

# WATERSPORTS CENTRE

Drawing set P5  
08/10/2022

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4611888

The drawing set together with the research book present the Bourj Hammoud Watersports Centre, a leisure project on Beirut's coast. The project has a critical view towards ongoing waterfront development, which translates into the comeback of a public coast, a place for interaction amongst all. This project is the graduation of the Architecture master track of the Technical University of Delft in the Complex Projects Beirut studio.



complex projects

Beirut studio  
2021/2022

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Load bearing structure  
Climate principals



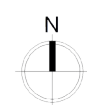
## Watersports Centre



Carlijn Reumer  
Complex Projects  
P5 Beirut Studio  
2021/2022

**SITE PLAN**  
1: 10000 on A0

\* Moorings boys: Floating structure which is used to moor visiting yachts. .  
- Water activities are an impression. Boats are **not true to size**.





# Watersports Centre

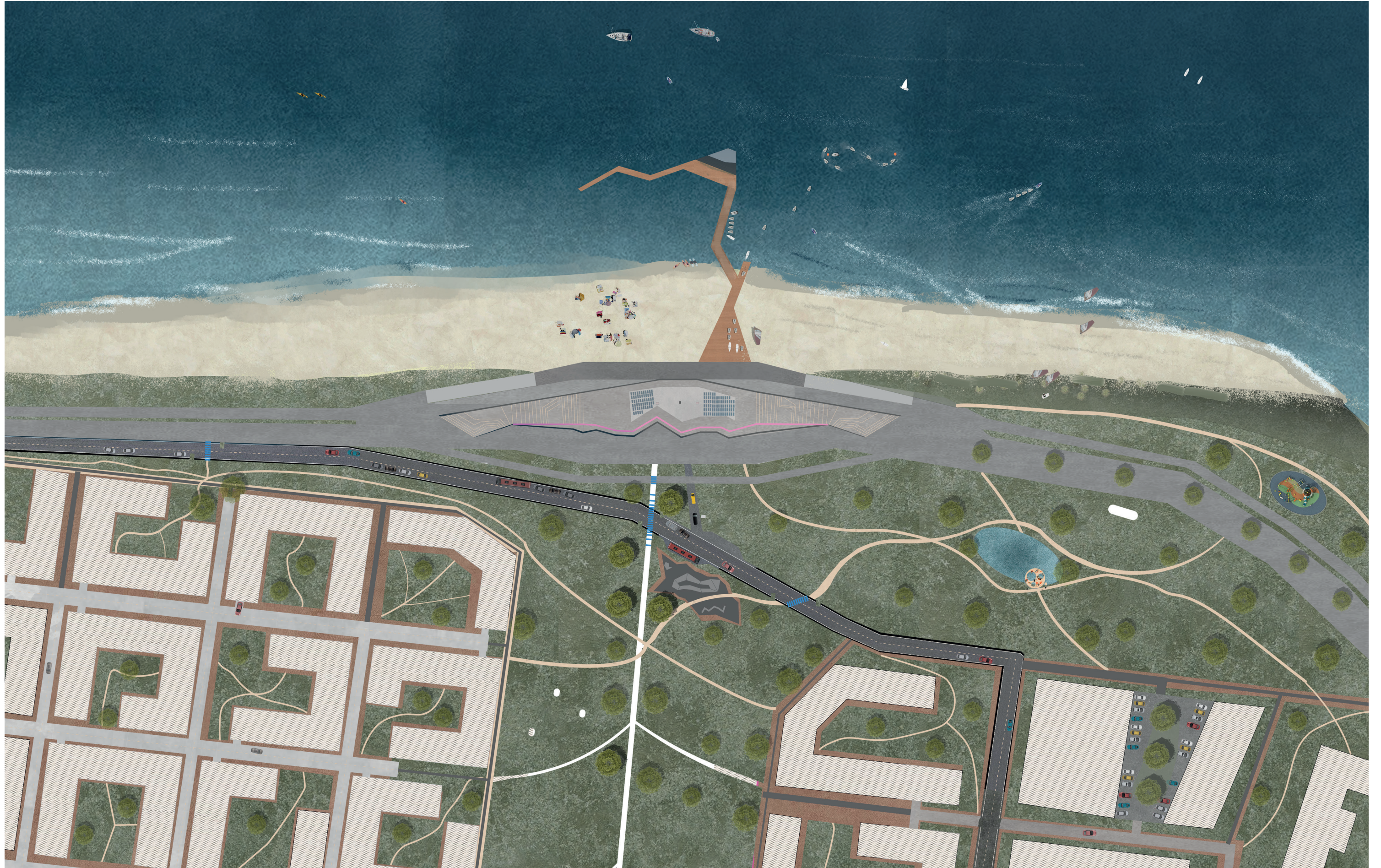


## SITE PLAN

\* Moorings boys: Floating structure which is used to moor visiting yachts. .  
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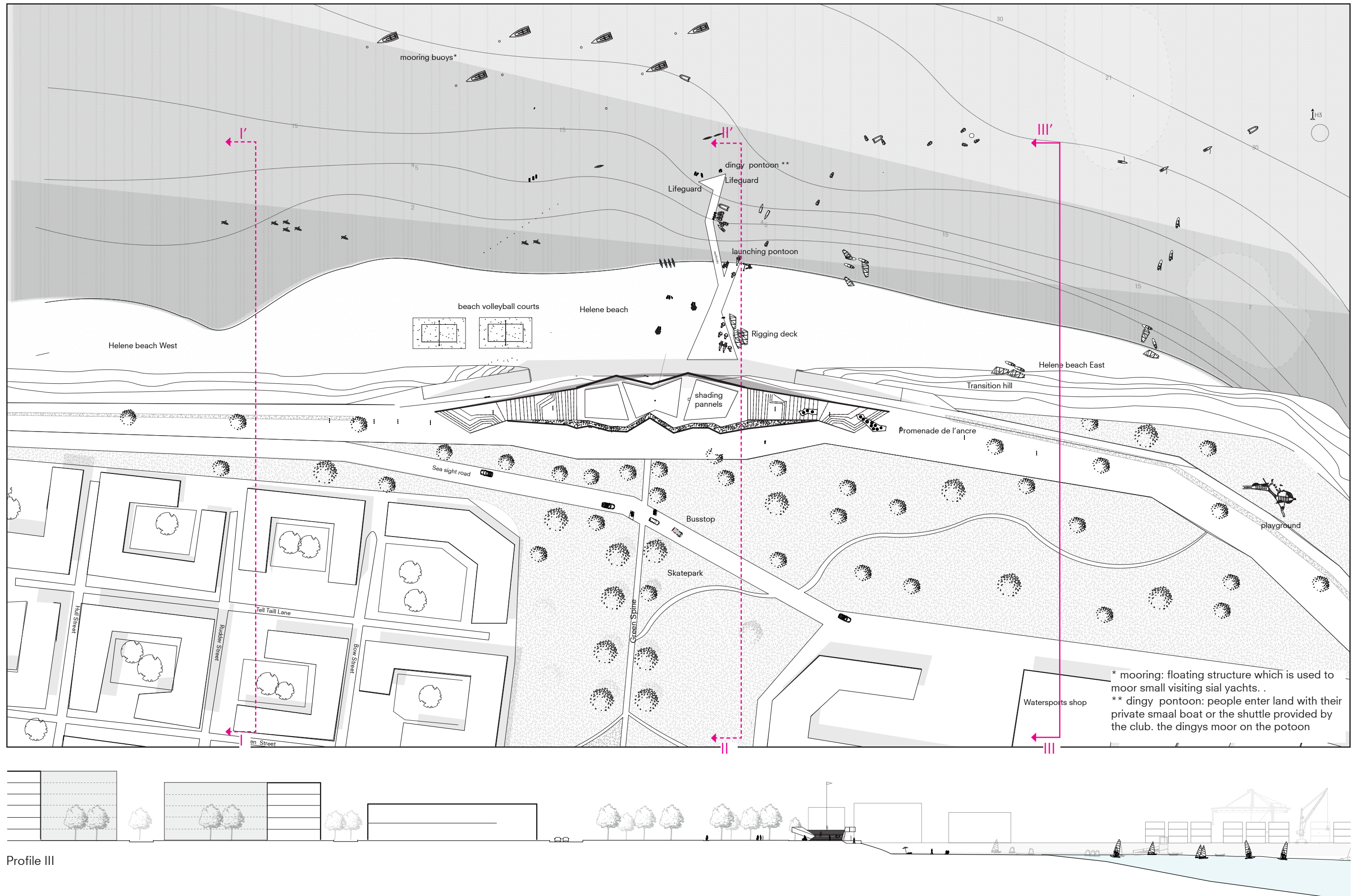






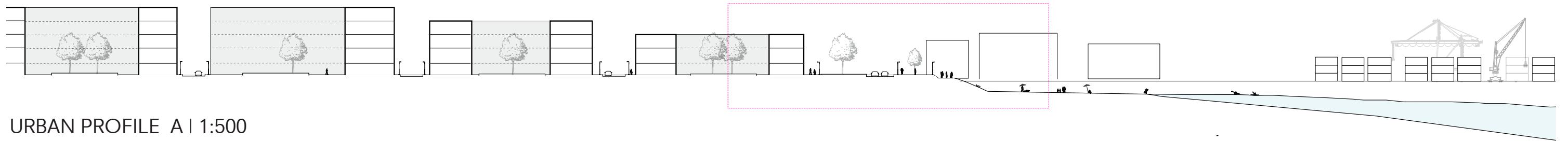


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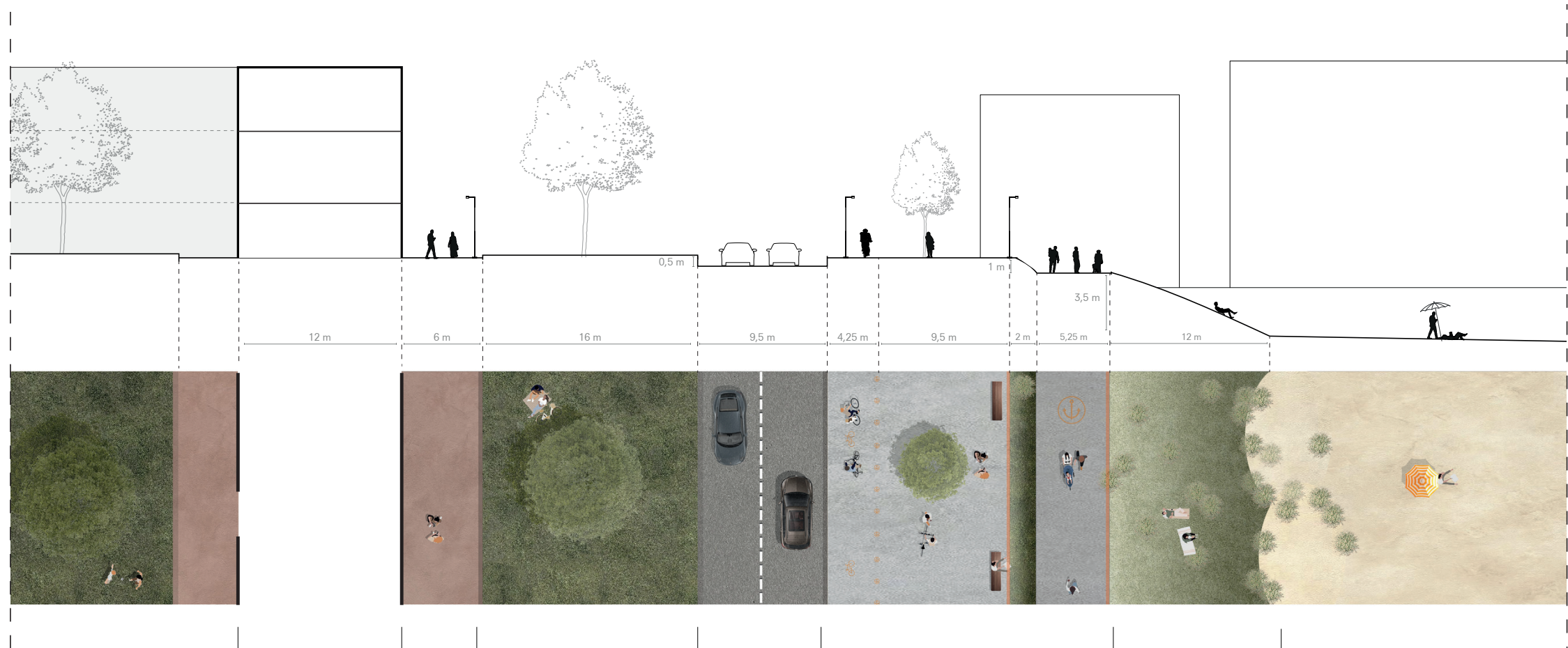


Profile III

# Watersports Centre



URBAN PROFILE A | 1:500



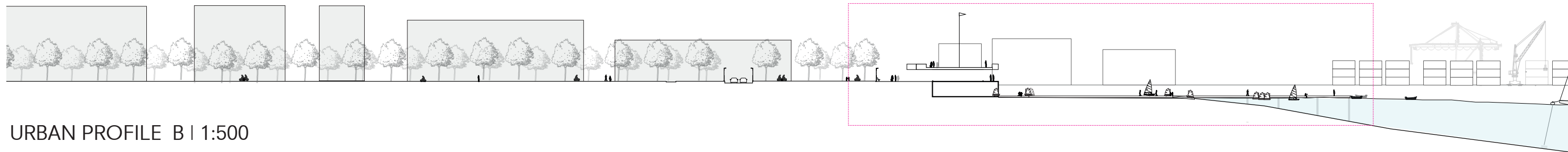
PROMENADE PROFILE 1:200

Courtyard	Housing	neighbourhood green	Sea sight road	Promenade de l'ancre	Transition hill	Helene beach West
The <b>courtyard typology</b> generates <b>green oases</b> between the building blocks. This cools down the surroundings but also creates supervised places where <b>neighbourhood kids can safely play</b> , which is lacking in Beirut. Because a housing block encloses the space, future public space change to building volume is less likely.	The housing blocks are <b>limited to 3 layers</b> close to the waterfront.	The greenery generates a <b>buffer between</b> the more <b>public</b> zones of the promenade and road and the <b>private</b> zone of the residential blocks.	In this profile, the sea sight road crosses closely next to the promenade. This allows for a bus stop connecting to the promenade. Because Beirut has a problem with illegal parking, <b>the road profile is deep, 0,5 m</b> in this way, cars can't drive on the path or greenery, and <b>illegal parking is impossible</b> .	The promenade <b>divides</b> pedestrians, cyclists/scooters ( <b>faster moving, slow traffic</b> ). The <b>iconic orange anchor symbols</b> mark the division and create a visual recognition of the promenade. The <b>lower positioned pedestrian path</b> shifts <b>focus toward the sea</b> . On the promenade, <b>directions</b> are written, and visitors will know which way they walk and how far it will be. The <b>orange line</b> creates awareness of the <b>change in height</b> , and the accent colour creates a <b>point of recognition</b> . <b>Threes</b> are used to create <b>shade</b> .	The transition from the promenade to the beach is soft in the way of a hill, contributing to the project's <b>social ambitions</b> . Give the people of Beirut <b>excess to the waterfront</b> .	At Helene beach west, there is <b>no designated activity</b> . The un deep waters and wind conditions make the location unsuitable for sailing. The <b>conditions are ideal for pedal sports</b> like kayaking and sup (stand-up paddling)

## URBAN / PROMENADE PROFILE A

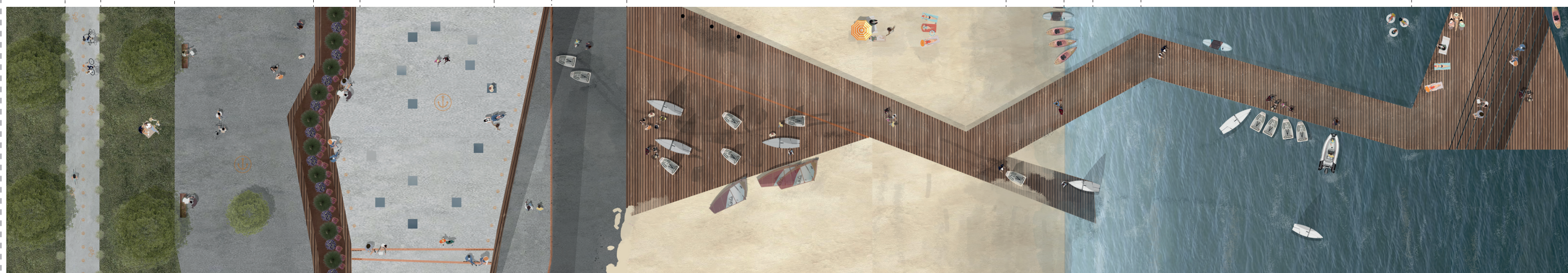
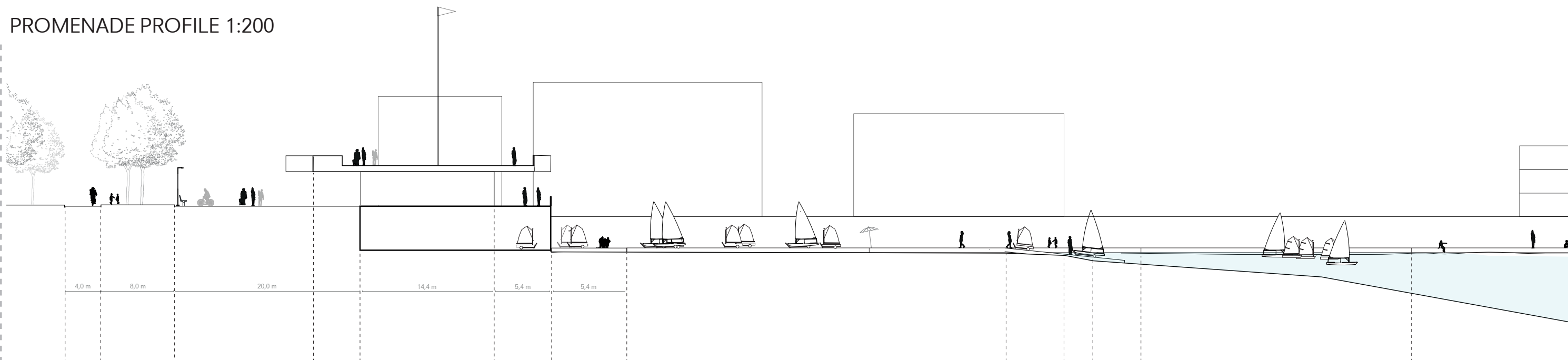
1: 200 / 1:500 A0





URBAN PROFILE B | 1:500

PROMENADE PROFILE 1:200



cycle path

Promenade de l'ancre

Helene beach

Promenade

rooftop

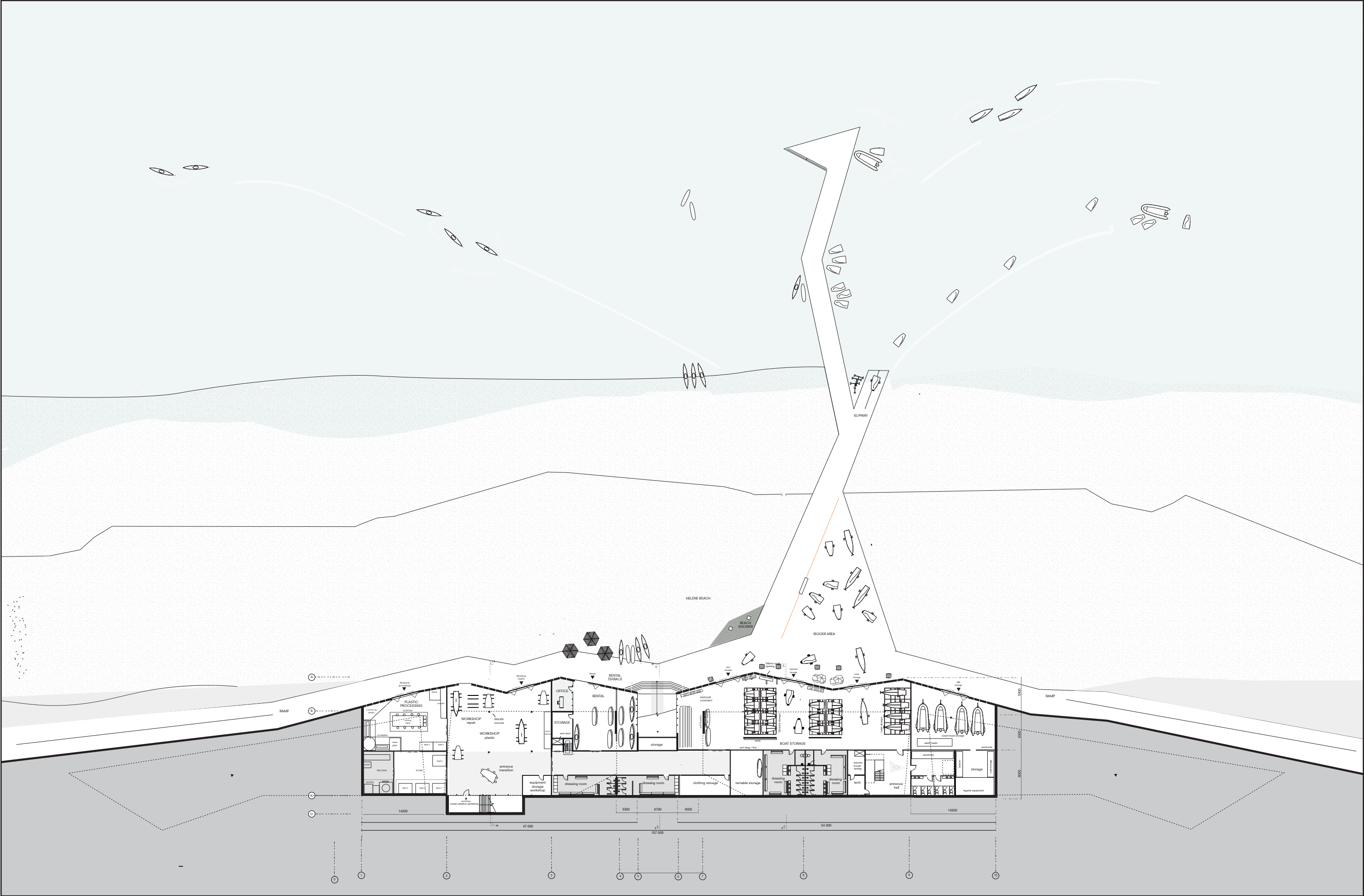
balcony

rigging deck

launching pontoon

tanning deck

life guard



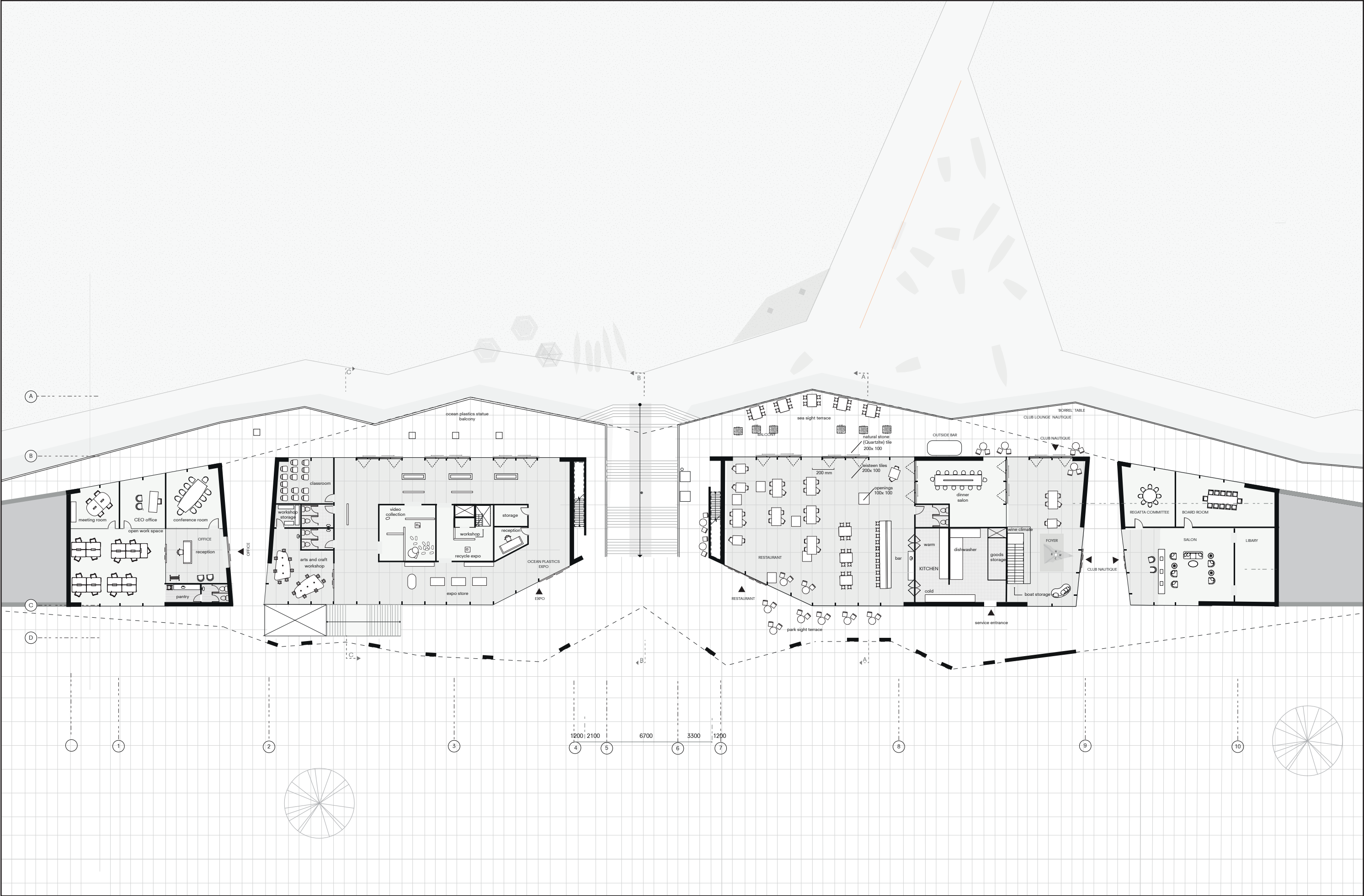


## Watersports Centre

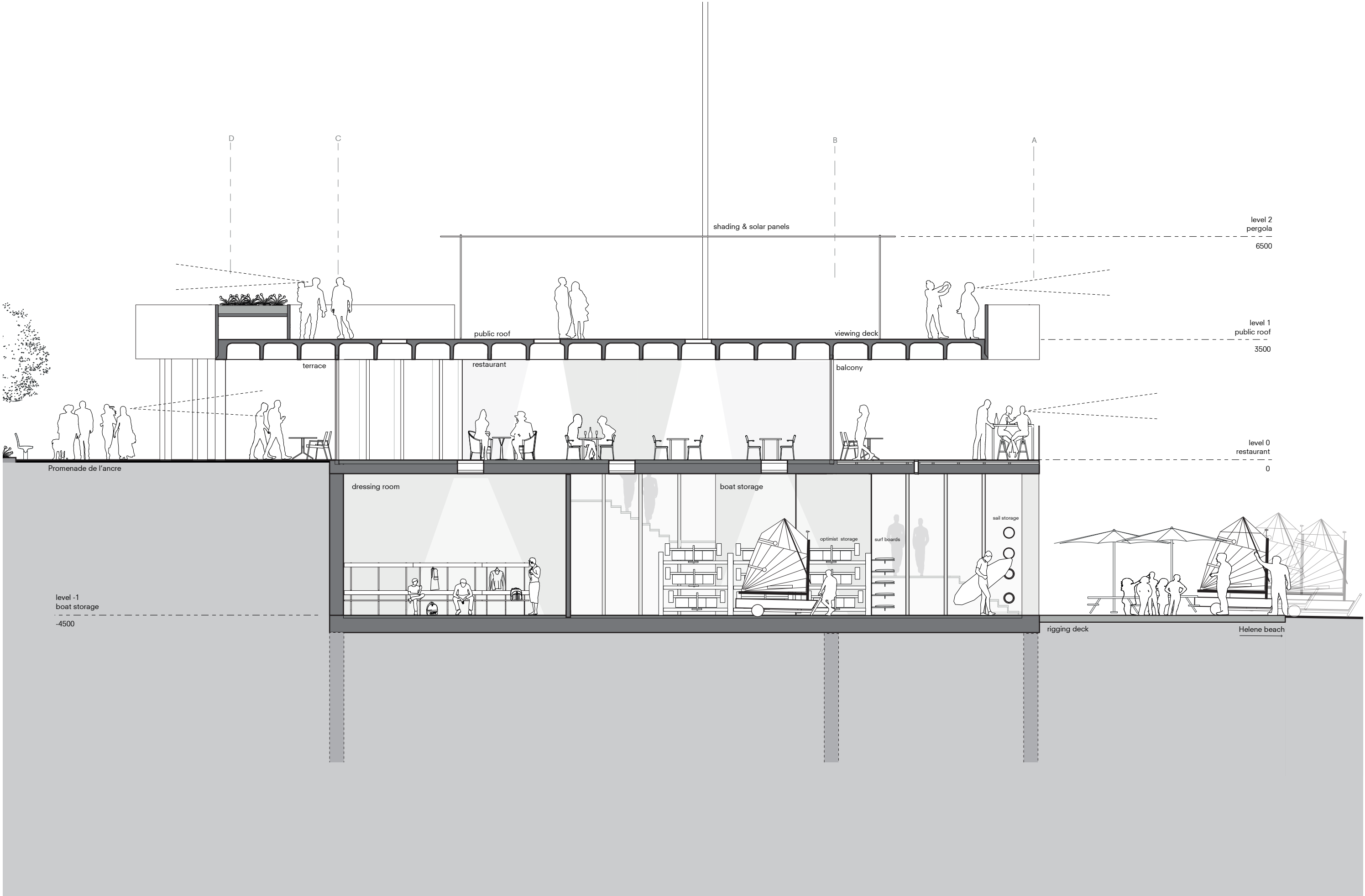




Watersports Centre



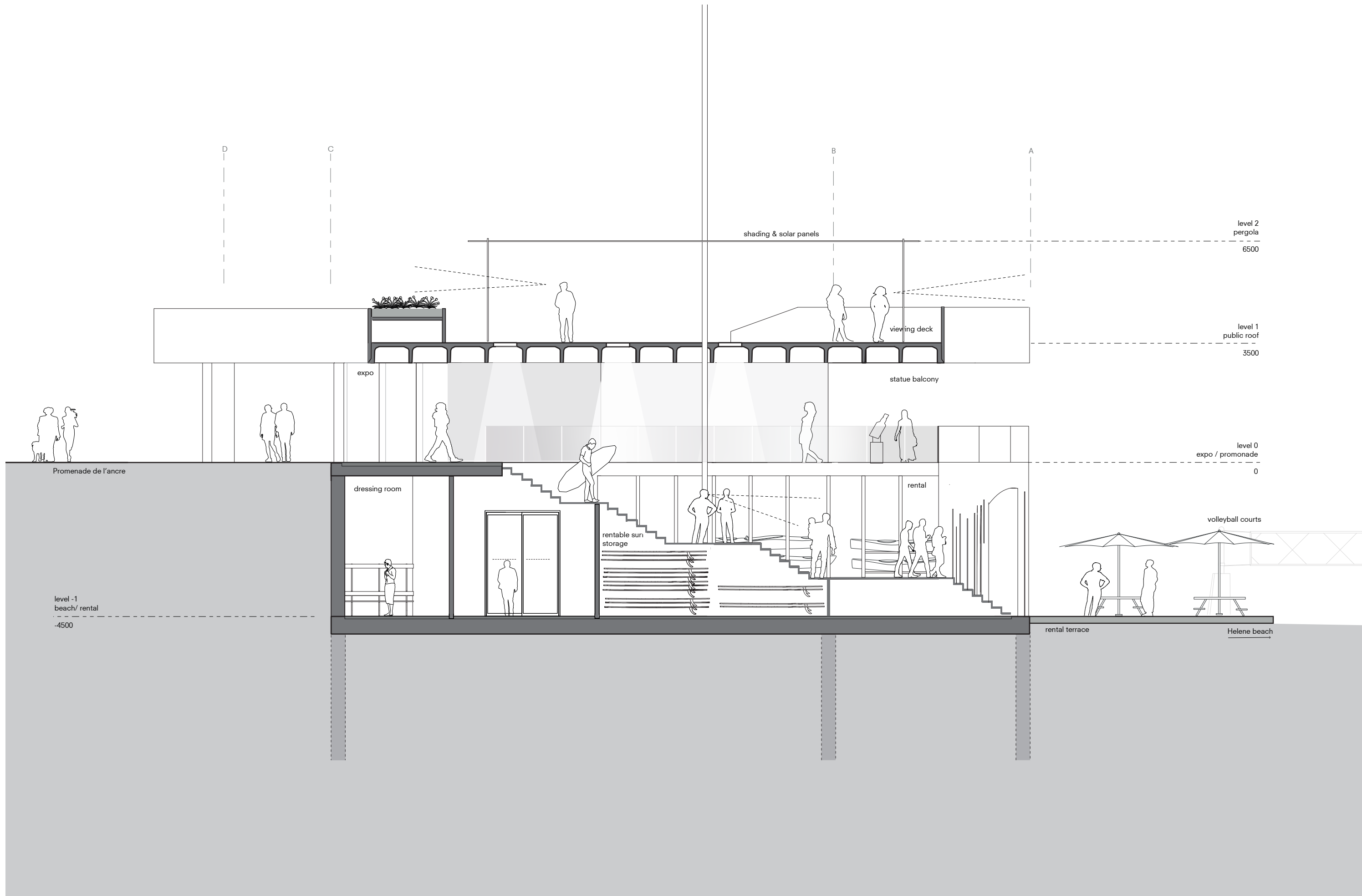
Watersports Centre



CROSS SECTION A-A' - restaurant & boat storage  
1:100

0 5 m

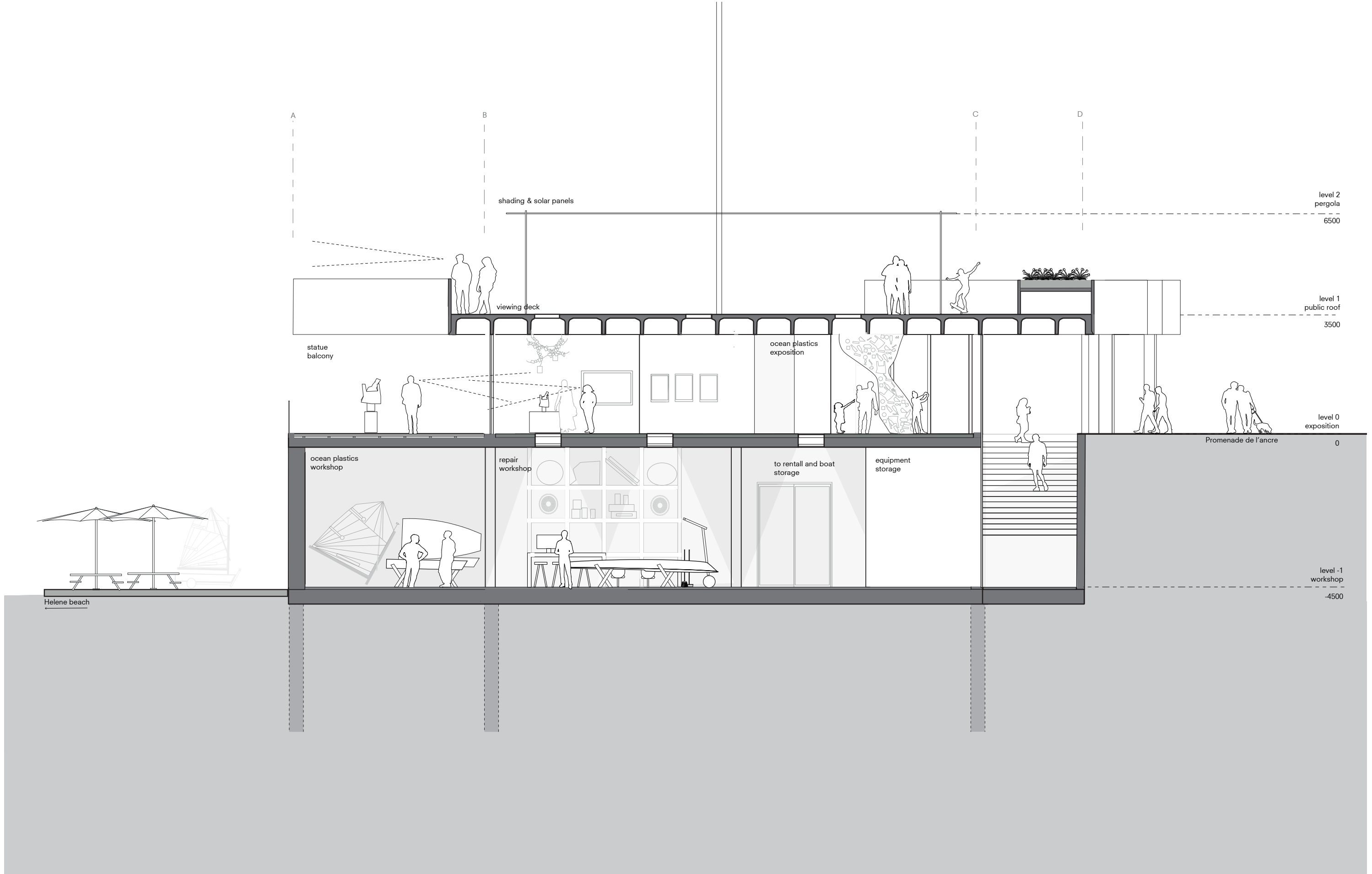
Watersports Centre



CROSS SECTION B-B' - stairs

1:100

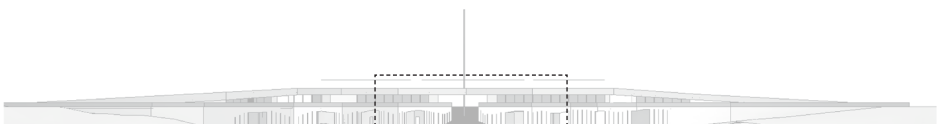
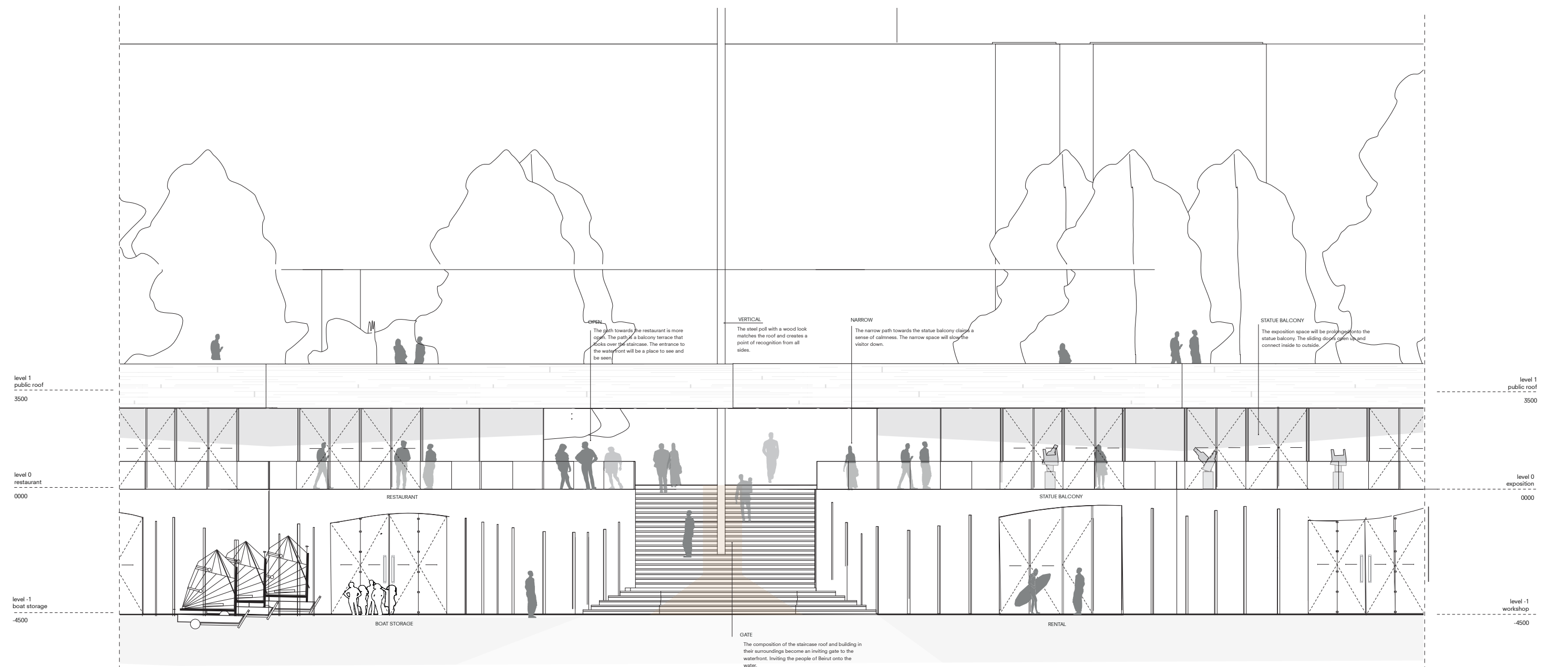
Watersports Centre



CROSS SECTION C-C' - ocean plastics exposition & workshop  
1:100

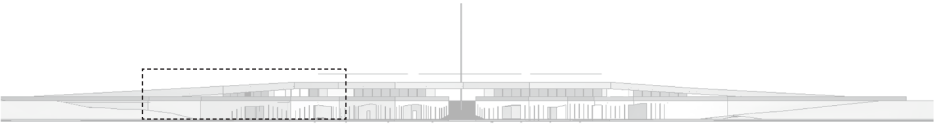
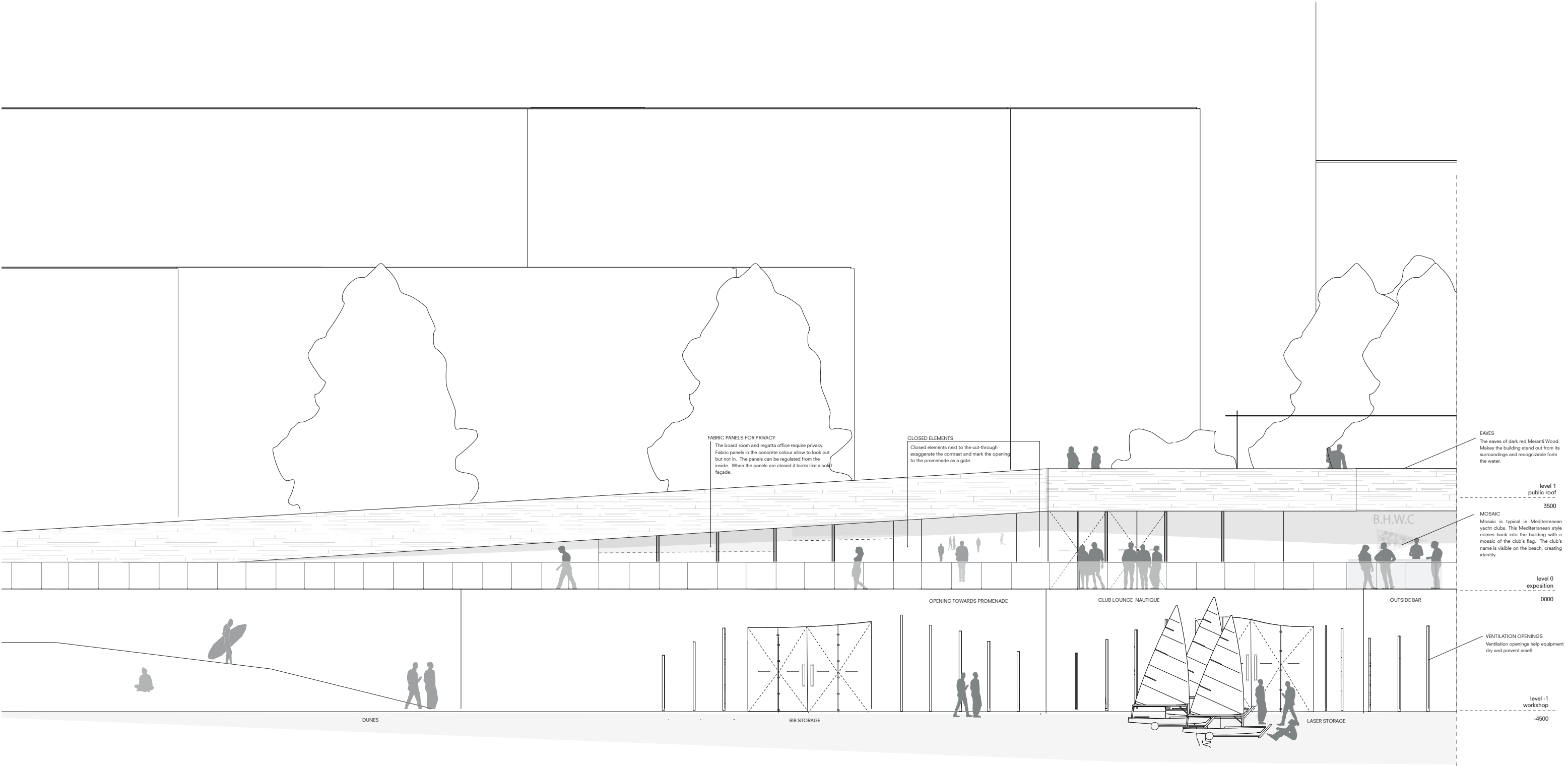


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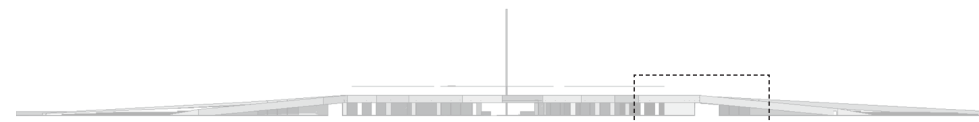
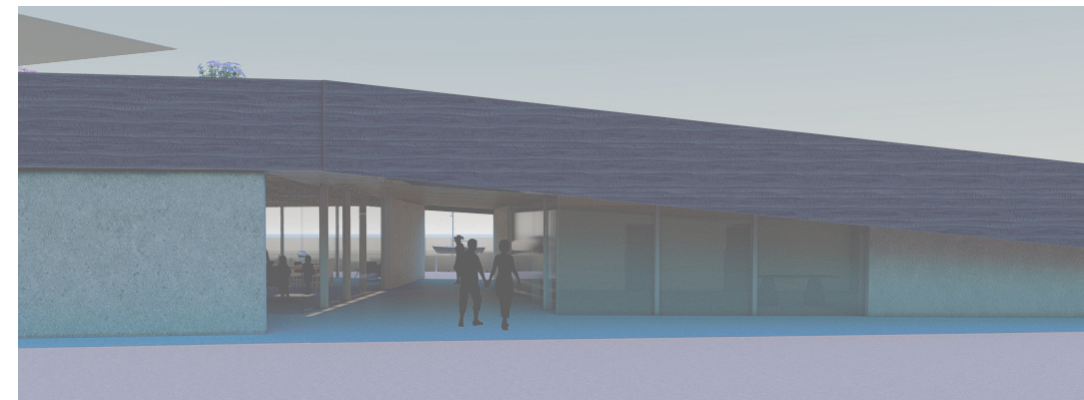
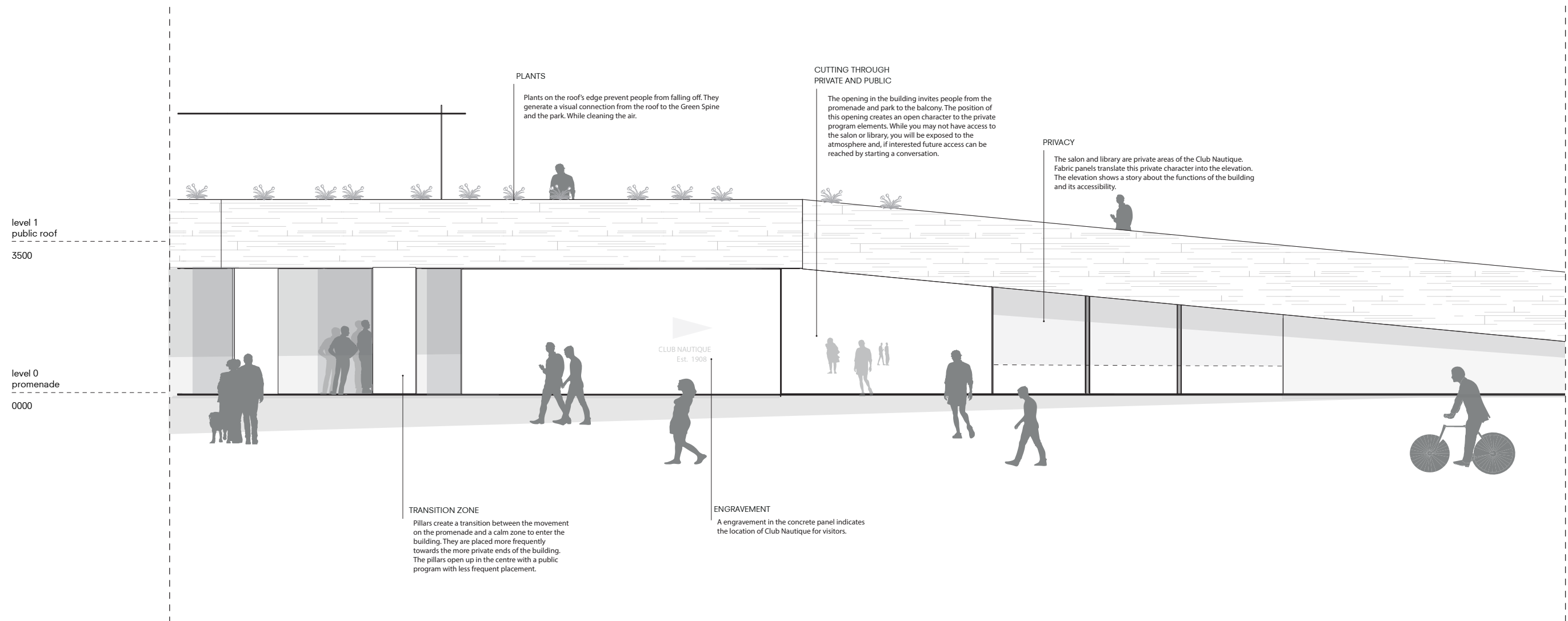
**BEACH ELEVATION - north**  
1:100 on A0

Watersports Centre



**BEACH ELEVATION - north**  
1:100 on A0

# Watersports Centre

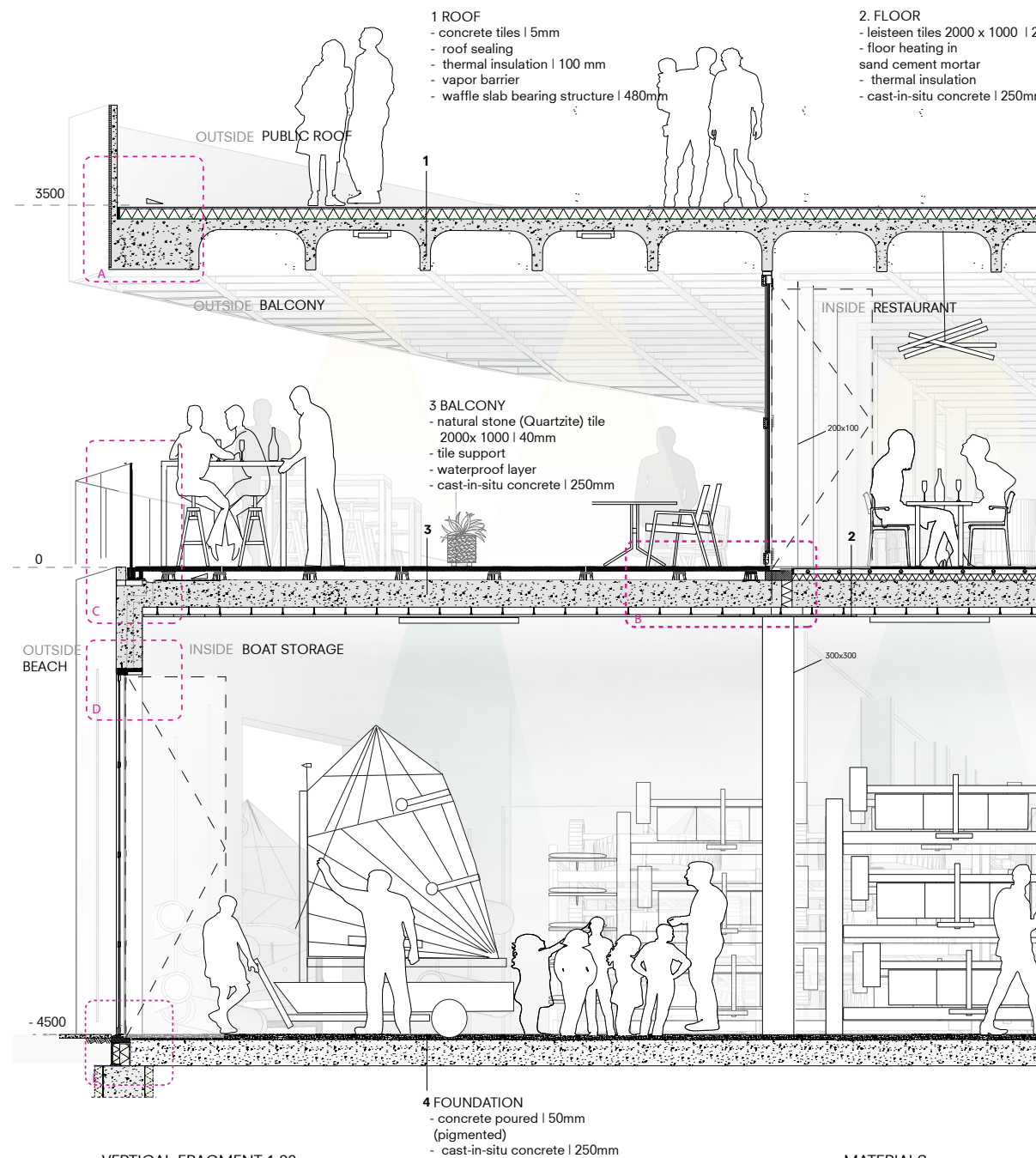


**PARK/PROMONADE ELEVATION - south**

1: 100



# Watersports Centre



VERTICAL FRAGMENT 1:20



BALCONY

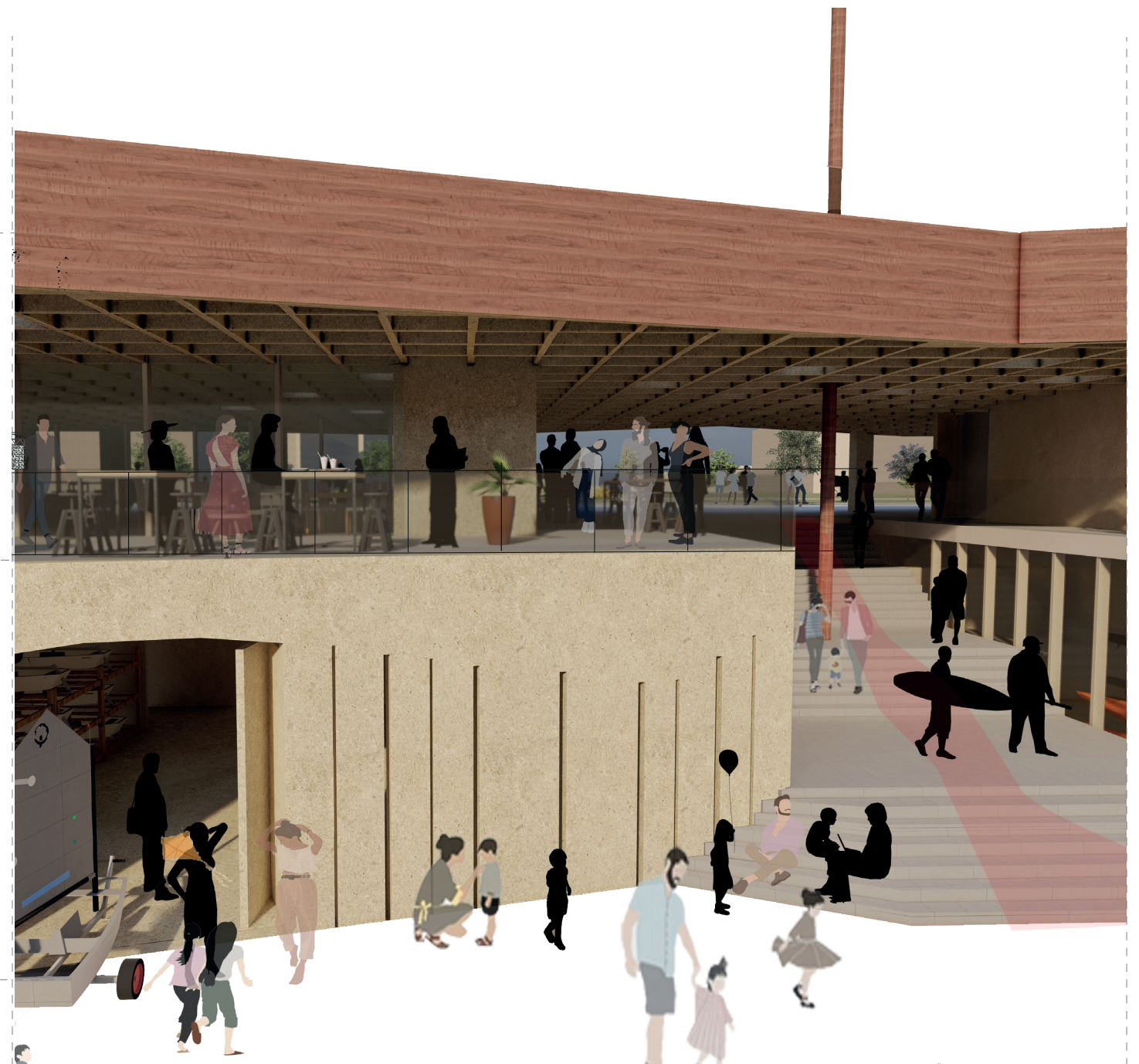
## MATERIALS



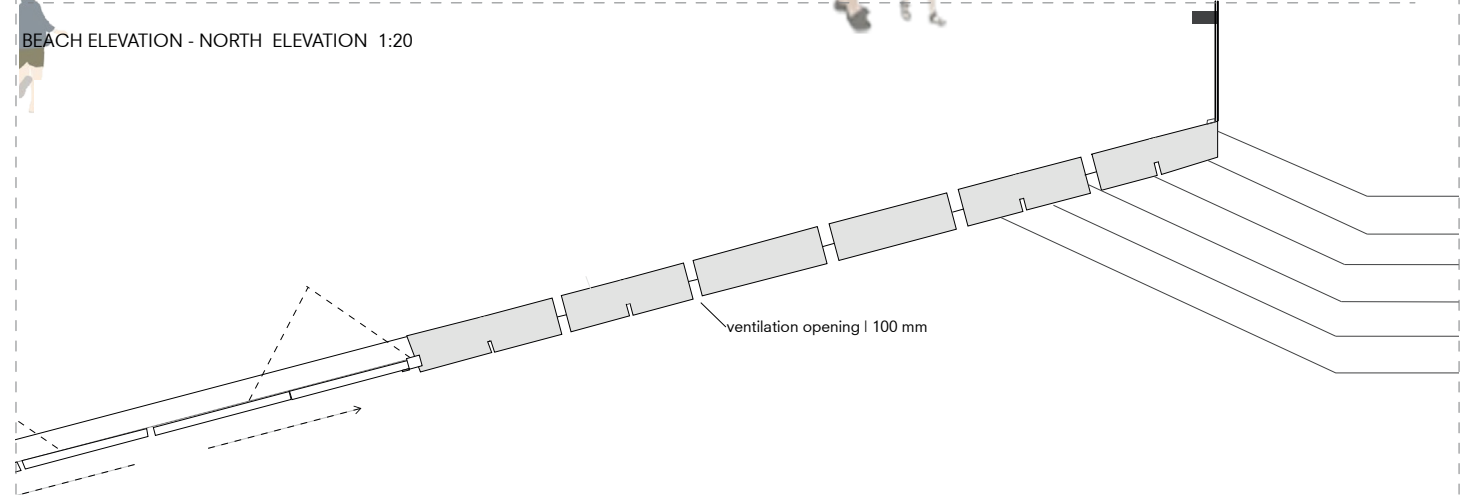
**DARK RED MARANTI WOOD**  
 Finish: Solvent-based oil. Protects the wood against water and UV rays.



**PIGMENTED CAST INSITU CONCRETE**  
 Dry pigment mixed into the concrete before it is poured. Sand look match with beach. Beach goes into building

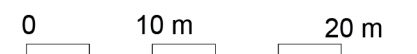


BEACH ELEVATION - NORTH ELEVATION 1:20

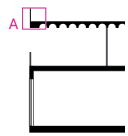
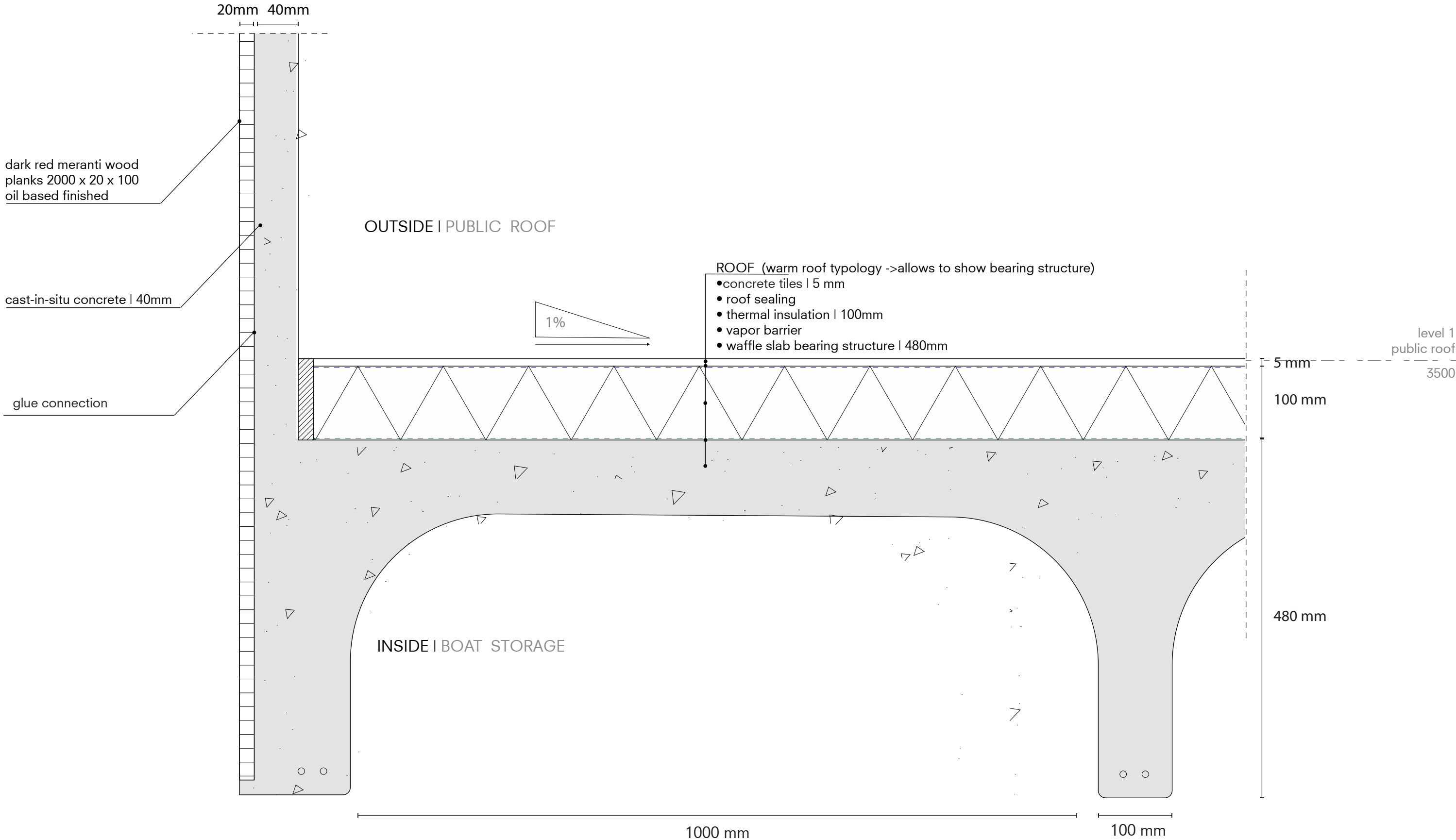


HORIZONTAL FRAGMENT | 1:20

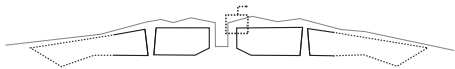
## ENVELOPE FRAGMENT 1:20 on A0







**DETAIL A - eaves**  
scale 1: 5



OUTSIDE | BALCONY

INSIDE | RESTAURANT

BALCONY

- nature stone (Quartzite) tile  
2000x 1000 | 40mm
- waterproof layer
- cast-in-situ concrete | 250mm

HR++ glas

aluminium joint

aluminium frame

FLOOR

- leisteen tiles 2000 x 1000 | 20 mm
- floor heating in  
sand cement mortar
- thermal insulation
- cast-in-situ concrete | 250mm

level 0  
0000

40mm

90mm

250mm

20mm

50mm

60mm

250mm

70 mm

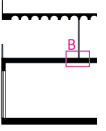
20 mm

INSIDE | BOAT STORAGE

ceiling hanger

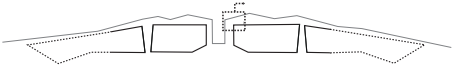
ceiling pannels (felt) 1000 x 1000

thermal insulation

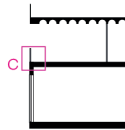
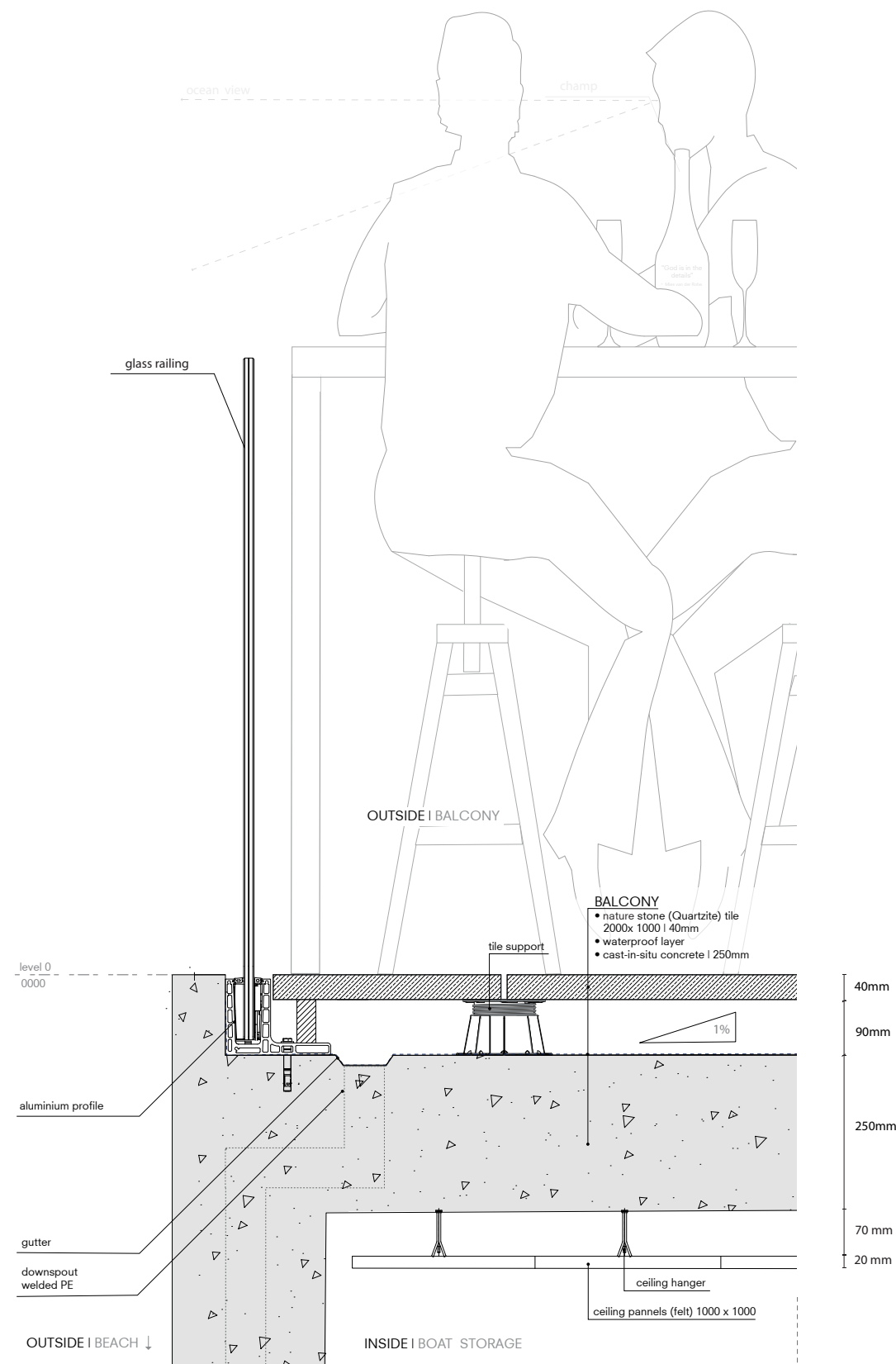


**DETAIL B** - balcony - restaurant  
scale 1:5

0 300 mm

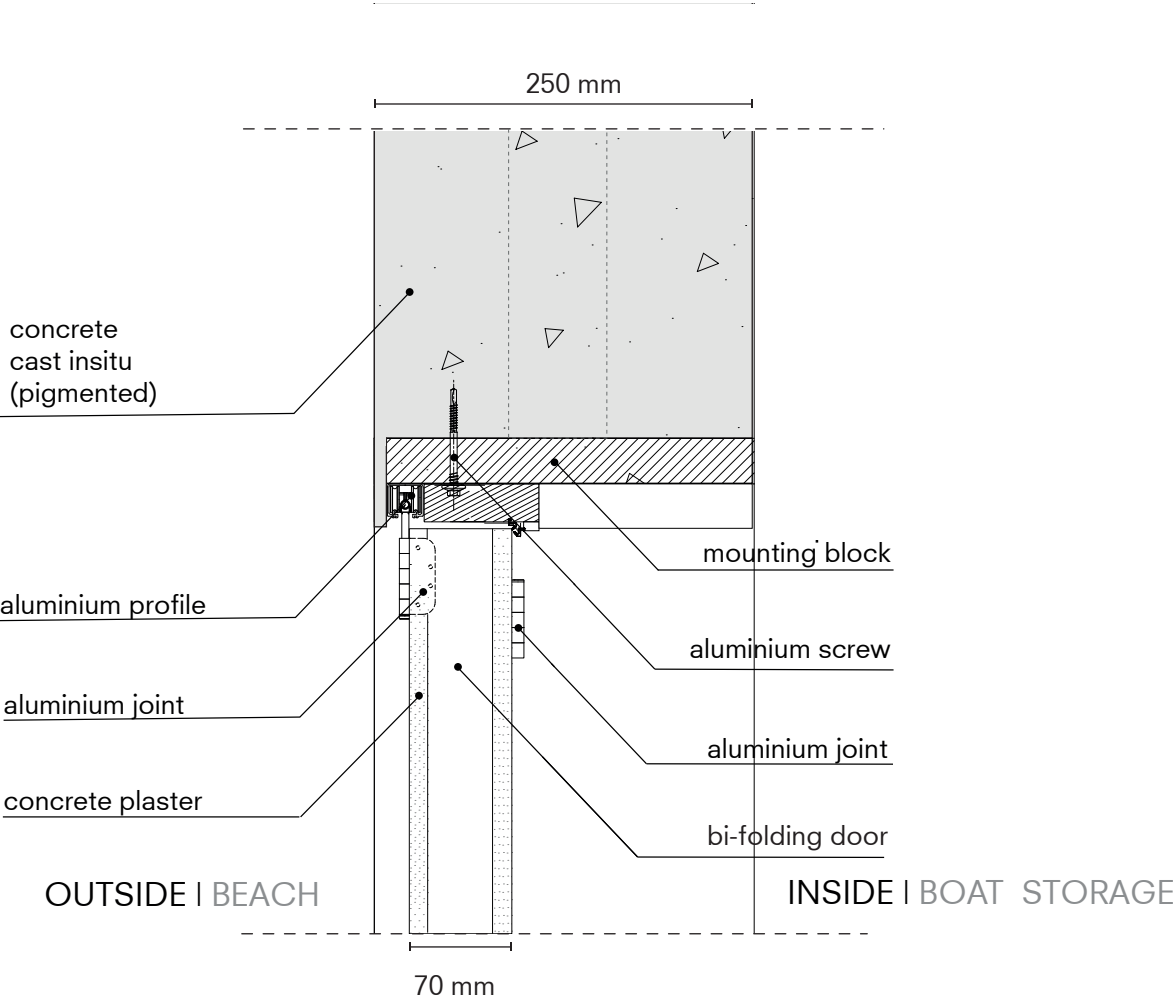


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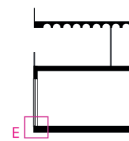
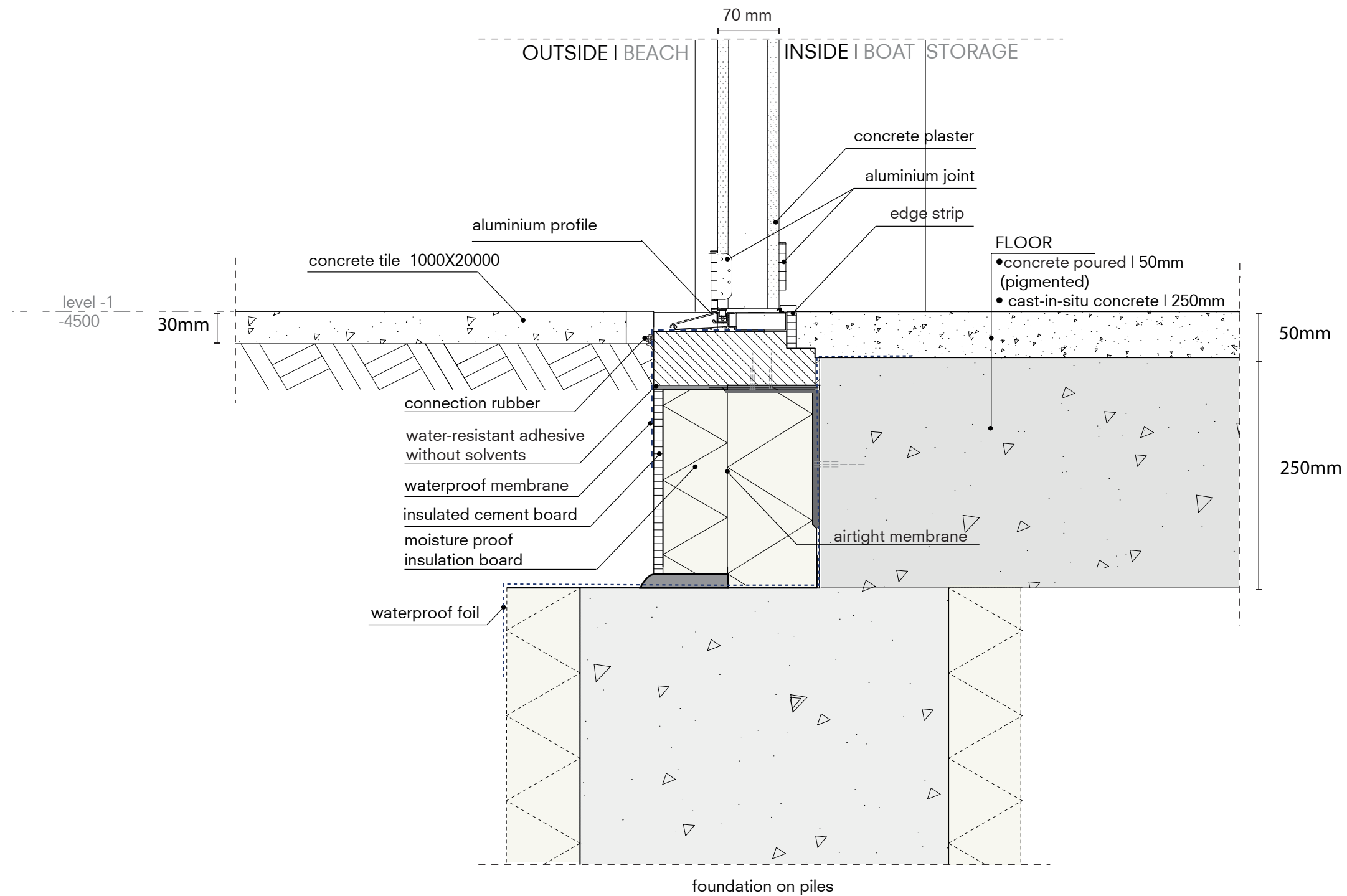


**DETAIL C-** ballustrade & balcony  
scale 1:10 (1:5 on A0)

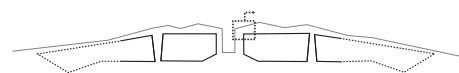
0 300 mm



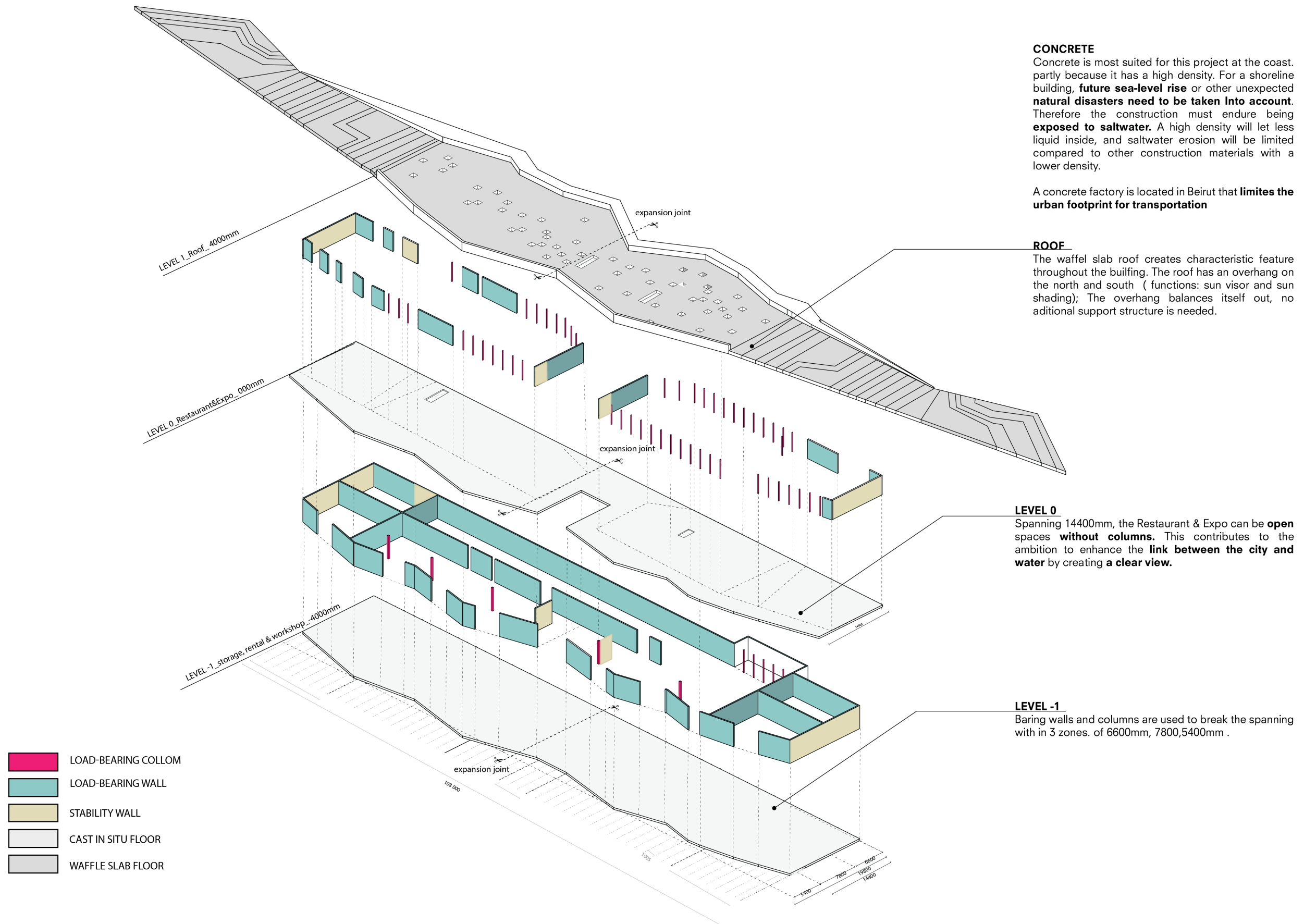
**DETAIL D-** door boat storage top  
scale 1:5



**DETAIL E-** foundation + door boat storage base  
scale 1:5



# Watersports Centre





# Watersports Centre

## VEGETATION

Plants help to clean the air of pollutants. The pores of leaves remove dangerous compounds, such as nitrogen oxide, sulfur dioxide, carbon monoxide, and ozone from the air.

## SHADING

Fabric is used to create shade on the public roof. Herby the **PEOPLE stay cool** when looking at the view but also the **ROOF gets less direct sunlight** and **heating will be limited**.

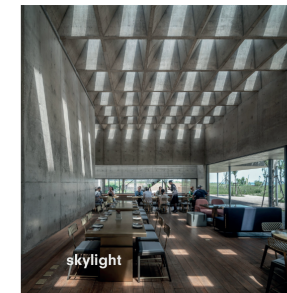
## SOLAR PANELS

On the shading fabric **flexible solar panels** are placed. To provide the energy needed for the building. **Wind can reach underneath** the panels, **cooling** them. The **fabric wont heat up** like a roof does. With these factors combined the **efficiency of the panels is optimised for the climate of Beirut**.



## SKYLIGHT

The waffle slab structure allows for roof openings. **Skylights** are placed in the grid of the roof to **reduce artificial lighting** during day. This will generate a significant and dynamic element in the level below. Angels will change with people waking over the roof and the sun traveling over the building.



## LEVEL 0

The building is divided in urban and water oriented. Functions on level 0, are urban oriented and all climatised. A **Floor heating/ cooling** system is used. That will cool the space most of the year. **cross ventiation** will be used, natural air will be sucked out **mechanically in the kitchen**.

## LEVEL -1

On level -1 water oriented functions are located. Some rooms don't need an controlled temprature/ climate. For example the **boat storage only requiers a shelter from outside elements**. however the workshops do depend on the right ventilation and climate.

The plastic processing part of the workshop has mechanical ventilation. To keep the air clean of chemicals and to prevent open windows, because **sand can intervene with the production process**.

The production part of the workshop has floor heating. While repairing boats **temperatures play an role in the processing of materials**. mechanical ventilation is required to suck mechanicals out. And prevent sand to come in.

Dressing rooms have **floor heating, to stay comfortable after being on the water**. Natural air will enter through the storage, and a mechanical ventilation outlet.

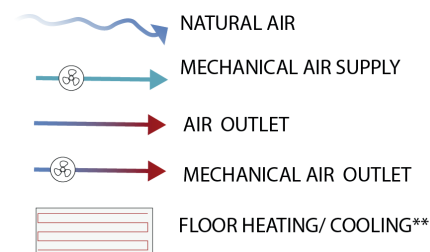


## RIB\* STORAGE

The rib storage requires good ventilation because of the **smell of fuel**. A mechanical ventilation system is chosen. The storage is positioned at the bottom of the ramp, **where people entre the beach**.

This beach needs to be contrasting to the polluted shores of Beirut. the smell of fuel would break this image. **To create a beach for the people of Beirut where people like to stay and interact mechanical ventilation is needed**.

\* RIB = Rigid inflatable boats  
\*\* floor heating pipes are a visual suggestion - no representation of accurate placement.



## CLIMATE SYSTEMS