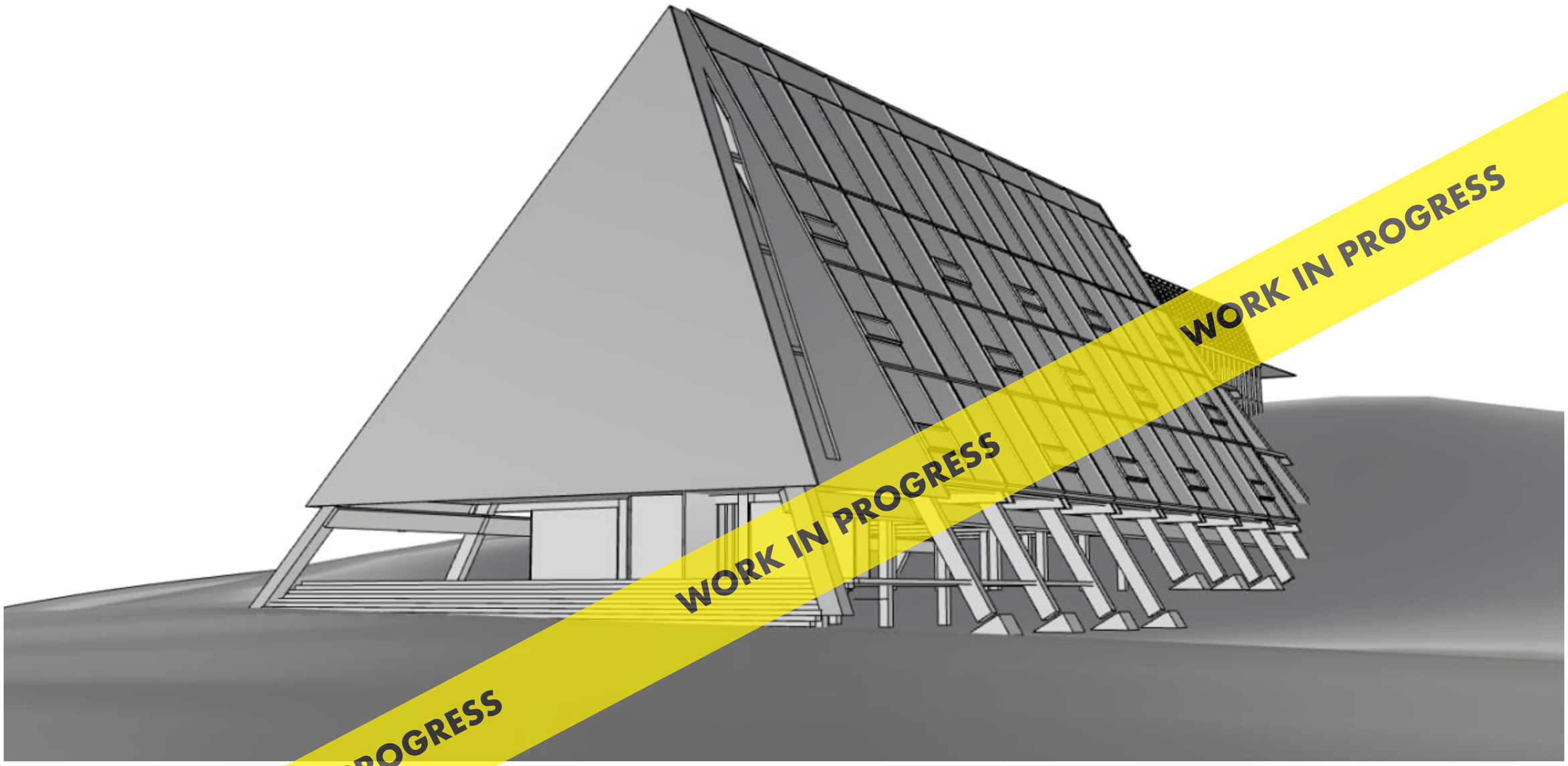
SOLID HILL

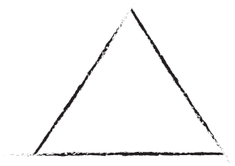
REST STATION

and a place of worship



Wood Architecture Design Studio Jenny Helmer Xuanyu Diao Xuxiao Ma

starting point

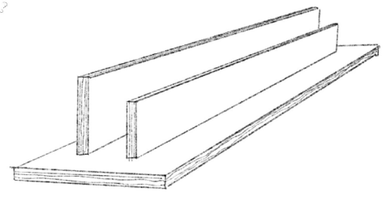
Starting point	SOLID	HILL
Definition	firm and stable in shape; not liquid or fluid 	a naturally raised area of land, not as high or craggy as a mountain 
The way we worked with	for the structure, the solidness is more about the shape and has therefore a triangular shape for the living units, it is more about the feeling of solidness the aim was to create a dense and safe feeling since the building is partly open between the different levels the living units also needed to be soundproof	the project site is located in a landscape full of hills where the nature and hiking routes are the main attraction the main target group was thus hikers

life cycle concept and strategies

PRODUCTS

Use mainly wooden products in core structure and units which are produced in Finland.

The IsoTimber which is used in the units can partly be made of a lower quality wood which is one way to utilize the all material you get from a tree.

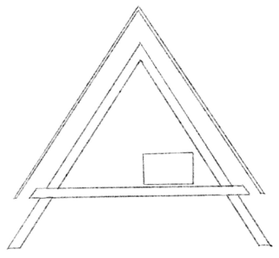


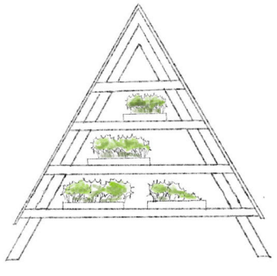
CONSTRUCTION

The triangular shape of the building is a solid construction which can be a decisive reason for the life of the building.

The purpose of the glass structure is to protect the wooden structure and extend its life.

The units consist of components and are designed for disassembly.





USE AND REUSE

Today the function of the building is a rest station for hikers and a place of worship. However, thanks to the open structure the function of the building have a range possibilities, green house or festival venue.

The units are designed to be accessible to wheelchairs, which means that the number of people who can use them increases.

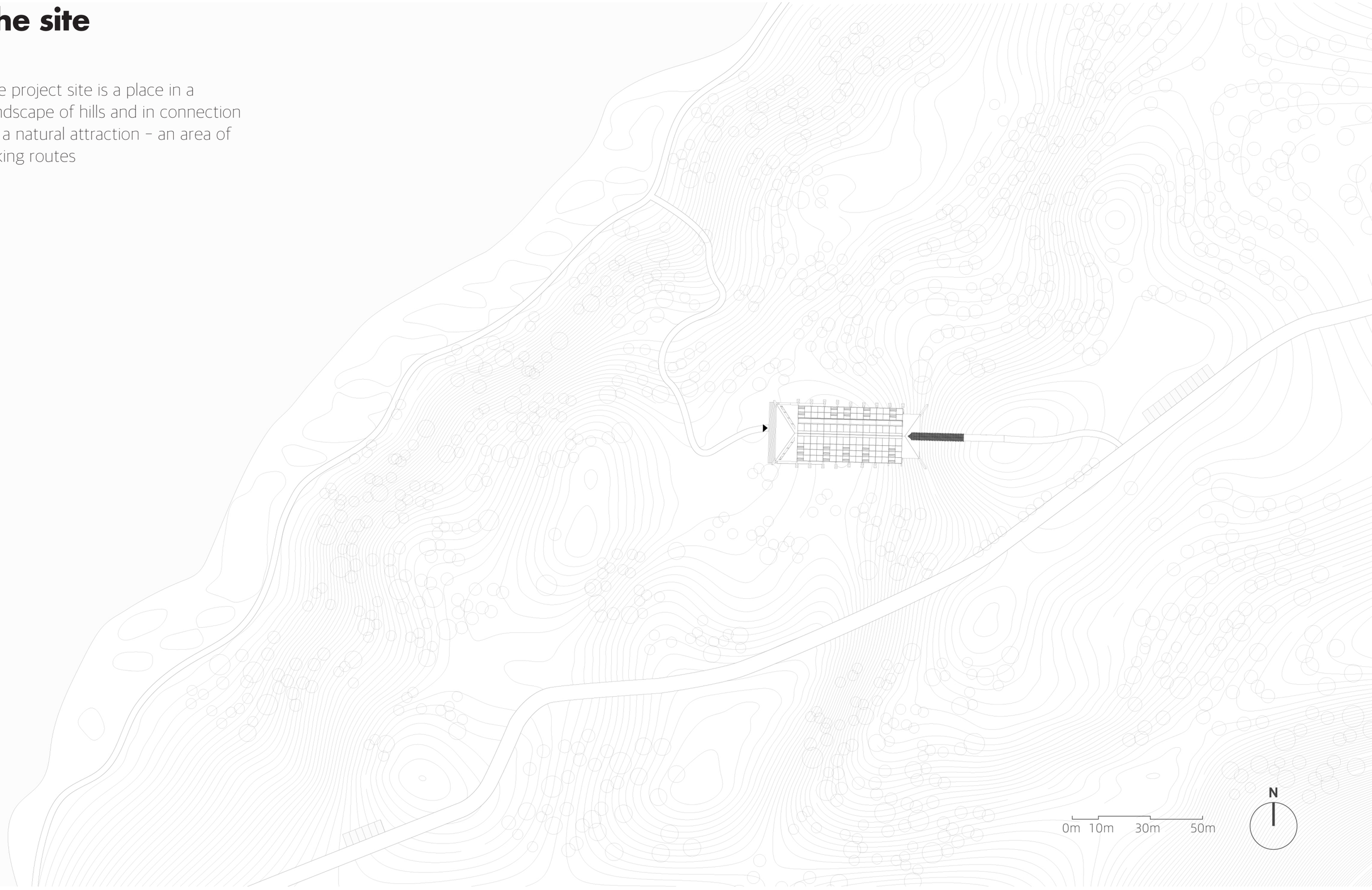
The building has a natural ventilation system and is heated by the sun. This means that the core has a lower temperature during wintertime and that it is controlled by the weather. The units are insulated and can be used all year round. In summer, when the sun is too hot, the facade will be covered with flower boxes to work as sun shades.

END OF LIFE

A place of worship it might stand for hundred of years... co2

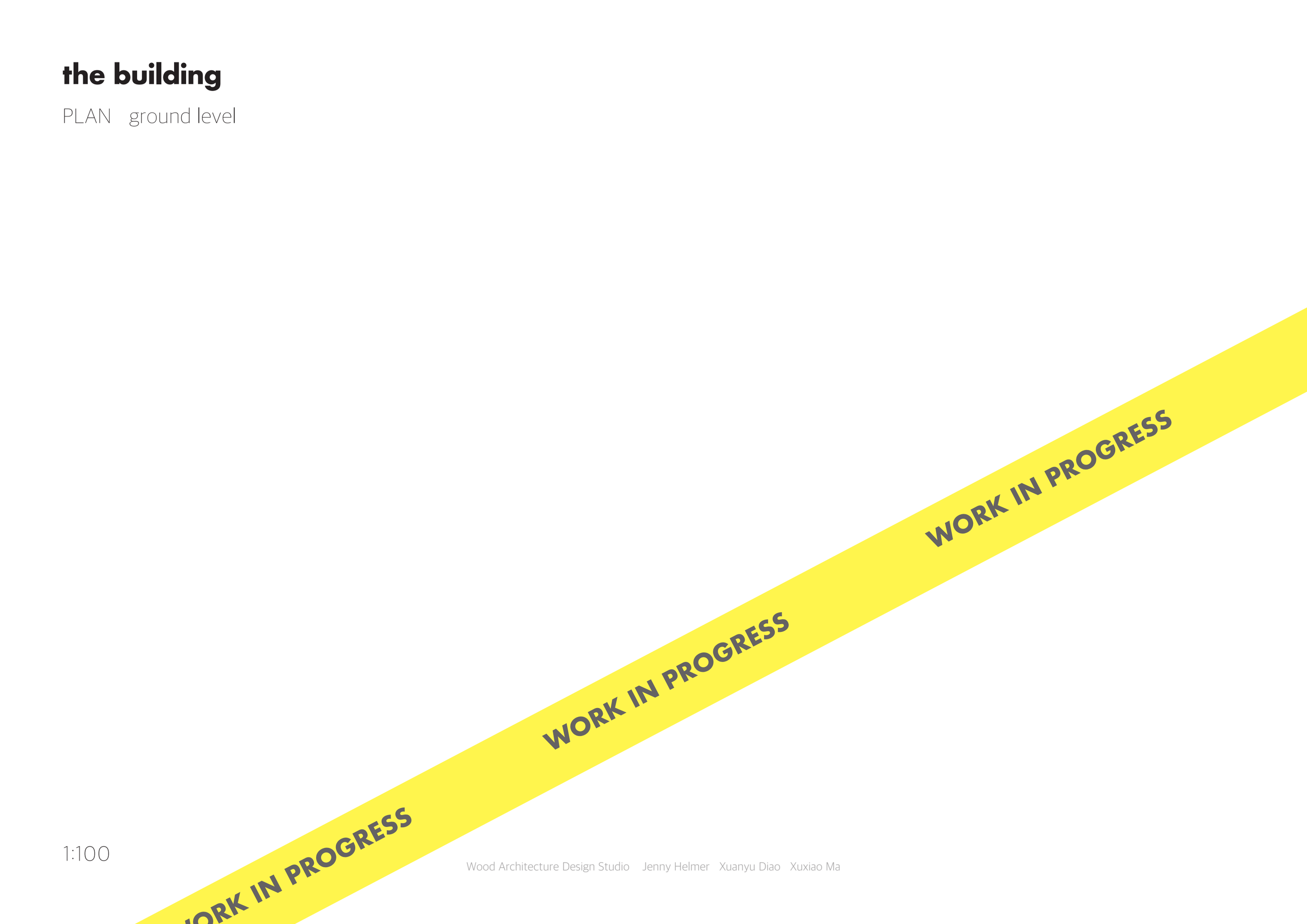
the site

the project site is a place in a landscape of hills and in connection to a natural attraction – an area of hiking routes



the building

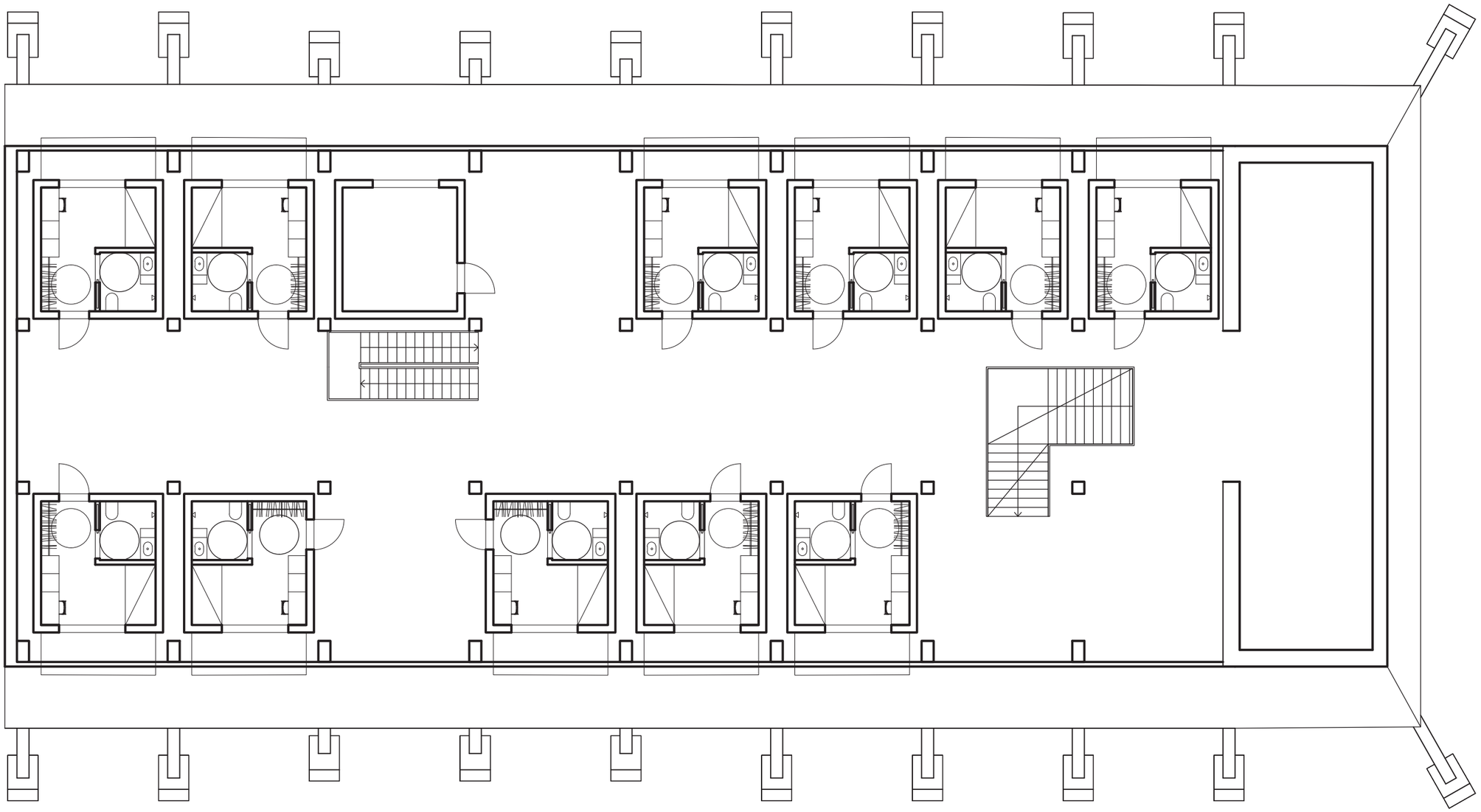
PLAN ground level



1:100

the building

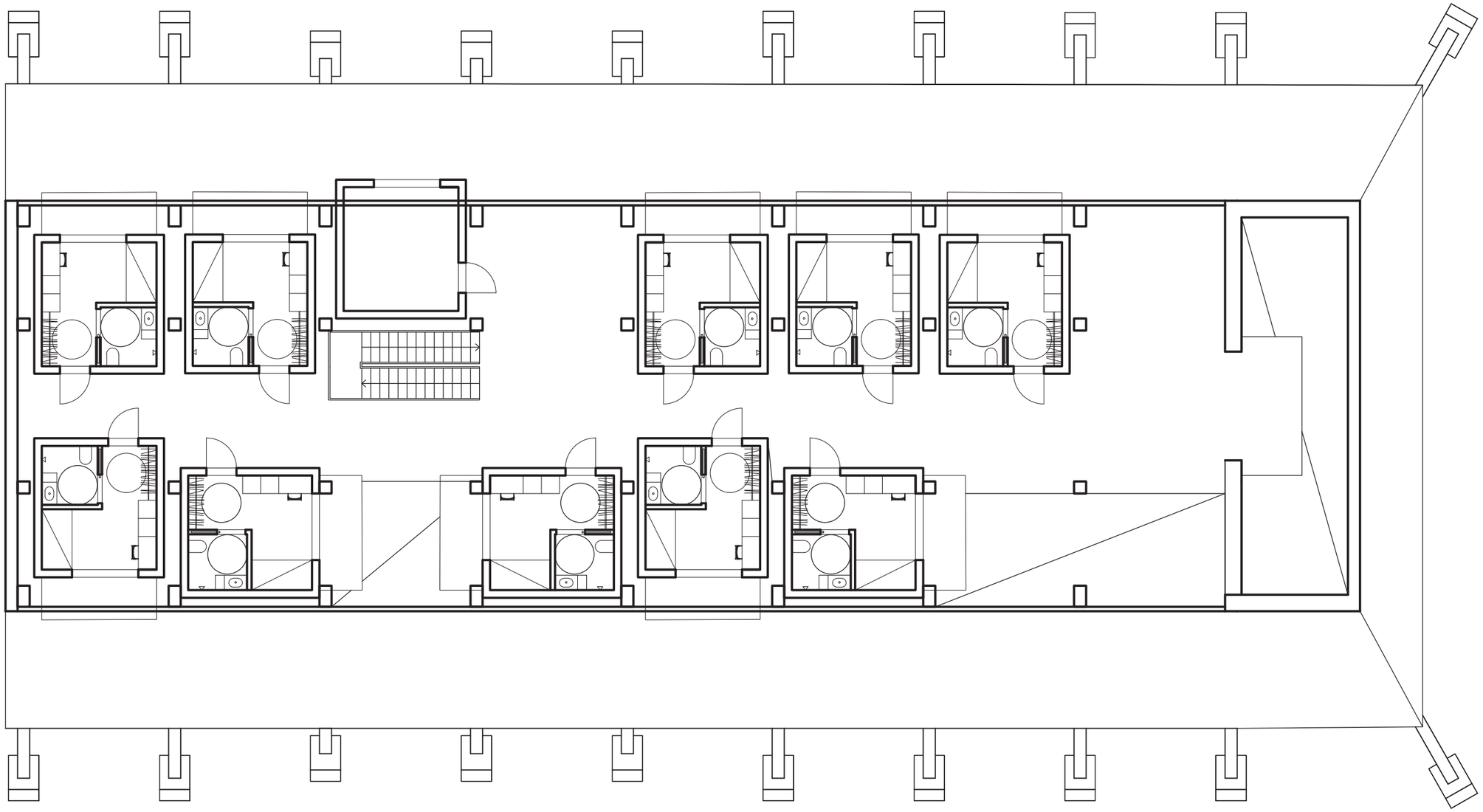
PLAN first level



1:100

the building

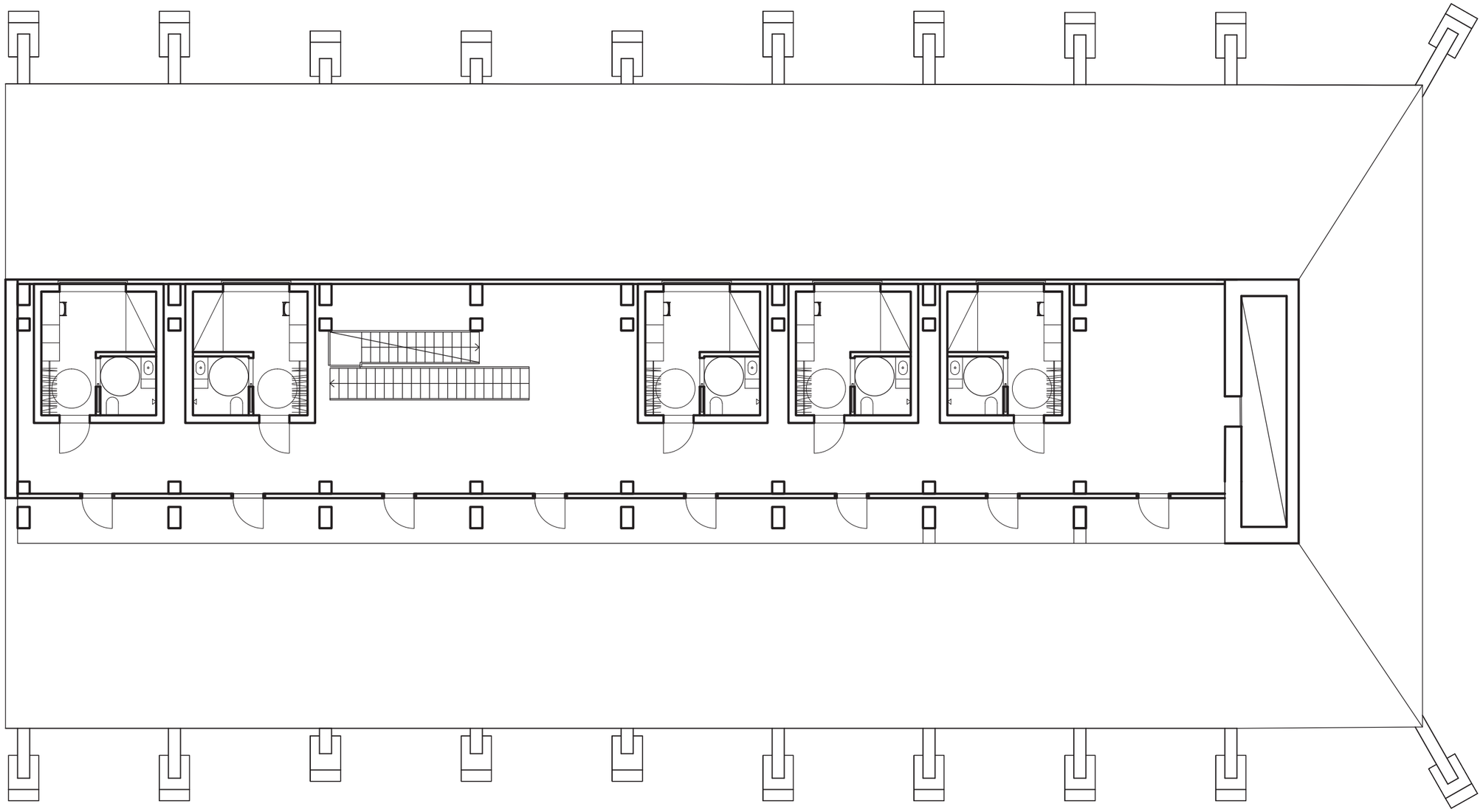
PLAN second level



1:100

the building

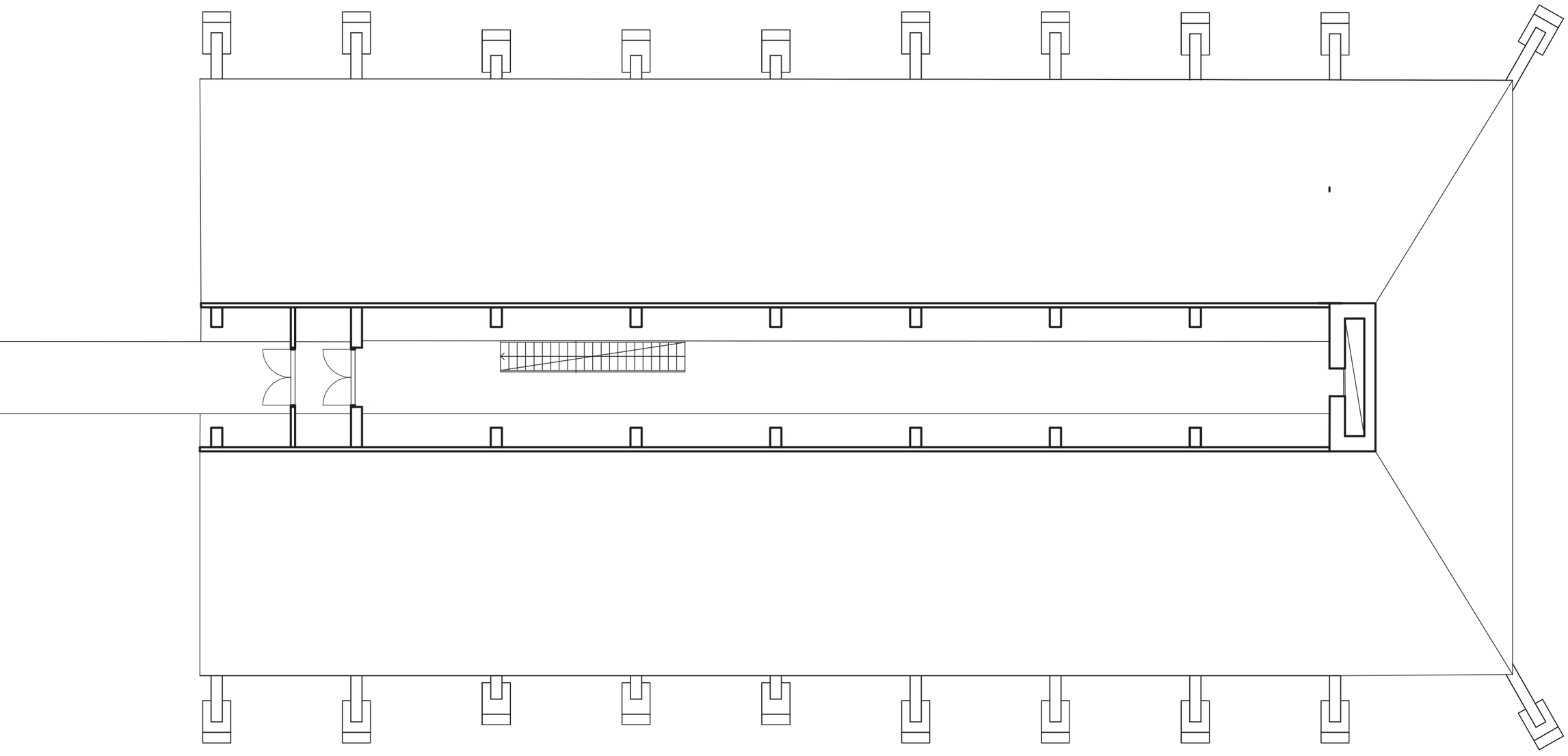
PLAN third level



1:100

the building

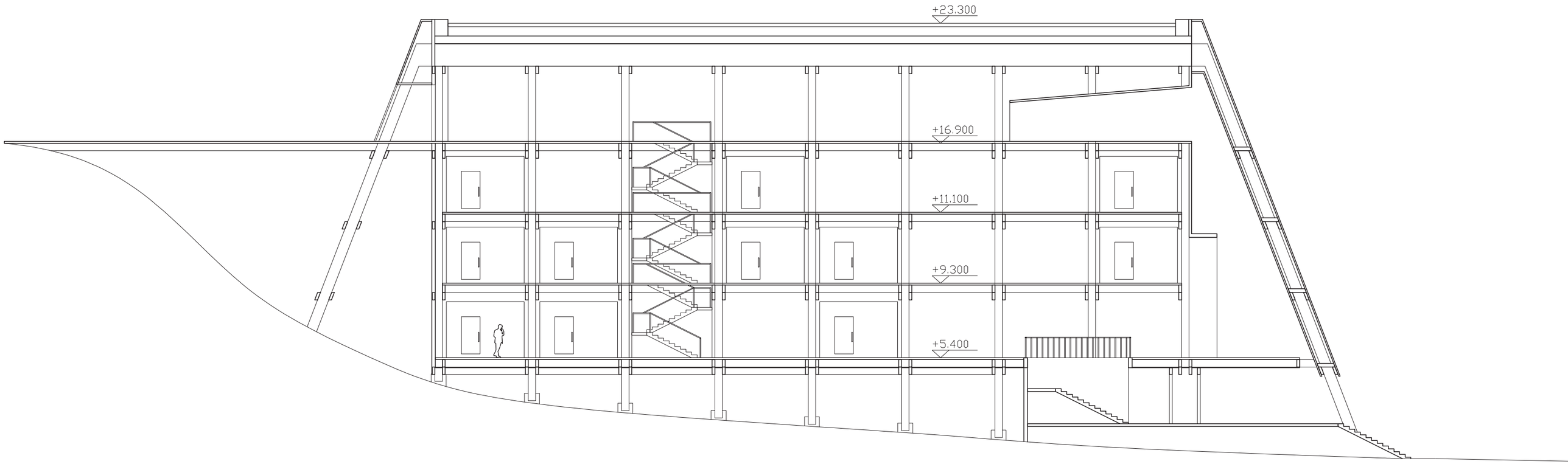
PLAN top level



1:100

the building

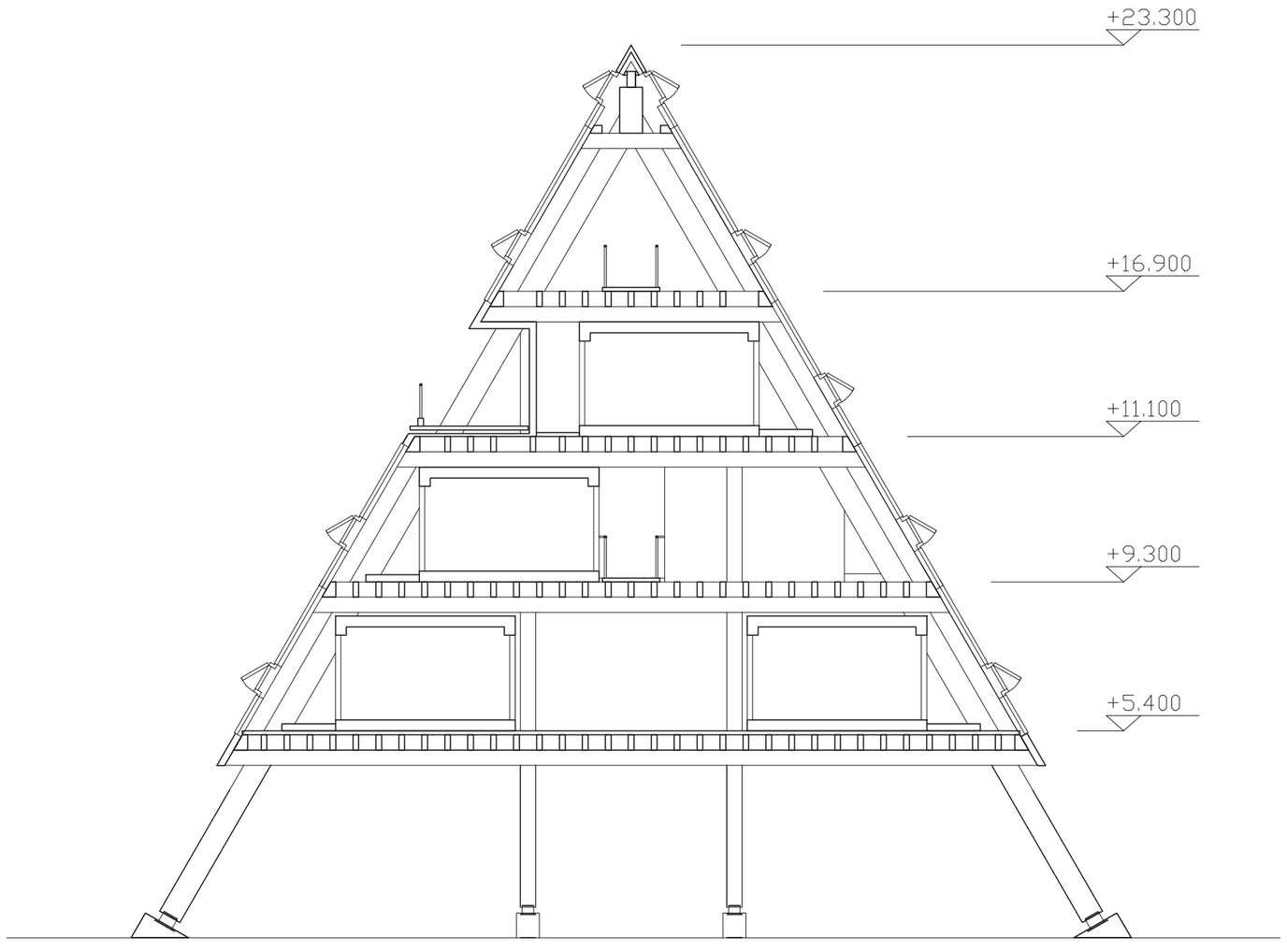
SECTION a-a



1:200

the building

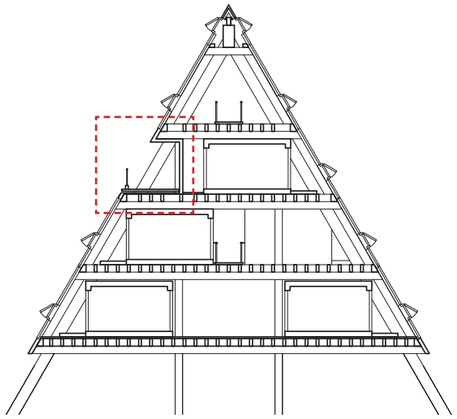
SECTION b-b



1:150

the building

DETAIL balcony vertical section



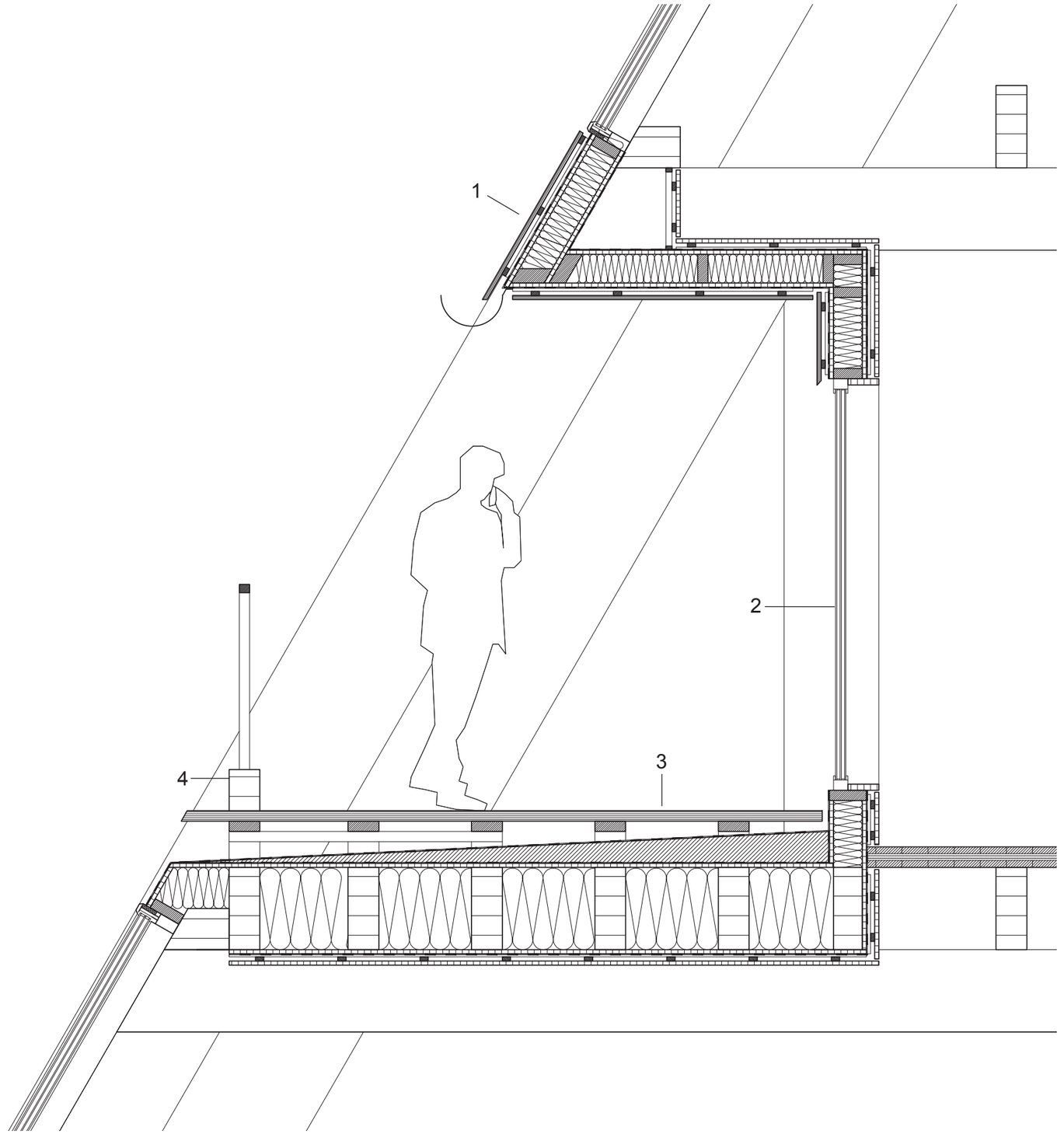
1.External wall construction:
  20mm larch boarding
  20/40mm battens;20/40 counter battens
  Vapour barrier
  Wind barrier, 20mm OSB
  140mm wood fibre wool
  20mm OSB
  20/40mm battens;20/40 counter battens
  20mm interior boarding

2.Triple glazing in wood frame

3.Floor construction:
  50/80mm larch strip terrace paving
  50/150 mm battens;50/150mm counter battens
  Vapour barrier
  Inclined panel
  Vapour barrier
  20mm OSB
  400mm wood fibre wool
  20mm OSB
  Vapour barrier
  20/40mm battens;20/40 counter battens
  20mm interior boarding

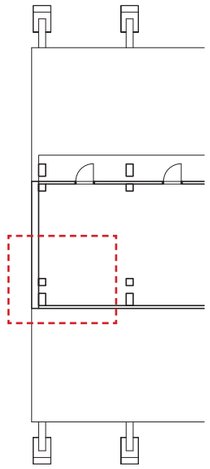
4.150/200 mm beam

1:25



the building

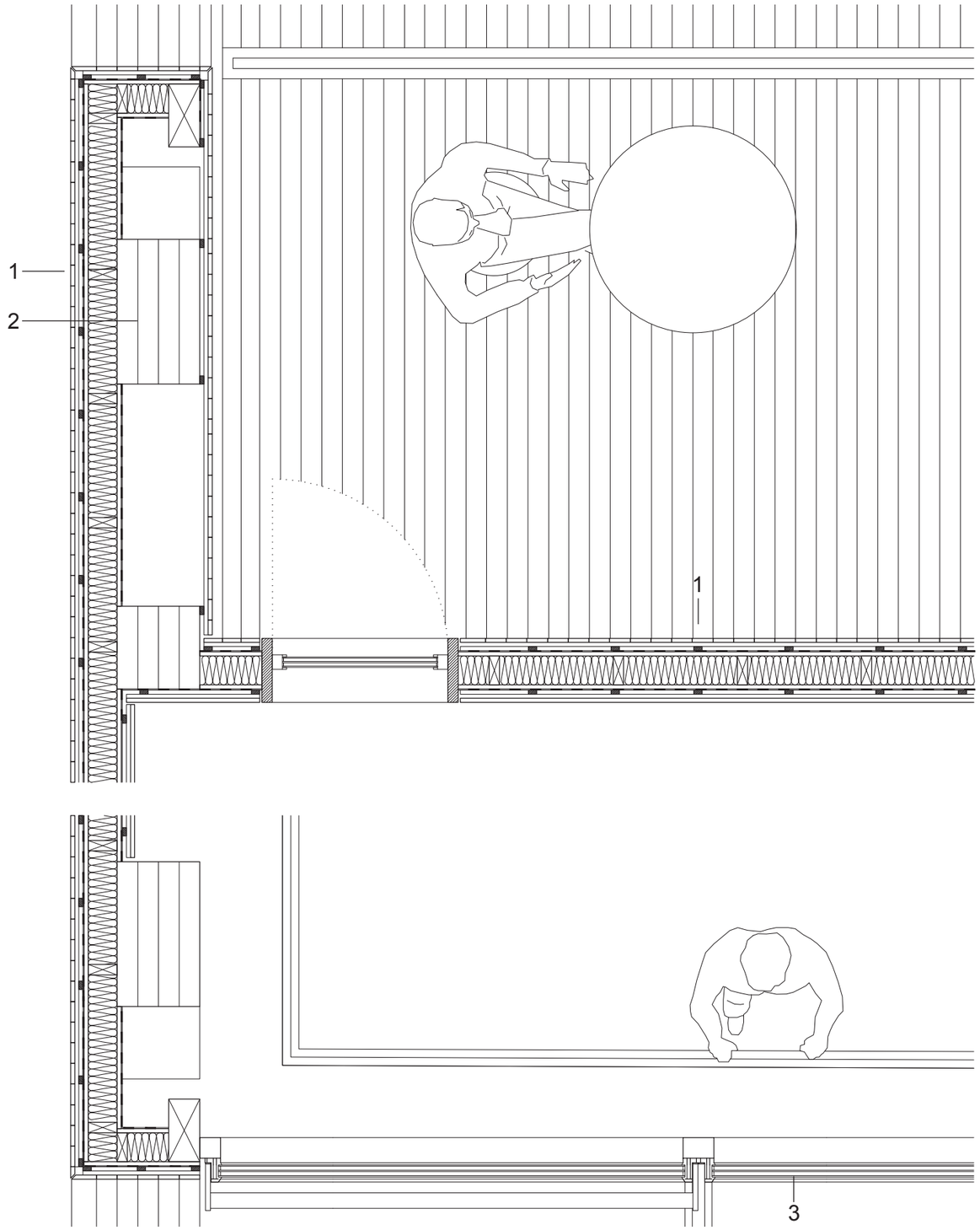
DETAIL balcony horizontal section



1.External wall construction:
20mm larch boarding
20/40mm battens;20/40 counter battens
Vapour barrier
Wind barrier, 20mm OSB
140mm wood fibre wool
20mm OSB
20/40mm battens;20/40 counter battens
20mm interior boarding

2.400/600 mm main column

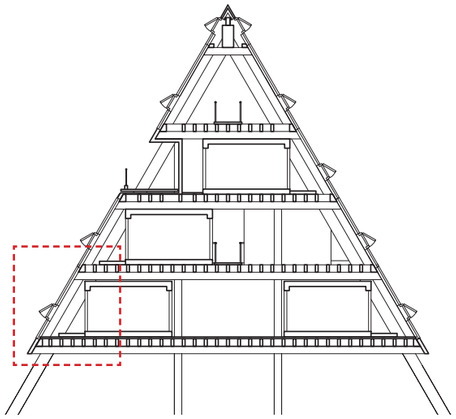
3.Triple glazing in wood frame



1:25

the building

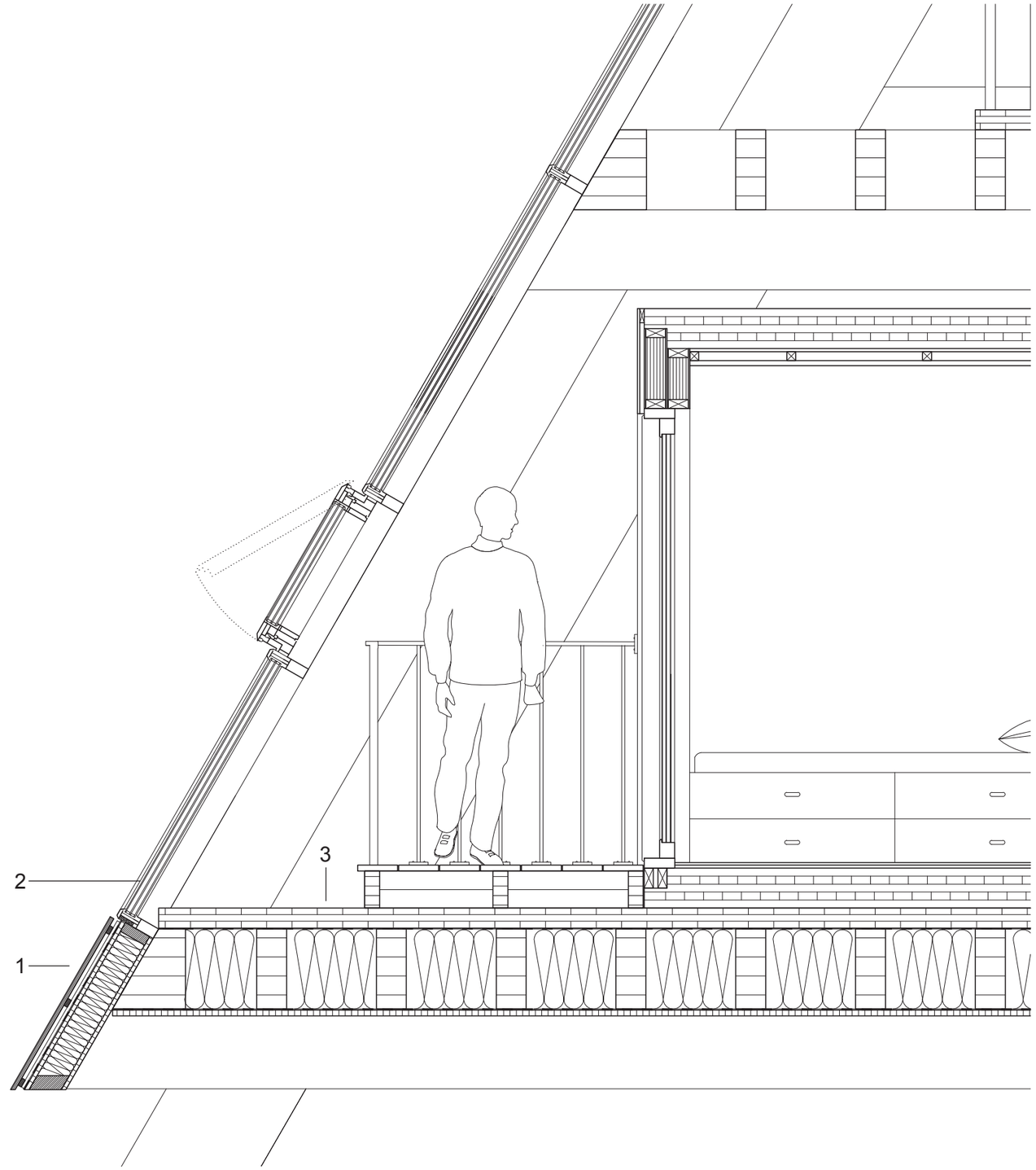
DETAIL corner vertical section



1.External wall construction:
20mm larch boarding
20/40mm battens;20/40 counter battens
Vapour barrier
Wind barrier, 20mm OSB
140mm wood fibre wool
20mm OSB

2.Triple glazing in wood frame

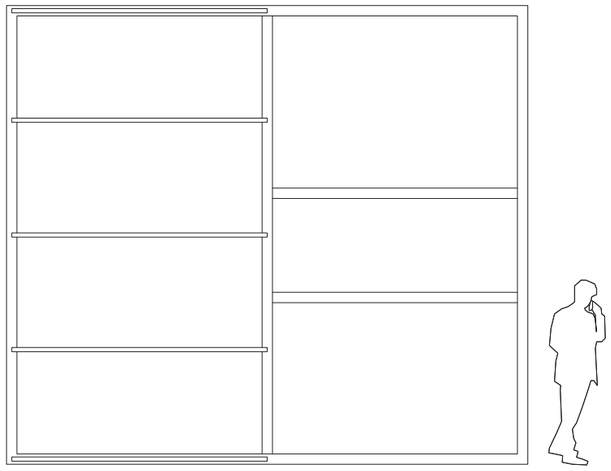
3.Floor construction:
100 mm CLT
Vapour barrier
400mm wood fibre wool
Vapour barrier
20mm OSB



1:25

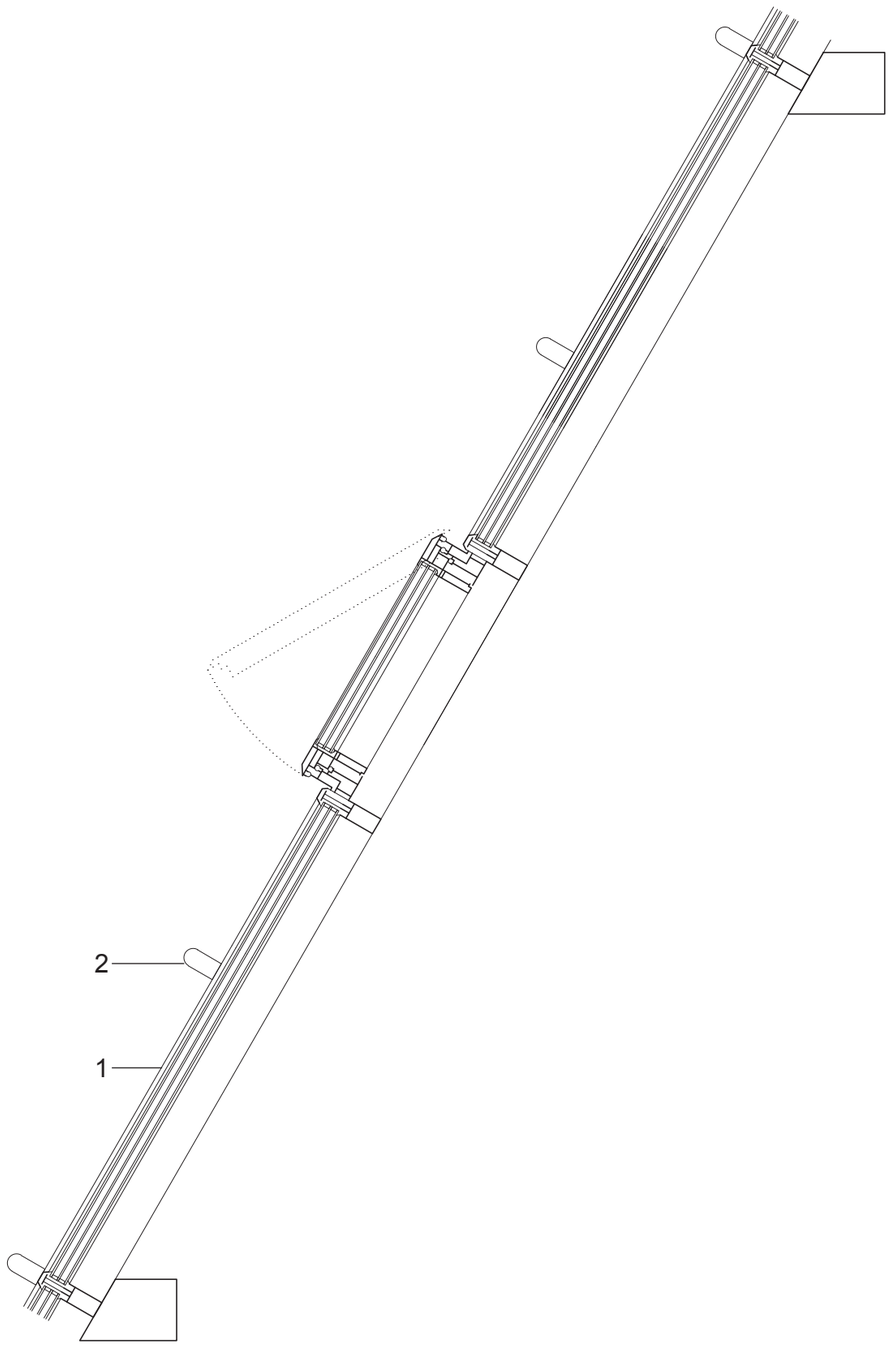
the building

DETAIL window frame

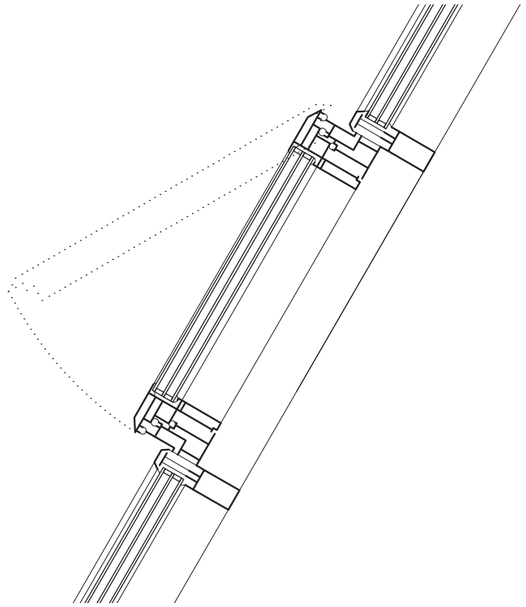


1.Triple glazing in wood frame

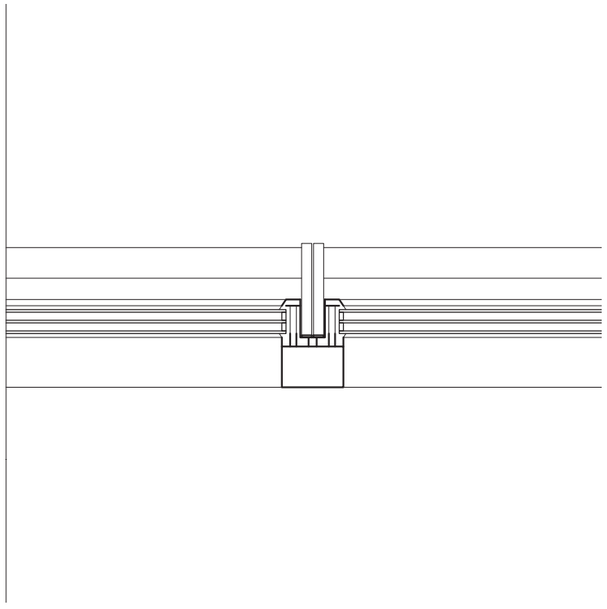
2.Bars for hanging flower boxes



Window frame vertical detail 1:20



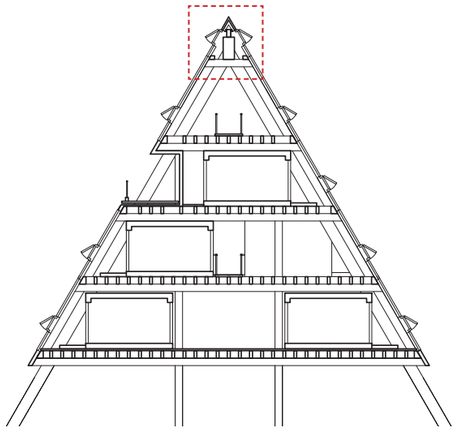
Open part vertical details 1:15



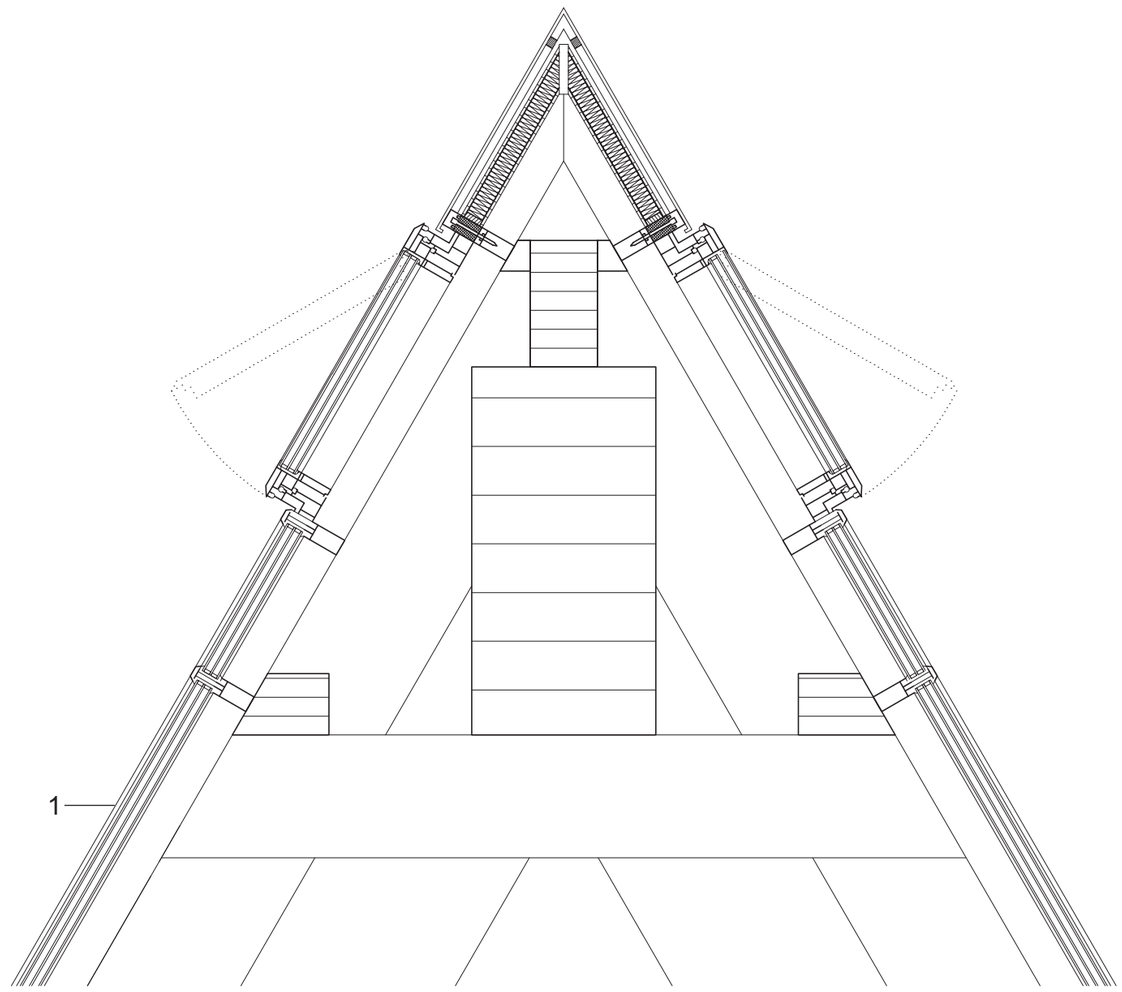
Windows frame horizontal details 1:20

the building

DETAIL top of the building



1. Triple glazing in wood frame



1:20

the building

PLAN place of worship

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the building

SECTION place of worship

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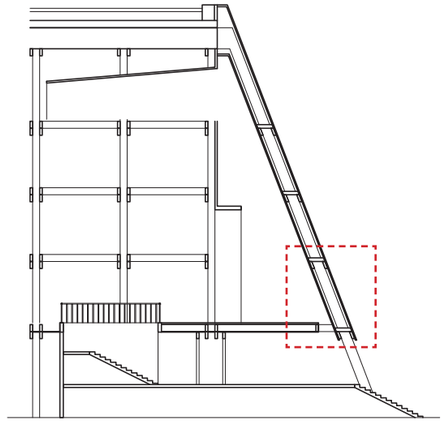
the building

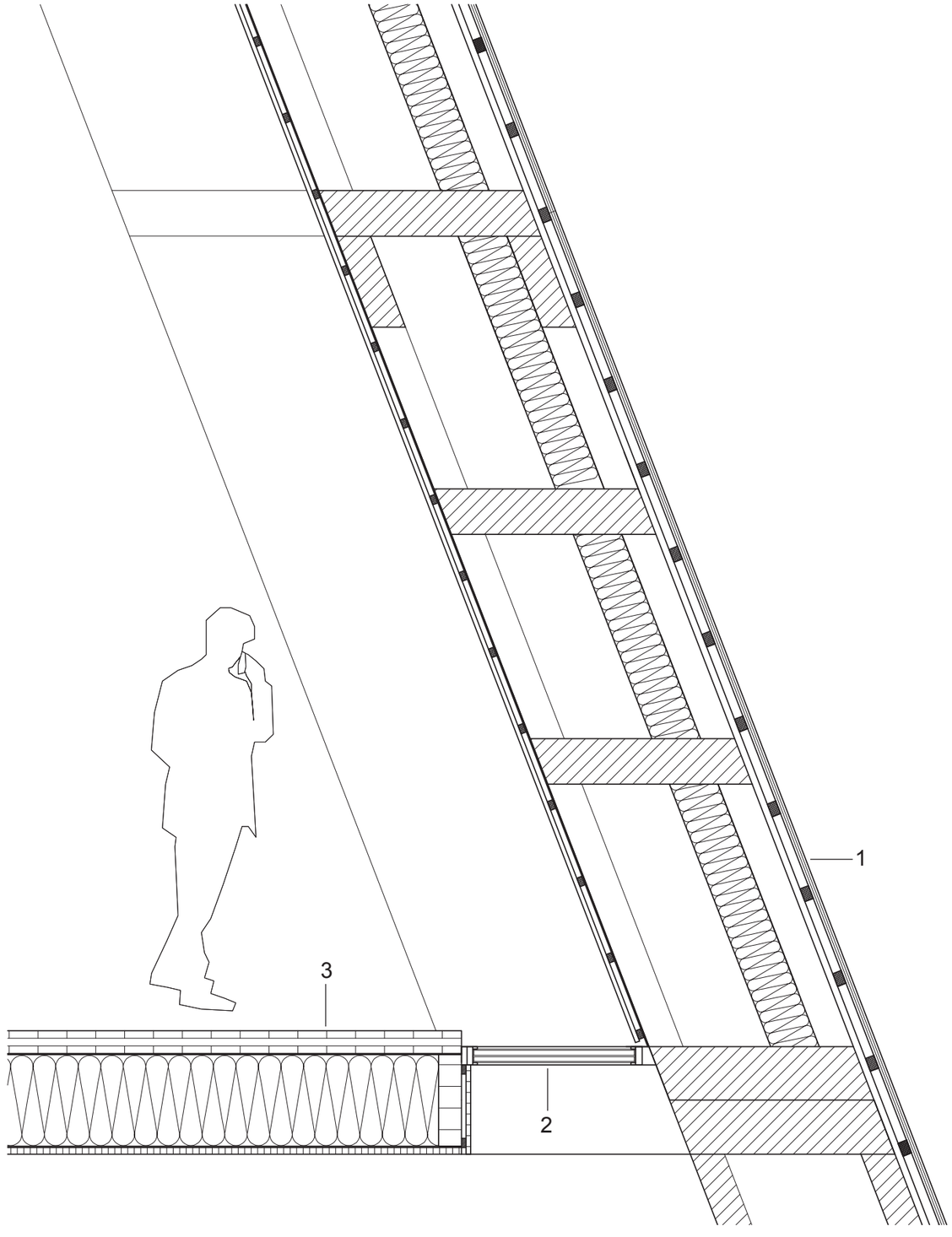
DETAIL place of worship



1.External wall construction:
  20mm larch boarding
  20/40mm battens;20/40 counter battens
  Vapour barrier
  Wind barrier, 20mm OSB
  150mm air gap
  20mm OSB
  200mm wood fibre wool
  20mm OSB
  500mm air gap with beams
  20mm OSB
  20/40mm battens;20/40 counter battens
  20mm interior boarding

2.Triple glazing in wood frame

3.Floor construction:
  100 mm CLT
  Vapour barrier
  400mm wood fibre wool
  Vapour barrier
  20mm OSB



1:25

the building

PERSPECTIVES place of worship

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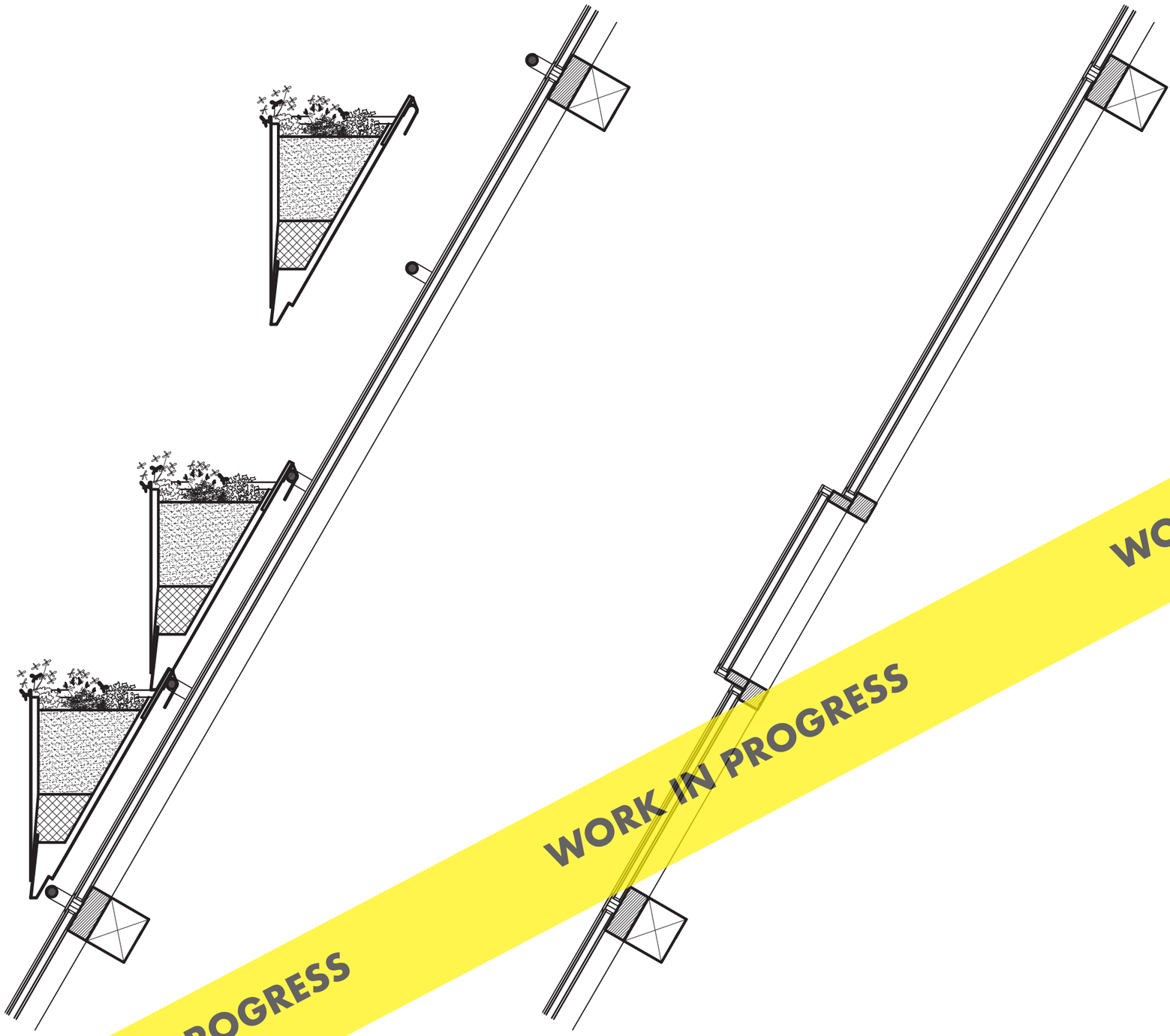
the building

DETAIL flower boxes



1:20

the living unit

STRUCTURE

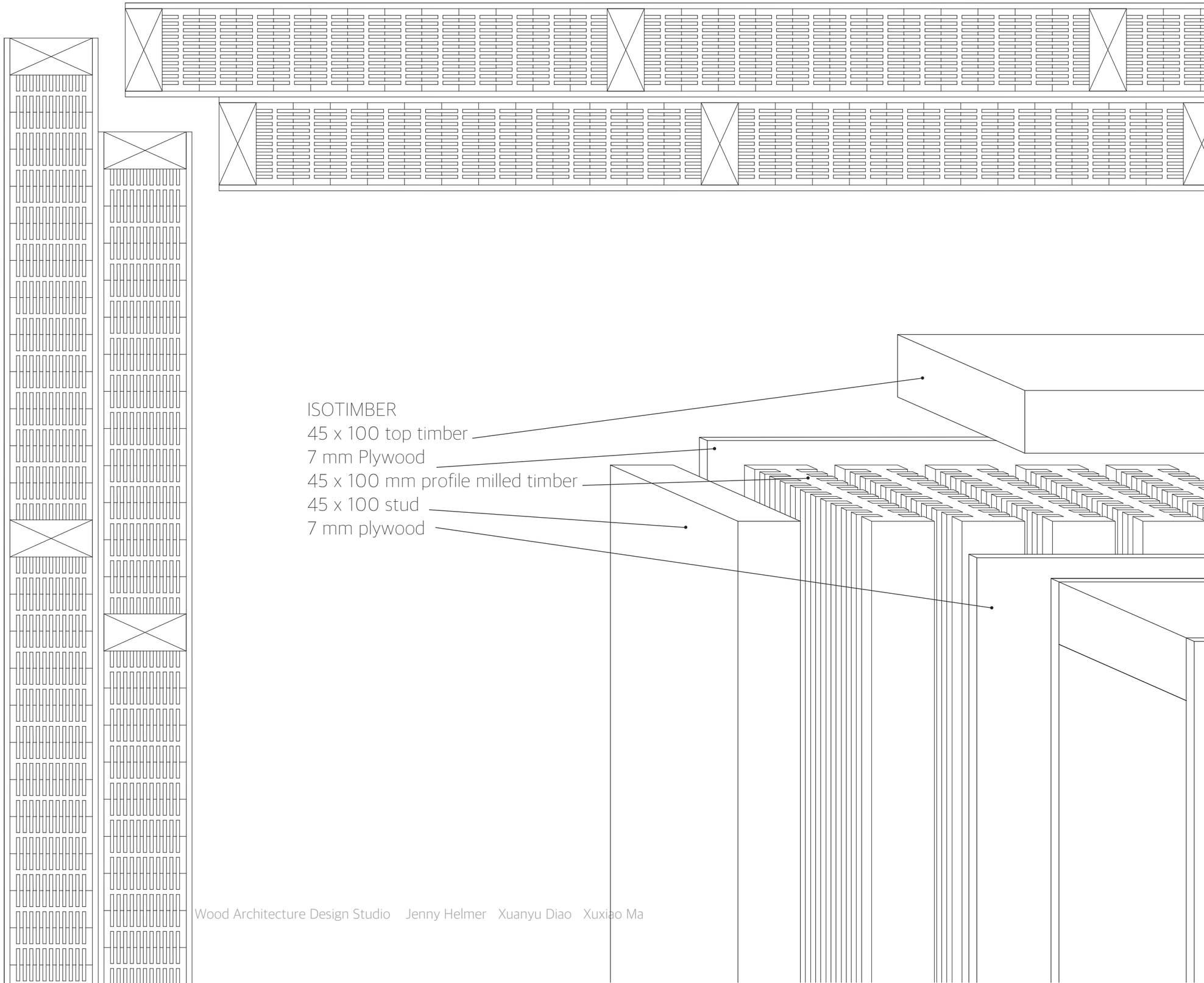
prefabricated wooden wall structure – Isotimber

designed to be disassebled and reused somewhere esle

they are designed with accessibility in mind in the event of a change of function in the future

the prefabricated wall componets are connected with screws and are overlapping to avoid coldbridges

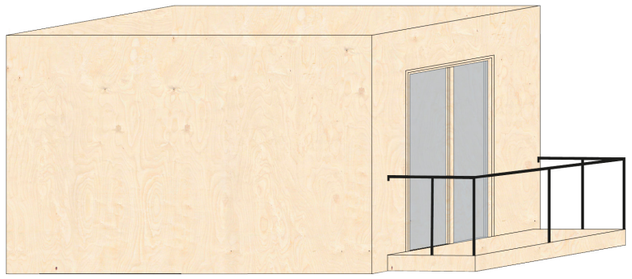
the seams are coverd with tejp



the living units

THREE UNITS

UNIT 1

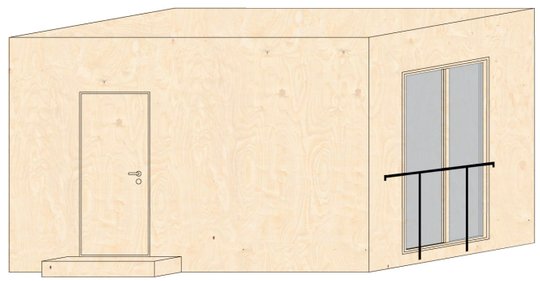


Unit 1 is designed for one person and contains sleeping and hygiene space, storage space for a short stay and a small desk.
The entrance door is placed on one of the short sides. On the opposite side there is a sliding glass partition and the possibility of stepping out onto a balcony belonging to the unit.

UNIT 2

Unit 2 is almost the same as unit 1. The only difference is the location of the entrance door which is placed on one of the long sides. In this way, the unit can be rotated and placed in the opposite direction but still be entered from the same side as unit 1.

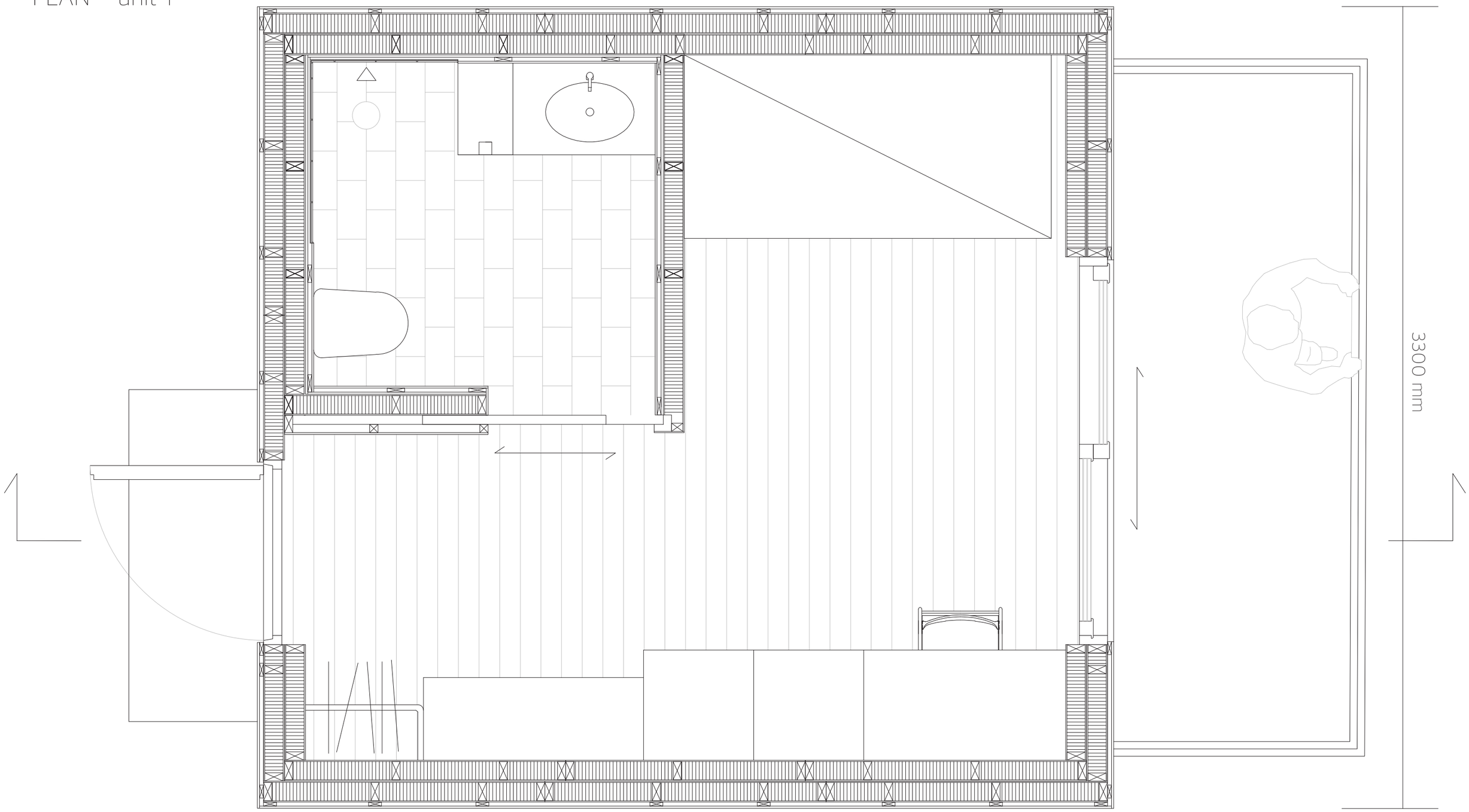
UNIT 3



Unit 3 contains a shared coocking space. Only two units of this type is in the building and they are placed on the first and second level.

the living unit

PLAN unit 1



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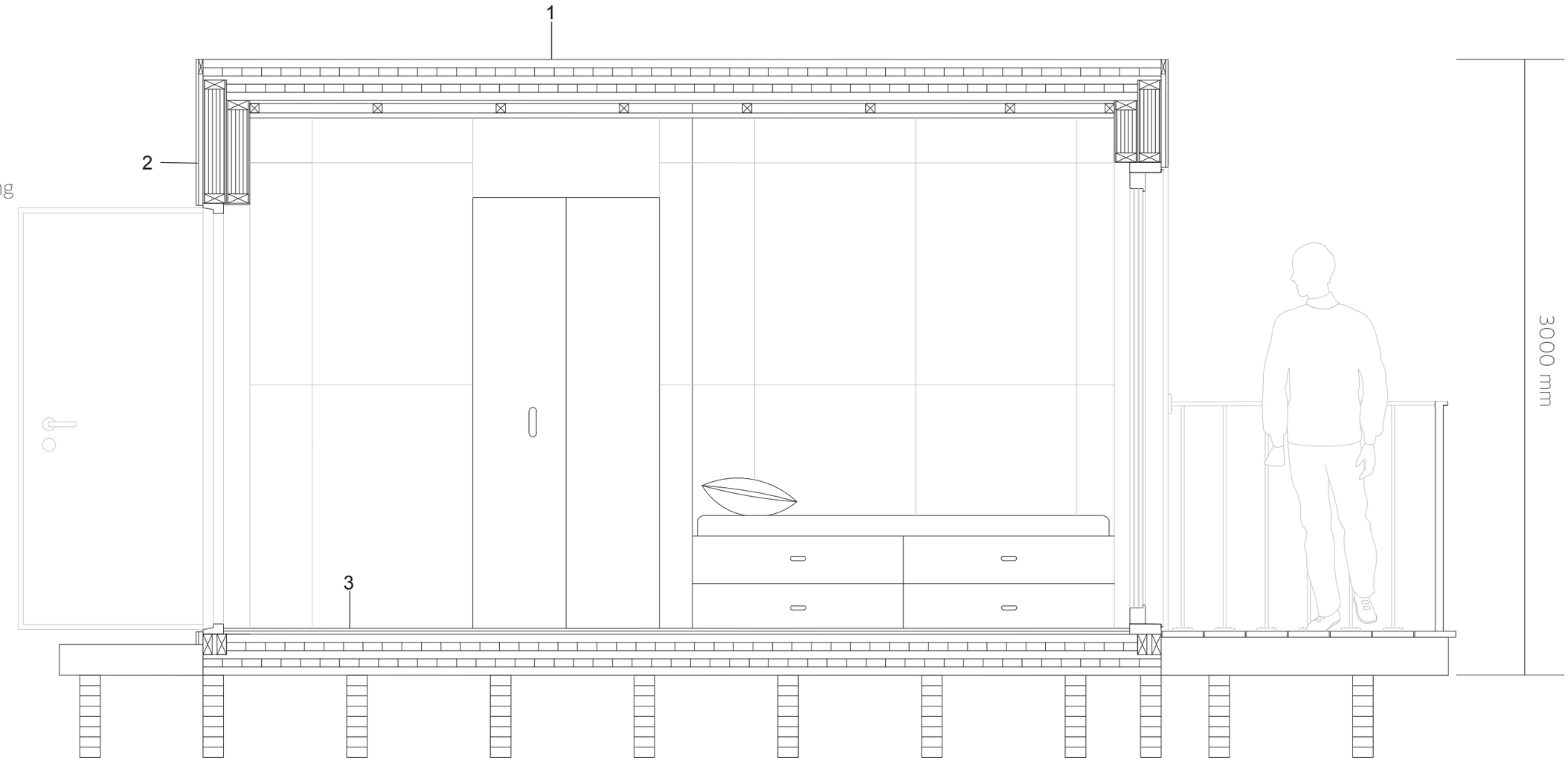
the living unit

SECTION unit 1

1. Roof structure:
   200 mm CLT board
   15 mm gypsumboard
   45 x 45 timber frame
   25 mm acoustic board

2. Wall structure:
   15 mm Plywood
   22 x 70 timber frame
   228 mm IsoTimber

3. 15 mm laminate flooring
   20 mm particle board
   200 mm CLT board



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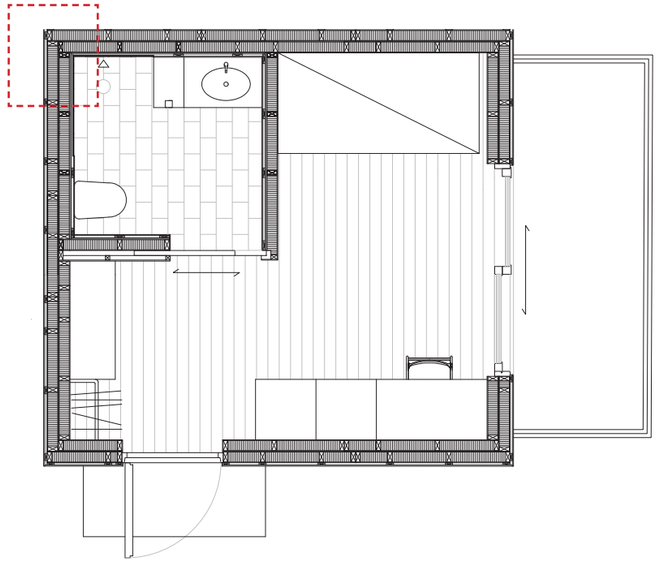
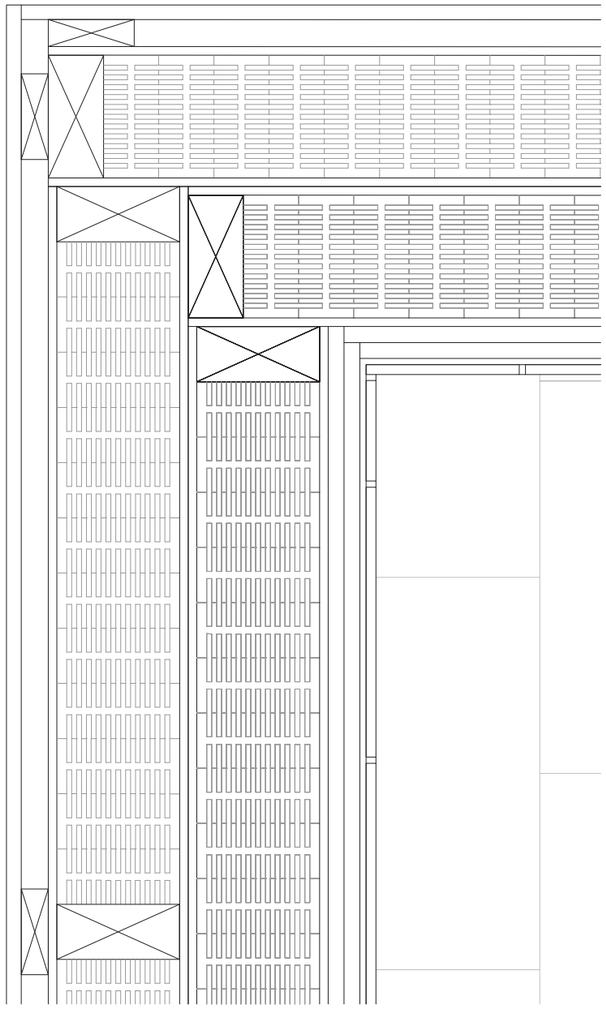
the living unit

DETAIL unit 1 and 2



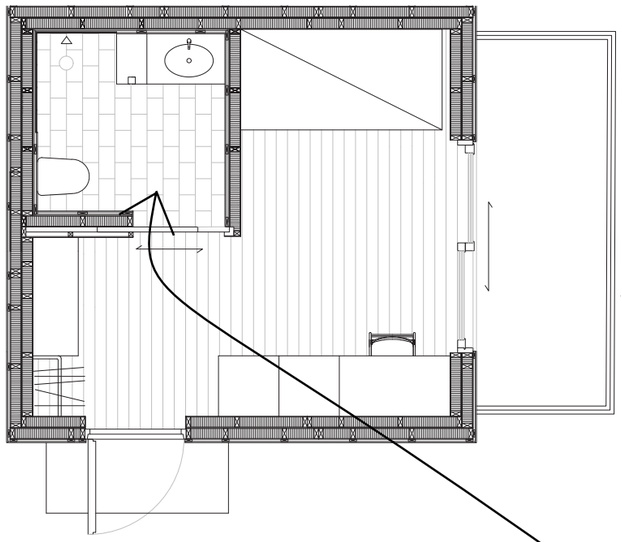


Structure of the bathrom wall:
15 mm Plywood
22 x 70 mm timber frame
228 mm IsoTimber wall
15 mm Plywood water resistent
15 mm waterproofing board
waterproofing wrap
primer
220 x 320 mm tile

the living unit

BATHROOM unit 1 and 2

The bathroom is a separate unit consisting of one layer of Isotimber and bathroom wall strucutre. The bathroom is placed where it is also only one layer of Isotimber.



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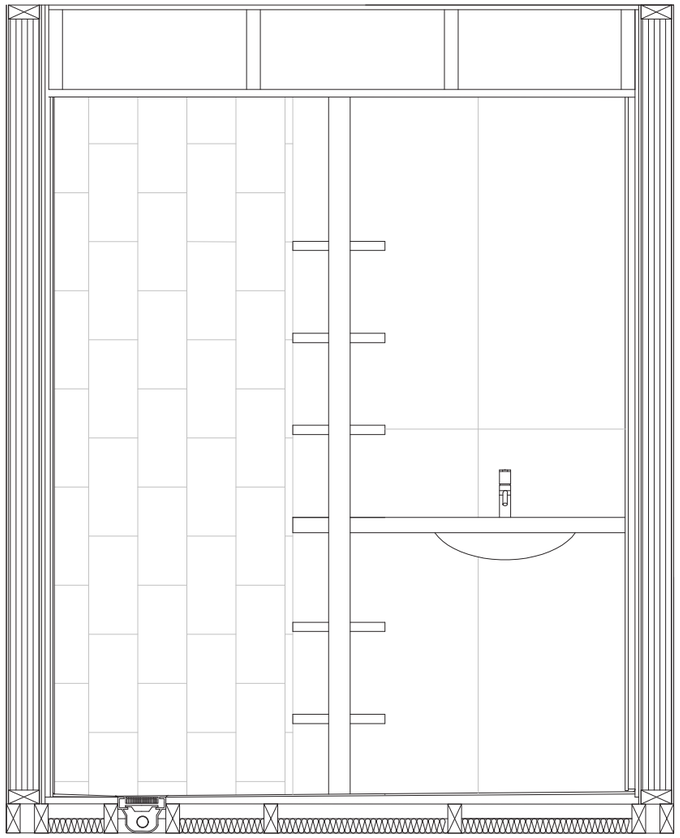
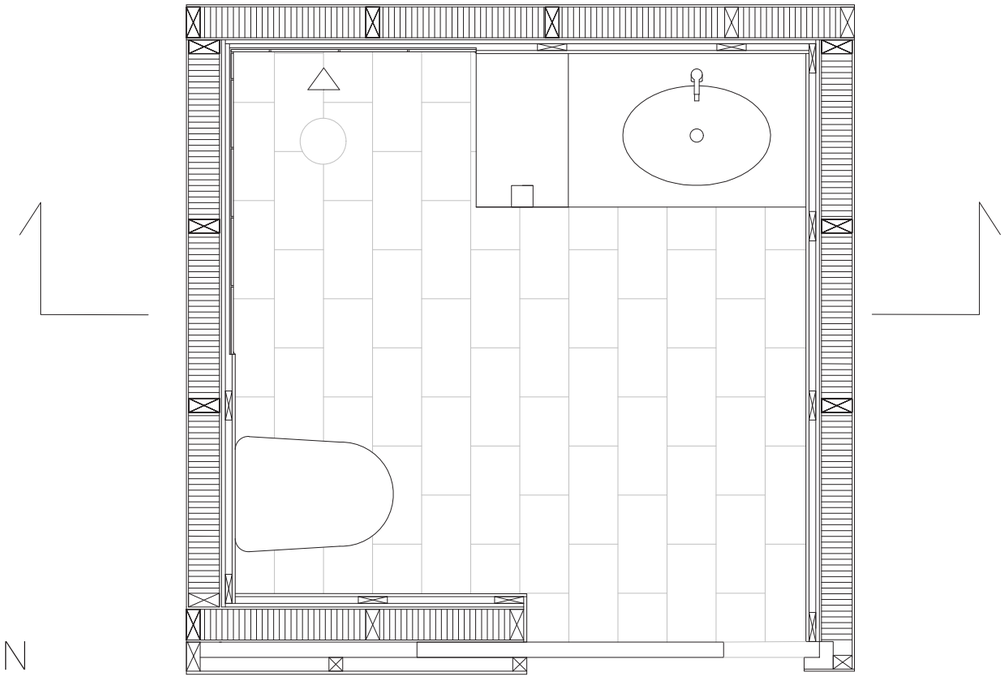
SECTION



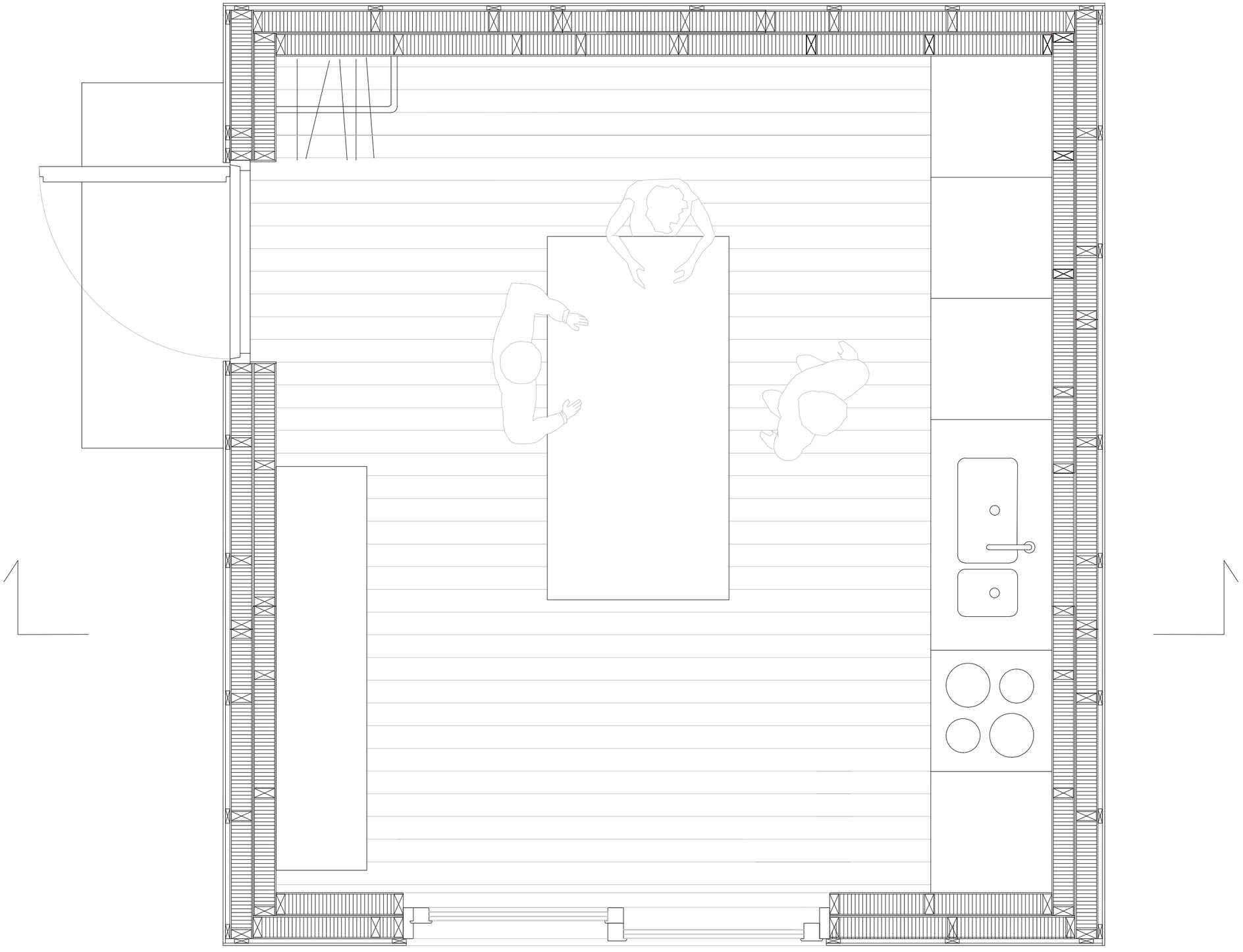


PLAN

Wood Architecture Design Studio Jenny Helmer Xuanyu Diao Xuxiao Ma

the living unit

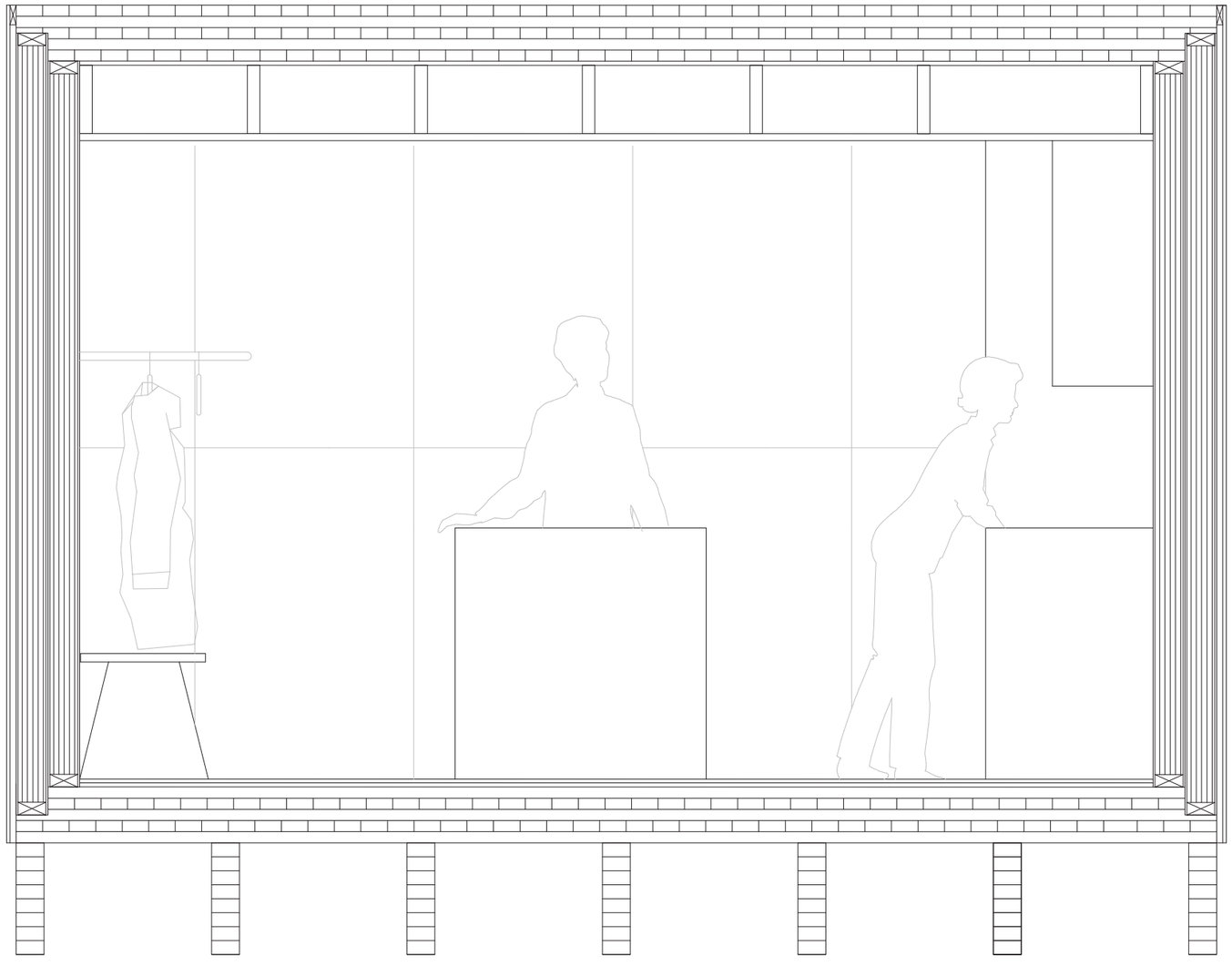
PLAN unit 3



Wood Architecture Design Studio Jenny Helmer Xuanyu Diao Xuxiao Ma

the living unit

SECTION unit 3



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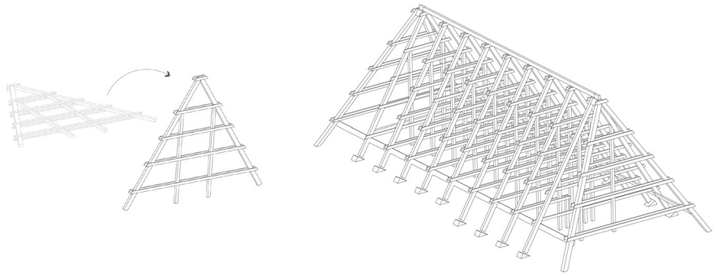
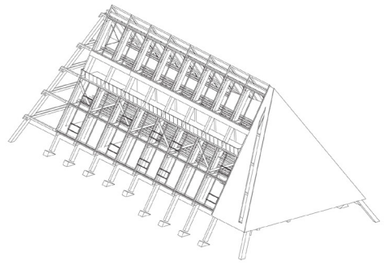
phases of building and rebuilding the building

PHASE 1



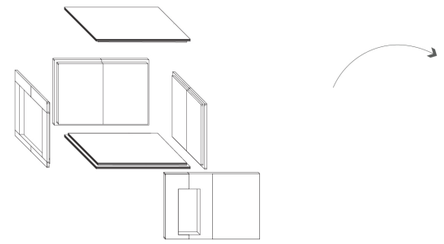
A-frames are built and joined.
The core structure is built.

PHASE 2



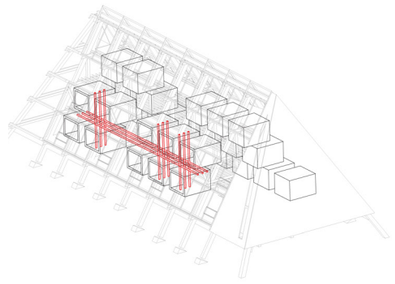
Flooring on the different levels are placed.
Cladding and glass struction are placed.

PHASE 3



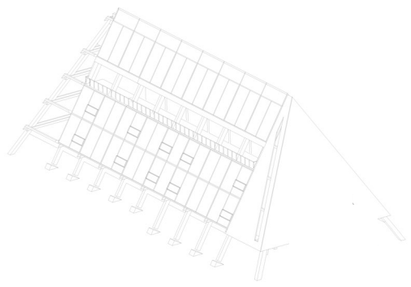
Unit components are prefabricated and transported to the site and into the building.

PHASE 4



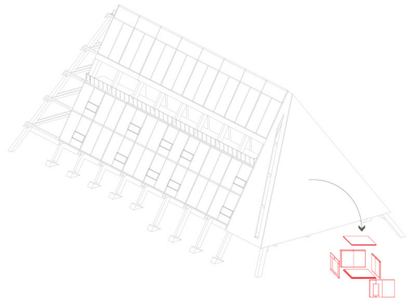
The units are put together inside the building in protection of the glass structure. Plumbing and electricity are installed.

PHASE 5



Finishing the indoor structures like doors and railings.

PHASE 6



Units can be dissasembled and moved to