

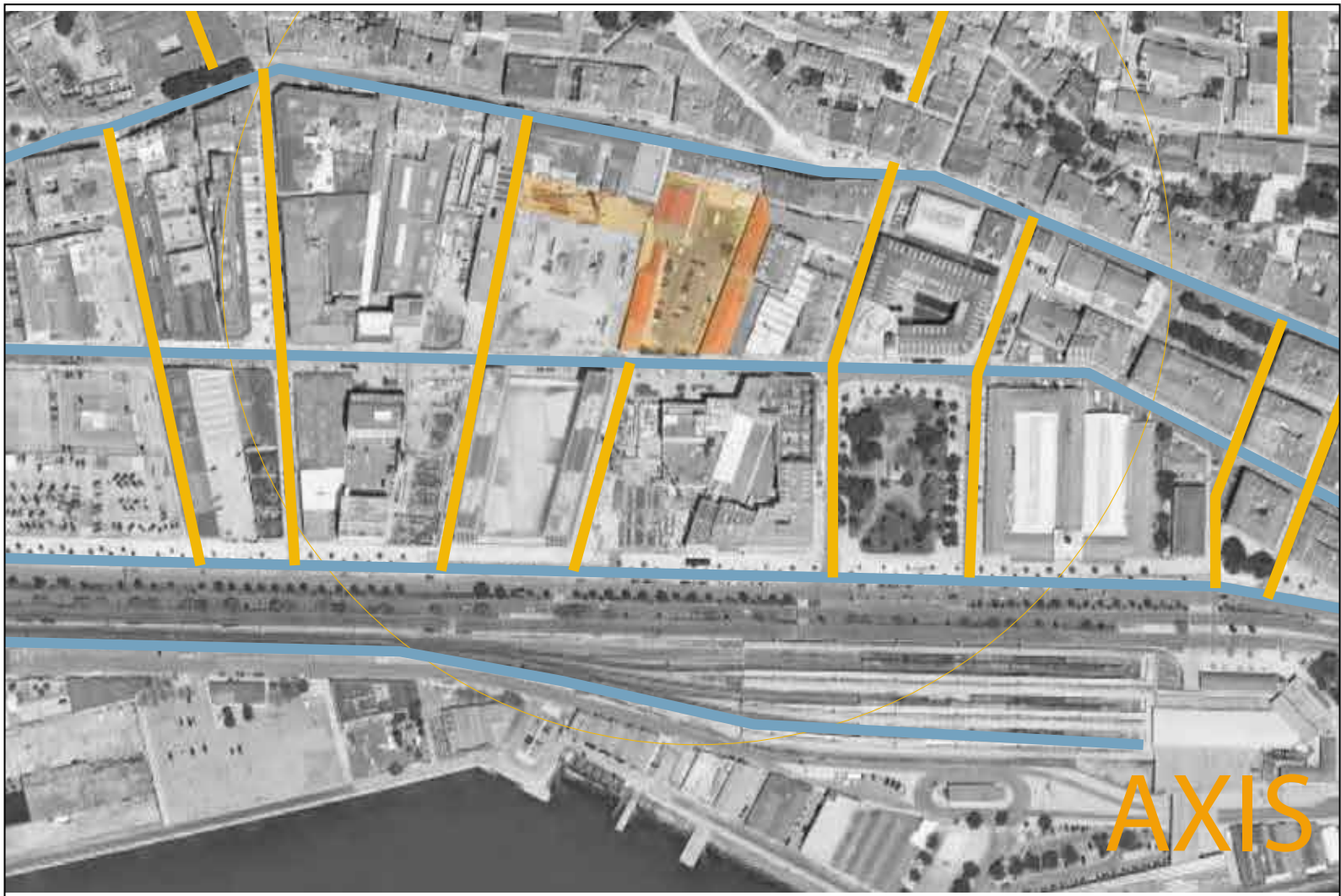
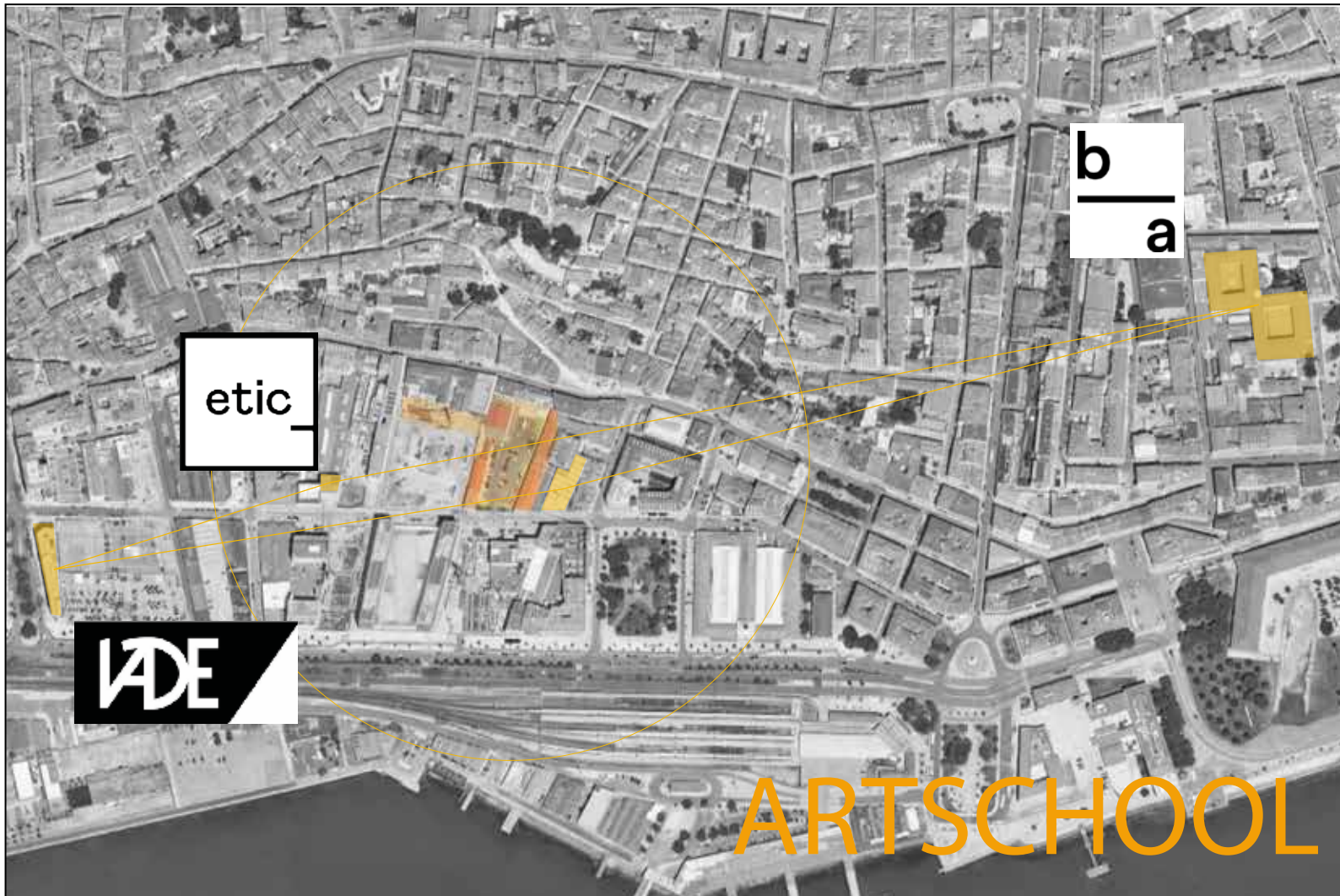
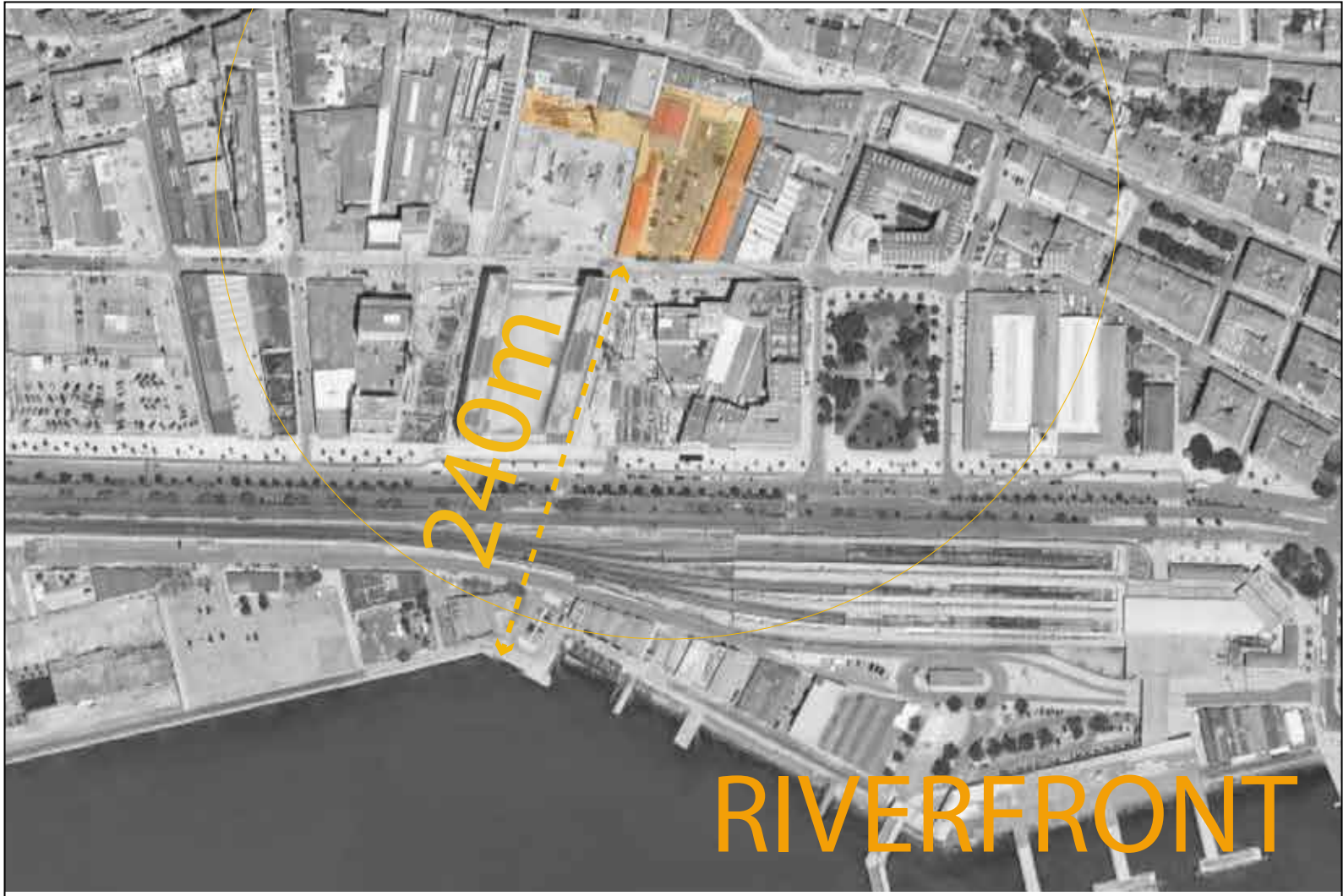
GREEN WAVE

We designed a building that could simultaneously respect the context of the existing site, where many long and narrow buildings exist, and Building A, which is historical and beautiful but small in size, can be alienated. Building B, which was created in this way, was designed to provide residents with a creative and unique space while considering energy and the environment.



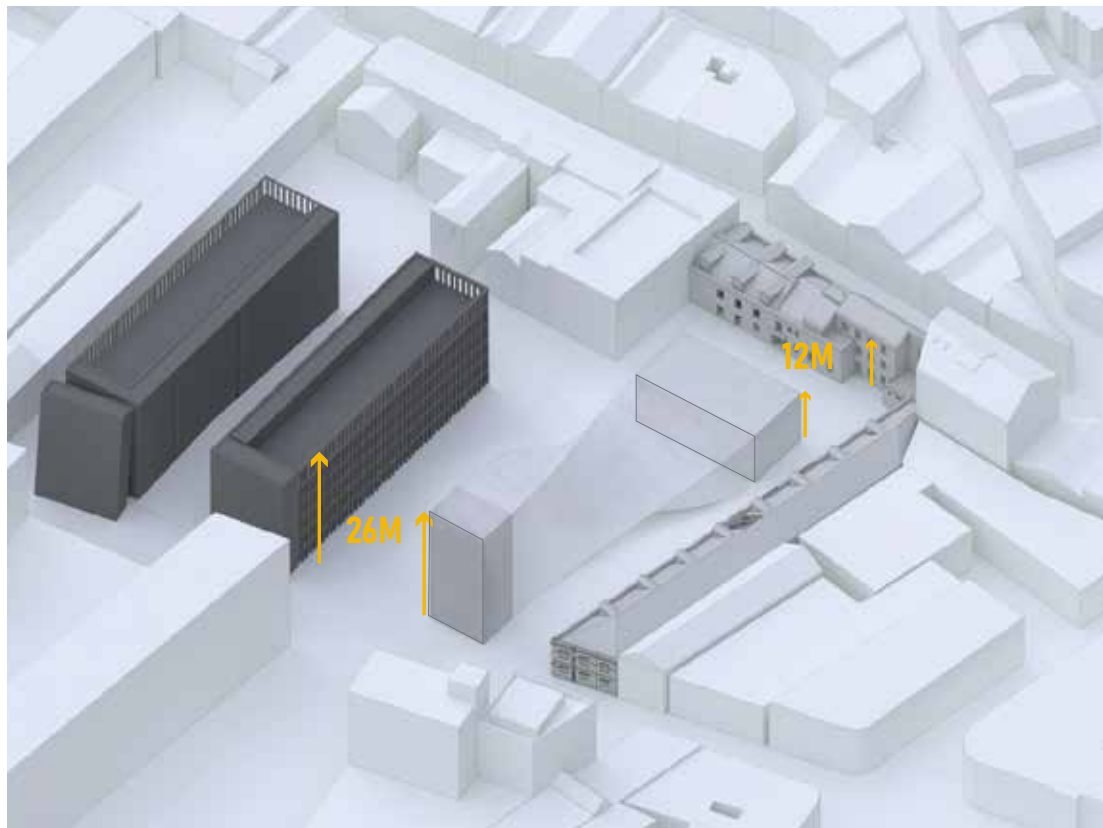


LOCAL & PROJECT BACKGROUND



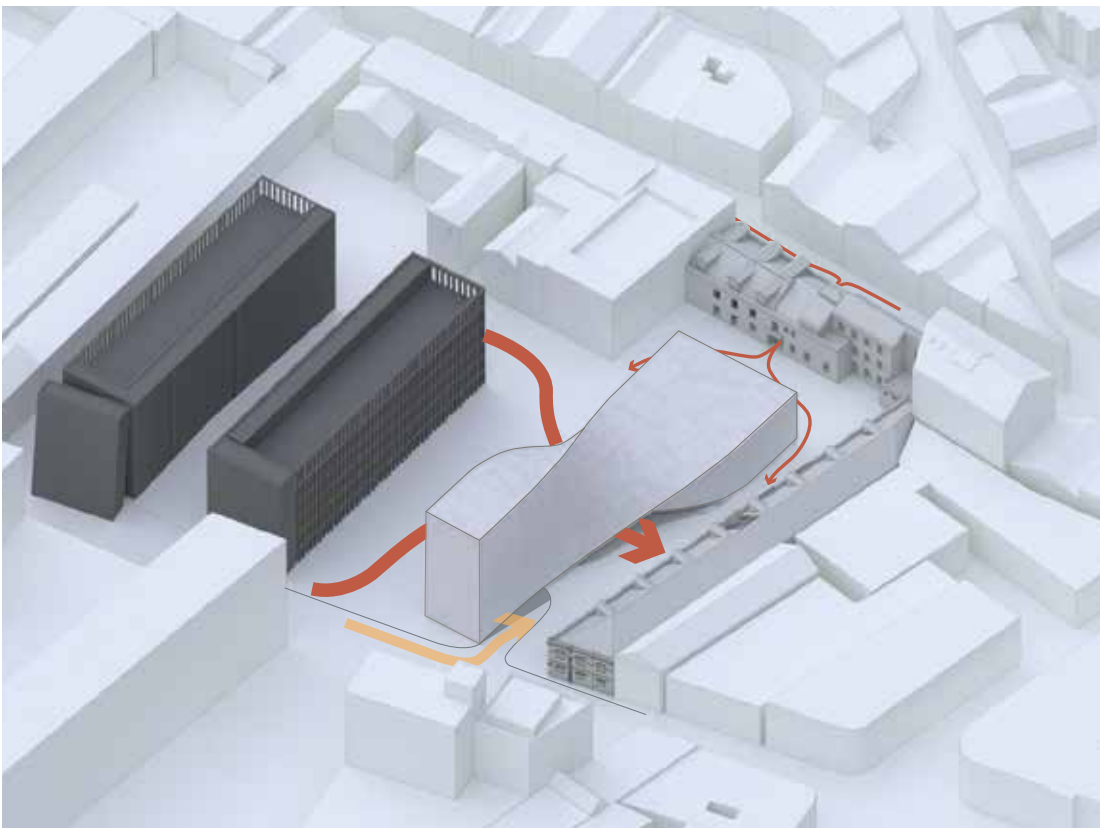
Lisbon, the estimated population is about 540,000, with an area of 100.05 km², has been the center of Portugal's economic and political culture since the past, and has become the capital of Portugal since the 13th century. Through land reclamation around the 19th century, Lisbon prepared the land for major urban infrastructure such as roads, railways, and ports. This site is also an area formed by a land-fill. Because of the great earthquake in November 1755, Lisbon was devastated and urban reform was carried out to withstand earthquakes. Since then, regulations on structure, materials, and number of floors have been made, and the buildings built in accordance with the regulations formed the urban landscape of Lisbon. In the 19th century, facilities such as theaters, shops, and gardens appeared, and the urban form became what it is today according to the Urbanization Master Plan in 1959.

CONCEPT DIAGRAM



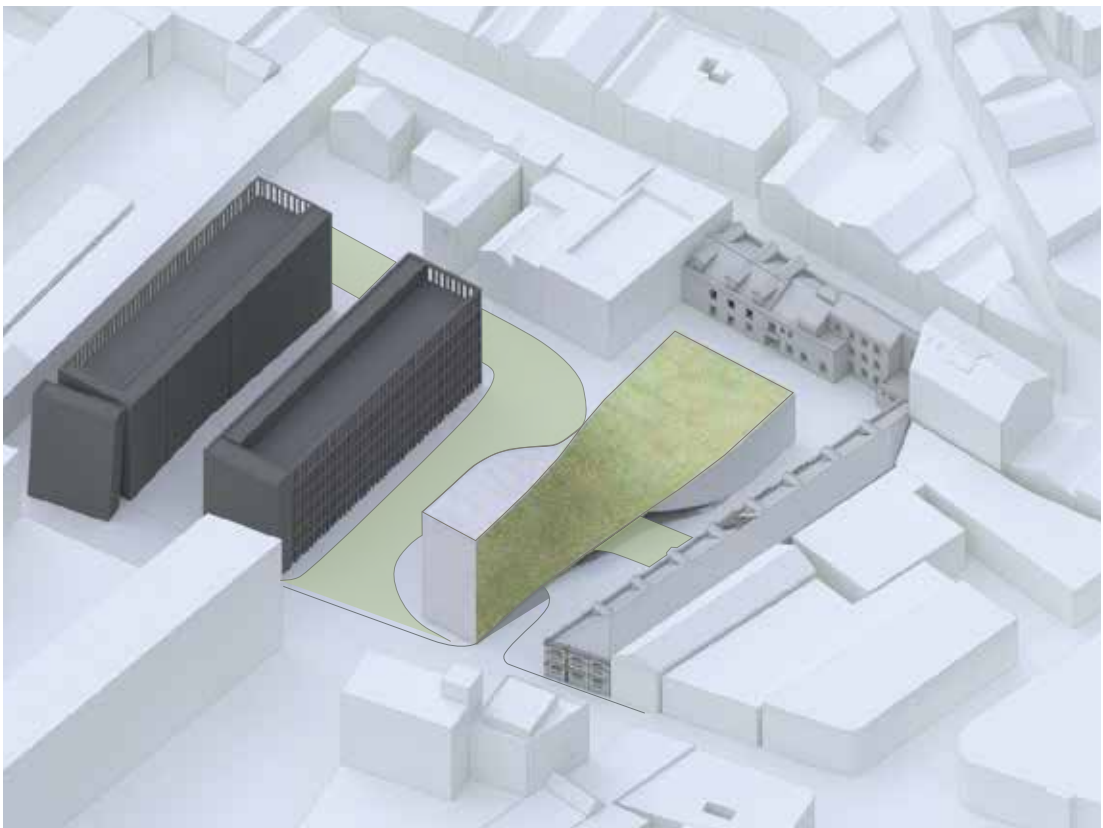
Integration into the existing height system
Open more light into the area

Buildings height surrounding our site varies from 26 meter to 8-12 meter and have very steep change between each other. New mass is designed to achieve natural transition between new high rise buidings and parapet height of old existing buildings. New twisted mass introduces more light into the narrow site.



Separation of pedestrian and car movement lines
Emphasis of building A by directing crowd towards main entrance

Entrance to underground parking is located on the buidling A side and we created pedestrian zone on the other side to provide safe enviroment. To achieve natural and comfortable movement between both sides of building B we introduce sunken passage under. This gesture invites people from the designed square on the office side directly to main entrance of buidling A.

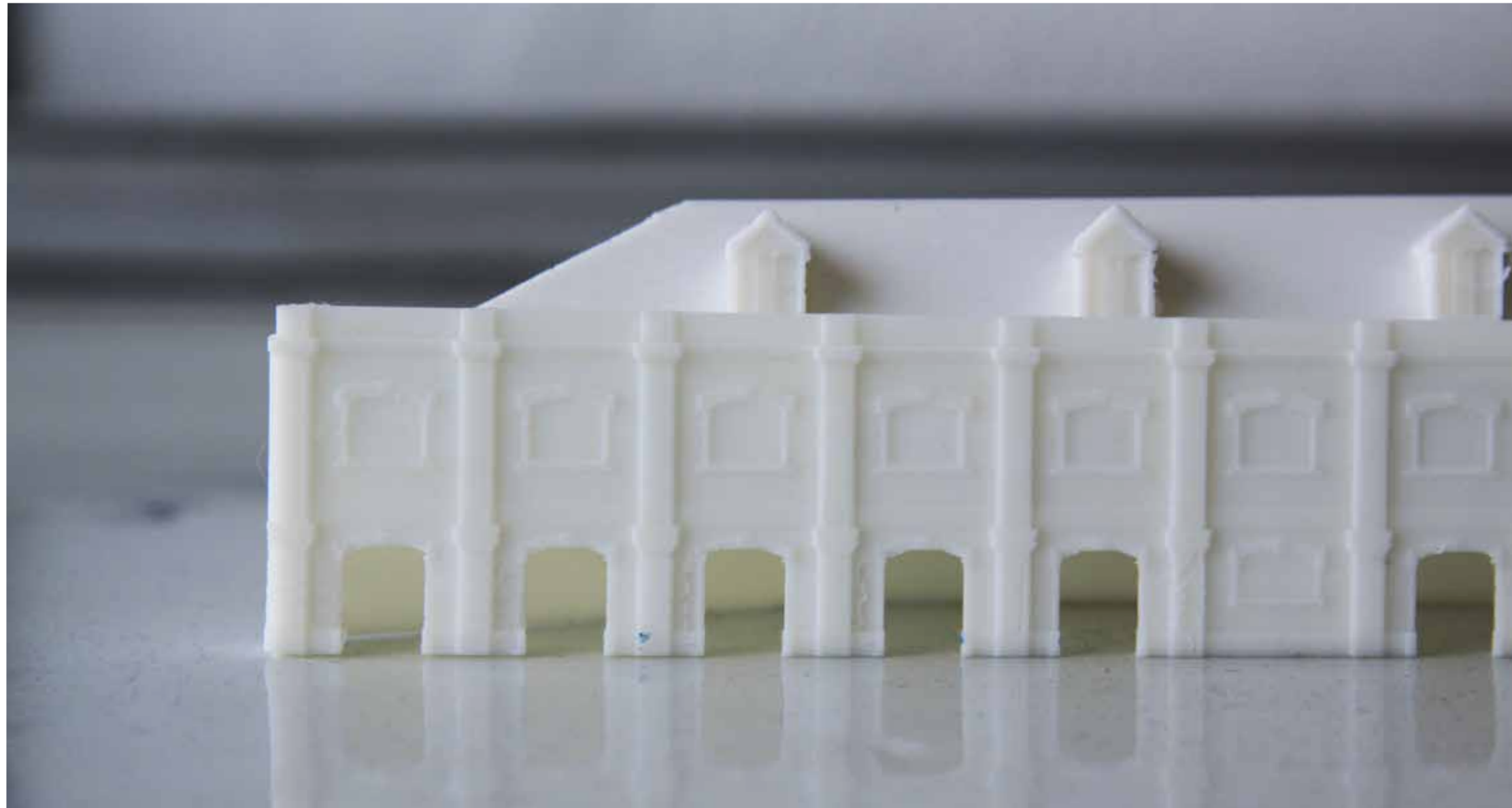


Implementation of green facade softly changing into green roof

Introducing green system facade to control during daylight. Green roof increases greenary area in designed zone and allows residents socialize and enjoy surrounding views.

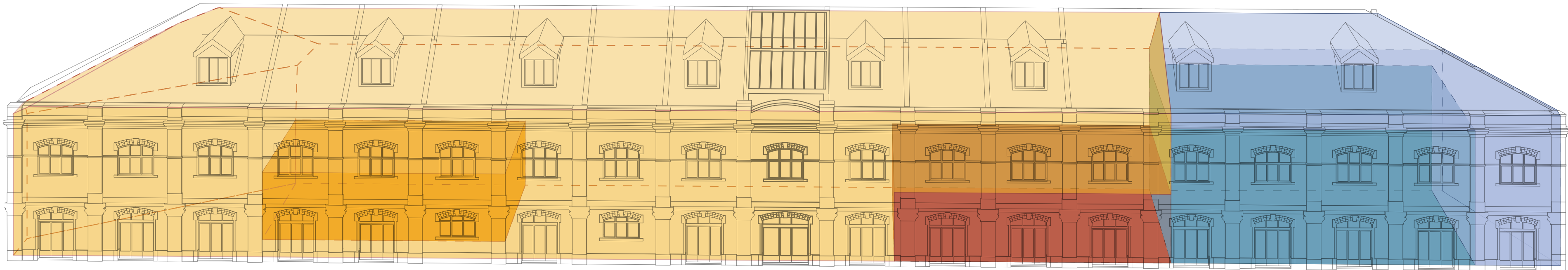
MASTER PLAN





BUILDING A This existing building is designated in the Detail Plan for the Boavista Landfill and is intended to be renovated to accommodate the new Lisbon Video Library and the Lisbon Film Commission, as a hub dedicated to “moving image” in film and video.

VIDEO LIBRARY - PROGRAM DIAGRAM



public space
(exhibition, auditorium etc)



video archive



viewing rooms

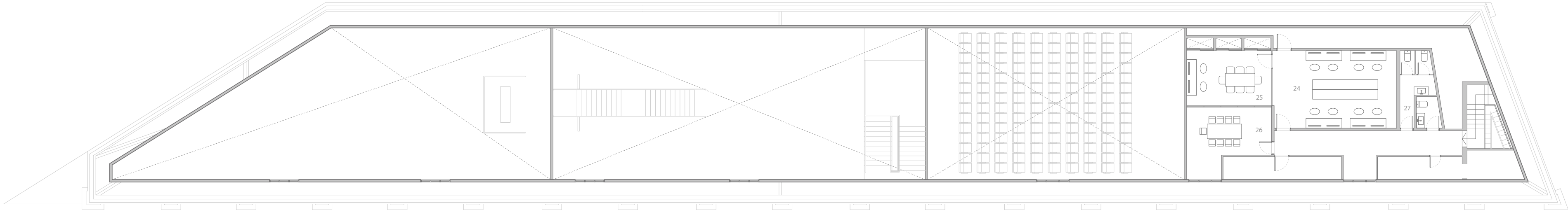


cyclorama, all connected spaces

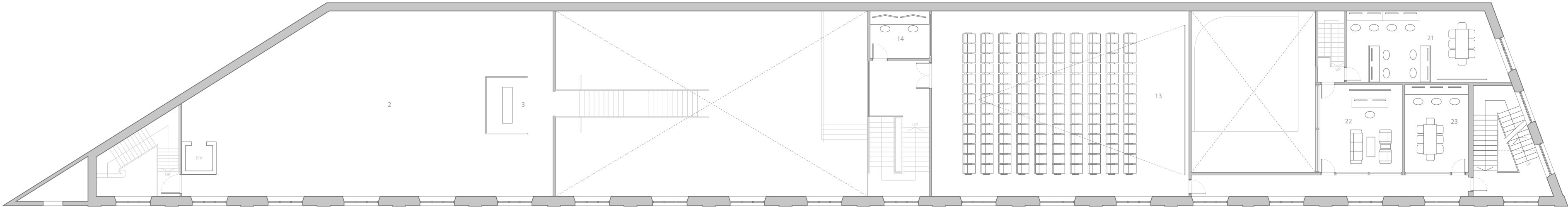


video commission

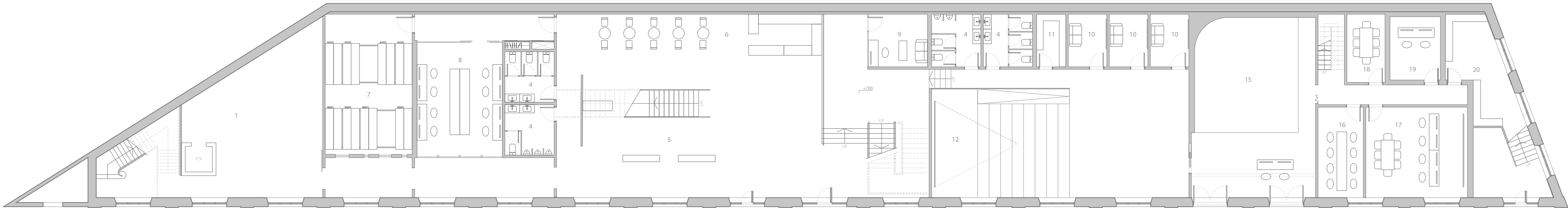
VIDEO LIBRARY - PLAN



SECOND FLOOR



FIRST FLOOR



GROUND FLOOR



LISBON VIDEO LIBRARY

- 1. Temporary Exhibition
- 2. Permanent exhibition
- 3. Reception
- 4. W/C
- 5. Shop
- 6. Cafeteria
- 7. Deposit and archive room
- 8. Video digitalization room
- 9. Administration
- 10. Individual visioning room
- 11. Supporting room
- 12. Collective visioning room

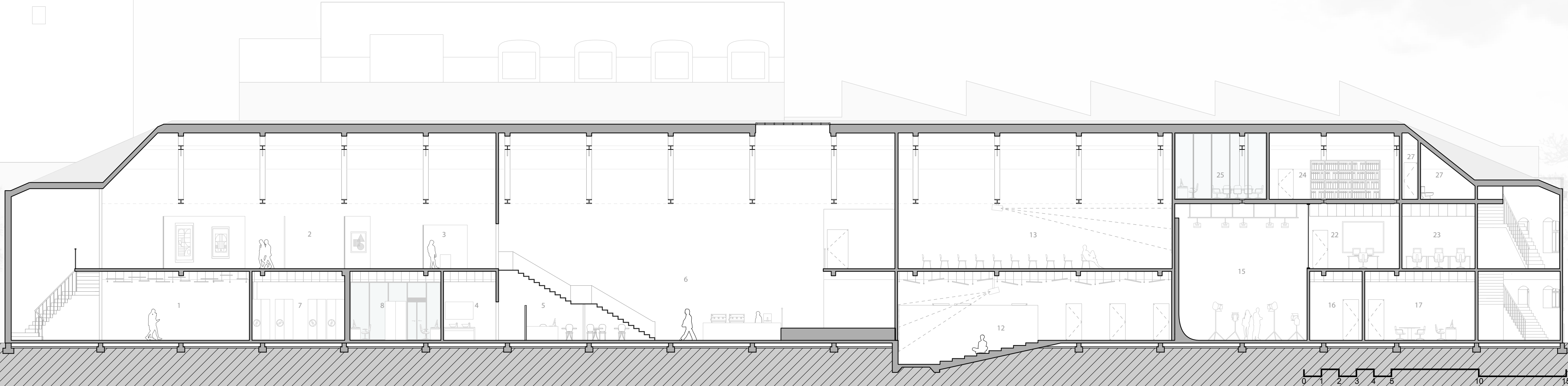
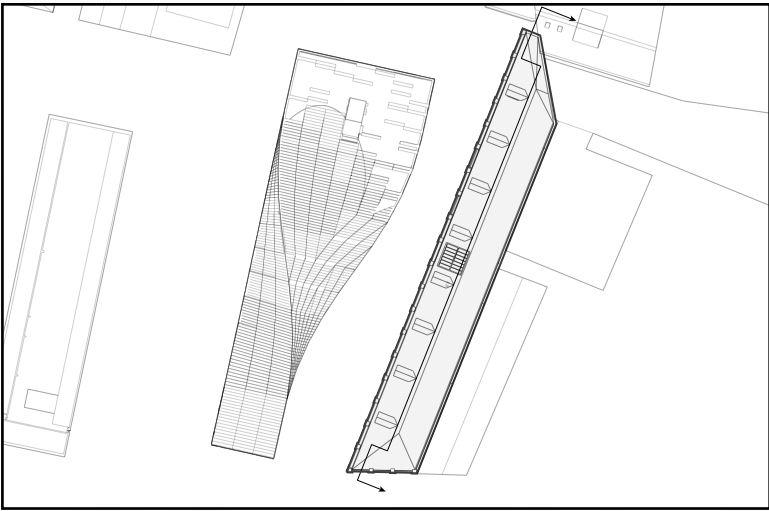
- 13. Auditorium
- 14. Backstage room
- 15. Cyclorama studio
- 16. Meetings room & Make up room
- 17. Film and Vedio description room
- 18. Reading room
- 19. Sound studio
- 20. Filming equipment storage room

- 21. Video edition room
- 22. Executive project production room
- 23. Coordinator room

LISBON FILM COMISSION

- 24. Workingroom
- 25. Meetings room
- 26. Coordinator room
- 27. W/C

VIDEO LIBRARY - LONG SECTION



LISBON VIDEO LIBRARY

- 1. Temporary Exhibition
- 2. Permanent exhibition
- 3. Reception
- 4. W/C
- 5. Shop
- 6. Cafeteria
- 7. Deposit and archive room
- 8. Video digitalization room
- 9. Administration
- 10. Individual visioning room
- 11. Supporting room
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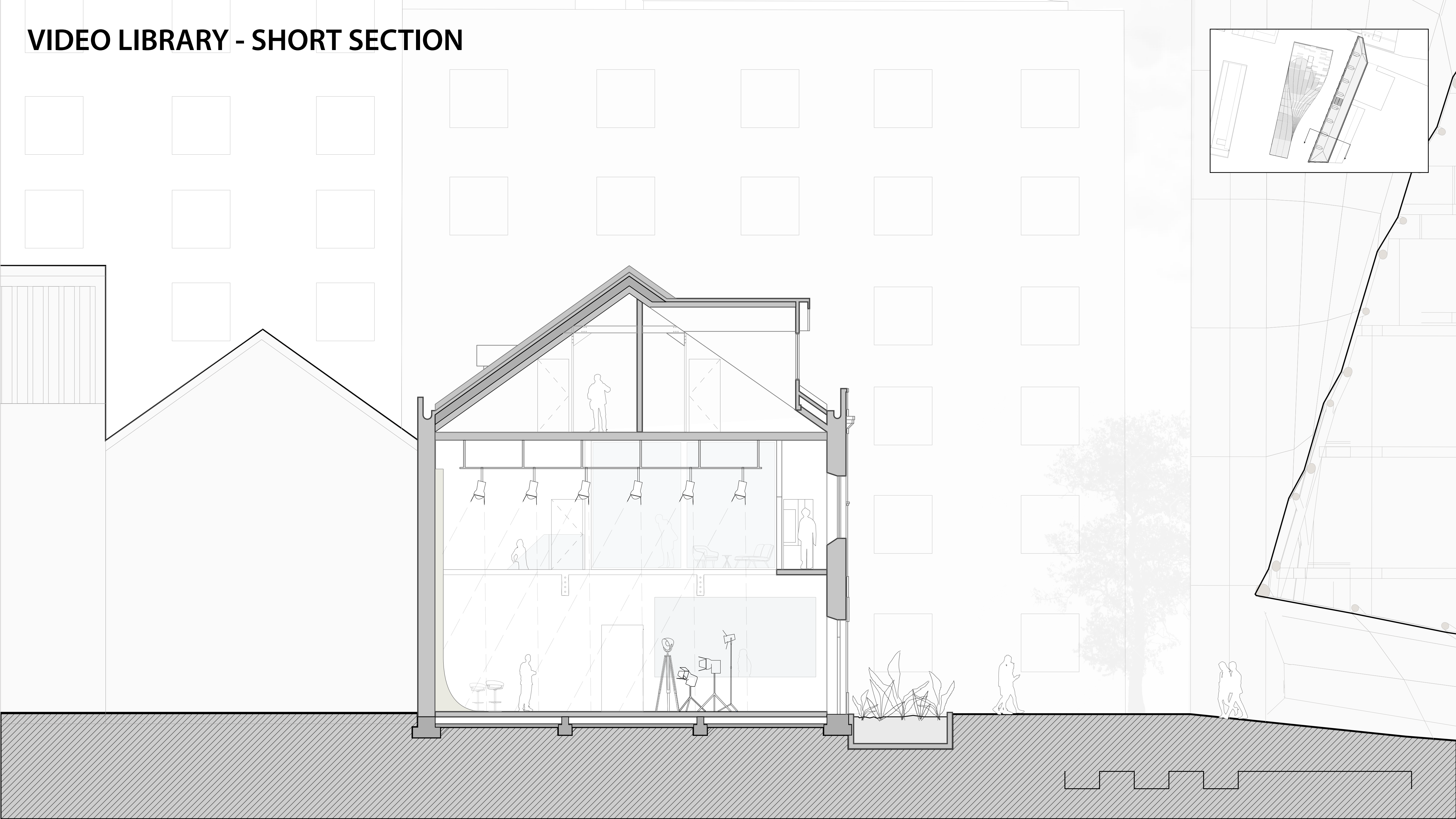
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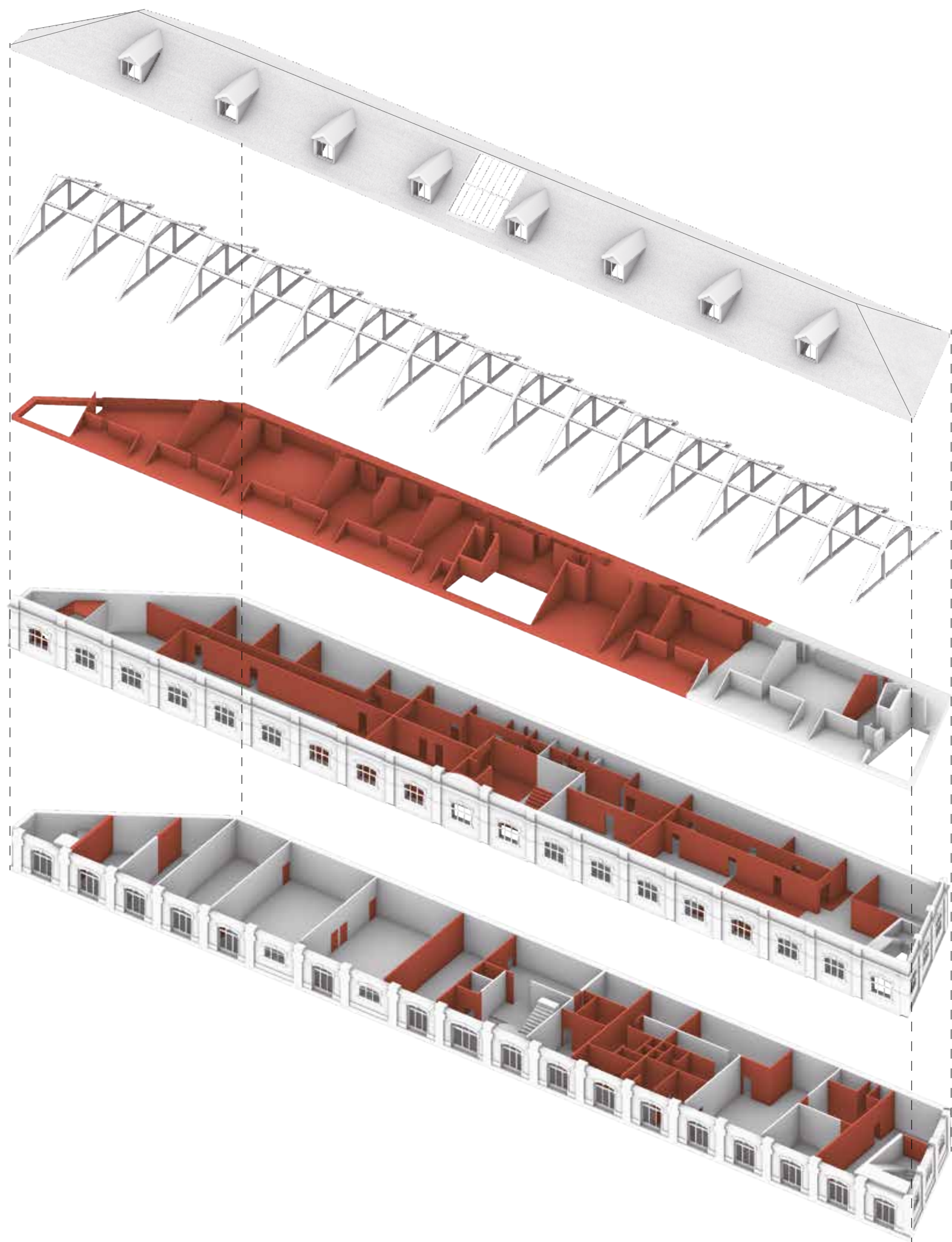
LISBON FILM COMISSION

- 24. Workingroom
- 25. Meetings room
- 26. Coordinator room
- 27. W/C

VIDEO LIBRARY - SHORT SECTION

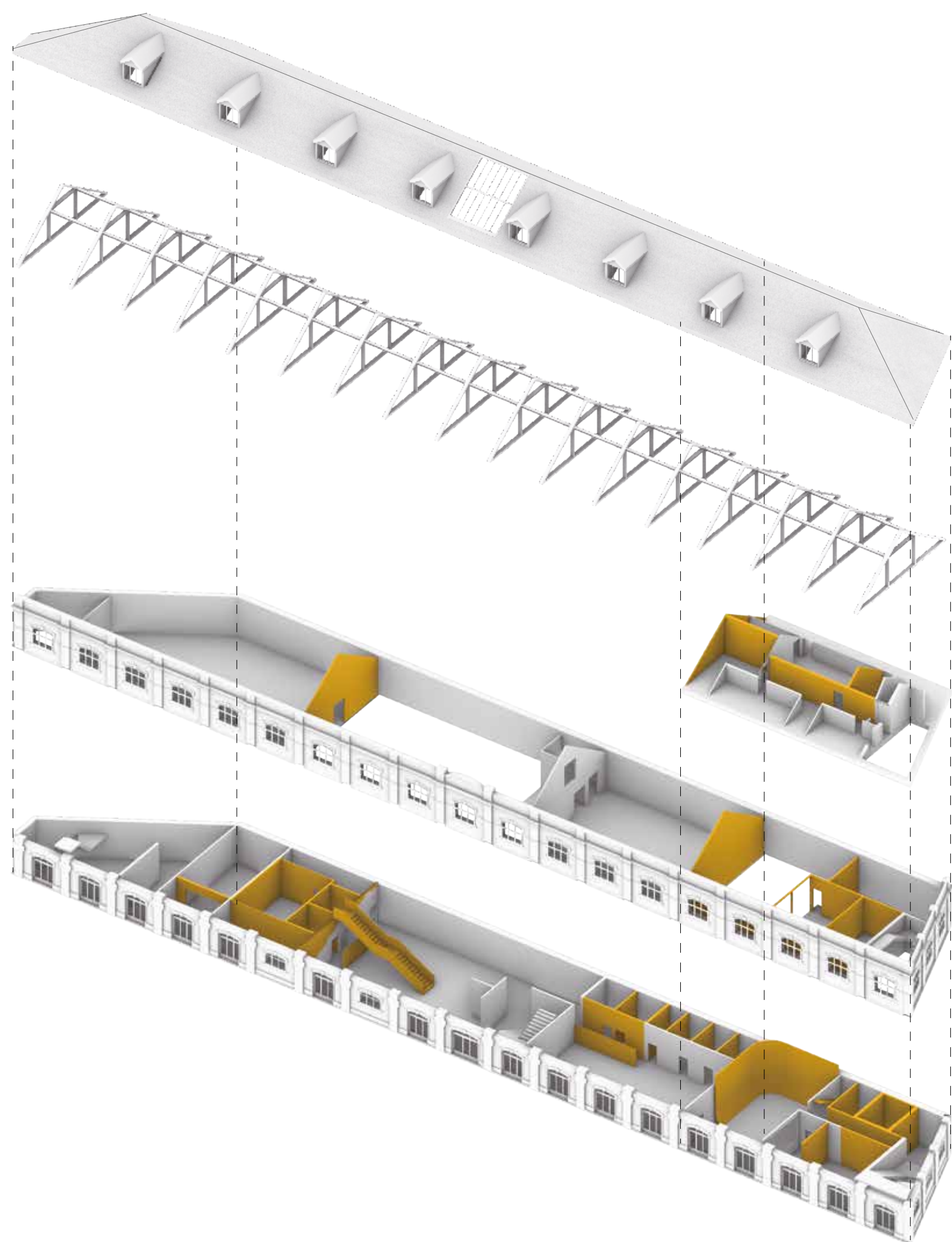


REUSE STRATEGY



● DEMOLISHED

The structure of the roof is exposed by demolishing part of the floor slabs to create an open feeling. Also, Removal of some interior walls and slabs opens the space for exhibition rooms, a cafeteria and an auditorium



● FACADE & ROOF

The existing facade and roof design of the building is fully respected and maintained to keep the building's original characteristics.

● NEW

The rough marks of existing walls and slabs show the history and passage of time of this building. Rather than hiding these traces of time, we emphasized them with a modern white wall so it could emphasize the existing rough wall even more.

MAIN HALL



AUDITORIUM



Cast

Scott
Eva
Tom
Joe
Maria
Erkki
Mike
Frank

JOS BLEAU
MARIA IVANOVA
HANS MUSTER
OLA NORDMANN
ERIKA MUSTERMANN
MATTI MEIKALAINEN
GIORGOS ELLINAS
FRED NURK

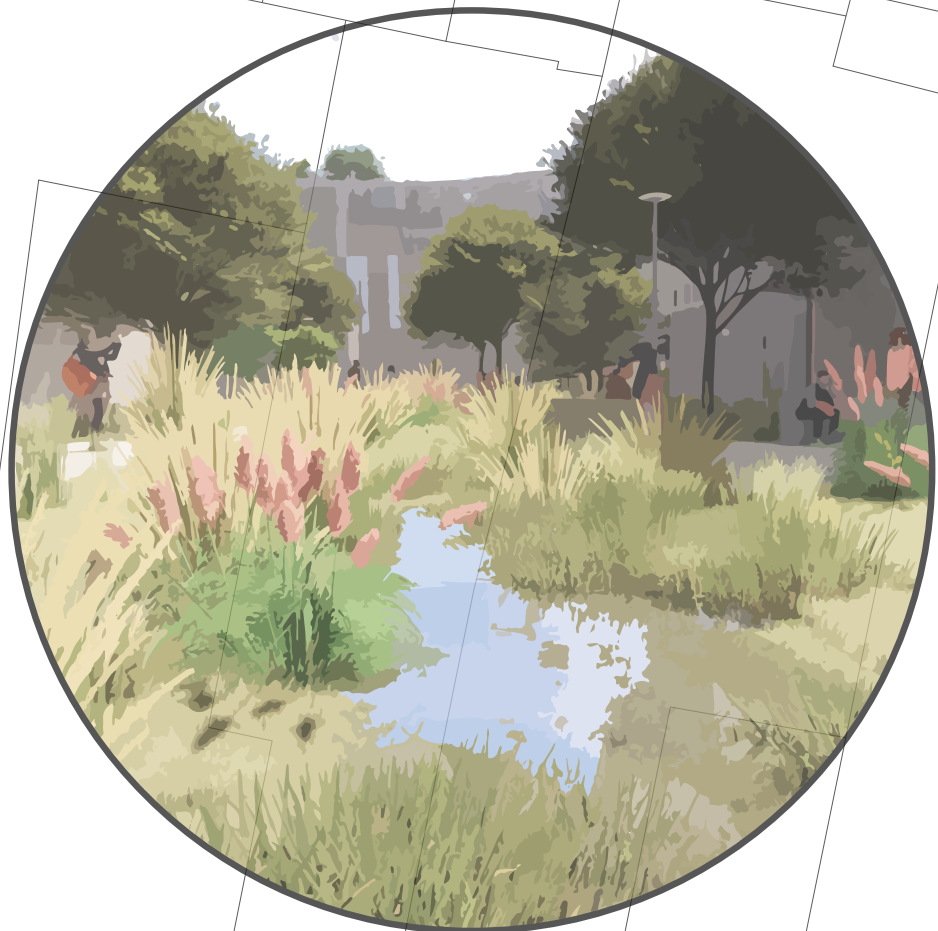
Directed by
Screenplay by
Produced by
Editor
Director of Photography

JOE PUBLIC
CHANSIU MING
HERR SCHMIDT
SANTERI VIINAMÄKI
JANEZ NOVAK

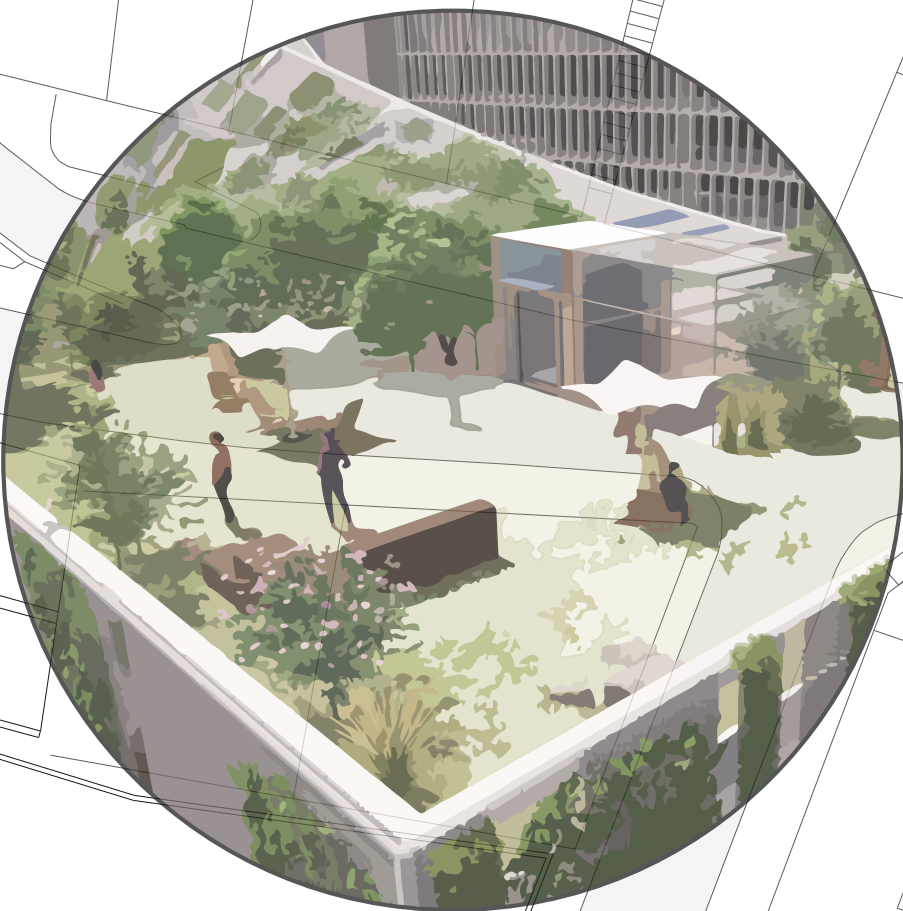


AREA C This new building is designated in the Detail Plan for East Boavista Landfill. It is intended mostly for residential use.

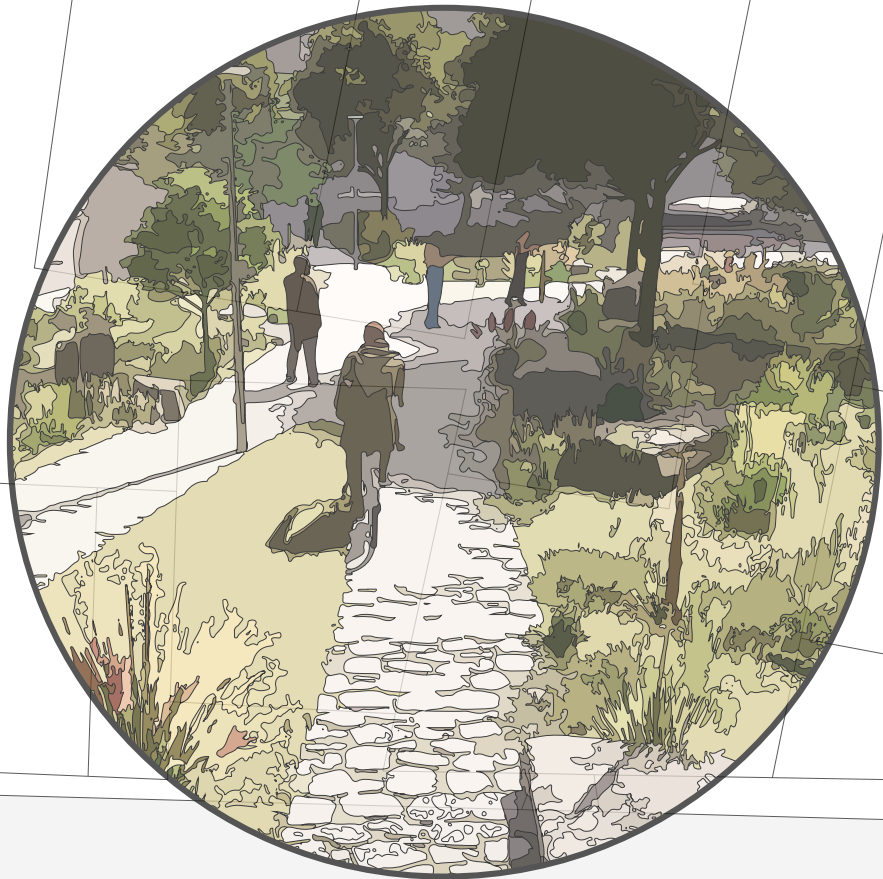
AREA C - Program



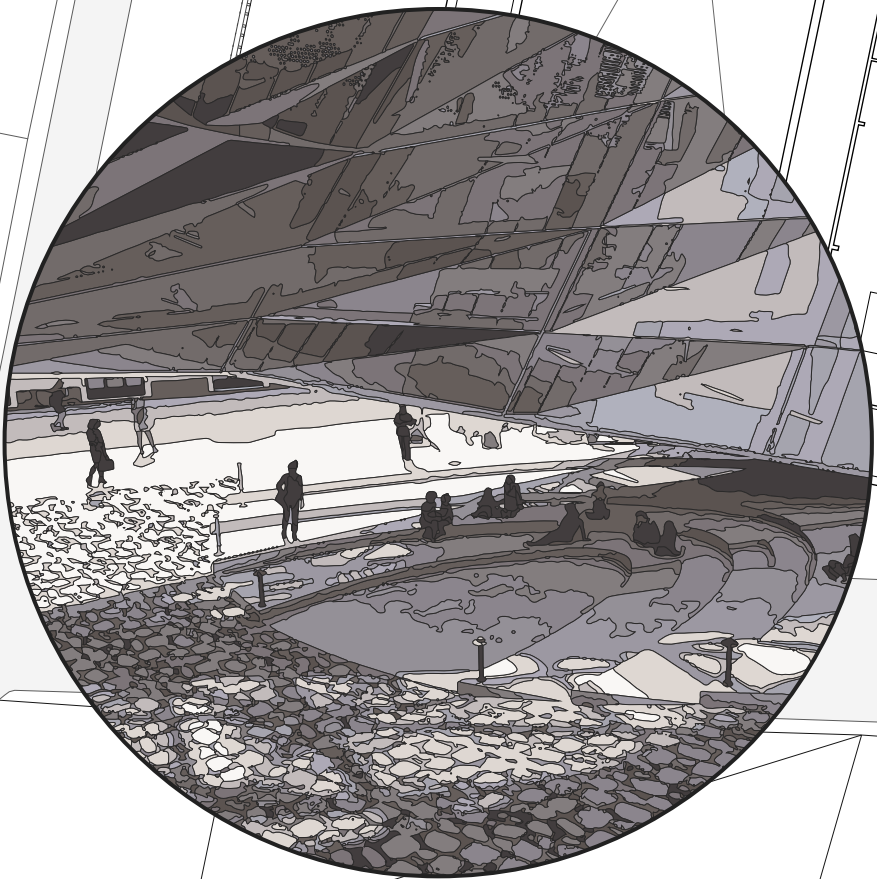
Rain Gardens



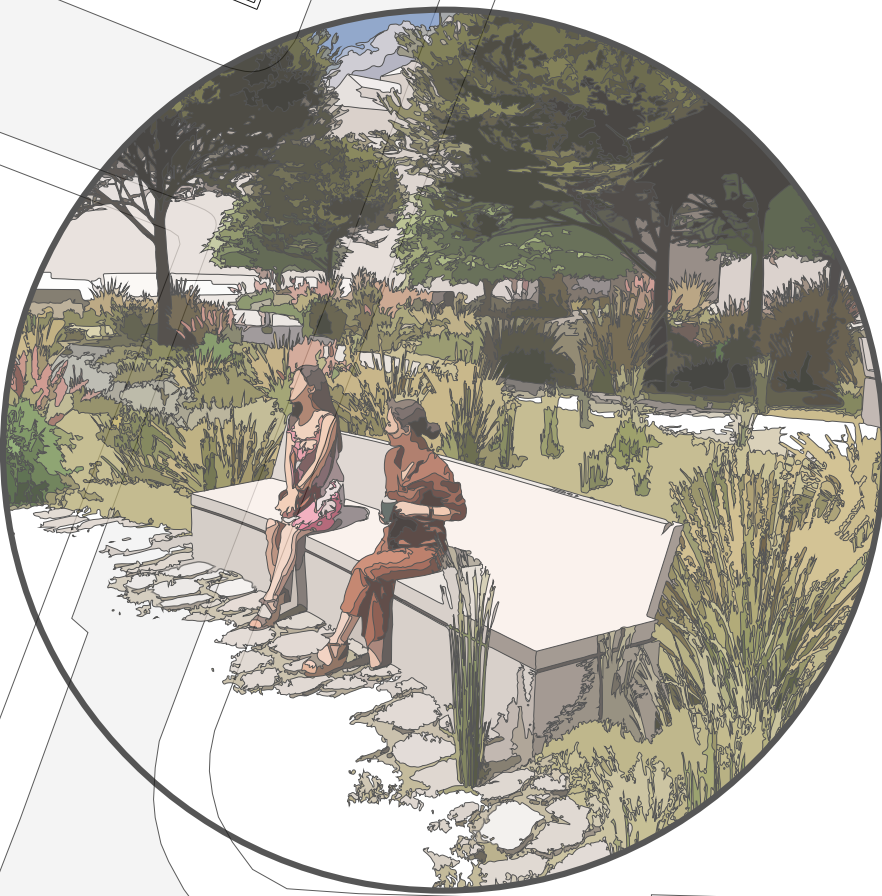
Roof Garden



Walking paths



Seats with screen

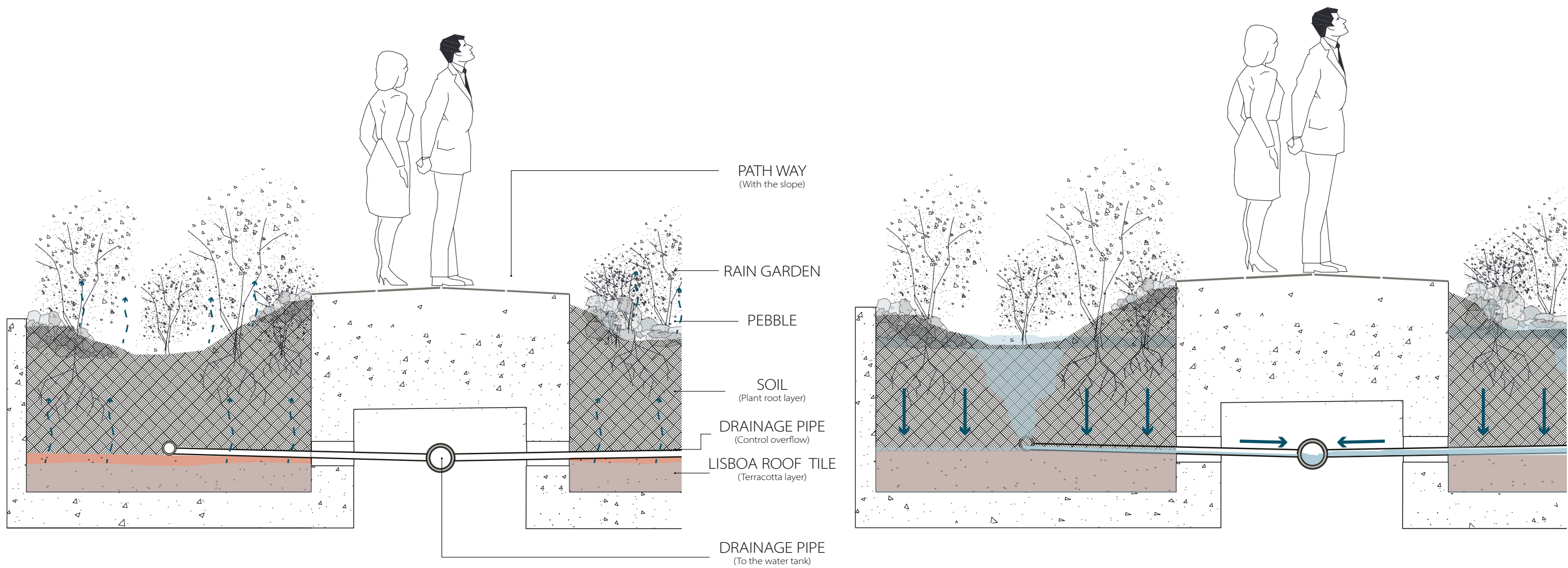


Benches

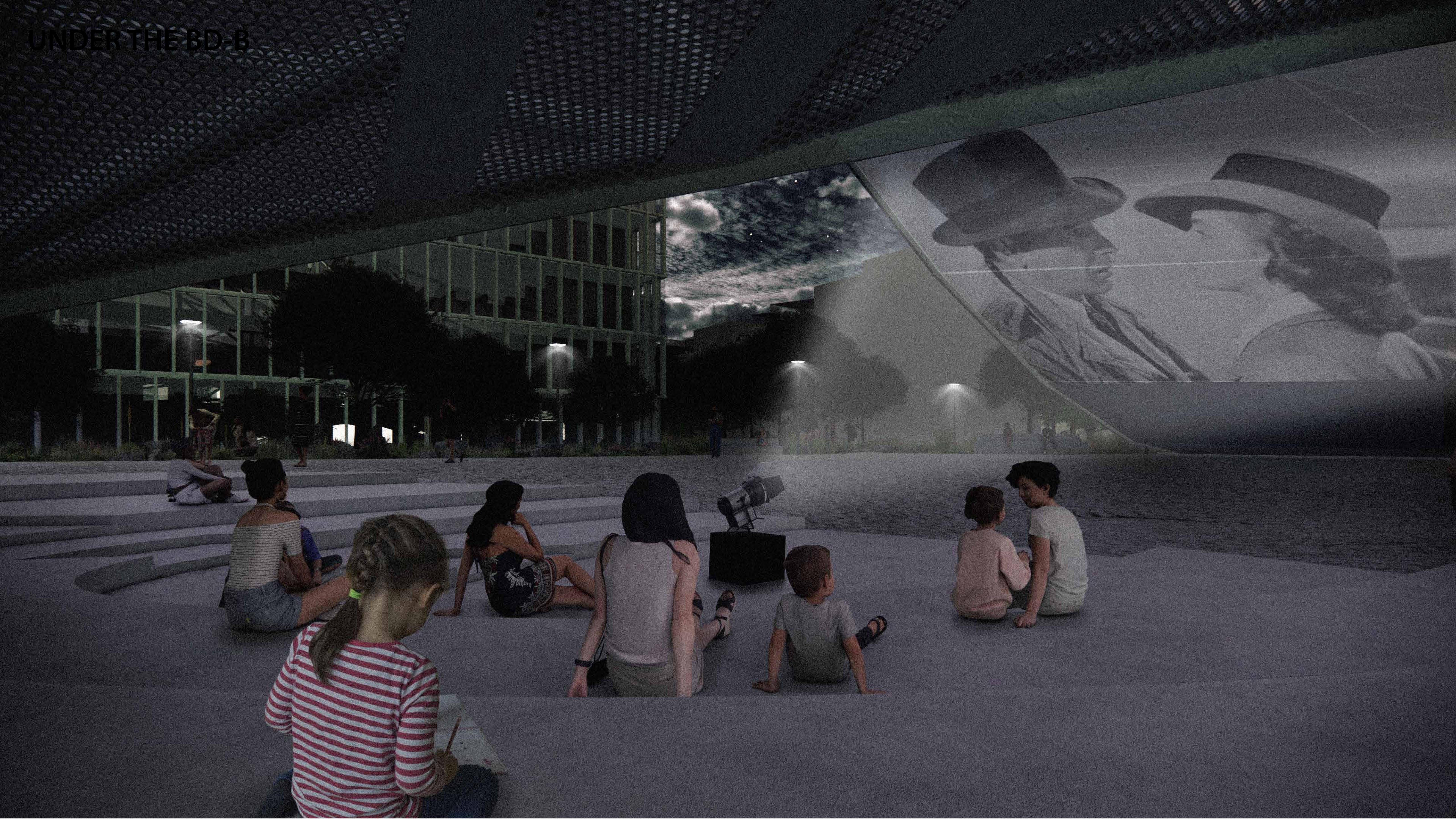
AREA C



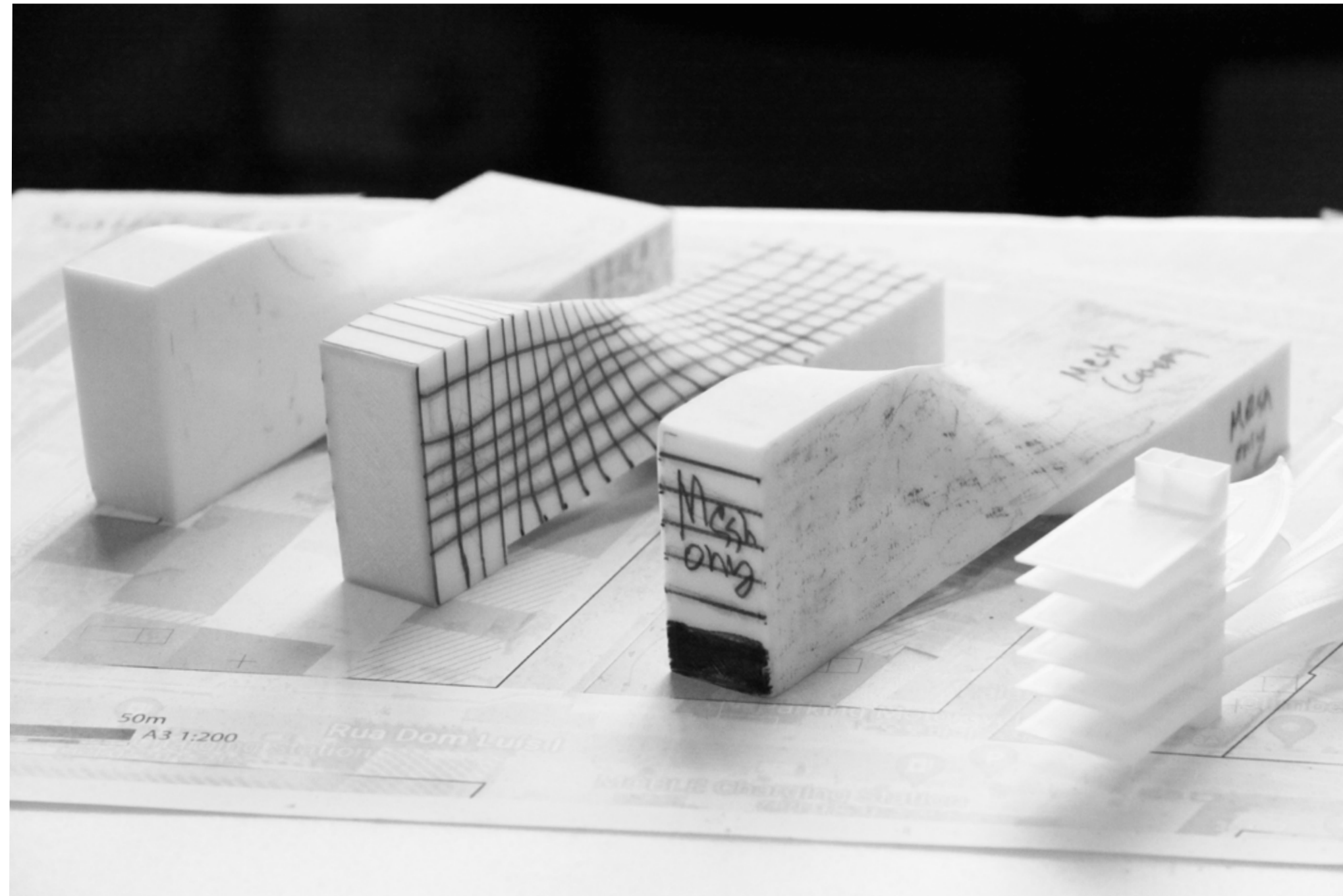
We implemented rain garden system into design of Area C with feature of plant pot. Instead of opening way for water to go straight to the ground we made a foundation and put layer of old terracotta tiles from demolished buildings on our site. That layer should work as a absorbtion element while foundation would prevent water to go fast to the ground. We wanted to achive cooling effect for the area, make water col-lected from rain evaporate through the ground with time and also give plants water gradually. Extra water amount are directed to water tanks in the building B to filter it.



UNDER THE BD-B

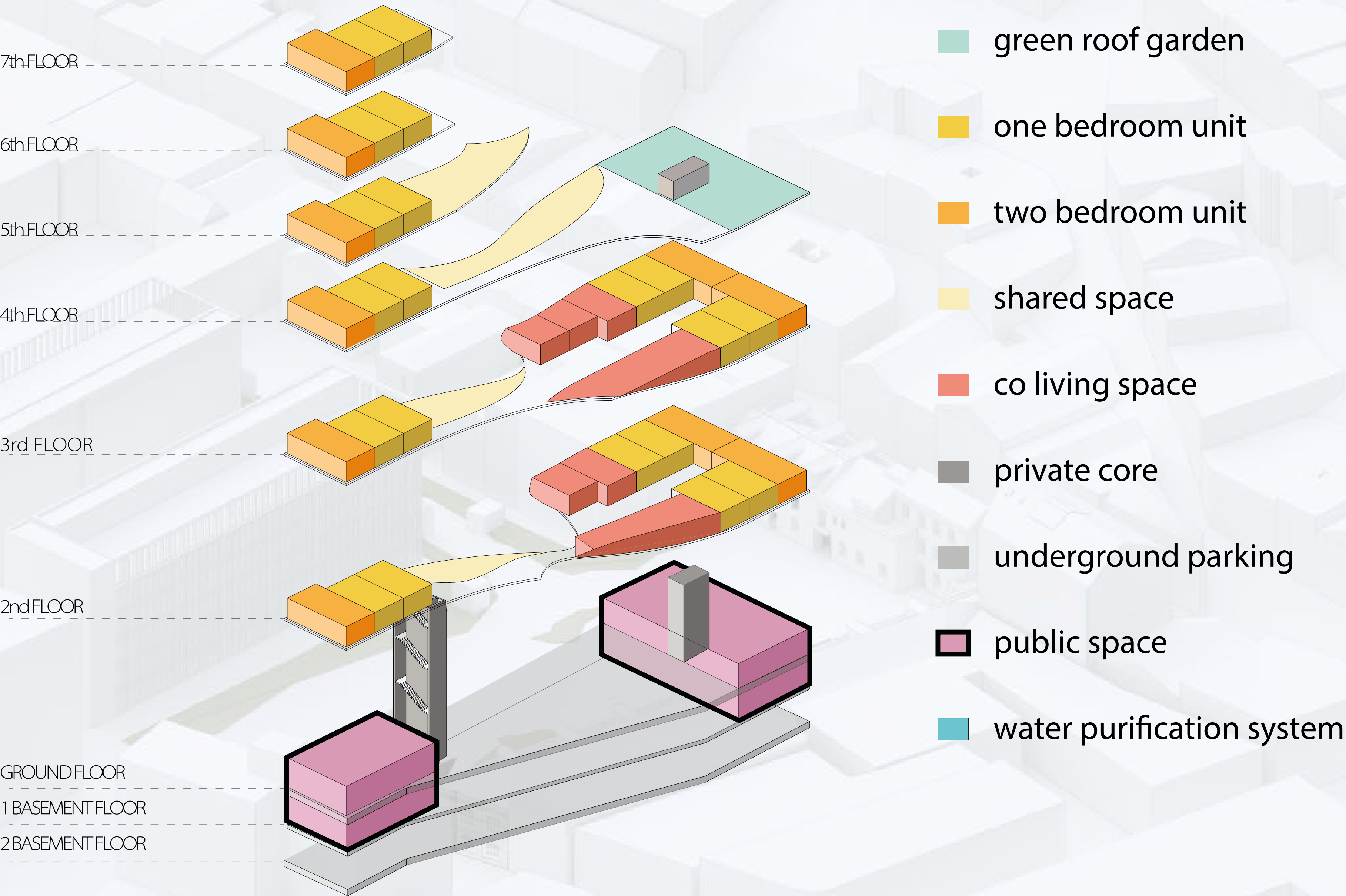




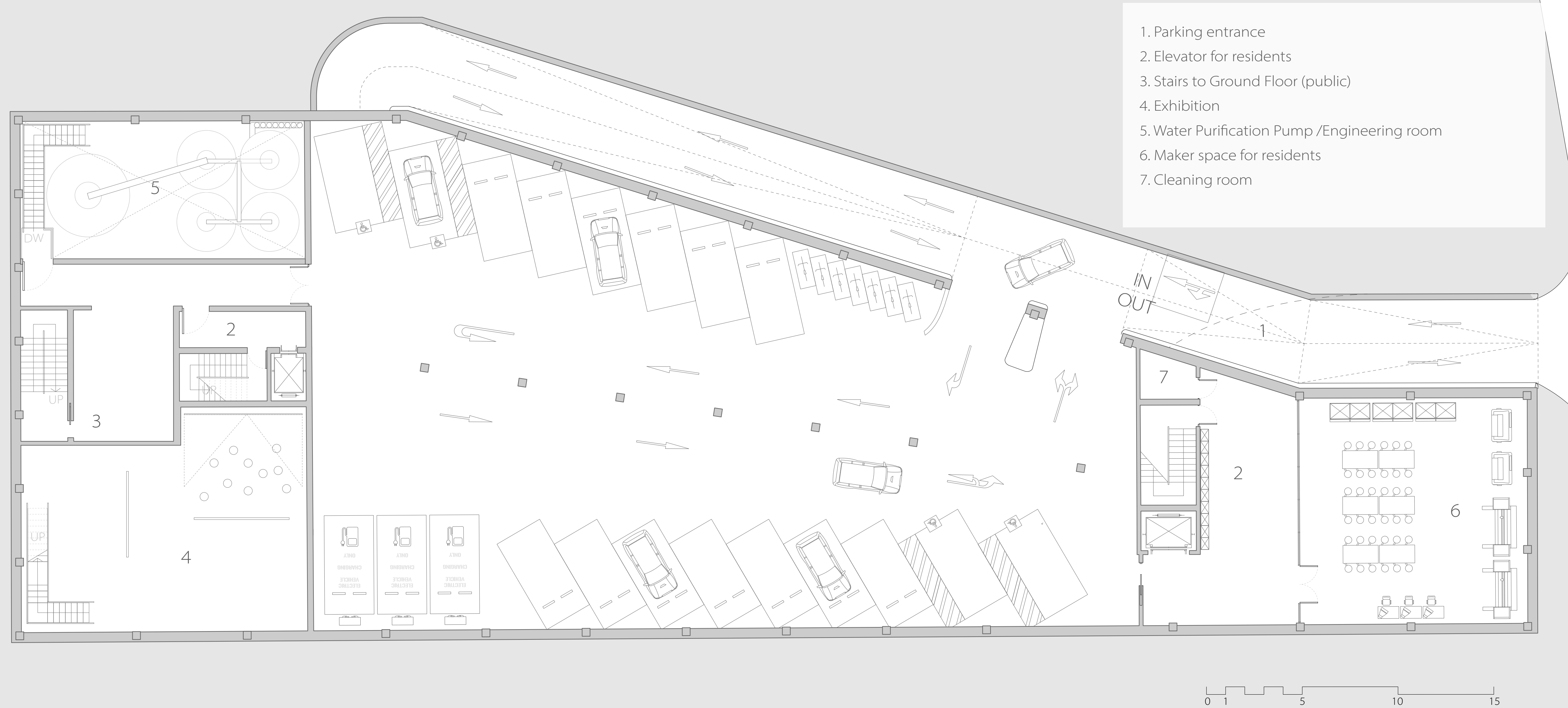


BUILDING B This new building is designated in the Detail Plan for East Boavista Landfill. It is intended mostly for residential use

PROGRAM ZONING



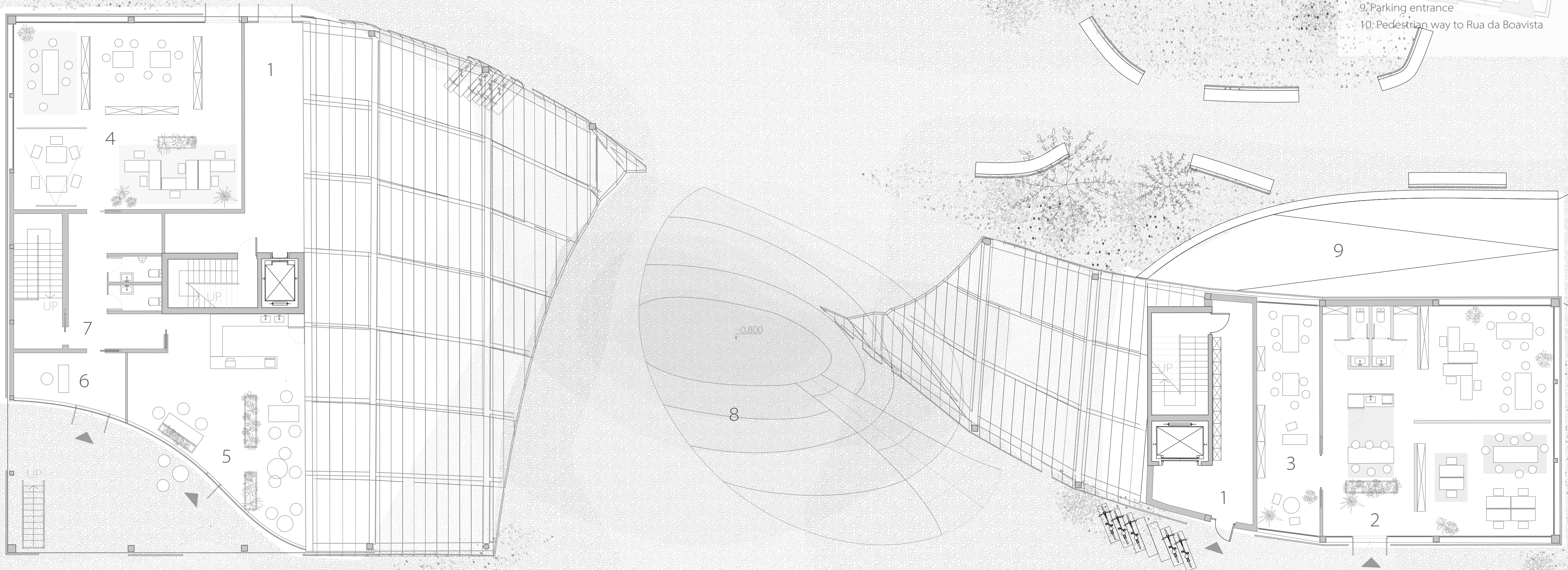
BUILDING B - Basement Floor Plan



B1 FLOOR PLAN
A3 (1:200)

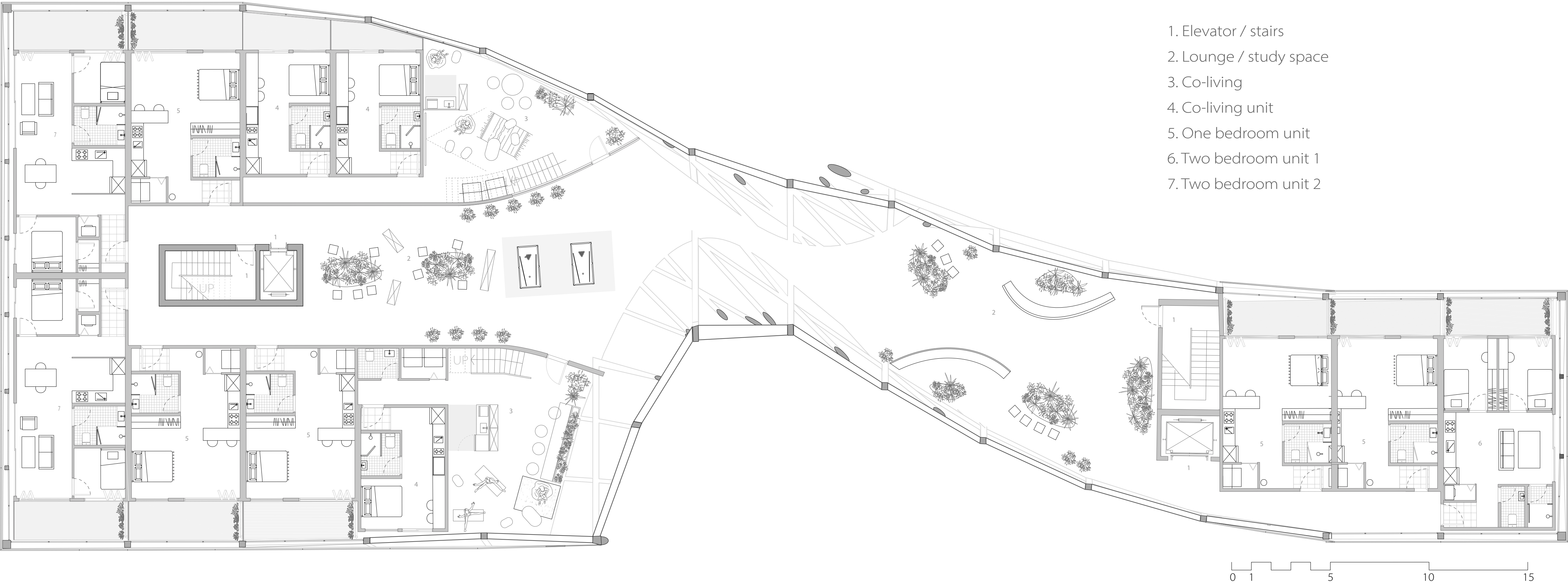
BUILDING B - Ground Plan

- 1. Entrance for residents
- 2. Co-working (start-up offices)
- 3. Atelier
- 4. Workshop / co-working space
- 5. Cafe
- 6. Exhibition
- 7. Stairs to underground parking (public)
- 8. Sunken square seats
- 9. Parking entrance
- 10. Pedestrian way to Rua da Boavista

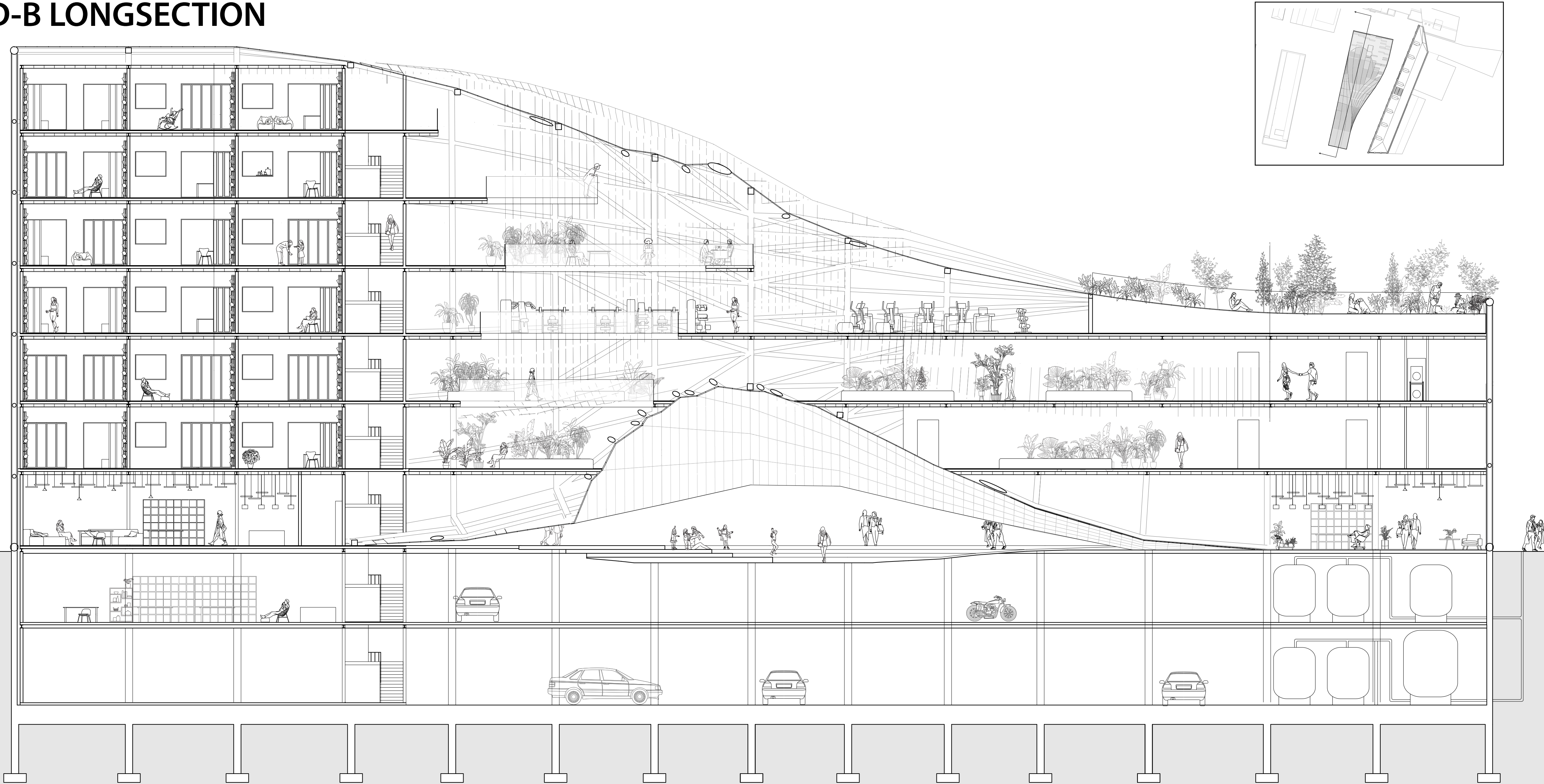


GROUND FLOOR PLAN
A3 (1:200)

BUILDING B - 1st Floor Plan



BD-B LONGSECTION



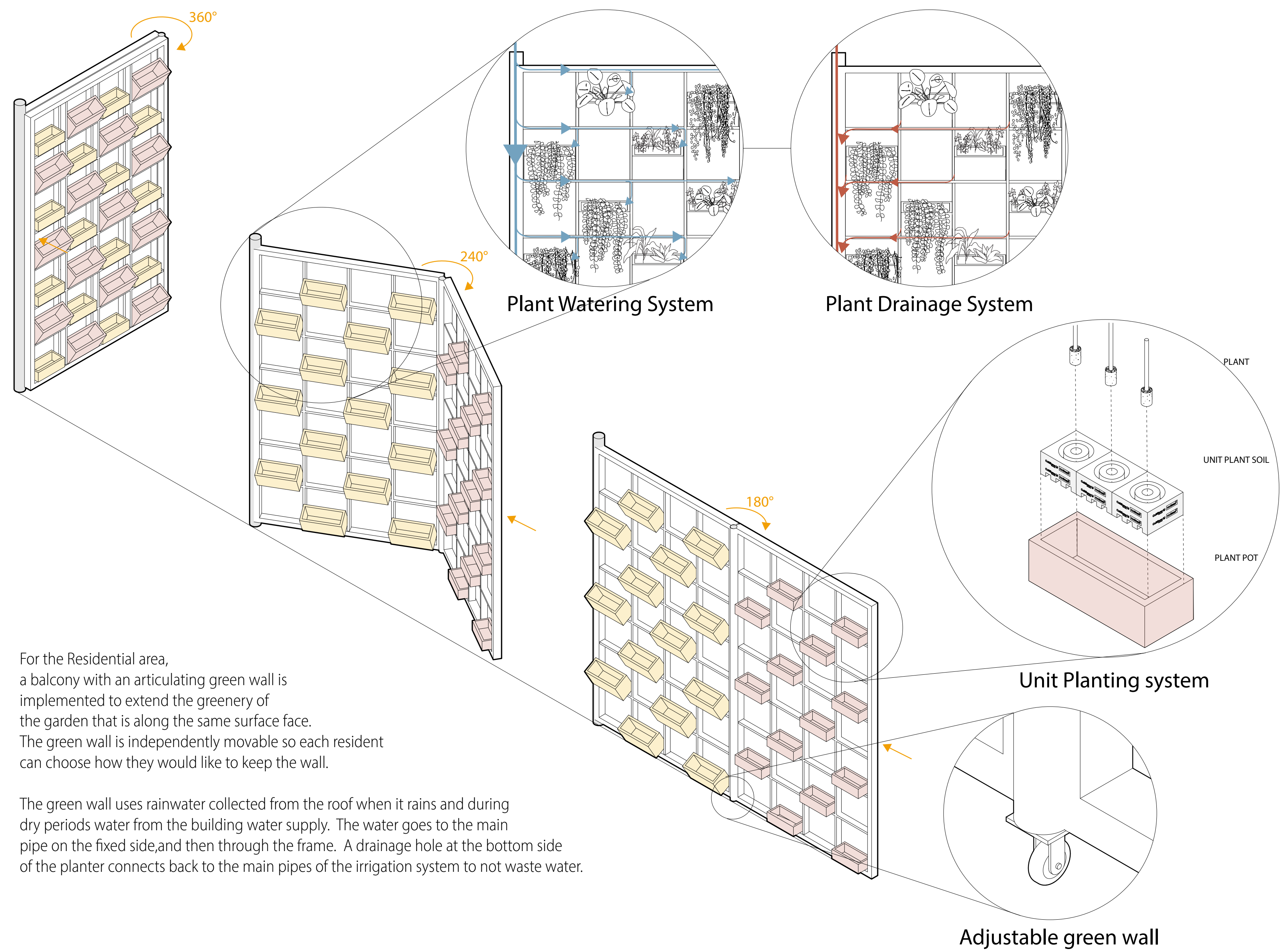
HALLWAY FOR RESIDENCE



FITNESS CENTER FOR RESIDENCE



MOVABLE GREEN WALL



For the Residential area, a balcony with an articulating green wall is implemented to extend the greenery of the garden that is along the same surface face. The green wall is independently movable so each resident can choose how they would like to keep the wall.

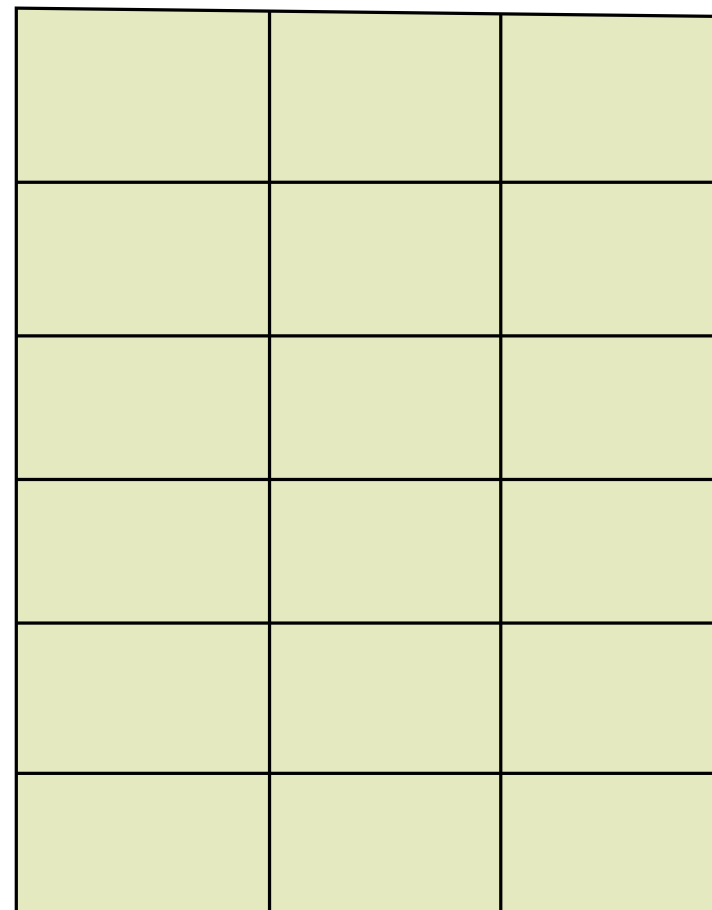
The green wall uses rainwater collected from the roof when it rains and during dry periods water from the building water supply. The water goes to the main pipe on the fixed side, and then through the frame. A drainage hole at the bottom side of the planter connects back to the main pipes of the irrigation system to not waste water.

FACADE MOVABLE GREEN WALL SYSTEM



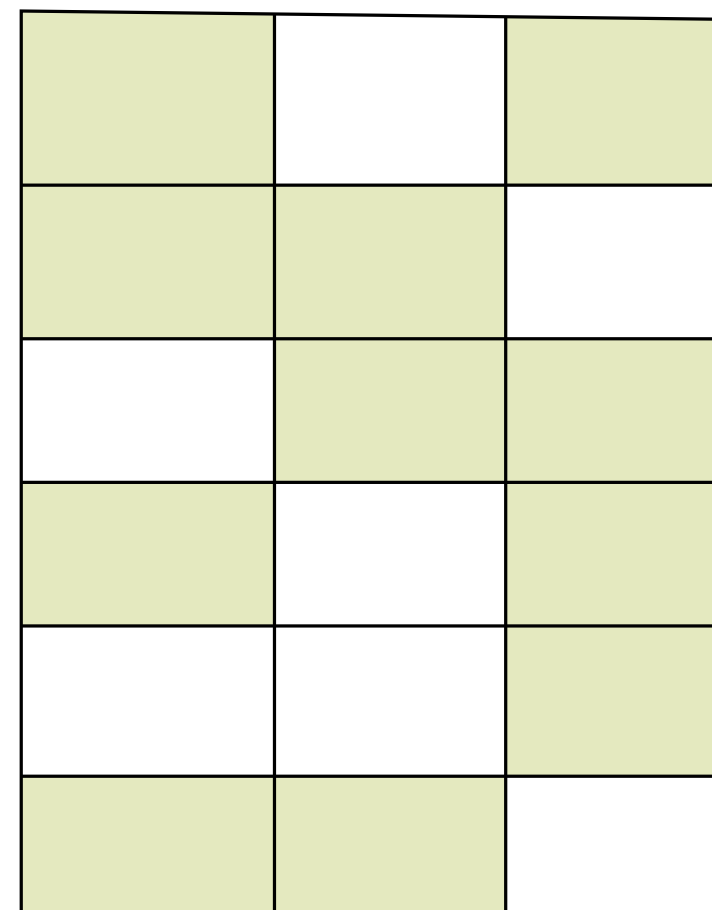
12:00

Moveable Green wall **all open**



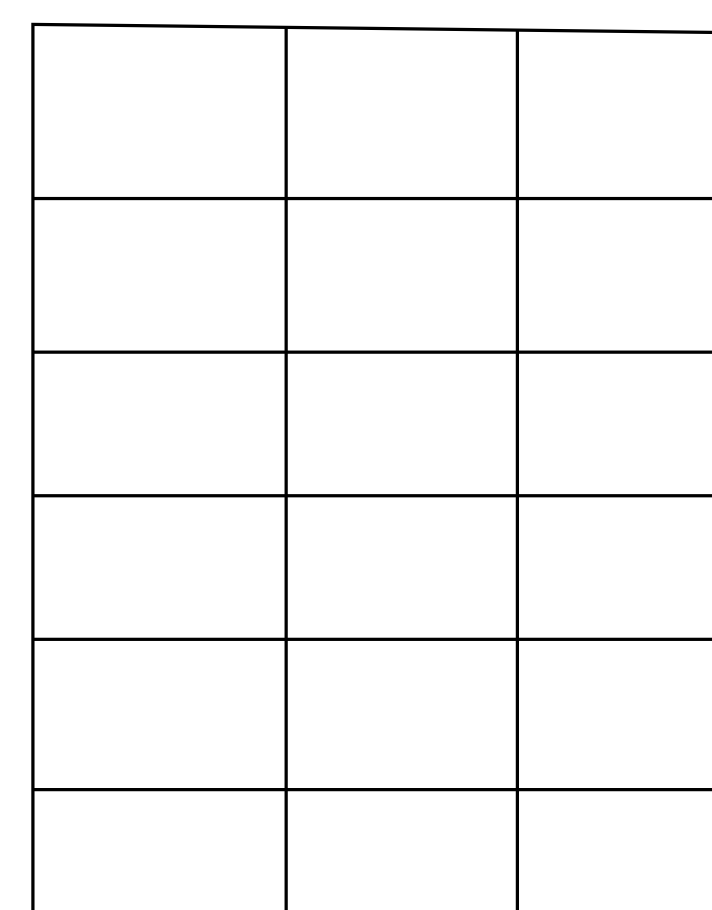
15:00

Moveable Green wall **partially open**



18:00

Moveable Green wall **all closed**



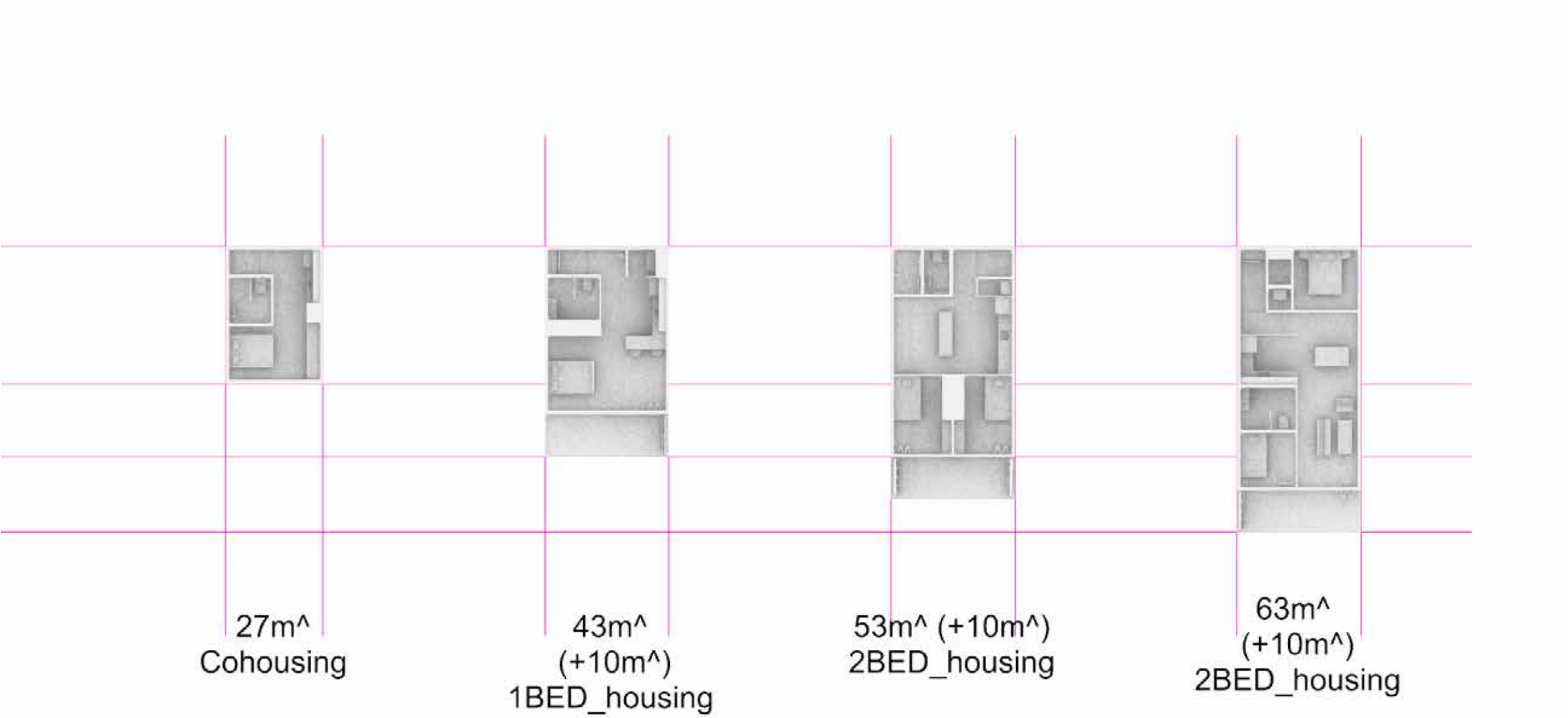
ENVIRONMENTAL -SUN



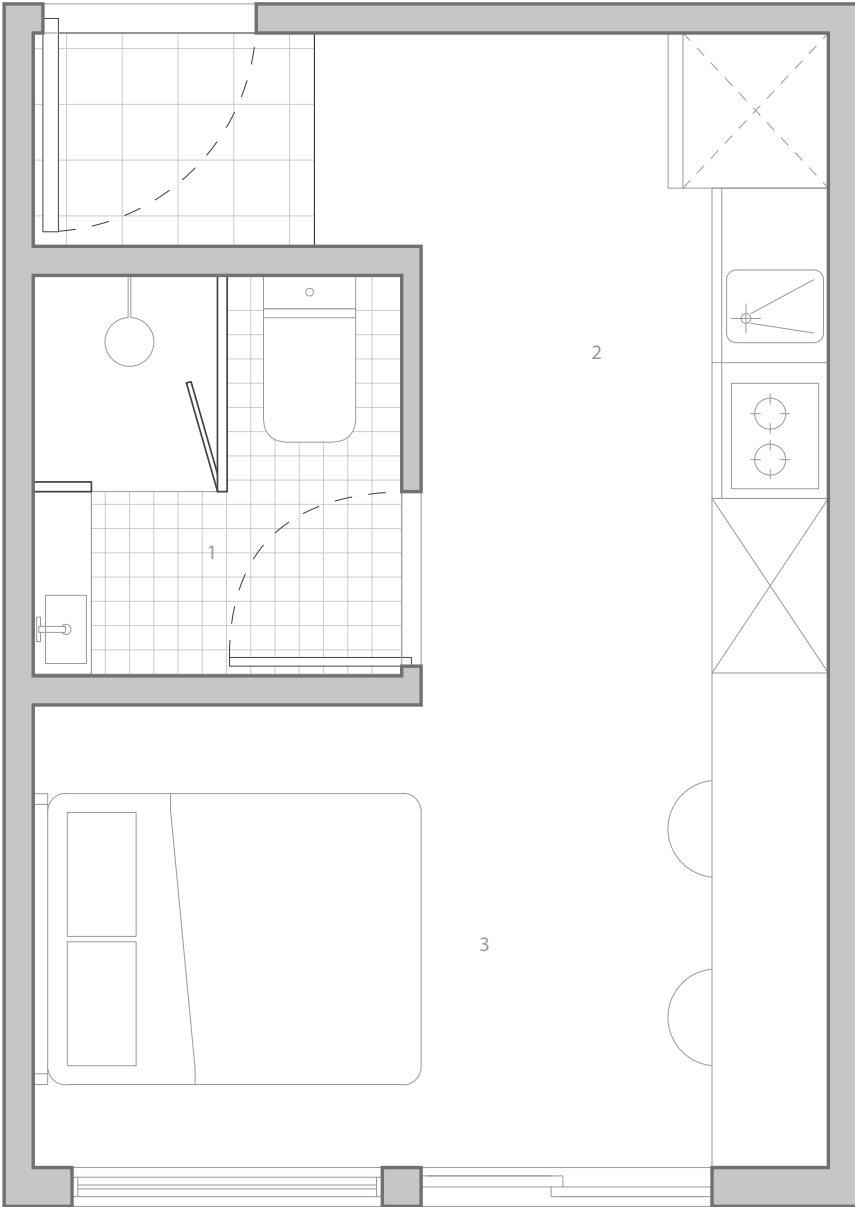
The arrangement of residential units is decided according to direction of sun and site location. Site is narrow and long from south to north we decided to arrange all units towards one side to achieve maximum light conditions for each residential unit.

In particular, when Movable Green is applied, the adjustable range of DAYLIGHTAUTONOMY is very wide.

UNIT

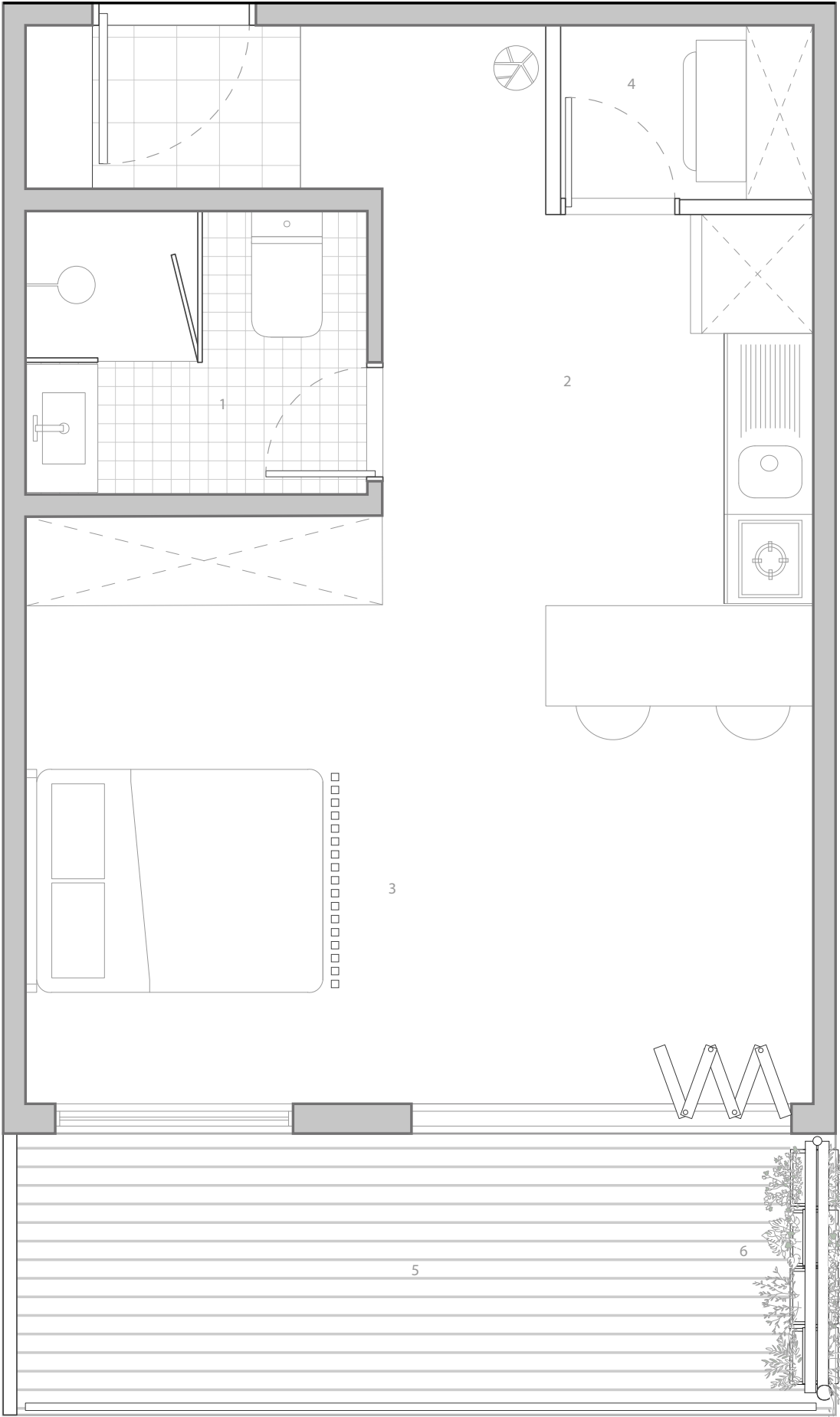


UNIT



COHOUSING UNIT

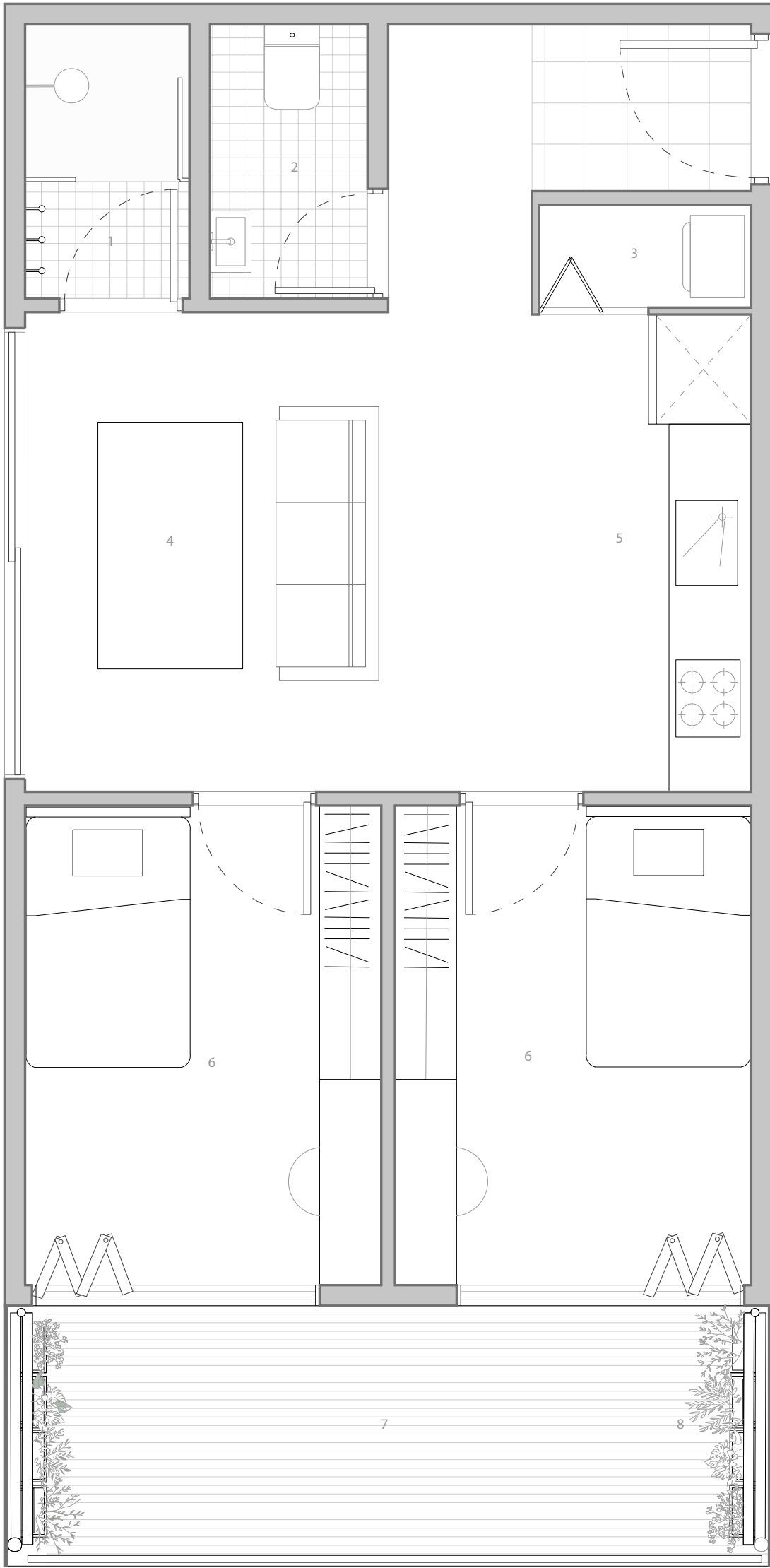
- 1. Bathroom
- 2. Kitchen
- 3. Bedroom



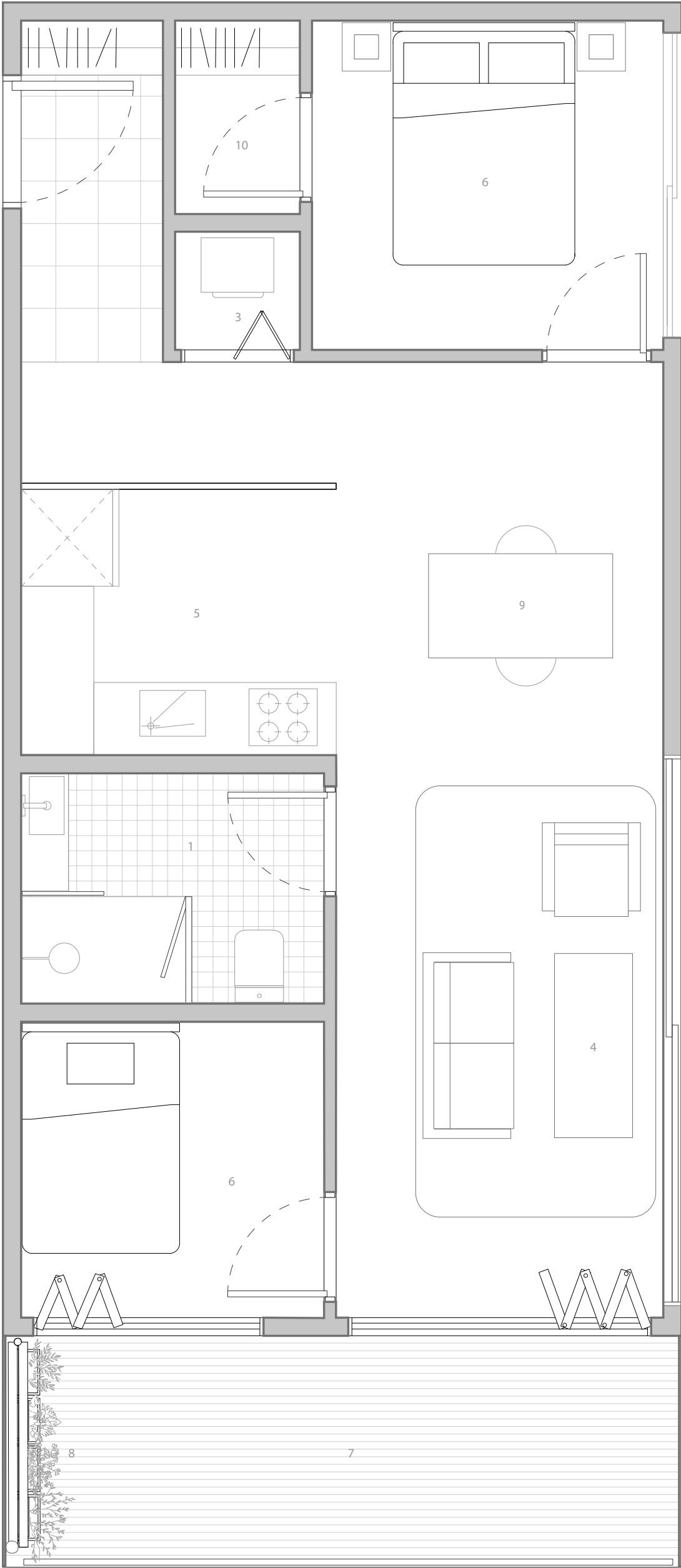
ONE BED UNIT

- 1. Bathroom
- 2. Kitchen
- 3. Bedroom
- 4. Laundry
- 5. Balcony
- 6. Movable Green Wall

UNIT



- TWO BED A UNIT**
- 1. Bathroom
 - 2. Toilet
 - 3. Laundry Room
 - 4. Living Romm
 - 5. Klitchen
 - 6. Bedroom
 - 7. Balcony
 - 8. Movable Green Wall



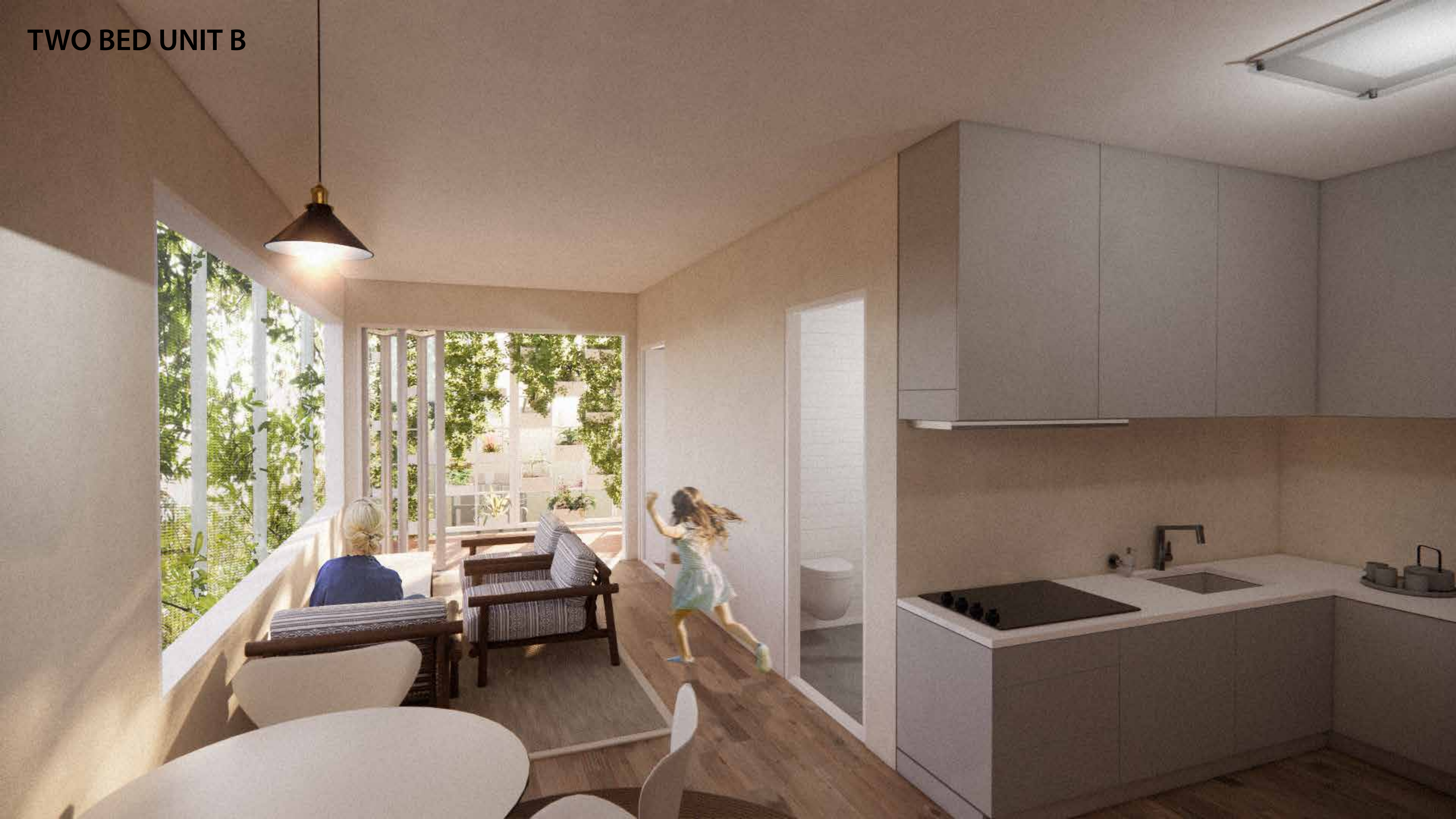
- TWO BED B UNIT**
- 1. Bathroom
 - 2. Toilet
 - 3. Laundry Room
 - 4. Living Romm
 - 5. Klitchen
 - 6. Bedroom
 - 7. Balcony
 - 8. Movable Green Wall
 - 9. Dining Room
 - 10. Dress Room



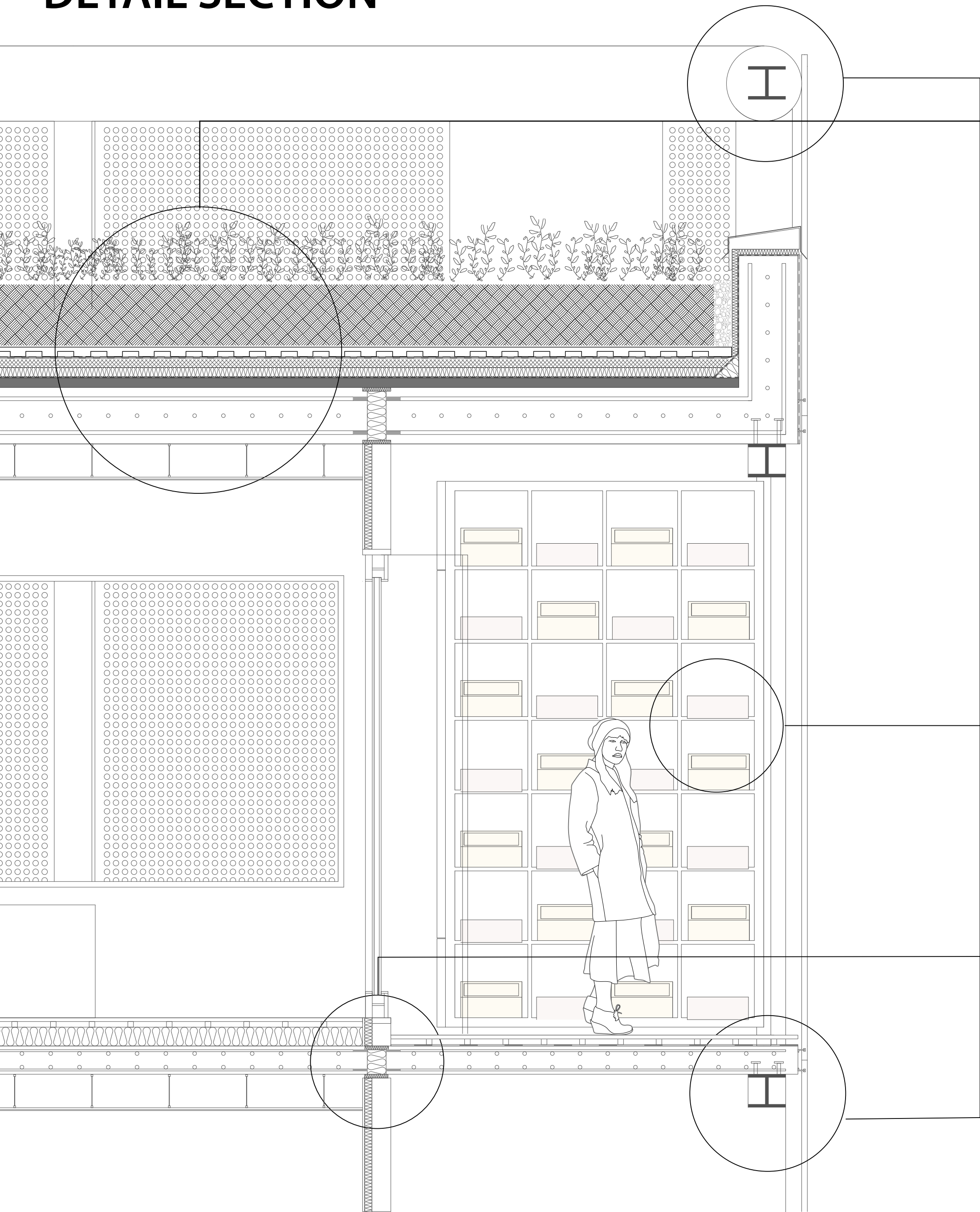
ONE BED UNIT



TWO BED UNIT B



DETAIL SECTION



Steel H beam structure

Green roof detail section

- 300mm Intensive soil mix
- 4mm Filter Fabric
- 60mm Water-retention and Drainage board
- Diadem Build-up
- 6mm Storage mat
- 30mm Root barrier
- 50mm Thermal insulation with vapour barrier layer



- ISOVER ARENA COVERAGES**
- 12.5mm **Weberdry ROOF NATURA** waterproofing MEMBRAINE
- Protection membrane
- 300mm **CHRYSO EnviroMix ULC** Low Carbon concrete solution
- Air gap
- PLACO** profiles and fixing accessories
- 12.5mm **PROGY PPF BA (PLACO)** Laminated Plaster-board



RootmaXX (100 x 100 x 65) *3



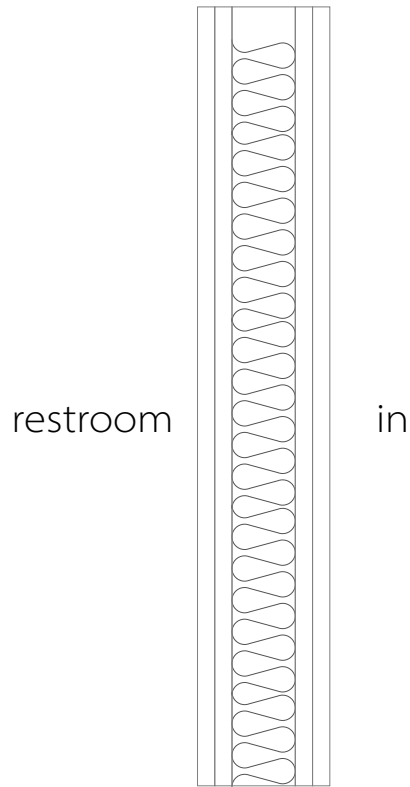
Schock Isokorb T Type K, thermal break element

0 25 50 100 200cm

DETAILED SECTION
A3 (1:25)

DETAIL SECTION

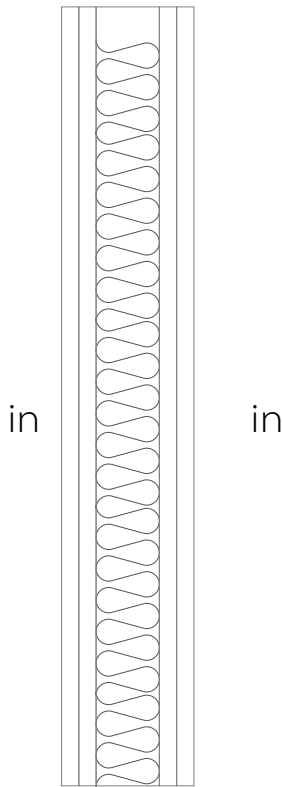
partition wall restroom



12.5mm **PROGY PPF BA (PLACO)** LAMINATED PLASTERBOARD
55mm **Isover APT ARENA**
12.5MM **GLASROC X(PLACO)** x2



partition wall

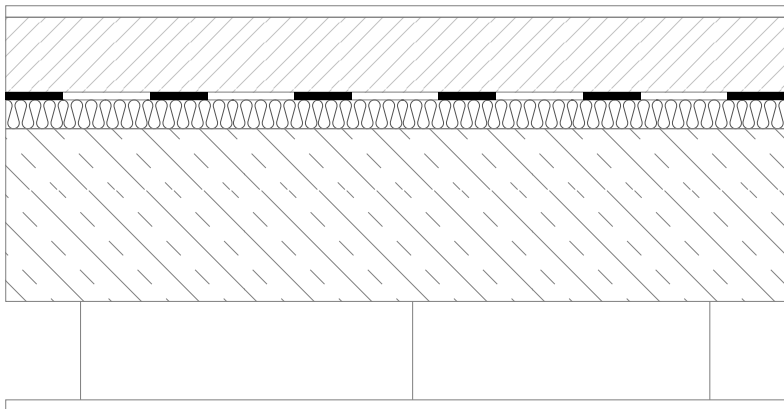


12.5mm **PROGY PPF BA (PLACO)** LAMINATED PLASTERBOARD
55mm **ISOVER APT ARENA**
12.5mm **PROGY PPF BA (PLACO)** LAMINATED PLASTERBOARD



Public space (middle of the building)

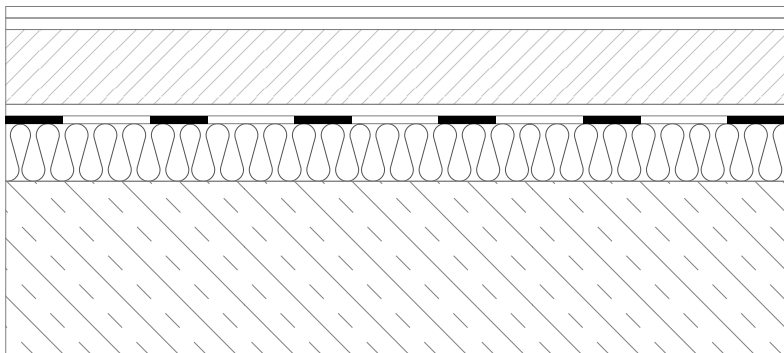
Floor between floors



10mm Finishing
65mm **WEBERFLOOR BASE** screed
WEBERDRY PURE SEAL POLYURETHANE WATERPROOFING MEMBRANE
25mm **ACOUSTIC INSULATION ARENA PF**
150 mm **CHRYSO EnviroMix ULC** Low Carbon concrete solution
air gap
12.5MM **PROGY PPF BA**
STANDARD LAMINATED PLASTERBOARD (FIRE RESISTANTDT)



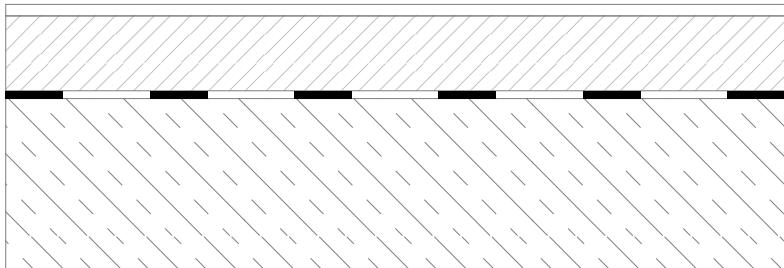
ROOF (NON GREEN)



10mm Finishing
Adhesive Mortar
65mm **WEBERFLOOR BASE** SCREED
WEBERDRY PURE FABRIC 110G
12.5 mm **WEBERDRY PUR SEAL AQUA** polyurethane waterproofing membrane
50MM **ISOVER 175 ROOFING PANEL** (THERMOACOUSTIC)
150 mm **CHRYSO EnviroMix ULC** Low Carbon concrete solution



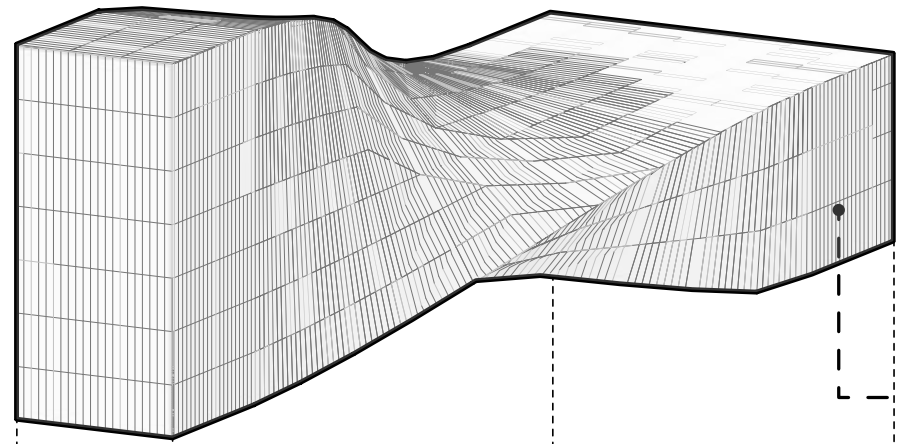
BALCONY



10mm CERAMIC OT STONE
65MM **WEBERFLOOR FLOW LIQUID** SCREED MORTAR
4MM **WEBERDRY FEEL** WATERPROOFING
150 mm **CHRYSO EnviroMix ULC** Low Carbon concrete solution

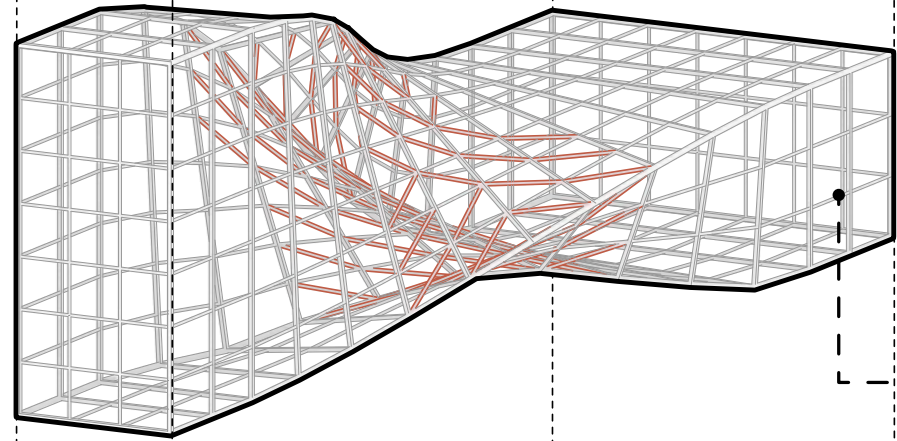


STRUCTURE STRATEGY



MESHED PANEL

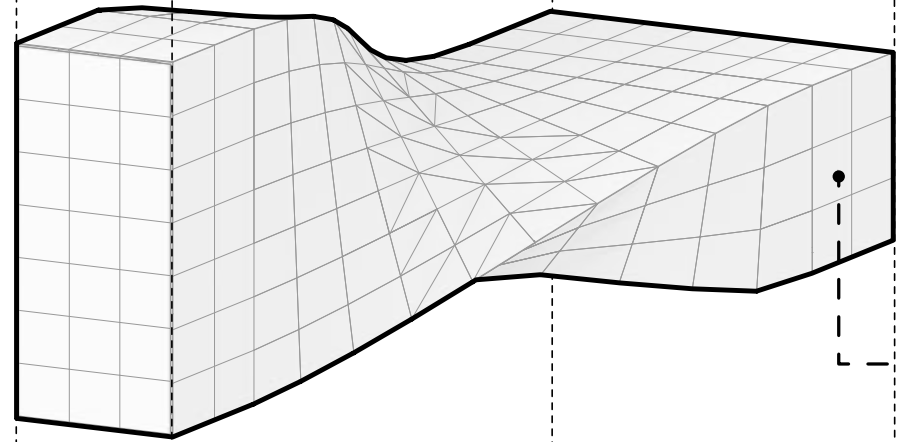
As the outermost layer connects to the 'Truss tube' the structure basic frame of the building. That panel is made of patterned aluminum panels serving as a basic structure for air circulation and plant growth.



TRUSS TUBE SYSTEM

One of the Tublar Systems, 'Truss Tube' method, it is possible to manufacture one continuous repeating main structure like a Tube. When we Twist the mass The distorted section will need extra braces to hold a structure as one tube system.

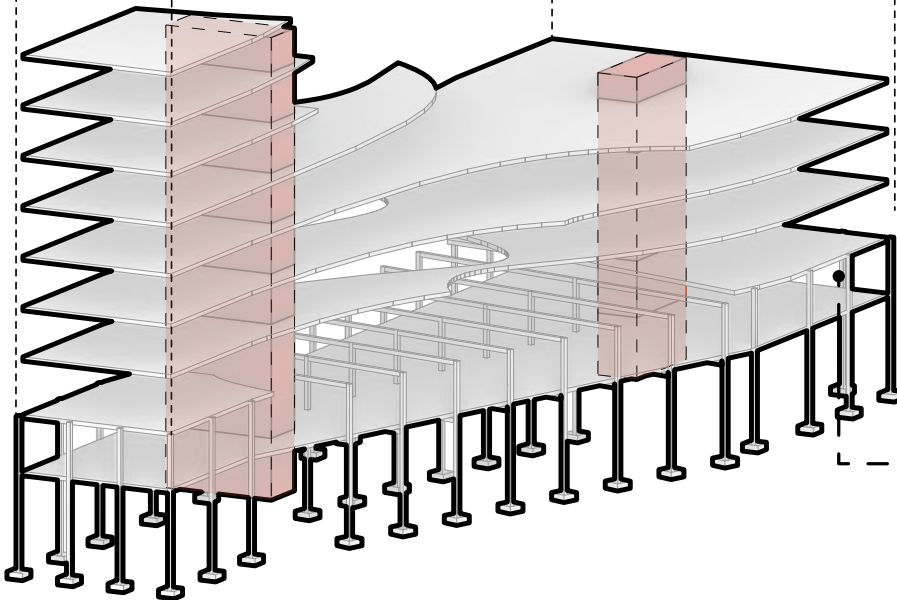
Main edges truss: R 200 Steel bar
Main truss: 300*300 H beam
Sub truss: 200*200 H-beam
Brace: R 100 Steel bar



PC & GLASS PANEL

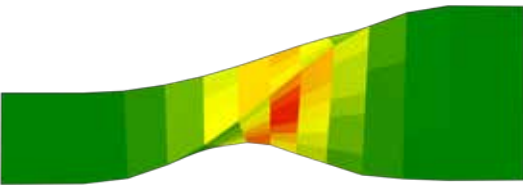
Due to the characteristics of Portugal, there is a lot of sunlight, it converts direct light to diffuse light by adopting translucent polycarbonate instead of transparent glass for the Semi-Public space. The Residential facade will be covered with glass So each unit can control the sunlight personally with a rotating green wall. The panel structurally serves as a second skin supported by the Truss Tube System

Panel : POLYCARBONATE SECURITY GLASS POLYGARD ATTACK

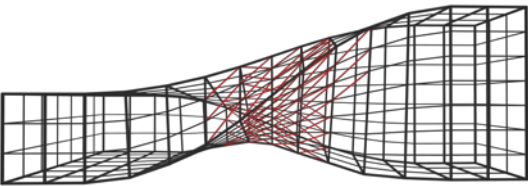


RC SLAB & CORE

The slab is a 300mm RC structure and is supported by the main core and truss tube system. The garden and groundfloor of the podium is 1000mm (including soil), and the underground structure is supported by Piling wall type side walls of 500mm or more and H-beam columns (300*300) at 5m intervals.



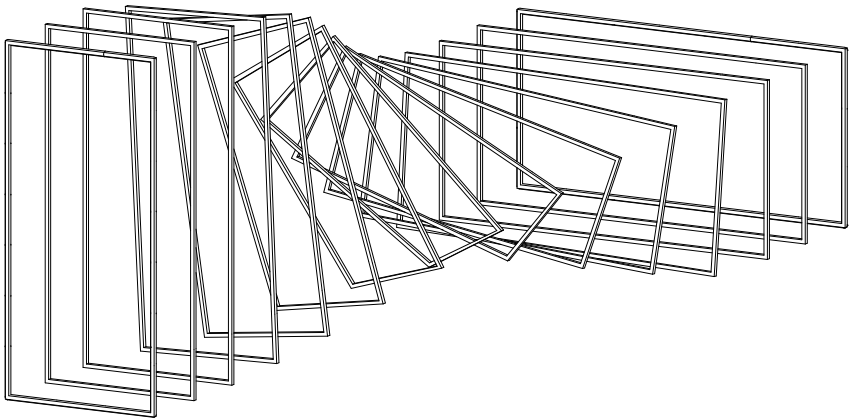
STUCTURALLY PROBLAMETIC SECTION



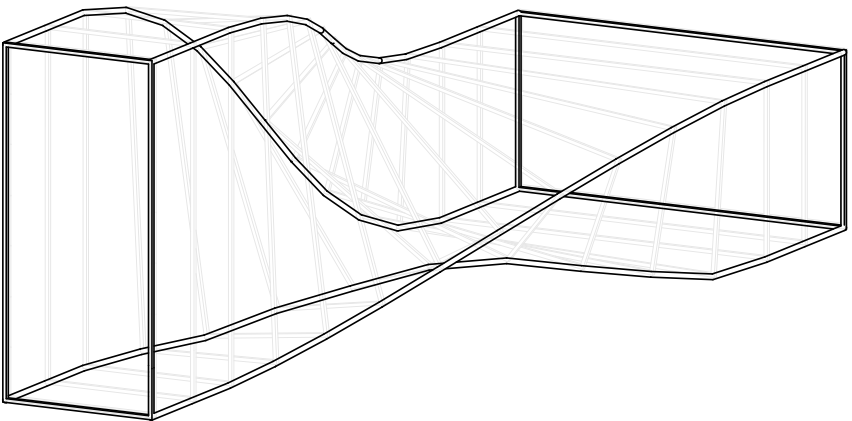
EXTRA BRACE TO REINFORE



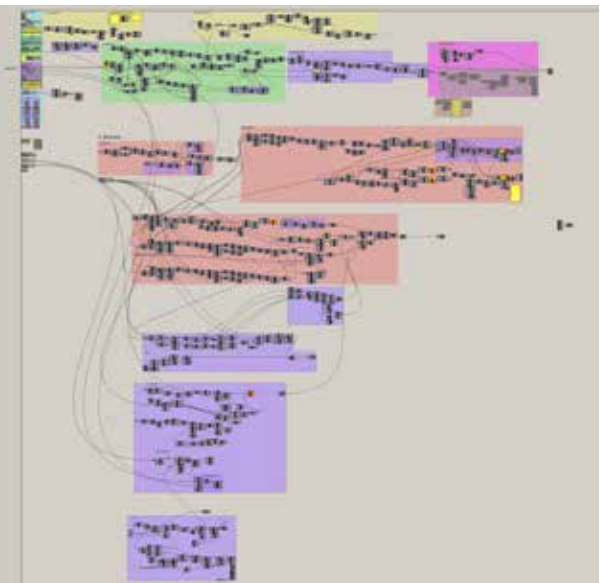
PROBLEM SOLVING



Main Tubular System (300*300 H Beam)



Main Edge Tubular System (R 200 Steel bar))



Twisted form is essential to achieve our design strategy. The form is slightly lifted up in the middle to create smooth connection between area C and building A. Tubular truss system was applied to achive these goals and to adjust this system to our form we modified it. First, the basic tube system was constructed, and the thickest R200 steel bar was applied to the main edge truss that connects all structures to the outermost part. In addition, an algorithm was constructed to find the section with problems by calculating the panel curvature of the twisted section using Grasshopper, and a brace was installed in the direction of force in the section with problems to reinforce it.

GREEN ROOF

GREEN FACADE

Based on Building B, there is a high building on the east side but on the west where Building A is located there are no high buildings around it. It means that the amount of solar radiation in the east is much higher than in the west.

Therefore, the eastern side facade is made by aluminum mash so that the green could grow. The advantages of the green facade are as follows. - Make a natural shading, which will block the strong sun light in summer.

However in winter, the leaves will fall and sunlight will be able to go deep into the room. - Block the direct noise from the External area C which is used as a public park.

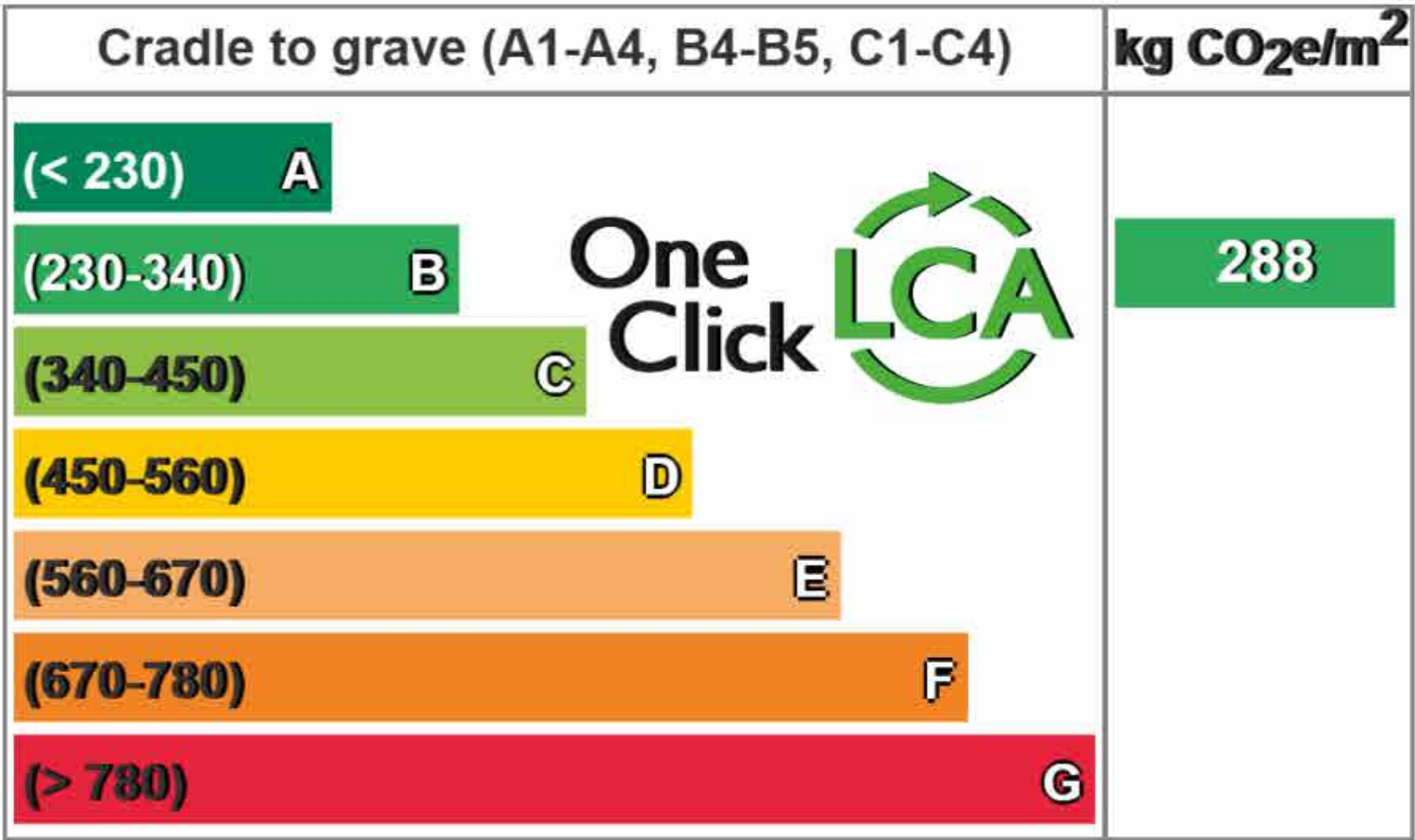
- Absorb carbon dioxide and provide oxygen. Helping residents live well-being lives

ROOF GARDEN

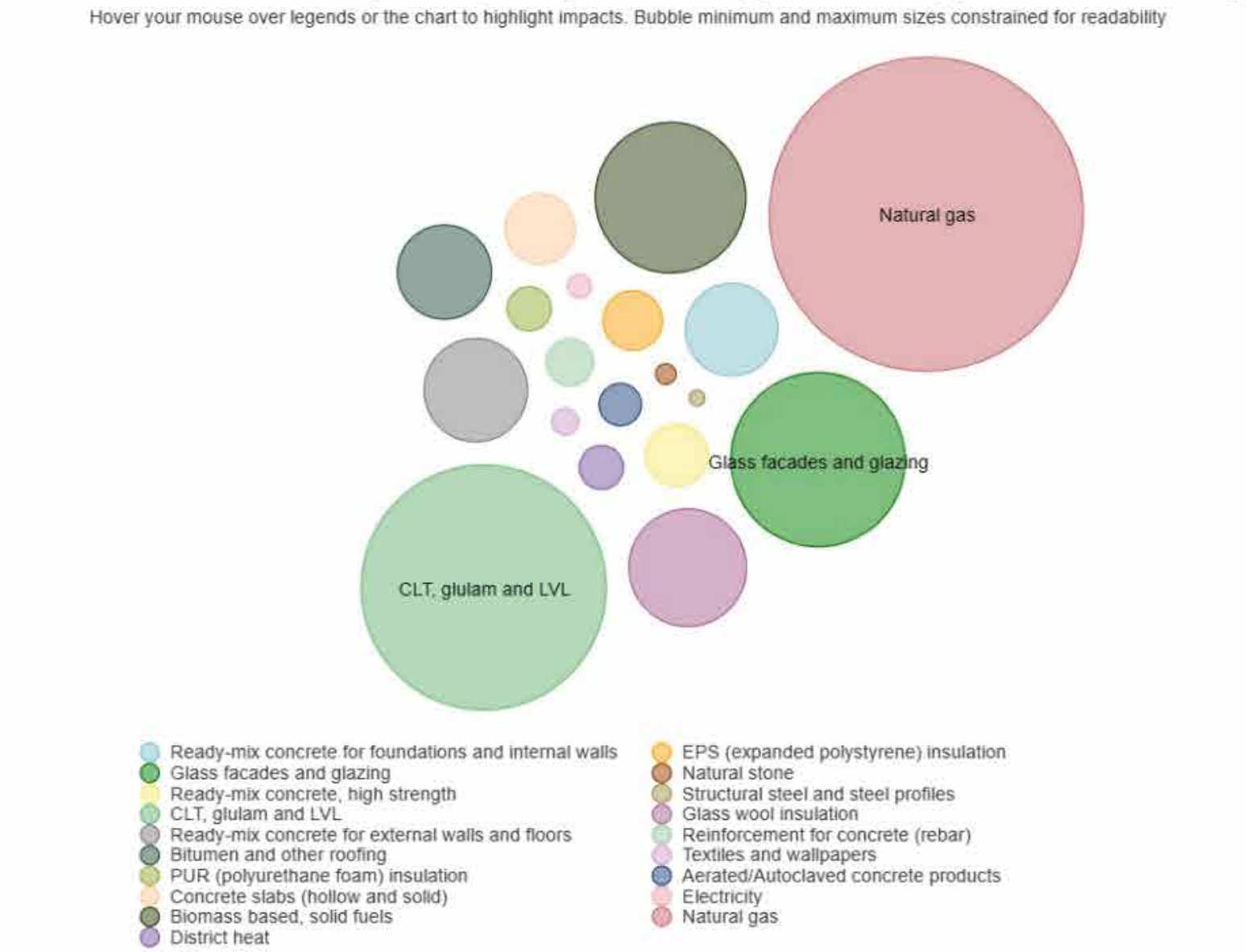
The green in the facade naturally leads to the rooftop garden according to the shape of the mass. The effects that can be obtained from rooftop gardens are as follows.

- Enable efficient energy management by lowering the temperature of rooftops and internal buildings.
- Provides a resting place for residents.
- Mitigate the urban heat island effect.

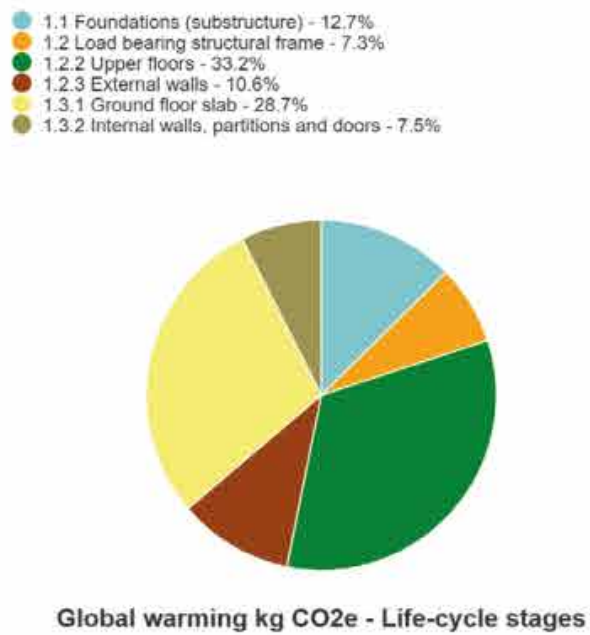
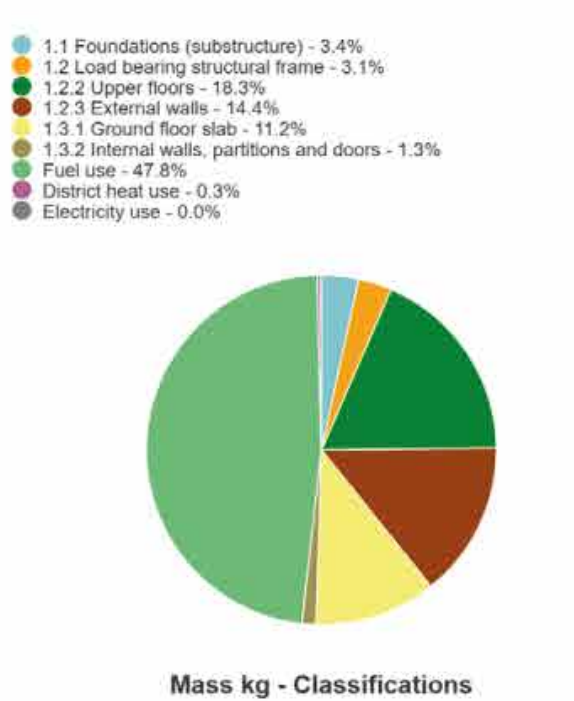
LIFE CYCLE ASSESSMENT



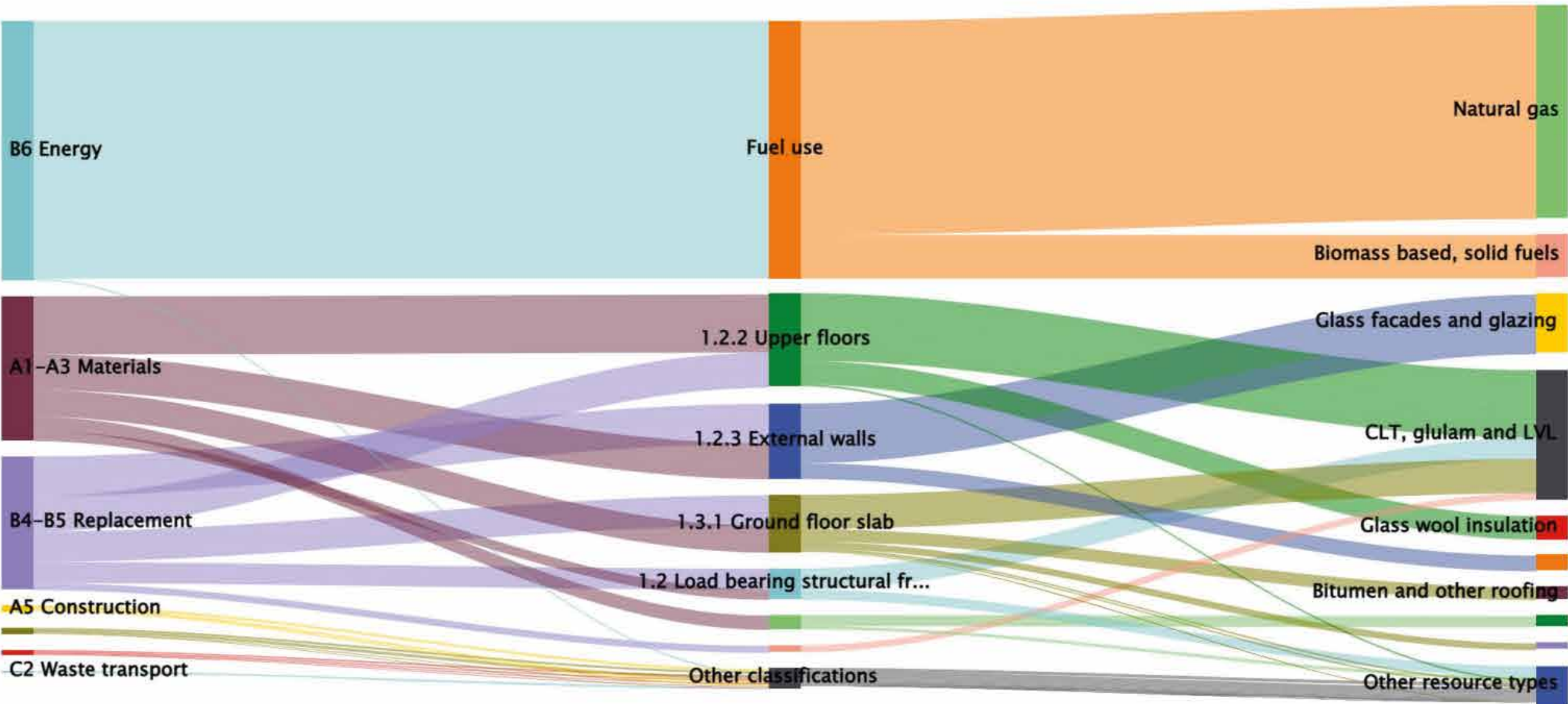
Bubble chart, total life-cycle impact by resource type and subtype, Global warming



Global warming kg CO2e - Classifications



Sankey diagram, Global warming



Results by life-cycle stage

