



ARCHITECTURE STUDENT CONTEST

19th INTERNATIONAL EDITION, HELSINKI 2024

About Us

Graduate students at the Faculty of Architecture Zagreb, Croatia



Iva Burazin

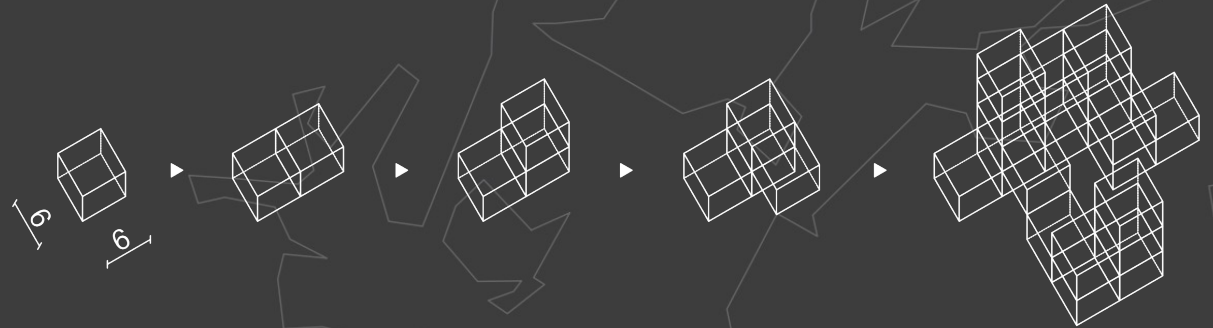


Karla Ambrus

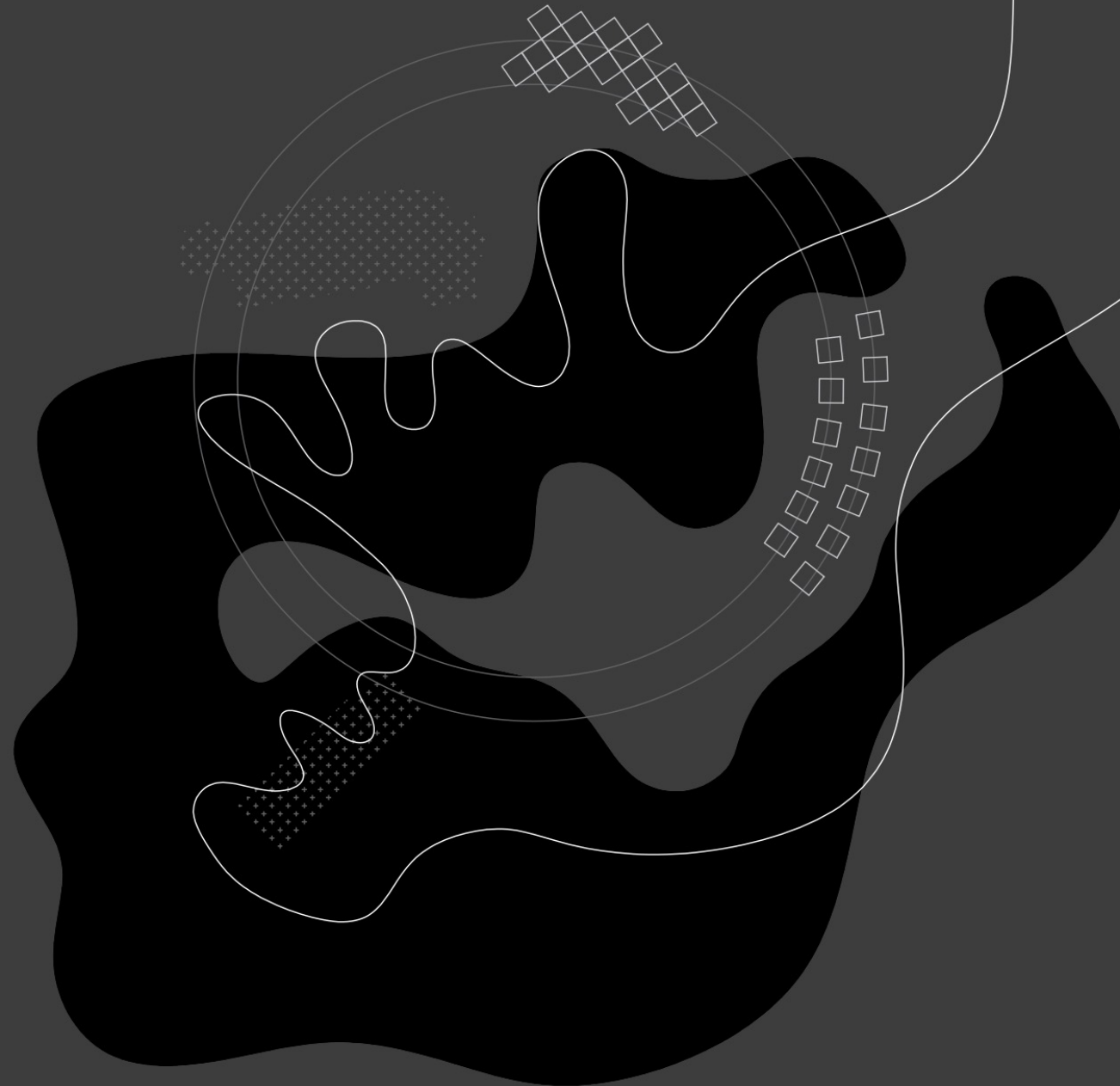


Saint Gobain Helsinki student contest

6x6 living



Idea



Through our project we wanted to give a response to changes in today's world. We tried to understand how human lifestyle is evolving and what are its new needs when it comes to living spaces. On the other hand, climate changes are a big factor in how we live today and how we perceive the future, so we gravitated towards renewable building materials and techniques. Our vision was to create a complex that intertwines natural resources of the location and modern, well equipped sustainable buildings. Living spaces are designed as flexible and user-friendly, allowing each resident to make it their own. Main construction material was Cross-laminated timber (CLT) since it has a lot of advantages such as carbon storage, fire resistance and fast installation. CLT load-bearing structure creates 6x6 meter modul. While disposing additional content such as a library, cafeterias and a gym, we thought about what we as students find useful to have on the campus. The site is designed in a way there is a flow from residential towards natural. New promenade connects green areas with buildings including Gardenia with the Japanese garden and a new botanical garden in the old museum.



building A

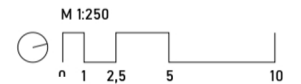
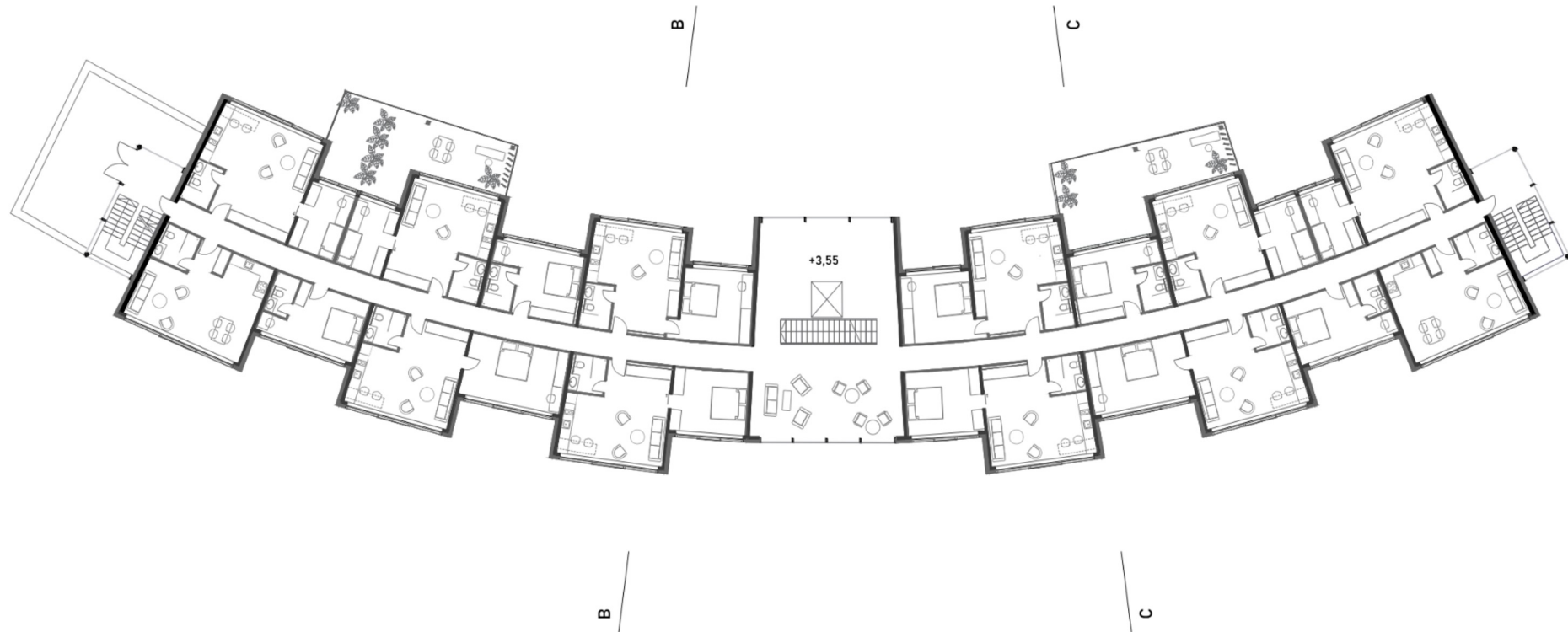
In zone A we transformed the old building into residential building with commercial and other public functions on the ground floor. We used transverse load-bearing structure of the old building and improved it with CLT extensions in the direction of the load-bearing structure. In that way we created a dynamic envelope that corresponds to our new building in zone B.

Zone A: Renovation



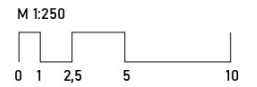
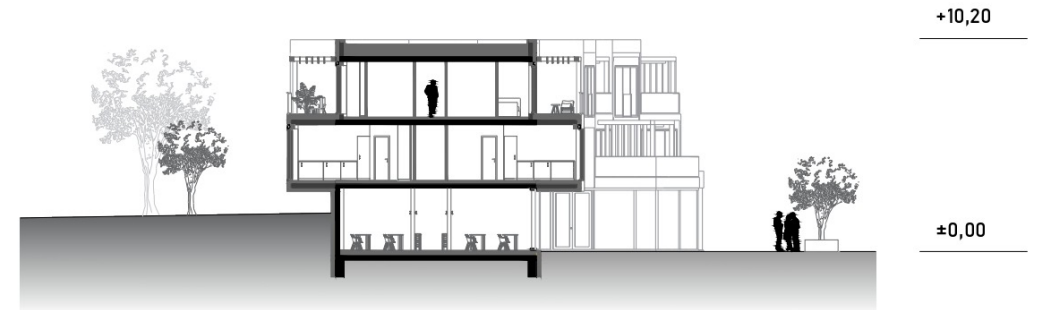
Zone A: Renovation

First Floor



Zone A: Renovation

Sections



Zone A: Renovation



Zone A: Renovation



building B

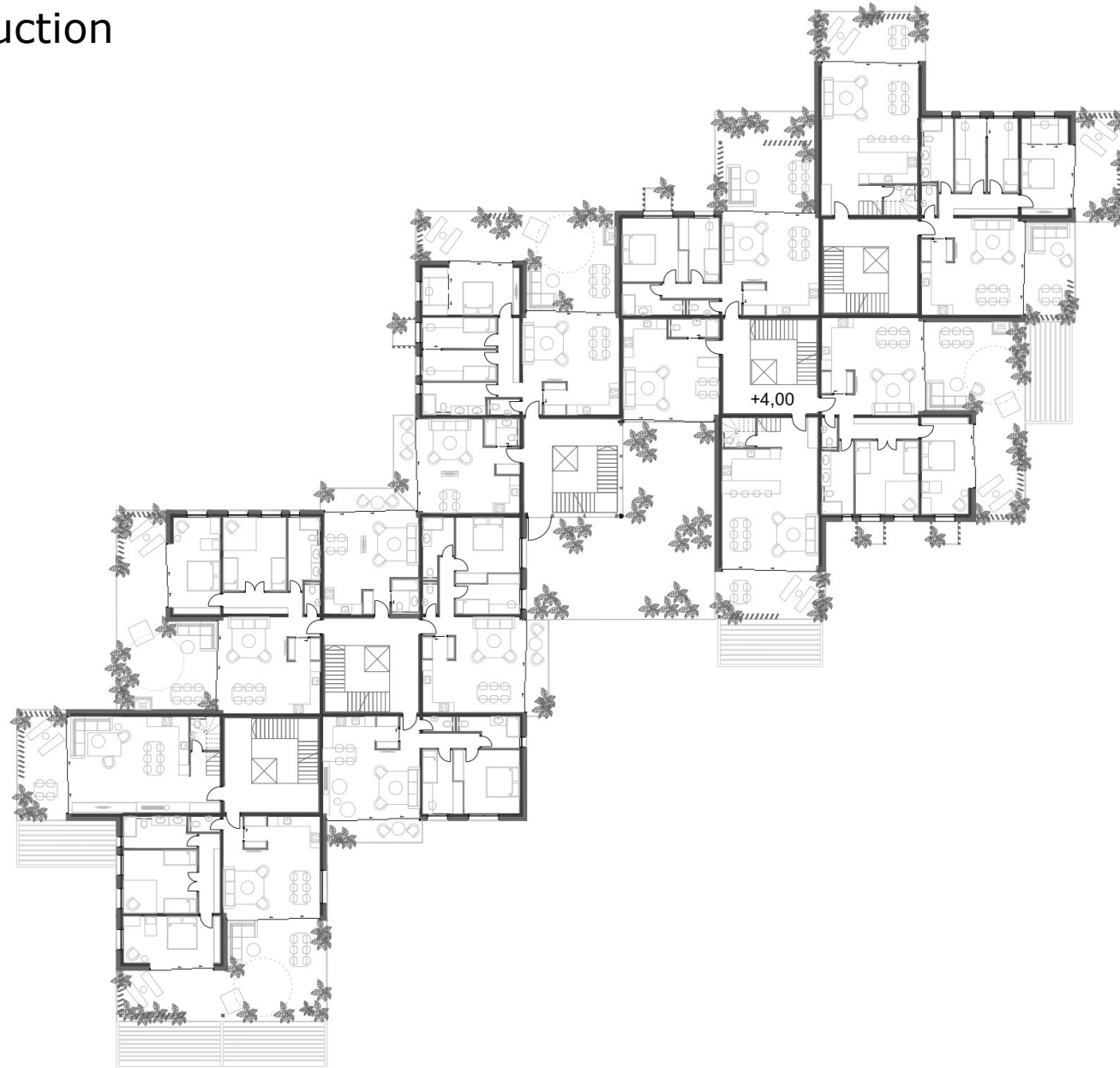
In zone B we designed a new five-storey building with underground parking and public and commercial functions on the ground floor. The building's geometry is marked by terraces allowing each floor access to an outdoor space. Each apartment is designed from multiple CLT structural units and there is a possibility of adding more of them in the future. On the fourth floor there is Finnish sauna and an outdoor pool.

Zone B: New Construction



Zone B: New Construction

First Floor



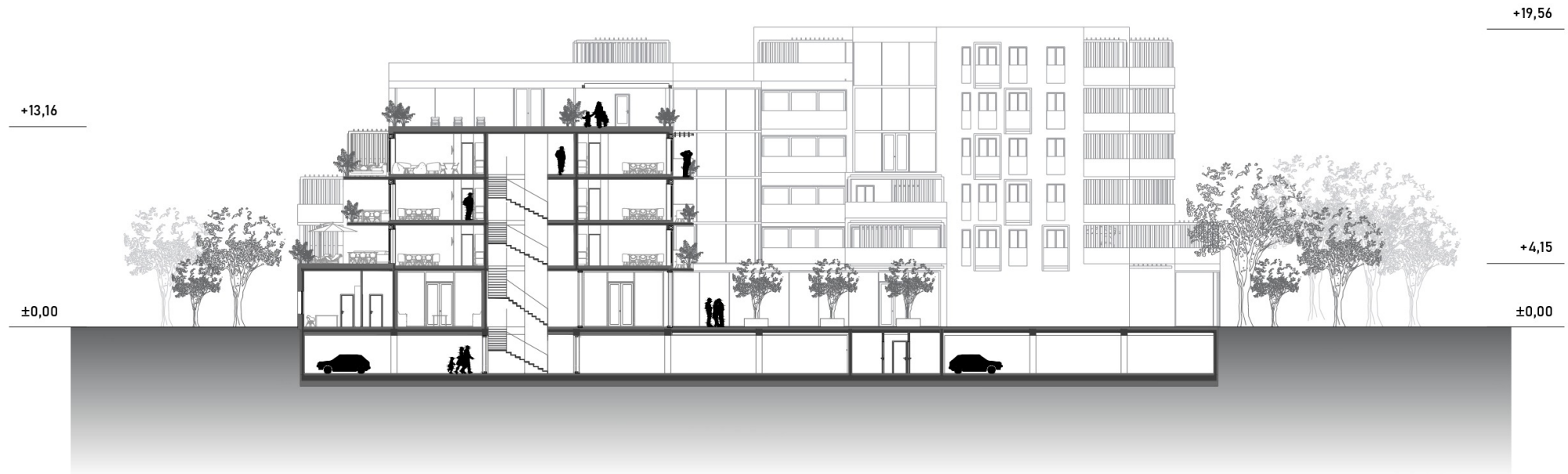
Zone B: New Construction

Fourth Floor



Zone B: New Construction

Section A-A

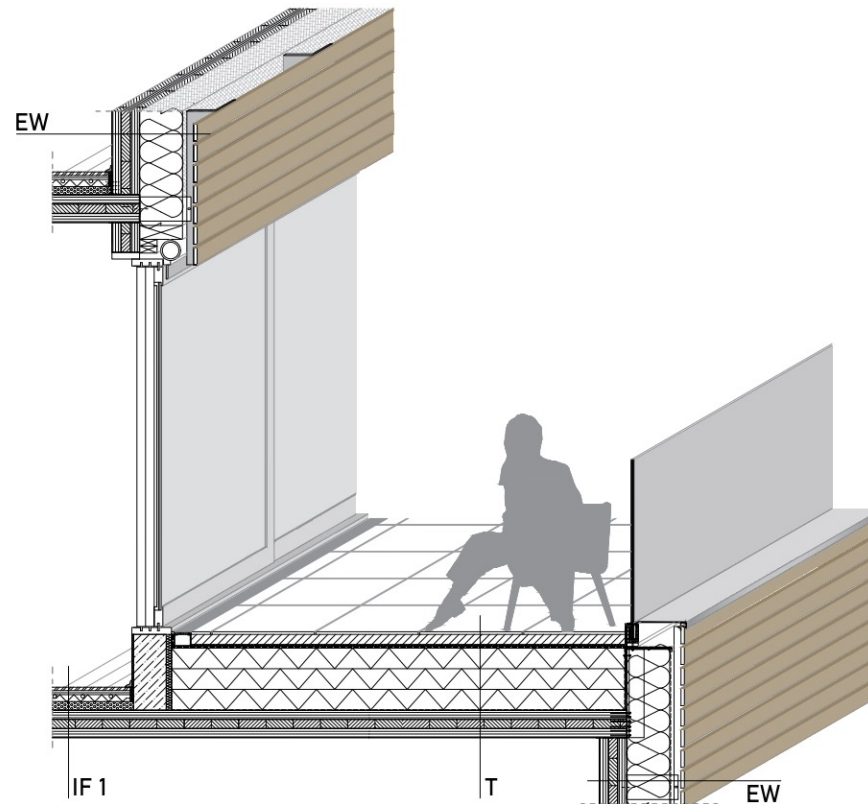
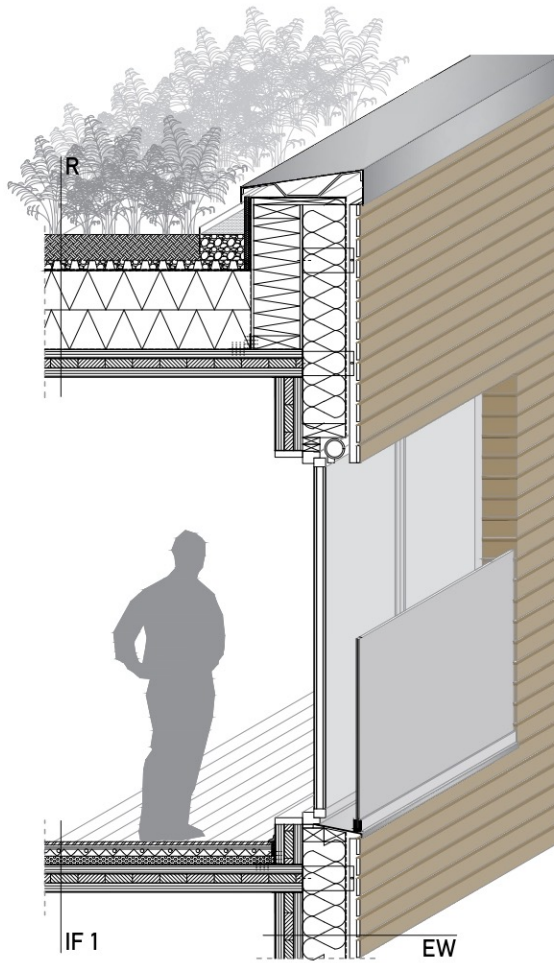


Zone B: New Construction



Zone B: New Construction

Structural Details



EW - External wall	U=0,10 W/m²K
CLT wall panel	16 cm
Multimax 30 MW insulation	25 cm
Tyvek foil	0,22 mm
ventilation cavity with aluminium substructure	6,5 cm
horizontal wood cladding	2 cm
IF 1 - Internal floor 1	
wood flooring	2 cm
Rigips rigiton air panel	2 x 1,25 cm
Profi facade stone wool with floor heating system	4 cm
Perlite	5 cm
PE foil	0,02 cm
CLT panel	16 cm
T - Terrace	U=0,6 W/m²K
CLT panel	16 cm
Difunorm foil	0,12 mm
Isover PIR B	3 x 12 cm
Weberdry PUR bitumen	1cm
High-density polyethylene (HDPE)	1 cm
Weberfloor easi screed	6 cm
ceramic tiles	1,5 cm
R - Roof	U=0,07 W/m²K
CLT panel	16 cm
Difunorm foil	0,12 mm
Styrodur 3000 CS panels	46 cm
PVC membrane	0,4 cm
Geotextile	0,3 cm
High-density polyethylene (HDPE) drainage	5 cm
Geotextile	0,3 cm
Green roof substrate	15 cm



Zone B: New Construction

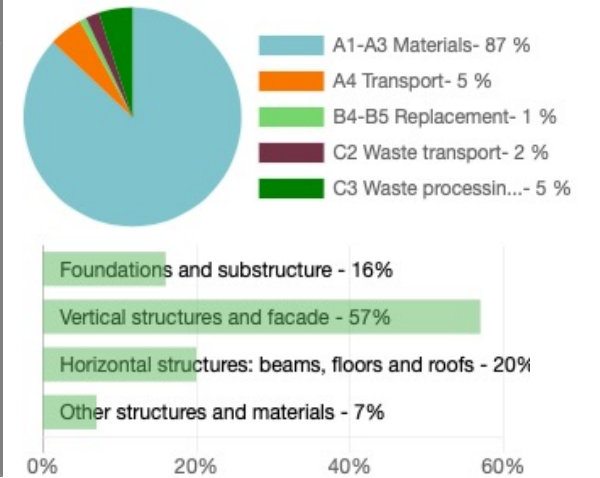
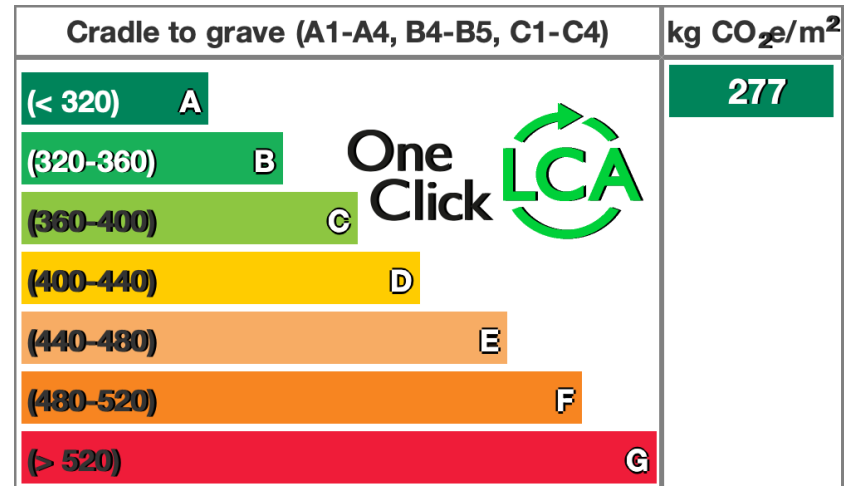
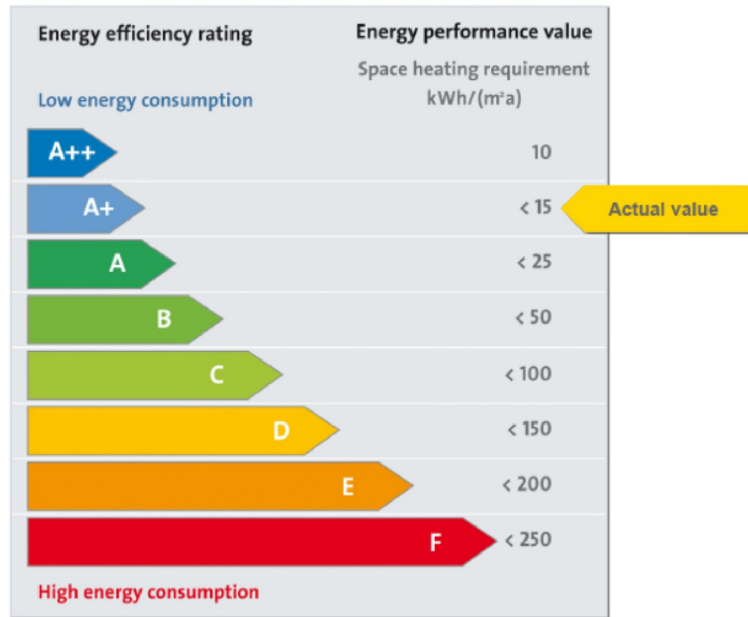
Energy Efficiency and LCA



Energy efficiency rating: A+ (<15)

Spec. heat demand: 11.86 kWh/(m²a)

Life-cycle assessment



Zone B: New Construction



Zone B: New Construction



Zone B: New Construction



building C

In zone C we preserved museum's stone walls and designed botanical garden featuring Mediterranean, evergreen, domestic, orchid and exotic garden. The garden is a meeting point at our new promenade and this area is the connection to the nature reserve area.

Zone C: Botanical Garden



Zone C: Botanical Garden

Floor Plan and Section

