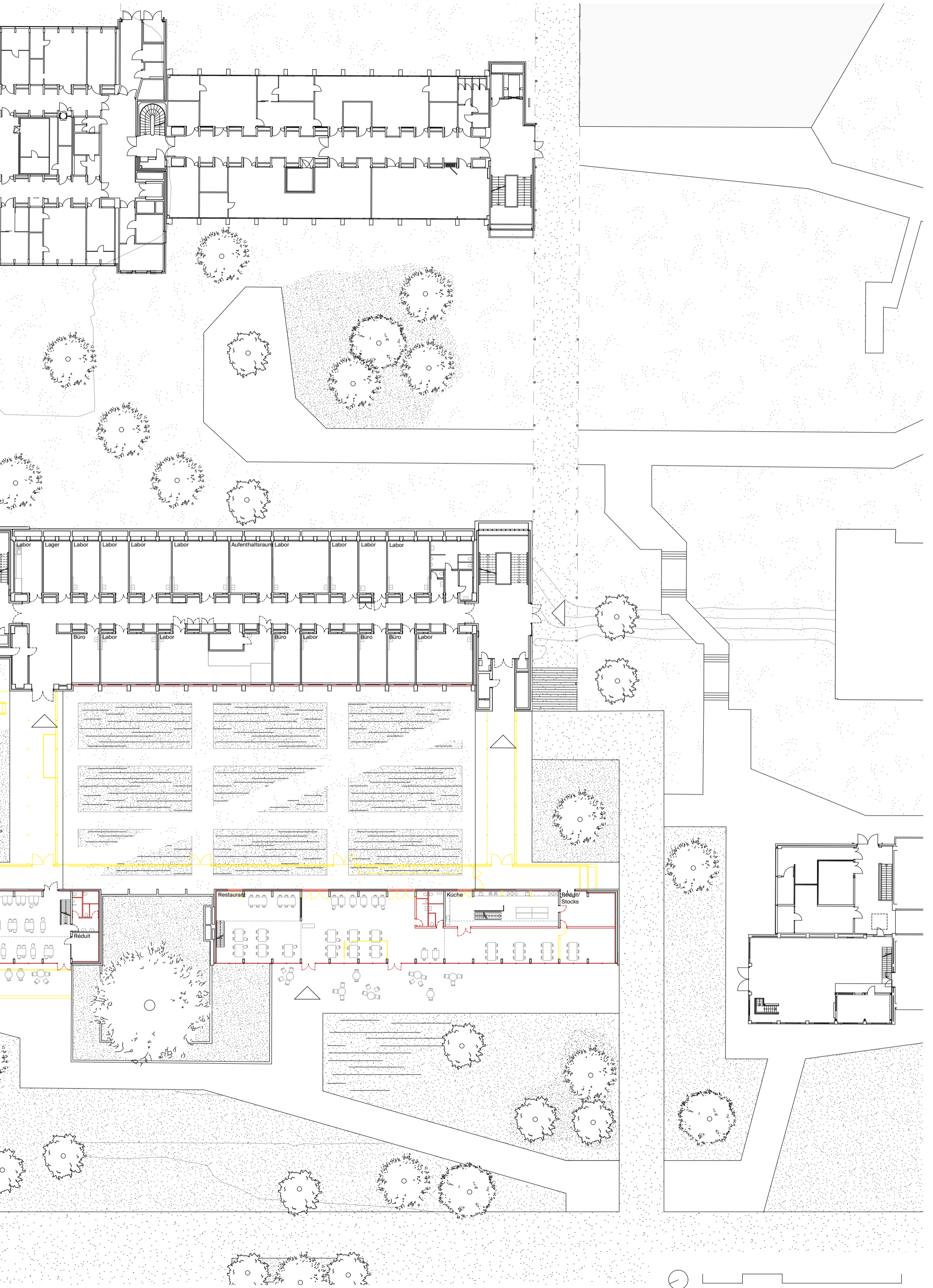


floor addition & extension

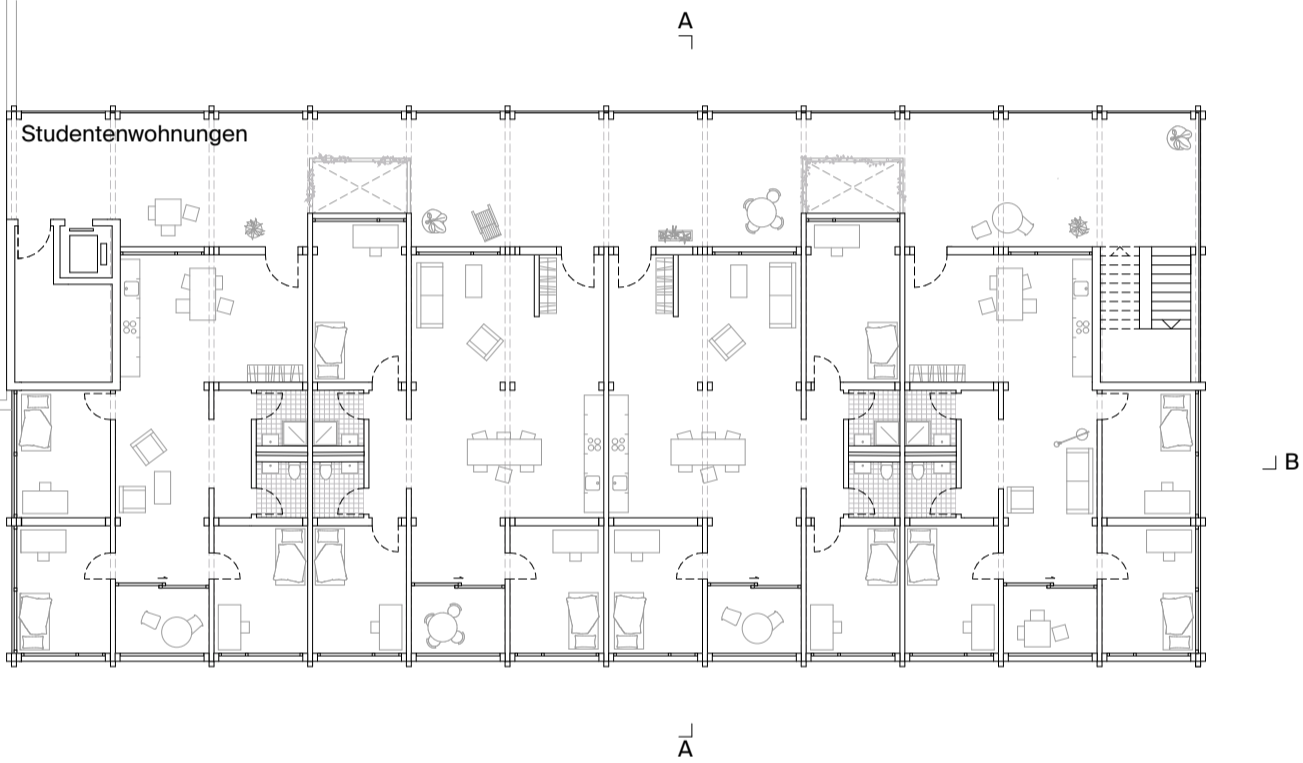
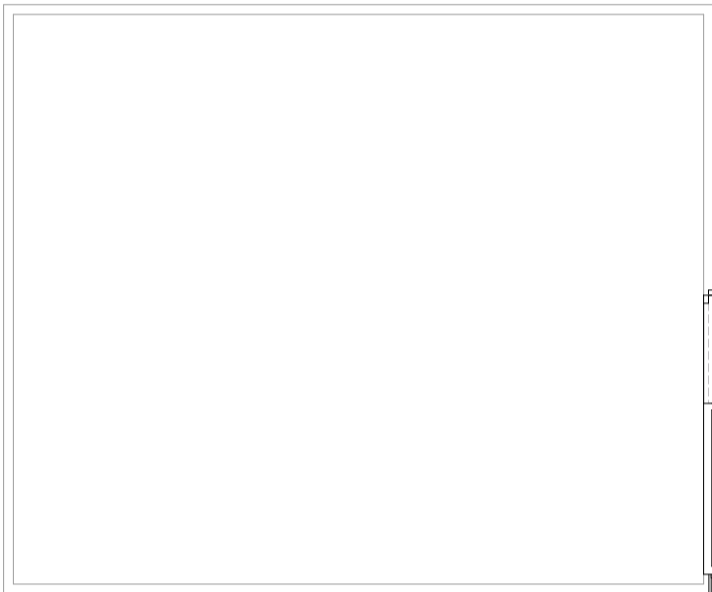




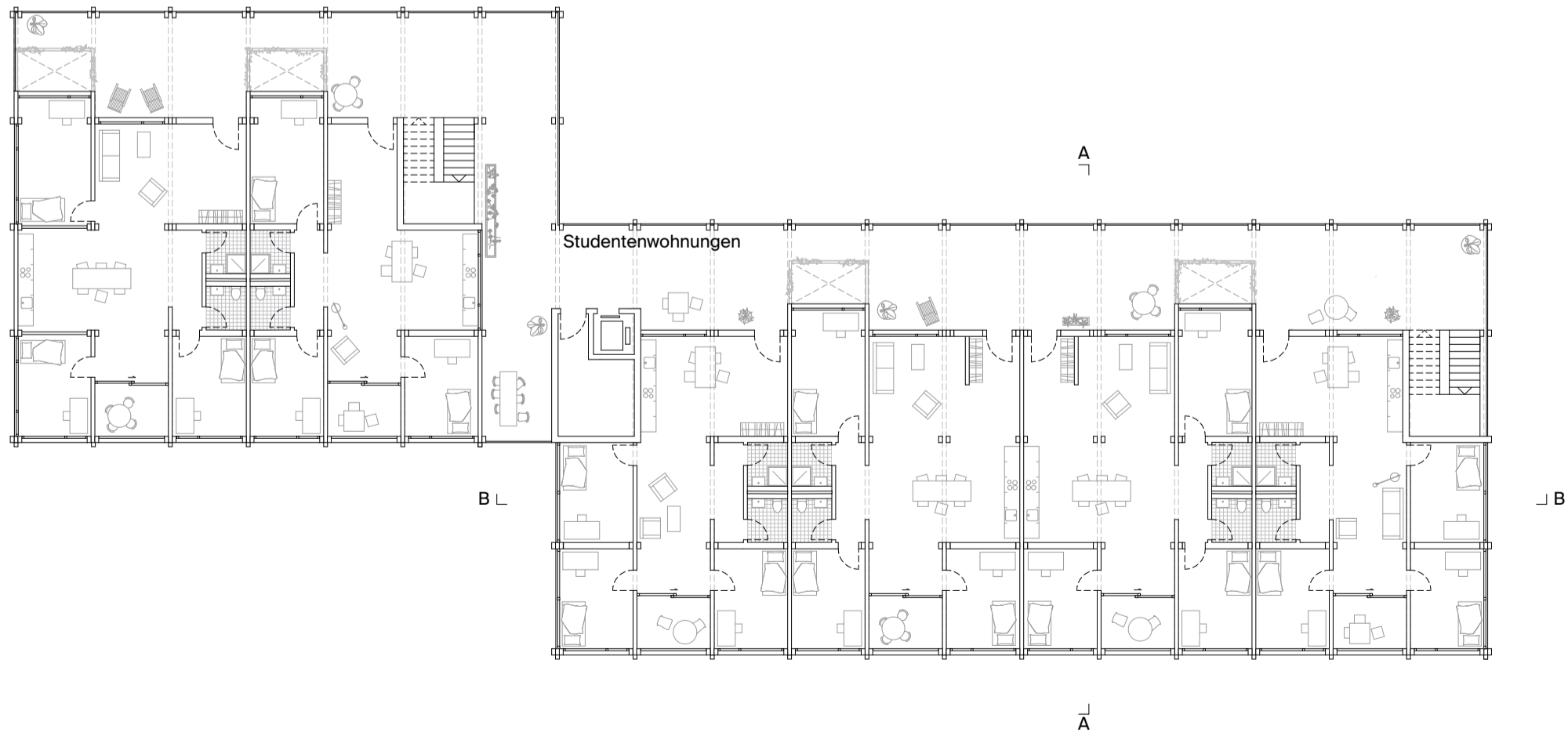
Groundfloor



STUDENT HOUSING



new construction, housing, roof floor

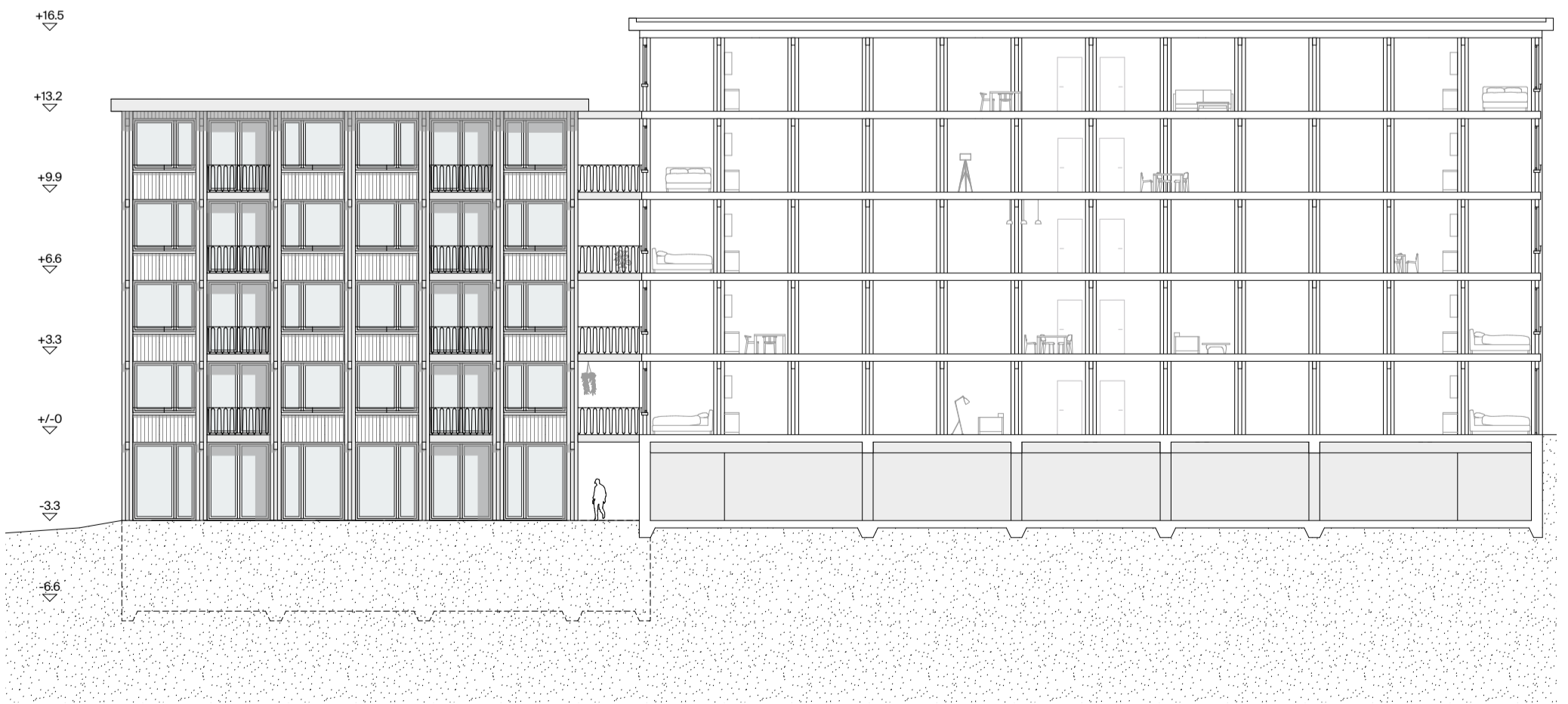


new construction, housing, standard floor





new construction, housing, north facade

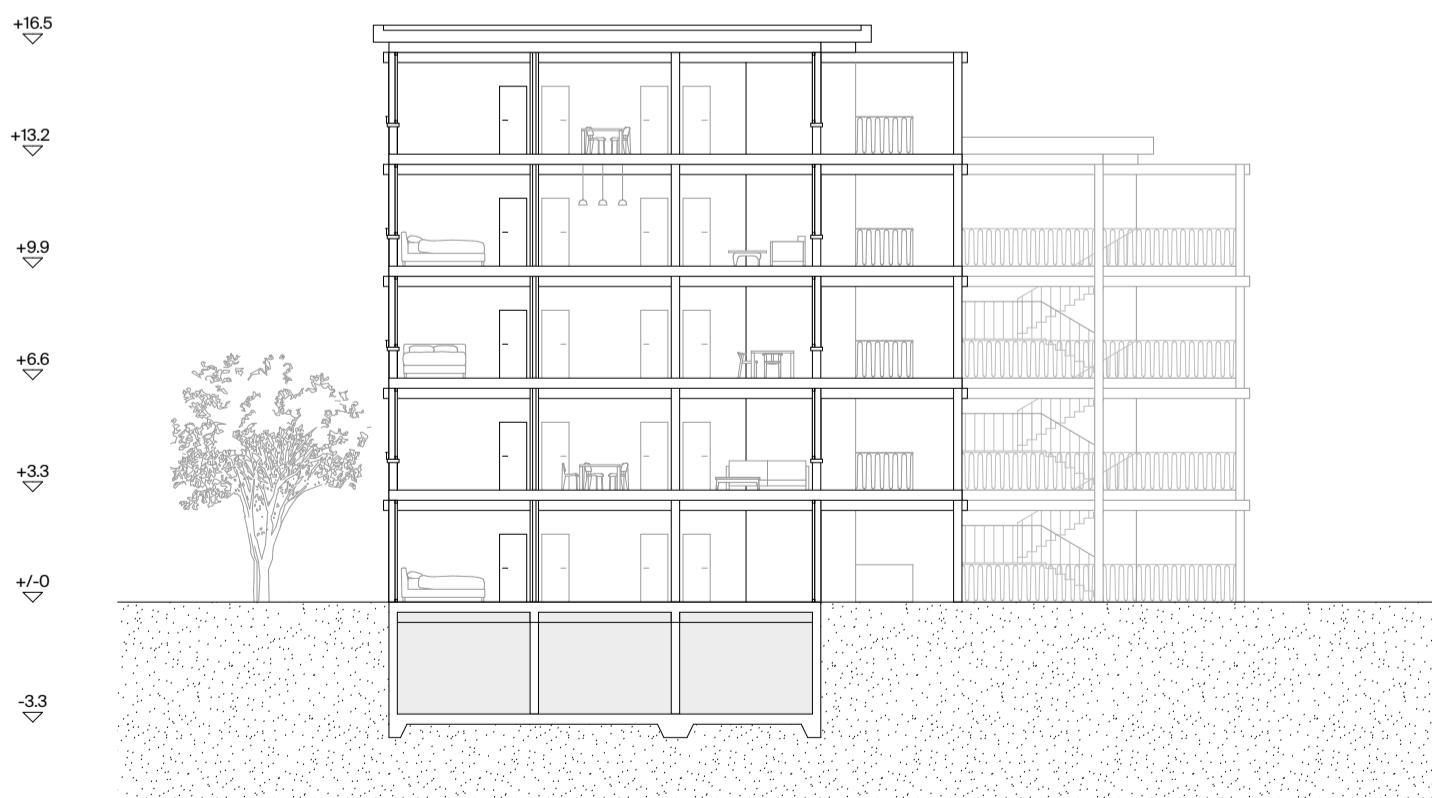


new construction, housing, longitudinal section B-B





new construction, housing, east facade



new construction, housing, cross section A-A





new construction, housing, south facade

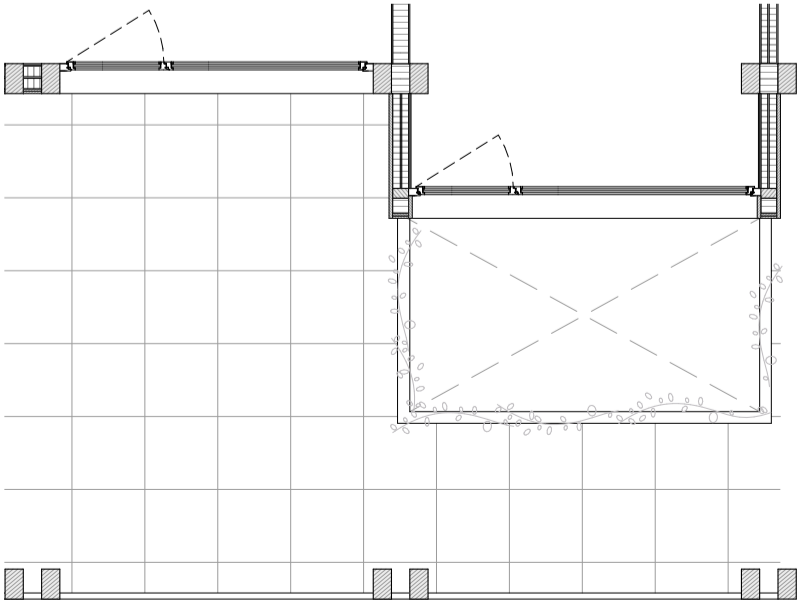
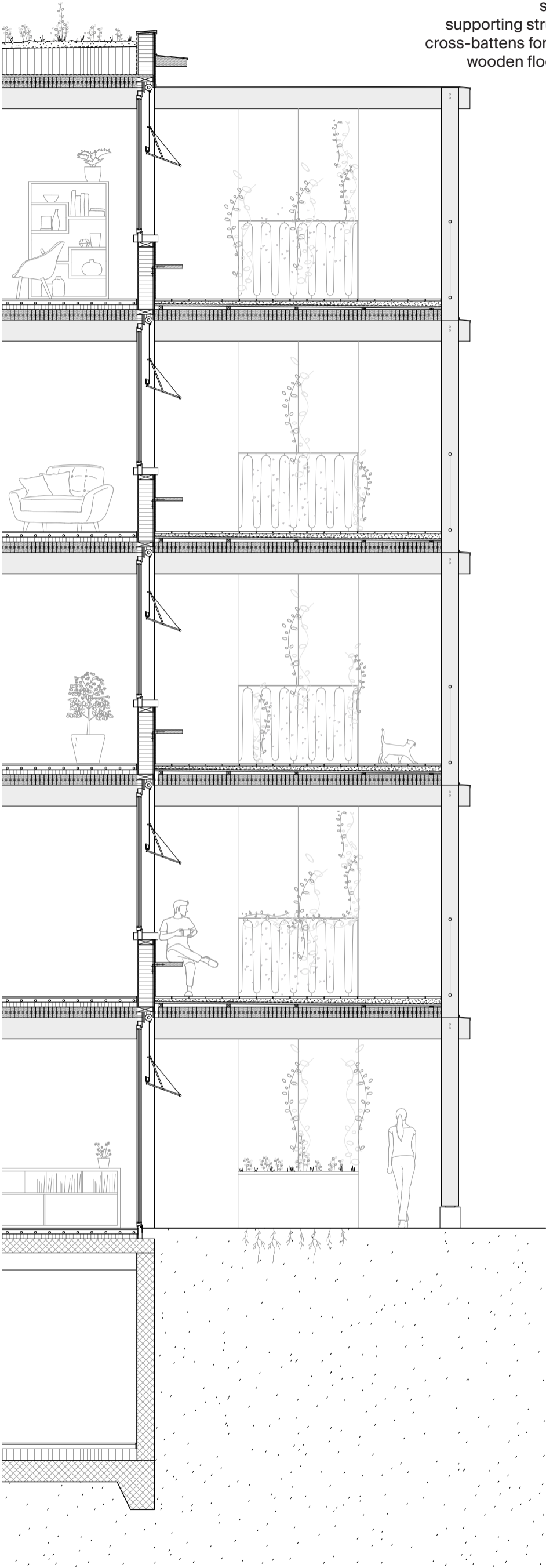




view on the «Laubengang»

«Laubengang» composition

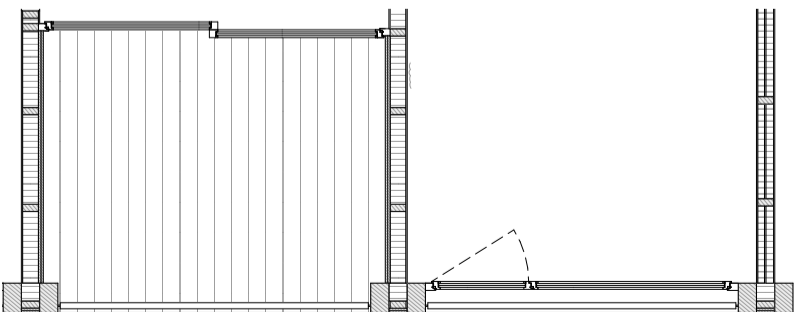
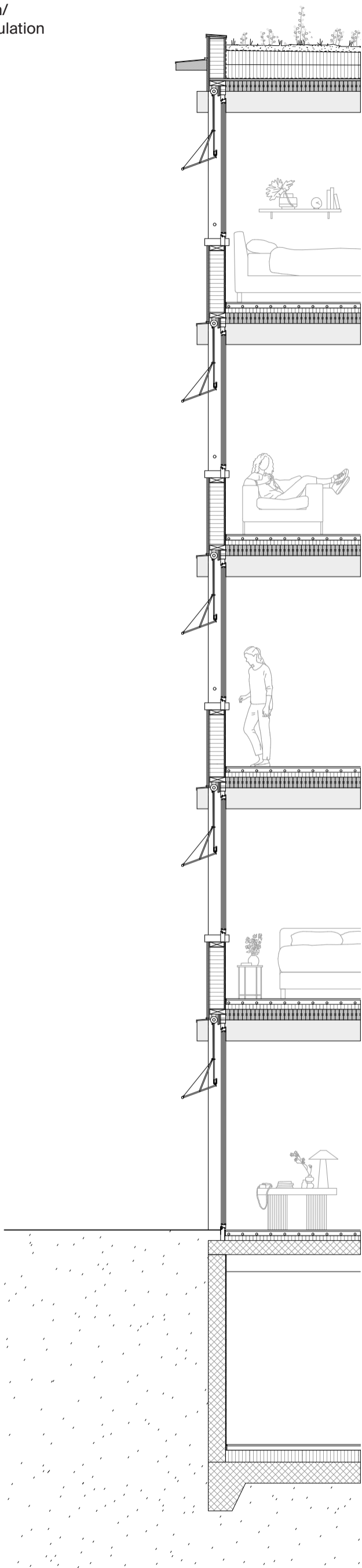
- cement tiles (60 minutes fire-proof)
- gravel
- sealing
- supporting structure
- cross-battens for slope
- wooden floor DLT

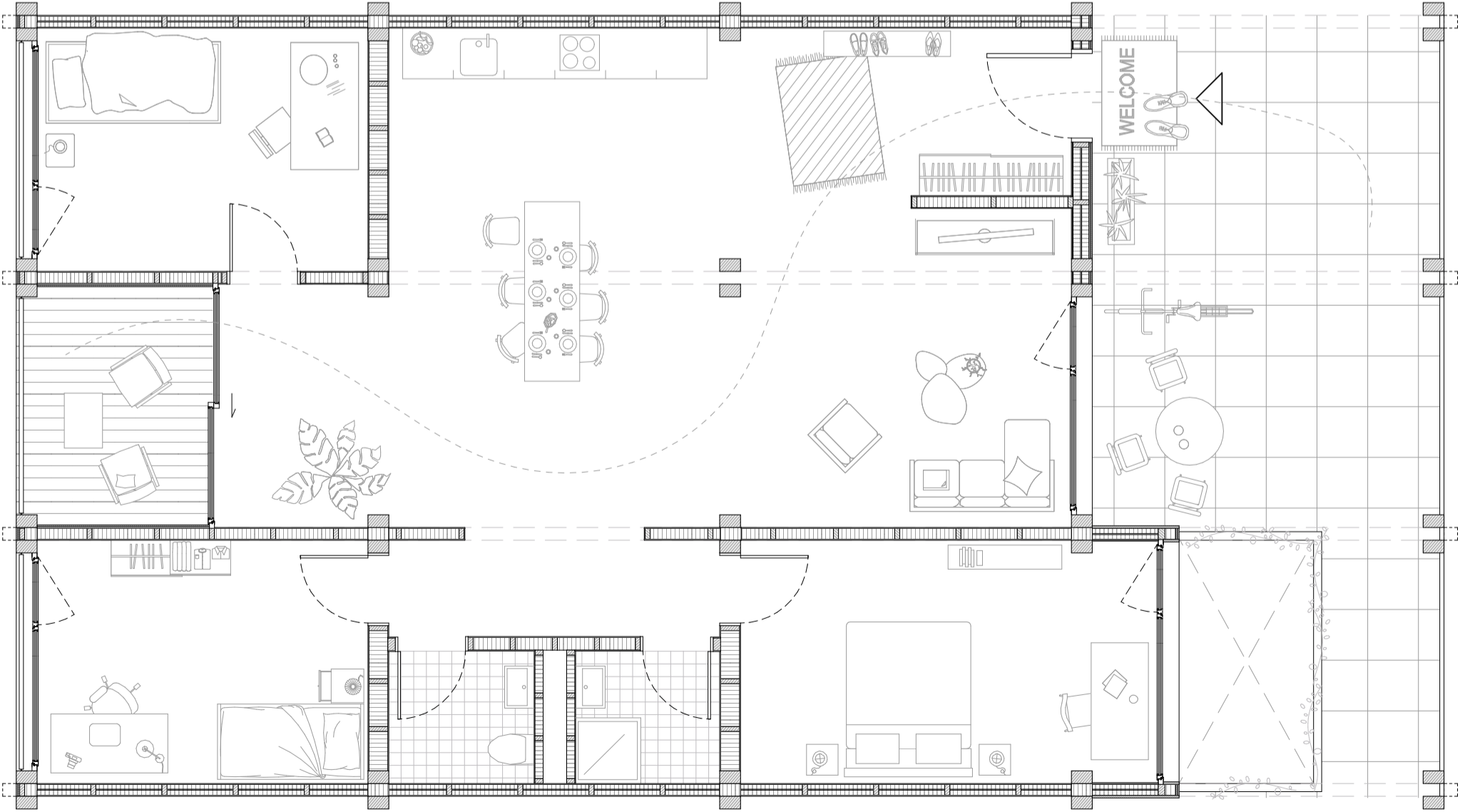


new construction, housing, «Laubengang» detailed

floor composition

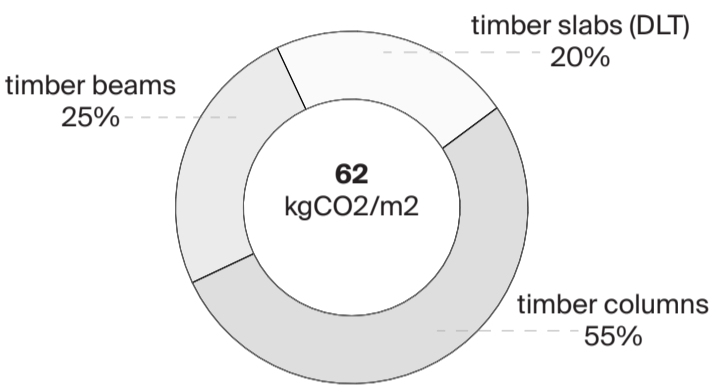
anhydrite finishing screed with
sealed floor heating
thermal insulation/
impact sound insulation
wooden floor DLT





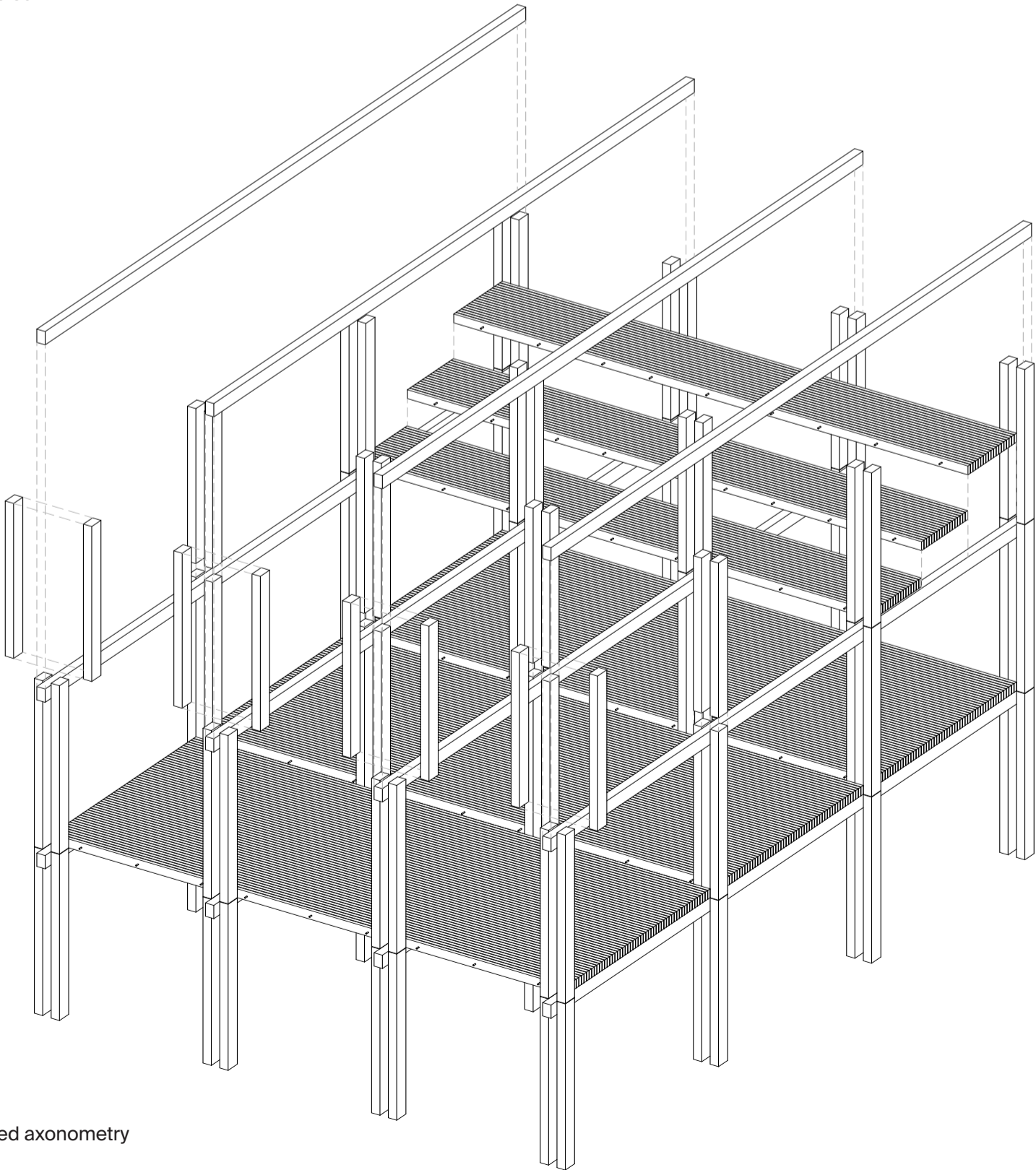


view of an apartment



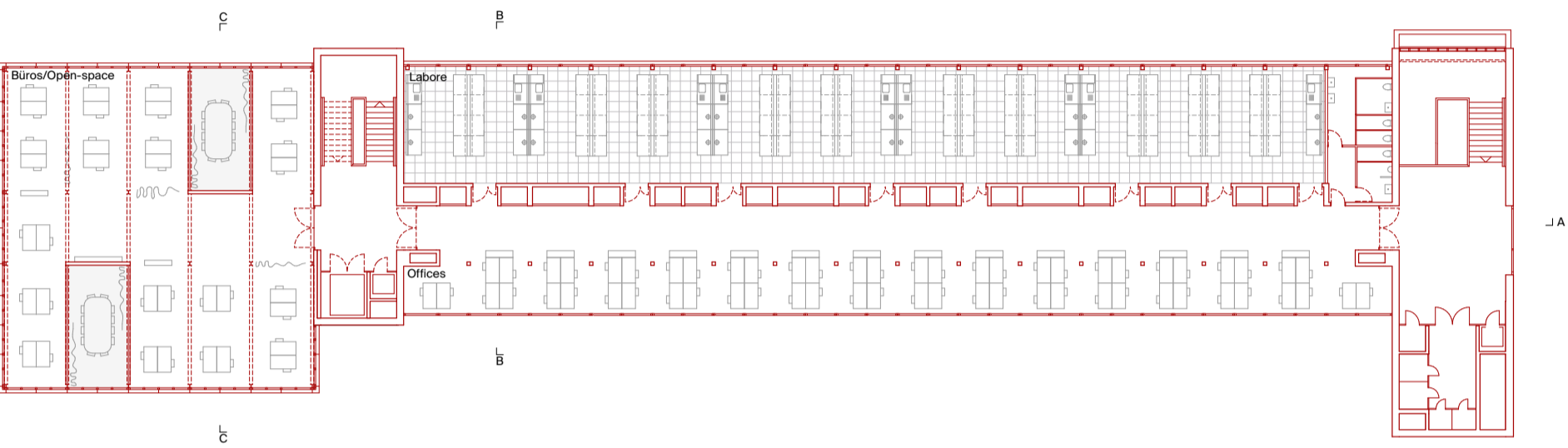
this option for the load bearing strcture was compared to two other option : a concrete-flat-slab structure and a wooden structure linked with «spiders» from the Rhotoblass catalogue. the concrete one was immediatly set aside because of its high GWP. the spider option could have been chosen, its GWP number being a little bit better than this one. the decision of a kind of feeling in the apartment drove to this structure.

new construction, housing, graph embodied carbon energy comparaison

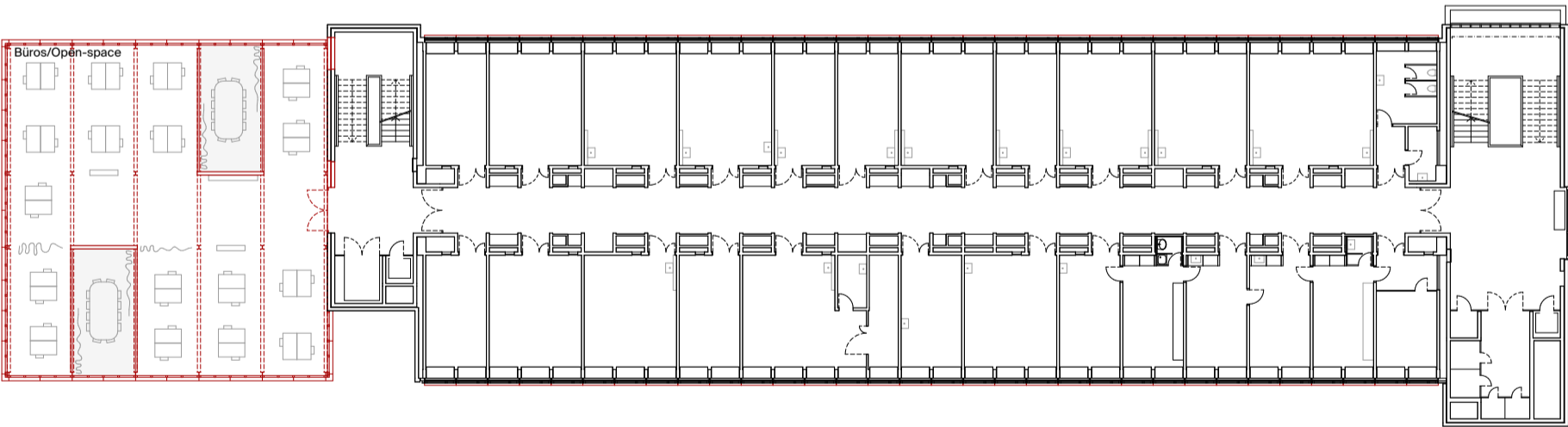


new construction, housing, exploded axonometry constructive concept

**HPF
EXTENSION/FLOOR ADDITION
&
REPURPOSING**

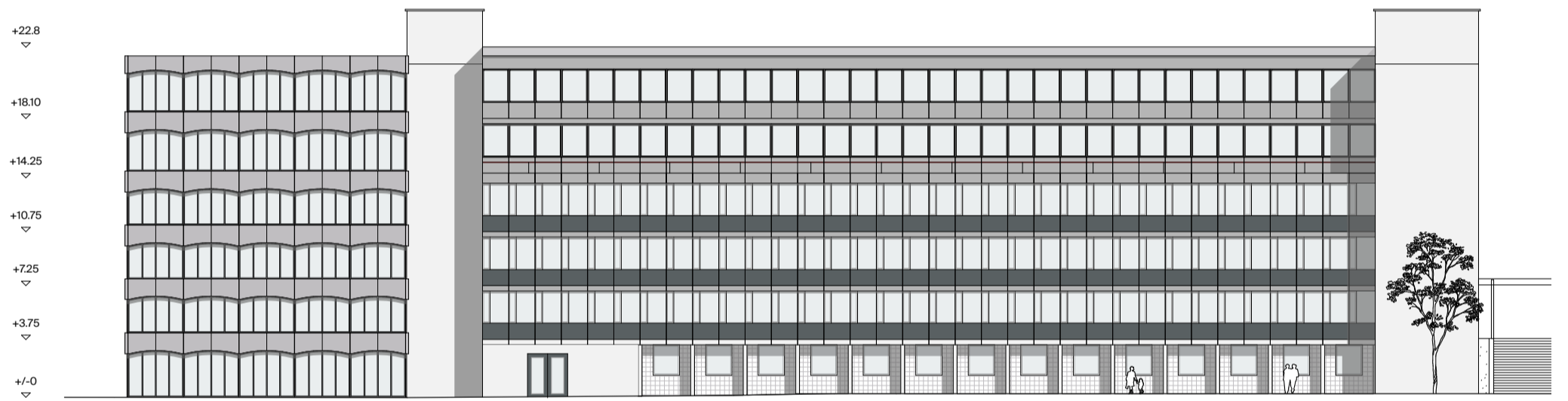


extension & floor addition, labs & offices, sixth floor

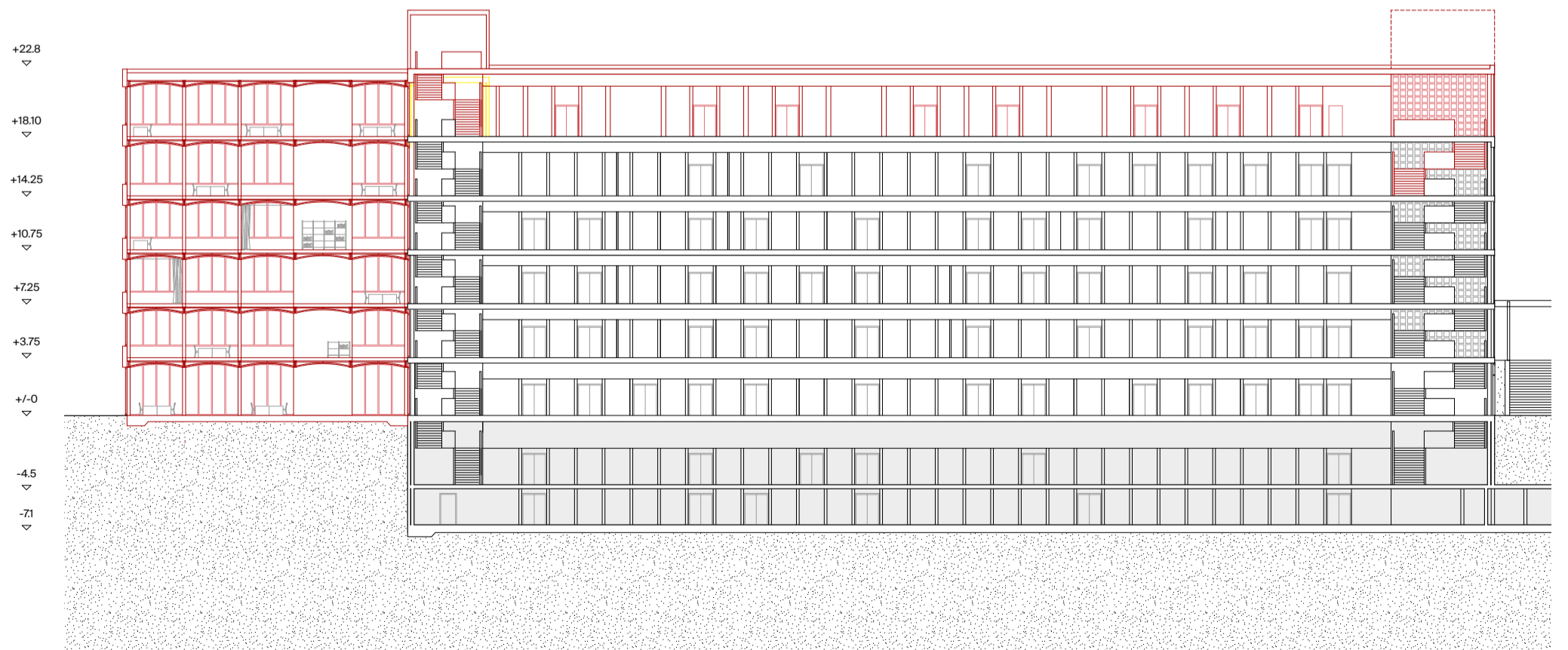


extension & floor addition, labs & offices, first floor





extension & floor addition, labs & offices, north facade

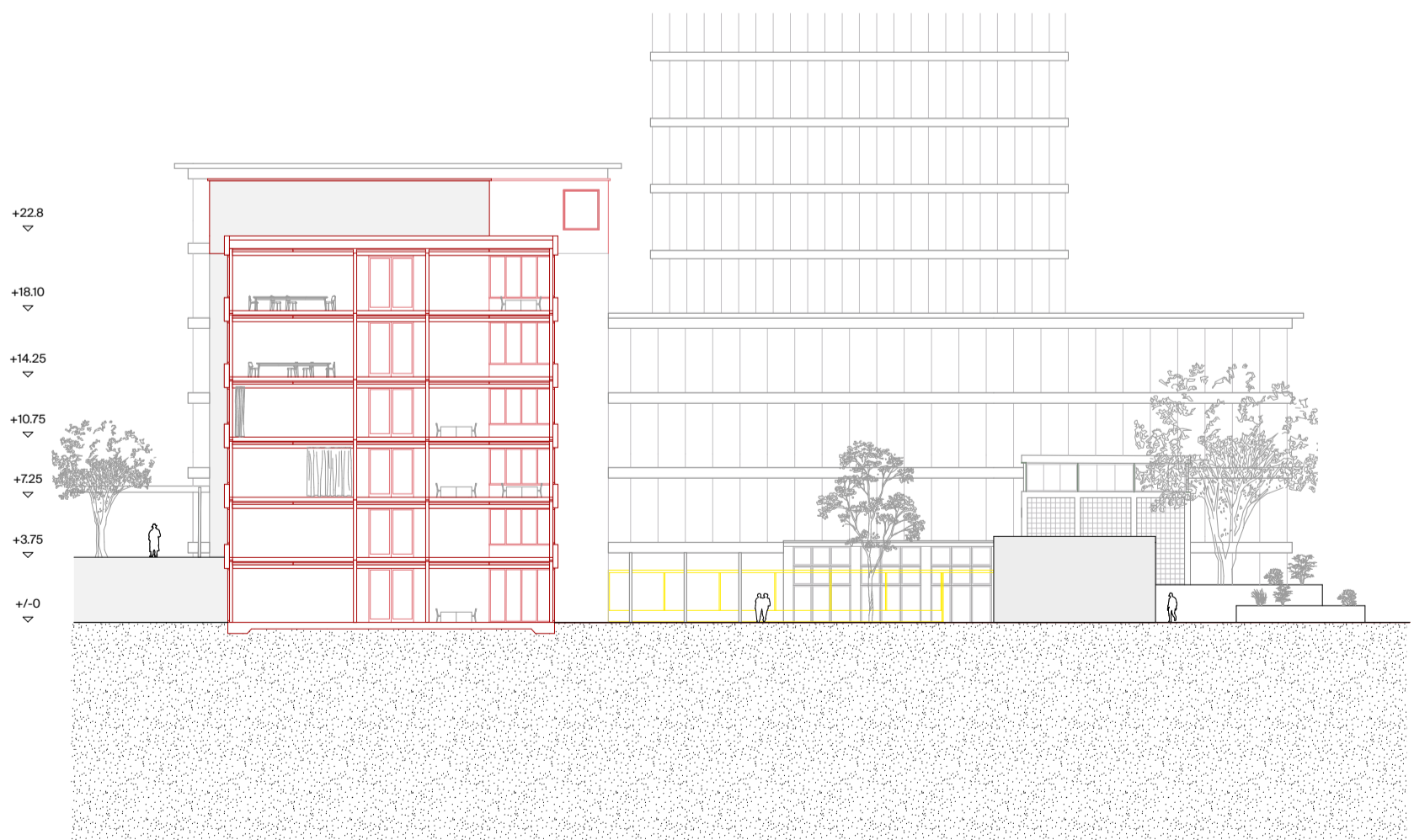


extension & floor addition, labs & offices, longitudinal section A-A





extension & floor addition, labs & offices, east facade

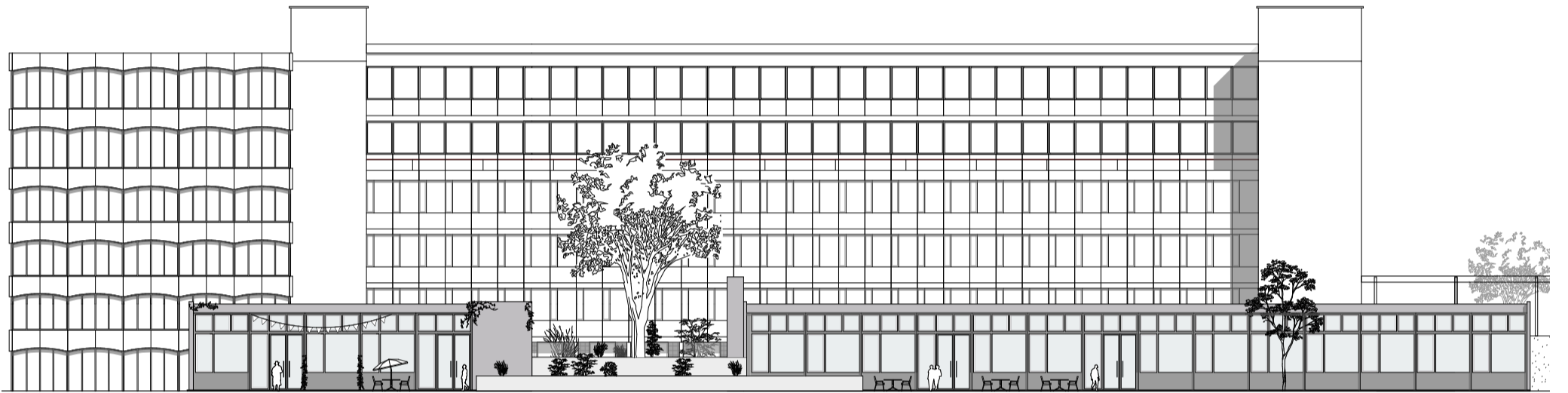


extension & floor addition, labs & offices, cross section C-C

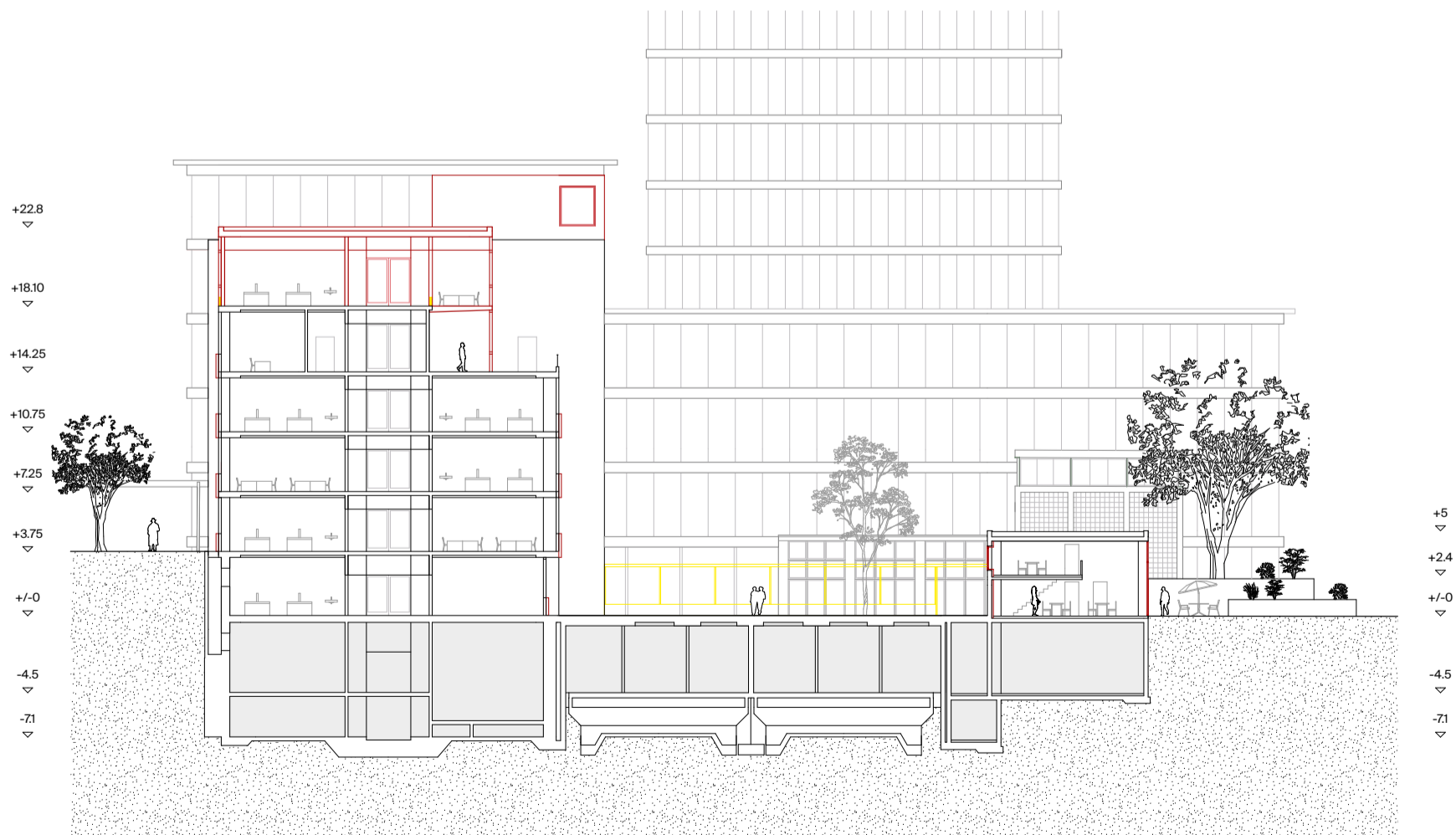




view of the open-space



repurposing, café & restaurant, north facade



extension & floor addition, labs & offices, cross section B-B

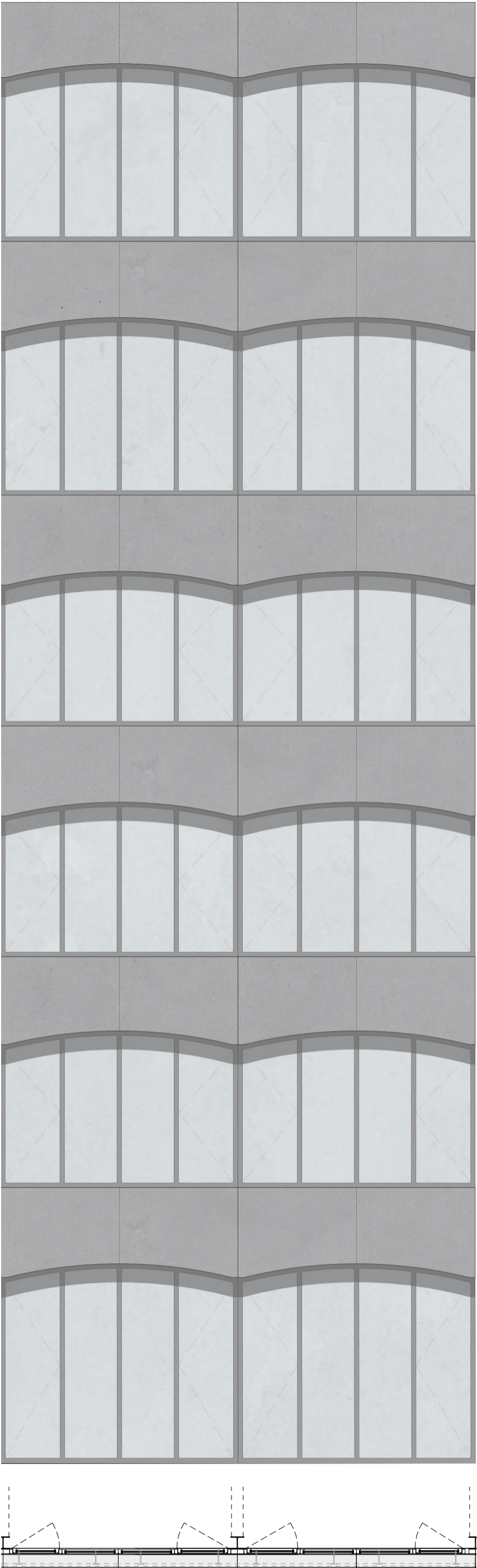
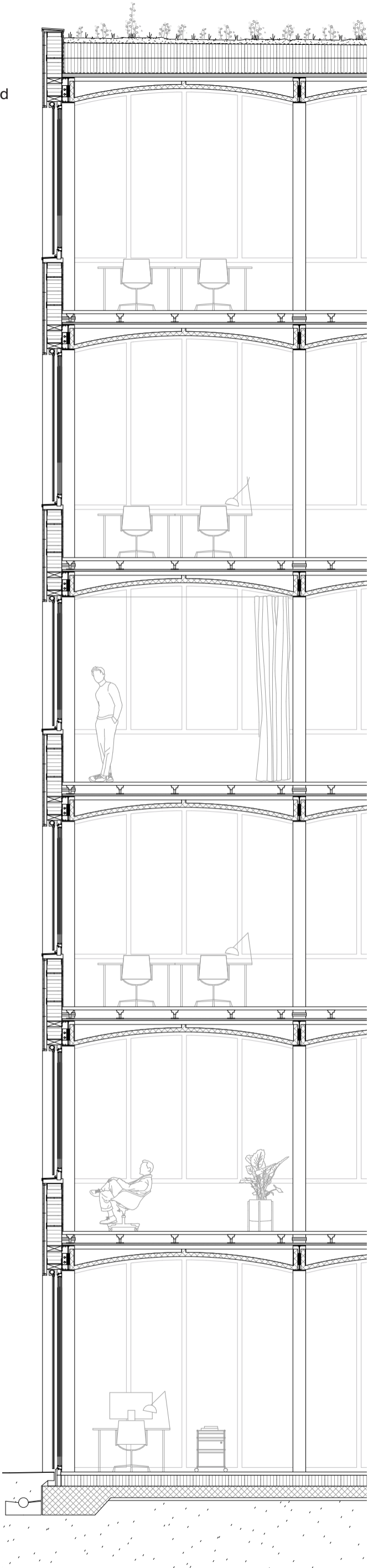




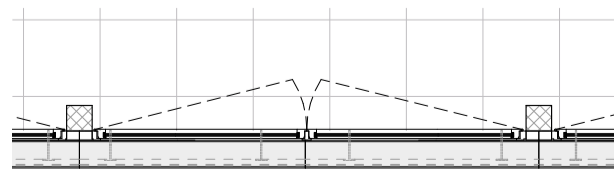
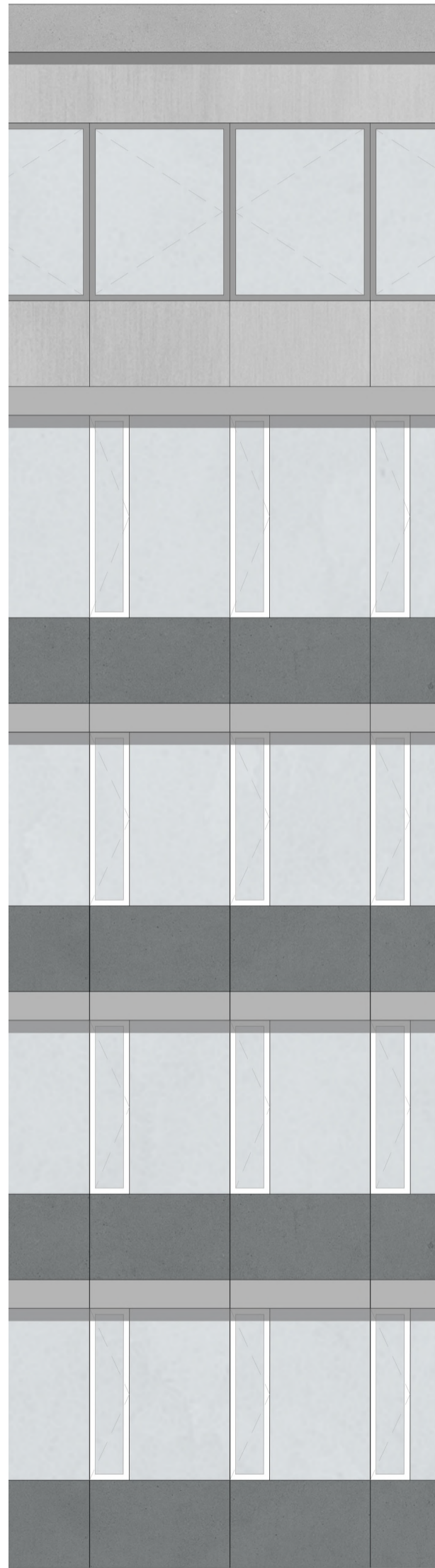
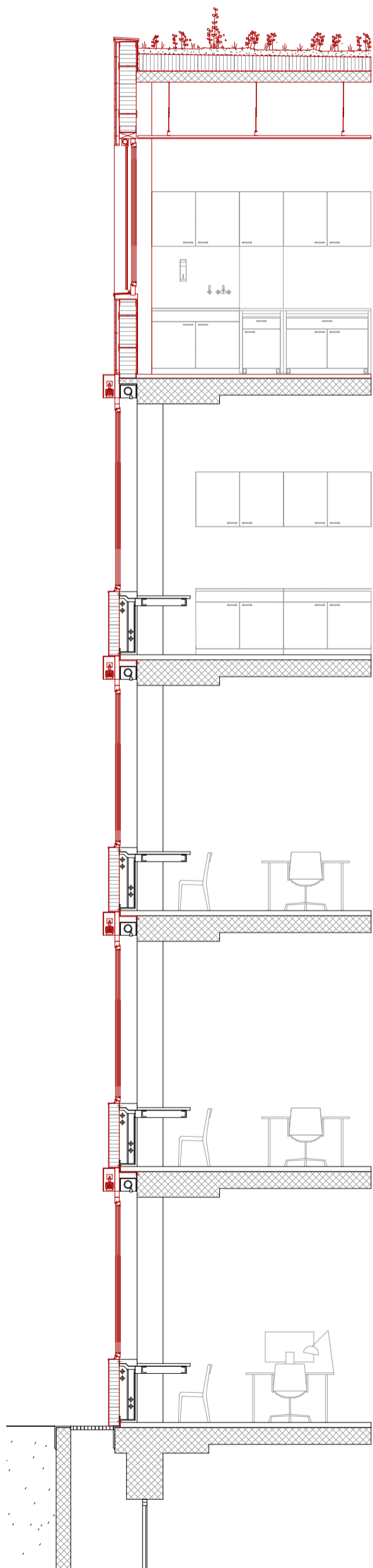
view of the café

floor composition

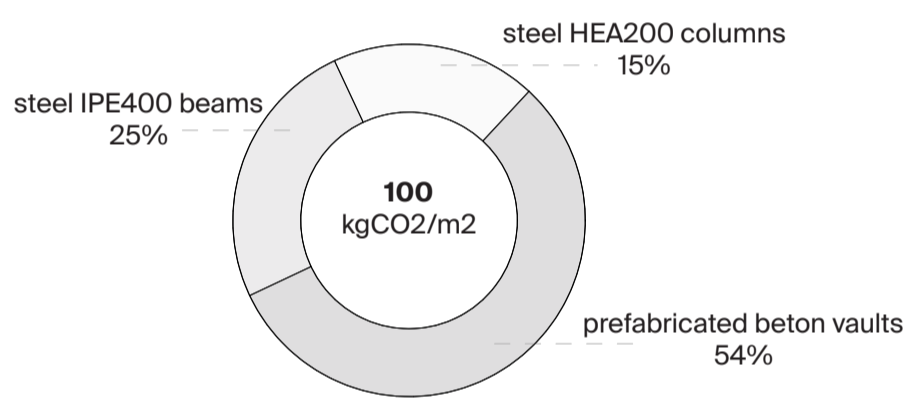
- flooring
- technical floor on adjustable cylinders
- prefabricated vaulted beton elements
- steel beam IPE400 profile



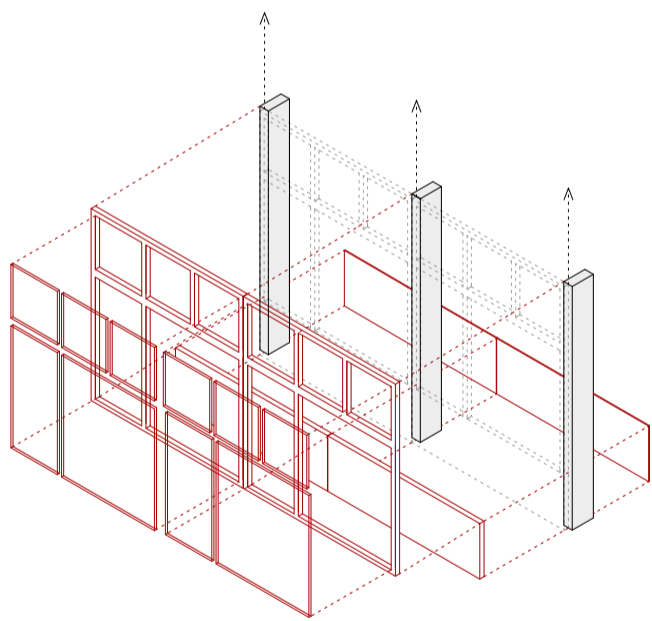
extension & floor addition, labs & offices, south facade detailed



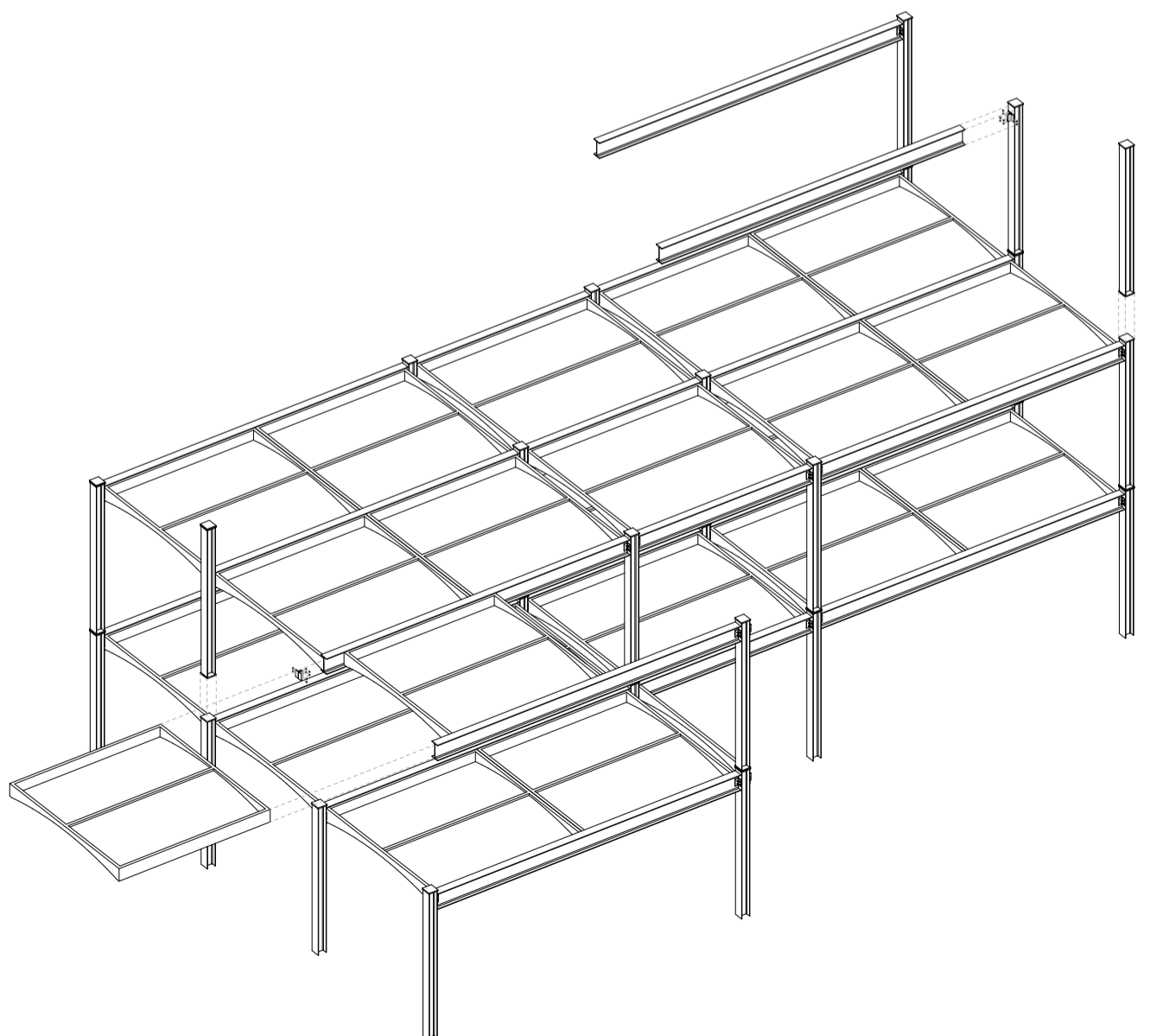
extension & floor addition, labs & offices, north facade detailed



extension, offices, graph
embodied carbon energy comparison



floor addition, labs & offices, exploded axonometry
newly isolated facade concept



extension, offices, exploded axonometry
constructive concept