VIIKKI THREE

Connecting the old the present and the future

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Urban analysis

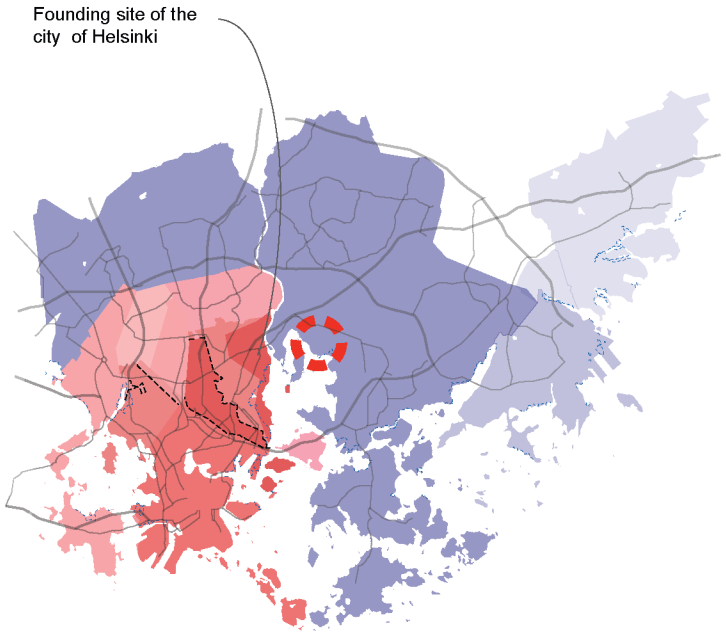
Situation

Viikki is a district of 12 000 inhabitants in the north-east of Helsinki, about 8 km from central Helsinki. Construction in Viikki intensified in the 1990s, at the same time as the University of Helsinki relocated its science faculties

A new phase of development is underway to build residential and commercial buildings for around 6 000 people by 2030, next to the new Jokeri tram line. The academic campus is also to be expanded.

Natural situation - the natural framework is included in Natura 2000

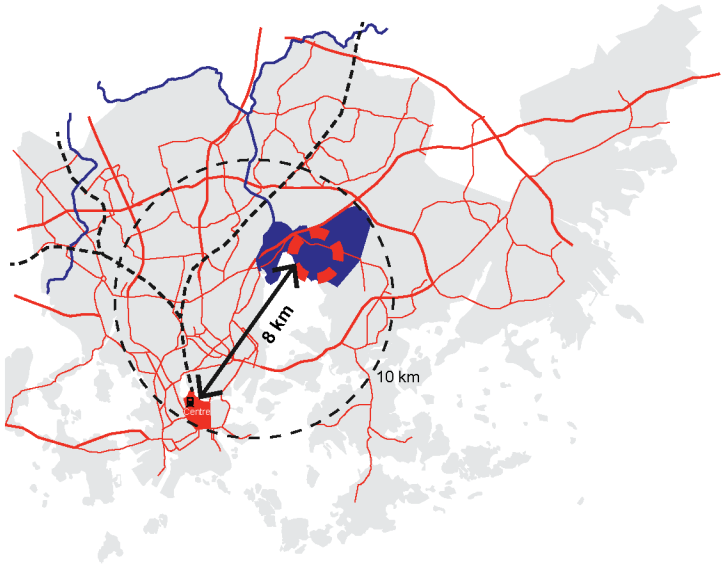
Competition site



Historical situation - Viiki near the founding site of the City of Helsinki

Oldest — Newest

Competition area



Accessibility - Viikki is ±8 km from the centre

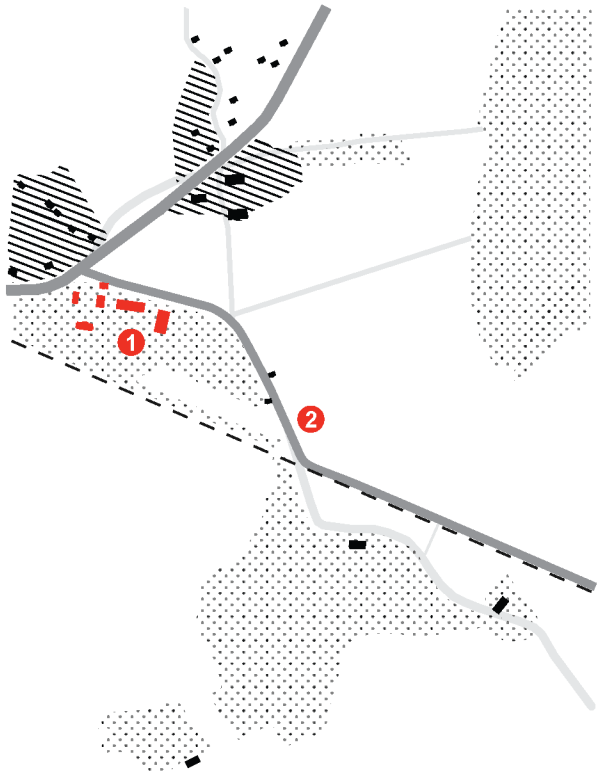
Viikki district

Helsinki University
experimental farm

Competition area

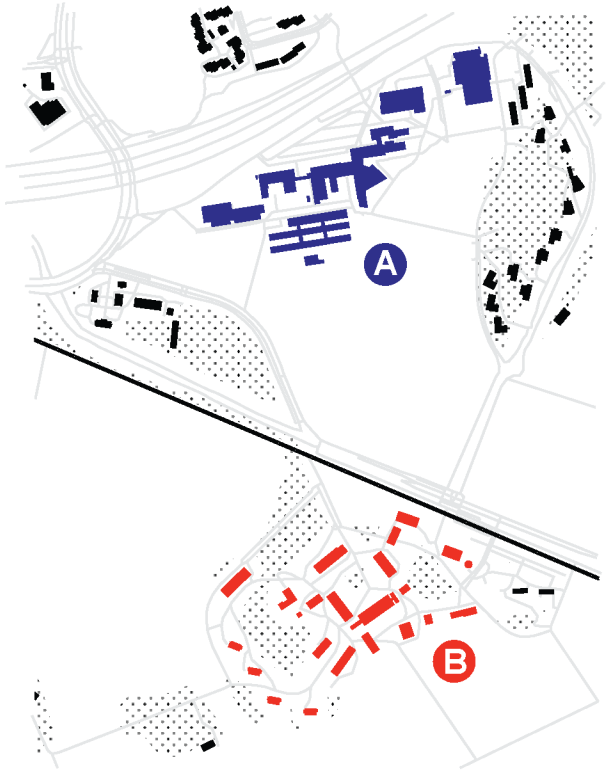
Urban analysis

Historical background



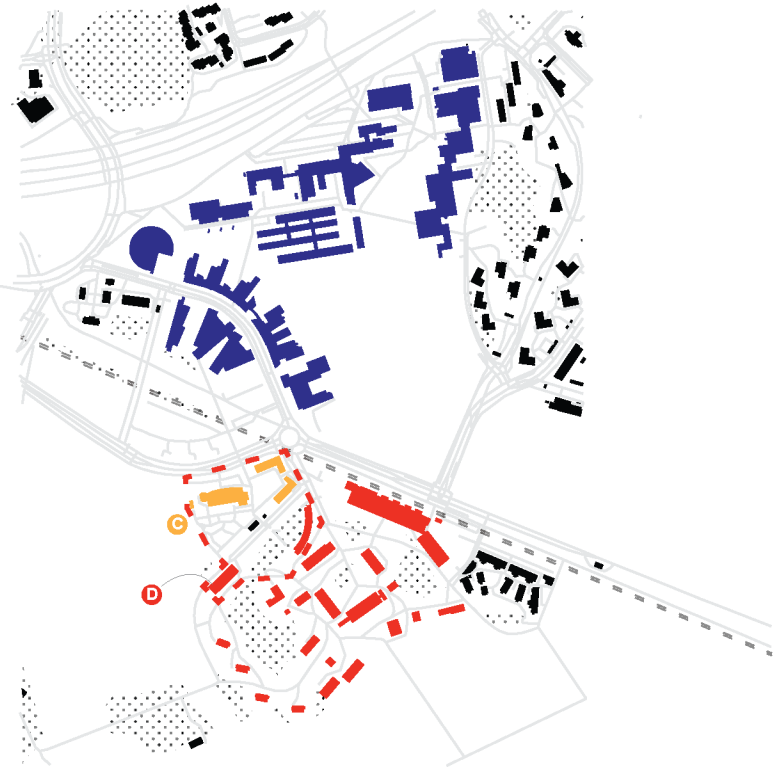
1932 - origins: manor house and historical twist

1. **Manor house**
   past summer residence / farming complex
2. **Historical road**
   Road that connected Helsinki and Hama



1988 - Expansion of the University of Helsinki

- A **Helsinki University**
  science park
- B **Helsinki University**
  experimental farm



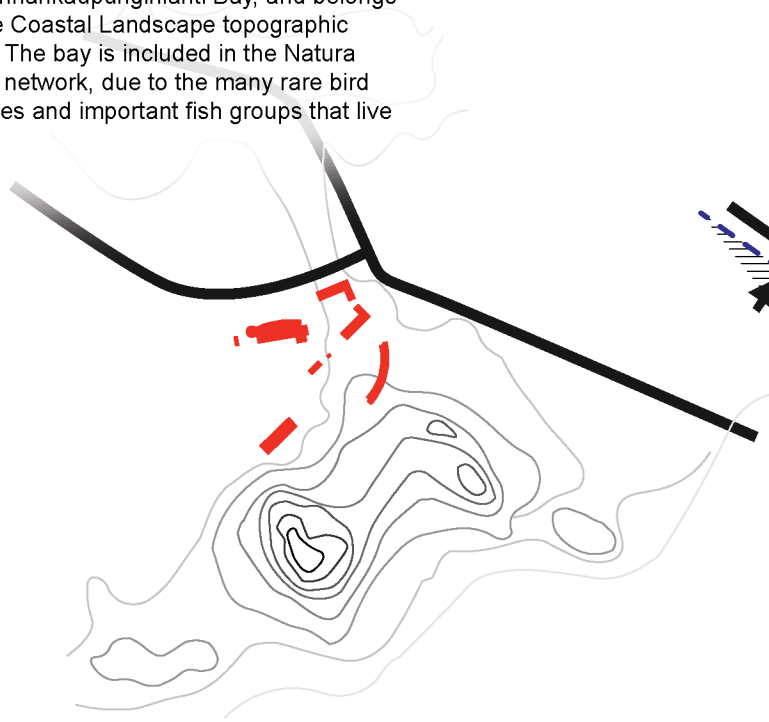
2005 - Eko-Viikki development

- C **Gardenia**
  A winter botanical garden, est. by the University of Helsinki now restaurant
- D **Museum of Agriculture**
  Museum of agriculture established by the University of Helsinki (closed/moved since 2016)

Urban analysis

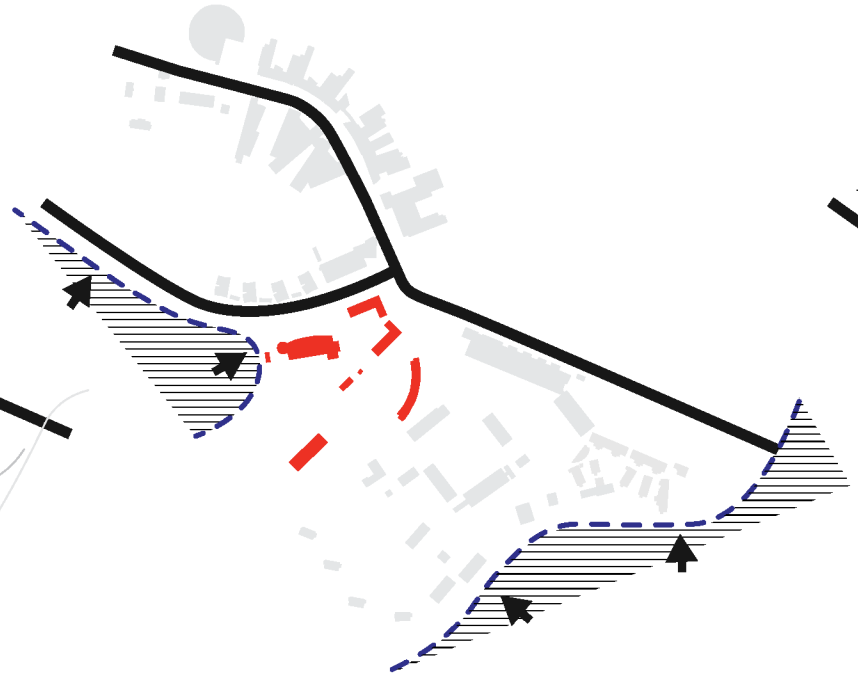
Natural conditions

The area is located in one of Helsinki's flattest districts, Vikkii, on the northern side of Vanhankaupunginlahti Bay, and belongs to the Coastal Landscape topographic area. The bay is included in the Natura 2000 network, due to the many rare bird species and important fish groups that live here.

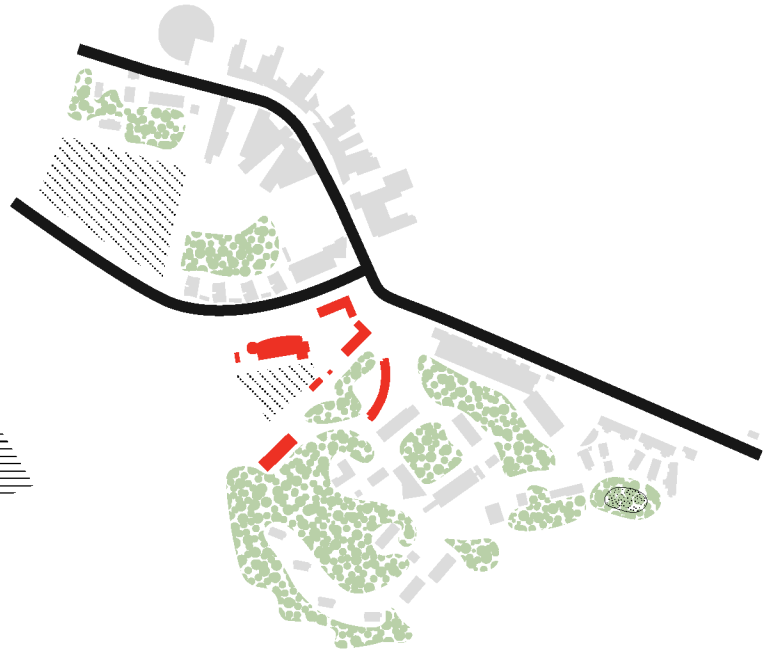


Topography

m/above sea level 0 20



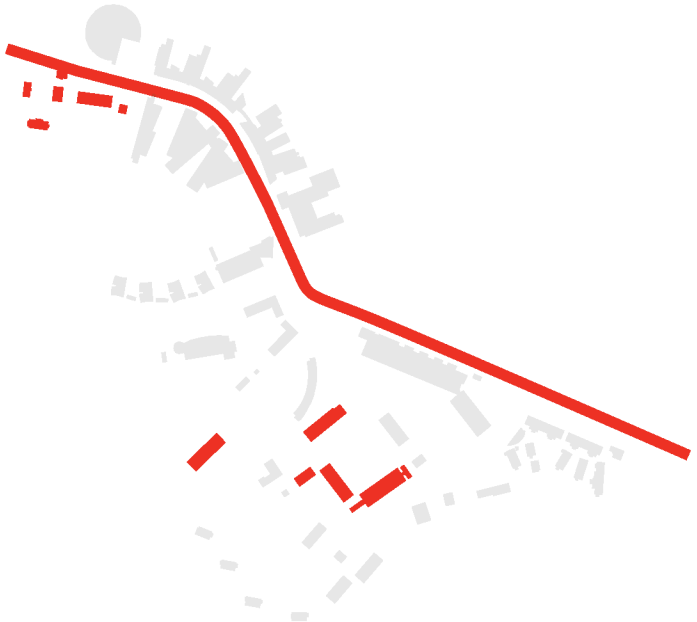
Flood risk areas



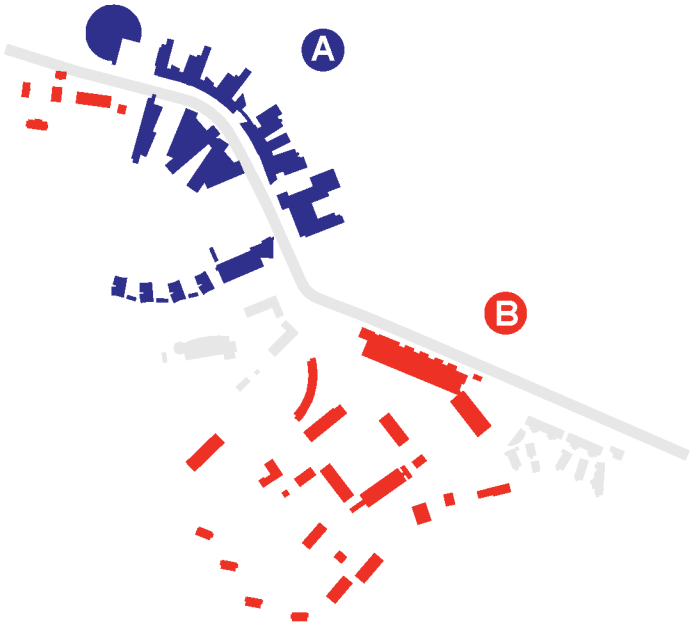
Plantations

Urban analysis

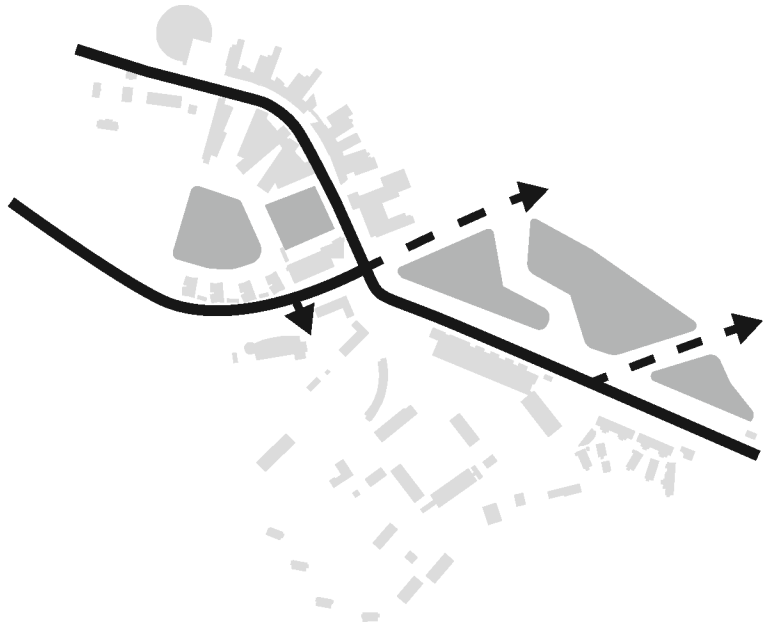
Conclusions



Historical bend and historical structures



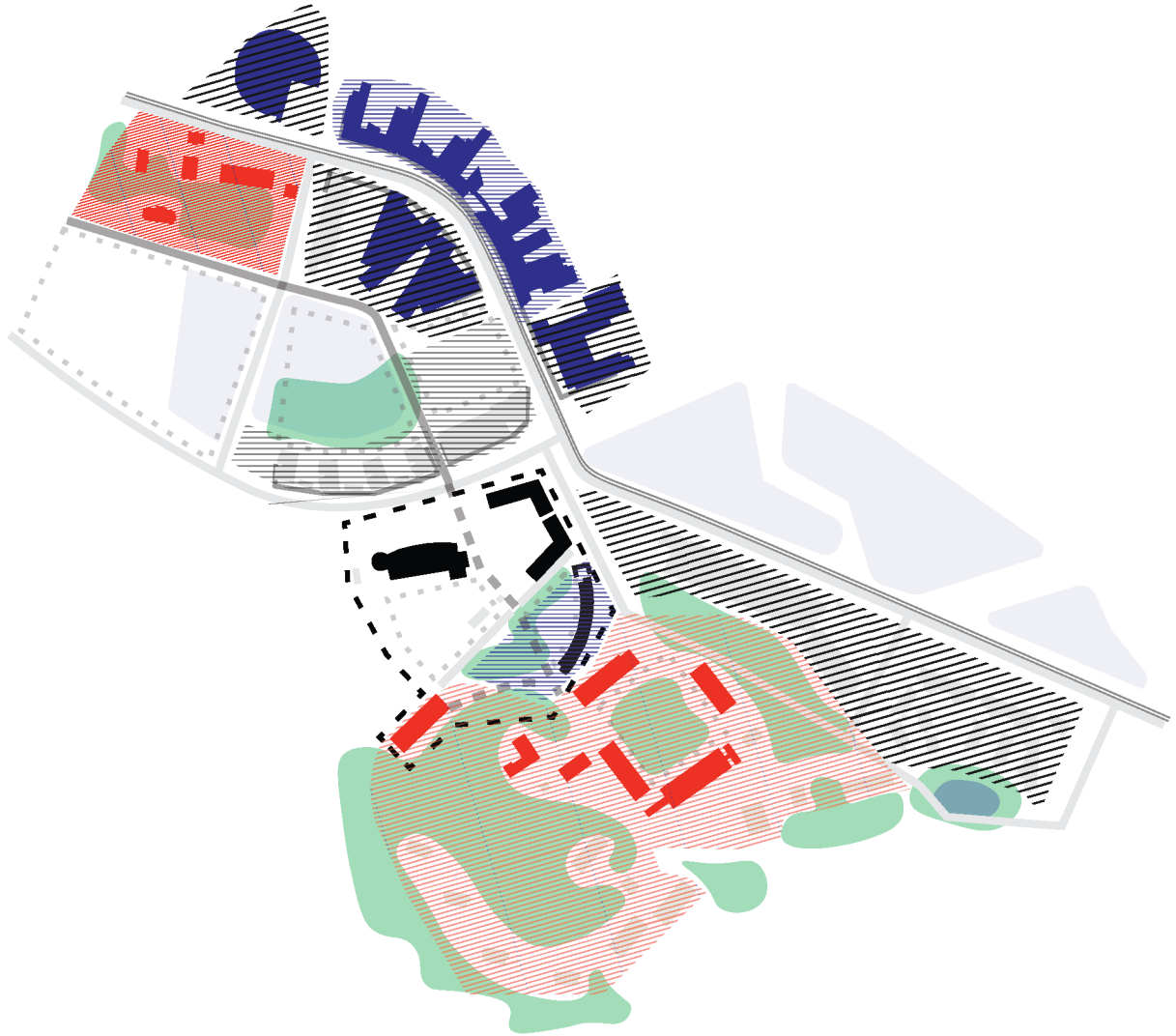
Two sides of the university campus



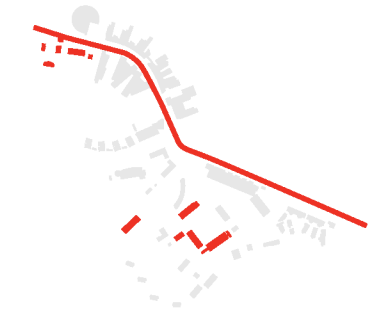
Planned development

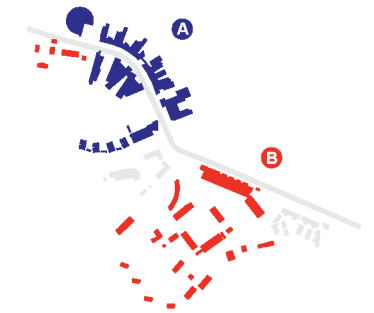
Urban analysis

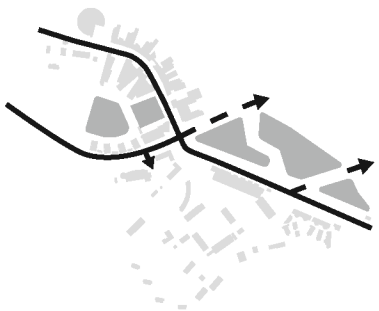
Summary diagram



- Future development
- 2008-2012
- 1995-2005
- 1988-1995
- 1953-1988
- 1953
- Competition site
- Perimeters to be outlined/projected
- Buildings
- *Jokeri* light rail
- Roads
- Existing public space
- Links
- Two sides of the campus
- Plantations
- Water



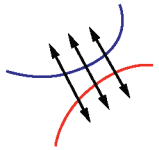




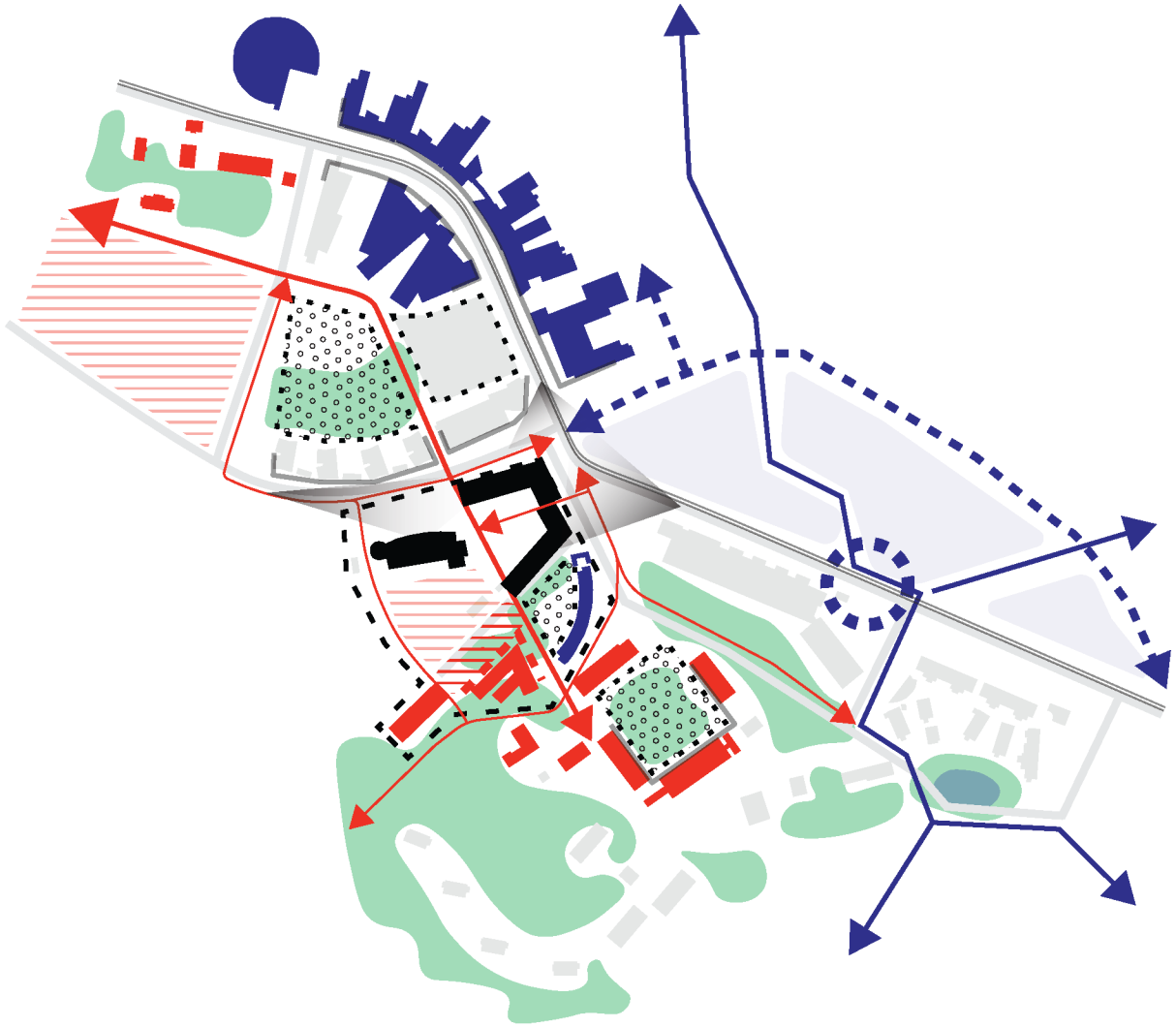
Urban concept

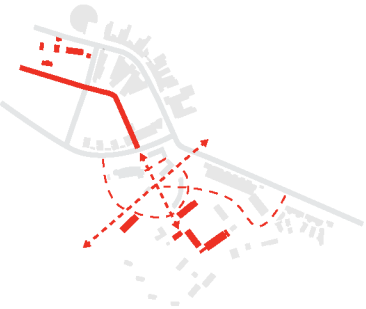
Summary diagram

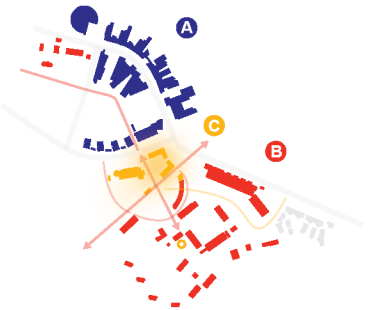
The urban concept consists of 2 parts: the development envisaged in the urban plan (shown in blue) and the urban concept for the area and its surroundings to be designed for the competition. The latter (shown in red) aims to connect the historic buildings on the two sides of the campus by consolidating a network of pedestrian paths and public spaces shaped by existing and planned development.

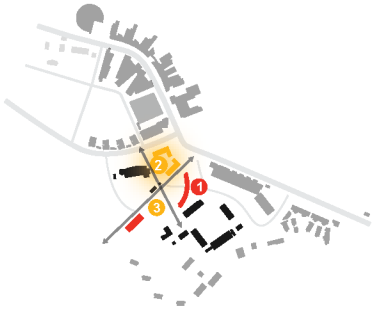


- Viewpoints
- Planned service and transport centre
- Perimeters to be outlined/projected
- Planned/designed public spaces
- Existing public spaces
- *Jokeri* light rail
- Planned pedestrian paths
- Planned car connections
- Planned pedestrian connections
- Planned development
- Plantations
- Water



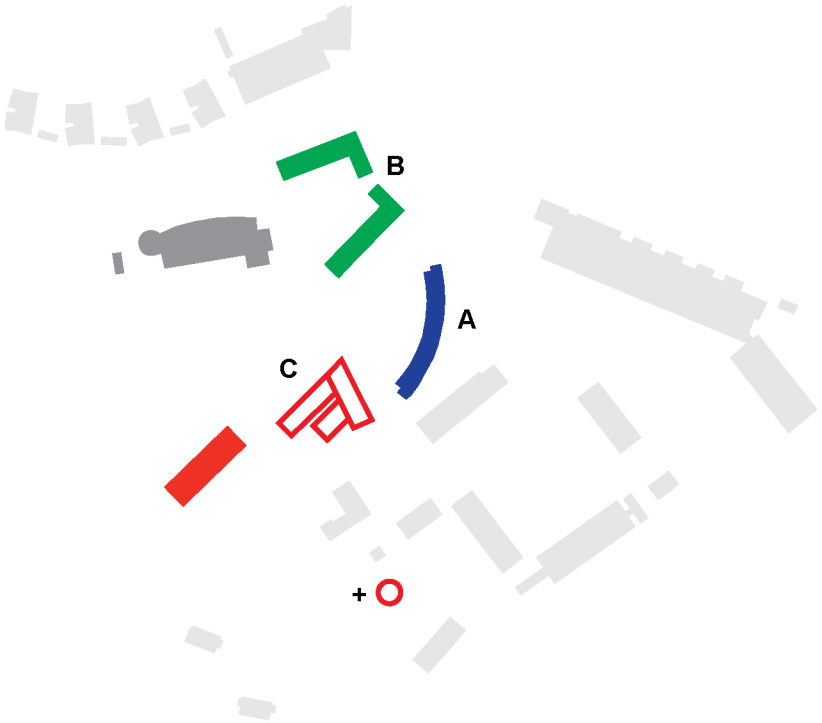






Urban concept

Program



B

1 BED APT.

2-3 BED APT.

LIVING

COMMERCE

P

New construction
Mixed use housing

A

TEMPORARY HOUSING

COMMERCE

Reconstruction
Temporary housing

C

MUSEUM OF AGRICULTURE

EXHIBITION

CHANGING EXHIBITION

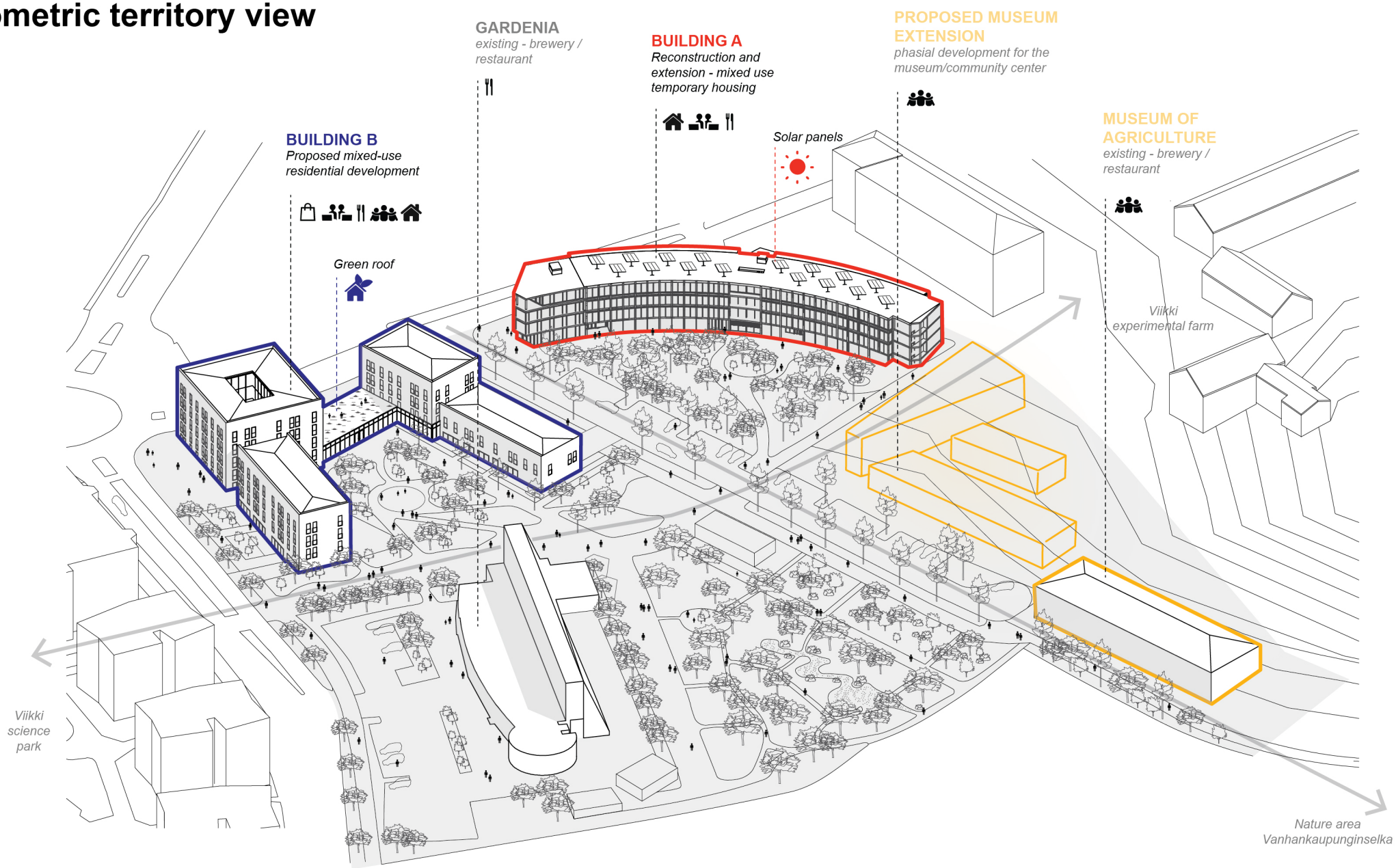
WORKSHOP EDUCATION

New construction
Public building

+

LOOKOUT

Axonometric territory view



Masterplan

The territory is being developed with the idea of a Japanese garden, replicating already formed natural structures. New public spaces are created to highlight and activate the pedestrian path connecting two sides of the university.

LEGEND

- Entrance
- Proposed development of the territory

GREENERY

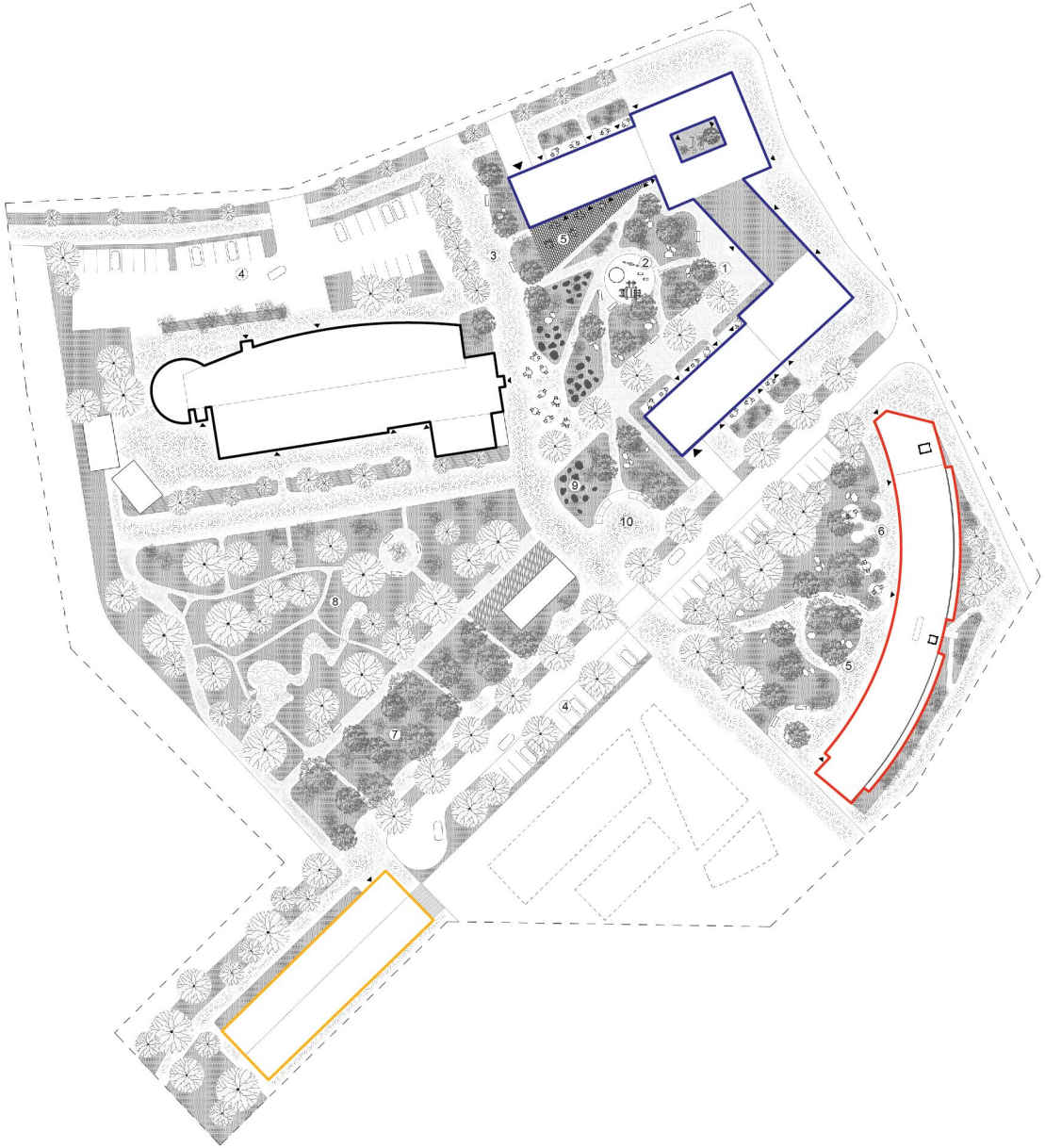
- Existing trees
- Newly planted trees
- Newly planted shrubs, small trees
- Newly planted perennial plants

GROUND

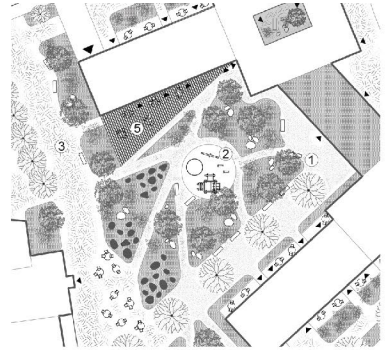
- Natural stone pavers
- Natural stone chip
- Asphalt
- Water
- Terrace

SMALL ARCHITECTURE

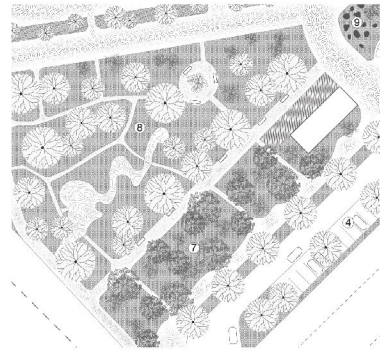
- Tables
- Benches
- Trashcans
- Vegetable gardens
- Rocks
- Cars



1 Private living space with walkway
2 Kids playground
3 Main pedestrian walkway
5 Community recreation areas



4 Parking
7 Temporary exposition of greenery
8 Japanese garden

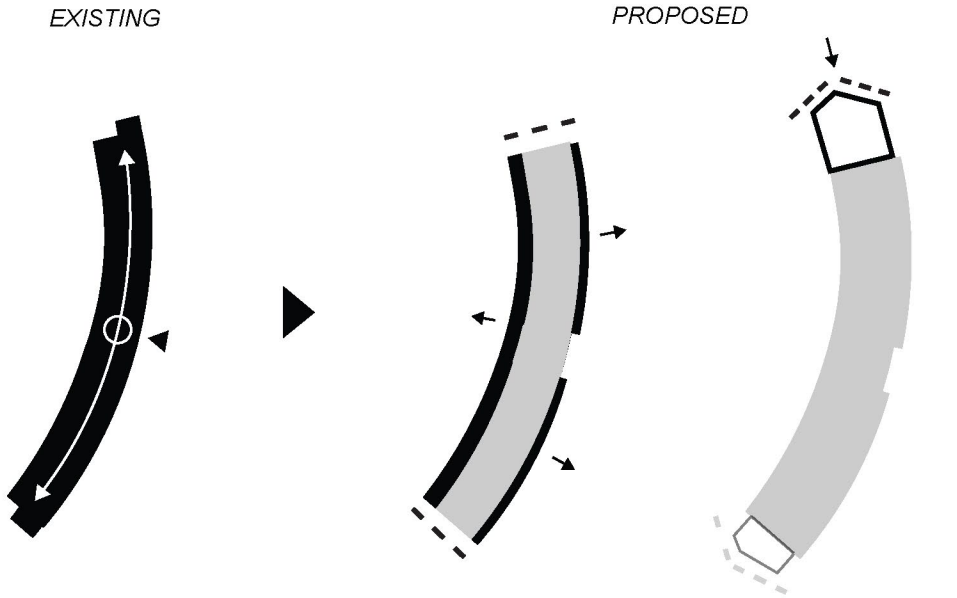


5 Community recreation areas
6 Cafe area

Building A

Concept

Concept diagrams



Existing -
Center corridor
structure

Addition instead
of substraction

Defining shape, reacting
to surroundings

Building A

Floor plans / Function

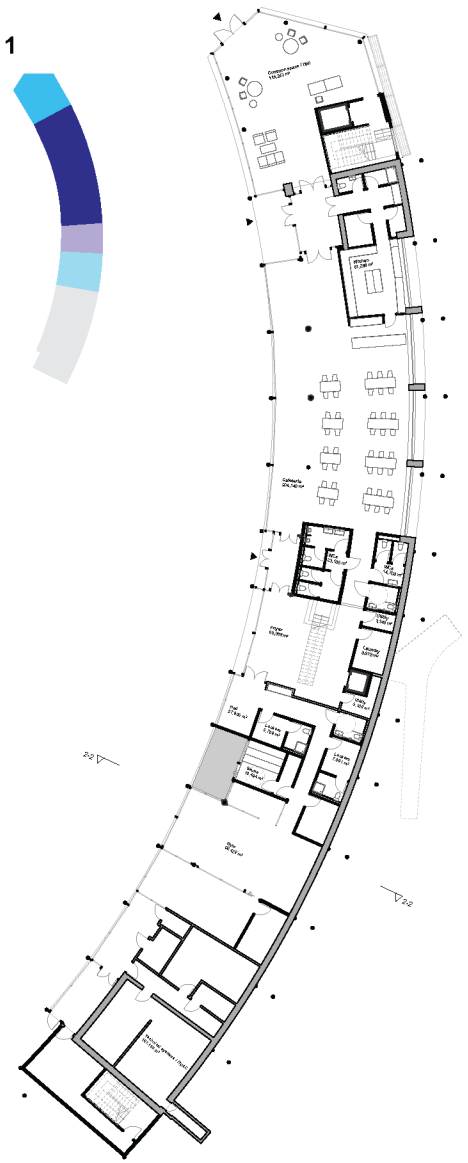
The project involves transforming an existing office building into temporary housing for visiting and/or local Helsinki University researchers, academic staff.

At the heart of the design is the reconstruction of the northern facade into a gallery structure which serves as the main circulation path on the northern side, and a lodgia structure on the south which serves as a sheltered outdoor space.

- Technical / Utility
- Research facility
- Cafeteria
- Gym / Sauna
- Common space

- Residence T1
- Residence T2
- Residence T3
- Residence T4

1



2-3

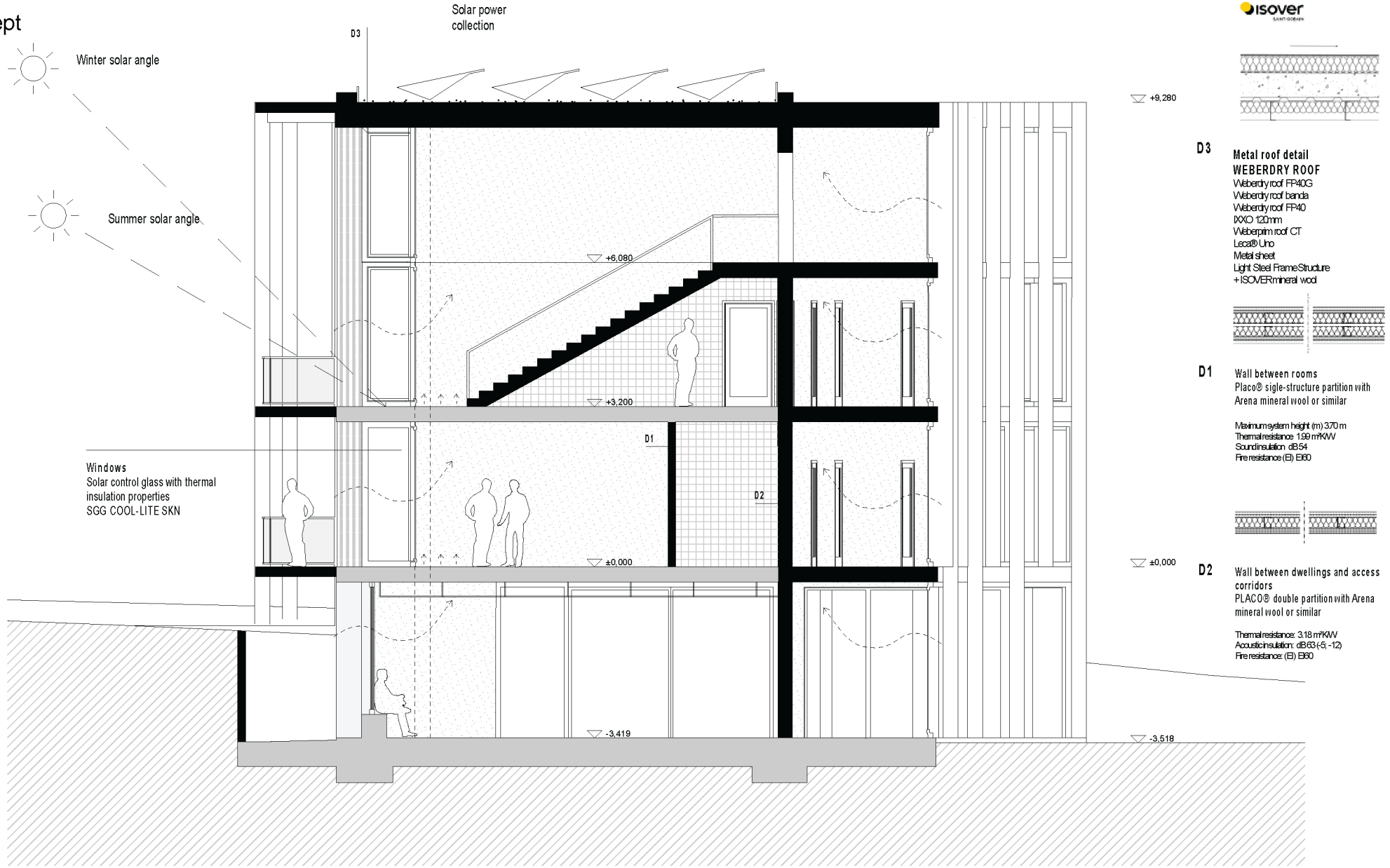
4

Building A

Section / Sustainability concept

The aim is to reduce energy consumption by - additional insulation and increased quality of fenestration (solar control glass, double glazing); application of low temperature heating and cooling distribution (radiant floor); rainwater collection; task-based LED lighting;

Furthermore, introduce the use of renewables: PV cells; mechanical ventilation with heat recovery (MVHR); geothermal heat pump;



placo

isover

D3 Metal roof detail
WEBERDRY ROOF
Weberdry roof FP40G
Weberdry roof banda
Weberdry roof FP40
IXXO 120mm
Weberprim roof CT
Leca® Uno
Metal sheet
Light Steel Frame Structure
+ ISOVER mineral wool

D1 Wall between rooms
Placo® sigle-structure partition with Arena mineral wool or similar

Maximum system height (m) 3.70 m
Thermal resistance 1.99 m²K/W
Sound insulation dB 54
Fire resistance (EI) EI 60

D2 Wall between dwellings and access corridors
PLACO® double partition with Arena mineral wool or similar

Thermal resistance: 3.18 m²K/W
Acoustic insulation: dB 63 (-5; -12)
Fire resistance: (EI) EI 60

Building A

Northern elevation

Building A

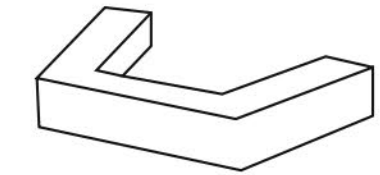
Southern elevation

Building A

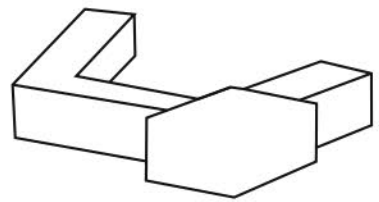
Visualization

Building B

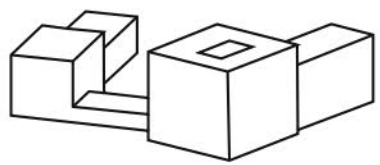
Concept diagrams



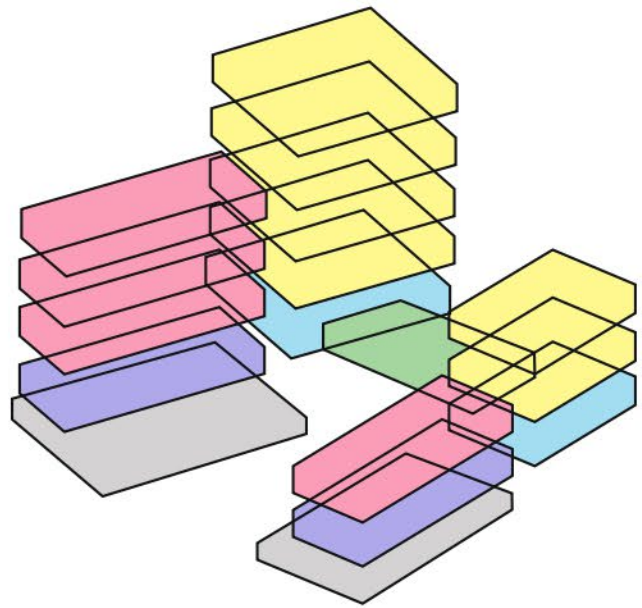
emphasising the perimeter



accent corner



adjusted heights and expression



Underground parking

2-3 room apartments

Community spaces

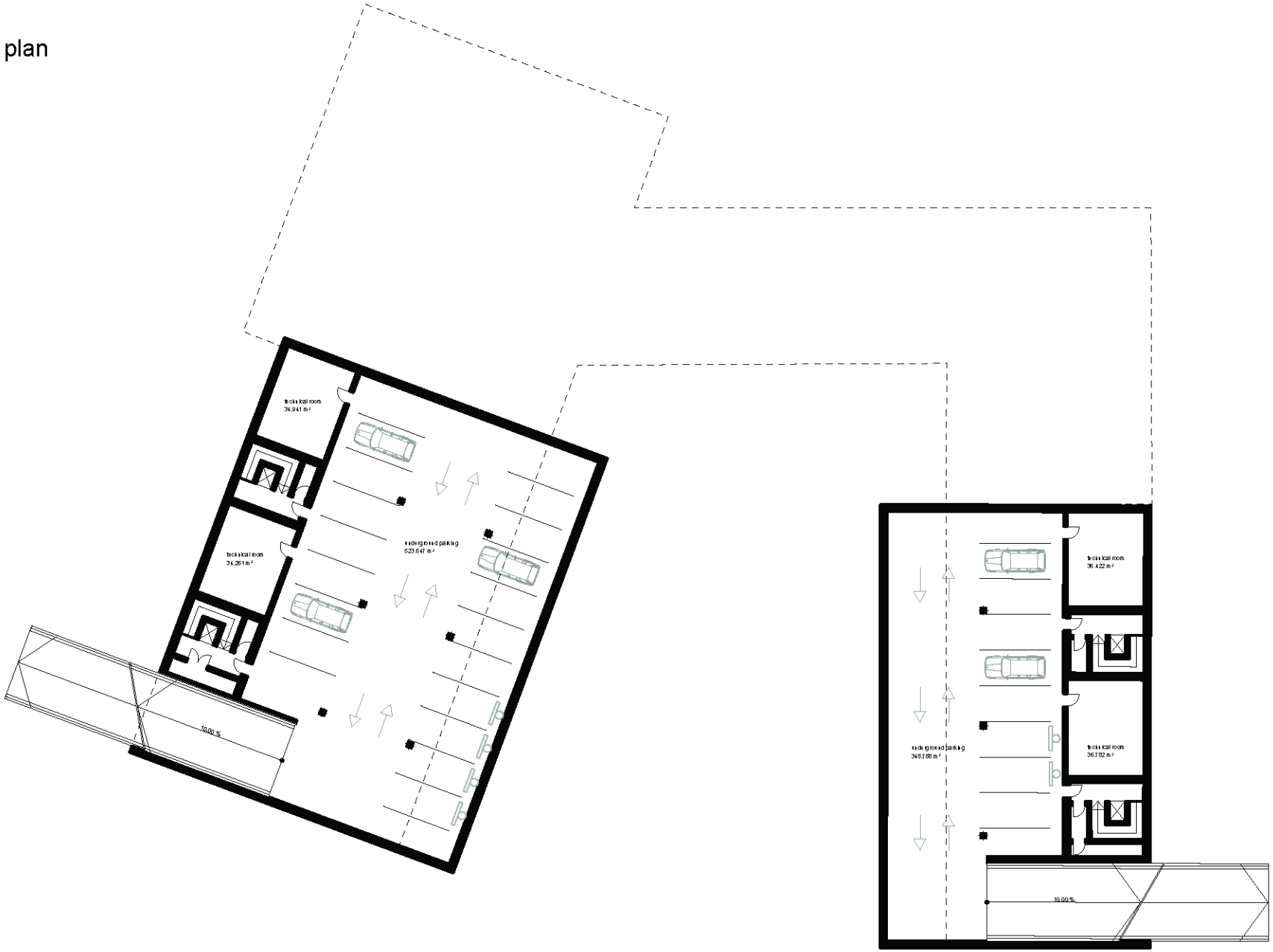
Co-working spaces

1-2 room apartments

Cafe/winter garden/sedum roof

Building B

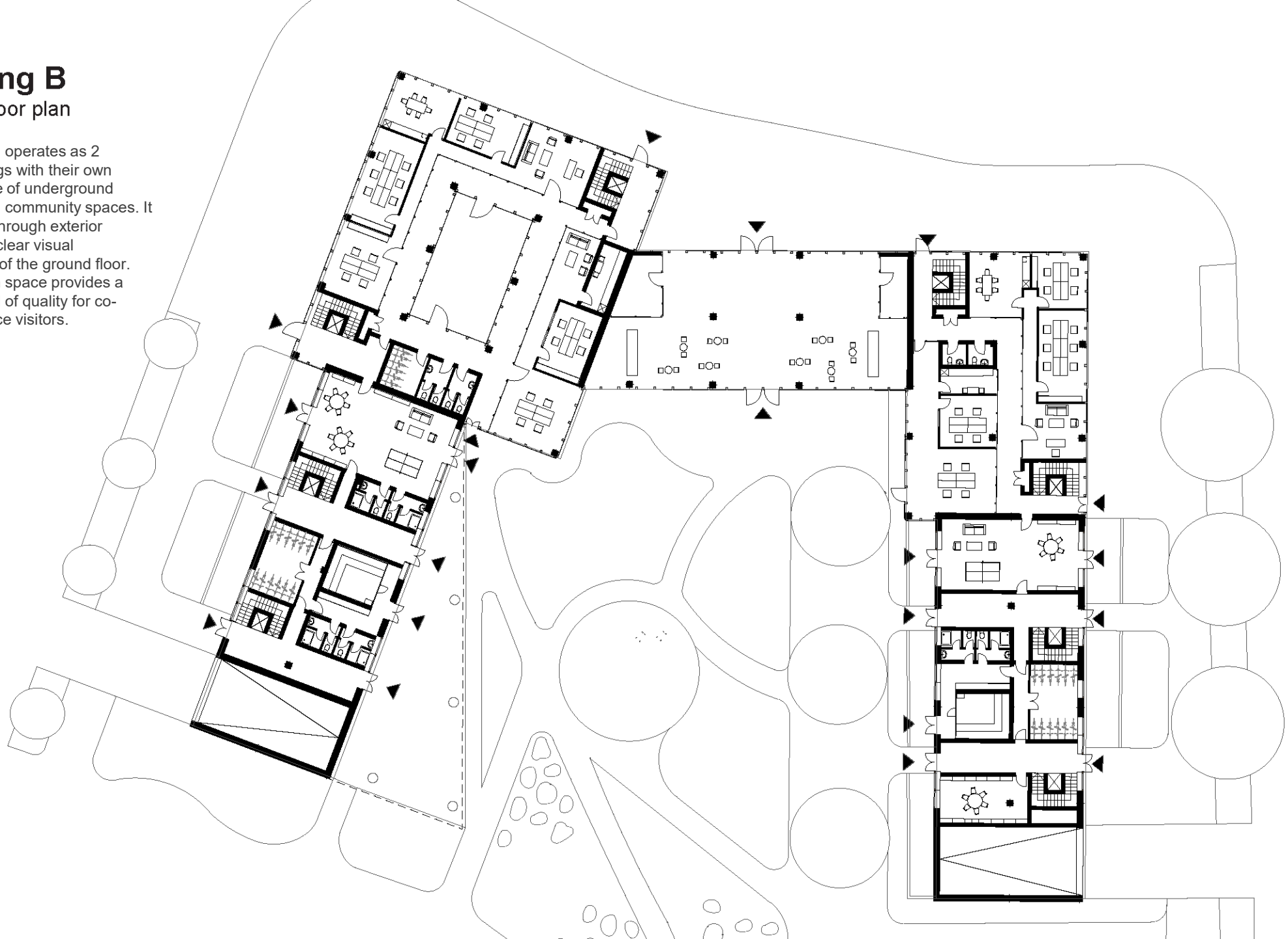
Underground floor plan



Building B

Ground floor plan

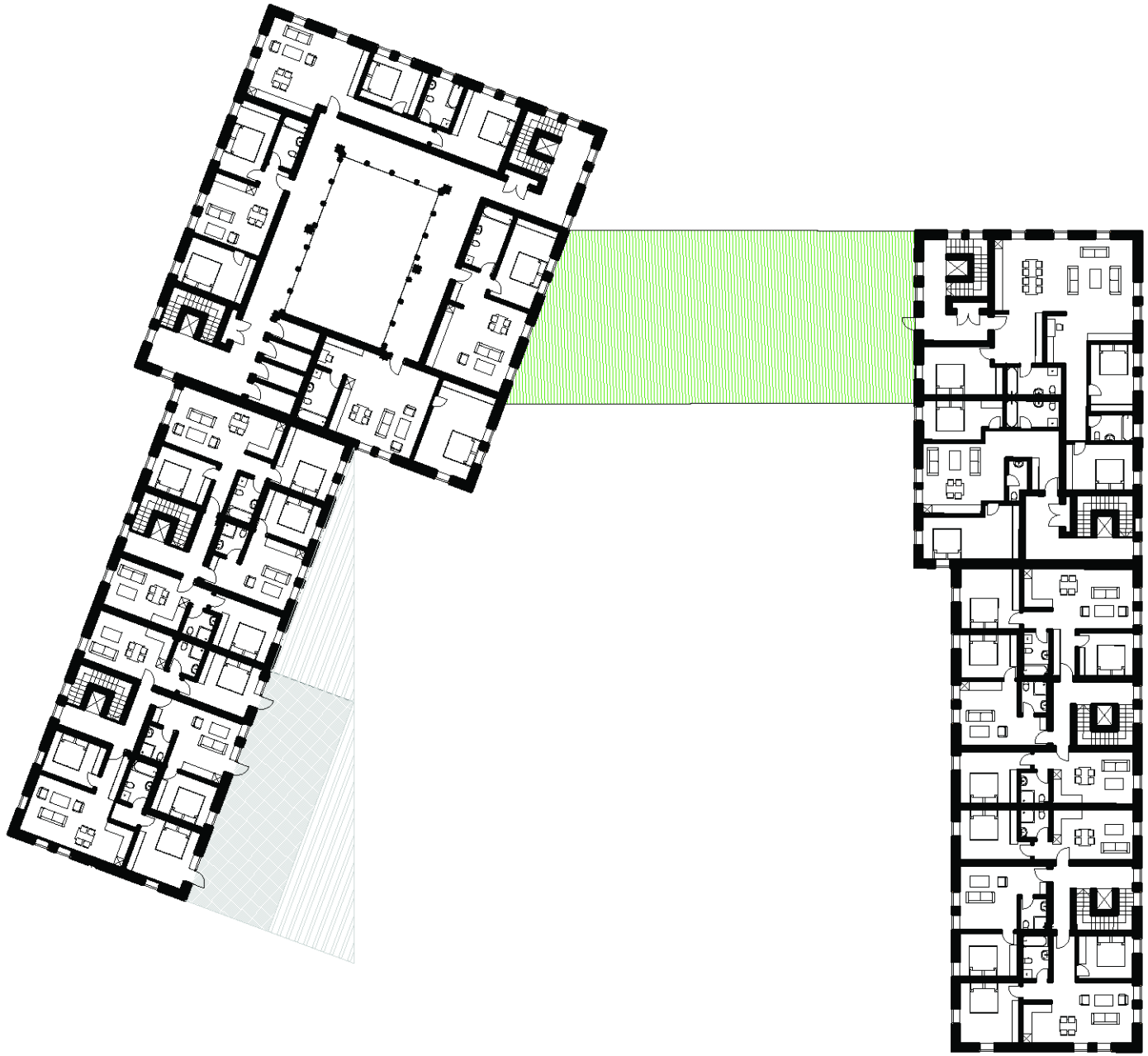
Building plan operates as 2 different wings with their own infrastructure of underground parkings and community spaces. It is all joined through exterior spaces and clear visual connections of the ground floor. Inside atrium space provides a different kind of quality for co-working space visitors.



Building B

1st/typical floor plan

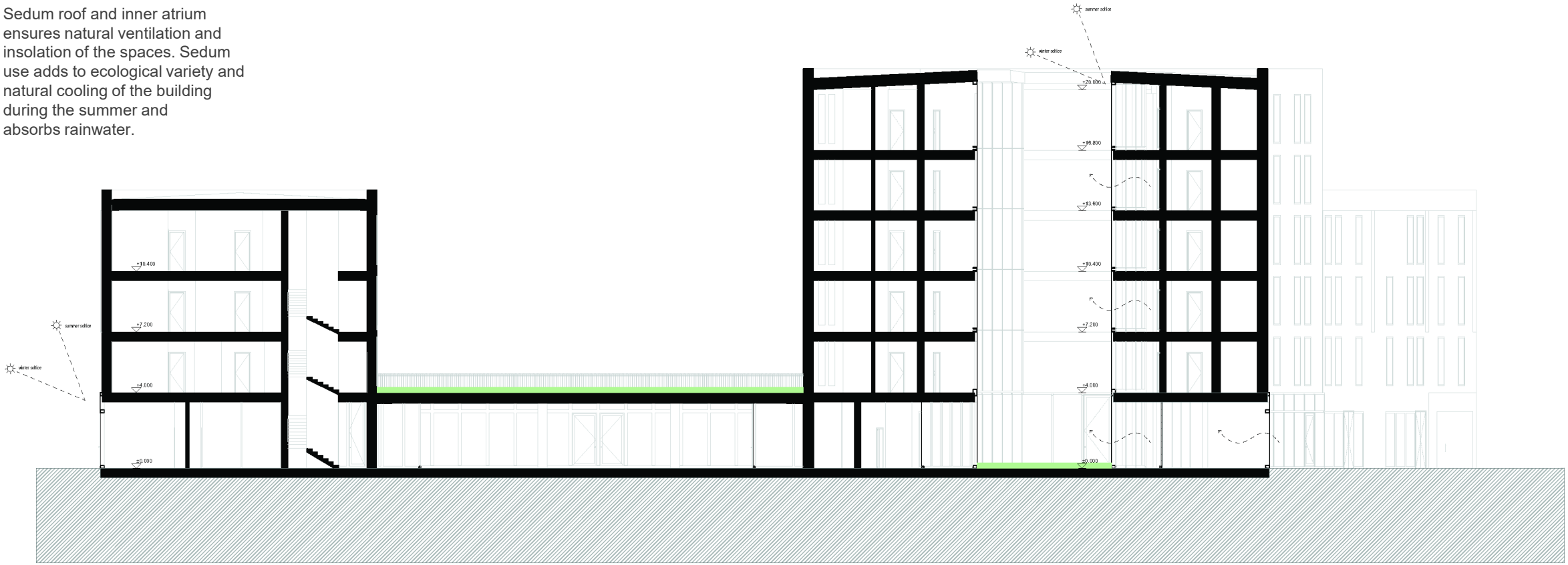
1st floor plan acts as an extension of the exterior landscaping solutions – public and private terraces are incorporated and adapted to building's green and insolation needs.



Building B

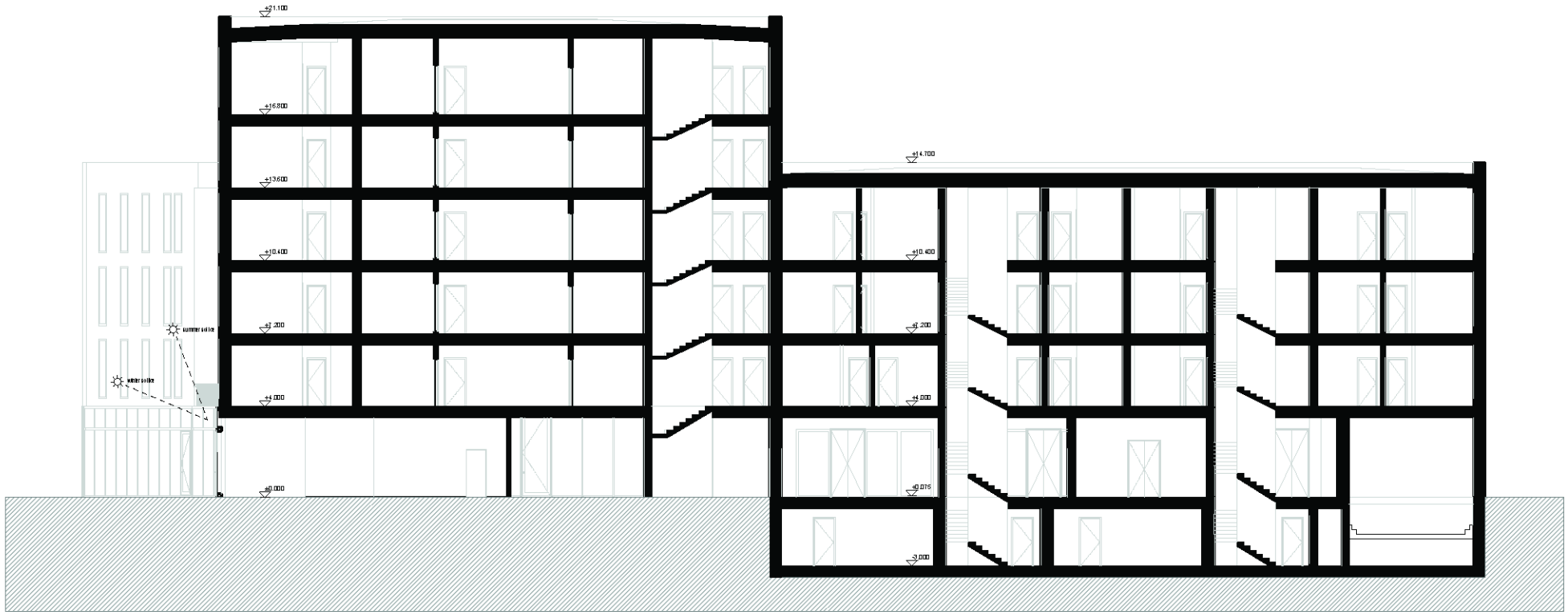
Cross section

Sedum roof and inner atrium ensures natural ventilation and insolation of the spaces. Sedum use adds to ecological variety and natural cooling of the building during the summer and absorbs rainwater.



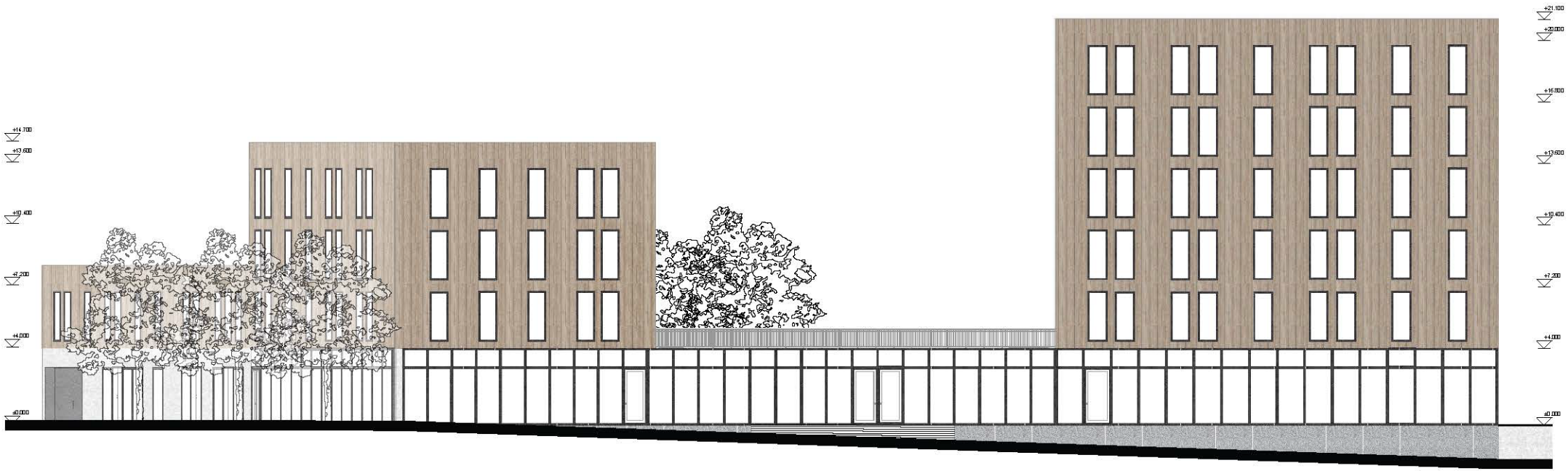
Building B

Longitudinal section



Building B

East elevation



Building B

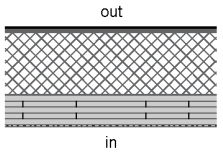
North elevation

Building B

Construction solutions

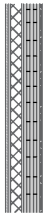
Timber frame and CLT construction helped ensure and comply with the energy efficiency and carbon footprint levels as well as adding to the regional and well-being oriented expression of the building.

low - pitched roof



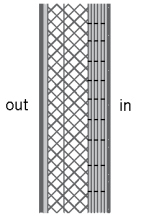
5 mm metal sheet roof covering
6 mm waterproofing
20 mm ISOVER ROBUST Ceiling Board
380 mm ISOVER ROBUST Ceiling panel
2 mm underlaying felt
180 mm CLT element
12.5 mm Gyproc GNE 13 Normal

apartment partition wall



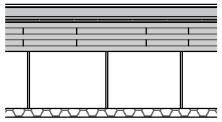
15.4 mm Gyproc GFE 15 Protect FR
100 mm CLT element
10 mm Air gap
70 mm Gyproc ER 70 with
70 mm ISOVER PianoR Sound Board
12.5 mm Gyproc GNE 13 Normal
15.4 mm Gyproc GFE 15 Protect FR

external wall with wood cladding



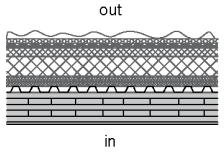
12.5 mm Gyproc GNE 13 Normal
120 mm CLT element
0.2 mm ISOVER VarioR Xtra
145 mm ISOVER Uni Board 35 between
145 mm Wooden stud
0.4 mm ISOVER Vempro wind barrier
100 mm ISOVER Facade board 300
28 mm nailing battens/ventilation battens
22 mm Thermowood facade

intermediate joist



14 mm parquet
2 mm foam
60 mm weberfloor 150 dura
12 mm Aprobo Decibel 4
180 mm CLT element
345 mm air gap
55 mm Ecophon Combisson DUO A

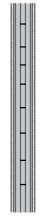
sedum roof



sedum album, acre, sexangulare
25 mm gravel layer
30 mm substrate for green roofs
50 mm hydrophilic panels Isover Flora
1 mm geotextile 300 g/m²
1.5 mm waterproofing film
1 mm glass fleece 120 g/m²
120 mm Isover EPS 100
2x30 mm Isover MW
0.2 mm PE film
35 mm trapezoidal sheet
1 mm waterproofing membrane
180 mm CLT element
12.5 Gyproc GNE 13 Normal

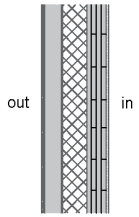
Building B

Construction solutions



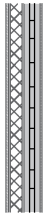
room partition wall

15.4 mm Gyproc GFE 15 Protect FR
12.5 mm Gyproc GNE 13 Normal
90 mm CLT element
12.5 mm Gyproc GNE 13 Normal
5.15.4 mm Gyproc GFE 15 Protect FR



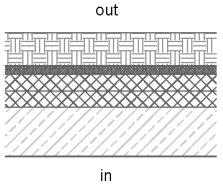
external wall with stucco covering

12.5 mm Gyproc GNE 13 Normal
120 mm CLT element
145 mm ISOVER PLUS+ board 32
9.5 mm webertherm 500
100 mm webertherm 371
20 mm clay stucco



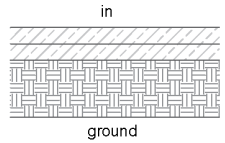
wet room walls

12.5 mm Glasroc H GHO 13 OceanR
100 mm CLT element
10 mm Air gap
70 mm Gyproc ER 70 with
70 mm ISOVER PianoR Sound Board
15 mm Structural plywood
12.5 mm Glasroc H GHO 13 OceanR



undergound parking ceiling

200 mm soil layer
2 mm perforated metal layer
1 mm geotextile
50 mm ISOVER FLO
100 mm ISOVER OL-E-35
100 mm ISOVER Stropmax
300 mm monolith concrete
5 mm interior covering



undergound parking floor

200 mm concrete flooring
with weber.floor 4640 Outdoor RepFlow
1 mm geotextile
350 mm soil

Building B

LCA and Energy efficiency calculations

SAINT-GOBAIN

International SG SAVE

Energy needs verification

Building description

Technician contact info

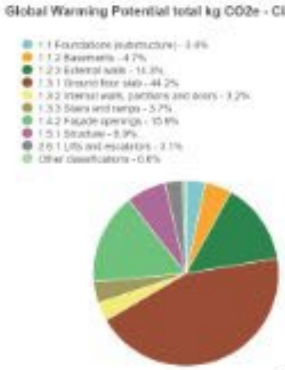
Compliance

Graphs

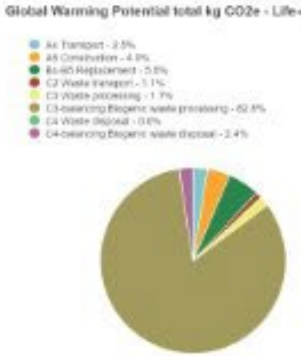
Heating needs

Cooling needs

Global Warming Potential total kg CO2e - Classifications

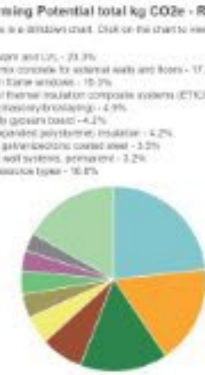


Global Warming Potential total kg CO2e - Life-cycle stages

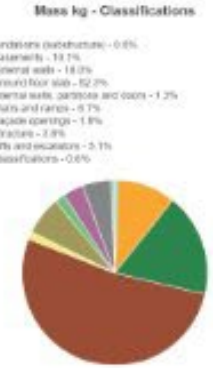


Global Warming Potential total kg CO2e - Resource types

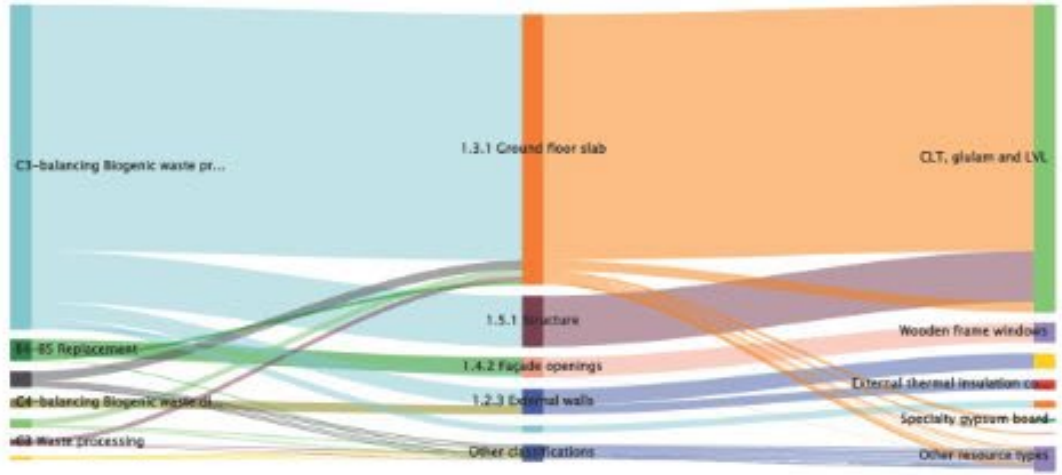
This is a drilldown chart. Click on the chart to view details

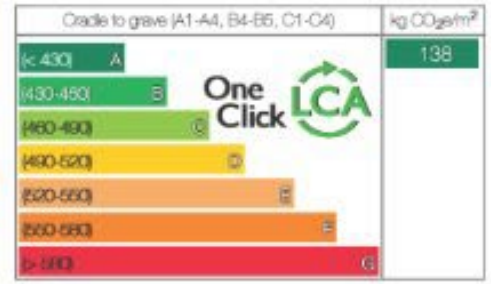


Mass kg - Classifications



Sankey diagram, Global Warming Potential total





Building B

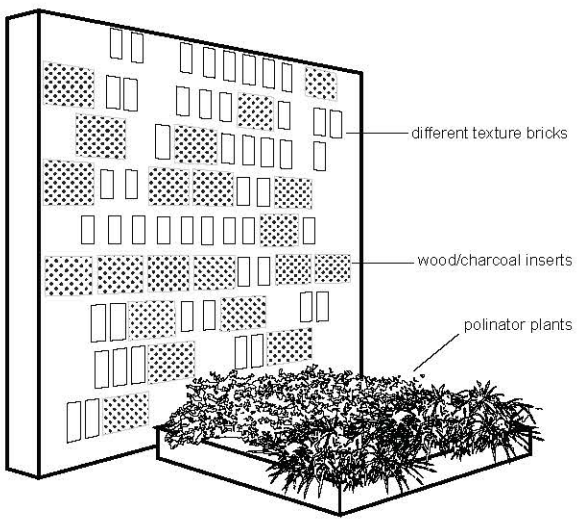
Visualization

Building B

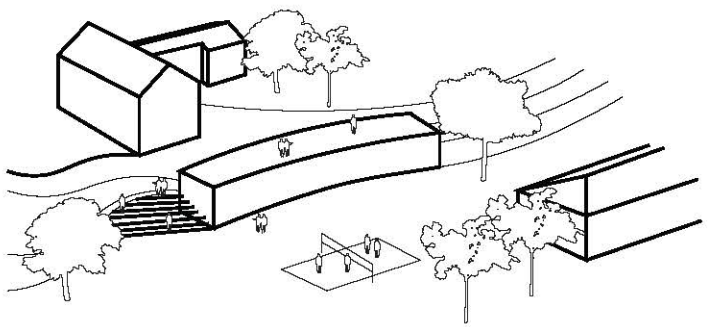
Visualizations

Area C

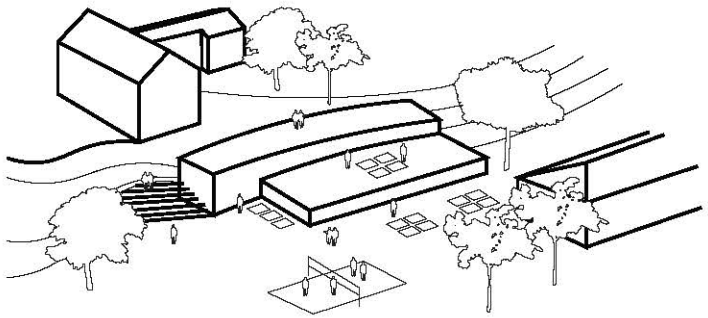
Phasial development



small - scale intervention
insect hotel and garden areas



secondary intervention
pavillions and landscaping



tertiary intervention
long-term buildings and infrastructure

VIIKII THREE

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2024