

BETWEEN NATURE AND CULTURE  
*a garden*

*“La naturaleza es una mierda!”*

(Paulo Mendes da Rocha)



*“The role of the architect is to intervene on nature, modifying it for the needs of human life. Nature tells us: please change me, I did not make this landscape for you, I did it for me, and if you want your own landscape you have to modify me, but if you want to change me you must always be against me”*

(Luigi Snozzi)



1. FORESTS

*origins of a conflict*

2. ANTHROPOCENE

*landscapes of exploitment | site*

3. BETWEEN NATURE AND CULTURE

*nature | culture | project*

1. FORESTS  
*origins of a conflict*



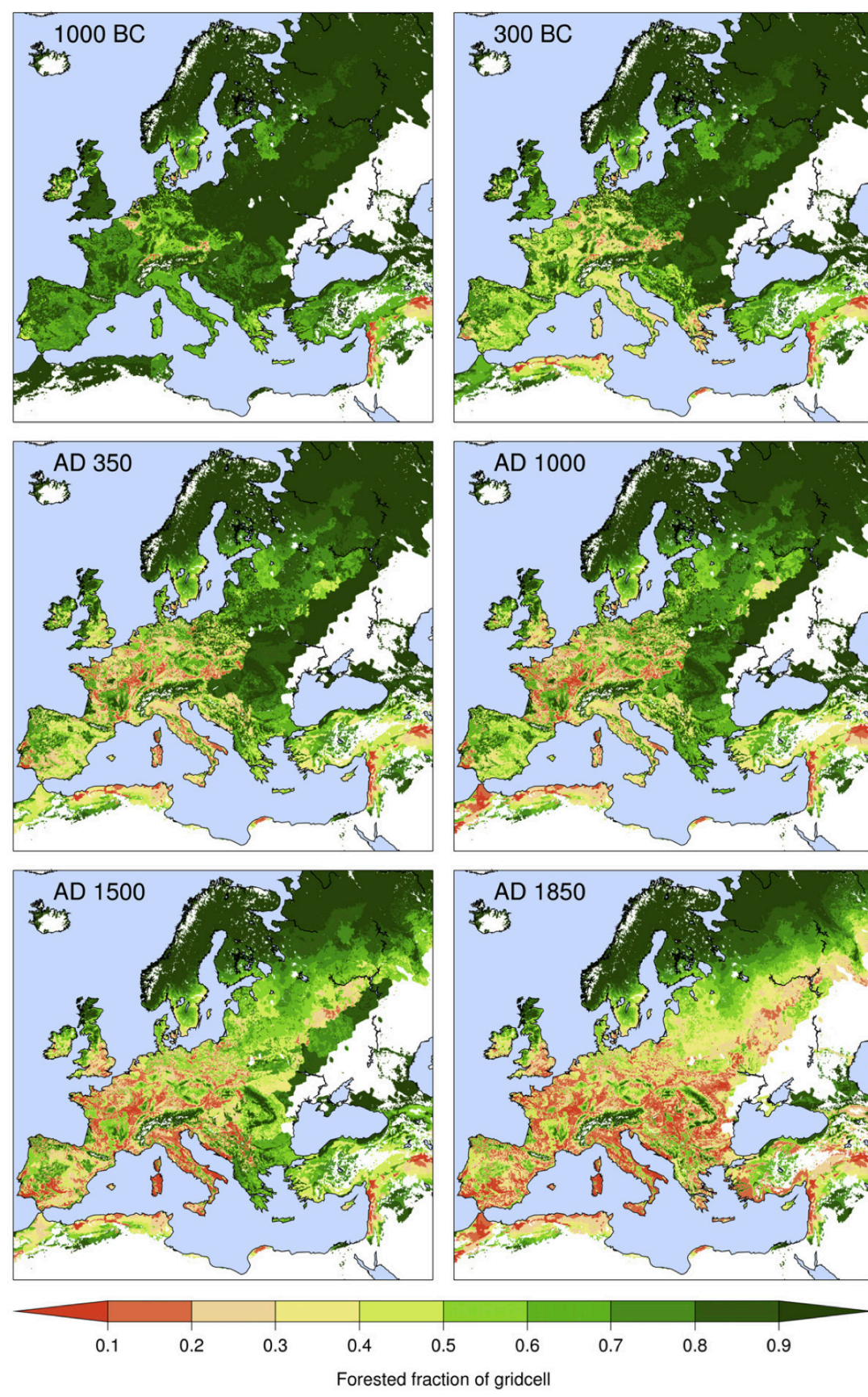












2. ANTHROPOCENE  
*landscapes of exploitment | site*

*”The end of the world has already occurred. We can be uncannily precise about the date on which the world ended. [...] It was April 1784, when James Watt patented the steam engine, an act that commenced the depositing of carbon in Earth’s crust – namely, the inception of humanity as a geophysical force on a planetary scale.”*

(Timothy Morton, *Hyperobjects: Philosophy and Ecology after the End of the World*, 2013)













2. ANTHROPOCENE  
*landscape of exploitment | site*

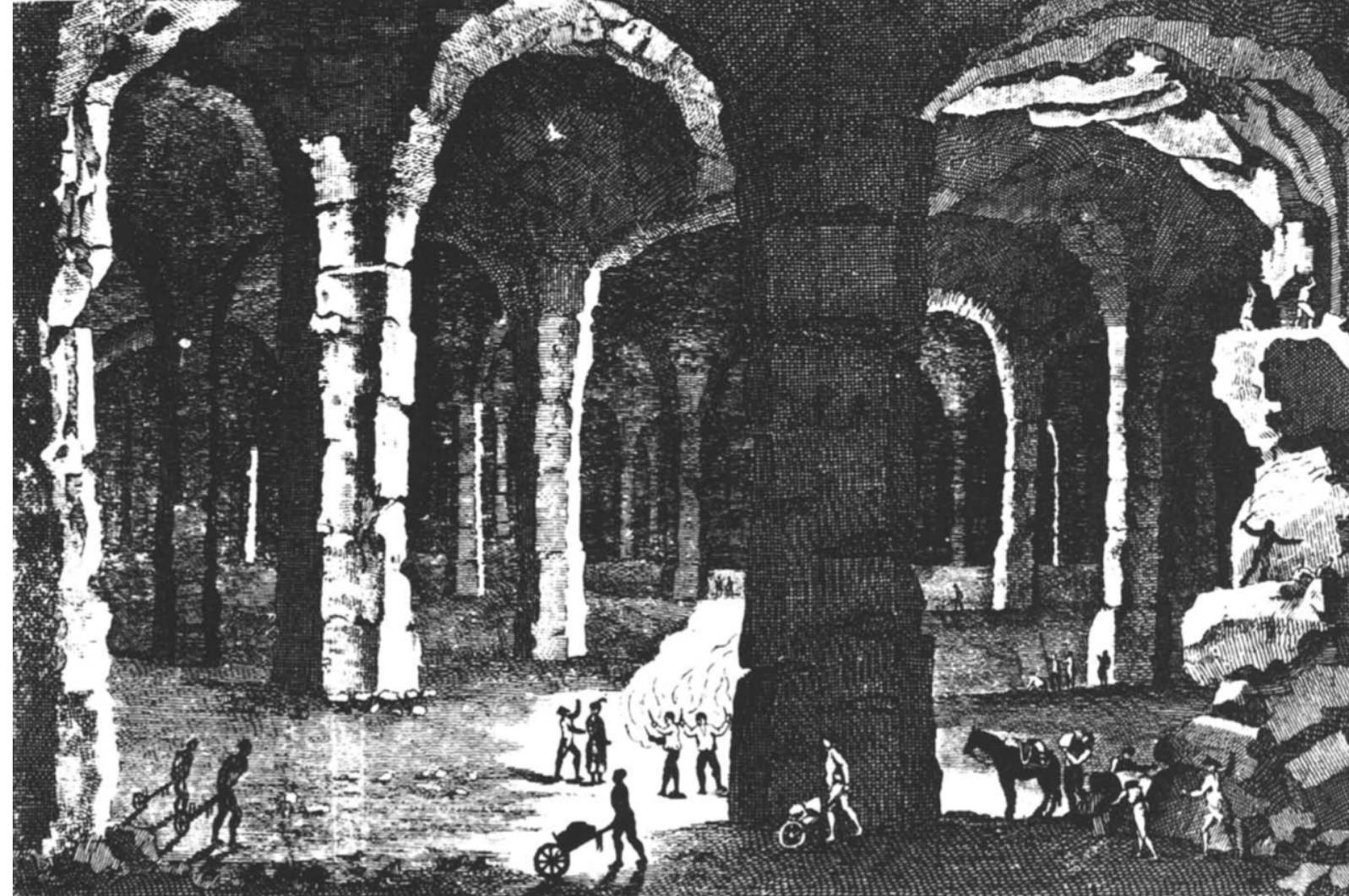












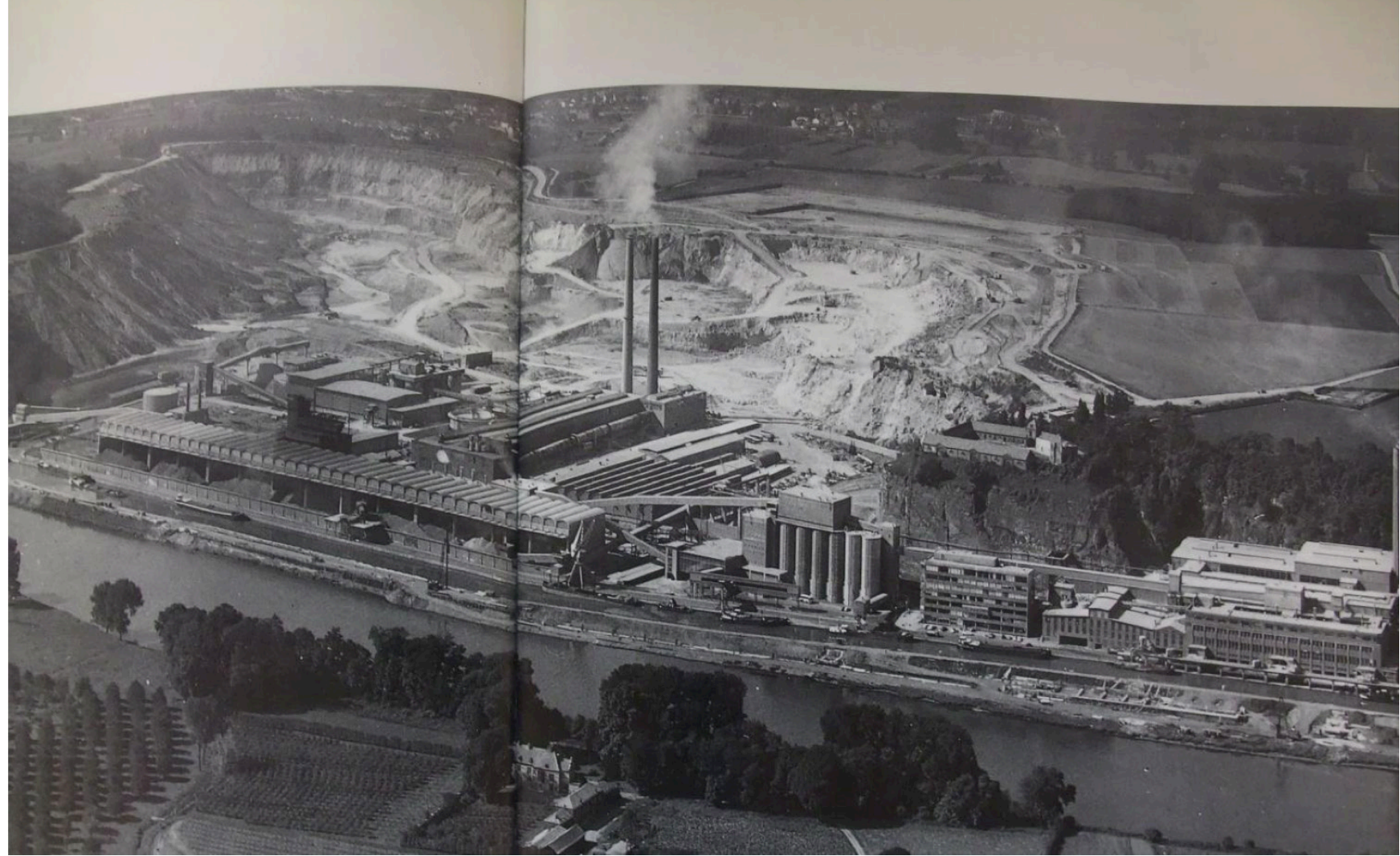
Foujas de Saint Fond  
*Sint Pietersberg Groves*





















3. BETWEEN NATURE AND CULTURE  
*nature | culture | project*



Sint Pietersberg  
*scale 1:25000*





Sint Pietersberg  
scale 1:10000





Sint Pietersberg  
scale 1:10000





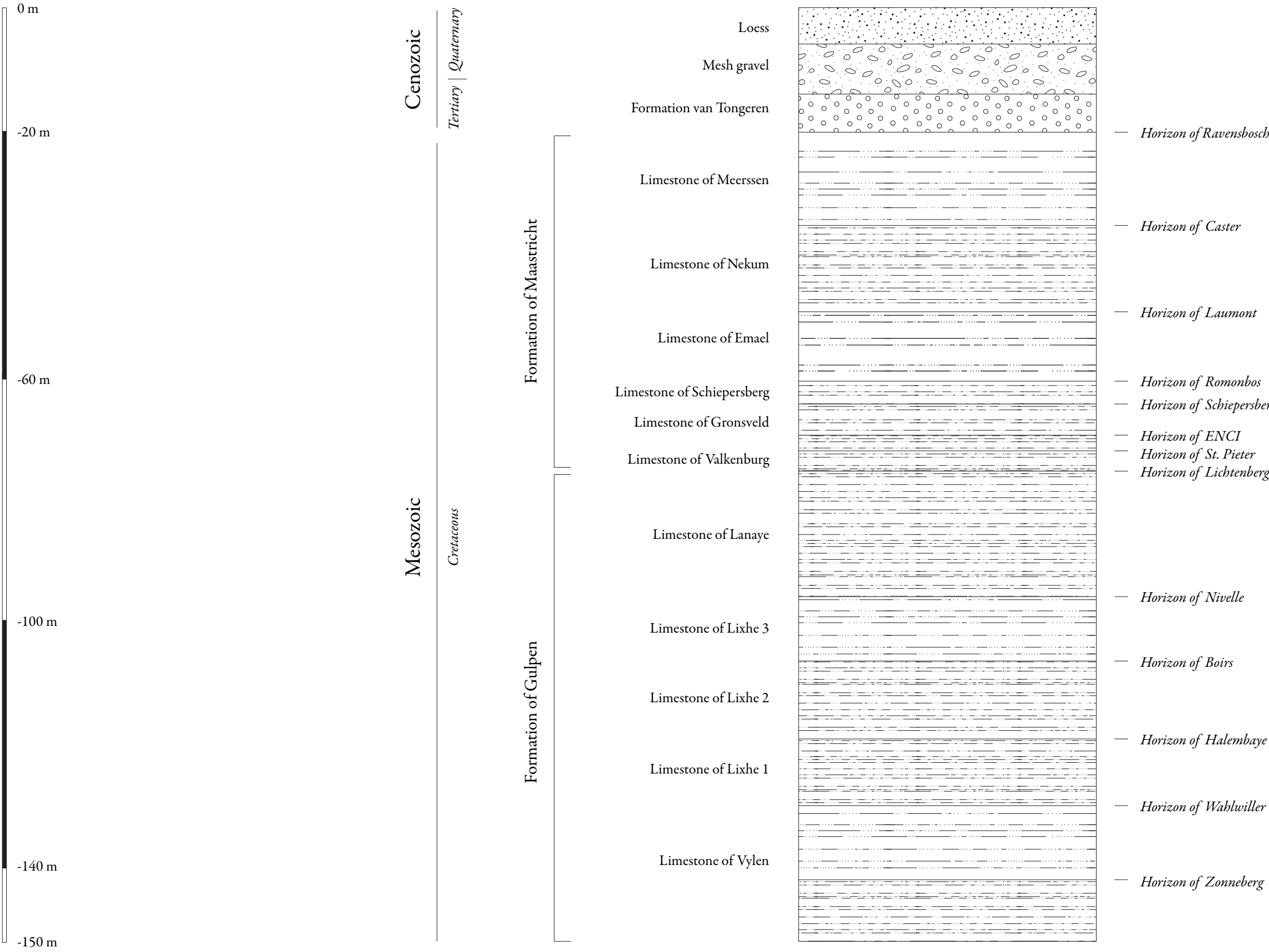
Sint Pietersberg  
scale 1:10000

3. BETWEEN NATURE AND CULTURE  
*nature | culture | project*

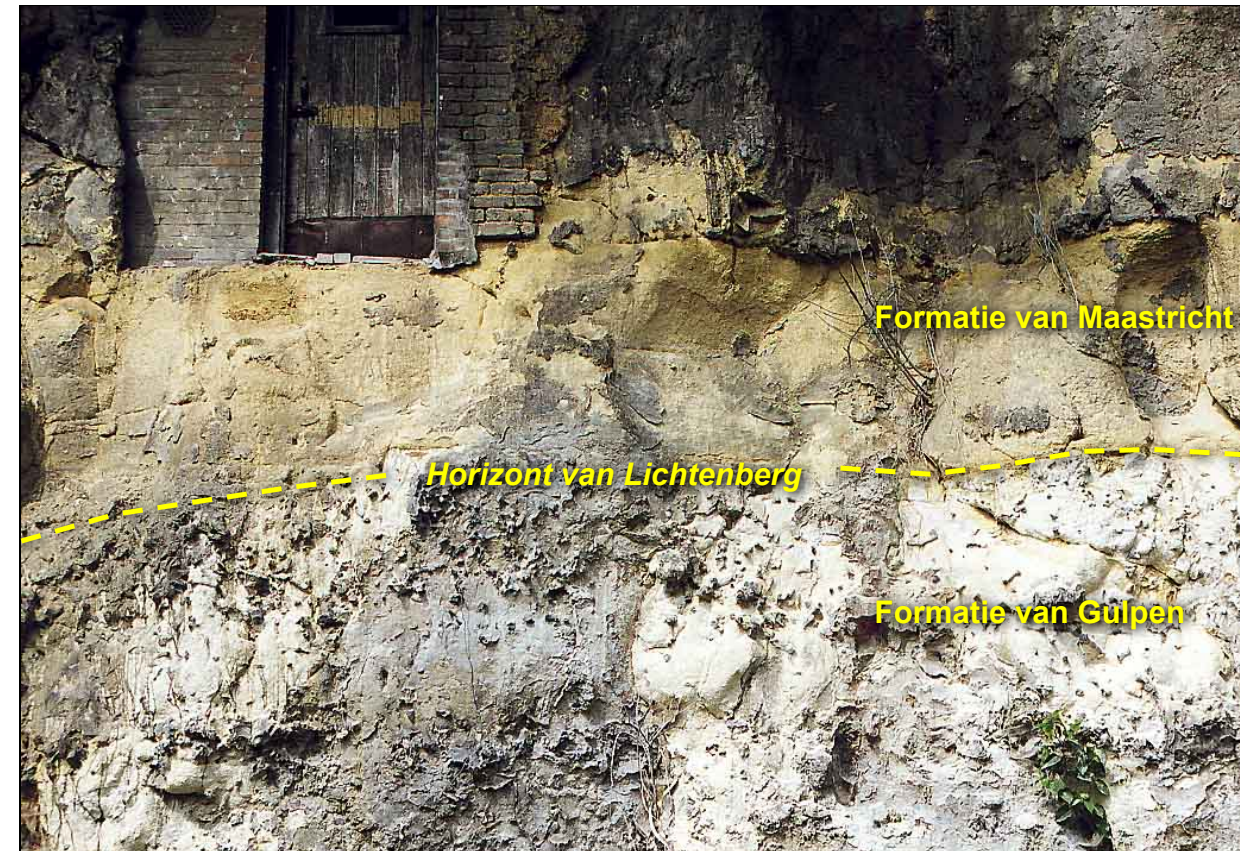












*central quarry | photographs*













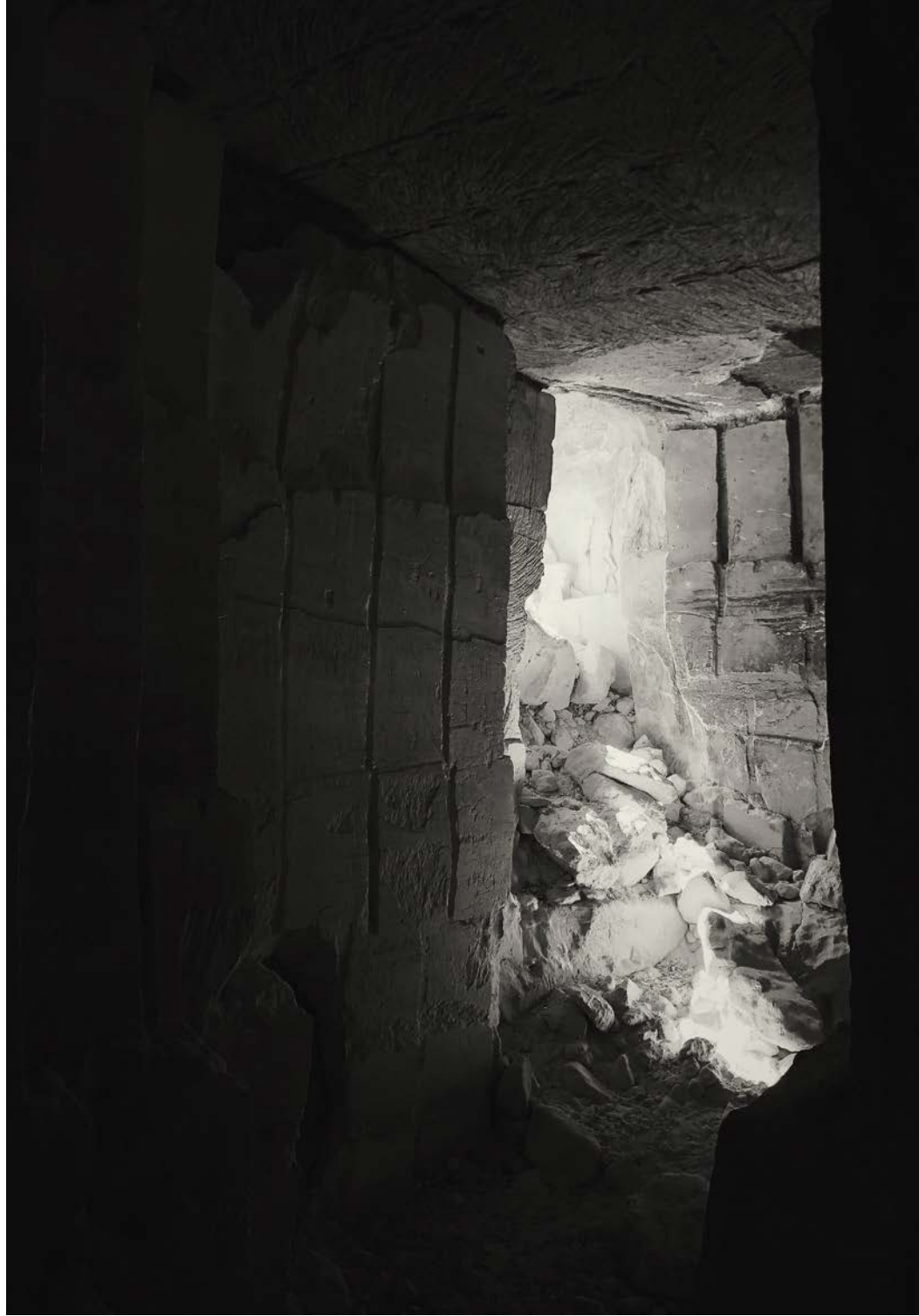


















*central quarry | a scale study*







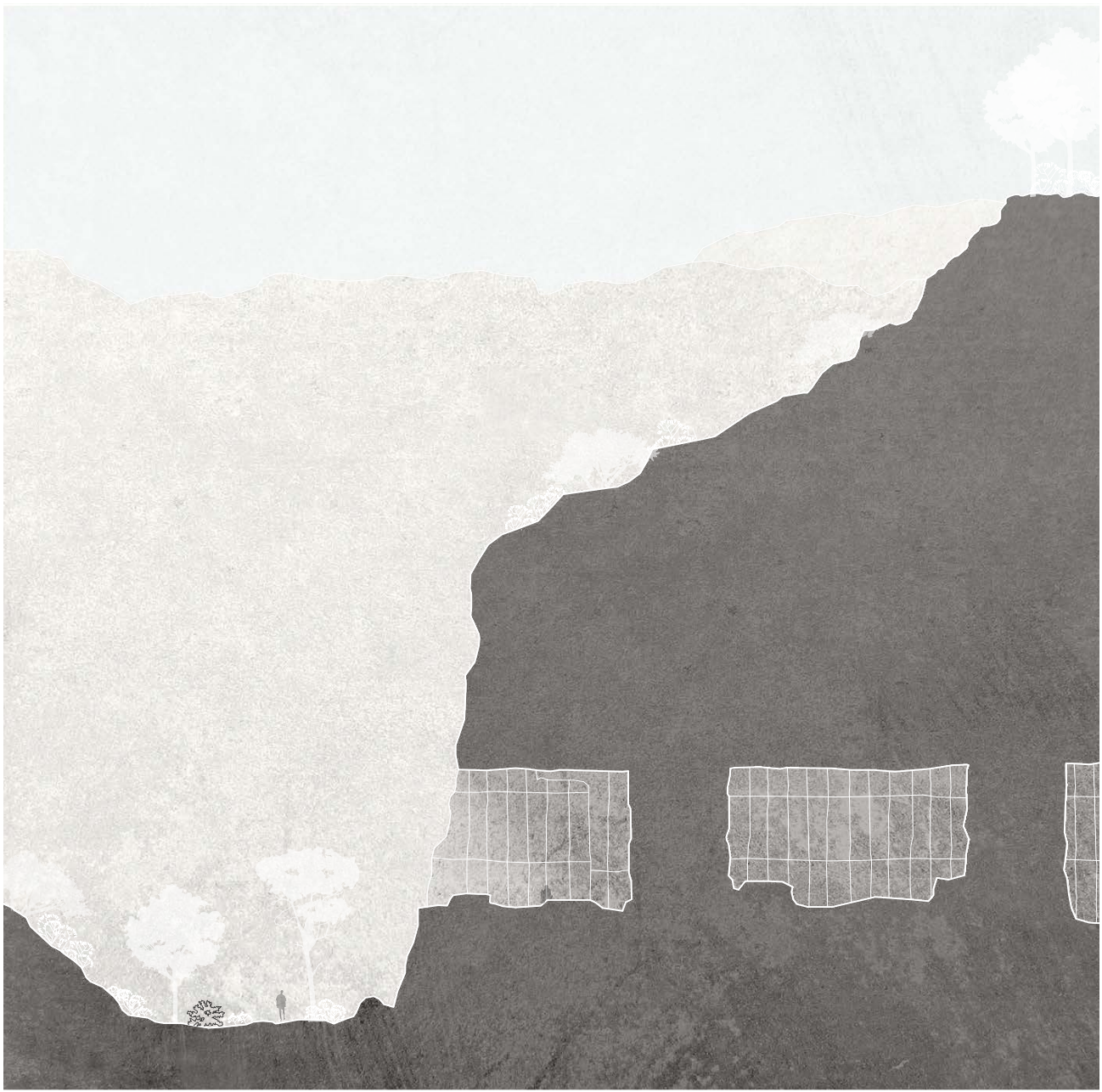




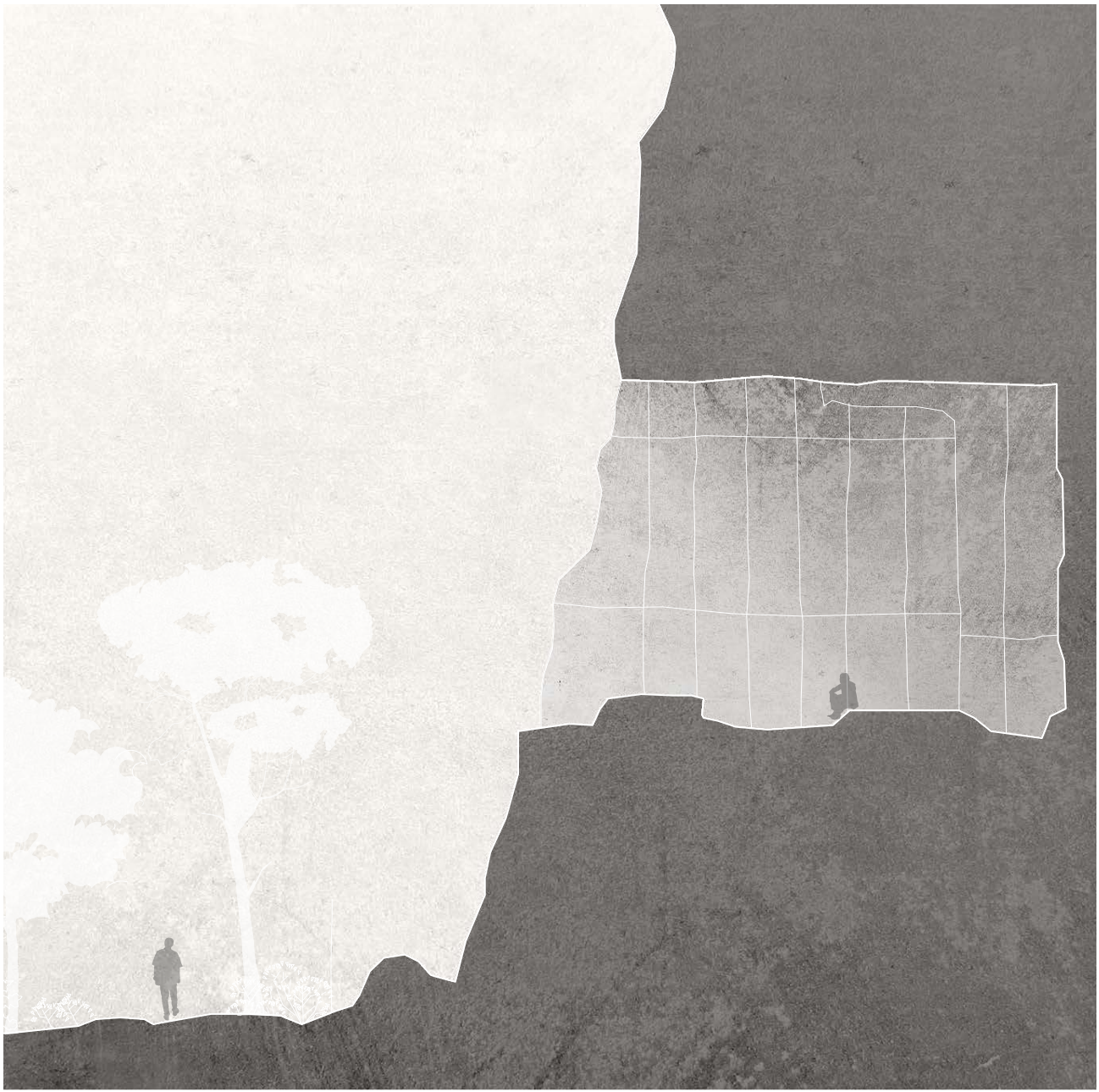










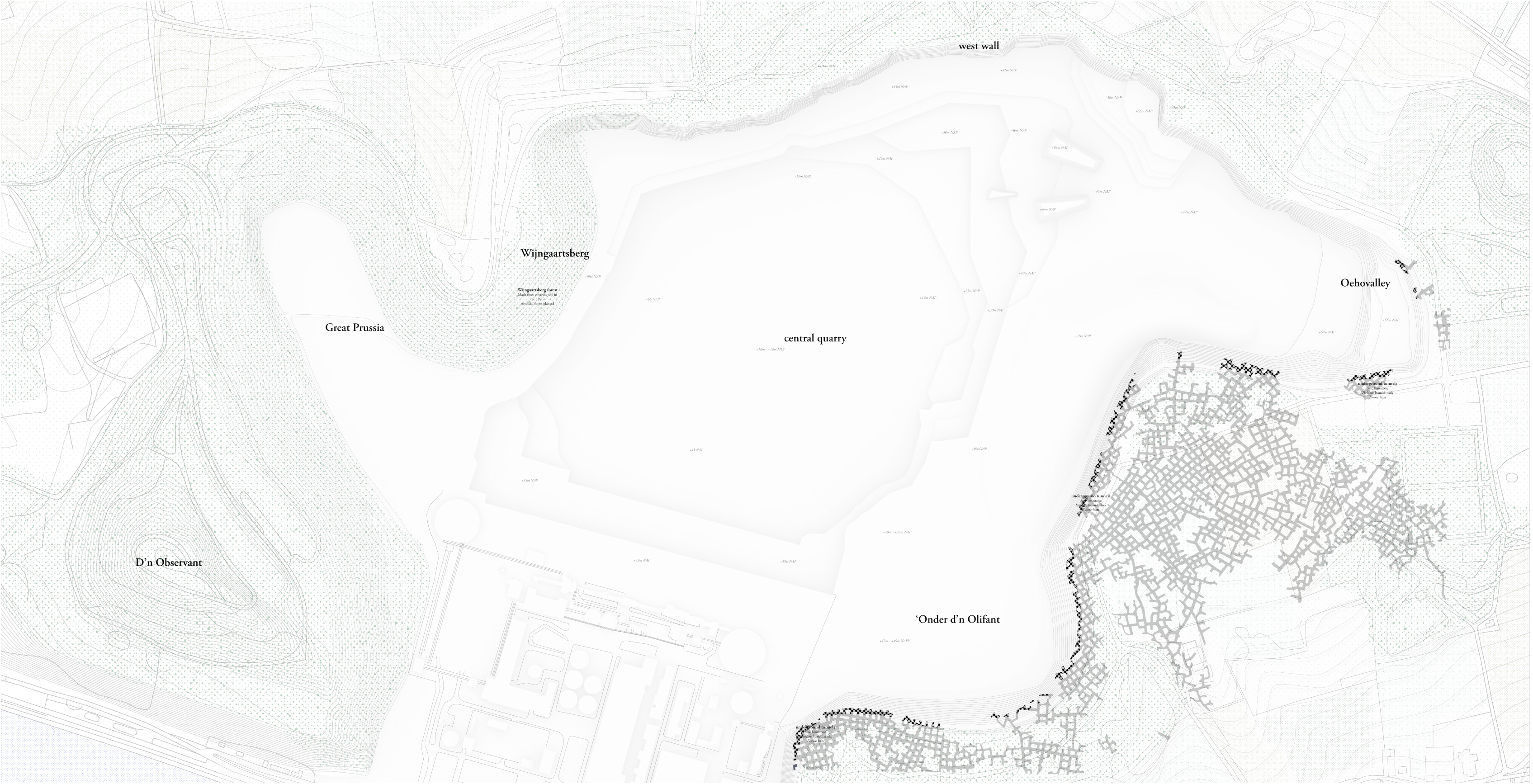


*central quarry | habitats mapping*











Habitat 1  
*Underground Tunnels*

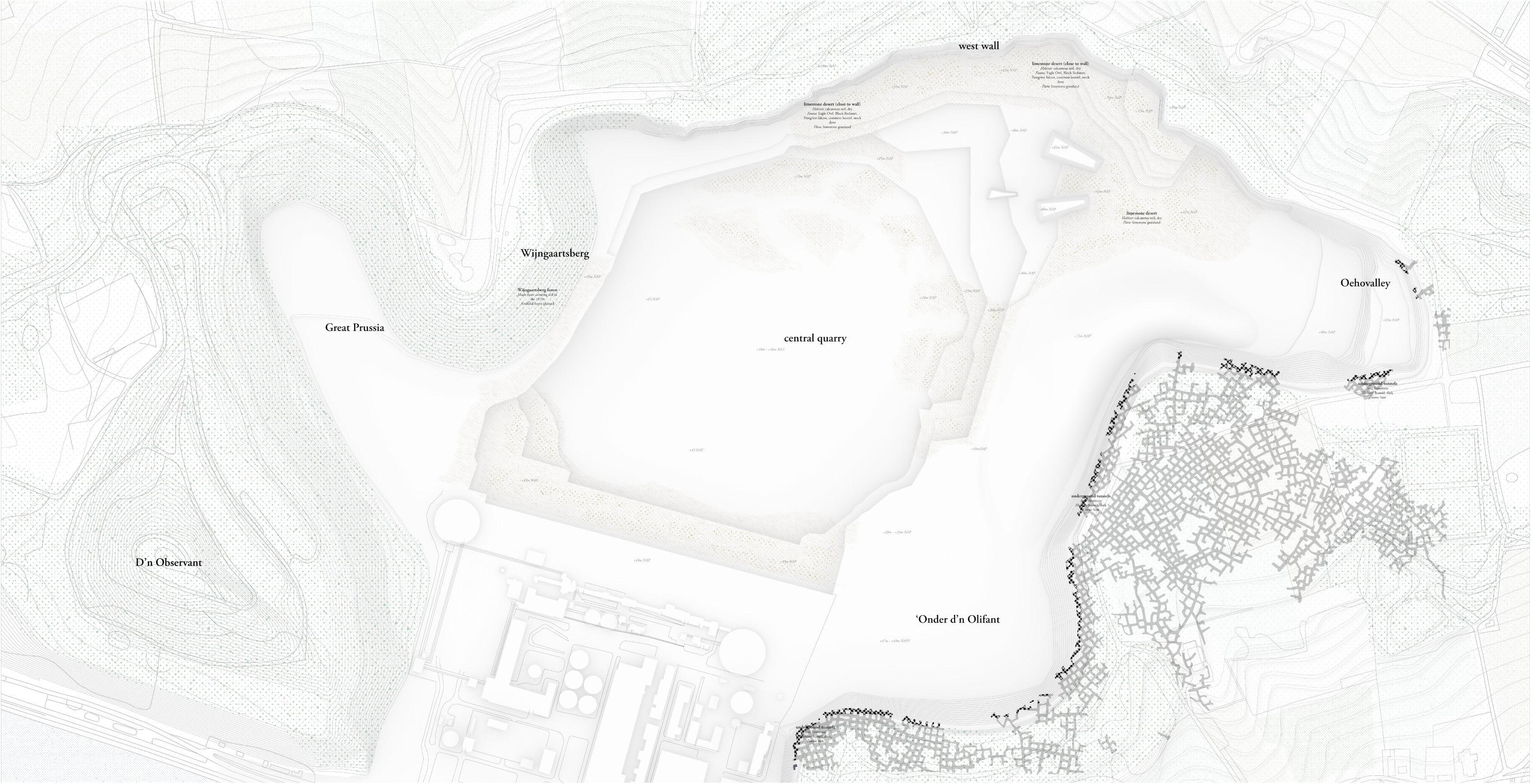
*Soil:* Limestone  
*Light Condition:* Dark  
*Humidity:* 98%  
*Temperature:* 14 °C



Fauna

*Bat*







Habitat 2  
*Limestone Desert*

*Soil:* Limestone  
*Light Condition:* Bright  
*Humidity:* Low  
*Temperature:* variable

Fauna



*Egle  
Owl*



*Black  
Redstart*

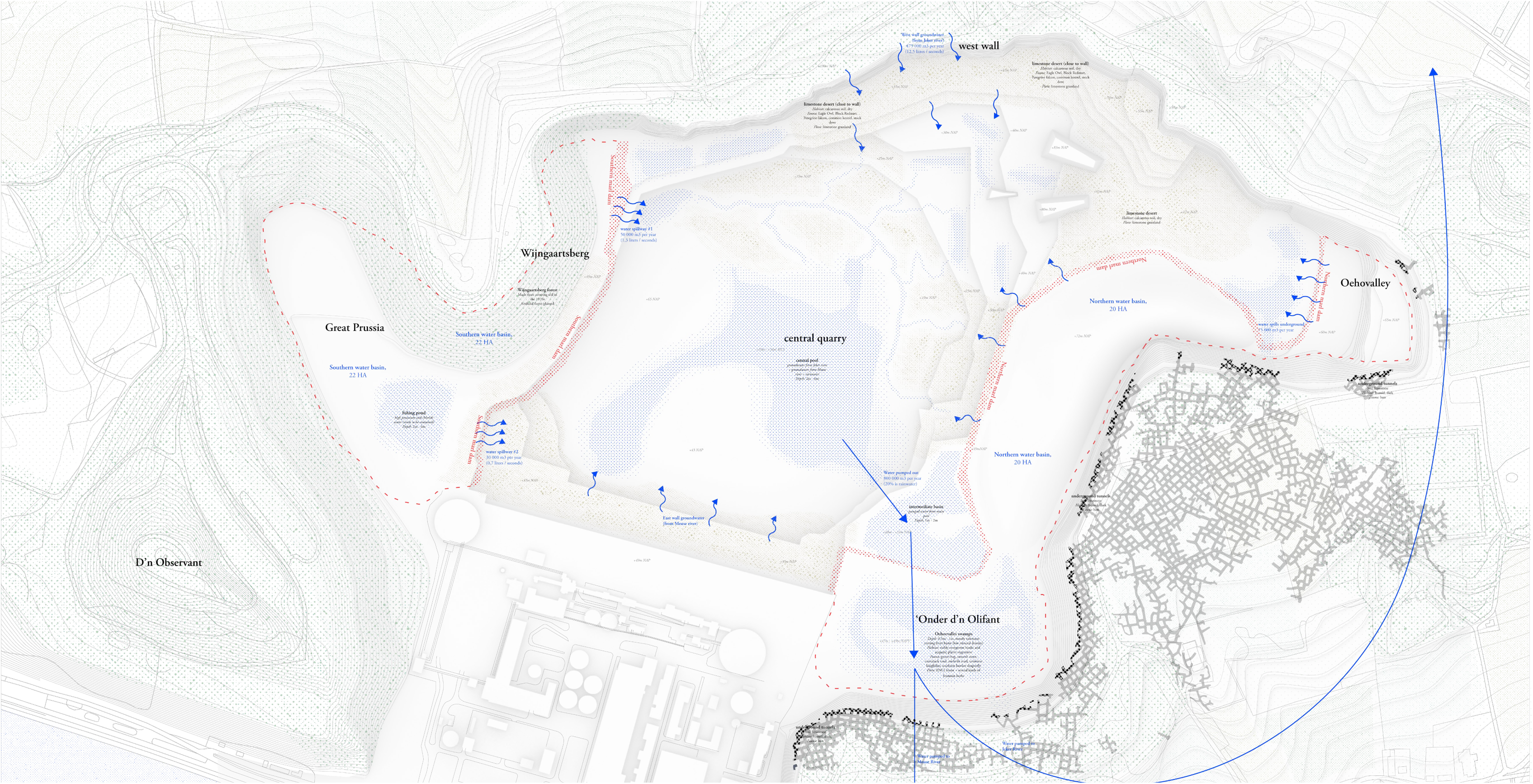


*Peregrine  
Falcon*

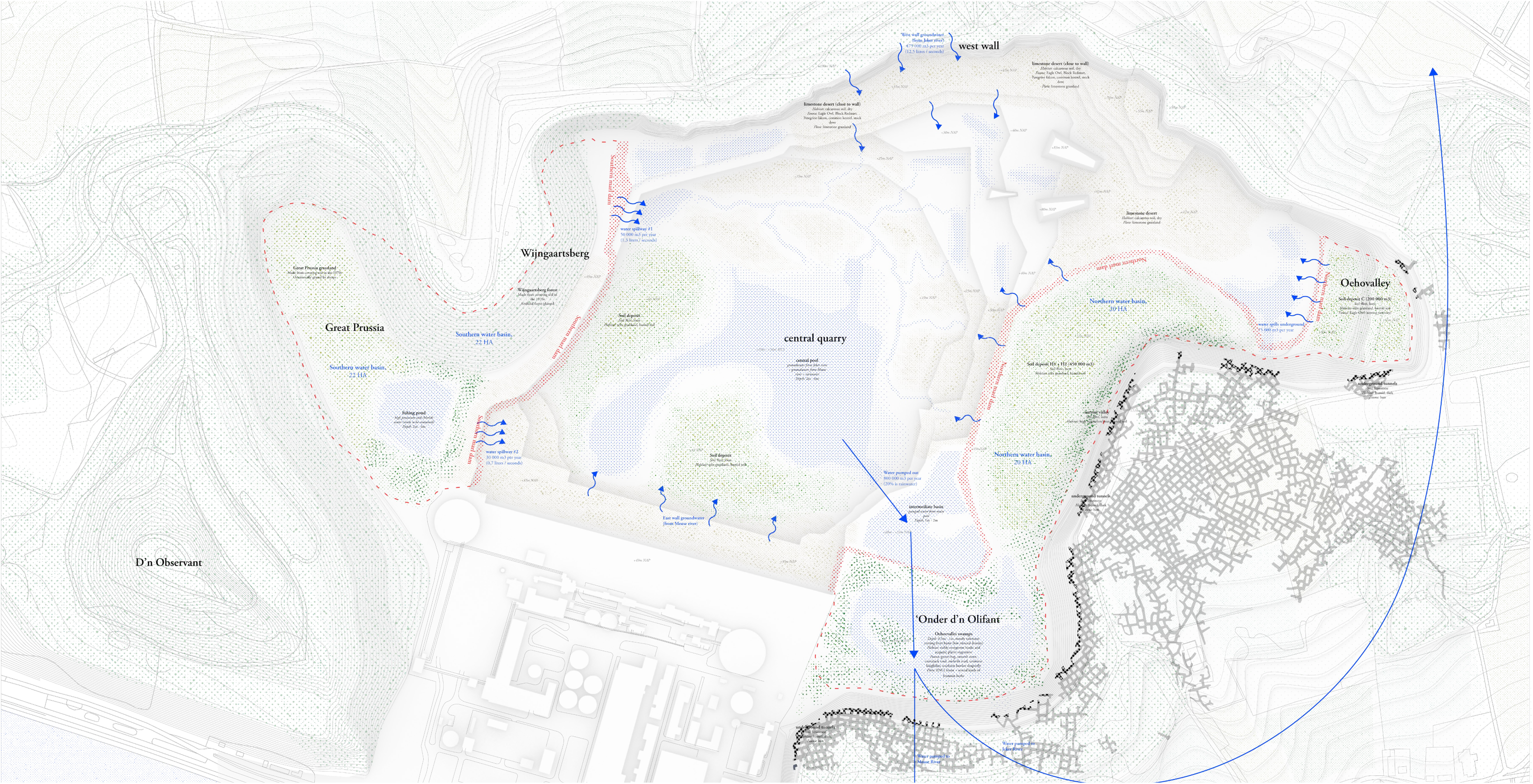


*Common  
Kestrel*







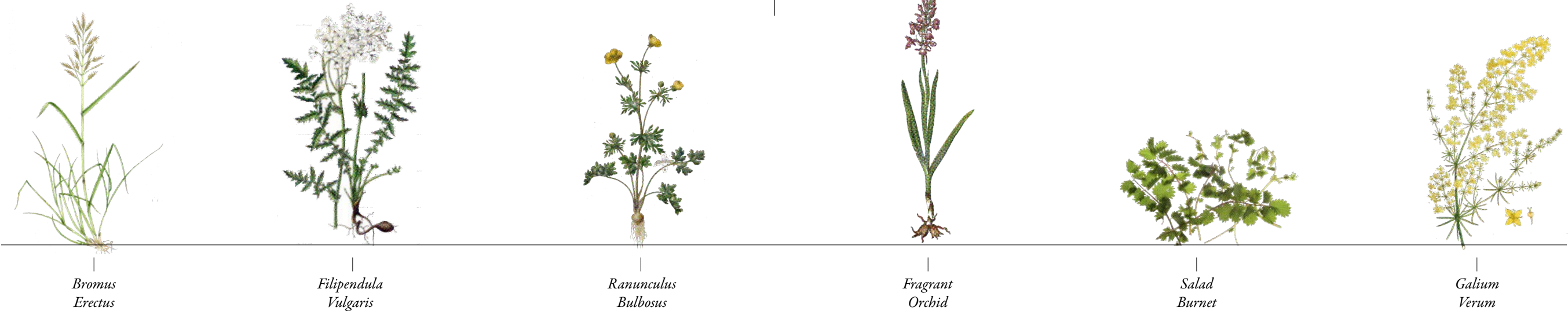




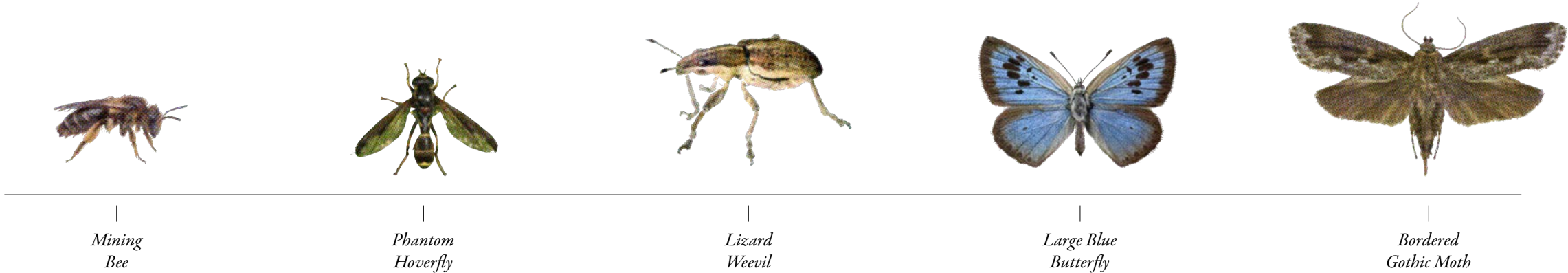
Habitat 3  
*Silex Grassland*

*Soil:* Silex  
*Light Condition:* Bright  
*Humidity:* Humid soil  
*Temperature:* variable

Flora



Fauna





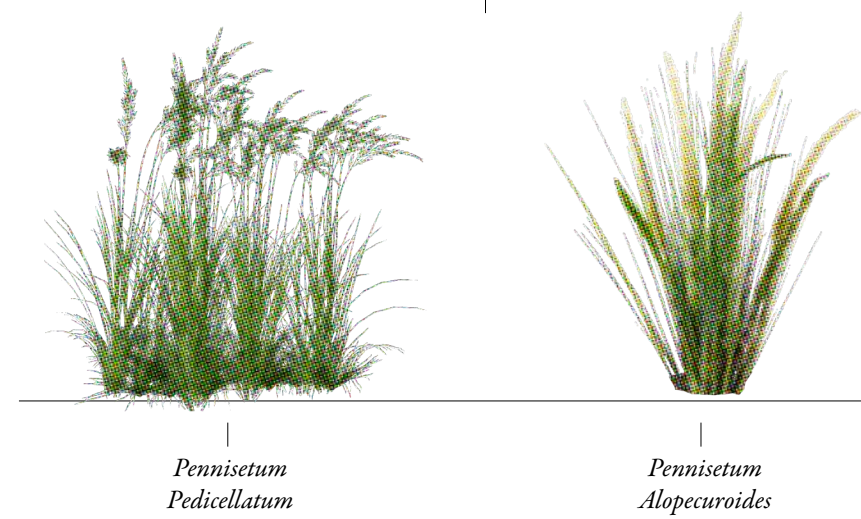




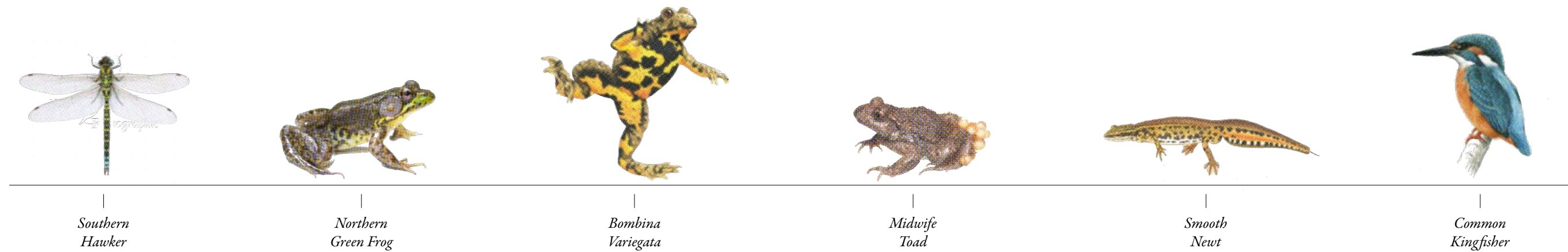
Habitat 4  
*Limestone Swamps*

*Soil:* Limestone  
*Light Condition:* Bright  
*Humidity:* Wet (groundwater, 0,5 - 1m depth)  
*Temperature:* variable

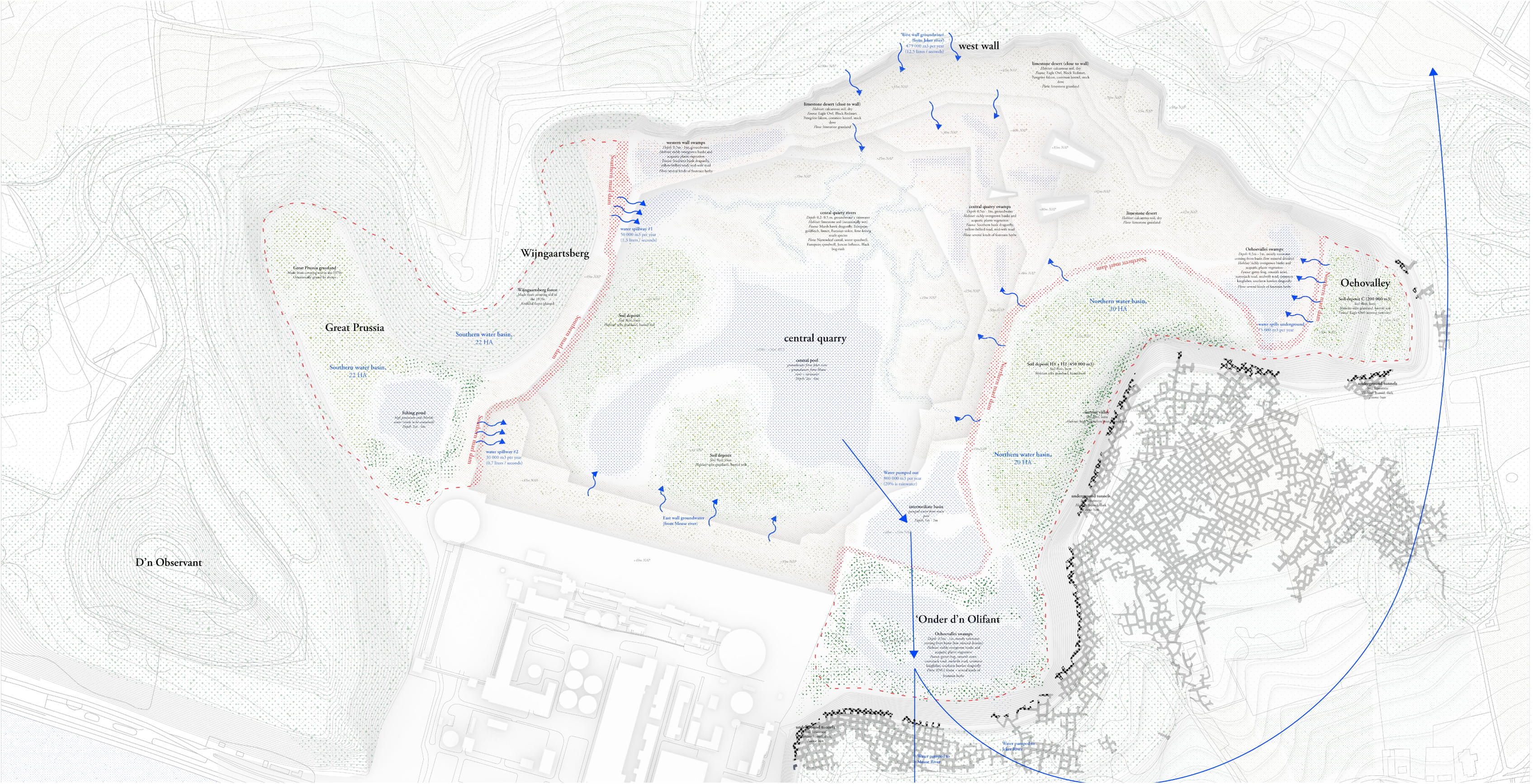
Flora



Fauna













Habitat 4  
*Central Quarry Rivers*

*Soil:* Limestone  
*Light Condition:* Bright  
*Humidity:* Wet (rainwater, groundwater, 0,5m depth)  
*Temperature:* variable

Flora






*Narrowleaf  
Cattail*

*Water  
Speedwell*

*Juncus  
Inflexus*

*Black Bog  
Rush*

Fauna



*Southern  
Hawker*

*European  
Goldfinch*

*Eurasian  
Siskin*



*central quarry | conclusions*



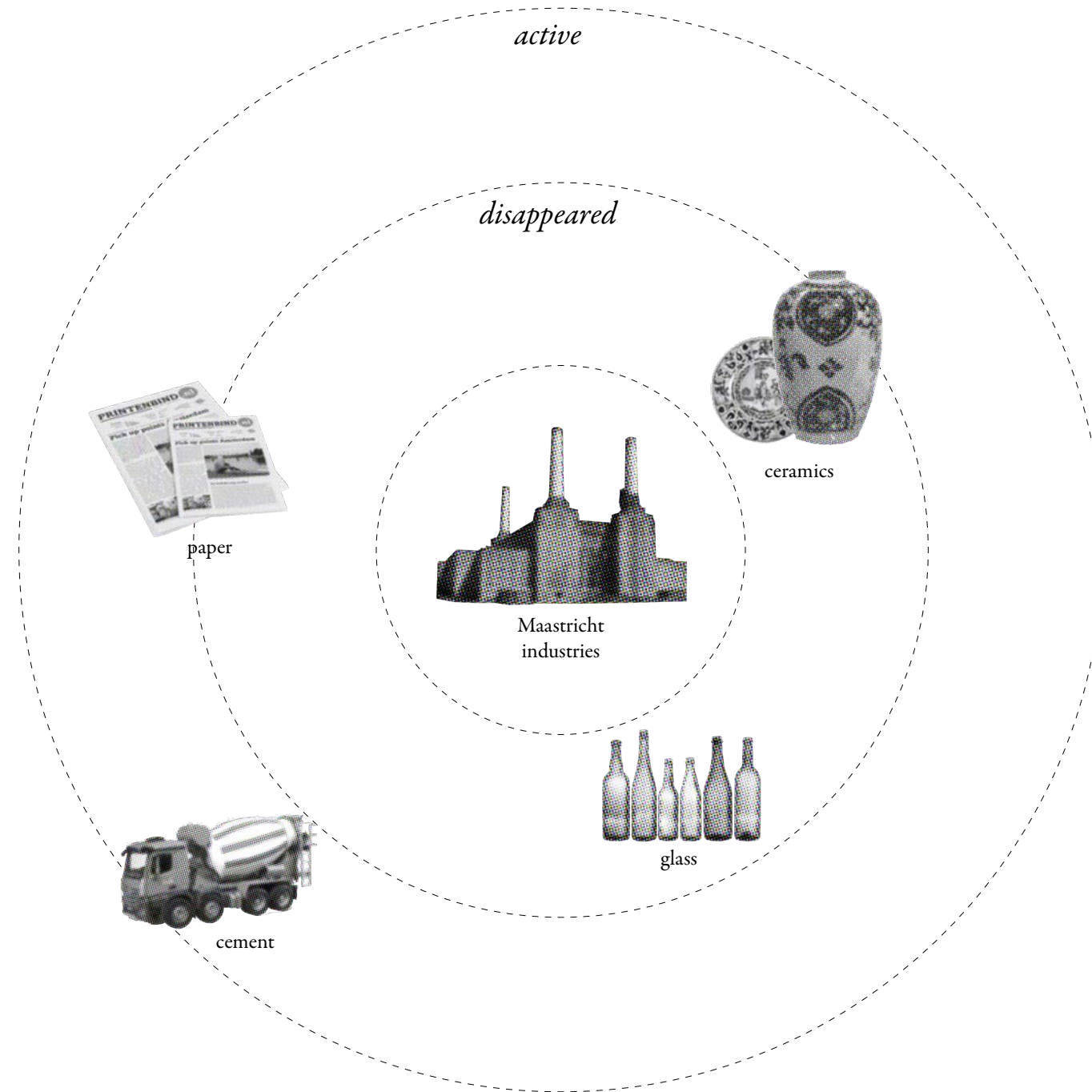




3. BETWEEN NATURE AND CULTURE  
*nature | culture | project*











## Fifty employees on the street due to closure of ENCI Maastricht, the union still knows nothing about it

EDITORIAL OFFICE \* DECEMBER 9, 2019

NEWS

### Obligations

Fifty employees work at ENCI Maastricht. Collective redundancies are requested for them. ENCI indicates that it fulfills all its obligations set out in the Plan of Transformation of the ENCI area. What will happen to the building is still unclear.

NOS NEWS · REGIONAL NEWS · 09-12-2019, 16:50

## After 94 years, curtain falls for the ENCI cement factory in Maastricht



The cement factory in Maastricht 1 LIMBURG

Cement factory ENCI in Maastricht will close at the end of June 2020. The director of parent company HeidelbergCement announced this to the staff this afternoon. [The factory's 50 employees are losing their jobs.](#)

There are two more ENCI factories in the Netherlands; in IJmuiden and Rotterdam. They will remain open. The Maastricht office was established in 1926. About 900,000 tons of cement are produced annually.

weighing in the decision to only limited storage high.

element for cement, since year. As a result, the ect. That was a handicap ot sail across the Maas to

In the summer of 2018, the first rumors about the factory being shut down started. Then ENCI stopped extracting marl at the site in Maastricht.

Share this article: [Twitter](#) [Facebook](#) [E-mail](#) [WhatsApp](#)

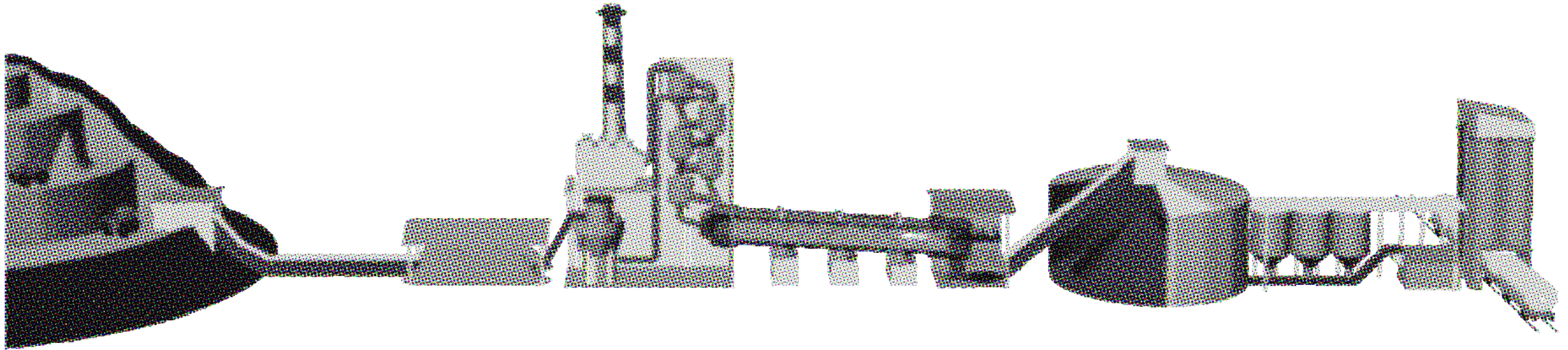
This is an article by  
**1limburg**











#### 1. Quarry

Limestone is the basic raw material for the manufacture of cement. Limestone is mined in the quarry and transported to the crusher by dumpers.

#### 3. Homogenization

Marl is fed to a first homogenization zone via a conveyor belt. It is then premixed to a homogeneous quality.

#### 5. Preheating

The flour is fed to the preheating tower, which consists of cyclones. During the fall, the flour absorbs rising gas calories and reaches a temperature of 800 ° C.

#### 7. Cooling

The clinker leaves the furnace in the form of granules and is sent to the air cooler causing its temperature to drop to approximately 150 ° C. This sudden cooling stops all transformation processes.

#### 9. Dosage

A binding regulator is added to the clinker grains. Depending on the cement type, fly ash, limestone flour and blast furnace slag are also added. The dosage of those raw materials determines the desired cement types.

#### 11. Storage cement and shipping

The cement is stored in large silos. Each silo is assigned a specific type of cement. Then, the bulk cement is shipped in carriages, trucks or ships.

#### 2. Crusher

The limestone is crushed and finely sieved in the crushing plant and transported to the clinker production plant via a conveyor belt.

#### 4. Grinding and drying

Clinker is obtained by drying, mixing and grinding four mineral components (calcium, aluminum, silicon, and iron oxide). This creates a homogeneous flour.

#### 6. Heating

The mixture then enters an inclined rotary kiln, which is heated by a flame at a temperature of approximately 1800 ° C. Here clinker formation takes place at a temperature of 1350 ° C.

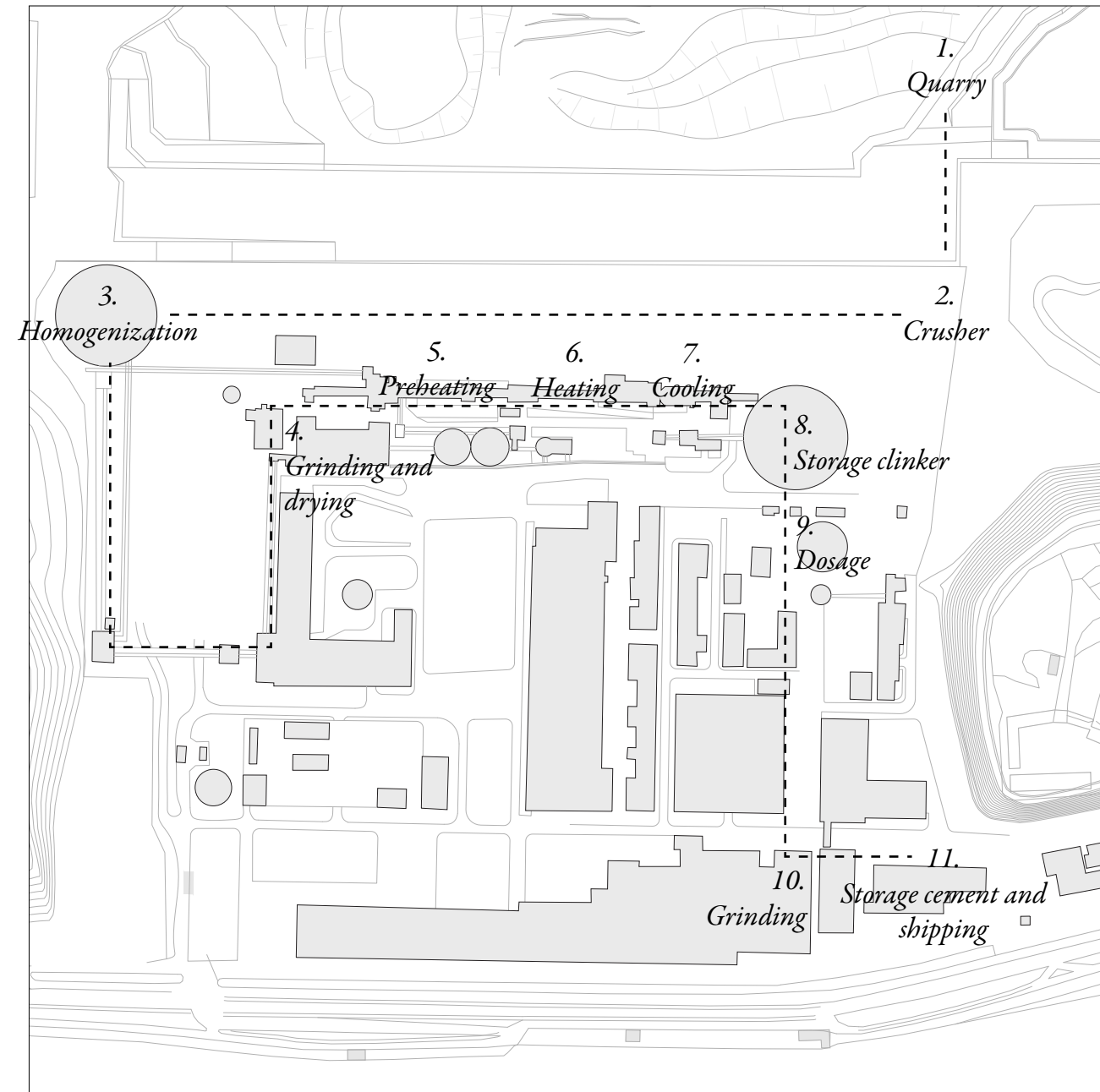
#### 8. Storage clinker

The clinker is stored in silos.

#### 10. Grinding

After dosing, the elements are placed in a grinding installation where they are ground to powder. The grains are separated according to their fineness in a separator. Grains that are too coarse are returned to the mill. The fineness of the cement determines its properties.





Plan  
Current Cement Production

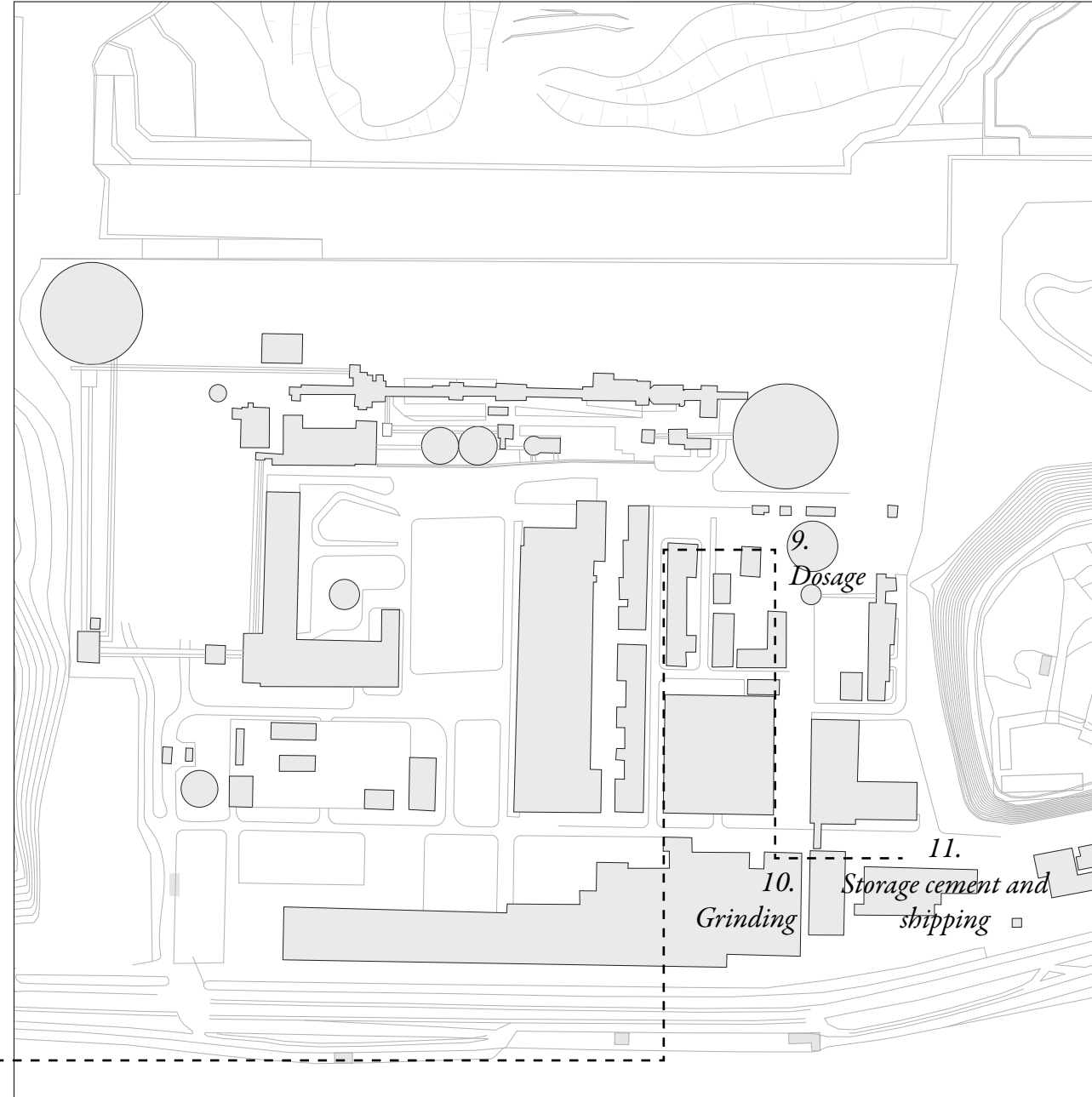
*cement production*



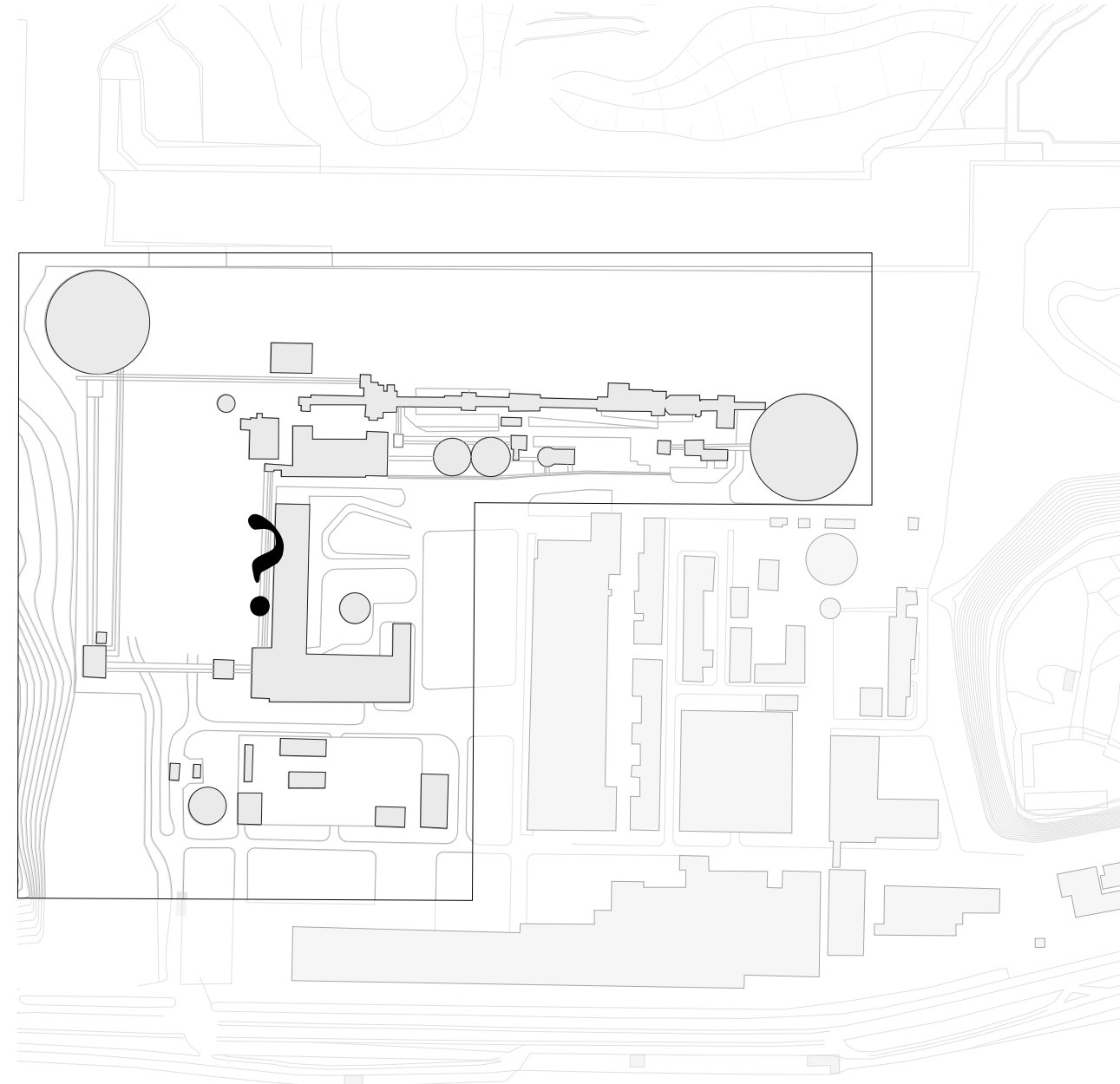
*Research &  
Development  
pole on material  
culture*



- 1. Quarry
- 2. Crusher
- 3. Homogenization
- 4. Grinding and drying
- 5. Preheating
- 6. Heating
- 7. Cooling
- 8. Storage clinker
- Belgium



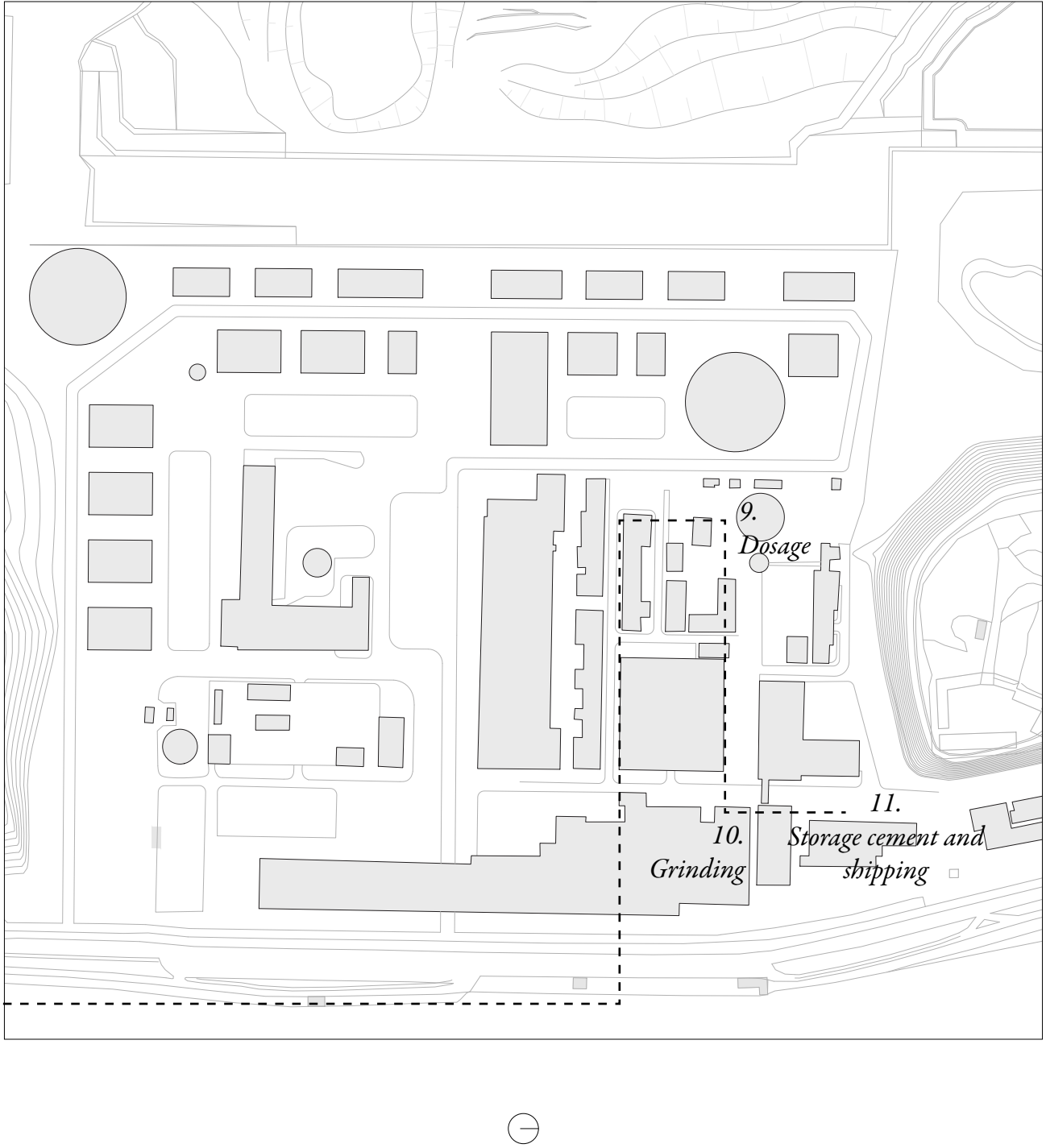
Plan  
Future Cement Production



Plan  
*Future Cement Production*



- New Functions:
- Maastricht University pole*
  - Mineral processing industries*
  - Waste Processing Activities*
  - Glass/Ceramics Companies*
  - Glass/Ceramics Companies*
  - 1. Quarry*
  - 2. Crusher*
  - 3. Homogenization*
  - 4. Grinding and drying*
  - 5. Preheating*
  - 6. Heating*
  - 7. Cooling*
  - 8. Storage clinker*
  - Belgium*



Plan  
2030 ENCI Masterplan

3. BETWEEN NATURE AND CULTURE  
*nature | culture | project*



*Sint Pietersberg*

Nature



Culture



*Sint Pietersberg*

Nature



Project

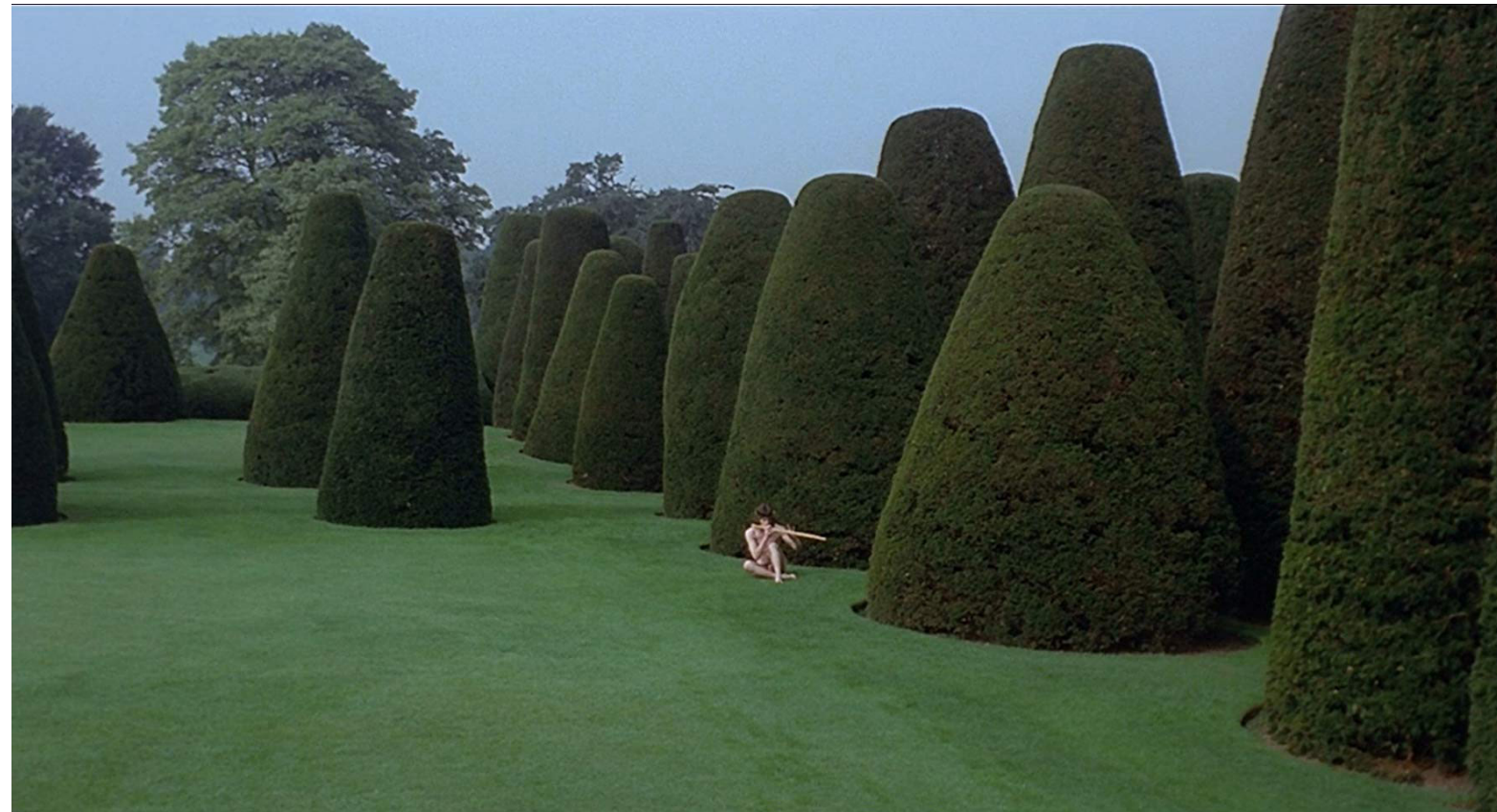


Culture





*project | garden*







*project | location*











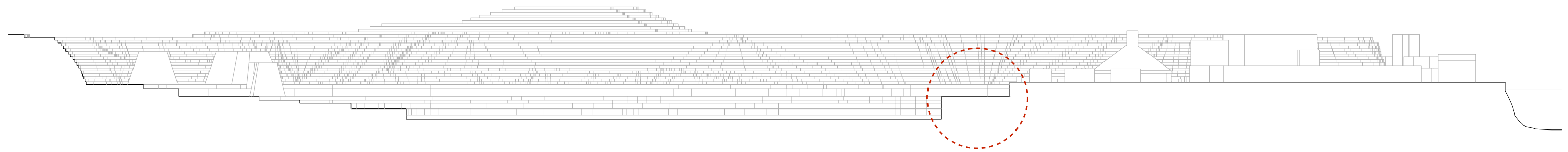








planimetry  
scale 1:5000



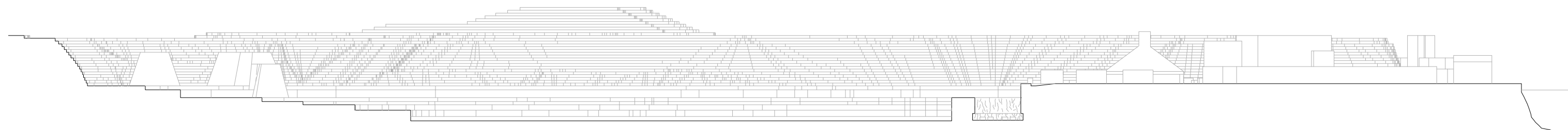


*project | design intentions*



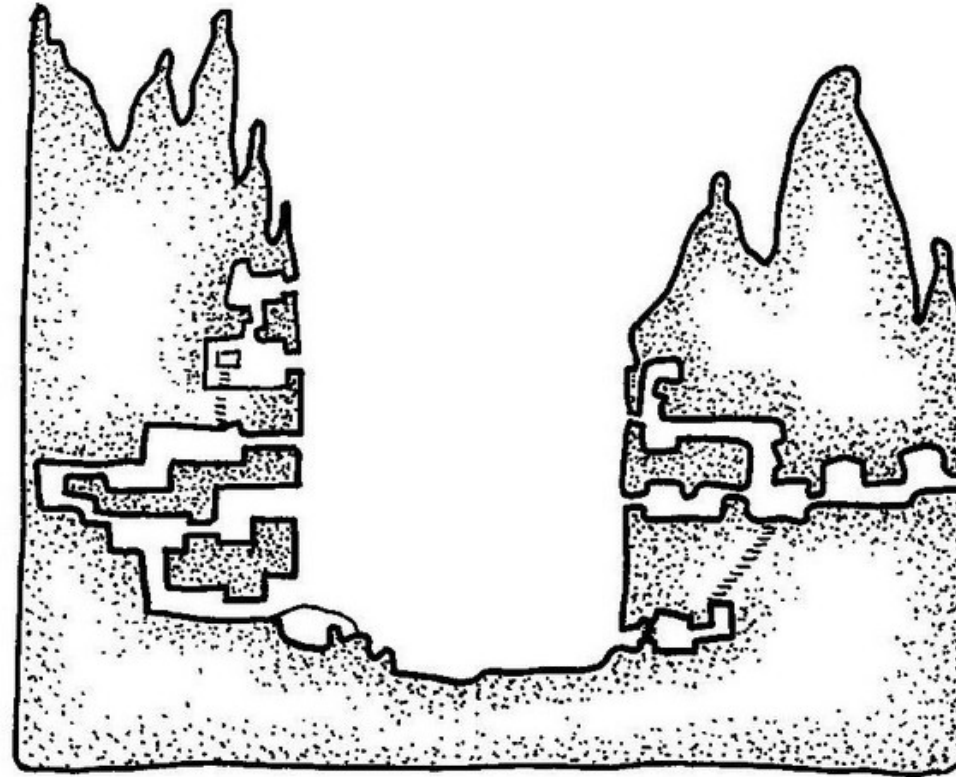
















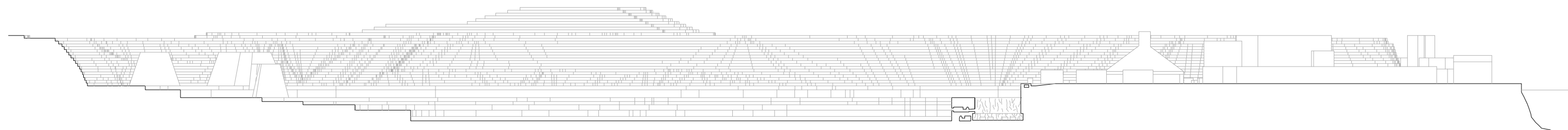


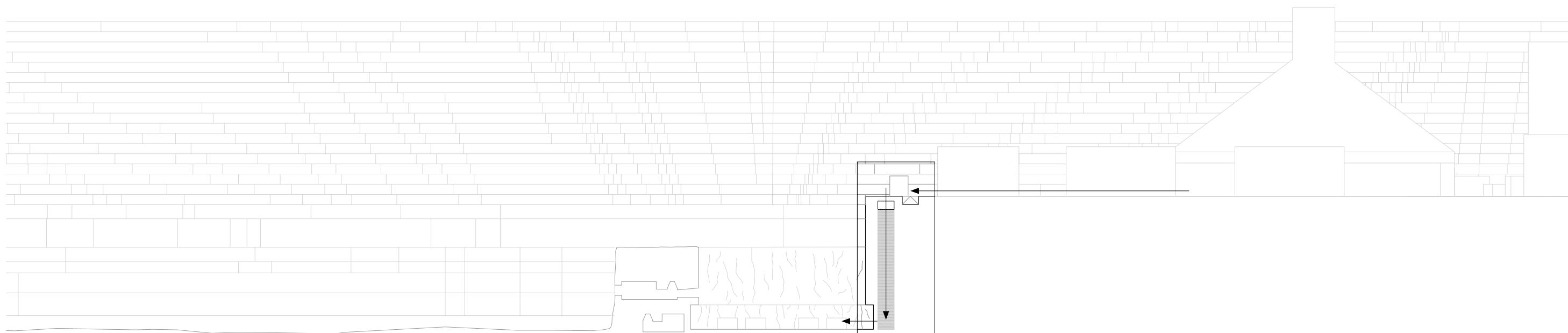




*project | programme*







2. Research Centre:

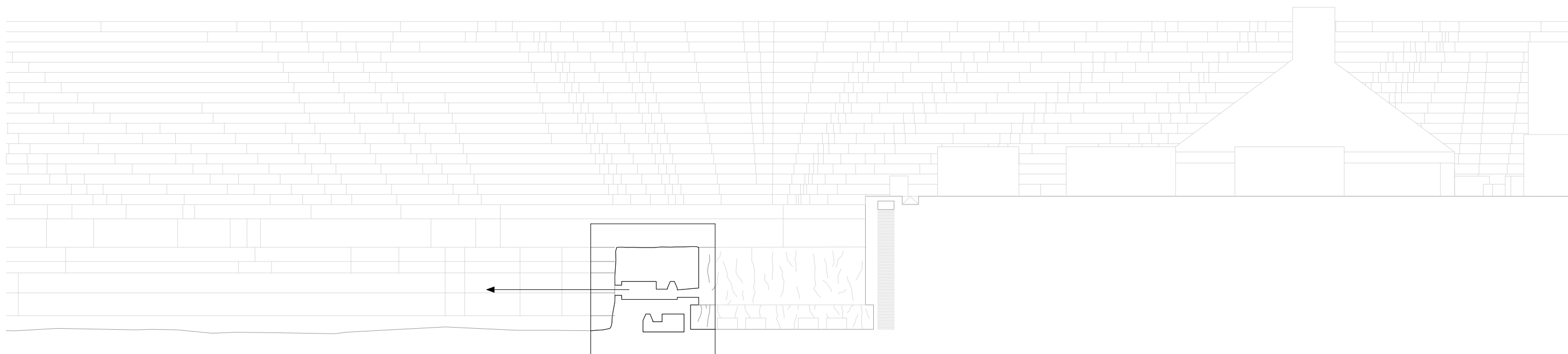
3. Garden:

1. Entrance:  
*Two elevators and one  
continuous parallel stair  
connect the garden to the  
ENCI university campus.*



cross section  
*scale 1:1000*





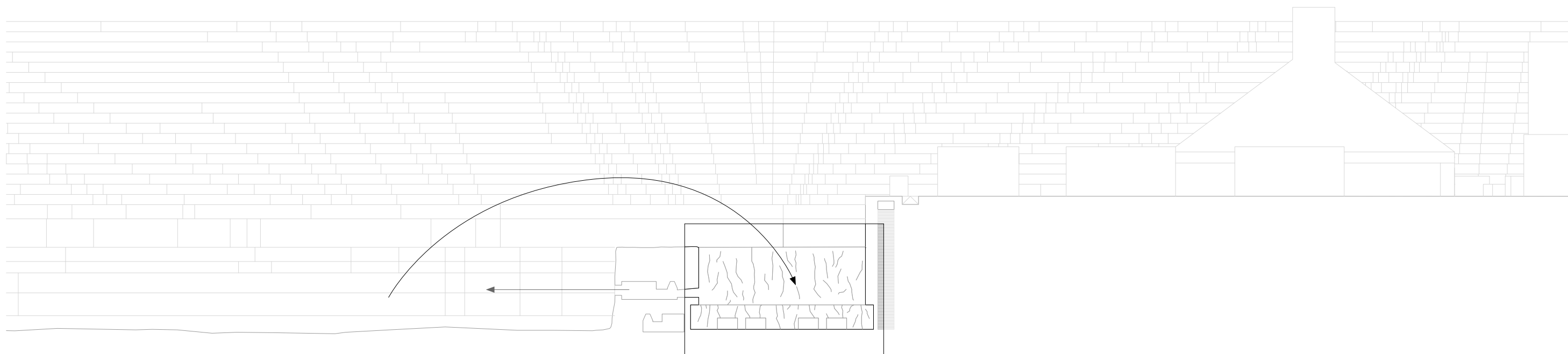
2. Research Centre:  
*Studies and observes all of  
 the nonhuman biodiversities  
 and processes that  
 spontaneously foster on the  
 soil of the quarry.*

3. Garden:

1. Entrance:



cross section  
 scale 1:1000



2. Research Centre:

3. Garden:  
*Used as a  
testing ground  
for botanical  
experimentation*

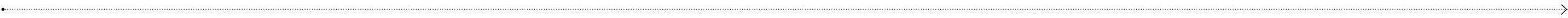
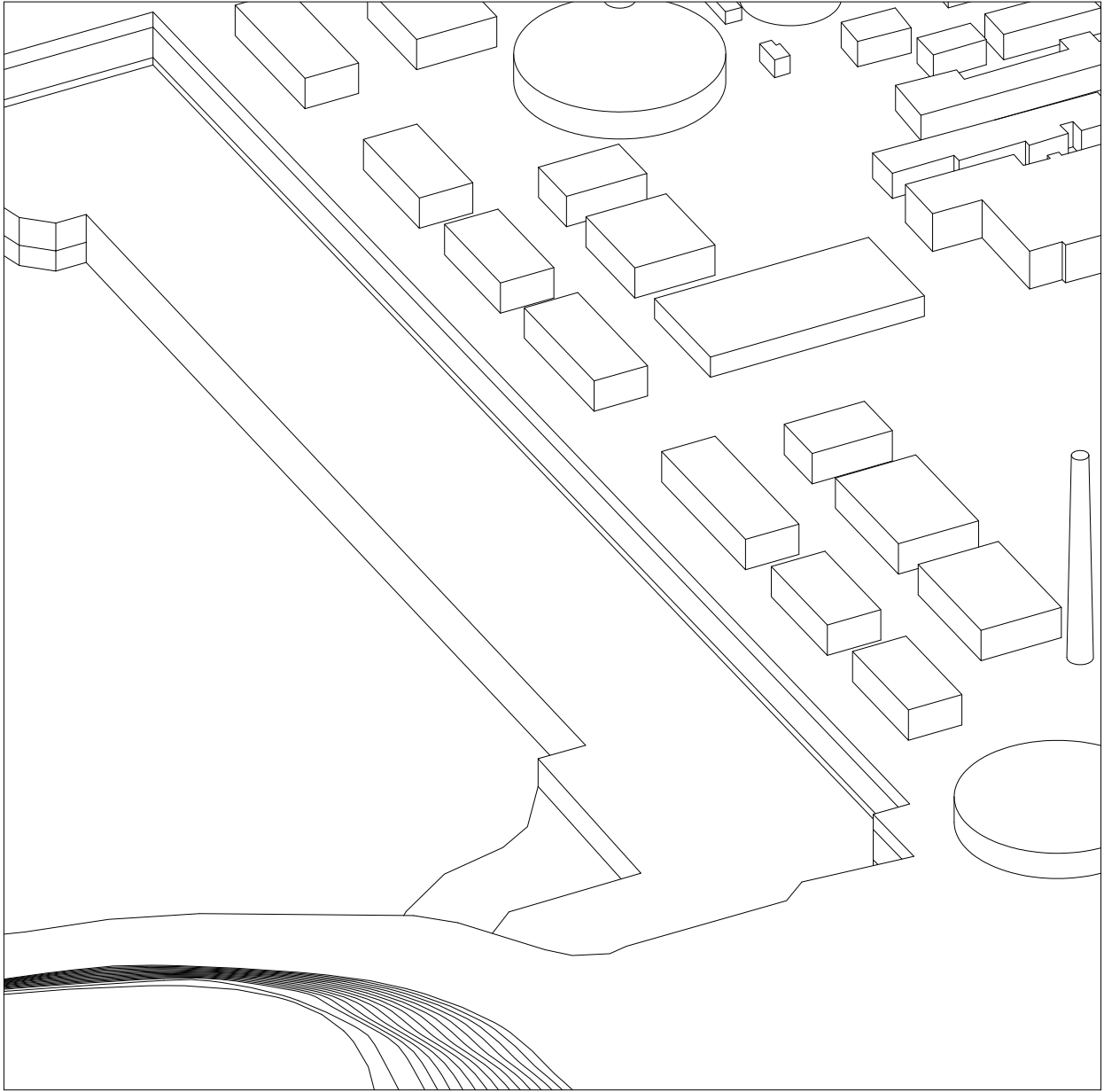
1. Entrance:



cross section  
*scale 1:1000*



*project | processes*



0. Pre Condition

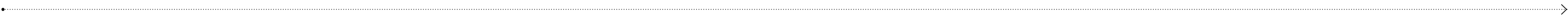
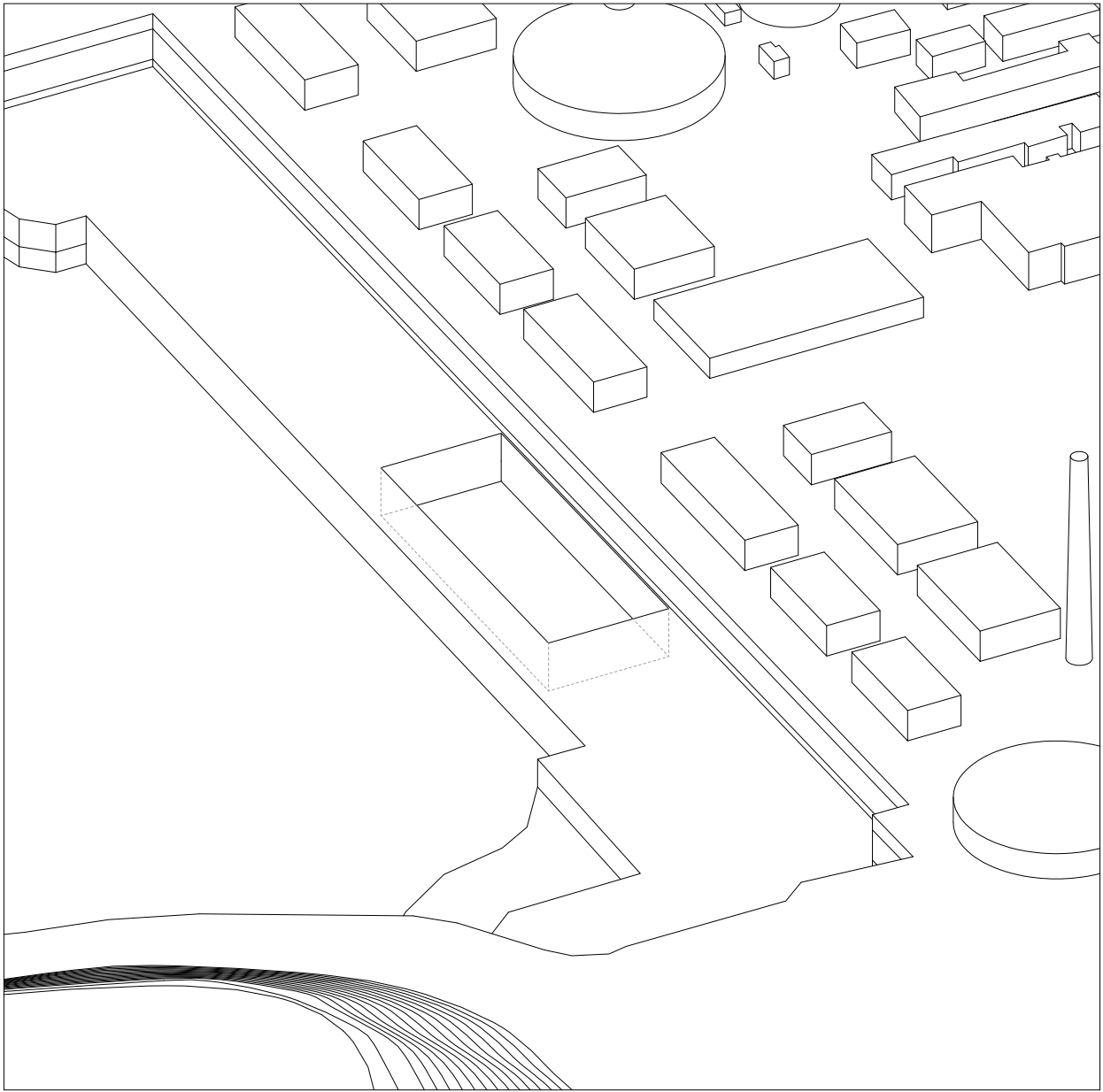
1. Open Pit Mining

2. Underground Quarrying

3. Inhabiting the Ground

4. Recreating Nature





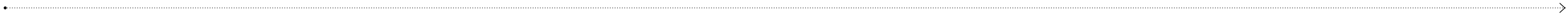
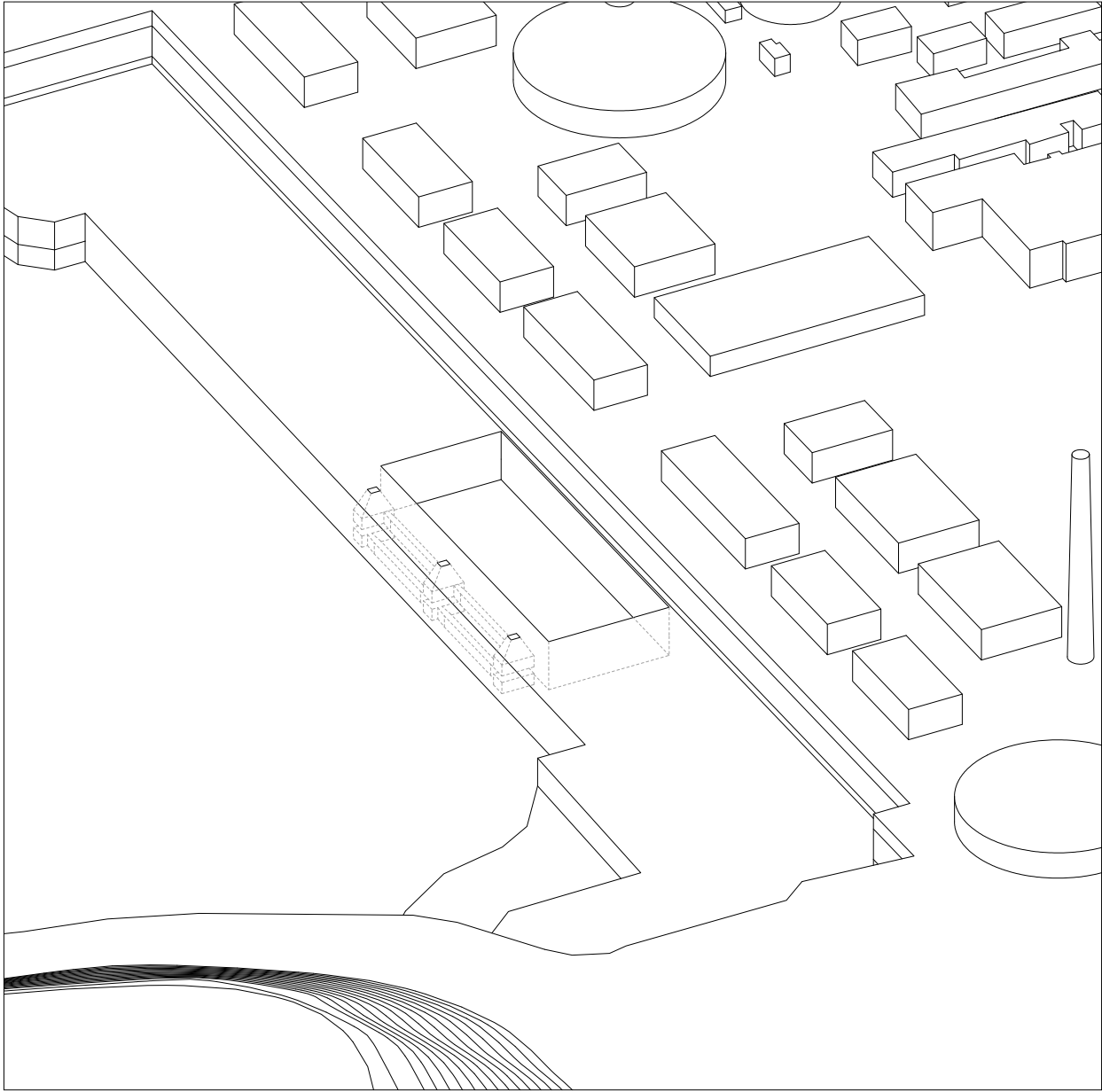
0. Pre Condition

1. Open Pit Mining  
*Creation of the Garden*

2. Underground Quarrying

3. Inhabiting the Ground

4. Recreating Nature



0. Pre Condition

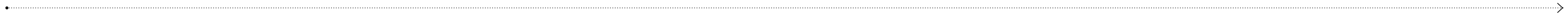
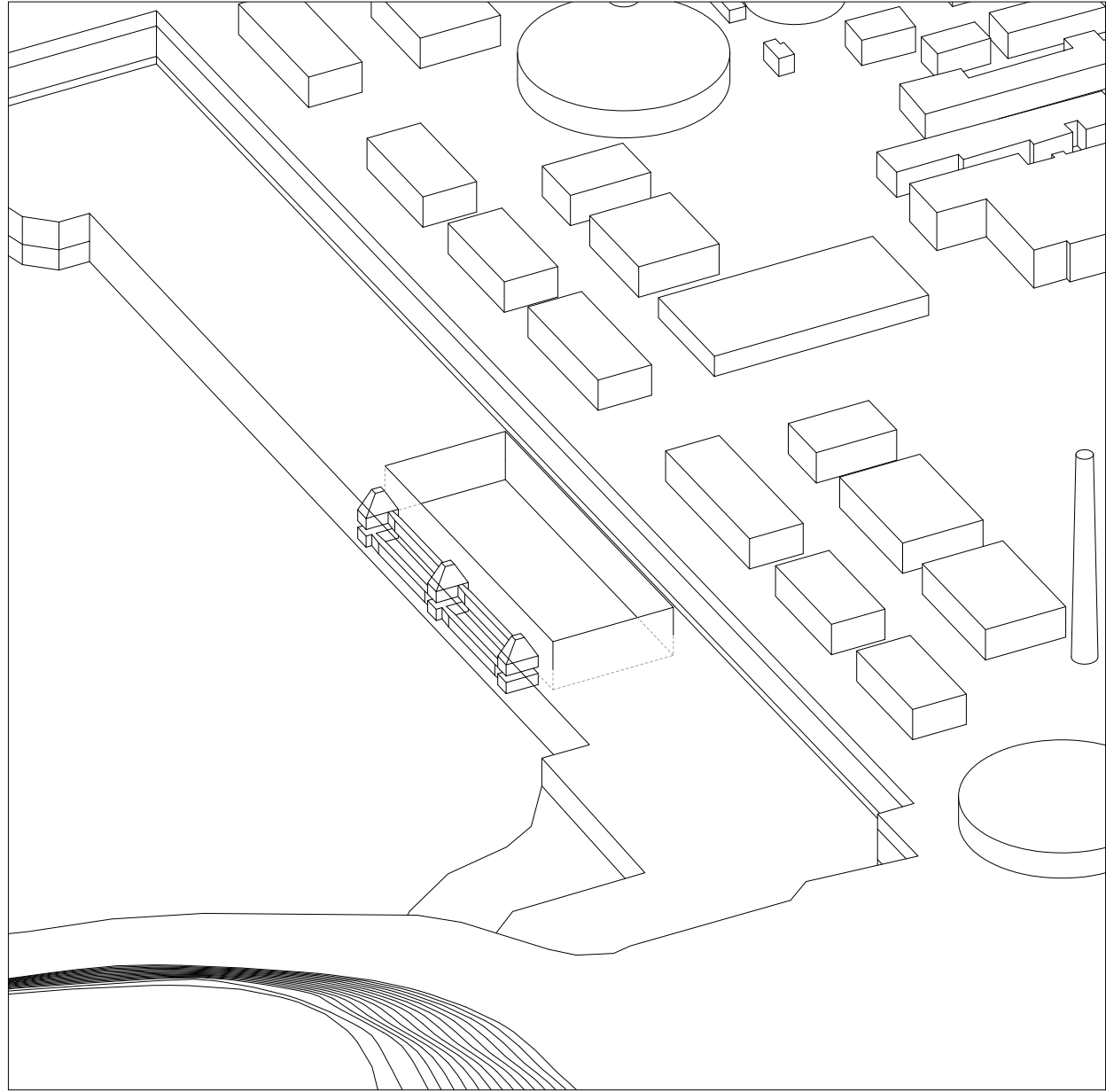
1. Open Pit Mining

2. Underground Quarrying  
*Carving space for the Research Centre and  
the entrance units*

3. Inhabiting the Ground

4. Recreating Nature





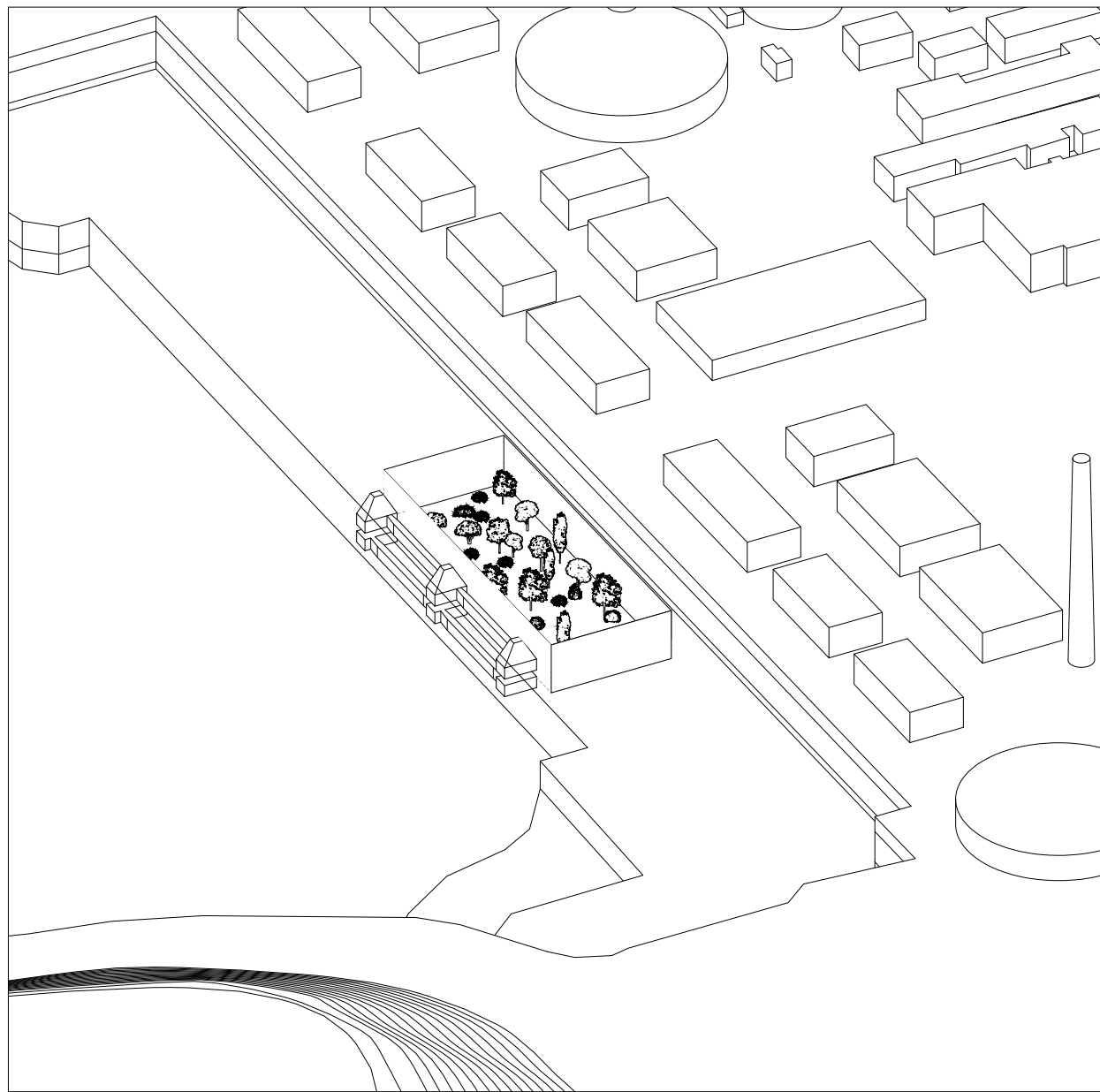
0. Pre Condition

1. Open Pit Mining

2. Underground Quarrying

3. Inhabiting the Ground  
*Architectural intervention for allowing  
livability inside the carved space*

4. Recreating Nature



0. Pre Condition

1. Open Pit Mining

2. Underground Quarrying

3. Inhabiting the Ground

4. Recreating Nature  
*Creation of the microcosmos. Definition of  
 the garden as a scientific ground*

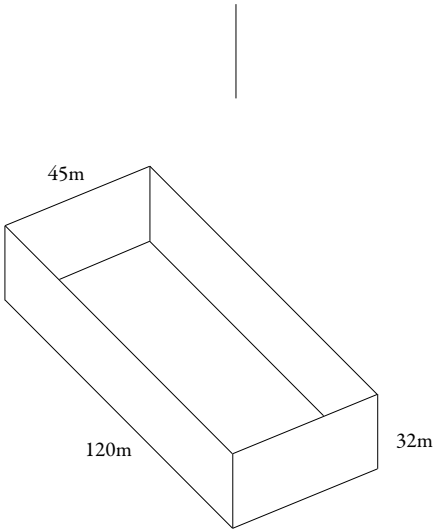


*1 | Open Pit Mining*



*Open Pit Mining*

Articulated Trucks / Draglines /  
Hydraulic Mining Shovels  
Dynamite



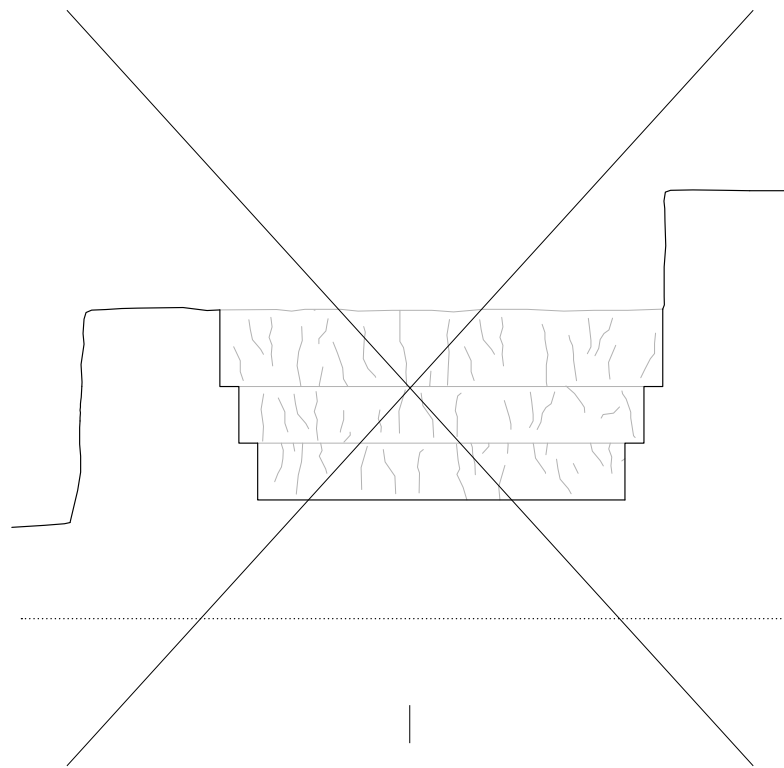
162.000 m3 of Limestone

Two more years of ENCI  
quarrying at medium capacity

Employement of 50 former  
workers

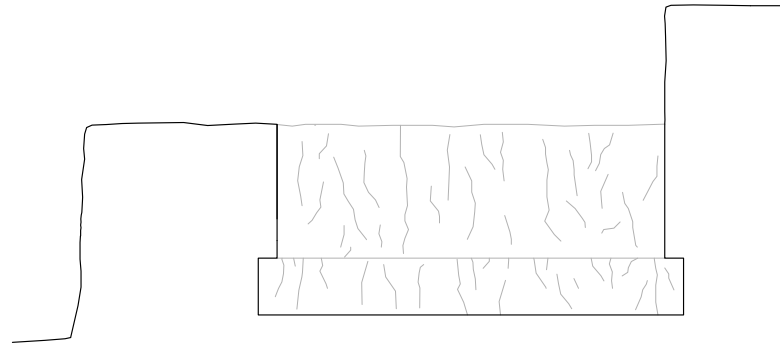
The extracted limestone will help  
finance the construction costs.  
It will be processed locally thanks  
to ENCI expertises on “clean”  
cement production





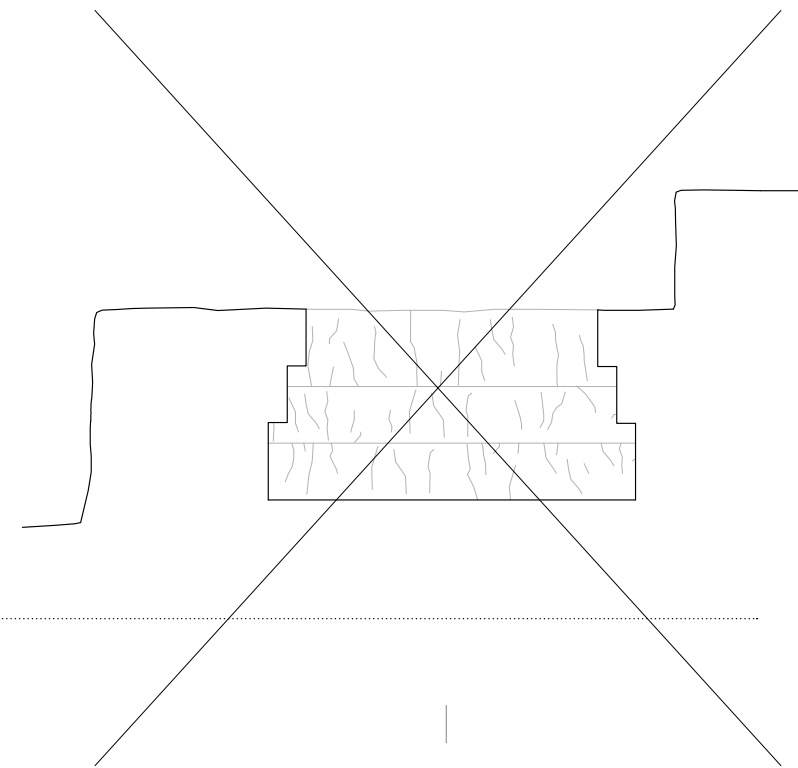
Option A

Too referential to the  
landscape



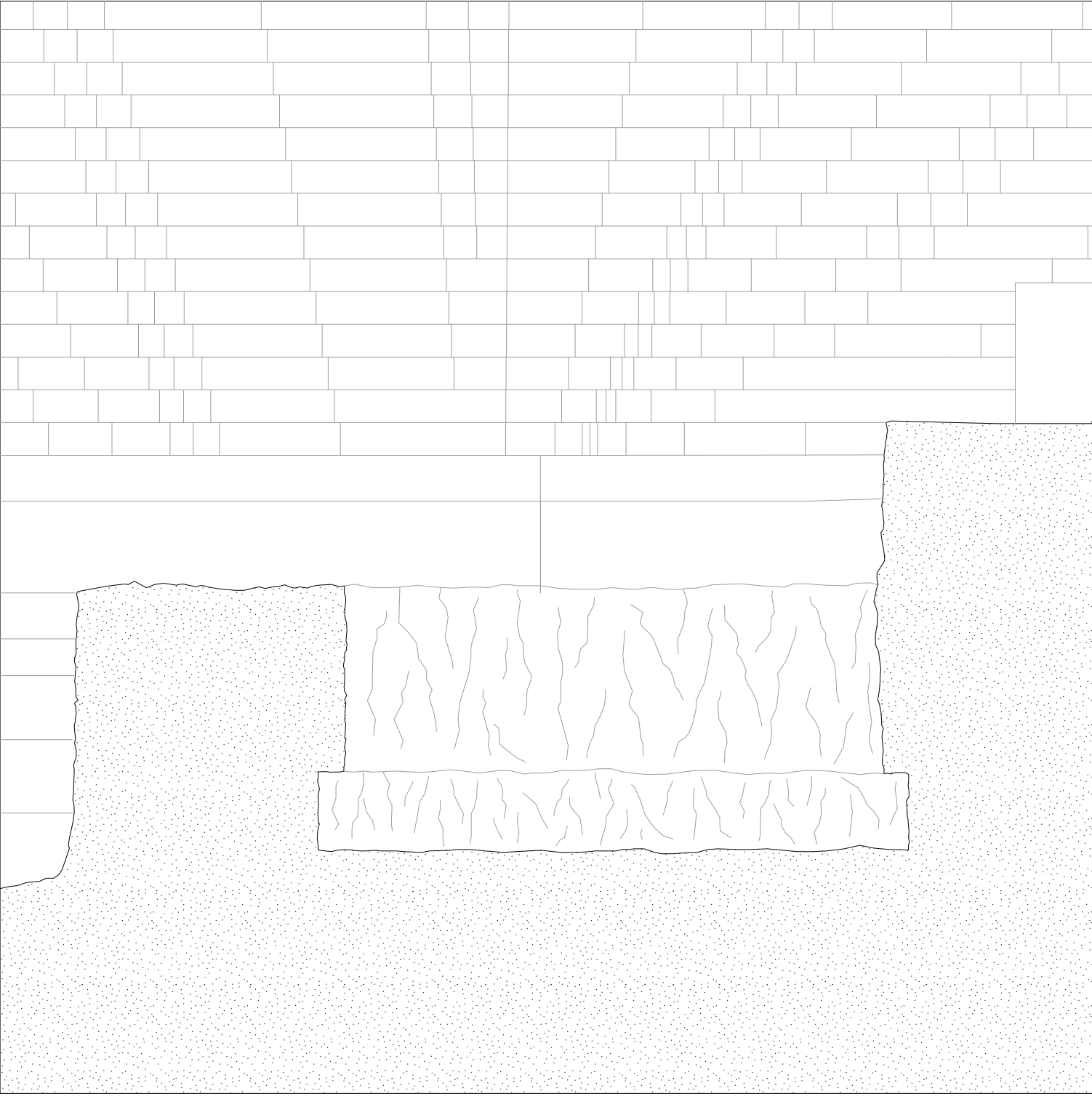
Option B

Good amount of formal  
autonomy.  
The 2 metres overhang  
protects users from  
rainwater and gives a sense  
of human scale on the  
bottom level

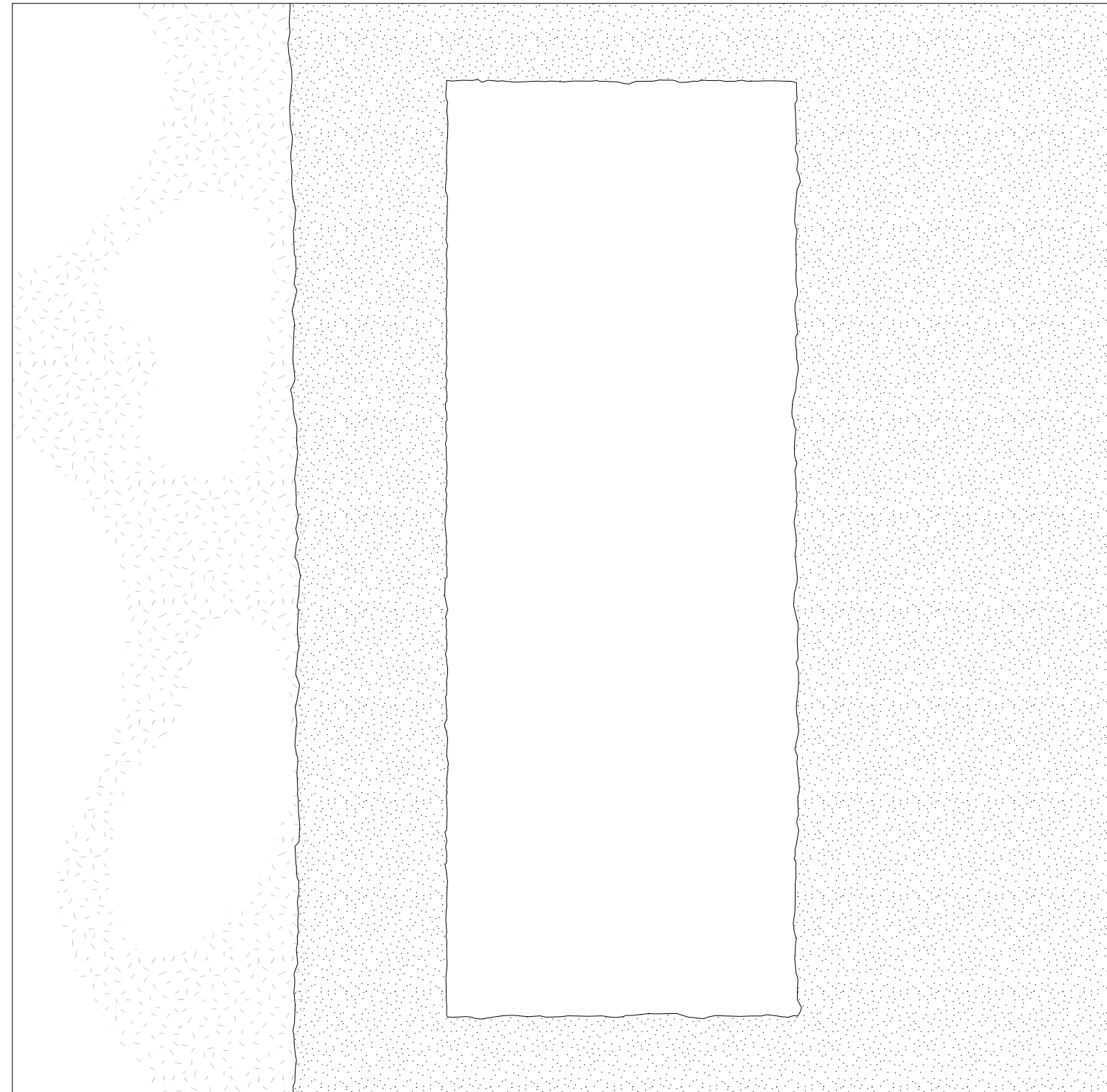


Option C

Good amount of formal  
autonomy.  
The inverted lanscape shape  
doesn't provide the garden  
with enough sunlight







2 | *Underground Quarrying*

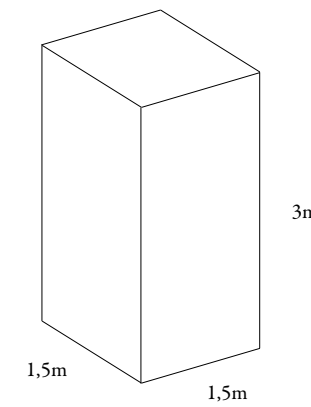




### *Underground Quarrying*

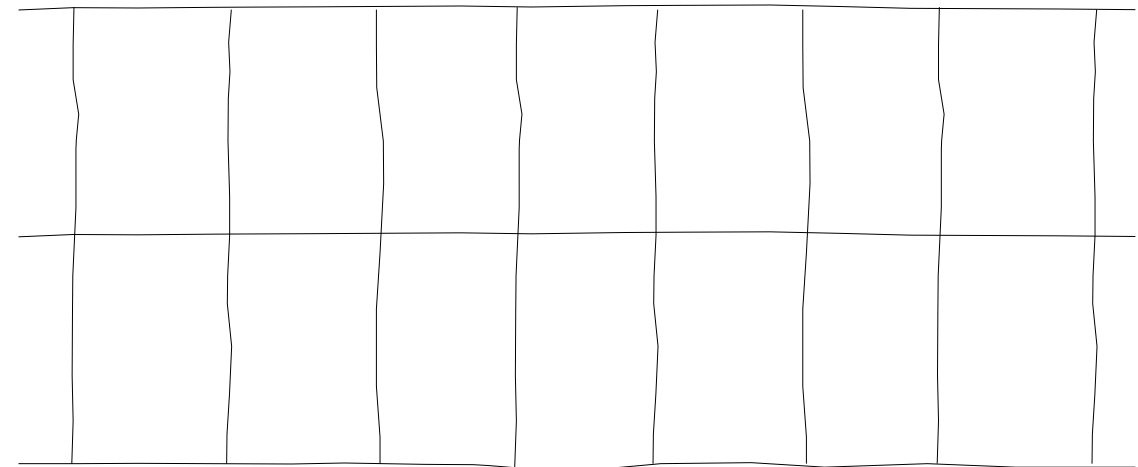
Diamond Saw / Wire Saw  
Dynamite

- More expensive and time consuming than open pit quarrying
- Less disruptive for the landscape
- Less noise pollution

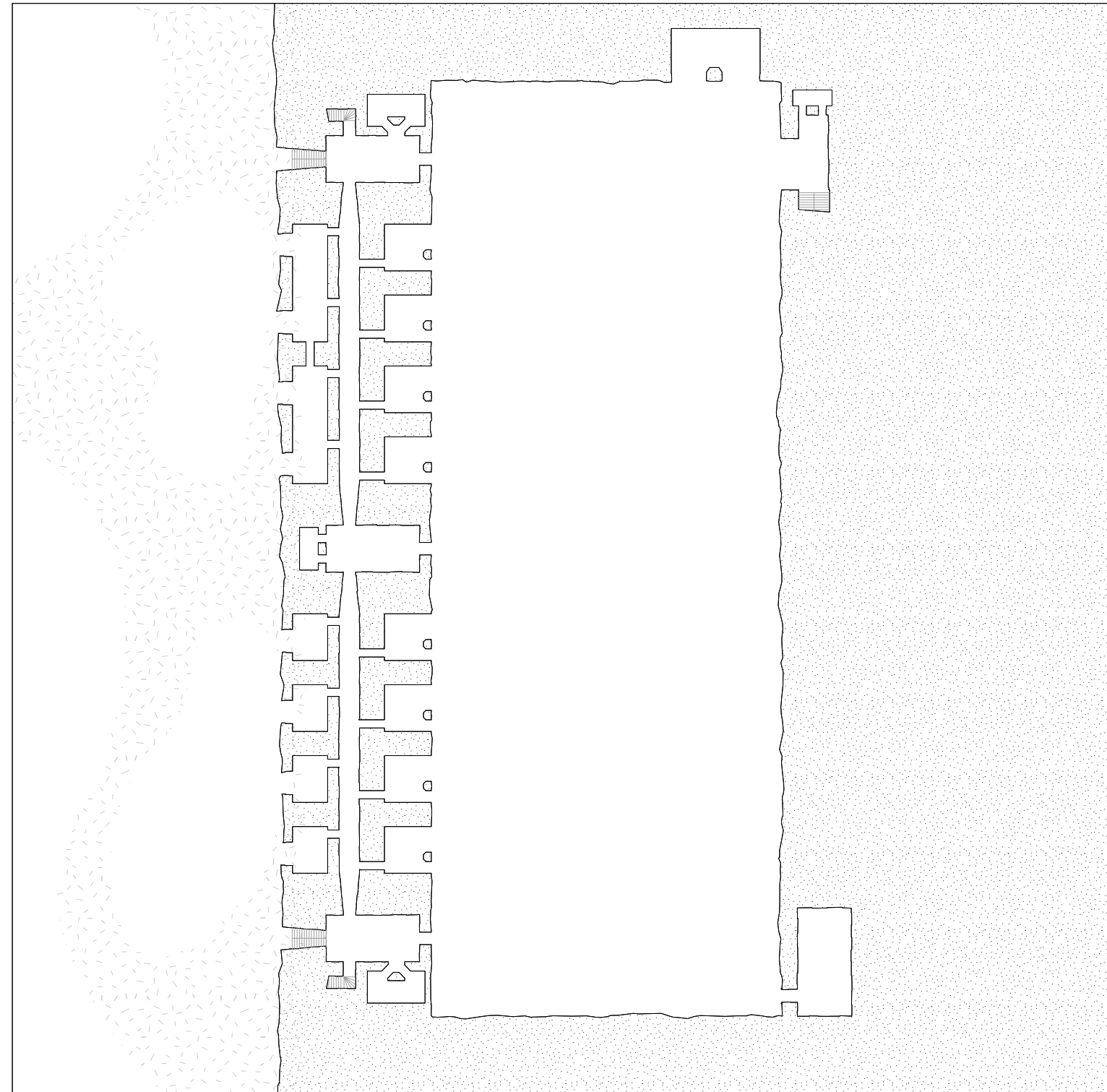


Either by explosives or by diamond saw, each block is individually excavated from the rock. Through a railing system, they're brought on the outside of the quarry.

The extraction process leaves traces of every block on the walls

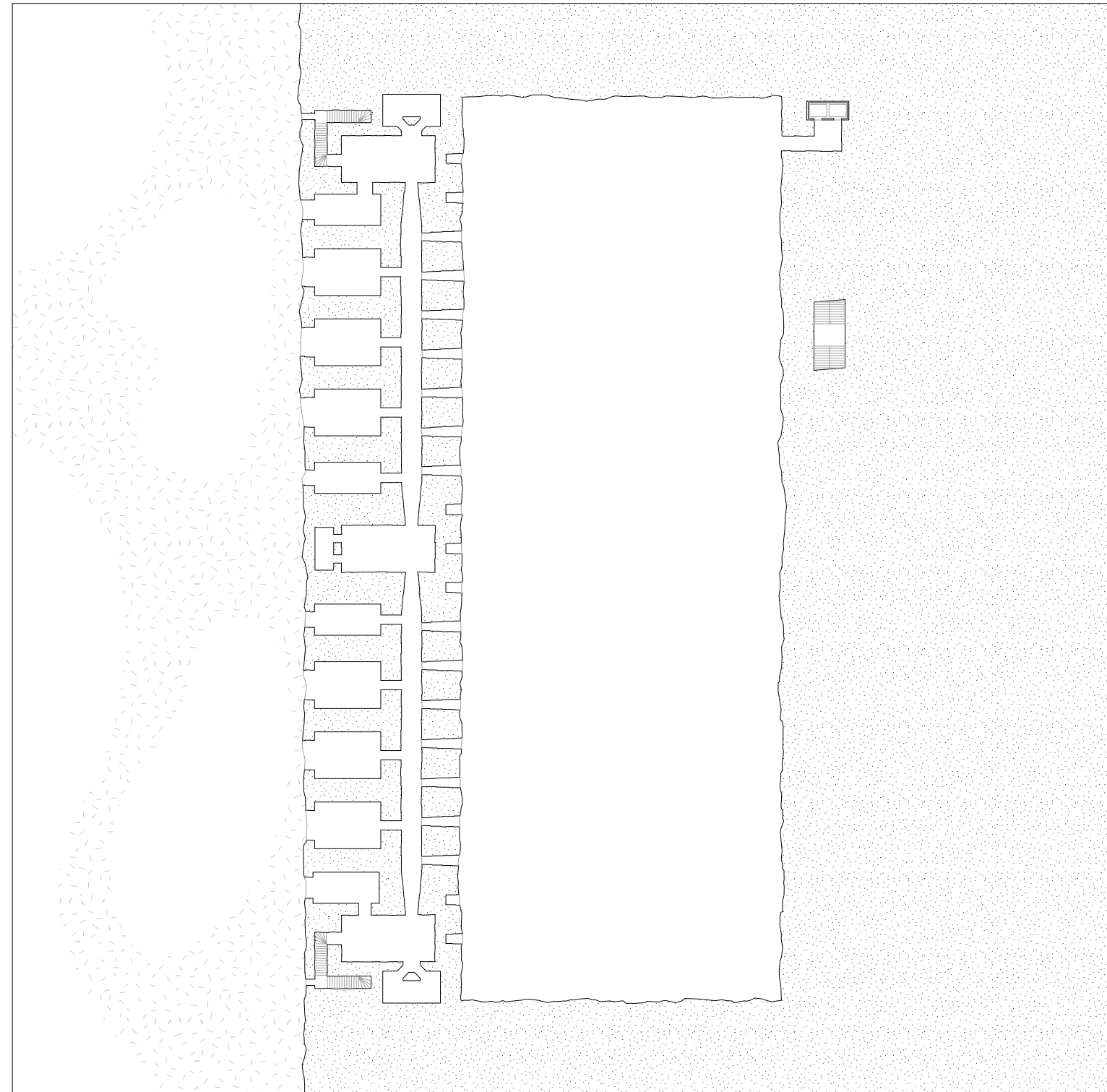


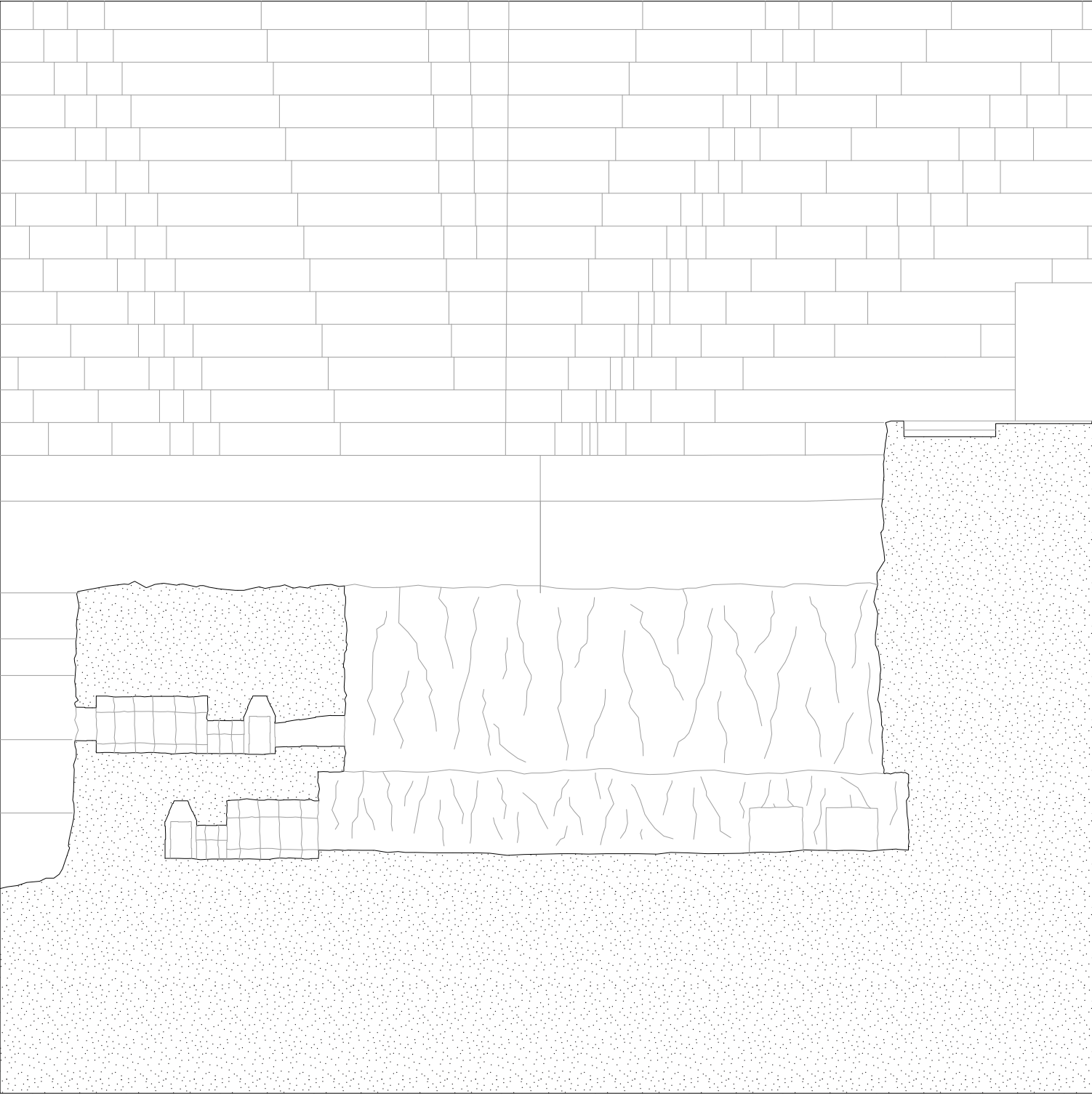




Ground Floor Plan  
*scale 1:750*







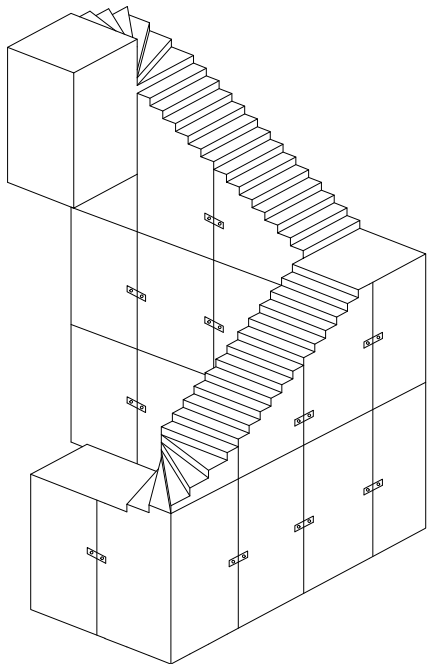
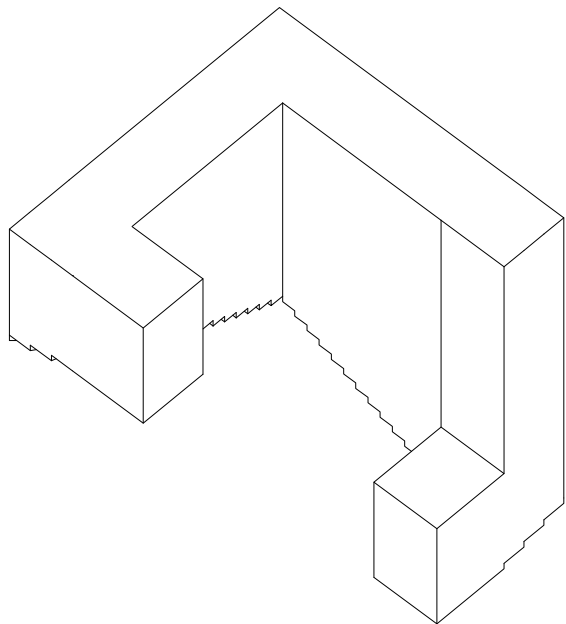
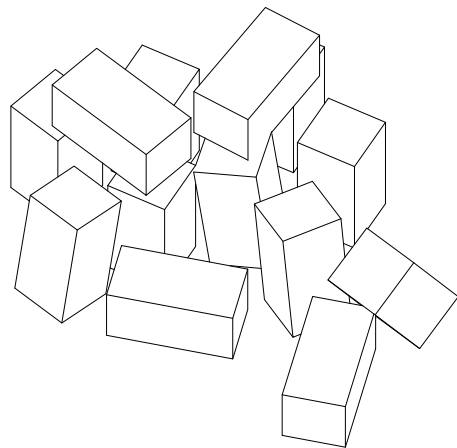
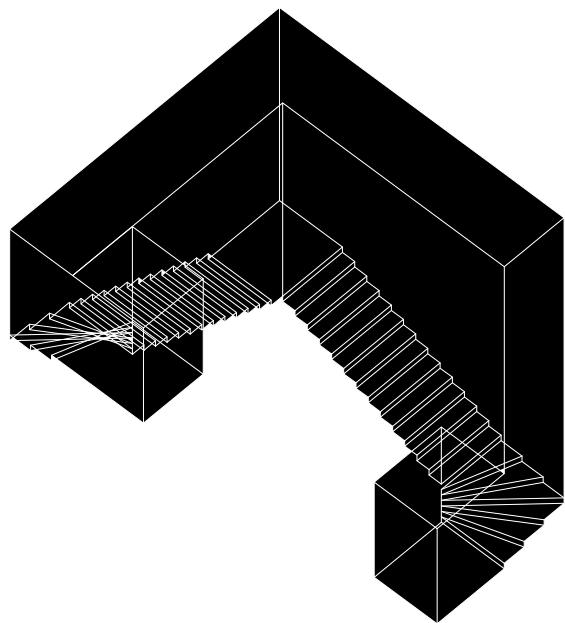


Displacement of matter

Limestone blocks from the underground quarrying process are brought into the garden and re-arranged into their original physical form.

They physically manifest the process of construction/distruction necessary for human dwelling

Once in the garden, moss and other small plants will start growing on them. Through time, entropic processes will slowly disrupt their initial form.

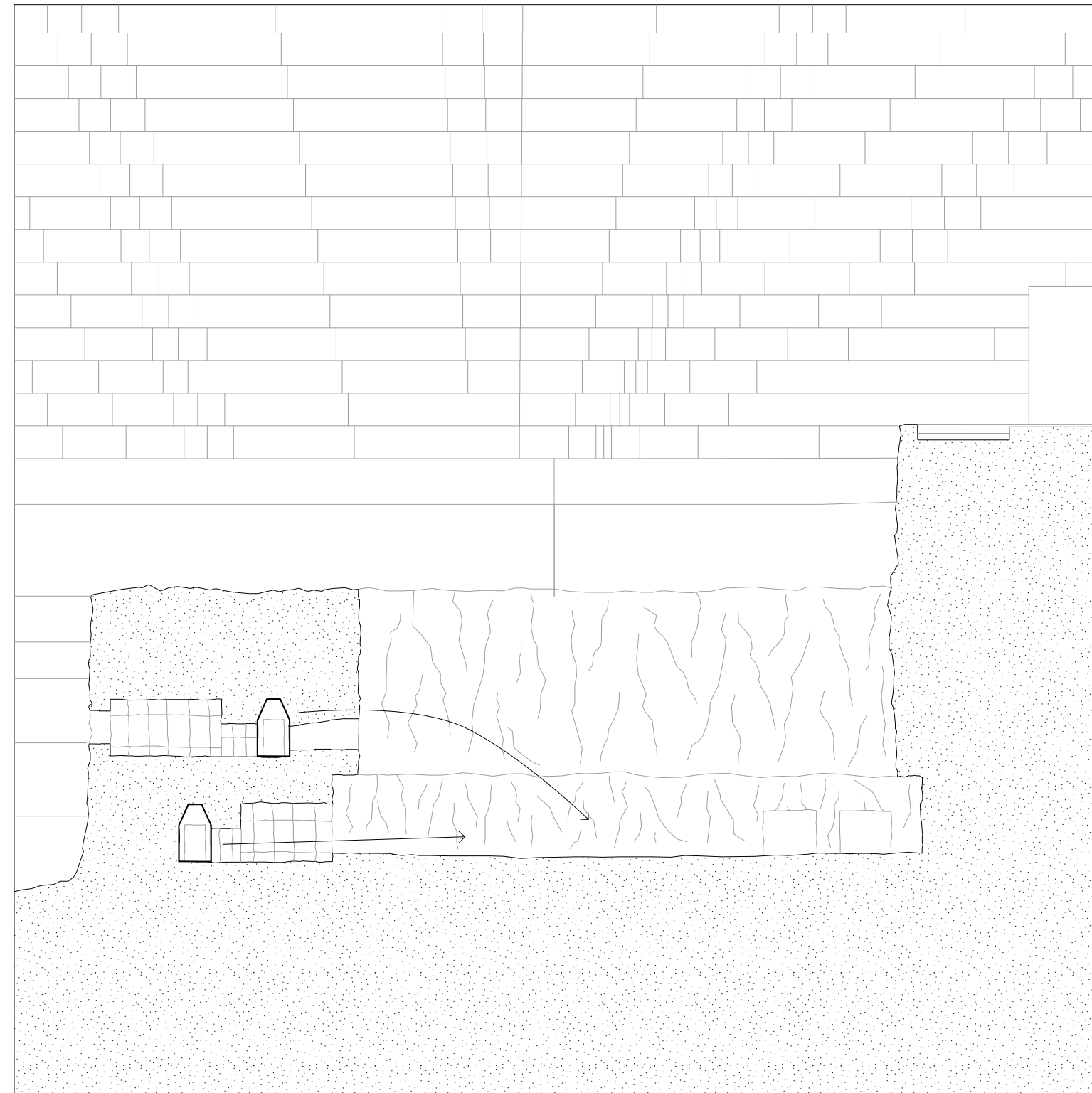


1. Underground Quarrying  
*Space is carved out of the limestone*

2. Limestone Blocks  
*Limestone blocks are brought outside*

3. Negative space  
*Ideally, the blocks are re-arranged into their initial form*

4. Displacement  
*For stability reasons, the initial shape is re-arranged upside down. Limestone blocks are hold together with metal plaques*













*Dwelling underground*

Maastricht Limestone  
*Temperature: 14 degrees all year long*  
*Humidity: very high (approx 95%)*

Goal: satisfying today’s building requirements without sacrificing the material qualities of earth-sheltered architecture.

From cave to dwelling



One overall strategy for:

- *Architectural qualities*
- *Climate requirements*
- *Material qualities*

BUFFER ZONES

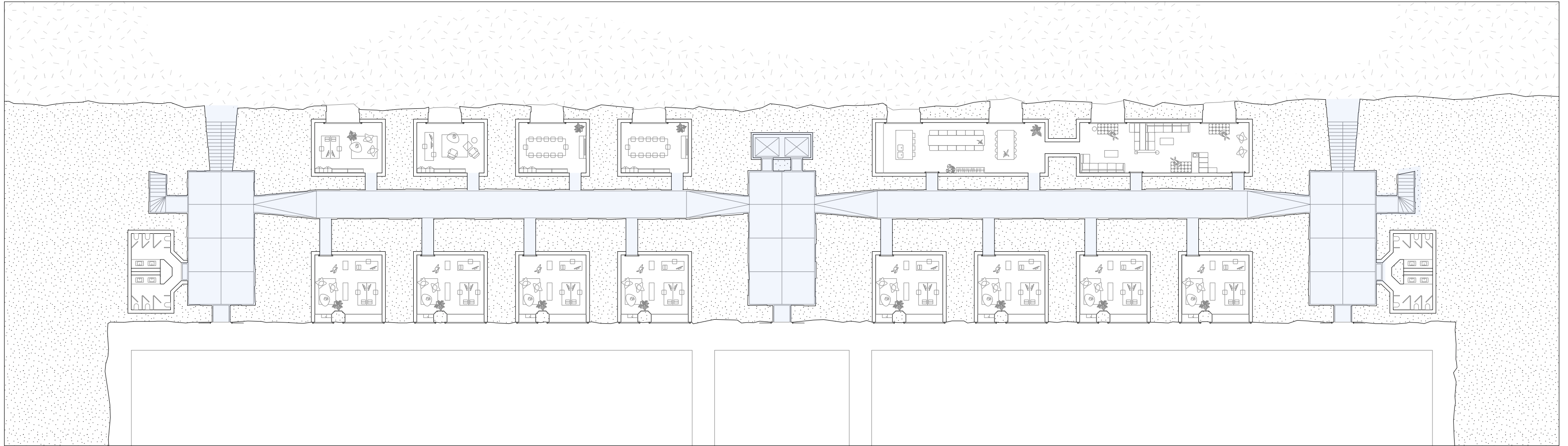
*Programme: transition zones (corridors, cores, etc...)*  
*Materiality: paved floor, visible limestone on walls*  
*Heating/Cooling system: passive*  
*Ventilation: natural/mechanical*  
*Aimed Temperature: 16/18 °C*

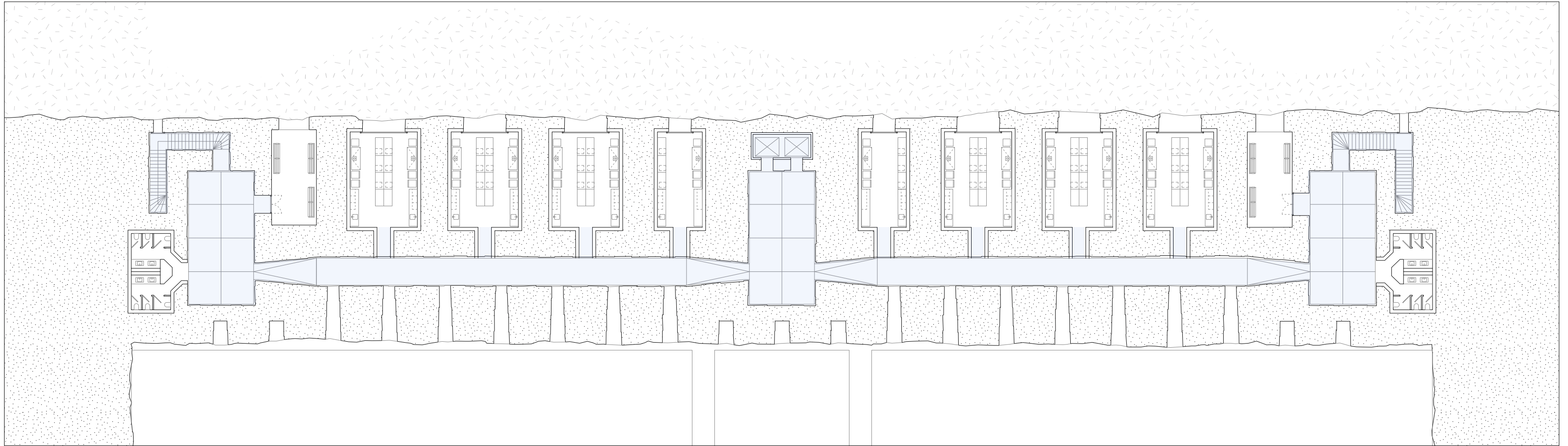
INSULATED AREAS

*Programme: offices, laboratories, canteen, relax area, reception, bathrooms*  
*Materiality: paved floor, concrete walls*  
*Heating/Cooling system: Floor fancoils*  
*Ventilation: mechanical*  
*Temperature: 21 °C*

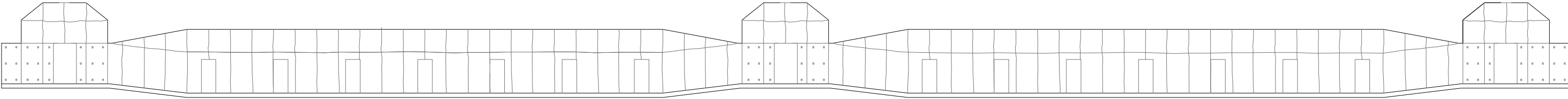
BUFFER ZONES

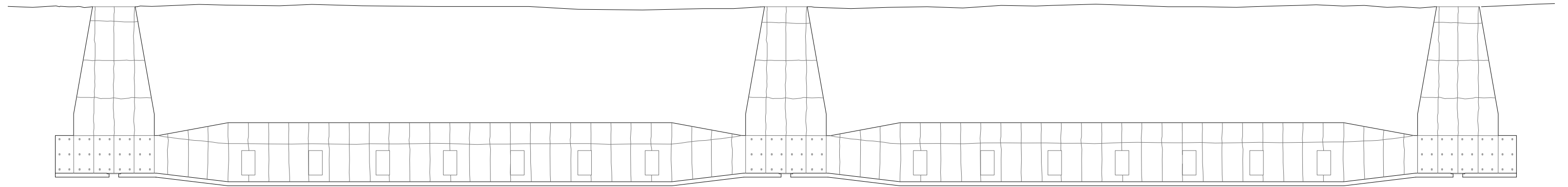




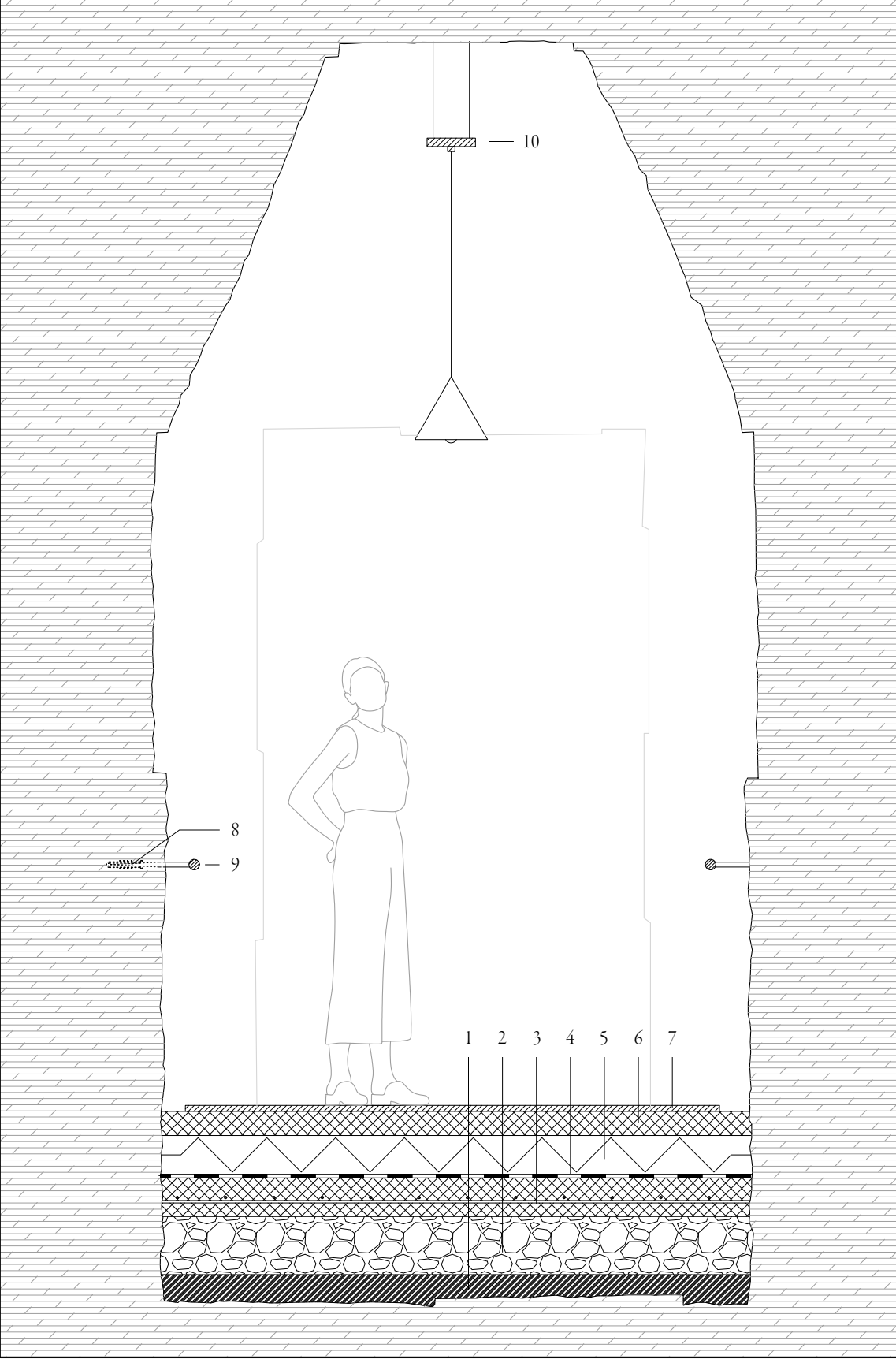




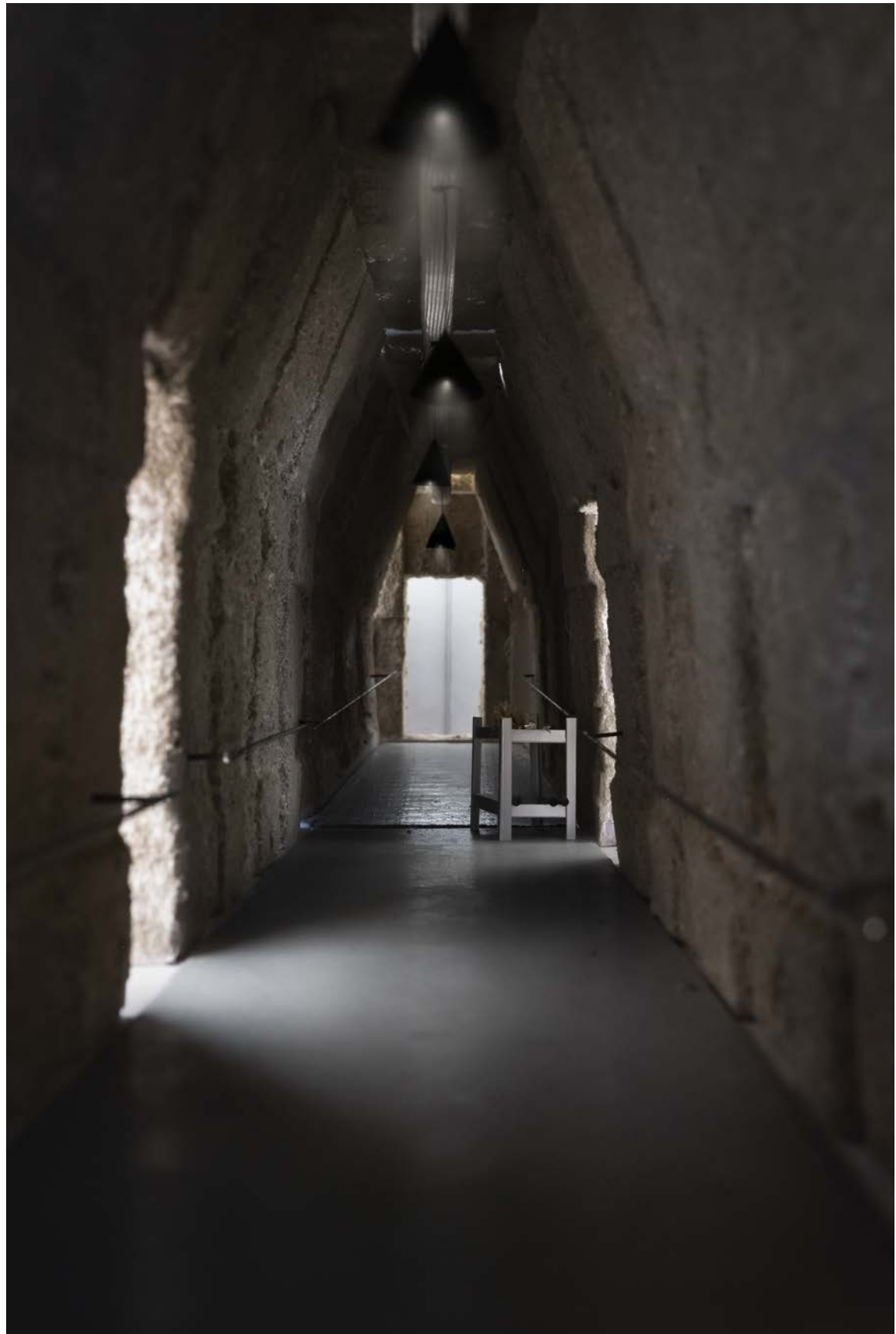






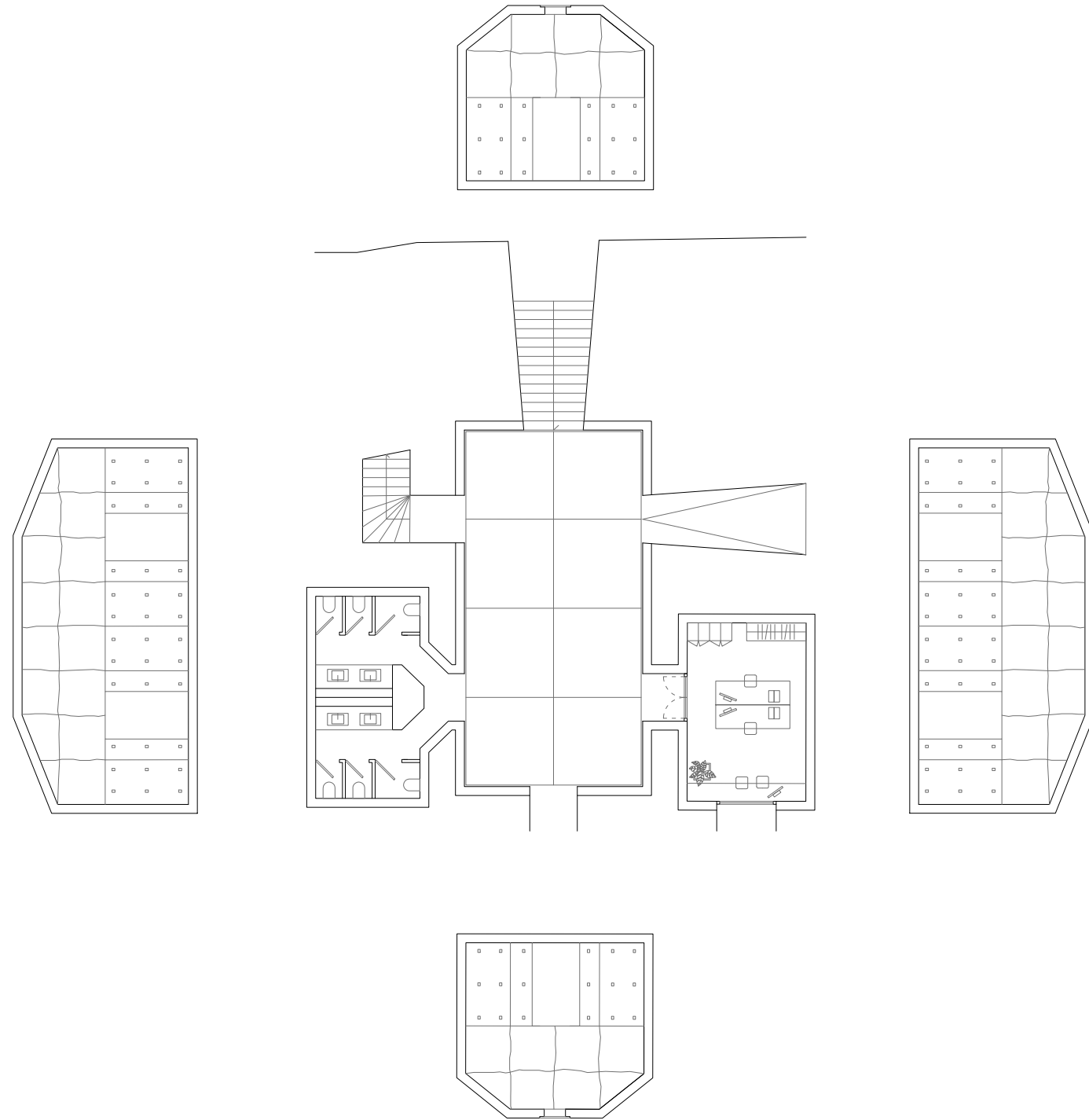


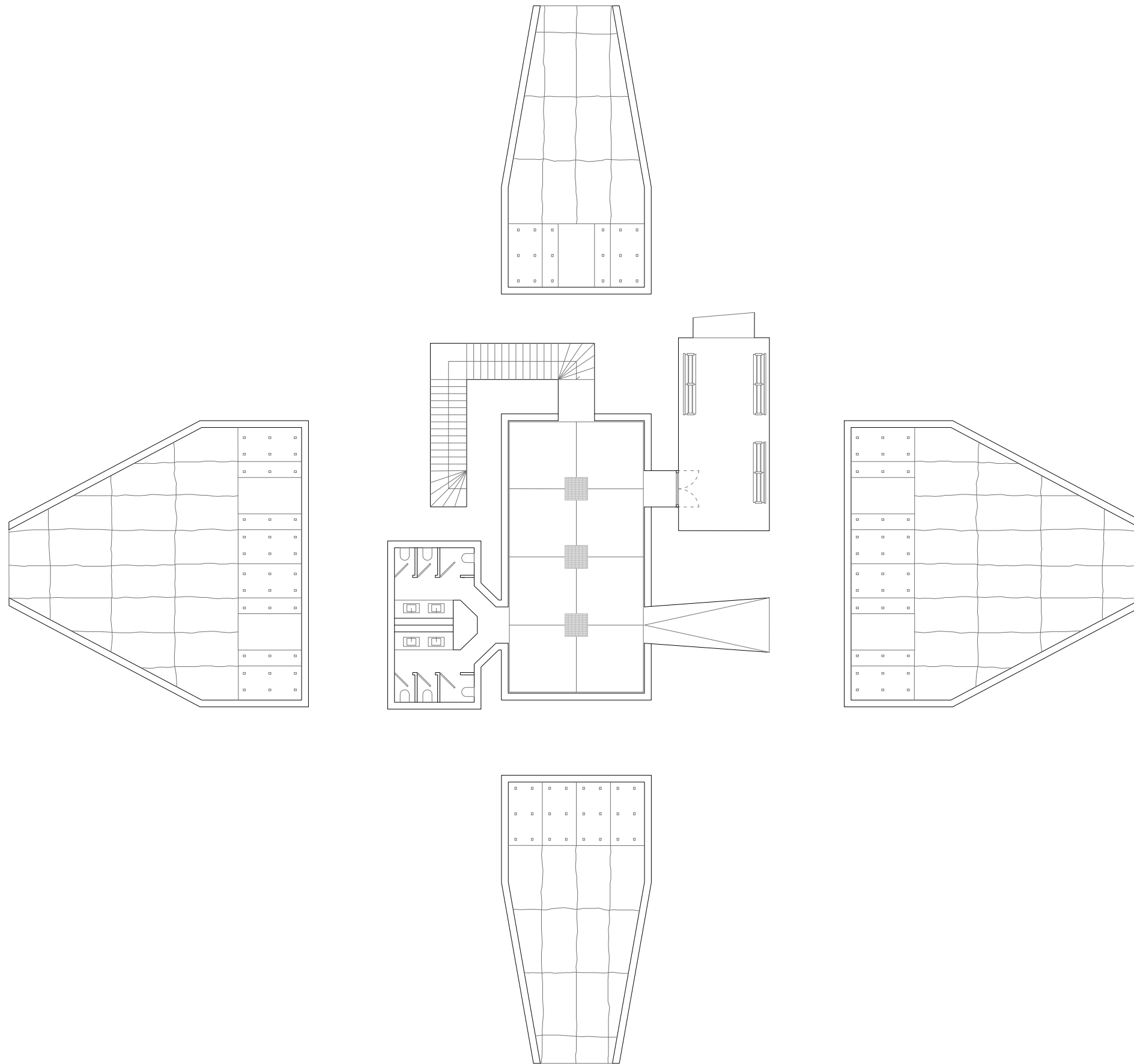
1. concrete screed 100mm
2. drainage layer 240mm
3. reinforced concrete with steel electro-welded mesh 150mm
4. damp proof membrane
5. rockwool insulation 160mm
6. concrete slab 100mm
7. industrial concrete flooring 20mm
8. metal gusset with rock screw
9. metal handrail
10. steel support for electrical cables



Corridor View  
*model photo*

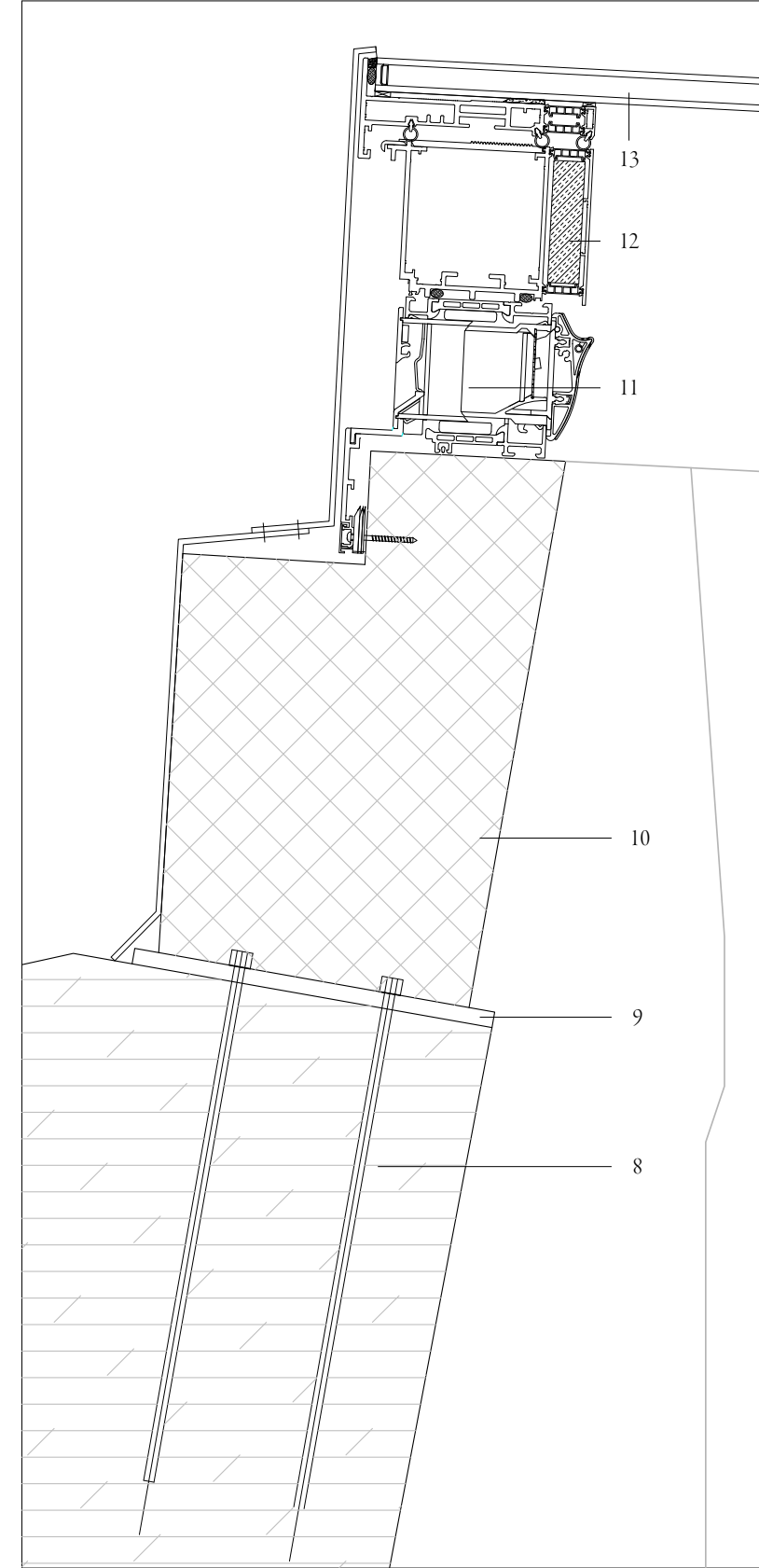
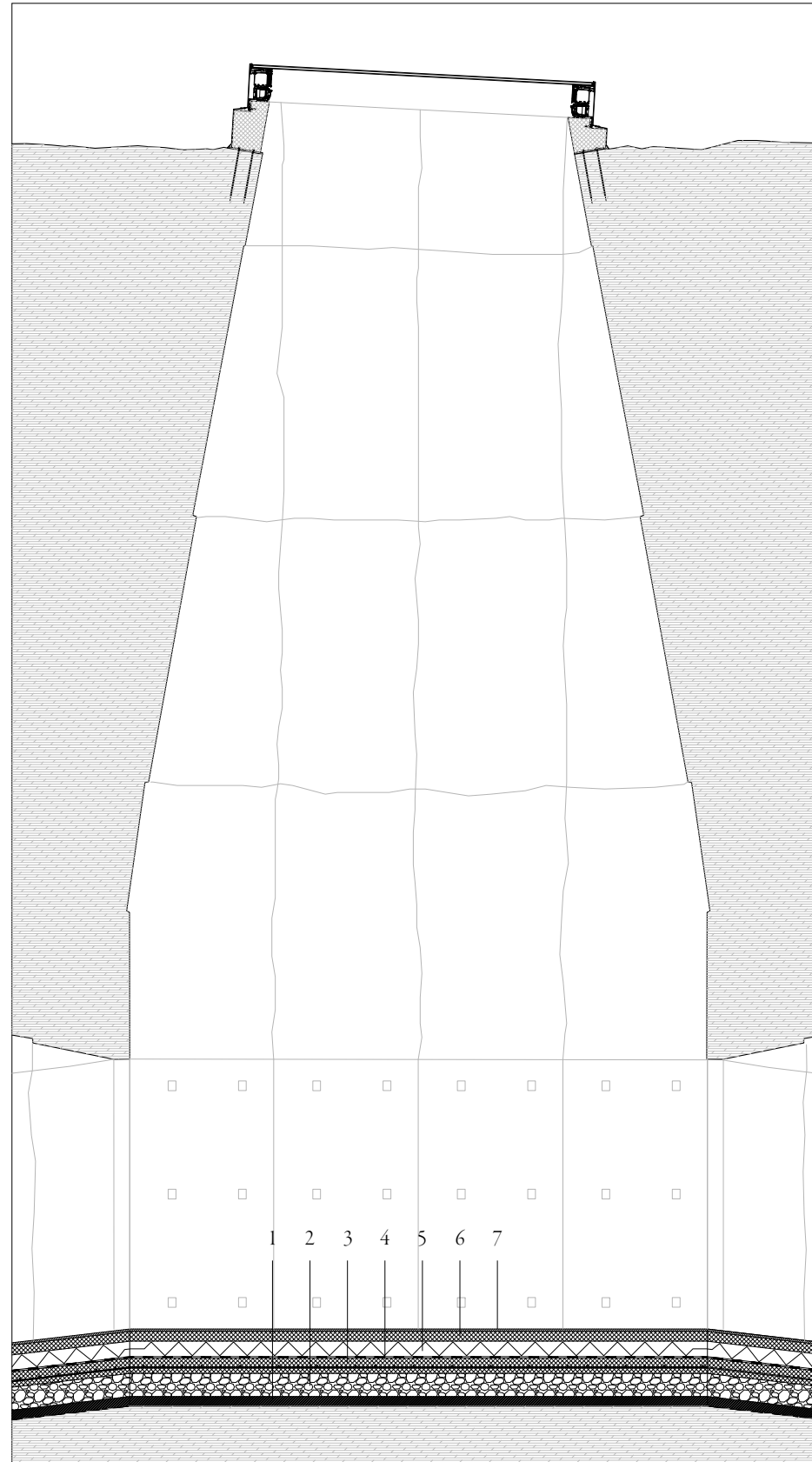






First floor distribution core  
*Scale 1:200*





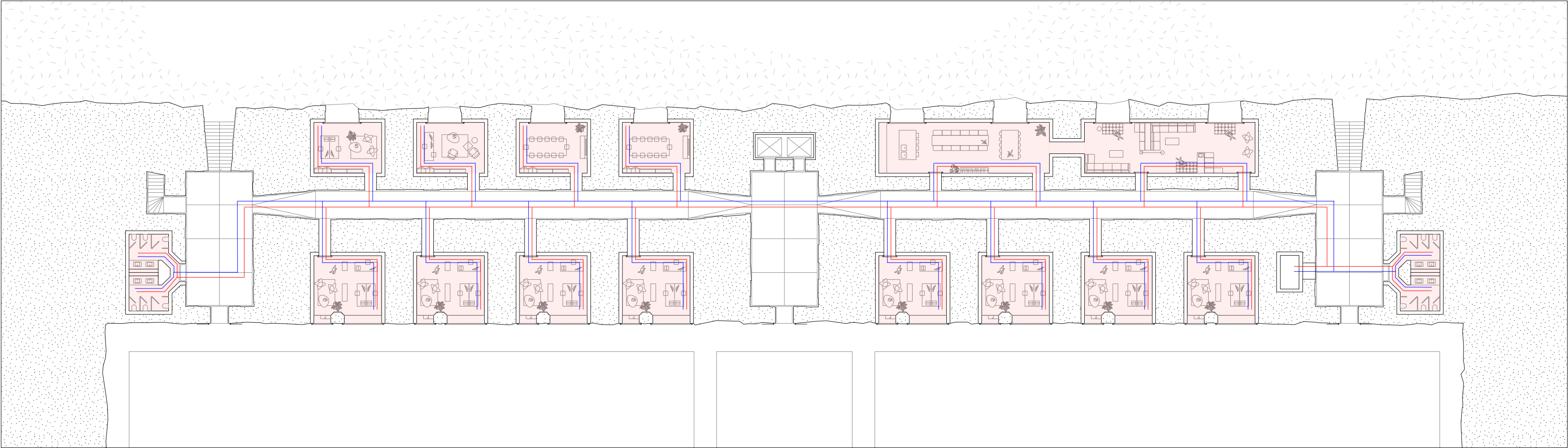
1. concrete screed 100mm
2. drainage layer 240mm
3. reinforced concrete with steel electro-welded mesh 150mm
4. damp proof membrane
5. rockwool insulation 160mm
6. concrete slab 100mm
7. industrial concrete flooring 20mm
8. metal gusset with rock screw
9. metal plaque 15mm
10. concrete plinth
11. mechanical ventilation unit
12. skylight metal frame
13. double glazed glass



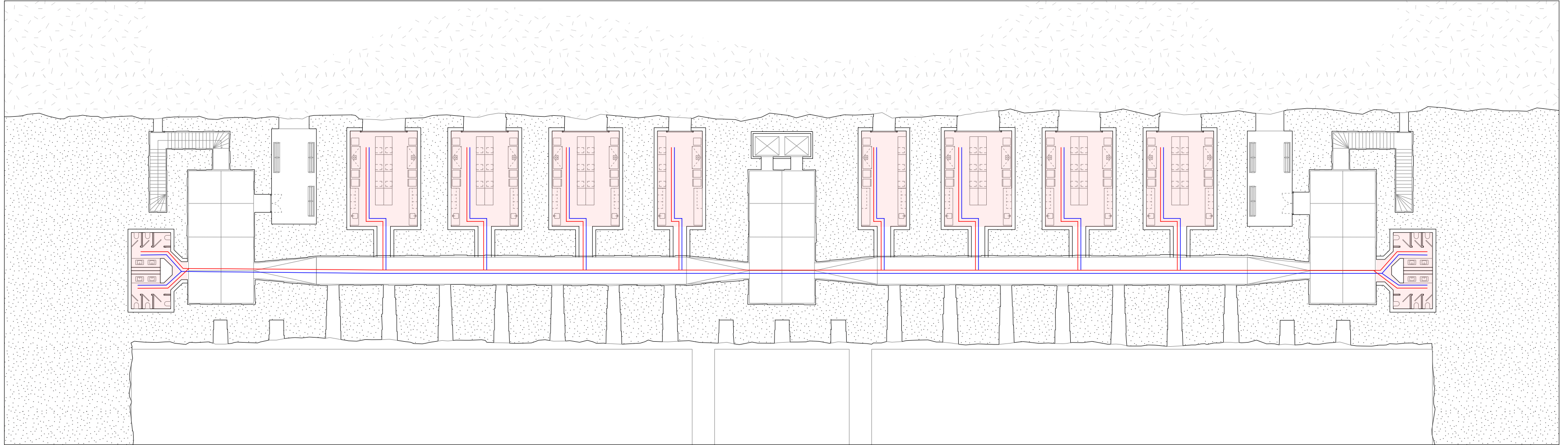
Core View  
*model photo*

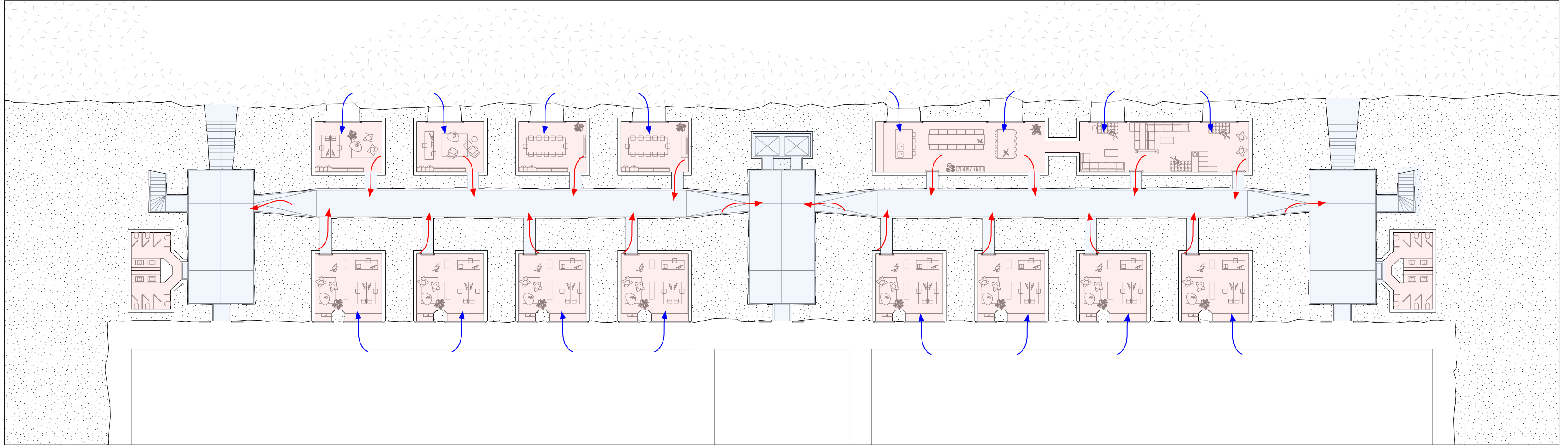


## INSULATED AREAS

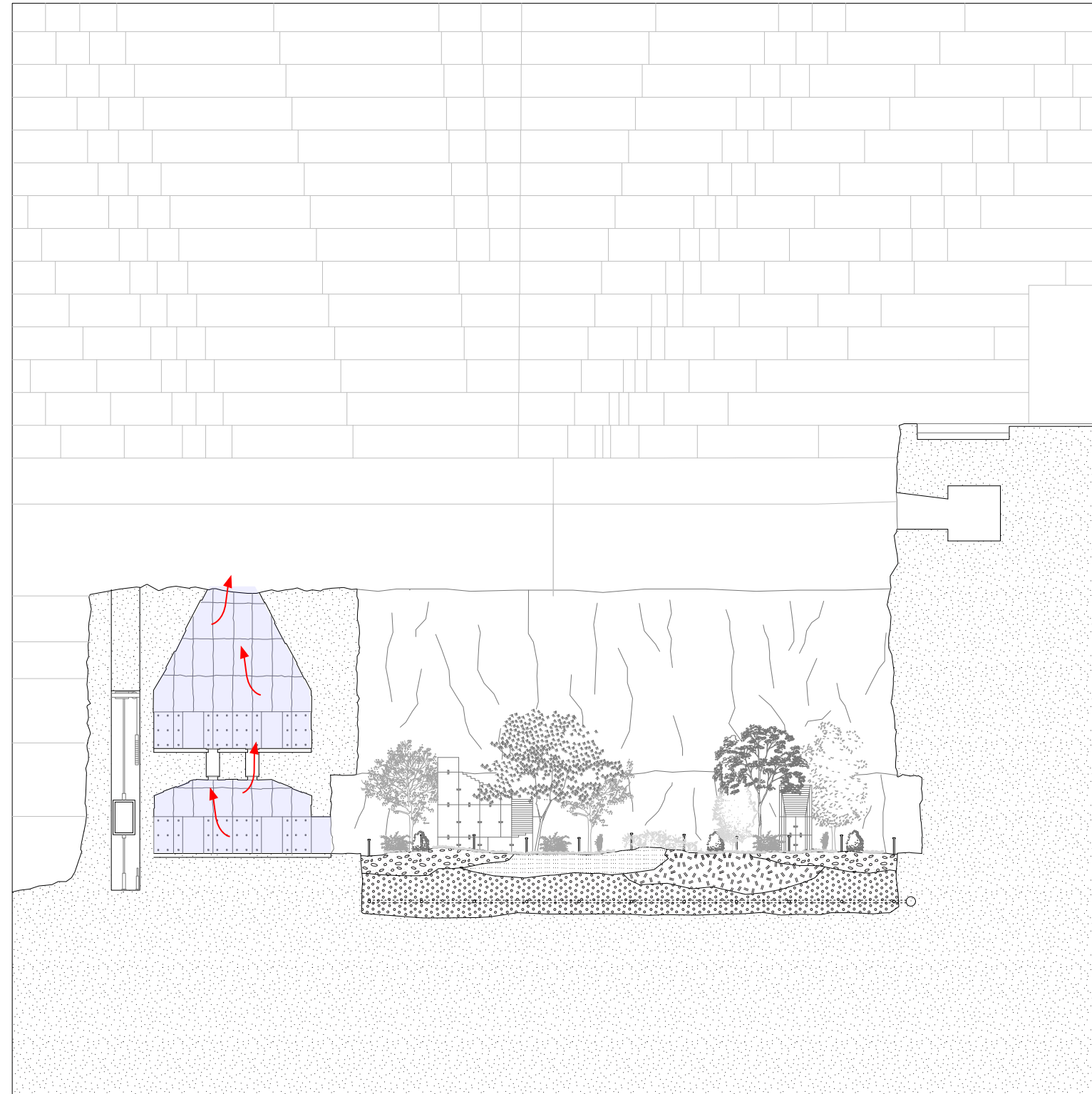


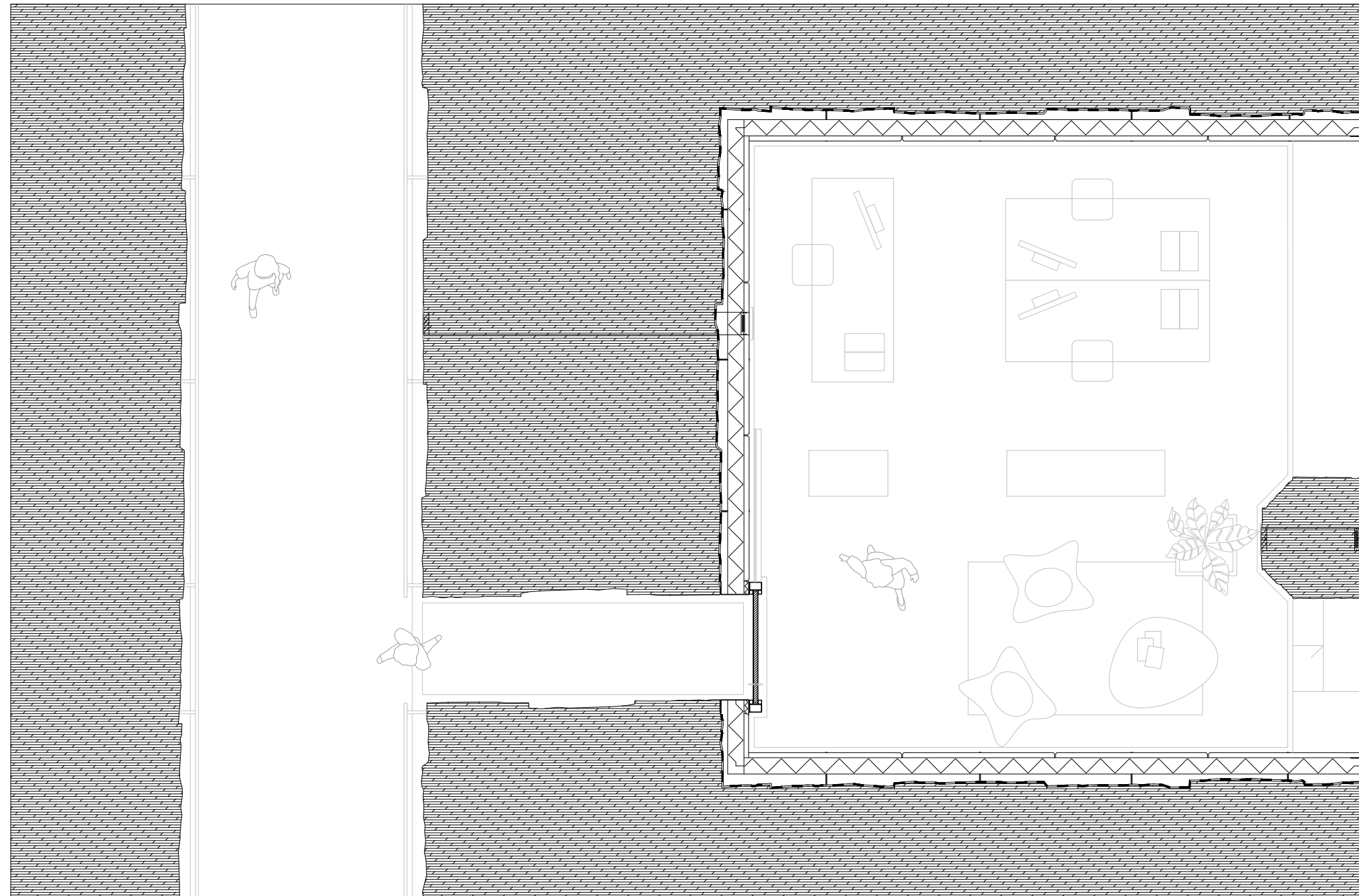


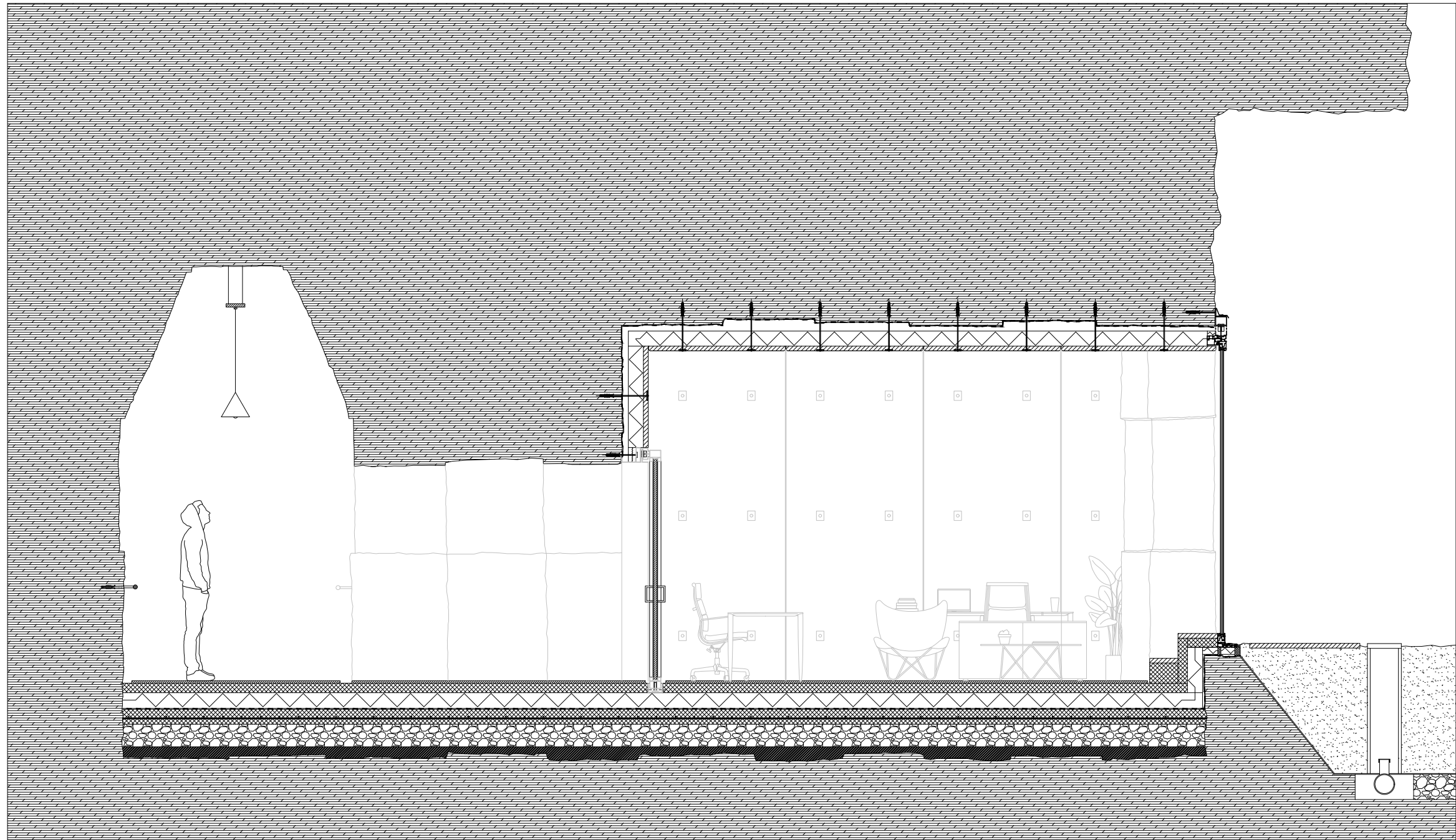




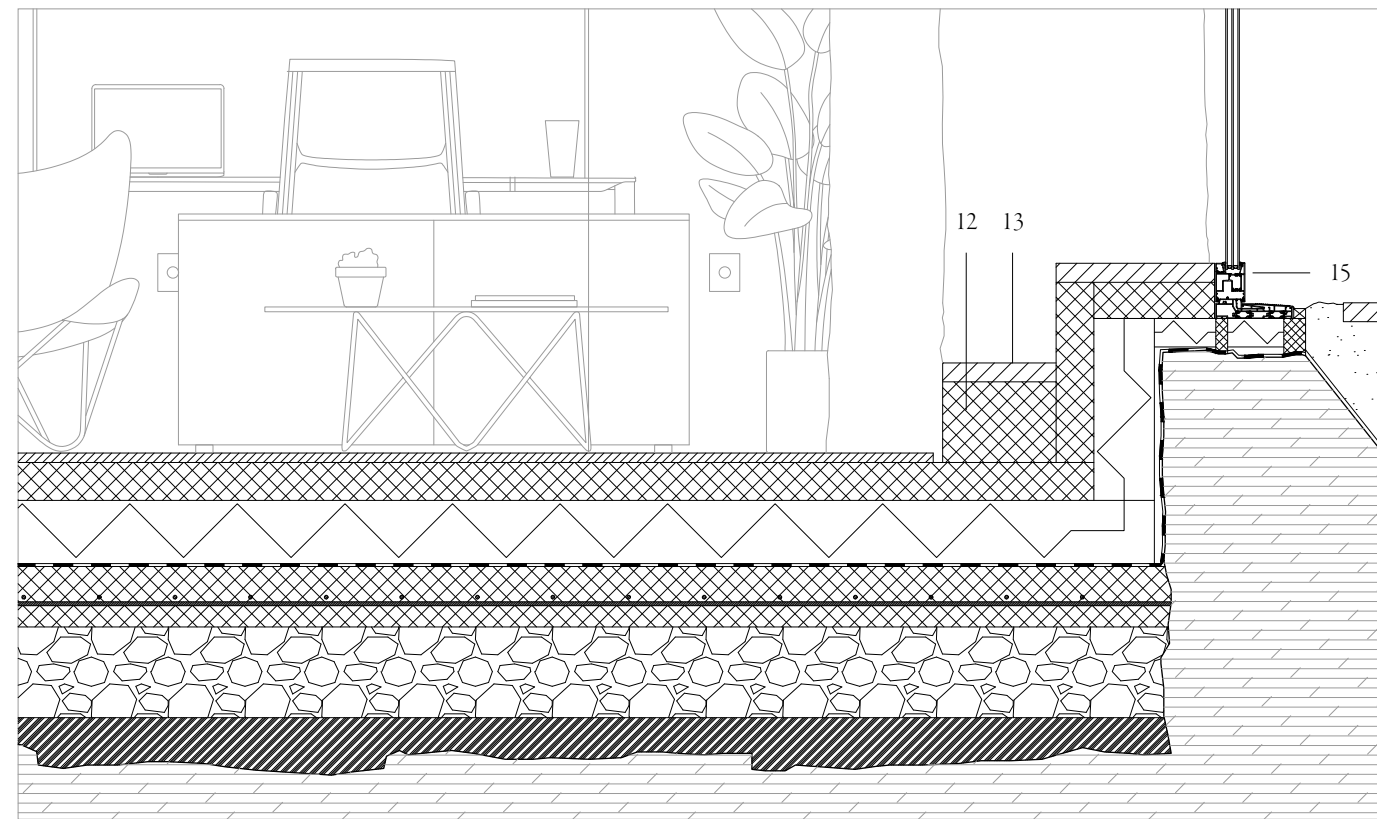
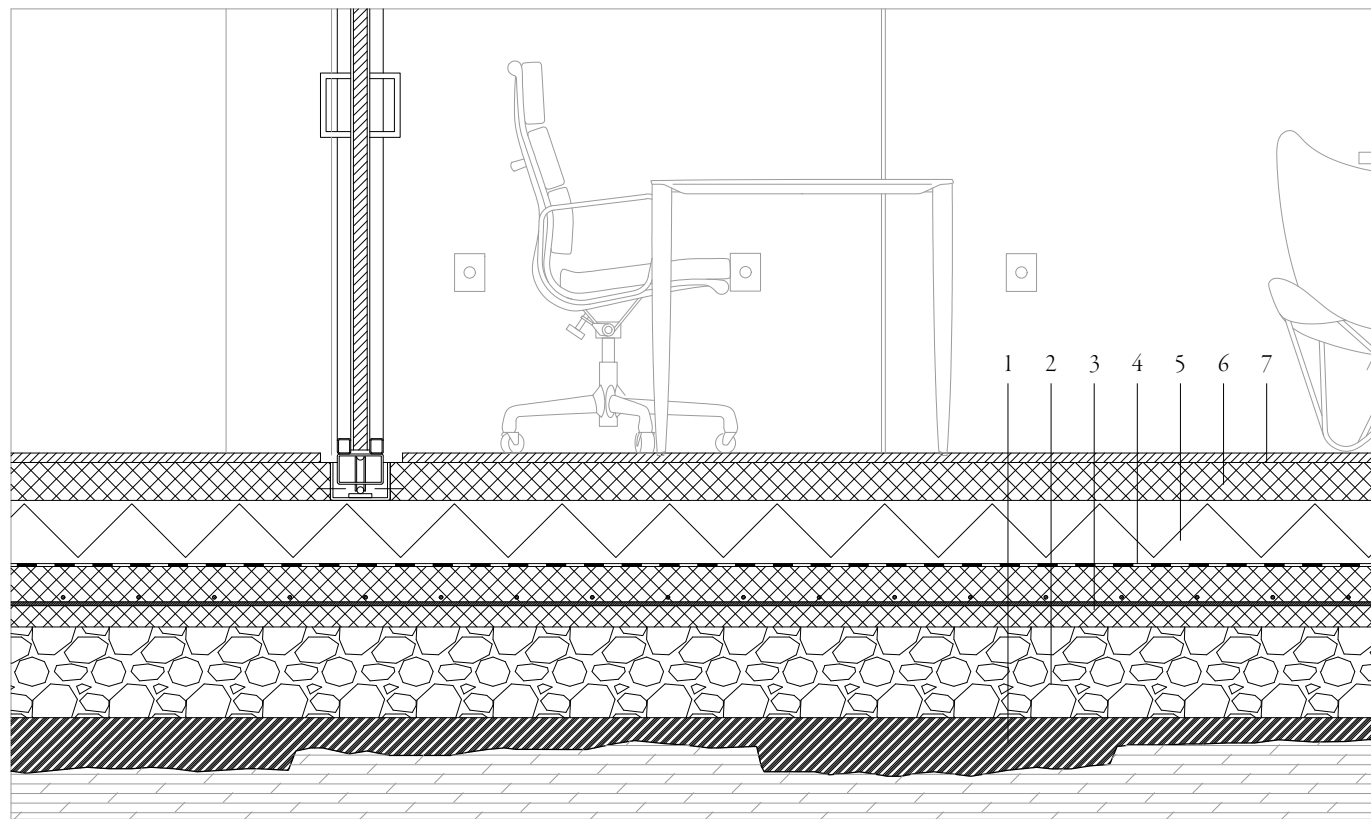
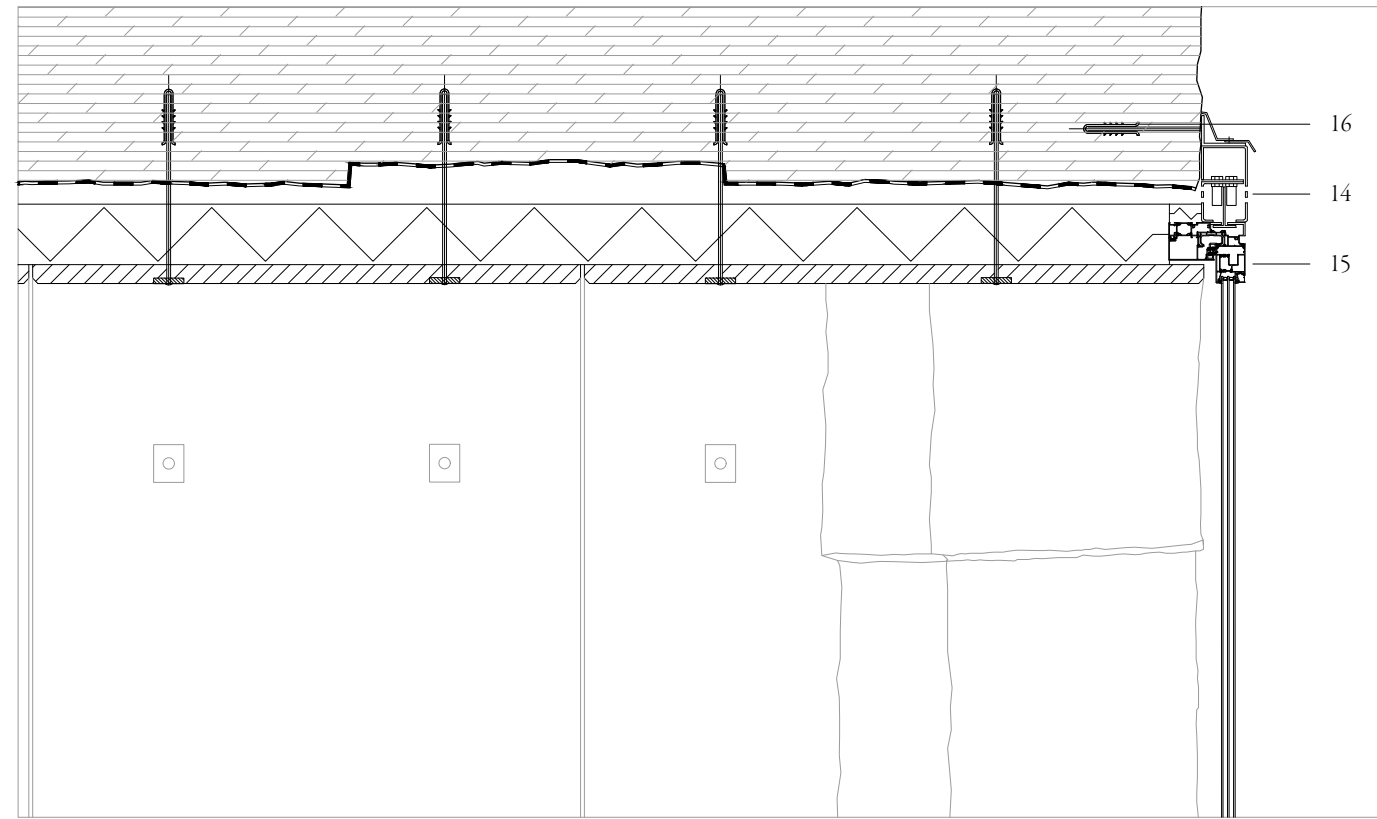
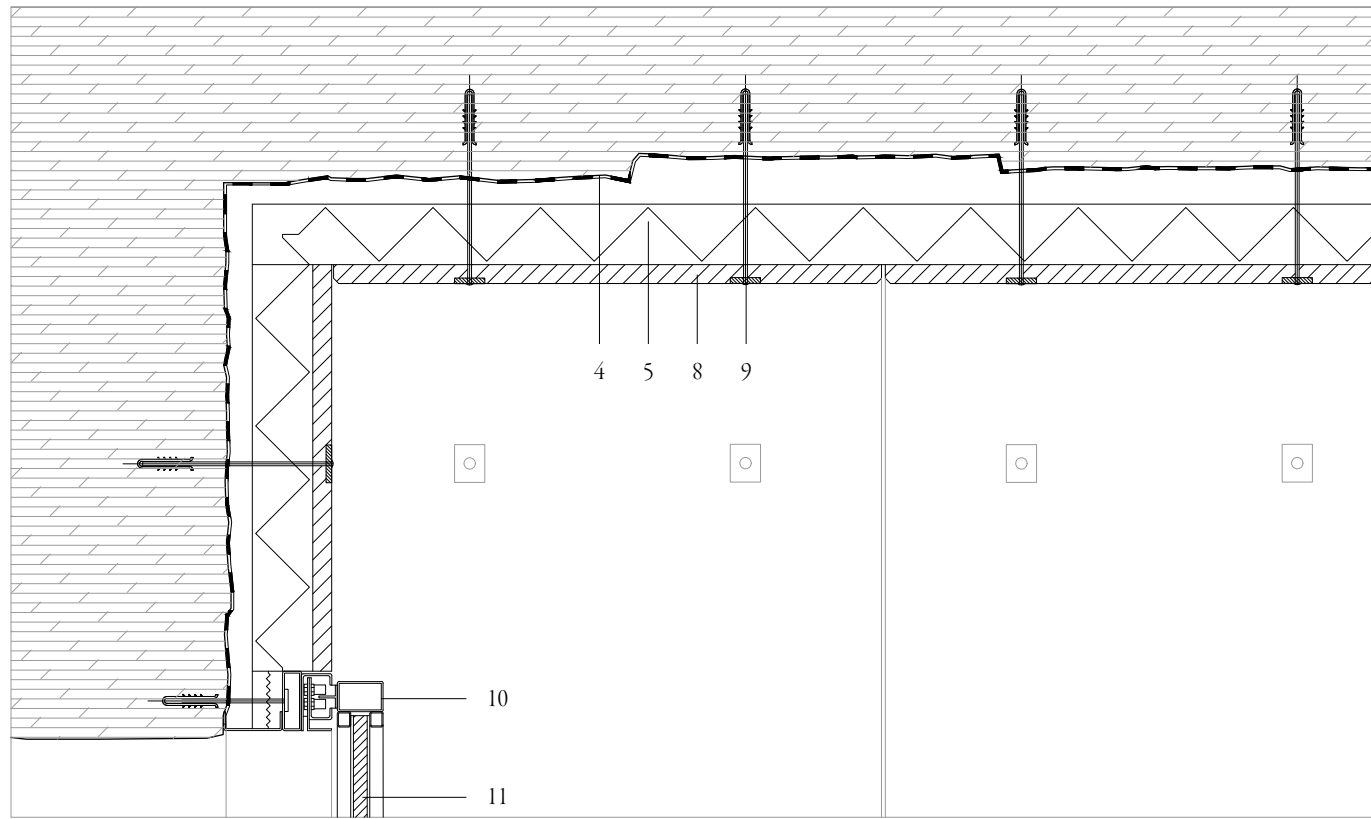




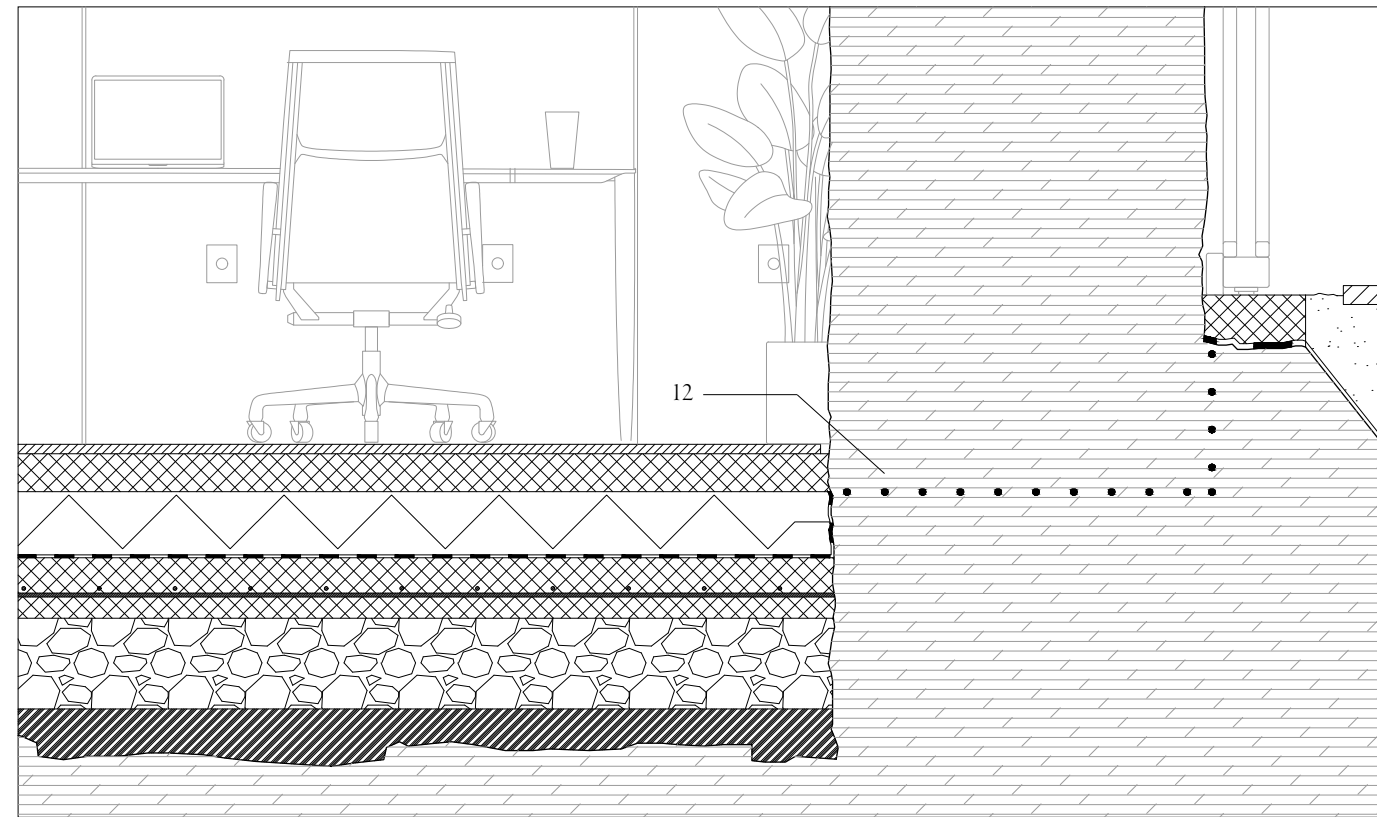
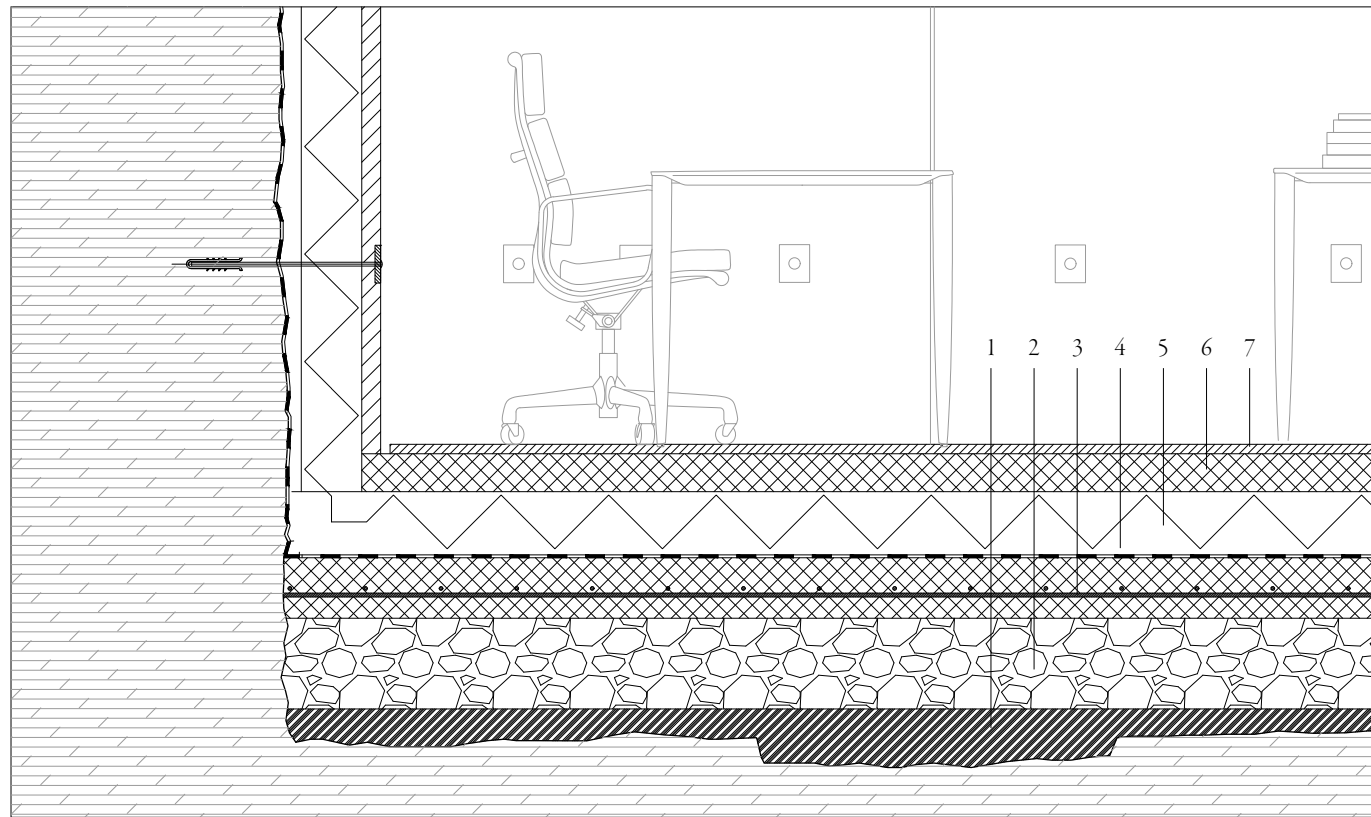
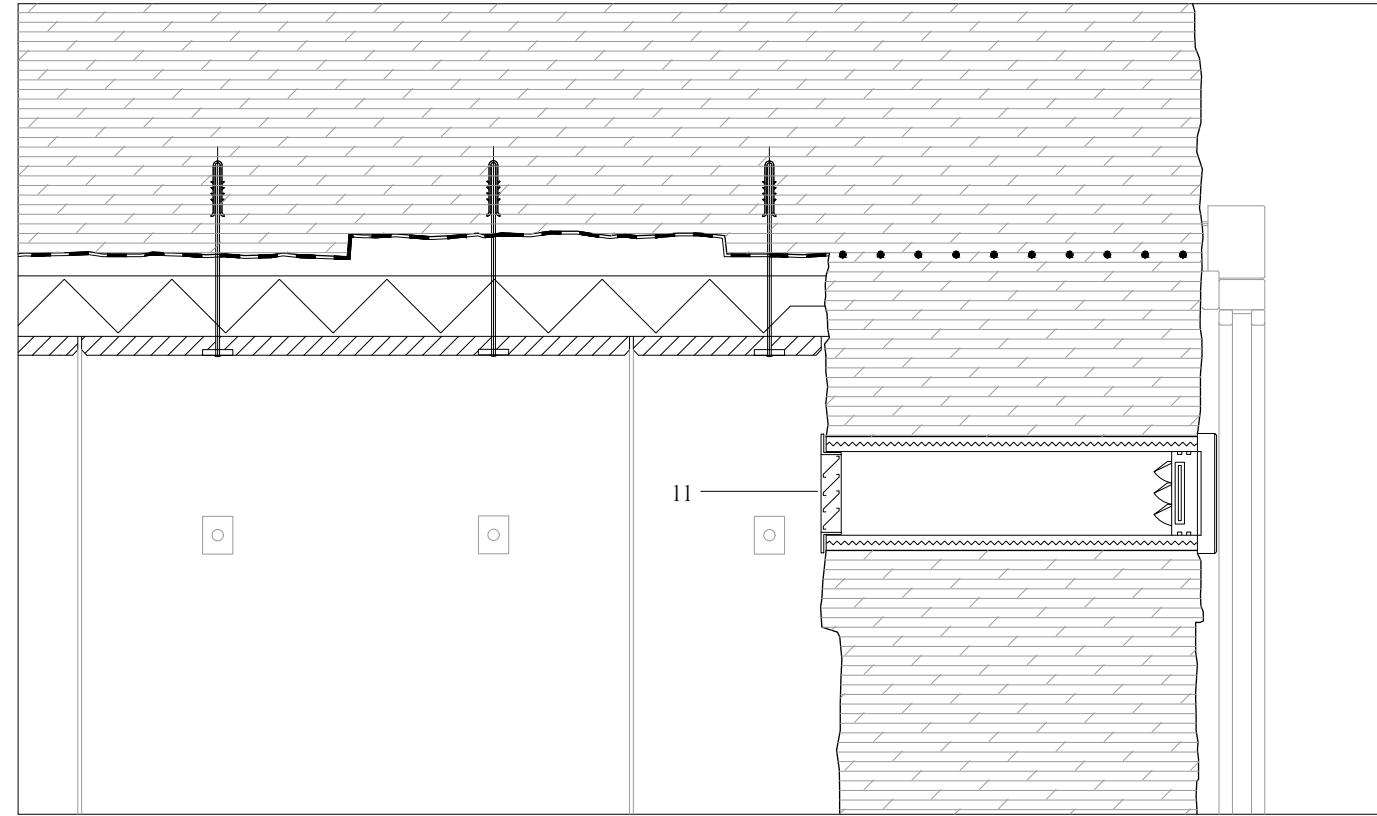
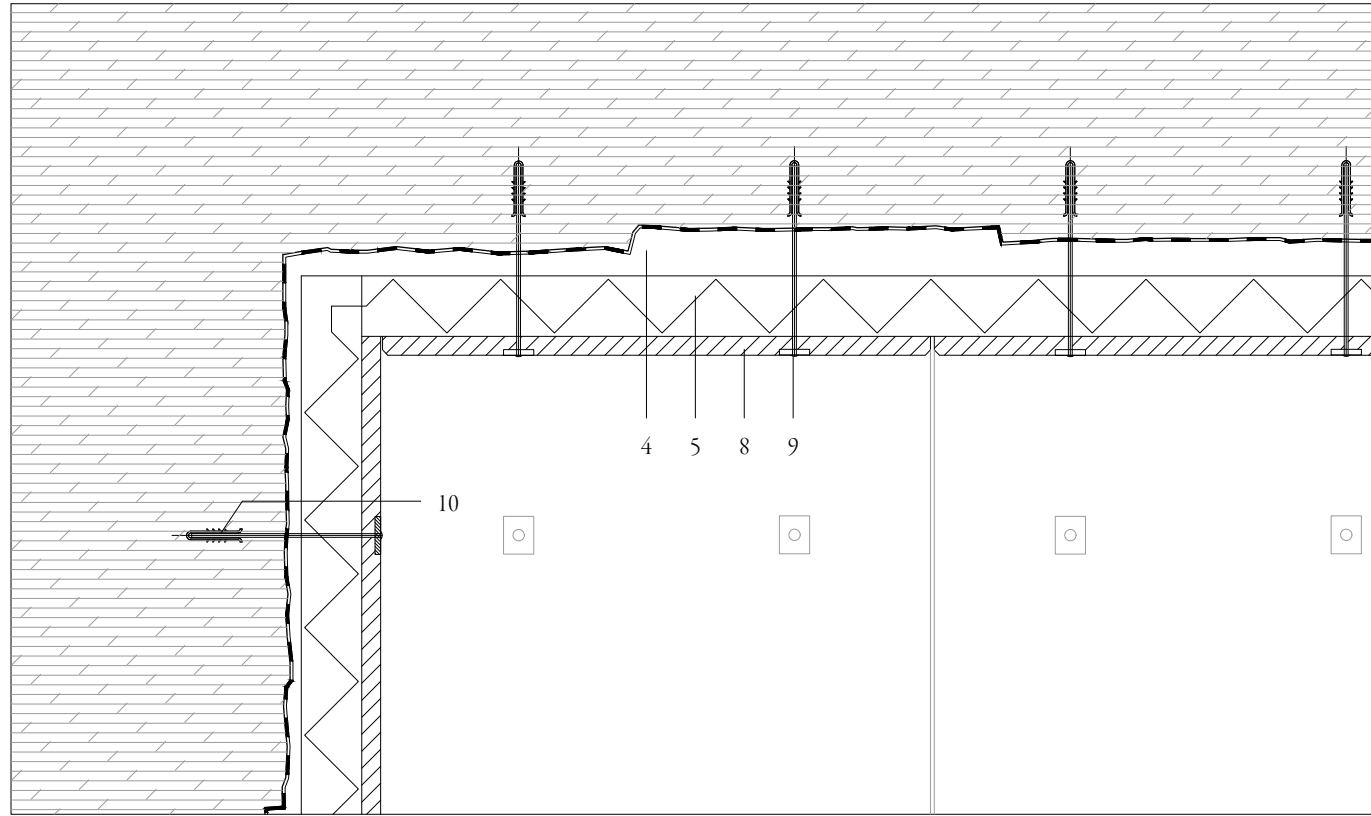




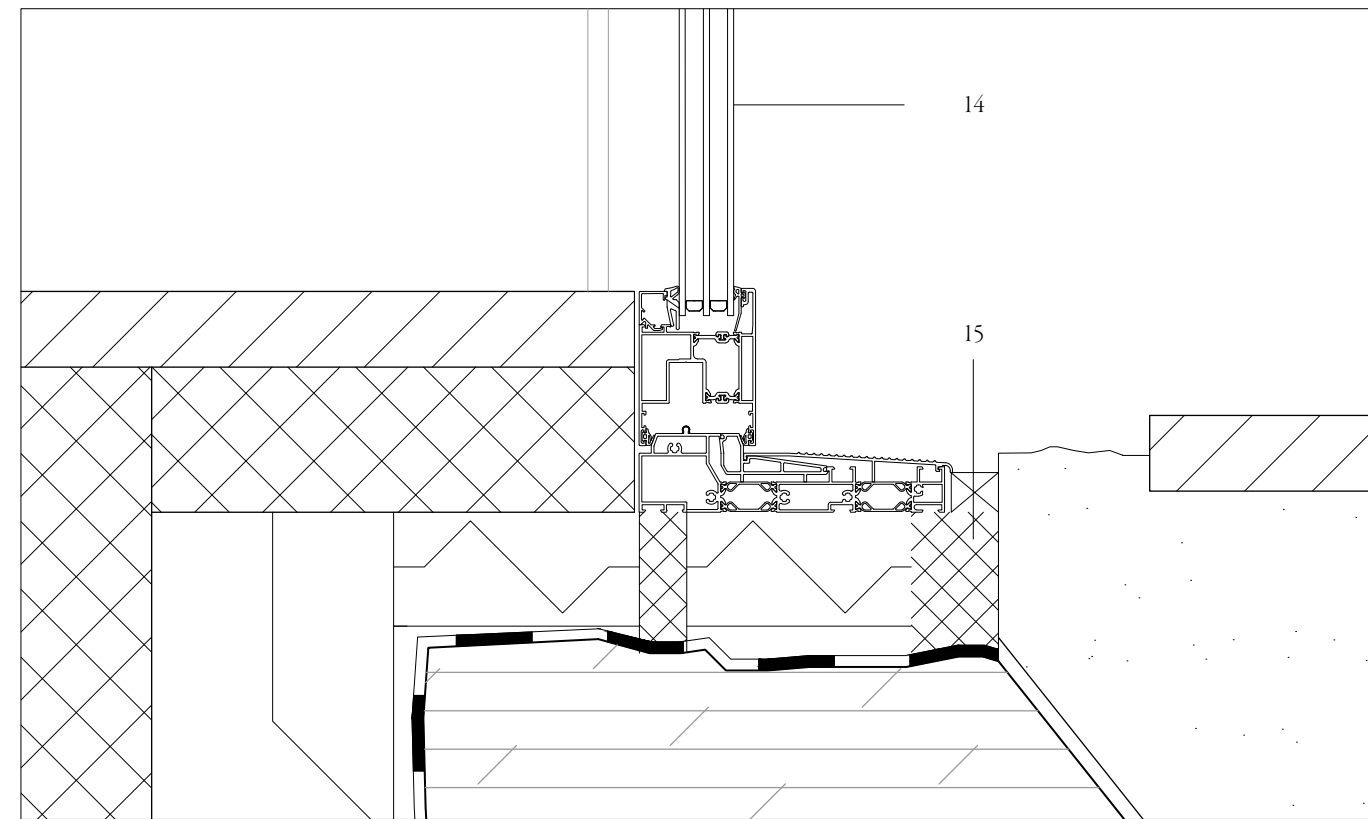
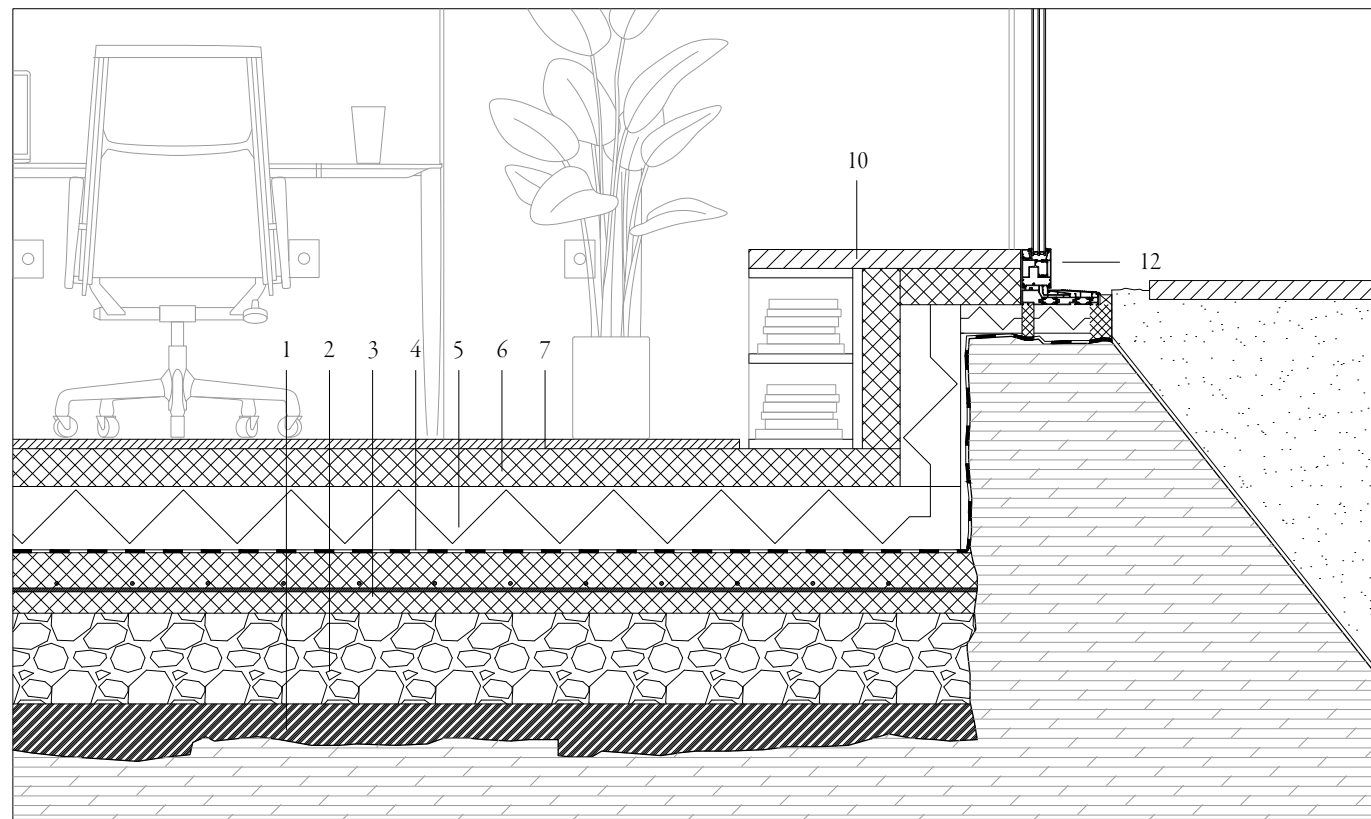
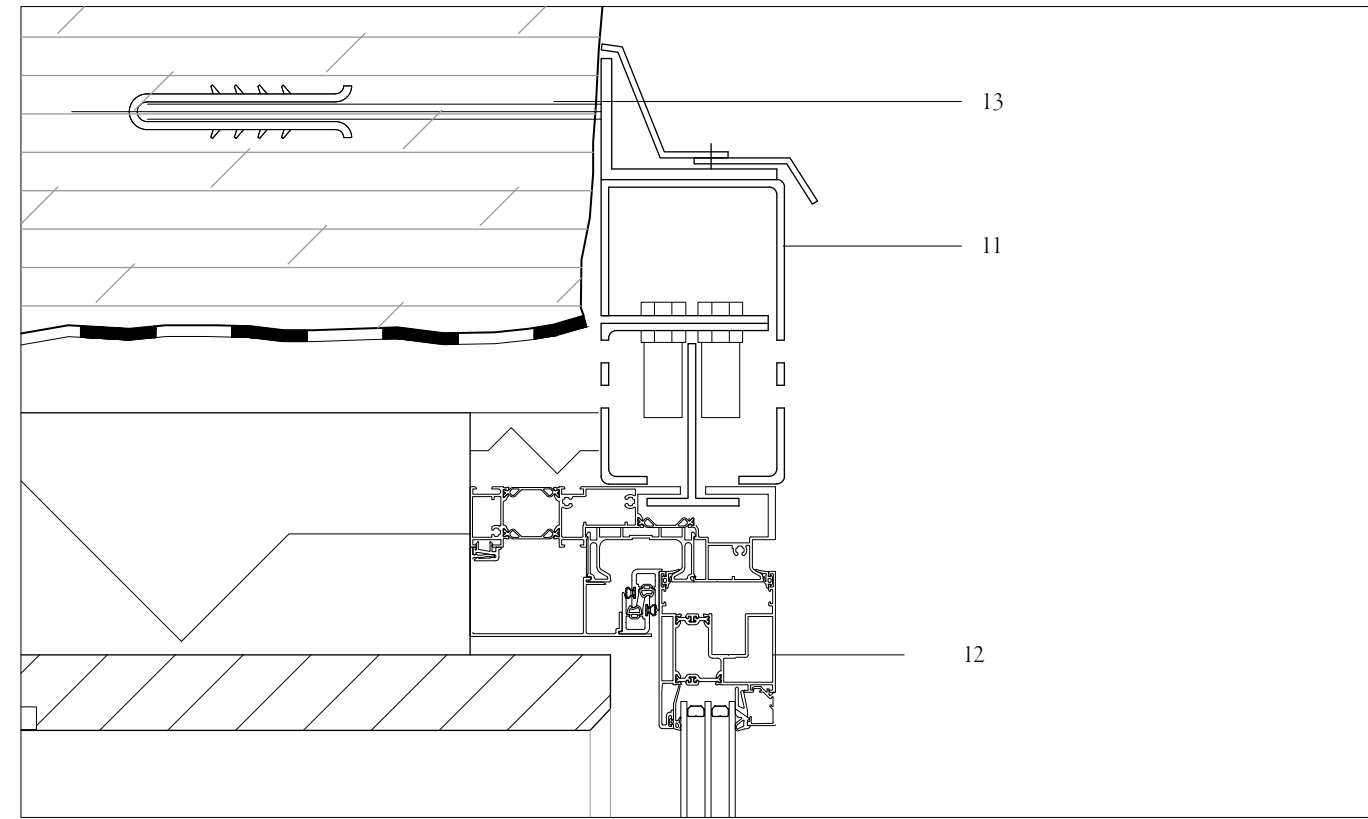
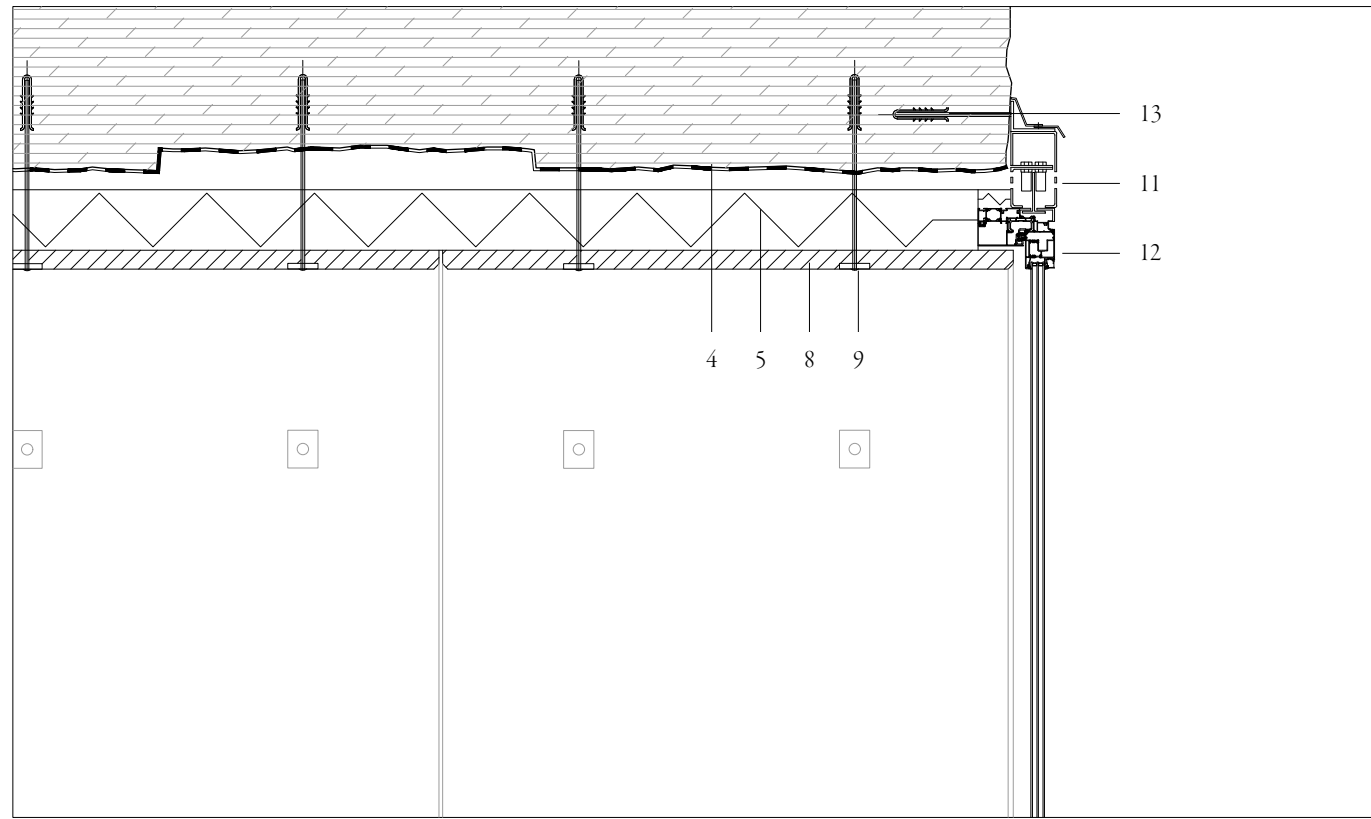




1. concrete screed 100mm
2. drainage layer 240mm
3. reinforced concrete with steel electro-welded mesh 150mm
4. damp proof membrane
5. rockwool insulation 160mm
6. concrete slab 100mm
7. industrial concrete flooring 20mm
8. prefabricated concrete panel 50mm
9. steel bar spacer
10. sliding door metal frame
11. wooden door
12. concrete stair block 180mm
13. wooden stair finish panel 20mm
14. metal profile frame
15. sliding window frame
16. metal gusset with rock screw

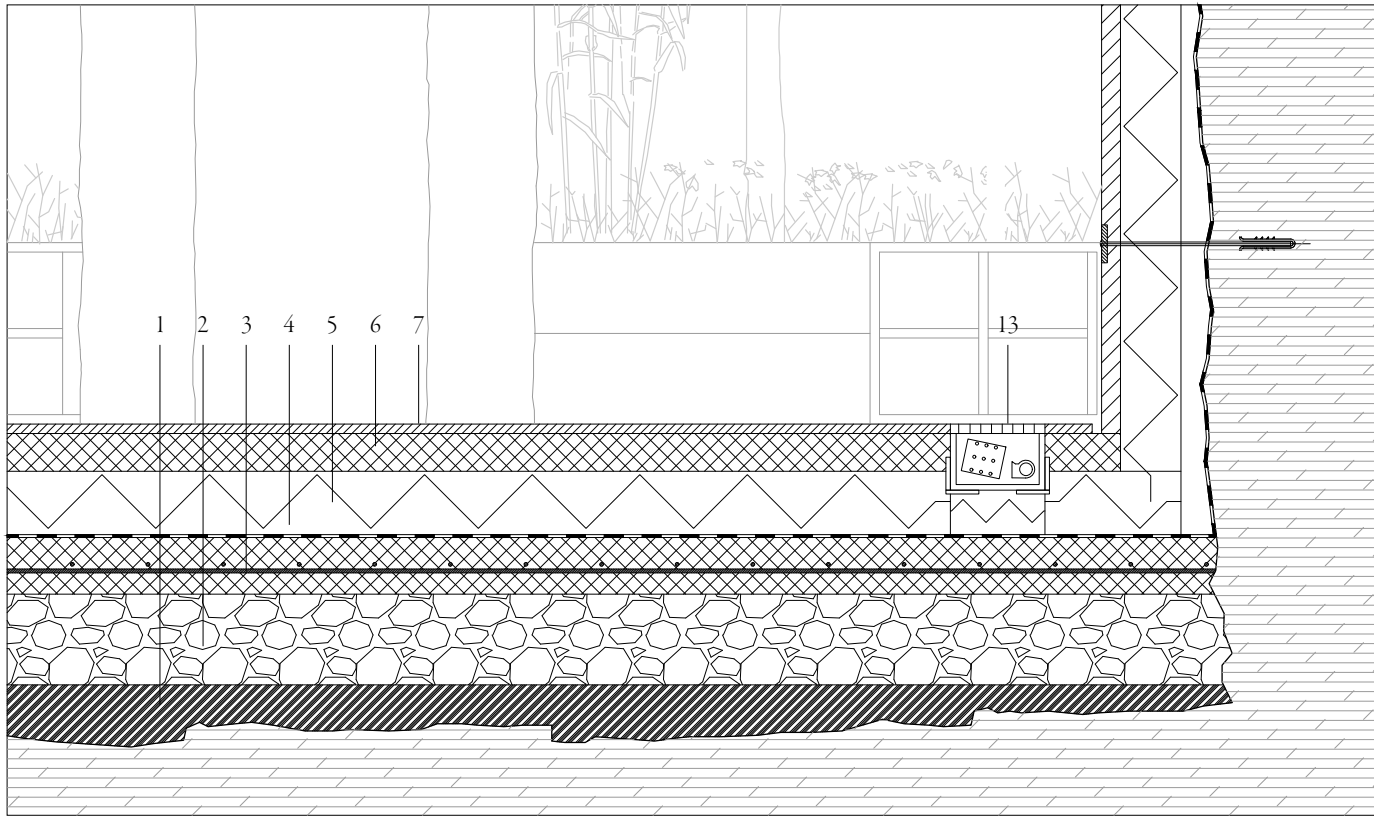
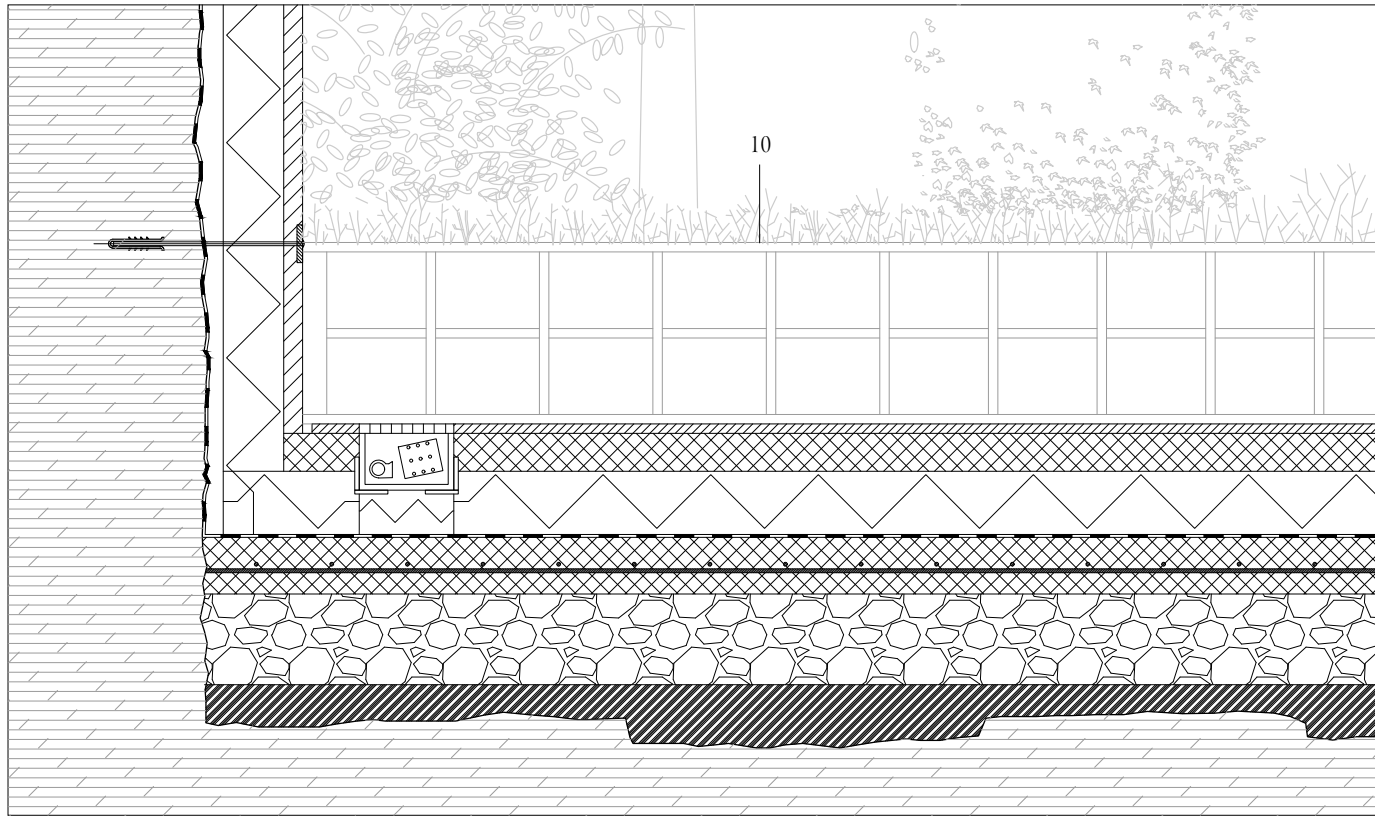
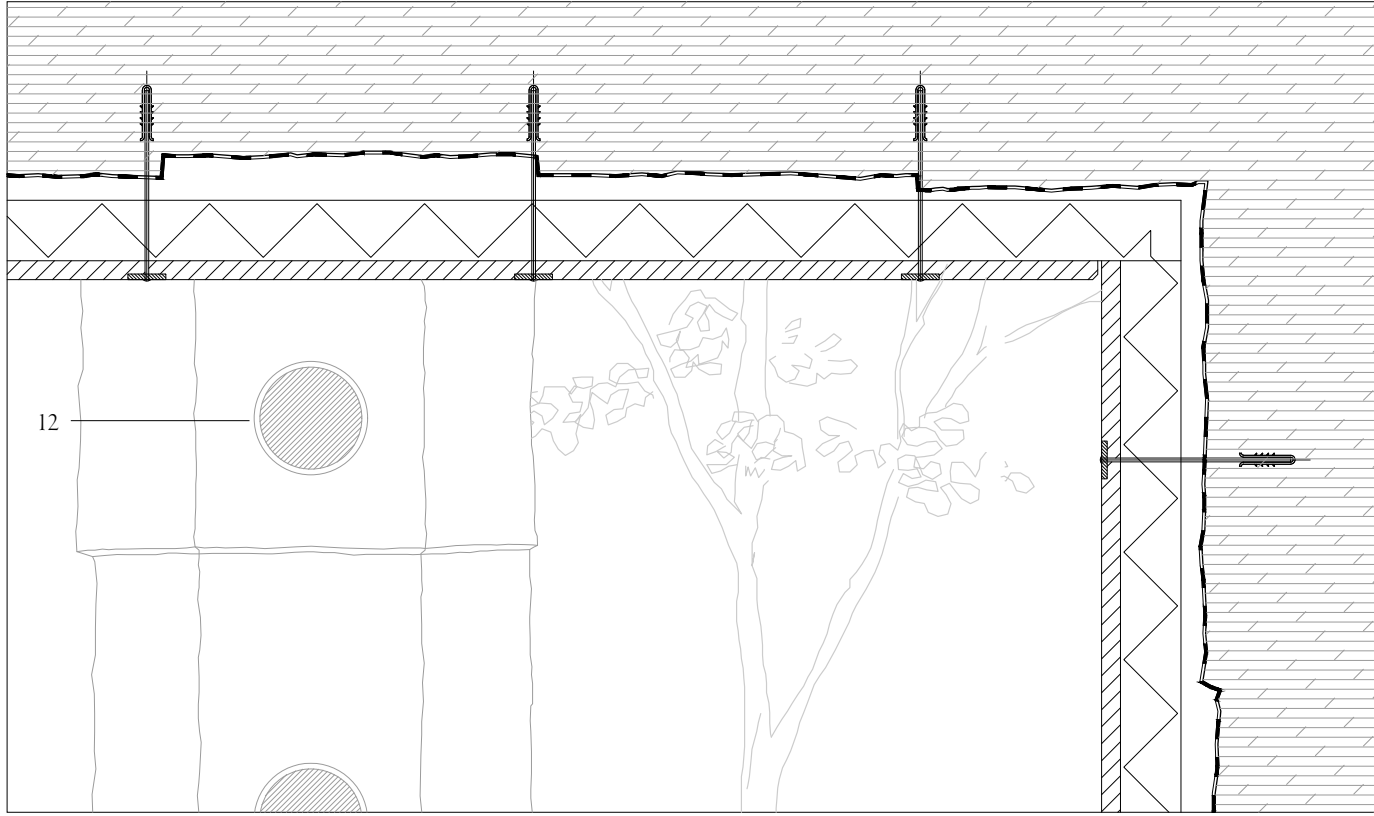
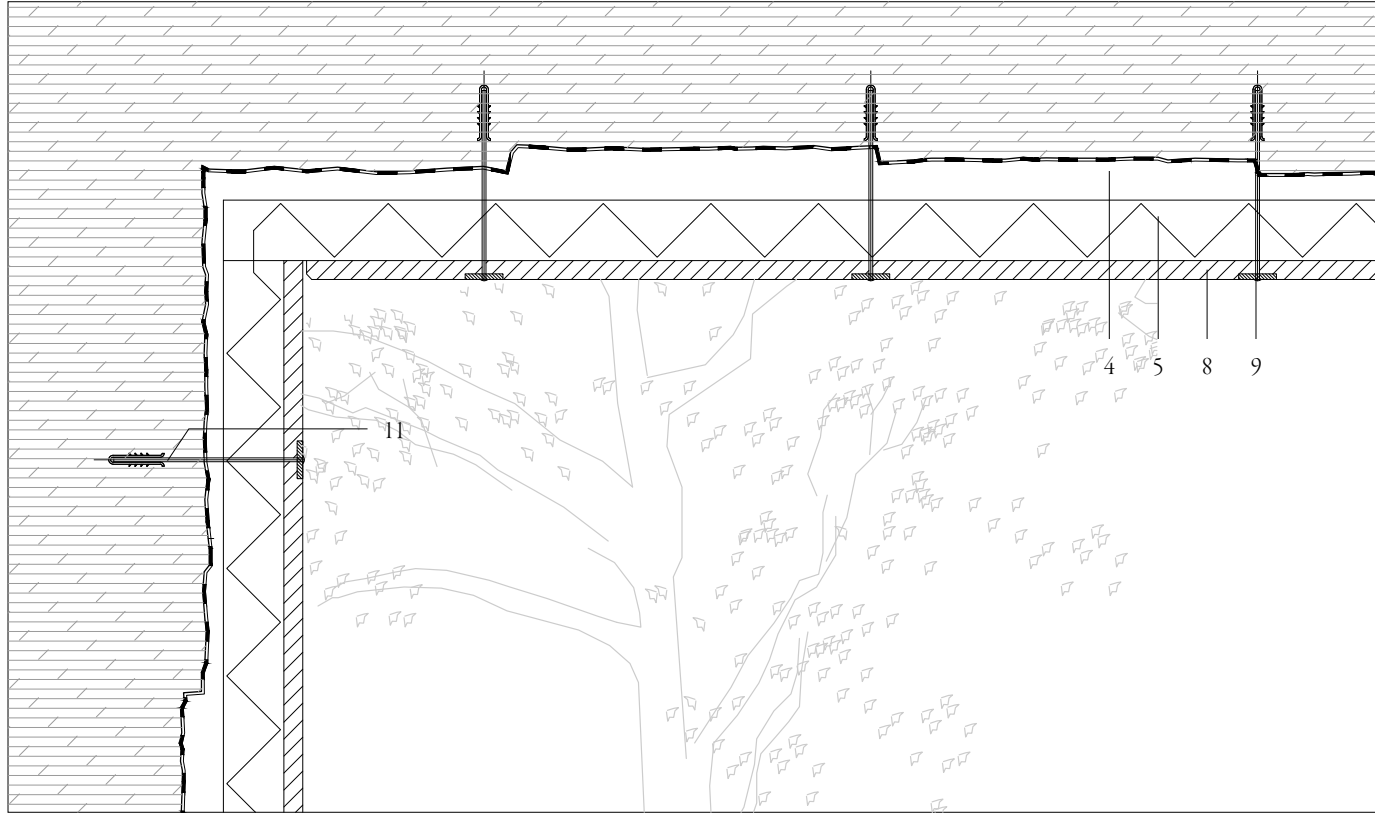


1. concrete screed 100mm
2. drainage layer 240mm
3. reinforced concrete with steel electro-welded mesh 150mm
4. damp proof membrane
5. rockwool insulation 160mm
6. concrete slab 100mm
7. industrial concrete flooring 20mm
8. prefabricated concrete panel 50mm
9. steel bar spacer
10. metal gusset with rock screw
11. mechanical ventilation unit
12. chemical cut of humidity raise

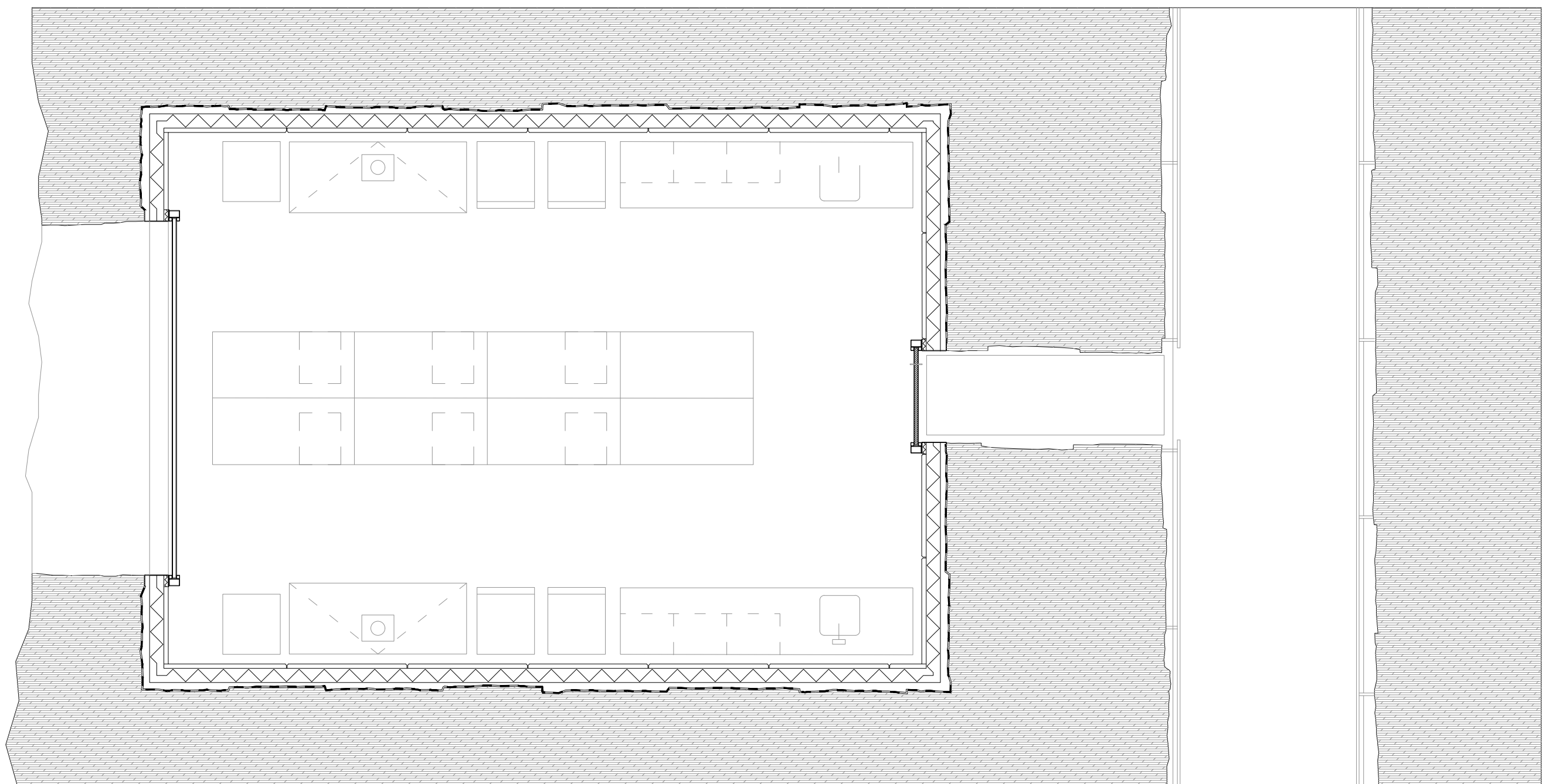


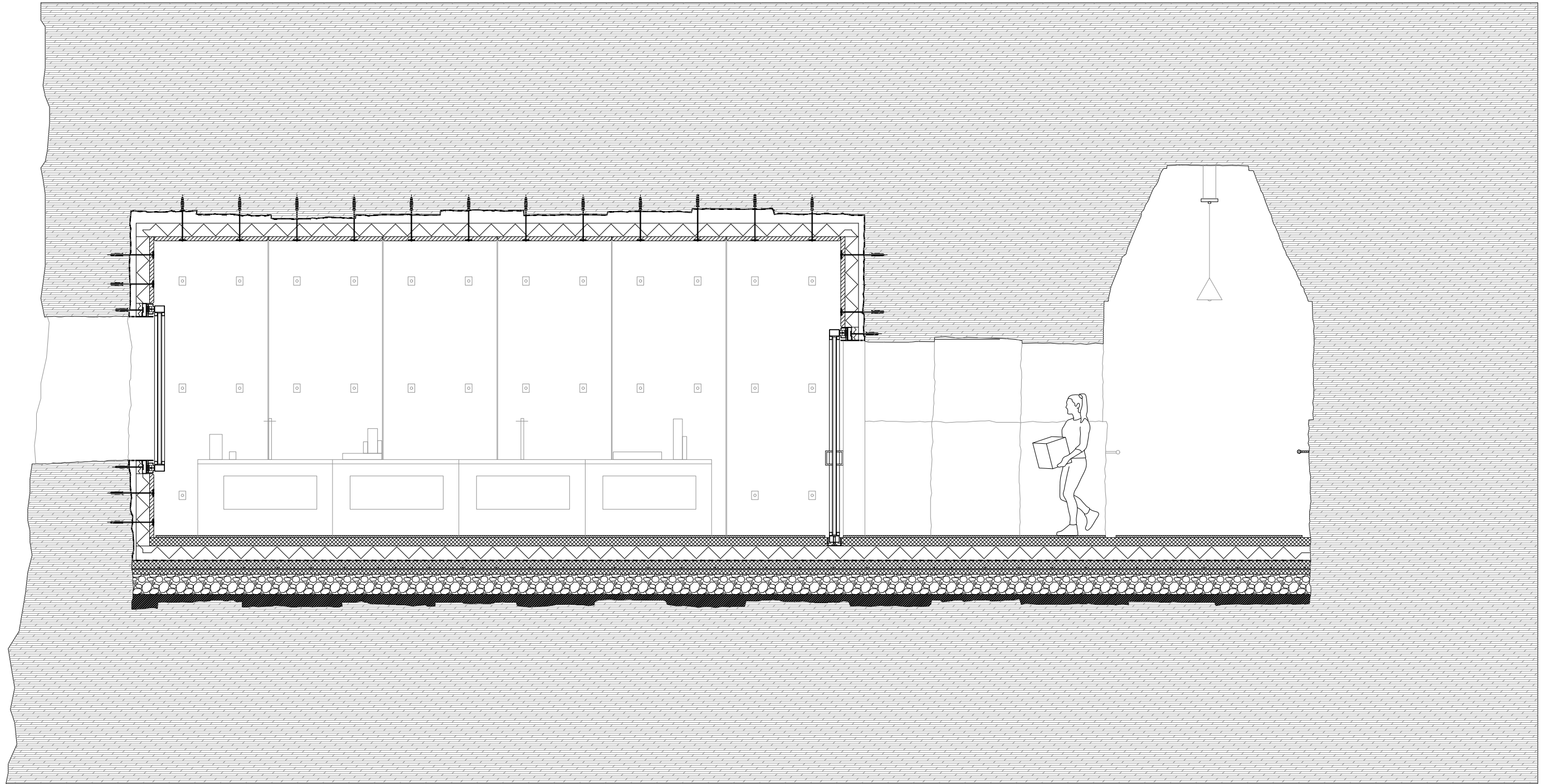
1. concrete screed 100mm
2. drainage layer 240mm
3. reinforced concrete with steel electro-welded mesh 150mm
4. damp proof membrane
5. rockwool insulation 160mm
6. concrete slab 100mm
7. industrial concrete flooring 20mm
8. prefabricated concrete panel 50mm
9. steel bar spacer
10. wooden finish panel 20mm
11. metal profile frame
12. sliding window frame
13. metal gusset with rock screw
14. double-glazed glass
15. concrete spacer for window frame 80mm



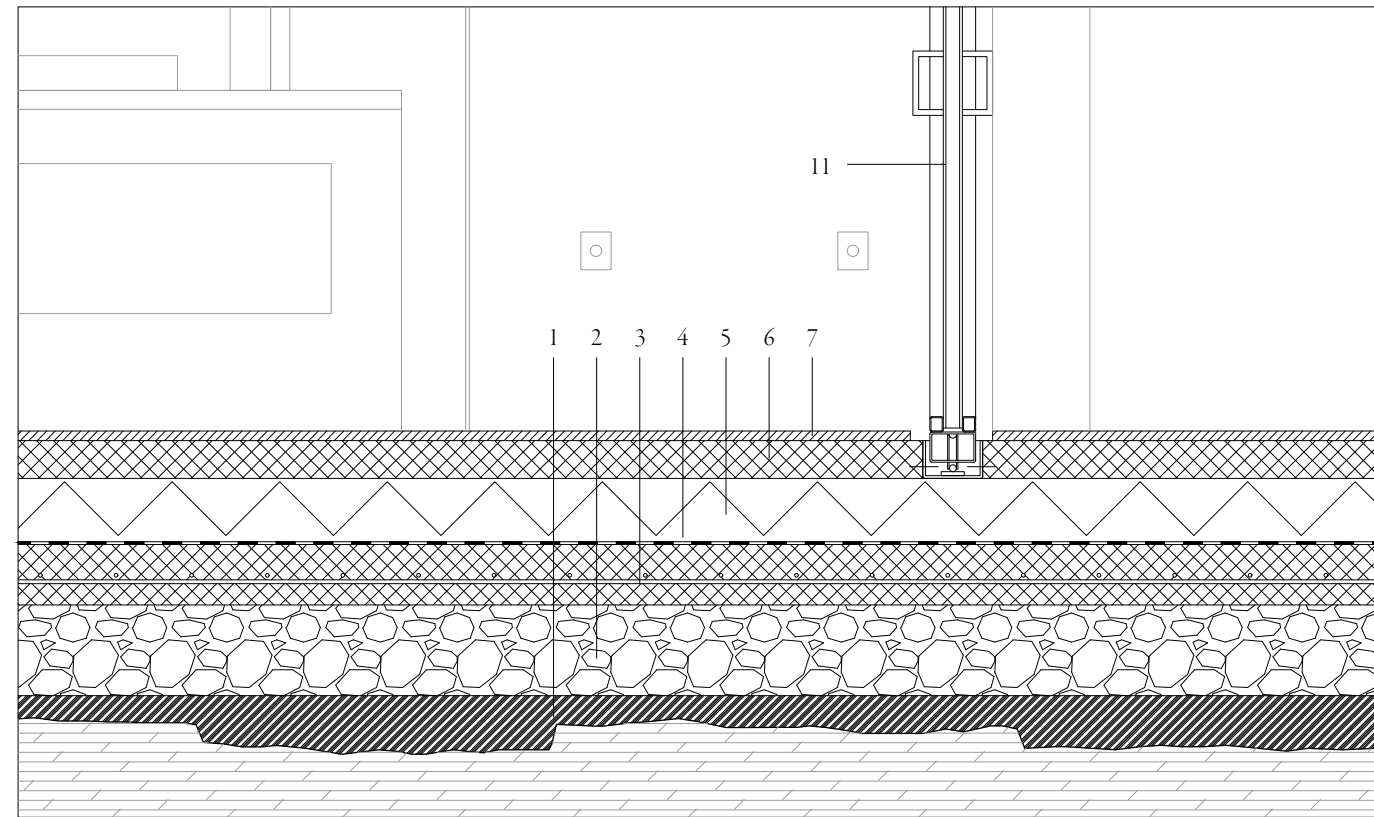
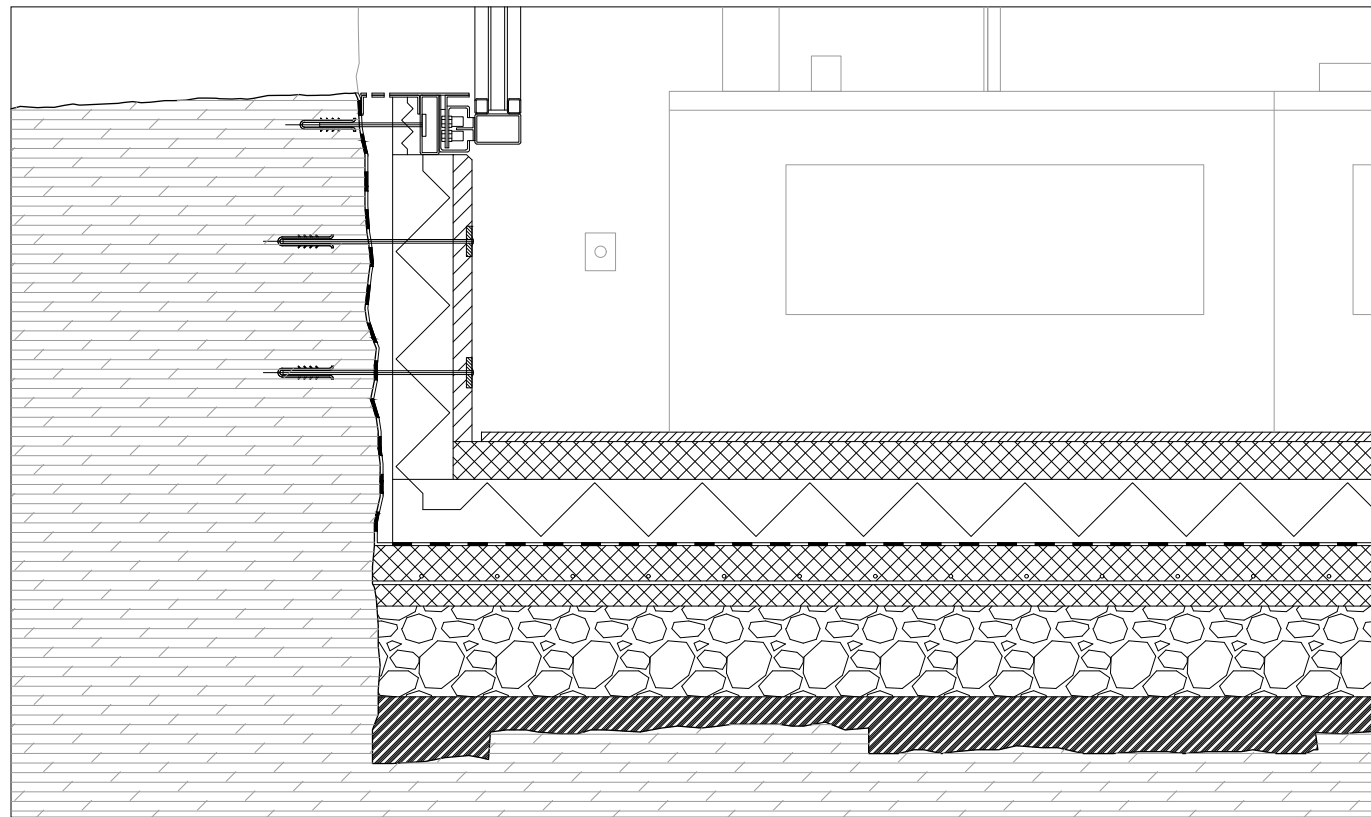
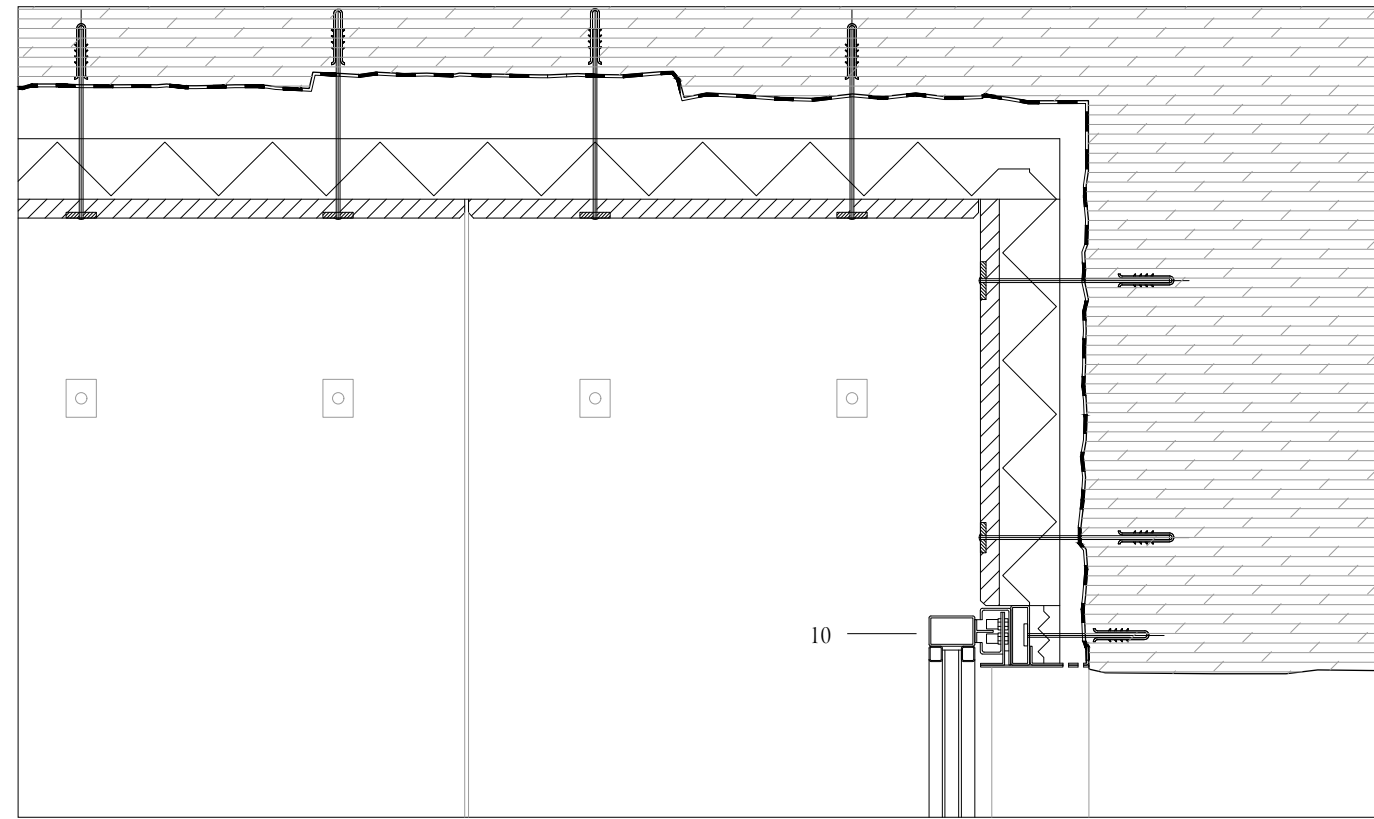
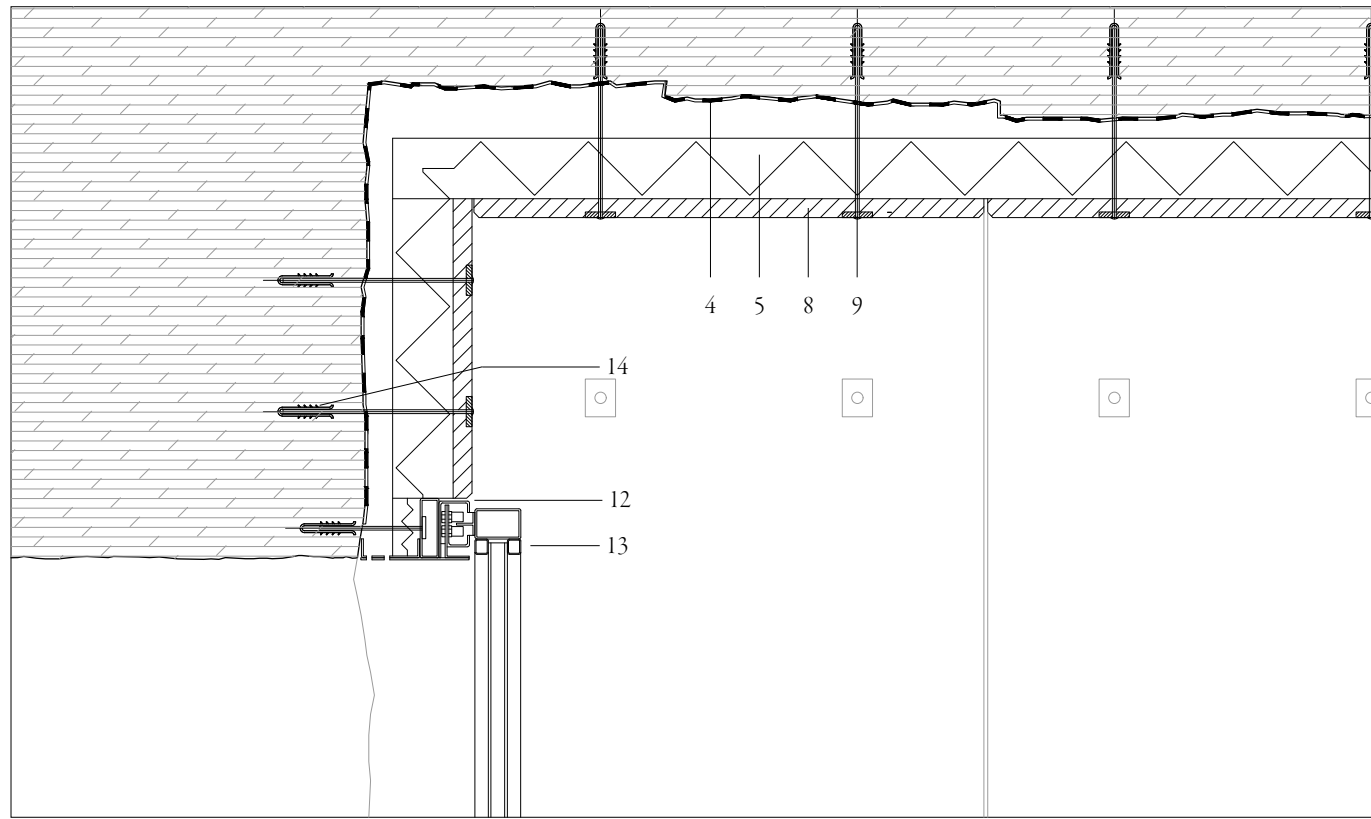


1. concrete screed 100mm
2. drainage layer 240mm
3. reinforced concrete with steel electro-welded mesh 150mm
4. damp proof membrane
5. rockwool insulation 160mm
6. concrete slab 100mm
7. industrial concrete flooring 20mm
8. prefabricated concrete panel 50mm
9. steel bar spacer
10. wooden stair finish panel 20mm
11. metal gusset with rock screw
12. mechanical ventilation unit
13. fan coil floor units

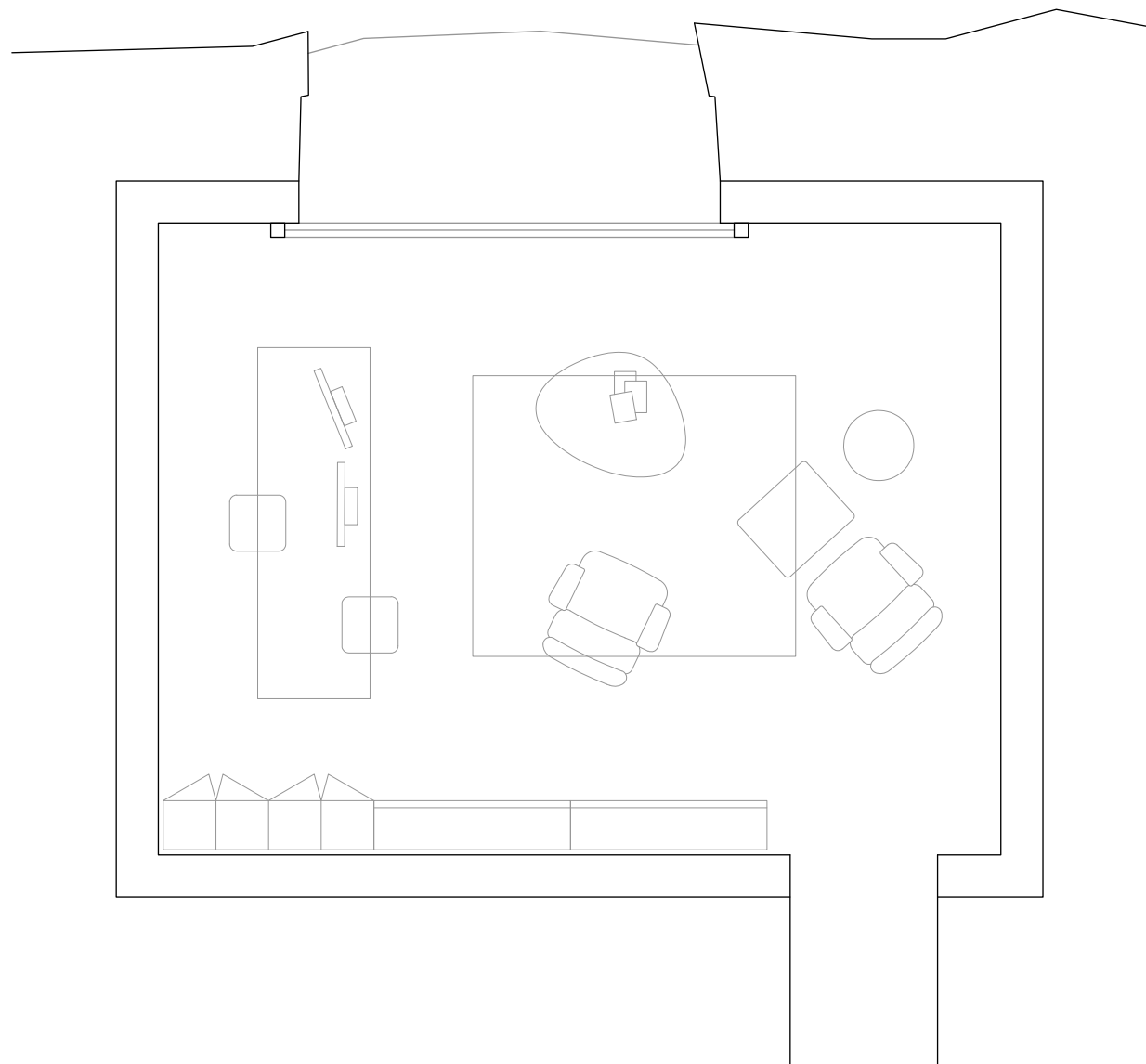
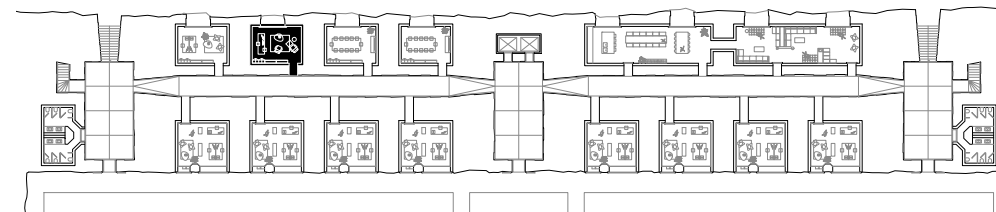




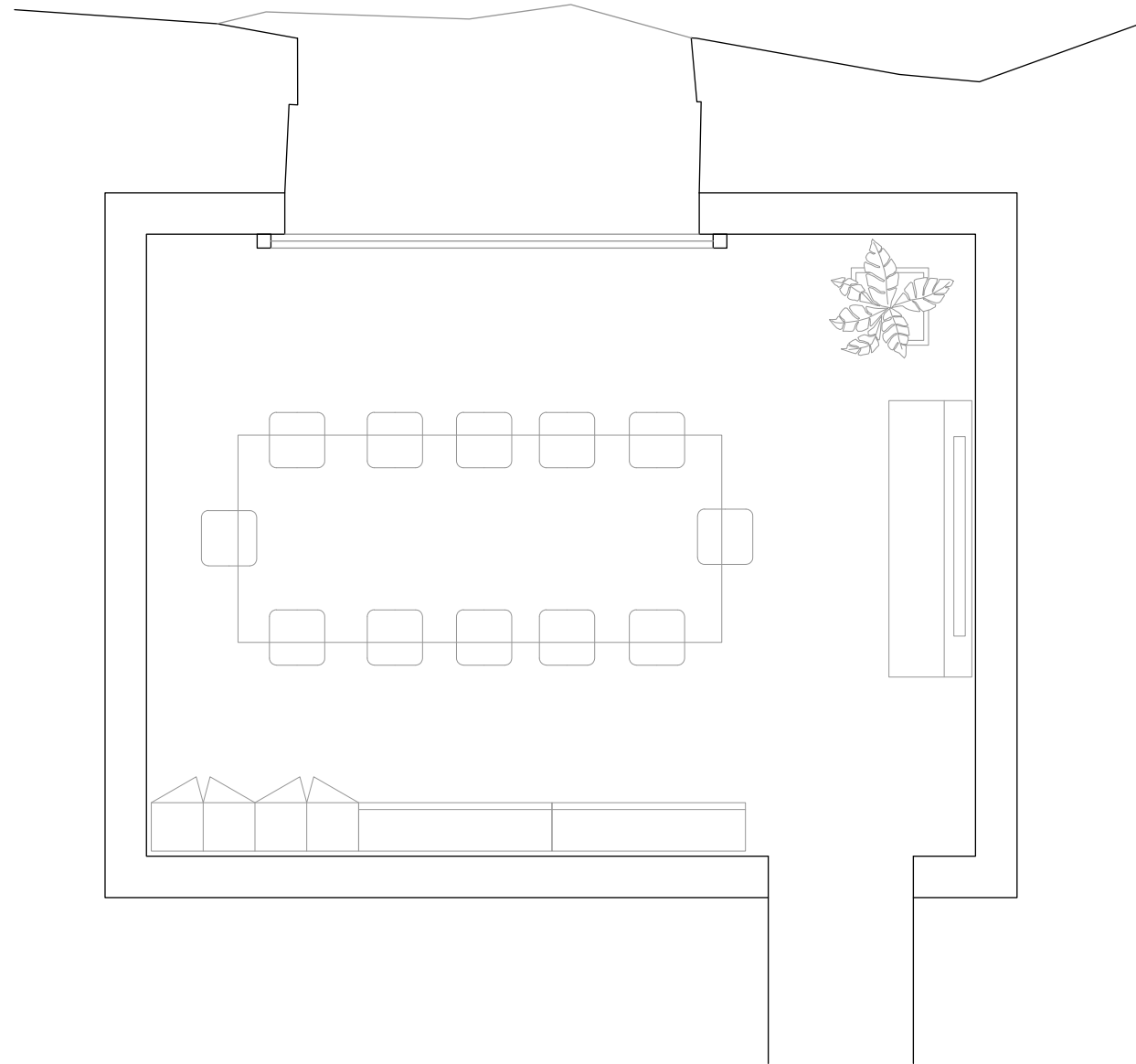
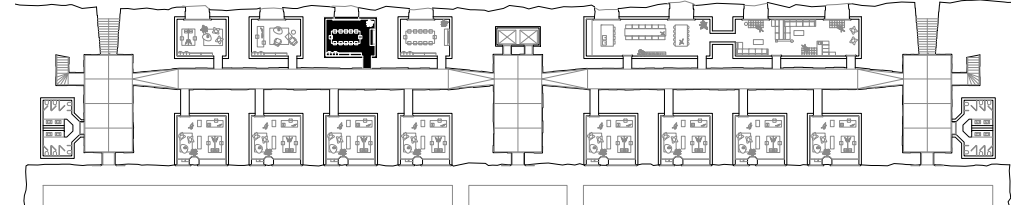




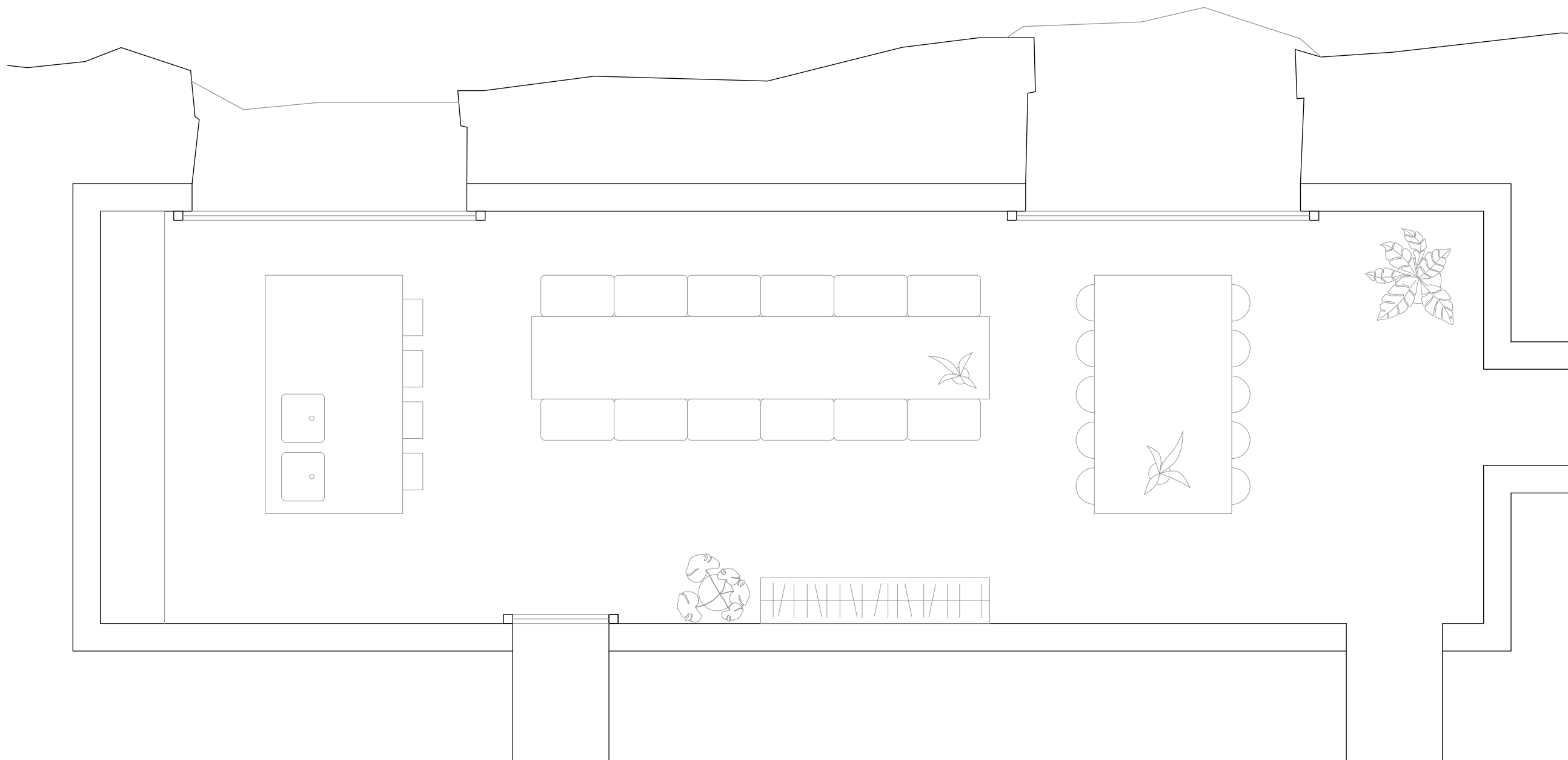
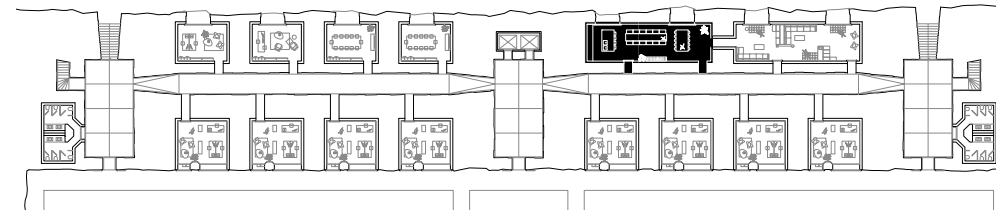
1. concrete screed 100mm
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6. concrete slab 100mm
7. industrial concrete flooring 20mm
8. prefabricated concrete panel 50mm
9. steel bar spacer
10. sliding door metal frame
11. wooden door
12. metal profile frame
13. metal window frame
14. metal gusset with rock screw

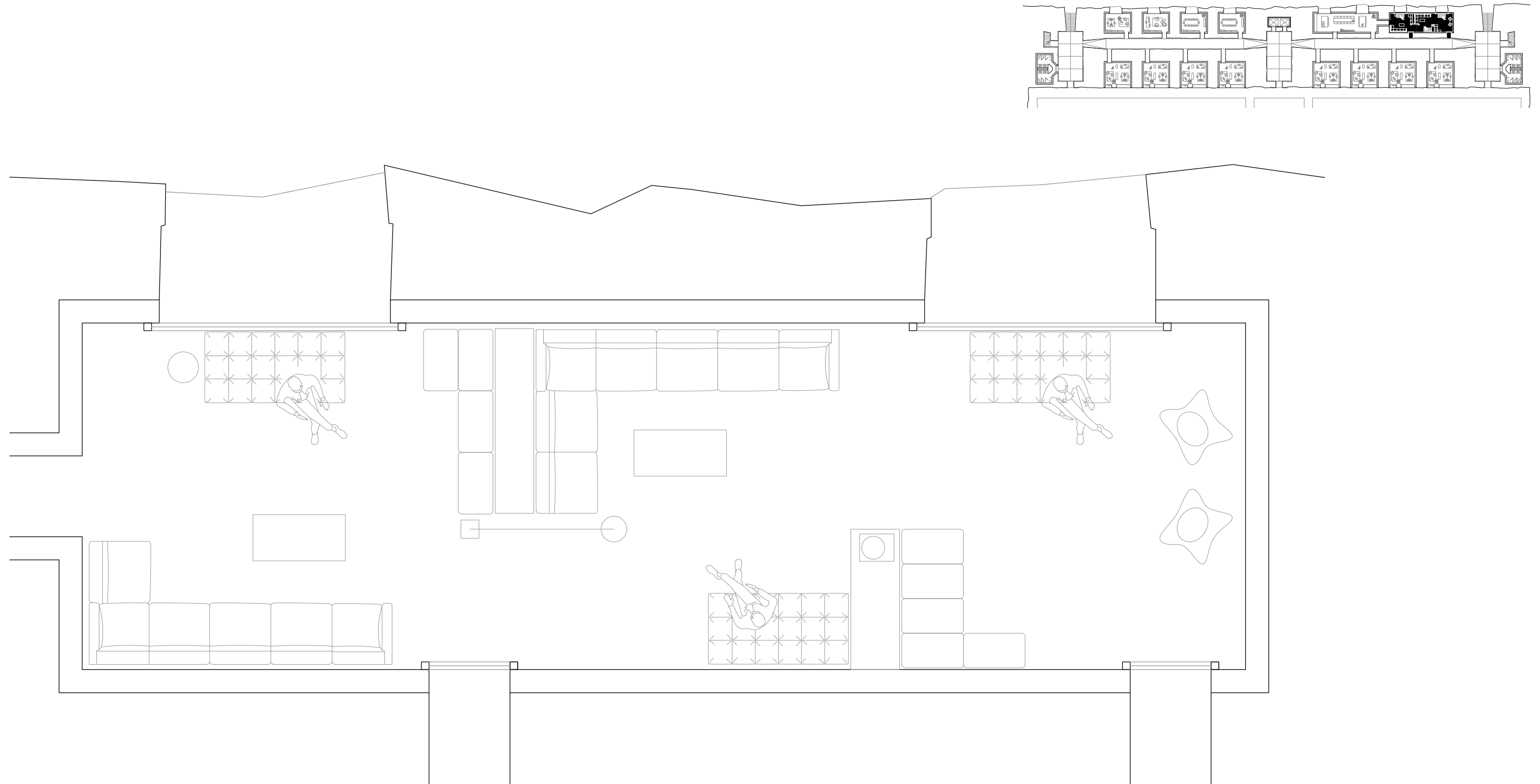


Single Office Plan | Ground Floor  
*Scale 1:50*













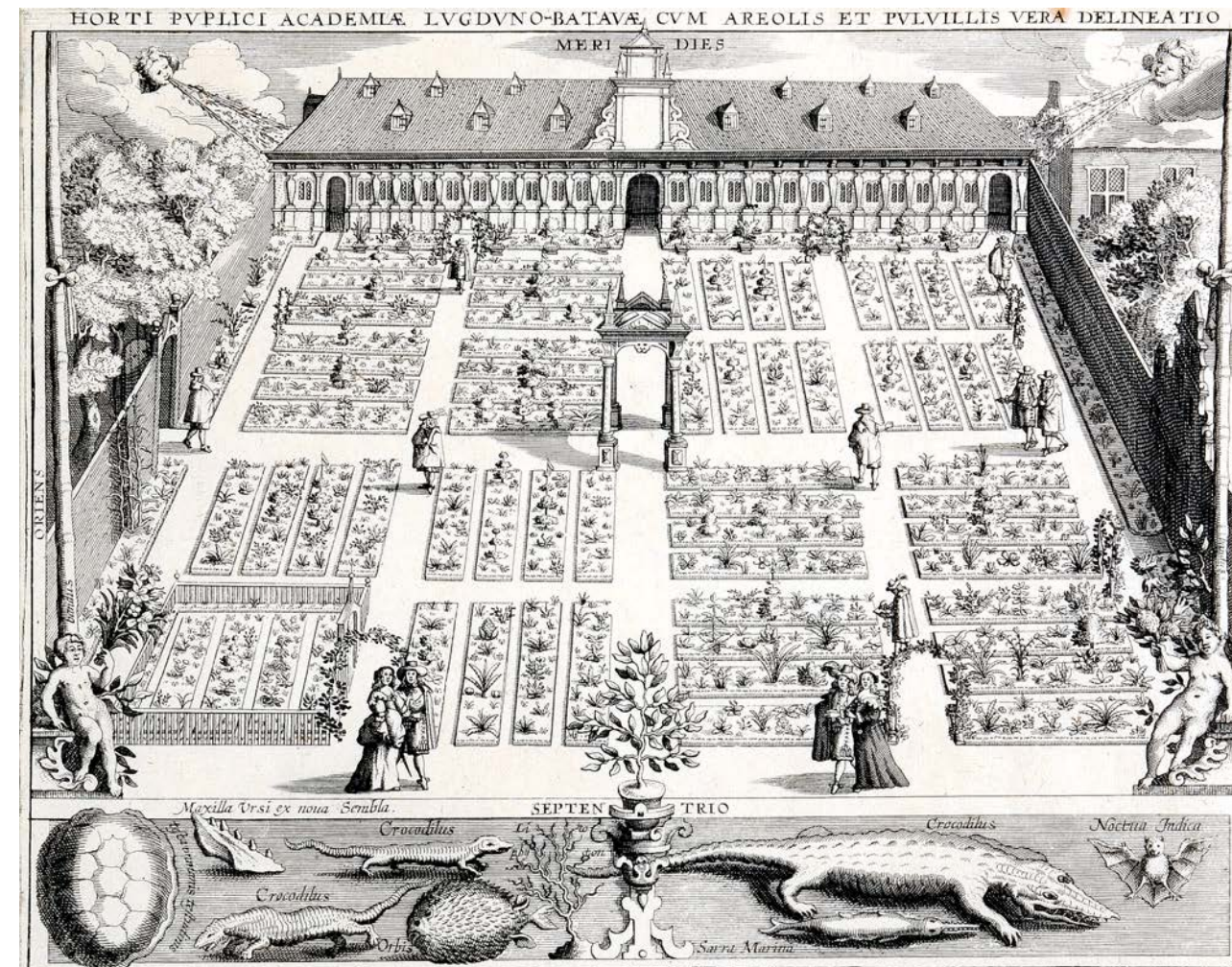
*Making of the garden*



Re-creation of the quarry's microcosmos



Definition of the garden as a  
scientific ground





*Filipendula  
Vulgaris*



*Ranunculus  
Bulbosus*



*Southern  
Hawker*



*Northern  
Green Frog*



*Bombina  
Variegata*



*Midwife  
Toad*



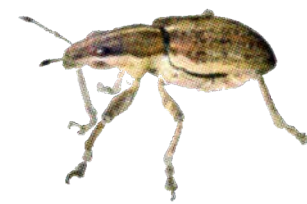
*Pennisetum  
Alopecuroides*



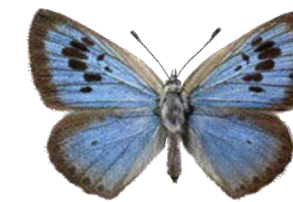
*Smooth  
Newt*



*Common  
Kingfisher*



*Lizard  
Weevil*

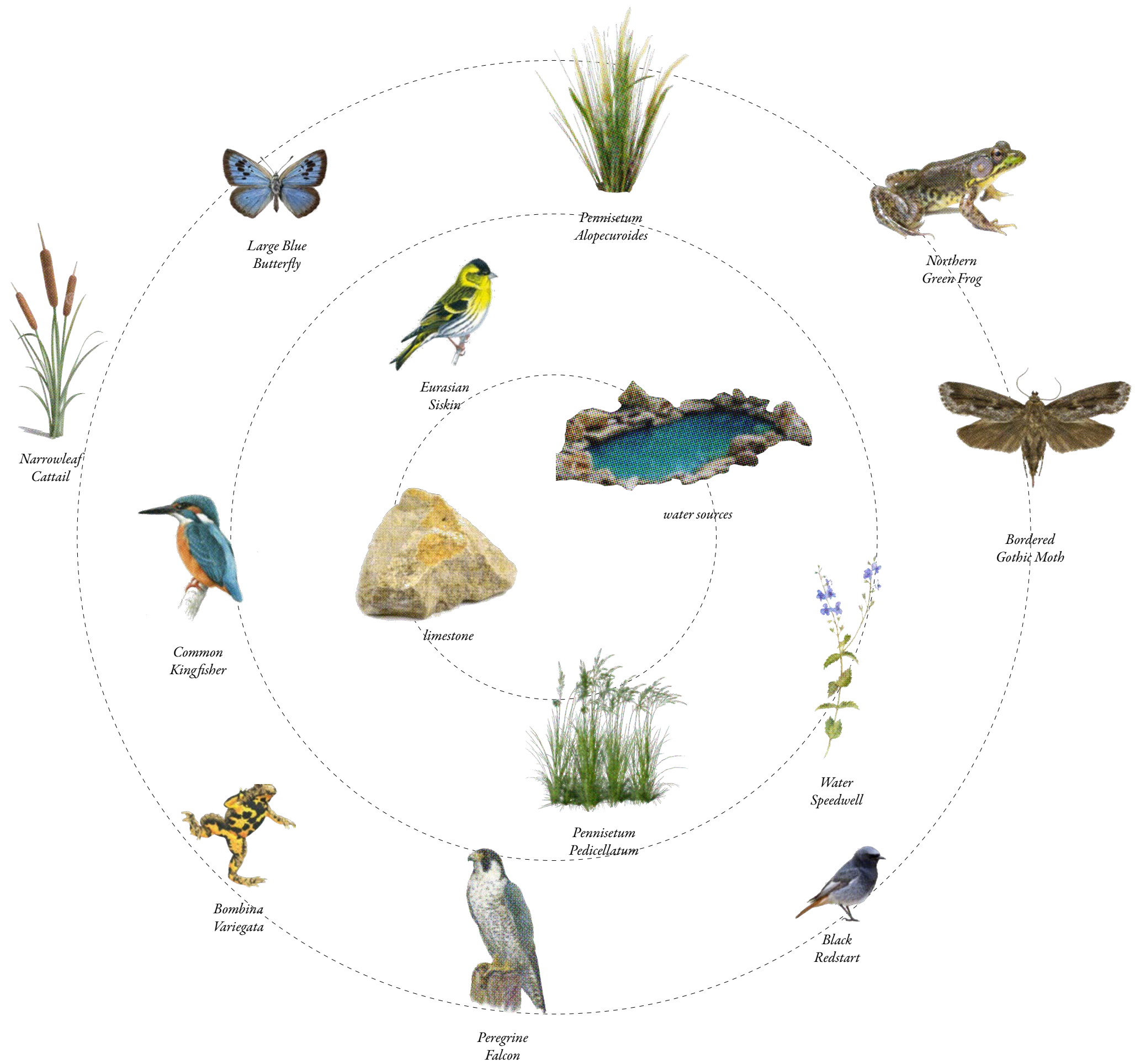


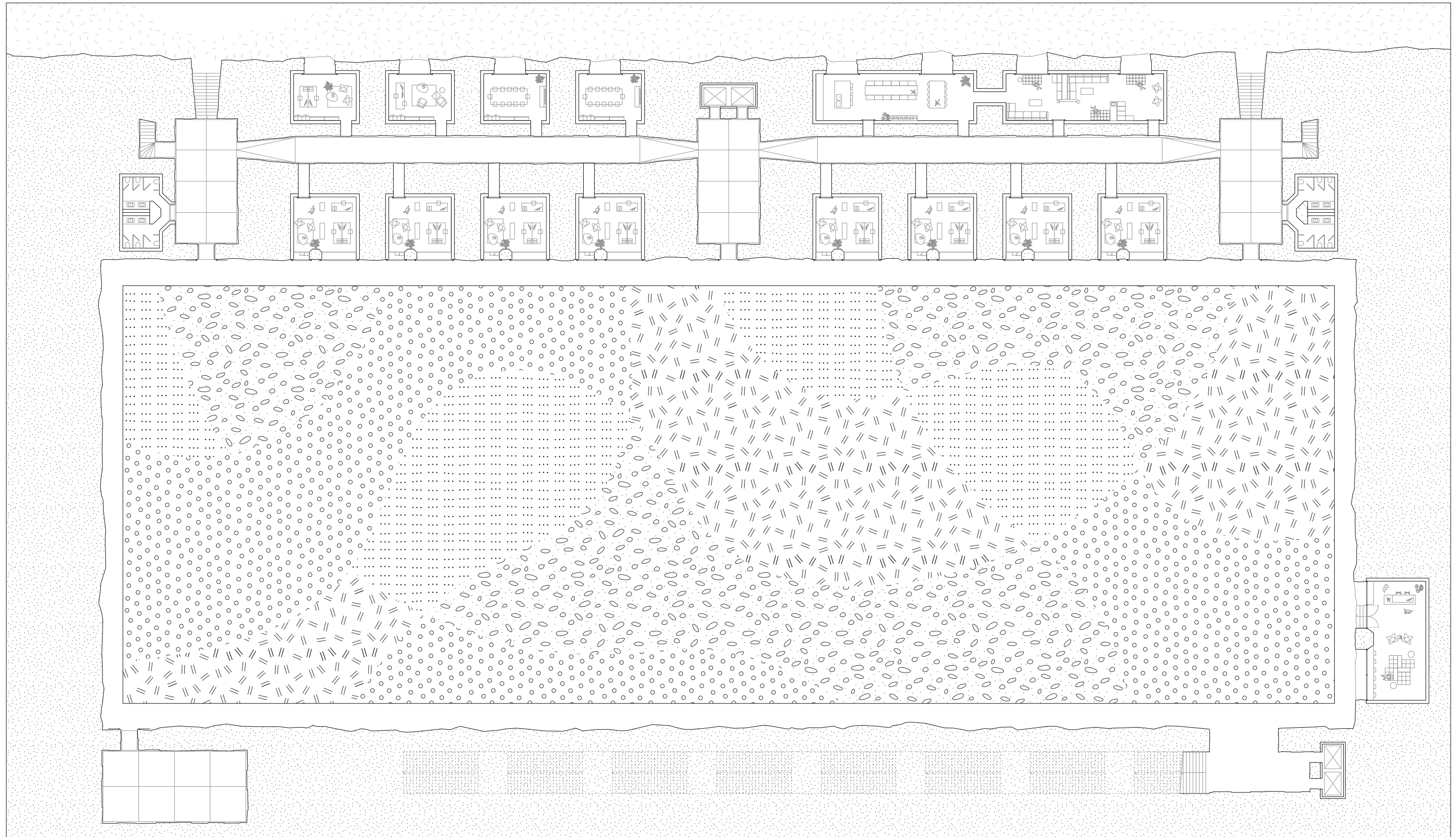
*Large Blue  
Butterfly*



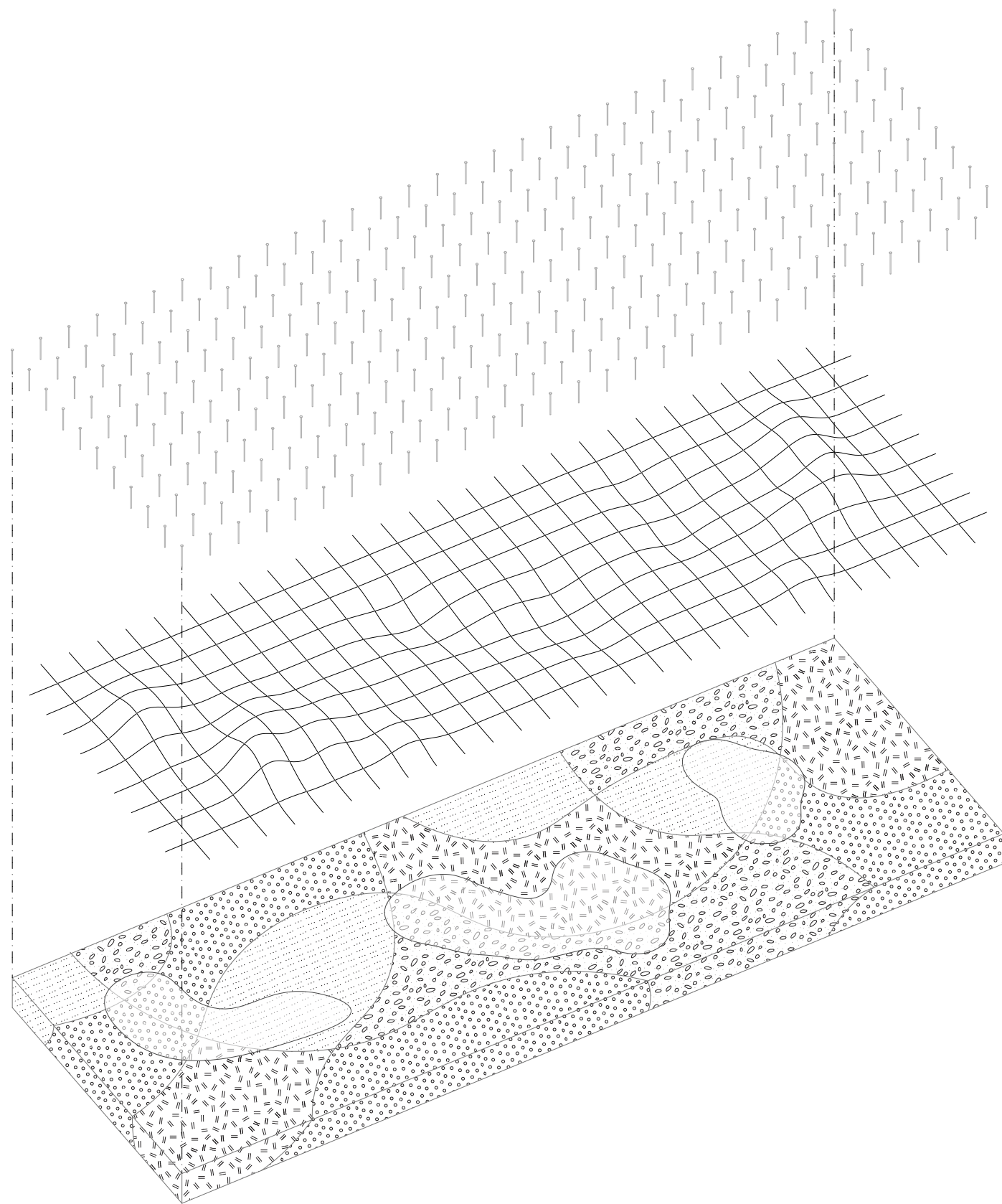
*Bordered  
Gothic Moth*



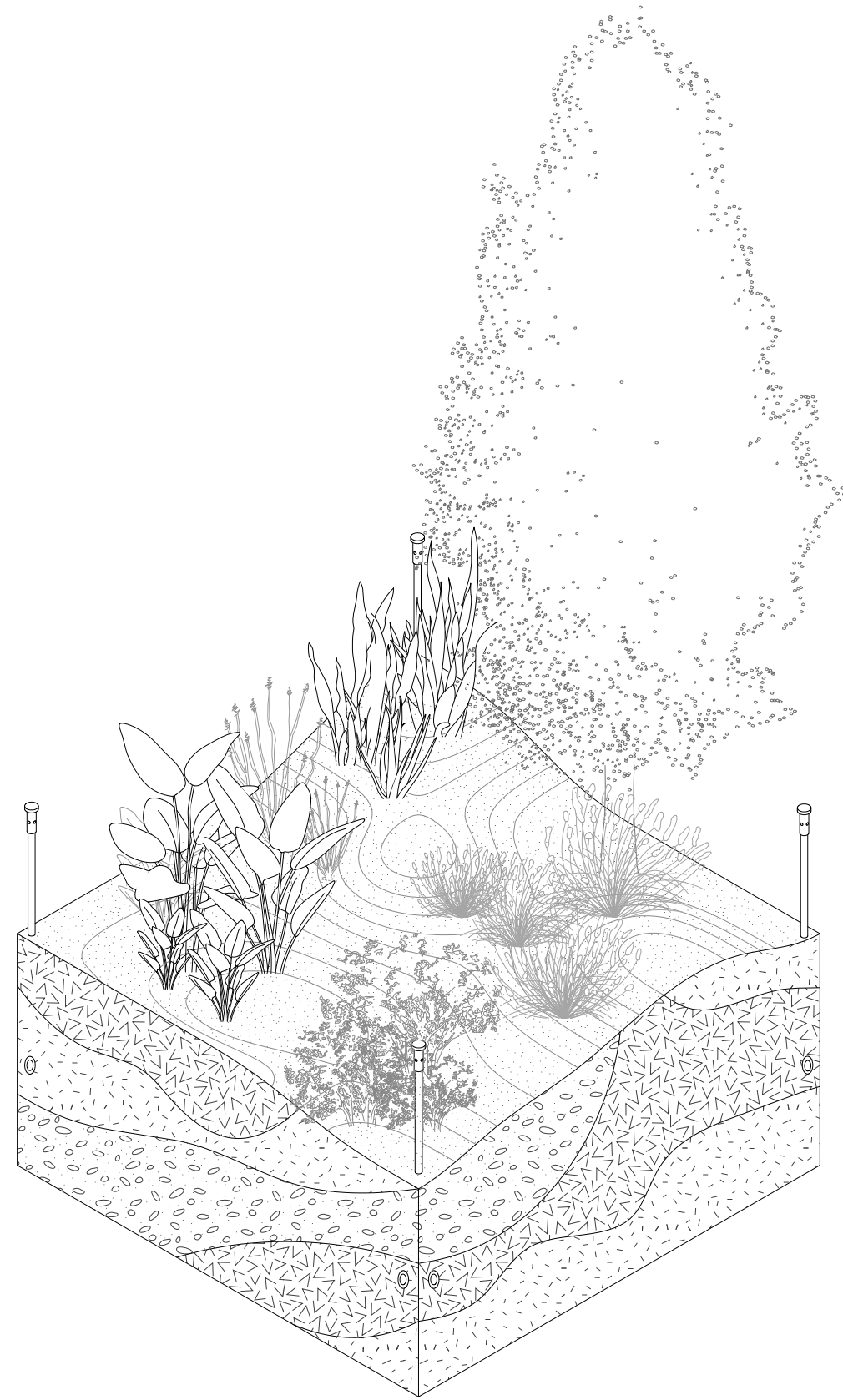


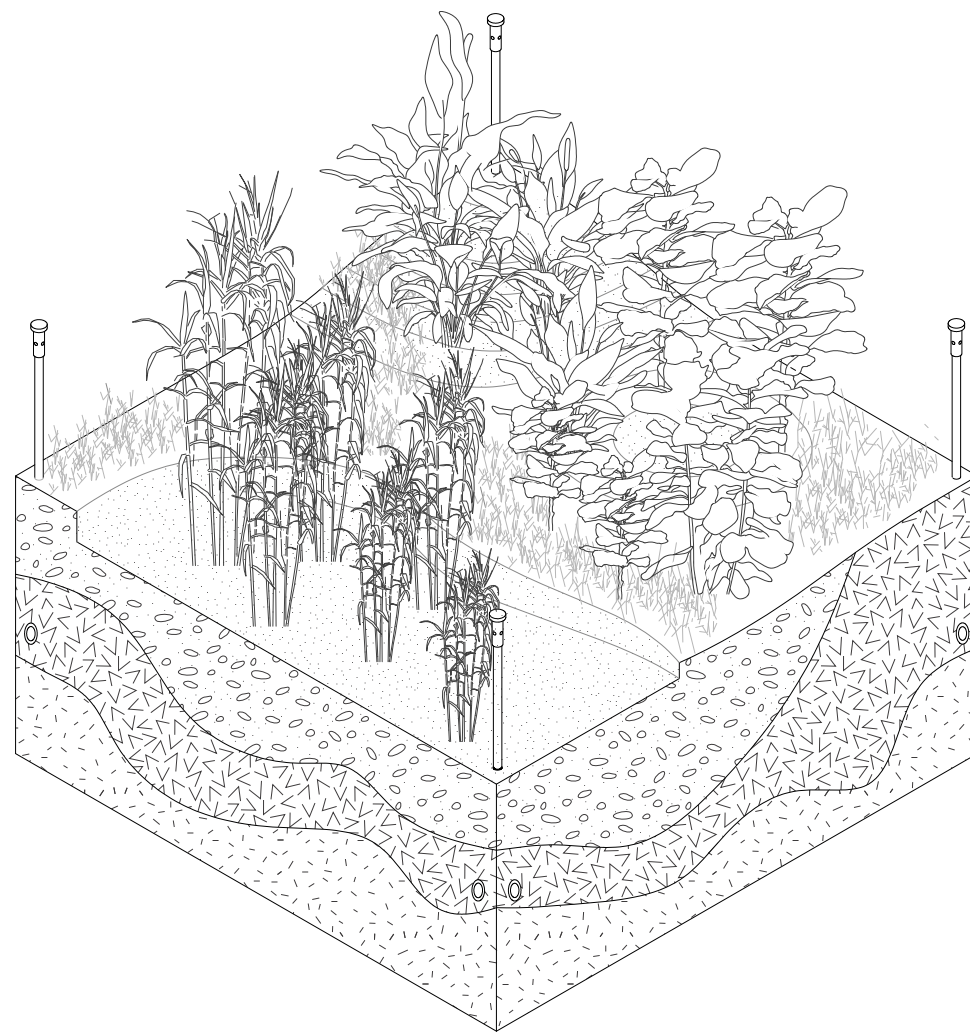


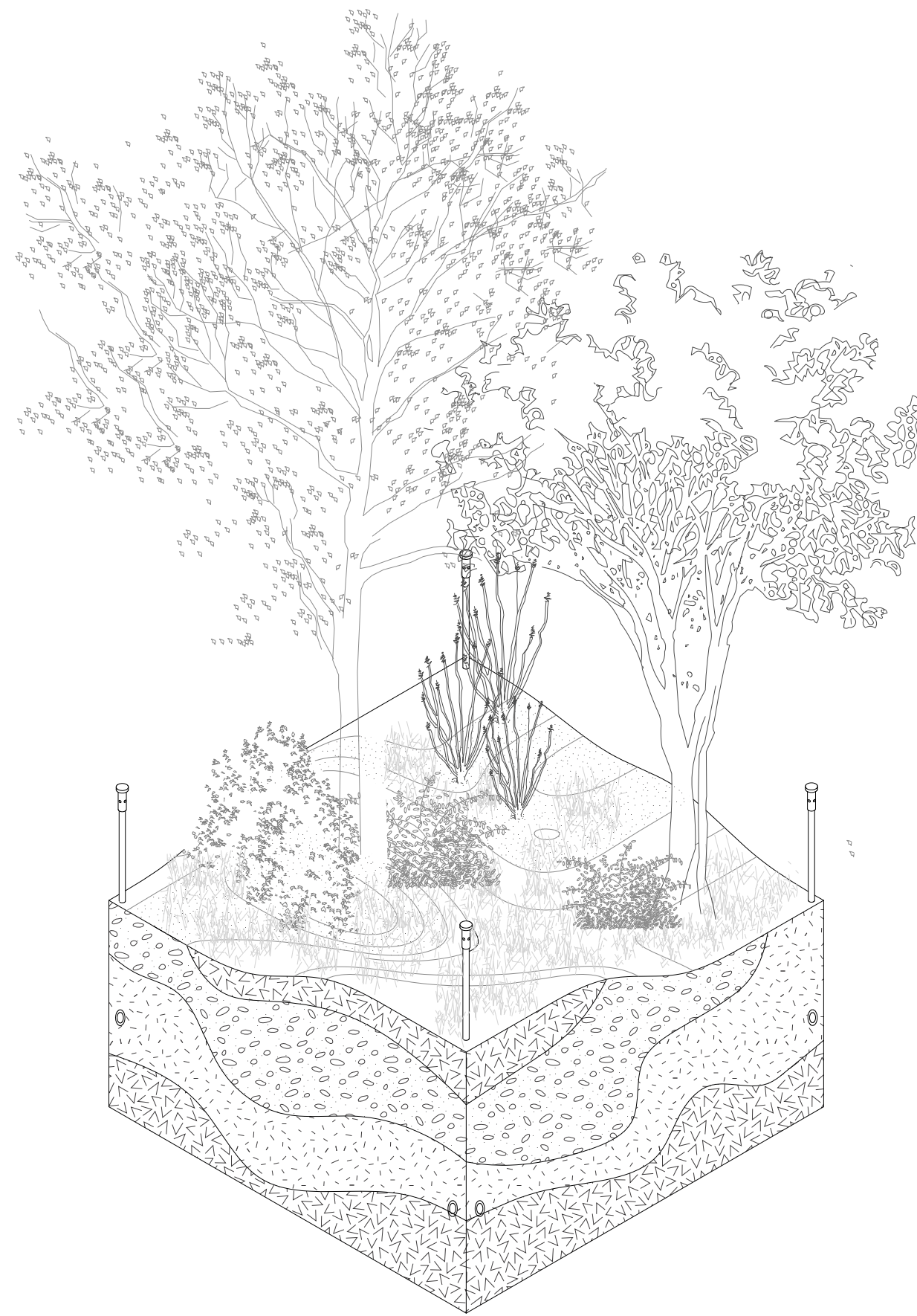
Ground Floor Plan  
scale 1:350



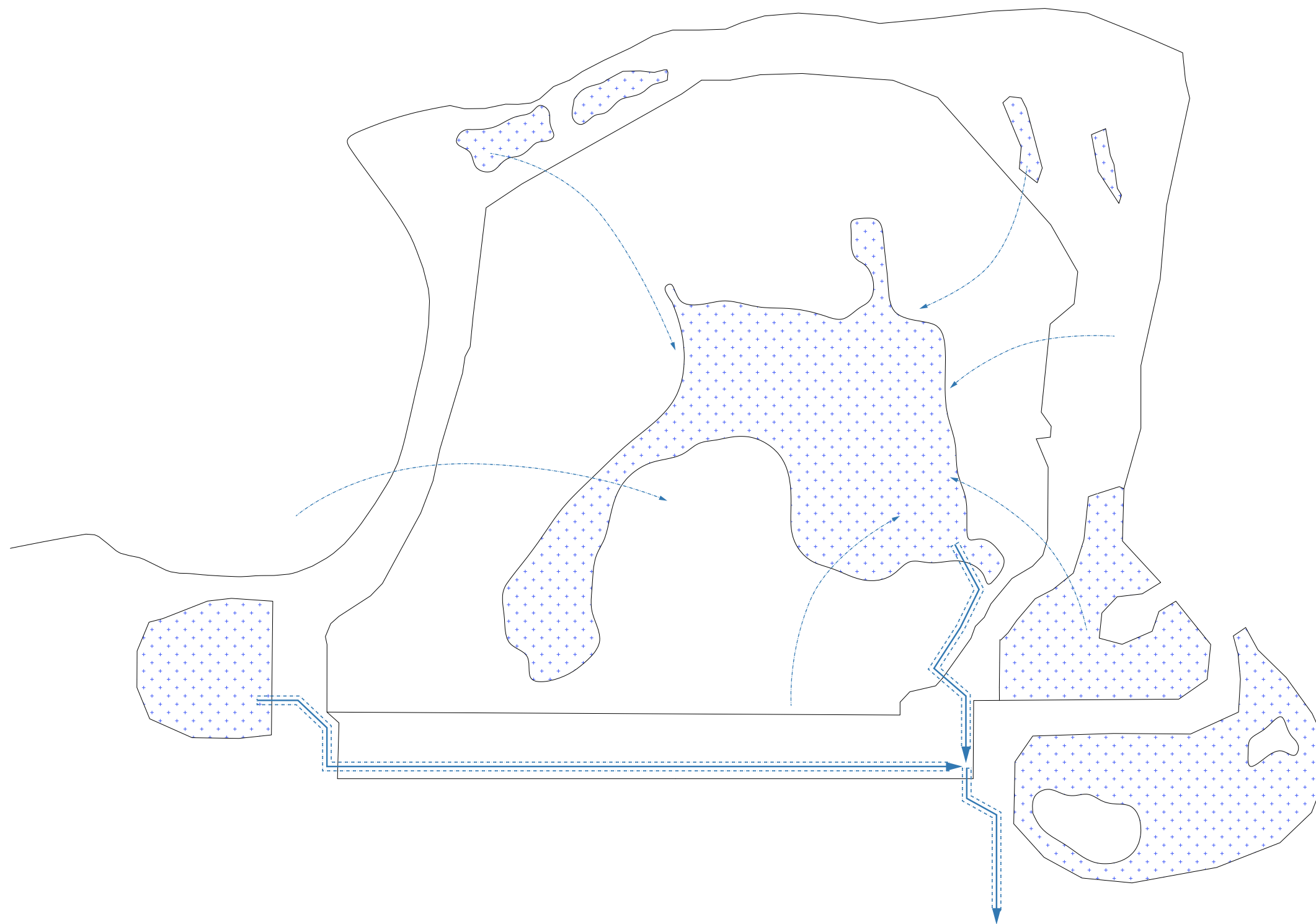




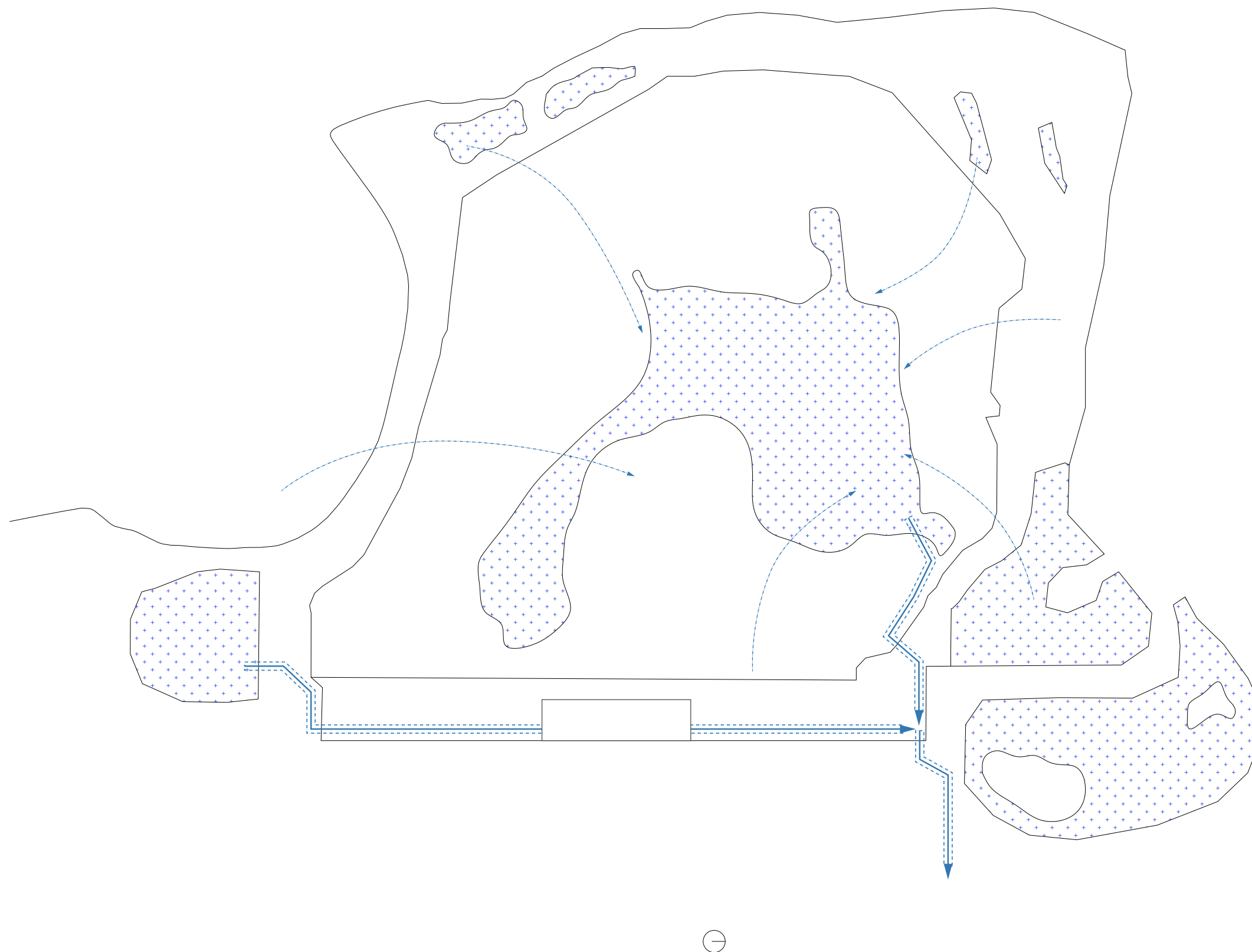


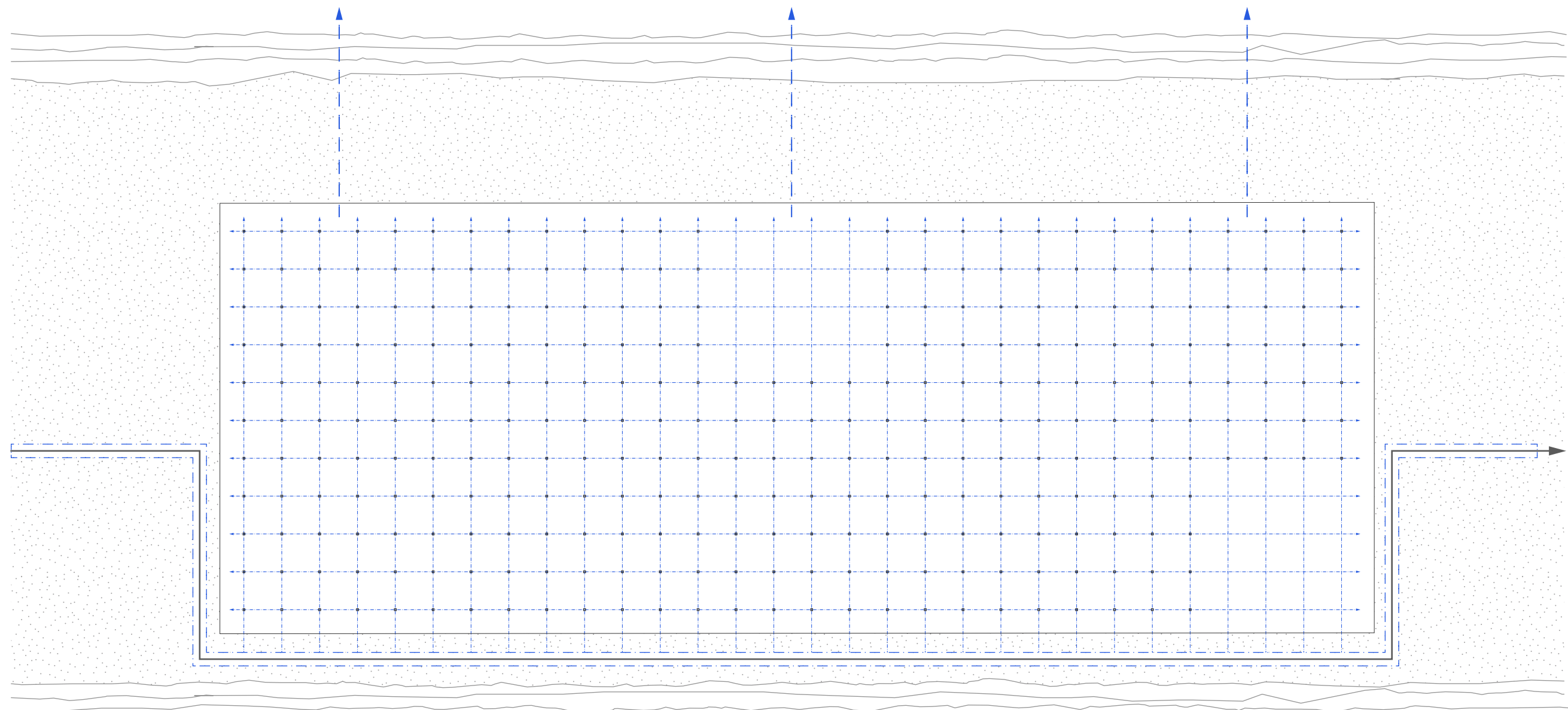




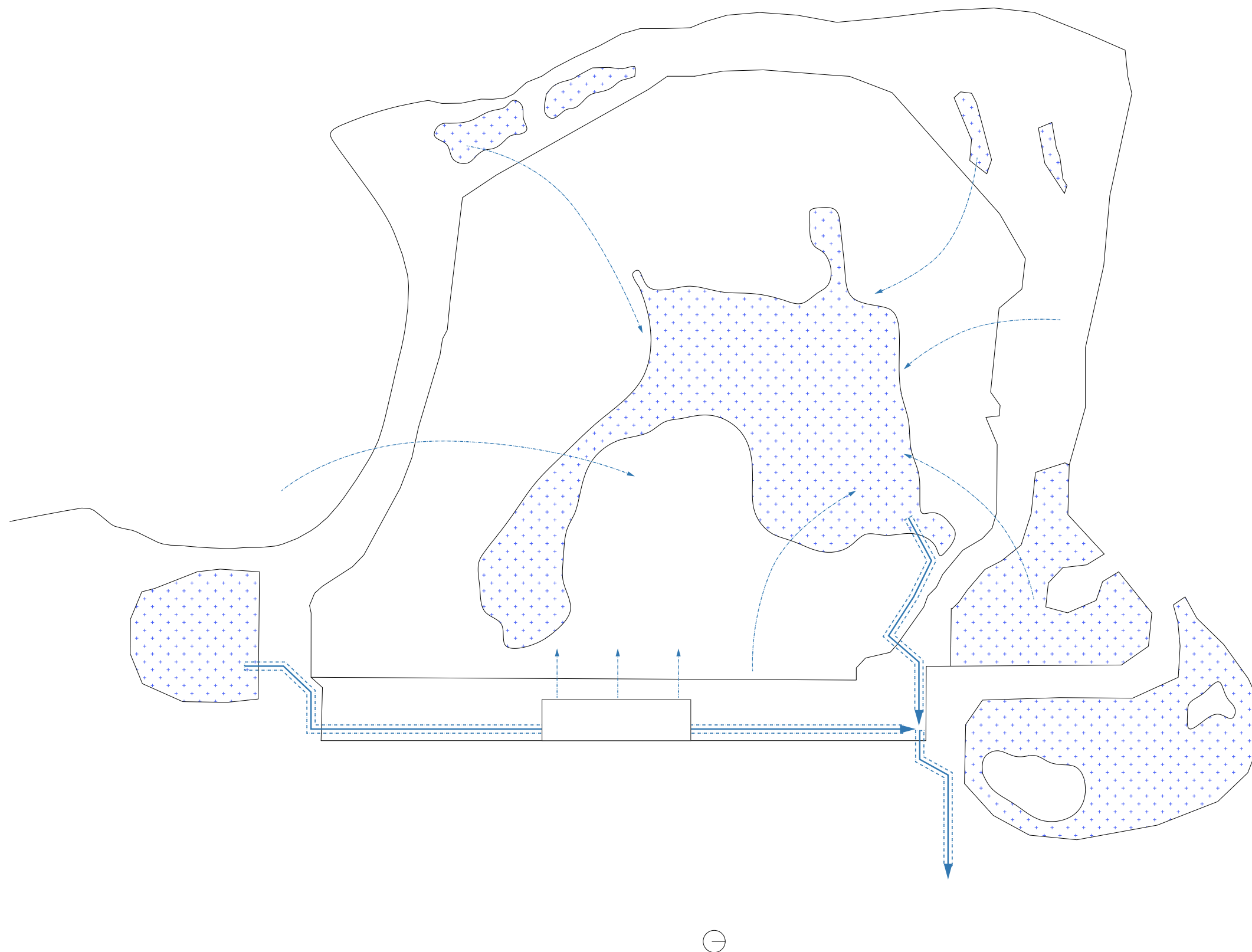


quarry water management  
*plan*

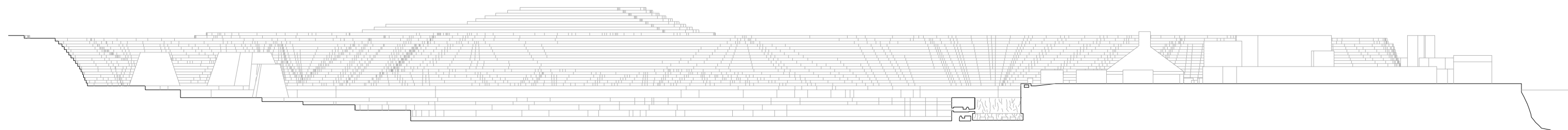






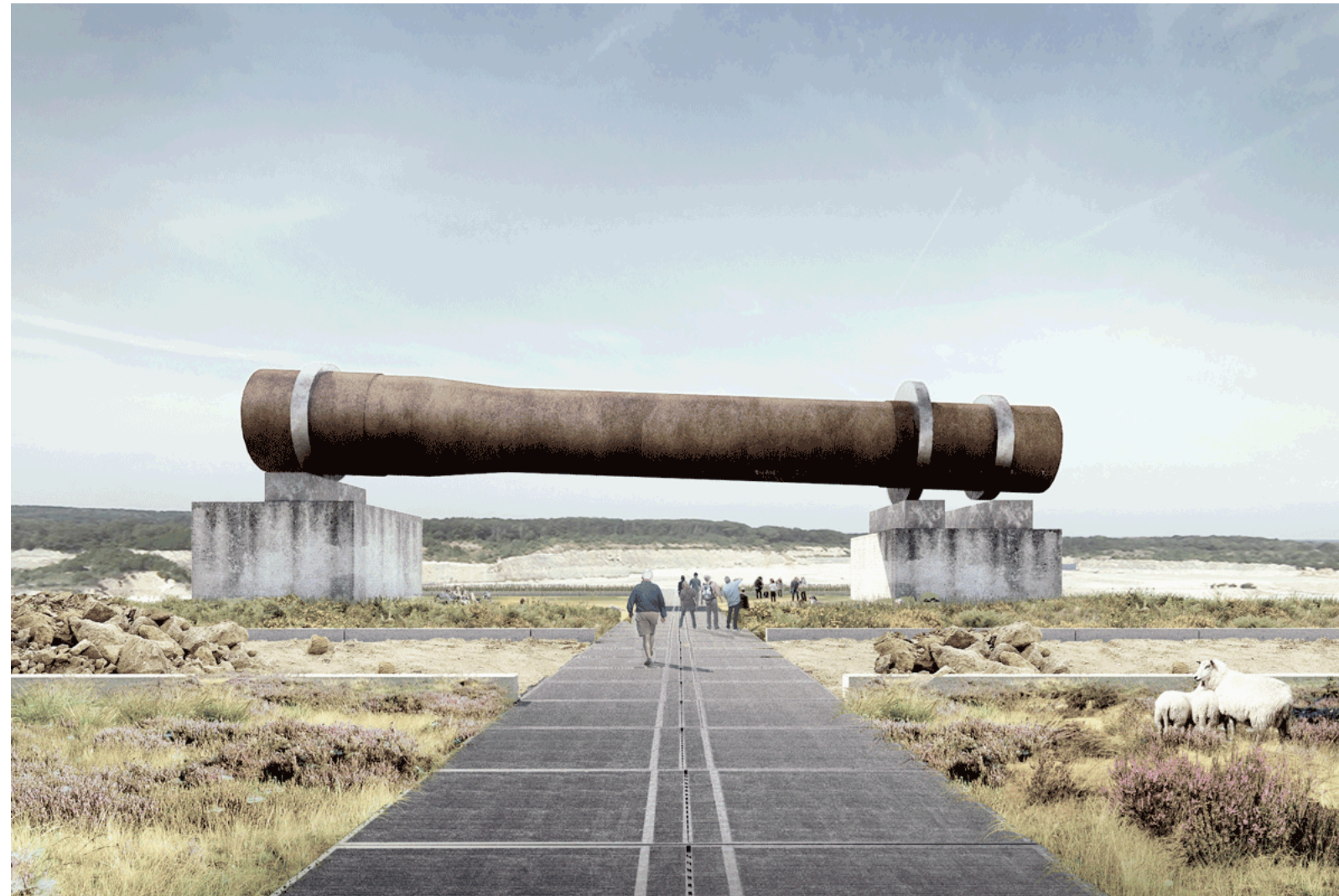


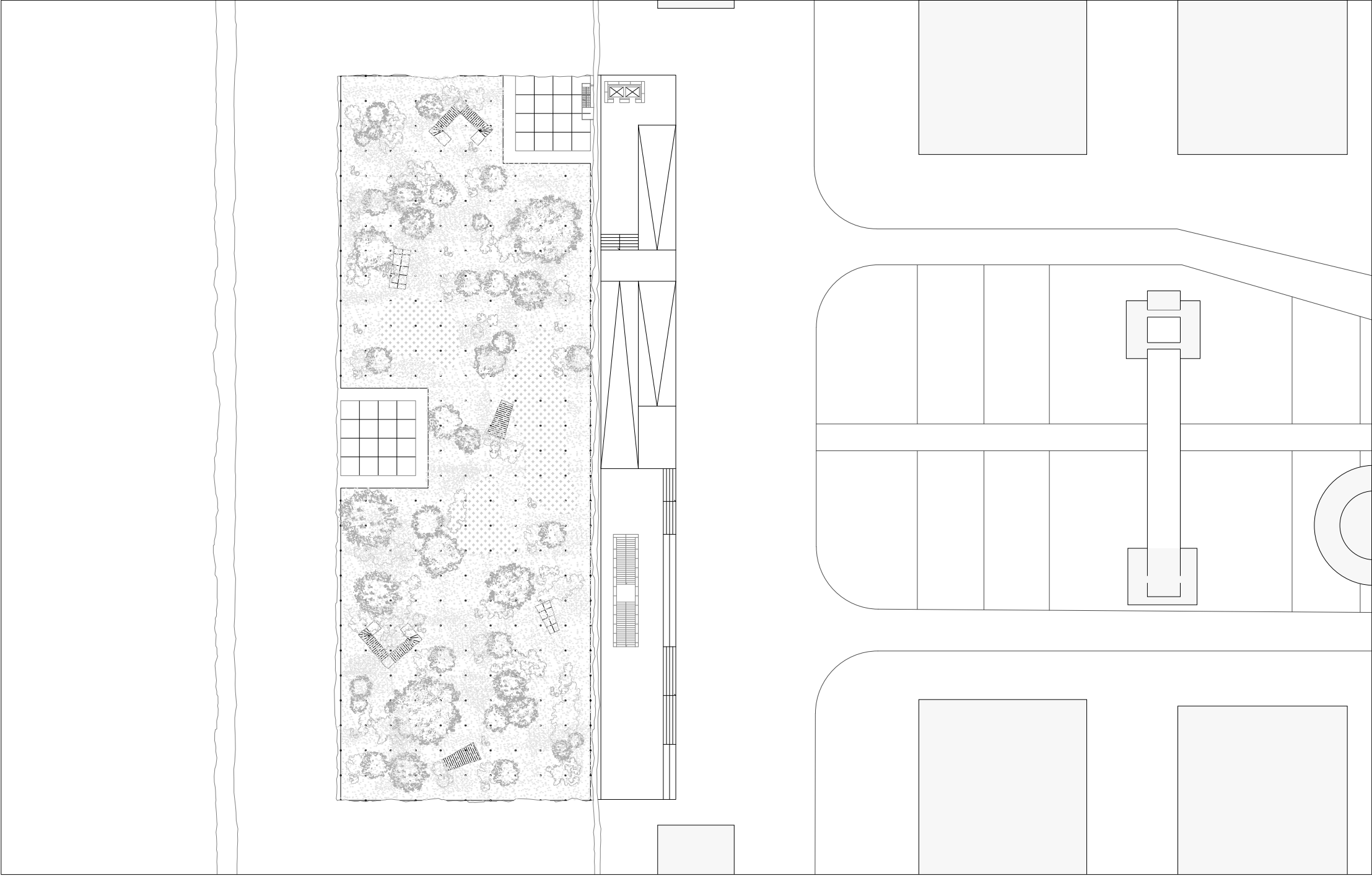
*Experience of the project*



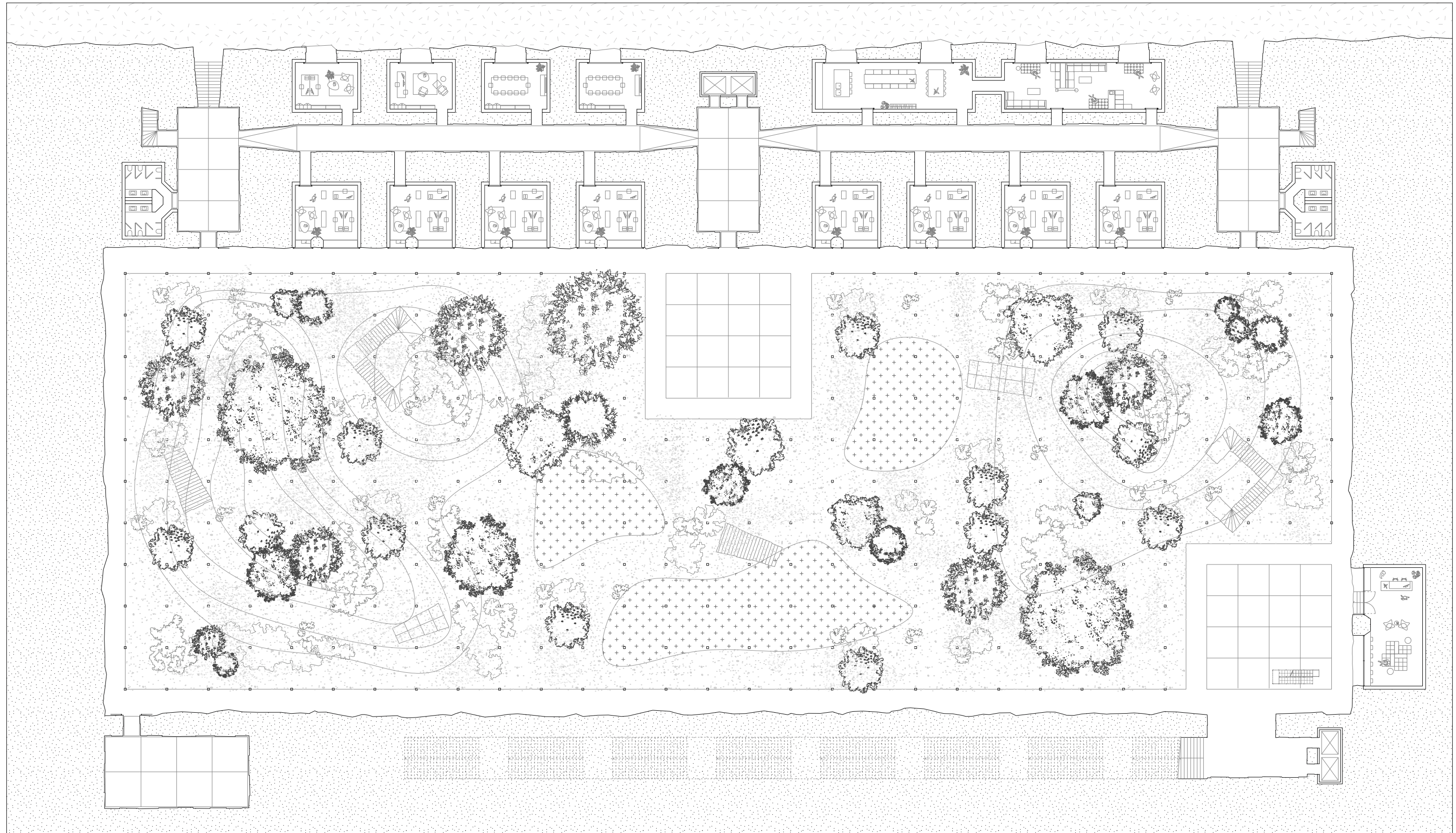




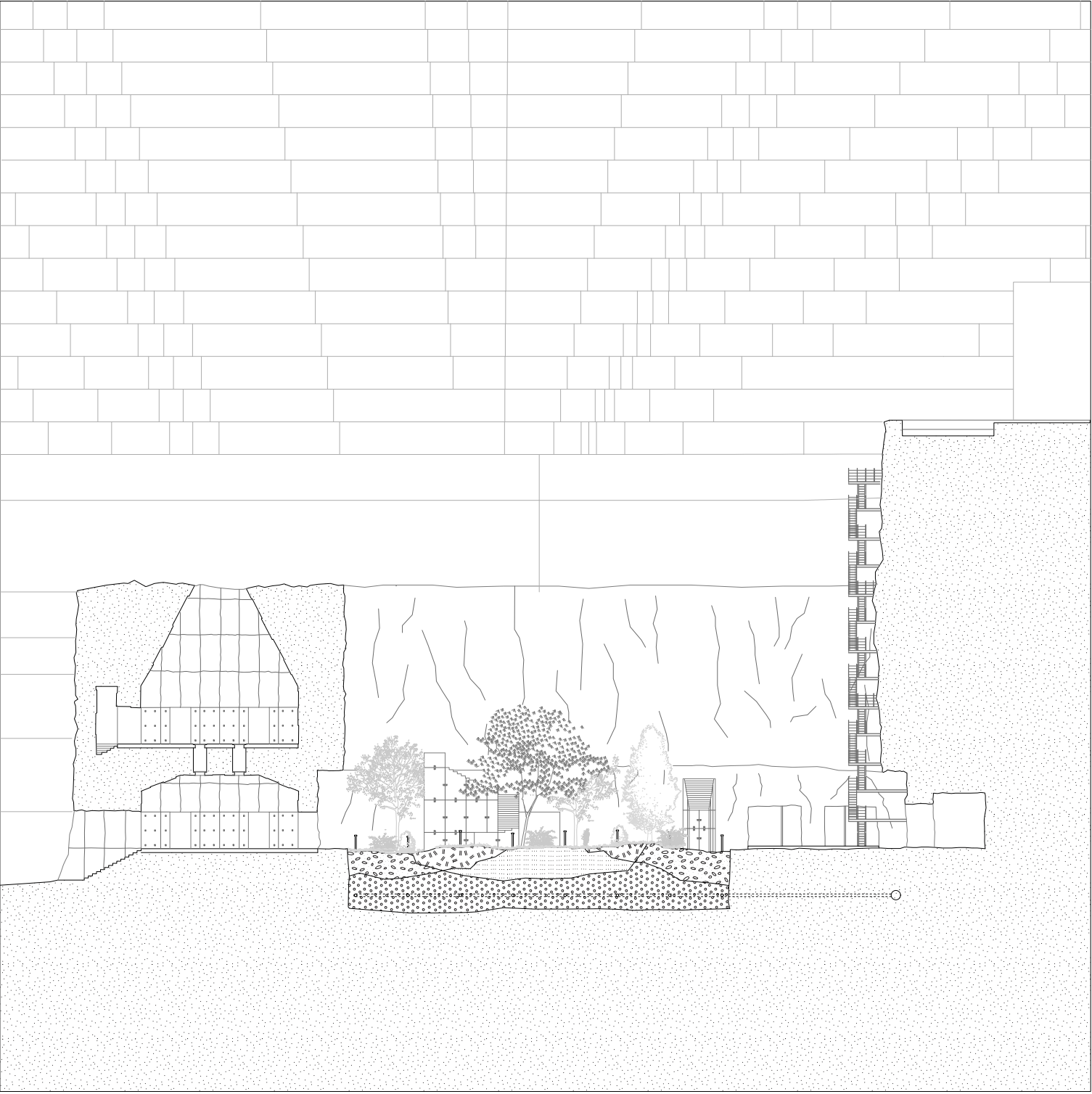








Ground Floor Plan  
scale 1:350

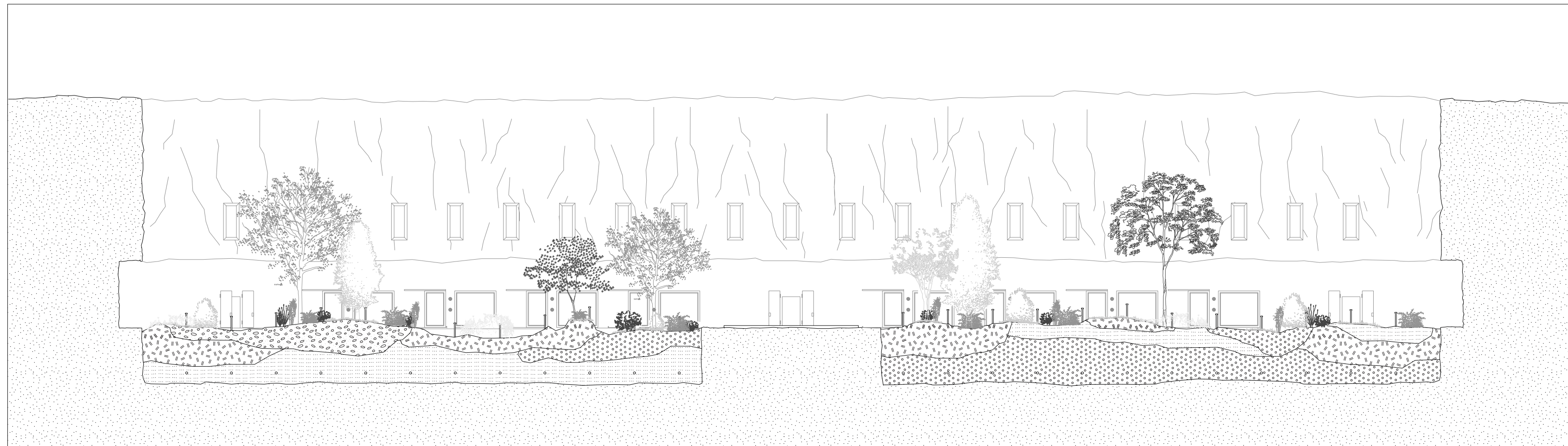




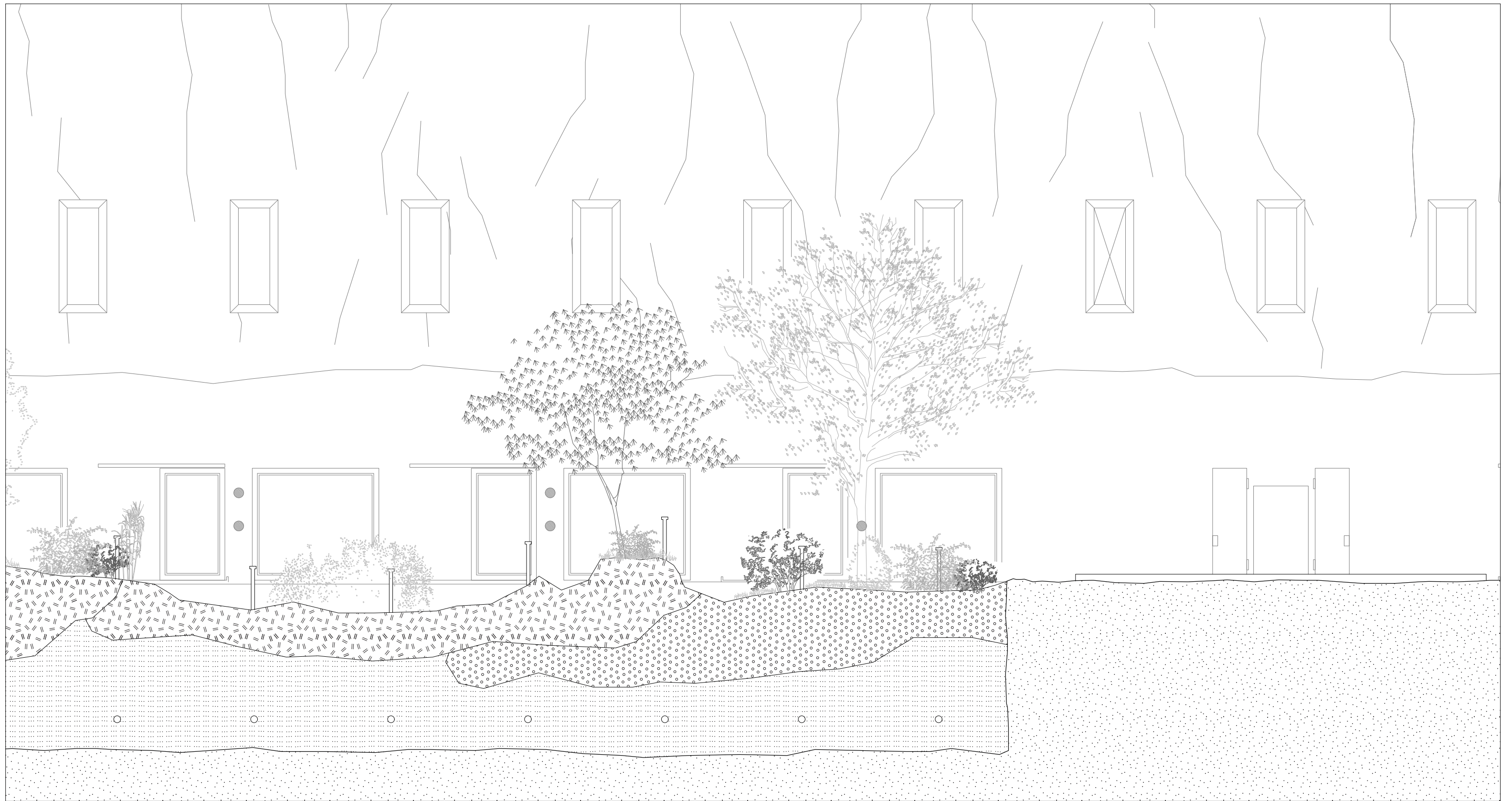




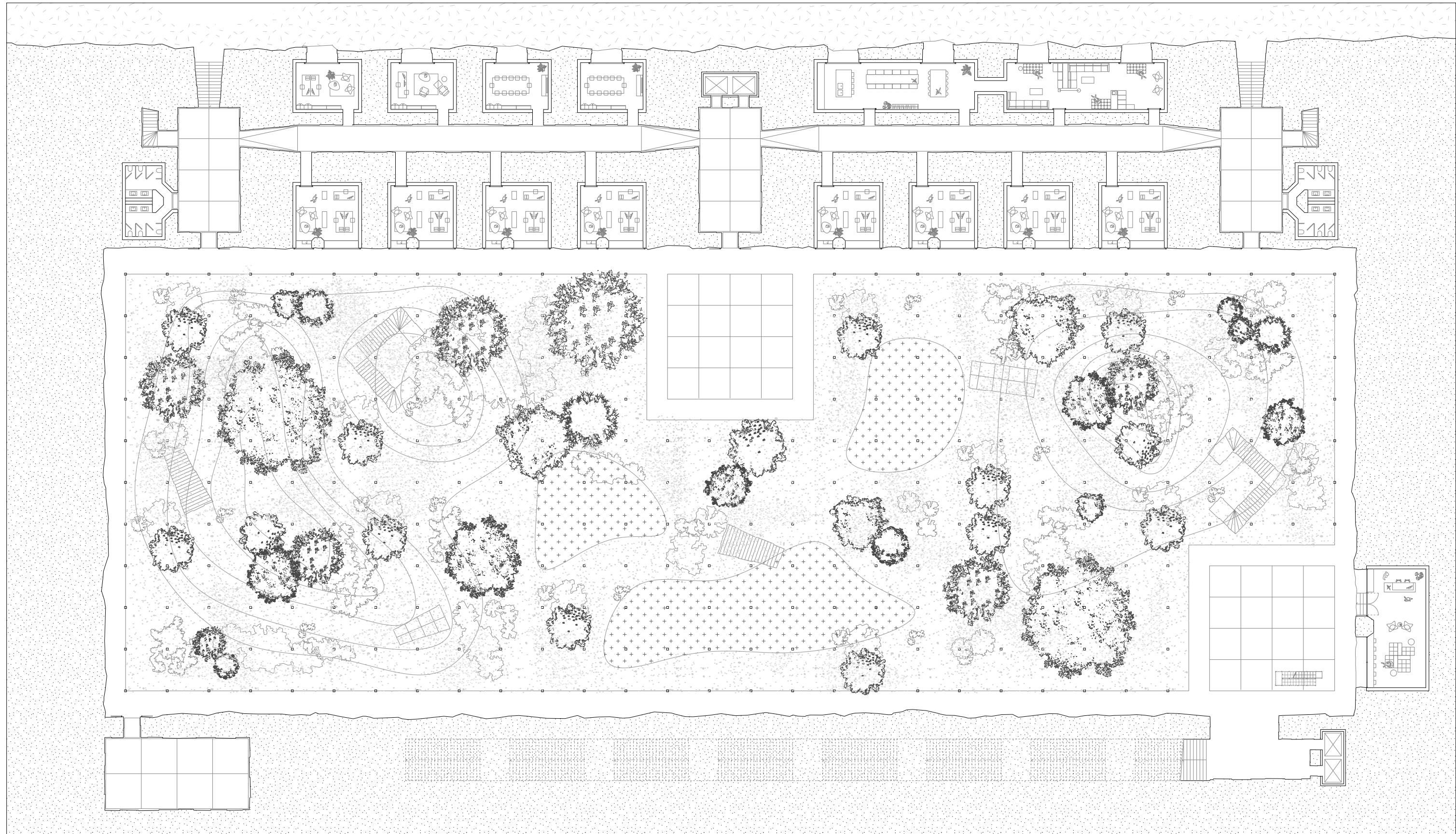








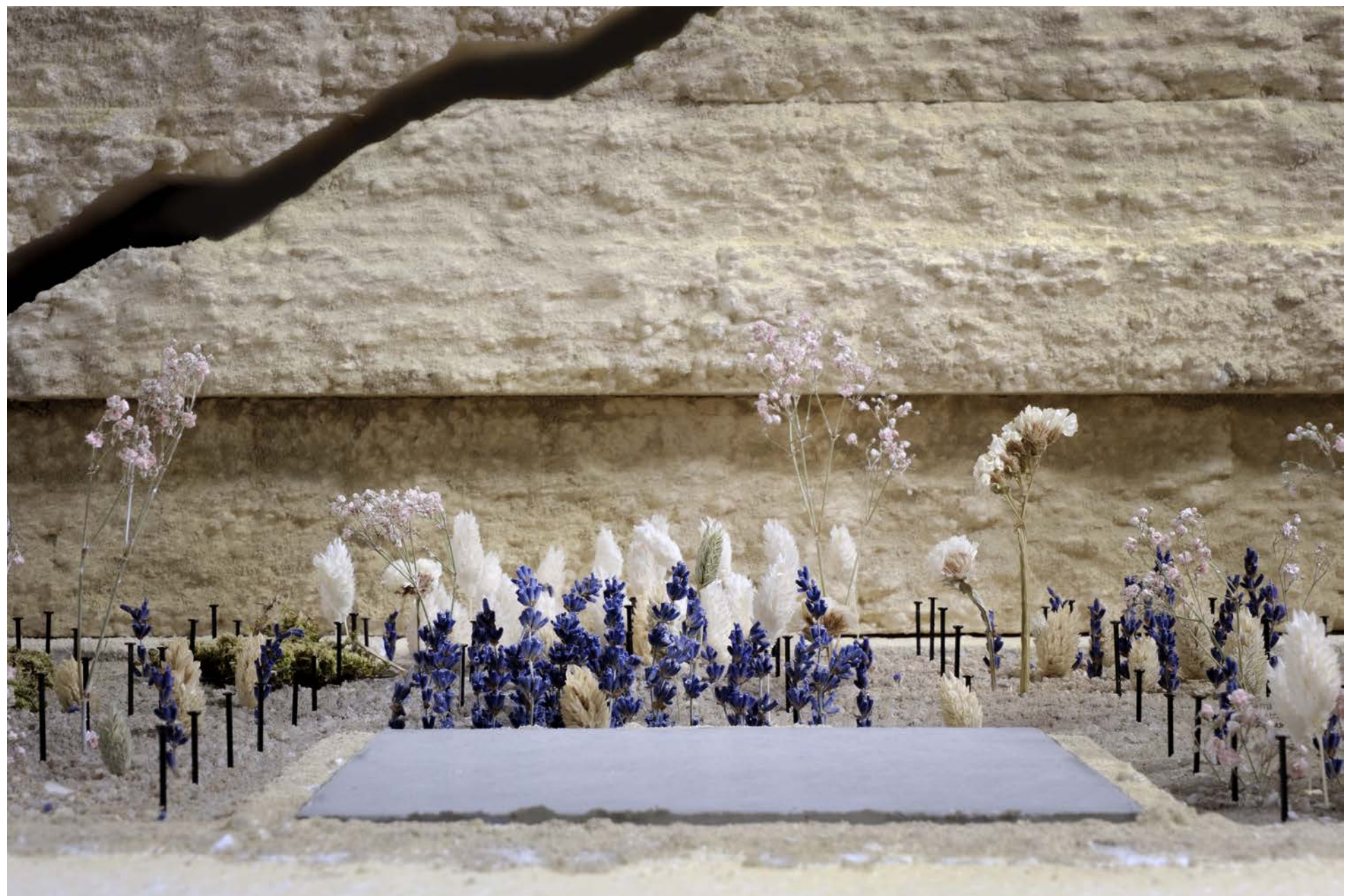




Ground Floor Plan  
scale 1:350



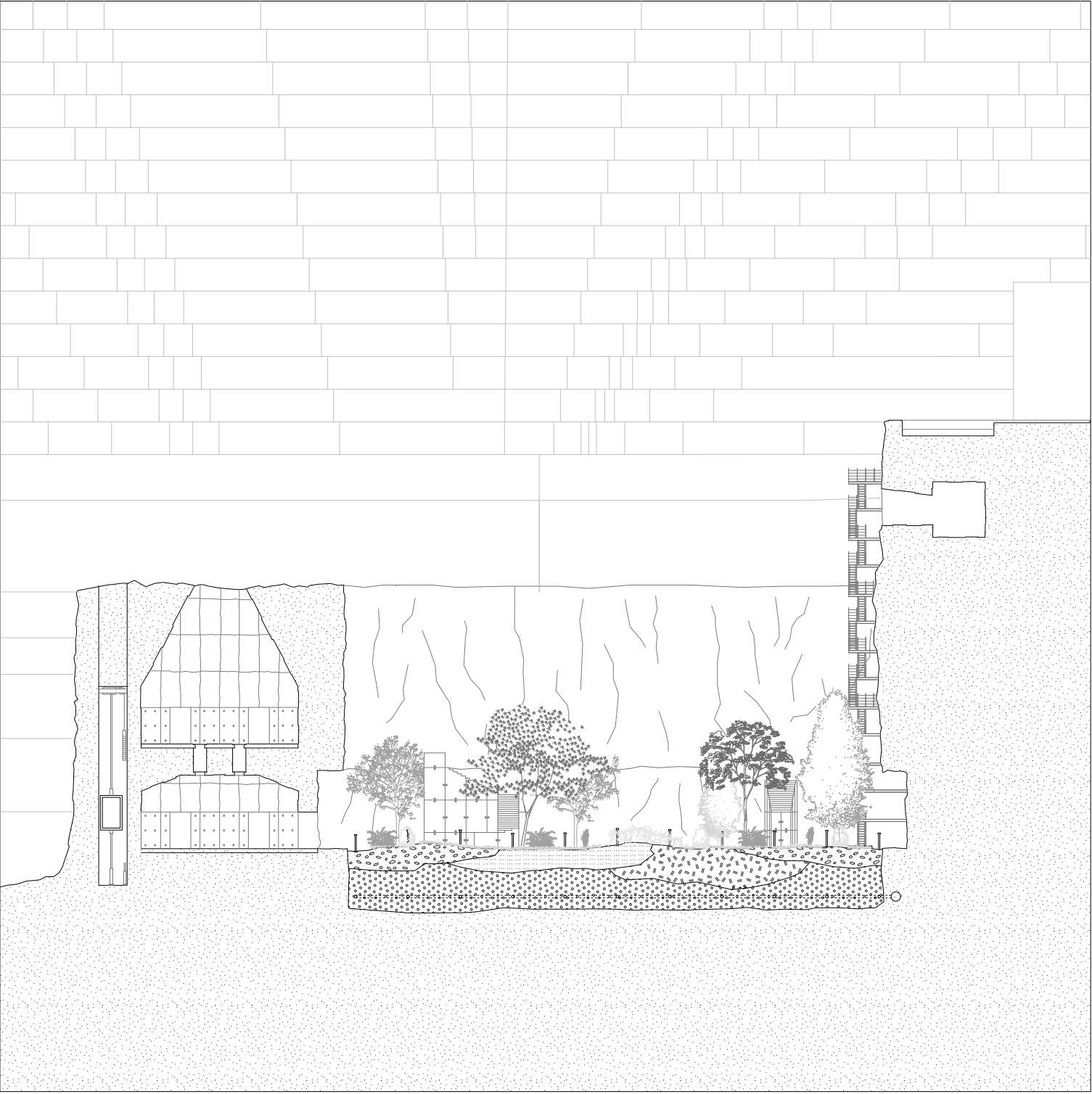




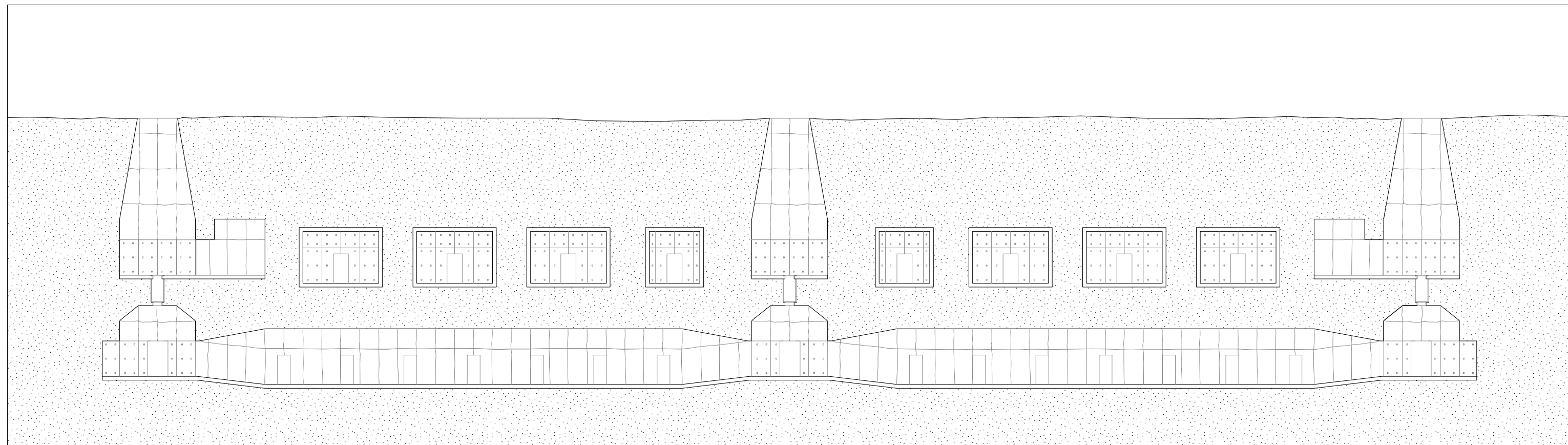
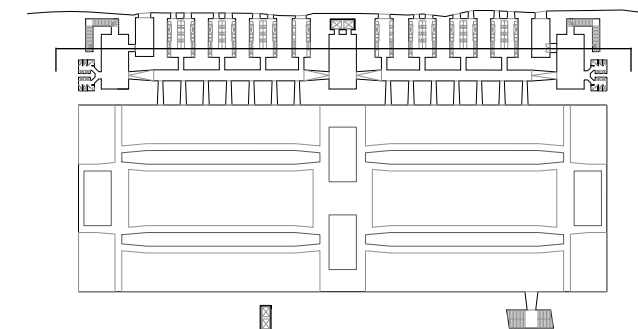


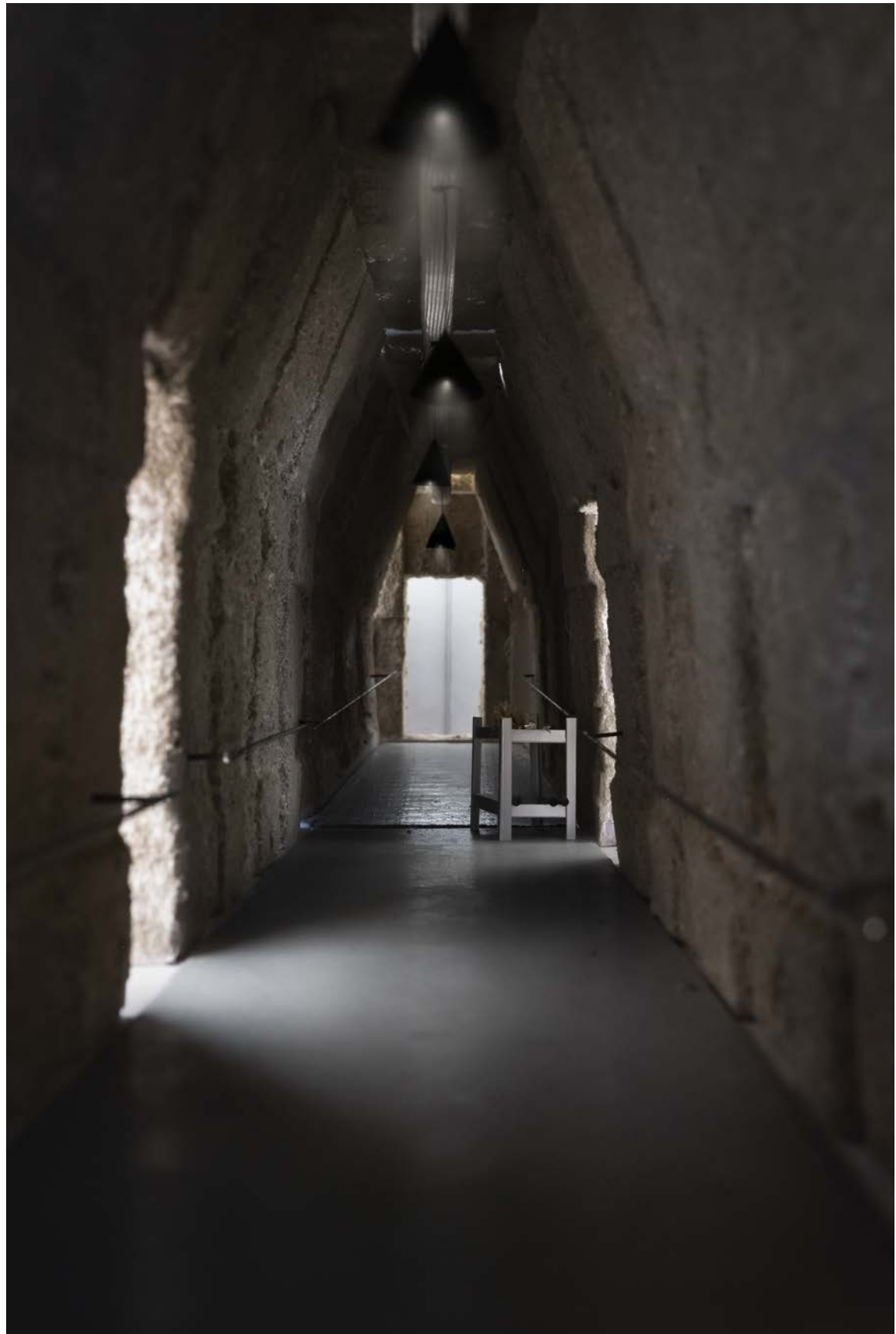


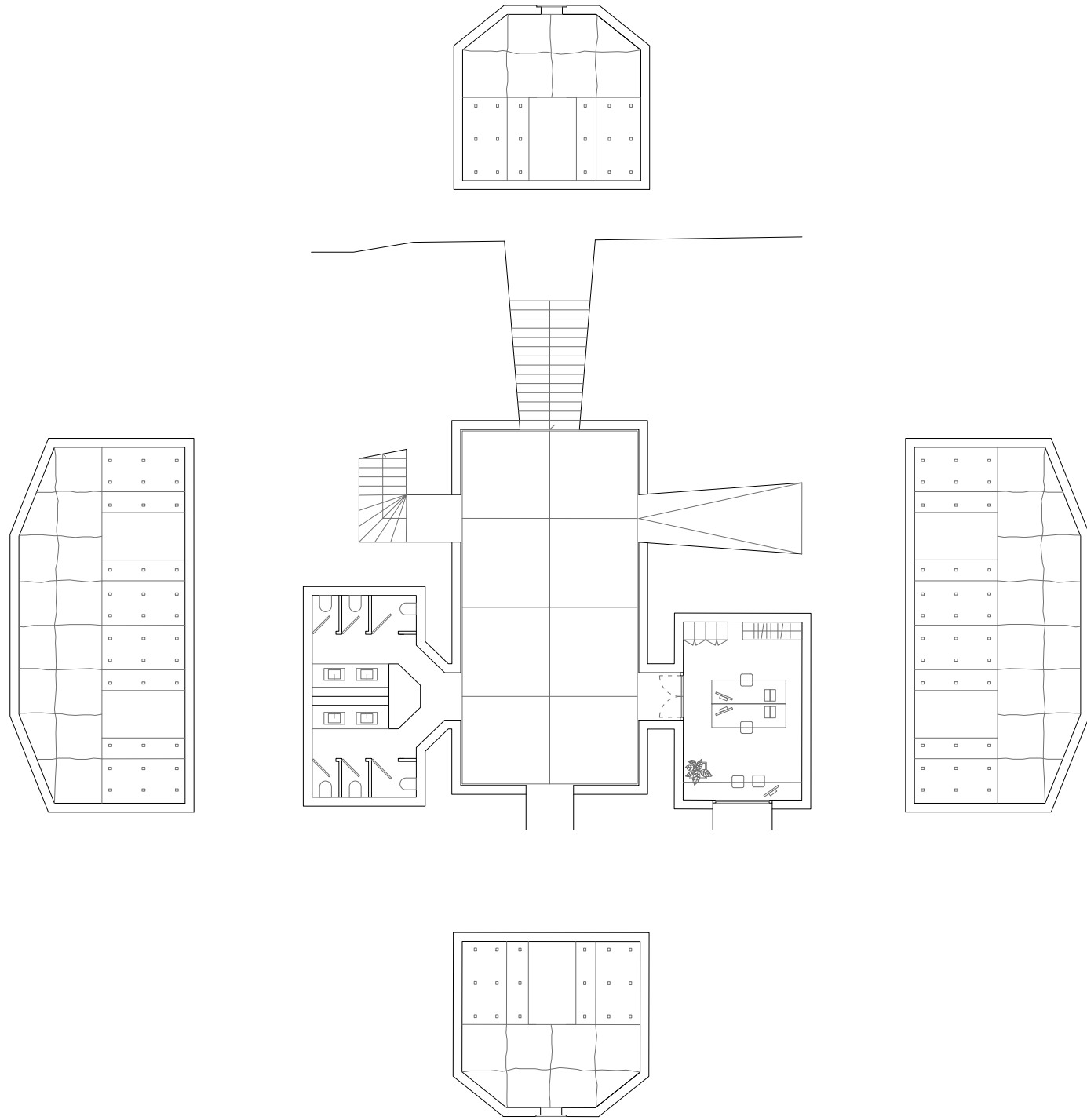






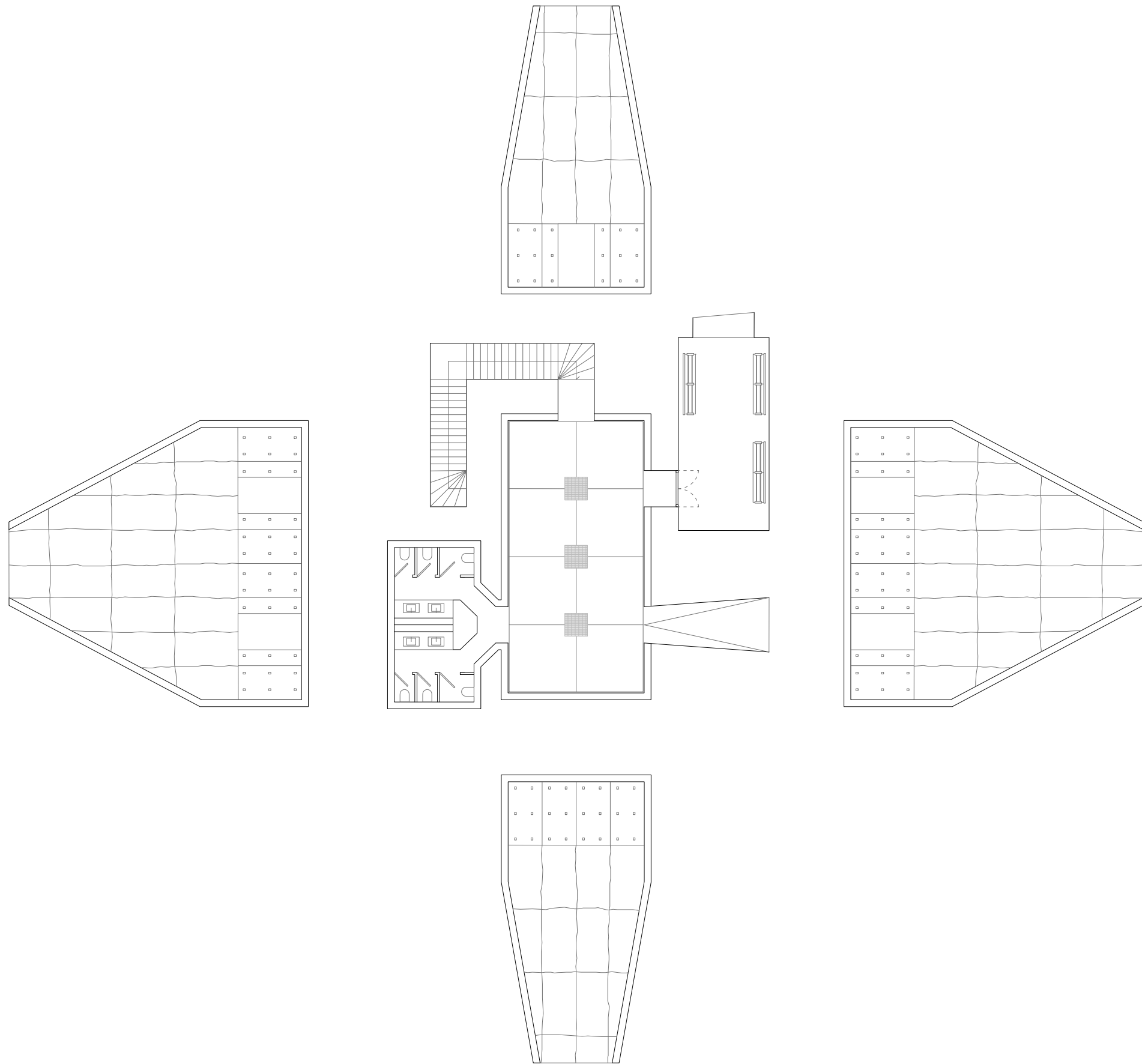






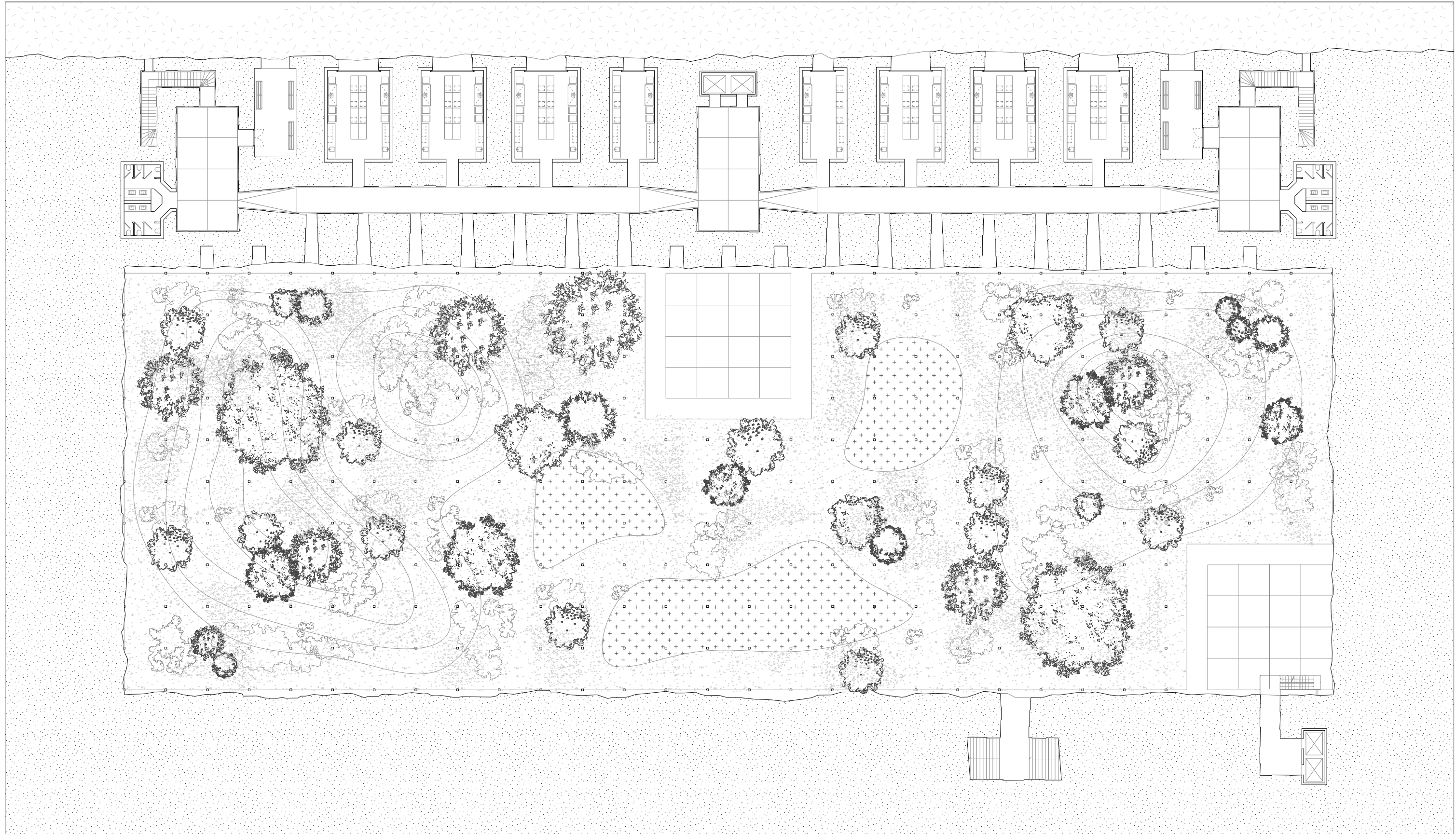
Ground Floor Core  
*plan*





First Floor Core  
*plan*





First Floor Plan  
scale 1:350



*conclusions*









*“[...] Every intervention presupposes a distruction.  
Please destroy with reason”*

(Luigi Snozzi)

*thank you*