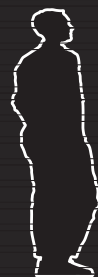


WATERSPORTS CENTRE

RESEARCH BOOK

Watersports Centre • Complex Projects
Beirut Studio • P5 • 8 november 2022
Carlijn Reumer





Bourj Hammoud Watersports Centre
Research book

Carlijn Reumer
P5. 8 nov. 2022

How can **waterfront leisure facilities**, in the development of the Bourj Hammoud waterfront, **contribute to the interaction** between different communities in Beirut?



2021/2022

COMPLEX PROJECTS

Beirut studio

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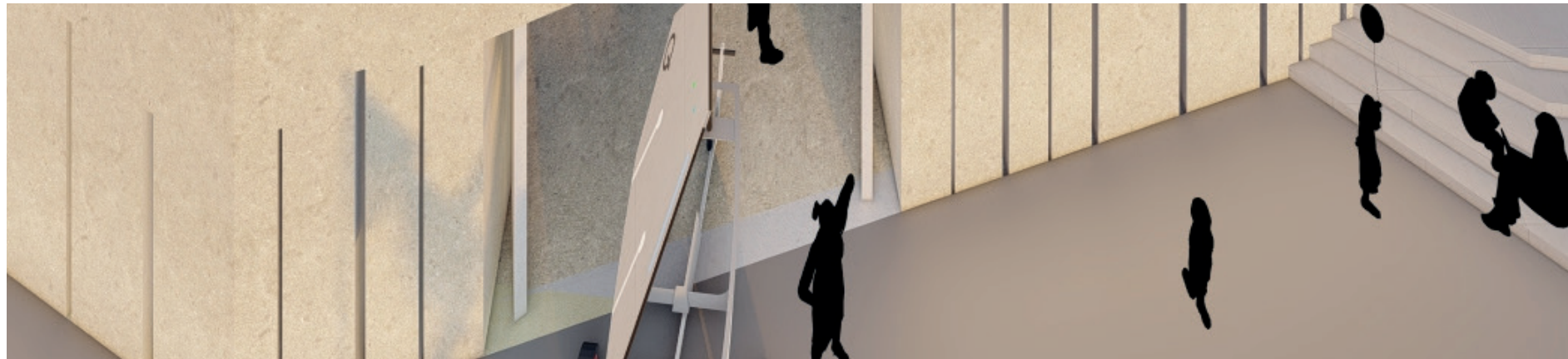
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Jelmer van Zalingen



RESEARCH BOOK

This book presents the research of the Bourj Hammoud Watersports Centre. The Watersports Centre is a leisure project on the coast of Beirut.

The project had a critical view towards ongoing waterfront development in Beirut, which translated 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.

Poem from the perspective of the building
inspired by quotes from tutors.

Me

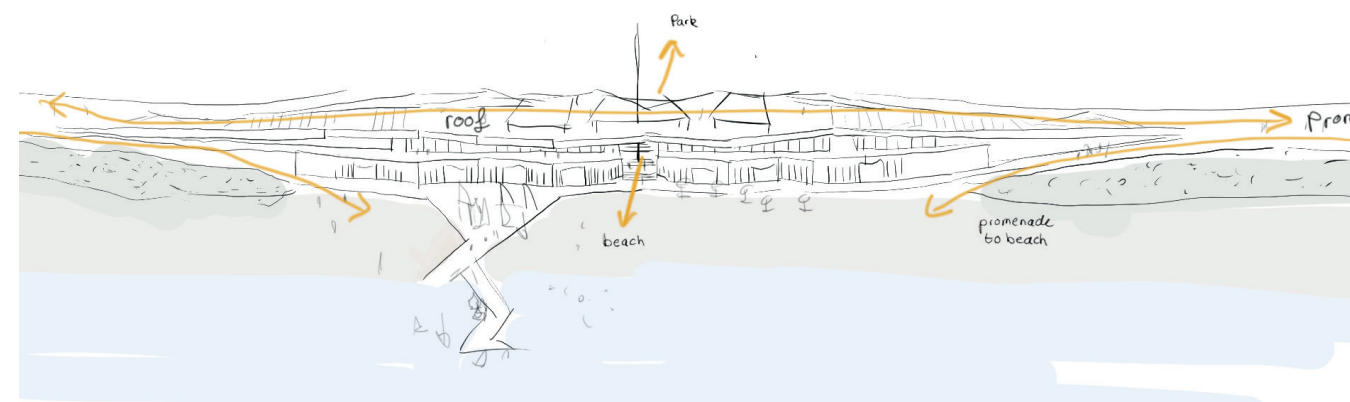
Blending in while standing out.
For the masses, and the small crowd.
On water or on land.
It's the two that I blend.

I am my surroundings.
My surroundings are me.
Beach, land and Mediterranean Sea.

I know what I want to be.
Something else for everyone to see.
Thus, the place to see everyone else.

Long and low.
After a year.
Now.
The final show!

Author: The Project



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BEIRUT STUDIO

1.1 Studio introduction

1.2 Masterplan



01

LOCATION
Beirut harbour

City:
Beirut, Lebanon
Coordinates:
33° 53' 19.0680" N
and 35° 29' 43.7280" E.
size:
19.8 km2
Inhabitants:
2.060.363

Catastrophe as a boost for change

Once called 'Paris of the East', the Lebanese capital was devastated by a shocking blast in August 2020, leaving hundreds of fatalities and thousands of injured. Dwellings, public institutions, healthcare facilities and infrastructure were left in shambles. Lebanon had already been facing its worst humanitarian, socio-economic and financial crisis since the 1975-1990 civil war, leading to widespread protests for political reform in 2019.

The complex projects Beirut studio reacts to this with the studio theme of a Catastrophe as a boost for change. An impulse to reflect on the ways of doing. To build up a better Beirut for future generations

Complex Projects - Beirut studio

Complex Projects investigates settlements around the world that are often ambiguous in their development and embedded in the process of globalization. Both students and teachers are encouraged to look critically at their surroundings; to gather, organize, and question the complex forces that ultimately manifest themselves into our built environment.

The role of the architect is changing more than ever before and our profession needs to cultivate a strong, critical and analytical

approach to the design process. The contemporary architect today must learn to see the world through many lenses: as a planner, organizer, politician, economist, philosopher, strategist, humanitarian, and visionary. The contemporary architect today is also challenged to operate within many different scales and cultural contexts. The complexity of these parameters converges more into a philosophy of design enabling students to unpack virtually any set of design constraints and react more thoughtfully to the conditions around them.

The Beirut studio is organized into four teams that develop an urban site. This project is part of the harbour site. Within the team, Beirut anchored six students focused on an individual research topic with an individual project. In this book, the research on the leisure topic will be presented through the development of the Bourj Hammoud Watersports Centre.



TEAM:Beirut Anchored



BART BROERSEN | EDUCATION
Agriculture campus



CARLIJN REUMER | LEISURE
Bourj Hammoud
Watersports centre



DAN XIE | MOBILITY
Garage + Distribution Center



GINA GOEDERT | OFFICE
Fashion office

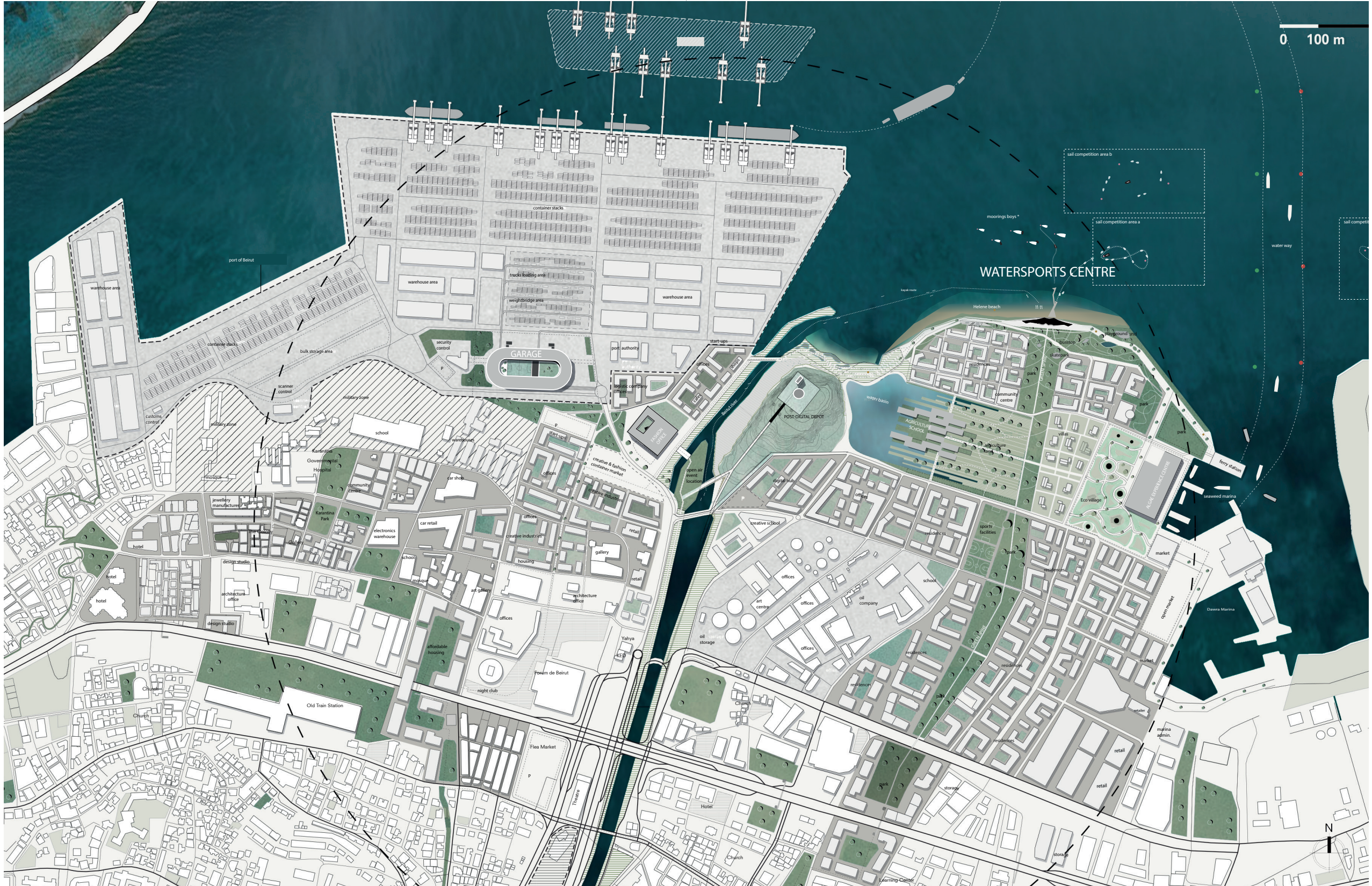


OYKU SU OKKAN | CIVIC & CULTURE
Post digital depot



SEYAR KHALILI | PRODUCTION
Energy power plant





BEIRUT

2.1 Impressions

2.2 Introduction

2.3 History

2.4 Public space

2.5 Waterfront

2.6 Pollution

02



Picture: Container terminal of Beirut's port.
Background: Damaged port as a result of
2020 port blast



Picture: Man fishing on a stone. The facilities to access water are limited. Beirut's coast is 80% privatised.



Picture: Swimming at sunset in between plastic Beirut deals with heavily polluted waters.



Picture: One of Beirut's streets wherein the car takes up pedestrian paths. There is no greenery or place to meet. Beirut lacks public space.



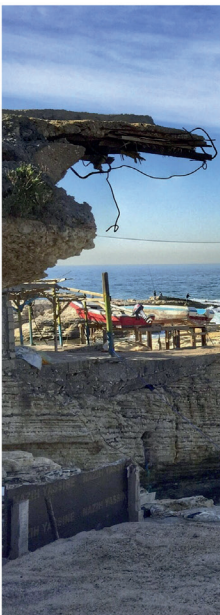
Picture: The car or a scooter plays an essential factor in the lives of Lebanese. The fuel supply is not consistent.



In picture: Parisian building heritage, Beirut has French architectural influences resulting from the French mandate



Picture: Mountains of Beirut in the city.



Introduction

Beirut

Arabic Bayrūt (بيروت)
French Beyrouth

Beirut is the capital of Lebanon. Lebanon is a country of 10.400 km2 in South West Asia with a 200km shoreline along the Mediterranean Sea. Neighbouring countries are Syria and Israel. Its total population is around 4 million people wherefrom 87% live in cities.

Beirut is the largest city in Lebanon, and 32% of Lebanese live in Beirut and its suburbs (1.3 million). Beirut is a port city at the foot of the Lebanon mountains.

Beirut's history is illustrated by religious and political strife, which led to conflicts and culminated in the 1975-1991 civil war. The city's layout is ununiform; this reflects the market-driven urban planning style, which resulted in the disappearance of public space.

Beirut has a diverse society, almost evenly divided into Muslims and Christians. In the city, the two religions separated along the green line that split the town during the civil war.

Climate

Beirut has a subtropical climate. During winter, it's cool, with temperatures between 11-17 °C. Summer is hot and humid, with temperatures between 23 -32°C. The rain season extends from mid-autumn to spring, with an annual average of 914 mm.

Beirut was once called the Paris of the middle east.



Figure 2.1: City at the Mediterranean sea

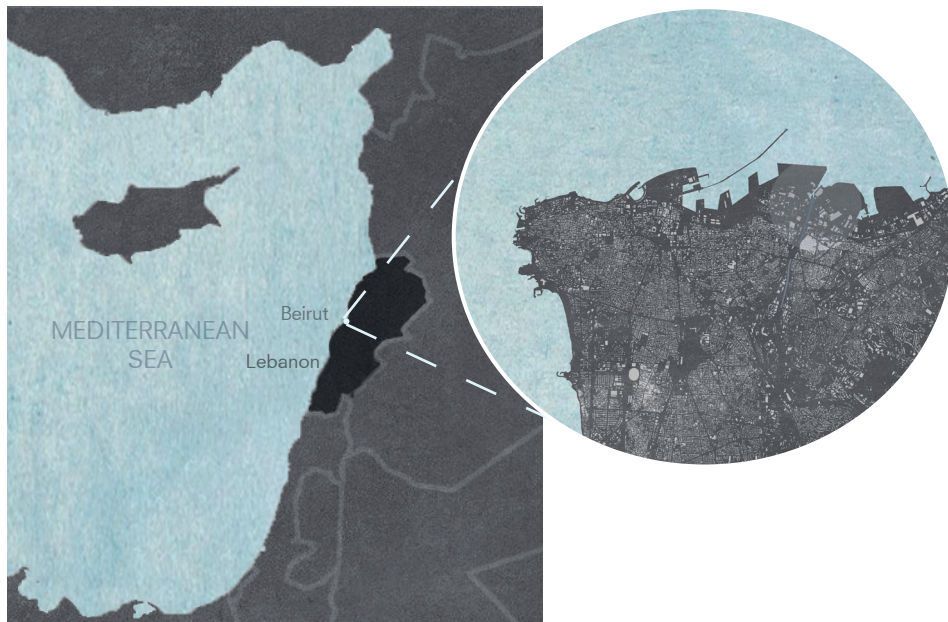


Figure 2.1: Diverse society



Figure 2.1: Parisian building heritage



Figure 2.1: Civil war

Through a series of traumatic events, it transformed into a city that

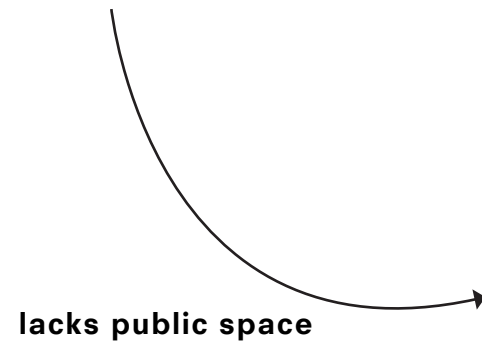


Figure 2.2: Political conflict



Figure 2.3: Port blast

Beirut, once the Paris of the Middle East turned into the **City without a shore**

- (Kiesouw, 2018)



There is a **lack of** free and open **public spaces** playgrounds, sanitary public beaches, designated **sports areas.**



“Cities are built on the conception and things that people share.”

(LEA, 2013)

“In Beirut, the notion of the common good is non-existing.”

(LEA, 2013)



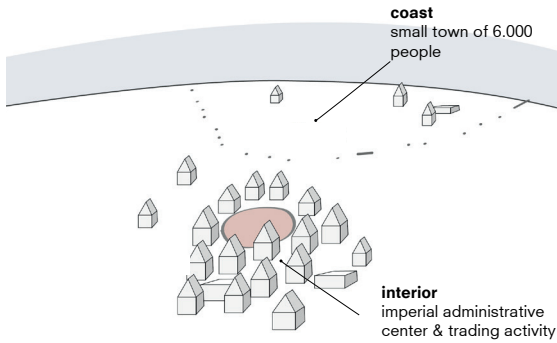
LATE OTTOMAN EMPIRE

Beirut grew into the city we know today because of the development of the port. The port started to grow in the late Ottoman Empire.

Different phases characterise Beirut's history. The different stages affected urban planning, which is still visible in the urban framework of Beirut today. In this paragraph, the becoming of Beirut from a small coastal town to a major seaport city and the effects on the urban framework will be guided by illustrations.

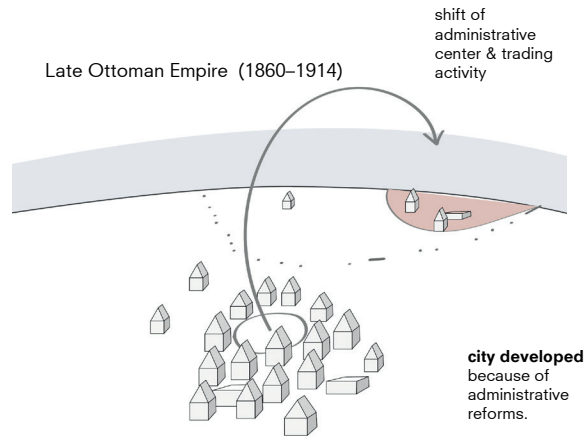
LATE OTTOMAN EMPIRE

Lebanon before 1860



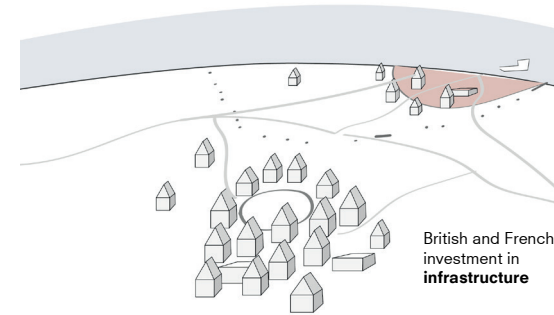
Beirut started out as a small town with the centre in the inlands

Late Ottoman Empire (1860-1914)



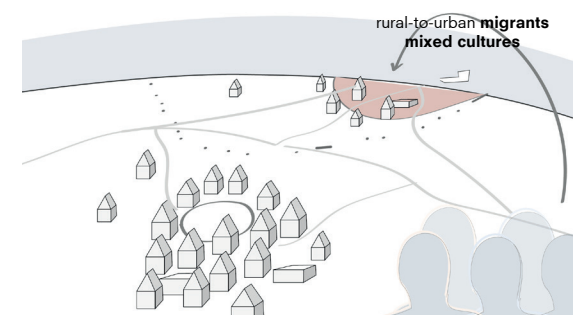
The city started to grow with the development of the port

Late Ottoman Empire (1860-1914)



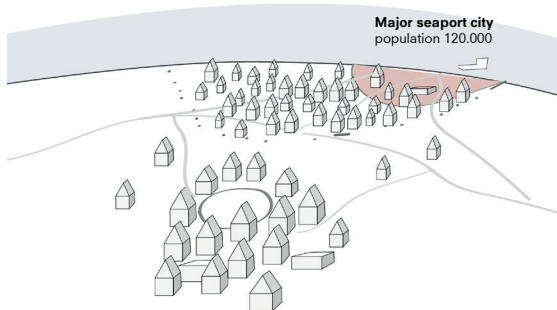
The development of the port attracted British and French investment in infrastructure. this made the city easy exisble.

Late Ottoman Empire (1860-1914)

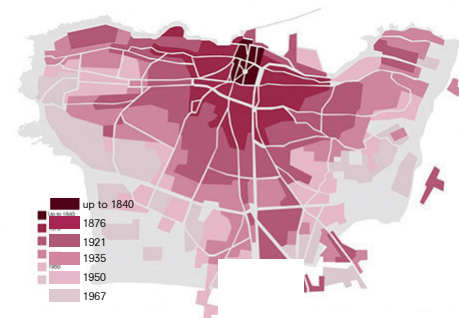


The port brought opportunities and attracted rural-to-urban migrants who brought mixed cultures into the city.

Growth of Beirut 1870-1975



the small coast town grew out ro an major seaport city with an population of 120.000 people.



from small town to **major seaport city**

new forms of public sociality
brought the people of Beirut together



the growing welth and mixed culture introduced new forms of public sociality. in this picture: Cafe at a Beirut public garden ca. 1900-1920.

1860

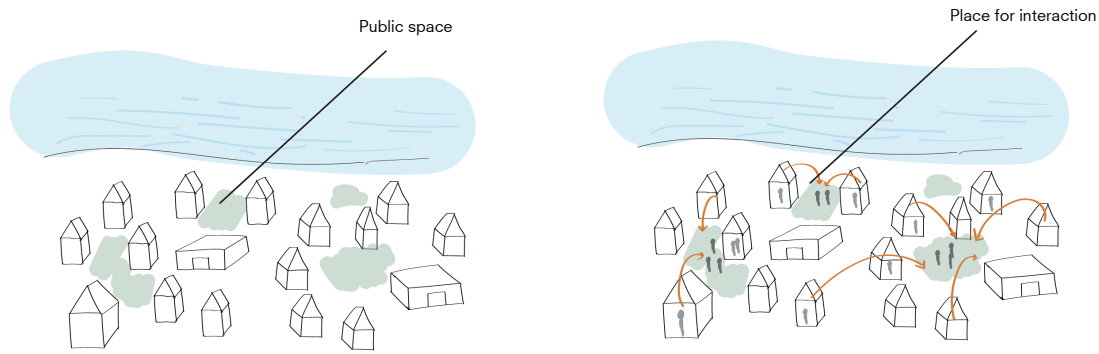
Late Ottoman Empire



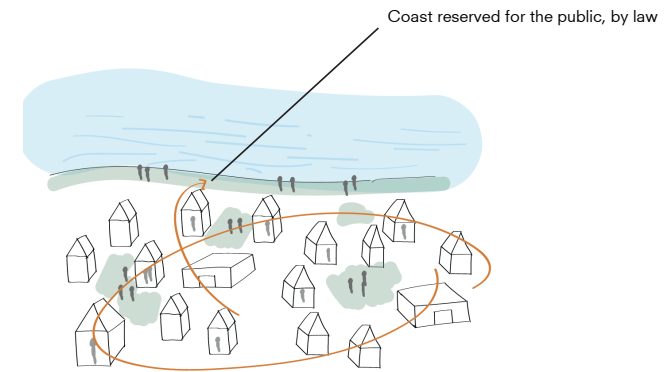
**FRENCH
MANDATE**

After world war one, Beirut became a French mandate. The French used Beirut as a showpiece of French urban planning. This period was characterised by well-organized urban planning.

FRENCH MANDATE



Public space in the city facilitated interaction.



The coast was reserved for the public by law. It was a place where people gathered for leisure activities.

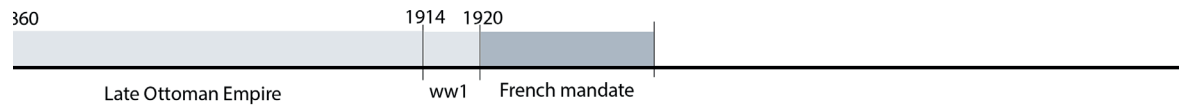


Figure 2.4: public coast

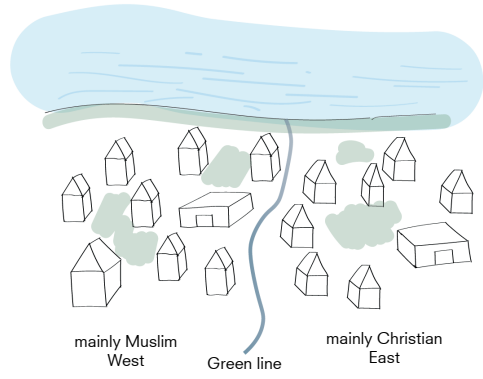


Figure 2.5: Parisian building heritage

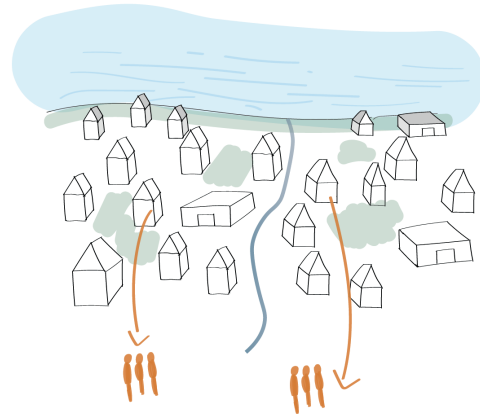


CIVIL WAR

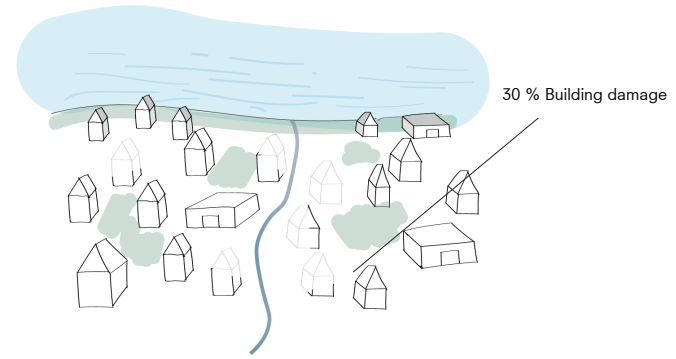
The Lebanese Civil War (1975–90) was a conflict between Lebanon's religious groups, Christians and Muslims. The conflict was intensified by socioeconomic inequalities and the presence of the Palestine Liberation Organization.



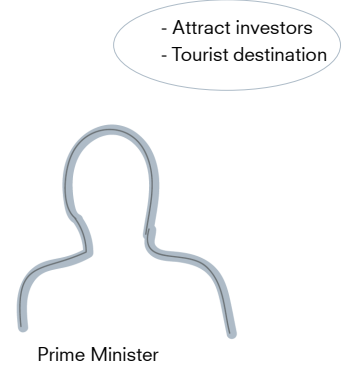
The civil war divided the city along the green line in a predominantly Muslim west and Christian east.



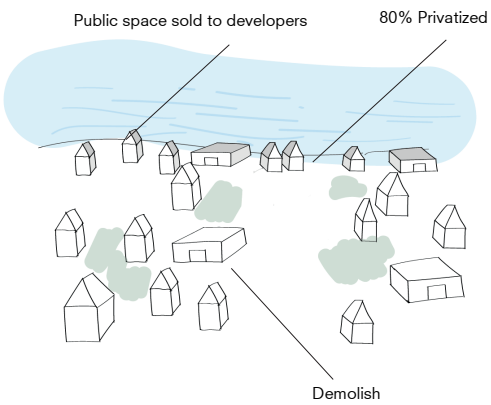
2/3 of Lebanese citizens had to flee. They got uprooted from their communities.



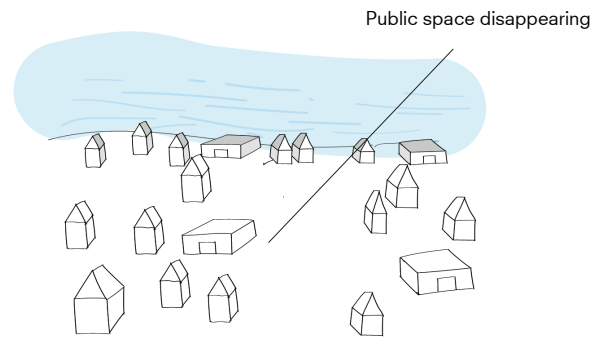
The years of war resulted in a lot of building damage. 30% of Beirut's centre district got destroyed.



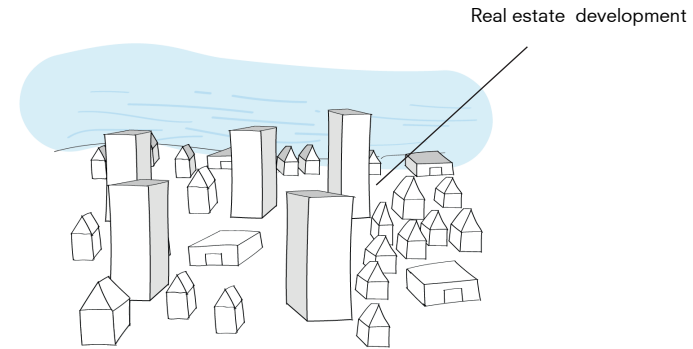
After the war, the prime minister wanted to change Beirut's image from a war zone into a location that attracted tourists and investors.



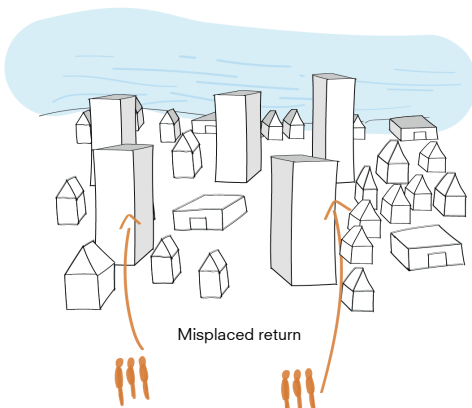
Public space at the coast got sold to real estate developers; public space began to disappear. The shore transformed from public to 80% privatized



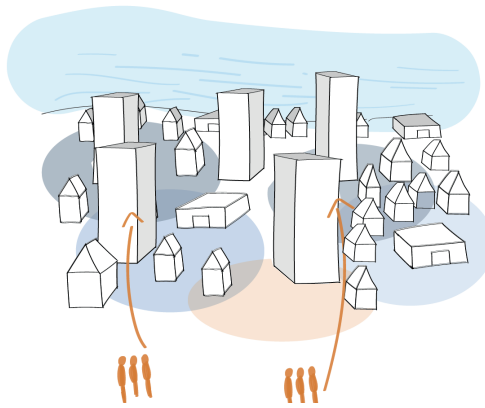
In the city, the land got sold to the highest bidder. Markt-driven real estate development led to the disappearance of public space.



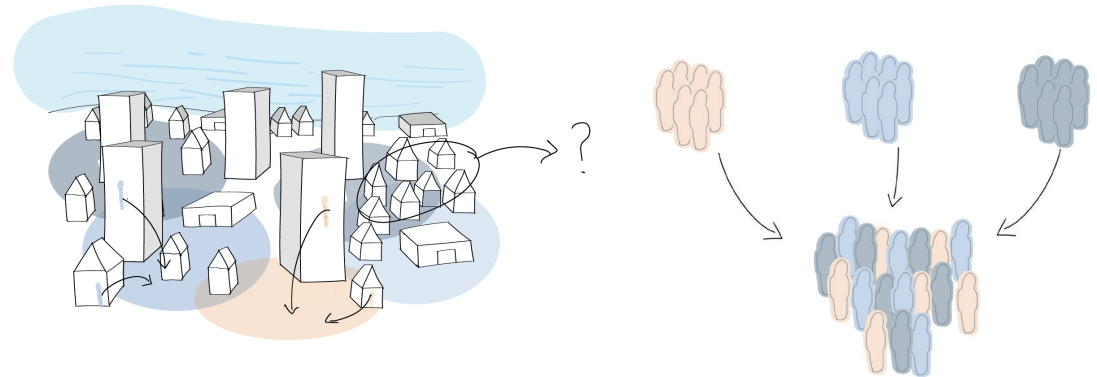
A poorly planned city that lacks public space evolved.



After the war, the people that did flee returned.



They returned to a city that became more homogenous than the city they fled from.



Some buildings have shared facilities where they can come together. Here they will only meet the people inside their social circle. The residential blocks that don't have shared facilities, where do they go

The lack of public space results in a stark sectarian division. Because the city doesn't provide places to meet, people live segregated.

History

The civil war ended on 22 October 1989 with the Taif Agreement that restored the Lebanese government in modified form. A new division of power was proposed to prevent any privilege for one religious community.

Taif Agreement:

- Reforming political system of Lebanon
- Restore balance of power between the sects.
- Sharing formula a 50/50 ratio.

The civil war destroyed 30% of Beirut's central district, leading to more than 100.000 people's death and the displacement of millions (Karizat, 2019). The Green Line divided the city into a Christian East and Muslim West. During the war, **the relationship people had with once heterogeneous spaces changed.** The division along the green line is still visible in the city today (Möystad, 1998).



Figure 2.6: Taif Agreement 1989

Neighbouring countries became popular tourist destinations while Beirut was filled with run-down buildings. Lebanon's prime minister saw post-war reconstruction as the opportunity to **change Beirut's image to appeal to global investors and compete as a tourist destination.** To achieve this, any memory of the violent past must be erased. The prime minister instructed the government-led real estate company Solider to **destroy 80% of the remaining buildings** in the central district. The aim was to create a central district like the other cities along the Mediterranean, **a Mediterranean Dubai.** This led to a political and economic interest in real estate development while the country had to recover from a 15-year civil war with sectarian divisions. **Stakeholders collaborated to maximise profit at the cost of public space. Public space transitioned into "prohibited space:"** (Karizat, 2019).

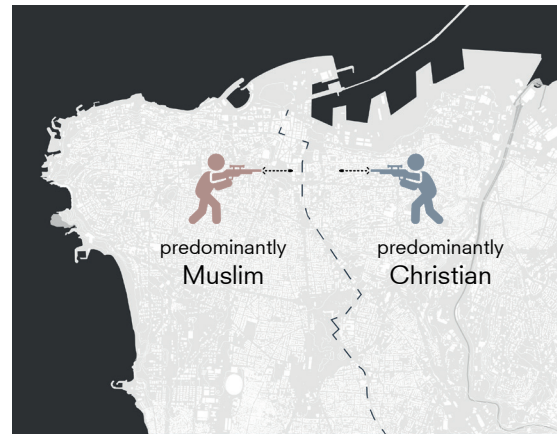


Figure 2.7: Green line

"Urban sites that were originally 'public' and within reach for the majority of the city residents but, because of the war and the various urban renewal projects, had become 'private,' that is, inaccessible and out of reach for the majority of the population" - (Sawalha, 2010)

Privatisation has been a consequence of post-war real estate development and private interests. While politicians and developers benefited from real estate development. The people of Beirut were left without public space (Karizat, 2019). While public space is essential in a diverse society like Beirut. **Public space has the opportunity to unite fragmented neighbourhoods** (Kiesouw, 2018). However, prohibited space instead of public space has reduced opportunities for healing across sectarian divisions in Beirut (Sawalha, 2010).

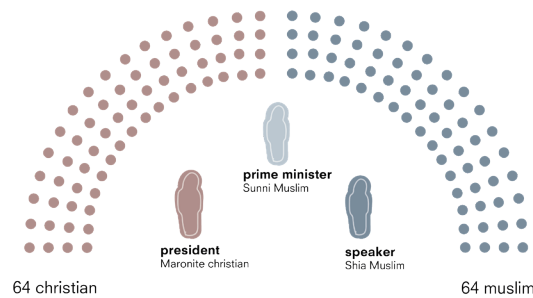


Figure 2.8: Equal representation parliament





PUBLIC SPACE

Because of market-driven real estate development, **public space has been disappearing** in Beirut since the end of the civil war. Large parts of Beirut became exclusive, and inaccessible for most. This results in a **contrast between public and private** spaces in the city.

PUBLIC SPACE CITY

Public space has been disappearing since the end of the civil war because of market-driven real estate development. Post-war reconstruction could have united Beirut's diverse society. However, the government invested time and resources in changing Beirut's image. **This transformed large parts of Beirut into exclusive ones.**

"Instead of aiding the social cohesion of society, Beirut's development has created exclusive spaces from those that were heterogeneous and accessible to most of the population before the Civil War." - (Karizat, 2019).

This results in contrasts; Beirut knows different faces and characters. The city will be perceived differently by its users. Nevertheless, it is noticeable that **Beirut has only 0.5% public space, compared to 12% in European cities** (Kiesouw, 2018).

A contrast between public and private spaces in the city is collected on the following pages.

PUBLIC SPACE WATERFRONT

*"Once the Paris of the Middle East with Parisian buildings and green hillsides. But it turned into the **city without a shore** – the seafront is overtaken by luxurious apartment buildings and hotels."* - (Kiesouw, 2018).

Historically, Beirut's coast is reserved for the public by law. However, the Mediterranean coast has changed into a place for exclusive resorts and hotels, which are not accessible to most Lebanese (figure 2.x). At the war's end, the well-connected Public spaces provide an opportunity to meet and interact with each other if real estate development takes away public space—the chances for interaction between the fragmented communities in Beirut decrease.

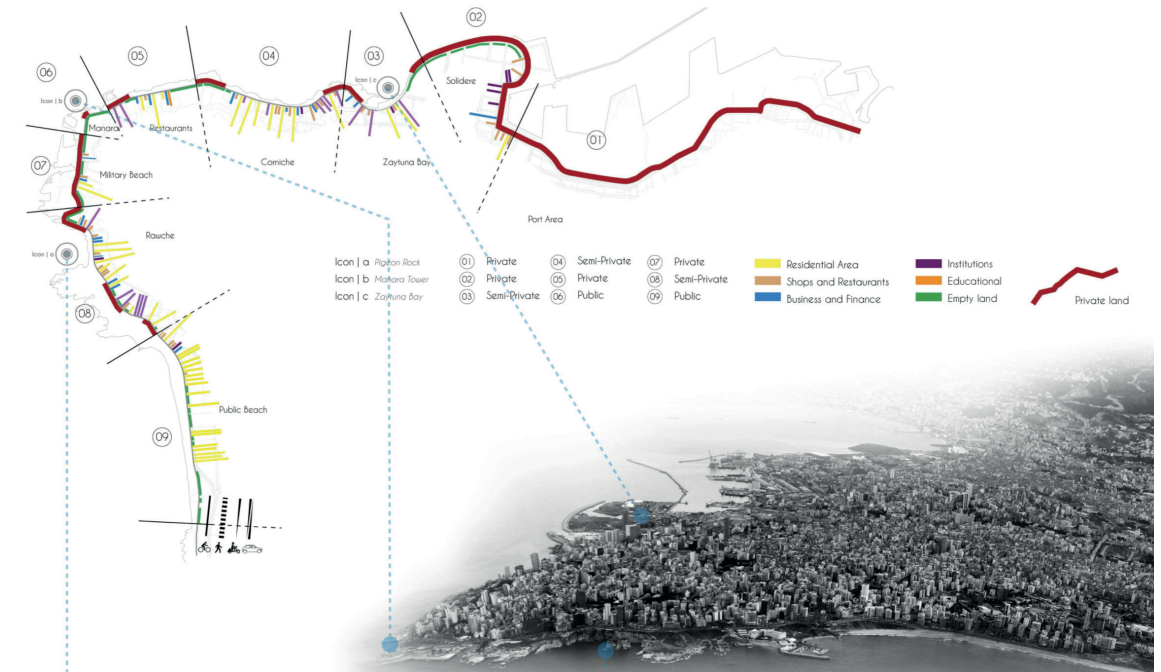


Figure 2.9: private coast *





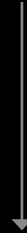


USAGE OF THE COAST.

Pictures show that only small parts of Beirut's waterfront are publicly accessible. However, those deal with pollution. The Bourj Hammoud landfill presents a unique opportunity for new ways of waterfront development that gives back to the people of Beirut.

With the Watersports centre, a critical view towards ongoing waterfront development translates into the comeback of a public coast for the people of Beirut, a place for interaction amongst all.

THE PLACE FOR INTERACTION IN BEIRUT



Beirut Central District

Private beaches/ resorts

Polluted public beach

dominated by cars

Port of Beirut

Inefficient port, truck parking nuisance.

Bourj Hammoud landfill

Polluted but empty land at the waterfront





WATERFRONT

Picture: Port of Beirut with mountains in the background.

Waterfront

THE PORT

The site is positioned next to the port. Documents published by Lebanese authorities give the impression that the port of Beirut plays a significant role in international trade activities. However, real-time AIS data and nautical charts show that **how the authorities present the port does not align with reality.**

This can be concluded out of the following:

- The Port is 10 -11 meters deep. This is **not deep enough** for the largest container ships that would be used in the kind of harbour they present the port of Beirut to be. The larger **container ships that travel between the international ports of significance**, such as Rotterdam, have a dept ranging between 12-14 meters.
- There is **no indication of a controlled shipping zone**. Ports of significance have an arranged traffic zone for approaching the port. Yachts cannot cross or need permission to cross this zone; this shows that port traffic is the main priority in an area. The nautical charts don't indicate a shipping zone. **This gives the impression that port traffic is not as intense as presented by the authorities.**

With **Beirut's history in mind**, wherein the elite chased personal and economic interests without taking care of the effect this had on public space in the city. The chance that authorities exaggerate the position of their port in the international context is high. It fits the pattern of behaviour that resulted in the Beirut of today—**presenting an image of Beirut through developments to compete with neighbouring countries without considering the people of Beirut.**

To confirm this , real-time data is monitored. **Real-time AIS data confirms this assumption. Beirut is not an A location but a B or C location.** Monitoring the number of ships coming in and waiting in front of the port over a week time shows that reality does not align with the picture sketched by Lebanese authorities.

Lebanese authorities proposed to expand the port onto the Bourj Hammoud landfill. However, there is no need for an expansion. If the landfill becomes an extra dock, the dept needs to be adjusted because it's shallow, close to the landfill. With the **urban plan proposed**, the depth of the surrounding will be enhanced, and a place for the people of Beirut will be created.

With the Watersports centre, **a critical view towards ongoing waterfront development translates into the comeback of a public coast for the people of Beirut, a place for interaction amongst all.**

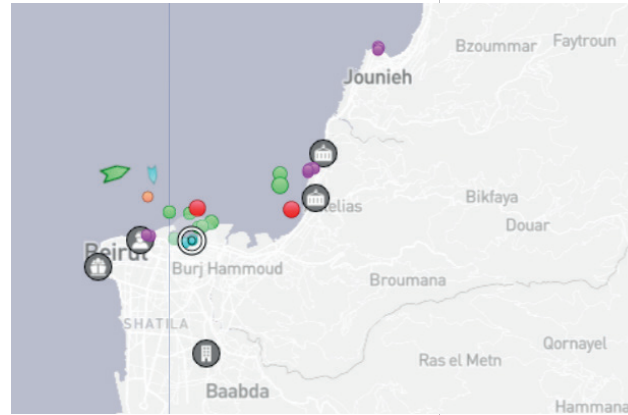


Figure 2.10: Ship movement Port of Beirut

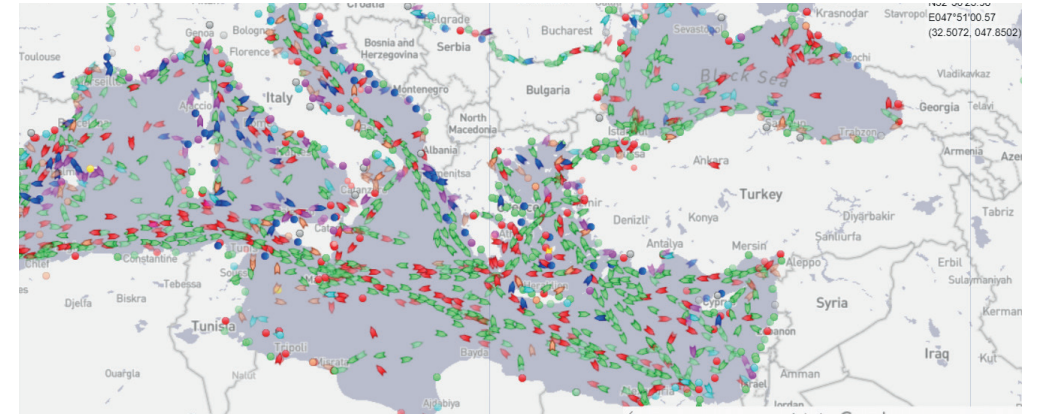


Figure 2.11: International ship movement AIS data

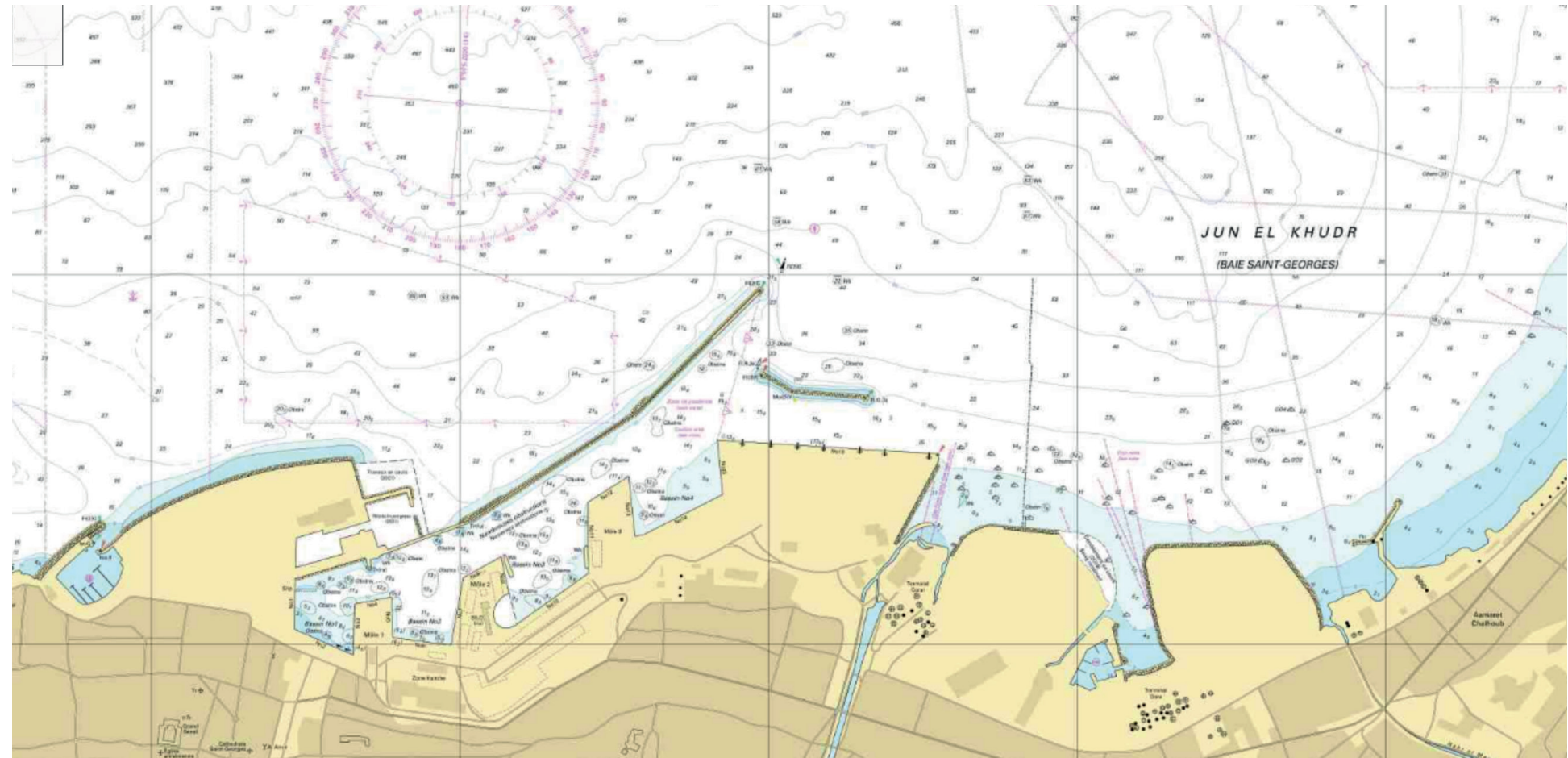


Figure 2.12: No shipping zone



WATER POLLUTION

Picture: Picture: polluted waters of Beirut.

Water pollution

CAUSES OF POLLUTION

Beirut deals with water pollution as a result of the following causes.

1. Lack of wastewater treatment: only 8% of wastewater is treated before disposal.
2. Dump sites along the coasts: Beirut's waste management system
3. Industrial wastewater: litter and chemicals are dumped in the sea
4. Leaking landfill

SOLUTIONS

A slaughterhouse, leaking landfill, sewage outfall, and the estuary contribute mainly to water pollution. **The following measurements will be taken for the project and the wider Beirut.**

1. Wastewater will be treated with wastewater plants
2. Dump sites along the coast will be relocated, and education about ocean plastics will raise awareness.
3. Industrial wastewater will be managed with new regulations
4. With phytoremediation, The agriculture school will clean the land. Whereafter the waterfront will be developed.
5. The slaughterhouse will be demolished and make place for a Post-digital Depot.

IS IT ENOUGH ?

The Rio de Janeiro 2016 Olympics are an example that proves that **polluted waters can be changed into waters suitable for watersports** even in a short time. Rio de Janeiro's untreated sewage outlets and irregular trash collection led to polluted waters. A few months before the games, this was not solved. Athletes didn't feel safe competing; they were afraid their fragile equipment would get damaged or face health-related issues. With the instalment of sewage treatment plants and managing floating trash with sweeping trash-scooping vessels and barriers, the location became suitable for the Olympics in a matter of months.

Beirut's waters might be polluted now, but that does not mean the people of Beirut cant safely experience the pleasure of watersports in the future. With the correct measurements and awareness, improvements can be made. Rio shows that this is possible in a short time; **the coast of Beirut is full of potential.**



Figure 2.13: Rio before the Olympics

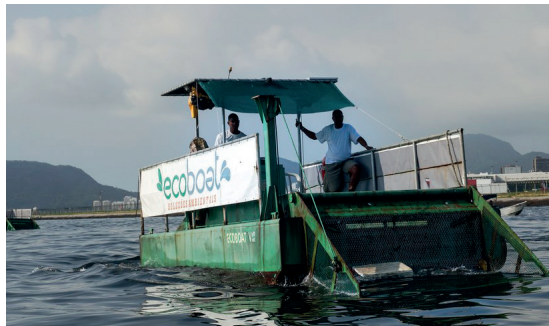


Figure 2.14: Sweeping trash-scooping vessels



Figure 2.15: Waters suited for windsurfing competitions

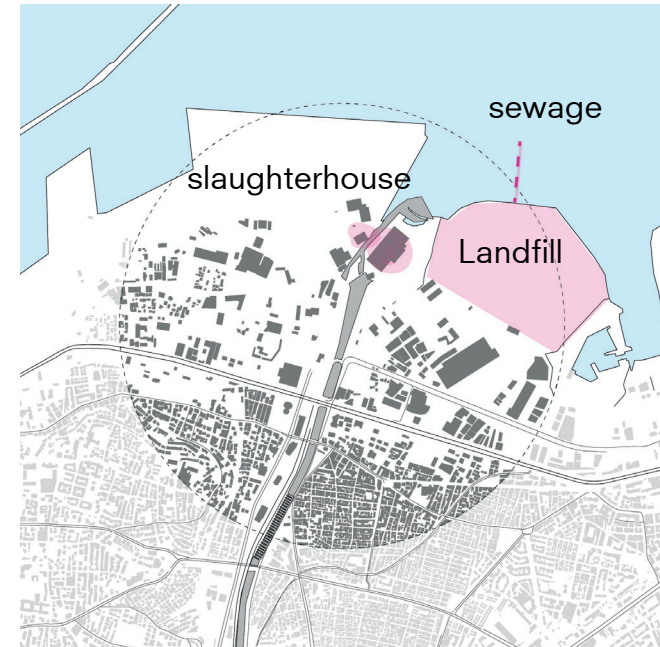


Figure 2.16: Main contributors to pollution on site.

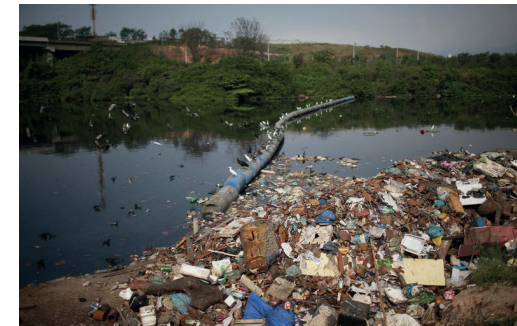


Figure 2.17: Trash barriers



Figure 2.18: Floating trash in Beirut River

LEISURE

3.1 Leisure definition

3.2 Recreation

3.3 Attractions

3.4 Sports

3.5 Article: watersports for interaction

3.6 Sailing

3.1 What is leisure?

Definitions of Leisure

Leisure can be explained in three ways; leisure as time, leisure as activity, and a state of mind

- Leisure as time:

Time free from obligations, work, and tasks needed for existing.

- Leisure as activity:

Activities we participate in for relaxation, competition, or growth. For example, reading, meditating, painting, and sports.

- Leisure as a state of mind:

Perceived freedom and ability to choose an activity without being influenced by external factors

- Recreation:

The difference between leisure and recreation is that recreation has to be morally acceptable by society and not only by an individual.

Leisure and recreation in Beirut

In the case of Beirut, the following categories of leisure are relevant (figure 3.1):

- Sports
- Recreation
- Attractions
- Culture

These categories are documented in the following maps.

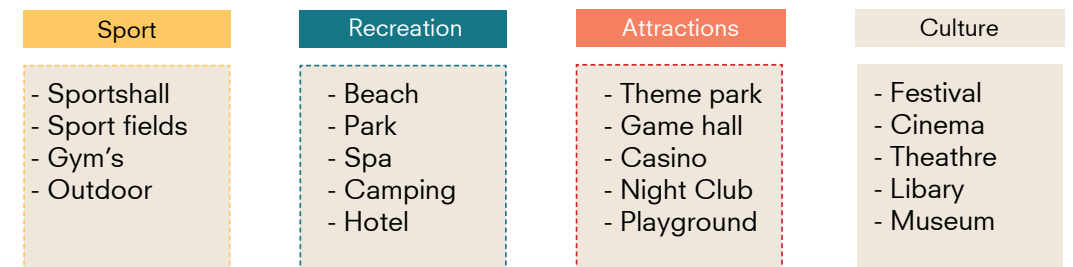


Figure 3.1: Categories of leisure



LEISURE

Site analyses are documented in this chapter. All leisure types are combined in this map. In the following paragraphs, they will be highlighted by category.



RECREATION

Picture: People sunbathing at a waterfront resort on Beirut's coast. Beirut central district in the background.

Recreation

What stands out in the analyses of recreational facilities is that there are only a few parks. **Beirut lacks public space and greenery.** It has only 0.5% public space, compared to 12% in European cities. Most parks are not publicly accessible. **Multiple marinas** create curiosity about their role in the city. Are they an essential part of recreation

for Lebanese? Hotels are indicated with blue ovals. They cluster around the west coast and centre of Beirut, the more wealthy neighbourhoods.

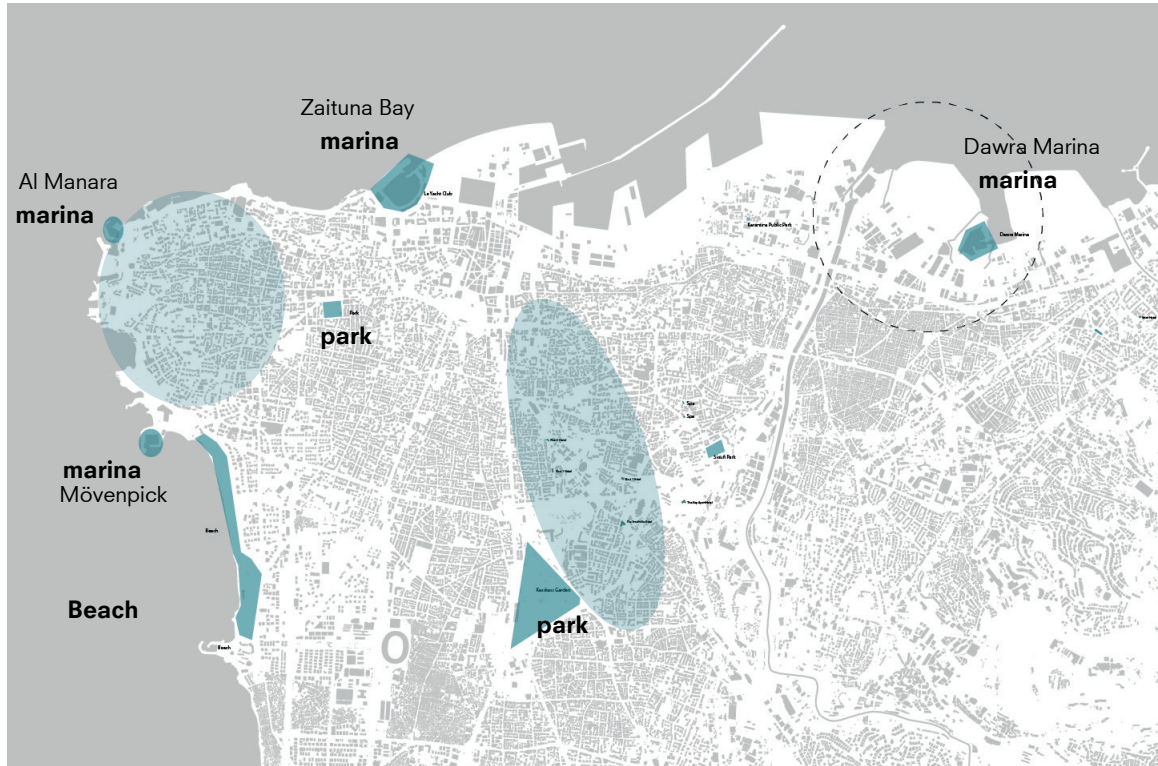


Figure 3.2: Recreation facilities

The resort shown on the previous page is a small part of the Lebanese waterfront experience. Most Lebanese can't afford private resorts, and **public beaches deal with pollution** (figure 3.3).

Privatisation of recreational spaces is visible in public parks, for example, The Karantina Public Garden, which is closed off by a fence and protected by a guard.



Figure 3.3: Poluted beach



Figure 3.4: Gccuarded public park

MARINAS



Figure 3.5: Dawra Marina

Dawra Marina and Al Manara Marina are **fishermen's marinas**. They are not recreational facilities.



Figure 3.6: Mövenpick Marina

What stands out in the pictures of the recreational marinas is that there are **no sailing boats**. A phone call to Zaituna Bay clarified that the sailboats disappeared from the marinas after the economic crisis. **A place to learn sailing is missing.**



Figure 3.7: Zaituna Bay



ATTRACTIONS

Picture: Nightclub B 018. The clubbing scene is a cheerful, creative and bright part of Beirut. Because of Beirut's climate, it is common to see outdoor clubs.

Attractions

On the south coast, **waterparks** facilitate amusement. In the east, entertainment is characterised by **nightclubs, indoor playgrounds, and game halls**. The industrial character of the harbour creates a place for young creative artists

to come together in the night scene. However, attractions related to the waterfront are not there. **This might be an excellent contribution.**

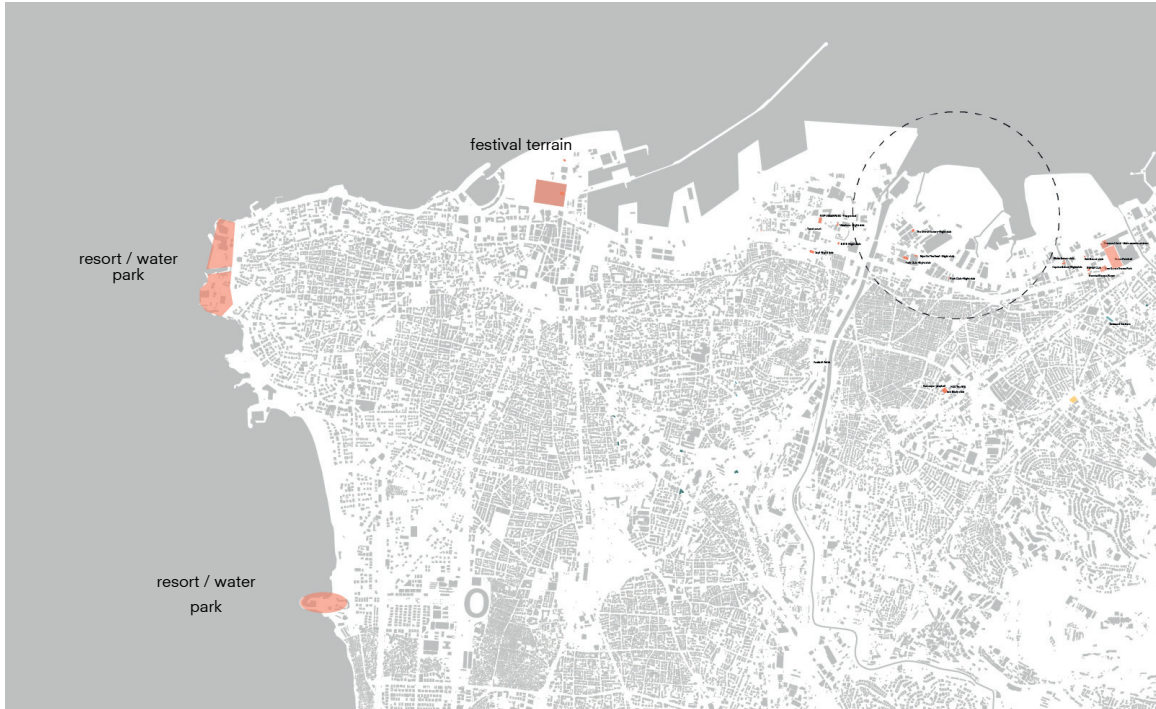


Figure 3.8: Attractions



Figure 3.9: Attractions zoom in left mainly nightclubs, right indoor leisure halls

NIGHTCLUBS/ AMUSEMENT



Figure 3.10: b 018 night club beirut - closed

B 018 is a popular underground nightclub. The building resembles a 1998 bomb shelter located east of Beirut. The club began as a **place to forget the war**. In Beirut, more nightclubs share this ideology.



Figure 3.11: b 018 night club beirut - opened

The **night scene** is positioned on the left side of the site circle. On the right site, **amusement halls** are located. **The surroundings could explain this strong division.** A nightclub in a neighbourhood would be less successful than in an industrial area because of sound limitations.



Figure 3.12: Indoor play halls



SPORTS

Picture: Improvised way of tennis at an empty part of Beirut's waterfront.

Sports

Documenting sports facilities (on a map) shows that sports in Beirut are **organised differently** than in the Netherlands. On the map, multiple identical **sports fields** are visible **close to each other**. In the Netherlands, it is common to have a club in every town with fields clustered together. In Beirut, multiple fields are spread throughout the city. This seems to be an unorganised collection

of small sports facilities. This raises **curiosity** as to **why this is different** to what we are used to in the Netherlands. This will be explained in the following **article**.



Figure 3.13: Sport facilities large scale



Figure 3.14: Football field within close distance



Figure 3.15: Stadiums next to each other

Fields are placed close to each other because the facilities are private facilities instead of sports clubs bound to a local community.

Identical stadiums are placed next to each other. Professional clubs create their own space instead of being confronted with each other while sharing space.

Because of limited space, sports fields are positioned between residential blocks and locked off by fences. Because the fields are not hosting a community, the surrounding **neighbourhoods don't relate to the fields as theirs**.



Figure 3.16: Private sports fields Footer, Football field and Basketball court (Facebook - Footers, 2017)

Locked-off private sports fields **do not serve the neighbourhood**.

Public accessible sports fields create a place to come together and meet each other. They **serve the neighbourhood**.

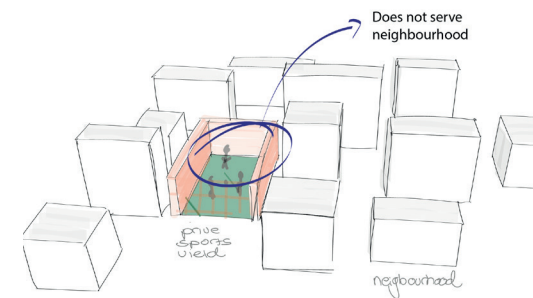


Figure 3.17: Private sports fields

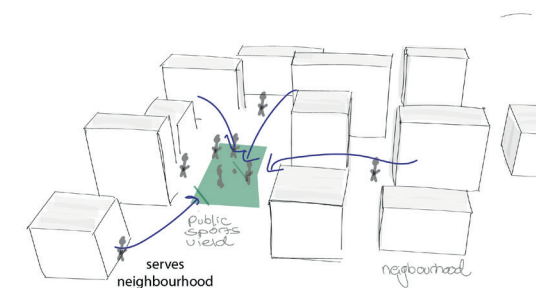


Figure 3.18: Public accessible sports fields

COMPLEX PROJECTS

Watersport for interaction

updated P1 article

Carlijn Reumer | 4611888 | 05-11-2021



0. Abstract

Sports facilities in Beirut are predominantly commercial. Their goal is to make profit. They often focus on the individual instead of on a team. Post-war real estate development led to privatisation because public space got sold by the city to real estate developers. This impacted multiple functions in society; one of them is sports. Professional sports demonstrate the fragmented society and how sport enhances segregation.

This article answers the following question: What criteria are required for a successful sports facility in Beirut?

Public space provides a place for interaction. In Beirut Because public space got lost during post-war real estate development, locations to interact got lost. No interaction leads to conflict. Sports can unite people through interaction. In Beirut, interaction through sport would go best if it matches the following criteria:

- Hosts a new sport that is currently non-existing
- Facilitate interaction by giving back public space.
- Build on a shared identity

A sustainable sailing school that recycles plastic into sailing boats would fit these requirements best.

Keywords: Leisure sports, Beirut, public space, interaction

1. Introduction

Sport and public space have the potential to unite fragmented societies. Because they facilitate interaction. However, in Lebanon, the opposite happens (Reiche, 2011). Privatisation of public space happened throughout the city at spaces like the old market and the Mediterranean coast (Karizat, 2019). Beirut's coast, historically reserved for the public; 1915 law stated that: "The sea's shore until the farthest area reached by waves during winter, as well as sand and rockshores, belong to the public." (Hall, 2017). But since 1966 developers and financial elites took advantage of the administrative chaos. And build resorts along the coast even though this was illegal (Karizat, 2019). In 1989 elite gained power and ability to transform legislation. So further development of the coast was possible. However, today 80% of Beirut's coast is privately owned (Karizat, 2019).

1.1 Problem statement

The few public spots along the coast that are public deal with heavily polluted water and fear being sold to private developers. Because the government prioritises development over public spaces, the city lacks public space (Monroe, 2016).

1.2 Research question

What criteria are required for a successful sports facility in Beirut?

2. Sport facilities in Beirut

Why do sport facilities in Beirut not facilitating interaction? In Beirut there are relatively much sport facilities. A sports facility is seen as a way to make profit. Beirut is the capital of Lebanon. Half of Lebanon's population lives in Beirut and its suburbs (Monroe, 2016). This urbanisation lead to increasing land prices (Chehayeb, 2021). The population lacks a shared identity (Reiche, 2011). There is culture wherein making profit is prioritised all other forgets needs of the people of Beirut (Karizat, 2019).

This prioritising of making profit does also show in sport facilities in Beirut. culture results in a way of using sport facilities.

3. Politics of sport in Lebanon

Two examples, indoor and outdoor sports complexes, show a similar organisational structure. Both facilities do not have members. Individuals rent a sports field (Jamgochian, 2018) (Mneimneh, 2021). When individuals rent a field, they use it with people inside their social circle. The facility does not promote interaction.

In Beirut, sports facilities have a commercial approach that leads to an individual mindset towards team sports. Club or team identity in sports is limited. Facilities are just a product. Players do not identify themselves with the facility they use. So, where do Lebanese players identify with?

Lebanon's 'mosaic society' of eighteen religious sects plays an essential role in professional sports. Football and basketball are the most popular in Lebanon. Professional football and basketball Clubs have strong sectarian and political affiliations. Political leaders sponsor sports teams to prove their superiority above other sects (Reiche, 2011). During games, fans use slogans referring to their religion and political leader. The rivalries (Muslims versus Christians) are full of tension and violent clashes. Conflicts within the same religion also occur, for example, between Orthodox Christians and Maronite Christians (McClenahan, 2007).

Clashes between supporters are nothing special they occur everywhere. The particularity in the case of Lebanon is that the conflict is based on religion and political beliefs. If a disagreement is based on football, fans can disagree on what team is best, and then there is no clash when football isn't discussed. Clashing supporters can sit next to each other, cheering on the national team. In Lebanon, that is not the case. Tension does not fade when the game is over. Lebanon lacks a common Lebanese identity, and sport does not help to soften the borders between sects to build a common Lebanese identity (Reiche, 2011).

Religious and political leaders influence the most popular sports (basketball and football), which is noticeable in all longer-existing sports. New sports are not dominated by religious and political leaders (jet) (Reiche, 2011). Rugby is an example of a new sport. Introducing a new sport could be interesting in Beirut. It will create a neutral environment that can bring groups together.

The examples in paragraph 1 show individuality but not the divisions based on religion, which is noticeable in professional sports. However, Beirut's map (figure 1) indicates four identical sports fields close to each other. This seems odd or not needed. However, if different groups do not share facilities, they all need their own. In Beirut, this is the case. For example, private schools all have their own religious orientation. These schools have their own sports facilities; one facility is not shared by multiple schools (Azzam, 2018).

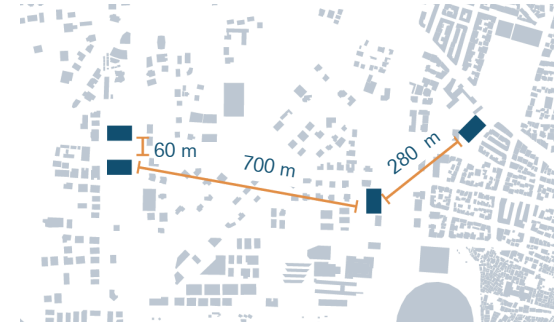


Figure 3.19: identical sports fields close to each other.

4. Fragmented

Previous paragraphs showed that sports are either commercial or have strong political affiliations. Where does this come from?

Beirut was divided into two zones during the civil war (1975 - 1990). The Green Line (figure 2) separated the Christian East and Muslim West (Möystad, 1998). Before the war, Beirut had heterogeneous public spaces that Christians and Muslims used. However, during the war, these changed into homogeneous spaces (Karizat, 2019). Protected by guards controlled by political parties, they became safe zones between instability and fear.

The 15-year war period demolished a large part of the city. Post-war reconstruction created the opportunity to change Beirut's image to a tourist destination and appeal to global investors (Stewart, 1996). This led to urbanisation wherein development was prioritised above the needs of Beirut's people, and the greater picture was lost out of sight. (Monroe, 2016). Public space got sold to the highest bidder (Lebanese economic association, 2013). The coast is an excellent example. Historically, Lebanon's coast is reserved for the public; the 1915 law stated that: "The sea's shore until the farthest area reached by waves during winter, as well as sand and rockshores, belong to the public." (Hall, 2017) During the war, developers took advantage of the chaos and built illegal resorts along the shore. Post-war reconstruction further enhanced this process. Today 80% of Beirut's coast is privately owned (Karizat, 2019). Luxurious apartment buildings and hotels take the coastline. "Beirut which was once seen as the Paris of the Middle East, turned into a city without a shore." (Kiesouw, 2018).

5. Lack of interaction

Where building damage got repaired, post-war development did not restore the fragmented

society to its before. Post-war development reduced access to public spaces, which are essential in healing relations within society. Public space creates the opportunity for interaction among all. The practice of being part of a public and operating concerning the actions and lives of others. (Karizat, 2019)

Looking at the coast, the public beaches were a place to get a fresh breeze during hot summers. Different groups came together at the beach. Urbanisation made the city even hotter (Kaloustian, 2015). However, there is no beach to cool down (Karizat, 2019); for most of Beirut's people, private facilities are unaffordable. The public beaches deal with heavily polluted water. Swimming is unsafe (Yan, 2018). People that go for a swim get skin problems, and taking in the water leads to poisoning (Aguilar et al., 2018).

This illustrates how post-war developments further enhanced the fragmented society, which is also visible in sports today. A fragmented society were making a profit is the priority. Footers showed the commerciality of a sports facility not oriented on the teams/club spirit. The lack of team and club spirit lies in the fact that people do not identify with the facility but with the people, they use it with. This limits interaction between the different groups.

6. The consequence of lacking interaction

Is lack of interaction a problem? A lack of interaction increases the chance of conflicts (Karizat, 2019). The recent shooting (14 October 2021) illustrates this.

The Shia Muslim groups Hezbollah and Amal protested outside the Palace of Justice, Beirut's main court building. The protest was against judge Tarek Bitar, a Christian investigating the blast at Beirut's port. The protesters deemed the judge biased and demanded his removal (Reuters, 2021). The shooting started when protesters moved through a zone dividing a Christian and Shi'ite Muslim neighbourhood. Christians opened the gunfire, whereafter, the exchange of bullets began that lasted a few hours. During the shooting, six people got killed, and 32 were injured (BBC News, 2021). The conflict shows the high tensions between groups in society. There is no base for communication. One group reacts to the protest of the other group by shooting them. Public space can facilitate and force interaction. Given the accident, the practice of interaction seems highly needed: practising the skill of being part of a mixed group. So future interaction is not in the form of shooting.

Article

7. Conclusion

Sports facilities in Beirut have a commercial approach that leads to an individual mindset towards team sports. Club or team identity in armature sports is missing. The facilities are just a product. Players do not identify with the facility but the people they play with. At the professional level, Lebanon's 'mosaic society' of eighteen religious sects shows its role. Professional Clubs have strong sectarian and political affiliations. New sports aren't infused by political leaders' jet. National sports show that a common Lebanese identity is missing (Reiche, 2011). The civil war enhanced the division between the two religions. Post-war real estate reconstruction did not solve the fragmentation. It only further enhanced it by prioritising profit over the needs of Beirut's people (Monroe, 2016).

Public space got lost, such as at the coast. Historically reserved for the public, 80% is taken by private developments today. They are not excisable by most Lebanese. The 20% that is public deals with polluted water, leaving Beirut, a waterfront city, without a shore (Kiesouw, 2018).

The waterfront facilitated interaction between different groups before. Today there is no place for interaction (Karizat, 2019). No practice of being part public. Existing sports facilities do not facilitate practice in the interaction either. On a professional level, existing separations are enhanced.

Currently, sports in Beirut do not facilitate interaction between groups. The shooting of 14 October shows that this interaction is highly needed.

Given the facts, the criteria required for a successful public sports facility in Beirut are the following:

- Hosts a sport that is currently non-existing in Beirut, so there is no structure of political affiliations.
- Facilitate interaction between different groups by giving back public space.
- Build on a shared Lebanese identity

A sailing school fits these requirements.

- Hosts a new sport: Sailing is non-existing
- Giving back public space: a sailing school located at the coast can influence how space is used on the coastline. It can facilitate space for interaction between different groups. To successfully give back public space, the sailing school needs to include a program that focuses on improving water quality because polluted water limits the use of space.
- Shared identity: The waterfront can become a

shared identity for Beirut's people

A sustainable sailing school will react to the existing problems in Beirut best.

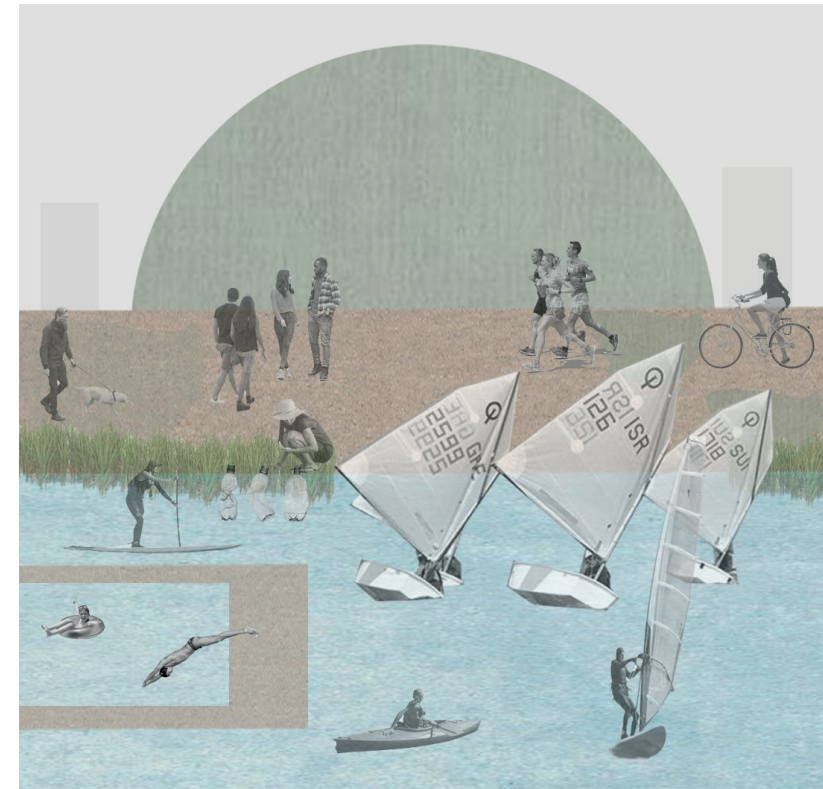


Figure 3.20: Ambition collage

3.6.1 sailing for interaction

At Beirut's waterfront, it stands out that leisure marinas dock power boats primarily. There are **no sailing yachts, which is interesting for a country that struggles with fuel supply**. The marinas do not dock sailing yachts because people do not know how to sail; there is no place to learn sailing. Remarkable in a port city.

Research shows that taking part in sailing can improve **awareness of the environment and climate-related to water**. (Sandell and Öhman, 2010). This could be beneficial in Beirut, which deals with heavily **polluted waters**.

A different set of skills is developed by participating in dingy sailing (sailing in small open boats figure 3.21).

- Communicational skills
- The ability to work together
- Awareness: while sailing, the environment is unpredictable (wind and water conditions), and participants must be aware and act in the moment. (Williams et al., 2020)

Those skills are helpful in the complex situation of Beirut.

However, there can be **a financial or social barrier to sailing** (Holt et al., 2011). Different charities put in the effort to make sailing more accessible. Nevertheless, charity work introducing only the sailing sport will not have the aimed outcome.

The project aims to contrast the privatisation done at the other parts of the Beirut coast by **including a wider scoop of Beirut's population**. Next to sailing, **more approachable watersports** such as a **public pool, SUP, and kayak rental** will be added.

A clubhouse will bring the different activities together. There will be a variety in accessibility, a mix of public and private. **Experiences of varying water sports will unite beyond the social and economic class in the clubhouse**.



Figure 3.21: Dingy sailing



3.6.2 Lost sailing tradition

Harbours in Beirut today do not show any signs of sailing. However, sailing is **routed in Beirut's history**. The first ships used to transport goods from the port were sailboats. It was sailing where the growth of Beirut all started. Also, as a leisure activity, the sport has a rich history. Over time this tradition got lost. The project can bring back this lost tradition.

PROGRAM RESEARCH

4.1 Case study

4.2 Program

4.3 Massing study

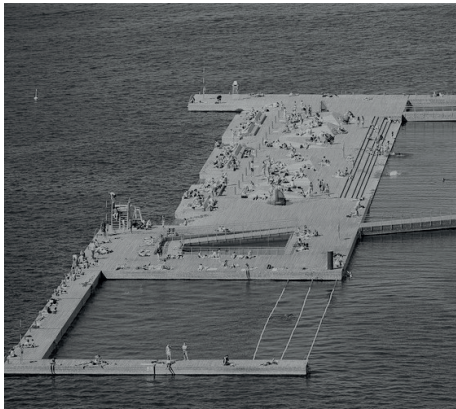
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Sørenga Sjøbad
Oslo, Norway

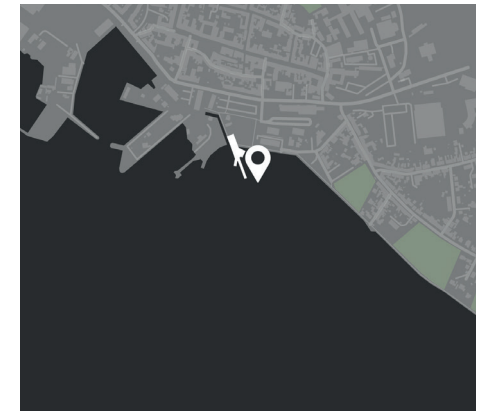
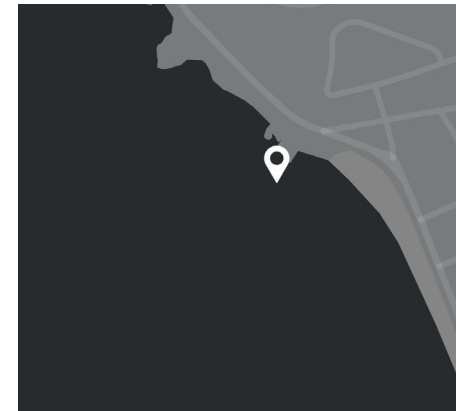
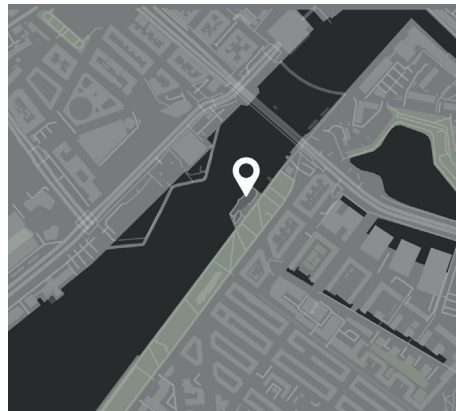
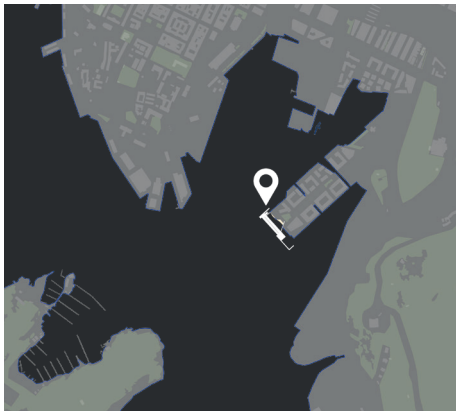
The Harbour Bath
Copenhagen, Denmark

Carpa Olivera
Mazatlán, Mexico

Faaborg Harbor Bath
Faaborg, Denmark



relation to water



conditions

- 7°C to 21°C
- Inner Oslofjord
- 3°C to 16°C
- 0.2m
-

- 1°C to 21°C
- Sydhavnen (river)
- 2°C to 17°C
- 0.35m
-

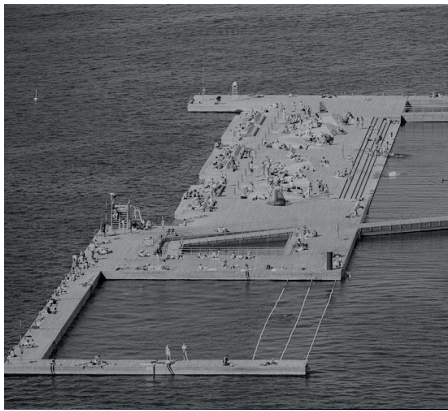
enclosed waters

- 13°C to 32°C
- northern pacific
- 22°C to 30°C
- 1.25m
-

- 1°C to 21°C
- Baltic Sea
- 2°C to 18°C
- 0.2m
-

open waters

Sørenga Sjøbad
Oslo, Norway



The Harbour Bath
Copenhagen, Denmark



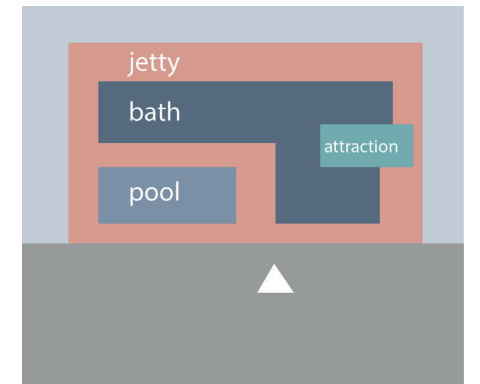
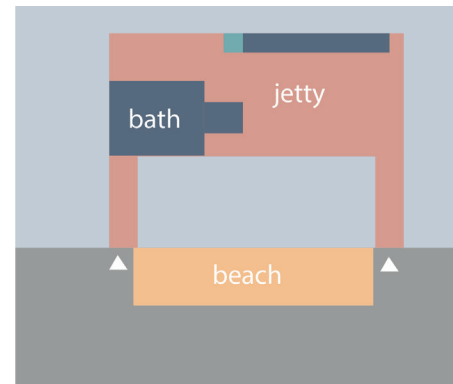
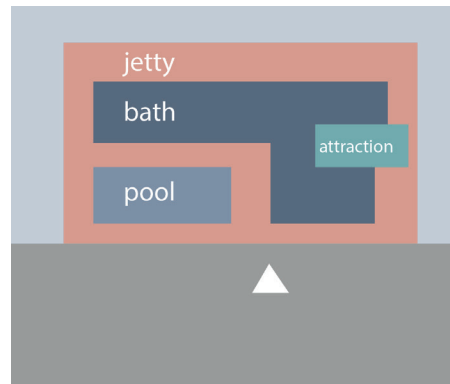
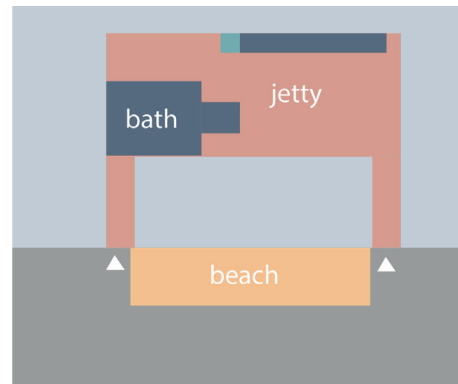
Carpa Olivera
Mazatlán, Mexico



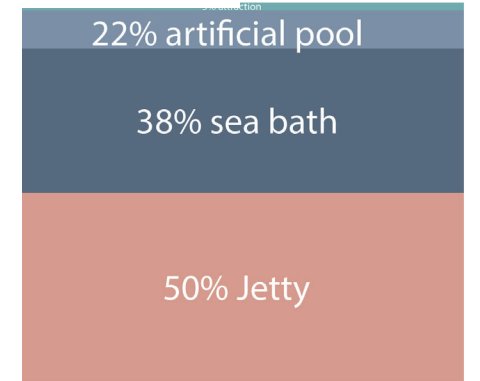
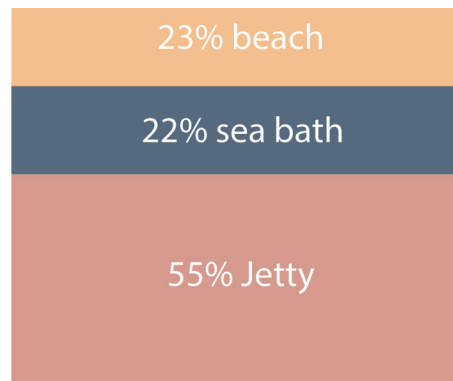
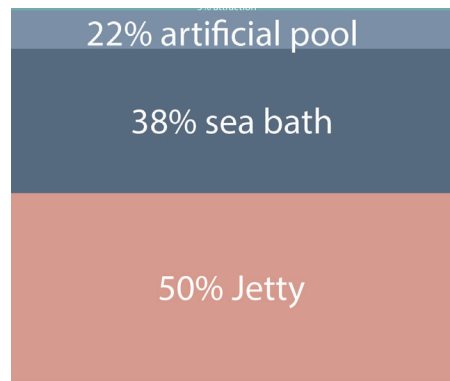
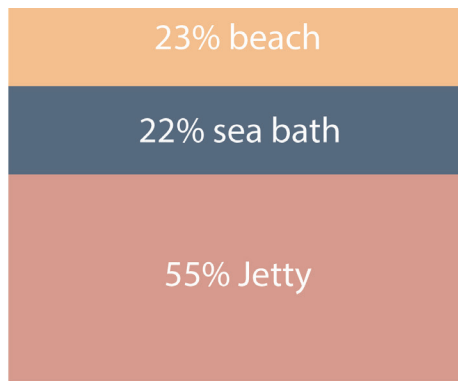
Faaborg Harbor Bath
Faaborg, Denmark



orientation



ratio



~6780 m²

~2.340 m²

722 m²

2.000 m²

VISITED REFERENCES

Two reference projects are visited. The Sørenga Sjøbad in Oslo, Norway and The Harbour Bath in Copenhagen, Denmark. These informed the project in the program concerning the pier and design of the promenade.

The visits showed that both baths had a lifeguard station. This is added to the program. What stood

out is that waterfront facilities can be **simple to be successful; the location and view are an attraction** on their own.

The harbour bath had an interesting **recognising point from afar**. This inspired a recognition point in the project as well, the pole.



Figure 4.1: Sørenga Sjøbad - life guard



Figure 4.2: Sørenga Sjøbad - kayak & enhance view



Figure 4.3: The Harbour Bath - recognition point

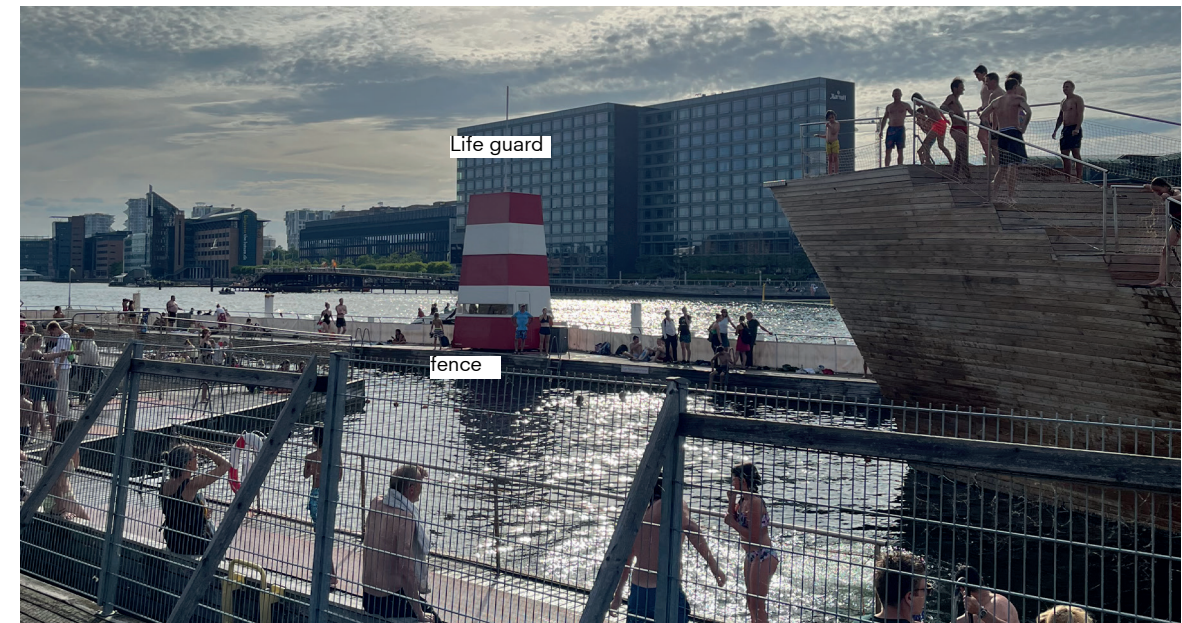
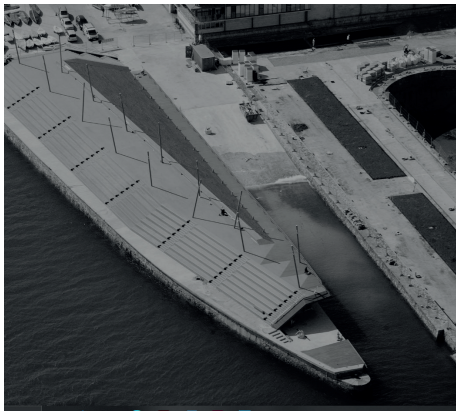


Figure 4.4: The Harbour Bath - life guard & fence

Sailing World Championship Facilities
Mazatlán, Mexico



Sotogrande's Sailing School
Cádiz, Spain



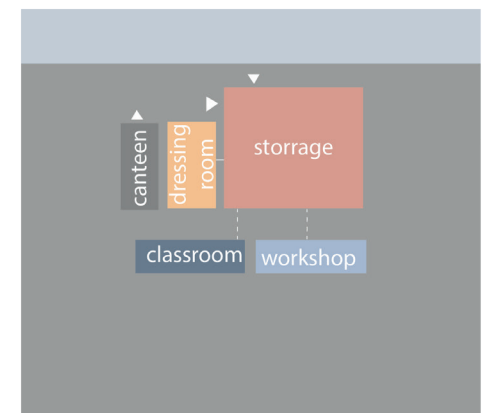
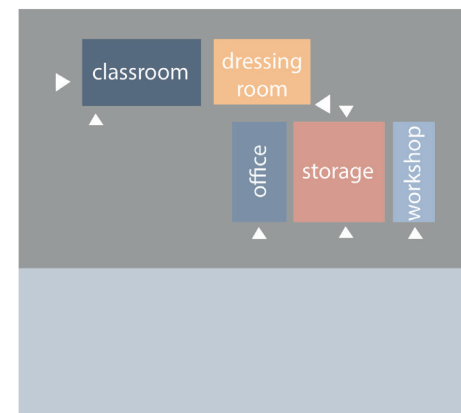
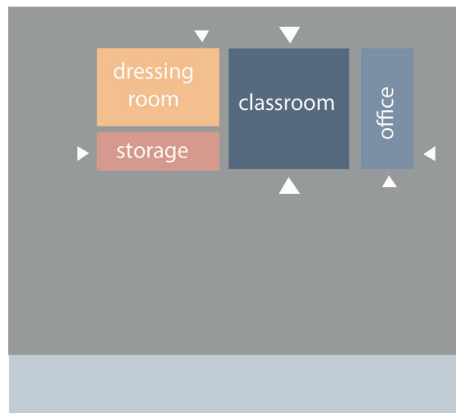
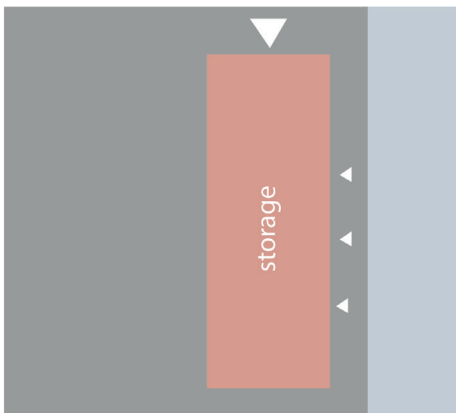
Northwestern Sailing Center
Michigan, United States



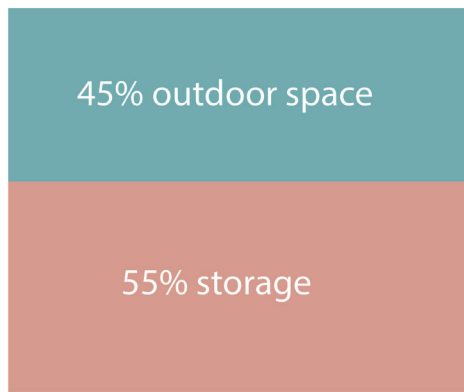
Zeilschool Aalsmeer
Aalsmeer, Netherlands



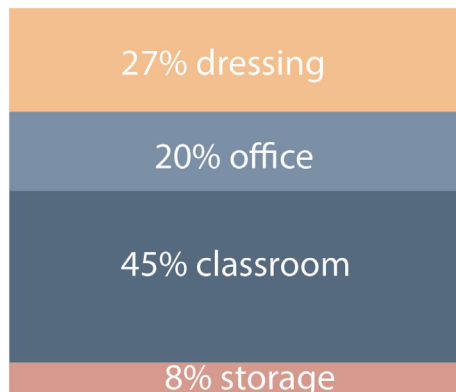
orientation



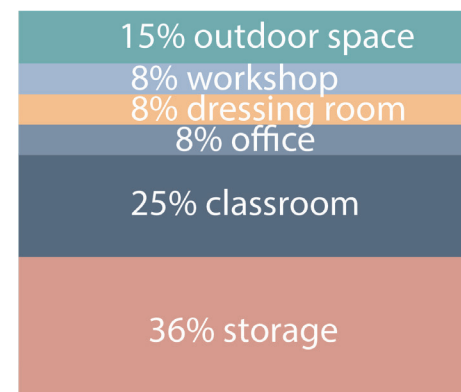
ratio



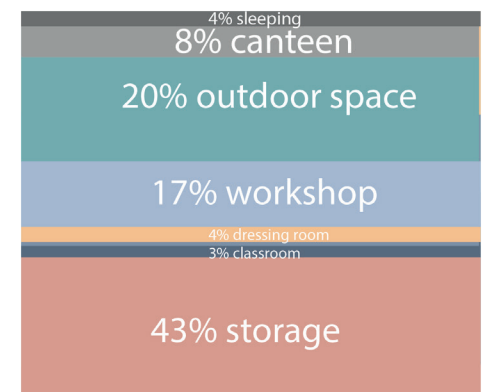
2.000 m²



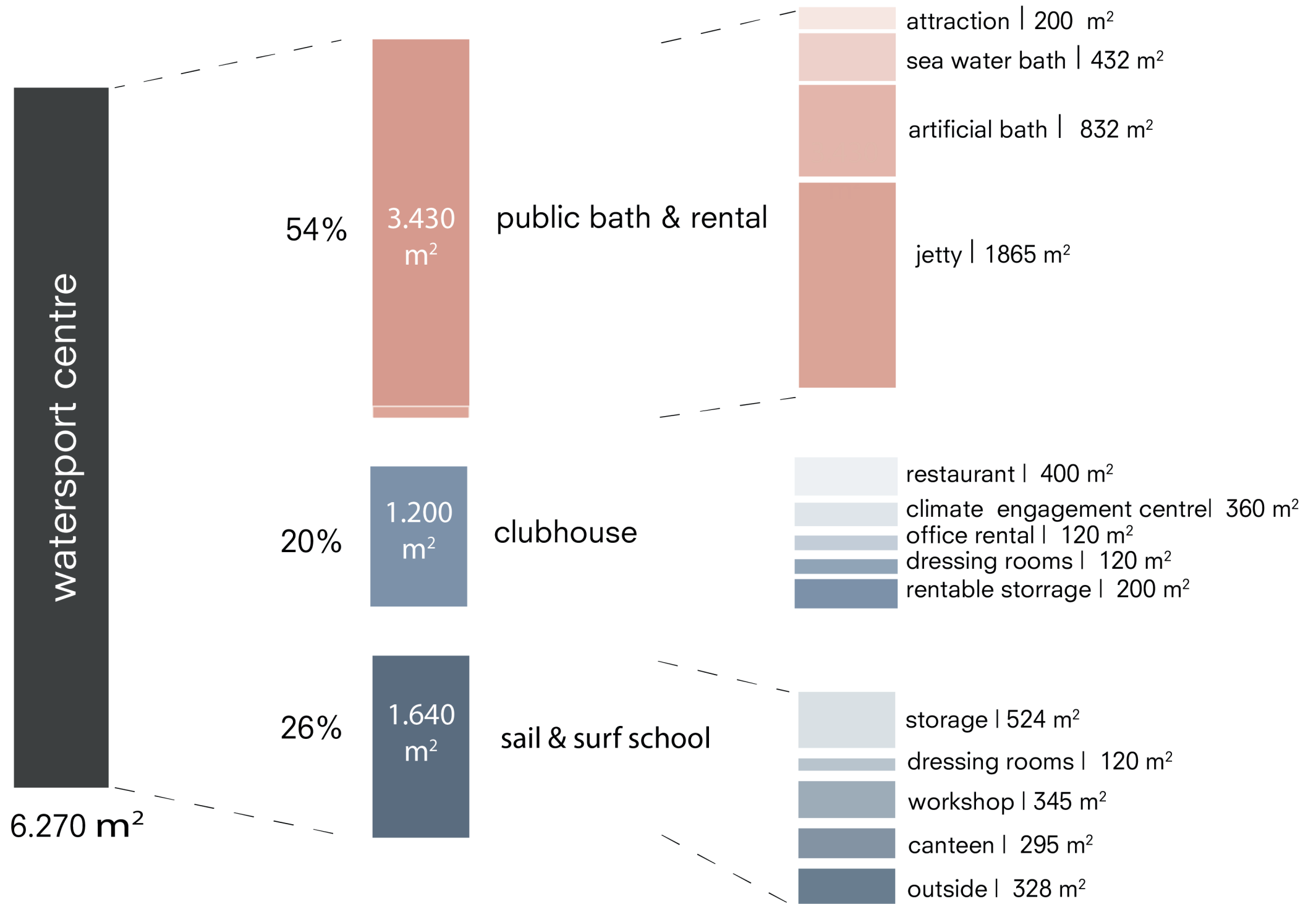
145 m²



560 m²



~ 2.265 m²



MASS

The program exists out of three main elements, the sailing school, the clubhouse and the public bath and rental. Those elements have different height requirements.

For example, boat storage.

Because the Water sports centre is a learning facility, the boat storage needs to be high enough to fit a fully rigged boat. During heavy wind, a fully rigged boat inside creates a learning experience when the conditions don't allow one to go out on the water. When learning sailing, awareness of the boat and its surroundings is not fully developed. By making the doors high enough to fit in the boat fully rigged, chances of potential damage are lowered, and **the building will be "beginner-proof"**. The storage doors should therefore be 7000mm high (figure 4.5). For a fully rigged laser to pass through. However, this will result in a significant height difference and would intervene with creating a transition between water and land. Because of that, doors will be high enough for a rigged optimist to enter but not a laser. The laser is for the more advanced or older sailors—the optimist for young beginners.

Because of Beirut's climate, boats will be stored inside. In Beirut, it is often sunny, and the sun has a damaging effect, Especially on recycled plastic. Storing boats inside makes **public surroundings** possible. The beach must be

locked and private around the building if boats are stored outside. When the dinghies are kept inside, the surrounding space can be publicly accessible, welcoming people to walk around the building.

The sailing school has to be profitable. To cover the cost, the more sailors per instructor, the better. Therefore, the **right amount of boats** is needed. Examples show that it is common to pair an instructor with 12 sailors. Existing sailing schools offer lessons for beginners, intermediate and advanced. Facilitating training for the three levels at the same time would be ideal. Therefore **The boat storage will store 3x12 36 Optimists.**

Because the watersport centre will collaborate with local schools to introduce the sport, the optimist will be the main boat to learn sailing. **Next to that, there will be 12 Lasers for youth to adults; this amount can expend with time,** and storage racks are universal.

As seen in case studies, the optimists will be stacked (figure 4.6). Stacking will reduce square meters. In Beirut, where sailing will be a new sport, this storing method allows for growth over the years. Three massing strategies are tested:

1. on land
2. coastline
3. on water

EXPRESSION

In Beirut, different cultures relate differently to architectural references in the city. References give a territorial impression and a message of what kind of user it is for.

Because of the sensitivity of these references, the project's expression will not reflect the past. It will be **inspired by the surroundings: beach, land and Mediterranean sea,** to become a building that is inviting to all, clear of political or religious references, **and a natural base for interaction.**

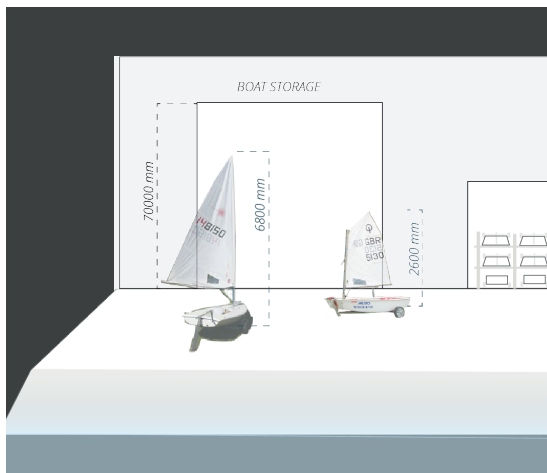
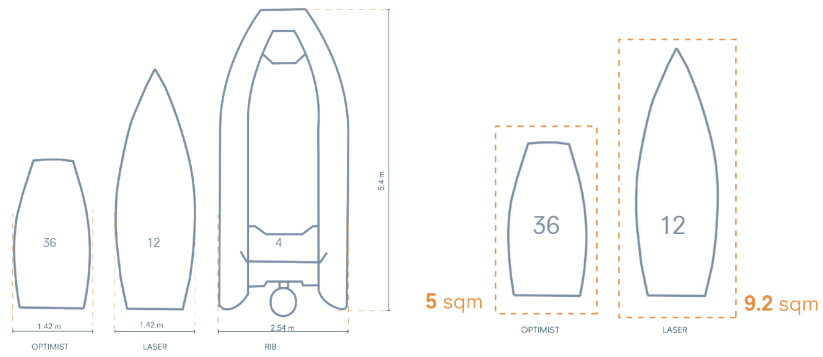


Figure 4.5: Height boat storage

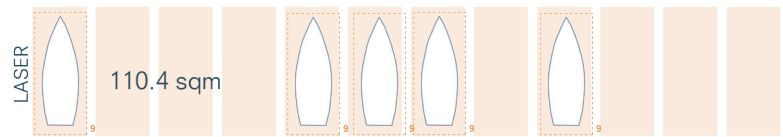
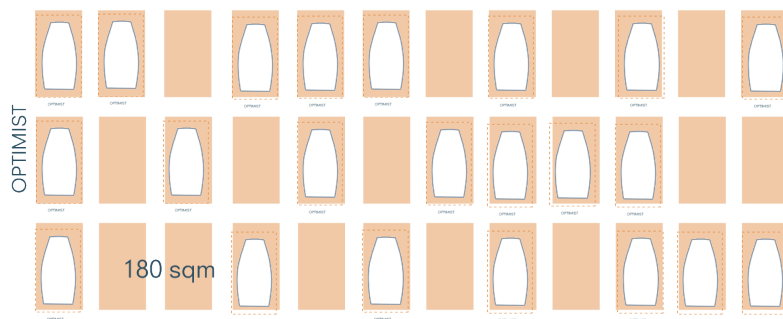
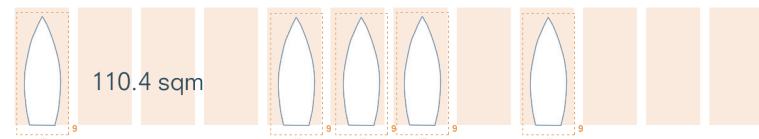
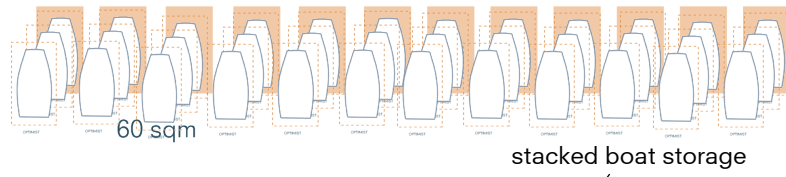


Figure 4.6: Stacked boat storage

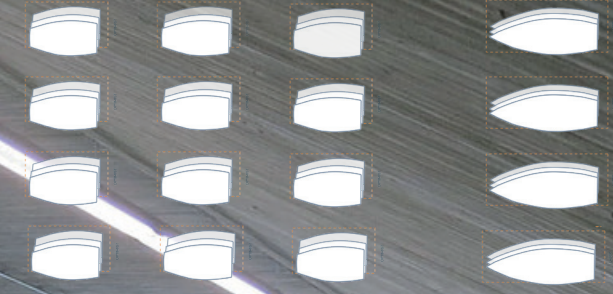


Dimensions

Square meters



Total 290 sqm



OPTIMIST FÖR HAVET

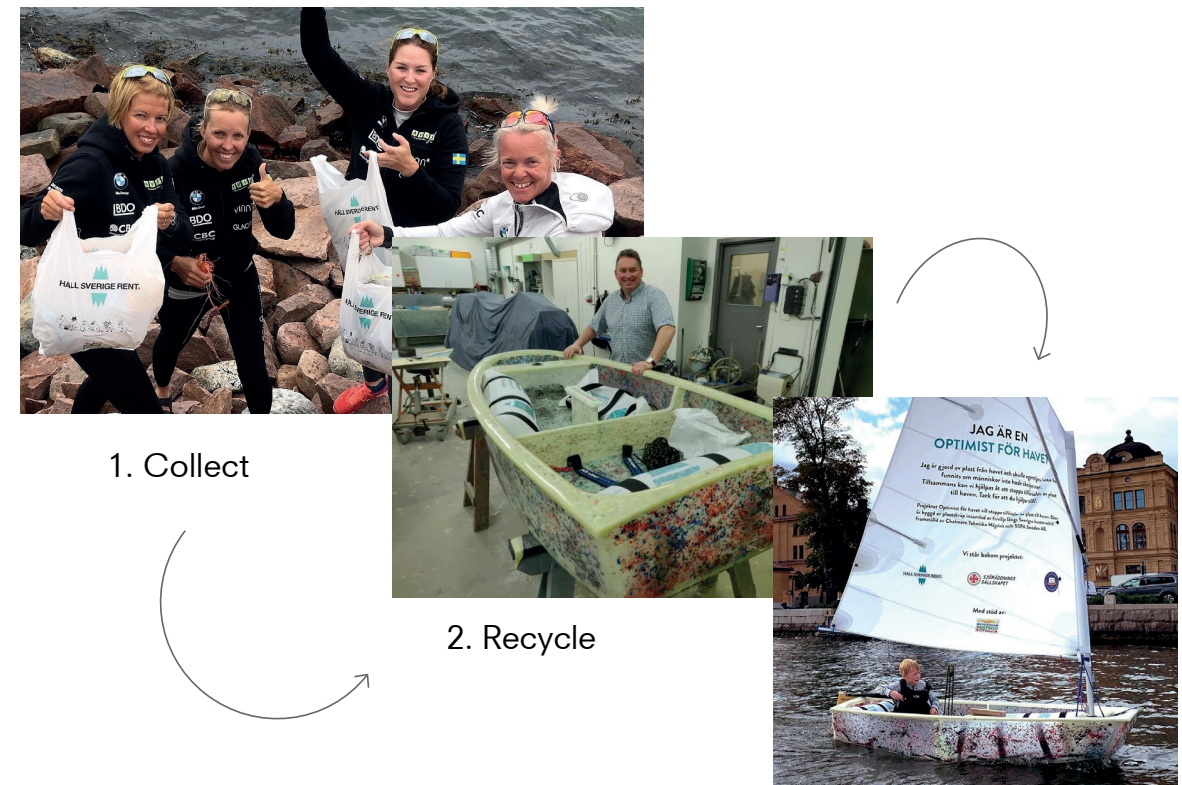
Plastic waste as a marine pollutant is a global problem. In Sweden, an awareness campaign called “Optimist för havet” aims to reduce plastic entering the seas by spreading knowledge about the problem and engaging children and adults in solutions.

Plastic collected by volunteers will be recycled into boats (optimist dinghies). Experts from SSPA craft the sailboats with support from the Chalmers University of Technology with knowledge of handling different plastic materials.

This project suits the context of Beirut. In the building, a workshop with grinding machines will be positioned, and an exposition where the recycling process and ongoing problems will be shown to **create more awareness**. Offices for the researchers will facilitate the further development of this Swedish project and make the building a location for material studies.



Figure 4.7: Optimist out of recycled plastic

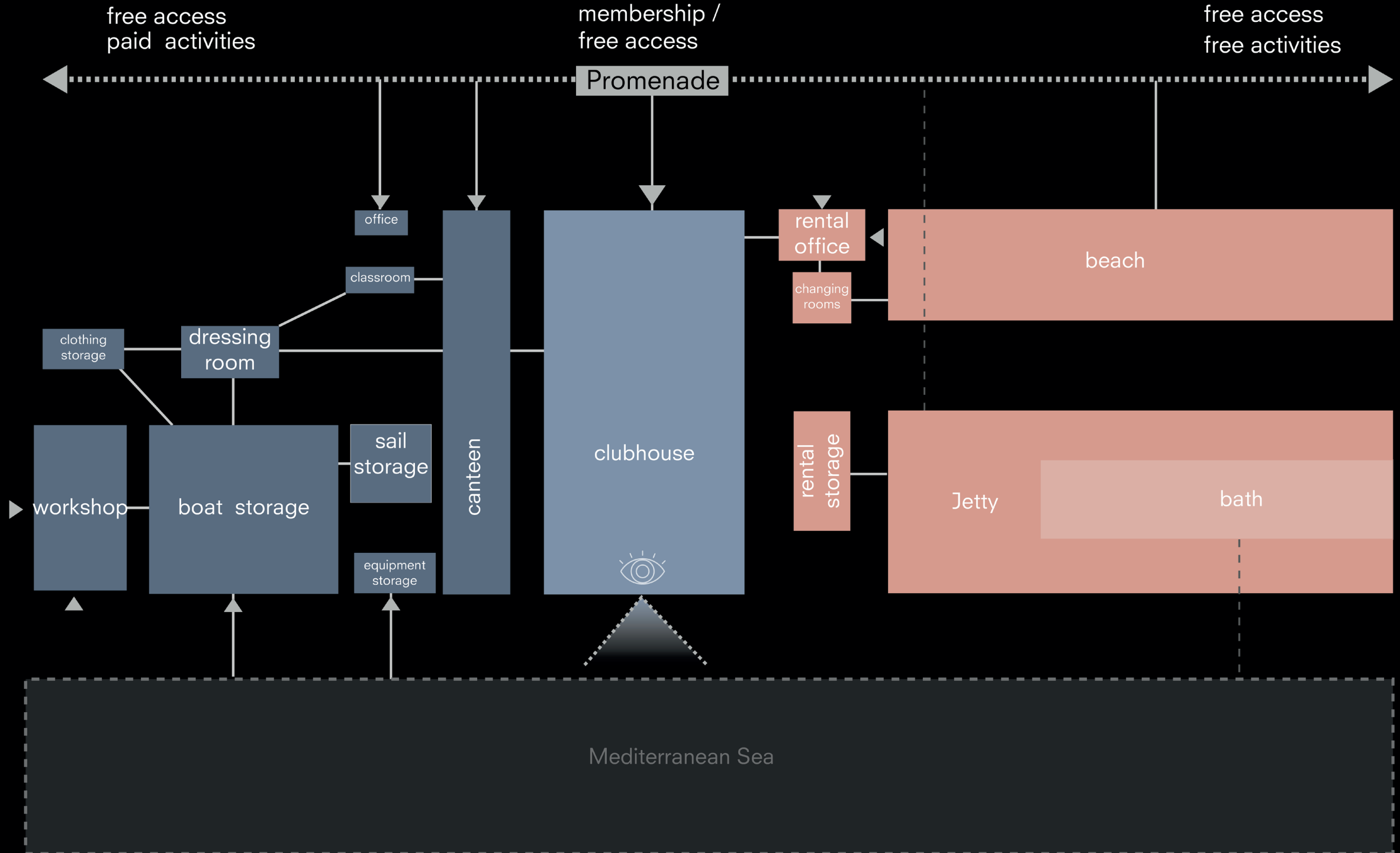


1. Collect

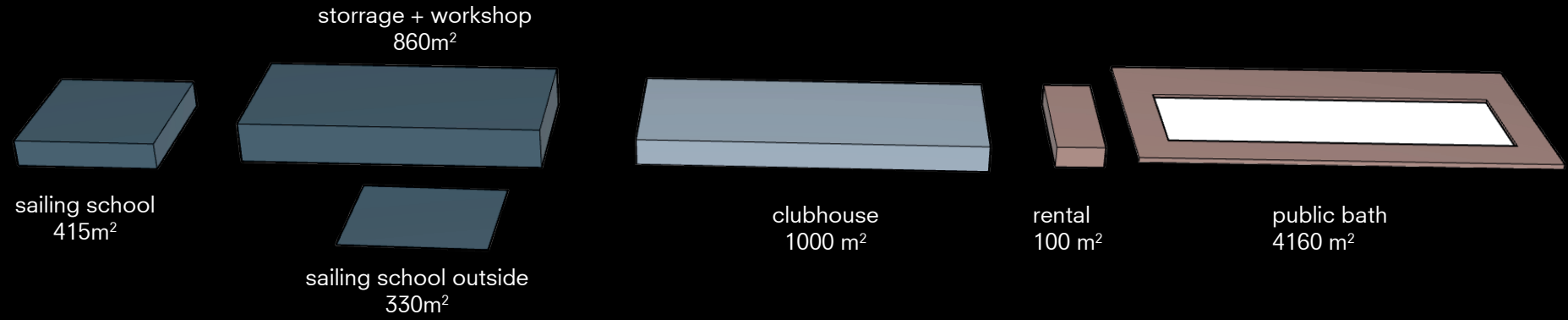
2. Recycle

3. Sail

RELATION DIAGRAM



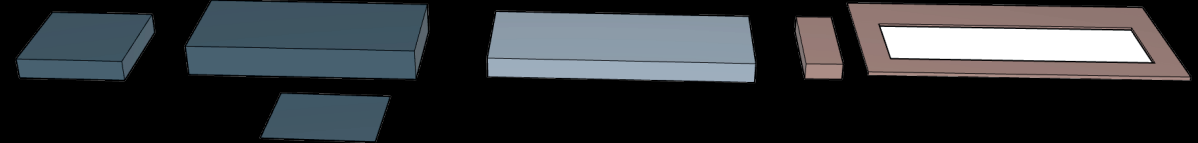
1. mass elements



2. Ground floor

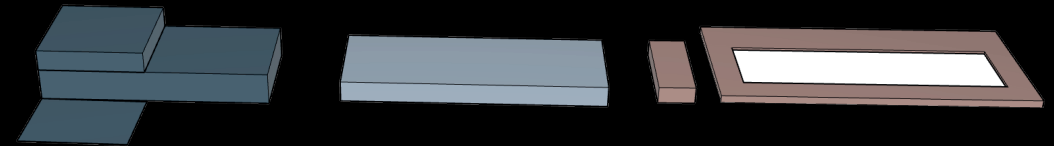
The boat storage and workshop should be on the ground floor. The clubhouse can be stacked. However, it should connect to the promenade and water and be a transitional zone between public

and private. The storage has a height requirement of 7 meters. The workshop requires a height of 5.5m. It will be taken with 7 meters ceiling height too.



3. Sailing school

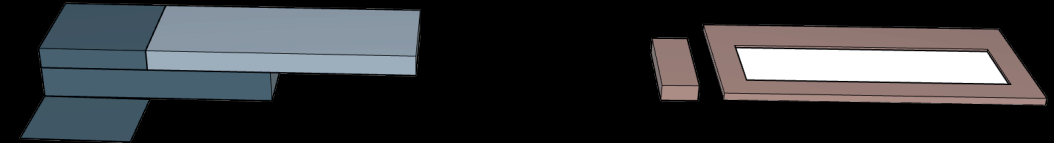
The boat storage is situated on the ground floor and connected to the water and rigger area; all other functions can be positioned on top.



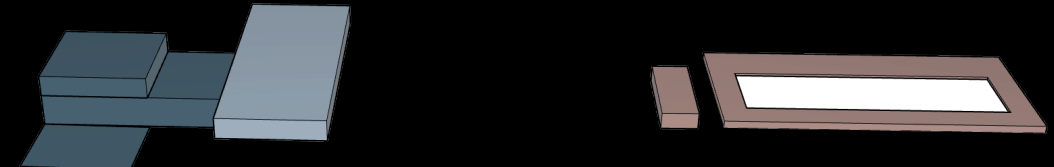
4. Clubhouse

The clubhouse has to have contact with the promenade and the sea. Furthermore, it will function as a transition zone between public and private by bringing the different users together. However,

the clubhouse can be stacked above the sailing school and create an opening. This orientation does not connect to the promenade most.



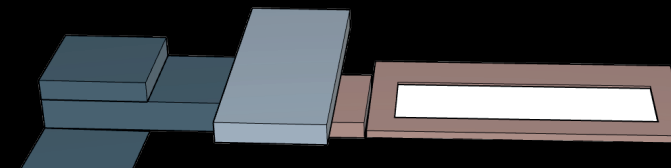
By turning the orientation, the clubhouse can bring users together and connect the promenade and sea.



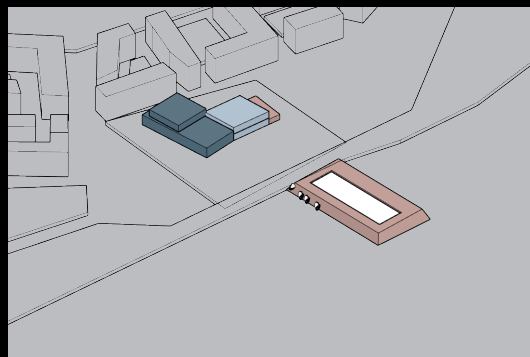
5. Rental and public bath

The rental will be connected to the promenade and the public bath. Keeping it connected to the boulevard will make the low-cost activity feel most approachable for users. The public bath

creates an opportunity for a slipway into the water. By combining the rental and the bath, users can play and swim or take an extended kayak trip.

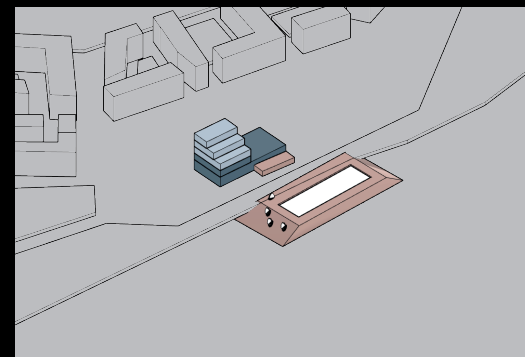


1. All on land



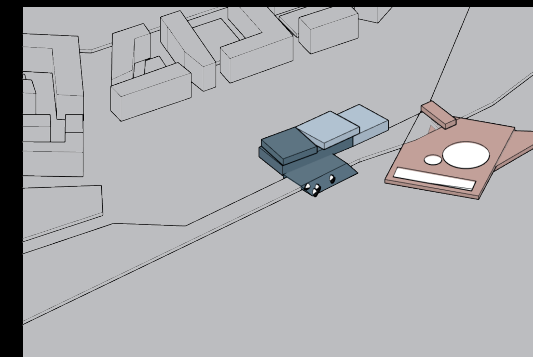
1a. Follows the shape of housing

Creates an opening for promenade, public bath and sailing school merch. Clubhouse far from shore. Will this result in the wanted connection through the clubhouse?



1b. The tower

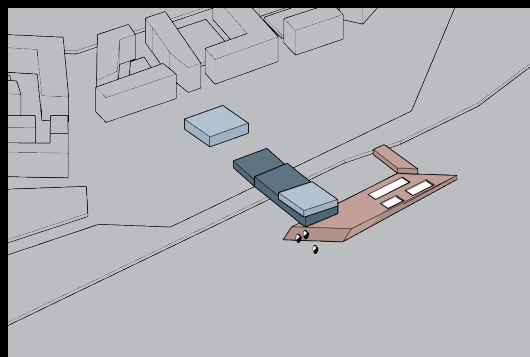
Only the functions that have to be on the ground floor: boat storage, workshop and rental, are located on the ground floor. All other parts are stacked on top. The tower creates an overview of the sea from the clubhouse.



1c. Close to the sea

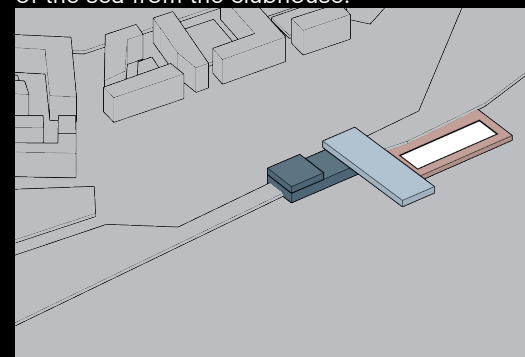
The centre is located on the shore. The promenade crosses behind. Sailing school gets more private. Surroundings benefit less from the centre because they can't see what is happening.

2. Partly on land partly on water



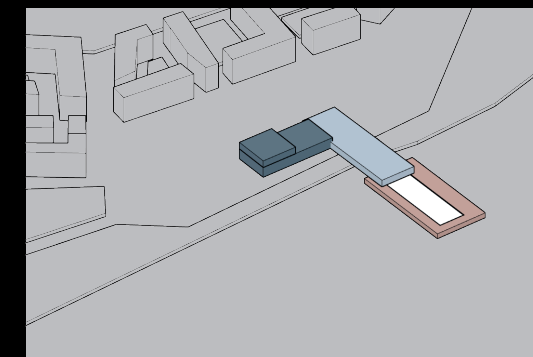
2a. Split up

Clubhouse split up in two; the promenade crosses through the buildings. Sailing school and a part of the clubhouse on water, ending in the public bath. Public bath used as a slipway.



2b. Land and water

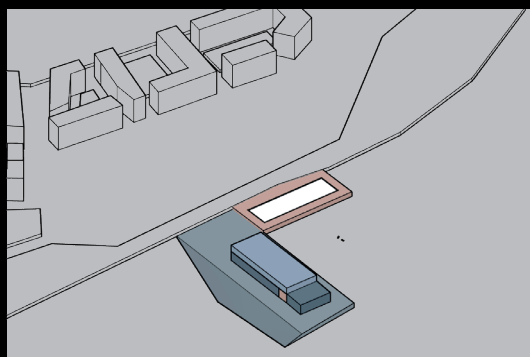
Connecting sea and promenade through the clubhouse. Sailing school on land -> more enclosed. Surroundings don't benefit.



2c. Infinity pool

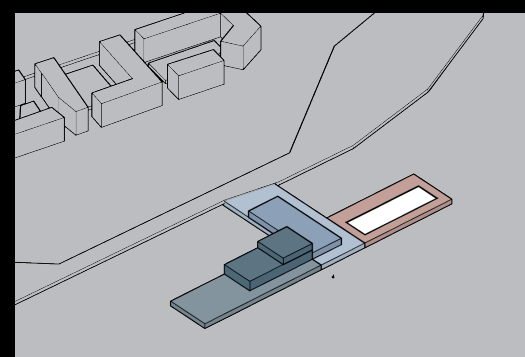
The clubhouse flows into the public bath. The bath is only accessible through the clubhouse. Will the bath get more exclusive, or will the clubhouse be more approachable when it functions as the gate to a public activity?

3. All on water



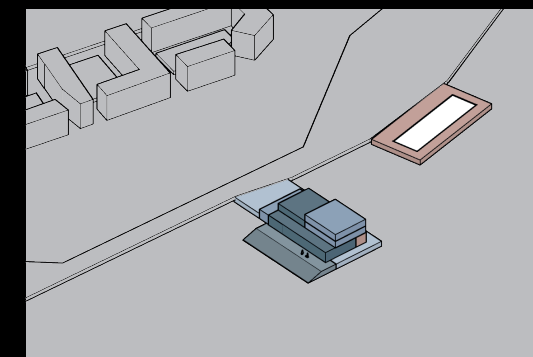
3a. Plateau

A plateau in the water allows for walking around the building. This mass creates space for public accessibility.



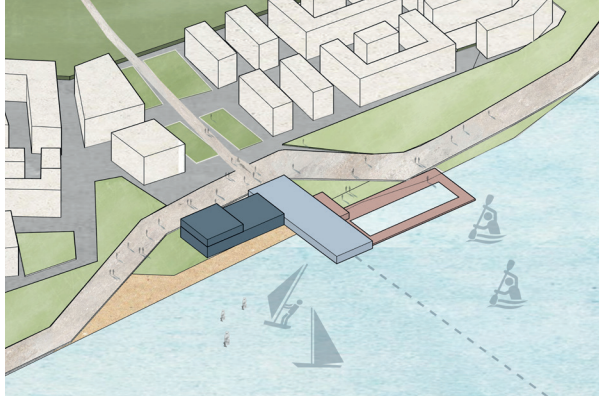
3b. Wings

Wings on the water separate functions and allow curious visitors to look.

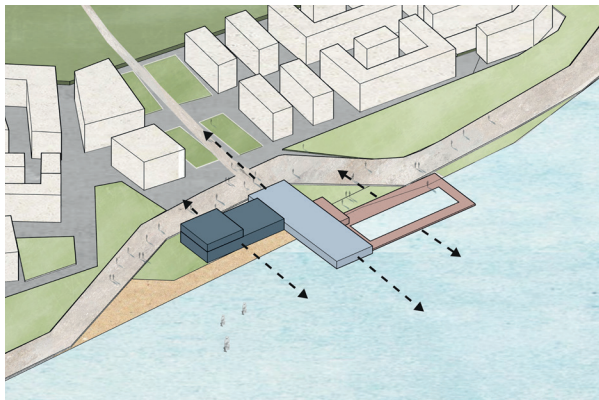


3c. Mixed

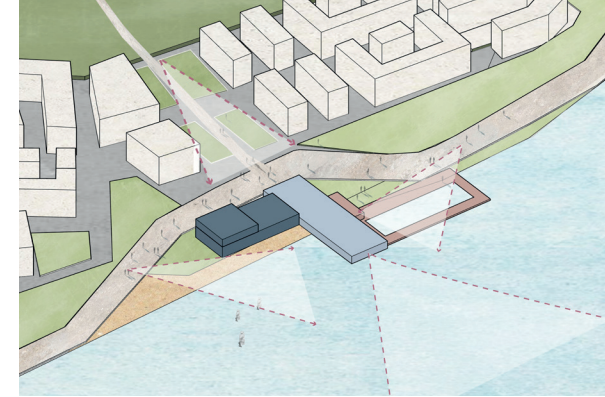
Less room around the building and the bath is separated. This proposal is less successful for interaction.



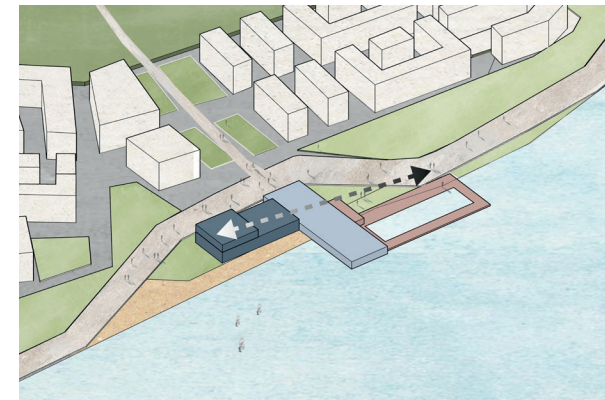
Division water use



Transition water and land



Visual connection



Horizontally orientated program

PROJECT INTRODUCTION

5.1 Design brief

5.2 Ambitions

5.3 Site

5.4 Concept

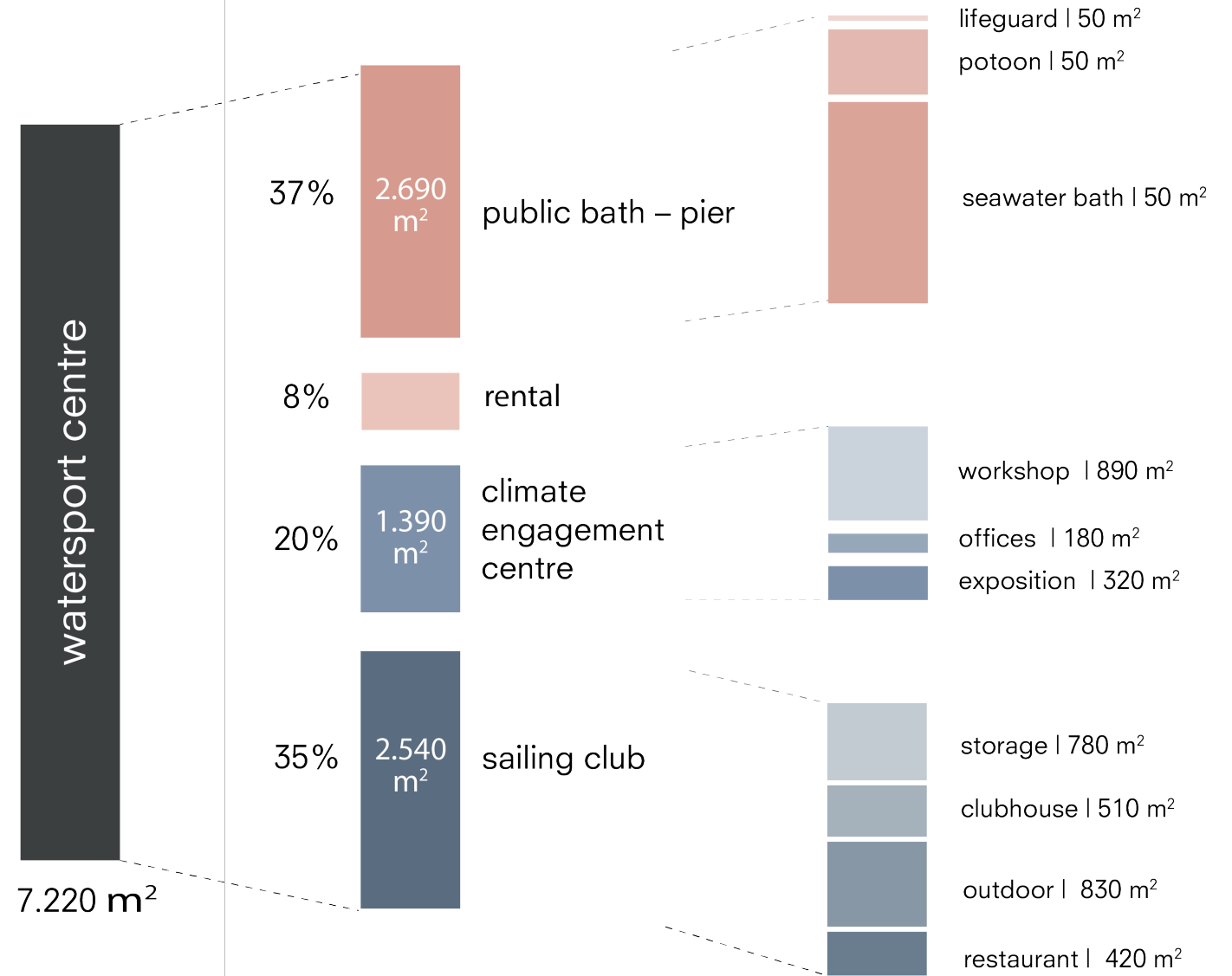


05

The watersports centre exists out of a sailing club, climate engagement centre, a rental and a pier. The **pier will separate water activities** and be the place where activities get in contact with each other. (sailing, swimming and kayaking.)

In the climate engagement centre, **boats are built out of recycled plastic**. Locals will be included in this process to enhance awareness of water pollution. To reach a wider group, the process of recycling plastic into sailboats and **information about ocean plastics will be exposed in the exposition.**

The boats built in the workshop will be stored in the boat storage. Next to that, the sailing club exist out of a restaurant. The restaurant will connect to the clubhouse, which will be breeding into the restaurant with a **nautical atmosphere**. The restaurant will be an open space that **transitions from the park to the waterfront—inviting onto the water.**





1. Facilitate **interaction**



2. Give back the **coast** to the **public**



3. Improve link between **water & city**

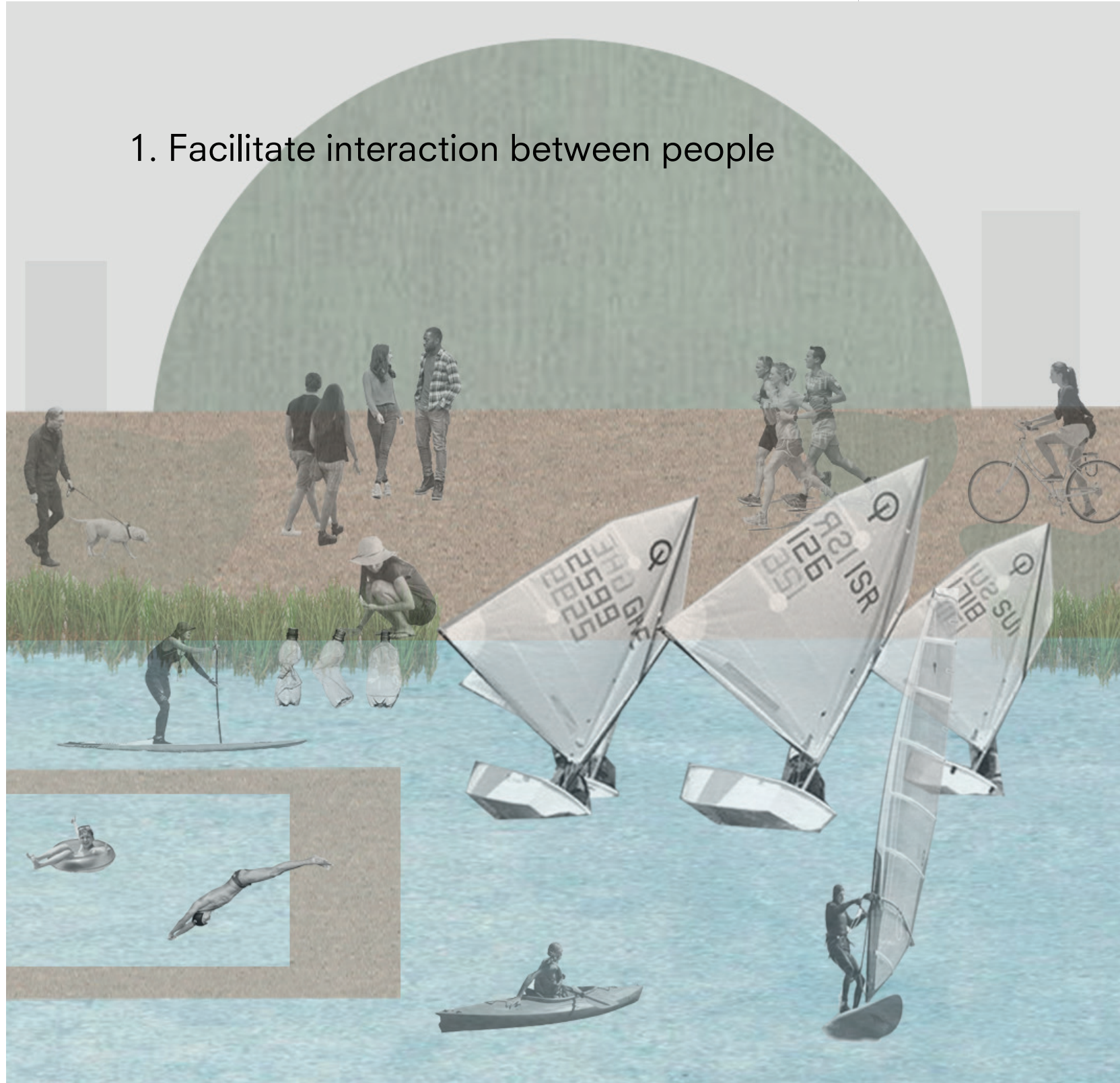


4. Climate awareness

AMBITIONS

In this paragraph, the project ambitions are explained with supporting animations.

1. Facilitate interaction between people



FACILITATE INTERACTION BETWEEN PEOPLE

The project aims to **facilitate interaction** through the development of (a wide range of) water sports activities. The design speaks a language that invites in and ensures the user is welcome.

Architecture is about space, enclosed and open. That is why the space around the building is essential in facilitating interaction. The building will be part of the promenade, **low and open.**



2. Give back the coast to the public



GIVE BACK THE COAST TO THE PUBLIC

The existing waterfront is either **privatised and expensive or public and polluted**. This makes the waterfront inaccessible for most Lebanese.



2. Give back the coast to the public



GIVE BACK THE COAST TO THE PUBLIC

The project aims to change this, to **give the waterfront back to the people of Beirut** so it can be **a place for interaction and leisure activities** as it was when reserved for the public by law.



3. Improve the link between water and city

Remove barrier



IMPROVE THE LINK BETWEEN WATER AND CITY

Because the coast is not accessible for most, the people of Beirut **do not identify with the waterfront**. The link between water and city is weak.

To improve this connection, the project aims to remove the barrier of buildings that block the view. The link between water and city will improve by **creating a visual connection**.



4. Improve awareness water pollution

Climate awareness

Active interaction



IMPROVE THE LINK BETWEEN WATER AND CITY

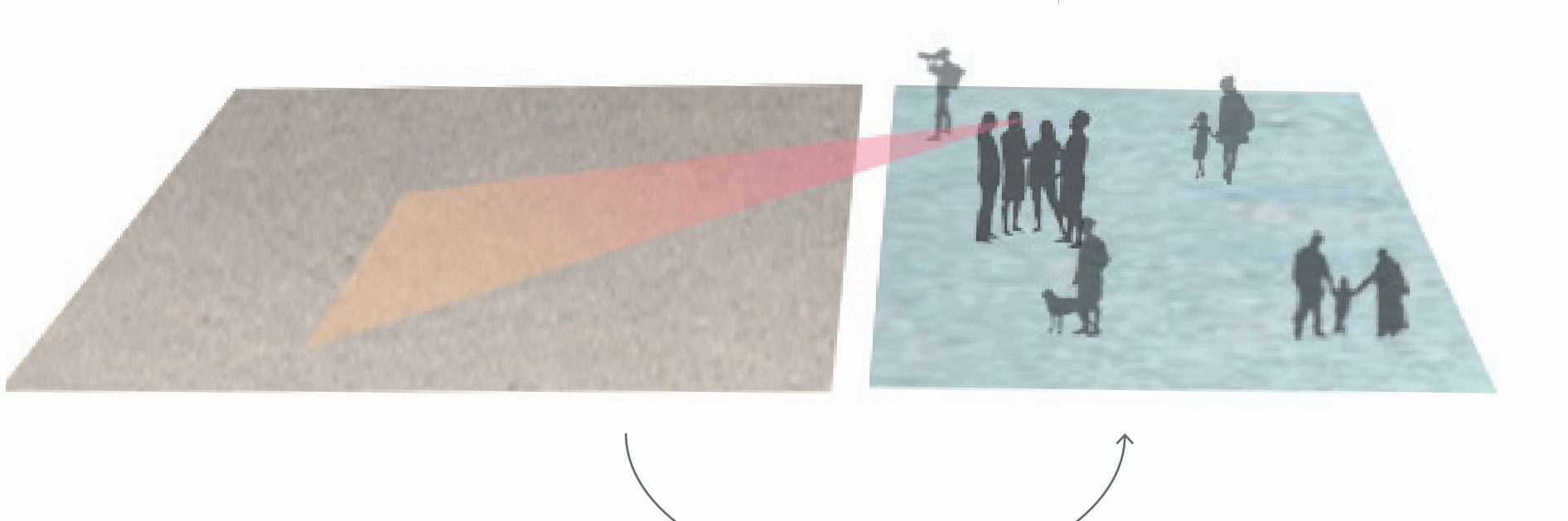
However, more than just looking at the water is required. The project aims to move the people of Beirut on the water so an **active interaction** can be realised.

IMPROVE AWARENESS WATER POLLUTION

This active interaction will result in **more awareness about water pollution**. Before, the coast was something distant to the people of Beirut. The goal is to **transform it into their coast** and their waters. Something close they identify with.

When you can relate to something or someone, you will likely take better care of it. When the people of Beirut see the **consequences of their actions** regarding water pollution, the **internal motivation to change behaviour** to reduce water pollution will increase.

To be aware of their impact, they must first be exposed to the potential and qualities the waterfront has to offer. Because now they are exposed to the consequences of pollution too. However, it is not their water or place to go to. They are not in a position of impact. They do not see what a behaviour change could mean for them in the current setting.



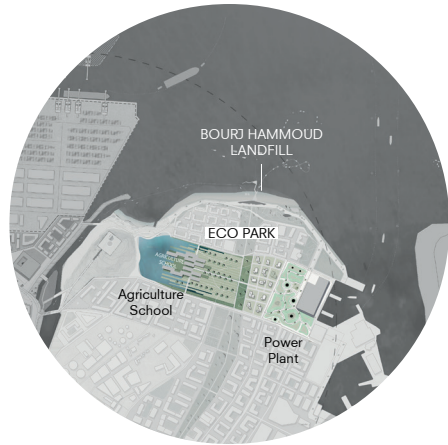
Move user on water



SITE

Picture: Cranes on the container terminal of Beirut's port. Picture of the site visit.

This paragraph explains **how the site informed the floorplan concept** and how the program influenced the project's **positioning on the site.**



ECO PARK
 The project will position itself at the **waterfront of the Bourj Hammoud landfill**. Before it becomes suitable for a project like a watersports centre, something must change because it was an old trash dump. That is why the **development of the landfill will be in stages**. First, the Eco park will be realised with an Agriculture School and Power Plant. Through Phytoremediation, the **land will be cleaned**.



GREEN SPINE
 An green access, **The Green Spine, will connect the neighbourhoods to the waterfront**, where the development of the Watersports Centre will **boost the coast**. The realisation of the Watersports Centre will transform it into **a place worth visiting**. It will facilitate the transition from land to water.

Neighbourhoods



PROMENADE DE L'ANCRE
 With the promenade, the waterfront of the Bourj Hammoud landfill will **connect to the broader city**. And **facilitate a route** where the projects at the estuary (Post-Digital Depot and Fashion Office) are part of.



WATERSPORTS CENTRE



DIVISION OF FUNCTIONS

In Beirut, the **mean wind direction is west**. The stacked containers block the wind resulting in **unstable winds** close to the port. Close to the port water is un deep. Learning to sail in unstaible winds **isn't ideal** because it is all about feeling what the wind does. If the wind is unstable and shifty, the skill is hard to master.

However, for sports such as kayak and sup, a wind shelter and un deep water are **prefered conditions**. The surroundings suggest a division of functions on water.

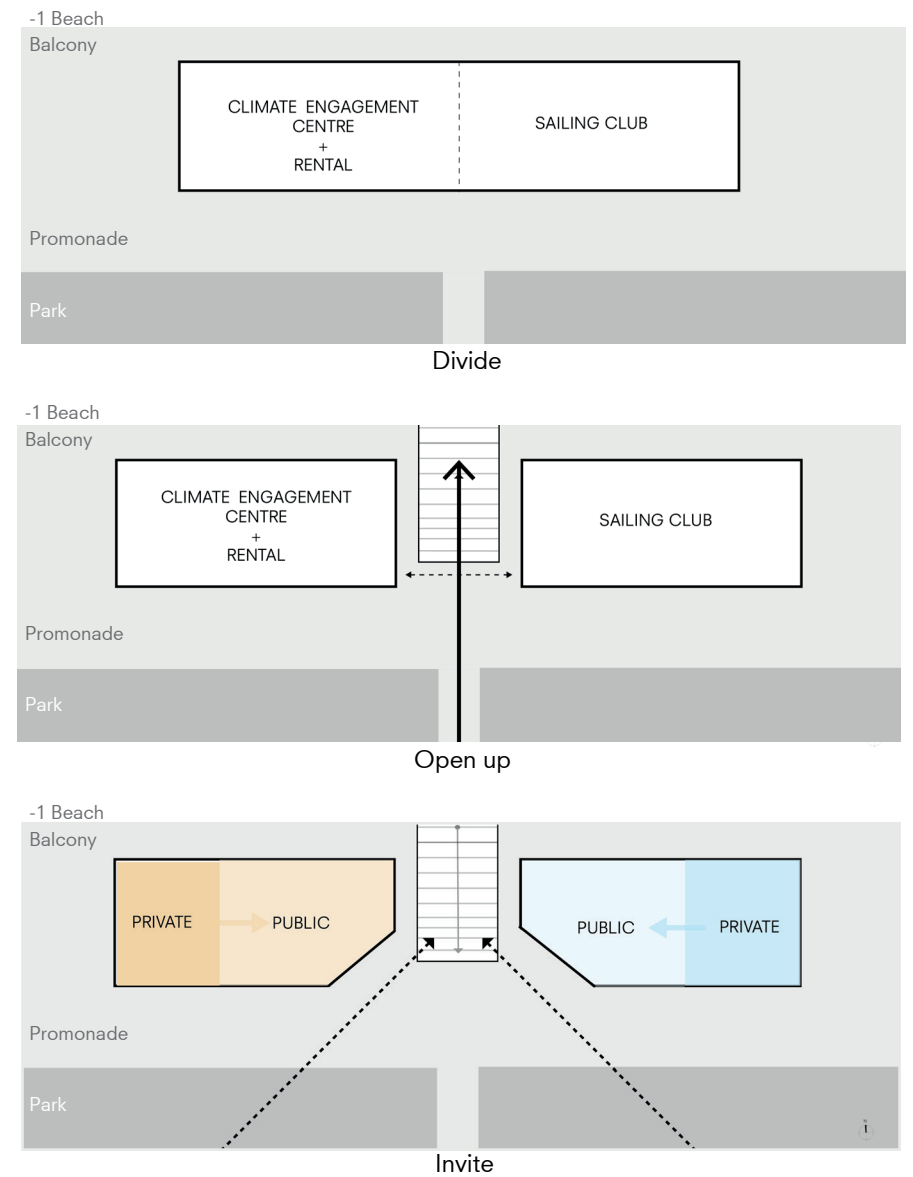
This division comes back in the floorplan concept. The floorplans are divided into two, on one side the sailing club and on the other the climate engagement centre and rental. Aligning with the characteristics of the surroundings.



CONNECT GREEN SPINE

To **connect to the green spine** that arrives from the neighbourhoods to the waterfront. The two parts **open up with a staircase in the middle**. Functions are positioned from **most private to public along the staircase**. The shape of the floorplans is **positioned in a V** to enhance the **inviting character of the building**.

The inviting gesture is shown in the visuals on the following pages.



Next page:
Visuals inviting gesture

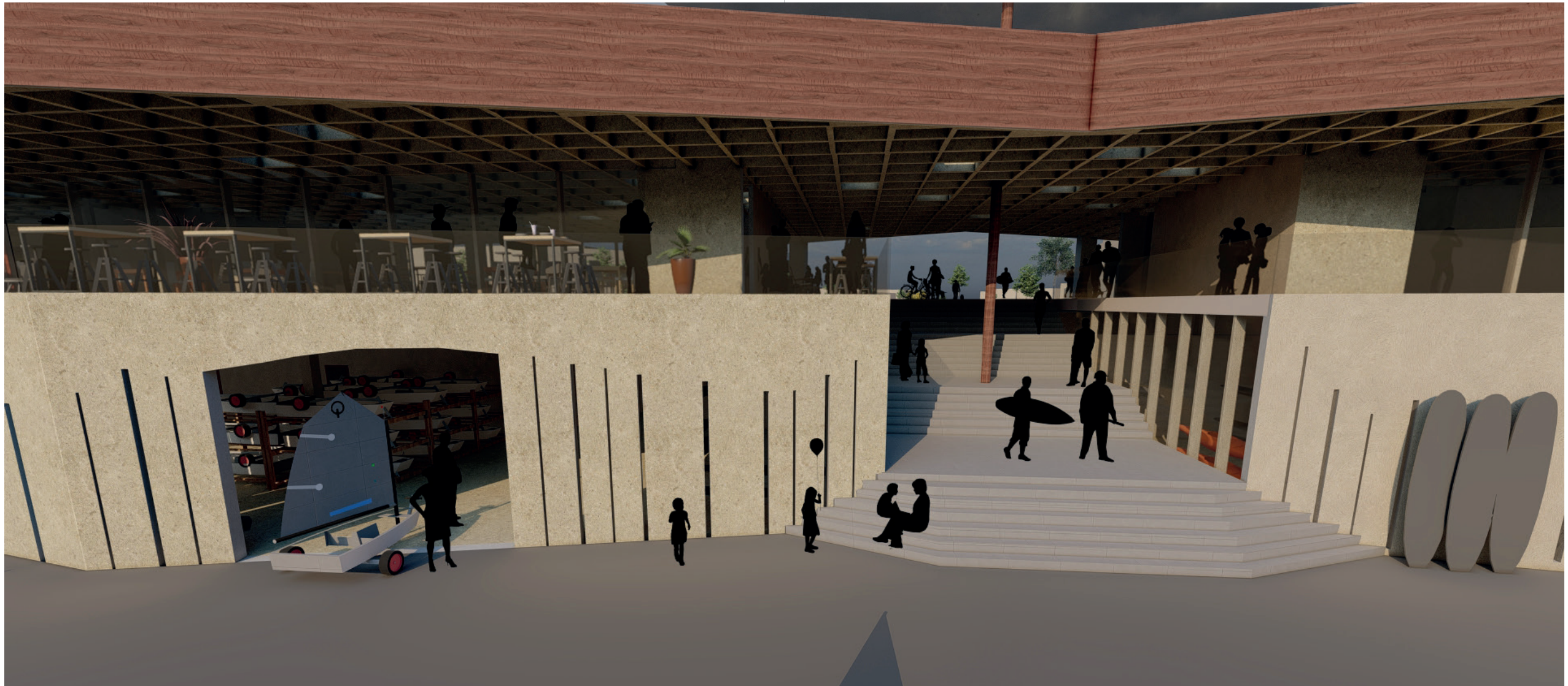








At the top of the stairs, a view of the ocean is framed. It is possible to look inside the boat storage and rental through the glass. The balconies look over the staircase. It is a place to see and be seen. The poll in the middle suggests two paths enhanced by the contrasting stroke.



The composition of the staircase roof and building in their surroundings become an inviting gate to the waterfront. Inviting the people of Beirut to be on the water. A place that exposes them to each other, their surroundings and new experiences.



TRAFFIC ON WATER

The location as it is now would **not be suitable** for the program proposed because of ongoing traffic on the water in front of the landfill. **Large boats are a potential danger when learning to sail** in small boats. Not solving this would result in failing to **give back the coast** to the people of Beirut.



WATERWAY

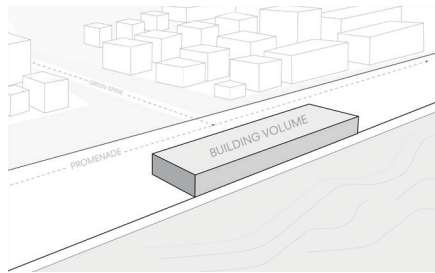
With a waterway, **traffic will be arranged** and controlled. The project positions itself at a distance from the waterway, so a **safe and comfortable practice area** free from un deep waters and unstable winds can be realised.



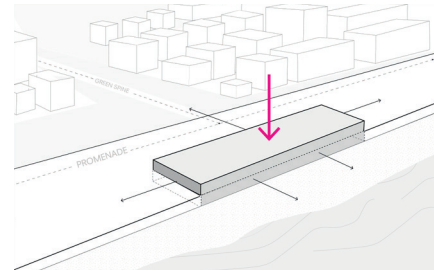
WATERSPORT INTO THE CITY

Activities do not stay on the landfill's edge to **enhance the connection between water and the city**; watersport activities go into the city too. The project positions itself within a **reasonable distance from the estuary**. A trip to the estuary by kayak takes 10 minutes.

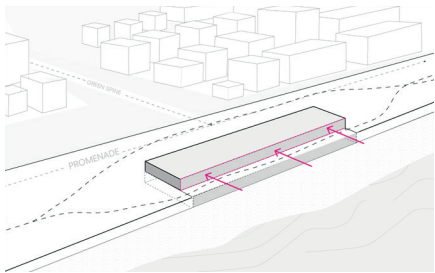




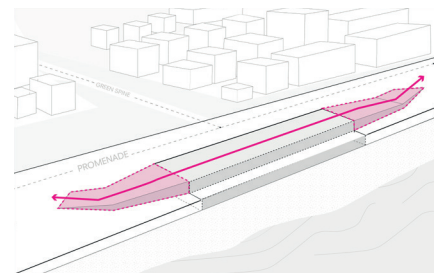
BUILDING VOLUME
the building volume is parallel with the promenade on the waterfront's edge.



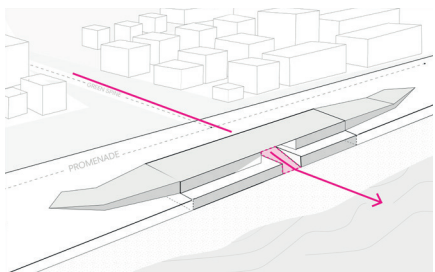
PUSHED DOWN
The volume is divided into urban-oriented and water-oriented. Urban-orientated functions face the promenade and water-oriented functions the beach.



PUSH BACK
The upper level is pushed back. This results in a balcony. And allows for walking around the building..



PUBLIC ROOF
By adding stairs, visitors can walk over the building. The building becomes part of the promenade.

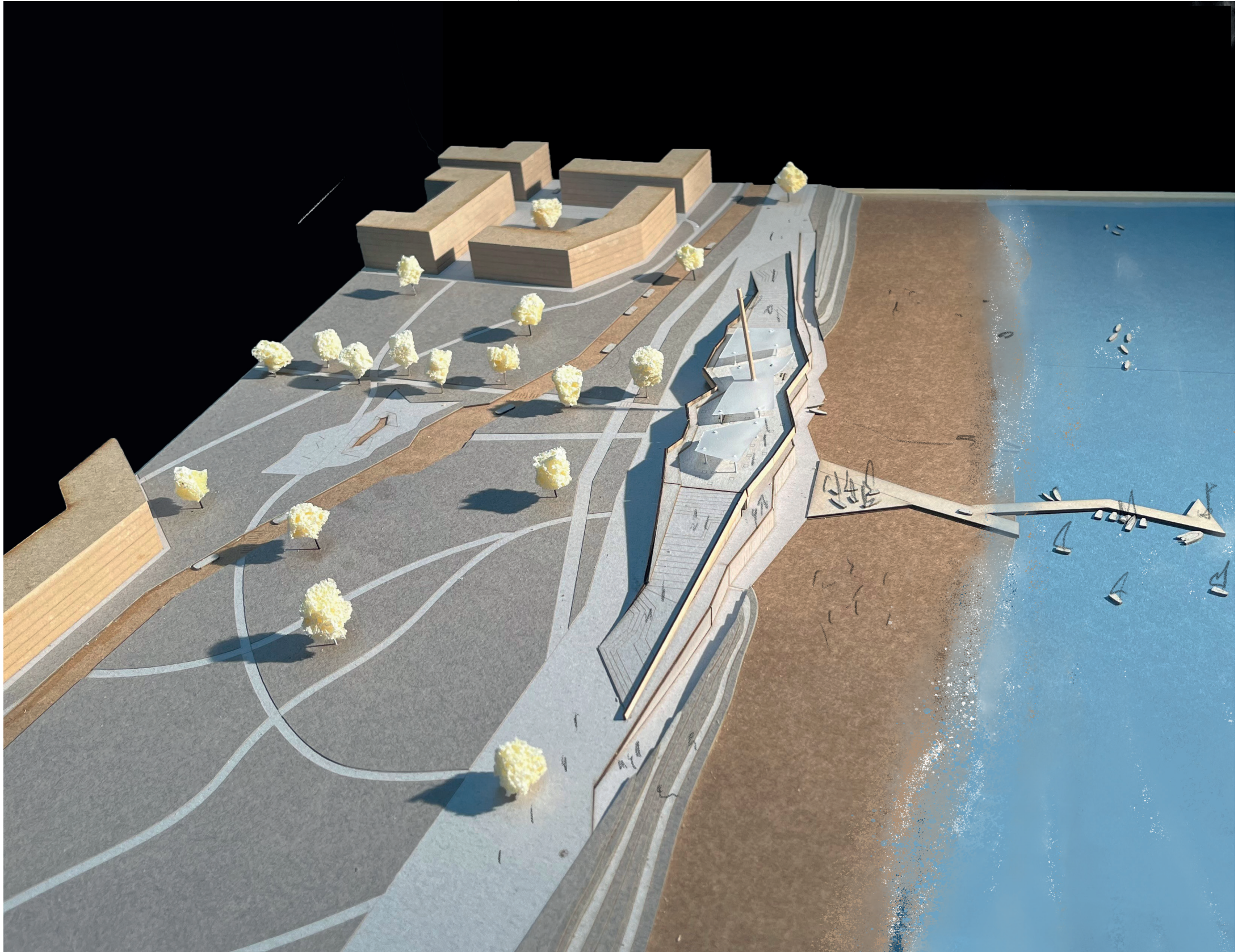


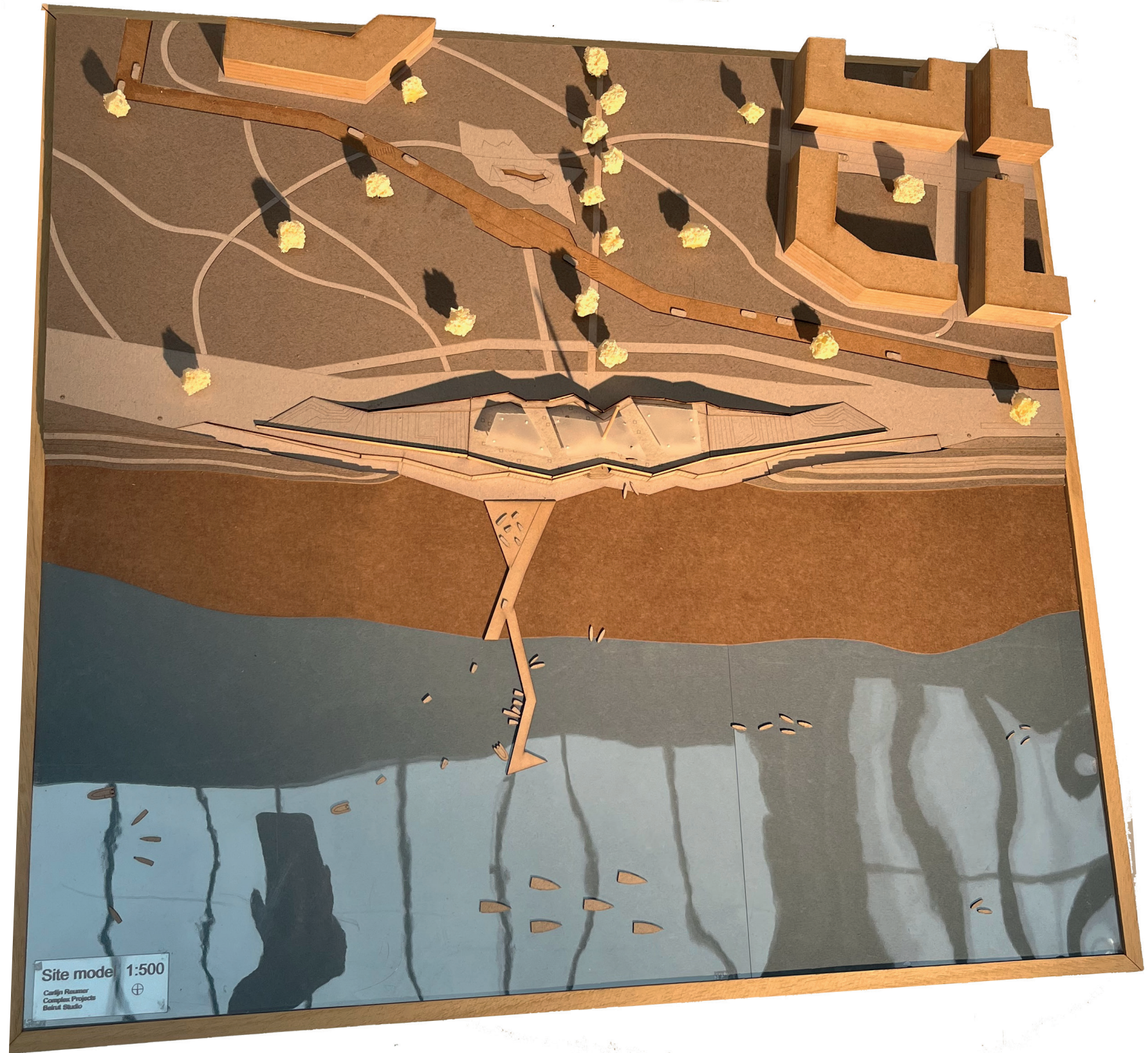
OPEN UP
The building opens up to connect to the green spine. Inviting the neighbourhoods onto the water.

MODEL

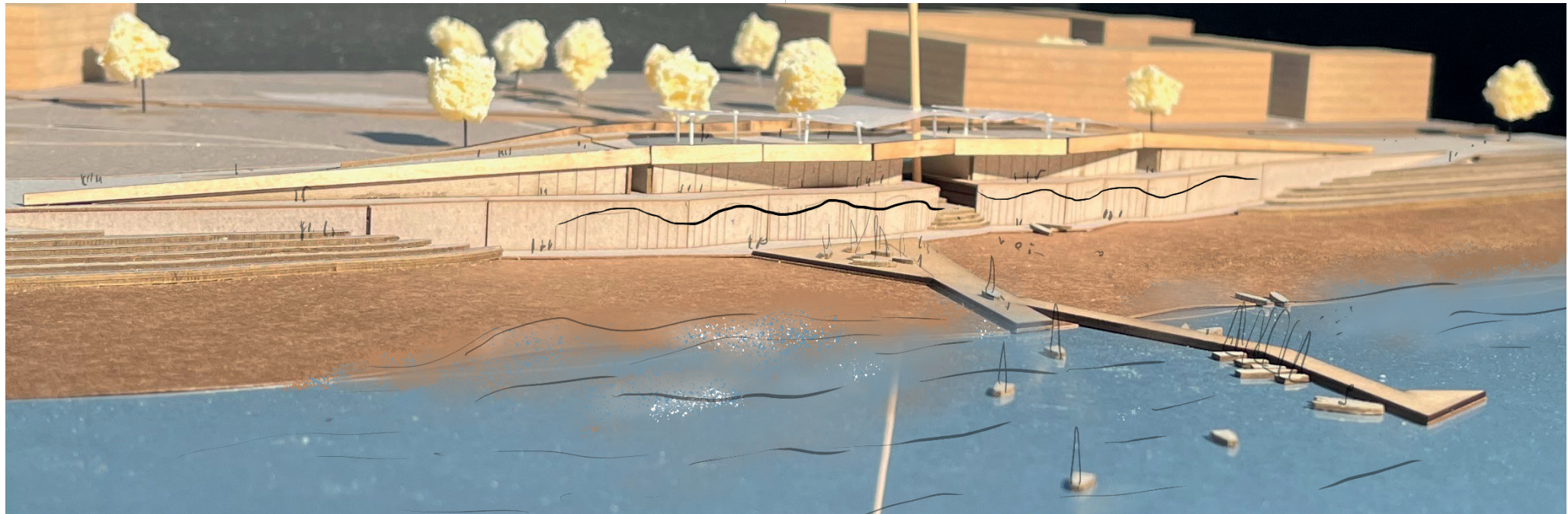
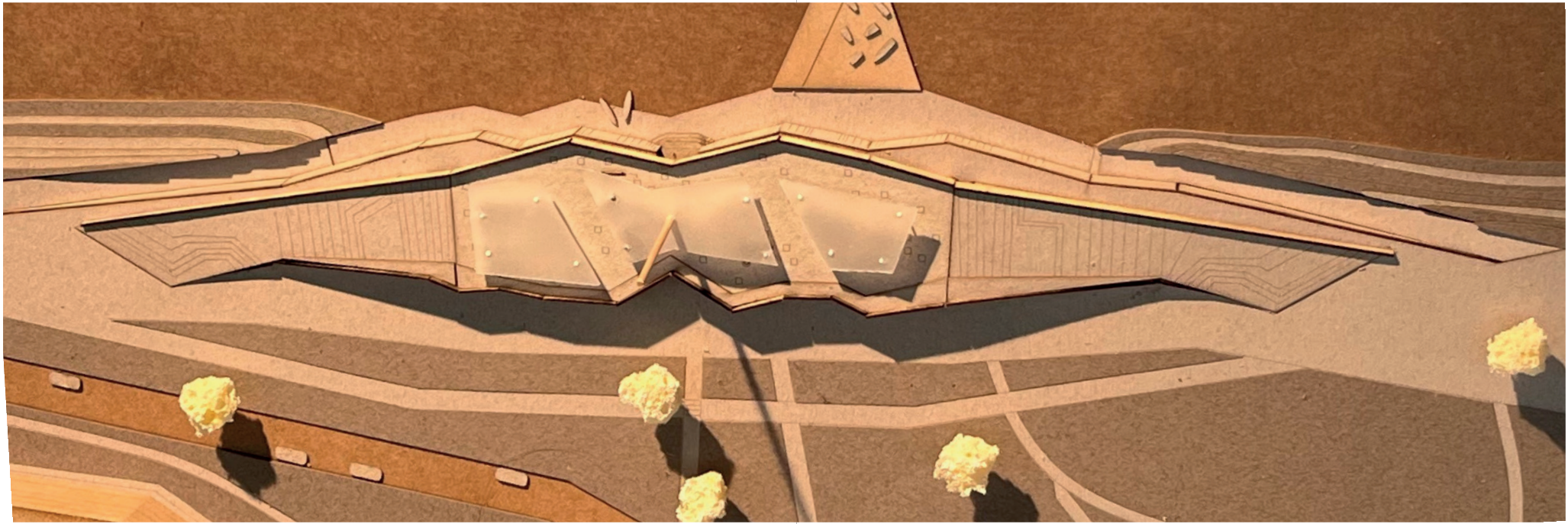
Site model 1:500

06





Site model 1:500
Cedric Belfrage
Complex Projects
Beirut Studio



DRAWINGSET

- 7.1 Site plan | 1:10000
- 7.2 Site plan | 1:500
- 7.3 Urban implementation profiles | 1:200
- 7.4 Floor plans | 1:200
- 7.5 Sections | 1:100
- 7.6 Envelope fragment | 1:20
- 7.7 Load bearing structure
- 7.8 Climate principals

07



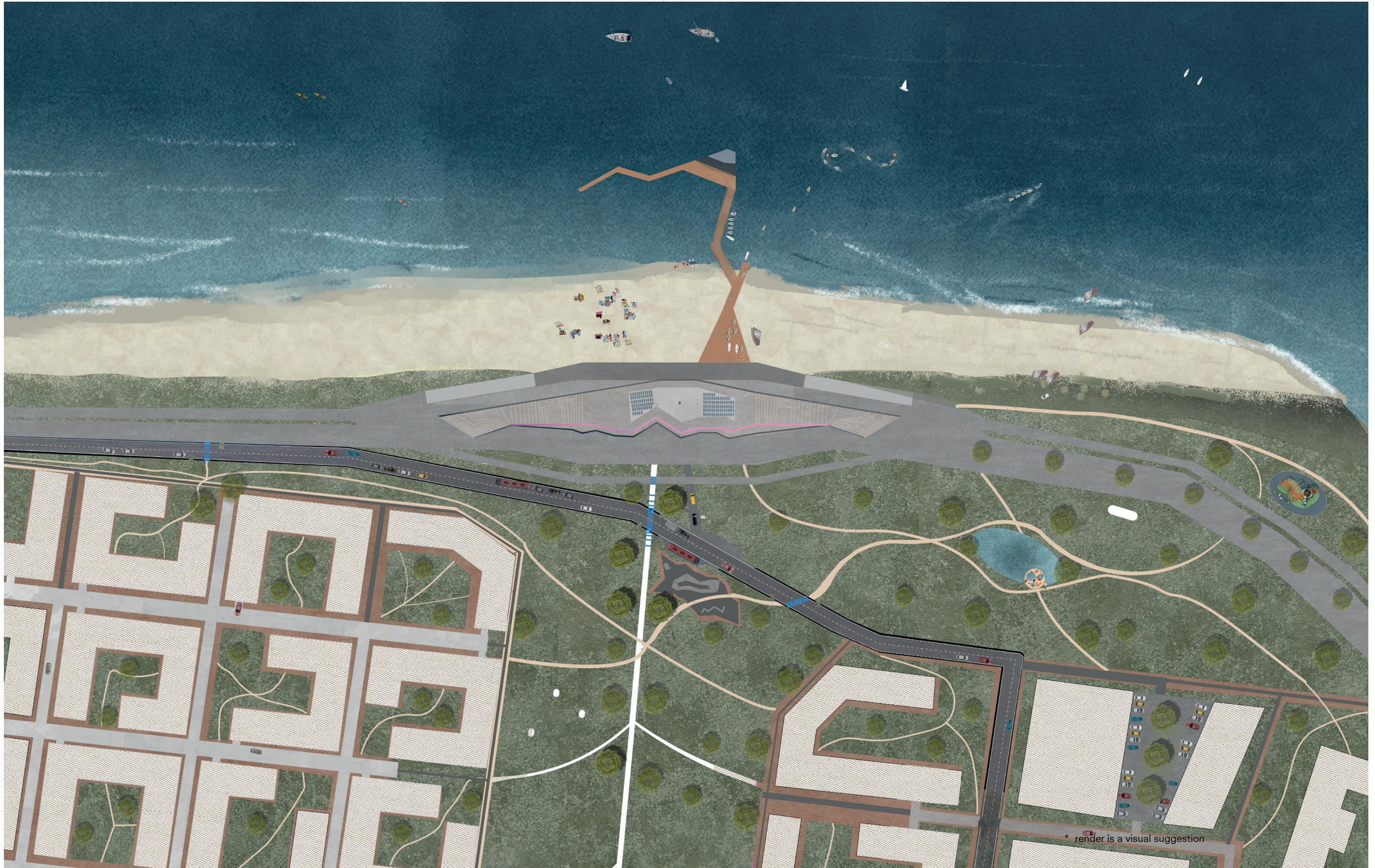
WATERSPORTS CENTRE

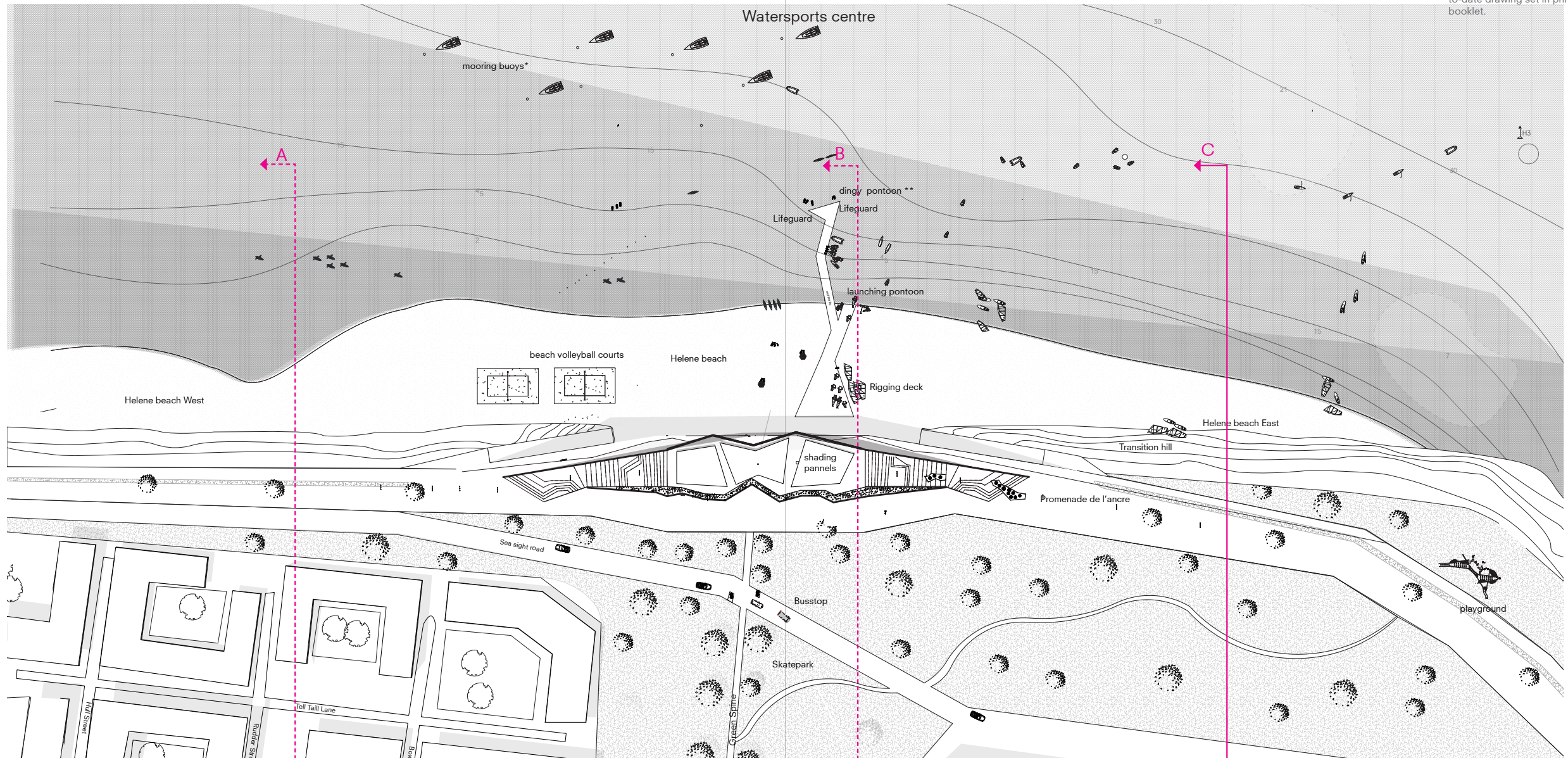
Drawing set P5 (previews)
03/11/2022

Carlijn Reumer
4611888

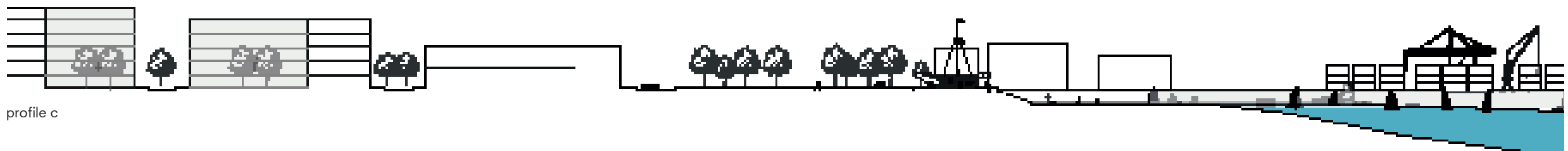
Up-to-date drawing set in printed a3 booklet.





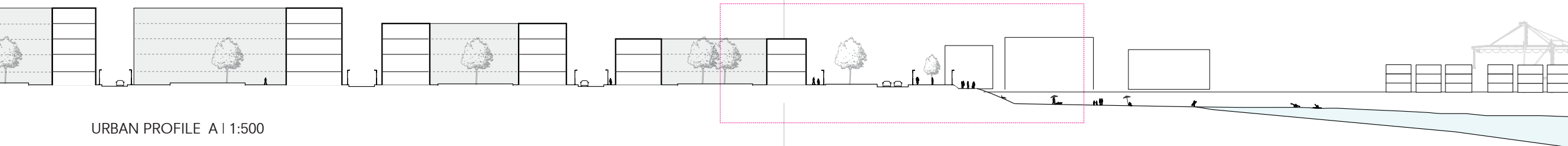


* mooring: floating structure which is used to moor small visiting sail yachts. .
 ** dingy pontoon: people enter land with their private small boat or the shuttle provided by the club. the dingys moor on the potoon



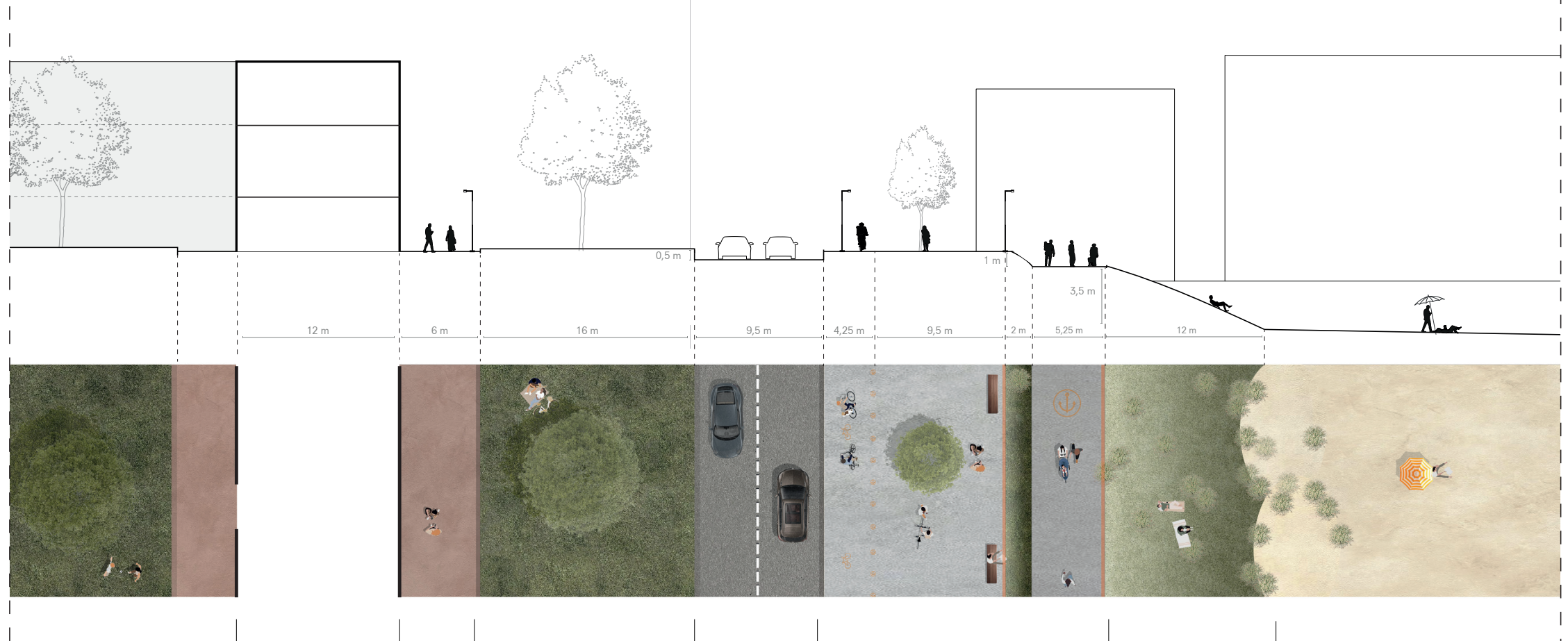
profile c





URBAN PROFILE A | 1:500

PROMENADE PROFILE 1:200



Courtyard

The **courtyard typology** generates **green oases** between the building blocks. This cools down the surroundings but also creates supervised places where neighbourhood kids can **safely play**, which is lacking in Beirut. Because a housing block encloses the space, future public space change to building volume is less likely.

Housing

The housing blocks are **limited to 3 layers** close to the waterfront.

neighbourhood green

The greenery generates a **buffer between** the more **public** zones of the promenade and road and the **private** zone of the residential blocks.

Sea sight road

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, **the road profile is deep, 0,5 m** in this way, cars can't drive on the path or greenery, and **illegal parking is impossible**.

Promenade de l'ancre

The promenade **divides** pedestrians, cyclists/scooters (**faster moving, slow traffic**). The **iconic orange anchor symbols** mark the division and create a visual recognition of the promenade. The **lower positioned pedestrian path** shifts **focus toward the sea**. On the promenade, **directions** are written, and visitors will know which way they walk and how far it will be. The **orange line** creates awareness of the **change in height**, and the accent colour creates a **point of recognition**. **Threes** are used to create **shade**.

Transition hill

The transition from the promenade to the beach is soft in the way of a hill, contributing to the project's **social ambitions**. Give the people of Beirut **excess to the waterfront**.

Helene beach West

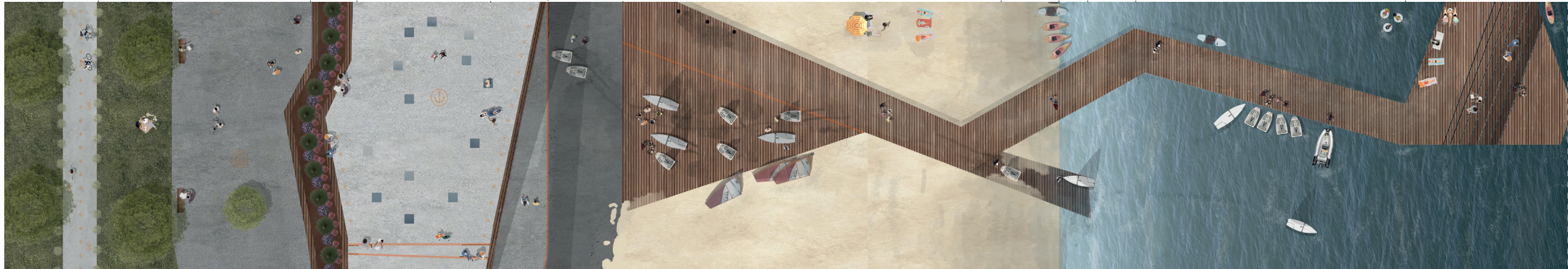
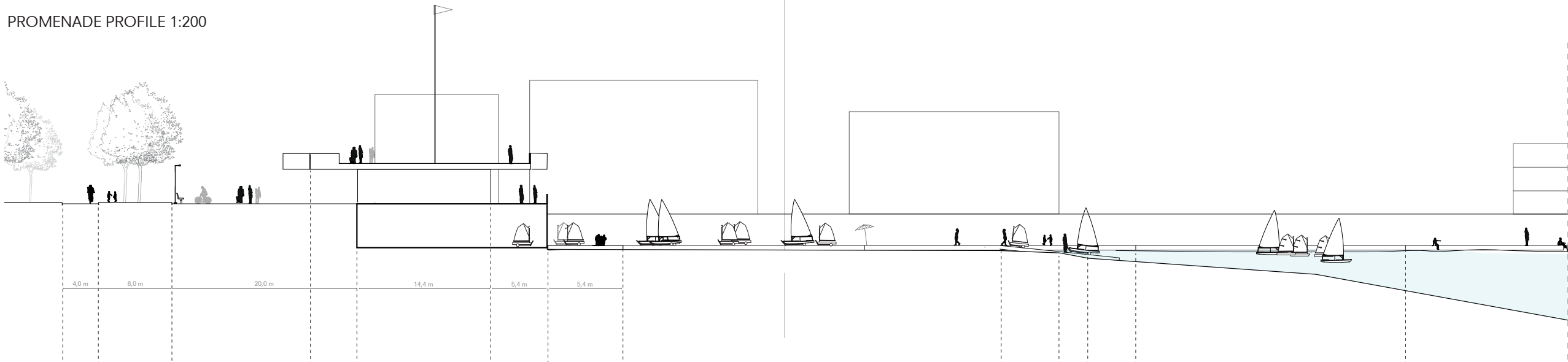
At Helene beach west, there is **no designated activity**. The un deep waters and wind conditions make the location unsuitable for sailing. **The conditions are ideal for pedal sports** like kayaking and sup (stand-up paddling)



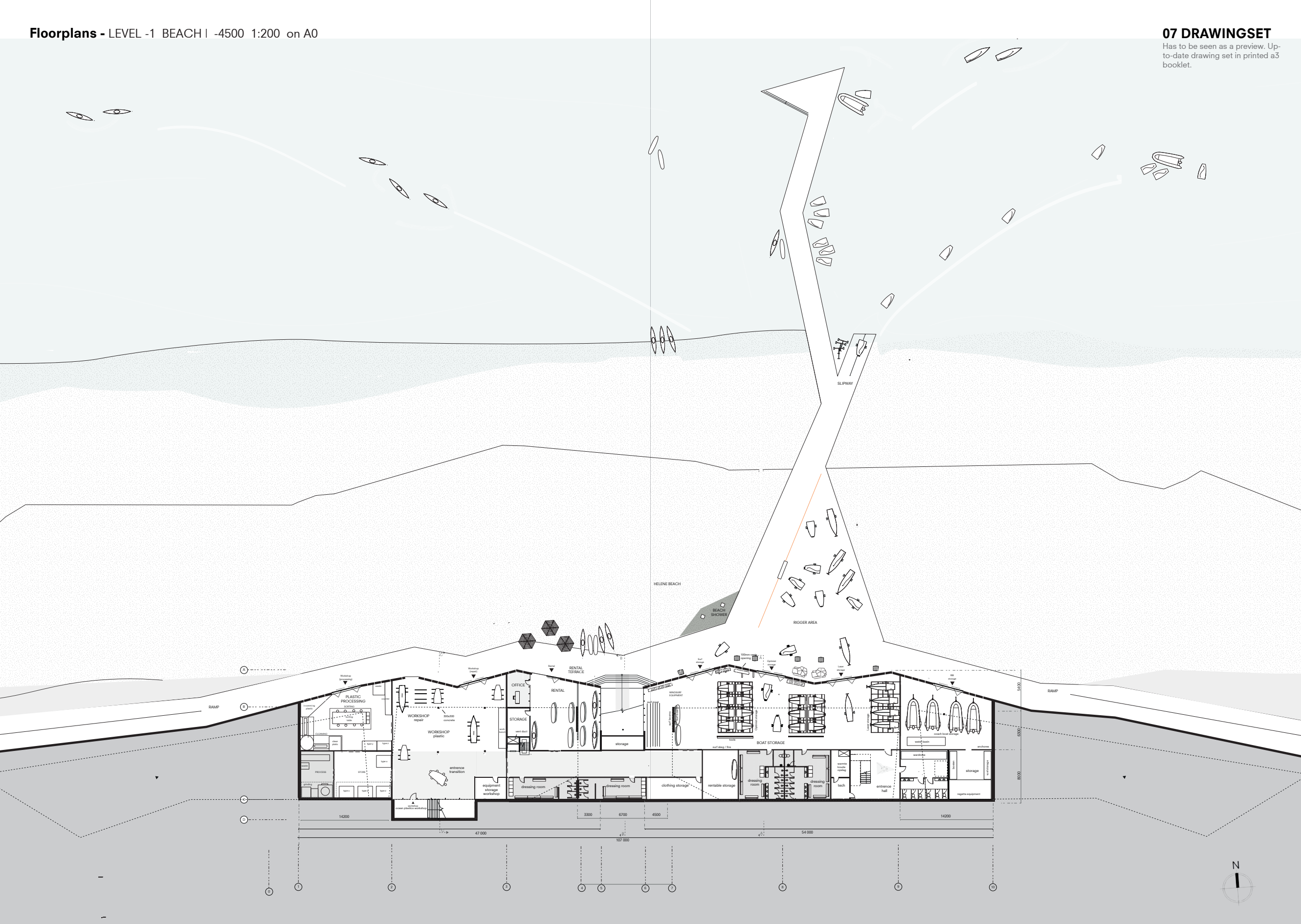


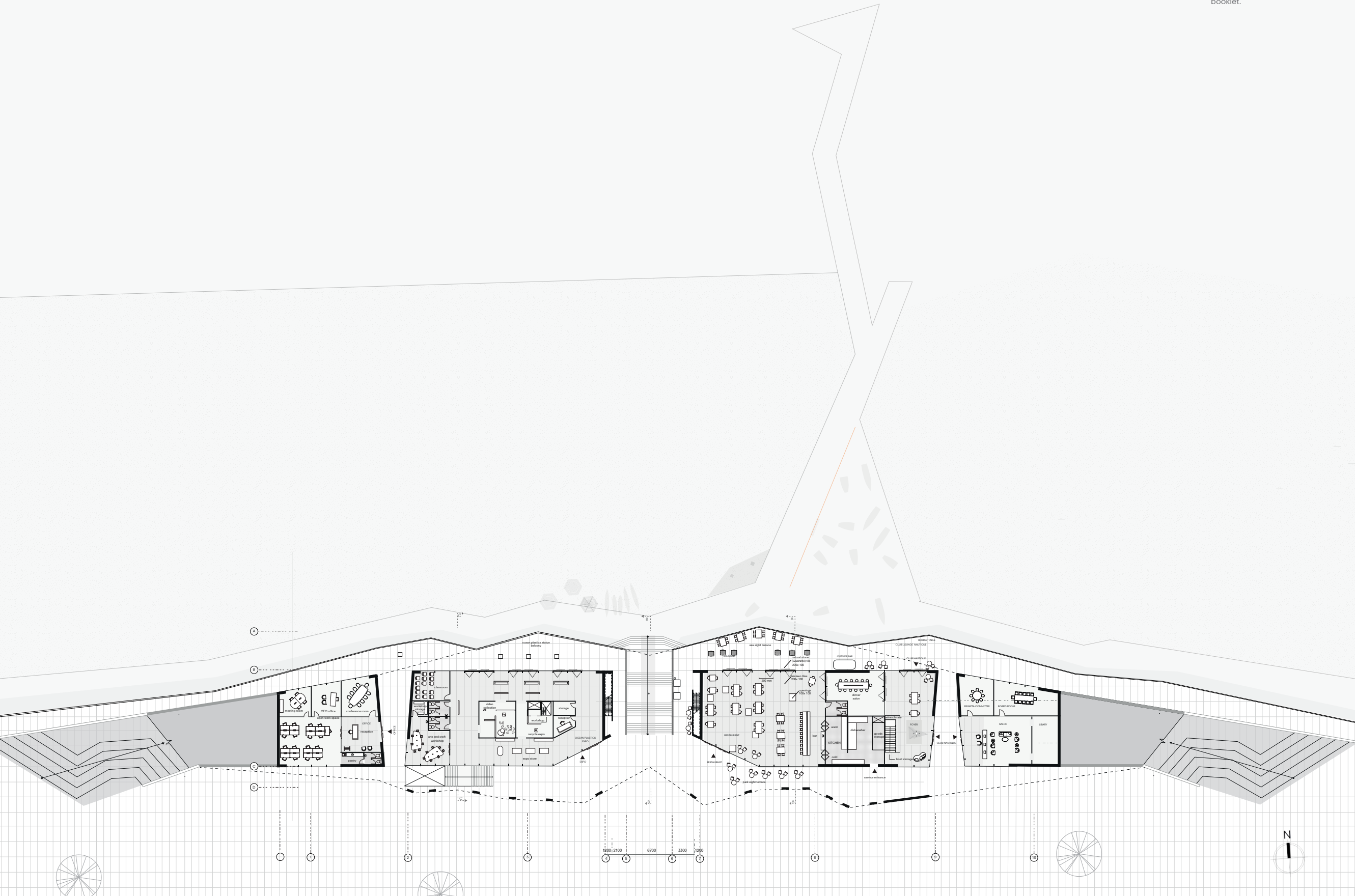
URBAN PROFILE B | 1:500

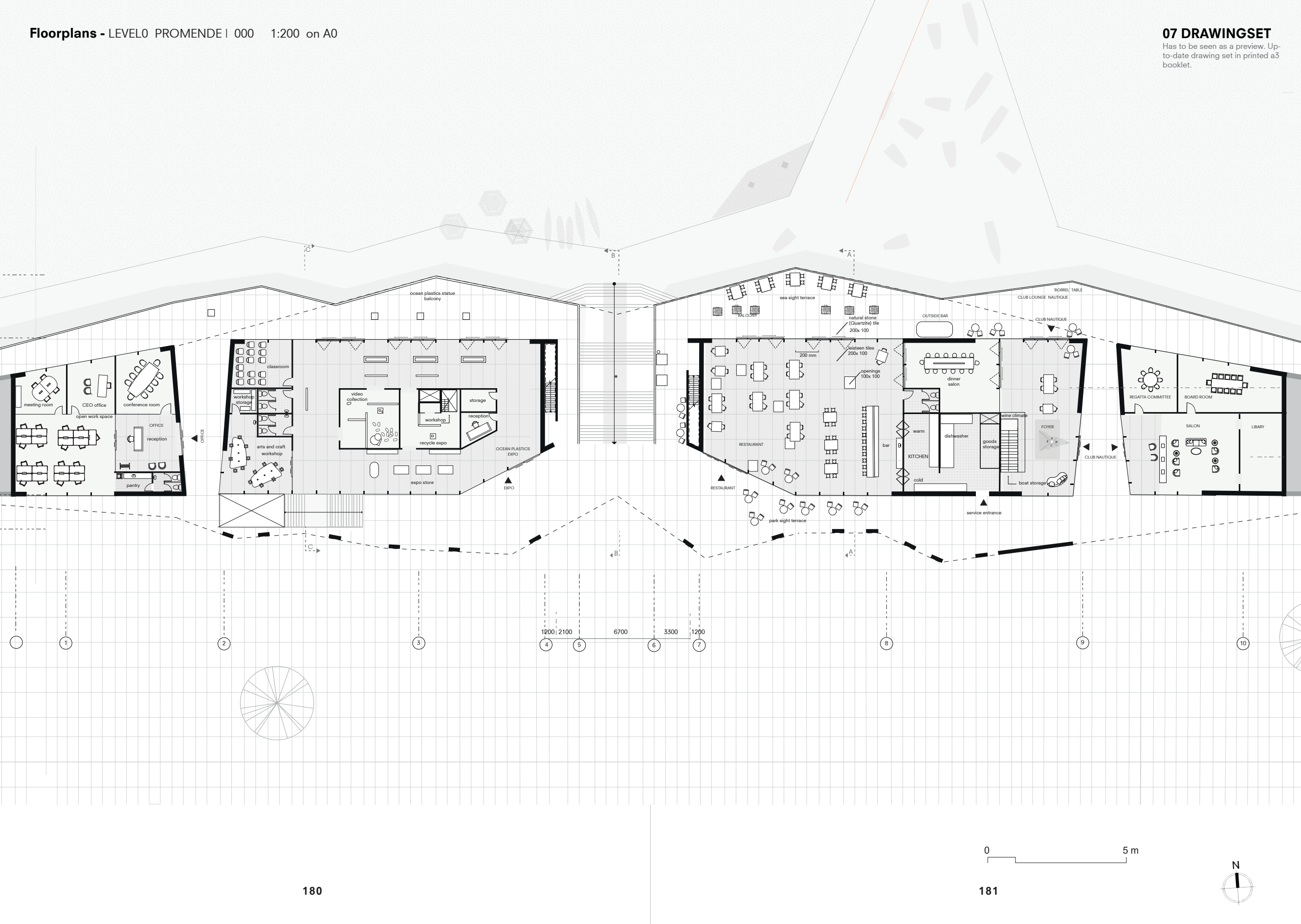
PROMENADE PROFILE 1:200

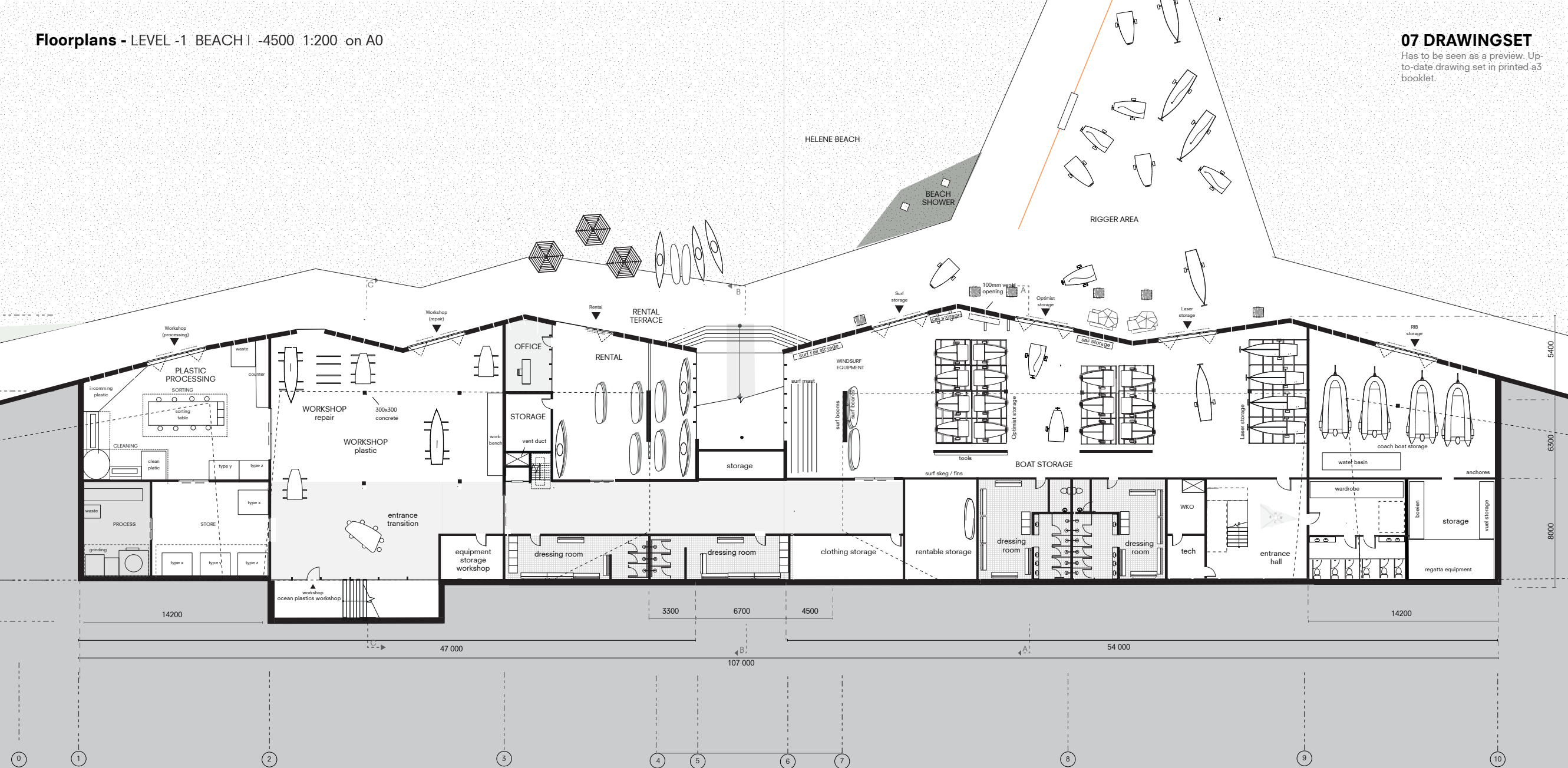


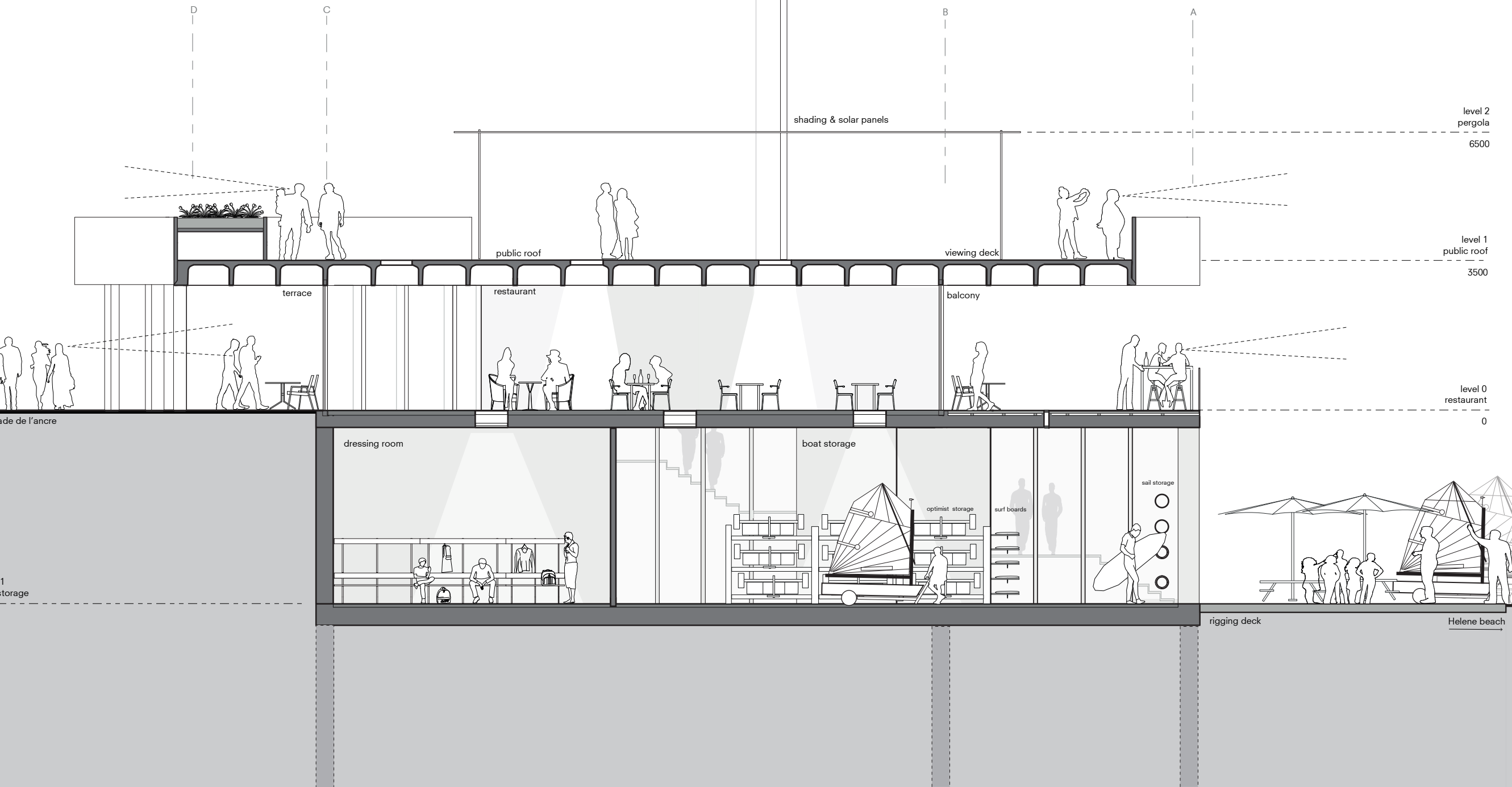
* render is a visual suggestion







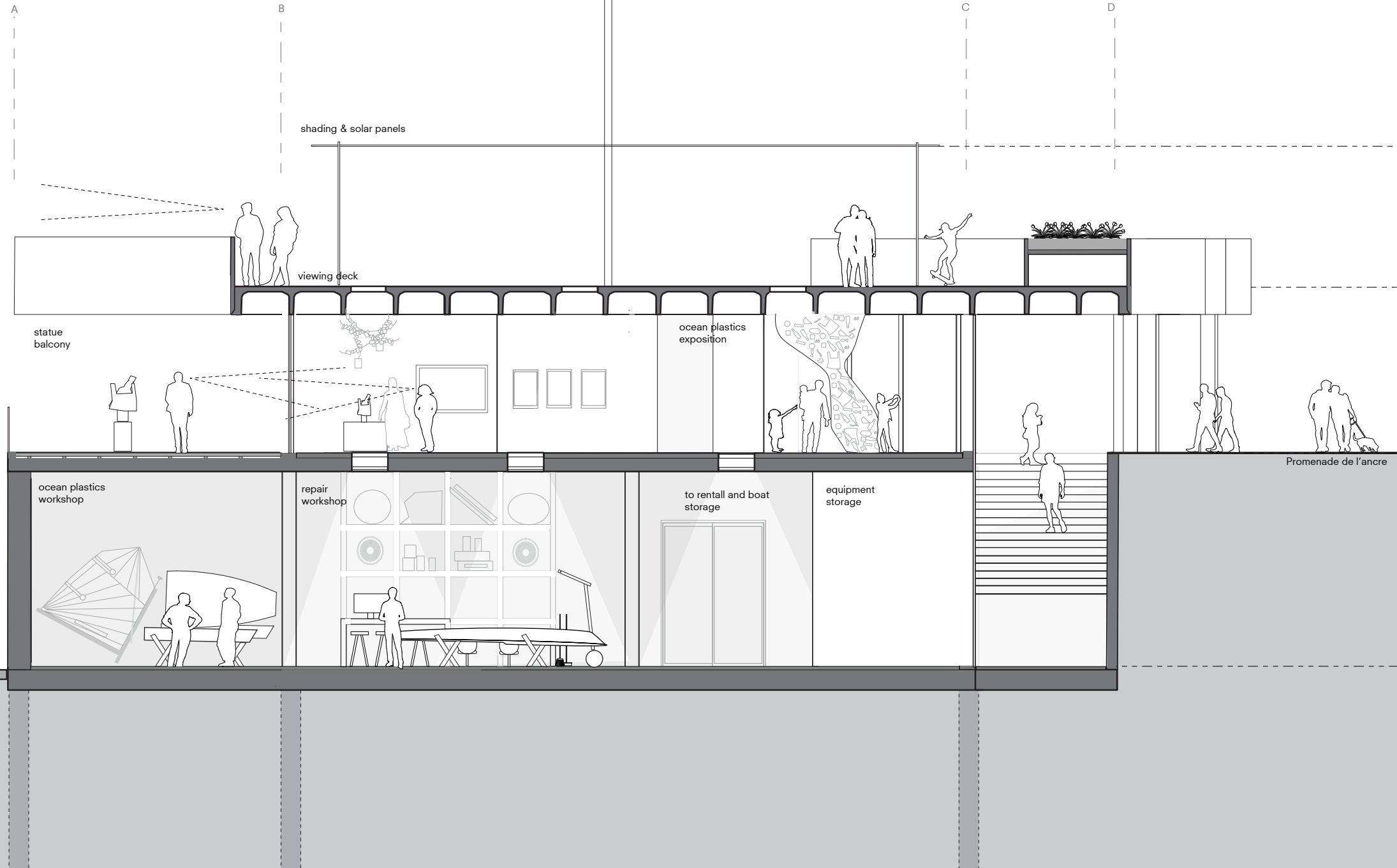




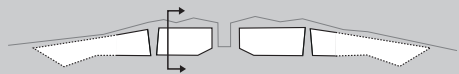
ade de l'ancre

1 storage

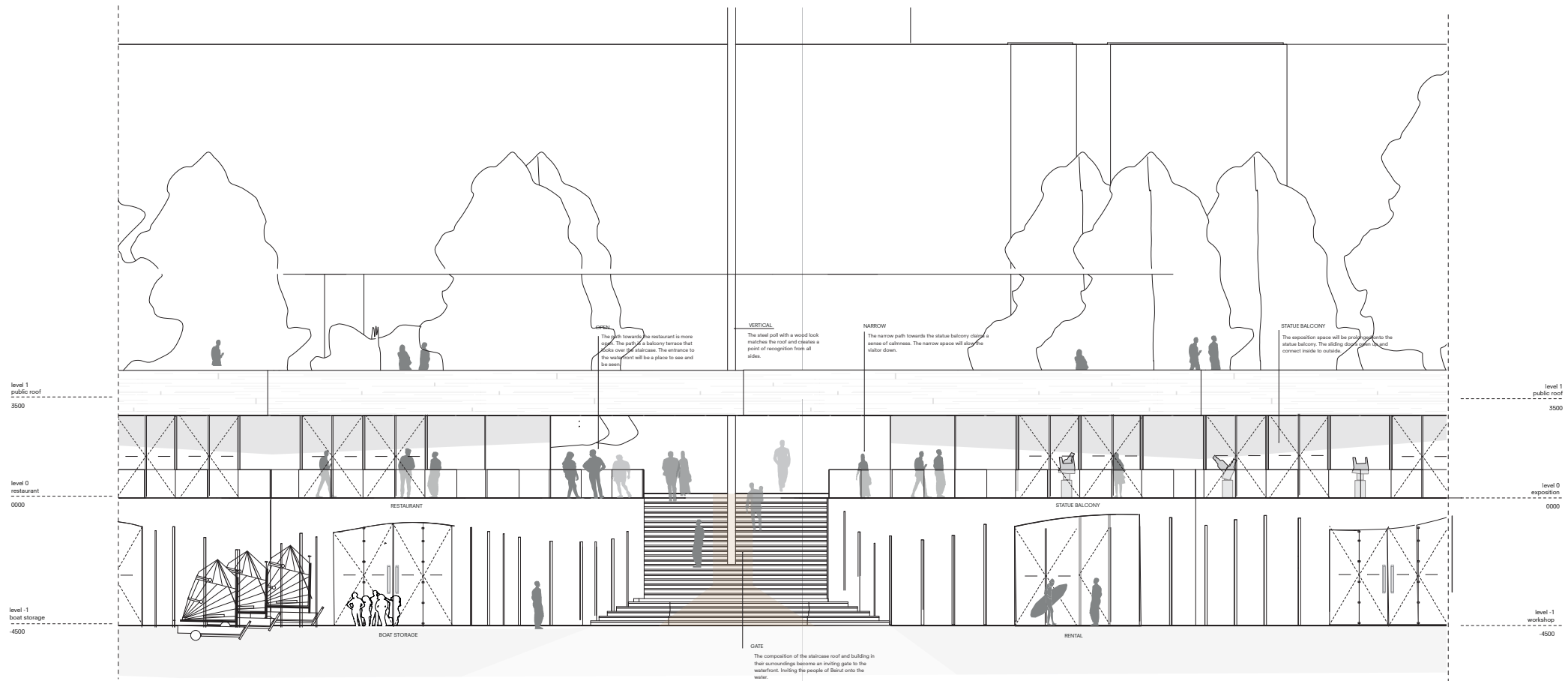
Helene beach



ach



Watersports centre



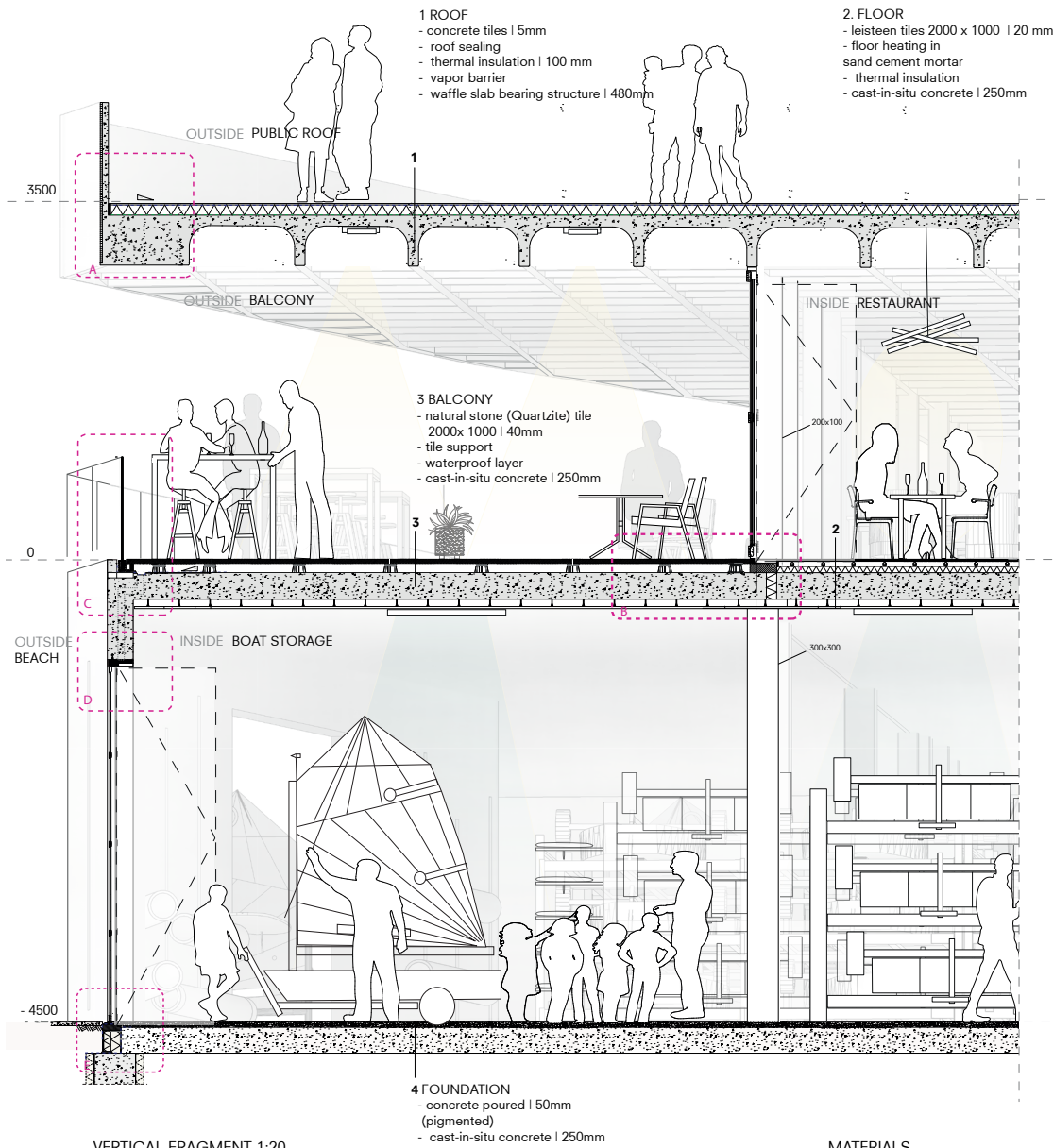
NORTH ELEVATION

The elevation tells a story about the building's function and surroundings. The project positions itself at the beach close to the coast. Because the boat storage will store wet sails and clothes, the storage needs good ventilation. Ventilation openings of 100mm width follow the shape of a wave—reflecting the surroundings. The ventilation openings will be closed off by glass so that an exciting light pattern will result from the building during the night.

The walls are made out of the sand-pigmented cast in situ concrete. The beach will fade into the walls, and the walls do fade into the land. Transitioning and blending in with the surroundings. While the building blends in, it also stands out. The wooden band around the roof makes the building recognisable from water and the park. It is like a touch of makeup, exaggerating what is already there. The buildings mascara. The pole on top of it gives a vertical element.

SURROUNDING ELEMENTS





VERTICAL FRAGMENT 1:20



BALCONY

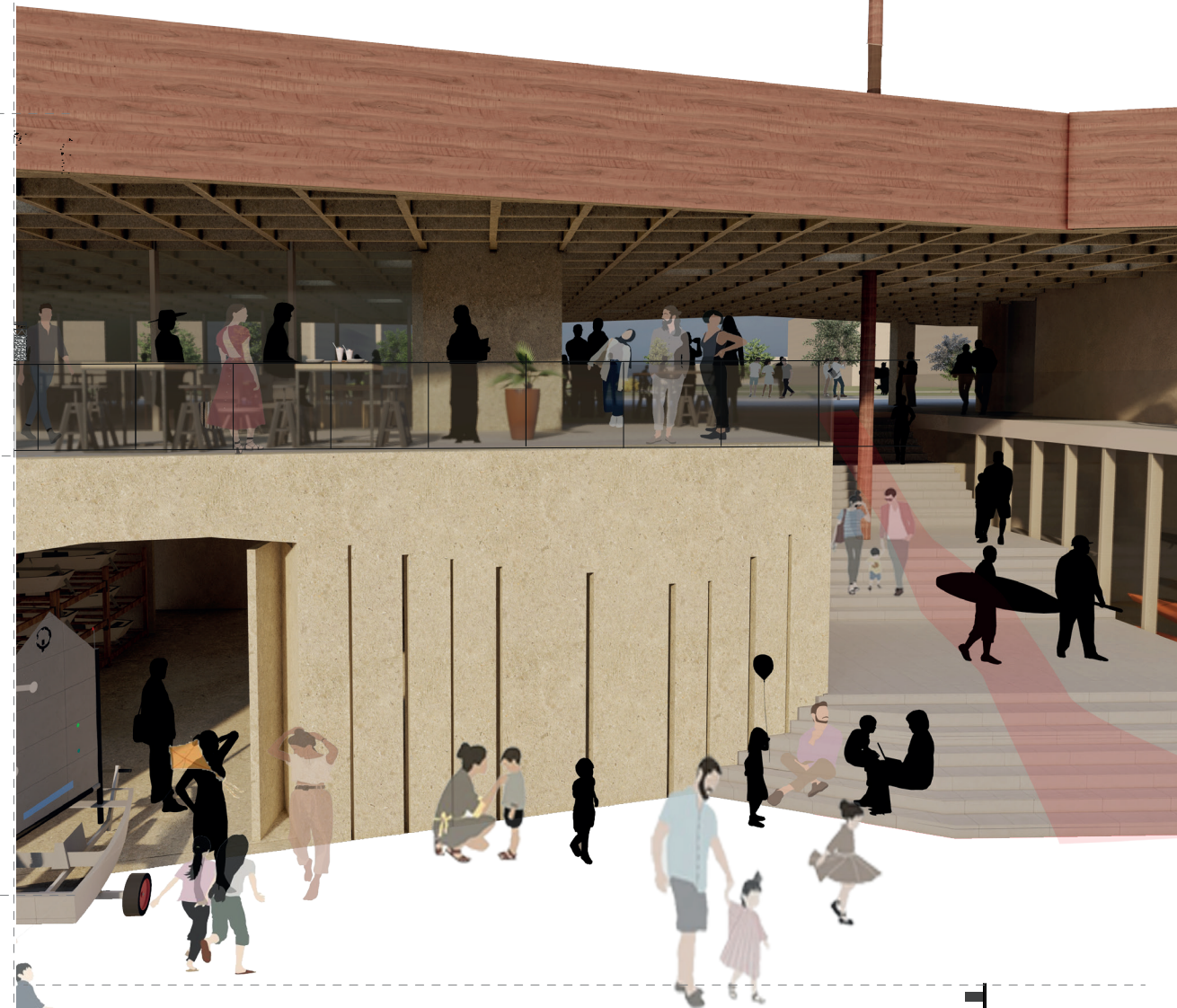
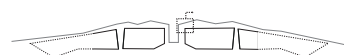
MATERIALS



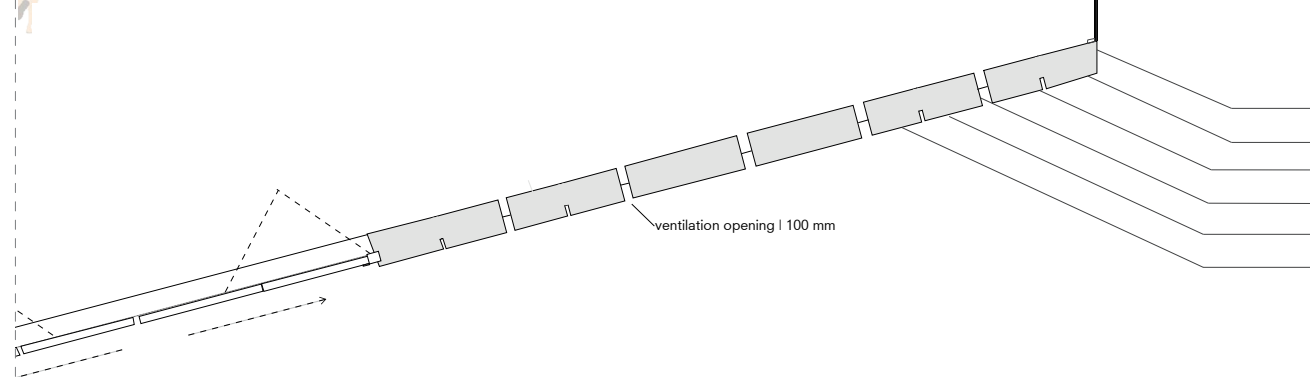
DARK RED MARANTI WOOD
 Finish: Solvent based oil. Protects the wood against water and UV rays.



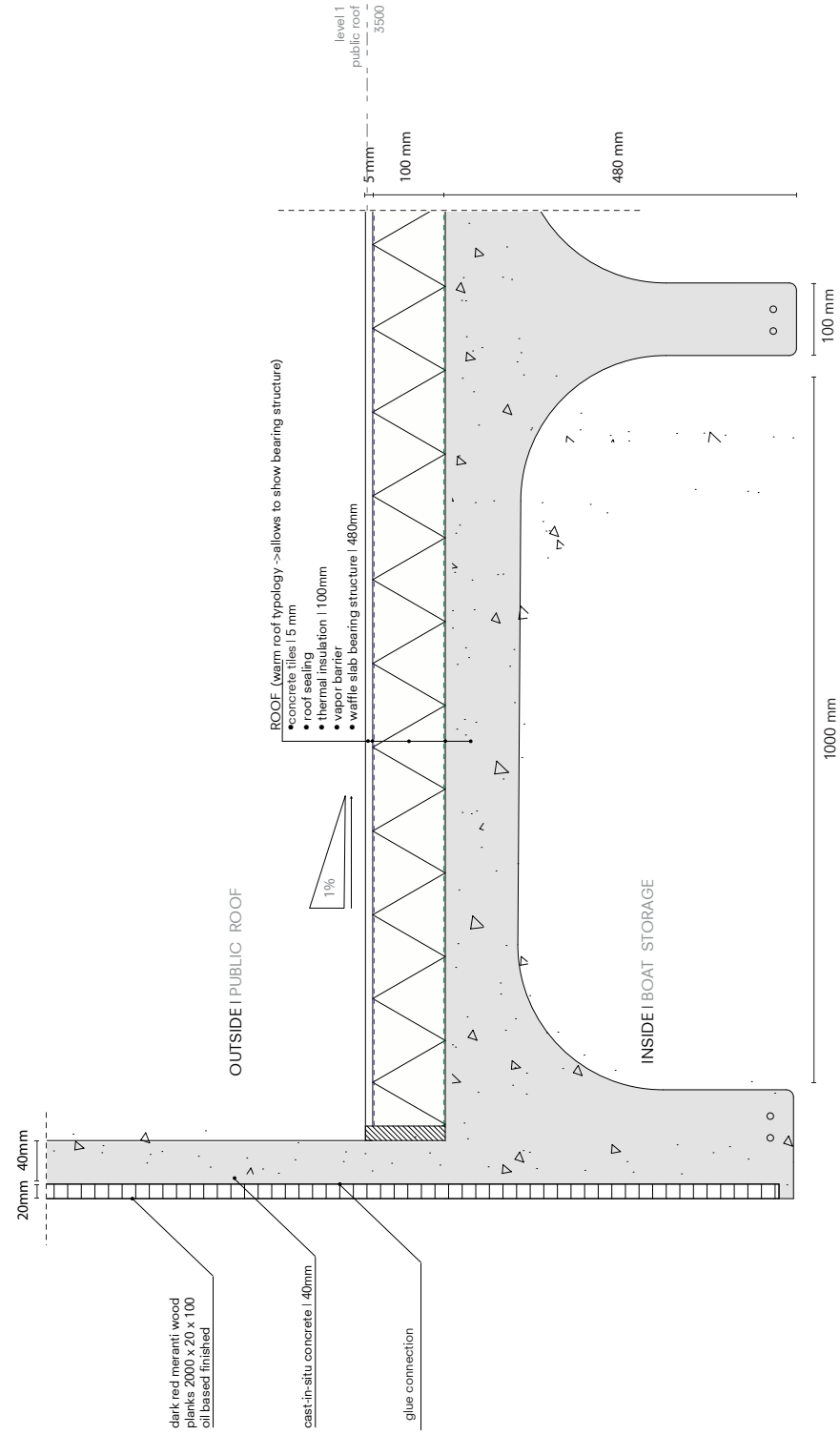
PIGMENTED CAST INSITU CONCRETE
 Dry pigment mixed into the concrete before it is poured. Sand look match with beach. Beach goes into building



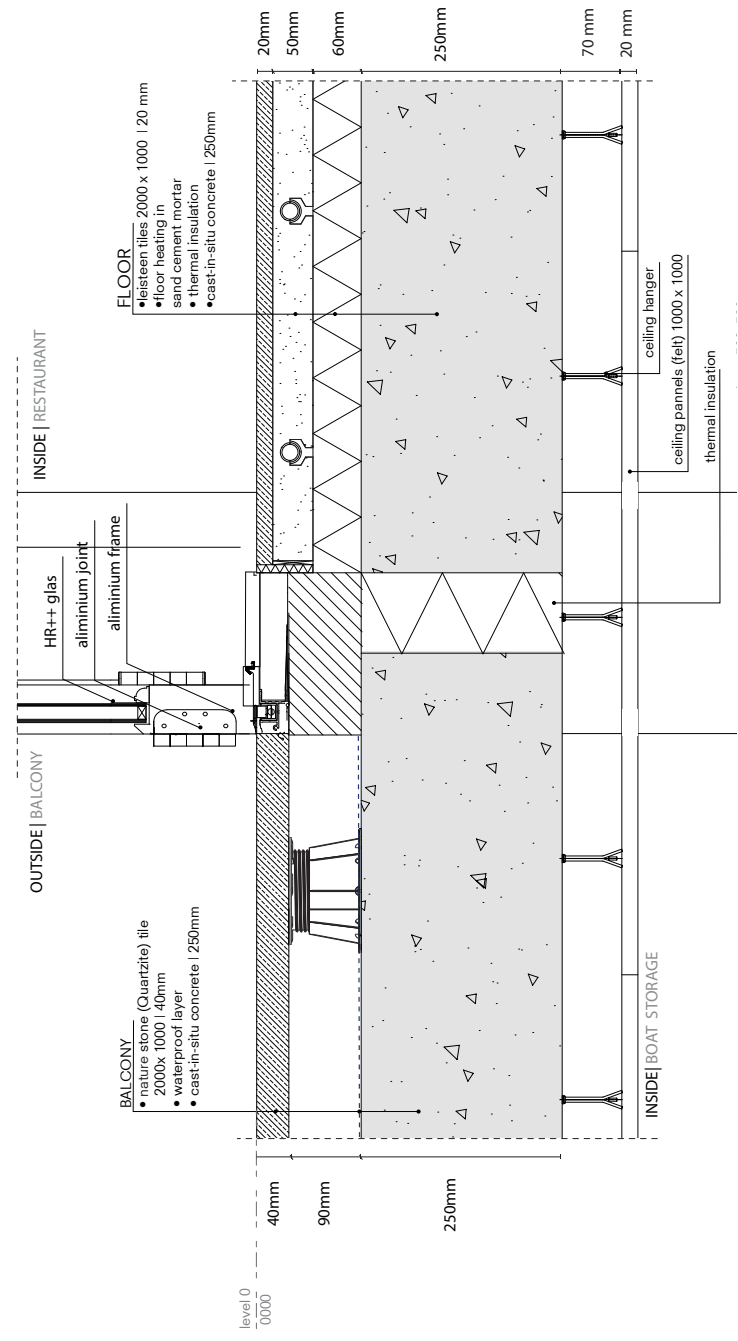
BEACH ELEVATION - NORTH ELEVATION 1:20



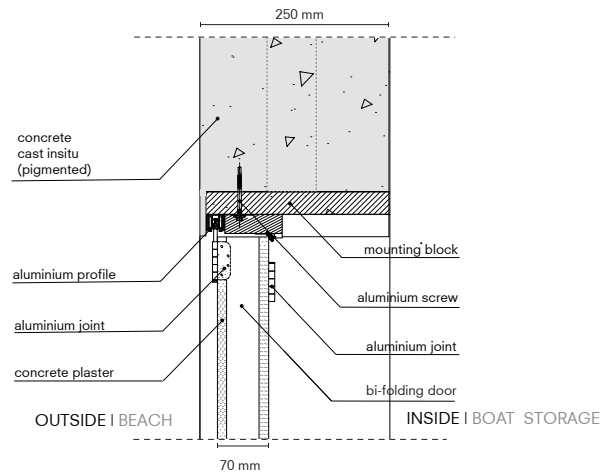
HORIZONTAL FRAGMENT | 1:20



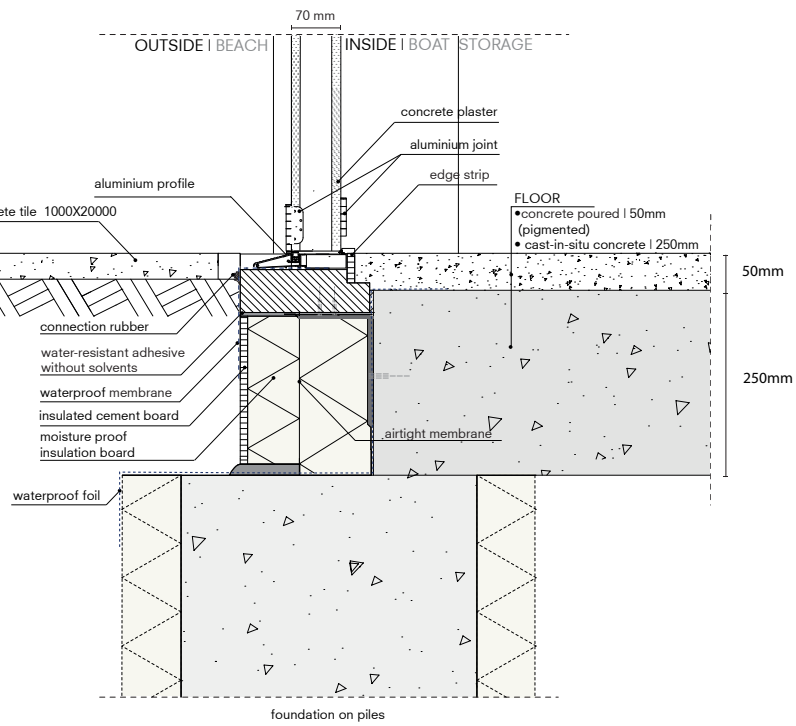
DETAIL A - eaves



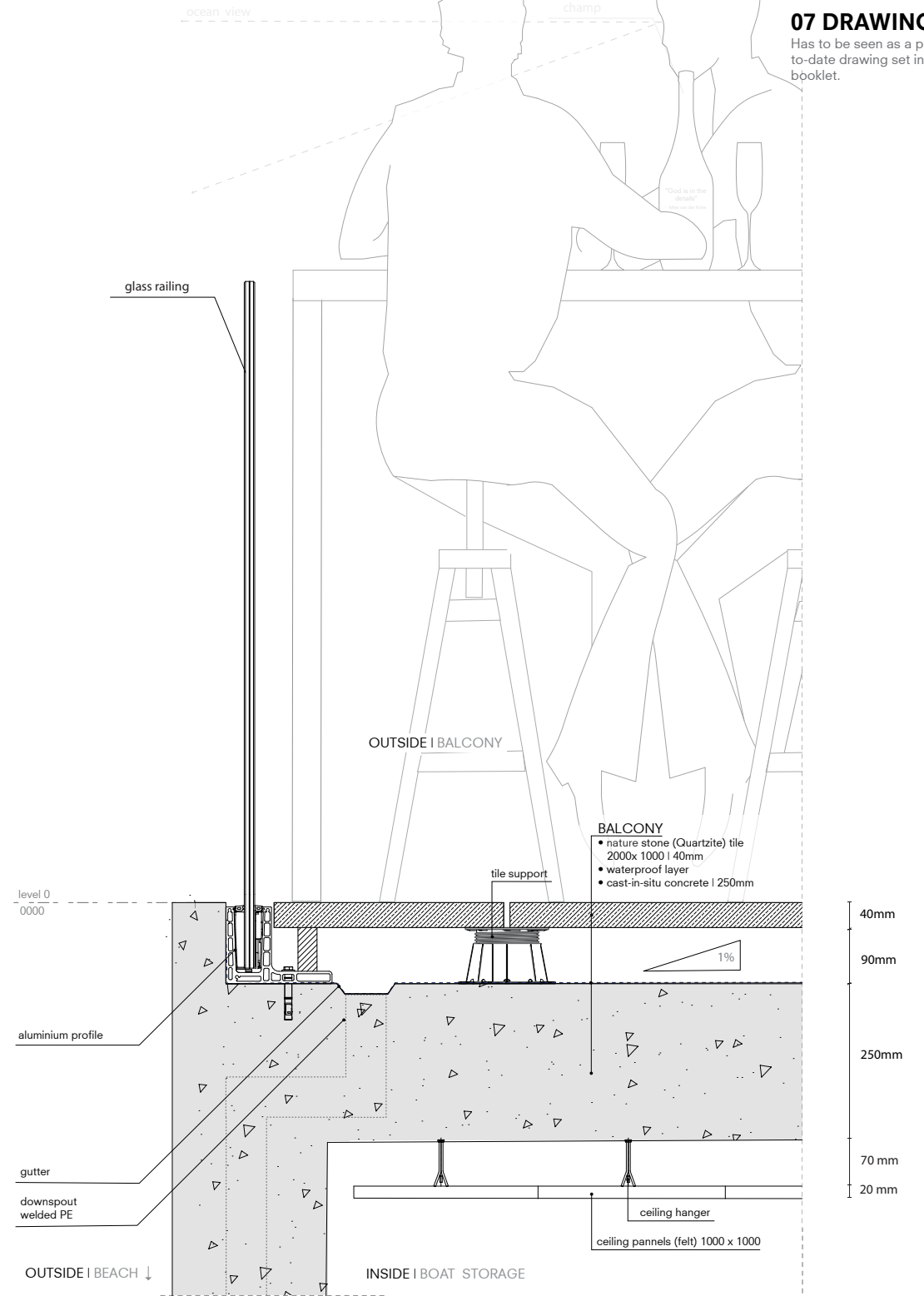
DETAIL B - balcony - restaurant



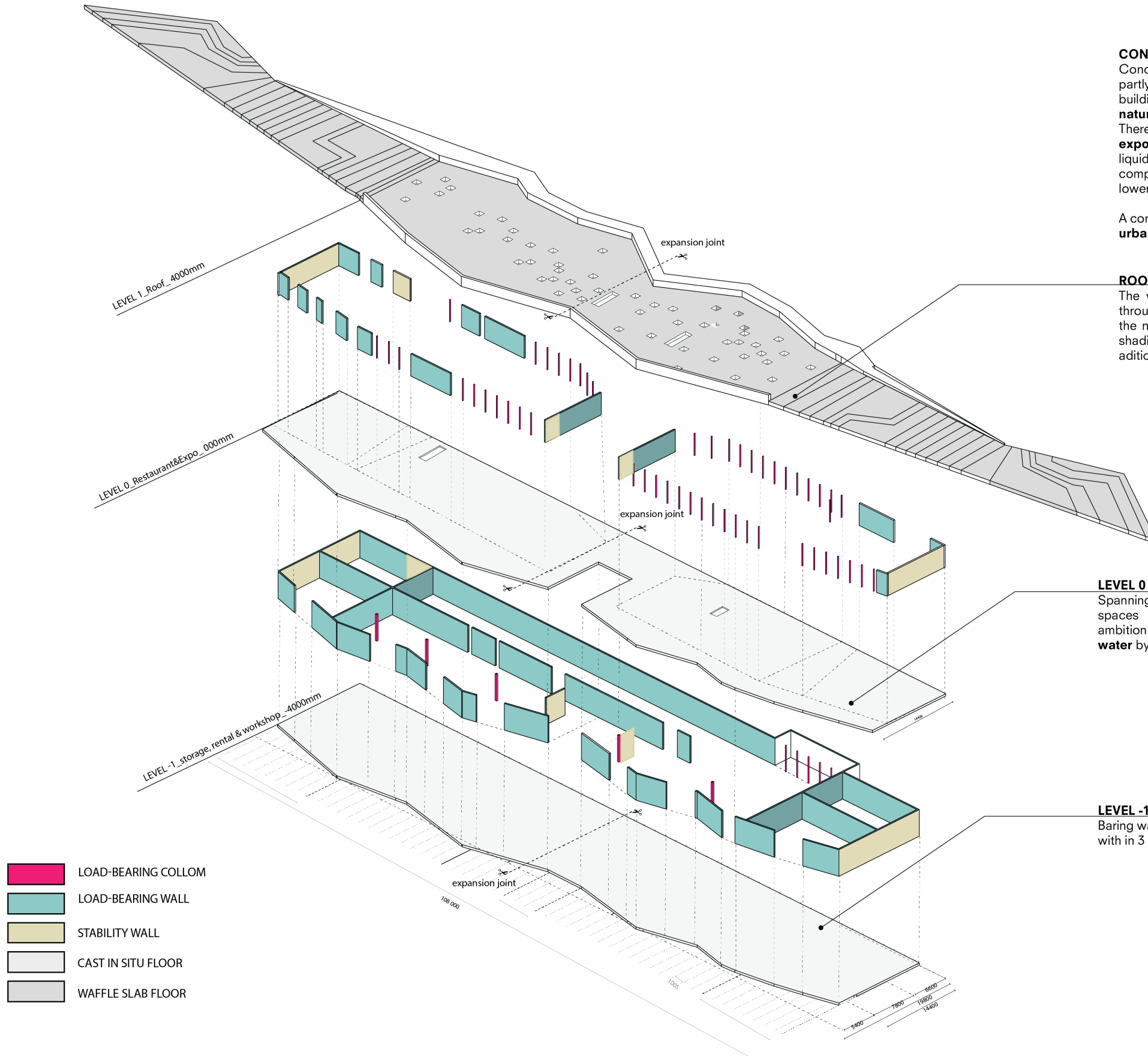
DETAIL D- door boat storage top



DETAIL E- foundation + door boat storage base



DETAIL C- ballustrade & balcony



CONCRETE

Concrete is most suited for this project at the coast, partly because it has a high density. For a shoreline building, **future sea-level rise** or other unexpected **natural disasters need to be taken into account**. Therefore the construction must endure being **exposed to saltwater**. A high density will let less liquid inside, and saltwater erosion will be limited compared to other construction materials with a lower density.

A concrete factory is located in Beirut that **limits the urban footprint for transportation**

ROOF

The waffle slab roof creates characteristic feature throughout the building. The roof has an overhang on the north and south (functions: sun visor and sun shading); The overhang balances itself out, no additional support structure is needed.

LEVEL 0

Spanning 14400mm, the Restaurant & Expo can be **open spaces without columns**. This contributes to the ambition to enhance the **link between the city and water** by creating a **clear view**.

LEVEL -1

Bearing walls and columns are used to break the spanning with in 3 zones. of 6600mm, 7800,5400mm .

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.**

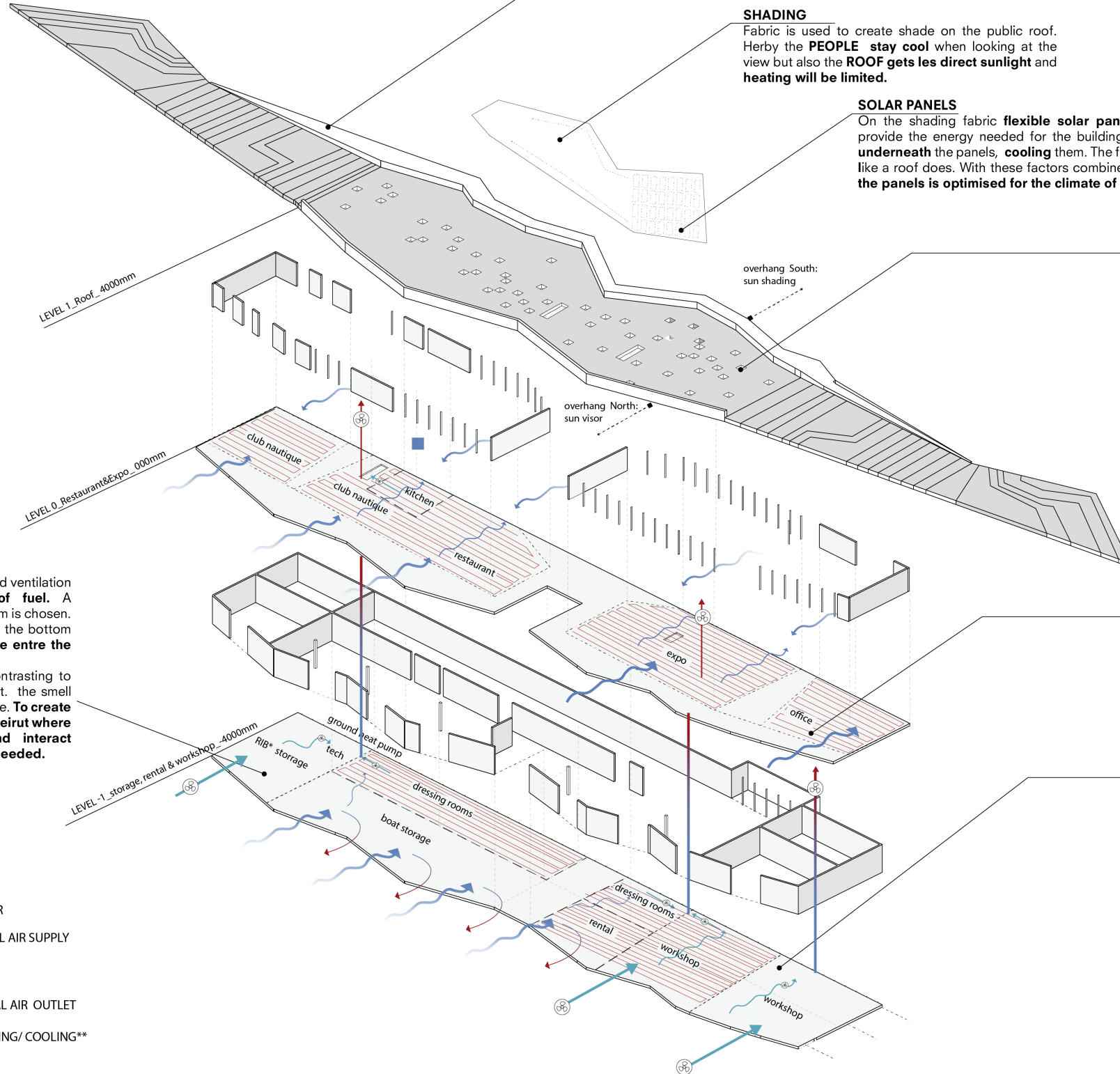
SOLAR PANELS

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.



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 enter 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.

- NATURAL AIR
- MECHANICAL AIR SUPPLY
- AIR OUTLET
- MECHANICAL AIR OUTLET
- FLOOR HEATING/ COOLING**

LEVEL 0.

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

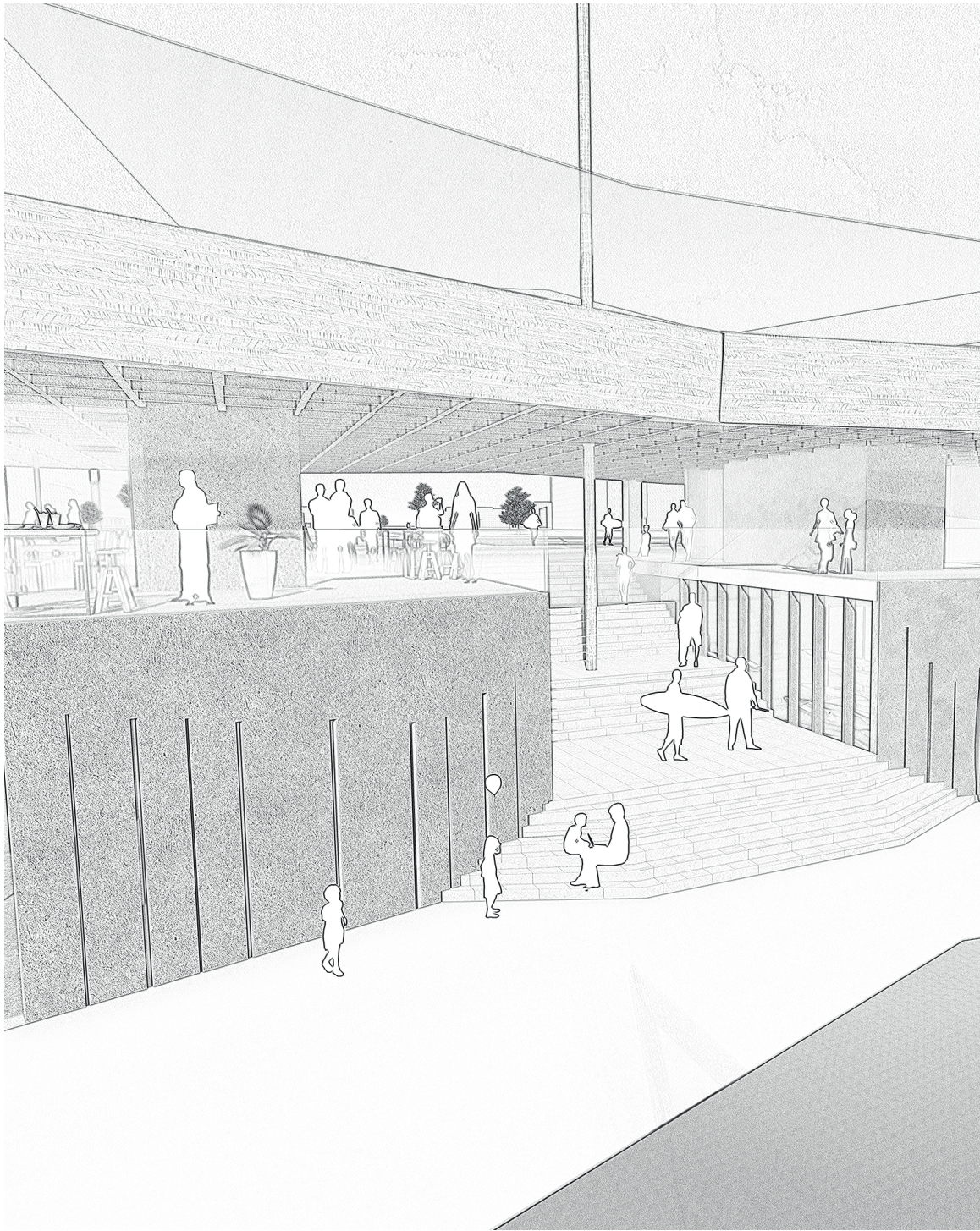
LEVEL -1

On level -1 water oriented functions are located. Some rooms don't need a controlled temperature/ climate. For example the **boat storage only requires 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.



REFLECTION

8.1 Reflection paper

8.2 Studies

8.3 Editions

Real reflection

08

REFLECTION PAPER

Bourj Hammoud

WATER SPORTS CENTRE

P5 8-11-2022

Carlijn Reumer

4611888

Complex Projects Beirut studio

08 REFLECTION

ASPECT 1: Relationship between research and design.

The **structure of graduation studios** at TU Delft clearly **divides research and design**. Successful completion of research during MSc3 is followed by the design phase of MSc4. P2 is the evaluation point for this transition.

In architecture, theories and research are not always successfully translated into design. Even though intention of research is to enlighten and inspire design, information tends to be lost in translation. Nevertheless, it's straightforward that **research and design go together and can't be separated**.

However, the structure of the TU gave the impression that research has to be finished at p2. But **"How can you know all that you want to know without knowing what you don't know!?"** and,

"To create, one must first question everything."
- Eileen Gray

To know what you don't know and to question everything is challenging. Design can guide and give feedback to the research. In the graduation studio, the **design phase was pushed ahead**, so getting input from the design was impossible. Without touching the design, the extended research phase created **a broad base of unbiased data**. This made the start of the project a smooth go.

When the design developed, parts of research that seemed a side path proved beneficial. And the **curiosity for more detail led to more research**. This additional research gave the project an extra layer. It developed the project into what it is today.

Not being able to research after P2 would have created an unrealistic situation and a different, less site-related design. The studio showed a way to keep design and research more separated than I was used to.

Conclusion link between research & design:
Research is a base for design, whereafter design becomes a base for research. So when you use research, you can create a design, and **the story will never end**.

Aspect 2: Relationship between the graduation topic and studio topic.

The Studio:
Complex Projects Spring Studio 2021 chose Beirut, Lebanon, as site. Beirut, the capital of Lebanon, a diverse port city, was once named the 'Paris of the Middle East' however, traumatic events changed this image. The most recent event: the harbour blast of 2020, left hundreds of fatalities and thousands of injured. Dwellings, public institutions, healthcare facilities and infrastructure were left in shambles.

Lebanon had already been facing its worst humanitarian, socio-economic and financial crisis since the 1975-1990 Civil War, leading to protests for political reform in 2019. Aggravated by the impact of sanctions and dwindling US dollar reserves, together with a global pandemic, Lebanon's economy has been in free fall. The port explosion, damaging almost half of the city, further complicated the situation. The studio reacts to this with the theme of **catastrophe as a boost for change**.

The relationship:
The challenges Beirut faces are visible in the city. There is a lack of public space due to market-driven real estate development. Spaces to meet are missing, which is highly needed in a diverse society like Beirut. This is most noticeable at the coast. Beirut's coast is 80% privatised, and accessible parts are polluted. This asks for new ways of coastal development that consider the people of Beirut. *The Water Sports Centre* is a **boost for change**, specifically change in the coastal development of Beirut.

Together with the team master plan, new development manifests change on the Bourj Hammoud landfill. The project reacts to the current waterfront development by opposing to the ongoing trend. *The Water Sports Centre* demonstrates a **new way of waterfront development that gives back to the people of Beirut**. This approach is sensible to the city context and citizens.

The project shifts the way of developing for profit to **designing for the people of Beirut today to give an even better Beirut to the people of Beirut tomorrow: a boost of change in its core**.

"As an architect, you design for the present, with an awareness of the past for a future which is essentially unknown"
- Norman Foster

Reflection paper

Aspect 3: The research method and approach chosen by the student in relation to the graduation studio.

The Complex Projects Studio comprises of individual and group work, by focusing on independent research topics on a shared site. This shared site is developed by a group vision wherein every team member develops an individual project. My focus was leisure. The research phase started by analysing the site in the team by mapping hard data, focusing on the Port, history, economics, culture and infrastructure.

The studio shifts from large to smaller scale and focuses on analysing and mapping/ documenting the existing situation, together with literature study. Those studies were interesting for me but made me curious about **the actual situation**.

Along with the conventional ways of research, **social media** was integrated into the study. I believe that social media, together with other forms of research, can be used as a powerful tool. Social media is also a fast tool; it got me sooner on a phone call with the person I aimed to speak to than I experienced through email.

On **Instagram**, I used “#sailing #Beirut,” and I contacted sailors from Beirut with whom I called the same day. This gave me extra insight into the **users’ context and state of mind**. This worked the same for existing harbours in Beirut, the Swedish program that works with recycling plastic into sailboats and reference projects.

Reference projects were analysed on **Archdaily and Facebook**. **Leisure projects mostly have a Facebook page** where they post photos of events. Those pictures do tell a lot about how a building is used. Looking at meridian sailing clubs on Facebook, browsing through their picture albums seeing how they are drunk and celebrating after a competition at night but focused and concentrated in the morning during a briefing **reminds of the atmosphere that fits a sailing club in a Mediterranean setting more than a line drawing could**.

However, social media on its own is not trustworthy and is not the whole reality. But the literature on its own is also not. **With the two combined, a critical view** towards the information gave **an impression of what is real** and an understanding of **how this affects people**.



How the building looks

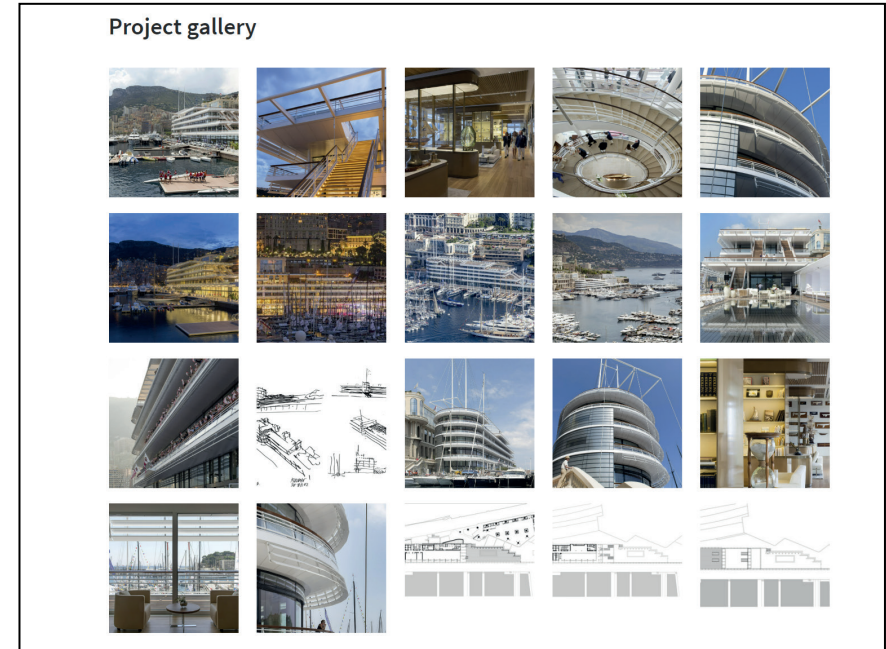
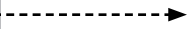


Figure 8.1: Yacht Club de Monaco on Archdaily



How the building is used

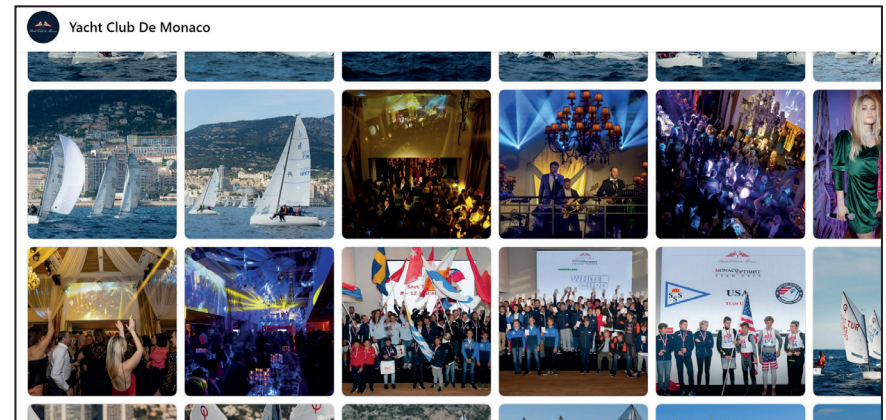
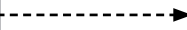


Figure 8.2: Yacht Club de Monaco on Facebook

Aspect 4: Relationship between the Graduation Project and the Wider Social, Professional and Scientific Relevance.

The project is a response to privatised waterfronts. It reacts to overruled land in Lebanon. It's an example of how a sports project's development can **impact the wider city**. Cities around the world deal with relatable problems. The study highlights **sport as a part of the solution**. The research shows that **case studies from northern Europe have beneficial value in the Mediterranean climates**. New developments can be inspired by those references as well.

Aspect 5: Ethical Issues and Dilemmas

I pointed out real estate development on Beirut's coast as a problem, **but I did the same. I built a project at the coast**. Realising that development was needed to give back to the people of Beirut was controversial. This led to good conversations that challenged me to **make a real difference with the project compared to the existing situation**.

Developing a sailing club to react to the privatisation in Beirut led to discussions. I learned that sailing is **perceived as an exclusive sport** it doesn't matter what kind of boat. I never saw it that way, specially not dingy sailing. Facing this perception was interesting because it was not about the actual price of a sport; sports that are more expensive (kite surfing) were named as less exclusive contributions. However, the discussions about this topic made that the **project shows sailing is not an exclusive sport by definition**.

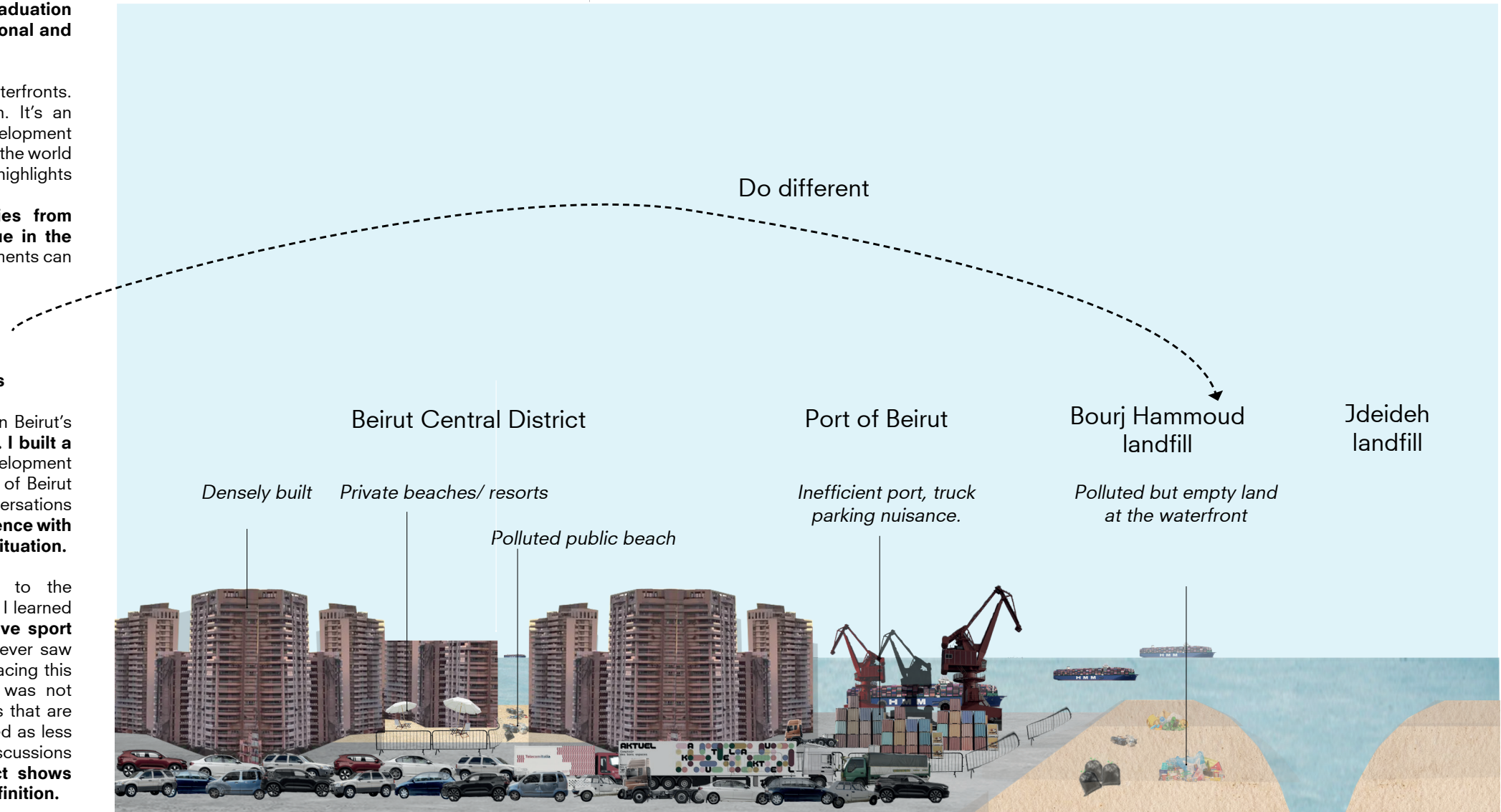
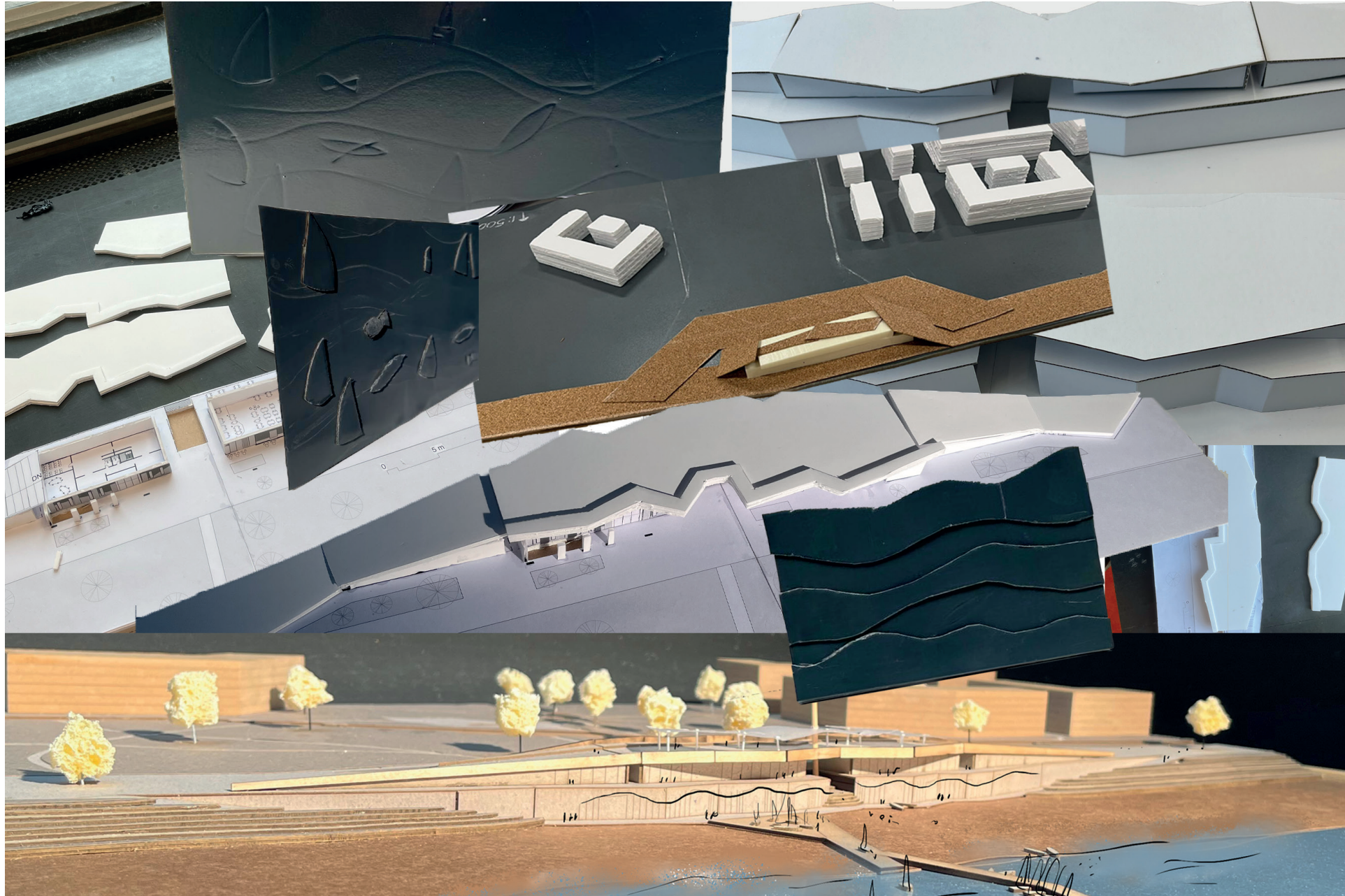


Figure 8.3: Usage of the coast.



STUDIES

In the design process, form studies are used to find answer to design questions. The following paragraph shows a selection of those **studies and their outcome/** effect on the final design.

Facade relief

Goal: bring back surrounding elements in the concrete façade. **Outcome:** none of the tested options; the concrete is smooth without imprints. However, the concept transfers to the final design more subtly with sand-pigmented concrete and ventilation openings in a wave shape.



Waves of stacked concrete panels.



Wave line engraved with fish and boat shapes.



Silhouette cut out with wave structure.

Figure 8.4: Material relief studies

Subtle resemblance of surrounding elements.

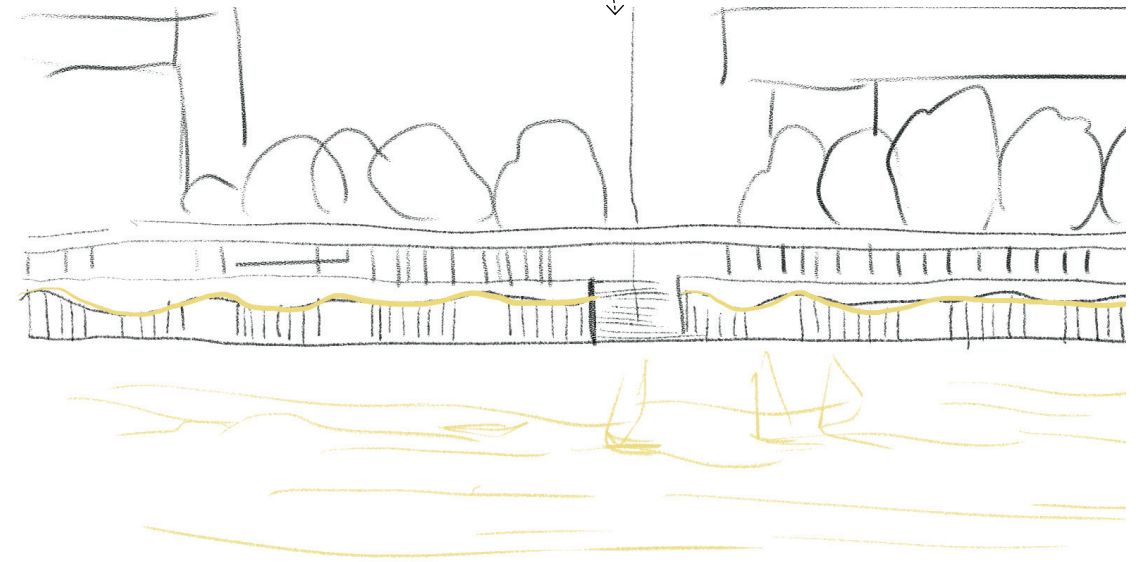


Figure 8.5: North elevation wave shape



Figure 8.6: Wave in elevation

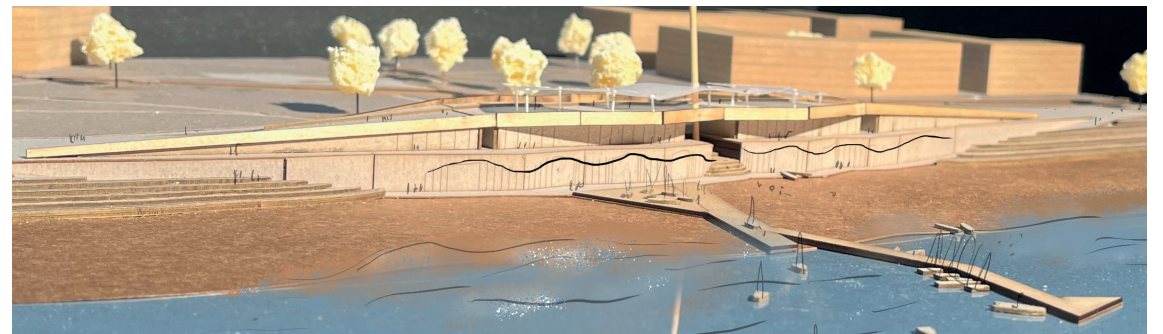


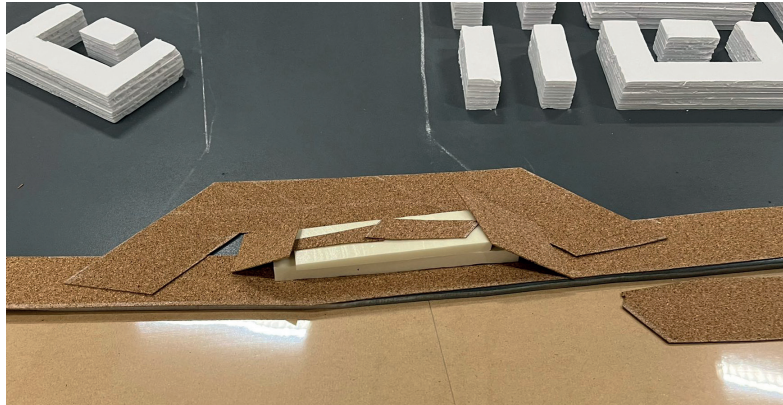
Figure 8.7: North elevation- model - wave shape

Positioning of building and promenade

On the site, the **surroundings are undefined**; this allows setting them in a way that's best for the project. This seems ideal; however, it is challenging because **everything is possible**. Because of that, the study shown here has unfixed pieces and a base that functions as a chalkboard. All parameters can be adjusted. To some, this may seem like an unfinished model. But this model

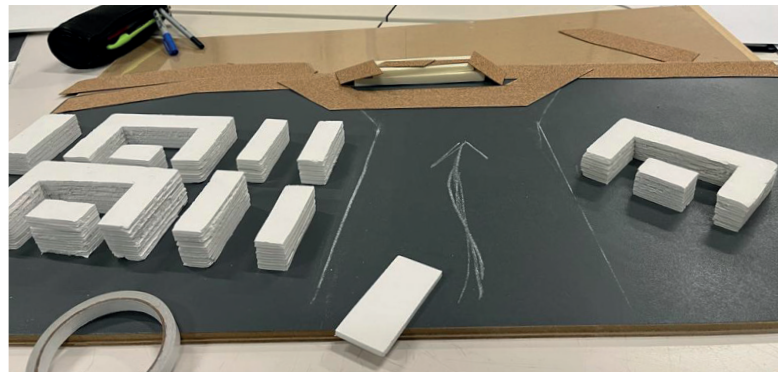
allowed experiments with the placement of the promenade, building volume and surrounding buildings. To reach the goal of a building that would be **part of the promenade. A project where people could walk over, beside and through.**

Outcome: a building that is part of the promenade. You can go over in front and behind the building; the **building does not take away from the public space it adds to it.**



Promenade over behind and in front of the building.

Figure 8.8: Positioning promenade and building volume



Testing with and positioning green spine.

Figure 8.9: Positioning of the Green Spine

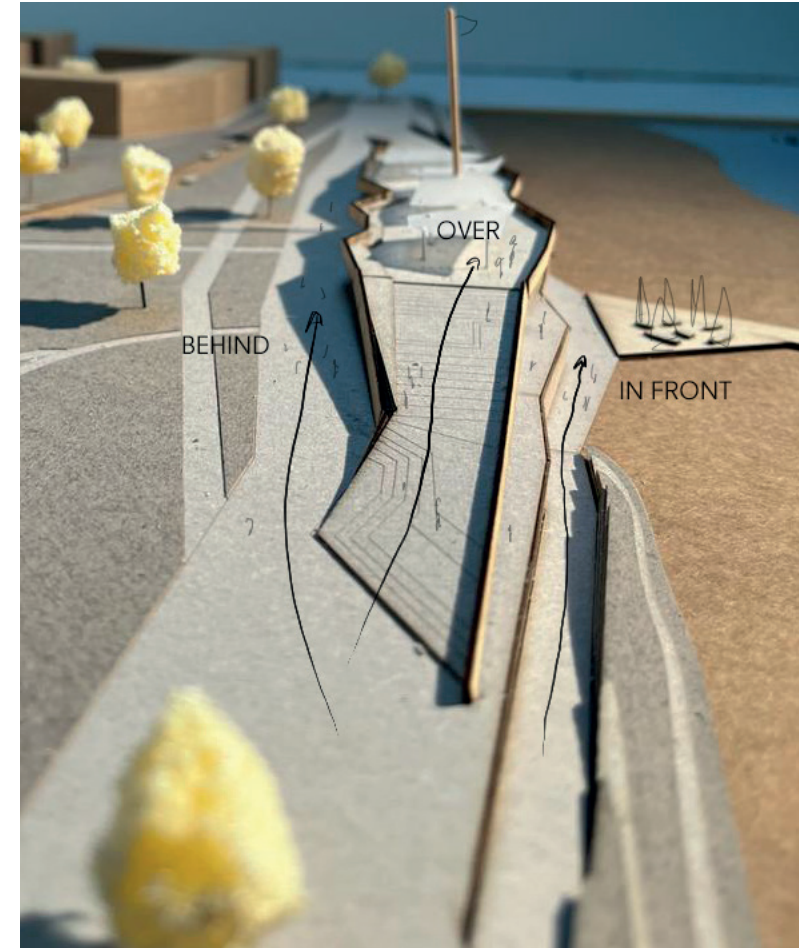
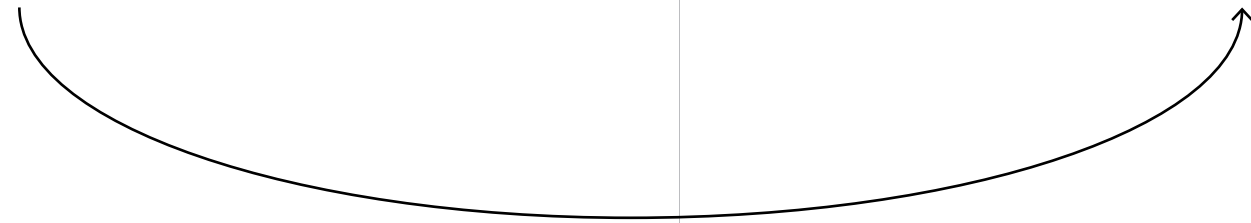


Figure 8.10: Project existing out of promenade



Shape north elevation

Experiment with two shapes, one that is calmer on one side. The other option is equally angular on both sides. The study shows that the option that is calmer on one side seems out of balance. The equally angular option creates a **dynamic play of shapes** on the beach and **suggests places to stay and walk** on the level above.

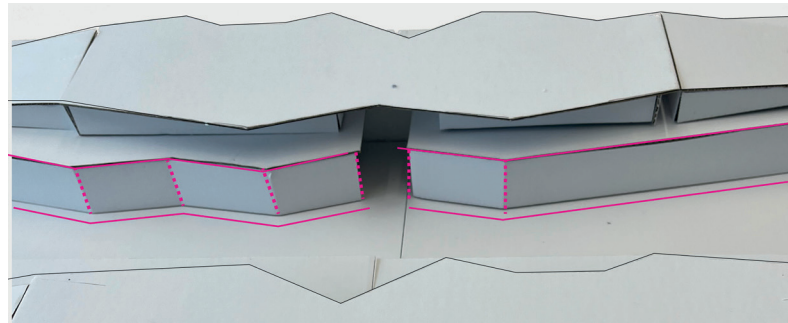


Figure 8.11: Calmer on one side

The shape seems out of balance, and not esthetically pleasing.

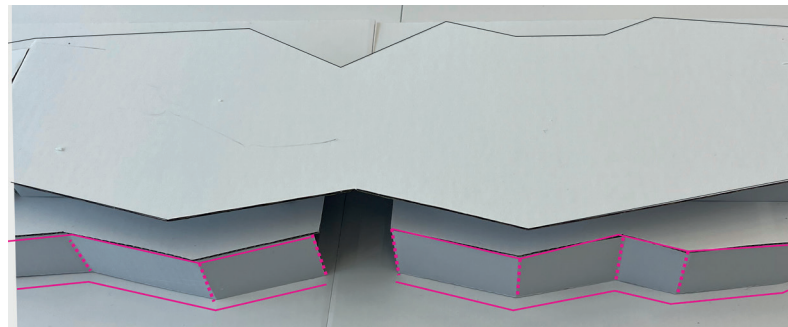


Figure 8.12: Equally angular on both sides

Dynamic shape. A suggestion for the use of space.

Outcome: Dynamic play of shapes and suggestion of places to stay and walk.

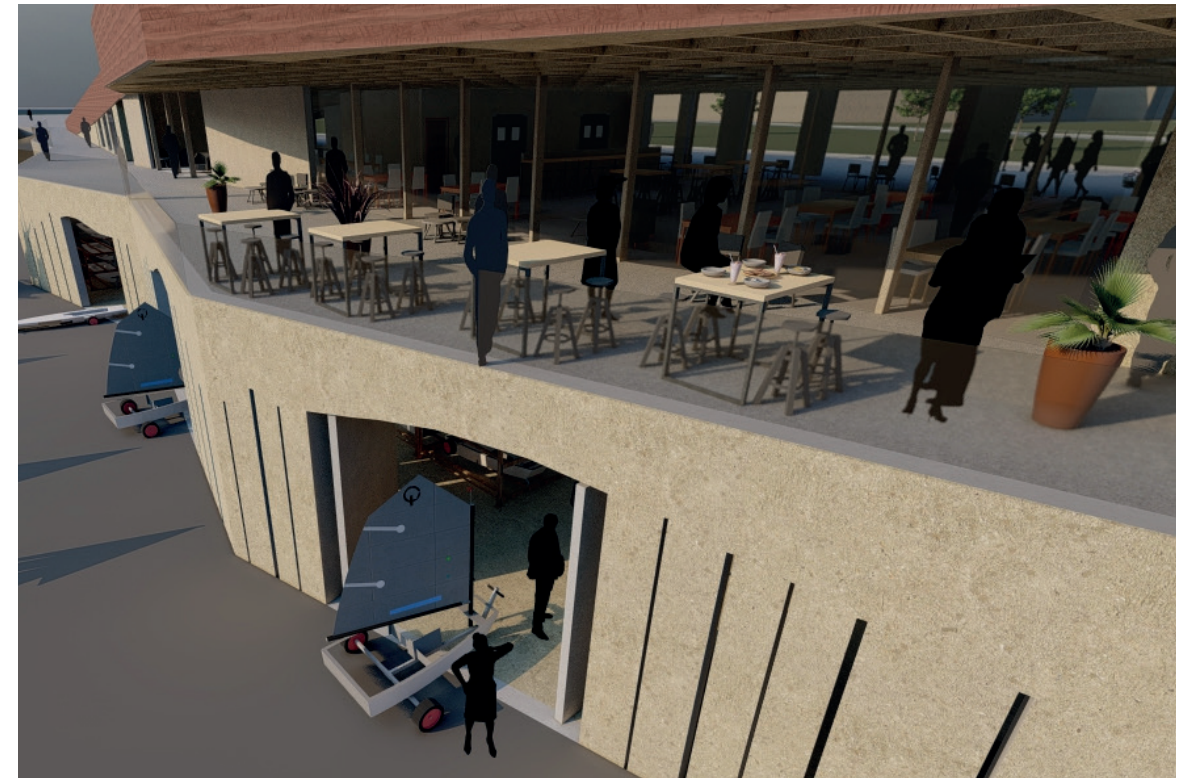
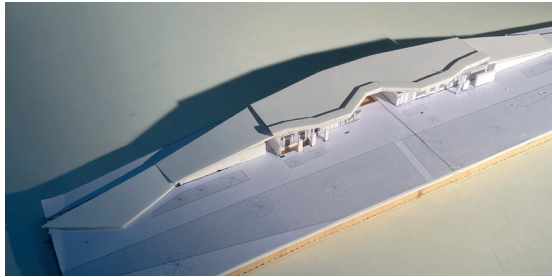


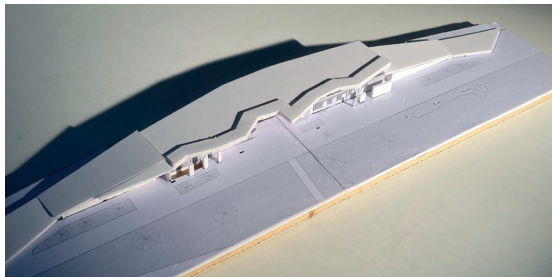
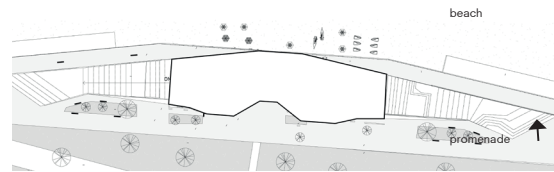
Figure 8.13: North elevation. Dynamic shape. + suggestion for the use of space.

SHAPE OF THE ROOF

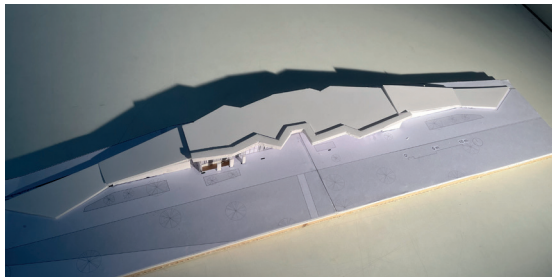
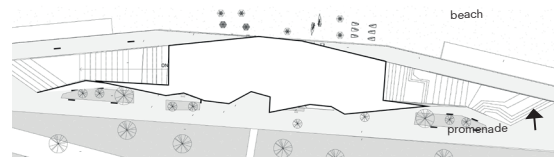
The shape of the roof invites and draws attention from the promenade. Different forms are tested to understand their influence on the experienced space.



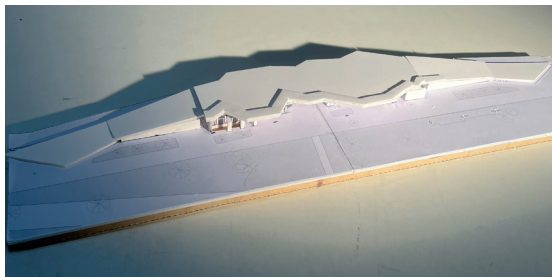
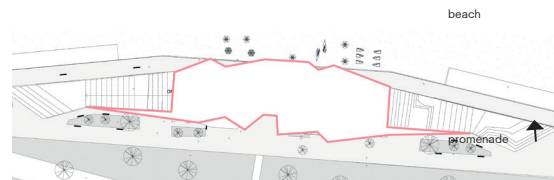
1. Roof at start study



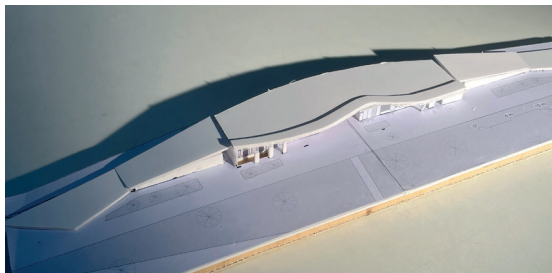
2. South more angular north identical



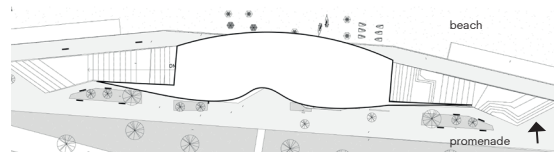
3a. Both sides are angular. Inlet creates strong suggestions for entrance (public part of the building)



3b. Inlet is more subtle.



4. Curved shape



Outcome: Dynamic roof that invites and draws attention. Inlet aligns with green spine **inviting from the park onto the beach.**

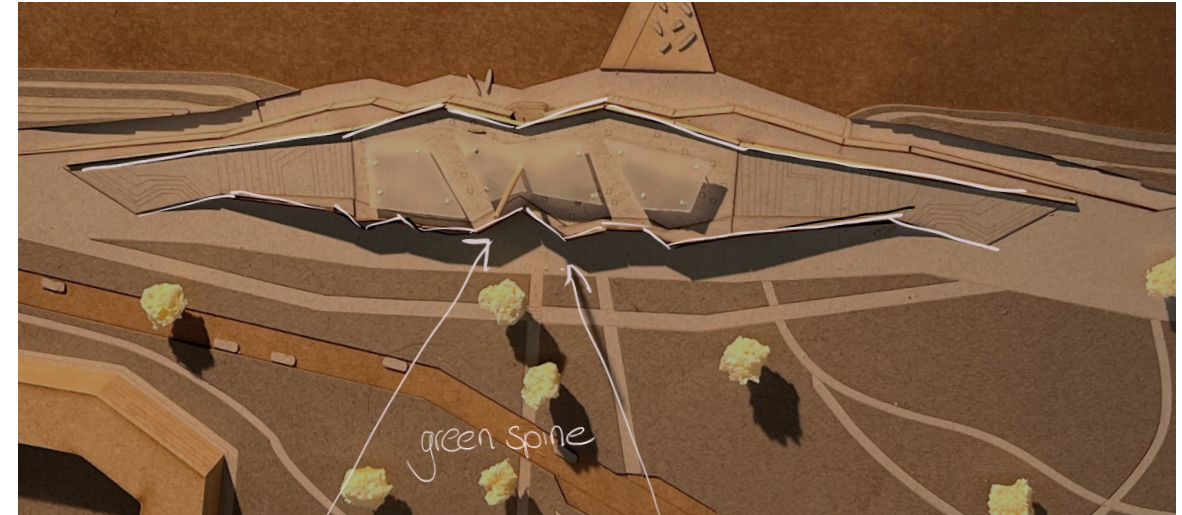


Figure 8.14: Shape of roof

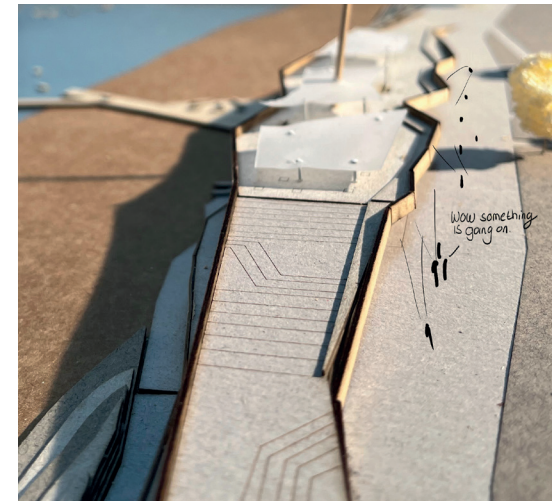


Figure 8.15: The roof draws attention from the promenade.

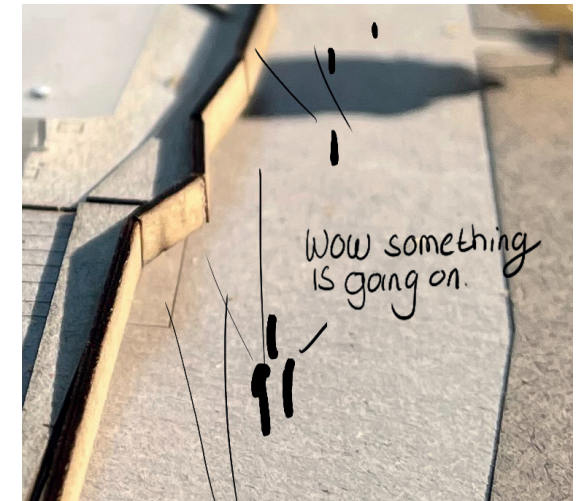


Figure 8.16: The shape tells a story about the program.



IN HONOUR OF
THE ONES THAT DIDN'T MAKE IT

EDITIONS

In the design process, multiple editions / variations are generated. This is because a concept can be realised in different ways. Finding the most optimal way takes trying out and optimising combinations.

Finding out that one way doesn't work puts you closer to the solution. This paragraph reflects on all the editions that did not make it, or as they are called: **"killed babies"**. It reflects on the concepts that the editions helped develop into design qualities. The paragraph **honours the variations that did not make it and their role in coming to the final design.**

THE WAVE - First design proposal (P2).

The first proposal includes **concepts that developed into main qualities in the final design**. The proposal arranges a **public centre in the middle**. Closed in this proposal. In the final design, This transformed into an opening, a staircase in the middle of the building.

The shape of a wave that the building proposes did not make it to the final design; however, the

idea behind the form did. The concept proposed is a **walkable building existing out of the promenade**. This concept comes back in the final design with the long staircase and public roof.

The **shape refers to the coast**. The final design doesn't have the literal shape of a wave; it does refer to the coast with **ventilation openings positioned in a wave shape**.

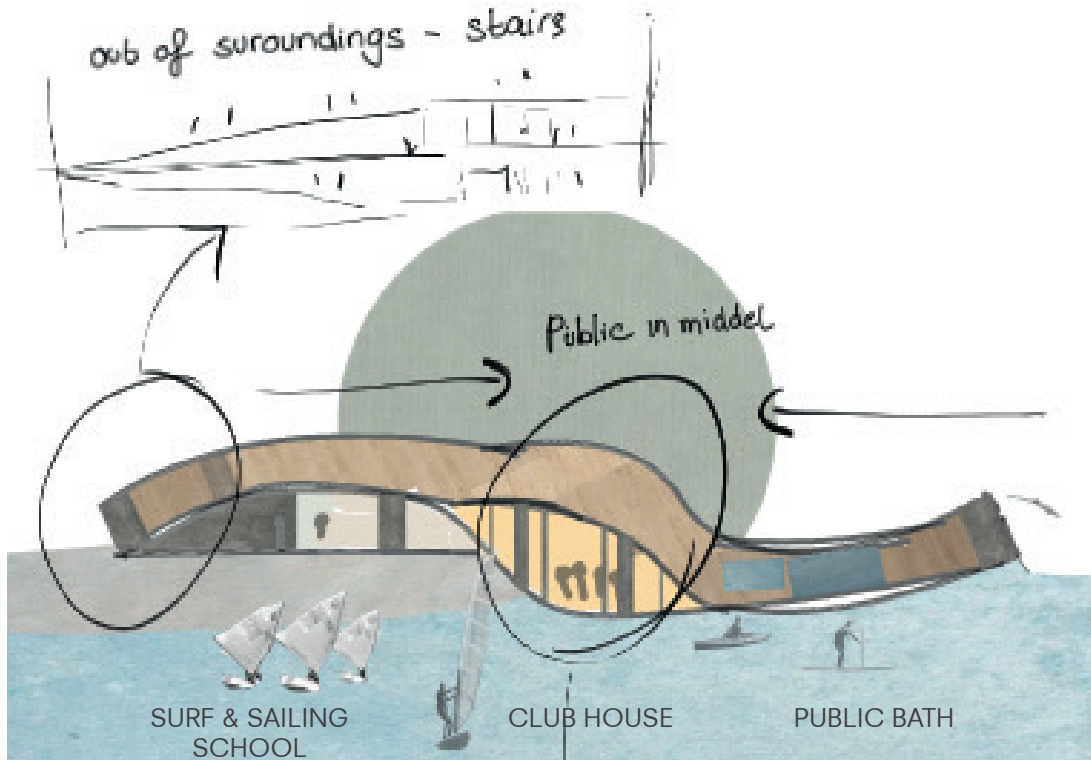


Figure 8.17: The Wave- First design proposal (P2)

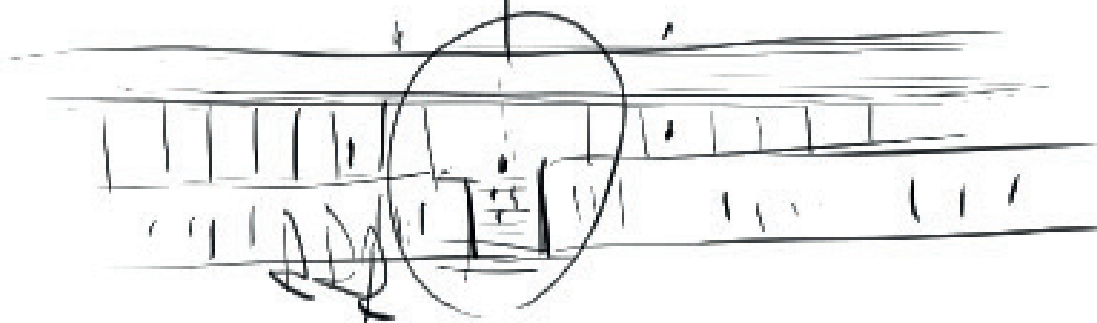


Figure 8.18: Public staircase in the middle of the building - final design

FLUID BRIDGE

This proposal has bridges that connect to the park and beach from the promenade. The idea of **walking around** the boat storage and **looking in** from the promenade started here. Looking back, this was a **complex way to connect** the promenade, beach, park and roof. **In the final design, the same connections are realised in a simplified manner.**

The fluid shape **indicates zones** to walk

and viewing points. The angular shape in the final design does the same, but it's now more integrated into the total design.

The positioning of one building more to the back is a concept that developed into the final design, where this became a **strong language with a balcony and a promenade**.

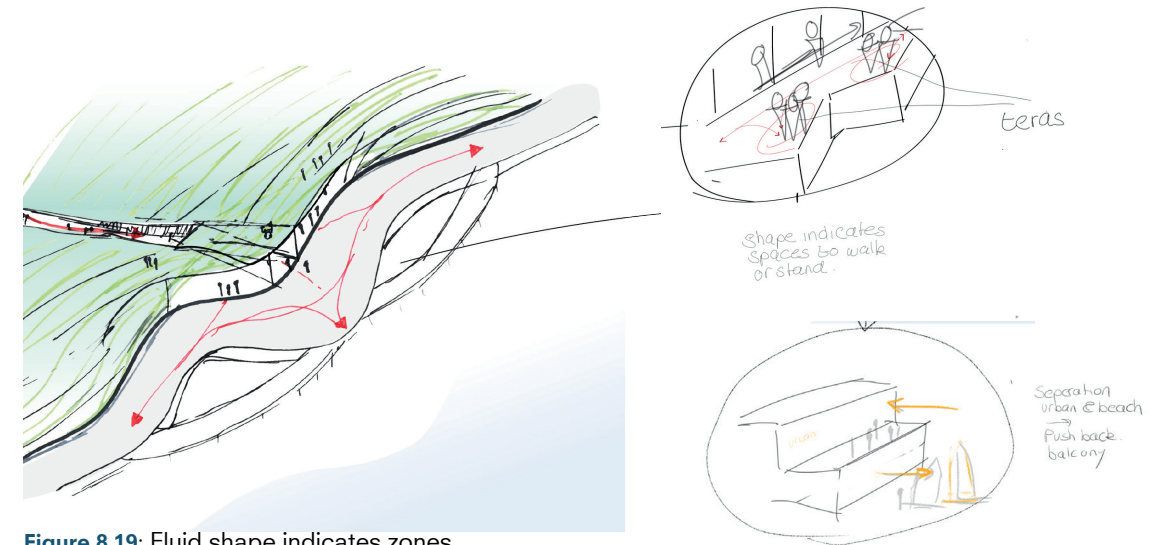


Figure 8.19: Fluid shape indicates zones

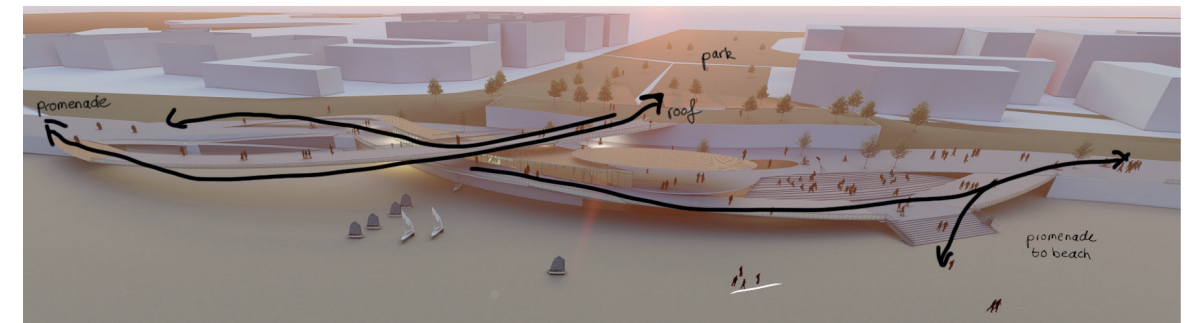


Figure 8.20: Bridges, **complex** way to connect.

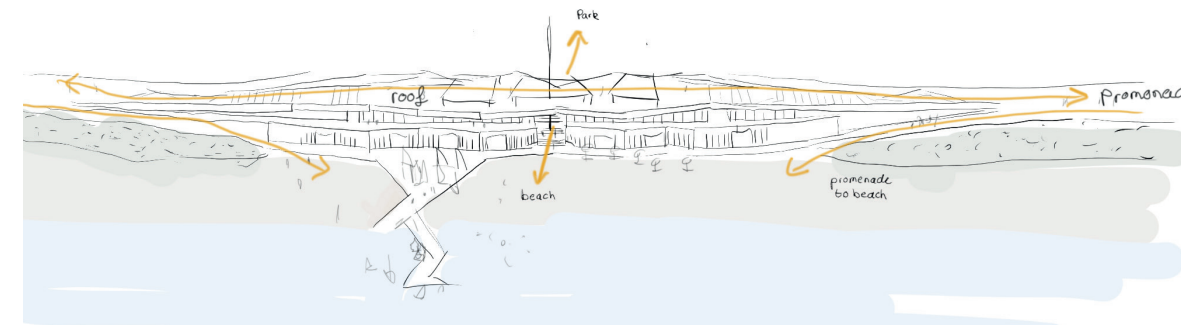


Figure 8.21: Same connections in a **simplified manner**. -final design,

The **X-shaped proposal**, where you can see in. This proposal has elements that made it to the final design but then better. The staircase in the middle and the opening aligning with the green spine made it into the final design in a different configuration.

Also, glass facing the staircase became a prominent attribute in the final design.

What I **still like** about this proposal is how you can **peak into the workshop from the promenade**. The wave shape makes it easier to look into the lower level. However, with all ambitions combined, the compromise in the final design serves the ambitions and, thereby, Beirut best.

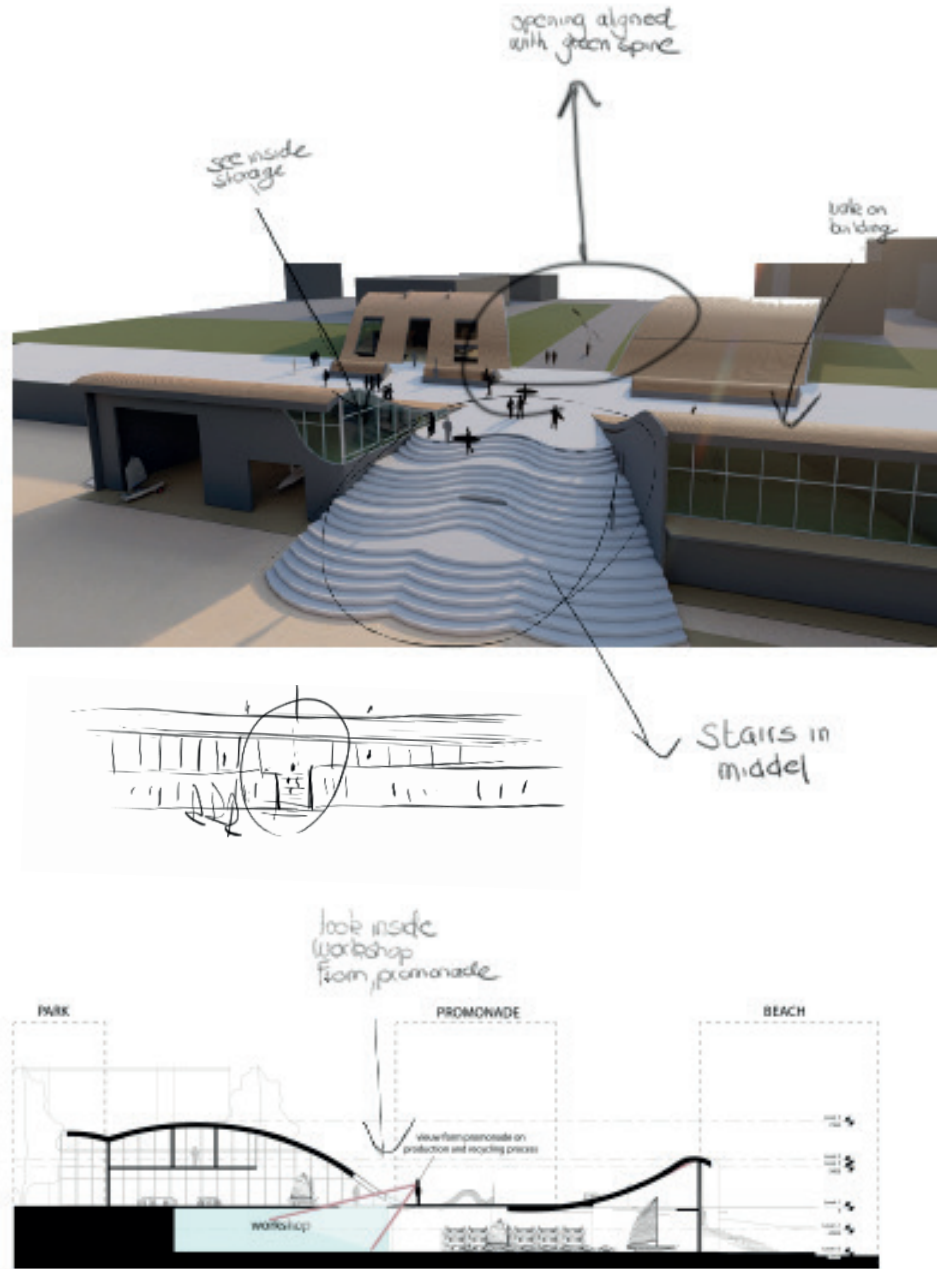
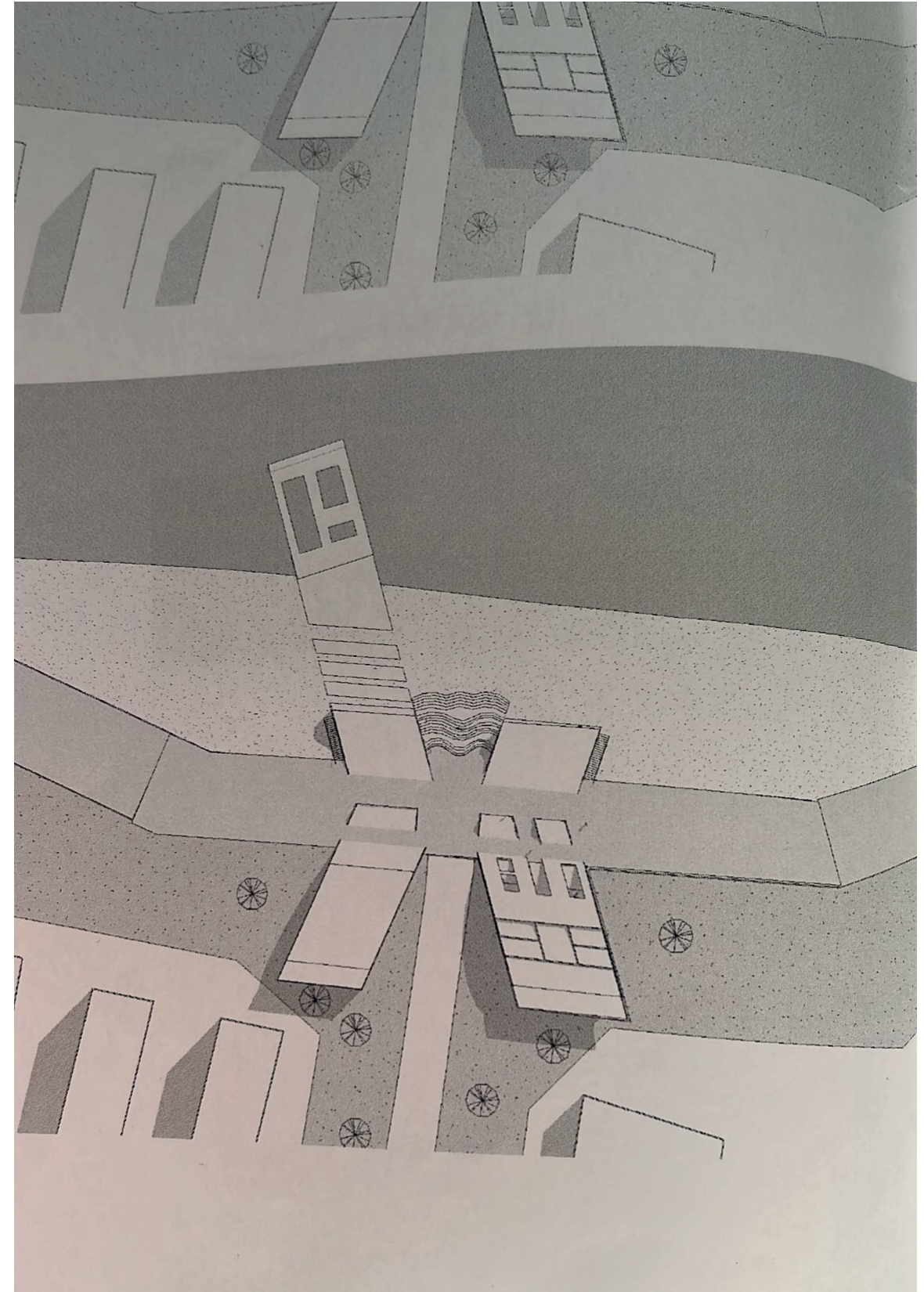


Figure 8.22: Look into workshop

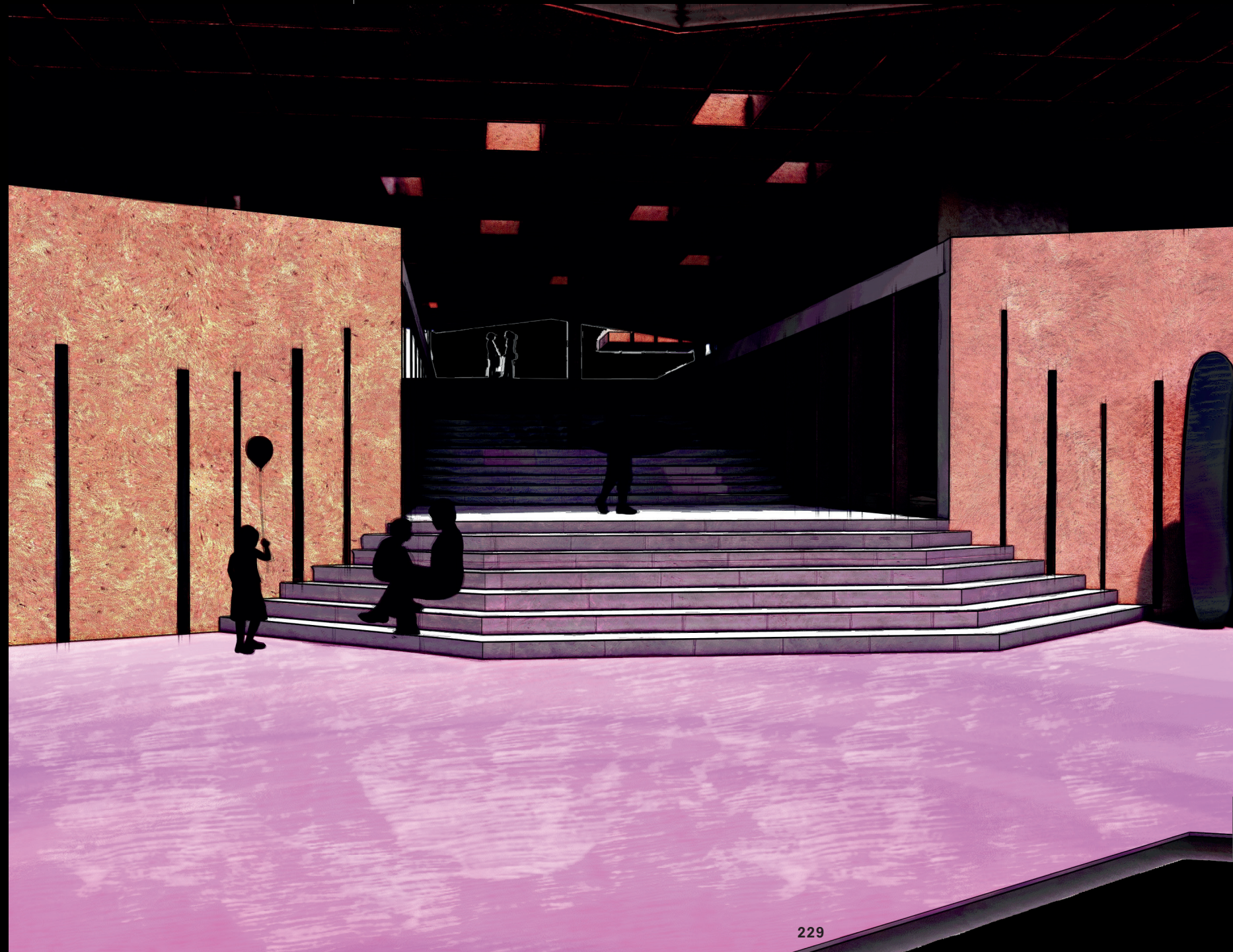


THE TEAM

The graduation studio evolves around the mixture of team and individual work. Looking back, working in a team suited me well; I'm glad the CP Studio offered a team structure. The team picture in the individual research book symbolises the team's role in developing the individual project.



THE PROJECT



How can **waterfront leisure facilities**, in the development of the Bourj Hammoud waterfront, **contribute to the interaction** between different communities in Beirut?

THE END

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