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GREEN DESIGN CENTER MOSTAR

PRESENTATIONS & VISITS pilot projects BAMB - 13/10/2017



Dr. Elma Durmisevic, 4D architects / SGDF



Green Design Center Mostar



Green Design Centre - Mostar



The GDC will be a creative hub bringing creative and production industries together around Reversible Building Design concepts and the use of Materials Passport, and it will be used for educational purposes and as a construction innovation platform.

DESCRIPTION OF THE PILOT PROJECT

Major objective of the Green Design Centre is:

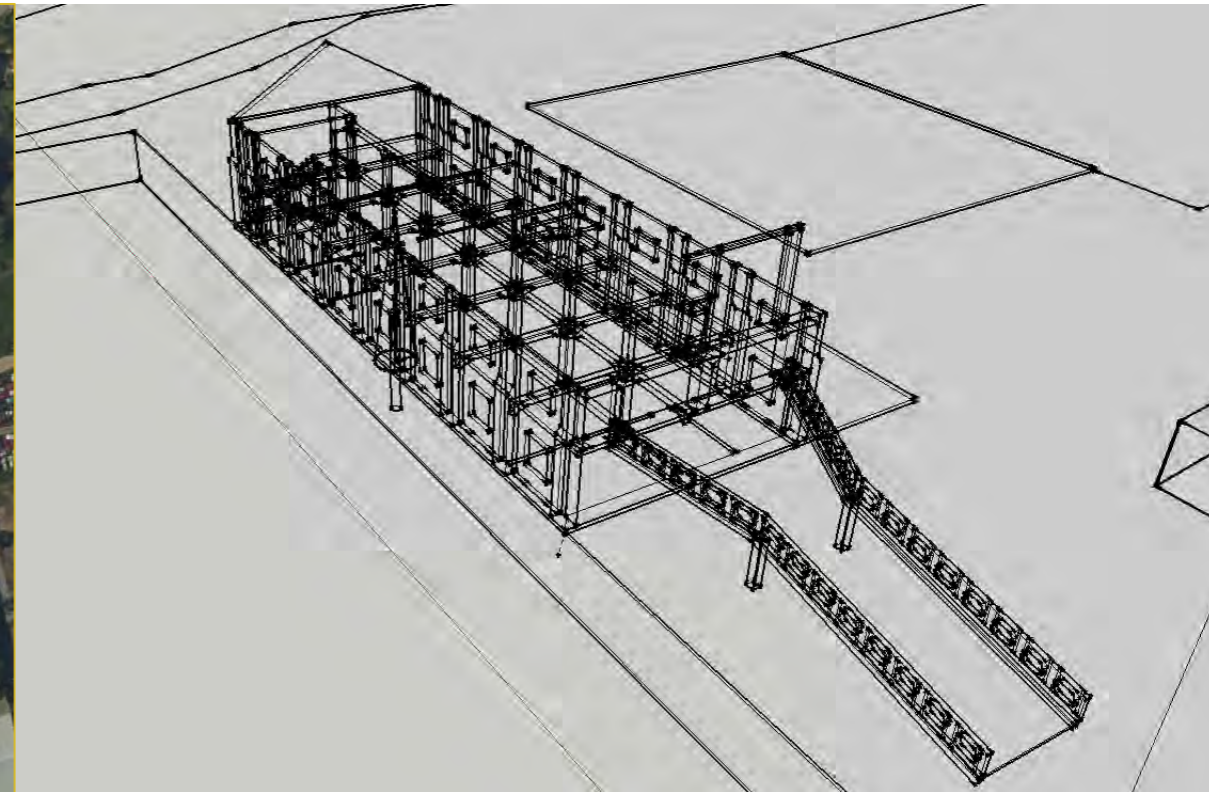
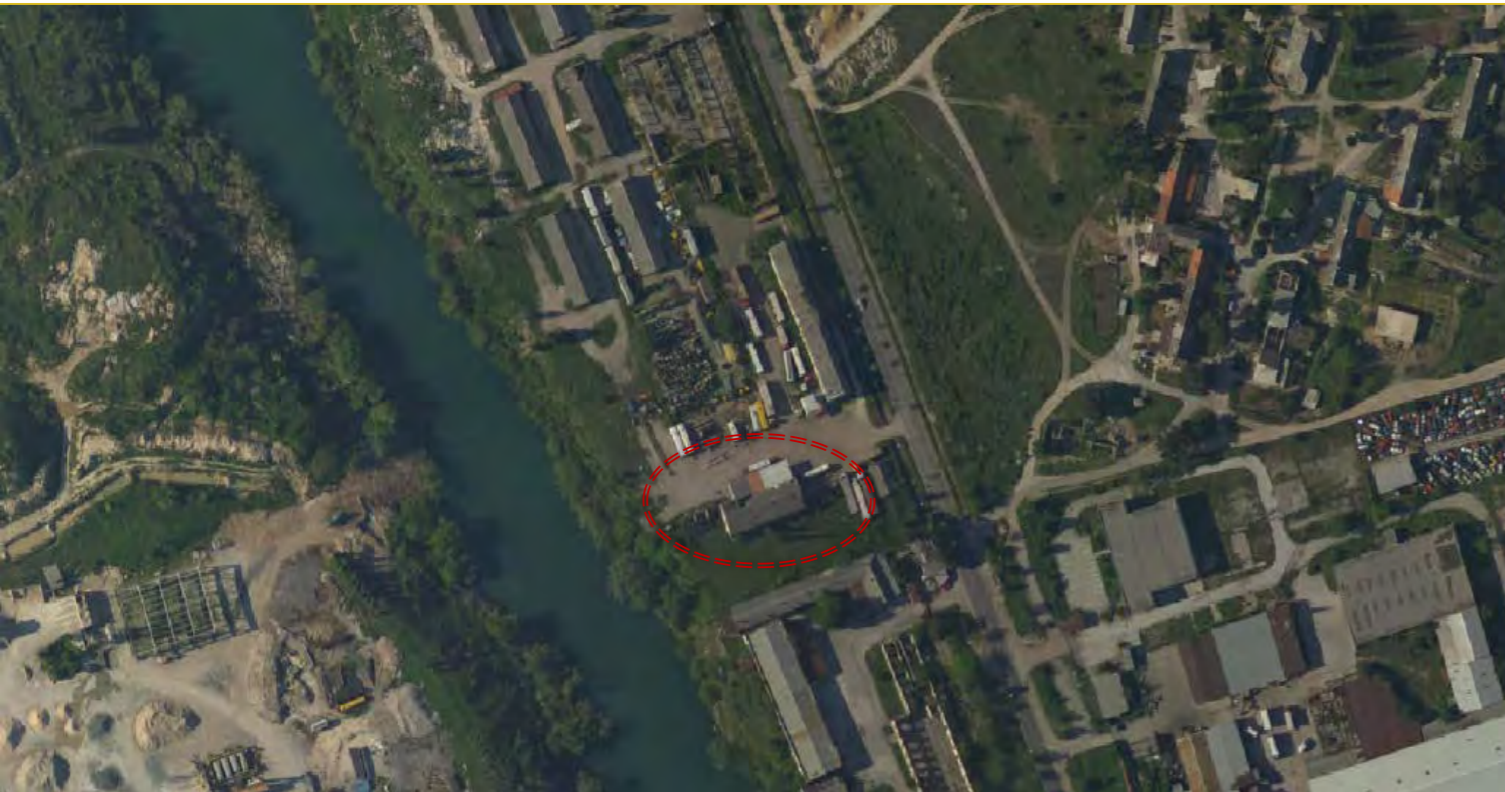
to become educative public information centre

showcasing new concepts and technical solutions for the realization of Dynamic and Circular building concepts and circular use of materials and energy within built environment.

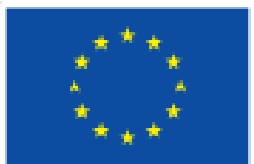
DESCRIPTION OF THE PILOT PROJECT

- Type of construction : refurbishment
- Size: 180m²
- Function: innovation center- showcase
- Country: Bosnia and Herzegovina
- Budget: Euro 220.000,-

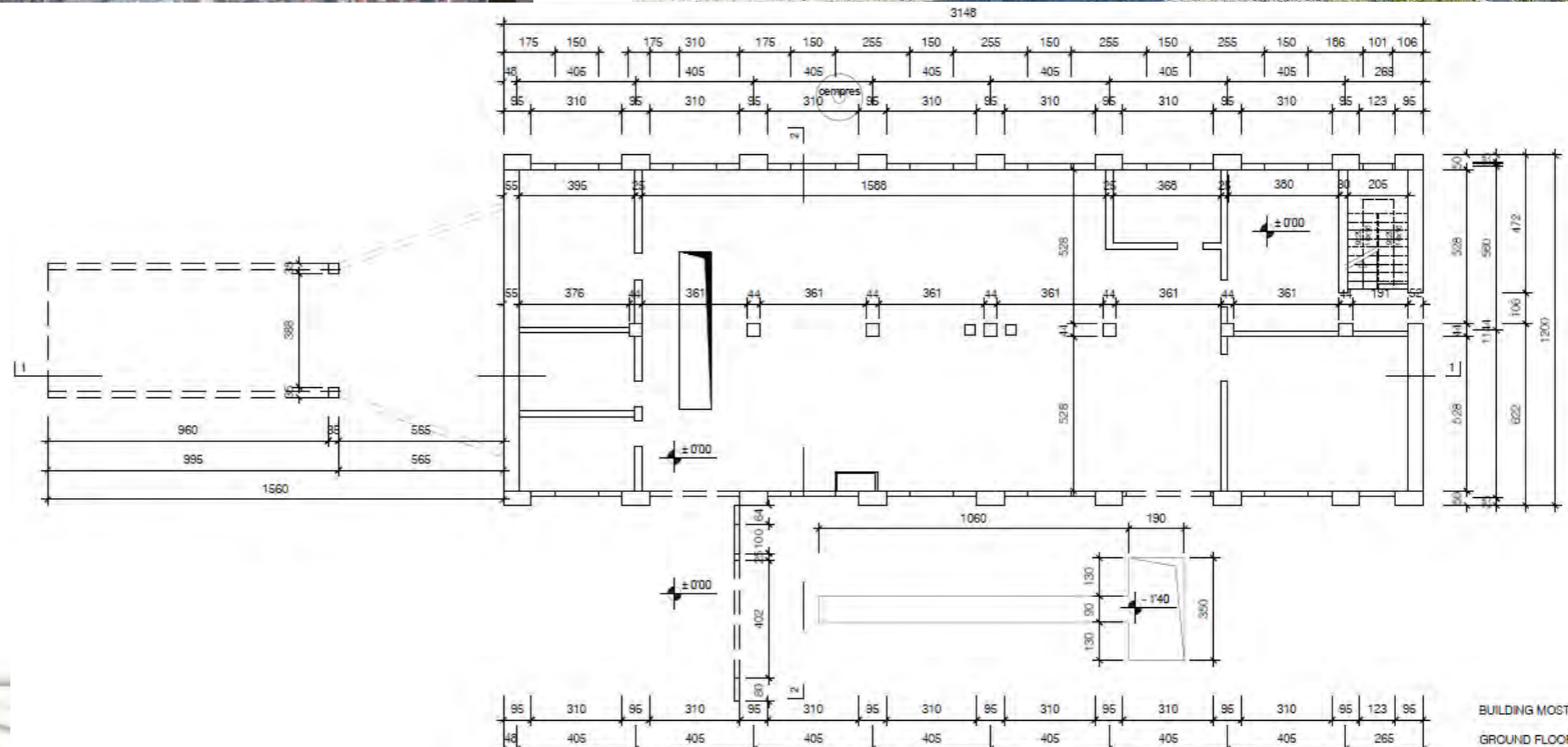




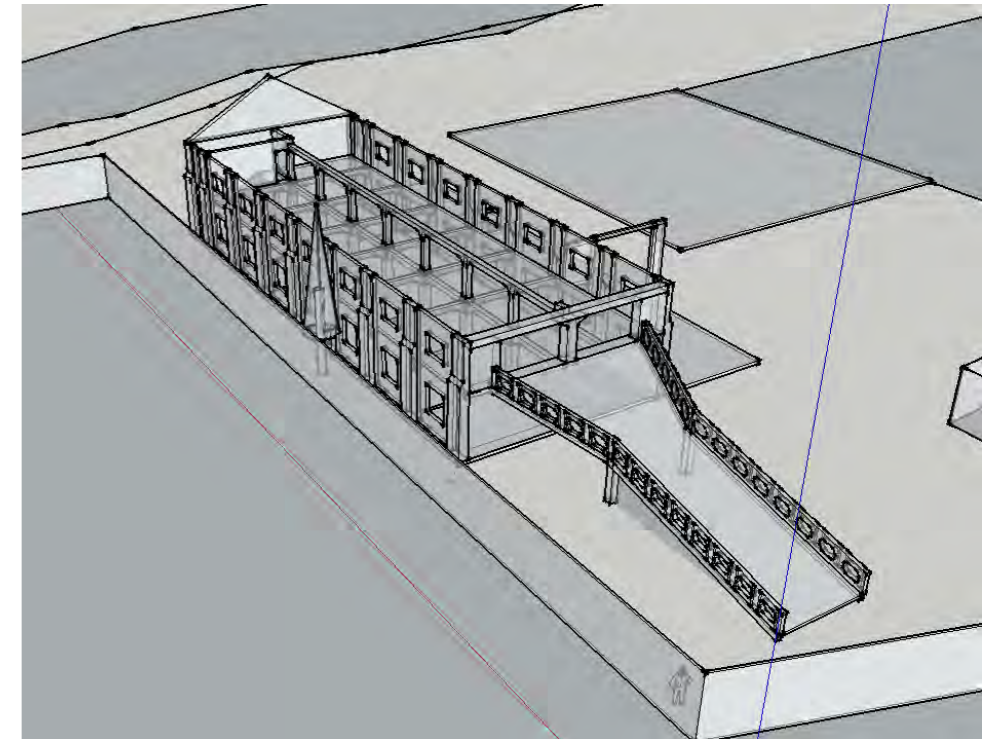
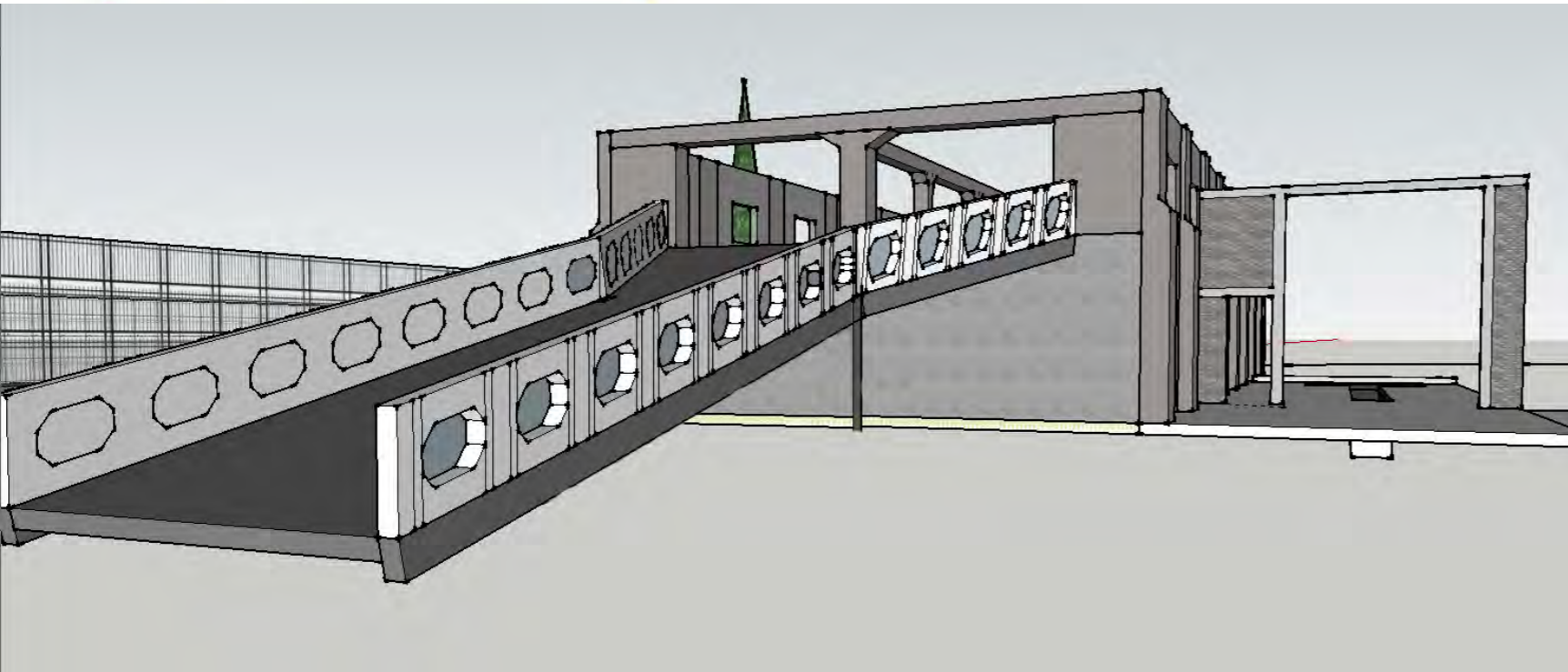
Green Design Centre | MOSTAR



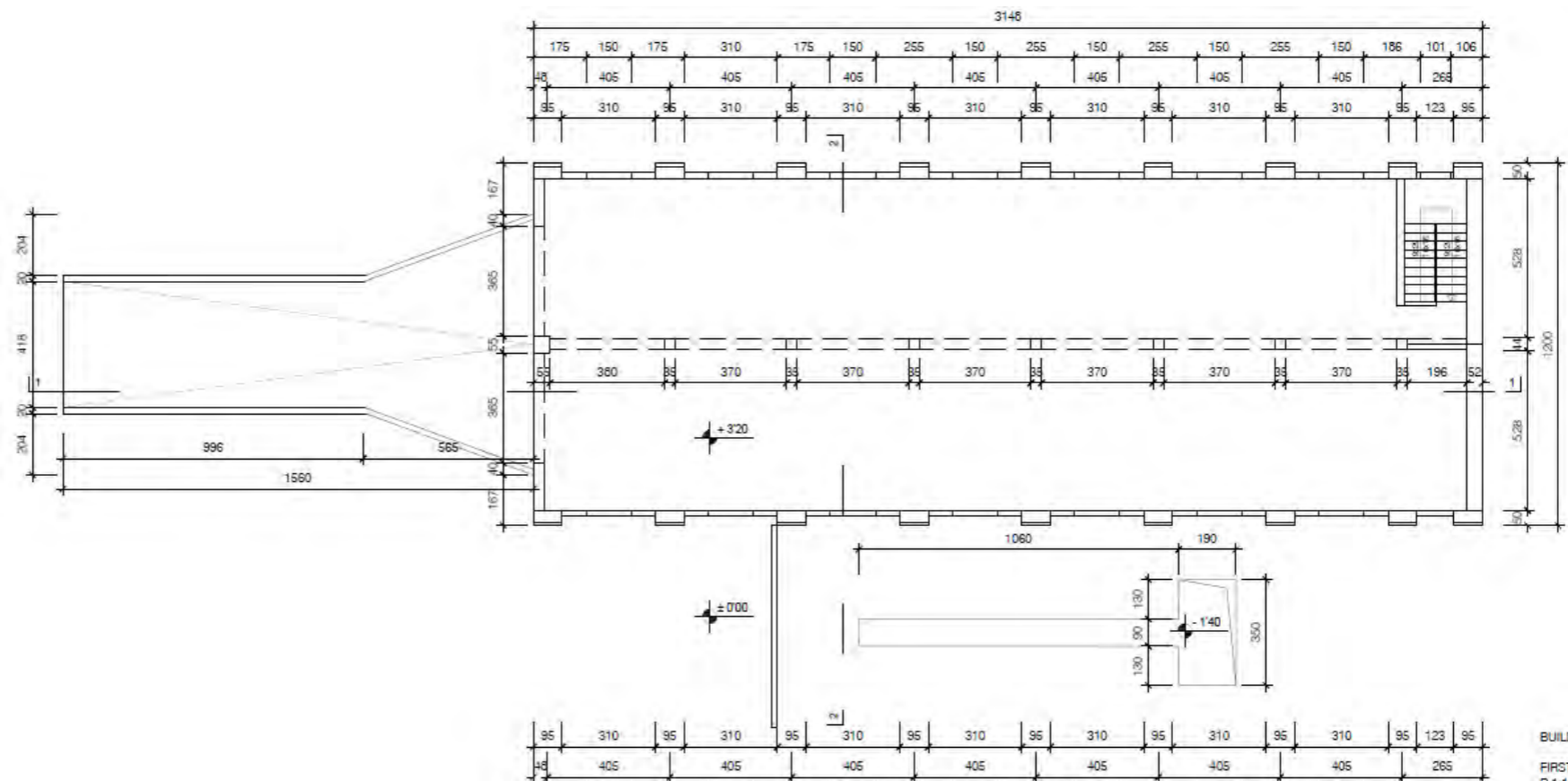
EXISTING



BUILDING MOSTAR
GROUND FLOOR PLAN



EXISTING

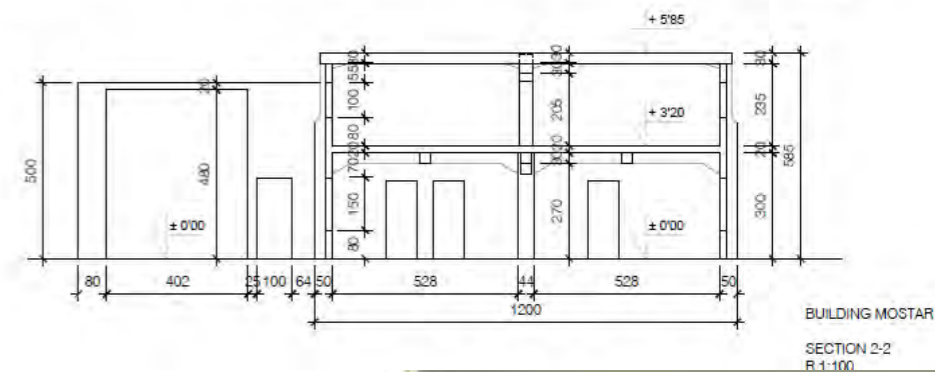
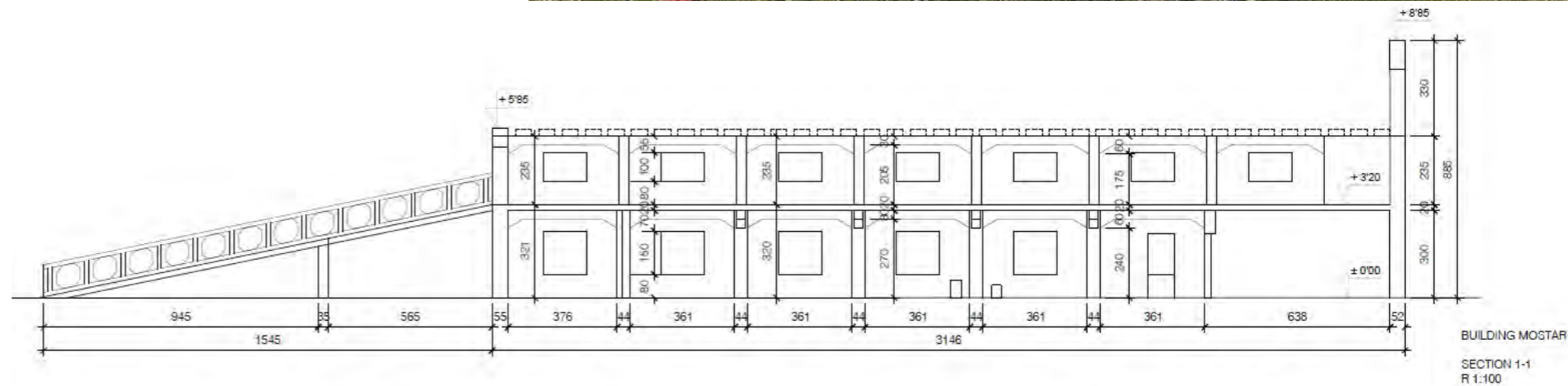




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EXISTING





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GDC energy concept

- Objectives:
 - - Maximum use of
 - local natural sources
 - - sun
 - - wind
 - - river
 - - earth
 - - Local energy storage
 - - Energy positive
- building



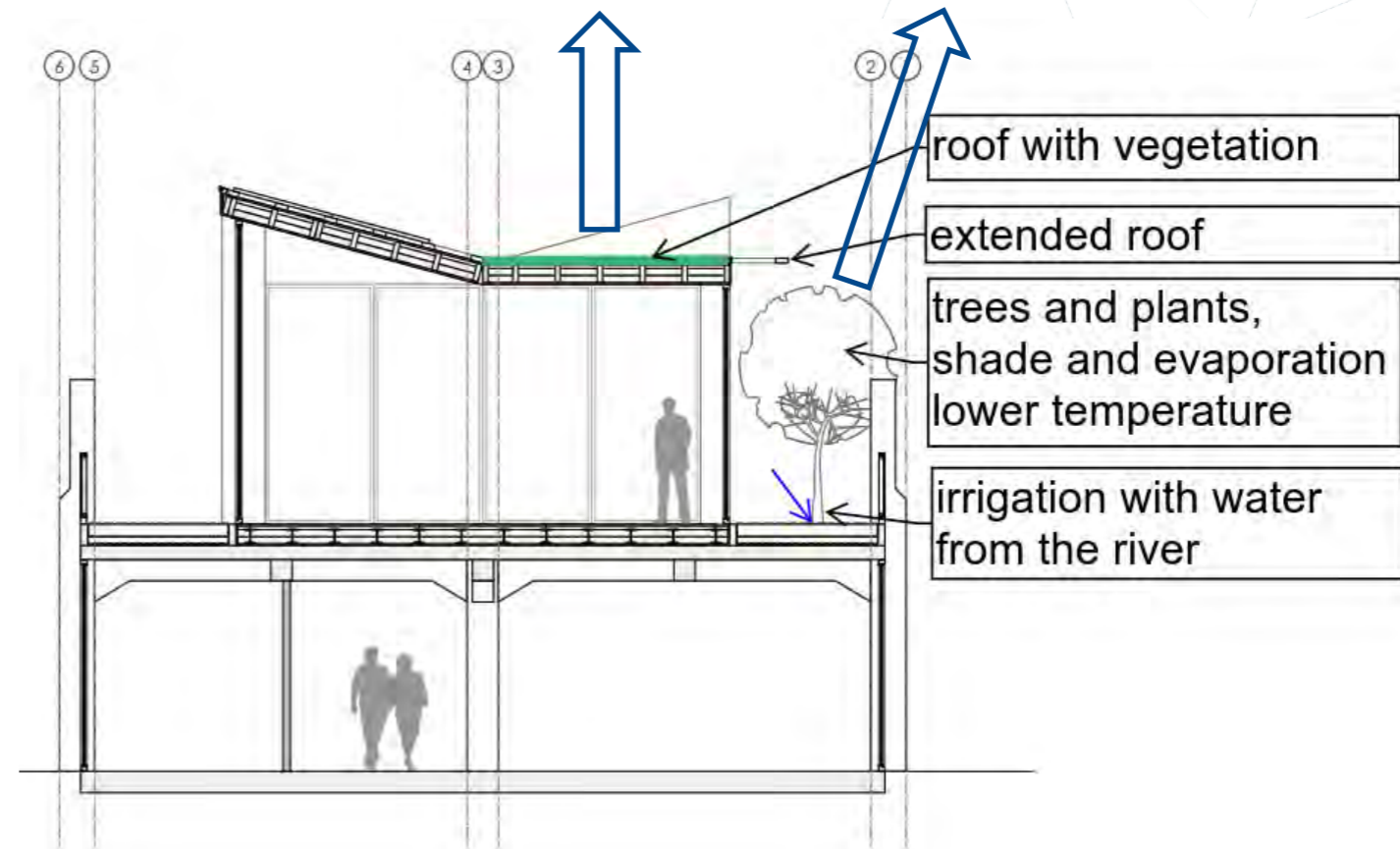
GDC concept comfort

- Objectives indoor comfort:
 - - Natural ventilation
 - - High temperature cooling
 - - Low temperature heating
 - - Use of natural light
 - - Use of natural shade



GDC concept indoor comfort

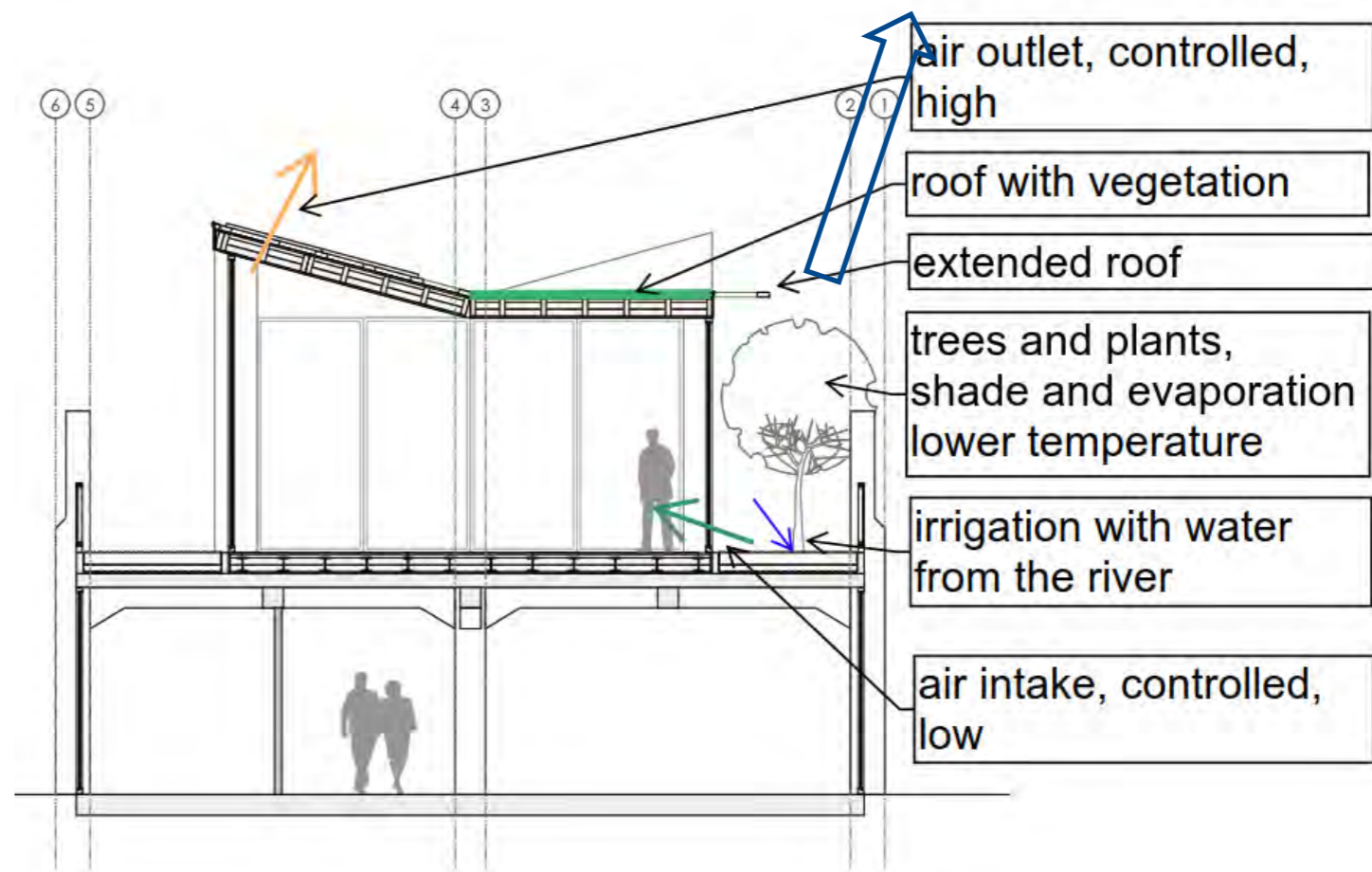
- Outdoors:
- - Create micro climate around
- the building by growing plants
- and trees
- - Irrigation and evaporation will
- lower temperature
- - Roof partly covered by vegetation
- - Extended roofs and sheds provide
- shade
- - Sun tempering glass
- - Sufficient material choice



GDC concept indoor comfort

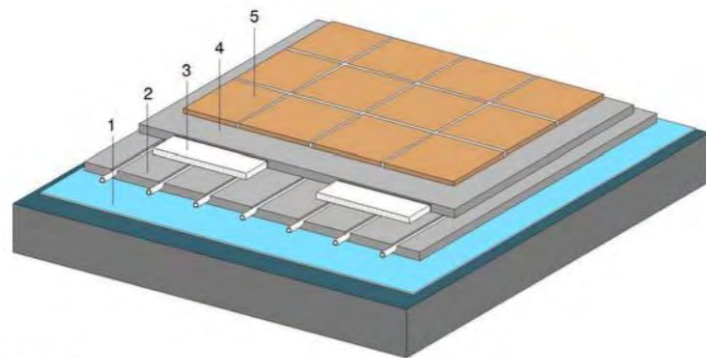


- Ventilation:
- - Air intake on most shaded and coolest spots, created with plants
- - Minimize ventilation when harmful
- - Maximize ventilation when useful
- - Modular

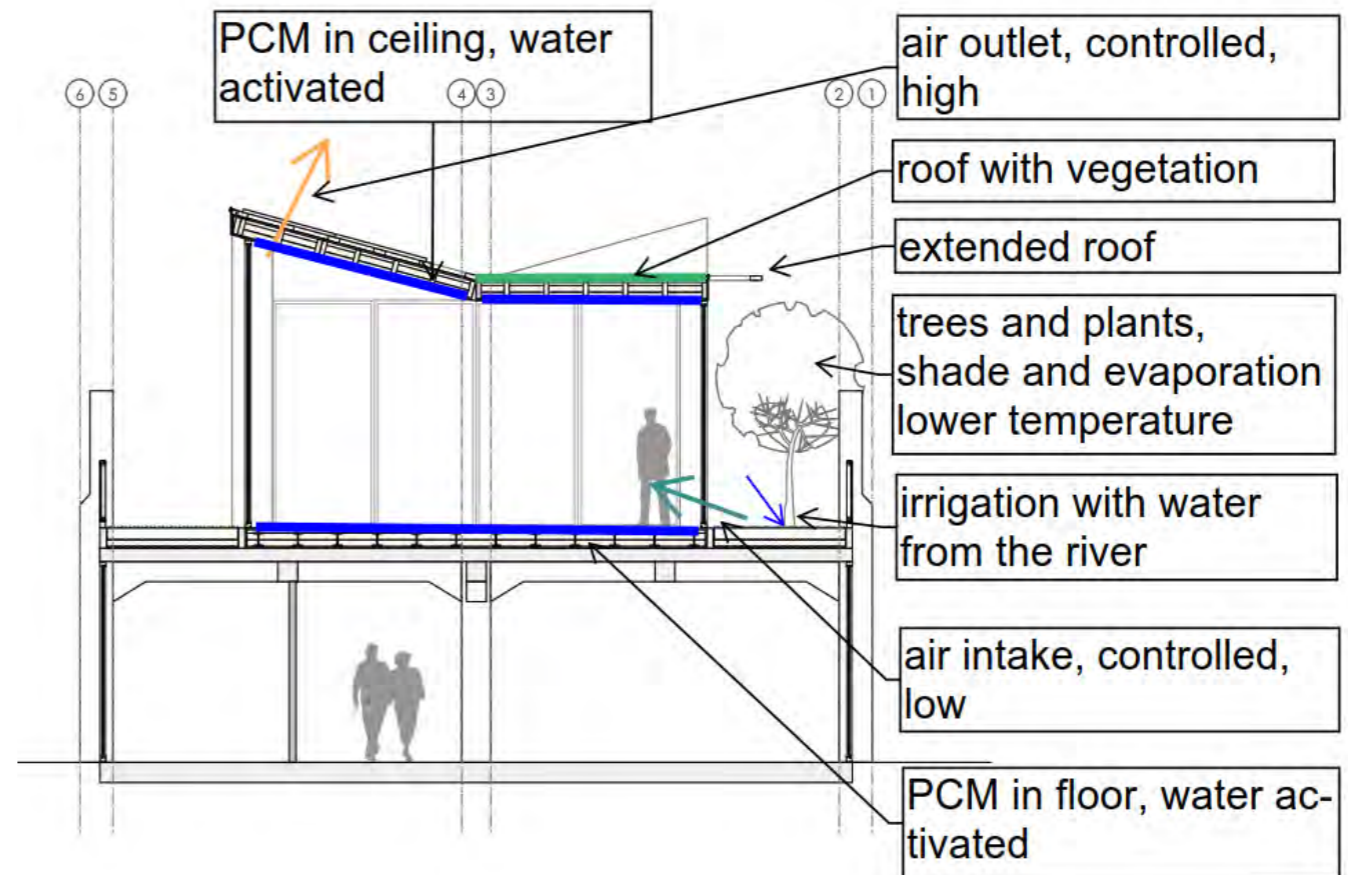


GDC concept indoor comfort

- Indoors:
- Activated floors and ceilings
- Energy storage by PCM
- Loaded by air at night (night ventilation)
- If necessary activated by water,

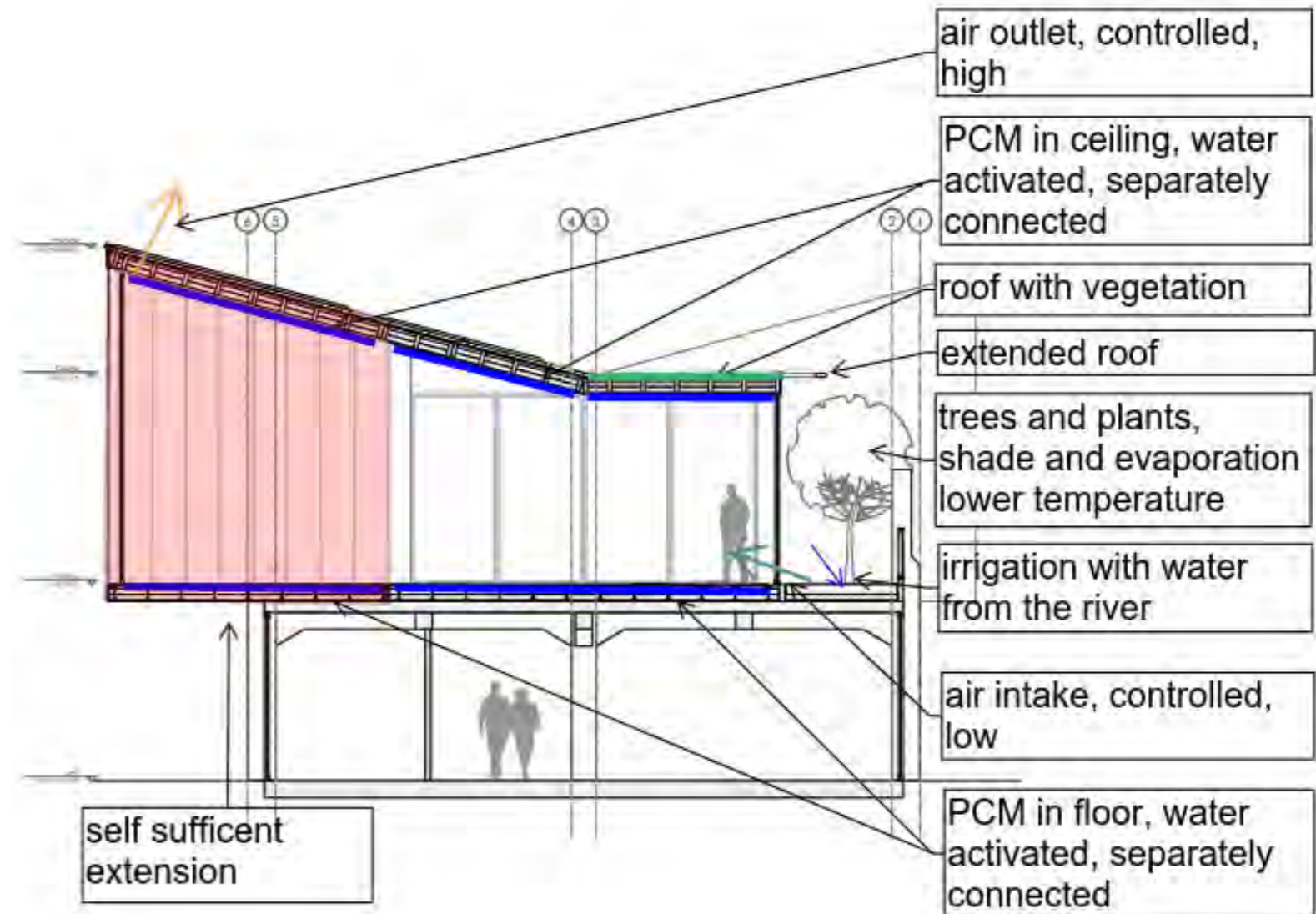


1. Alufoam 3mm
 2. Rihoceil klimaatplaat
 3. PCM Casette
 4. Rihoceil PCM plaat
 5. Vloerafwerking (bijv. tegels)



GDC concept indoor comfort

- Extension:
- - Self-sufficient
- - Separately connected to main
- distribution system



GDC concept indoor comfort

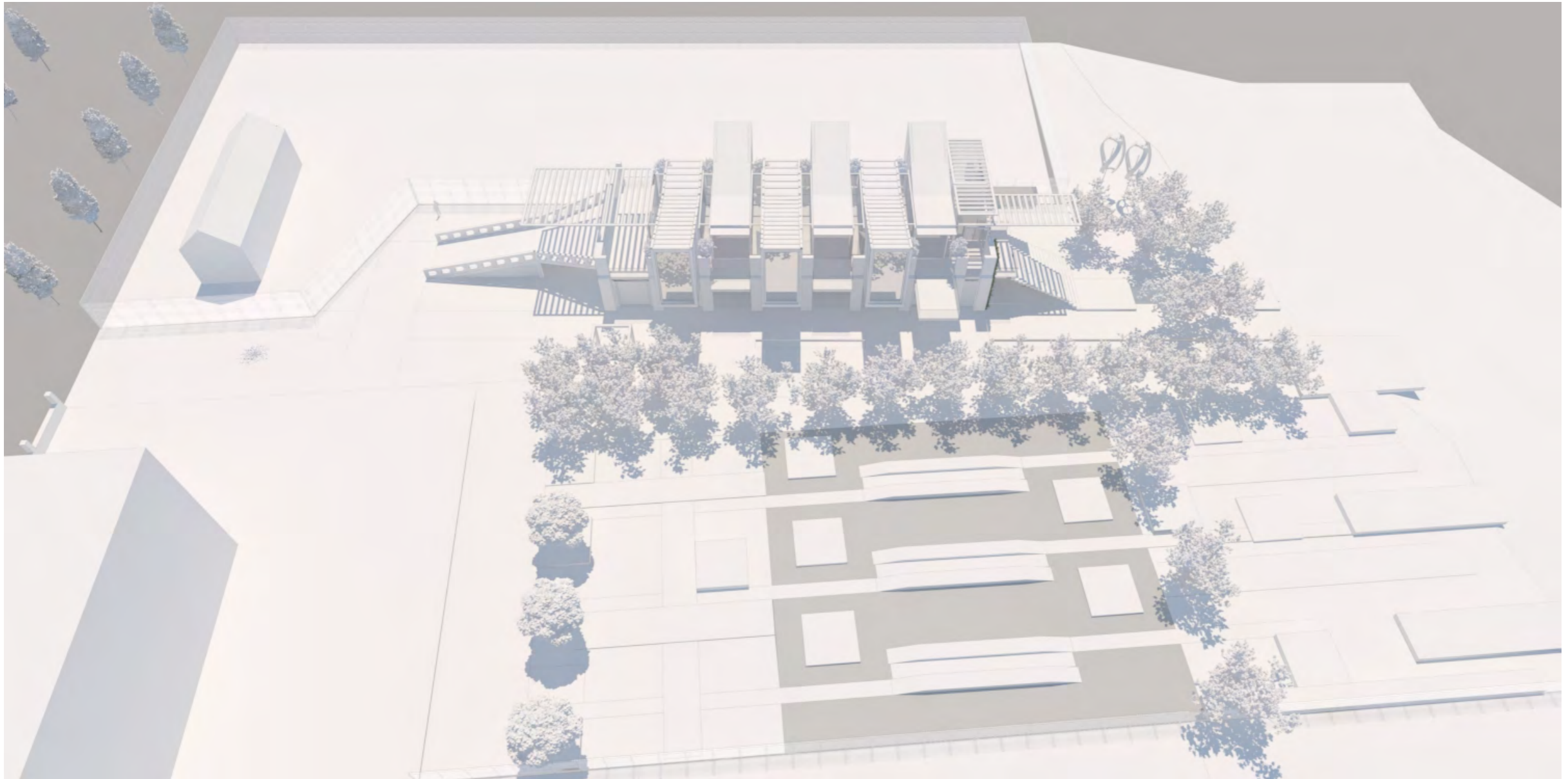
- Daylight:
 - - Large windows
 - - Both sides
 - - Partly translucent walls

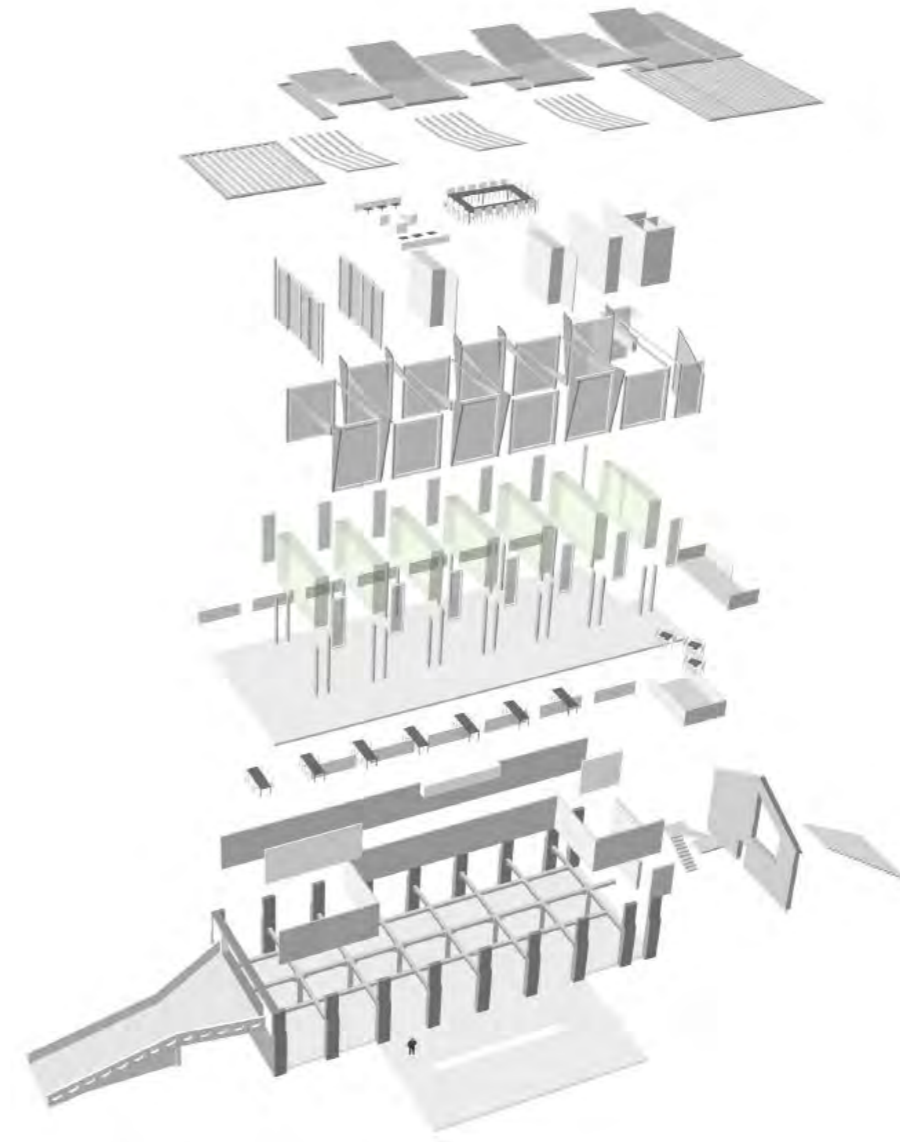
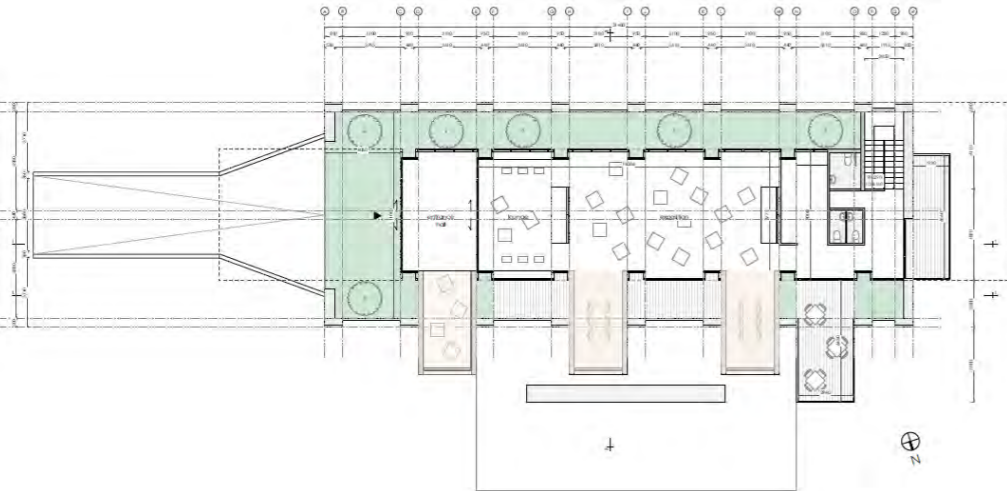
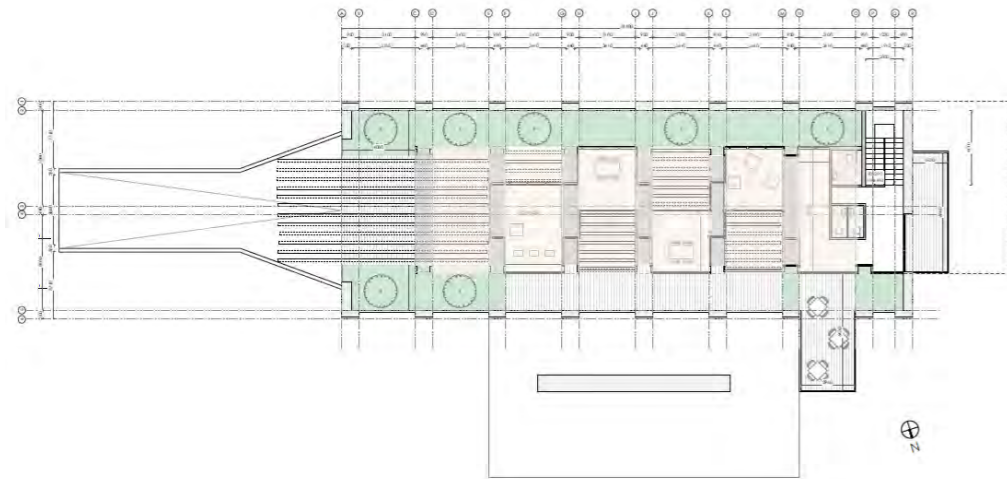
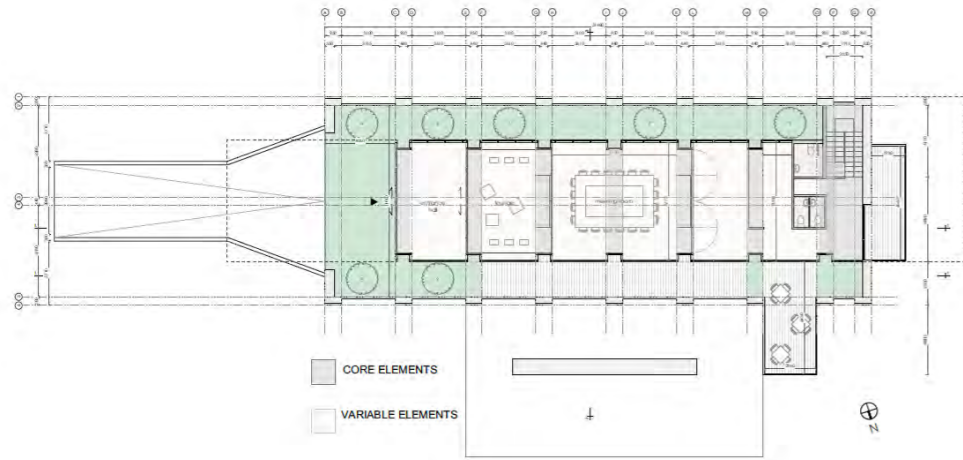


GDC concept indoor comfort

- Artificial lighting:
 - - LED
 - - Designed to create variety
 - - Designed to be switched off







SCENARIO I - OPTIE A

Roof

Roof construction

Furniture

Indoor walls

Facade elements

Installation zone

Construction

Floor and balconies

Furniture

Indoor walls

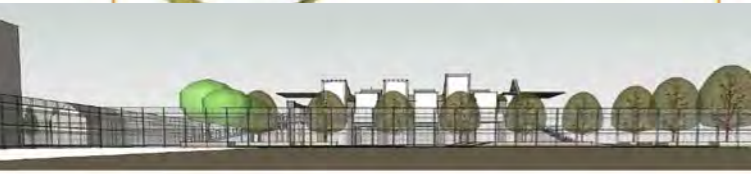
Facade elements

Existing construction

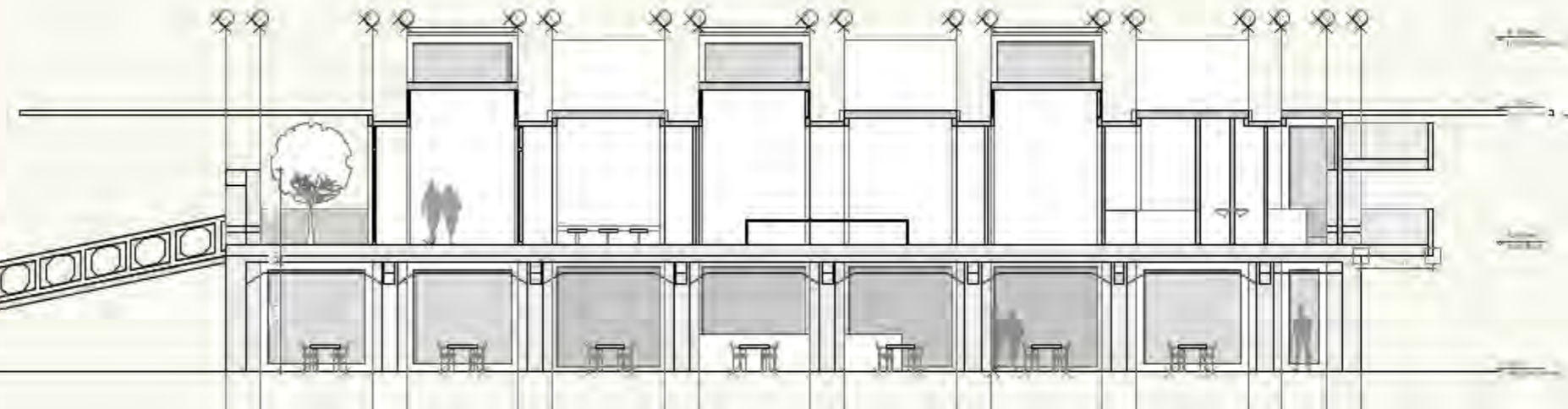
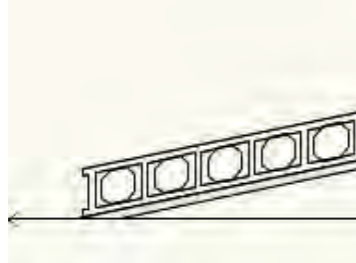
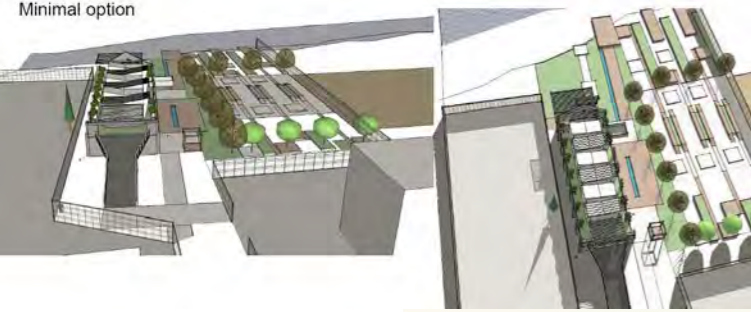
Existing floor



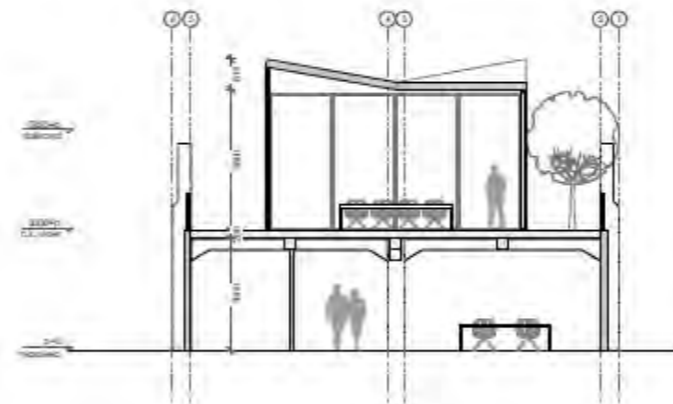
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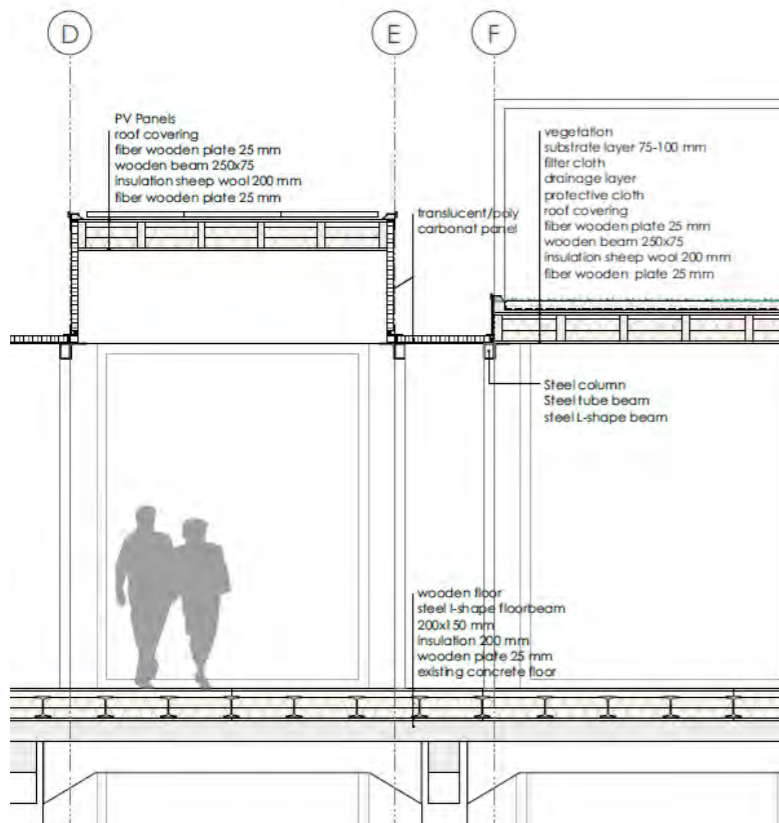
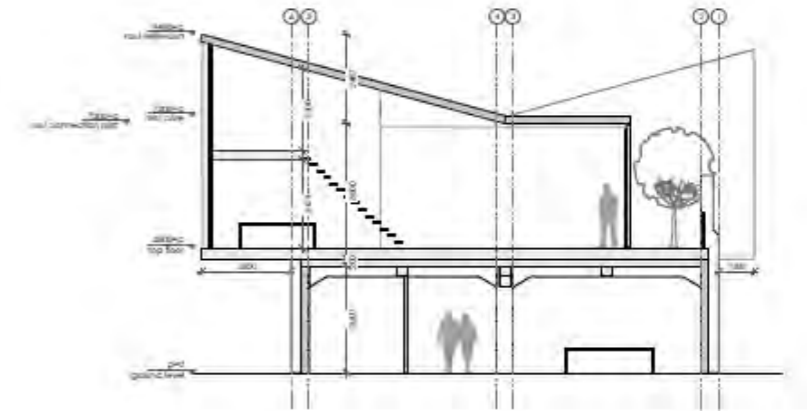
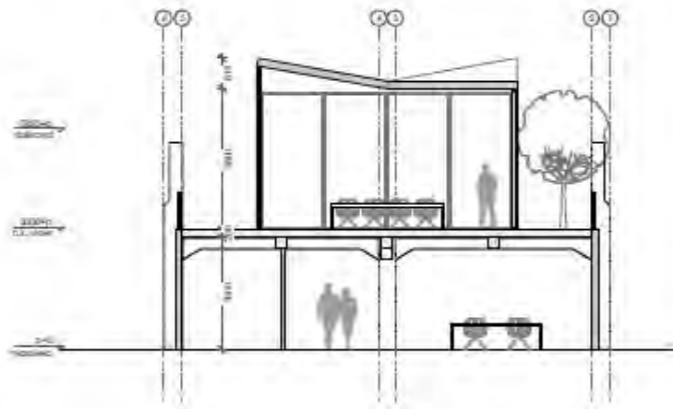
Minimal option



Maximal option

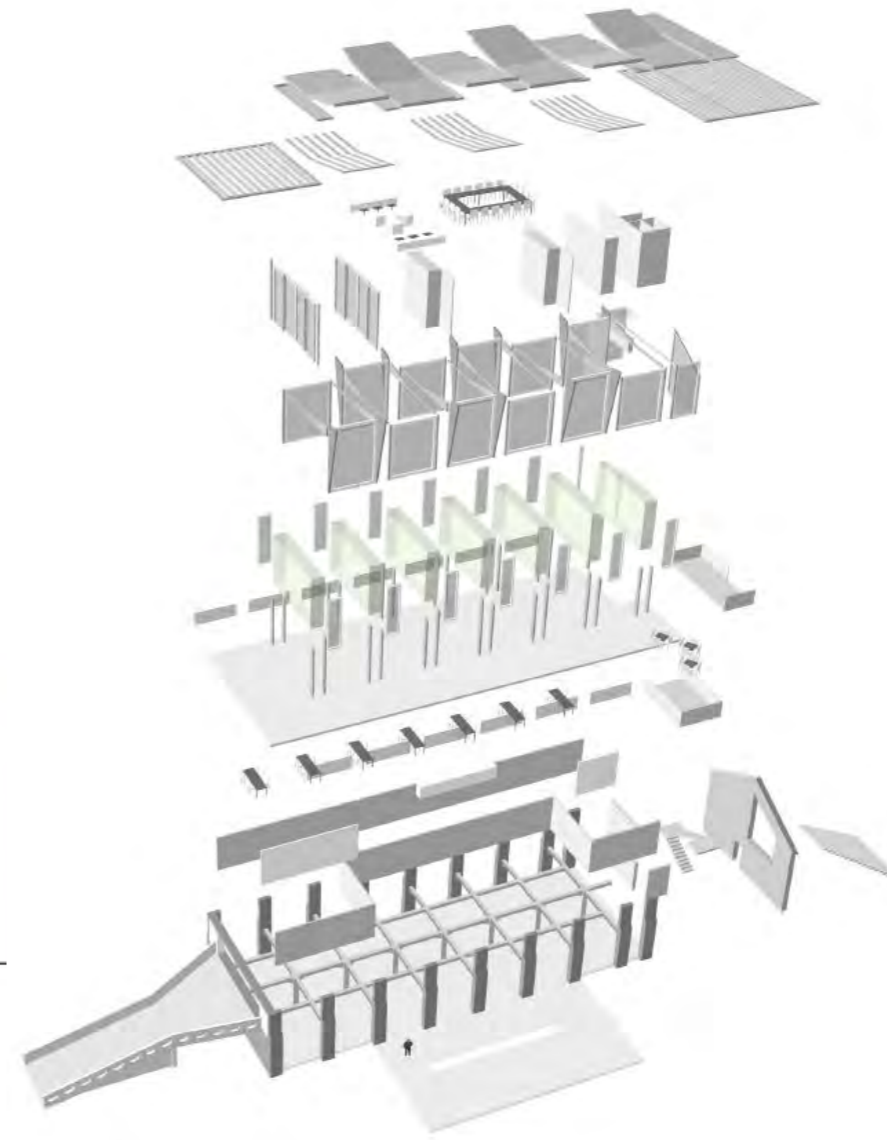
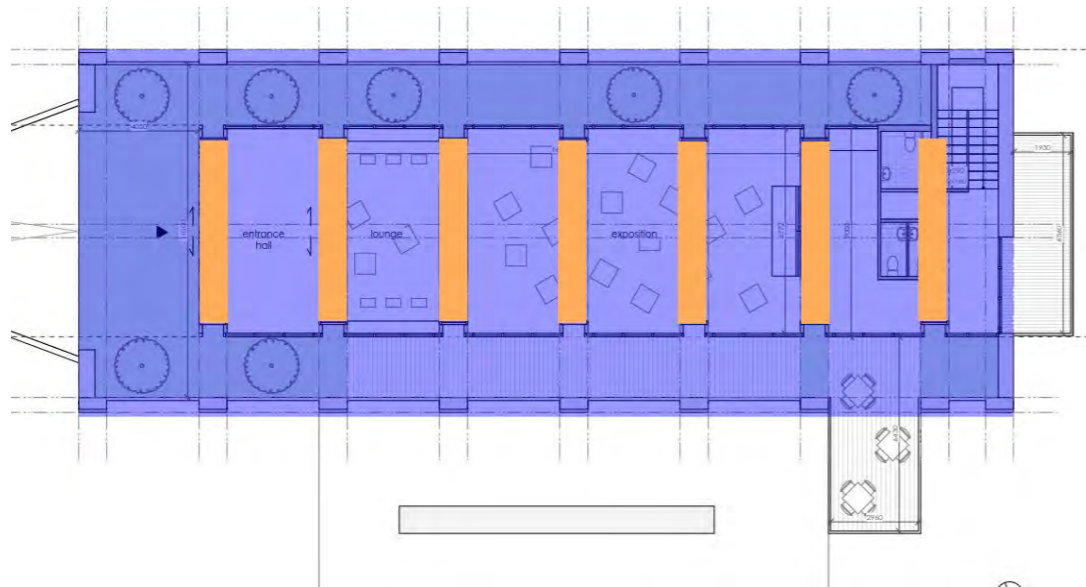


Technical aspects & materials



Concept of structural design

- Supportive floor
- Rigid frames

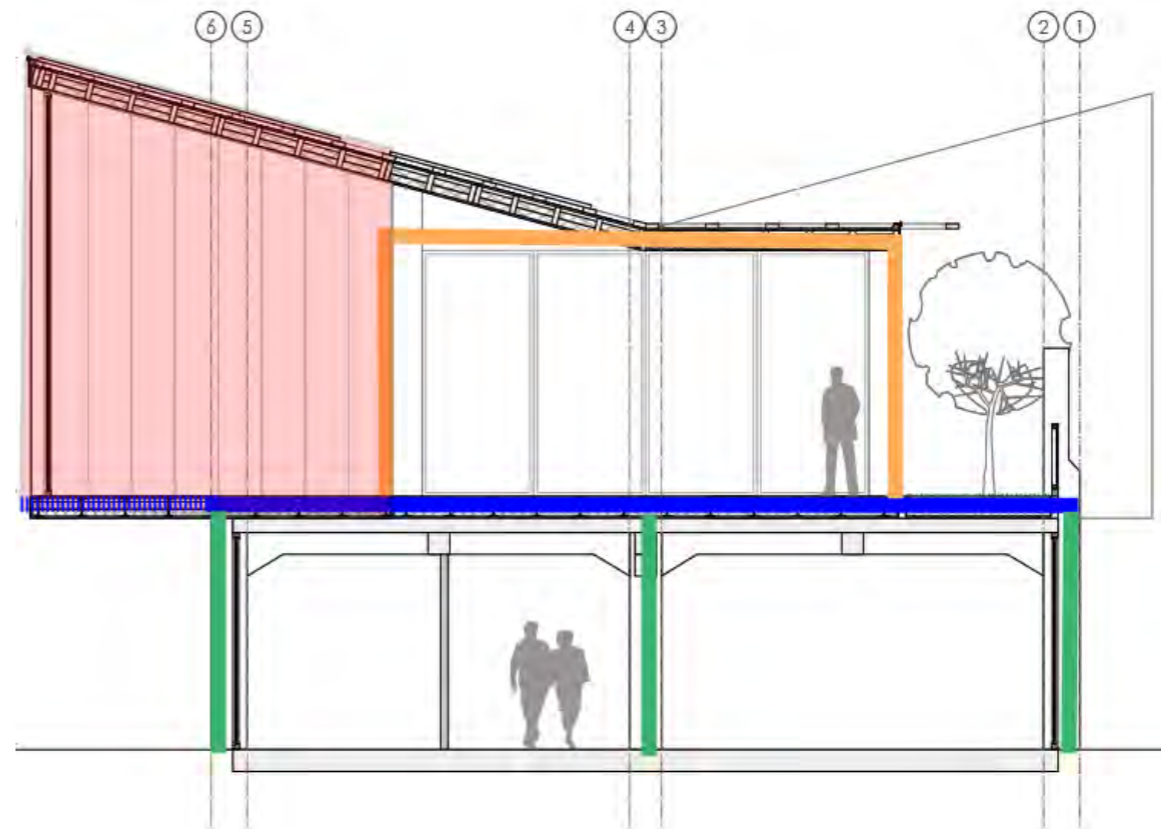
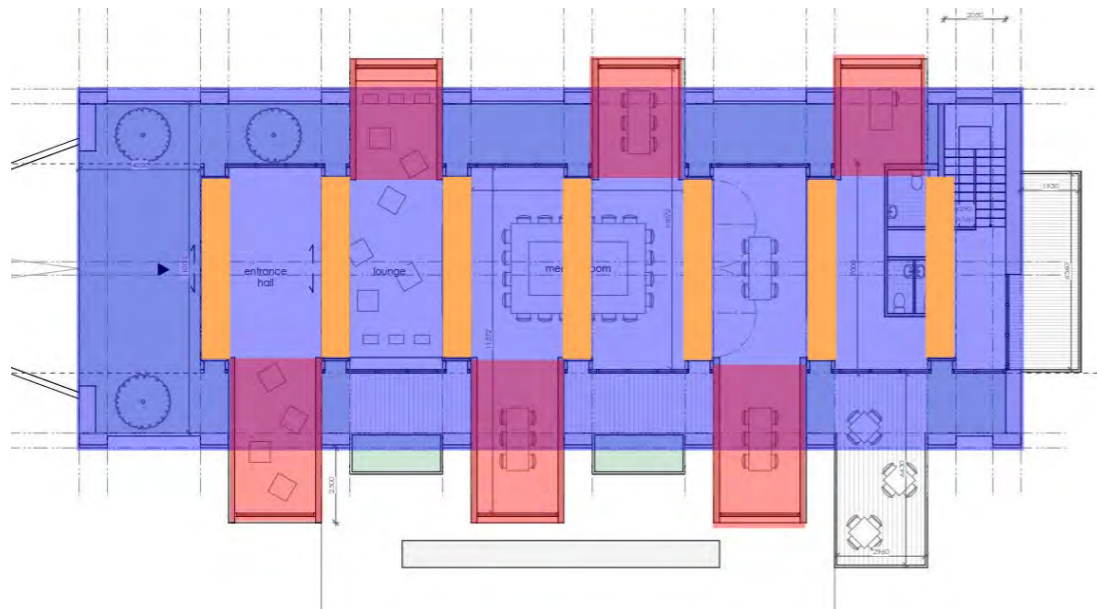


SCENARIO I - OPTIE A

- Roof
- Roof construction
- Furniture
- Indoor walls
- Facade elements
- Installation zone
- Construction
- Floor and balconies
- Furniture
- Indoor walls
- Facade elements
- Existing construction
- Existing floor

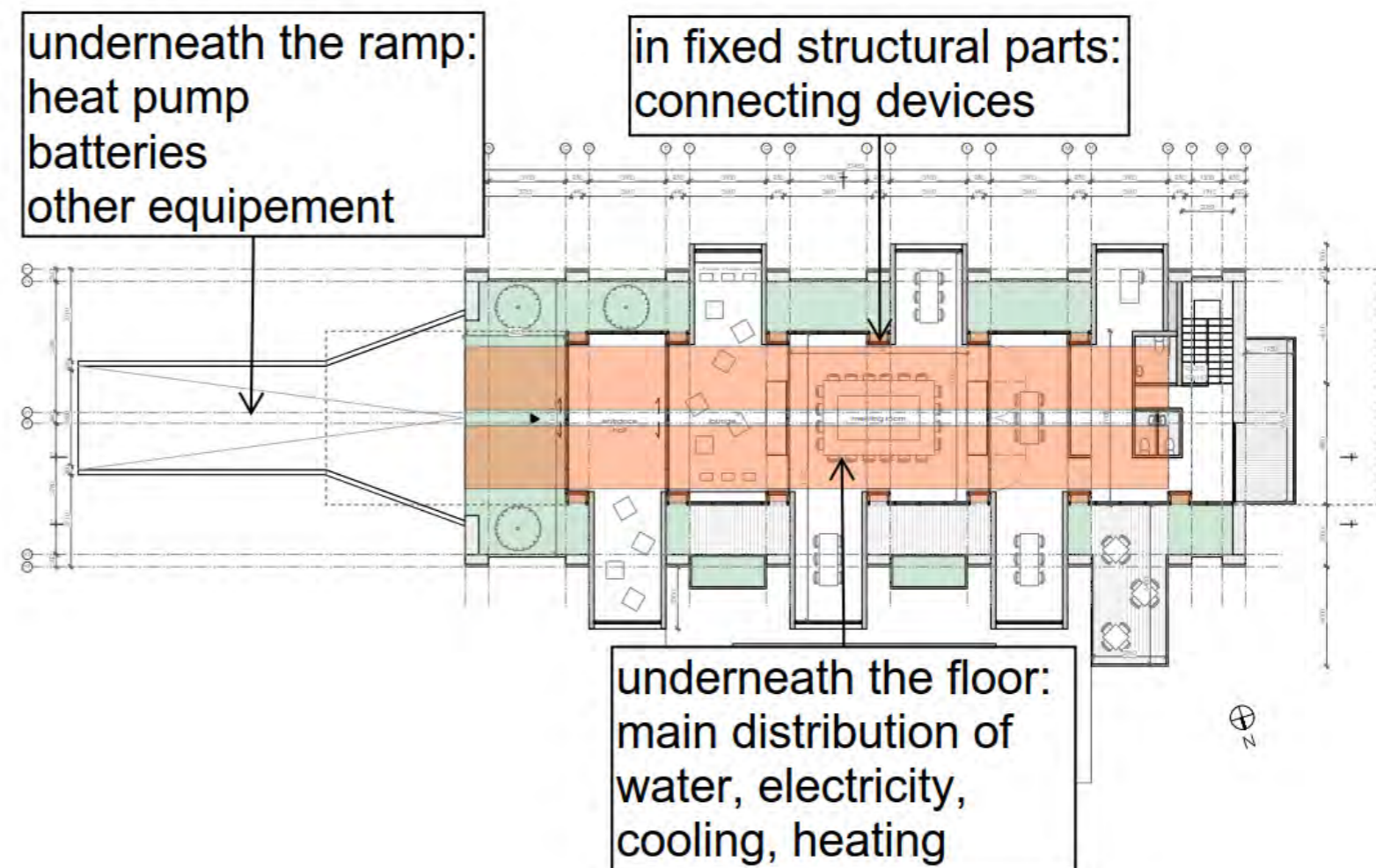
Concept of structural design

- Study:
- - Completely self sufficient
- - Supported by main structure



Main distribution system

- Measurements:
 - - Integrated in floor structure
 - - Modular
 - - Connecting spots located in fixed structural parts
 - - Local equipment mounted in walls and ceilings



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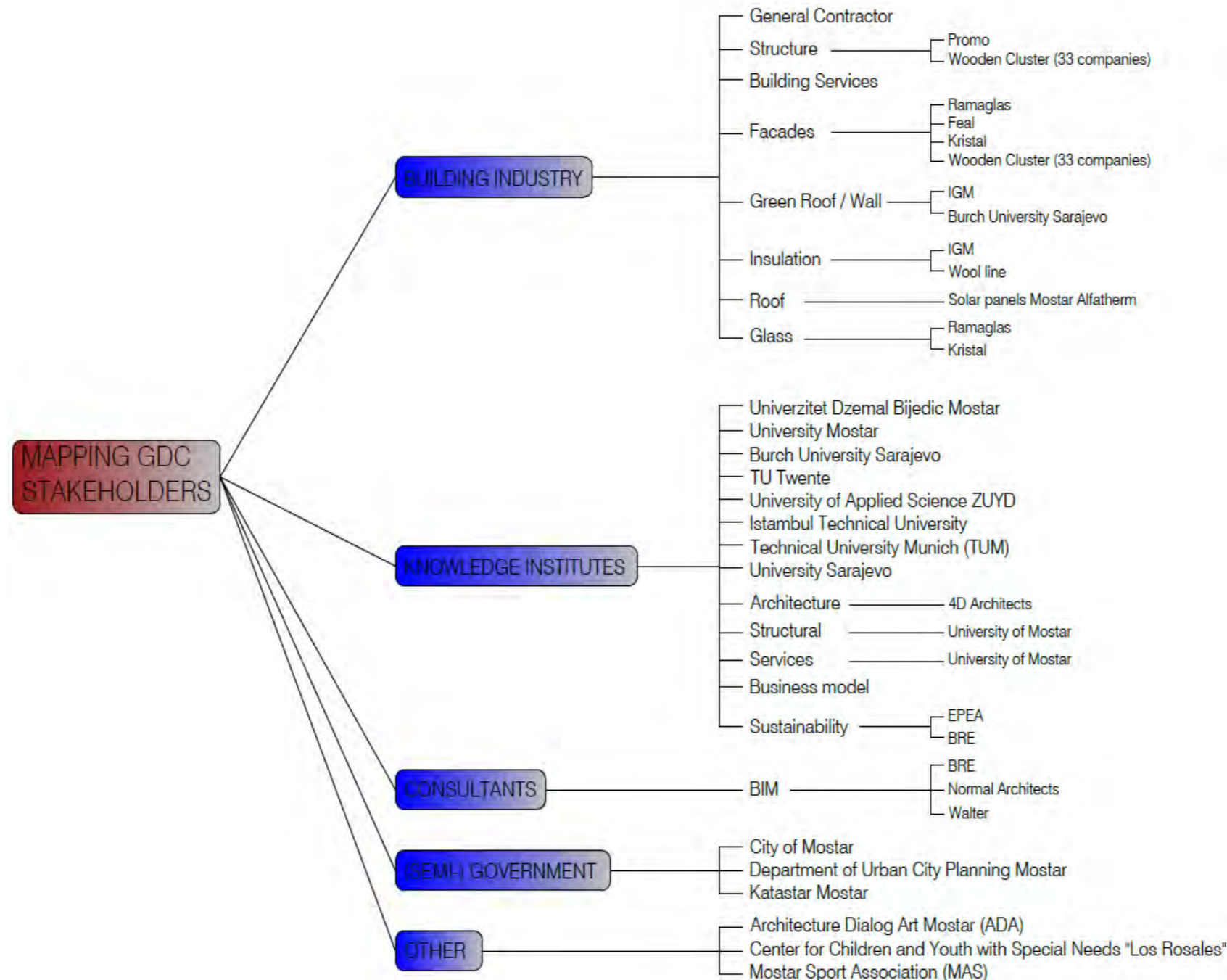




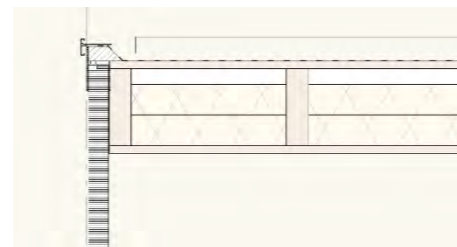
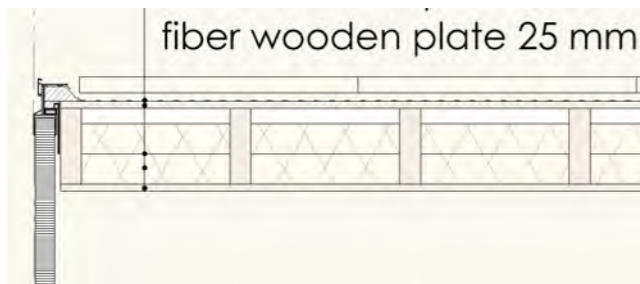
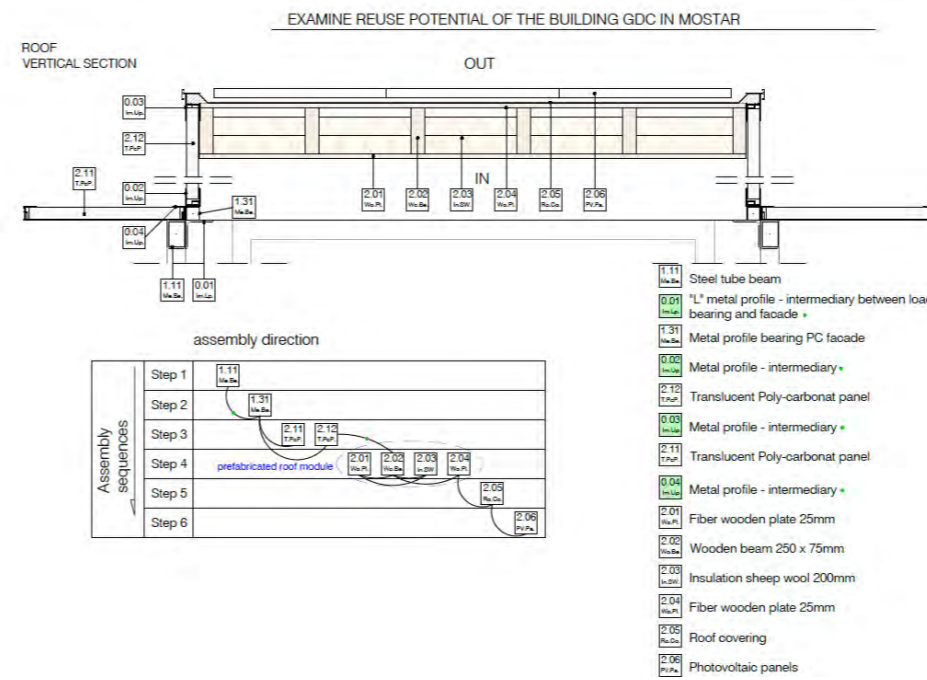
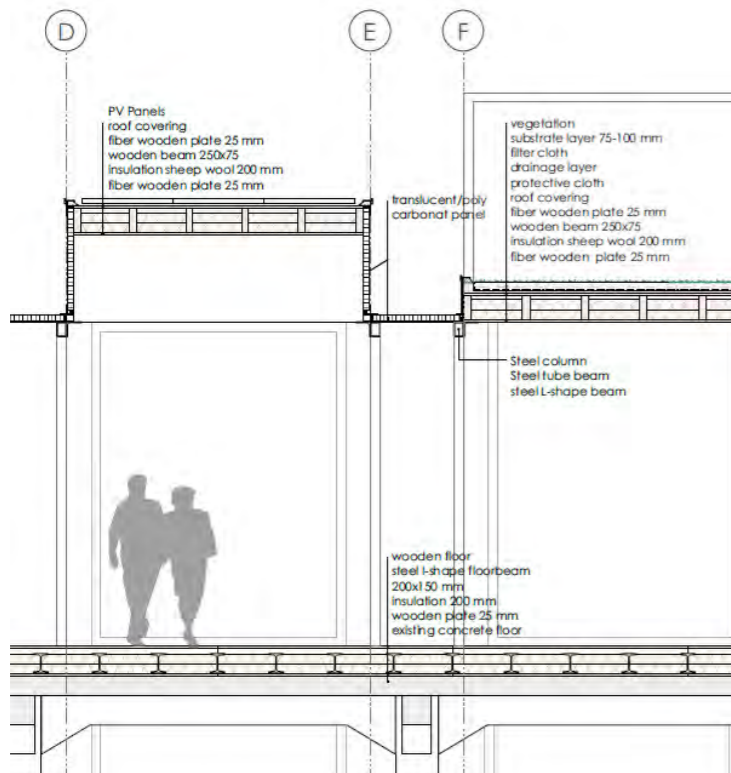
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Value network and collaborations



TECHNICAL ASPECTS & MATERIALS



NEXT

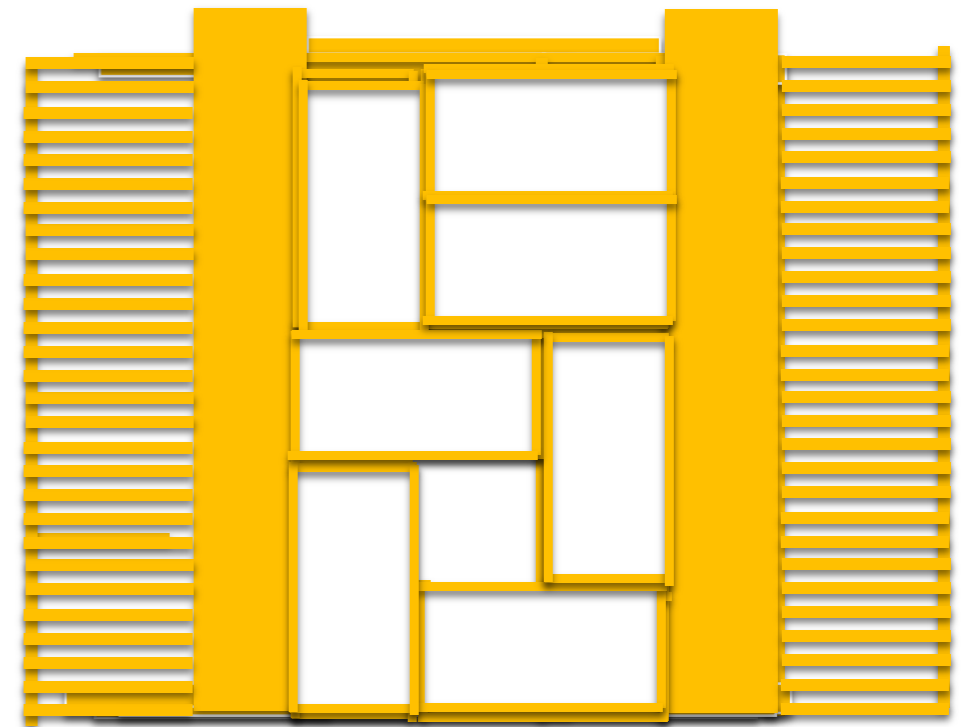
- Stages:
- Wooden component has been designed.
- Feasibility of the manufacturing needs to be checked
- This is going on at the moment.
- Prepare the manufacturing process
- Manufacturing will take one months
- Study on connections between the profile and separate elements are under investigation at the moment
- Development of the Revit file of the structure is under investigation
- What is the expected timing to start prototyping/building?
- Assembly of the component January of 2018



CHILDREN URBAN PIXEL



MOSTAR







NEXT

Green Design Center Mostar Innovation platform for green and reversible buildings

Green Design Centre in Mostar is educative public information center showcasing new concepts and technical solutions for the realization of Dynamic and Circular building concepts and circular use of materials and energy within built environment.

The GDC EU BAMB pilot project will be a creative hub bringing creative and production industries together around Reversible Building Design concepts and the use of Materials Passport, and it will be used for educational purposes and as a construction innovation platform.

Location

The city of Mostar has dedicated a plot of ca 4000m² for development of GDC, 2km south of the city center. The plot was a former military building site with storage building originating from end of 19th century).



GDC itself will reuse parts of the existing structure of former military building that has a footprint of 380m². The center is designed with the capacity to illustrate functional change from exhibition, workshop space to office concepts. The experiments will showcase reversible building design approach and its materialization through development of integrated architectural spatial and technical solutions that support reversibility of the building function and accordingly structural configuration without waste generation.

The space around the building will be developed as innovation park with green terraces for food production, platforms for temporally positioning of experimental structures, windmill, terraces for experiment with Mediterranean plants etc.

Design and development team

Architect: Elma Durnisevic, 4D architects/SGDF
 Structure: Erwin ten Brincke, ABT
 Installation: Andre Meijer ABT
 Structure: Vlaho Akmadic, University of Mostar
 Installation: Robert Kreso, Alfathem

Technical support:

Renata Androsevic, SGDF
 Senada Demirovic, City of Mostar
 Maja Popovac, University of Dzemal Bjedic
 Dragan Katic, University of Mostar





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