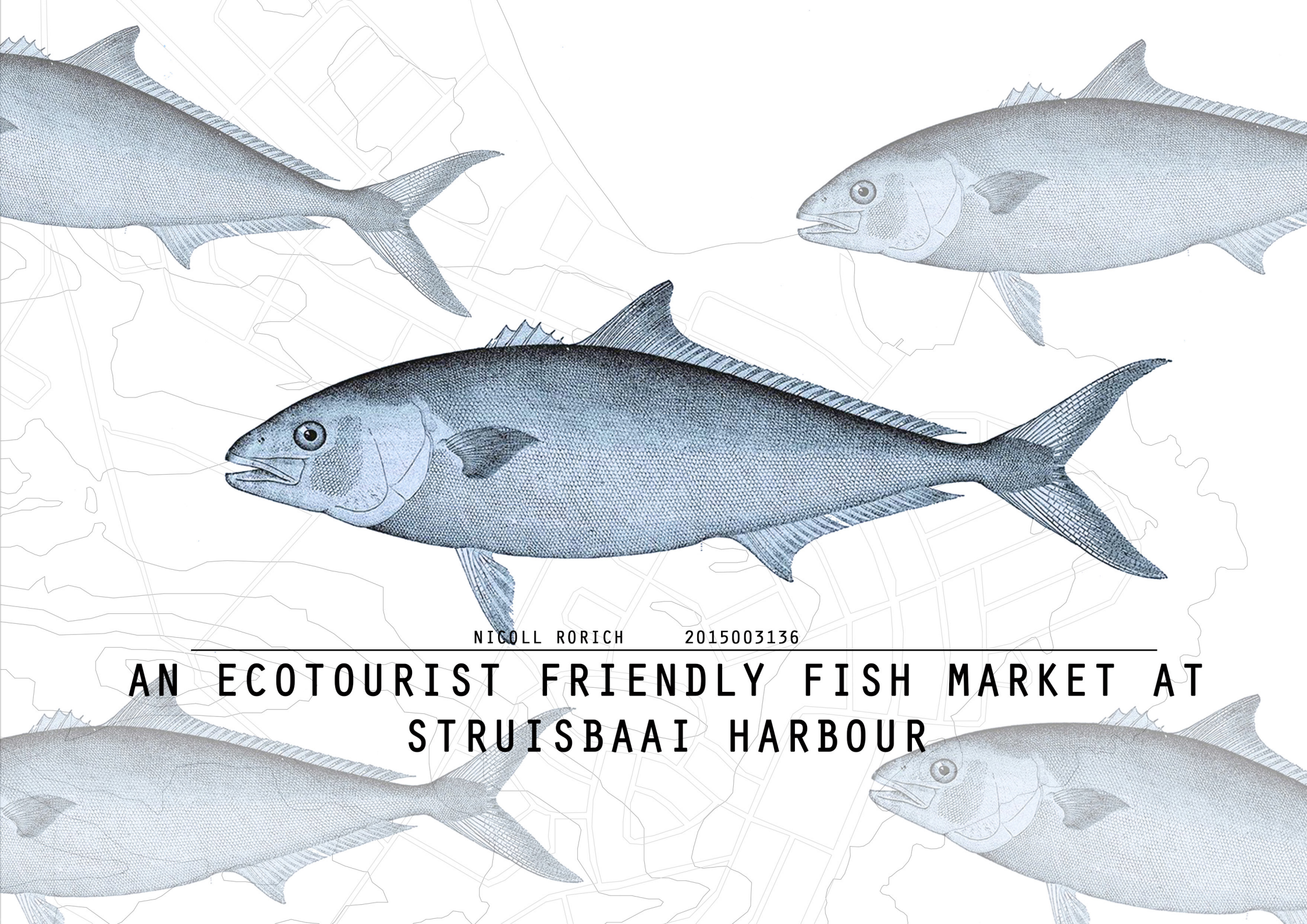

NICOLL RORICH 2015003136

AN ECOTOURIST FRIENDLY FISH MARKET AT STRUISBAAI HARBOUR

Figure 1: My family on the Struisbaai Jetty
(Rorich, 2019: own drawing)

STRUISBAAI

EN NOU
ONBEPLEISTER
SÊ EK SY NAAM
MET TENGER
STEMBANDE
VIR DIE SEKELMAAN

SY MOND
MY WINDSKERM
EN ONS IS GEGIET
IN ALLES
HIER BINNE
ALLES IMPLISIET

IN SY
SOMERARMS
VLOEI LAG UIT MY MAAG
SY SOENE
SEISOENE
IN GOLWE OPDAAG

IN MY
SEEKRULHARE
SY HAND VERGESTRENGEL
IN SY
SONBRANDSPROETE
MY HART VAS GEVANG

- SPOOKSAGE

[Refer to translation in Appendix B]

declaration:

This dissertation is submitted in partial fulfilment of the requirements for the degree MArch (Prof). All the work contained in this document is my own except where otherwise acknowledged.

Department of Architecture
Faculty of Natural and Agricultural Sciences
University of the Free State
Bloemfontein, South Africa
05 Nov 2020

Supervisors: Prof. Jan Smit and Mrs Petria Smit

Co-Supervisor: Annemarie Wagener

The work contained in this dissertation has been submitted for proof-reading and/or editing by Carla Pettit.

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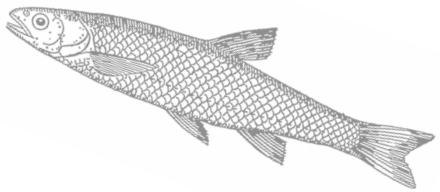
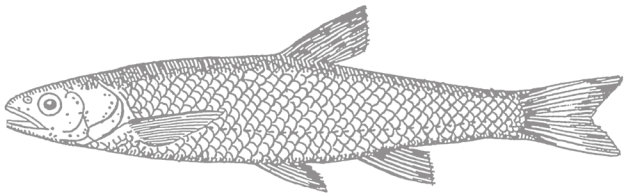
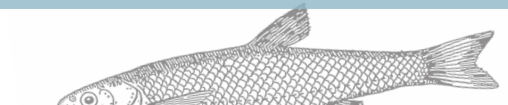


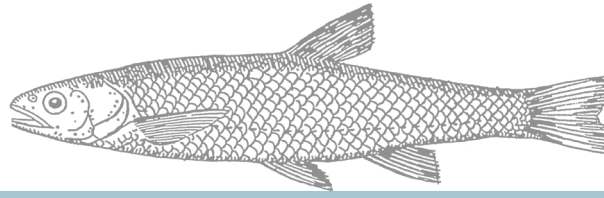




preamble:

This dissertation is a proposal for the expansion and improvement of Struisbaai Harbour in the Western Cape. The new additions consist of a promenade element, a swimming platform, a seafront building, a fish market, and a viewing deck on the jetty. The focal point of the proposed new additions will be the fish market element. The role of this proposal is to enhance the livelihoods of the local fishing community allowing for more job opportunities and better infrastructure to execute their daily tasks. The overarching aim of this proposal is to integrate the tourists with the local community. This integration will contribute to a more integrated Struisbaai culture that could benefit all users on the site. To achieve this, it is important to look at ecotourism and to understand how tourism and responsible design can contribute to the betterment of the community.

First, the complexities of the research topic are identified and investigated. This is followed by an in-depth exploration of what is needed on the site and why are these elements so important and unique to incorporate into the proposed intervention. Finally, once the complexities and needs of the proposal are identified a deeper exploration is made into creating an appropriate design solution by looking at multiple examples and understanding the context.



a. introduction 1. grounding

2. making

2.1 Typology

2.2 Topology

2.3 Morphology

2.4 Tectonics & Materiality

3. reflecting

3.1 Design Development

3.2 Design Synthesis

3.4 References

“Architecture is not just about building. It’s a means of improving people’s quality of life.”

Dièbedo Francis Kèrè

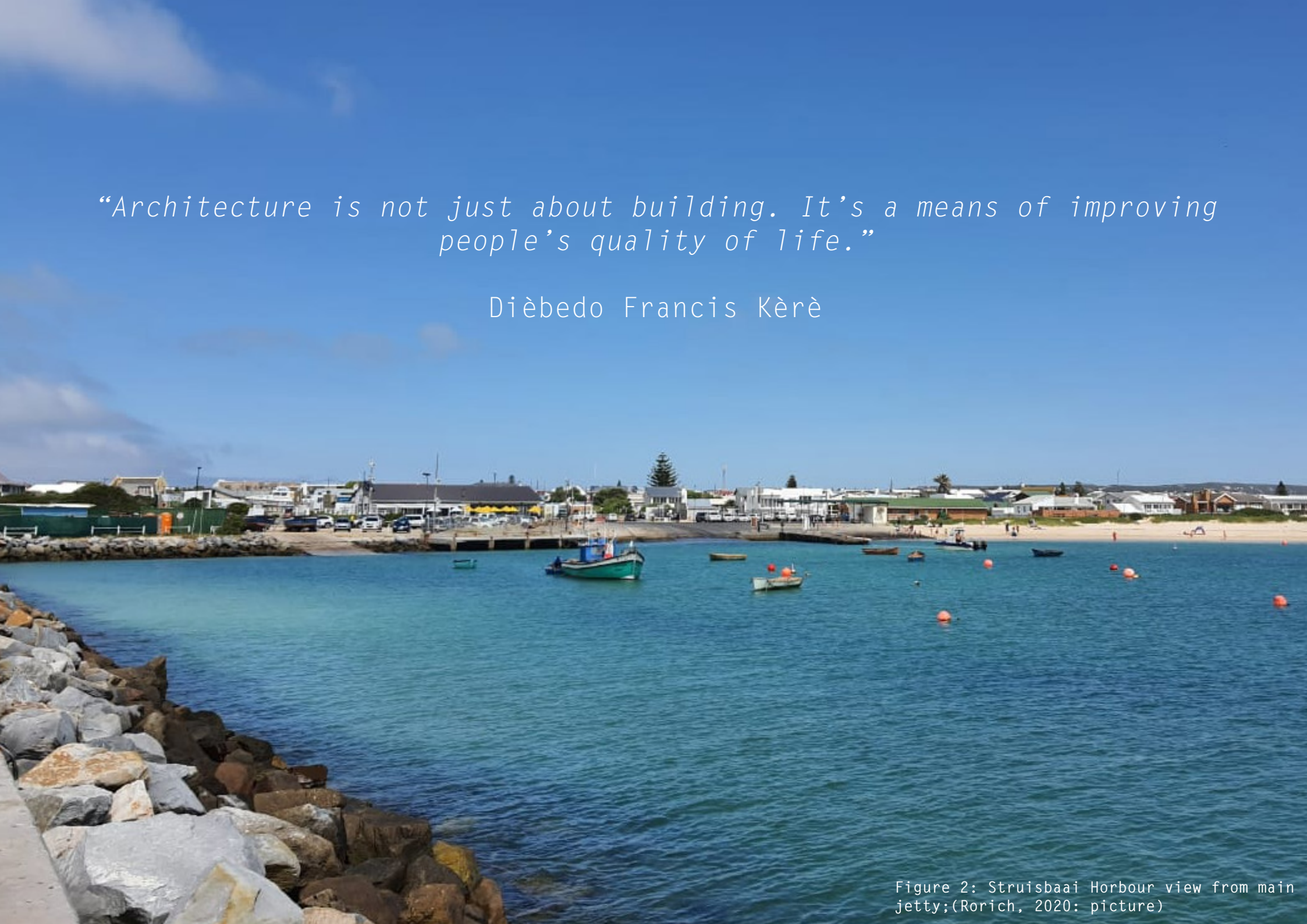


Figure 2: Struisbaai Horbour view from main jetty;(Rorich, 2020: picture)

a. introduction

i. Introduction

ii. Project Theme

iii. Explorations

- The Fishing Community
- The Site as the Glue
- The Tourists

iv. Document Struc-ture

1. Introduction

Keywords & Phrases:

fishers - tourists - ‘chukkies’ - ecotourism - vernacular - sustainable architecture - local community

Struisbaai is a place that holds meaning to many people in our country, whether you are a local fisher who calls it your home or a seasonal visitor who calls it your second home. The town has cultural complexities characterised by a constant clash and interaction between the local fishers and the tourists. The economy of the town depends on seasonal tourist income and the permanent income derived from the fishing industry, and because of this, its main focus is to accommodate both the local community and tourists at the town’s main point of activity, the harbour.

This dissertation aims to integrate the tourism sector with the local fisher community by creating awareness and participation in the proposed development. Through this, I believe that an appropriate design proposal will contribute to a more active and involved community intertwined with the tourist industry. This integration will ensure positive economic growth in the town and will uplift the fishing community. I propose to encourage this integration between the locals and the tourists, by designing a space appropriate to the environment of Struisbaai. At first, I will explore exactly what the complexities and needs are. I will place myself in the position of the tourists, as well as at the insider perspective of the local fishing community. To fully understand the insider perspective, I will interview several fisher families in Struisbaai and read several articles and reports released on the fishing community of the town. Through understanding the theoretical approach of ecotourism, it allows for the design to serve the complex needs of the dissertation and can create a space that is appropriate to the local environment, community, and economy.

ii. Project Theme

How to bridge the gap between the local fishers and the tourists at Struisbaai Harbour by implementing responsible tourism and domestic integration

Figure 3: Fisher rowboat; (Chadwick, 2014: online)

iii. Explorations

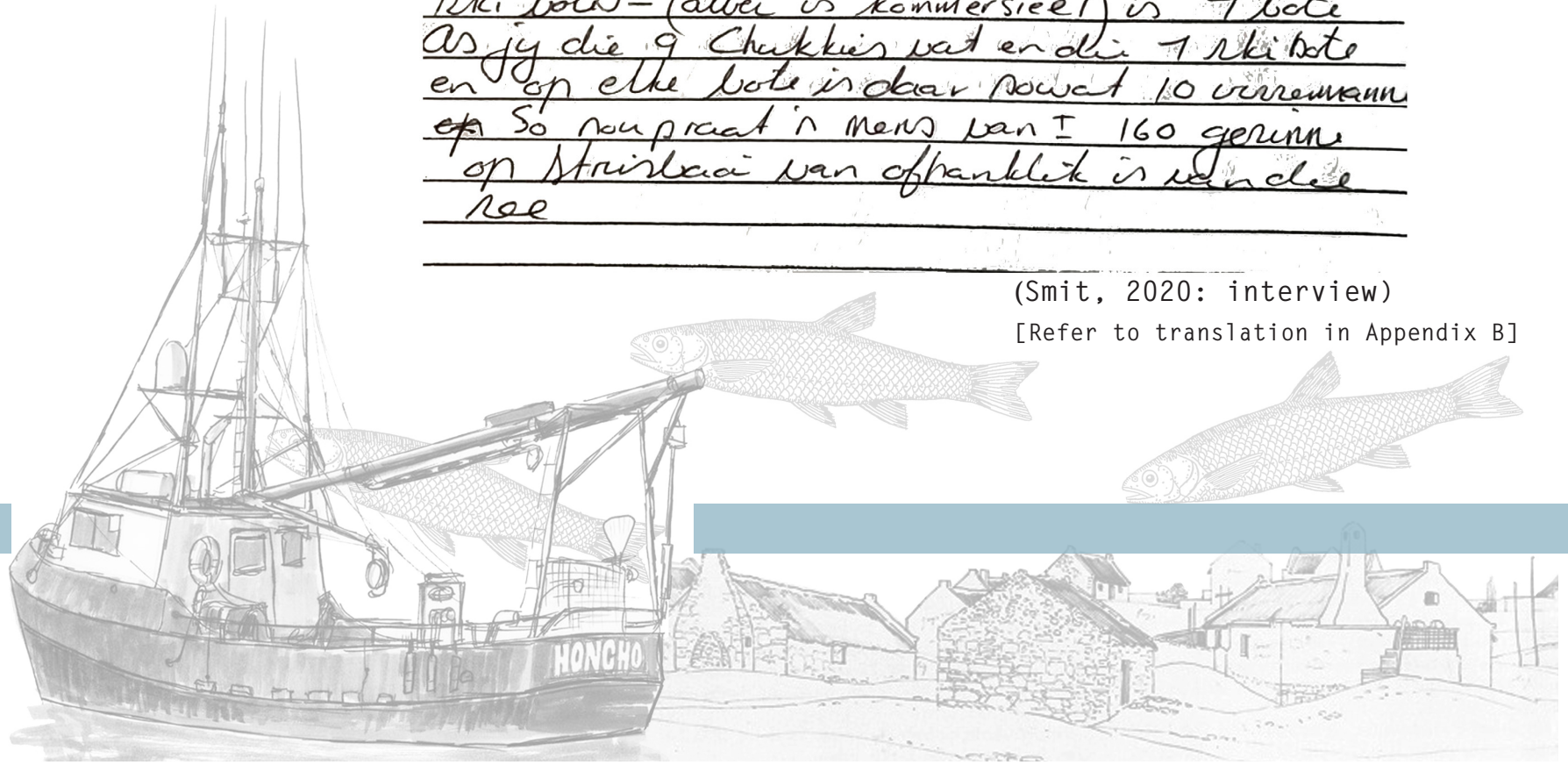
The Fishing Community

Die modern hawe van Striisbaai wat jy vandag sien is voltooi in 1989.

Toe was daar ± 45 Chukkies wat op moorings gelê het in die hawe.
[Chukkie is die ouerig haat skuite]
- Vandag is daar net 9 oor en plaaslike Ski boti - (albei is kommersieel) is 7 bote as jy die 9 Chukkies dat en die 7 ski bote en op elke bote is daar nowat 10 vennemanne ~~op~~ So nou praat ons van ± 160 gesinne op Striisbaai van afhanklik is vandag toe

(Smit, 2020: interview)

[Refer to translation in Appendix B]



Struisbaai is a town that is centred around the ocean and its fish. Struisbaai is situated along the coast of the Western Cape approximately 5km from L'Agulhas, the most Southern Tip of Africa. This town's most recognisable feature is its rich fishing culture and temperamental weather patterns. The livelihoods of the local people are mainly dependent on fishing, with fishing being the main source of income for the community. Over the years the town has developed its fishing activities to attract many other fishers to the town over the peak seasons. These fishers catch large volumes of the available fish and do not invest further in the town and its community (Meyer, 2016: online). This beach town has become a popular holiday destination, but behind the picture-perfect image, we find a fishing community that is crippled by poverty, social ills, and unemployment (ibid.).

Fishing as the main source of income has proven to be a challenge over the years, with elements that influence it such as new environmental laws, quota systems, and most importantly the struggle to get the correct fishing licence (ibid.).

The fishing villages in the surrounding areas have all urged the government to step in and improve the lives of the communities or they could face losing the last traditional line-fishers of the Overberg Region. Another issue is the poor infrastructure and upkeep of the facilities at the harbour (Wagener, 2020: interview) see Appendix A. All these elements place a tremendous strain on the livelihoods of the fishing community.

The local people have come up with suggestions on creating a 'chukkie' friendly zone for fishing (Meyer, 2016: online), cutting out commercial ski-boats and tourists; but I believe that through architecture it will be possible to introduce a better integrated solution. This can be achieved by designing a system of integration that highlights the importance of the fishing community, a space that allows for community upliftment and improvement. This can be realised by situating the fishers at the centre focus of the harbour, allowing several other activities to feed off the local fishing. These activities can also be aimed at integrating the locals and the tourists thereby benefitting both groups in the long run.

The Site as the Glue

Struisbaai greets you with the traditional Cape Cottage Fisherman houses and as you drive through the town it draws you to its main point of activity; the harbour. The picturesque harbour sets a paradise-like scene with clear blue waters, white-sand beaches, and the local boats, ‘chukkies’, that are always present in the bay. The small town has a complex culture where, on the one hand, you have the local fishing community that has inhabited these lands for many years, and on the other hand, you find the seasonal tourists that flock to Struisbaai during peak season. The harbour is the main element that drives the economy of the town and is, therefore, the focal point of Struisbaai’s activities.

The harbour serves opposing user groups that depend on the activities available on the site. Activities like a restaurant, the beach, and accessible jetties are elements that attract tourists to the site. The fishing activities have also become a major tourist attraction, with tourists flocking to the harbour to see how the local fishers go about their daily activities. For the local community, the harbour is the place where their livelihoods are earned. The proposed development must therefore cater for the Struisbaai culture. Through clever and responsible design space can be created for both the locals and the tourists to benefit therefrom.

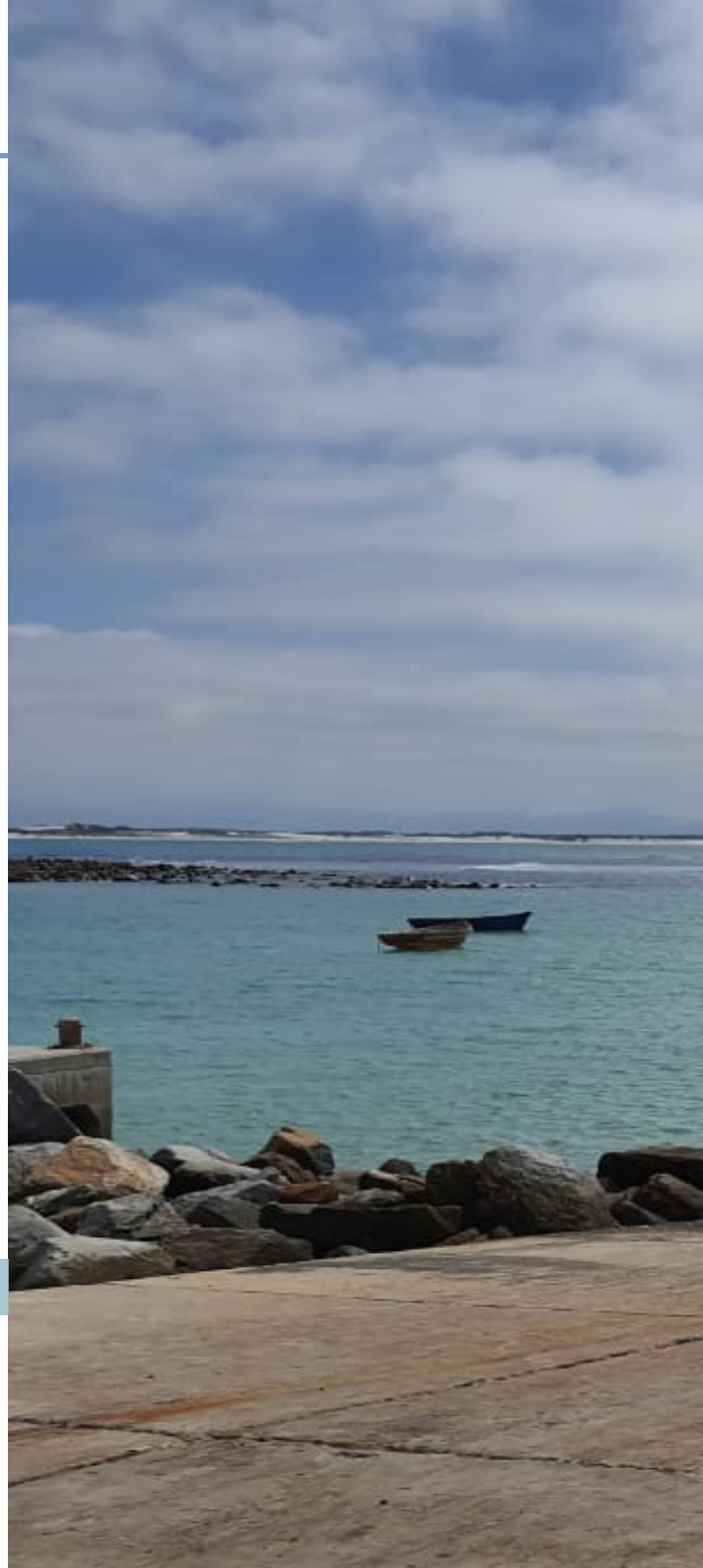


Figure 4: Struisbaai Harbour Boat Slipway; (Rorich, 2020: picture)

The Tourists

Struisbaai I'll always remember you!

Going to Struisbaai is the highlight of my year, its my second home. I vaguely remember playing in my grannies garden, taking my doll in her pram to the beach, walking to the local garage to get sweets and of course learning to catch fish. I remember the days I believed that my dad was the best fisher on the Jetty with kids always running up and asking; "Oom watse aas gebruik julle?" I remember the after sun sessions after a long day on the beach and making grannies house full of sand. I remember the smell of braai's at every corner and the waving hands of the friendly holiday goers. I remember the romantic beach strolls and the new years fireworks on the beach. I remember the cheesecake at the lighthouse and the cocktails at Seagulls. And most importantly I remember your peacefulness.

(Rorich, 2020)

Each year tourists visit the small town of Struisbaai, whether for long December holidays, long weekends, or even for the 'Geelstert Fees' in March. Struisbaai is an ideal place for a holiday as there is a range of activities, mostly outdoor. The main attraction is the ocean and the beaches, with ocean activities like fishing, waters sports, swimming, surfing, snorkelling, and even tanning. Tourists often engage in other activities like hiking and enjoying the natural fauna and flora of the Cape Agulhas region. Besides the annual influx of South African tourists, Struisbaai might experience an influx of international tourists throughout the year, because of its proximity to the most southern tip of Africa. Another big attraction is the L'Agulhas Lighthouse.

The financial influence of tourism on the economy of Struisbaai is apparent and carries the economy through the year. Businesses make their biggest profit in December and rely on that money throughout the following year. Therefore, the tourism activities in town are essential, and through innovative design and planning, tourists could be lured to participate in the local fishing community, and to contribute financially to the town's economy in new and different ways. The proposed project can also attract tourists and increase awareness of the importance of the local fishing community and their livelihoods.

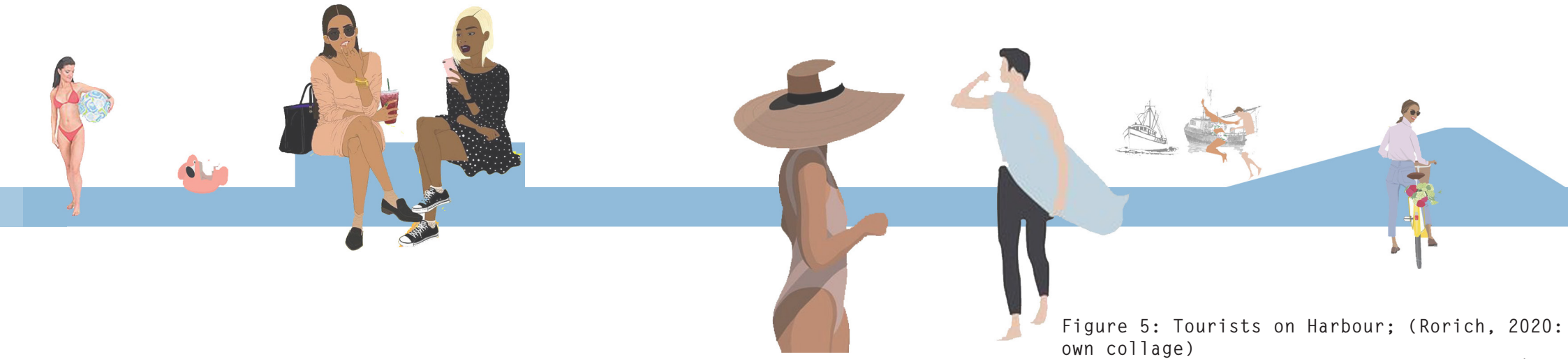
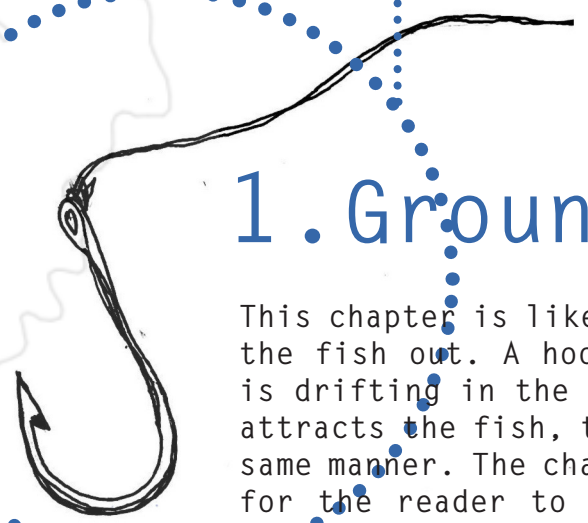


Figure 5: Tourists on Harbour; (Rorich, 2020: own collage)

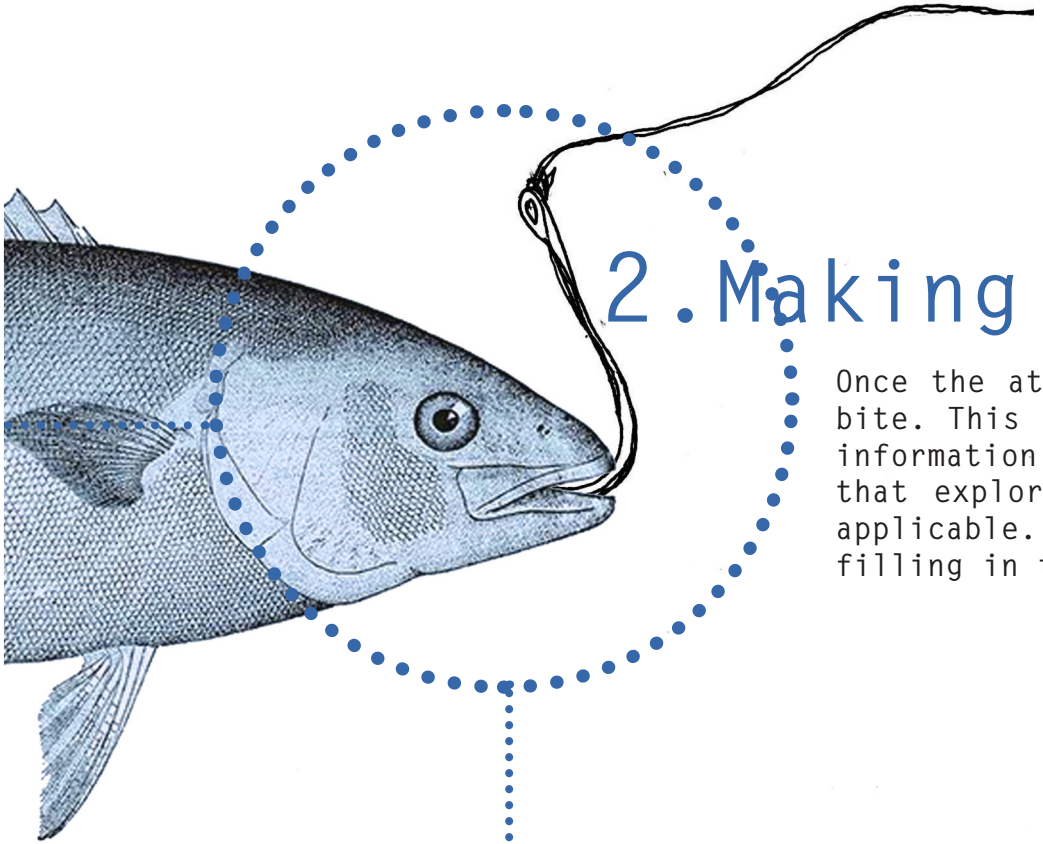
iv. Document Structure

This dissertation is structured around the deep understanding of the complexities of the problem and researching elements that will lead to a possible solution. The different branches that I am exploring are the grounding, making, and reflection of the project. This exploration forms part of my document structure seen in the diagram. 'Grounding' refers to the reasons why the project is important and how the conceptual and theoretical elements can contribute to deeper comprehension of the complexities and needs of this dissertation. 'Making' explores the different possibilities by looking at the topology, typology, morphology, and the tectonics and materiality of the project. This branch explores several possibilities and combines it into one design proposal found in the reflection branch. 'Reflection' touches on the design process and the design solution.



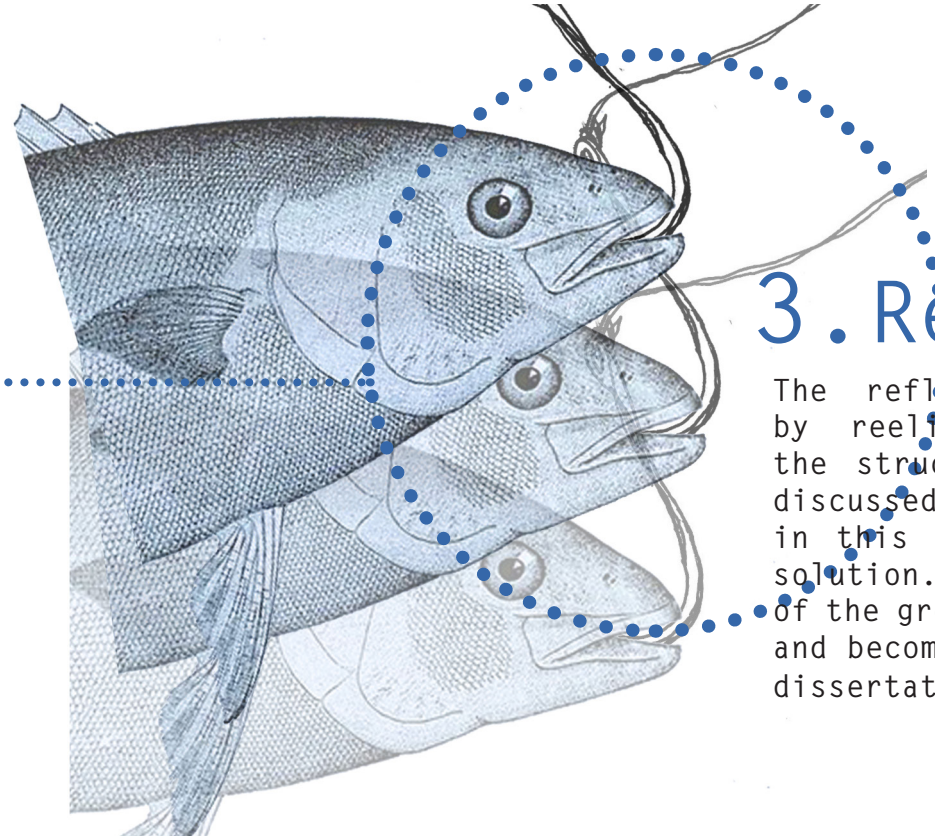
1. Grounding

This chapter is like a fishing hook, luring the fish out. A hook with bait on it that is drifting in the water is the thing that attracts the fish, this chapter acts in the same manner. The chapter creates a platform for the reader to grab onto. The chapter is aimed at explaining the significance of the project and why it is so important. In a sense, this chapter resembles the main investigations.



2. Making

Once the attraction of the ‘hook’ is created the fish are eager to bite. This relates to the document structure in such a way that the information given in this chapter becomes the ‘fish’, the body, that explores how the proposed intervention can be successful and applicable. This chapter is aimed at putting a body onto the framework, filling in the gaps and the questions.



3. Reflecting

The reflecting chapter is resembled by reeling the fish in. Now that the structure and the body have been discussed we can bring the project home, in this sense explaining the proposed solution. The chapter is an accumulation of the grounding and the making chapters and becomes the finished product of the dissertation.

“Architects can’t force people to connect, they can only plan the crossing points, remove barriers and make the meeting places useful and attractive.”

Denise Scott Brown

Figure 6: Harbour Jetty; (Rorich, 2020: picture)

1 grounding

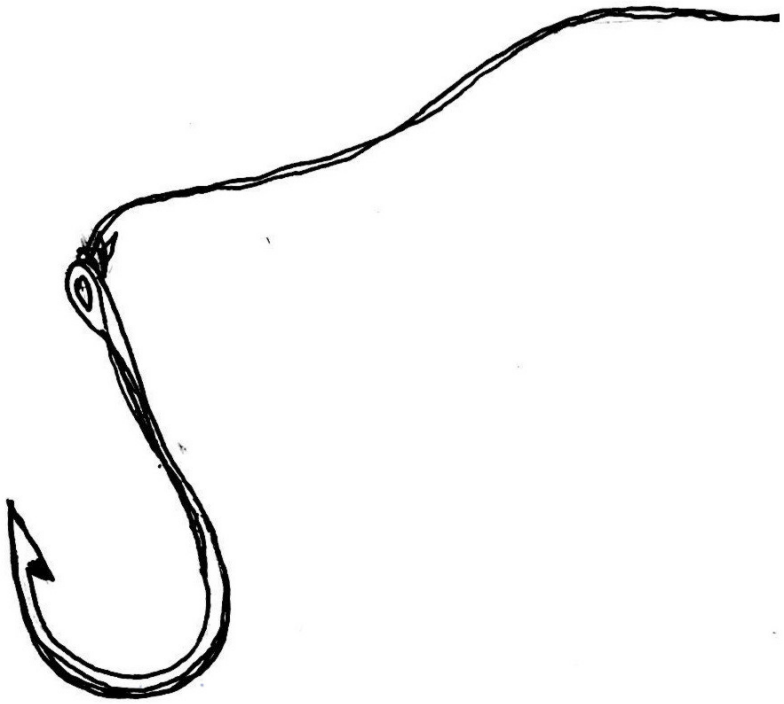
1.1 Background & Project Rationale

a. What
b. Why
c. Where

1.2 Conceptual Development & Underpinning

a. Touchstone
b. Concepts

1.3 Theoretical Underpinning



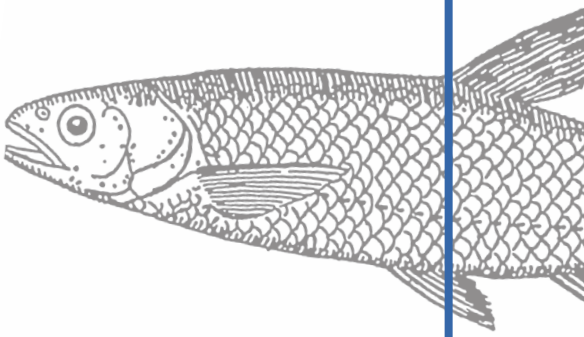
1.1 Background & Project Rationale

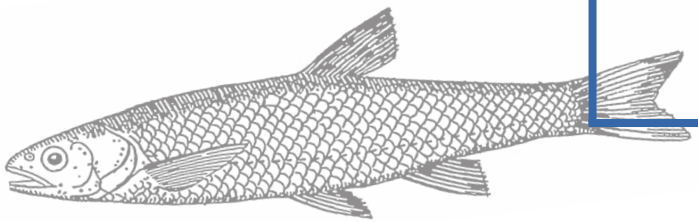
a. What (am I proposing)

The programme is focused on binding the elements and users on-site through creating spaces for different activities and endless possibilities that will suit each user's needs. The proposed elements will all become attractions to all users on-site and will blur the line between local fishing activities and tourist activities

Fish Market

The fish market is the focal point of the site. This market will allow for the upliftment of the community. The market will also encourage interaction between tourists and local fishers. This market platform will mainly accommodate fish cleaning and fish distribution activities; it will also create an opportunity for local fishers to sell their fish to the tourists as well as allowing tourist experiences and orientation based on the fishing industry (this process will be discussed later in the project map section).



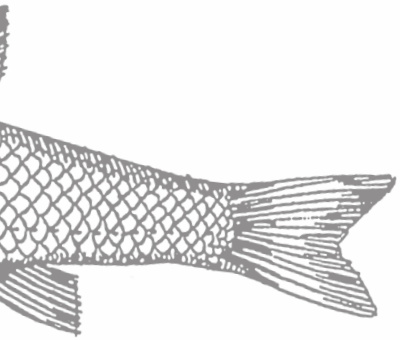


Jetty

There is an existing jetty on-site that will be upgraded and enlarge; a viewing deck will also be added. This jetty's main purpose will remain focused on the current fishing activities on-site. The viewing deck is an element that might attract tourists to the end of the jetty and encourage integration between the different users on-site.

Seafront

The seafront is located at the heart of the bay, and this element will host all the restaurants, shops as well as the government fishery offices. The restaurants and shops will feed off the fish market that is situated on the seafront. Elements like the information desk and the orientation centre will introduce other tourist activities while still focusing on uplifting the fishing community.

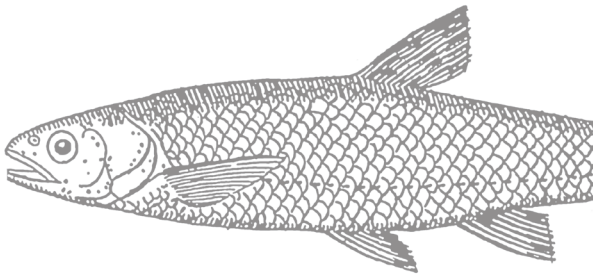


Swimming Platform

A new swimming platform that extends into the ocean will be introduced; this platform will replace the current small jetty at the heart of the bay. The idea behind the platform is to create a more interactive platform in the water, an urban ‘jungle gym’.

Promenade

The promenade will be a new element to the site that will host spaces for leisure, restaurants, ablutions, and all other beach-related activities. The existing timber walkway connected to the main beach will feed into the new proposed promenade. The main focus of the promenade is to create leisure spaces to accommodate the tourists’ numerous and varied needs.



Integration Programme

The dissertation programme aimed at blurring the line between local fishing activities and tourist activities. There are certain activities aimed at attracting different user groups. So how will this interaction be encouraged further?

I will be introducing a Tourist Orientation and Experience programme. This programme will create a platform for interaction between users, which will positively influence the local community by creating more job opportunities, other means of income as well as encourage interaction with tourists. The advantages that it holds for the tourists are, for example, awareness of the local fishing community, yet another interesting tourist activity to partake in, and creation of responsible travellers.

This Tourist Orientation and Experience programme will consist of several activities. The fishing community will host three activities, namely:

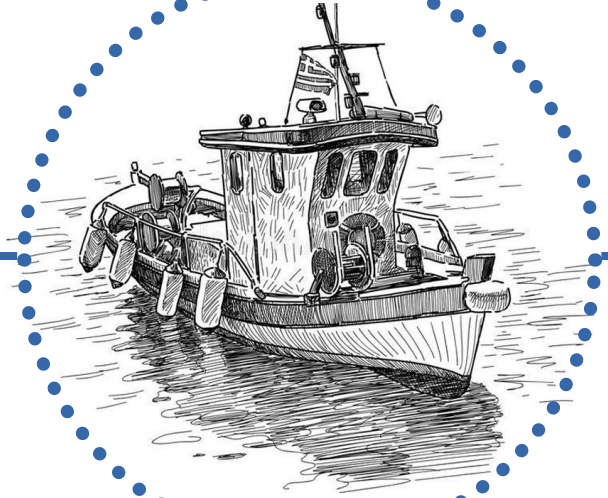
1) A deep-sea fishing trip on a local ‘chukky’ boat
2) Fish cleaning and prepping class
3) Fish cooking experience

The tourists that participate in these experiences will receive an orientation and brief background on the fishing community of Struisbaai before and during these experiences, in order to create a more informed traveller.

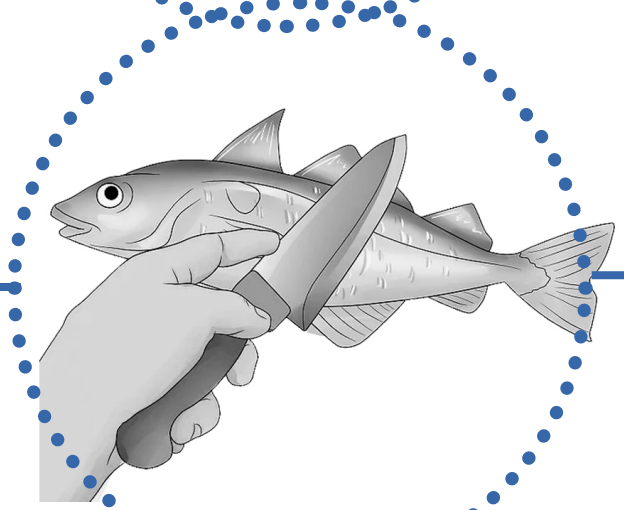
Deep-Sea Fishing Experience

Fish Cleaning Experience

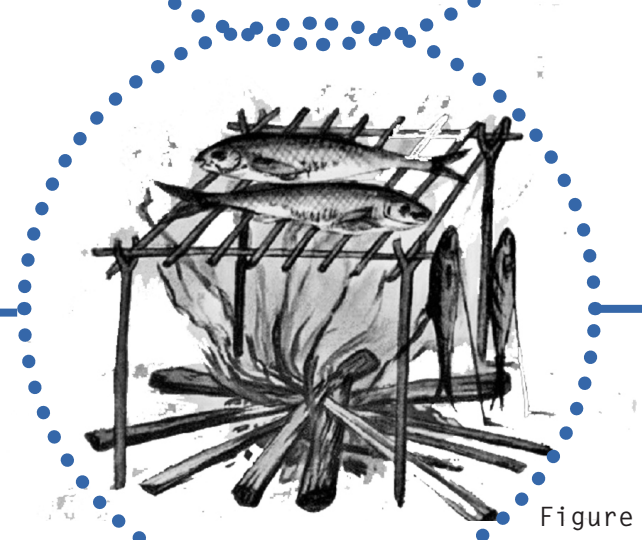
Fish Cooking Experience



The tourists will have an opportunity to go deep-sea fishing with the local crew. A safety program will be set up where the fishers presenting this tour will go for several training sessions to ensure tourist safety, for example, first aid training, etc.



The local fisherman will present a 'class' showing step by step how the fish is cleaned, each tourist will then have the opportunity to clean their own fish that they either caught or paid for.



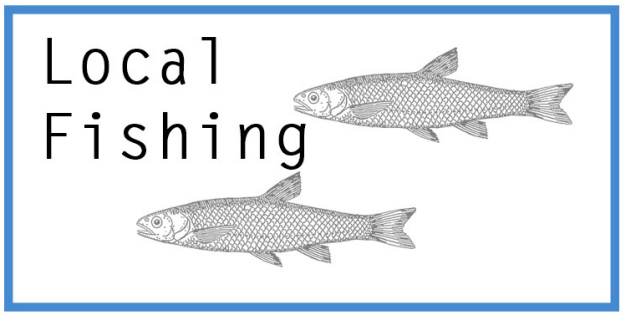
A fish cooking experience will be presented by the local fishers, where a braai pit will be booked out for a group, this pit will have a minibar area, a fish box, and a braai area. The fish will be braaied by the local while he explains how to treat the fish properly. This becomes a social experience.

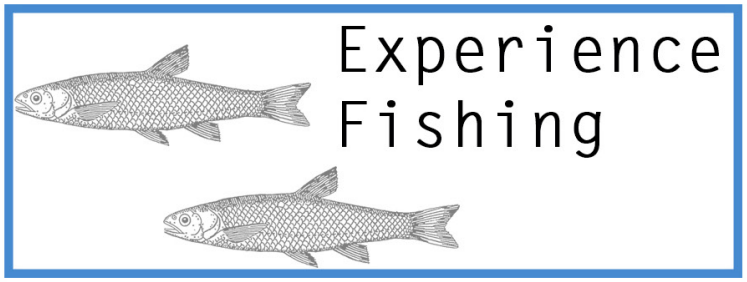
All these experiences will be presented by the local community. Each tourist guide will have to go for training to ensure safety and to also learn how to work with tourists. Each experience will also have an orientation and history session presented by the tourist guides.

Figure 7: Activities; (Rorich, 2020: own diagram)

Project Map

The main challenge on the site is to ensure that interaction is encouraged, firstly because of the size of the site, and secondly because of the different users on-site. A Dissertation Programme and Tourist Orientation and Experience Programme has already been introduced. How do we ensure interaction takes place? I believe that the project map is a good element to describe the integration between local and tourist activities. This project map places the fish market at the centre and ensures that all the other activities on-site are connected with the fish market.





This diagram indicates how all the elements on the site tie into the notion of creating a connection between the local fisherman and the tourists. The fish market is the element that connects these two groups, and the connection is achieved by making the market the focal point from which all the other elements feeding off.

The fishing activities range from local fishing, tourist fishing, and fishing trips hosted by the locals for the tourists (as discussed in the 'Integration Programme' section above). These activities tie back into the fish market by creating opportunities for the local fisherman to sell fish at the market to the tourists, to clean fish at the market, and to also re-distribute the fish from the market. The market then supplies fish to the fish shop on-site and the restaurants on-site. The tourists are in this way supporting the local community: firstly, by using the fish produced on-site; and secondly, through the interactive and orientation experiences presented by the fishers (as discussed in the 'Integration Programme' section above). The governmental fisheries are accommodated for and will observe and control all the activities related to the catching and selling of fish, to ensure that all fishing and health regulations are complied with.

By introducing a project map that maps out how each element is bound together and how each element ties into the fish market, I believe that positive interactions will be encouraged between the tourists and the locals.

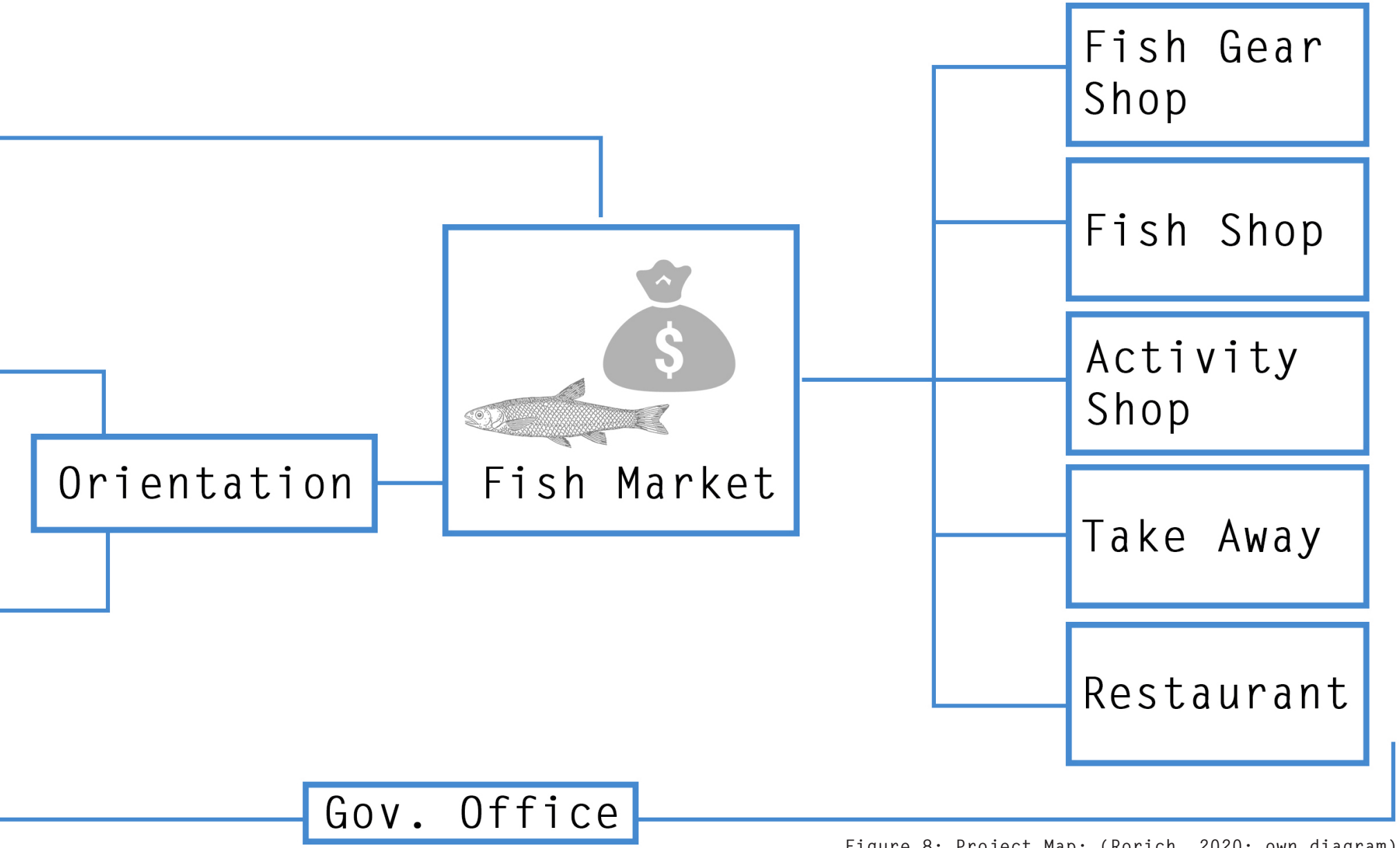
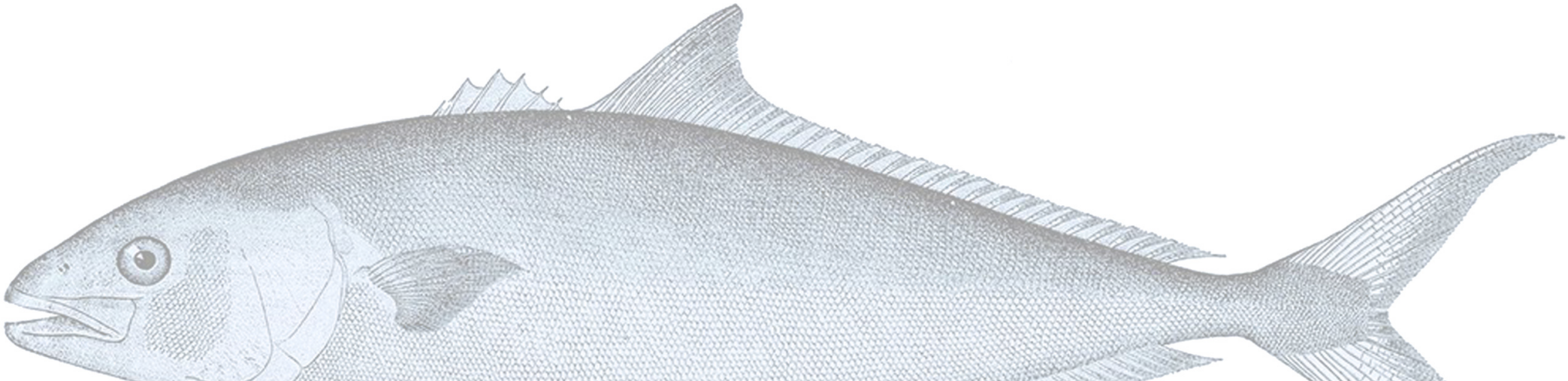


Figure 8: Project Map; (Rorich, 2020: own diagram)

b. Why (is this important)

In the 1940s Struisbaai and the surrounding villages all made a living from the ocean. From Gansbaai to Arniston, all with their unique fishing culture. These fishing communities lived in small traditional Fisherman Cape Cottage houses and lived a simple life earning a living from fishing. According to a report by Galloway, these traditional houses were scattered around the coast of Struisbaai, where the local fishers were the only inhabitants of these lands (Galloway, 2017: 129-130). Later, the fishing villages along the Overberg coastline evolved and changed into a combined fishing village and holiday destination. In the 1950s the previous government had set out the first series of plots in Struisbaai (ibid.). Because of this, the fishing community was moved to the northern part of Struisbaai, where most of the traditional houses were demolished (ibid.). Most of these plots were sold to white families and this created a transformation in the identity of the town (ibid.). Many people from all over the country started to flock to Struisbaai and created a town mostly known for its touristic attractions.

Struisbaai has carved deep roots into both users found in town, the one dependent on the other. Without the fishers the towns would not be the attraction it is today. And without the tourists, the town will not survive financially throughout the years. Let's look at all the unique components that make this place special, which highlights the importance of uplifting not only the harbour infrastructure of Struisbaai but also the whole culture of the town.



General Fishing Statistics

GLOBAL FISHERIES AND AQUACULTURE PRODUCTION
2012 totalled
158 MILLION TONNES

FISHERIES AND AQUACULTURE SUPPORTS THE LIVELIHOODS OF AN ESTIMATED 10-12% OF THE WORLD'S POPULATION

90% OF FISHERIES ARE SMALL SCALE

15% OF THE PEOPLE INVOLVED ARE WOMEN

50% OF SEAFOOD CONSUMED IN RSA IS IMPORTED

128 999 380 kg
EXPORTS IN 2010

2 604 225 968 kg
IMORT FISH IN 2010

FISH ACCOUNTS FOR ALMOST 17%
OF PROTEIN INTAKE GLOBALLY IN 2010

These statistics are all information from the WWF (WWF, 2014)

Struisbaai Fishing Statistics

9 CHUKKIES & 7 SKI-BOATS
ARE THE PERMANENT BOATS IN THE HABOUR

+- 10 PERSOSNS
PER COMMERCIAL BOAT

160 PERMANTLY
DEPENDANT FAMILIES

FISH MAINLY SOLD TO
BUYERS IN CAPE TOWN

IN PEAK SEASON YOU
GET UP TO +- 150
COMMERCIAL BOATS THAT
ALL COME TO STRUISBAAI

1-1,5 TON
FISH PER BOAT ON A GOOD DAY

IN PEAK SEASON
THERE IS ON AVERAGE
50-60 COMMERCIAL
BOATS

IN PEAK SEASON
THERE IS ON
AVERAGE 80
LEISURE BOATS

LEISURE BOATS
RESTRICTED TO
10 FISH PER
DAY

These statistics are all information given by Brendon Smit (Smit, 2020: interview)

Handline Fishing Process:
https://www.youtube.com/watch?v=u53Ww8Sh05U&ab_channel=TheRovingRunner

Handline Fishing

"Line fishing in South Africa is defined as the capture of fish with hook and line (maximum of 10 hooks per line) but excludes the use of set pelagic or demersal longlines. Together, the three sectors of the line fishery (commercial, recreational, and subsistence) target over 200 of South Africa's 2 200 marine fish species."
(WWF, 2015)

Handline is the most used fishing method by the local fishers in Struisbaai. Handline fishing falls under the line fish procurement of South Africa and involves mostly small-scale fisheries. Handline fishing is the most hands-on method of fishing available. This method works as follow (Rorich, 2020: interview):

- You drop your fishing line in the water from the drifting boat
- The fishing line usually has a baited hook and a sinker on
- The line is not controlled by a rod or reel but by hand
- You will feel the fish strike and must pull it in by hand

The line fisheries consist of almost 2 500 vessels that are about 5.5m to 15m long. These boats operate on the continental shelf that is between 5-130m deep (Griffiths, 2011: 81). There are many elements to the topographical layout that make Struisbaai and the Overberg region an ideal place for handline fishing; Galloway defines these elements:

- The wind
- The Indian Ocean
- The Agulhas Bank

These three elements will be discussed in more detail in the Topography section in Chapter 2.

Figure 9: Handline Fishing; (The Roving Runner, 2016: online)

Fish Species

As discussed in the fishing statistics above, it becomes clear that the small-scale fishing sector has a big impact on the livelihoods of the fishing communities on the coast. Many of these communities are dependent on the income of derived from fish caught by handline and in Struisbaai particularly the most popular fish species are Yellowtail, Kob, and Galjoen. Yellowtail is unique to the Overberg region, therefore, Struisbaai and its neighbouring towns are the main suppliers of these fish species to the national and international market.

Cape Yellowtail

Information from: (Kistnasamy & Hatting, 2013: online)

Scientific Name: ***Serida lalandi*** Common Names: **Giant Yellowtail, Geelstert**

GLOBAL DISTRIBUTION: circumglobal, confined to warm temperature shelfs and seamouths and oceanic islands.
SOUTHERN AFRICAN DSITRIBUTION: NAM, NC, WC, EC, KZN

Movement: *Nomadic*

The fish aggregate and move between offshore reefs the 12-Mile banks in the Agulhas region. but can also be found along the West Coast between Dassen Island and Hondeklip Bay, as well as offshore areas such as Vema Seamouth. Adults move up the east coast to KZN during winter following the sardines.

Habitat:

Adults: Epipelagic, with larger fish occuring to depths of 40m

Juveniles: Epipelagic, shoals associated with flotsam

Egs & larve:
Pelagic

Feeding:

Adults: Prey on pelagic baitfish species such as *Sardinops, Trachurus, Engraulis* and *Scomber* as well as squid and crustaceans

Juveniles: Unknown

Silver Kob

Information from: (Kistnasamy & Hatting, 2013: online)

Scientific Name: ***Argyrosomus indorus*** Common Names: **Kablejou, Kob**

GLOBAL DISTRIBUTION: ENDEMIC TO SOUTHERN AFRICA OCCURING FROM NAM TO SOUTHER TRANSKEI

SOUTHERN AFRICAN DSITRIBUTION: NC, WC, EC, KZN

Movement:

Migratory

Inshore (<60m) in summer dispersing further offshore in winter in response to oceanographic patterns

Habitat:

Adults:

Mostly moderate/low profile ref in 20-120m depth in the SWC

Juveniles:

Sand/mud substrate, recruiting into shallow embayments but move offshore with growth

Egs & larve:
Largely unknown; pelagic larvae

Feeding:

Adults: Pelagic fish, shrimp and squid

Juveniles: Unknown

Galjoen

Information from: (Kistnasamy & Hatting, 2013: online)

Scientific Name: ***Dichistius capensis*** Common Names: **Galjoen, Damba**

GLOBAL DISTRIBUTION: ENDEMIC TO SOUTHERN AFRICA OCCURING FROM SOUTHERN ANGOLA TO DURBAN

SOUTHERN AFRICAN DSITRIBUTION: NC, WC, EC, KZN

Movement: *Resident*

Most fish are resident (90%). A small percentage are nomadic. Its uncertain wheter individuals adopt the one or the other patter, or if all fish can adopt both patterns, but in unequal proportions. Sometimes found on offshore pinnacles in large shoals.

Habitat:

Adults: Broken surf in areas of mixed rock and sand are favoured.

Juveniles: Immediate sublittoral surf-zone

Egs & larve: Unknown, eggs have never been located

Feeding:

Adults: Epilithic feeders. Principally molluscivores with brown mussels dominating the diet.

Juveniles: Unknown

Fishing Process Struisbaai

Yellowtail, Kob and Galjoen are the most prominent fish species caught in Struisbaai (Rorich, 2020: interview). All these fish species are caught using the handline fishing method. Let's look at how exactly this process works in the Struisbaai fishing community.

The local 'chukkie' boats and ski boats go out to sea to catch the fish each day. The fishers' day starts in the early hours of the morning, as they go out to sea at about 3:00 am. Although this is traditional, changing resource patterns necessitate that fishers also fish during the night (both boat based and shore angling) (Parker, 2013, 55-57). The time of day and length of time they stay out at sea varies and is greatly dependent on the ocean conditions, the fish availability, etc.

Going out to sea is dependent on, and determined by, the weather. The fishers of Struisbaai Noord receive their weather predictions through internet sites such as Windfinder, which they access through the local library (ibid.). This website provides them with essential local weather information such as wind speed, wind direction, precipitation, wave direction and height, and temperatures.

Fishers use sardines, chokka and 'seekat' (a type of octopus) as bait. Once they have reached the fishing banks, every crewman has their own bucket and section on the boat. It is each person's responsibility to keep their fish in a good condition, which is achieved by keeping the fish cool and wet and also by covering them with plastic bags to protect them from the sun. Most boats (whether chukkies or ski boats) have regular crewmen, but fishers say they will fish on any boat that has space for them.

All the people in the community are somehow involved in the fishing industry. The fishing process itself is a tough environment and, therefore, it is mainly the men who go out to sea. The women involved in the fishing industry usually help with the management, and previously they also helped clean the fish but that has fallen away. The fish caught are sold to several sectors that range from restaurants, fish shops and also big fish companies that export seafood.

Handline Fishing Process in Struisbaai:
https://www.youtube.com/watch?v=WFv49oZOcBo&ab_channel=WCLWestcoastliving

Figure 10: Local Fishing Struisbaai; (Westcoastliving, 2020: online)

The Tourists

My mom always says “ek gaan al Struisbaai toe vanaf ek doeke dra”. Each year we return to the same small coastal town, like many other families; it is our second home. Just mention the towns Struisbaai and Agulhas, and you can rest assured that most people will have visited it at some point and will have a memory that has stuck with them. The western coast has its own unique character that attracts many visitors, maybe because of its down-to-earthness or possibly because of its ‘lekker’ people. Struisbaai is one of those Western Cape towns that has its own unique character and transports you into a different world.

When I ask people what they think is unique about Struisbaai, I hear stories like: ‘die lekker vry op die sandduine’, the ‘skuurskoffels’ in the olden days, catching ‘strepies’ on the jetty, tanning on the white sandy beaches, being blown away by the wind, the Trans Agulhas Pencil Duck racing, the feeding of the famous stingray in the harbour, fishing at the ‘plaat’, and many more. Therefore, I believe that tourism is an unavoidable element that contributes to the identity of the town.

Struisbaai is a perfect holiday destination that is not too overcrowded and expensive, like Stilbaai, which is approximately 2.5 hours away. Another big tourist attraction is the fishing culture of the town, where tourist fishing activities vary from ski-boat trips to on-jetty fishing and off-shore fishing. I believe that this fishing culture had a big impact on the influx of tourists. Many fond memories and stories are created in Struisbaai, some of which go as follows (next page):

70 000 PEOPLE IN STRUISBAAI IN 2019 PEAK SEASON ACCORDING DERICK BRUGER (BRUGER, 2020: INTERVIEW)
THIS INCLUDES DAY VISTORS
THIS NUMBER GROWS EACH EAR AND IS CALCULATED FROM THE MATRIC FINAL EXAM END DATE(BRUGER, 2020: INTERVIEW)

THE LONGEST, UNINTERRUPTED WHITE BEACH IN THE SOUTHERN HEMISPHERE

14 KM
(Xplorio, n.d.)

PARRIE THE STINGRAY
THE TOWN MASCOT

43 811 VISITORS TO SANP AGULAS IN 2017
(South Africa. Western Cape Government, 2018: online)

20 000 PEOPLE ON THE BEACHES IN 2017 PEAK SEASON ACCORDING TO WC GOVERNMENT (South Africa. Western Cape Government, 2018: online)

Breyten Breytenbach wrote in his poem Septembersee

onthou jy nog
-ek dink dit was in Kaap Agulhas-
die lang geel kwas van die lighuis op die punt
vee gereeld, so klopritmies soos ons vaak
en die posboot vér in die baai
se stil bloedpyl teen die aand se lug
op weg na so 'n vreemde wieweetwaar

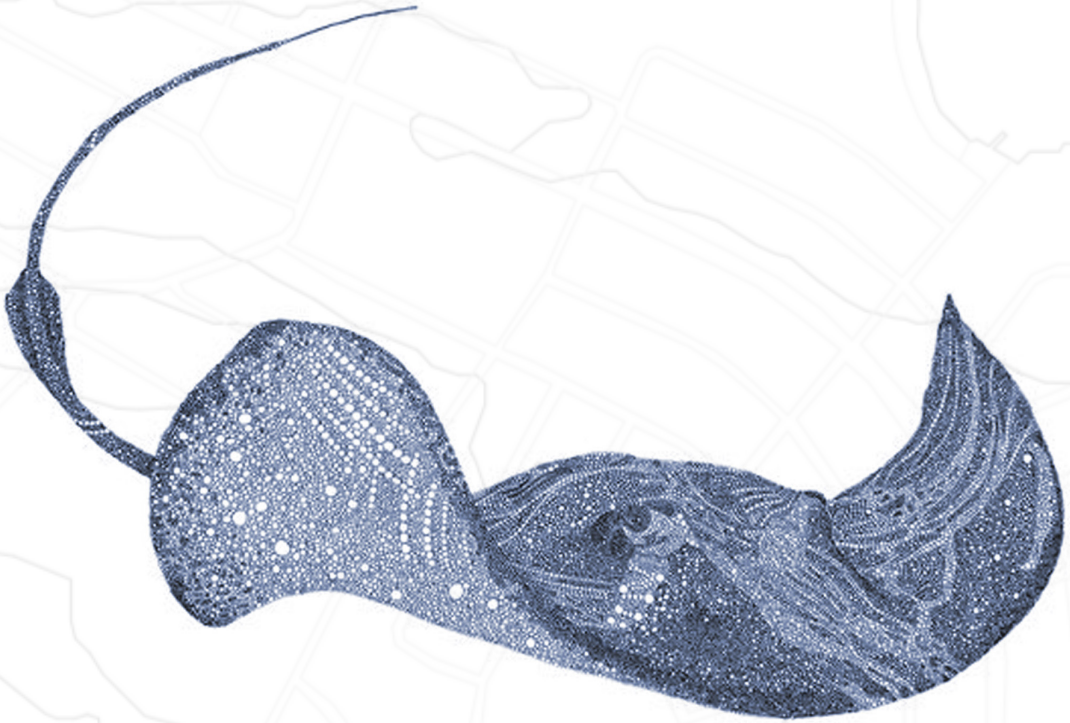
onthou jy hoe die witmaan-hoë branders
flink agtermekaar
soos muilspanne op 'n skou
af kon donder op die Strand se sand,
onthou jy hoe ons branders gery het
met ons baaibroeke ons monde vol sand?

onthou jy nog
daardie perspens aande
tussen rietbosse en skimmelsee
as die rokies lugwaarts sê
in Struisbaai
hoe seer ons lywe velaf was
hoe die haai ons opgevreet het?

[Refer to translation in Appendix B]

Parrie the Stingray

The stingrays in the bay is a big tourist attraction along the western coast. People drive all over the country to come to see the stingrays (Smit, 2020: interview). The stingrays constantly return to the bay because of the harbour activities that take place. There are about 7 stingrays and some of them are tame, you can even feed some fish with the hand (ibid).

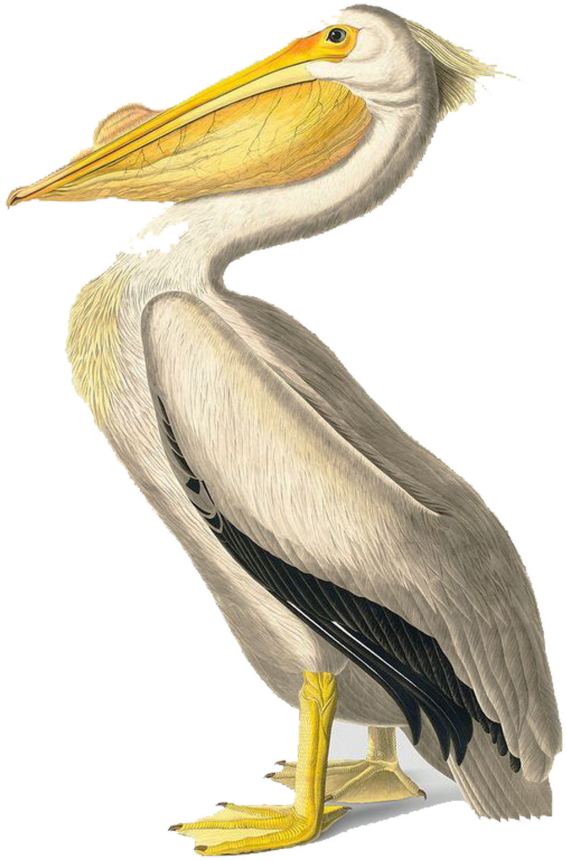


Scientific Name: ***Dasyatis chrysonota*** Common Names: **Blue Stingray, Blou Pylstert**

GLOBAL DISTRIBUTION: From central Angola south-east to Cape Agulhas and nort-east to St Lucia, and possibly occuring off MOZ and beyond.
SOUTHERN AFRICAN DISTRIBUTION: NAM, NC, WC, EC, KZN, MOZ

Sakbek the Pelican

This pelican lived on the harbour since the ’70s (Lohann, 1998). It is strange to find pelicans in the Overberg region and that’s why the bird was so famous. Sakbek eventually found himself a wife but she, unfortunately, didn’t live too long. Sakbek was so comfortable in the harbour that he would even help himself to fish from the people’s bait. The bird was unfortunately shot by someone and it was a tragedy for the whole town.



Scientific Name: ***Pelecanus*** Common Names: **Pelican**

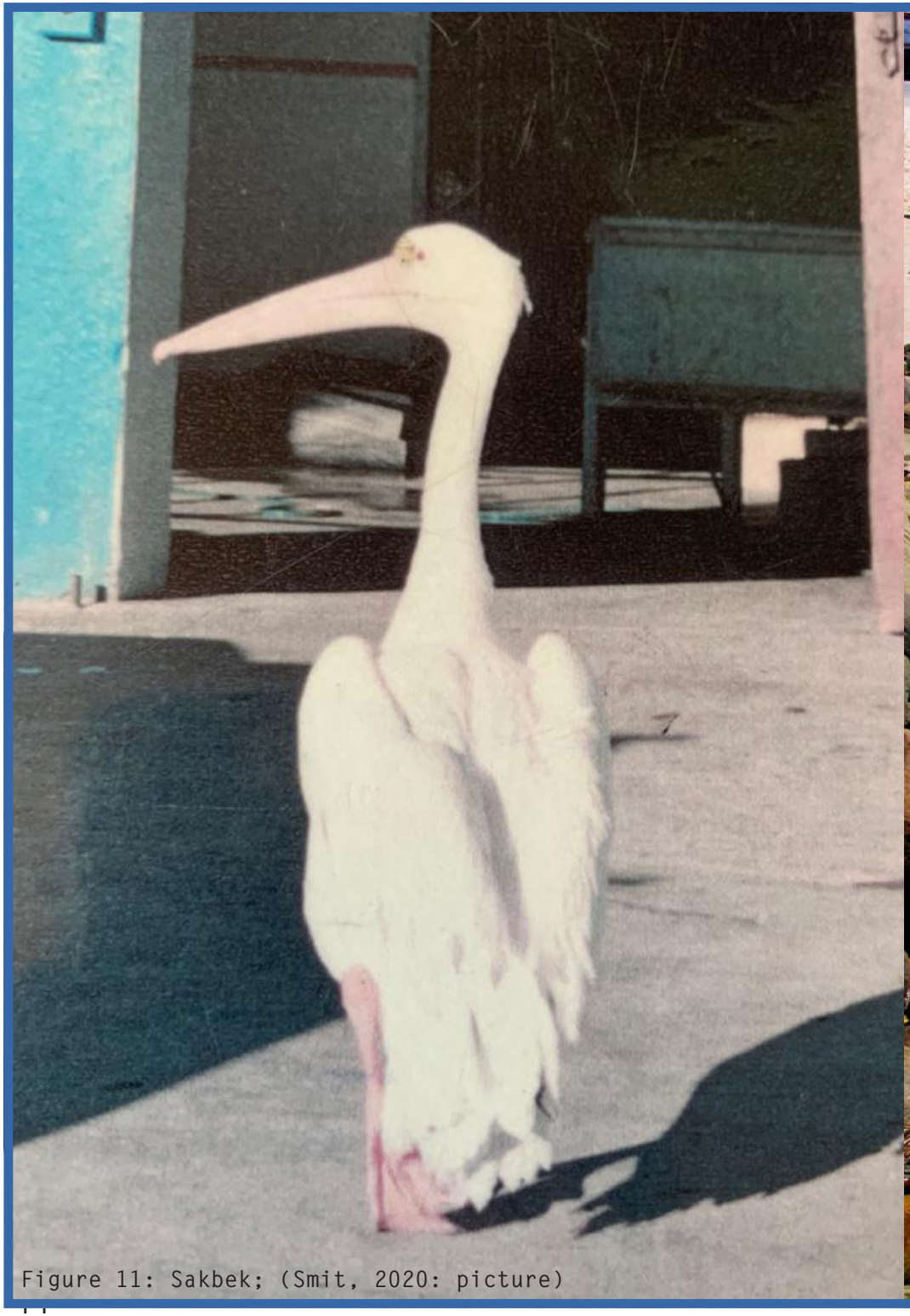
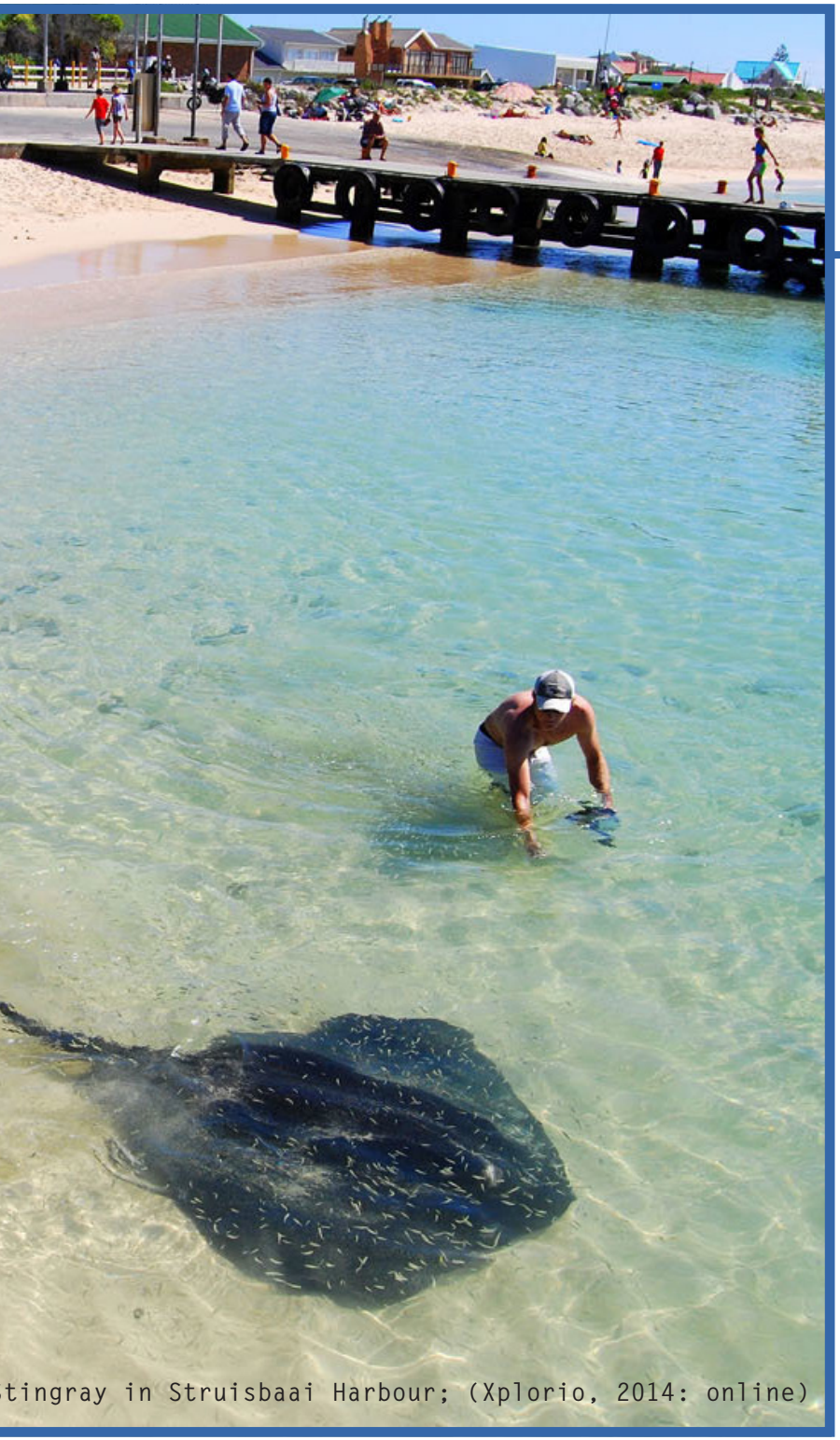


Figure 11: Sakbek; (Smit, 2020: picture)

Figure 12: S

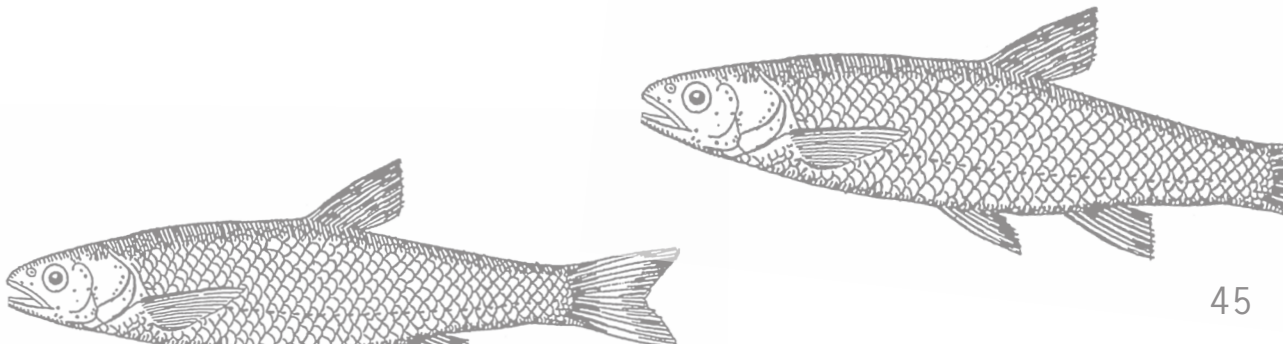


Stingray in Struisbaai Harbour; (Xplorio, 2014: online)

Conclusion

Why am I proposing a design on Struisbaai harbour? It's about the memories and the stories, it's about the history and the community. All these elements, together, form the identity of Struisbaai. The influence that the two user groups have on the harbour and Struisbaai itself is unavoidable, and it is a pity that these groups are perceived to be disconnected.

Therefore, it is important to create a space for all the influencing factors in the town. The fishermen have needs and, through architecture and good planning, space can be created for them to perform better and to be in a more comfortable environment to practise their occupation. The tourists also have their needs and through architecture and new proposals, these needs can also be met. The challenge is to encourage integration and participation from both the locals and the tourists throughout the site. Through smart and sensitive design, the harbour can become a place where the diverse economic drivers of the town are accommodated and their needs are met.

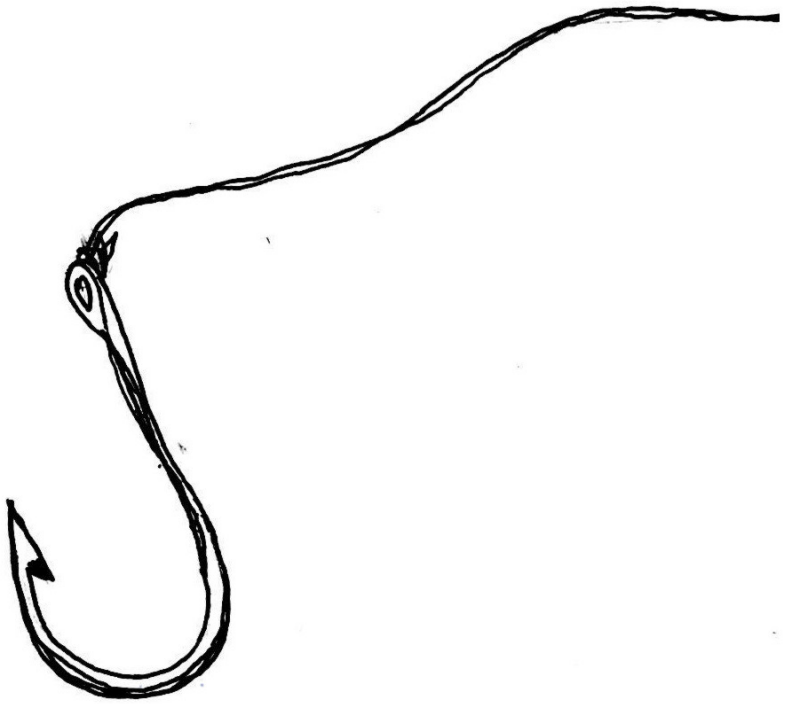


b. Where (is the proposal)

The site that I chose is Struisbaai Harbour. Situated along the western shoreline of the bay are the main beach, the caravan park, and the Sea Shack; nestled along the eastern shoreline is Shelly Beach. The bay itself already has a few functions with the beach on the east and the jetty on the west. The site is an exceptionally large expansive site where clever design strategies will have to be employed to attract the users to all the elements on the site. It is a fully functional and operational fishing harbour used by the local community. The site remains a popular attraction for tourists because of its beauty and its uninterruptible platforms for outdoor activities and leisure.

The fishing culture of the town is practised by both the locals and the tourists and the site is the meeting point for these activities. The site is chosen because of its location and its size. It allows for an influx of tourists from all sides and the permanent influx of local fishers. The harbour is considered to be a large site, but its size will allow for several activities to take place simultaneously, will accommodate numerous points of attraction, and will also cater for spaces that are more isolated and private. More information on the site will be discussed in Chapter 2.2.

Figure 13: Struisbaai Harbour; (1Map, 2020: online)



1.2 Conceptual Development & Underpinning

a. Touchstone

Kraaines

[This term describes the fishing line being knotted beyond repair, a big mess, a big gathering, and in this case a knot between the tourists and the locals]

The livelihood of Struisbaai relies on the constant ‘entanglement’ between the local fishermen and the tourists

There is constant pressure in Struisbaai, about who belongs. This tension is prominent between the local fishers/ fishermen that currently reside there versus the temporary tourists that come and go.

Therefore, I looked at the principle of luring tourists to participate and contribute to the town's current economy. Luring is also refers to the notion of mystery and the unknown, the wait and anticipation of what the result will be.

In this touchstone, the strings represent the locals and the tourists and through spinning, it creates densely integrated and compact layers of the strings that resemble the integration or entanglement between the locals and the tourists. The strings in the box frame are placed there for a mysterious event, without permitting anyone to determine what the outcome will be.

Figure 14: Touchstone; (Rorich, 2020: model)

b. Concept 1

Entanglement

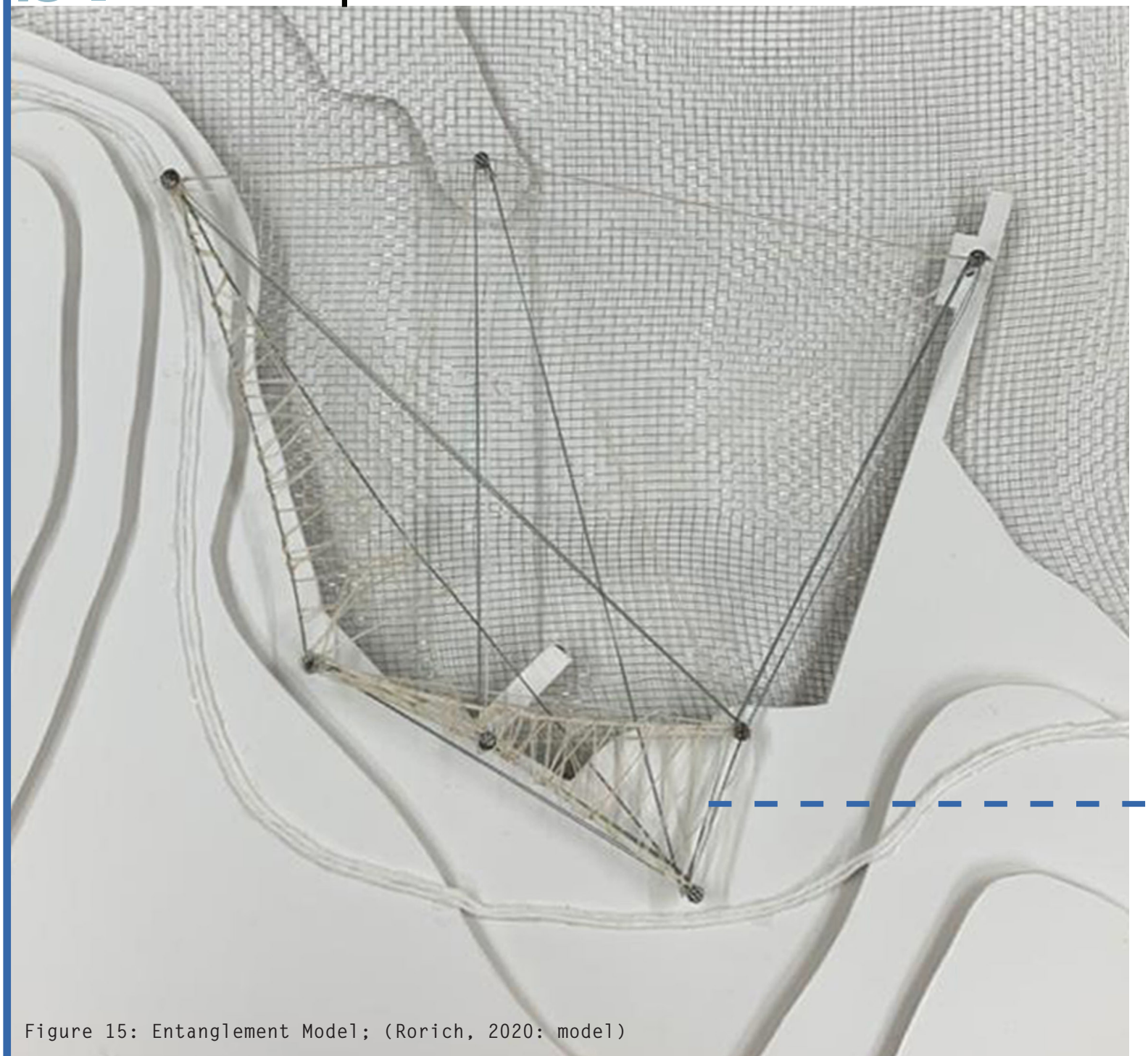


Figure 15: Entanglement Model; (Rorich, 2020: model)

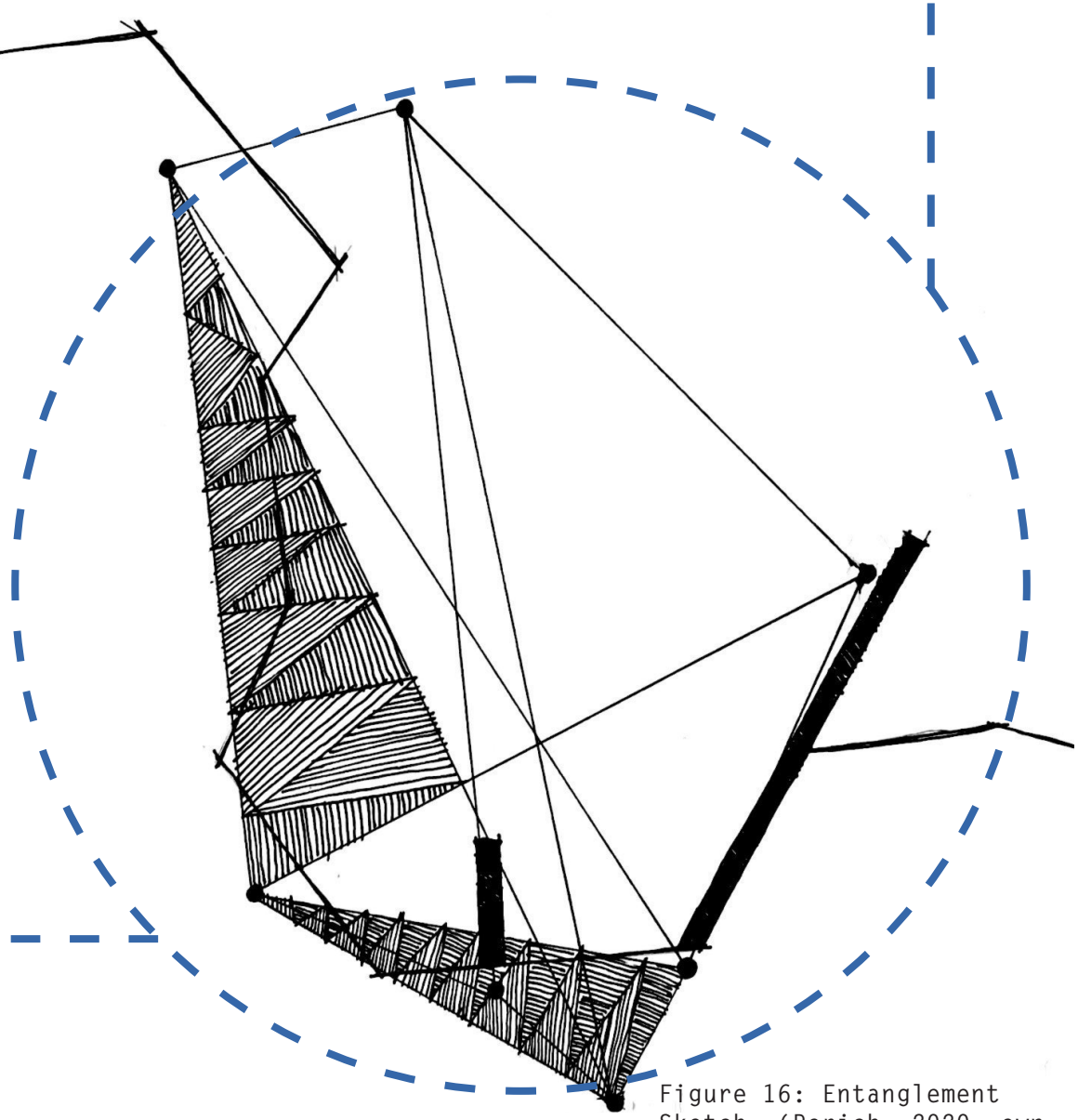


Figure 16: Entanglement Sketch; (Rorich, 2020: own drawing)

The Conecpt of Entanglement

Elements of attraction with both local and tourist identities are scattered all over the harbour in Struisbaai. To promote integration, entangling these several elements is an important aspect of the dissertation proposal. This could be done by connecting the overlapping elements (such as the activities situated at the heart of the bay) with the clashing elements (the attractions on the opposite sides of the bay) through a means of sewing.

Entanglement Application

This concept of entanglement is visually represented by connecting all these points on-site and later on defining spaces where lots of potential for integration and entanglement becomes possible.

C. Concept 2

Luring

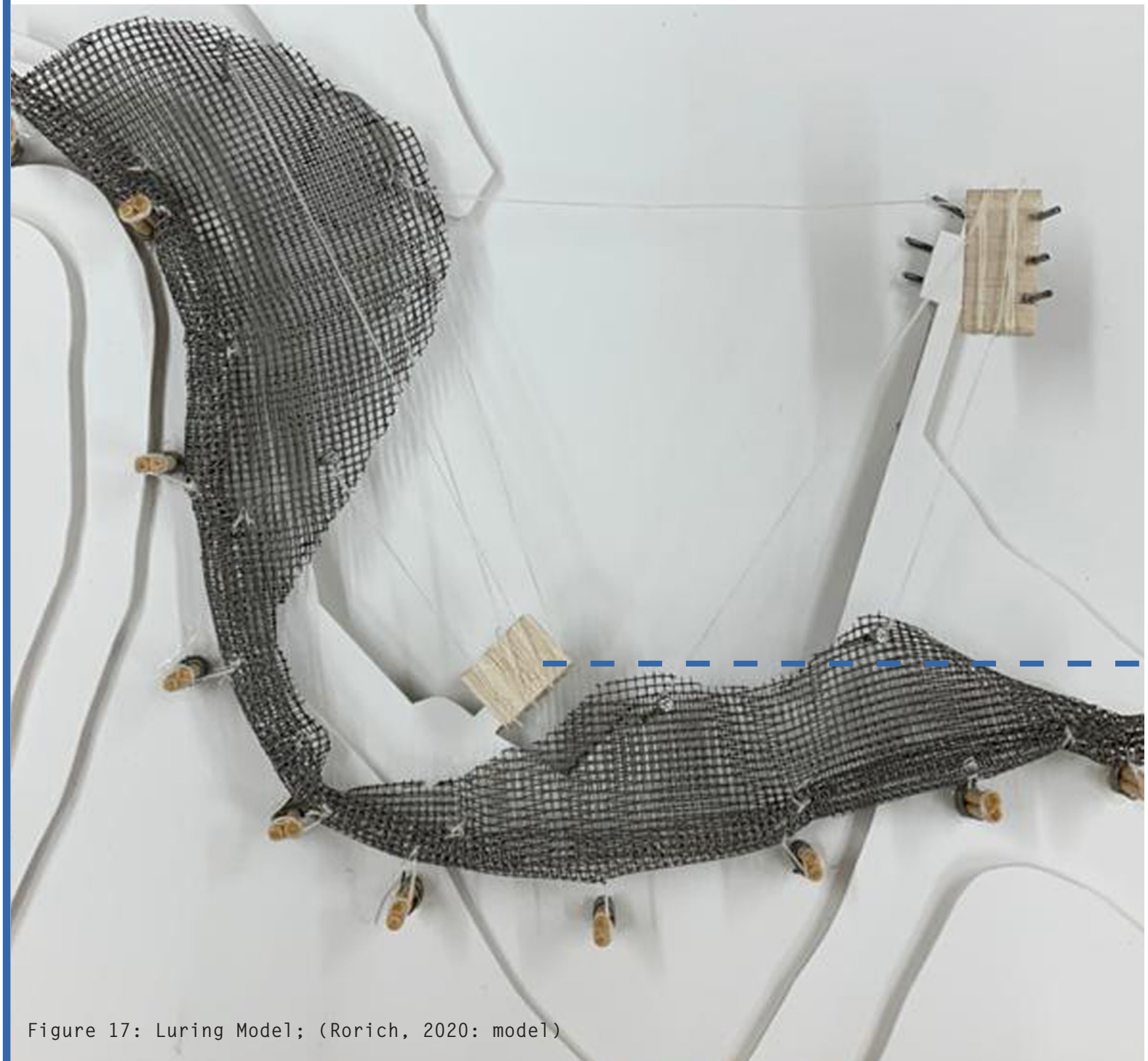


Figure 17: Luring Model; (Rorich, 2020: model)

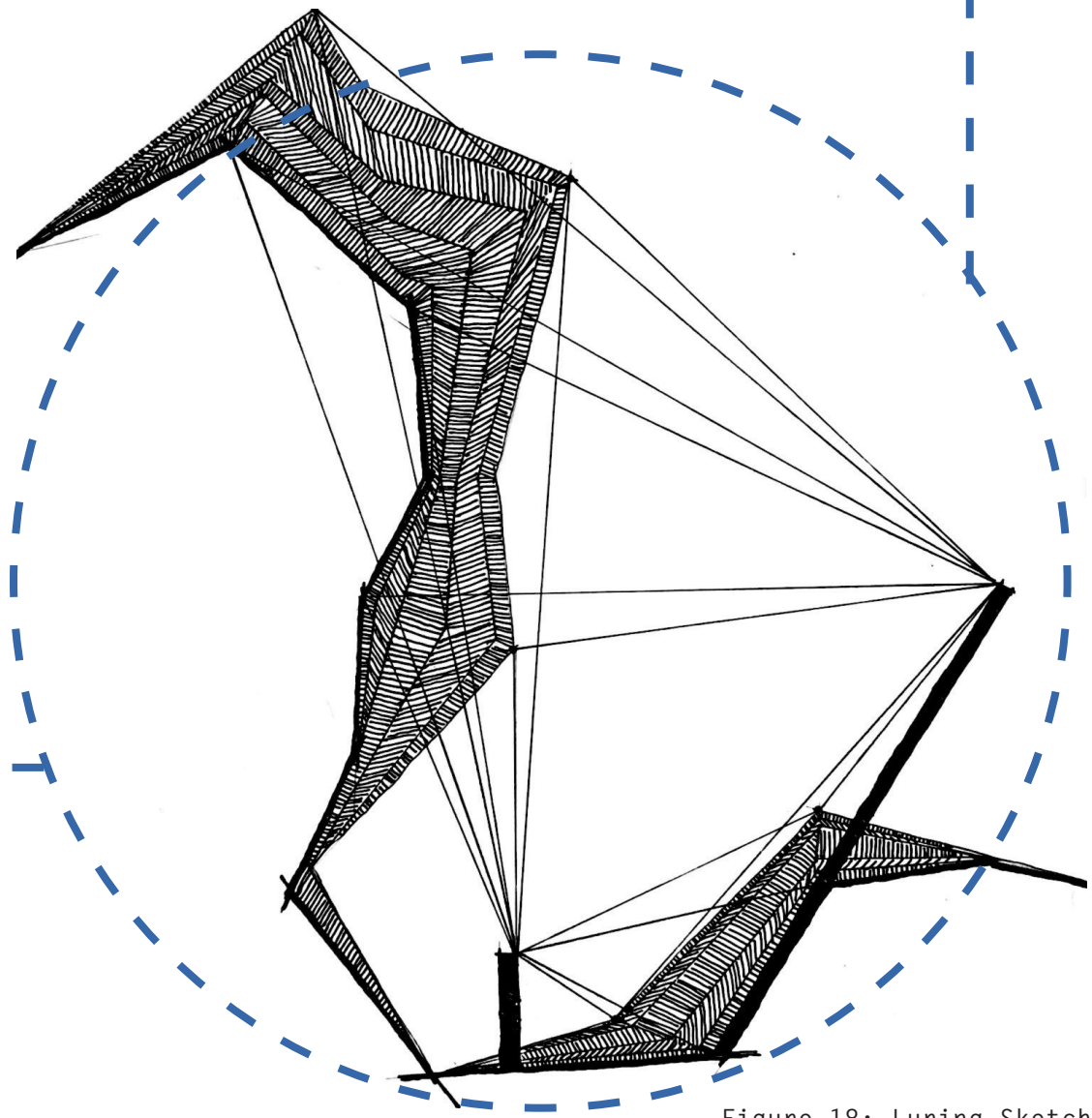


Figure 18: Luring Sketch;
(Rorich, 2020: own drawing)

The Concept of Luring

Luring is one of the most prominent rituals used when it comes to fishing. In Struisbaai, fishermen make use of bait on a hook connected to the traditional handline reel, which is a timber plate. In this way the fisherman lures the fish out of the water to then later benefit financially from the fish. This approach is implemented in the dissertation proposal by luring the tourists out to participate in the complex fishing economy of Struisbaai.

Luring Application

Luring could visually be implemented in the design by using the two prominent jetties, currently used by the fisher community, and enlarging the timber walkway to create the impression that it is being 'lured' in by these two jetties. The walkway will in essence become a promenade space that allows for interaction between both the tourists and the fishermen.

d. Concept 3

Change

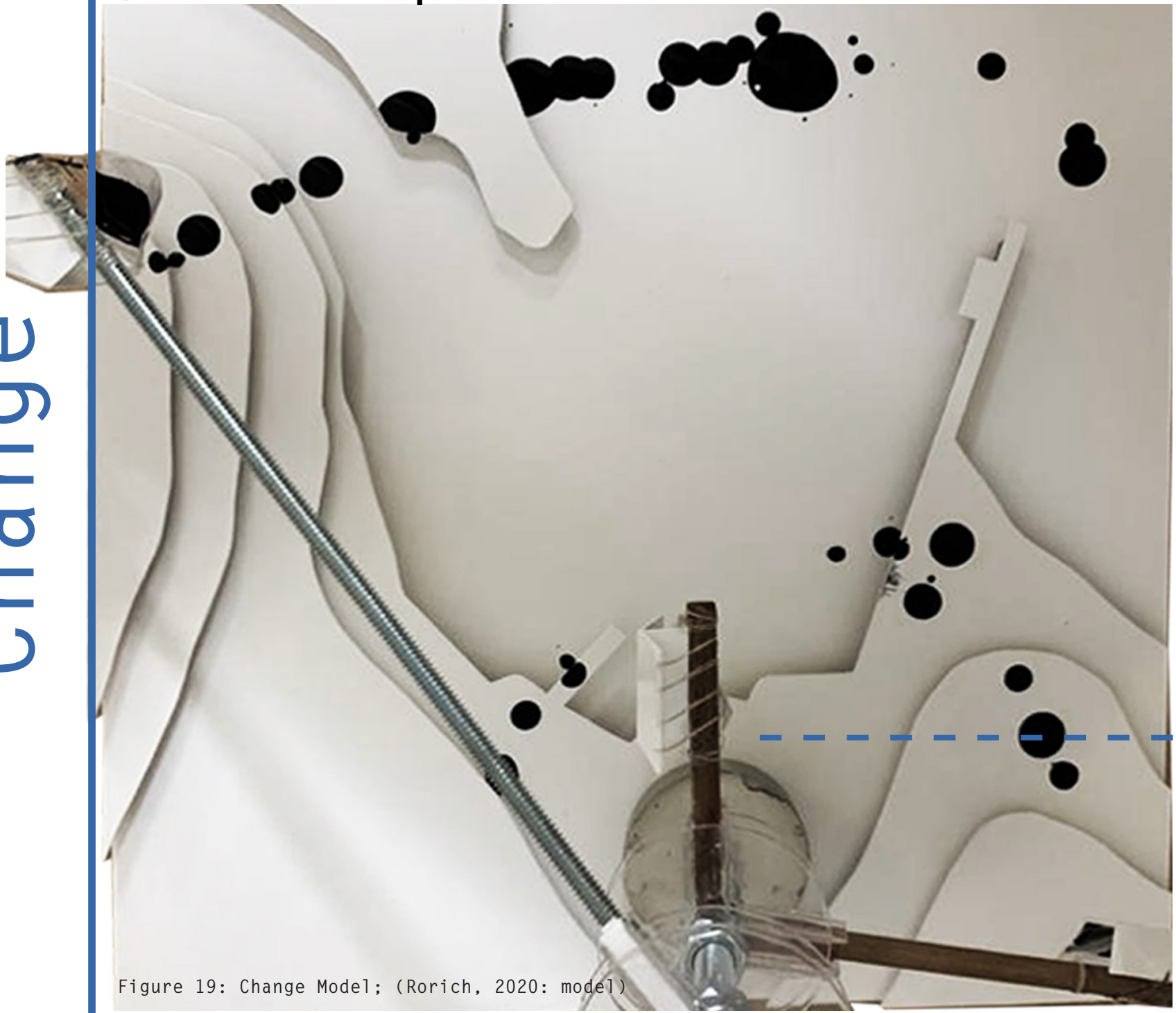


Figure 19: Change Model; (Rorich, 2020: model)

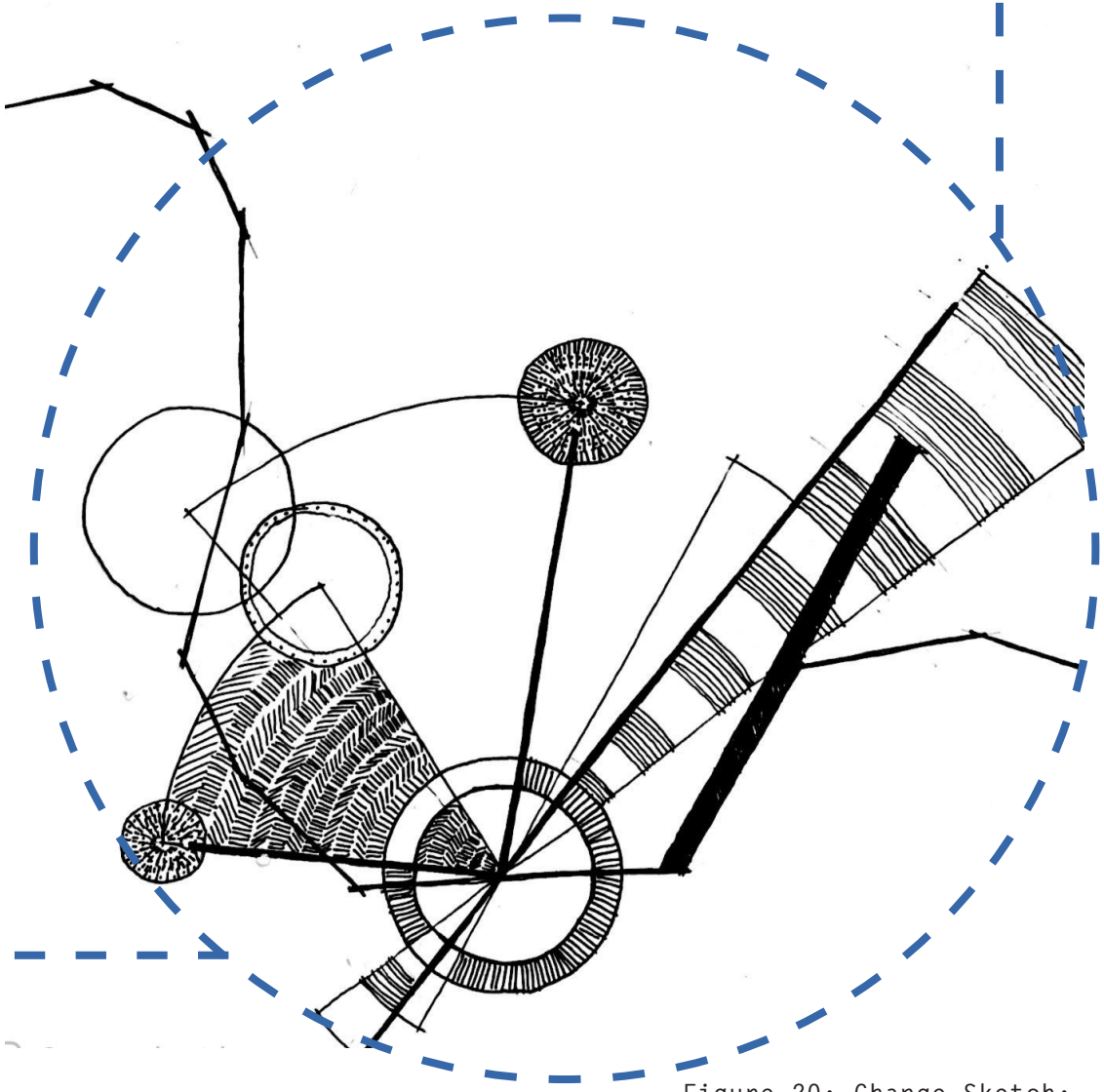


Figure 20: Change Sketch;
(Rorich, 2020: own drawing)

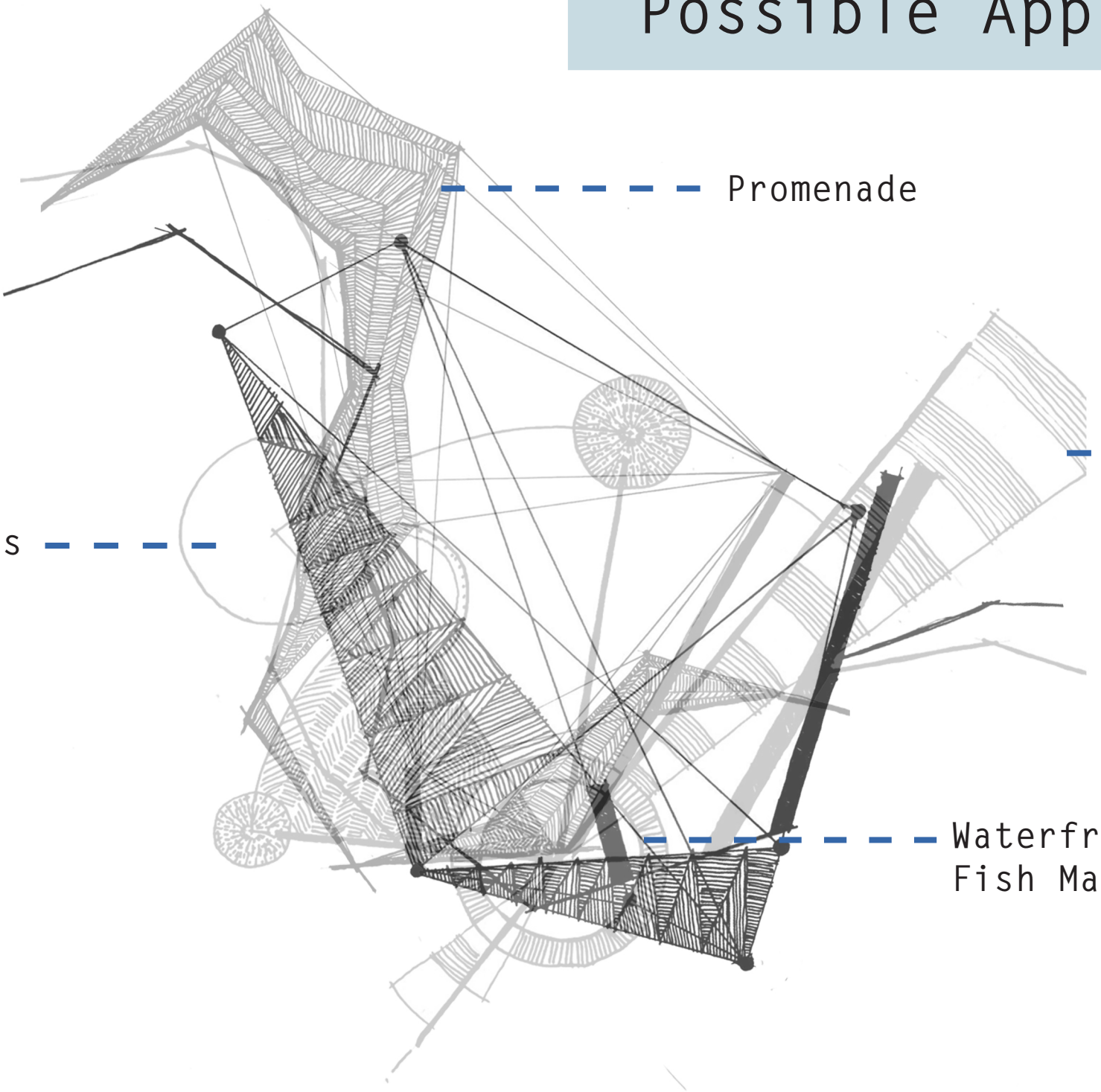
The Concept of Change

Change and time have a big impact on the identity of Struisbaai. There is, for example, a constant transformation between fishing season and tourist season, high tide and low tide, fish availability, and rituals. The change is constant; therefore, as one element changes another one fills or replaces that space. Because of this the understanding of the complexities between rituals is important and must allow for a form of integration.

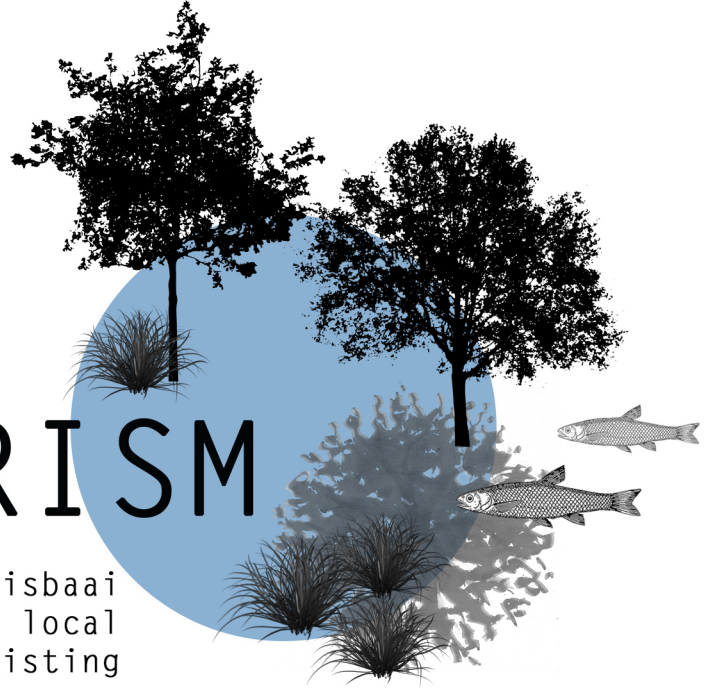
Change Application

The fishermen and the tourist attractions and activities are visually represented by moveable arms, the one overlapping and influencing the other, creating a complex integration and understanding between the local fishers and the tourists.

Possible Application



1.3 Theoretical Discourse



ECO-TOURISM

How to create responsible travel to Struisbaai that will improve the success of the local people and that respects the existing environment?

[THE BRANCHES THAT WILL BE EXPLORED]

Benefits to the environment, the locals and the tourists

-Looking at existing systems of integration between the environment, the locals and the tourists and implementing a new workable system in the Struisbaai community based on previous examples.

Cultural Awareness

-Explore the cultural complexities in the town and how to involve and respect the local community in future developments.

The building environment

-Vernacular Architecture of South Africa and Struisbaai specific.

Designing low impact facilities

-Sustainable Architecture that incorporates the already existing language of the environment and the town.

Ecotourism is described by Ziffer as:

"ECOTOURISM IS A FORM OF TOURISM INSPIRED PRIMARILY BY THE NATURAL HISTORY OF AN AREA, INCLUDING ITS INDIGENOUS CULTURES. THE ECOTOURIST VISITS RELATIVELY UNDEVELOPED AREAS IN A SPIRIT OF APPRECIATION, PARTICIPATION AND SENSITIVITY. THE ECOTOURIST PRACTISES A NON-CONSUMPTIVE USE OF WILDLIFE AND NATURAL RESOURCES AND CONTRIBUTES TO THE VISITED AREA THROUGH LABOUR OR FINANCIAL MEANS AIMED AT DIRECTLY BENEFITING THE CONSERVATION OF THE SITE AND THE ECONOMIC WELL-BEING OF THE LOCAL RESIDENTS. THE VISIT SHOULD STRENGTHEN THE ECOTOURIST'S APPRECIATION AND DEDICATION TO CONSERVATION ISSUES IN GENERAL, AND TO THE SPECIFIC NEEDS OF THE LOCALE. ECOTOURISM ALSO IMPLIES A MANAGED APPROACH BY THE HOST COUNTRY OR REGION WHICH COMMITS ITSELF TO ESTABLISHING AND MAINTAINING THE SITES WITH THE PARTICIPATION OF LOCAL RESIDENTS, MARKETING THEM APPROPRIATELY, ENFORCING REGULATIONS, AND USING THE PROCEEDS OF THE ENTERPRISE TO FUND THE AREA'S LAND MANAGEMENT AS WELL AS COMMUNITY DEVELOPMENT".

Today Ecotourism is defined by The International Ecotourism Society as:

"RESPONSIBLE TRAVEL TO NATURAL AREAS THAT CONSERVES THE ENVIRONMENT, SUSTAINS THE WELL-BEING OF THE LOCAL PEOPLE, AND INVOLVES INTERPRETATION AND EDUCATION".

Education is meant to be inclusive of both staff and guests. (The International Ecotourism Society, 2020: online).

Struisbaai Harbour is a unique destination in South Africa that has been explored by people all over the country. It is a beautiful attraction that will definitely leave an impression on the average visitor, be it the scenery or experiences. But there is actually much more to the harbour than the setting; the harbour is the element that keeps the town and the community running and is the primary economic contribution to the town throughout the year. This harbour can in a sense be described as the life source of the town Struisbaai.

Struisbaai started as a fishing village and the Cape Agulhas coastline has seen approximately 30 shipwrecks in its waters. Even though the harbour was only constructed in 1959, fishing remained the primary focus. This is evident from the presence of famous tidal fish traps found in Cape Agulhas, which traps were used by the nomadic Khoisan (Media, n.d.: online). Currently, the town is mostly known for being a great holiday destination, and as a result, some eruptions have occurred between the local fisherman and the tourists. This conflict is based around the diverse use of the harbour, where some parts contribute to fishing while the other parts contribute to leisure. Therefore, the focal theme of this project is:

HOW TO BRIDGE THE GAP BETWEEN THE LOCAL FISHERMEN AND THE TOURISTS AT STRUISBAAI HARBOUR BY IMPLEMENTING RESPONSIBLE TOURISM AND DOMESTIC INTEGRATION?

Ecotourism is defined by Epler Woods as: “Responsible travel to natural areas that conserves the environment and improves the well-being of local people” (Love, 2018: online). This means that tourism will have a positive impact on the ECOlogy and the ECOnomy of that specific destination (Love, 2018: online).

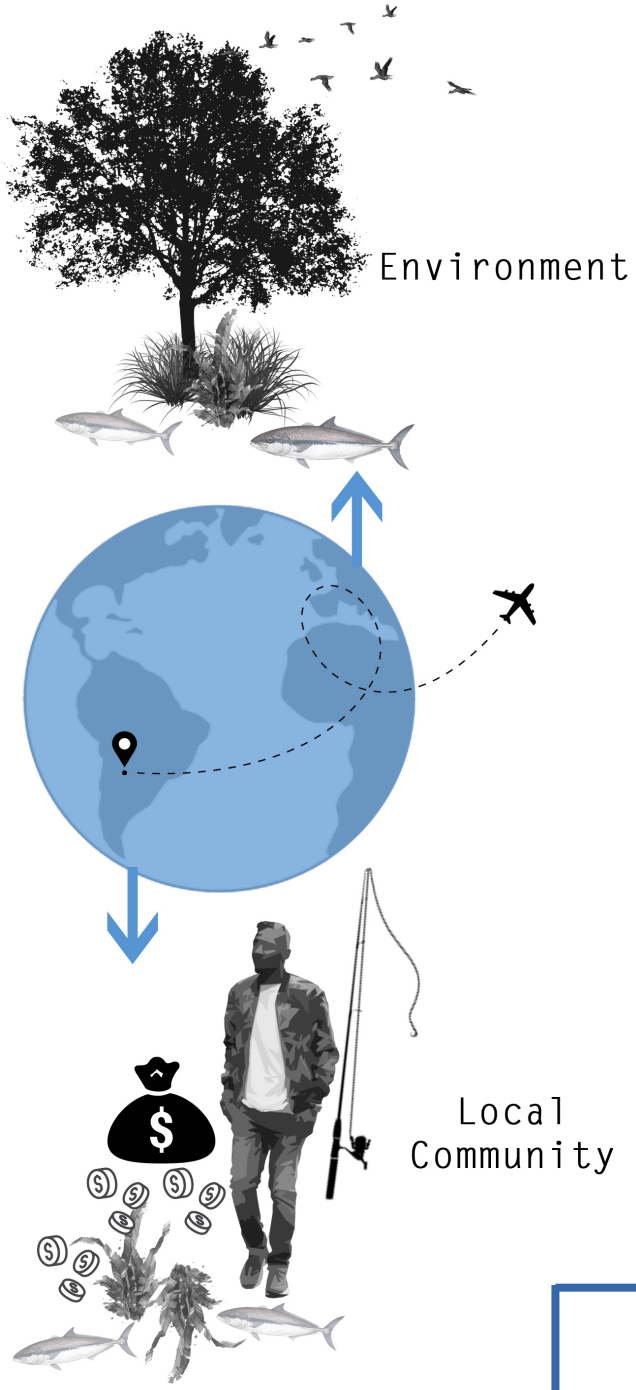


Figure 21: Ecotourism contributing to the environment and local community; (Rorich, 2020: own collage)

“Ecotourism is a form of tourism which minimizes negative impacts, contributes to conservation, directs economic benefits to local people and further provides opportunities for local people to enjoy natural areas” (Fennel, 2001: 403-421).

Ecotourism has also been described by McCormick as: “the purposeful travel to natural areas, increasing the knowledge and understanding of the culture and the natural history of the environment as well as to produce economic benefits that make the conservation of natural elements beneficial to the locals” (van Zyl, 1994: online).

Weaver stated that “Ecotourism is a form of tourism that fosters leasing experiences and appreciation of the natural environment, or some component thereof, within its associated cultural context” (Weaver, 2008).

“Ecotourism is therefore largely associated with small scale community-controlled and long-term social well-being” (Reichel and Uriely, 2008: 23-41).

Therefore, it becomes clear that ecotourism is not necessarily only concerned about the conservation of wildlife but focuses on the financial benefits for the local people as well, and that without this aspect it is not truly ecotourism. Ecotourism should focus on conserving nature, respecting the local communities and should also create a responsible travel industry that is aimed at long-term sustainability rather than short-term profits (Love, 2018: online).

To ensure that the focus of ecotourism is adequate, architects should adopt an appropriate method of designing attractions/destinations that will benefit the local fauna and flora, the local people and all the other elements related to travel.

It is evident that ecotourism is different from the ‘normal’ idea of tourism. This difference is found in the direct benefit of ecotourism, as opposed to the possible indirect benefits that ‘normal’ tourism provides. The tourism industry is dependent on the diversity and the quality of the natural and cultural resources all over the world. Because of this dependence, it is essential for all business sectors that focus on tourism to adopt environmentally responsible conduct. (van Zyl, 1994: online). The appropriate design of a destination could have a large contribution to successful implementation of ecotourism, that is why responsible travel becomes the core focus of my project, and several branches will be explored to ensure successful and responsible design.

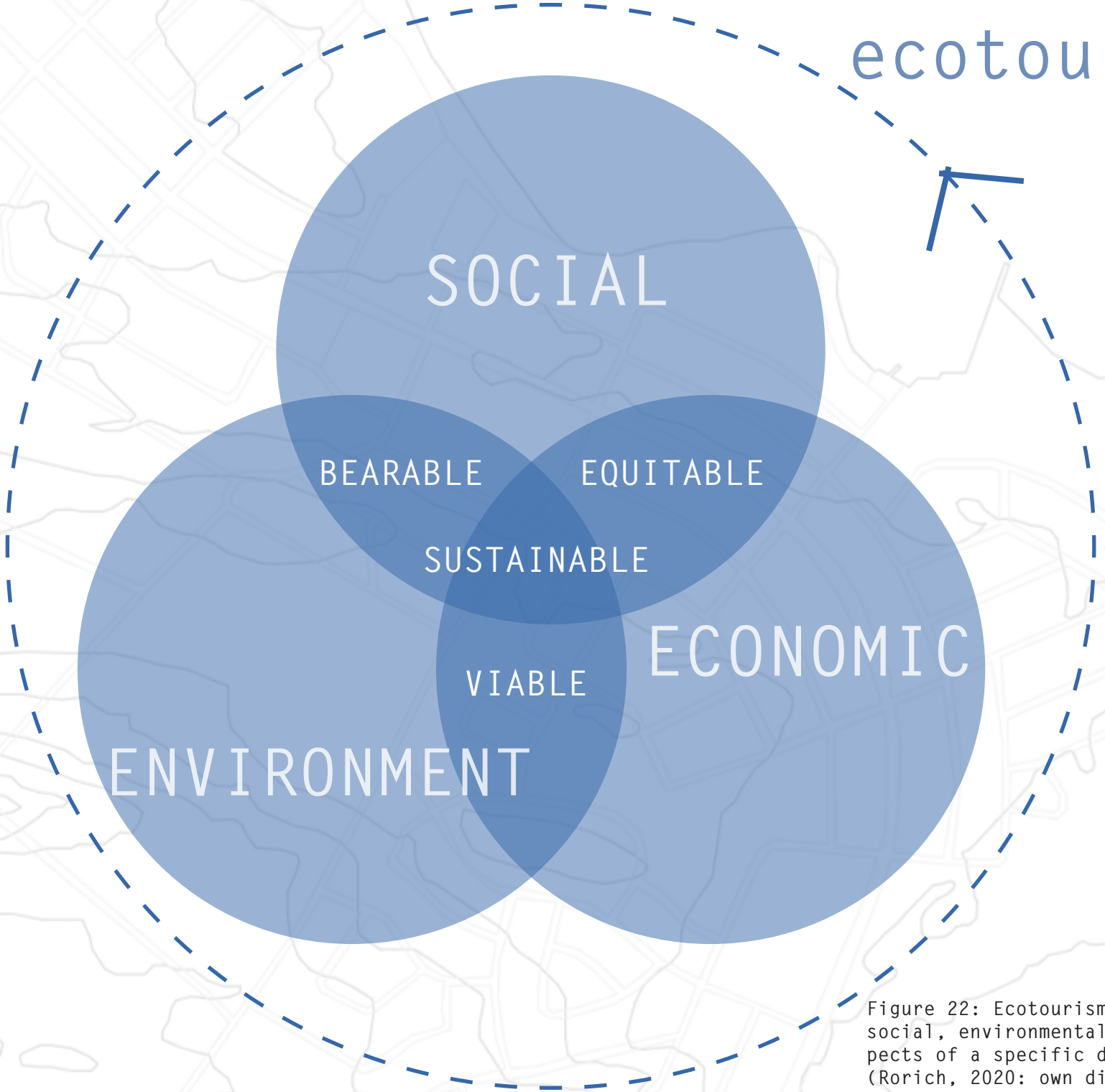


Figure 22: Ecotourism connecting the social, environmental and economic aspects of a specific destination; (Rorich, 2020: own diagram)

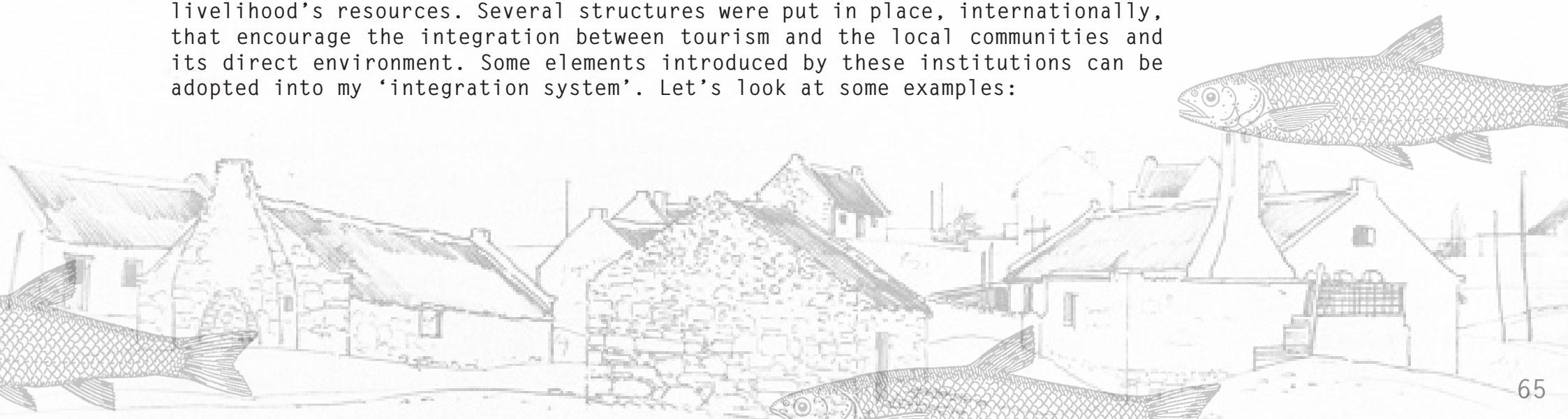
1. Benefits to the Environment, Locals and Tourists:

As stated above it is clear that the tourism sector should focus on all the aspects of that touristic environment. This is accomplished by holding benefits to the environment, the locals, and the tourists.

THIS DISSERTATION WILL FOCUS ON UPLIFTING THE LOCAL COMMUNITY AND THE ENVIRONMENT BY CREATING AN OPPORTUNITY FOR RESPONSIBLE TOURISM.

To ensure a successful design project that integrates all the complexities of the community, an 'integration system' approach must be designed and implemented. This 'integration system' will form part of the design proposal. How do you design such a system?

The first step will be to look at the existing management theories explored internationally, that link complex institutional and organisational structures together (Dittmann, 2009: 8-30). Institutional structures are controlled by rules and norms that have widespread use of power. These institutions may be formal or informal and may directly or indirectly facilitate access to the livelihood's resources. Several structures were put in place, internationally, that encourage the integration between tourism and the local communities and its direct environment. Some elements introduced by these institutions can be adopted into my 'integration system'. Let's look at some examples:



1.1 Community-Based Tourism

Community-Based Tourism (CBT) forms a branch of sustainable tourism (Dittmann, 2009: 8-30). CBT is commonly used in third world countries like Brazil, and continents like Asia, but has not been implemented in Southern Africa. The United Nations (UN) describes community development in two parts (Dittmann, 2009: 8-30):

- CBT is when people participate in measurements that can improve their living conditions by making use of their own facilities, for example, using local infrastructure to generate an income in the community.
- CBT is when he community support the available services: this could happen by encouraging financial participation in a business, through which it will cultivate a self-sustainable community.

These tools could be effective to implement CBT, but it is important to plan for it as it will not occur spontaneously. This approach does form part of Sustainable Tourism as well as Rural Tourism.

Sustainable tourism is looking at the development of different regions and countries' tourist industries. It analyses the impact tourism has on natural resources, the consumption patterns, pollution, and social systems. The aim is to then plan and manage the impact of the industry to ensure its survival (Sustainable Tourism, 2019: online).

Rural tourism is defined by Aref and Gill as: "A tourism product that gives to visitors a personalised contact, a taste of physical and human environment of countryside and as far as possible, allow them to participate in activities, traditions and lifestyles of local people" (Stainton, 2020: online).

Rural tourism can become an important branch in ecotourism as the destination attracts many visitors but the facilities at that destination are mostly owned by the local community (Nicolaides, 2020).

Rural tourism as a branch of sustainable tourism becomes an element that can control and analyse the constant effect tourism has on a rural environment. Struisbaai Harbour can in a sense be a form of rural tourism, and this concept could be further implemented in the 'integrated system' proposal by creating a platform for community -owned businesses. This could possibly encourage the direct participation of the local community within the tourism sector.

The involvement of the local community with the tourism sector becomes an important contribution to the overall success of the dissertation proposal. The difficulty with integrating the Struisbaai community and many other communities in SA into a proposed tourist system, is the lack of skill in the tourist profession as well as the a lack of structure and strategies. This could be because as a result of the current disconnect between the tourist sector and the communities (Dittmann, 2009: 8--30). CBT will not be successful if the community groups are not included in the planning system. To encourage this the inclusivity and participation of the local community with the processes and the developments of the tourism industry, these the following four levels of participation should take place (Dittmann, 2009: 8--30):

- Sharing of information about ongoing activities
- Consultation with the locals
- Co-determination with the local community
- Developing and carrying out the community's own projects

Figure 23: Afritwin, UK students practicing ecotourism in 2014; (Rorich, 2020: picture)

Objectives to achieve by integration and participation of the local community are (Dittmann, 2009: 8-30):

- Encouraging local entrepreneurship
- Generating a tourism income to the locals
- Setting up awareness to protect the community culture
- Refreshing and improving the community's daily lives
- Establishing job opportunities
- Education and skill training
- Improvement of the areas and countries reputation

By following the four levels of participation one develops a mutual understanding between what the local community envisions and how to align one's vision with theirs. Once this mutual understanding is established in Struisbaai then the 'integrated system' approach can incorporate the objectives to further enhance CBT.

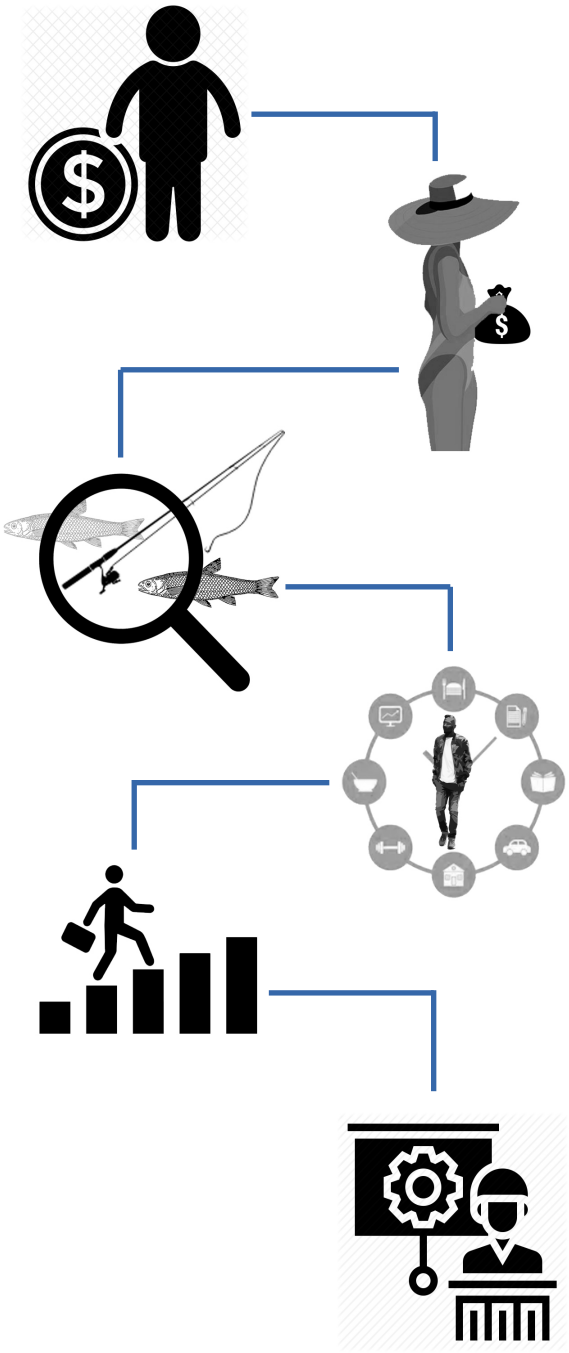


Figure 24: Objectives to achieve to encourage local involvement; (Rorich, 2020: diagram)

1.2 Organisational structures

The Sustainable Fisheries Livelihood Programme (SFLP) is a positive organisational structure to consider, one that focuses on bettering the livelihoods of fishers. SLFP was involved in 25 West African countries and promoted the diversification of livelihoods as another means to improve the overall household income of poorer communities. The SFPL have provided loans and co-management initiatives to fisher communities of Ghana, Congo and Gabon and also helped these communities to engage in agricultural activities like farming (van Zyl, 1994: online). Even though this organisation is no longer operational, I believe that some important lessons could be learnt from this programme. The idea of making use of other means of income by the fisher communities is important and this concept was used to sustain a wealthier fisher community. In the Philippines and Indonesia, seaweed farming was introduced as a supplemental livelihood activity. In Paraty, Brazil, fishing was combined with tourism, just as I am proposing in Struisbaai (van Zyl, 1994: online).

Creating opportunities, environments and incentives for fishers to diversify their livelihood strategies is important, but it is not a simple task, and the availability of another means of income besides fishing varies from place to place (van Zyl, 1994: online). In most cases, though, I have noticed that the community of Struisbaai wants to retain fishing as the core source of income.

Figure 25: Seaweed farming; (Fernandez. n.d.: online)

Figure 26: The development of the Philippi Informal Trading Strategy; (Charman. 2017: online)

By looking at the approach of the SFLP and analysing it, it becomes clear to me that providing another means of income in my proposal, like participating in tourism, could contribute to an overall upliftment of the community and the economy of the town.

Another organisation to consider is the Sustainable Livelihood Foundation (SLF) in South Africa. This organisation was established in 2010 and is based in Cape Town. The SLF focuses on marginalised urban communities and tackles the complex developmental challenges and develops realistic solutions (Sustainable Livelihood Foundation, 2020: online). This organisation aims to bridge the gap between the planning and the reality, which is done through (ibid.):

- Listening, learning and sharing information
- Advancing appropriate policy and programmes
- Building sustainable, safer and more inclusive communities
- Amplifying marginalised voices
- Capability strengthening

Another project to consider is The Development of Philippi Informal Trading Strategy. This project aims to formulate a street trader plan to create a business hub in Philippi. This project will accommodate, diversify and upscale the informal trading activities in the hope of creating an active economic hub (ibid.). The organisation listened to the needs of the community and came up with a realistic solution. This same concept could be followed in my dissertation proposal, by listening to the needs, creating an appropriate ‘integration programme’ and finally ensuring that the local community understands and participates in the proposed programme.

Both the theory and the organisations look at the struggling communities and plan to uplift these communities through integration and by creating another form of income and other opportunities. Community-based tourism focuses on integrating the local communities with the tourism sector that is promoting tourism in the area. In addition, the Sustainable Fisheries Livelihood Programme looks at creating a secondary form of income for the poorer fishing communities. These approaches that were investigated, together contribute to my project's main focus on uplifting the local community.

BY PROPOSING A SYSTEM WHERE THE LOCAL COMMUNITY IS INVOLVED WITH THE TOURIST SECTOR IN STRUISBAAI, I BELIEVE THAT THE PROJECT AIM CAN BE ACHIEVED.

The local community will then be integrated with the tourist activities in town and they will be able to generate an alternative source of income. This system could create more work opportunities, promote the development of skills, and also encourage participation with the tourism sector and many more.

HOW DO I ENSURE THAT THIS SYSTEM CONTRIBUTES TO THE LOCAL COMMUNITY AND ENCOURAGES THE ECONOMIC UPLIFTMENT OF STRUISBAAI?

Figure 27: Local community daily activities; (Stone. 2020: online)

2. Cultural Awareness:

The idea of implementing a system that allows for alternative job opportunities and integration with the tourism sector, is a smart approach. It, however, remains important to ensure that this proposed system is appropriate to the environment of Struisbaai and will truly cater for the needs of the local community. For this system to be successful I believe that the economic complexities of the town should be understood, and methods of sustaining livelihoods should be explored.

2.1 Understanding the economic complexities of the town and small-scale fisheries

To design an appropriate architecture intervention at Struisbaai Harbour is important, therefore, one should understand and investigate the local fishermen and the community. The project must encourage the locals to participate and should also be a place that they feel they belong to. Fishing is the primary source of income in the local community, and through research it was found that the harvesting of marine resources remains the primary activity that contributes to the food resources and the income of the community of Struisbaai (van Zyl, 1994: online).

The fishing industry of Struisbaai consists of small-scale fisheries. Small-scale fisheries are usually difficult to document because of the high changeability between the permanent and temporary participants. However, small-scale fisheries still play an important role in the local economy and also impact on a global scale (van Zyl, 1994: online). Yet, the fishing communities remain the poorest communities worldwide (van Zyl, 1994: online). The income of these groups rarely exceeds the national poverty lines. Because of this, these groups of people are usually lacking basic infrastructure and services such as education, health and transport (van Zyl, 1994: online).

Several known factors influence the economic position of these communities. We know that the process of fishing is dynamic and unpredictable. Fishing depends on the exogenous factors that change daily, monthly and seasonally (van Zyl, 1994: online). The market also plays a role in the economy, where the fishing price fluctuates each day based on the availability of the fish and demand (van Zyl, 1994: online). Fishing as an occupation clearly has its negative connotations, whether it be lack of education or the unstable monthly income.

HOW DOES THIS AFFECT AND SHAPE THE FISHING COMMUNITY OF STRUISBAAI?

The fishing community of Struisbaai and their livelihoods

The population of Struisbaai in 2011 was recorded at 3 877 people (Statistics South Africa, 2011: online). 19,7% of the population is younger than 14, people between the age of 15 and 64 make up 63,8% of the population and 16,5% of the population are elders (ibid.). Now that we understand the group percentages that make up the population of Struisbaai, let's look at the dynamics of the economically active population (between 15-64 years of age) and how the fishing industry affects the livelihoods of the population of Struisbaai.

The Cape Agulhas region had a recorded employment rate of 56,2% in 2011 (Wazimap, 2011: online). 26% of the working individuals earn between R10 000 to R20 000 per year, 20% of the working individuals earn between R20 000 to R40 000 per year and 11% of the working individuals earn between R40 000 to R75 000 per year (ibid.). The employment of the community consisted of 20% fishing, 17,8% farming and 26,6% domestic work (van Zyl, 1994: online). The rest of the population of Struisbaai relies on other forms of income, for example, social grants like child support and pension funds.

In addition to consumption, the results indicate that the harvesting of marine resources is the primary and most important activity that contributes to fisher households' income (ibid.). Fishing is a male-dominated industry, even though women also play a role within the fishing household. The female's role in the fishing industry of Struisbaai is to attend meetings and be part of important decisions (ibid.). Besides the fact that fishing contributes to the income and occupation of the household, it is also an important food resource in the community, where 64% of the households consume fish at least three times per week (ibid.).

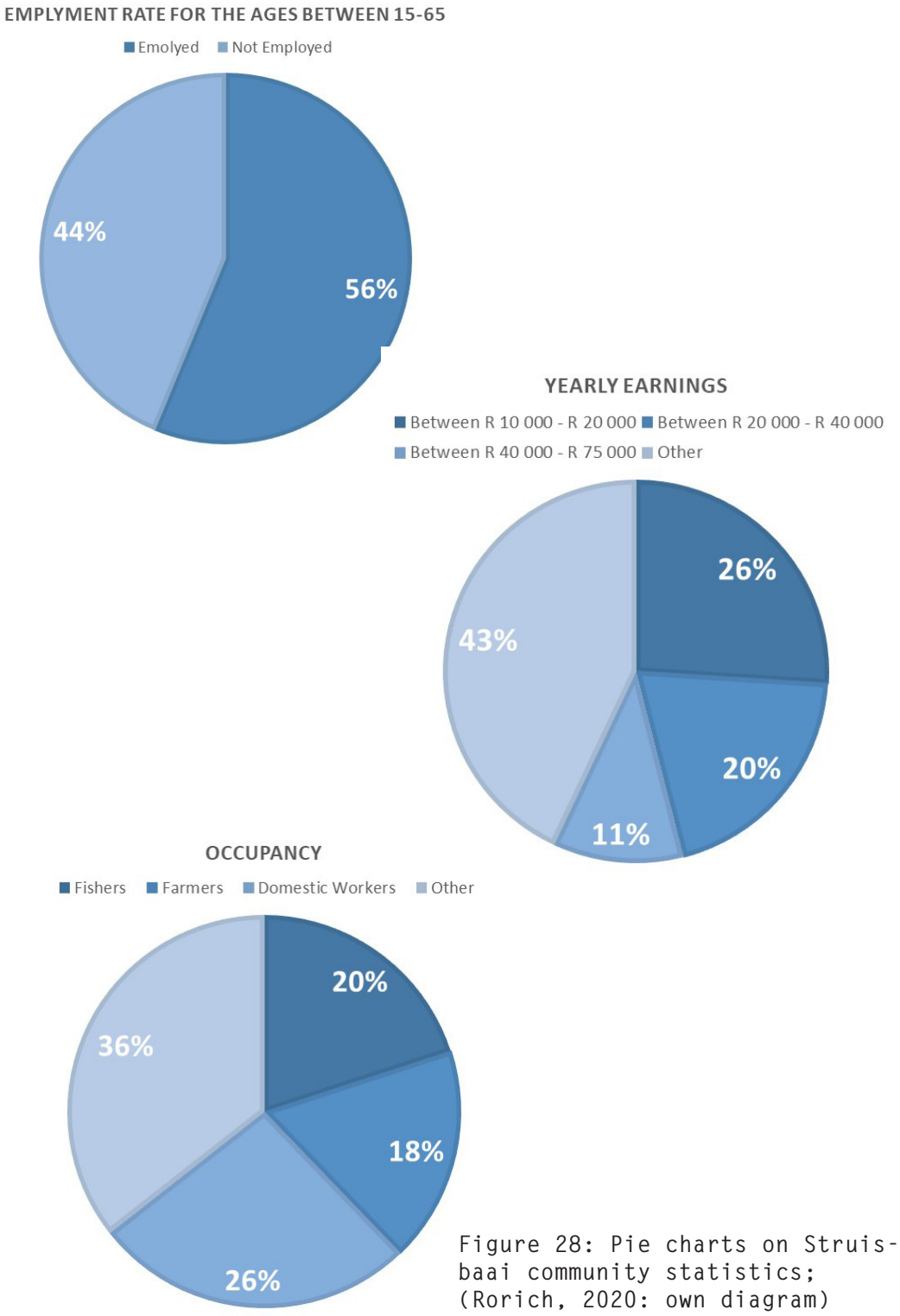


Figure 28: Pie charts on Struisbaai community statistics; (Rorich, 2020: own diagram)

For many years the fishing industry has been perceived as important for the community, where the fathers have been involved in this industry for years, and 94% of the interviewees (conducted by van Zyl) have identified this (ibid.). Their fathers' occupation ranged from crewmen to working in the commercial fisheries sector (ibid.). An interviewee said:

> "My father was a fisherman; my father's father was a fisherman. We live out of the sea… and this is how I want to die. A fisherman's life is about hope, we live with hope… if there is nothing today, we hope that tomorrow will bring something.' 'I grew up next to the sea… no, you could say I grew up IN the sea." (ibid.)

This industry has dominated the occupation of Struisbaai for many years and therefore, fishers believe that there is no alternative occupation for them other than fishing (ibid.). The community believes that they are unable to obtain jobs based on their race, the lack of alternative skills, and the issue of transport (ibid.). Statistics show that for the age group above 20 years, 22,4% of the population has matriculated, 12,9% has received higher education and 3,5% have had no education (Statistics South Africa, 2011: online). In the interviews conducted by Parker, it becomes clear that the community is convinced that there are no alternative work opportunities or that they have an alternative livelihood option (van Zyl, 1994: online).

The fishing industry is prominent in Struisbaai, and many members of the community believe that this industry should remain important, so why change it? My approach in this dissertation is to enhance this industry as opposed to changing it, and to create a platform that encourages more participation in the industry, whether it be by the local community or the tourists. The unemployment rate in Struisbaai remains high and many members of the community believe that more work opportunities should be created. Therefore, introducing an 'integrated system' that creates work opportunities within the tourism industry for the local community is important.

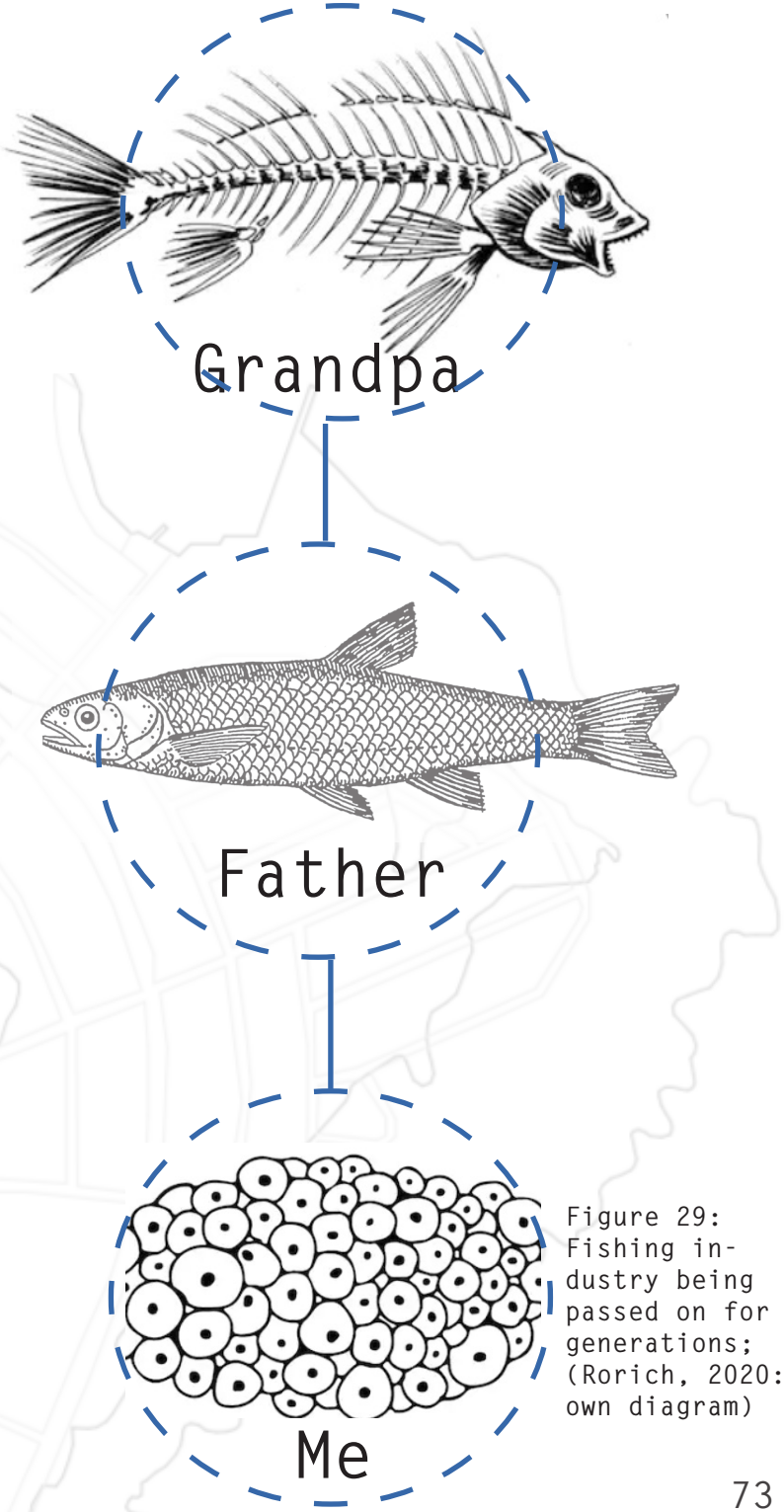


Figure 29: Fishing industry being passed on for generations; (Rorich, 2020: own diagram)

2.2 Creating sustainable livelihoods

'Sustainable livelihoods' is defined by Serrat as:

> *"A LIVELIHOOD COMPRISES THE CAPABILITIES, ASSETS (INCLUDING MATERIAL AND SOCIAL RESOURCES) AND ACTIVITIES REQUIRED FOR A MEANS OF LIVING. A LIVELIHOOD IS SUSTAINABLE WHEN IT CAN COPE WITH AND RECOVER FROM STRESSES AND SHOCKS, MAINTAIN AND ENHANCE ITS CAPABILITIES AND ASSETS, WHILE NOT UNDERMINING THE NATURAL RESOURCE BASE" (SERRAT, 2017: 21).*

The theory of Sustainable Livelihoods proposes a people-centred rather than resource-centred process and puts the community at the heart of the project (van Zyl, 1994: online). Sustainable Livelihoods is an important tool to use that allows one to fully understand the complexities of the economically disadvantaged people and set up strategies to sustain these people's livelihoods (ibid.).

The four elements to sustainability are environmental, economic, social and institutional (ibid.). The livelihoods of a community become strong when they can withstand external stresses and are not dependent on external support, and when the community can maintain long-term productivity of natural resources without compromising the livelihood options of others (ibid.).

The Sustainable Livelihood Approach (SLA) has developed a five-part framework application for fisheries, which are (ibid.):

1. **The vulnerability context in which fishers operate**
2. **The livelihood assets of fishers**
3. **Governance structures and processes**
4. **The livelihood strategies that fishers adopt**
5. **Livelihood outcomes**

All these points contribute to understanding the complexities within the community and act as a guideline to create an 'integrated system' that encourages the local community to become sustainable. The proposed intervention will allow for new opportunities in conformity with these five points.

Figure 30: Elements that the local community is exposed to; (Rorich, 2020: own diagram)

1. The vulnerability context in which fishers operate

Communities live in a context of vulnerability over which they have little or no control. As mentioned above in section 2.1, fishing communities are exposed to various elements, namely (Serrat, 2017: 23):

- trends (resource trends, market trends, population trends),
- shocks (conflict, natural disasters, economic and political changes), and
- seasonal shifts (food and fuel prices, climate) that may have an impact on their livelihoods.

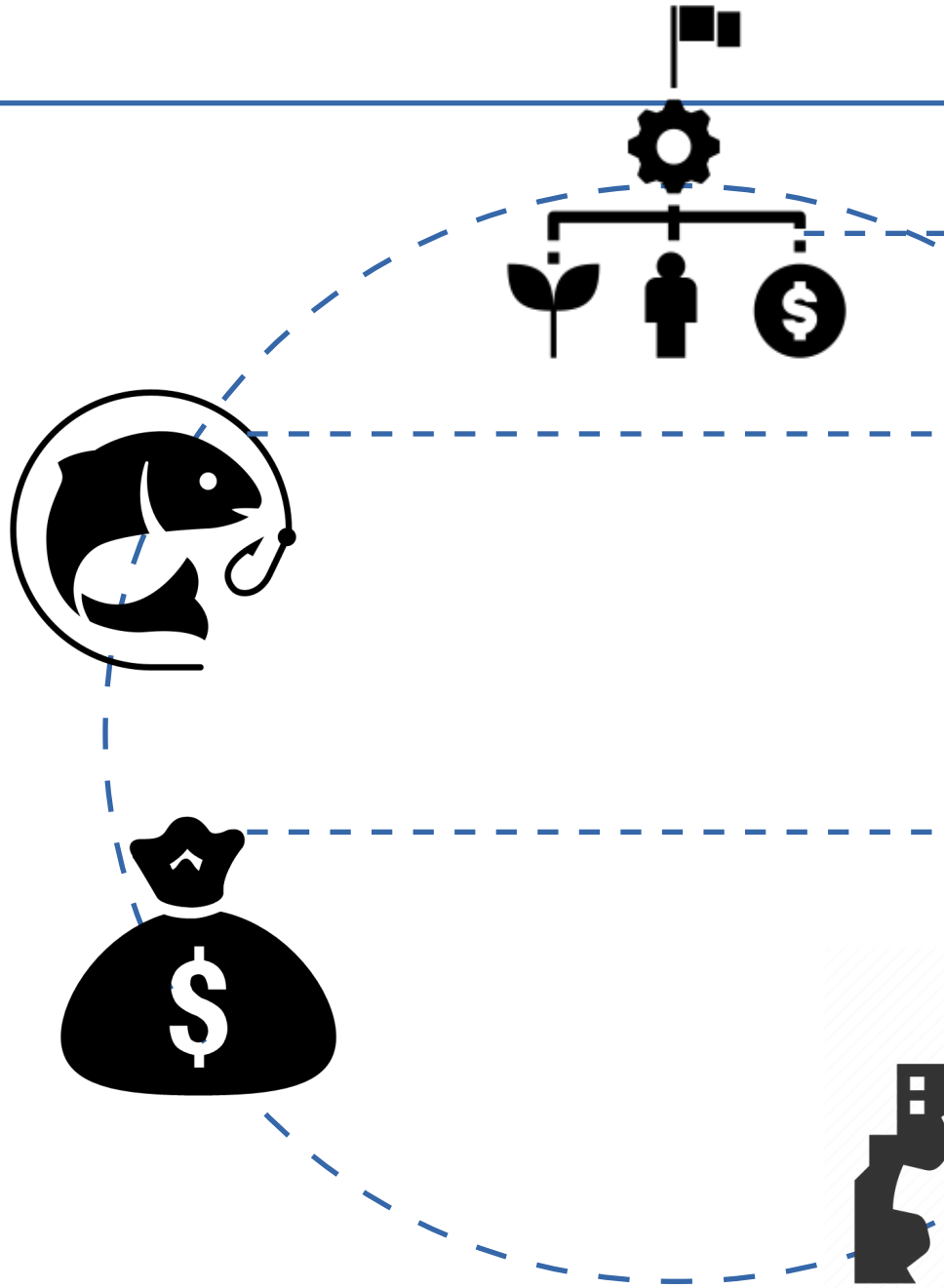
It is important to understand how these livelihoods are influenced by these elements and how to design a space that encourages coping and adaptive strategies. For example, an important influence on the fish industry is the seasonal change and availability of fish. In the off season, Struisbaai fish resources are scarce. Therefore, one must ensure an alternative method of income for the dissertation in the off season. This could be done by creating touristic attractions.

2. The livelihood assets of fishers

Within the sustainable livelihood framework, the available assets to the community are identified as (van Zyl, 1994: online):

- the basic materials used,
- social assets,
- economic assets, and
- institutional assets

The individuals and the community will all have access to these assets and can utilise it. These specific assets are described as capital assets and are the resources that are available to individuals and communities to construct their livelihoods (van Zyl, 1994: online). The fishing community has a minimum set of requirements to be successful. It becomes integral to cater for all the capital assets that the individuals and the community will need and will make use of, and the design proposal and system proposal should cater for these elements. These assets are essential in strengthening the ability of communities to improve and diversify livelihoods and this is especially important to ensure that I implement all these assets in my proposal (ibid.). The framework identifies five types of capital assets (Serrat, 2017: 23):



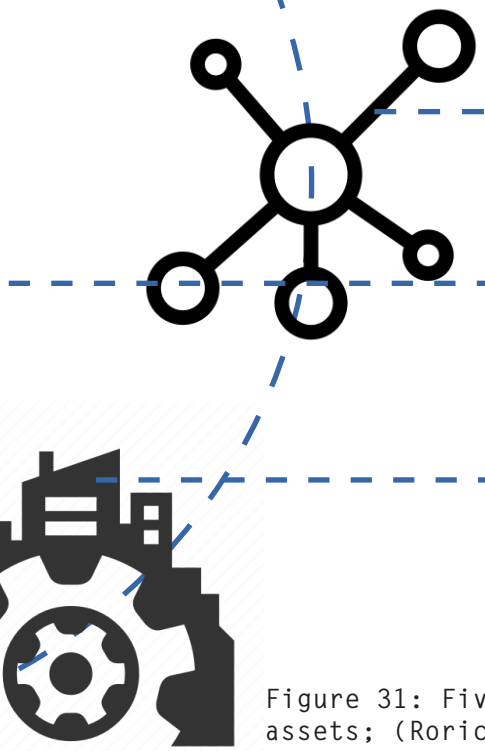


Figure 31: Five types of capital assets; (Rorich, 2020: own diagram)

Human Capital

the skills capability and knowledge base, good health and physical capability that people would need to be able to undertake their livelihoods.

Natural Capital

the quality and quantity of natural and biodiversity resources available to fisher communities. It includes fish stocks and other marine resources that are harvested, crops cultivated, wood gathered, etc.

Social Capital

the personal networks, relationships, associations and affiliations which exist within the fisher communities.

Financial Capital

the finances (cash, credit, savings, debt), and other economic assets such as infrastructure, equipment and technology, that are essential for the pursuit of successful livelihoods.

Physical Capital

the basic infrastructure such as transport, shelter, water, energy, roads, schools, clinics and harbours. It also refers to individual and household level infrastructure such as houses, boats, cars, gear, storage facilities, and processing equipment.

3. Governance structures and processes

Governance structures and processes (also referred to as transforming structures), refer to institutions, organisations, policies, and legislation that influence and shape the livelihoods of small-scale fisher communities (van Zyl, 1994: online). These policies and structures control the amount and type of natural resources that the community may have access to. Sometimes the government can place restrictions on a particular resource or area, for example, marine protected areas. These restraints are an important issue for the local fishing community and the proposed system should allow for good interaction between the governmental fisheries and the fishing community in Struisbaai.

4. The livelihood strategies that fishers adopt

As explored above it may become necessary for local fishing communities to practice alternative livelihood strategies. The Sustainable Fisheries Livelihood Programme has stressed the importance of this. The fishing industry is unstable and unpredictable and it is important for the fishing community to have alternative elements that it can rely on or fall back on. By implementing the framework of the SLA a community could flourish and actively tackle any issues along the way. By implementing a system in my design that caters for this, I believe that the livelihoods of the fishermen will become more stable.

5. Livelihood outcomes

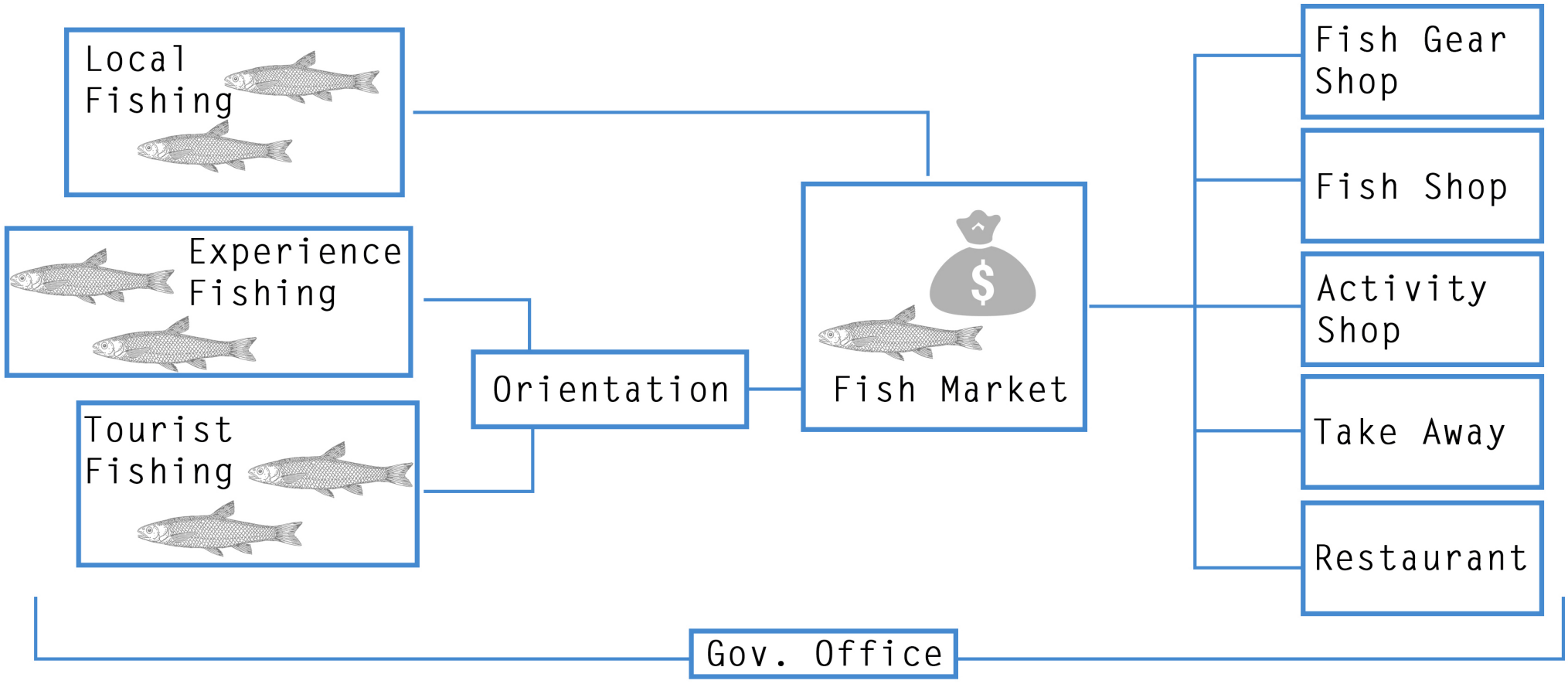
Livelihood outcomes are regarded as the accomplishments that individuals and communities aspire to achieve in their lives (ibid.). These include increased well-being, more income, improved food security, better health, reduced vulnerability and increased protection and sustainability of the natural resource base (ibid.). Through a smart system approach, these outcomes are capable of being realised by the local community.

Figure 32: Positive Struisbaai community; (Stone. 2020: online)

3. The system:

The ‘integration system’ that proposed in this intervention will determine the site layout and the functions. The Project Map discussed in Chapter 1.1 is the ultimate system that is proposed in this dissertation to encourage integration between the local community and the tourism industry. As explained in Chapter 1.1, the ‘integration system’ forms the basis of the Project Map. The system is based around the fish market and the allied fishing activities. The shops on-site all derive their existence from the fishing industry. The fishers are encouraged to participate in the tourist industry by introducing facilities that allow the locals to become tour guides, by inviting the tourists into their routine and by educating the tourists about the fishing industry. This ‘integration system’ proposed in the ‘Project Map’ will place the local community at the centre of the scheme. This ‘Project Map’ will become an element that will integrate conflicting users.

Now that the various users are more integrated, how do we design a facility/building that respects the environment and becomes part of the specific environment of Struisbaai?



4. The Built Environment:

To create a space that is respectful of the environment and that is also accepted by the environment and the local people within that environment. Architects, as members of the group of professionals responsible for designing the built environment, must fully grasp the complexities associated with that environment. In other words, architects must understand the complexities of the environment and what architectural language and approach would be suitable for that specific place. Architects should also consider how it can benefit that specific place in the future.

4.1 The Vernacular Cape Cottage Fisherman Architecture

Many people's preconceived view on Western Cape architecture is commonly associated with the famous 'Cape Dutch' architectural style. There are numerous other in-depth explorations and experiments conducted in the past on architectural styles in the Western Cape which all contributed to the common use of the Cape Dutch architecture. The Western Cape has an early history of colonial influence and this influence made a significant contribution to the architectural development on the associated coastal towns (Fitchett, 1996: 33). These small-scale coastal towns like Struisbaai and others in the Overberg region all have their own unique character. Fisher-folk lived in two-roomed, stone-walled cottages with an external hearth that became characteristic of the vernacular architecture as seen in the figure 36. The fishermen lived a lifestyle of direct interaction with nature. (Malan, Webley and Wessels, 2010). The early cottages were constructed with reeds, reed mats and daubed clay. This use of materials was used and adopted for years but has fallen away because of industrialised materials that are more readily available. These cottage houses were built by the colonial fishermen, farmers and missionaries (ibid.). Different building forms have developed throughout the years and have varied between traditional forms like the 'oval matjieshuise' (figure 33), the 'kapstylhuise' (figure 34) and the 'hartebieshuise' (figure 35). These styles are all interpretations of the original Cape Dutch architecture and were prominently found in the smaller coastal towns (ibid.).

Figure 33: Oval matjieshuis; (n.d.: Online)

Figure 34: Kapstylhuis;(Malan, Webley, & Wessels. 2010)

Figure 35: Hartebieshuis;(Malan, Webley & Wessels. 2010)

This is a landmark in the town and has become an architectural beacon that influences the architectural language of the town. An observation was made by Walton, where he noted that fishermen cottages were mostly made using reeds, but between Gansbaai and Stilbaai they found that the fishermen cottages were built out of rock (Malan, Webley and Wessels, 2010). This could've been as a result of the availability of the material or perhaps due to more exposure to other construction methods. The historical environment of these kinds of houses started to form a collective set of buildings that ranged from very traditional and vernacular architecture to architecture that became more modern and made use of different materials. The accommodation also ranged from free-standing cottages to long rows of rooms or hostels (ibid.). The vernacular houses in Struisbaai were originally used to house the Coloured fishermen of the town, which group was later forcibly evicted under the Group Areas Act of 1950. The cottages were declared a national monument on 10 April 1981 (Artefacts, n.d.: online).

This vernacular architectural style is respected and used in the town; the vernacular style is also associated with the history of the fishermen in town. For my design proposal to be respected by and integrated into the rich fishing community in town, it will have to mimic and respect the vernacular fisherman cottage style in its morphology, as it is appropriate to respect the language of the town and to encourage and highlight the importance of the fishermen in this community. Through explorations and investigations, I will have to come up with an appropriate architectural solution that makes use of appropriate materials and construction methods.

Hotagterklip

Now that the appropriate architectural style has been explored, how do we ensure that these proposed buildings are respectful of the environment and its community?

Figure 36: Hotagterklip;(Hall, 2013:nline)

5. Designing low impact facilities:

The harbour at Struisbaai has several elements that influence the site, among which are unpredictable weather elements, for example, strong winds. Another influencing factor on the site as discussed earlier is the human aspect where there is a contrast between the users on-site. Buildings along coastal towns are prone to decay and are difficult to sustain and maintain, so how can we create an architecture that will be easily sustainable? To design a sustainable building several elements should be explored: sustainable design, vernacular materials and the involvement of the community.

5.1 Sustainable design

From the beginning, people lived a life where they were self-efficient, and their immediate environment was a place from which they harvested or collected their basic needs (Avi Friedman, 2015). People hunted wild animals, gathered water from the natural streams, used interesting methods for ventilation and light exposure, etc. As time progressed, so too has the way we live today. Even though our way of life has progressed as also the way we do things, it remains important to remember that Struisbaai is a small down to earth town and the architecture should respect this. I believe it is important to look at creating a sustainable, low impact building in this environment that would encourage its use and upkeep. There are several forms of sustainable architecture that I could incorporate into the design:

- Natural Ventilation

Proper ventilation is needed in all buildings to allow for comfortable indoor air quality. Indoor air quality is determined according to the concentration of airborne pollution that can cause an irritation, the discomfort or even illness (Avi Friedman, 2015). Therefore, fresh air must be pushed through buildings to get rid of the stale air. The cooling and heating of this air could also be incorporated into the design system.

The harbour will produce a lot of smells and odours, be it the smell of the ocean or the fish. Natural ventilation becomes important to ensure a pleasant experience on-site which is not ruined by unpleasant smells.

• Natural Light

Natural light has the ability to transform a space into a masterpiece. When designing it is important to be conscious of the natural daylight and to consider how to maximise its use. This could replace the use of too much artificial lighting and create a more pleasant experience (Avi Friedman, 2015).

Struisbaai weather is described as having four seasons in one day, therefore buildings should be designed to create fun experiences whether you are inside or outside. The use of natural light in the building can create a more enjoyable experience for the users.

• Renewable Energy

Making use of sustainable energy will not only contribute to the global effort to mitigate climate change but it will also lessen the use and inevitable depletion of non-renewable resources (Avi Friedman, 2015). Four main renewable energy sources could be used: solar, wind, geothermal and hydropower.

I believe that by implementing solar energy into the design the buildings on-site could respect the environment and would lessen the restraint on the energy resources of the town.

• Water Harvesting and Recycling

Water usage has been growing at an alarming rate and has become an issue worldwide. In the Western Cape the water levels are especially low and therefore water harvesting, and recycling, should become an important element to design for.

The fishermen will need cleaning facilities and all the other users on-site will make use of water facilities, whether it be in the kitchen or in toilet facilities. By harvesting the water throughout the year, the design can lessen the strain on water resources during the peak seasons of the year.

5.2 Vernacular materials

Traditionally people have used locally-sourced materials to construct their homes. In the past, as explored in section 4.1 in the 'Theoretical discourse', it is clear that in the Western Cape people made use of reeds, reed mats and daubed clay to construct their homes. Janis Birkeland suggests that a vernacular architecture should be shaped in part by the materials at hand and, in turn, it becomes a manifestation of indigenous culture (Love, 2018: online). In Struisbaai one prominent material that is used and easily found is limestone (Heydenrych, 1994: 69-72), this element could be incorporated into my design and it also resembles the natural landscape. Limestone is also used in the Cape L'Agulhas Lighthouse. [This method will still be discussed and explored in Chapter 3]. Another element that could add to the vernacular architecture is to look at earth structures. This type of construction is clearly found in the vernacular architecture of the region where the whitewash walls of the fishermen cottages appear to be handcrafted and made of daubed clay or earth construction. Yet another method of construction to mimic the vernacular architecture can be introduced into this dissertation; I am proposing to use a slip form stone structure wall element, and this will be further discussed in Chapter 2.4.

5.3 Community involvement

An appropriate building, one that would be respected in the small community of Struisbaai, could hold great value to the local people, especially if they were involved in the project from the start. A good example to look at is the Mapungubwe Interpretation Centre, Peter Rich Architects:

This building is a public building that mimics the landscape of the area that it is situated in. Rich was influenced by the rocky landscape and used an old construction system to achieve a low environment and economic impact (Photography, 2009). Locally compressed soil tiles were constructed in the same manner used by the 'local tribes' in that area. Rich was influenced by the nature that was found at the park and used domed organic forms. According to Hall, "The hand-pressed, air-dried soil tiles were made by local women as part of a client-initiated, poverty-relief project" (Hall, 2011).

The involvement of the local community of Mapungubwe produced great benefits, for example, it created job opportunities, equipped the residents with new skills, and created a sense of pride within the local community. This principle of integrating the community with the construction of the building will be adopted in my design proposal. By involving the community in the construction process it will create and develop a sense of pride within the community and can only contribute to creating positive livelihoods. Using local skills will be a challenging element as community training will have to be incorporated into the programme. This proposal involving the community might hold many other benefits and can equip the local people with skills that can generate another source of income in the future.

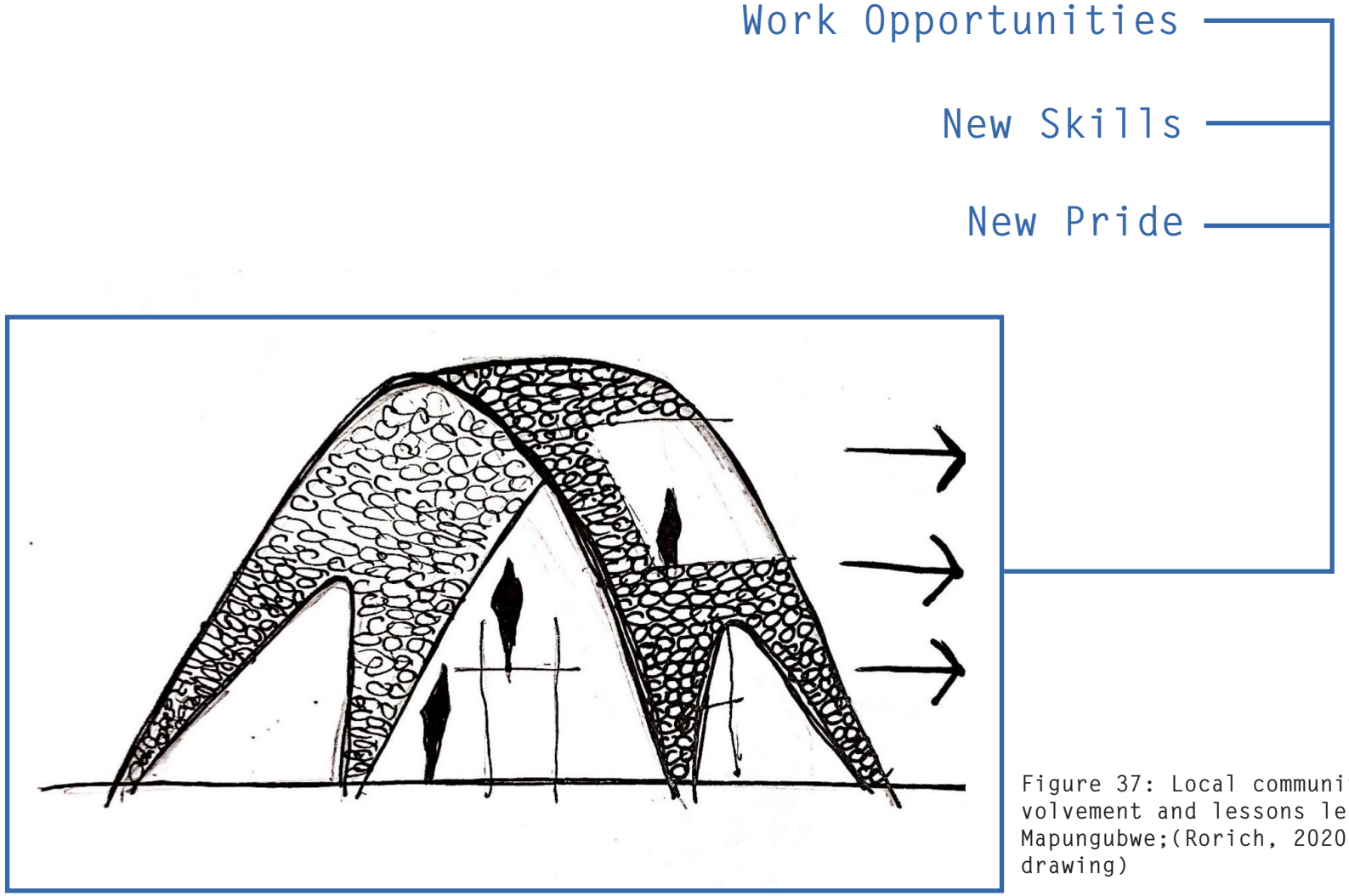


Figure 37: Local community involvement and lessons learnt at Mapungubwe;(Rorich, 2020: own drawing)

To create an appropriate building in the town of Struisbaai that has benefits to all the users is not a simple task. It is important to implement an 'integration system' into the design, which should be designed to encourage the participation of all the users on the site and should place the local community at the heart of benefiting from the project. To design an appropriate system, I had to understand the social and economic complexities of the fishing community. Through exploring existing systems and implementing them in my 'integration system' proposal, I believe that the 'Project Map' will be beneficial to its environment and community. For this system to be a success, I believe that appropriate design methods should be adopted and that, therefore, vernacular architecture and sustainable design should be core elements to the design proposal to ensure a true eco-touristic project.

"In order to design buildings with a sensuous connection to life, one must think in a way that goes beyond form and construction"

Peter Zumthor

Figure 38: Struisbaai current restaurant;(Rorich, 2020: picture)

2 making

2.1 Typology

- Client
- Users
- Accommodation List
- Precedents

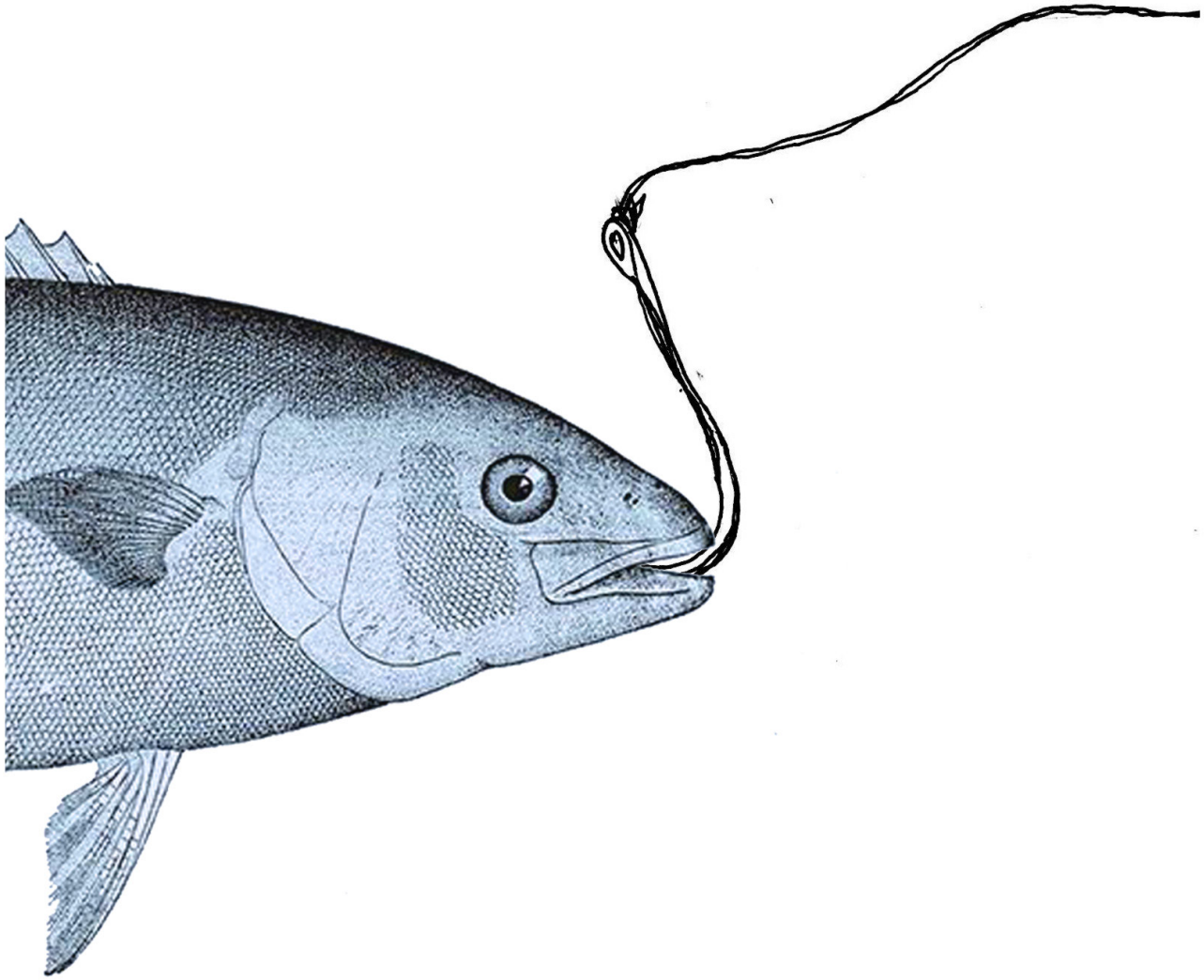
2.2 Topology

- Macro Analysis
-Cognitive Analysis
-Micro Analysis

2.3 Morphology

- Vernacular Architecture
- Earth & Sea
- Urban Design
- Sustainable Design

2.4 Tectonics & Materiality



2.1 Typology

In this section the elements that affect the functioning and physical aspects of the proposed intervention will be discussed. The clients of this project and their aims will be analysed and will largely affect the outcome of the design. Later, the potential users of the site will be analysed after which an accommodation list will be compiled. Once the building functions are established a further investigation will be conducted on the physical aspects of the building. This will be done by looking at applicable precedent studies and considering how I can possibly reinterpret them in my design proposal.

a. Clients

The Tourist Sector

The Department of Environmental Affairs and Tourism prepared the National Biodiversity Strategy and Action Plan (NBSAP) for the Overberg Region which is, in principle: “to develop a plan of action for the conservation and sustainable use of the country’s biological diversity.” I propose to have my design proposal form part of this strategy.

The municipality has set out a framework plan for Struisbaai (Cape Agulhas Municipality, 2012: online). The purpose of the Struisbaai Framework Plan is to “provide guidelines for the future development and the conservation of the area between the existing caravan park and the harbour area, as well as to provide the Local Authority with a frame of reference which can be used to assess development applications in the future (ibid.).” To design a building in the small town I must ensure that it complies with the town development framework. This can be achieved by:

- Having a policy framework in place to guide all future development;
- Planning strategies should ensure the integration of the physical environment, social and economic factors;
- Encouraging economic growth and tourism developments;
- Taking the impact on the environment and infrastructure into account.

The guidelines that were set in place first analysed the strengths, weaknesses, opportunities and threats (SWOT) of the study and also took the development context, natural environment and community concerns into account. The study area has been divided into seven land use zones, named A-G (ibid.).

KAAP AGULHAS MUNISIPALITEIT
CAPE AGULHAS MUNICIPALITY
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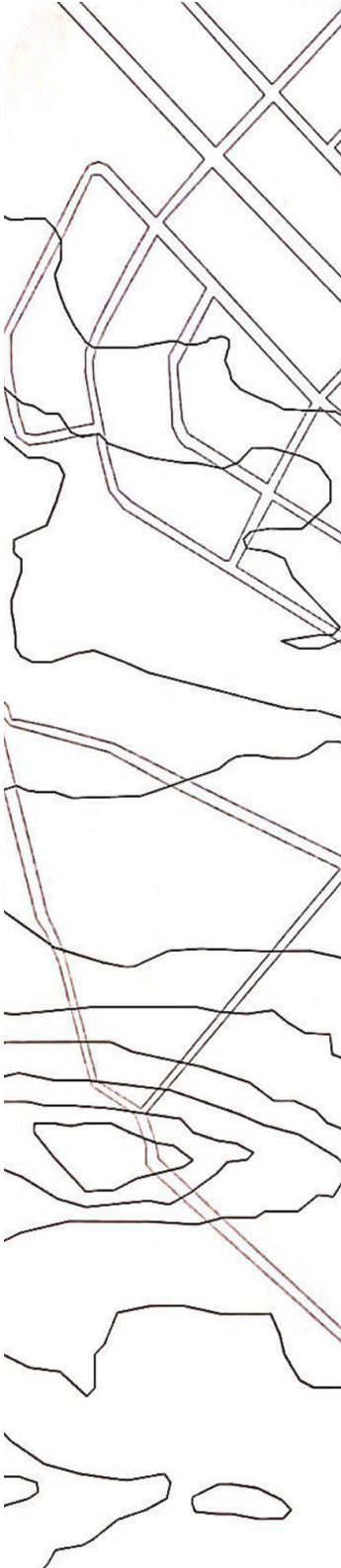


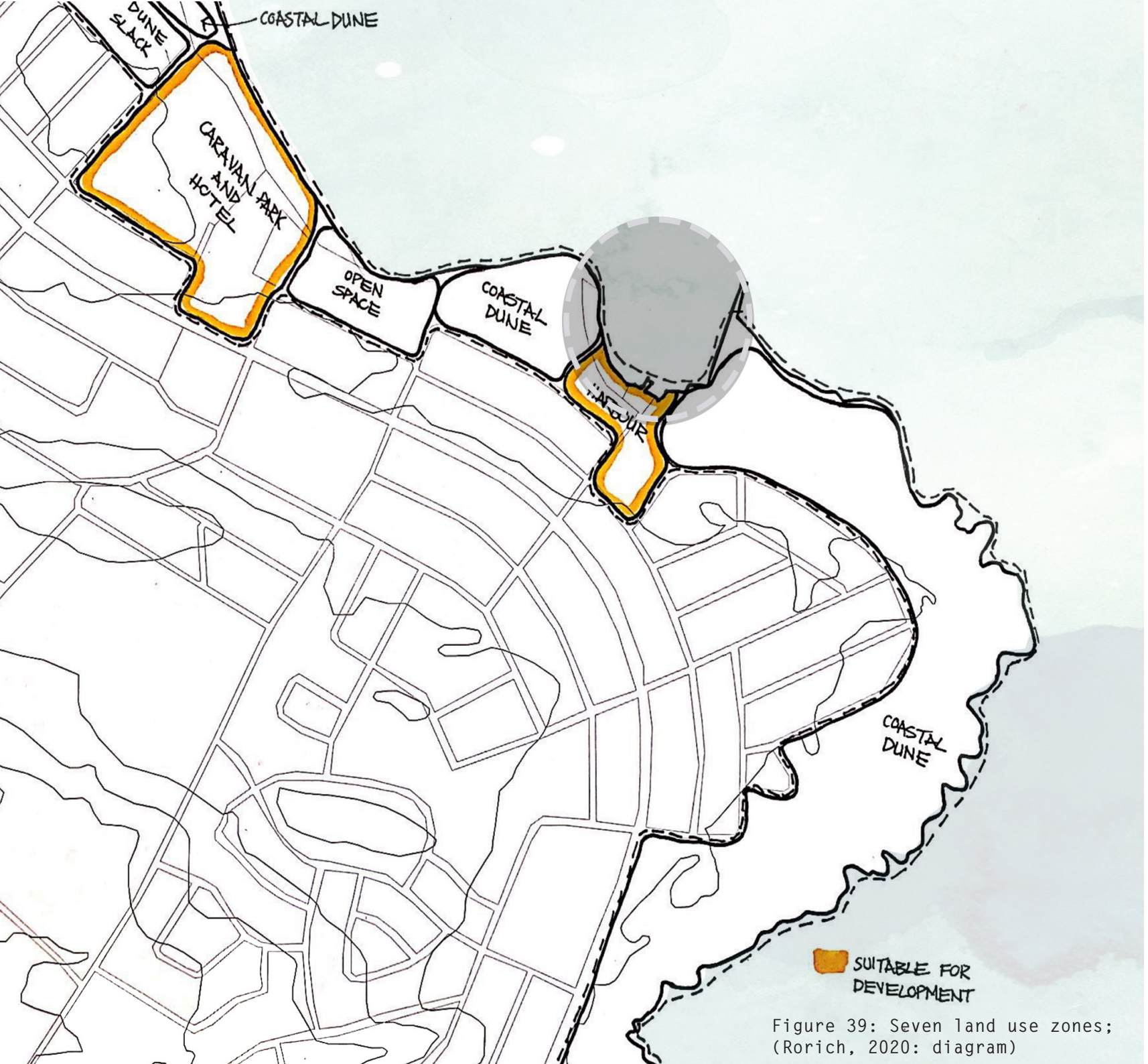


Figure 39: Seven land use zones; (Rorich, 2020: diagram)

A. Coastal Zone: This area is not suitable for development but is proposed to be a conservation area. The study has found that on an opportunity exists to formalise the roads and access points.

B. Harbour Zone: The SWOT analysis has earmarked this zone suitable for development (situated in close proximity to the CBD) with the possibility of developing recreation facilities as well as public amenities and public administration facilities (offices and management).

C. Coastal Dune: Zone C is not suitable for any further development but should be established as a conservation area.

D. Open Space: This zone is earmarked as a high-risk zone due to coastal process between the high-water mark and the northern boundaries of the erven along Minnetokka Road. The area is a suitable site for public recreation and public amenities but not for further development. An opportunity exists with regards to environmental authorisation.

E. Caravan Park and Hotel: Zone E is an area suitable for development, recreation and also coastal rehabilitation. The site could also be used for additional parking, public facilities and day visitors.

D. Open Spot: As with Zone D, this zone is a high-risk zone in terms of coastal process between the high-water mark and the north-eastern subdivision line along Port Jackson Avenue.

Small Scale Fisheries

‘The Department of Agriculture, Forestry and Fisheries’ has formulated a plan to enlarge the small-scale fishery industry in South Africa. In Struisbaai and other surrounding coastal towns, small-scale fisheries are considered to be the most practised occupation. Therefore, it would be ideal to channel the aims of the Department and to apply them to my design proposal, as this will hopefully support and enhance the livelihoods of the small-scale fishers.

The aim of the Department is to administer the provisions of the Marine Living Resources Act, 1988 (MLRA) by managing, promoting and supporting the small-scale fisheries sector (DAFF, 2020: online). The functions that they are proposing are the following (DAFF, 2020: online):

1. Develop policy, norms and standards for small-scale fisheries management
2. Manage the administration and support of small-scale fisheries sector in accordance with legislative requirements
3. Manage the verification of product flow through the fishing value chain
4. Develop the necessary networks to maintain and manage stakeholder participation

My proposal at Struisbaai harbour can be a test case, as this project explores how to integrate the local fishermen with the tourism sector and how to ultimately promote small-scale fisheries and increase their impact in coastal towns. This intervention programme could, in the future, become a precedent for other surrounding coastal towns with struggling fishing communities.

agriculture, forestry & fisheries

Department:
Agriculture, Forestry and Fisheries
REPUBLIC OF SOUTH AFRICA

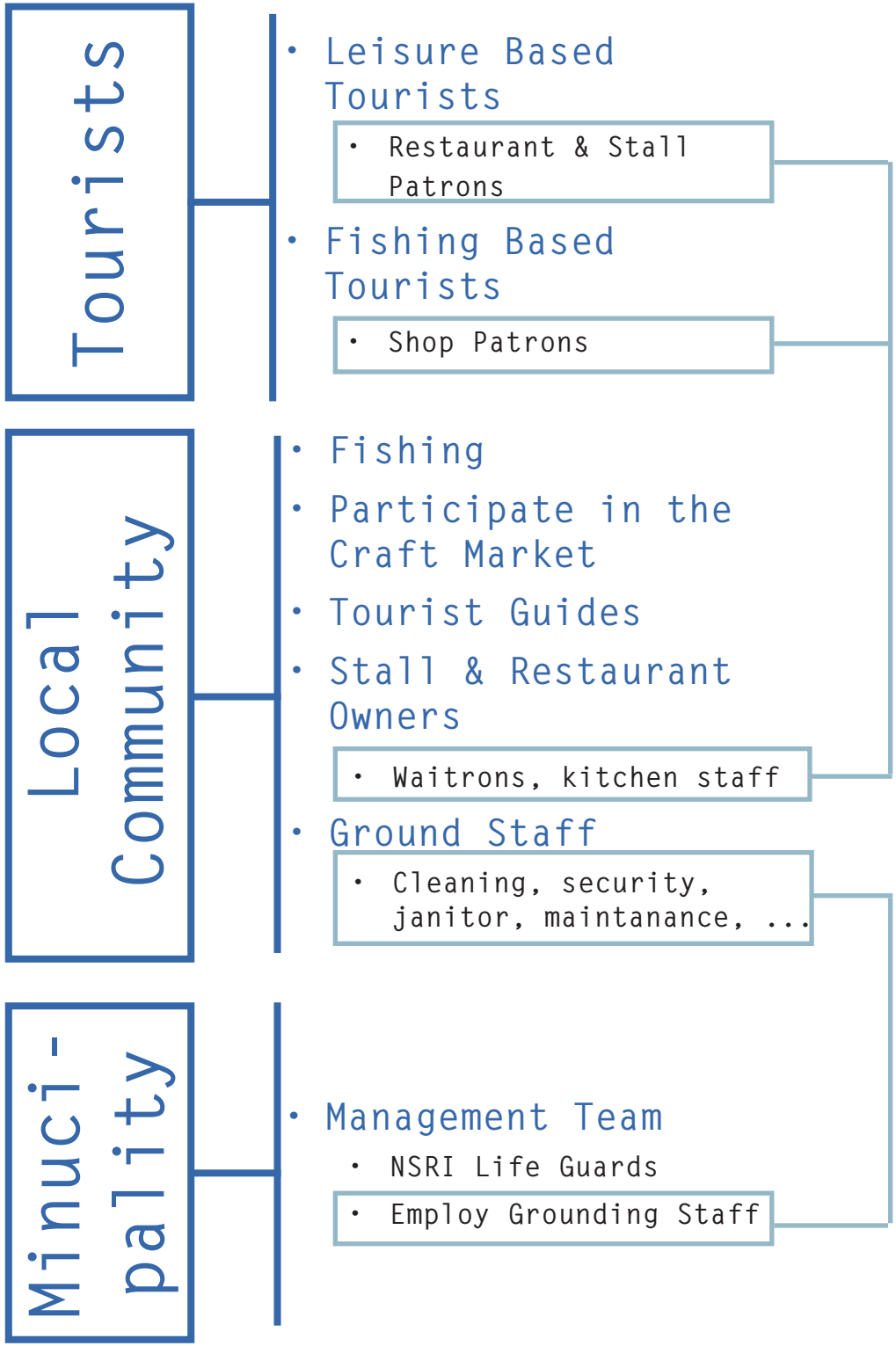
b. Users

The users on the site will alternate between the tourist and the locals. The tourists are divided into three categories, namely: Leisure Based Activity Tourists, Fishing Based Activity Tourists and Water Sports Based Activity Tourists.

- The Leisure Based Activity Tourists are focused on activities like strolling, sitting, viewing, and relaxing.
- Fishing Based Activity Tourists are people who go to the site specifically for fishing and this can range from shore fishing to ski-boat fishing.
- Water Sports Based Activity Tourists participate in activities like swimming, snorkelling, jet-skiing etc.

The tourists will also make use of other facilities like the restaurants, the stalls, and the fish market.

The other users, the local community, will take part in the various proposed activities on-site to encourage integration. The local community's participation on-site will mostly be aimed at generating economic growth. These users are the local fishermen, waiters, ground staff that will keep the site neat, and many more. The Governmental Fisheries Department will also be accommodated on-site. The local people will also naturally partake in the tourist-based facilities like the swimming platform. Therefore, there will be overlapping elements on the site that involve both the tourists and the local community to further encourage interaction.



C. Accommodation List

Promenade		Seafront		Fish Market		Viewing Deck	
Sandwich Shop	160 m²	Restaurant & Bar with kitchen	570m²	Overall Fish Market	982m²	Viewing Deck	231m²
Ice-Cream Shop	92 m²	Seafood Restaurant with kitchen	390m²	Ablution & Locker Facilities	37m²		
Beach Rental	62m²	Security Office	32m²	Fish Prep Area	50m²		
Ablutions	165m²	Craft Market	120m²			Swimming Platform	
Locker Room	140m²	Toilets	52m²			Platform	864m²
Life Guard Office	70m²	Activity Shop	146m²				
Smoothy Shop	80m²	Info & Orientation Room	236m²				
Tuck Shop	40m²	Fish Shop	140m²				
		Fish Gear Shop	108m²				
		Gov. Office	265m²				

d. Precedent Studies

PROMENADE

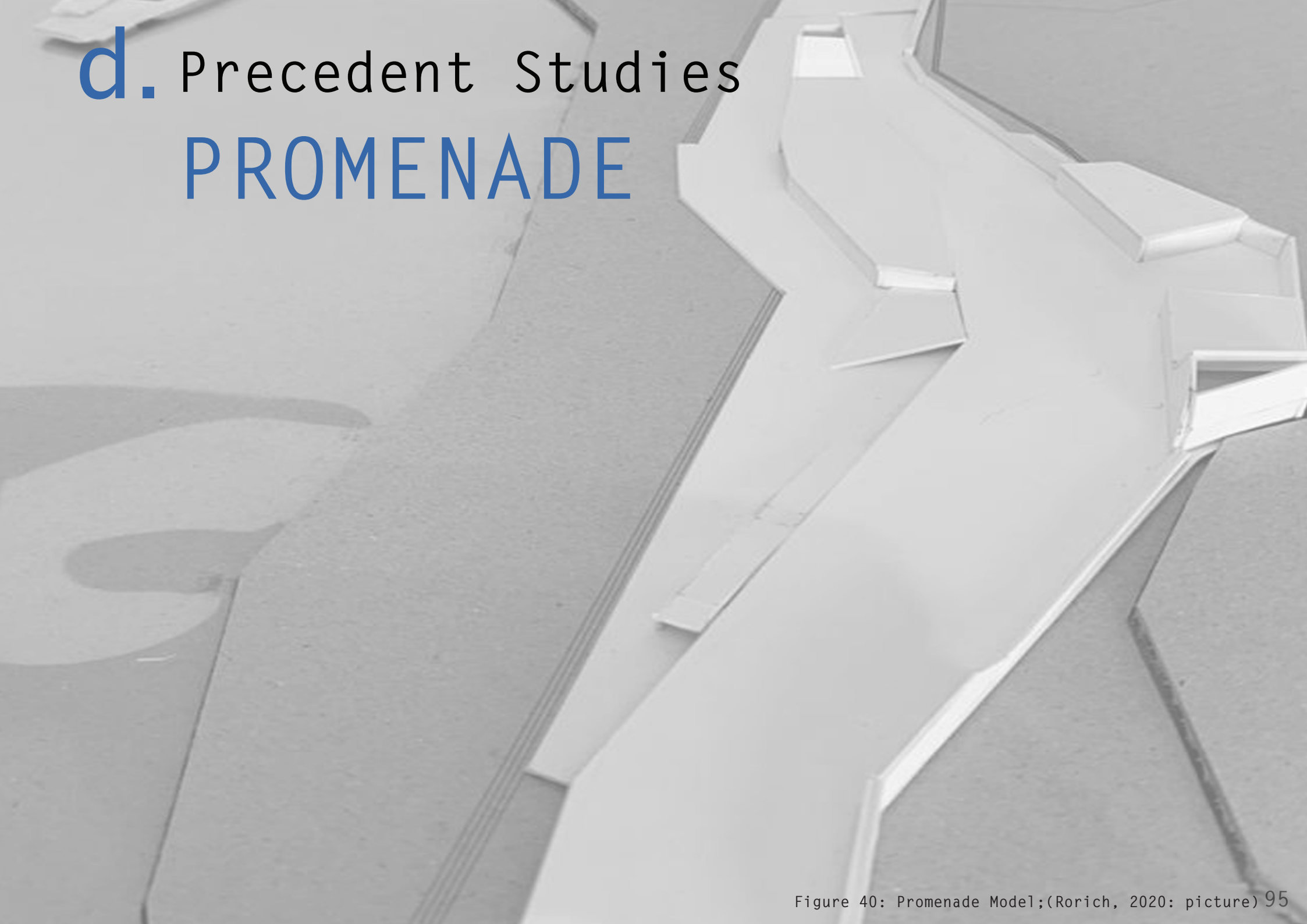


Figure 40: Promenade Model;(Rorich, 2020: picture)

Tel Aviv's Central Promenade
Isreal, 2018
Mayslits Kassif Architects

Tel Aviv's Central Promenade has, since the 1930s, played a pivotal role in establishing an ever-changing connection between the city and its shore (González, 2019: online). The promenade was reconstructed in 2018 to create a more interactive threshold. This boardwalk or promenade has always acted as a border between the city and its beach, and the new design is now acting as a continuous interface instead of a border. The new promenade allows pedestrians to flow from the sandy beach, to move further throughout the waterfront (González, 2019: online).

The lessons learnt:

- Designing a platform that can be interpreted and used for different activities to accommodate all the users
- Making the boardwalk a destination and not just a boundary that you move through, effectively making the threshold habitable
- Creating several nodes of activities on the promenade that ranges from collective used spaces to individually used spaces
- The method of defining different spaces on the promenade

Figure 41: Thresholds;(Rorich, 2020: own drawing)

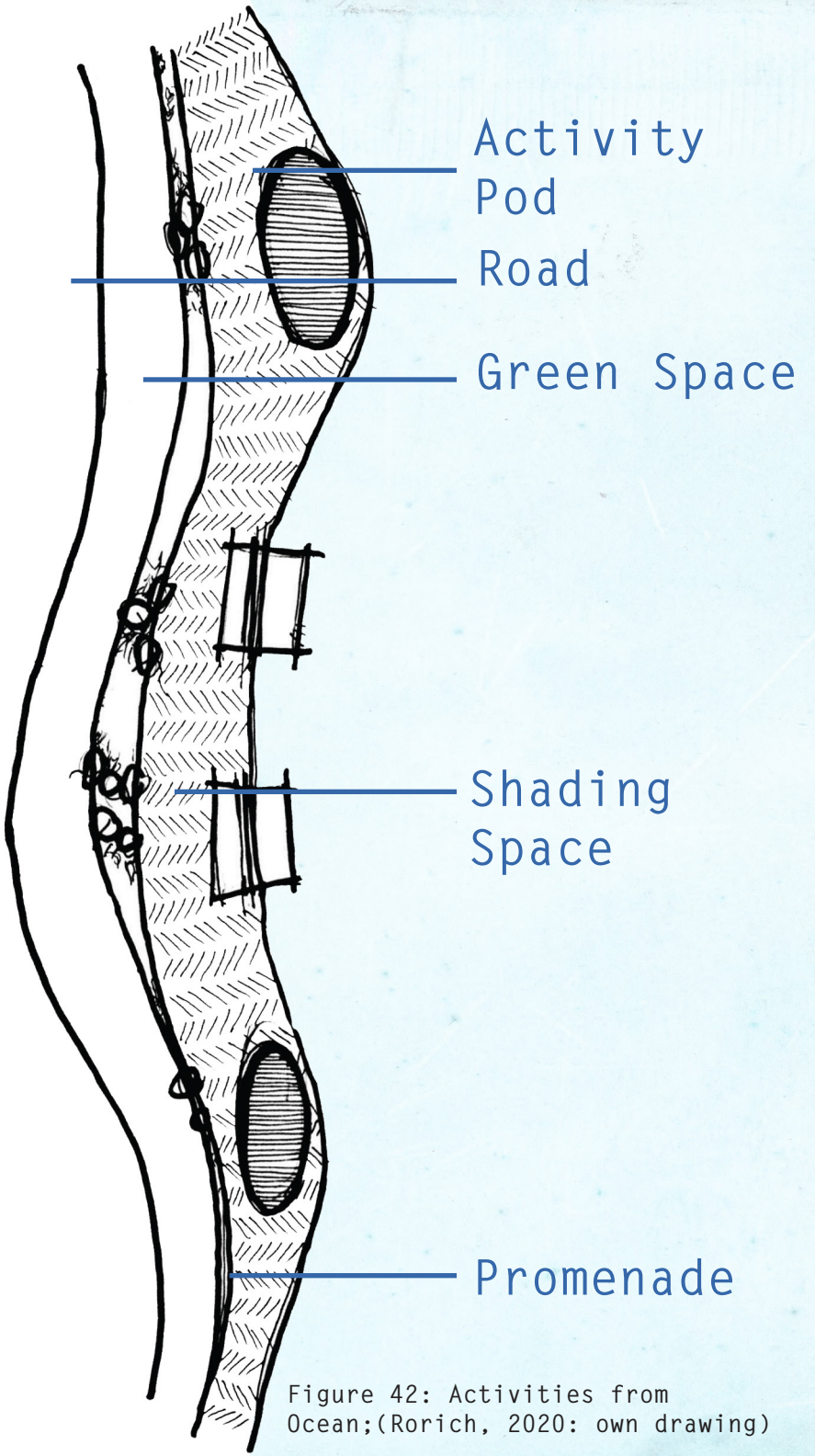


Figure 42: Activities from Ocean;(Rorich, 2020: own drawing)

Figure 43: Thresholds;(Cohen. 2018: online)

Treating the Thresholds

Durban Point Promenade
2019
COX Architecture & Iyer Urban Design

The Durban Point Promenade is the longest promenade in Africa (Correia, 2010: online). The promenade is situated between the Blue Lagoon on the one end and the Durban Harbour mouth on the other end. The promenade is designed with numerous recreational activities aimed at accommodating local families as well as tourists. The promenade welcomes people strolling, cycling and even skaters.

The promenade is a threshold between the ocean and the city and is therefore designed as an open stretch for pedestrians fringed by trees and grass to create a serene experience of the city.

Durban promenade is a large-scale development, but for the purposes of this dissertation, I will be focusing on the new development, The Point Promenade. By focusing on a part of the promenade I believe that it can better help me compare that specific part to the size of my site.

The lessons learnt:

- The layering of activities creating a series of filters from land and sea
- How to approach and design thresholds
- Accommodating necessary amenities, like lifeguard facilities and ablutions
- Level differences that creates a more open promenade space at the top and a more intimate section at the bottom

Figure 44: Level differer

Figure 45: Walkway platfo

Figure 46: Thresh

nce;(Instagram, 2020: online)

orm;(Instagram, 2020: online)

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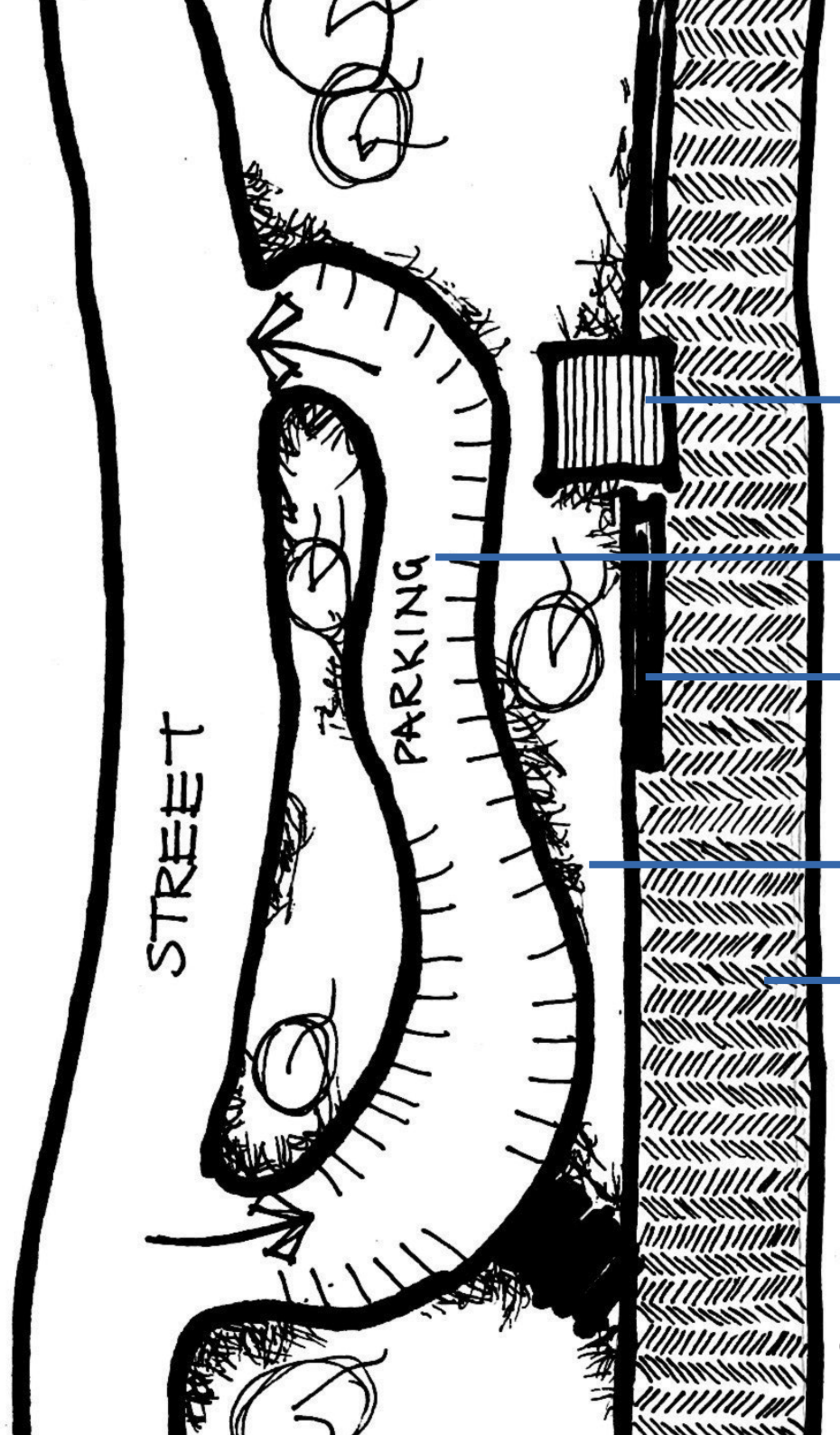
Threshold Walkway Level
Platform Difference



Shading Space

Parking

Threshold

Green Space

Promenade

Figure 47: Activities from ocean;(Rorich, 2020: own drawing)

Copacabana Beach Promenade
Rio de Janeiro, Brazil, 1970
Roberto Burle Marx

The Copacabana Beach Promenade is approximately 4km long and is so unique because of its mosaic sidewalk paving. This paving mimics a waveform and is done in black and white. The promenade resembles a giant abstract painting where each section is unique. Along the promenade one finds several gatherings or 'pods'. These pods usually have two restaurants or bars with bathroom facilities and are scattered over the length of the promenade. These pods create platforms for the local community to generate an income based on tourism (see https://www.modlar.com/photos/5920/copacabana-promenade/).

The lessons learnt:

- Addressing a big promenade platform through creating a unique pattern on the promenade that encourages movement
- Placing facilities along the promenade that serve as a gathering space to visitors and locals as well as to provide facilities like ablutions

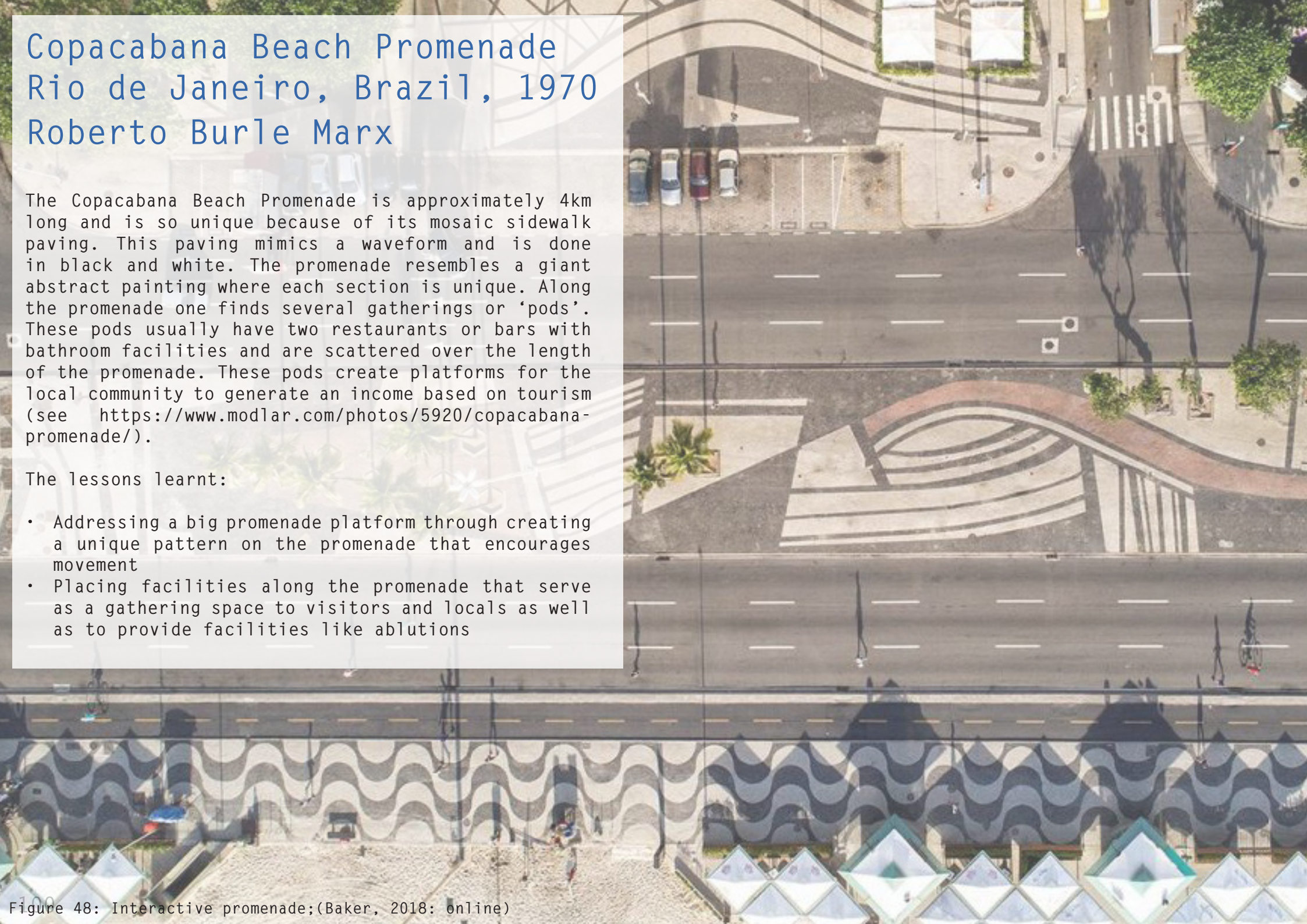


Figure 48: Interactive promenade;(Baker, 2018: online)

Figure 49: Promenade restaurant;(Rorich, 2018: picture)

Leça Swimming Pools
Portugal, 1966
Alvaro Siza

Leça de Palmeira is a small town along the coast of Portugal known for its rocky coastline (Zaxarov, 2020: online). Alvaro Siza designed swimming pool facilities along the coast and this project is considered to be one of his greatest early works.

This project includes two swimming pools, changing rooms and a café. The design is aimed at accommodating holiday goers. Siza aimed at preserving as much of the existing rock formations on-site and designed the project to blend in with the natural landscape (Zaxarov, 2020: online). He used concrete that is shaped over and around the rock formations to define spaces. The concrete has weathered over the years and fits almost perfectly into the site.

The lessons learnt:

- Creating a platform to accommodate seasonal tourists
- Using a heavier form of material to ground the project onto the site, instead of lighter construction materials often used at the coast
- Looking at a material blending into its landscape and not necessarily contrasting it

Thresholds Fading into Landscape

Figure 50: Thresholds; (Rorich, 2020: own drawing)

Figure 51: Bath Picture;(Guerra, 2017: online)

Sea Organ, Zadar Croatia, 2005 Nikola Basic

The seafront of Zadar was originally just a wall. Then the architect introduced a new design in parts of the seawall that interacts with the ocean waves (Taylor-Foster, 2015: online). Underneath the marble blocks of the stairs there is a network of polyethylene tubes that 'sings' as the waves and wind crash against it (Taylor-Foster, 2015: online). The stairs also act as a connection between the land and sea and has become an interactive threshold that the tourists and the locals enjoy.

The lessons learnt:

- Creating a space that allows people to dwell within the liminal space
- A new connection between land and sea
- Using architecture to create an interaction between land and sea

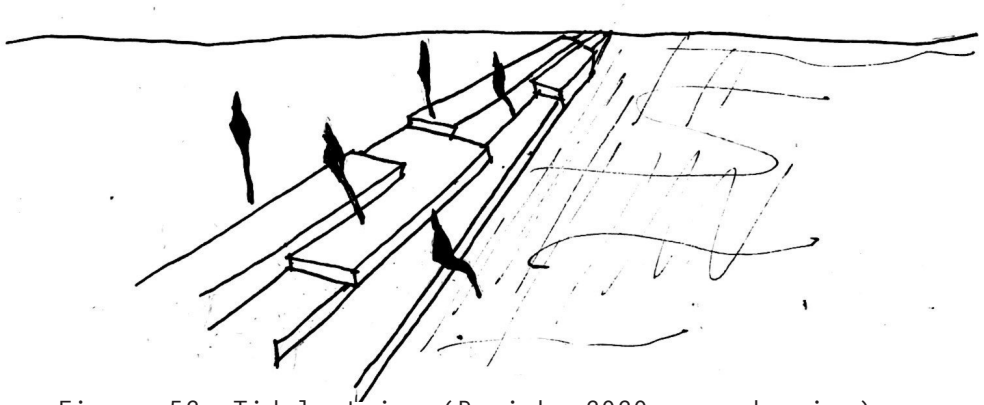


Figure 52: Tidal stairs;(Rorich, 2020: own drawing)

Solar Platform

Figure 53: (Tayler-Foster, 2015: online)

Plaza de Dalí, Madrid
Spain, 2004
Francisco Mangado

This project had two main objectives: to reconstruct the space to ensure that it reads as a formal urban space; and to simultaneously ensure comfort that encourages users to inhabit the space. Landscaped surfaces that rise from the paving and slope in the form of wedges filled with vegetation and trees together with urban furniture are introduced on this Plaza (laud8, 2010: online). The idea of these elements is to create a space that is welcoming the users.

Urban furniture adds meaning to a space; therefore, through effective design urban furniture elements can define spaces and become usable platforms for visitors. Introducing greenery into a promenade also contributes to a positive user experience.

The lessons learnt:

- Introducing greenery into the design
- Designing an element that can host more than one function, like greenery or shading, seating, and a place of gathering
- Designing an element that is an interactive interface

Figure 54: Garden pod;(Rorich, 2020: own drawing)

Garden Pod with Seating

Paprocany Lake Shore Redevelopment Poland, 2014
RS & Robert Skitek

[PROMENADE]

A wooden promenade is located along the back of the lake, which pathway at some points meanders out over the lake and then back on the ground (Skitek, 2015: online). By implementing this design, the users are given a new perception of the space (ibid.). The promenade makes use of urban design elements, like benches and hanging nets that hang over the water. These elements all contribute to the users' positive experience of the promenade.

The lessons learnt:

- Hosting different forms of activities
- Connection between the lake and the shore
- Thresholds and level differences
- Introducing different forms of urban furniture

Leisure - Netting

Seating Breakaway Spaces

Figure 55: Leisure spaces; (Zakrzewski , 2014:online)

d. Precedent Studies

SEAFRONT

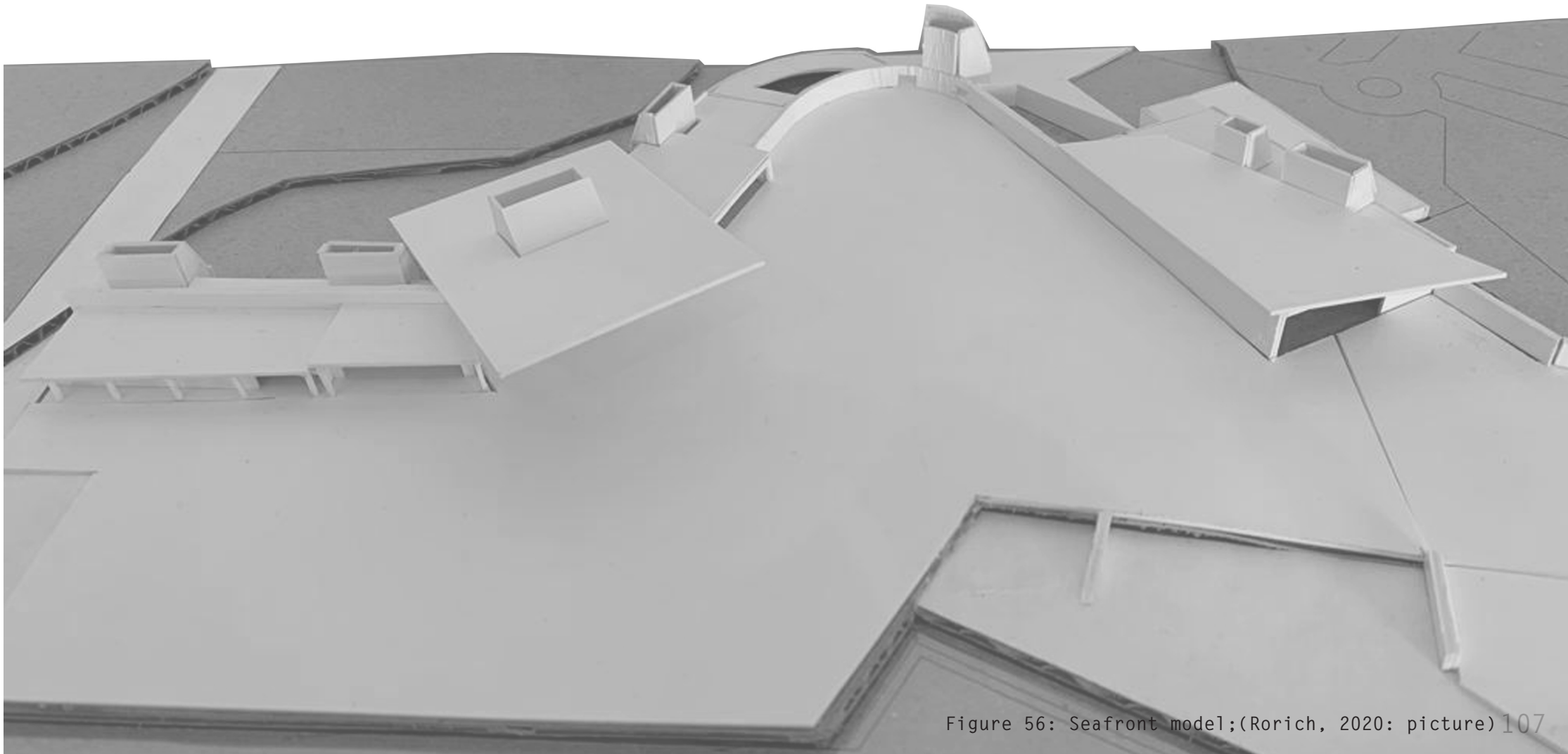


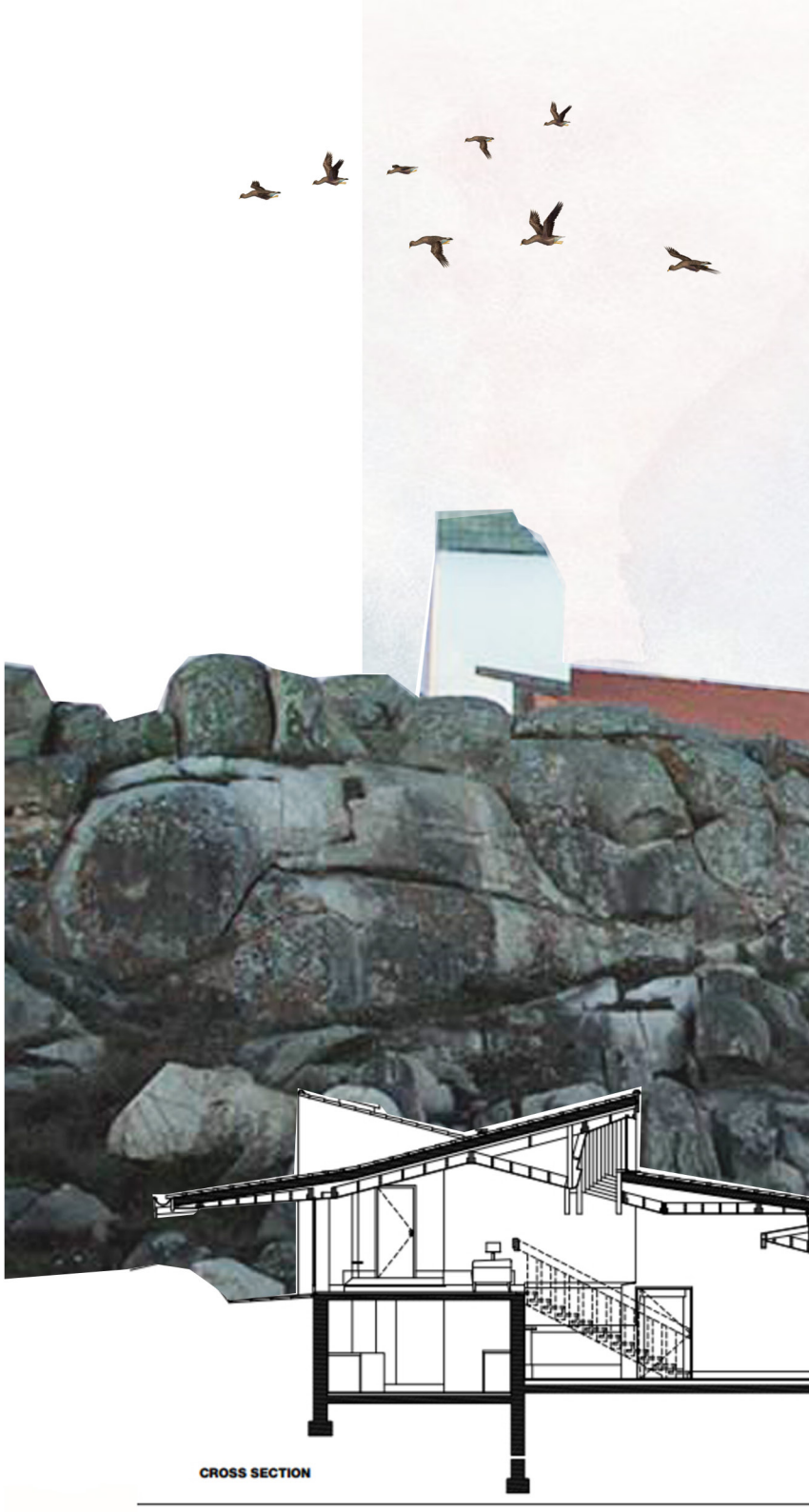
Figure 56: Seafront model;(Rorich, 2020: picture)

Boa Nova Tea House, Matosinhos Portugal, 1963 Alvaro Siza

Alvaro Siza designed a building to fit into the landscape of Matosinhos, where the walls almost become part of the landscape. The building can be accessed by a series of platforms and stairs that lead guests to a sheltered entrance that is hidden under a roof canopy (Stevens, 2014: online). The building is constructed from concrete walls and blends into the landscape. These walls hide and reveal the horizon line of the ocean (Stevens, 2014: online). The walls are designed to fit into the landscape, and the use of materials allows you to constantly be aware of the building without it seeming out of place; you still feel as if you are part of the landscape. Some parts of the building only partly reveal the landscape to you through smaller windows. The chimney elements of the building are most likely the only elements that are a revealing landmark in the landscape.

Lessons Learnt:

- The use of a wall element to fit into the landscape
- Openings that differentiate to reveal the ocean in interesting ways
- The use of thresholds
- Chimney elements are a beacon in the landscape
- The use of a heavier appearing material like concrete to fit into the landscape



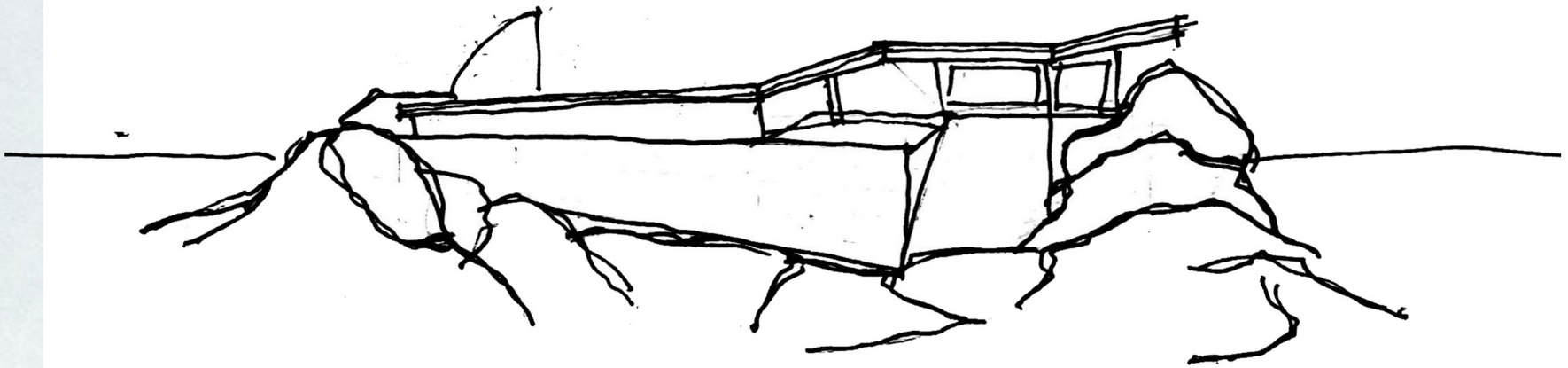


Figure 57: Building in rocks;(Rorich, 2020: own drawing)

Figure 58: Image & Section;(Morgado , 2014: online)

House at Dirk Cove
Ireland, 2004
Niall McLaughlin Architects

The House at Dirk Cove is a project located at Dirk Bay on the west coast of Ireland. The original site had a traditional cottage and a boat slip on it. The architects then refurbished these existing elements and added an extension to the existing building (McLaughlin, 2012: online). The aim of this project was to allow a maximum appreciation of the landscape while remaining almost invisible to the public road. The new extension contrasts the proportions of the existing cottage, and stretches out onto the horizon with more linear geometric forms, even though on the outside of the building it replicated the traditional cottage language through the use of a thick wall and small window openings (McLaughlin, 2012: online). The building is a great representation of respecting and channelling the old architectural language whilst introducing new means of architecture.

Lessons learnt:

- Creating an enclosed space removed from the public view / a courtyard space
- Implementing new geometric forms whilst respecting the traditional
- Channelling the vernacular architecture and implementing it in an appropriate way
- The use of a thick wall element with small openings whilst retaining the wall's functionality

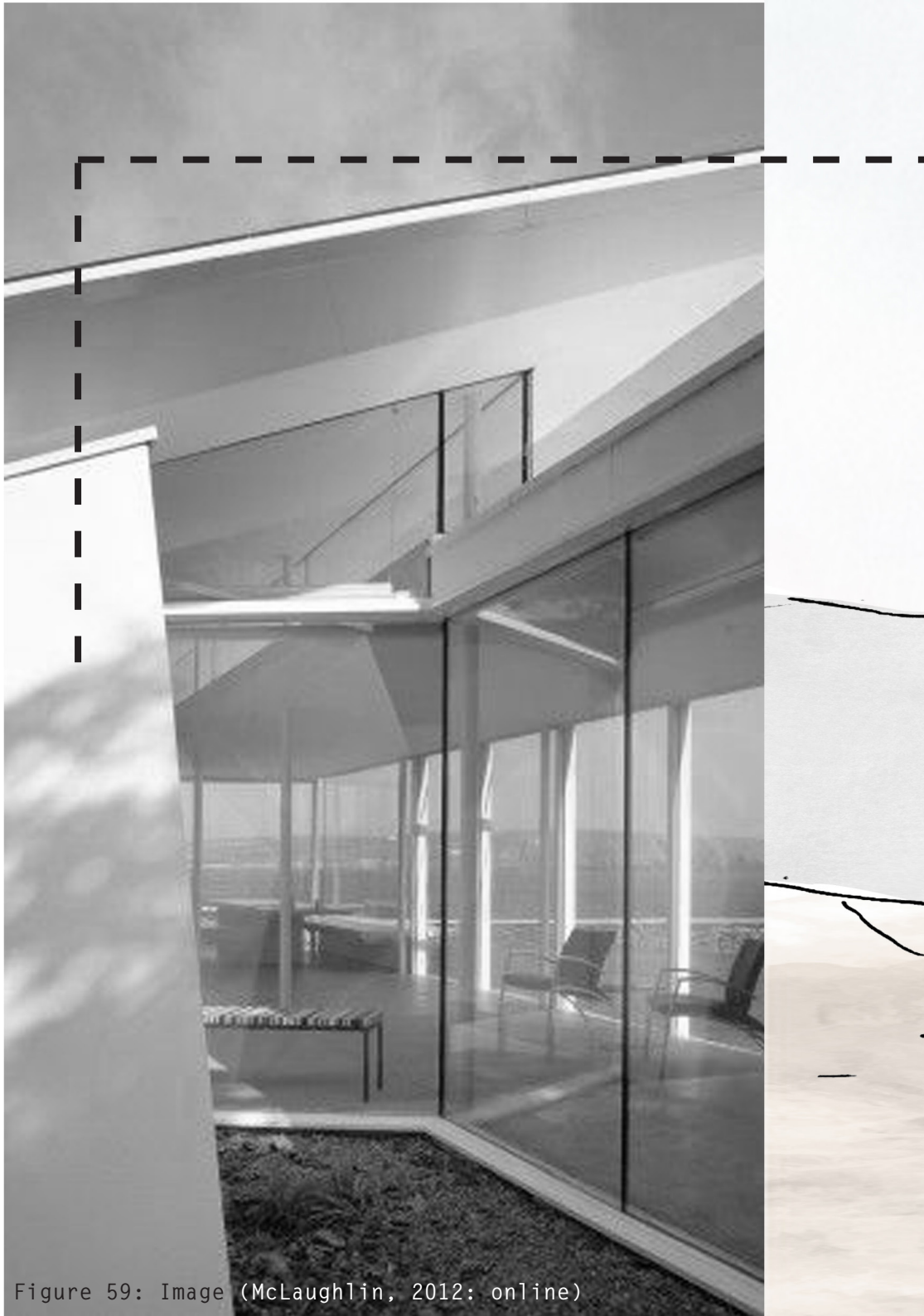


Figure 59: Image (McLaughlin, 2012: online)

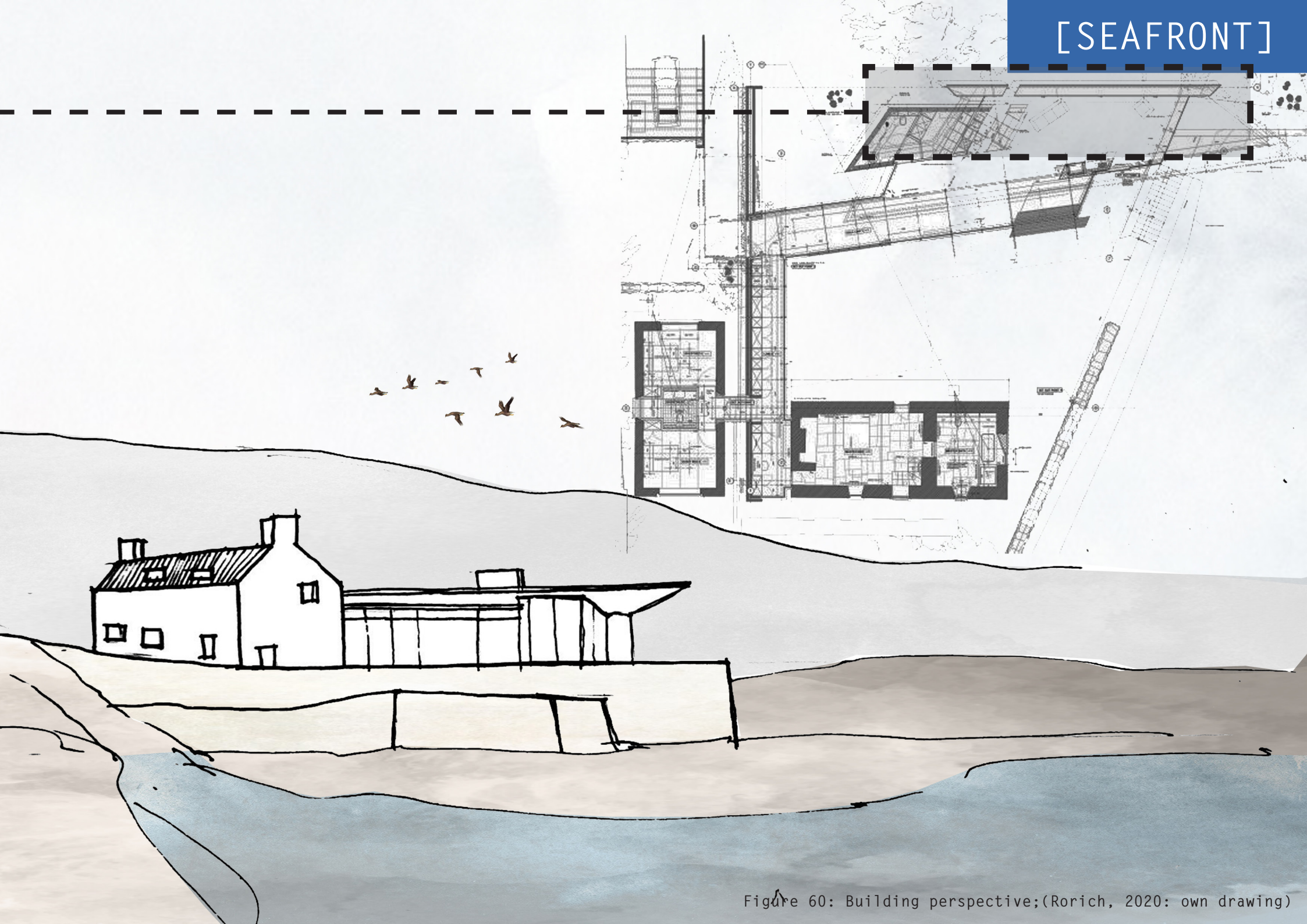


Figure 60: Building perspective;(Rorich, 2020: own drawing)

Muttrah Fish Market
Oman, 2017
SnØhetta Architects

On the coast of the Gulf of Oman, a new landmark was erected on the waterfront to host the fish market. This fish market is designed to act as the focal point in the community and to allow it to simultaneously act as a functioning hub for Oman's thriving fishing industry (Snøhetta, n.d.: online). This building is situated at the biggest harbour in Oman and it attempts to pay tribute to the past and the future of Oman. Muttrah is well known for its long history of commercial trade, its characteristic port, and its fishing traditions (Snøhetta, n.d.: online). The new proposed market caters for the region's trade and fishing traditions and also accommodates the tourism industry. This building allows for the local fishermen and tourists to come together under one roof.

Lessons learnt:

- Combining a fish market element with other functions like tourism
- How the building wraps around the curve of the bay
- Roof canopy/shading device
- How a fish market functions

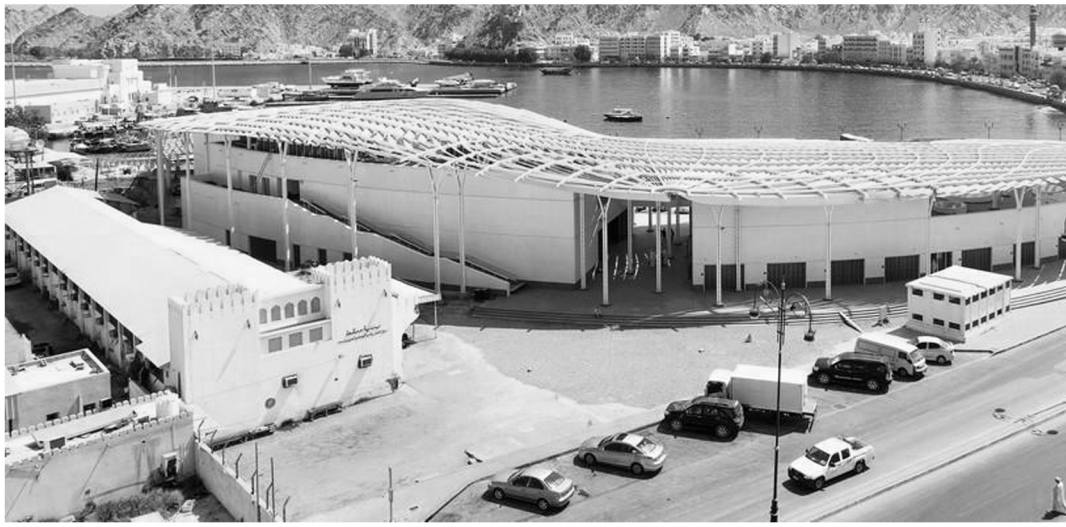
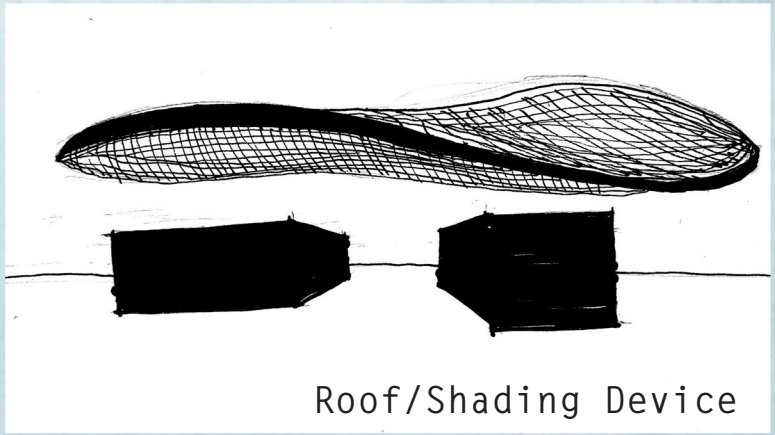


Figure 61: Roof element;(Snohetta, n.d.: online)

Building Reacting to Curve on Site

Figure 62: Building wraps around the curve; (Rorich, 2020: diagram)



Roof/Shading Device

Figure 63: Roof atcing as datum;(Rorich, 2020: own drawing)

d. Precedent Studies

SWIMMING PLATFORM

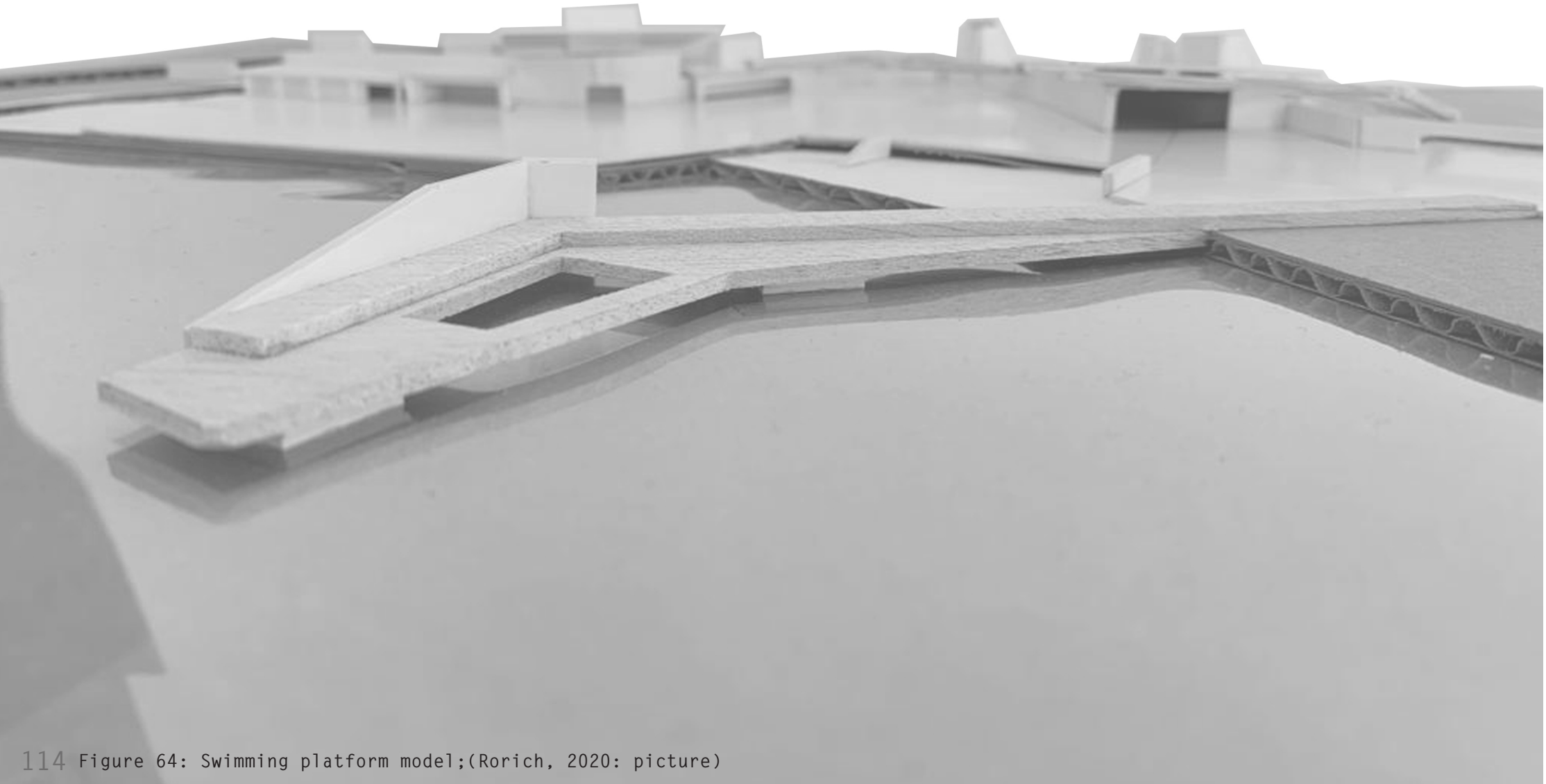


 Figure 64: Swimming platform model;(Rorich, 2020: picture)

Kastrup Sea Bath
Denmark, 2004
White Architects

The architects created a swimming platform in the ocean, which platform hosts several activities, like jumping platforms, designated swimming areas as well as platforms for enjoying the sun. This platform is constructed from timber which works well with the ocean and works well as a floating element. The structure also includes elements like toilet facilities.

Lessons learnt:

- Interactive platform on the water
- Different elements to accommodate different activities like diving
- Timber construction as a possible solution

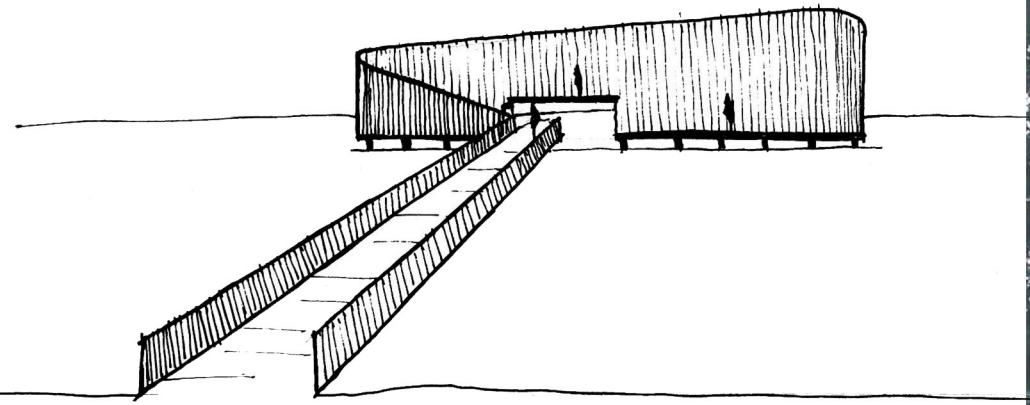


Figure 65: Platform on elevation;(Rorich, 2020: own drawing)

[SWIMMING PLATFORM]

Figure 66: Platform from above; (n.d.: online)

The Floating Kayak Club
Denmark, 2015
FORCE4 Architects

The Floating Kayak Club building is designed on the water, creating a unique and new connection from land to sea, similar to being in a kayak (FORCE4, 2015: online). The platform on the water level caters for kayak activities and creates a safe dock space for them, whilst on the upper deck level other spaces are provided, like a barbecue area, space for other sporting activities, an outdoor kitchen and a sun deck (ibid.). The two levels are connected by ramps that encourage continuous movement.

Lessons learnt:

- The use of ramp elements to encourage the flow of space
- Creating a courtyard space in the water for safety reasons and a calmer ocean pool
- The construction of a floating timber deck

Figure 67: Platform perspective;(Rorich, 2020: own drawing)

[SWIMMING PLATFORM]

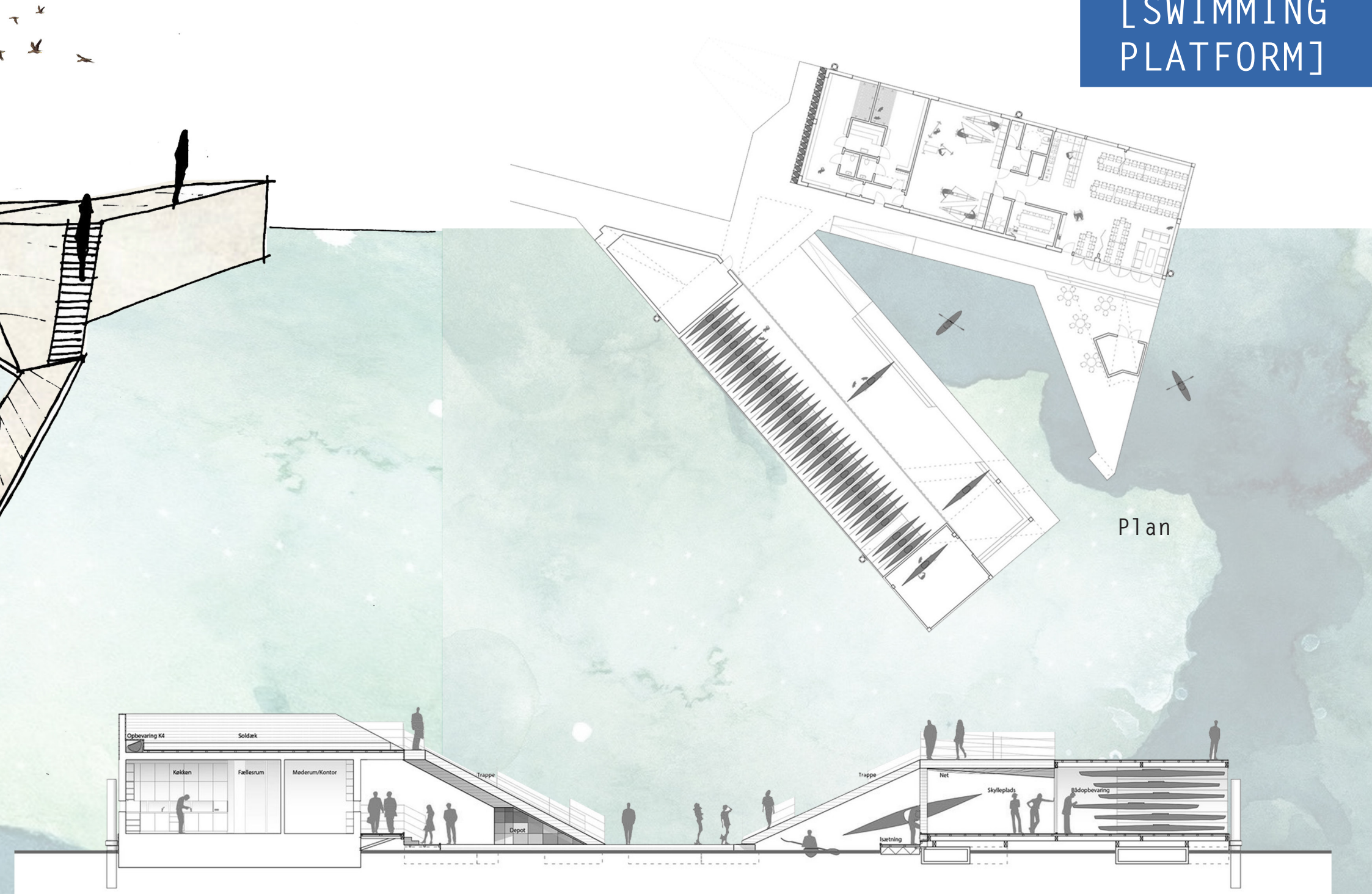


Figure 68: Section & plan;(Aagaard, 2020: online)

d. Precedent Studies

VIEWING DECK

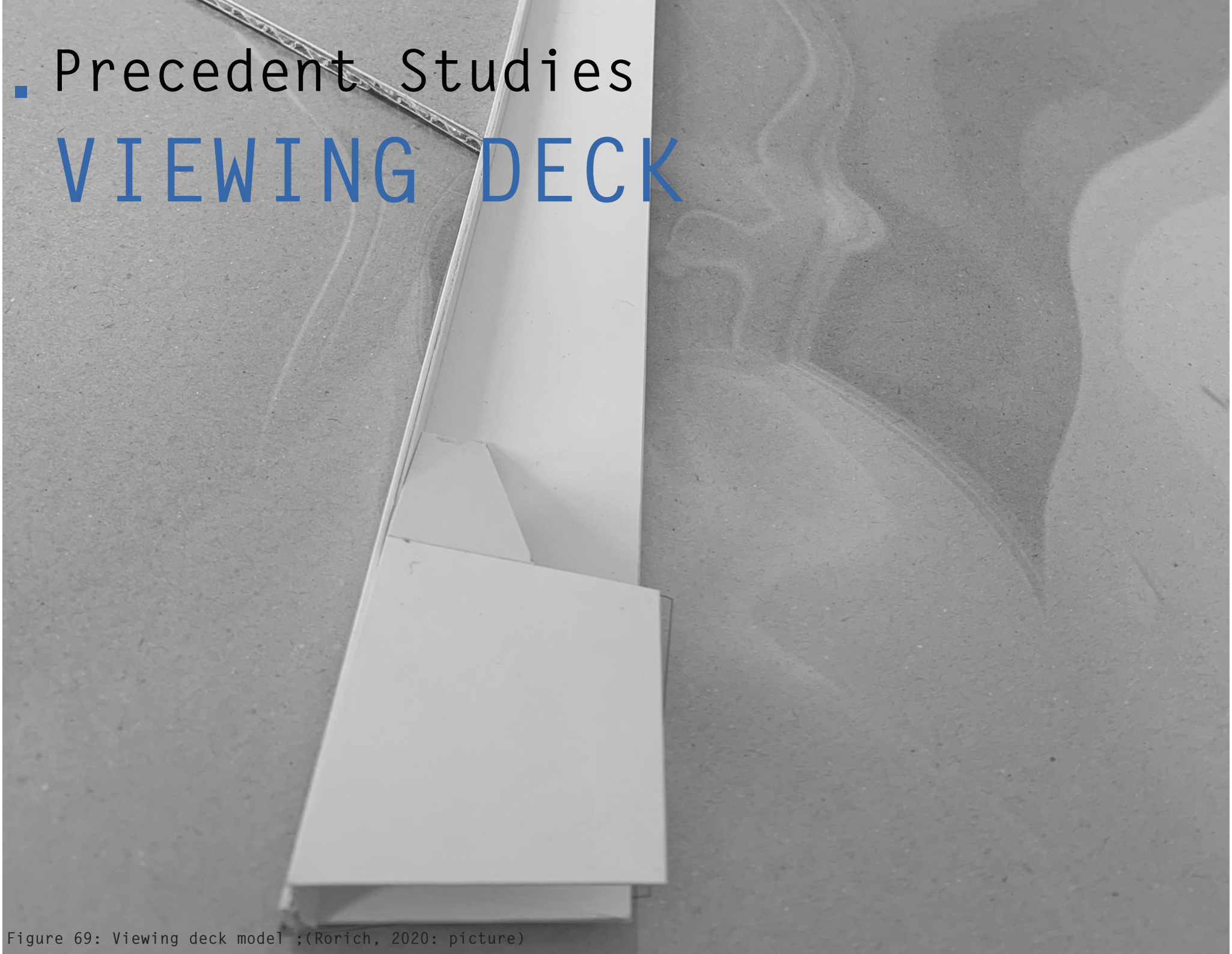


Figure 69: Viewing deck model ;(Rorich, 2020: picture)

ASTOC Architects Senftenberg Harbour Competition

ASTOC Architects participated in a competition and designed a space that would represent the idea of reaching out to the sea, beyond the existing platform. The architects made use of a ramp element to pick up users from the lower level allowing for a natural movement to the upper level.

Lessons learnt:

- Making the end of the jetty a destination point
- The ramp/stair element to encourage continuous natural movement
- Creating a space appears to stretch beyond the physical limits of the deck below

This precedent is applicable to my design and is incorporated into my jetty as a viewing deck, which will allow the promenade to end with a destination that users want to reach. Below the viewing deck, the existing fishing activities will continue as usual; this platform could act as a means of protection against the elements and could facilitate the fishing process.

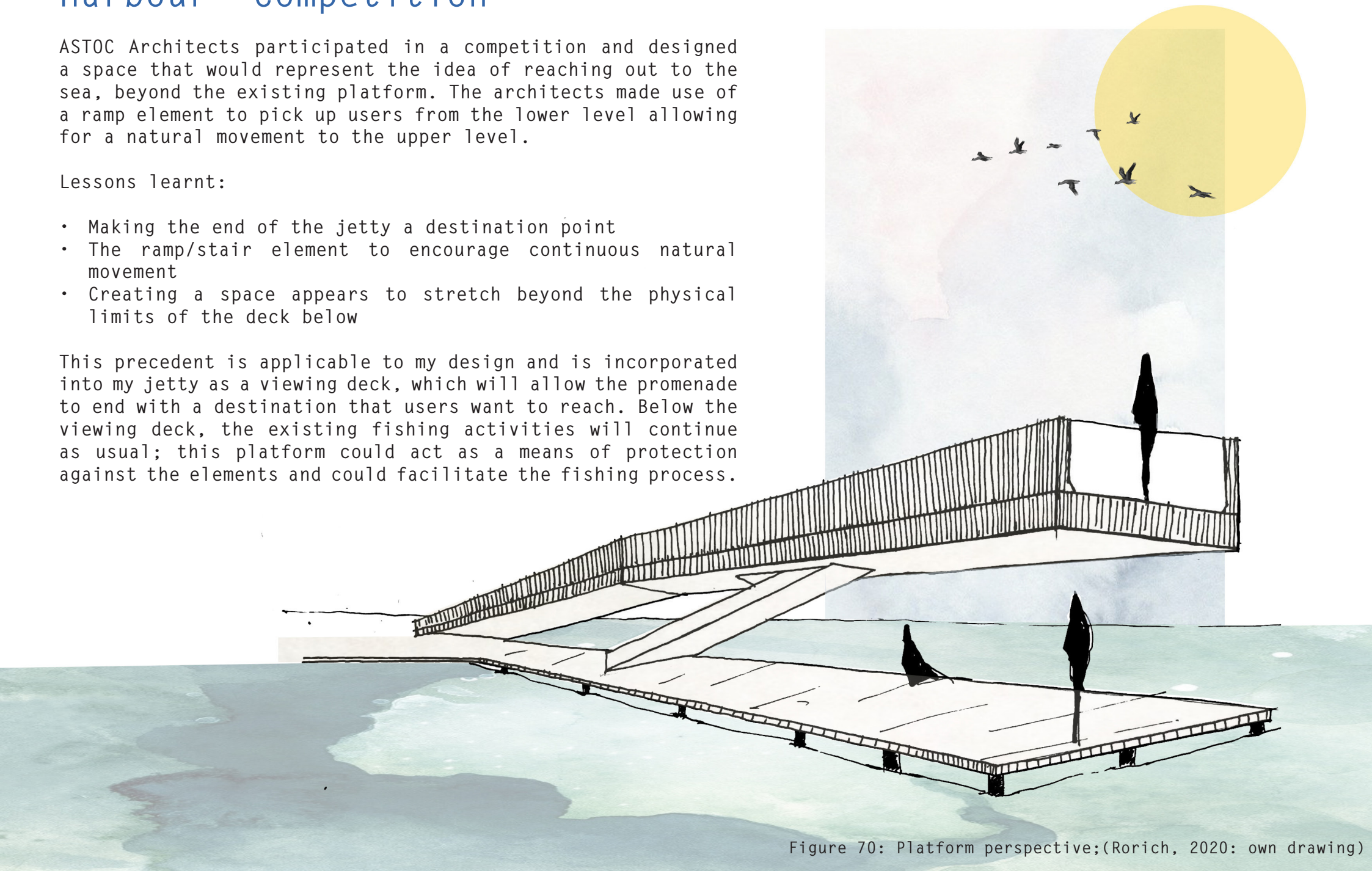
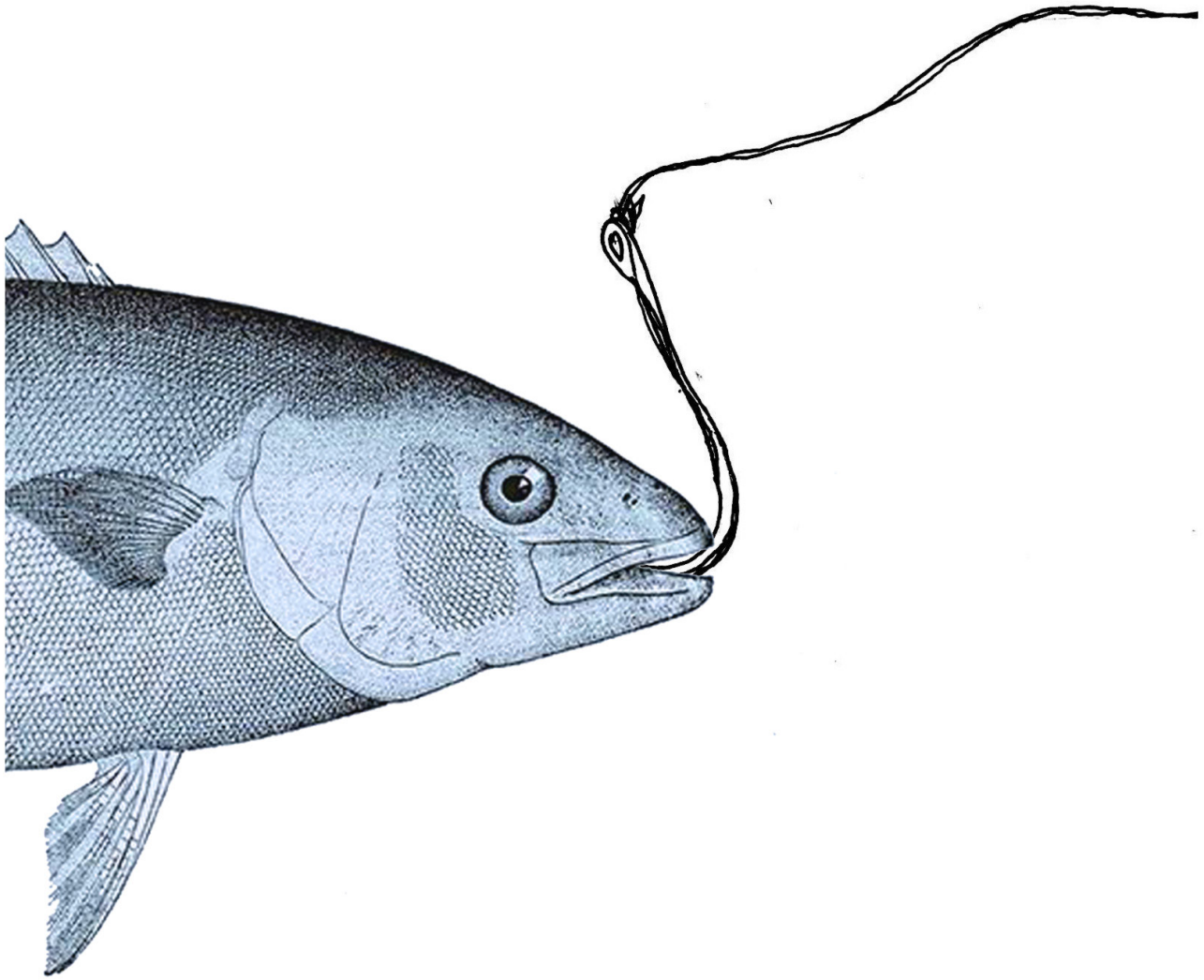


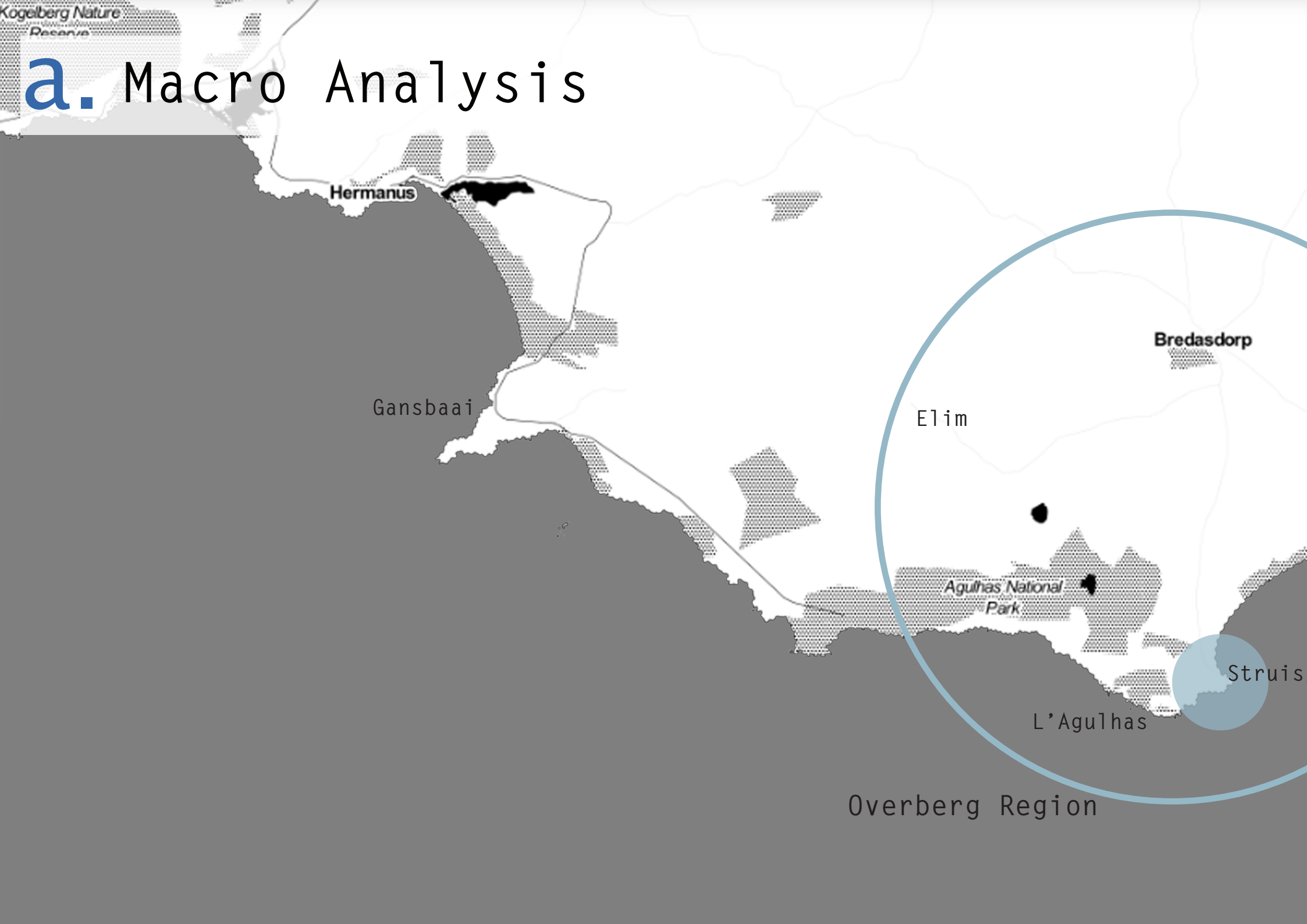
Figure 70: Platform perspective;(Rorich, 2020: own drawing)



2.2 Topology

In this section all the elements of the site will be analysed. I will use Macro Analysis, Cognitive Analysis and Micro Analysis strategies to touch on all the relevant information. The Macro Analysis will give a broader idea of the site, for example, where it is situated and how the site fits into its surroundings. The Cognitive Analysis focuses on the history of fishing and how it came to be so important in the community of Struisbaai. The Micro Analysis will focus on the specifics of the site, what is existing, the various points of attraction, the vegetation, the feeling/vibe of the site, etc.

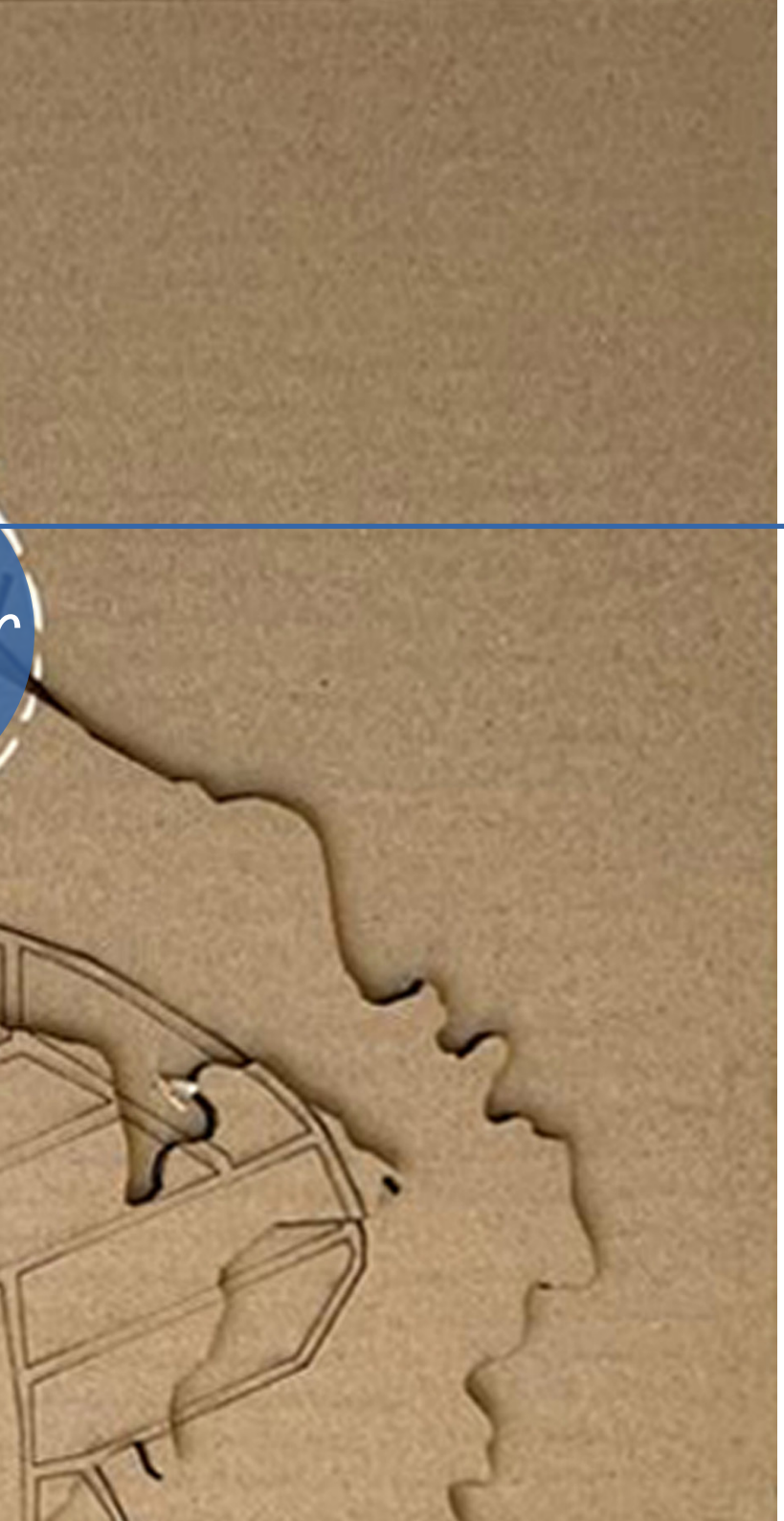
a. Macro Analysis




Witsand
De Hoop Nature Reserve
Infanta
Waenhuiskrans
baai
NORTHERN CAPE
Matzikama
Cederberg
WEST COAST
Bergrivier
Witzenberg
Beaufort West
CENTRAL KAROO
Saldanha Bay
Laingsburg
Prince Albert
EASTERN CAPE
Swartland
CAPE WINELANDS
Drakenstein
Kannaland
Oudtshoorn
Breede Valley
Langeberg
George
EDEN
CITY OF CAPE TOWN
Mossel Bay
Knysna
Bitou
Hessequa
Theewaterskloof
Swellendam
OVERBERG
Overstrand
Cape Agulhas
Stellenbosch

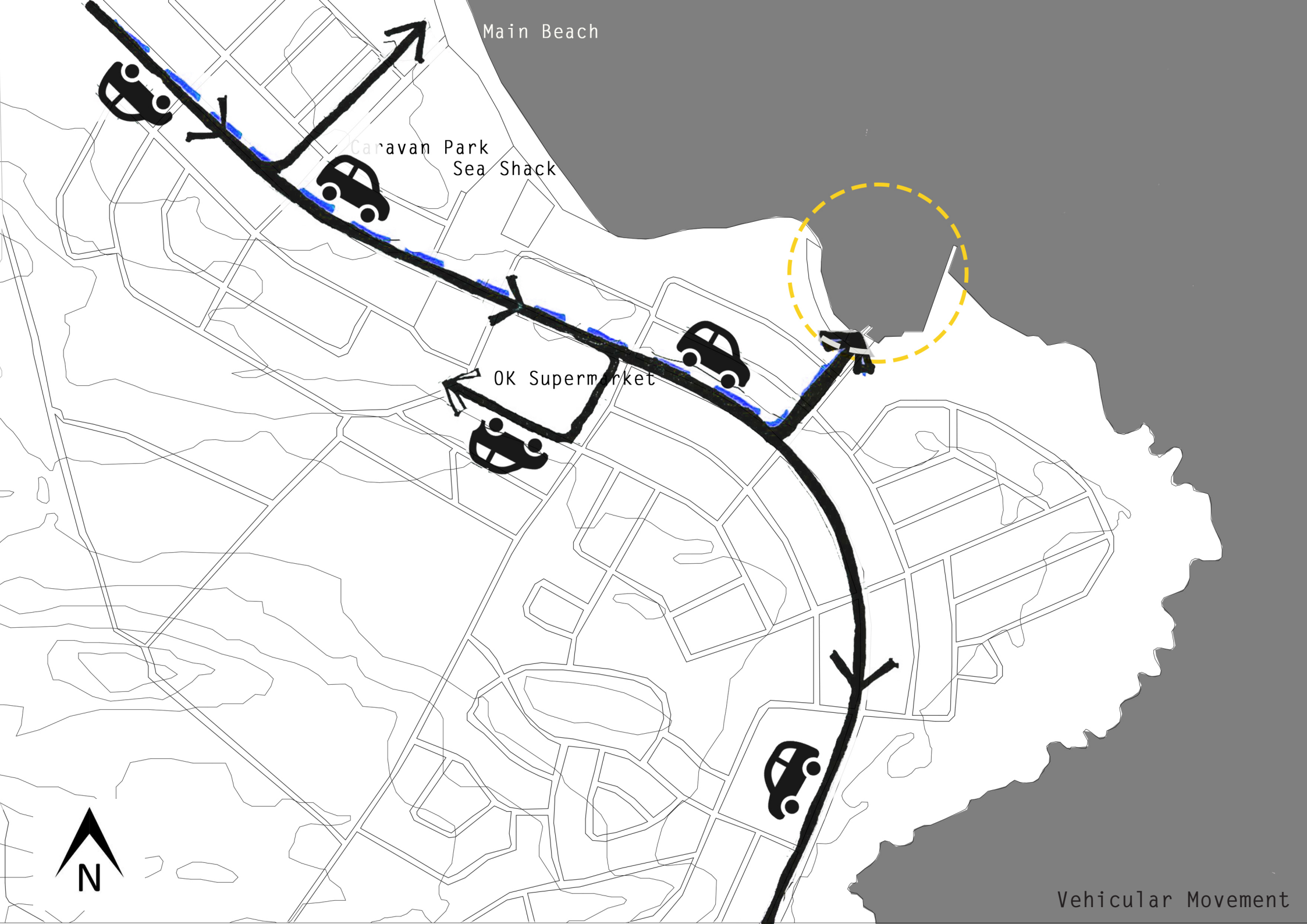

Main Beach
Caravan Park
Sea Shack
Proposed New Hotel
Harbour
NG Church
OK Supermarket
Important Sites in Struisbaai

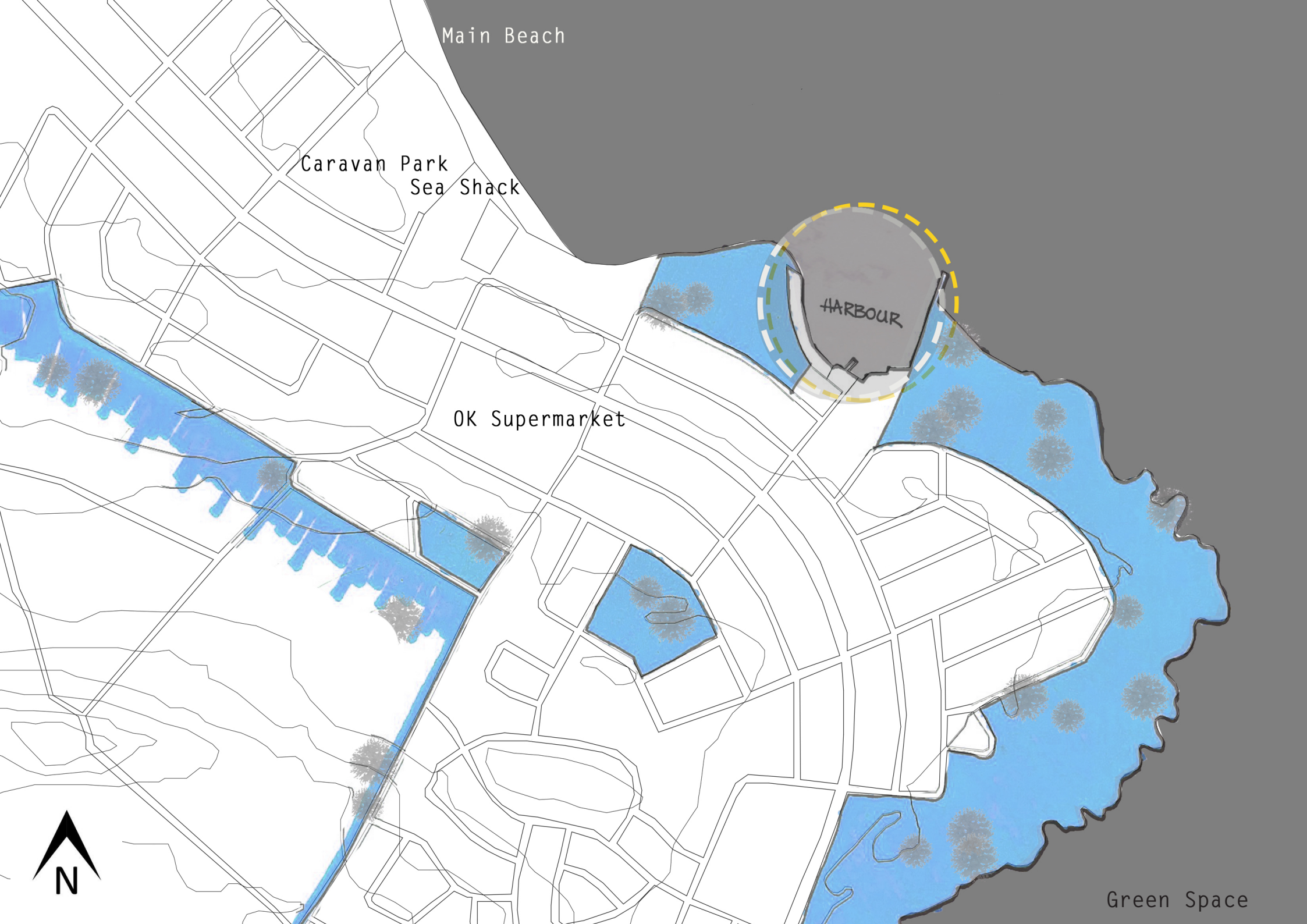
Distances to Important Sites

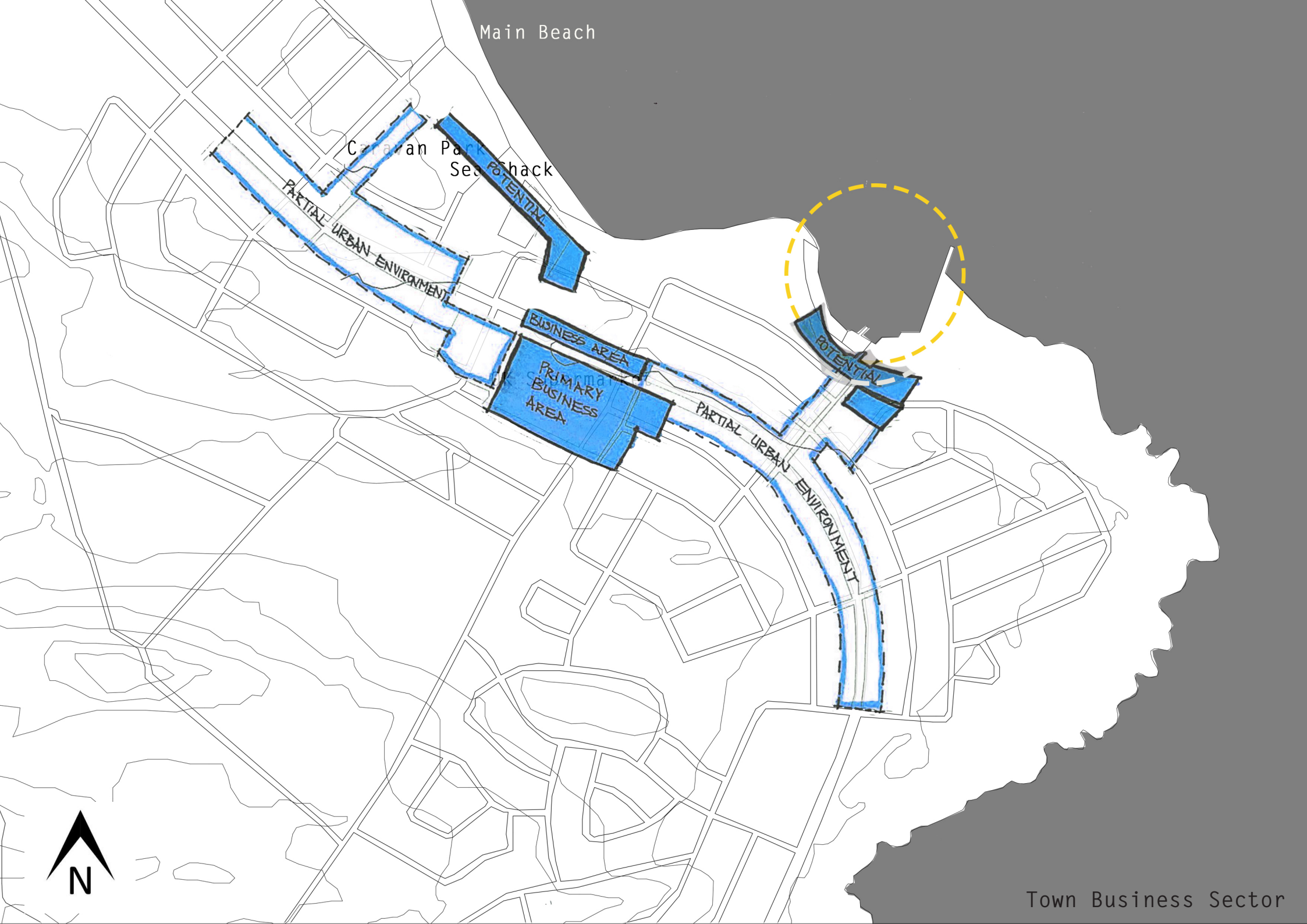


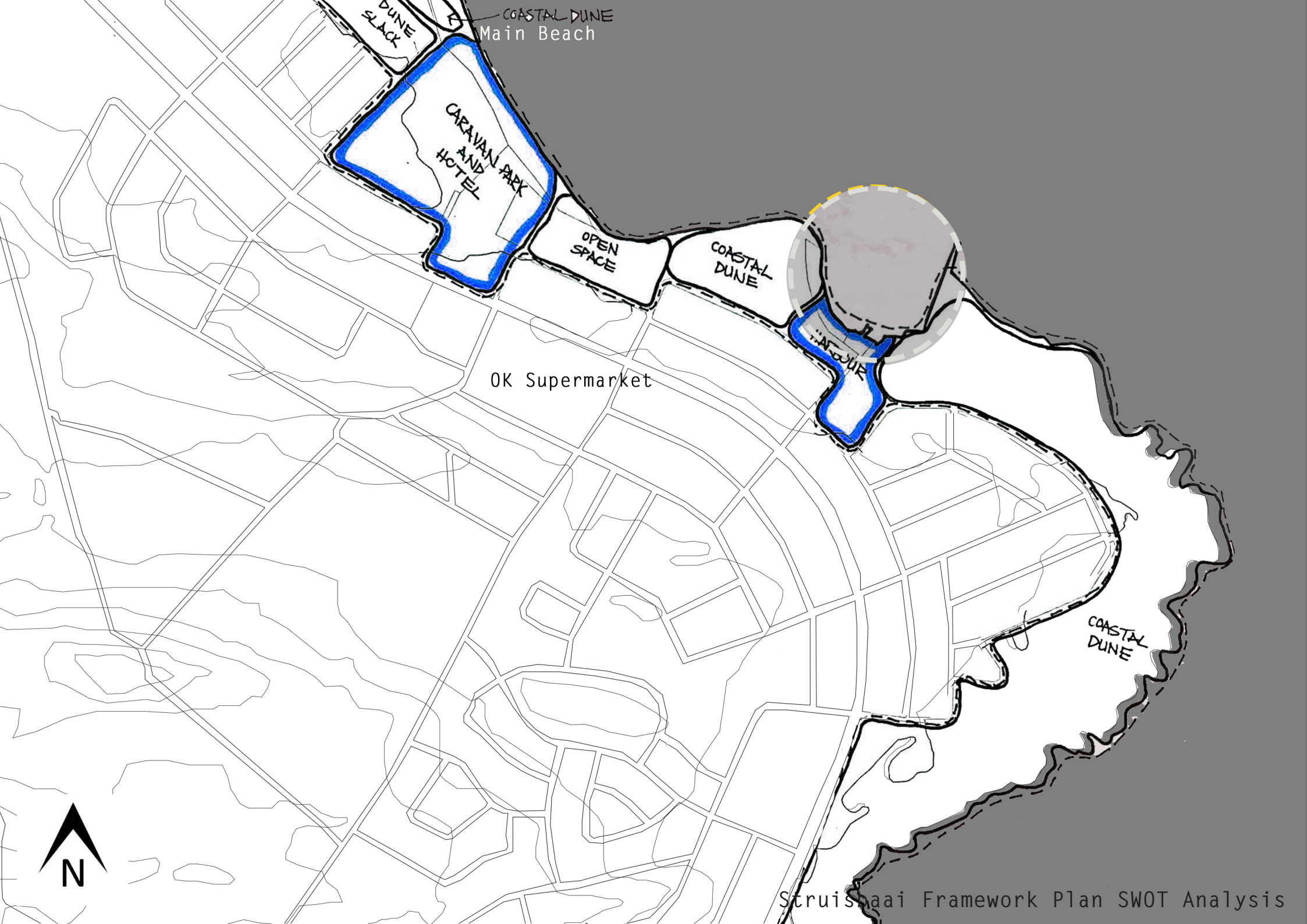
600m	OK Super Market
1.1 km	Dutch Re-form Church
900m	Sea Shack Bar
1.5 km	Caravan Park
1.7 km	Main Beach


Main Beach
Caravan Park
Sea Shack
OK Supermarket
N
Pedestrian Movement


Main Beach
Caravan Park
Sea Shack
OK Supermarket
N
Vehicular Movement


Main Beach
Caravan Park
Sea Shack
HARBOUR
OK Supermarket
N
Green Space


Main Beach
Caravan Park
Setback
POTENTIAL
PARTIAL URBAN ENVIRONMENT
BUSINESS AREA
PRIMARY BUSINESS AREA
POTENTIAL
PARTIAL URBAN ENVIRONMENT
N
Town Business Sector

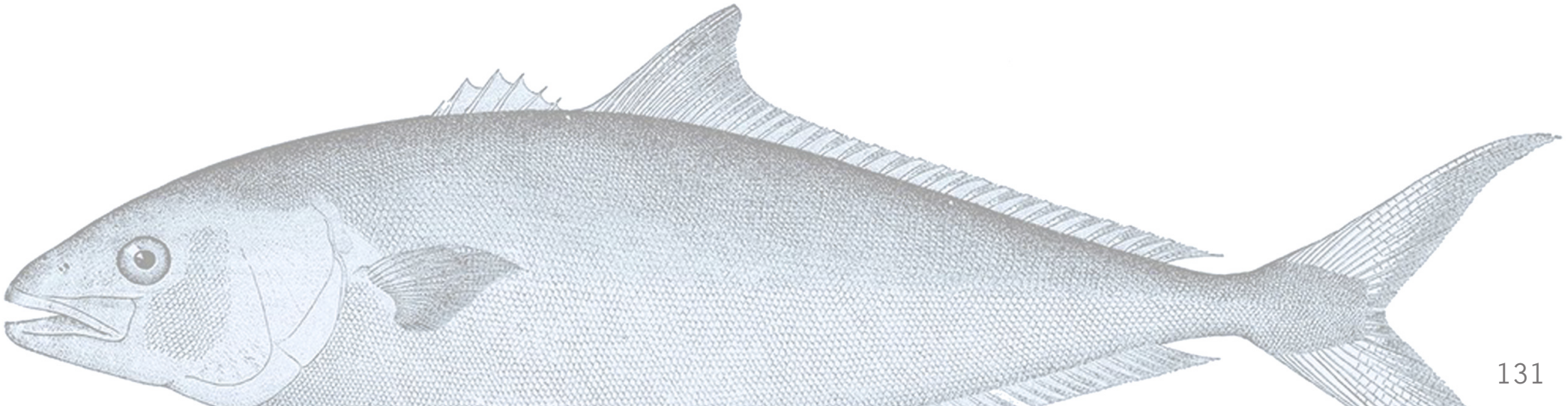


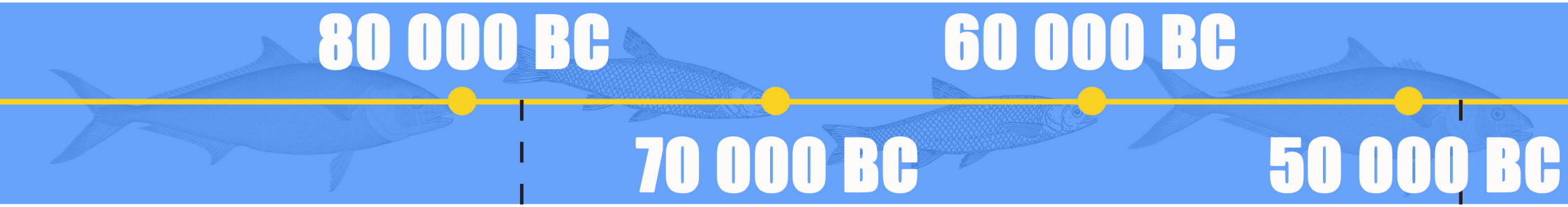
Struishaai Framework Plan SWOT Analysis

b. Cognitive Analysis

how FISHING shaped the existing IDENTITY of Struisbaai and Agulhas

The Overberg region is a place almost hidden away at the southern tip of South Africa, whose history is generally unknown. One thing that is clear, is the fact that fishing has always played a pivotal role in this area, and industry with a history that dates back to over 2 000 years. On the South African coast shell middens were found that date back as far as 10 000-12 000 years ago (Dennis, 2009). Shell middens are dumps for domestic waste that consist of animal bones, shells, etc. (ibid.). Some of the shell middens that were explored contained evidence of different types of fish species, thereby confirming that fishing activities took place in the region. Tidal fish traps were a commonly used method of catching fish and these date back to pre-colonial times (ibid.). Struisbaai or Agulhas has a rich fishing history that was evidenced throughout the years of the development of the fishing industry in South Africa.





78 000 BC
Firts evidance of people inhabiting Gansbaai

Figure 71: Stone age;
(Alvarez, 2020: online)

48 000 BC
Firts evidance of fishing taking place in the Western Cape Province

The Cape and the Development of the Fishing Industry

Africa's shoreline was always explored by non-Africans. The first documented explorations to Africa date back to 610BC when the Egyptian King Neco sent out the Phoenician people to explore and they were the first people to navigate to Africa (Dennis, 2009). The San and Khoikhoi people inhabited the Cape lands before the Europeans arrived (Anacker, 2010: online). Following the explorations of the Phoenician people, the Indian people sailed around Cape Point, which was known as Cape Diab, in 1420 (Dennis, 2009).

After that the Portuguese people, under the leadership of Bartholomew Diaz, explored the Cape in 1487. Diaz was the explorer who named the most southern tip of Africa after St. Agulhas (Xplorio, n.d.). The Dutch arrived in 1652 led by the well-known Jan van Riebeeck. Fishing was seen as the first industry of the Cape Colony, where on 9 April 1652 (three days after his arrival), they declared a provision stating that: "…no fishing, therefore, and no thawing of nets shall be allowed except by consent of the Commander after having consulted with the Council" (Dennis, 2009).

40 000 BC

30 000 BC

20 000 BC

10 000 BC

0

Figure 72: Shell middens; (Haverkamp, 2017: online)

Figure 73: Fossil; (2013: online)

28 000 BC

Bones of several deep sea fish found in Stilbaai

610 BC

Egypt king Nezco sent Phoenician people to explore other lands and discovered the African continet

Figure 74: Egyptian travelers; (Mark, 2018: online)

Van Riebeeck's journals were the main source of reference as to how the fishing industry developed initially. In 1655 dried and salted fish, penguins and duikers were found to be nutritious and were sold to the passing ships (Dennis, 2009). Later in 1657 the 'freemen' could fish with hooks but only for personal use, to ensure that the 'freemen' stayed focused on the development of agriculture. In 1708 the demand for fish was high, and this allowed for slaves to fish on Sundays and the fish caught could be sold (Dennis, 2009).

In 1722 restraints to this law were introduced as a result of the high number of shipwrecks being salvaged, which led to a dry period in the fishing industry at that time. Under British rule the export of dried fish decreased, but the fishing industry took a turn as the freed Malayan slaves turned to fishing and sold their fish to the slaves against very low prices (Dennis, 2009). By 1795 all fishing restraints were lifted, which led to an industry with 40 registered boats, that had about 200 men, exclusively engaged in fishing, and two boats, 12 men, engaged in whale fishing.

1000 1400 1500 1600

1450 1550

20
Khoikhoi drawings found in Gansbaai cave

Figure 75: Khoikhoi drawings in cave; (Walter & Colleen, 2012: online)

1420
The people from India sailed around the Cape Point

Figure 76: Cape point;(Kirsher, 2016: online)

1487
The Portuguese sailor, Barthlomew Diaz, sailed to the Cape

Figure 77: Barthlomew Diaz;(Livermore, n.d.: online)

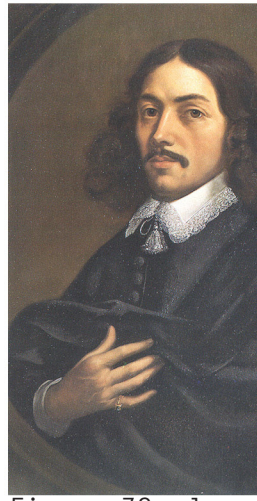


Figure 78: Jan v beek;(Olivier, 2 online)

Shipwrecks

1673 Zoetendal

1766 Meerimin

1860 Jupo

1877 Marie Elise

1925 Septre Mane Mattee

Meisho Maru

1700 1800 1900

1650 1750 1850 1950

1722 Fishing restraints put in place

1708 Slaves allowed to fish on Sunday to sell

1705 Peter Kolbe wrote about the act of fishing

1795 All fishing restraint lifted

1860 Hotagterklip constructed

1920 Use od sail baots

1945 First use of 'chukkies'

1959 Harbour Constructed

1990 Har-bour En-larged

1657 People allowed to fish for personal use only

1655 Salted fish were supplied to passing ships

Figure 79: Dried fish;(Marzannej, n.d.: online)

1849 L'Agulhas lighthouse fire was lit for the first time

Figure 80: Agulhas light-house;(Clare, 2020: online)

1973 Lighthouse declaierd as monument

1983 Froced removal of Skipskop

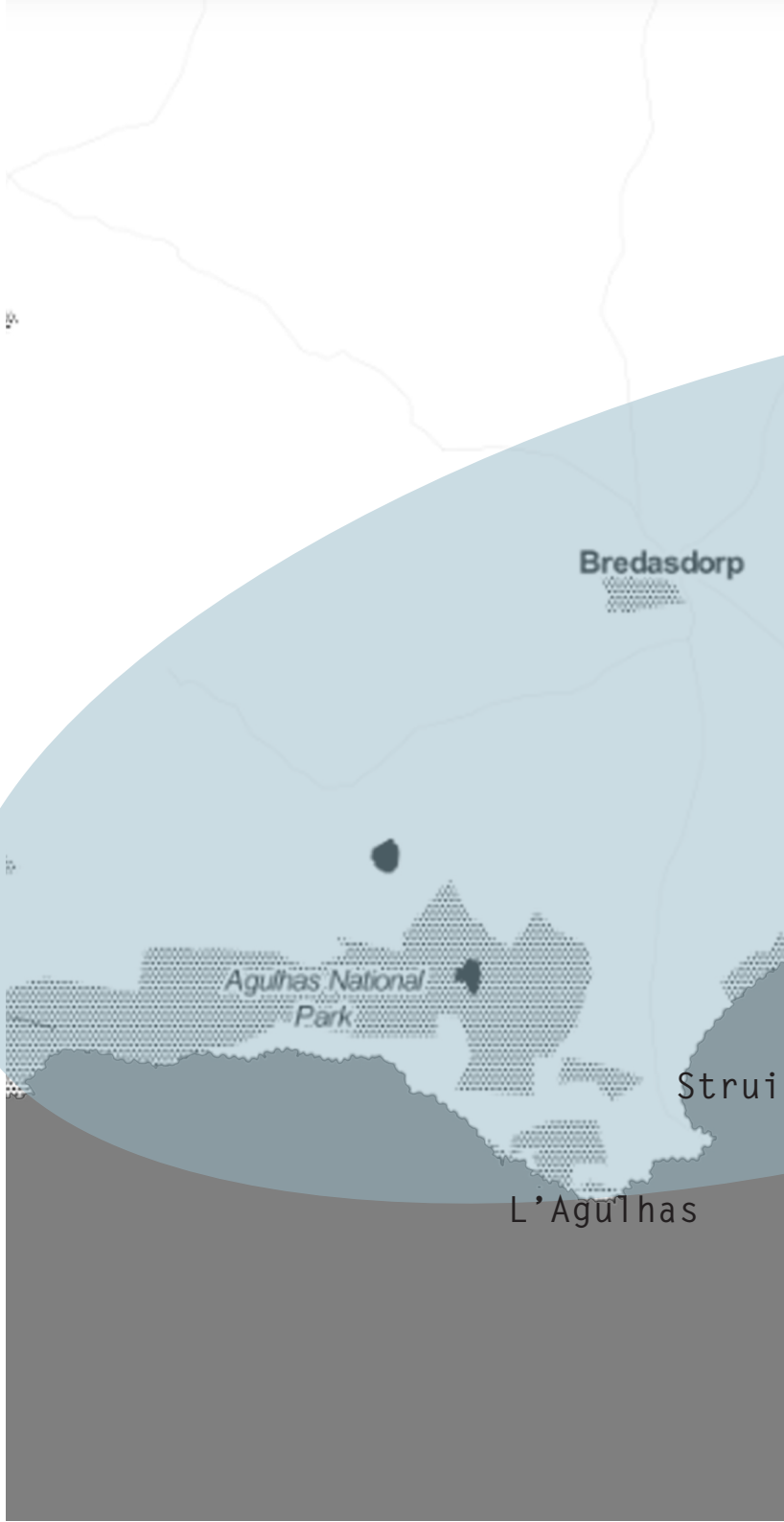
78 000 BC Jan van Riebeek and the Dutch settled in South Africa.
No fishing without permission act was established.

van Rie-
2016:

Later an Act was introduced to protect the sea animals by placing restraints on the size of the fish caught and ensuring the protection of other sea animals, for example birds and seals. Before implementing this Act, the prohibitions were tested at Cape Agulhas. Fishing on the Agulhas banks dates back to 1842 (Dennis, 2009). Between the years 1820-1883 the Malayan people were the driving force of the fishing operations but by 1910 the industry was dominated by several groups (Dennis, 2009). Coloured men were mostly involved in the areas of Bredasdorp, George, Riversdale and Knysna, whilst the Malayan fishermen were mostly seen conducting their fishing activities in Hermanus and East London (Dennis, 2009).

Van Riebeeck wrote about the 'Strandlooper' people, who were considered to be experts in handline and spear-fishing (Dennis, 2009). In 1705 Peter Kolbe was sent to the Cape of Good Hope from Amsterdam to compile a comprehensive description of South Africa (Wikipedia, 2020), and he conducted a study of the fishing practices of the Hottentots of the Cape (Dennis, 2009):

- They fished both in the sea and in rivers.
- Many were fishermen by profession and maintained their families in that manner.
- Fish were caught by angle, net, spear or pointed rod, and by groping or tickling.
- They were expert anglers and knew the best bait for most fish.
- The hooks were crooked bits of their own iron, but they later used the European hooks.
- They were more dexterous at casting and drawing nets than Europeans.
- The spear or rod was only used in rivers and creeks.
- They were experts at groping or tickling which was done in brooks on top of rocks in the sea, near the shore. When the tide receded, several types of smaller fish remained behind in holes and natural basins. This was where rockfish was taken. The fish without scales were not eaten by the Hottentots but was sold to the Europeans who liked it. Quick markets were always found for the fish and these were never brought to the Cape.
- Lines of guts or the sinews of animals were often laid in the sea with European hooks and mussels for bait. If fish were spotted, they would whistle to the fish to lure them to the bait, a snoek horn was also commonly used. If the noise of the sea was too loud, they would roar and shout and this brought many fish to the bait.



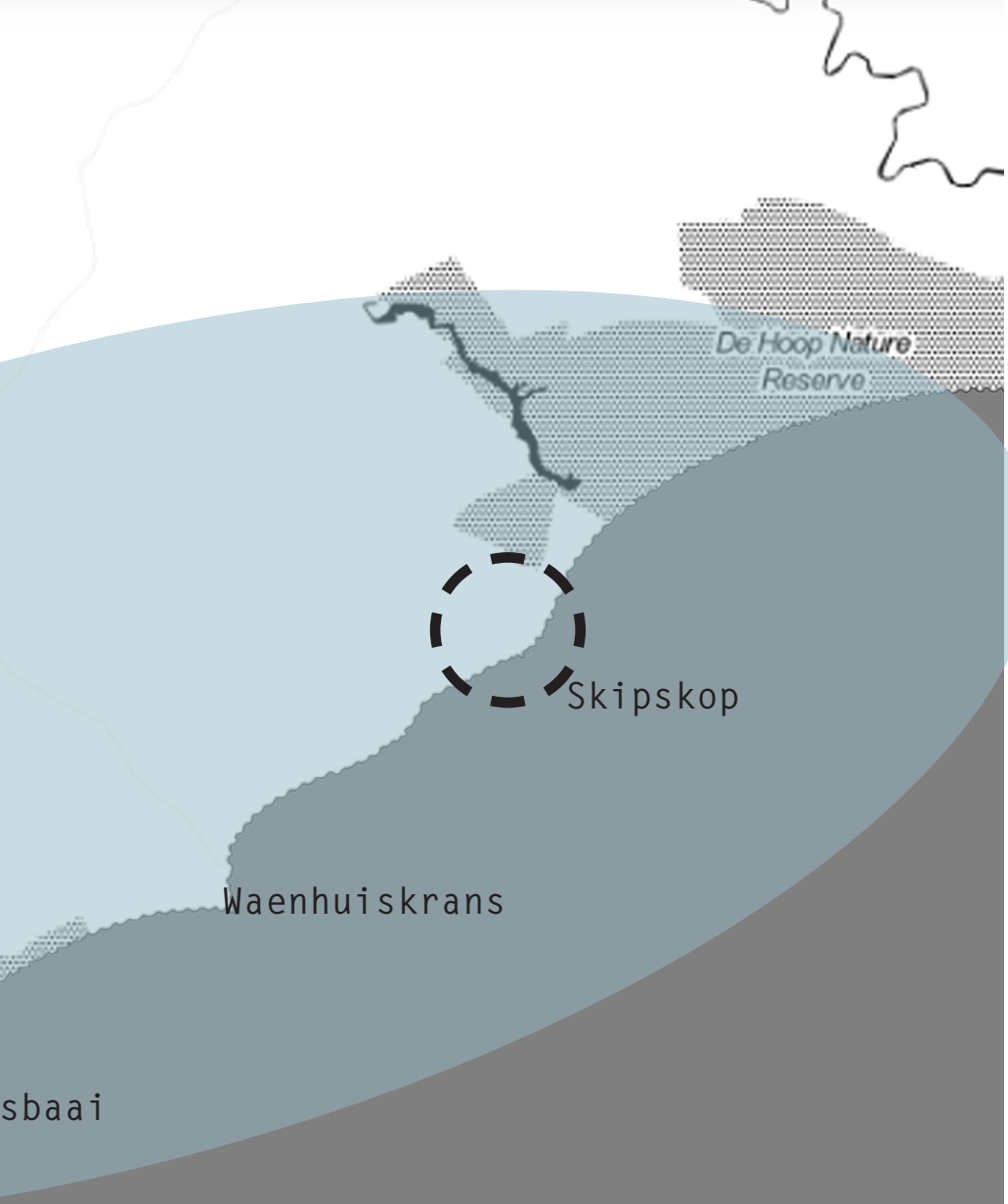


Figure 81: Zoetendalsvlei farm;(Rorich, 2020: diagram)

Another important influence on the development of the fishing industry in the Cape are the archaeological findings. Evidence of fishing in the Cape only became evident in the Late Stone Age era (Dennis, 2009). At the Blombos Cave in Stilbaai, several bones of deep-sea fish species were found that date back as far as 3 000 years ago (Dennis, 2009). In Gansbaai the Tourism Bureau found evidence that people inhabited that area since 80 000 years ago (Dennis, 2009). The Klipgat and Bijnekrans Caves at Gansbaai contain evidence of the existence of the Khoikhoi people from about 2 000 years ago (Dennis, 2009). The Cape Agulhas area is located between Stilbaai and Gansbaai. All this is evidence that these lands were inhabited for many years and that fishing has been a source of food for these people for decades. Fish traps were found along the shores of the Cape. These traps bear testimony to an early fishing industry but is difficult to determine how far back it dates because some of these traps are still being kept in good condition (Dennis, 2009). Some fishermen in Cape Agulhas still remember how these traps were built and maintained.

Cape Agulhas/Struisbaai Fishing History

Struisbaai and Waenhuiskrans/Arniston all formed part of the Zoetendalsvlei farm that was owned by Michel van Breda, the first Mayor of Cape Town from 1814-1844 (Dennis, 2009). This farm stretched from Brandfontein to Infanta. The farm was mainly used for sheep farming and his shepherds were all experienced labourers that were employed and not drawn from the local people. These shepherds started fishing as a leisure activity and settled in the areas of Struisbaai, Waenhuiskrans, Spitskop and Ryspunt (Dennis, 2009). The Cape Agulhas area was also inhabited because of its currents and the high occurrence of shipwrecks. The currents of the ocean also play a role on the fishing industry, and at the southernmost point the warm Mozambique current and the cold Benguela current meet, in essence the Indian and Atlantic oceans.

Agulhas was first named ‘the Cape of Needles’. This was firstly, because of its geographical location, where the needle of the compass does not vary between true north and magnetic north; and secondly, because of its rich heritage of shipwrecks and in relation to the shape of the reefs. Approximately 150 shipwrecks were found on the coast of South Africa and most of them occurred around the most southern tip of Africa at L’Agulhas (Xplorio, n.d.). The shipwreck survivors settled in Agulhas and had to make a new living there, which led to a diverse group of people. The first shipwreck was the Zoetendal (1673). Colonel Charles Cornwell Michell designed the lighthouse at Agulhas and the light was lit on 1 March 1849 (Xplorio, n.d.). This lighthouse is the second oldest lighthouse in South Africa and is 27m high and was declared a national monument in 1973 (Xplorio, n.d.).

Struisbaai is known for its long 14km long beach and is approximately only 10km away from the southernmost tip of Africa. The origin of the name of Struisbaai is debatable: it could possibly refer to the vernacular architecture, the straw roofs of the fishermen cottages (‘strooi’ in Afrikaans); or to the ostriches (‘struisvogel’ in Dutch); or it could be a derivative from the Dutch word ‘huge’ related to the long stretched out beaches (Xplorio, n.d.). The elders of the community of Struisbaai couldn’t recall where the community came from but felt like it was there since they could remember (Dennis, 2009). Originally the community started from farmers as mentioned above, and some of the local people also have European roots. A local, Oom Andrew Hammer, said that his grandfather was German, and his grandmother was from Elim, a Moravian Mission station 30km from Struisbaai, from where slaves were freed and they settled there since the 1800s (Dennis, 2009). Many of the fishermen in Struisbaai and Waenhuiskrans are originally from the town Skipskop. The Skipskop community was forcibly removed after the area was allocated to DENEL for a weapons testing site in 1983 (Dennis, 2009). Most of the Skipskop community relocated to Struisbaai, the latter becoming fully integrated with the community of Struisbaai.

There is an uncertainty about when fishers started to use fishing boats in Struisbaai but in 1852 a ship, ‘Jupo’, form the Netherlands, got stranded right in front of the lighthouse (Smit, 2020: personal communication). The people from this ship stayed in the area and started fishing with the local fishers. In that time, they used fishing nets and also fished in the ponds (ibid.). In the 1860’s - 70’s there were already more boats in Struisbaai, the Barry family from Swellendam opened a wool storage space in Struisbaai (ibid.).

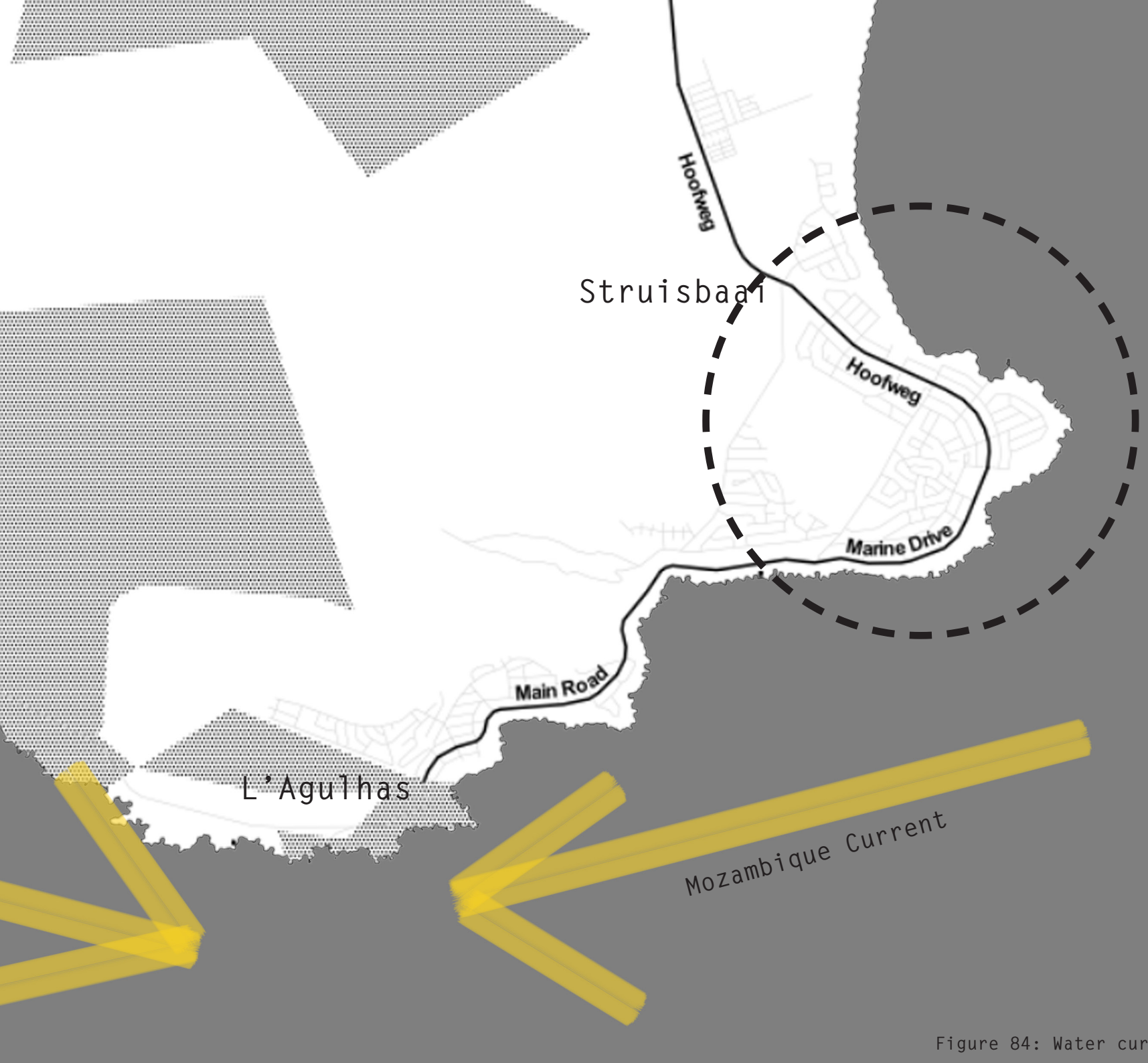
Figure 82: Old harbour;(Smit, 2020: picture)

Figure 83: New harbour construction;(Smit, 2020: picture)

Herman van der Rat (Herman von Raath, originally from the ship Alabama) built a big boat and castaway families like the Hamers, Stanleys and Thompsons all joined him (ibid.). Most of the old fisher houses at Hotagterklip is also from this time period. Most of the families in that time helped on the farms during harvesting season and others were in the limestone industry. Originally fishing took place with sail boats with oars, and the fishermen didn't have to go too deep because the fish were close to the shore (Dennis, 2009). In those days the fish that were caught ranged from cob, galjoen, red roman, mackerel, harders and Cape salmon. In 1925 with the English shipwreck the 'Septre' and 'Mane Mattee' was engine driven boats that still used sails as well (Smit, 2020: personal communication), and therefore the idea of an engine driven boat was established amongst the fishers.

In the late 1940's great while sharks were caught by Jan Agulhas Lourens on his ship "Seemeeu' (ibid.). The shark's livers were used to make oil and the rest of the shark was dried and exported. Yellowtail in that time wasn't caught because of the believe that they are poisonous (ibid.). After 9 fishers lost their lives on the boat 'Hero' did they establish a harbour committee, the first boats was stored at 'Toonbaai' in front of the Sea Shack and is later moved to its current spot. The harbour was built in 1959 and in 1998 was deepened and enlarged to the harbour we know it as today (ibid.). 'Chukkies' was used in the 1960's and was operated almost the same as they do today. These ski-boats allowed for more fish to be caught and much deeper, but because of this a cooling room was needed (ibid.). IJ a big buyer sponsored a cooling room and on the day of completion 15 tonne 'Geelbek' were cought (ibid). Yellowtail only became popular when they started freezing fish to spread to other markets, this was because of the fact that the yellowtail fish froze well (Dennis, 2009); and today it is what Struisbaai is known for. All the knowledge that the fisherman has was passed down from generation to generation, form the areas to catch certain species and also to determining direction when at sea.

The fishing industry has clearly shaped the community of Struisbaai, where the local people have a sense of pride in what they do. Struisbaai and Agulhas wouldn't have existed if it were not for the fishing. And without the fishing industry many other coastal towns would also have ceased to exist.



"Die voordele wat die ou skippers gehad het was die land merke wat hulle gemaak het." Ons het 'n ou skipper gehad, Ou Grote het hull hom gese, hy's nou al 'n paar jaar dood. Hy was so fyn gestel op 'n land merk van die wal af, ek gaan jou iets vertel jy gaan my nie glo nie. Hulle het haaie gevang, en hy breek sy haaigereedskap af daar op 'n plek, sy lood en sy hoek. Die dag daarna gaan hulle weer soontoe en hy gooi daar anker op dieselfde plek en hy vang weer sy eie lood en die hoek met sy lyn. Genuine. Daars 'n Vader bo my kop wat my gaan straf as ek 'n leuen vertel vanaand. So fyn gestel was die walmerke as jy hom reg gehad het. Baie mense met die GPS gaan presies, maar nie so presies nie." (Theunis Newman, Struisbaai 2009)

Figure 84: Water currents;(Rorich, 2020: diagram)

C. Micro Analysis

Timber Walkway

Beach

Main Jetty

Boat Dock

Parking

Gov. Fisheries

Current Fish Market

Parking

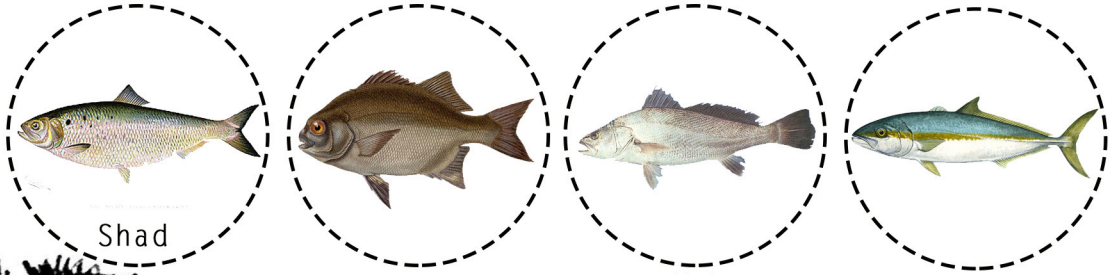
Catch Cook Restaurant

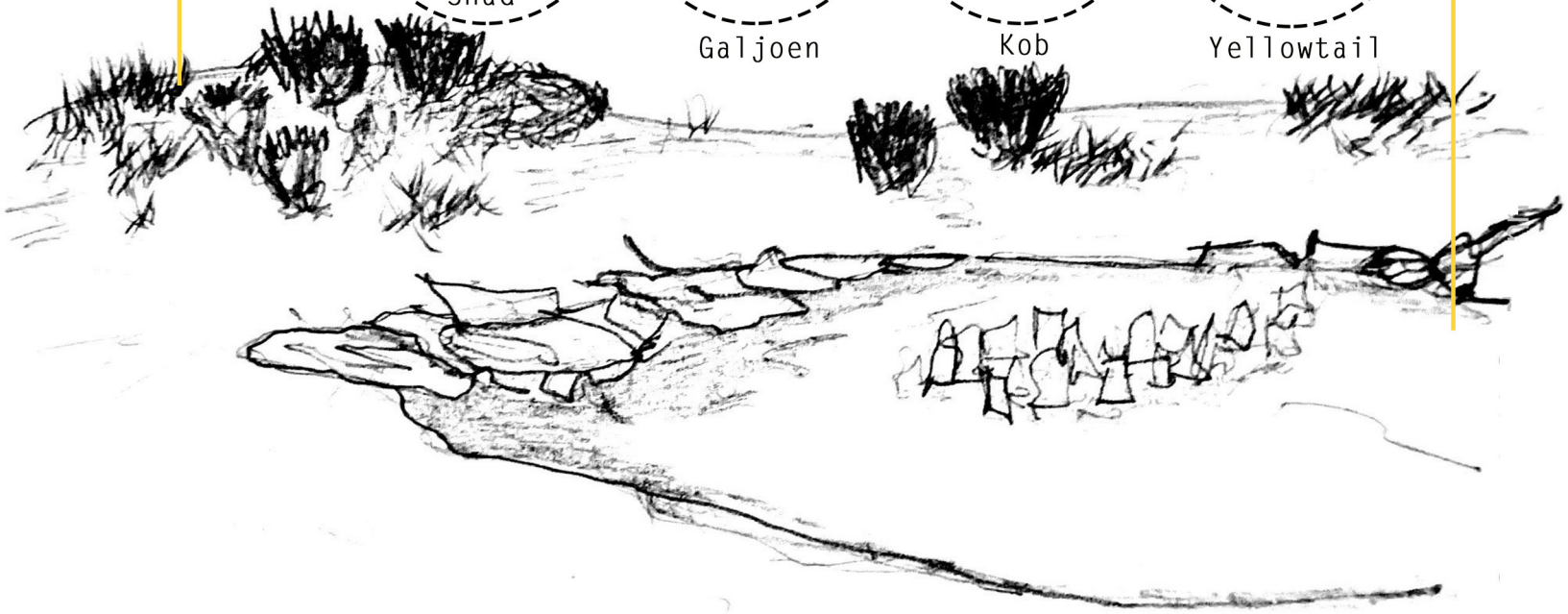
N

Current Site and Attractions

Coastal Strand & Rocky Shelf Vegetation

Aquatic Animals

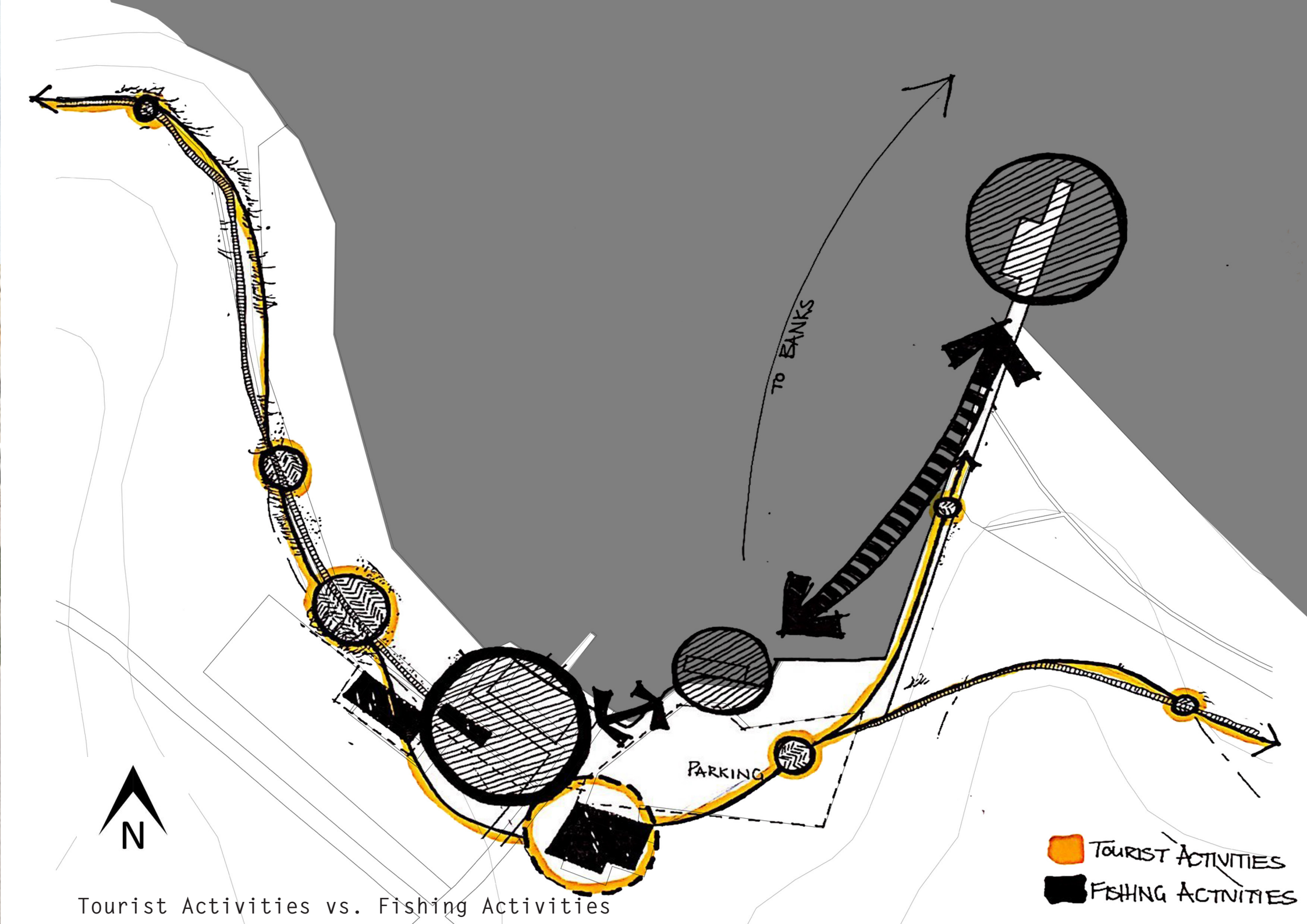




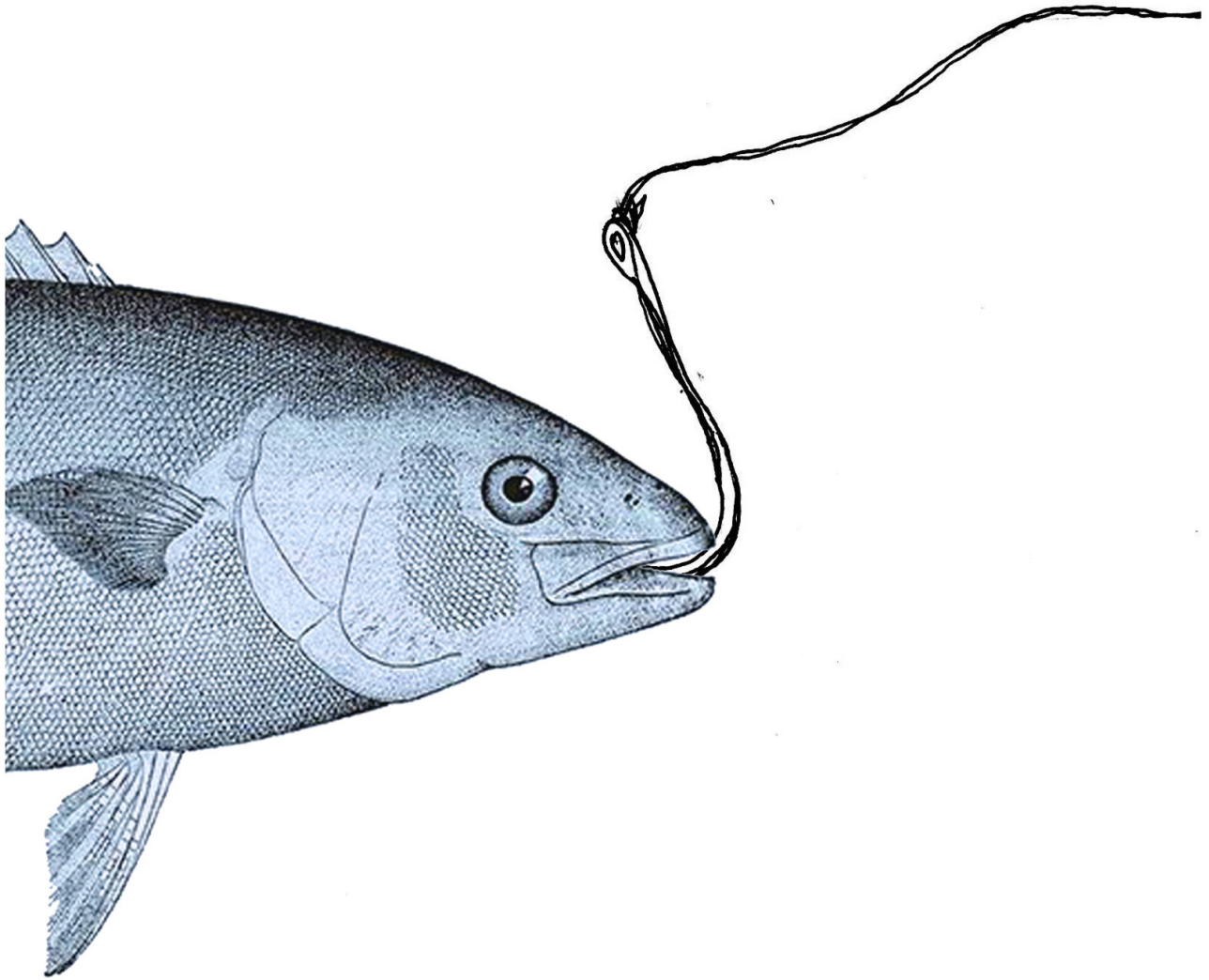
Site Atmosphere

Figure 85: Harbour;(Rorich, 2020: pictures)

Materials on Site



Tourist Activities vs. Fishing Activities



2.3 Morphology

The morphology consists of all the elements that affect the physical factors of the proposed intervention, which elements will all contribute to how I approach the design proposal. In this section I will be discussing and analysing all the different elements that will affect the morphology of the proposed building:

Vernacular Architectre

Designing an appropriate building requires that I look at the vernacular architecture of the town and implement that in a smart way. I will have to analyse the different elements of Fisherman Cape Cottage houses and will investigate how I can implement these principles in a new applicable manner that would be respected by the community.

Earth & Sea

Designing a building along the coast already has a certain identity associated with it. The elements along the coast are harsh and therefore restrict you to the use of certain materials. There is also an already existing design language that is associated with coastal design and I should implement this carefully in my design.

This proposal is situated at the most used element of the town, the harbour. This project should connect with the tourist pathway as well as the working environment it is associated with. I will have to investigate different means of urban design and furniture for my promenade to accommodate all the users of the harbour.

Urban Design

Sustainable design becomes an important aspect in my proposal as it will only be beneficial to the town and the environment. Therefore, I will have to investigate different methods of sustainable architecture and how these can be incorporated into my design morphology.

Sustainable Architectre

a. Vernacular Architecture

The architectural language of a town is basically like a building telling a story of the history of that town. In Struisbaai the Fisherman Cape Cottages are the well-known vernacular architecture of the town. It tells us a story about the fisherman that has inhabited these lands for decades. The vernacular architecture has previously been explored in Chapter 1.3.

The cottages consist of thick whitewashed walls with a thatched roof and always have a chimney/fireplace accompanying it. These buildings were usually constructed of any available material found. This idea of using found materials correlates with the history of the shipwrecks found in the Cape Agulhas region, where the castaway people used found objects and materials from the wreck and the immediate area to construct buildings.

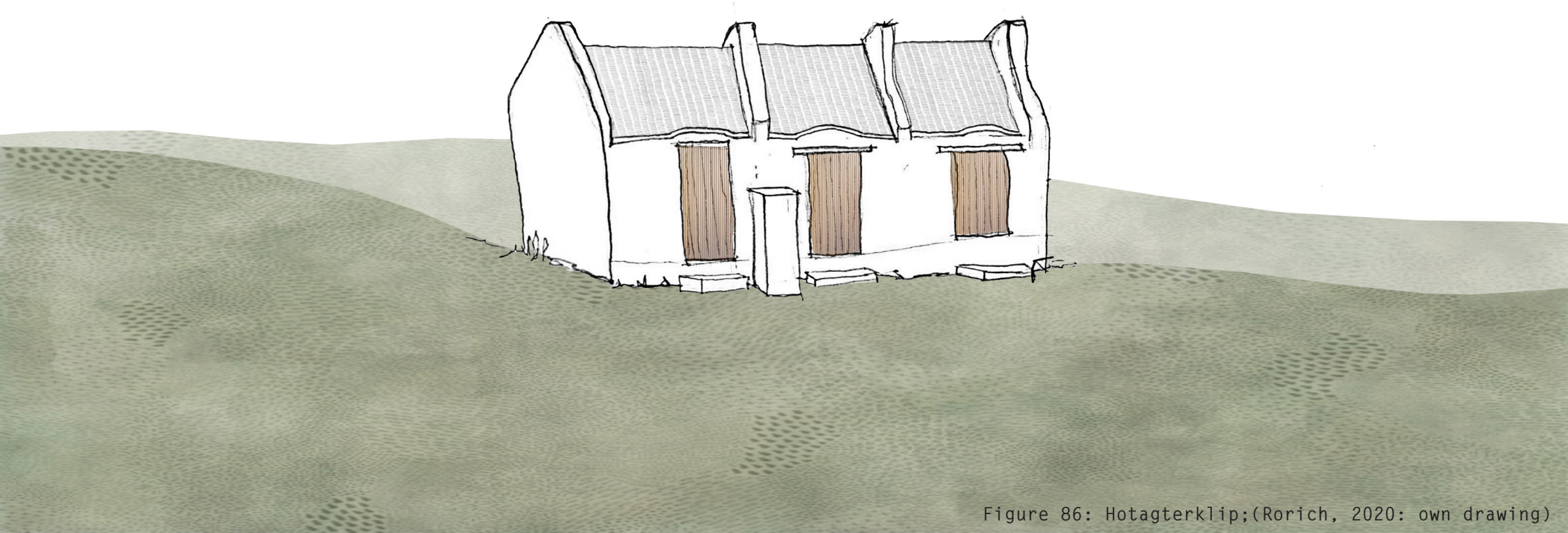


Figure 86: Hotagterklip;(Rorich, 2020: own drawing)

Tower Element

Each vernacular building was always accompanied by a fireplace, weather it be internal or, as in most cases, external. These fireplaces are usually shaped in a specific chimney form, as seen in figure 87, and truly define the vernacular buildings.

Roof Line

The thatch roofs used in the vernacular created a noticeable feature, the roof line is always prominent and is this contracting dark colour against the white walls. The roof line is a horizontal element that creates a rhythm in the design with the thresholds and roof lines.

Small Openings

The vernacular architecture had conventional window and door openings, which openings were generally small and covered with shutters.

Sculptural wall elements and natural materials

These walls were usually constructed from locally found materials. In Struisbaai the fishing community used natural rock elements to construct their walls, this is seen in image []. These walls were then later treated with several coats of limewash. This limewash gives the vernacular architecture its most recognised feature, the walls.

Thresholds

The vernacular buildings were usually raised onto a plinth, and accessing the building usually included a series of stairs, which mainly served to maintain storm water. The thresholds became a recognisable feature in the vernacular architecture. It almost creates a memory because as you enter the vernacular abode you are aware of it as you move through those thick walls and when you are greeted by the steps.

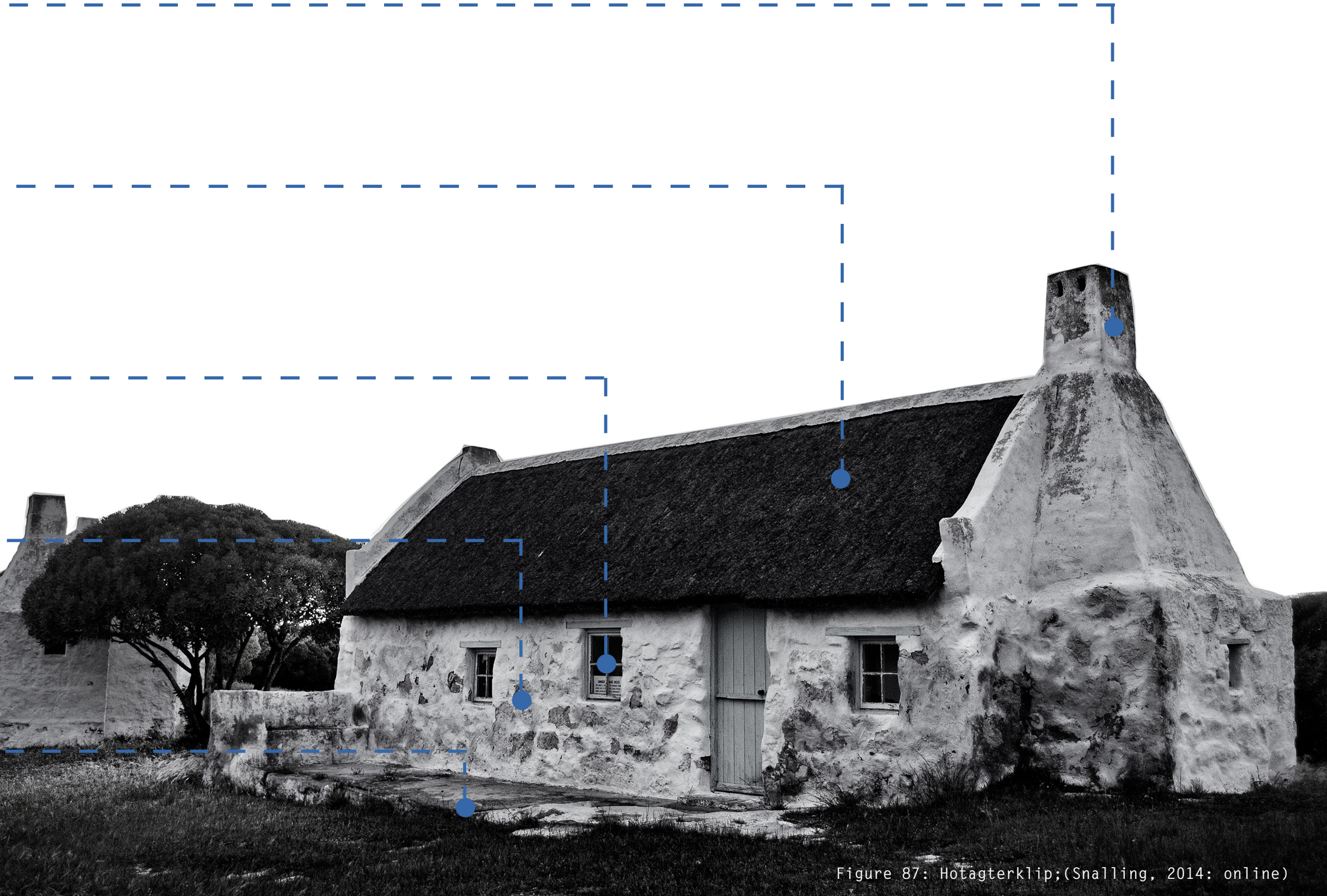
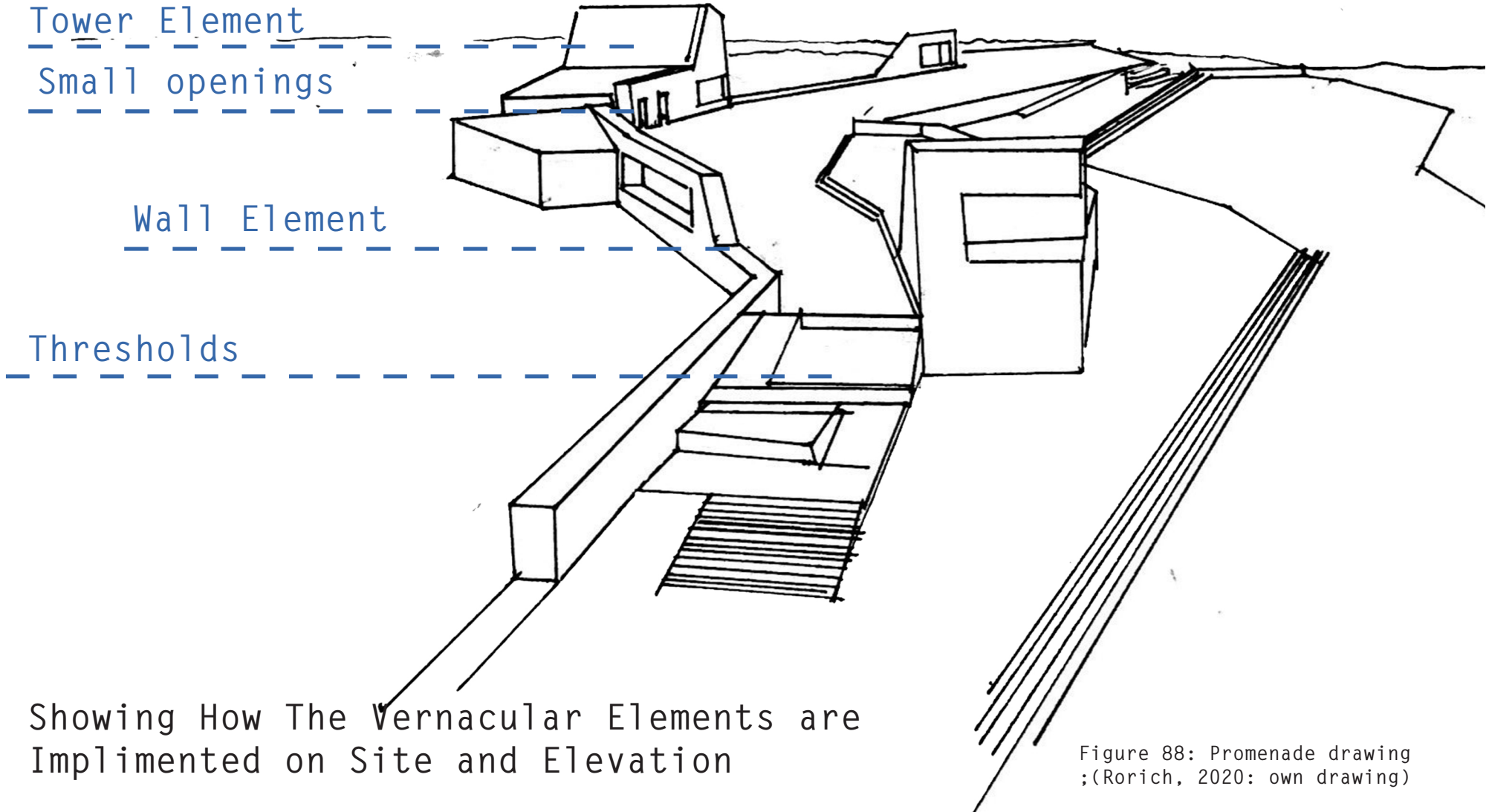


Figure 87: Hotagterklip;(Snalling, 2014: online)

The vernacular architectural language can have a bearing on my proposed intervention. The site is large and stretched out with numerous proposed elements situated on it. The concept of using different objects and putting them together to form a building is applicable in my design proposal, a concept which stems from the vernacular castaway method of construction. Another important concept is to look at the elements identified in the vernacular architecture and to apply these elements in a novel way; by doing this you already create a building that belongs in town and that will be respected and appreciated by the local community.



Showing How The Vernacular Elements are Implimented on Site and Elevation

Figure 88: Promenade drawing ;(Rorich, 2020: own drawing)

b. Earth & Sea

The local people in Struisbaai and many other coastal towns consider the ocean almost as a second home. In the movie 'Soul Surfer', the main protagonist starts off by saying:

> *"How could I not have salt water in my veins? … They say home is where the heart is and for most people that consists of four walls and a welcome mat, but for me it's the ocean."*

And I believe the community of Struisbaai might feel the same; it is the element where they earn their livelihoods, where they partake in leisure activities, etc. This all makes the concept of connecting the earth and sea/ocean extra important.

The site becomes the literal connection between the earth and the sea: where the boats enter the sea, where people swim, where people fish from the jetty, and also where people enjoy all the elements that are connected to the ocean, for example leisure. The new design proposal on-site must make this connection an important and integral part of the design. The ocean is the reason for the site's existence and is the reason for people visiting the site. By designing thresholds, places with views and interactive forms of activities; the site can become a connection to the ocean rather than just a site next to the ocean.

Figure 89: Threshold to ocean model;(Rorich, 2020: model)

C. Urban Design

The urban design group defines urban design as:

> *"It is the collaborative and multi-disciplinary process of shaping the physical setting for life in cities, towns and villages; the art of making places; design in an urban context. Urban design involves the design of buildings, groups of buildings, spaces and landscapes, and the establishment of frameworks and processes that facilitate successful development" (Udg.org.uk, 2019: online).*

In order to design a building, you must take the people that you are designing for into consideration, what their needs are, for what purpose they use the site, etc.

My design proposal will cater for the local fisherman community of Struisbaai and the tourists visiting Struisbaai. As discussed throughout the dissertation document, it became clear that both users' needs must be accommodated. Urban design will become the element that will combine the various elements. This intervention could also set the example for further urban development of the town.

The urban design elements in this intervention are:

- Seating
- Planter boxes
- Promenade textures
- Usable thresholds
- Wall element connecting the whole site

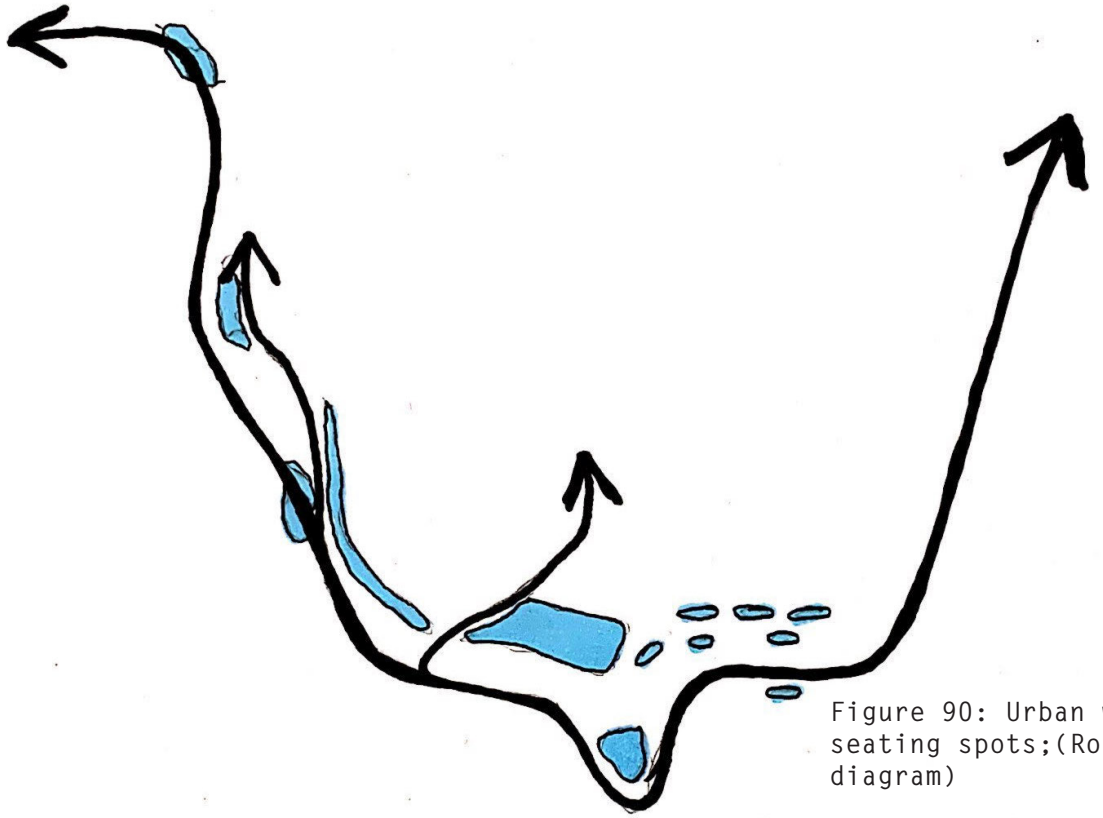


Figure 90: Urban walkway and seating spots;(Rorich, 2020: diagram)

d. Sustainable Architecture

The USA Government defines sustainable design as:

> *"Sustainable design seeks to reduce negative impacts on the environment, and the health and comfort of building occupants, thereby improving building performance. The basic objectives of sustainability are to reduce consumption of non-renewable resources, minimize waste, and create healthy, productive environments ()."*

To create an appropriate design, I believe that the building should be as sustainable and respectful to the environment as possible. In my theoretical discourse on ecotourism we see the importance of creating a building that respects the environment and the local community. Another important aspect to me is the involvement of the community in this project. Through innovative design all these sustainable elements will be implemented and will contribute to an ecotourism friendly building.

Sustainable elements in this intervention:

- Good natural ventilation systems
- Solar energy
- Water harvesting
- Community involvement

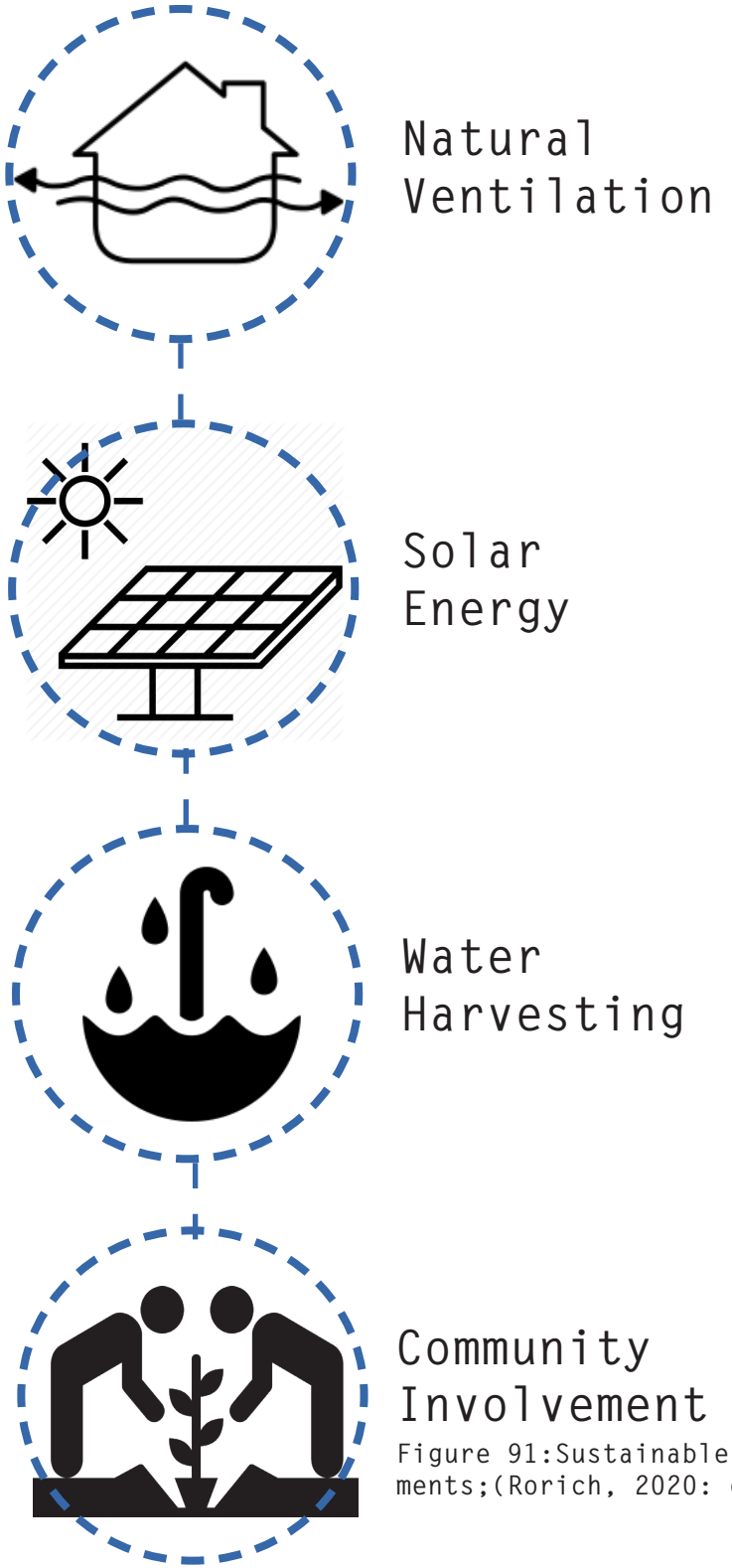
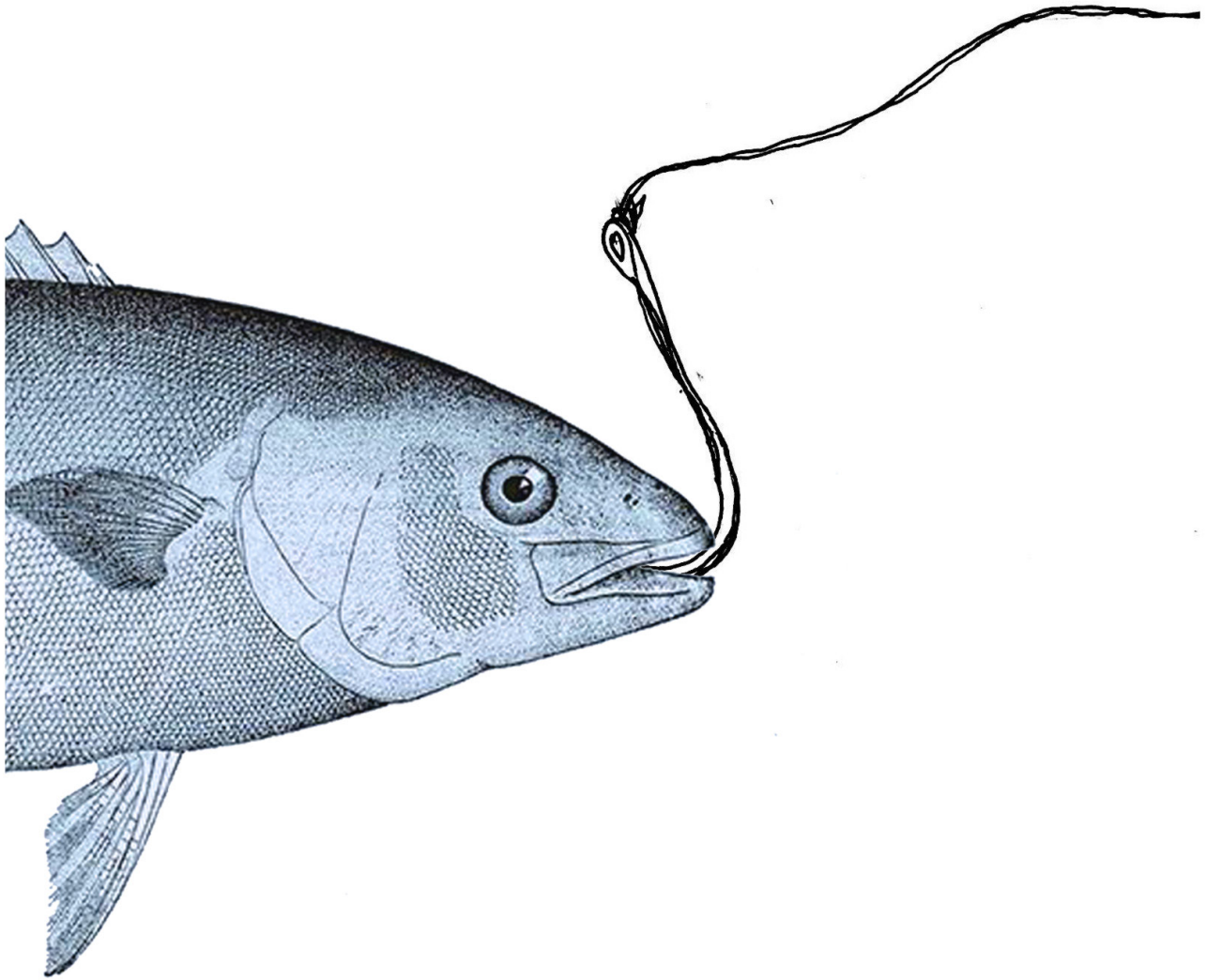


Figure 91:Sustainable elements;(Rorich, 2020: diagram)



2.4 Tectonics & Materiality

In this section the technical elements of the building will be discussed. All the interesting structural explorations will be documented and discussed as well as the appropriate materials used in this intervention.

a. Structural Explorations

My site is the whole harbour bay which stretches 540m from the one end, following the shoreline to the viewing deck, see figure 90. One of the main challenges in the design process is making sure that all the different proposed elements speak one architectural language. This is accomplished by introducing several elements that stretch across the whole site for example the 1,2m thick wall element, the towers and the shading devices, see figure 93. Each of these proposed elements on site has its own function and character and therefore has its own structural development.

The main structural exploration are the different structural developments, just as there are contrasting users on the site. These structural characteristics of the wall are its solidity and thickness which are contrasted to the 'lighter' elements for example the roof structures and the swimming platform. The construction touchstone addresses these two contrasting elements working together and creating spaces to inhabit and move through

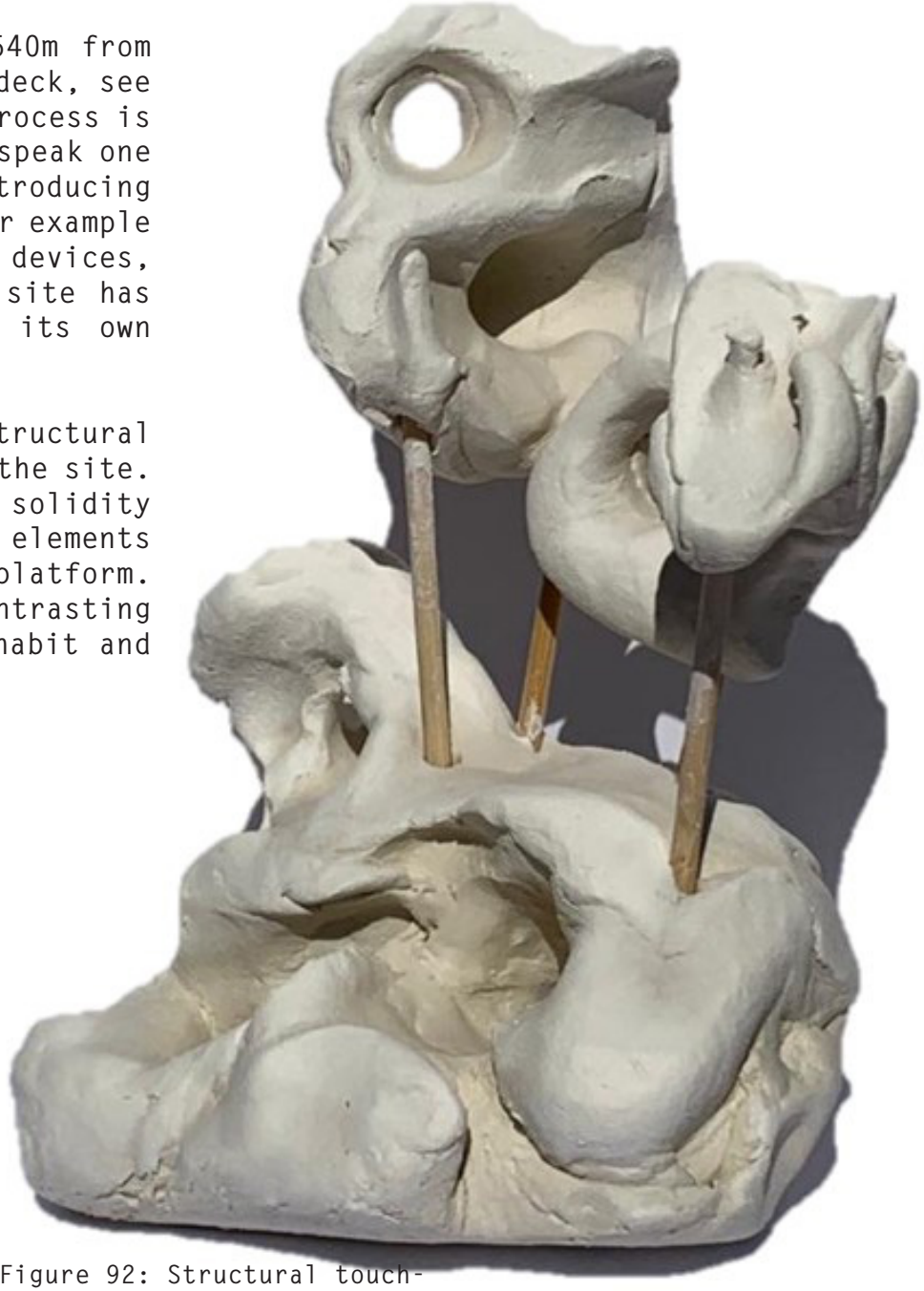
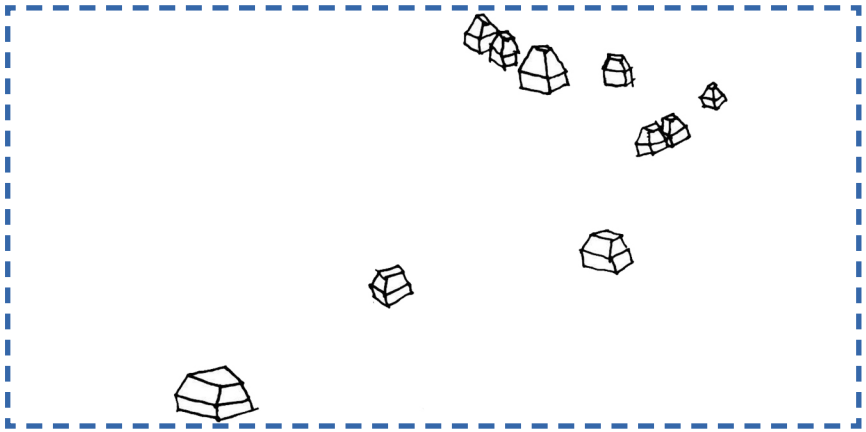


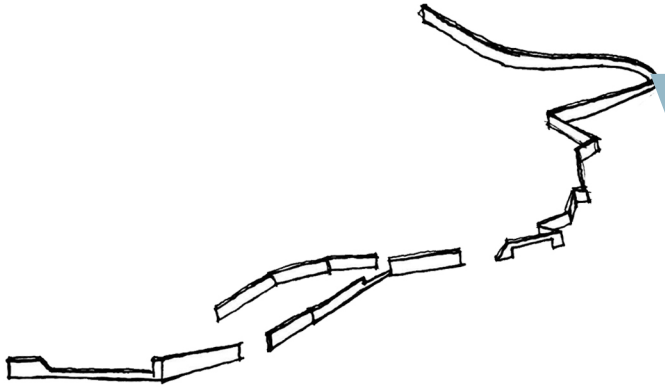
Figure 92: Structural touch-stone;(Rorich, 2020: model)

Load Bearing

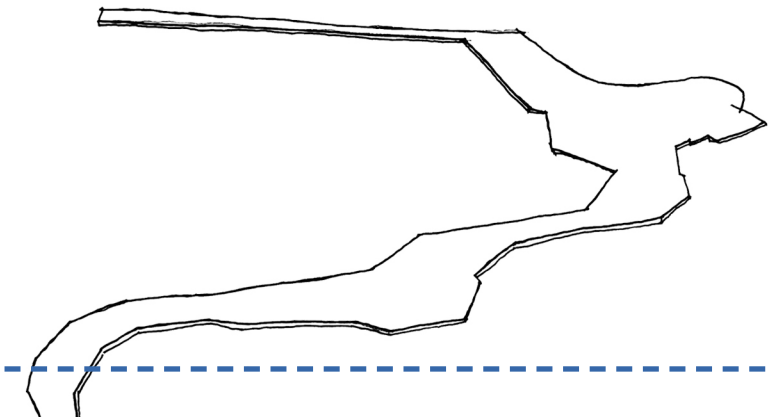
Towers



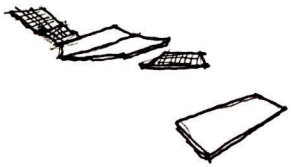
Datum Wall



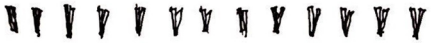
Promenade



VS.



Roof



Columns

Swimming Platform

Tectonic

Figure 93: Contrasting structural elements on site;(Rorich, 2020: diagram)

Slipform Stone Wall

In Chapters 1.3 and 2.3 the characteristics of the vernacular architecture of Struisbaai were discussed. It became apparent throughout my investigation that the vernacular whitewashed walls are an element unique to the Fisherman Cape Cottage houses and it is definitely an element that I would like to reinterpret in this proposed intervention.

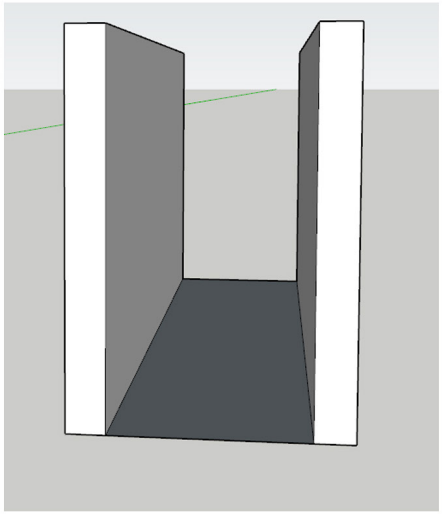
An initial investigation was conducted into introducing earth construction - cobbing - to resemble the vernacular. This form of construction was proven to be unsuitable for the large-scale intervention that I am proposing. The proposed cob wall would've been exposed to many natural elements, like water and sun. Another issue was the proposed size and functioning of the wall where, for example, designing the wall to be interactive to allow users to sit on it, use it as a counter top, etc. Therefore, slipform stone walls are more suitable for the purpose of the datum wall.

Slipform stone construction is a combination of stone and concrete work that then forms a wall that shares the attributes of both (Elpel, 1997: online). The wall has the aesthetic appeal and strength of stone and is reinforced with steel and concrete. The final product is low maintenance, long-lasting and virtually weather and fireproof (ibid.).

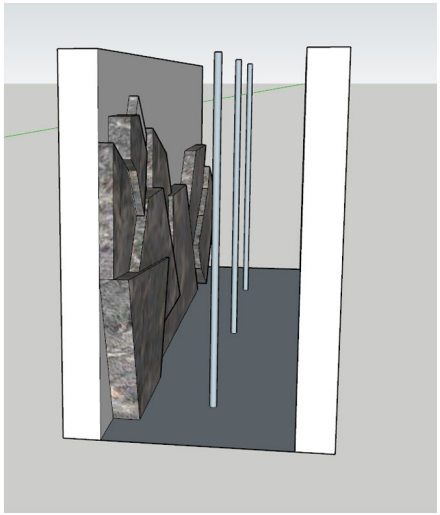
The slipform stone wall construction will be used on the datum wall introduced throughout the site. This wall will have several functions and ranges between interactive window openings, benches, counter tops, service spaces and at some points it will even having a ventilation system introduced into it. This method of construction will still resemble the vernacular architecture of Struisbaai, especially as the stone element is being used. This wall will further be treated with white limewash to resemble the white walls of the Fisherman Cape Cottage architecture. The walls will be treated regularly with the limewash and the local community will be involved in this process.

How is it constructed:

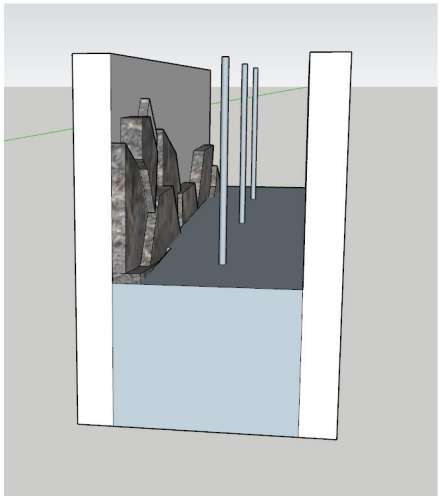
Figure 94: Slipform stone wall construction;(Rorich, 2020: 3D model)



Temporary Frame



Pack Stone & Reinforcement

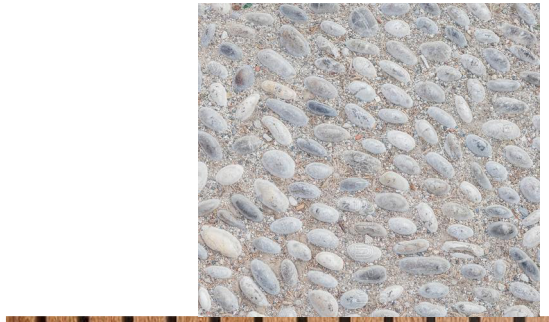


Fill with concrete, remove frame

b. Materials

The materials used in this intervention are particularly important as they will all contribute to making the building appropriate in Struisbaai. Some of these materials will pay tribute to the vernacular architecture of Struisbaai.

Pebble Stone



Limestone

Concrete

Slipform Stone Wall

“Context is so important, not to mimic but to becoe part of the place, I wanted a building that acknowledges its surroundings”

David Adjaye

Figure 95: Small jetty at Struisbaai harbour;(Rorich, 2020: picture)

3 reflecting

3.1 Design Development

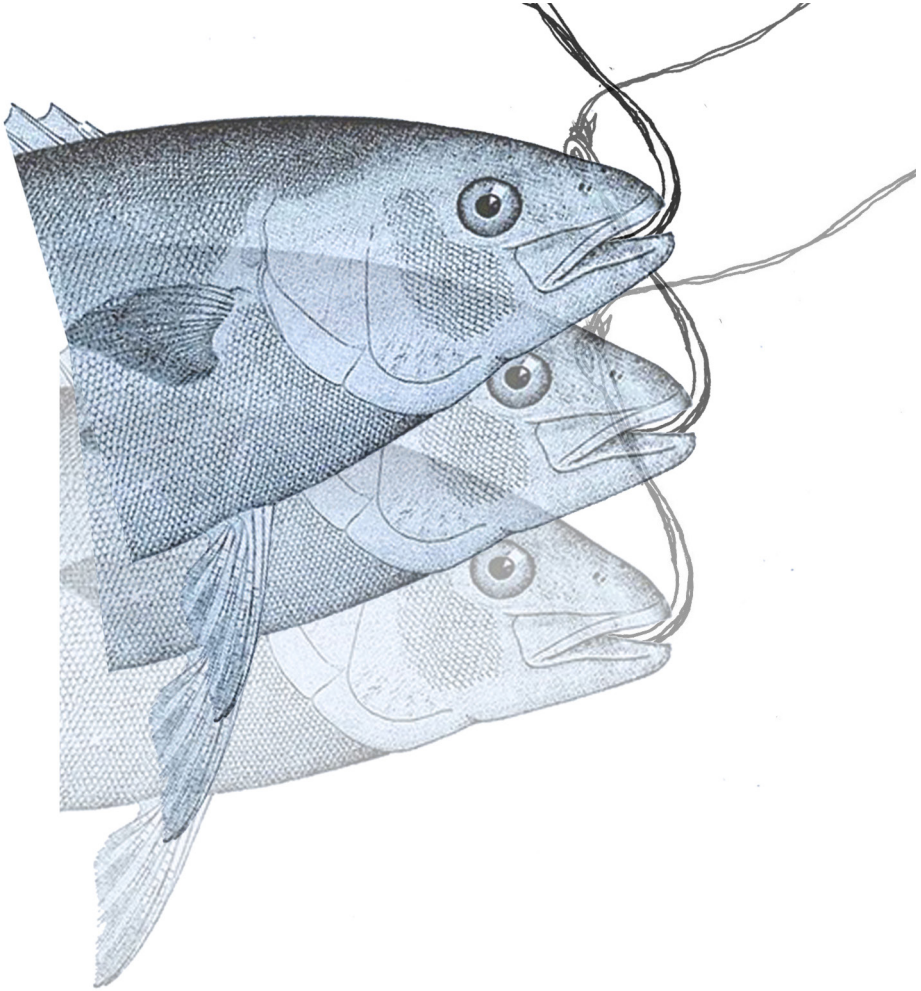
- Process

3.2 Design Synthesis

- The Final Product
-Techniacl Report
- Reflection

3.1 References

- Reference List
- List of Figures
-Appendix A
-Appendix B



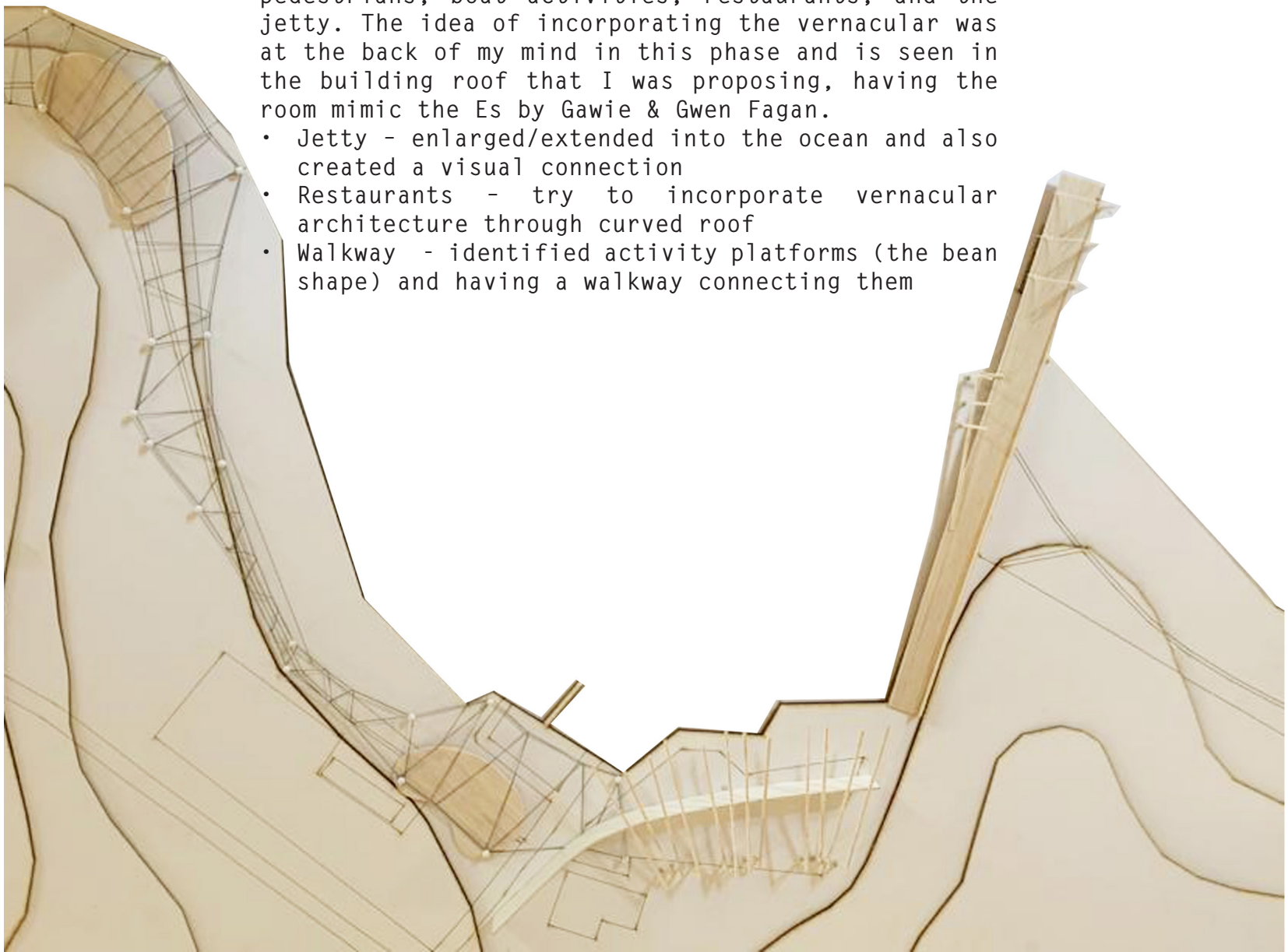
3.1 Design Development

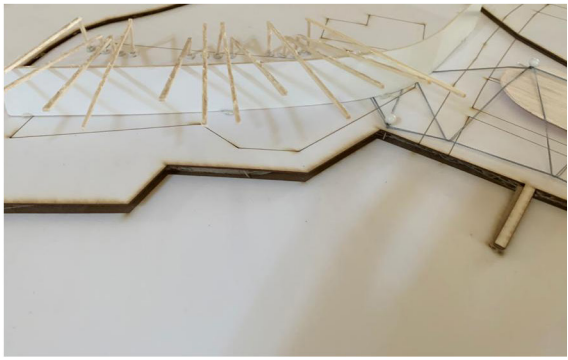
a. Initial Idea

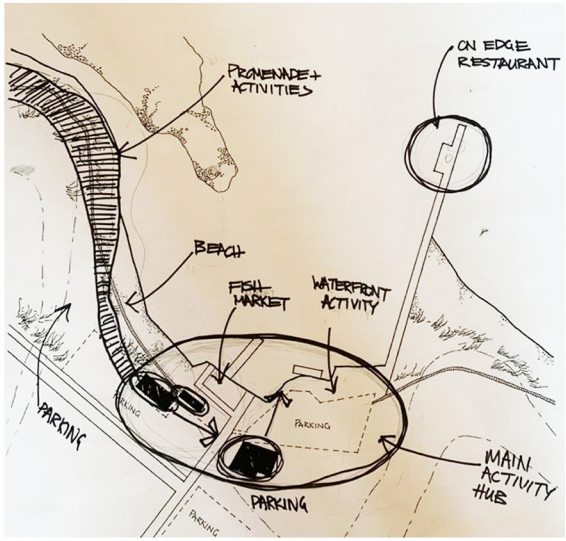
Development 1

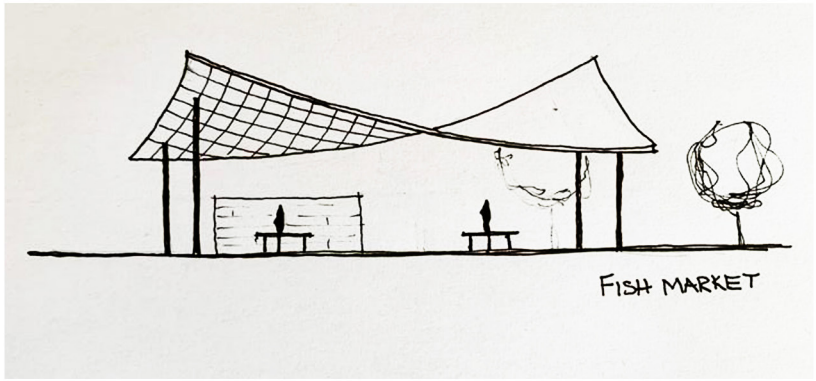
This was my initial approach to the design. In this phase I identified four main elements to accommodate: pedestrians, boat activities, restaurants, and the jetty. The idea of incorporating the vernacular was at the back of my mind in this phase and is seen in the building roof that I was proposing, having the room mimic the Es by Gawie & Gwen Fagan.

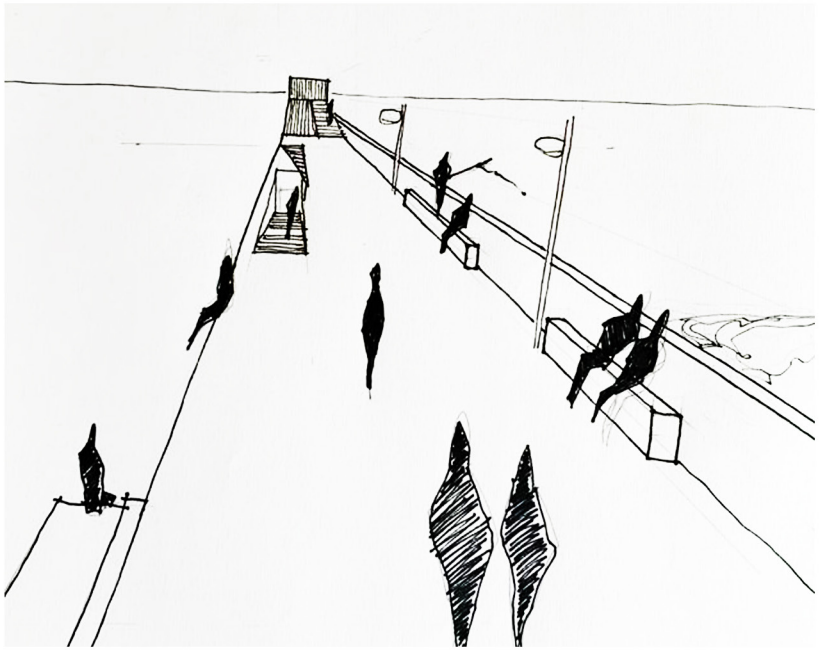
- Jetty - enlarged/extended into the ocean and also created a visual connection
- Restaurants - try to incorporate vernacular architecture through curved roof
- Walkway - identified activity platforms (the bean shape) and having a walkway connecting them

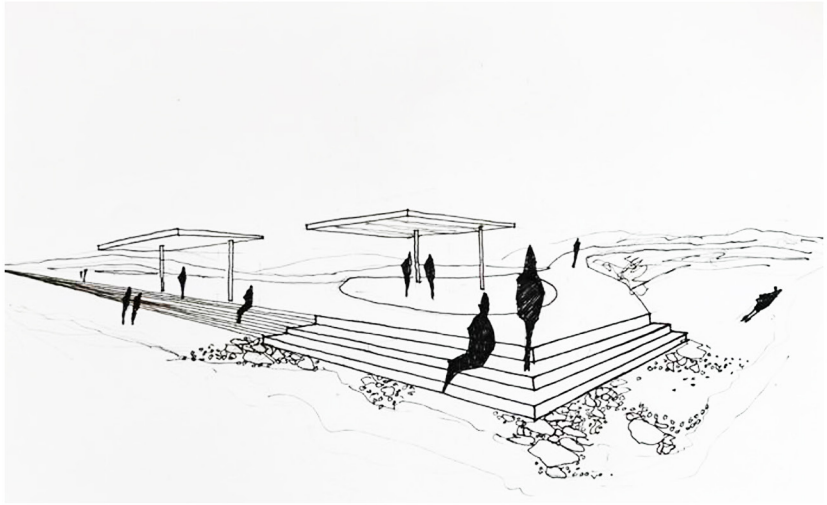










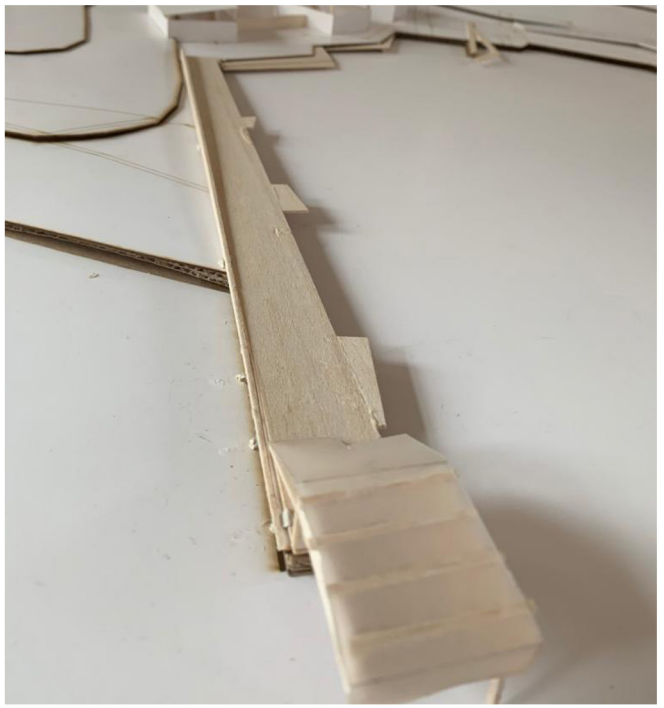


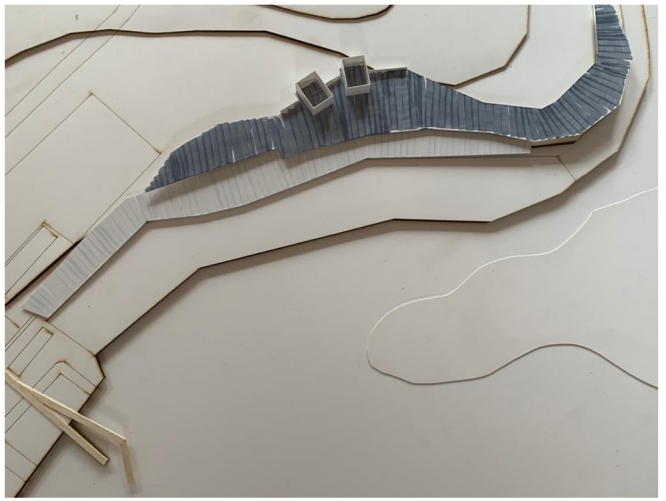
Development 2

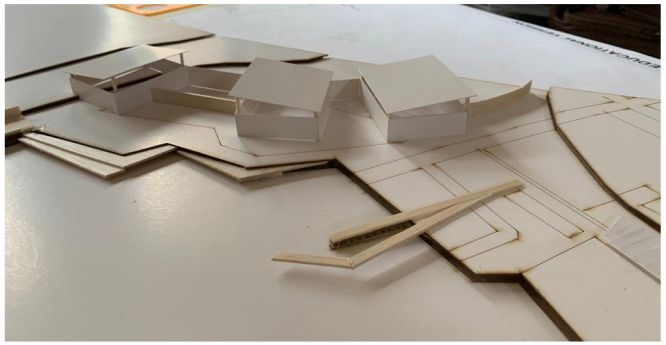
In this phase the idea of a promenade element that connects everything became apparent, it is still very subtle, but a promenade is starting to form in my unconsciousness. The fish market was introduced in this phase and different restaurants and shops were identified. The deign of the building was aimed at fading into the hill but that has proven to be impossible. In this phase the viewing platform is also introduced.

Development 3

In this phase the promenade became an important feature to work on and this is where the level difference in the promenade is introduced. The accommodation list formed and allowed for specific functions to be accommodated for. The ‘boxes’ of the buildings changed shape to form a curve. A new swimming platform was identified in this phase as well as a story room on the jetty that later fell away.

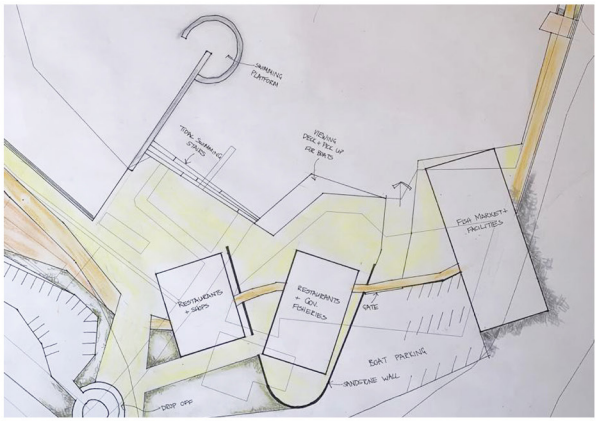


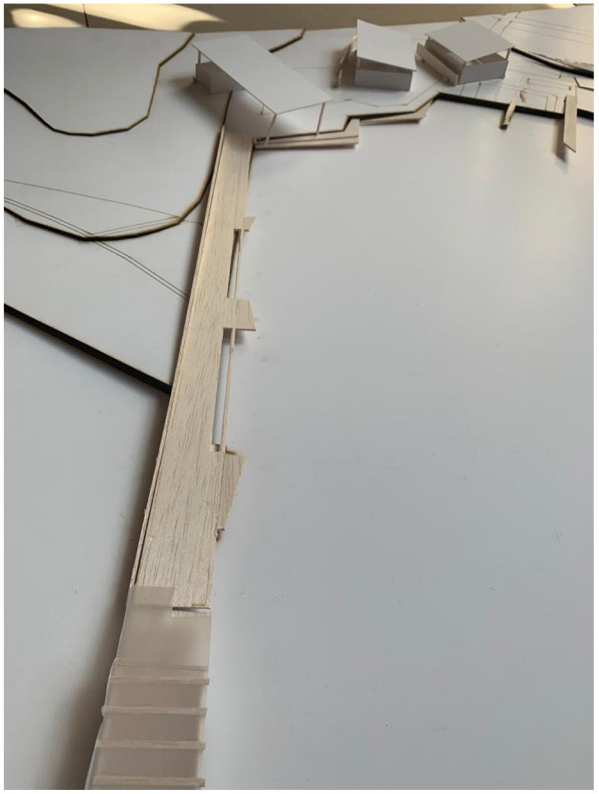




b. Introducing the Curve

This phase had a big impact on the current design, this is where the curve is introduced. The two ‘boxes where positioned next to the curve to create a courtyard idea and the fish market was placed on the right-hand side of the curve. The boat entrance was also moved to be between the restaurant facilities and the fish market. The promenade was still developing, and a new swimming platform shape was introduced.

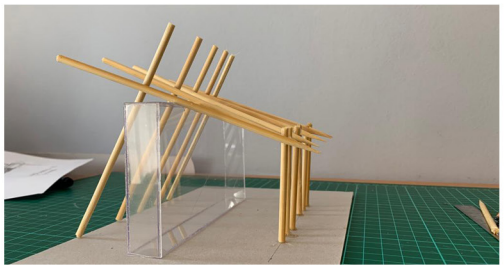


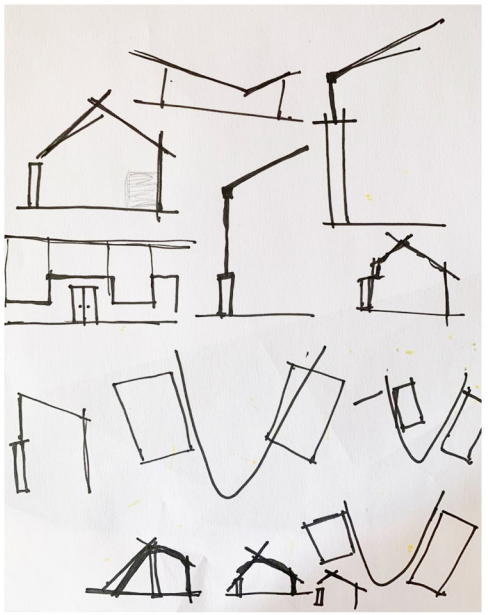


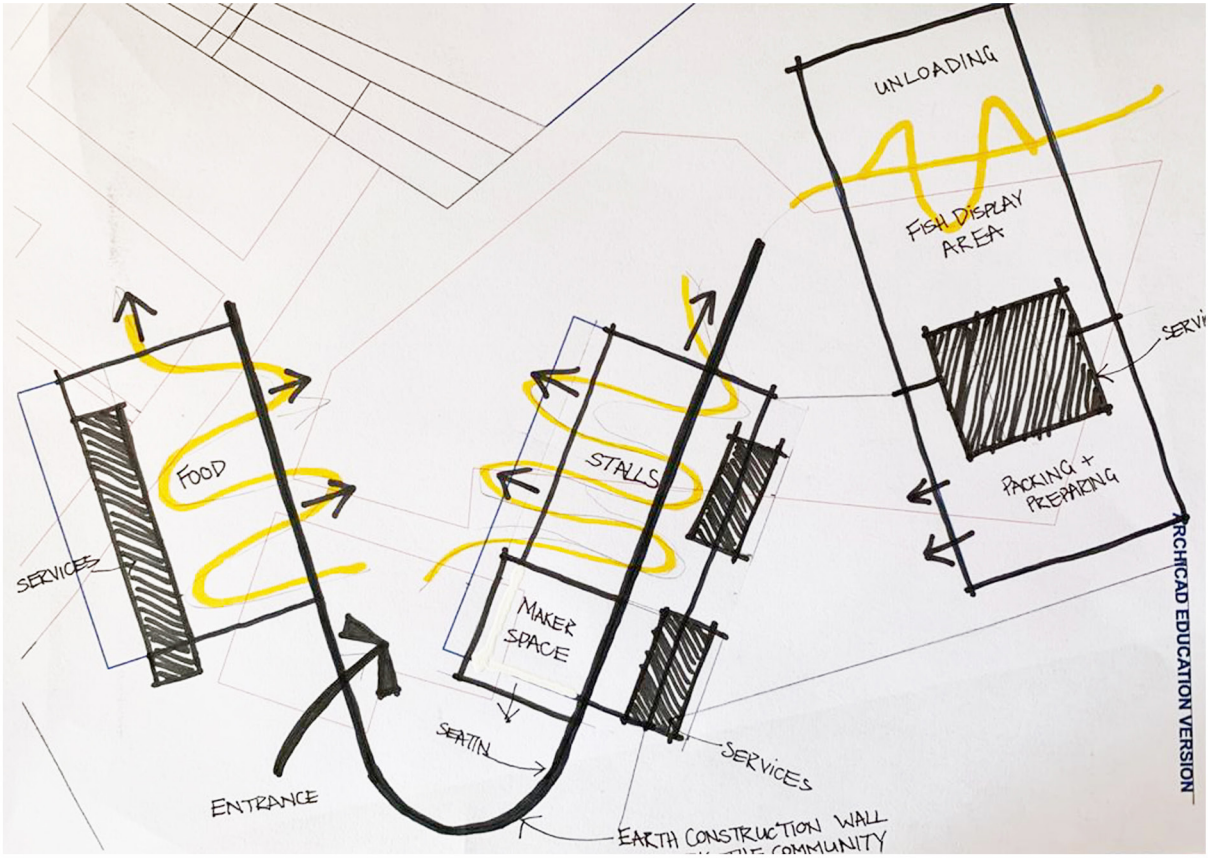
C. The Vernacular Route

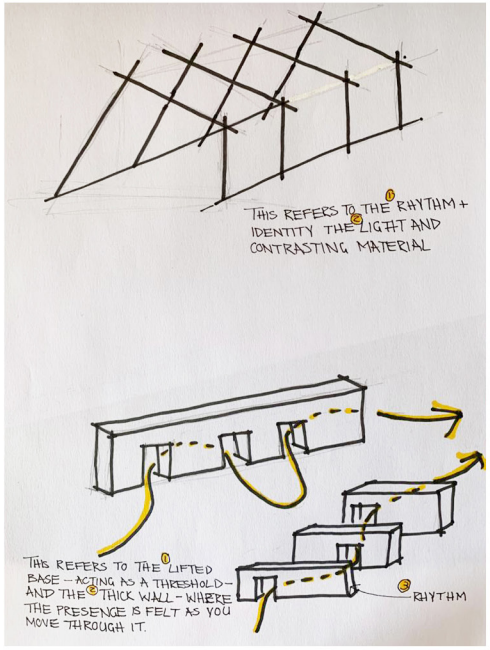
Development 1

In this phase the vernacular Cape Cottage houses were analysed and reinterpreted in a contemporary way. The shape of the building started to form, and different roof shapes were explored to mimic the morphology of the vernacular in a new way. The buildings placed on the curve started to get more shape and the serviced vs. served spaces were identified.



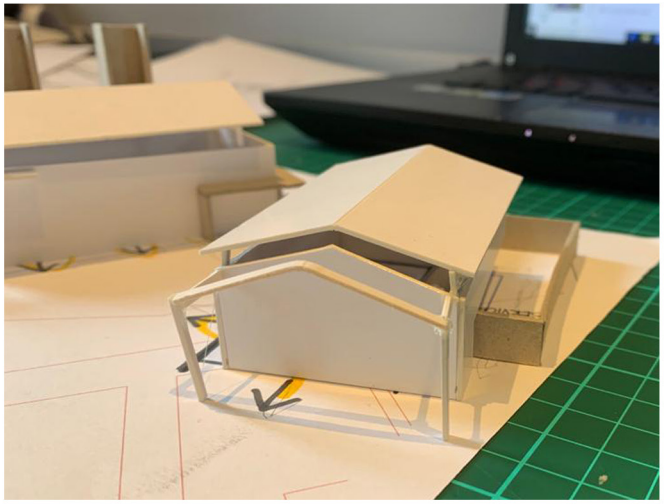


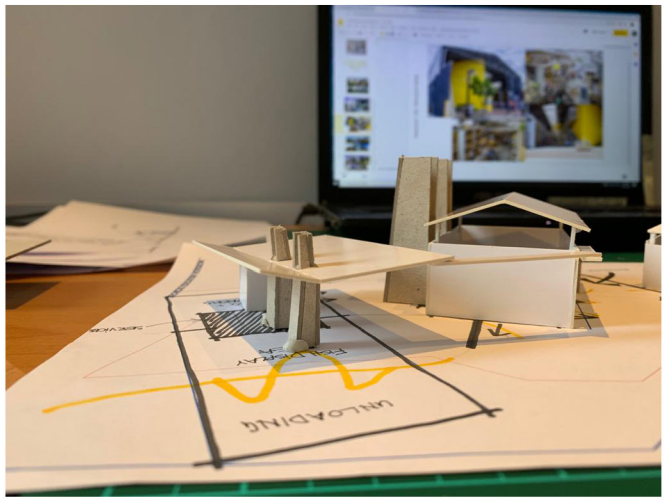


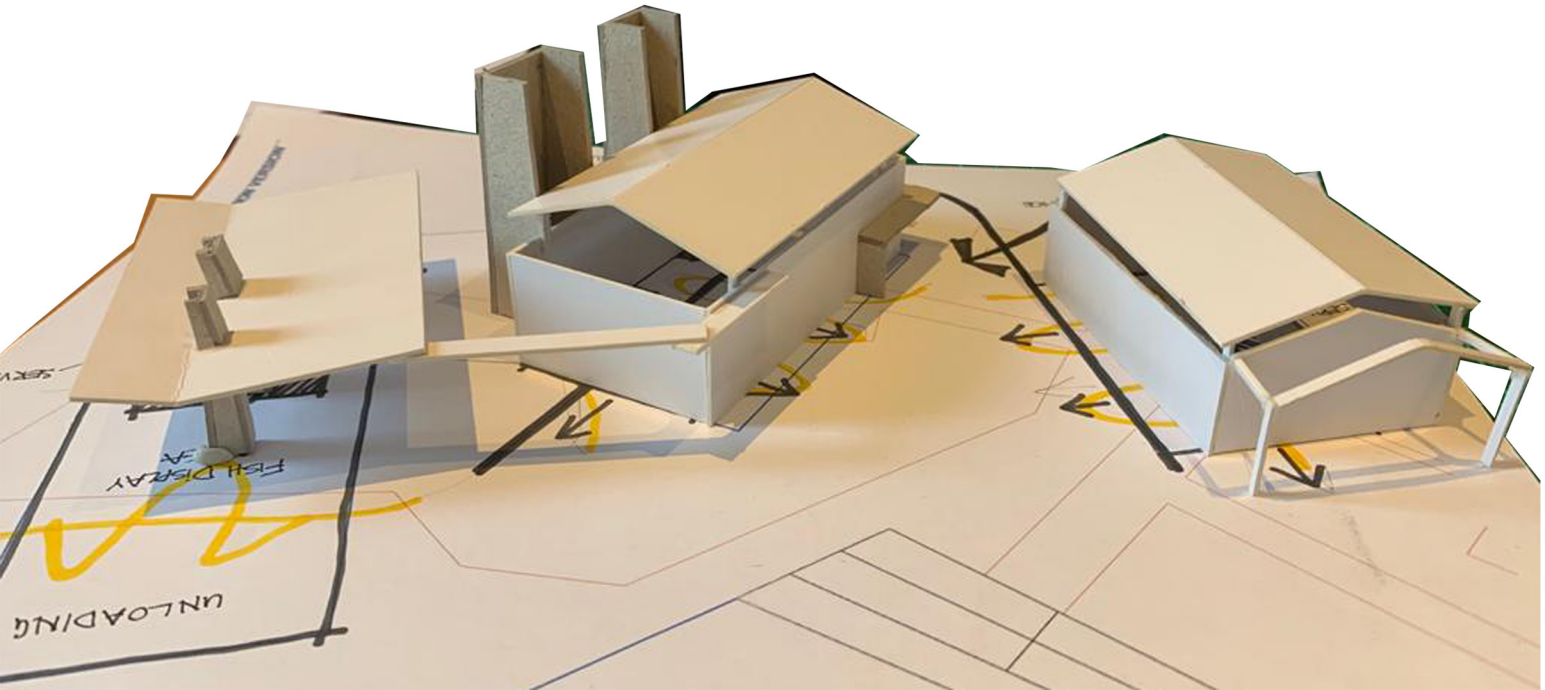


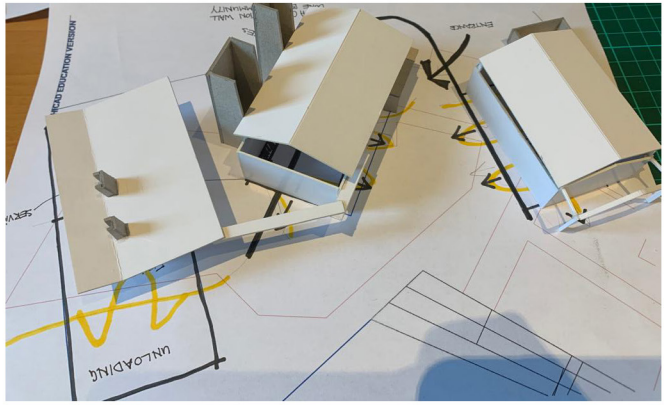
Development 2

The vernacular started to play a big role on the shape of the building. The curve element became a prominent wall through the two buildings to lead the users as well as to allow users to move through this wall. In this phase the idea of the chimneys is introduced initially acting as served spaces.



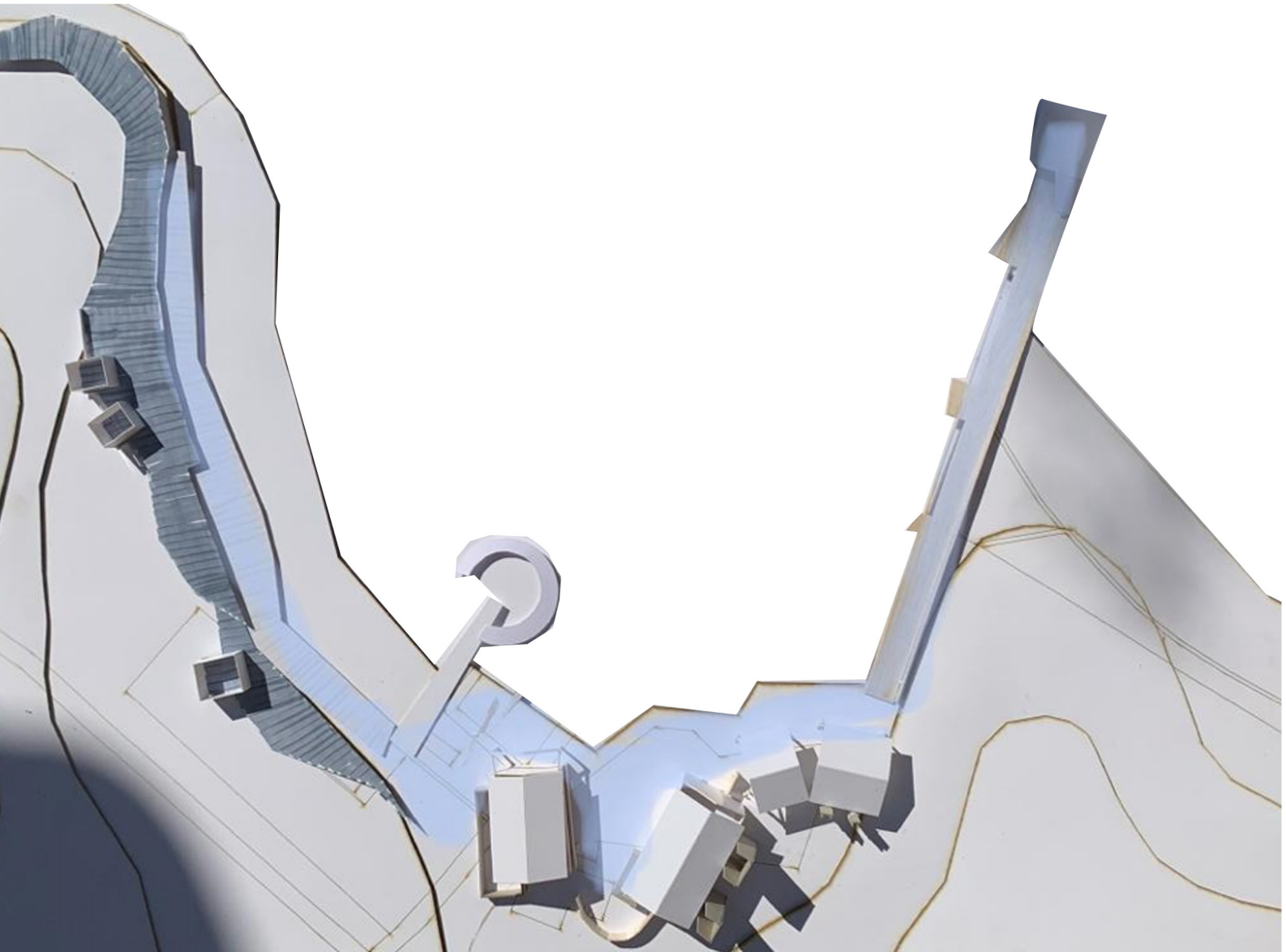


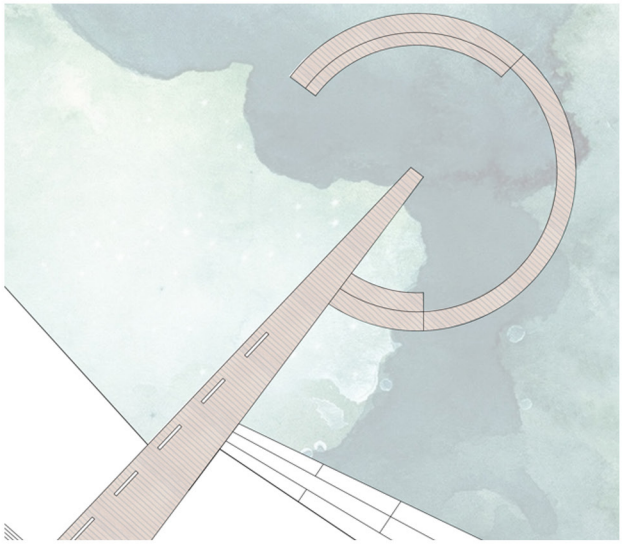


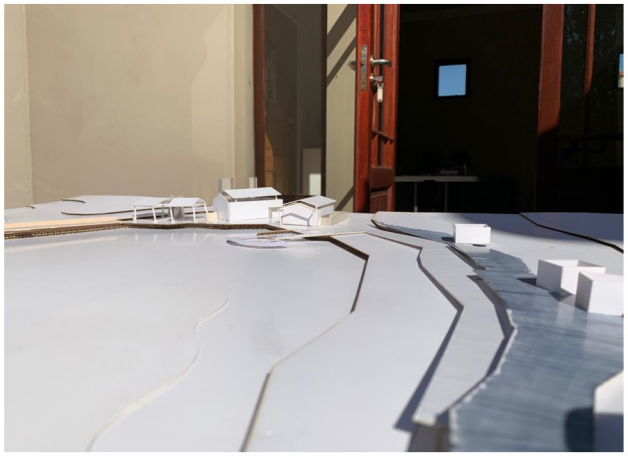


Development 3

In this phase the shape of the promenade is finalized and truly connects all the elements on site. The curve of the buildings was changed slightly, and the fish market was now forming part of the curve, because the market was previously positioned in an awkward space. The boat slipway was completely moved to the right and the grouping of tourist activities vs. fishing activities started to make more sense. The buildings self still tried to mimic the traditional architecture in the area.

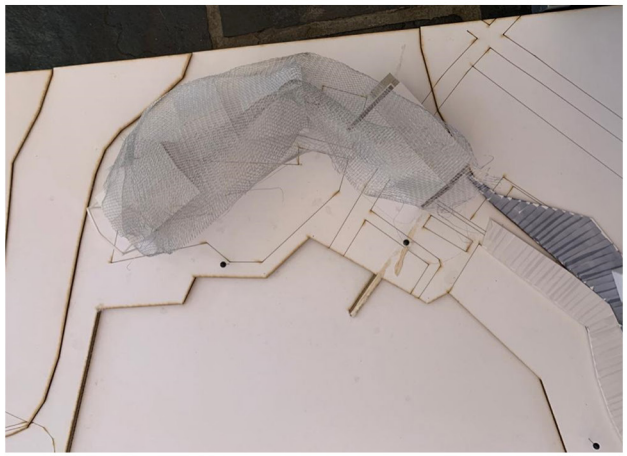


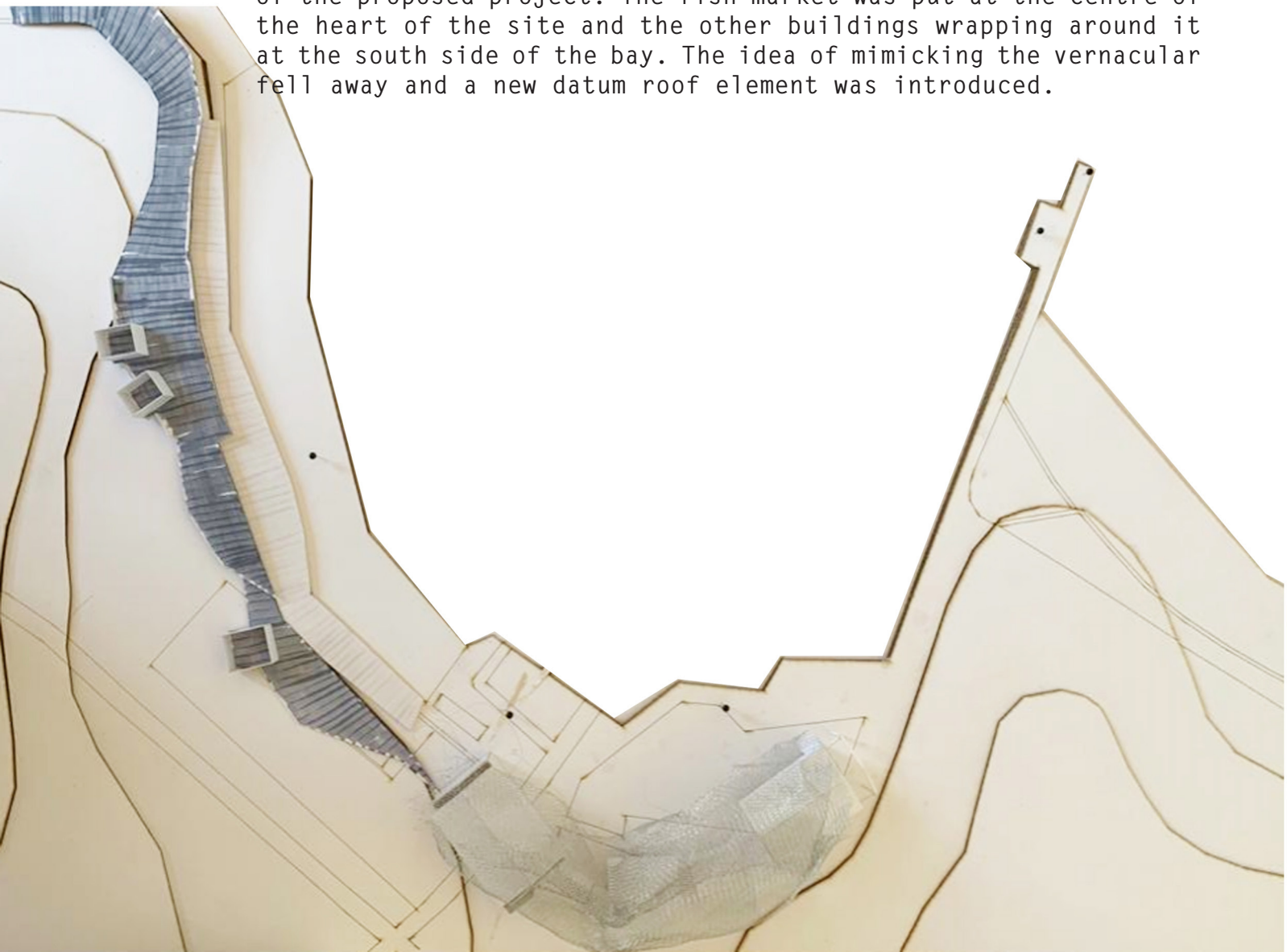


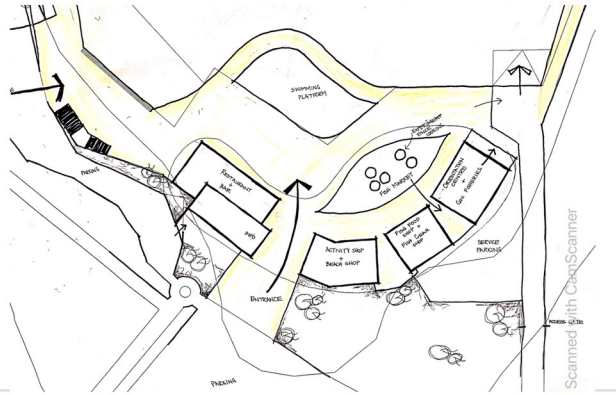


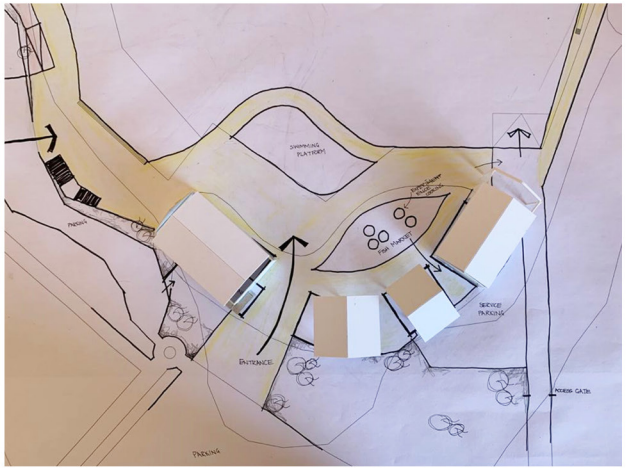
d. Falling off the Wagon

After the first external crit I was confused with my feedback and completely tried to change my design. One important element that came from this phase was making the fish market the focal point of the proposed project. The fish market was put at the centre of the heart of the site and the other buildings wrapping around it at the south side of the bay. The idea of mimicking the vernacular fell away and a new datum roof element was introduced.





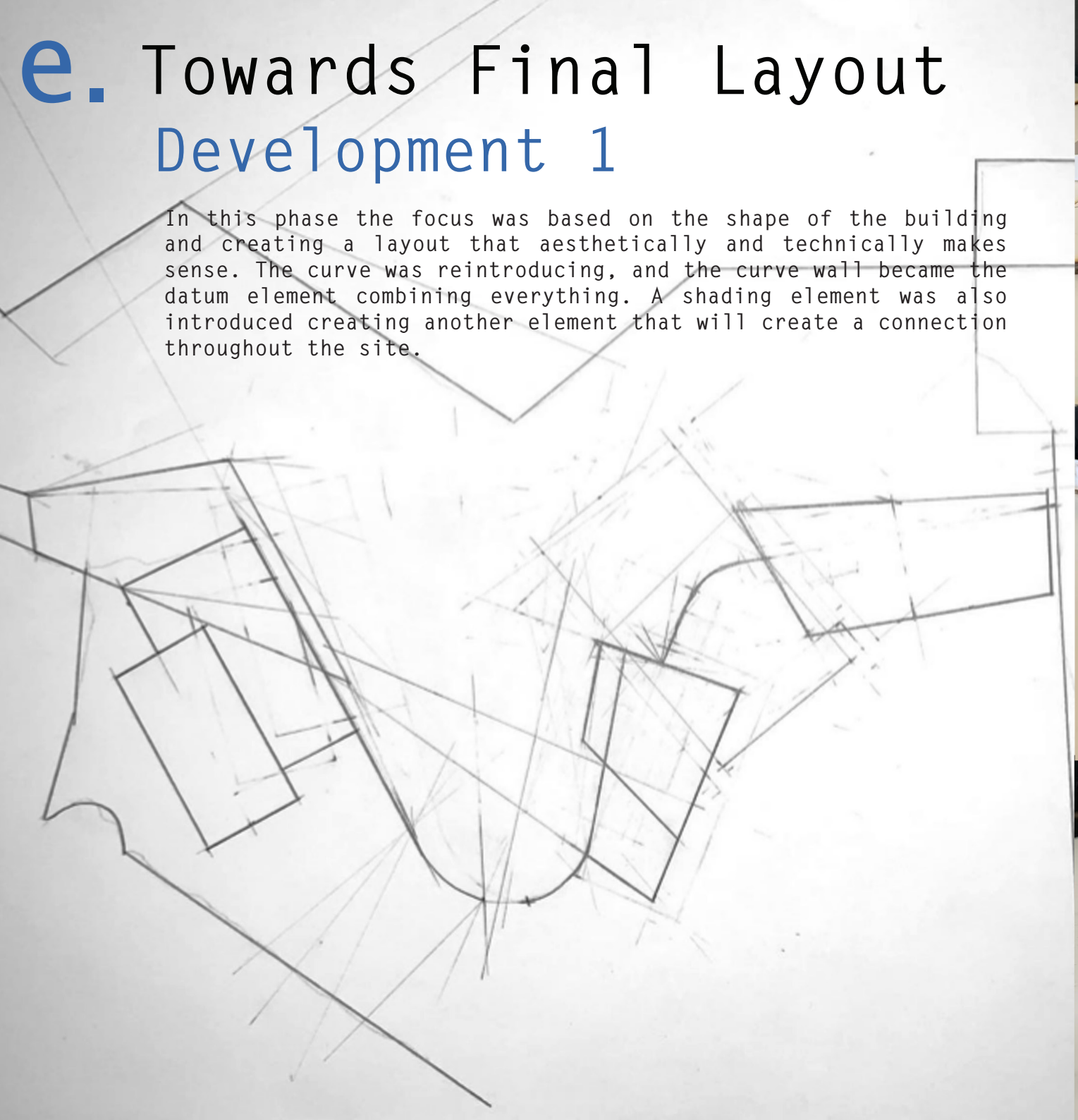


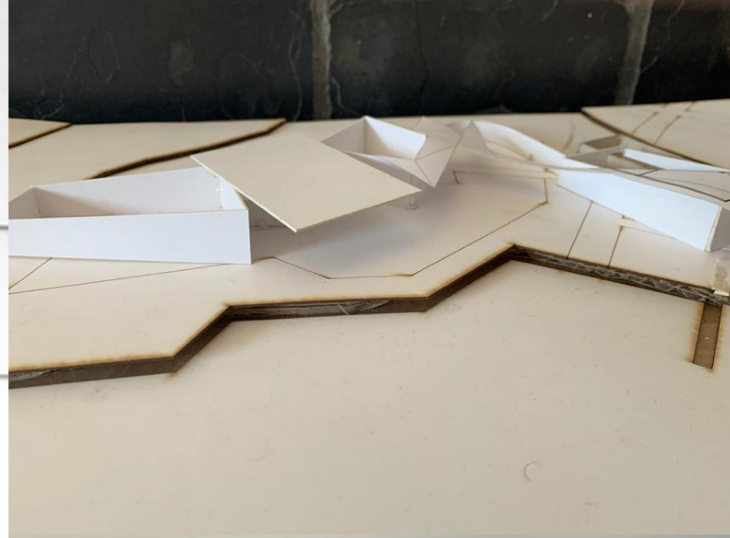


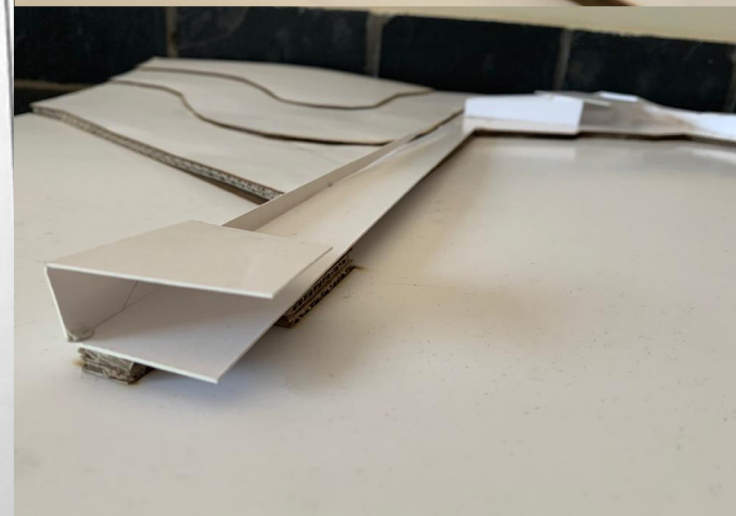
e. Towards Final Layout

Development 1

In this phase the focus was based on the shape of the building and creating a layout that aesthetically and technically makes sense. The curve was reintroducing, and the curve wall became the datum element combining everything. A shading element was also introduced creating another element that will create a connection throughout the site.

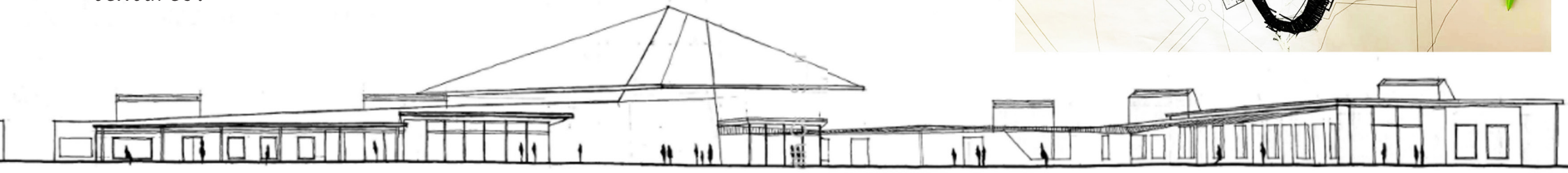




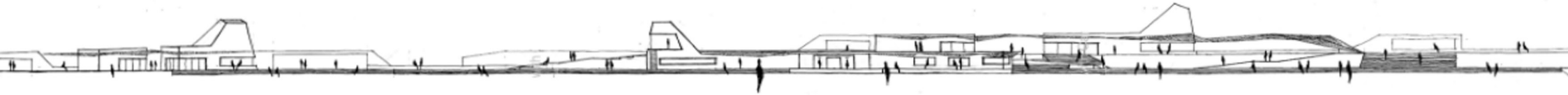


Development 2

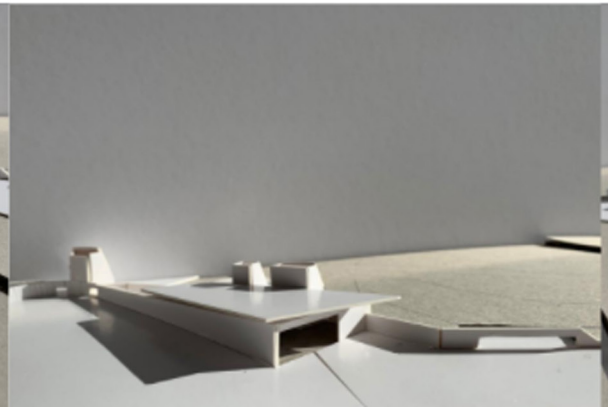
In this phase the wall element was introduced and became a datum element throughout the site extending to the promenade. The wall element was explored to host several services and activities. In this phase the tower elements was also introduced throughout the site creating beacons in the landscape and becoming the spine of the building. The towers and the wall element both became a new contemporary take on incorporating the vernacular. A new swimming platform shape was introduces and more detail was given to making the promenade more welcoming through introducing level differences, urban furniture and textures.

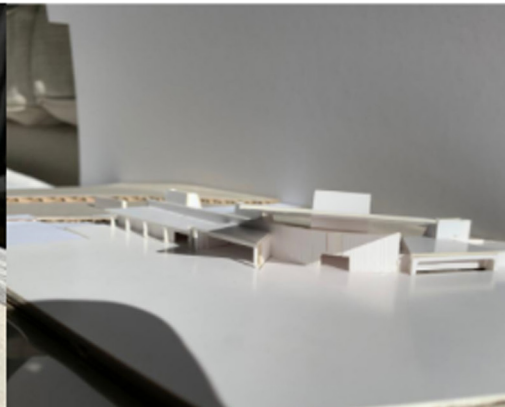


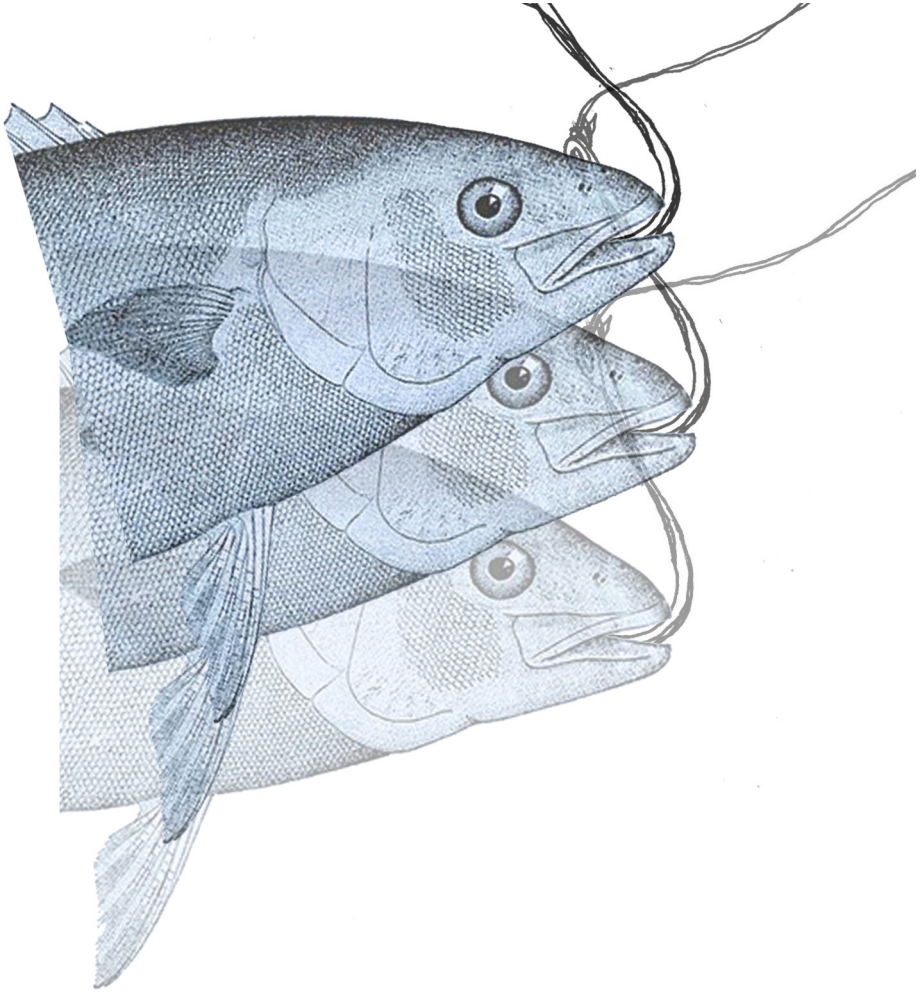
North Elevation



East Elevation (Promenade)

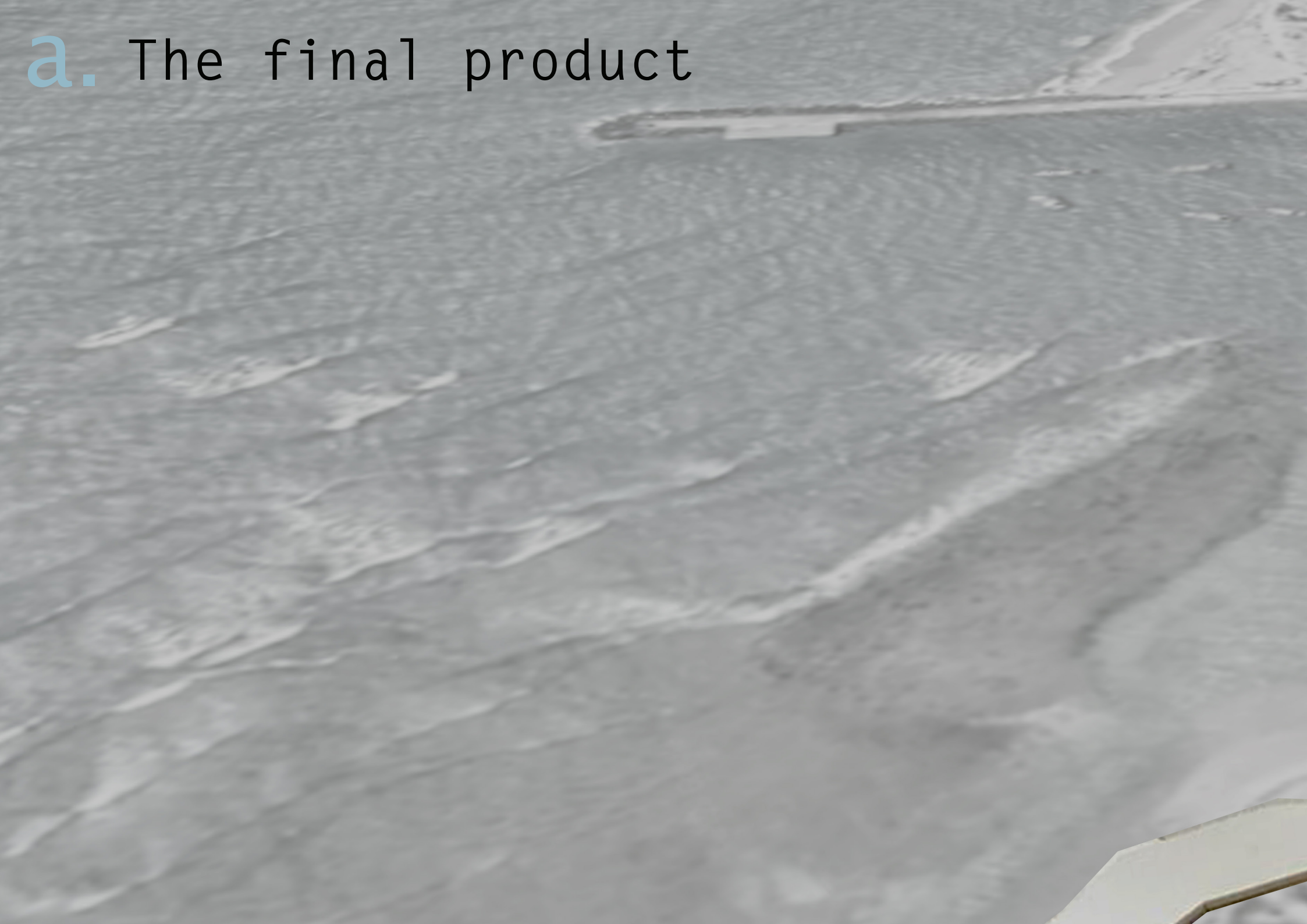


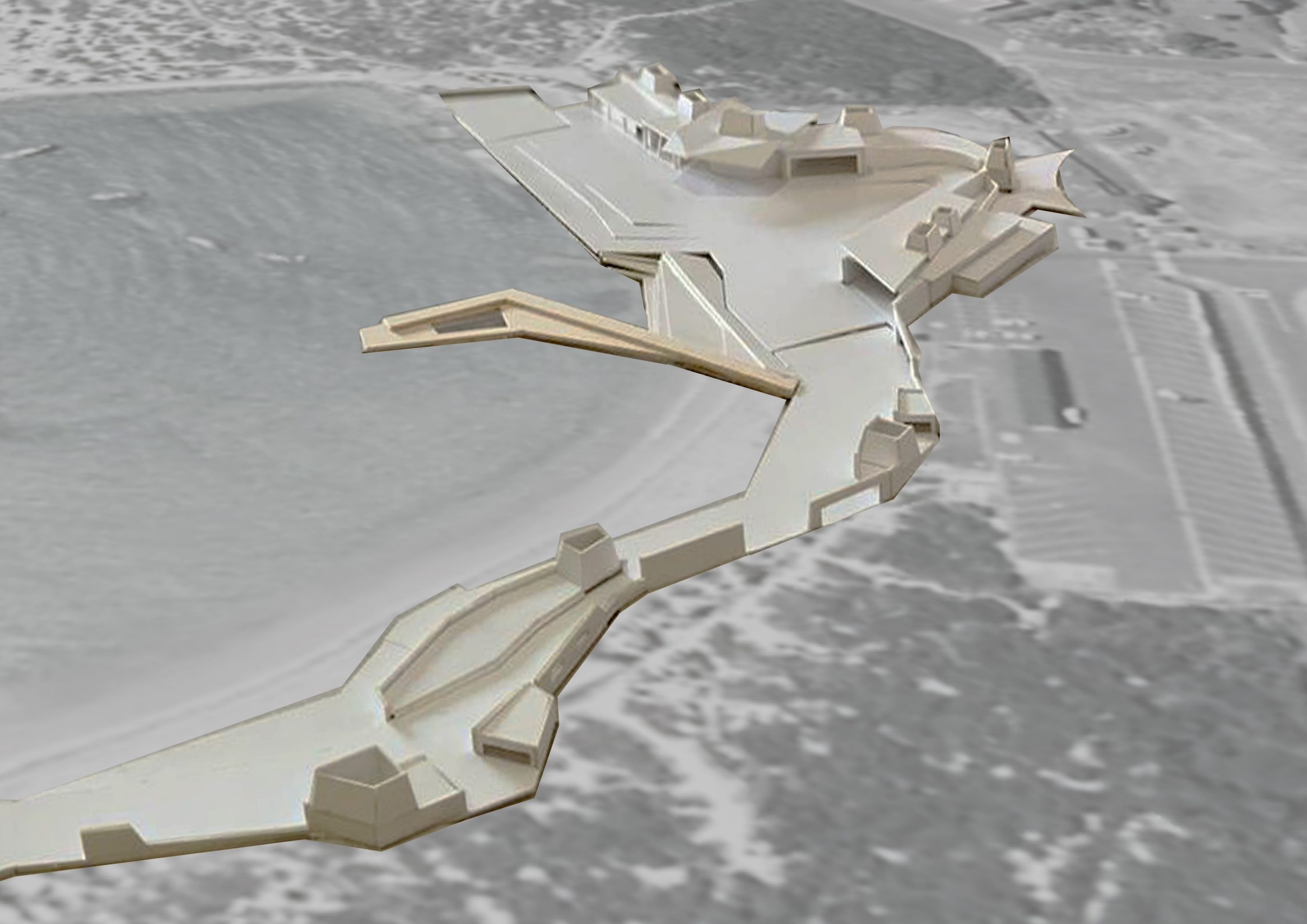


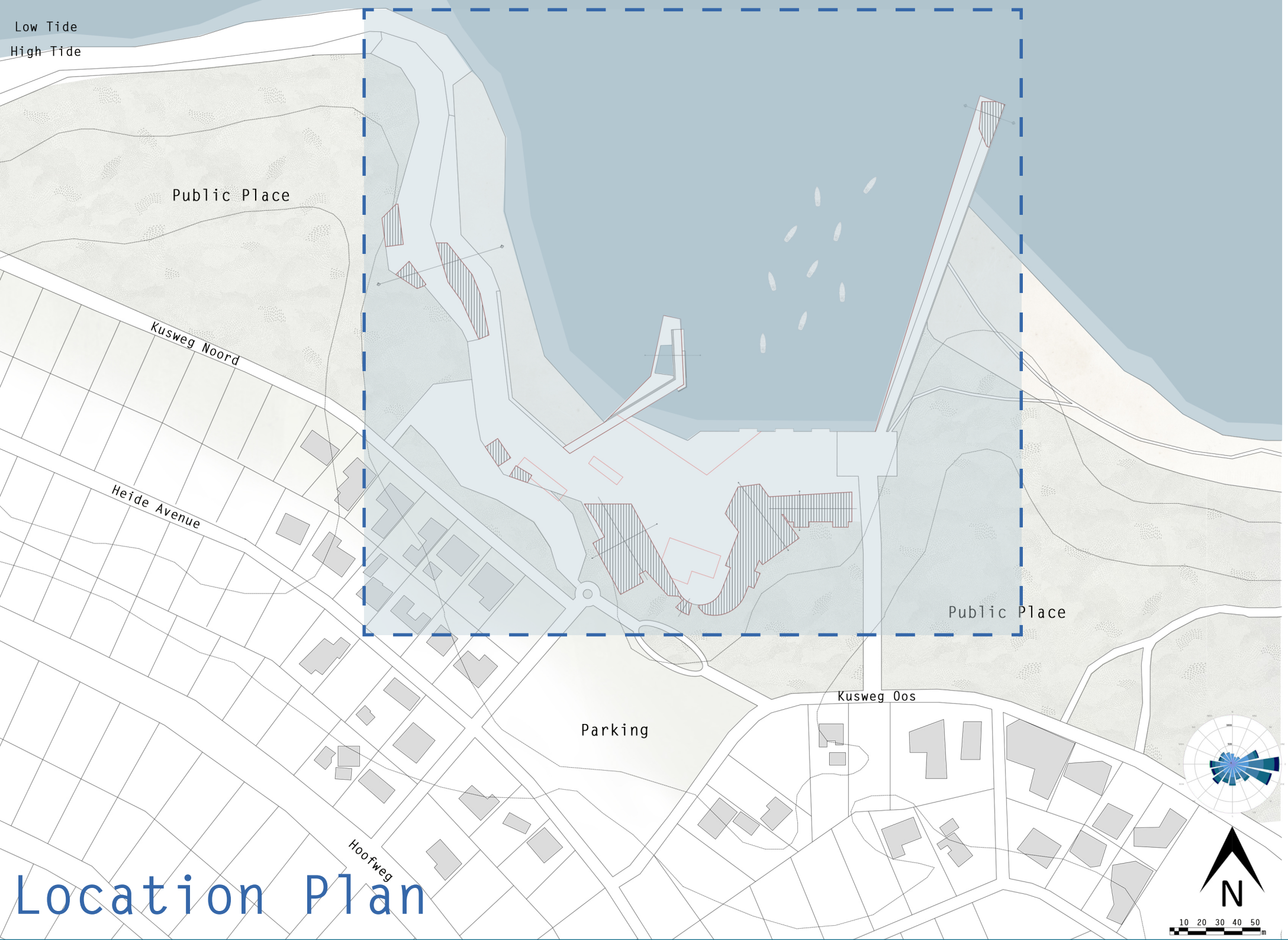


3.2 Design Synthesis

a. The final product





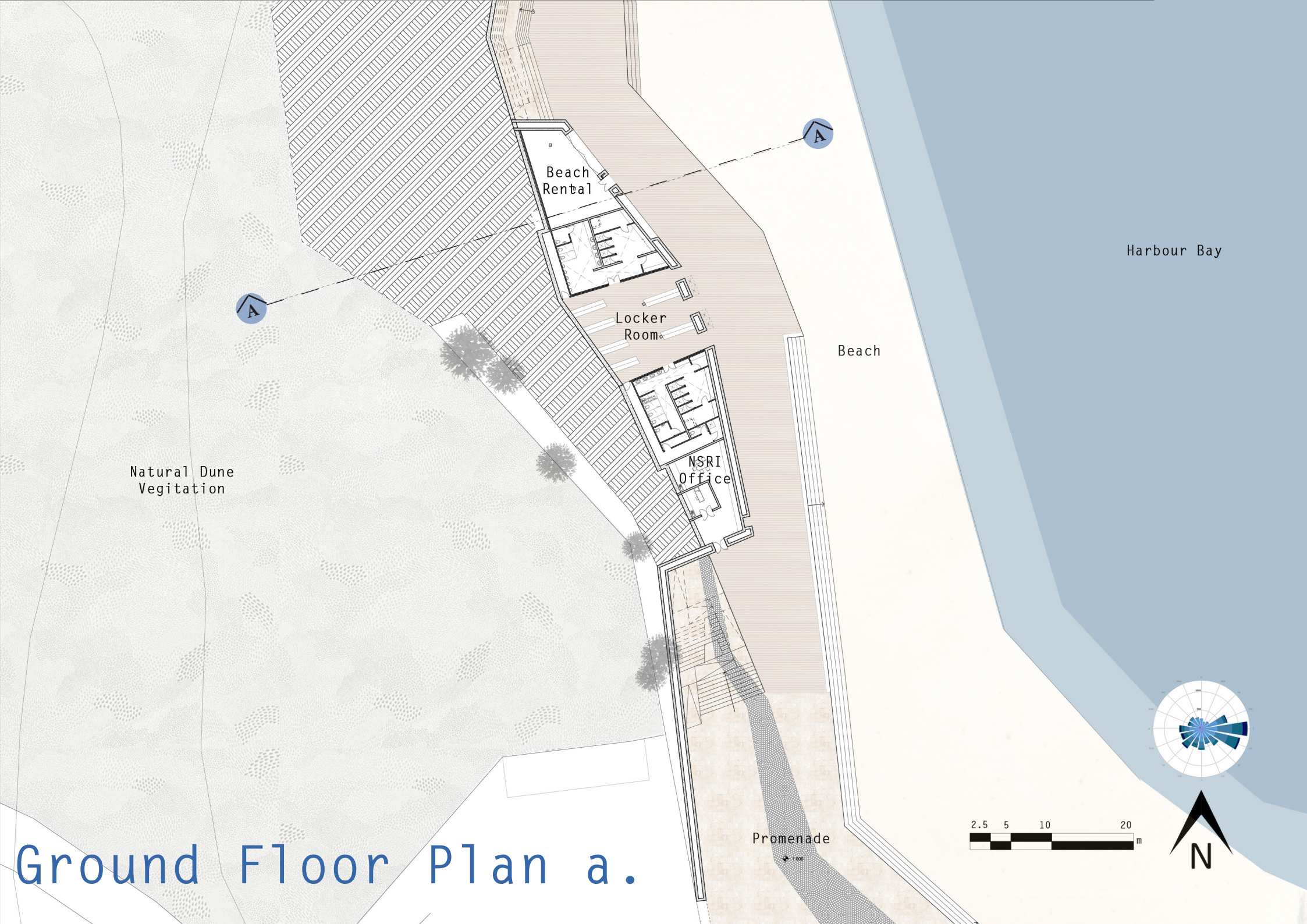


Location Plan

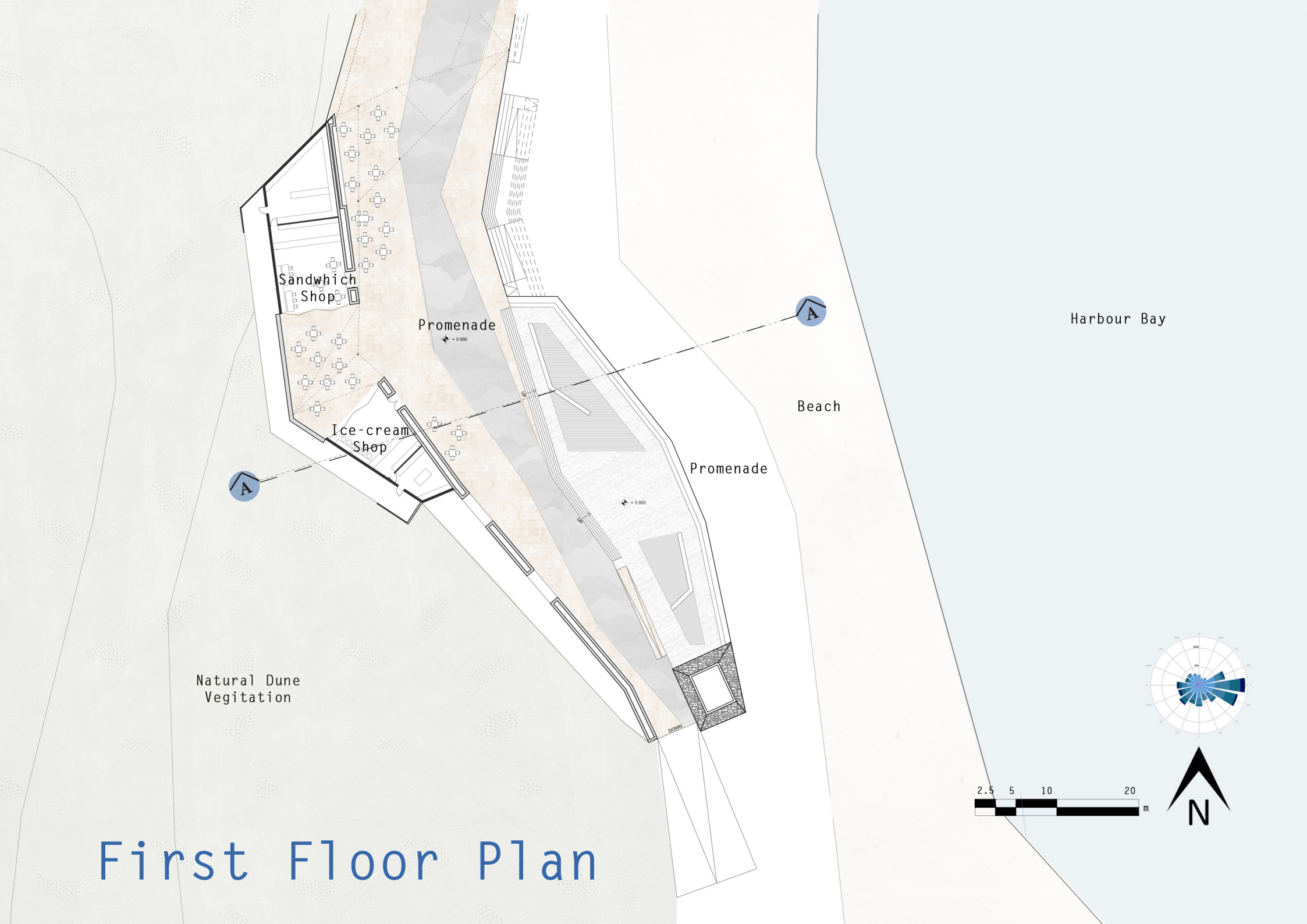

Reef
Natural Dune
a.
A
A
B
B
Low Tide
High Tide
D
D
c.
b.
C
C
Parking
Kusweg Noord
Heide Avenue
Natural Dune
Garden
N
10 20 30 40 50
m

Site Plan

Site Perspective

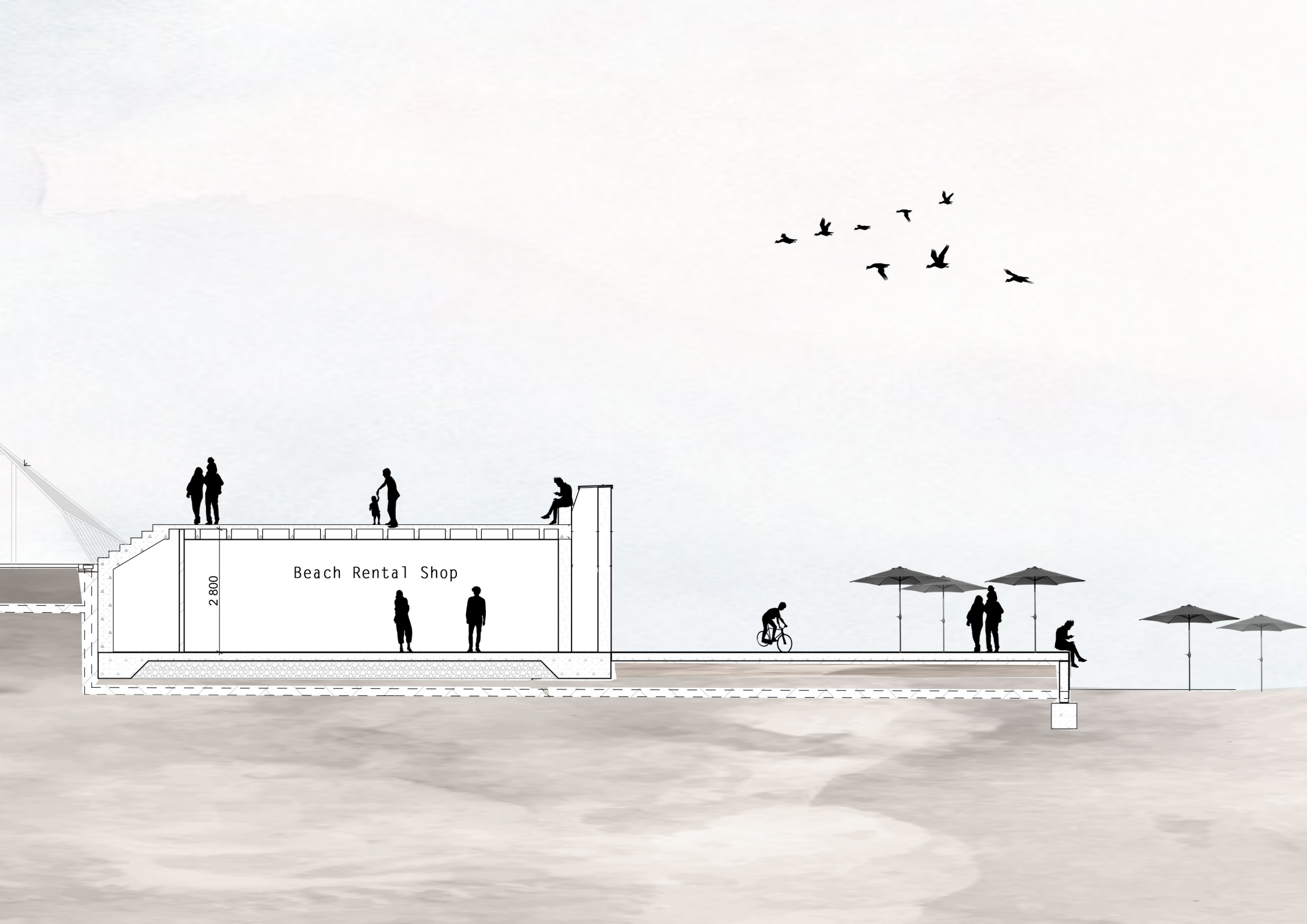


Ground Floor Plan a.

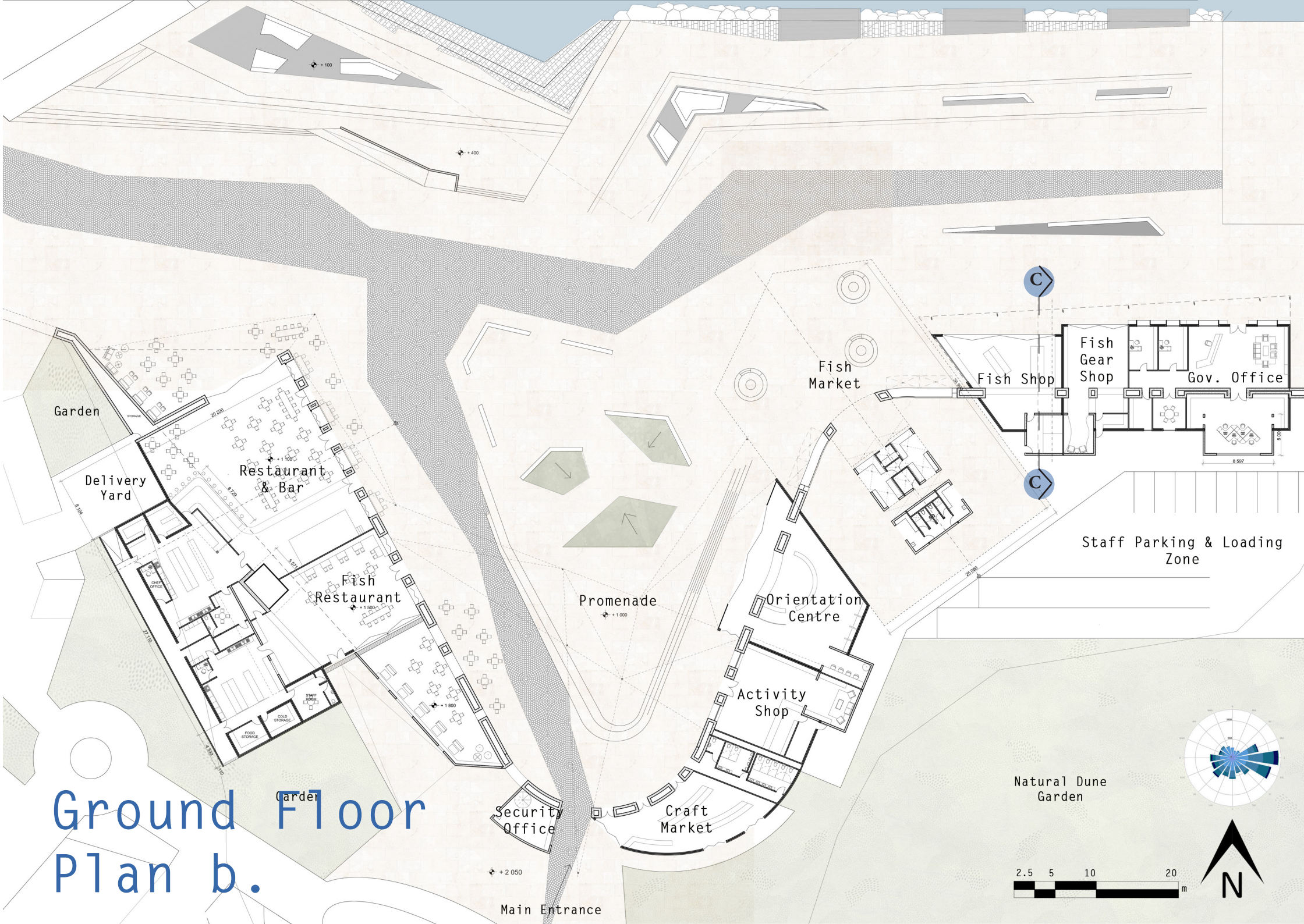


First Floor Plan

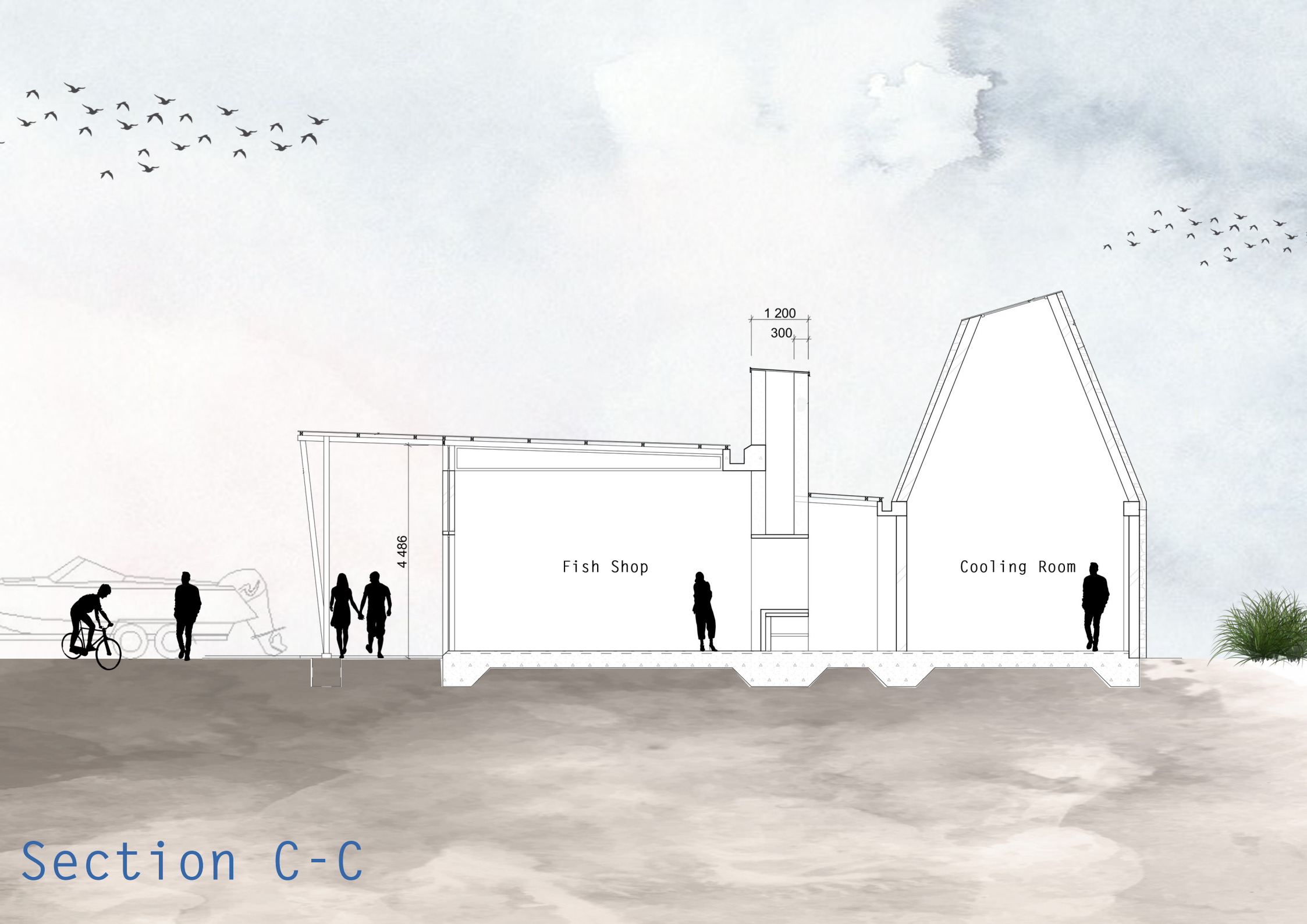
Section A-A


Beach Rental Shop
2 800

Promenade



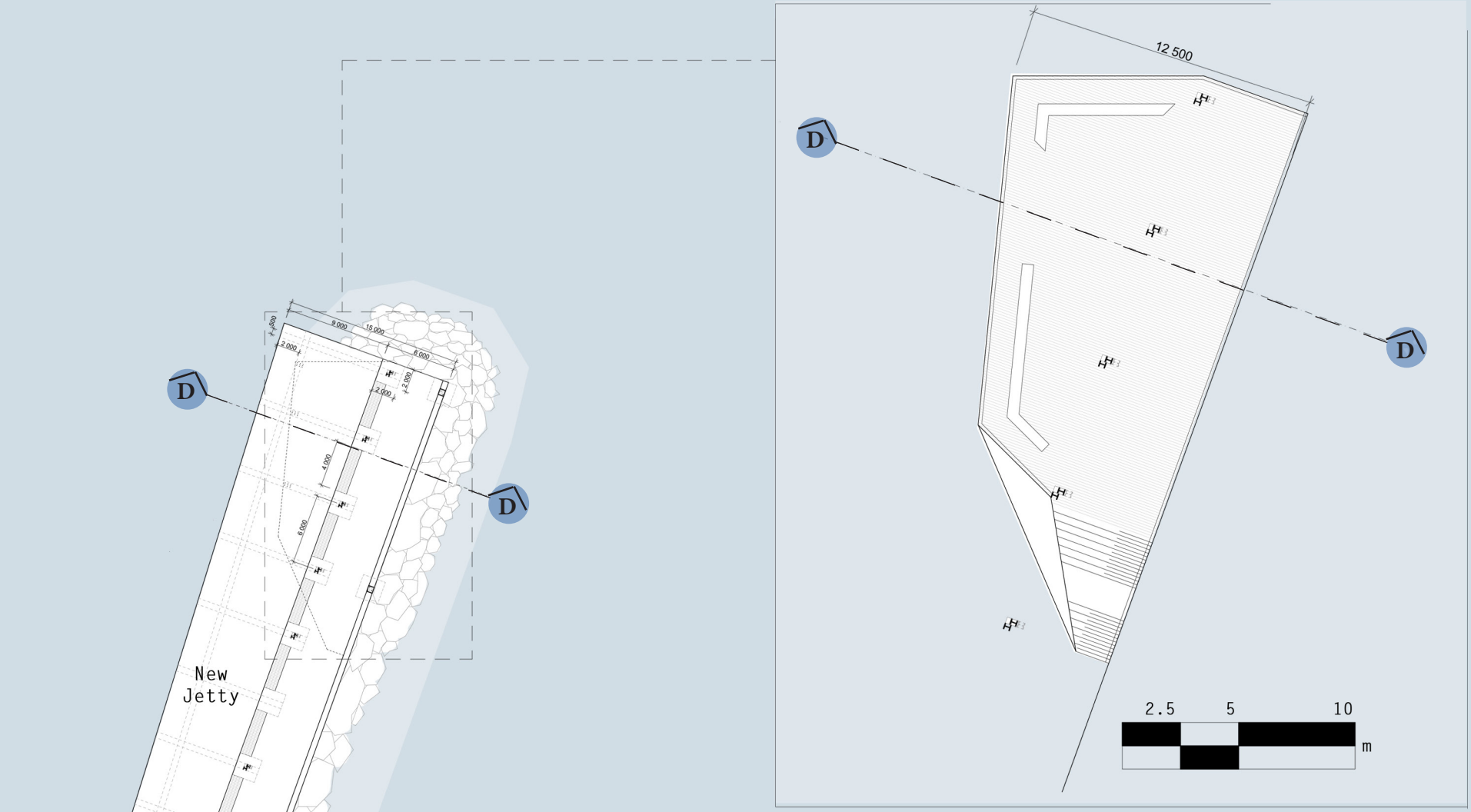
Ground Floor Plan b.

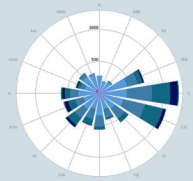


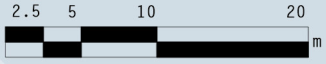
Section C-C

Fish Market

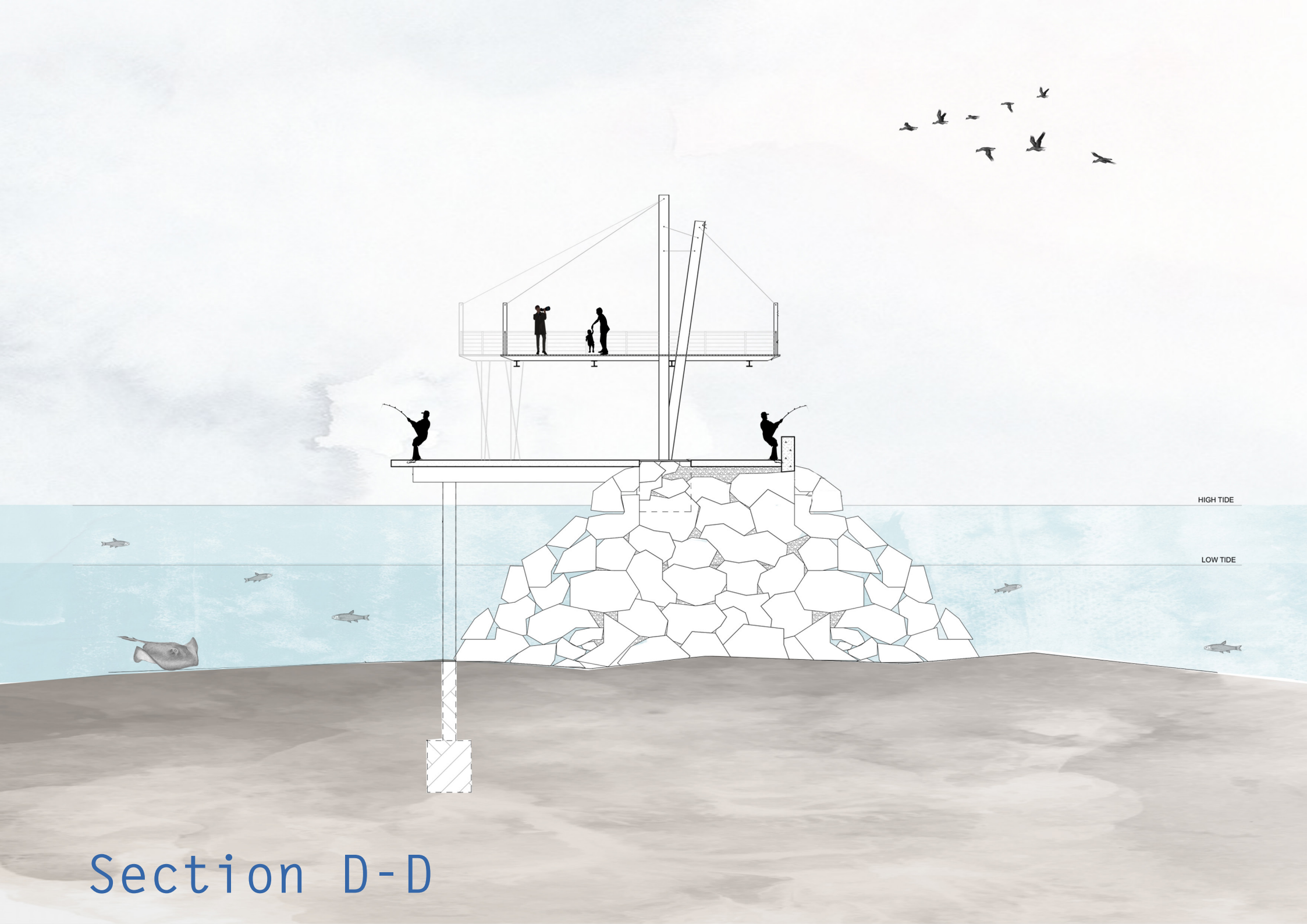
Seafront





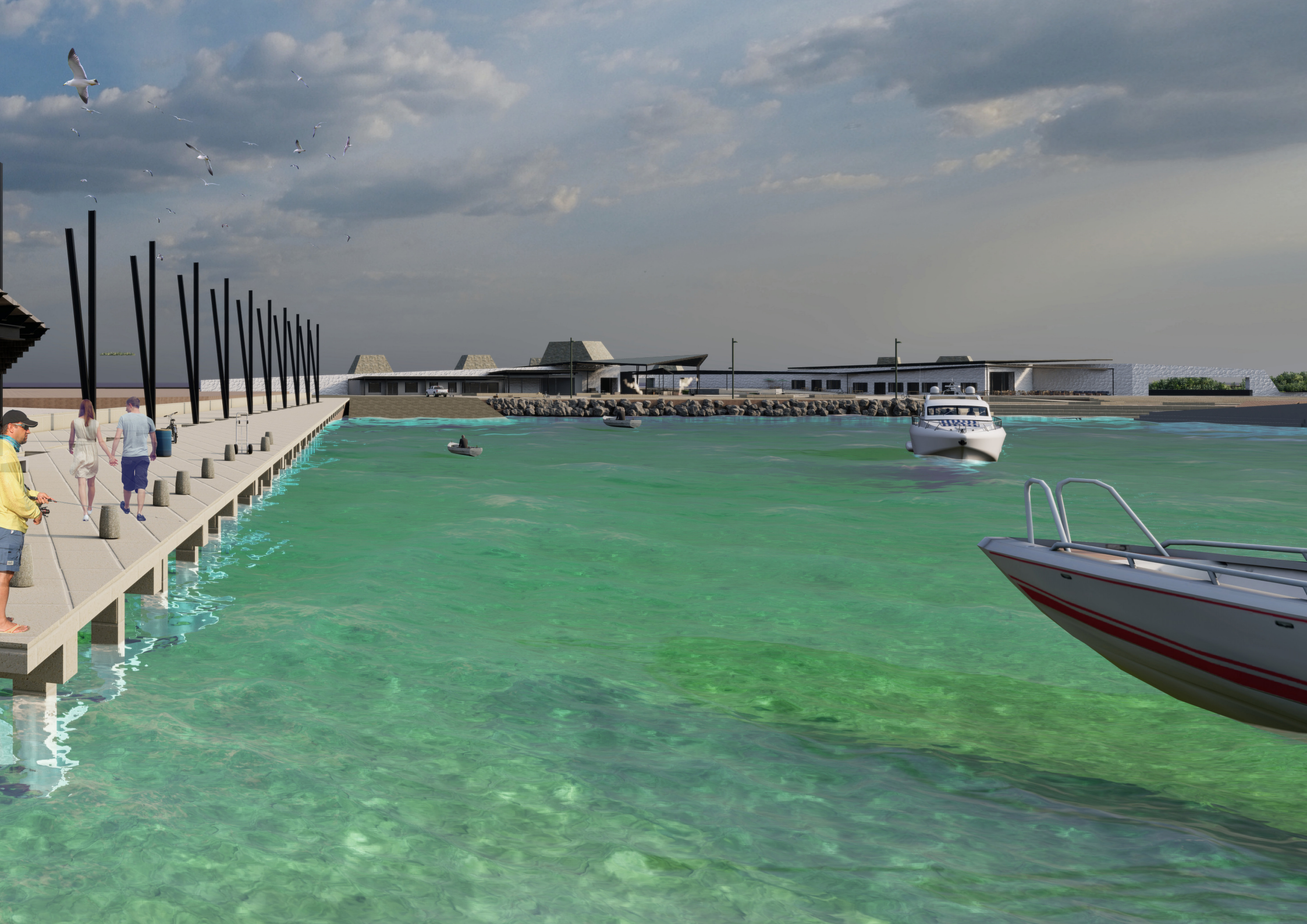


Ground Floor Plan c.



Section D-D

Jetty



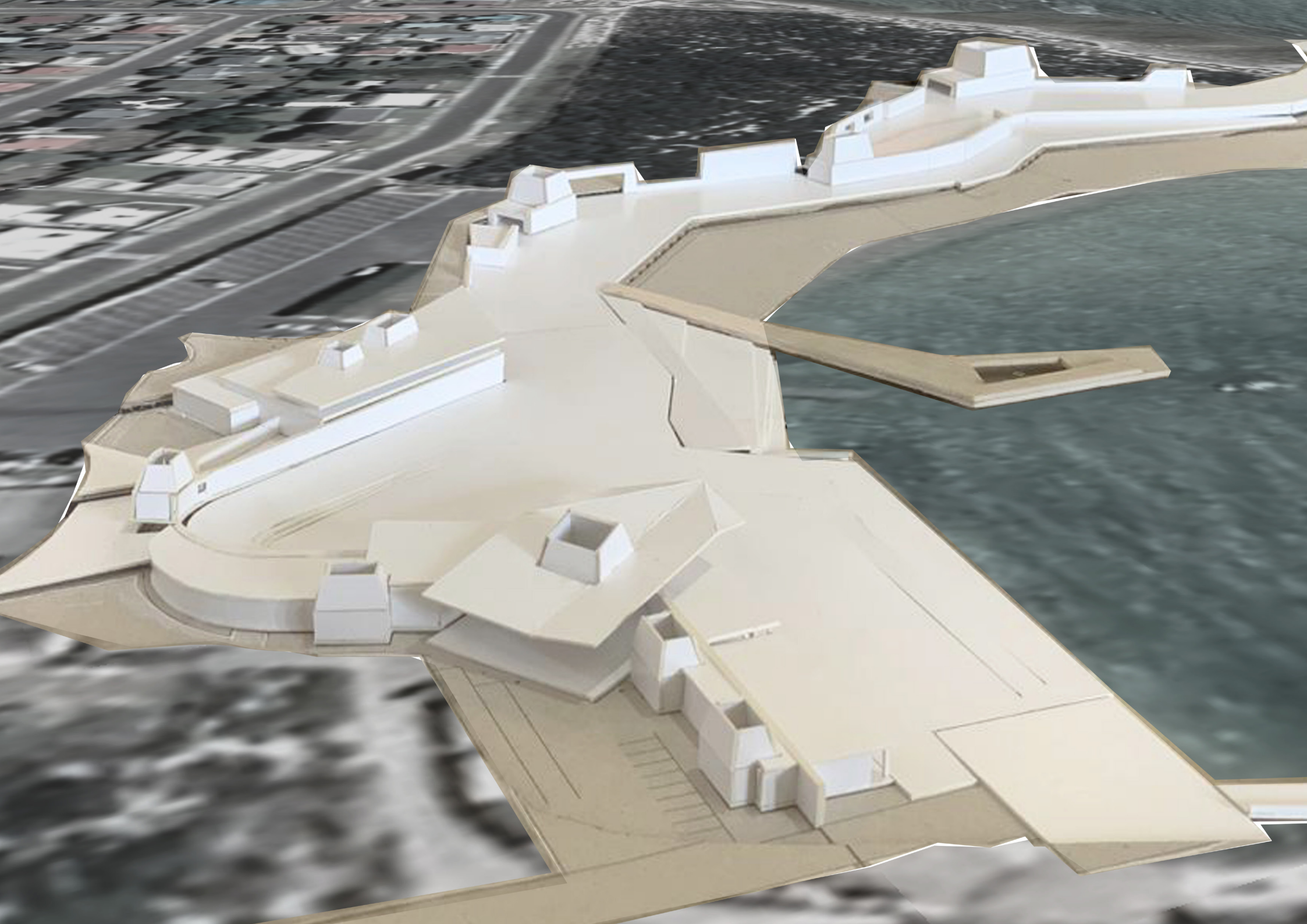
Section B-B


High Tide
Low Tide


Promenade Stalls


Restaurant

Swimming Platform



b. Technical Report

"Everything we design is a response to the specific climate and culture of a particular place"
- Norman Foster

Throughout the dissertation document it is apparent that one must design a space that is suitable to its environment. For a building to be suitable one must investigate, understand, observe, and research solutions that will attempt to generate the correct material usage, construction methods and detailing.

The project is located at the heart of a small coastal town, Struisbaai. Therefore, relevant construction methods and innovative design ideas must be applied to generate a building that is suitable. A suitable design in Struisbaai will include elements like sustainable design, vernacular materials, and community involvement, among other things.

This technical report will analyse the proposed design and will focus on determining whether it is truly a responsibly designed building. The report will analyse the immediate elements affecting the design, for example, the climate. It will also look at what structural systems are proposed in order to respect the complexities of the site that is being designed for.

1. Environment & Micro-Climate

The climate has a significant impact on any architectural development. This proposed intervention site is situated in Climatic Zone 4: Temperate Coastal, which is characterised as having a low diurnal temperature range near the coast, four distinct seasons, mild winters with medium to high humidity, and warm summers with lower humidity and strong winds (Muller, 2015: 106). The site is exposed to harsh natural elements which must be taken into consideration in the design proposal. Struisbaai Harbour also experiences a high incidence of strong winds year-round and, therefore, extra attention was given to structural detailing, for example, the anchoring of roofs. The combination of the harsh climatic elements on-site is the reason why attention was given to creating sheltered spaces, for example, having spaces that can open up but also close when needed.

Some detail was given in the dissertation to accommodate wind breaks, as seen in figure 96. The wind mainly blows in a south-easterly direction. Therefore, the curve design introduced into the proposal is an ideal feature to break the effect of the wind. The datum wall has several openings placed in specific positions to allow for wind to move through the site, as wind flow still remains important to create ventilation for the odours naturally found on-site. The promenade will not, however, be protected from the wind by the Seafront buildings and thus other elements were introduced as windbreaks. A level difference is introduced on the promenade and the balustrade wall and lifeguard tower will act as these wind-breaking elements.

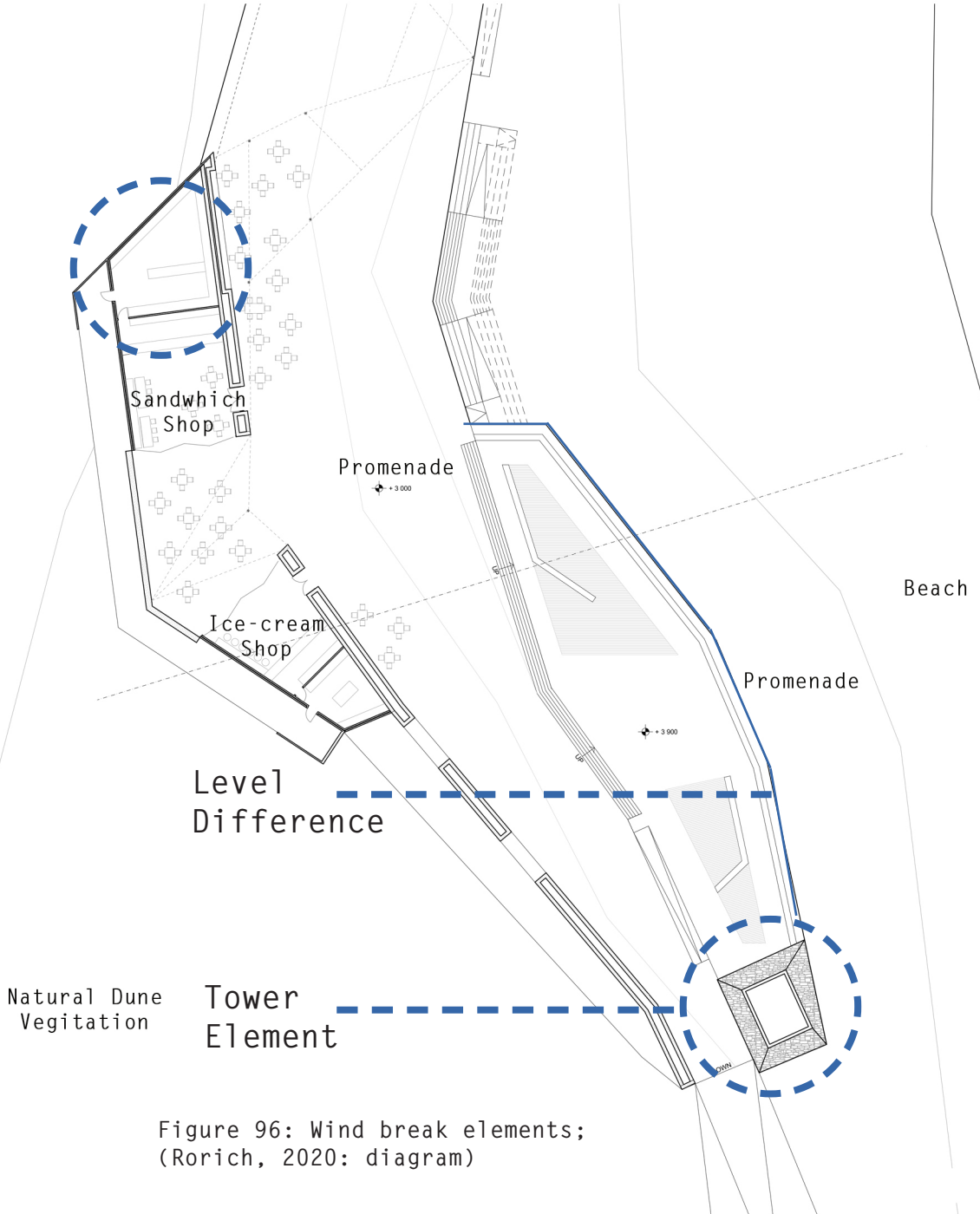


Figure 96: Wind break elements; (Rorich, 2020: diagram)

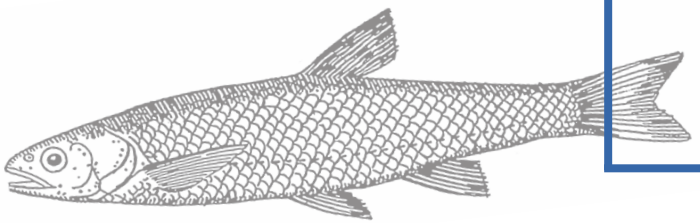
2. User Behaviour and Building Requirements

a. Function

The main function of the proposed dissertation is aimed at accommodating the local fishers and the tourists. I am introducing a fish market as the focal point of this dissertation, onto which I am latching the promenade and other functions, for example, restaurants, swimming facilities, and other. It becomes important in this proposal to constantly bear in mind what the main focus on-site would be.

Fish Market

The fish market's function is multi-purposed: on the one side (the more private side), the functioning is aimed at accommodating large-scale fish cleaning services; and on the other side, it is aimed at selling the fish to tourists and educating them about the cleaning process.

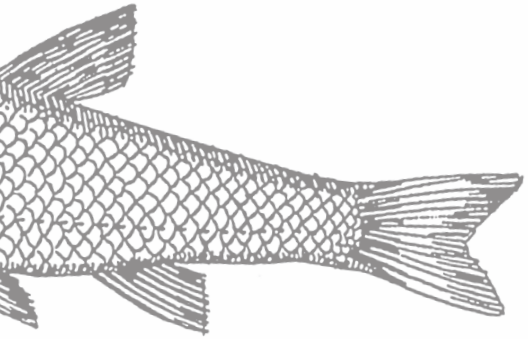


Jetty

The function of the jetty is multi-purposed, as the viewing deck is mainly aimed at attracting tourists to the end of the jetty, whereas the jetty itself is aimed at accommodating shore fishing by the locals and the tourists.

Seafront

The seafront buildings' main function is to accommodate tourist elements that are somehow connected to the fish market, whether it is fish supplied by the fish market, or a fishing gear shop. The seafront almost becomes the hearth of the project where most activities will occur.



Promenade

The promenade is focused at accommodating all leisure- and beach-related activities. The promenade will mainly be used by tourists. The promenade will have the requisite facilities, like ablutions and lifeguard facilities, as well as small restaurants, etc. The promenade is also the element that stiches the whole site together.

b. Building Requirements

The proposed intervention will be classified under the A1, G1 and B3 category of the SANS 10400. The A1 occupancy category is for 'Entertainment and Public Assembly': this is for people who gather to eat, drink, dance and participate in other recreational activities. The B3 occupancy category is for 'Low Risk Commercial Services': this caters for occupancy by a commercial enterprise where a non-industrial process is carried out and where neither the material handled nor the process itself falls into the high or moderate risk category. G1 occupancy is for 'Office Spaces'.

The restaurants, promenade, swimming platform, orientation centre, jetty and viewing deck all fall under the A1 classification. The Governmental Fisheries Office and Lifeguard Office fall under the G1 category. The B1 category hosts the beach rental shop, activity shop as well as the fish and fishing gear shop. All these categories have elements and restrictions that must be catered for and close consideration was given to these restrictions and guidelines in the proposed intervention.

3. Site Planning and Landscape Detailing

a. Site Development

The site consists of a combination of buildings and the promenade element that connects all the elements. A curved wall element was introduced and is seen as an orientation element, while creating the opportunity for the buildings themselves to be orientated towards the ocean and the views. The main entrance is on the south side of the site, and as one moves through the slipform stone wall element and the promenade, the ocean is revealed to you. You will immediately find yourself on the promenade and you can either go left or right, as the promenade acts as the circulatory element together with the slipform stone datum wall. The site also progresses from the ocean through different levels and thresholds as seen in figure 97.

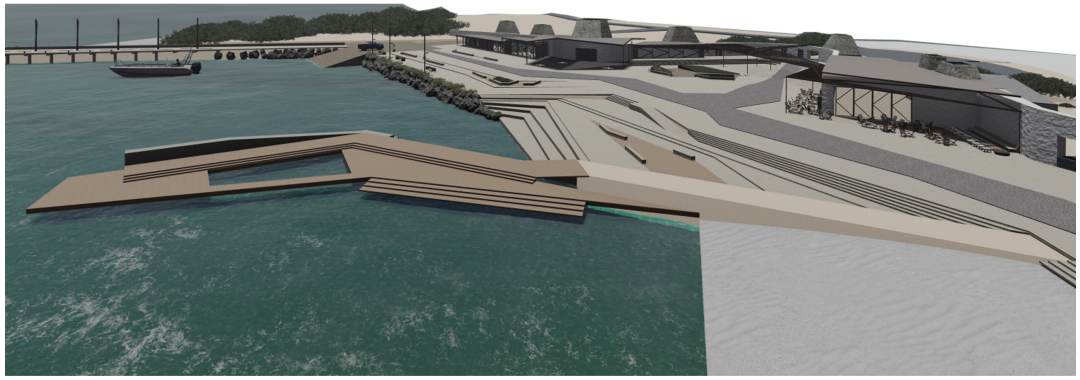


Figure 97: Thresholds;(Rorich, 2020: 3D Render)

b. Landscape Detailing

The main landscape detailing element is the promenade. The promenade is a combination of urban furniture, level differences, thresholds, and textures, all of which contribute to the overall site experience. Special attention was given to pavement textures, for example, the use of pebble stone and cobble stone. The datum wall also becomes an interactive element where it changes shape from seating to an arch defining the entrance. Some landscape detailing was introduced at the centre of the promenade to create an interactive platform as seen in figure 98.

Figure 98: Urban Landscaping;(Rorich, 2020: 3D Render)

4. Circulation

a. Horizontal

The site is a large stretched out site along the whole harbour. Therefore, horizontal circulation becomes one of the most important elements to address to facilitate circulation throughout the site for the numerous users. Many horizontal elements are introduced on the site, for example, different roof structures, the datum wall, and the roofs are used as shading devices seen in figure 99.

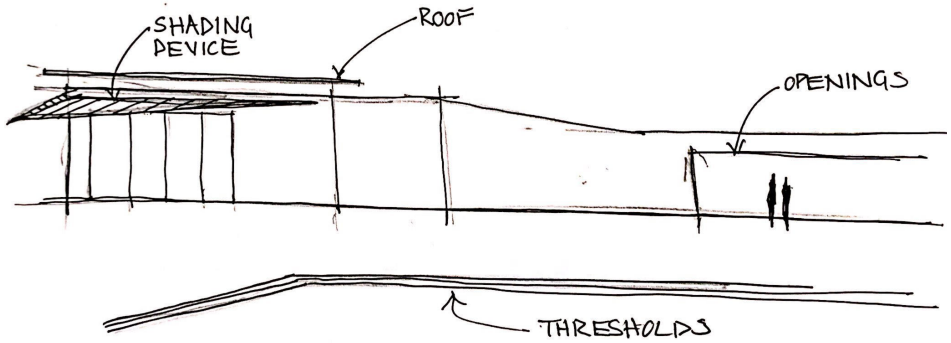


Figure 99: Horizontal Circulation;
(Rorich, 2020: own drawing)

b. Vertical

Vertical orientation is mostly visible on the promenade element where several thresholds have been introduced, as well as a whole level difference, seen in figure 100. The level difference has allowed for several interesting ramps and stairs to be designed, which connect the top promenade to the bottom promenade. Other vertical elements are the towers throughout the site that become a beacon in the landscape and a point of hierarchy.

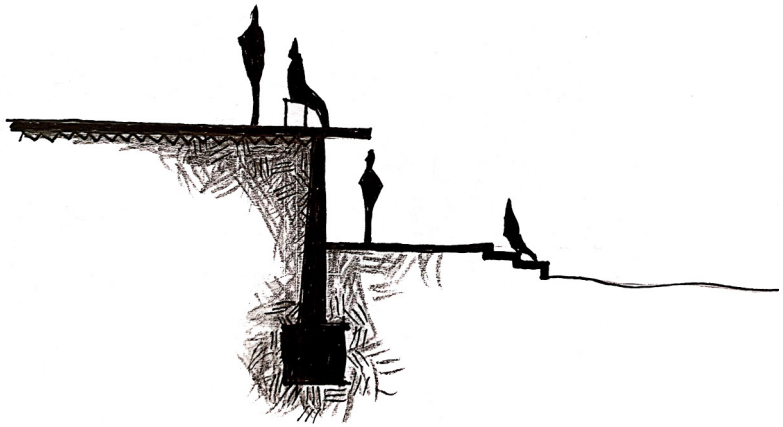


Figure 100: Vertical Circulation;
(Rorich, 2020: own drawing)

5. Design Detailing

This intervention is predominantly influenced by the vernacular architecture of the area and many of the design details are a new take on existing elements of the vernacular. The new proposed slipform stone wall that is visible throughout the site, resembles the vernacular thick whitewashed walls. The chimney elements are yet again another play on the vernacular and become a form of hierarchy throughout the site. The openings are mainly designed to resemble the vernacular approach on openings. The focus of the design was to connect all the elements on the site and, therefore, the promenade became an important detailing element, the element that stitches everything together.

6. Structural System

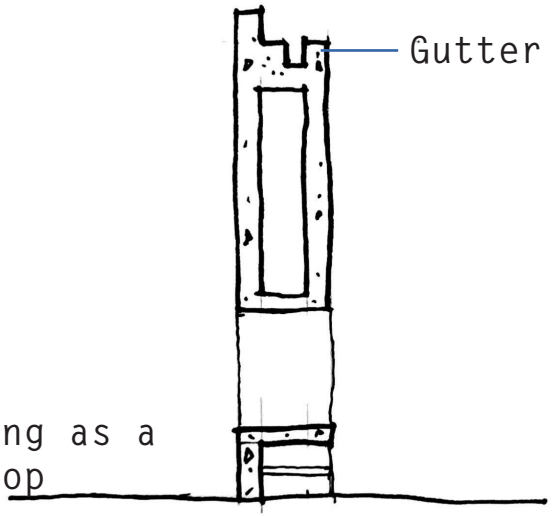
The main structural system in this intervention is a combination between load-bearing, heavy structures and lighter tectonic structures. The load-bearing structures are the wall, tower and promenade elements, whereas the lighter tectonic structures are the roof elements and shading devices introduced into the scheme.

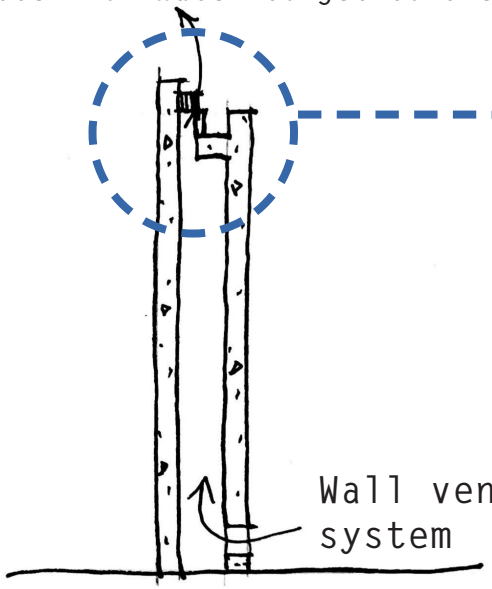
The Datum Wall

This slipform stone wall, discussed in Chapter 2.4 (a), acts as a datum wall throughout the site and is one of its most recognizable features. Besides its physical appearance it is also functional. The wall is designed to fulfil certain functions where they are needed: in some places it acts as a countertop, in other places it becomes a bench and in one instant it even provides storage space.

The wall will also provide for a natural ventilation system for the interior spaces. Ventilation ducts will be placed into the base of the wall and is connected to a wind turbine at the top, creating suction and circulating fresh air through the interior space.

Other services will also be positioned in the wall for example electrical reticulation, so the wall will also act as a service duct housing such services as electrical wiring. Another important feature of the wall is to act as a water harvesting system, where the wall acts as a gutter for water to get to the water storage system.





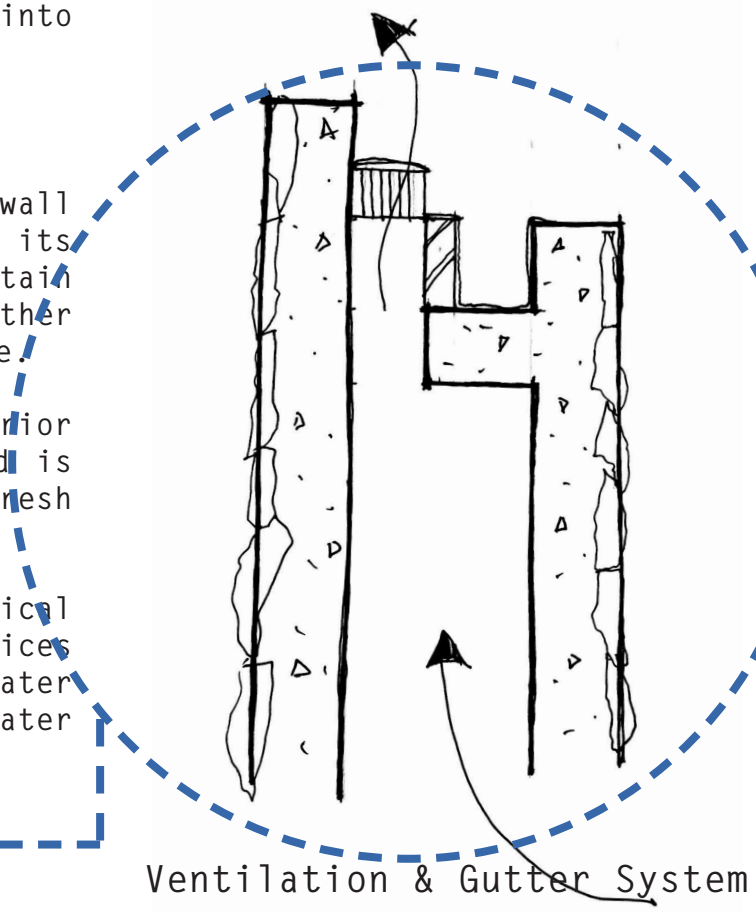


Figure 101: Datum wall functioning;
(Rorich, 2020: own drawing)

The Tower Element

The towers will be constructed from locally sourced limestone. The biggest technical challenge with these elements are the size, height and shape of the towers. Therefore, a in-situ concrete framed structure with limestone infill is proposed.

Another technical challenge is waterproofing the skylight. A double framed system is proposed as shown in figure 103.

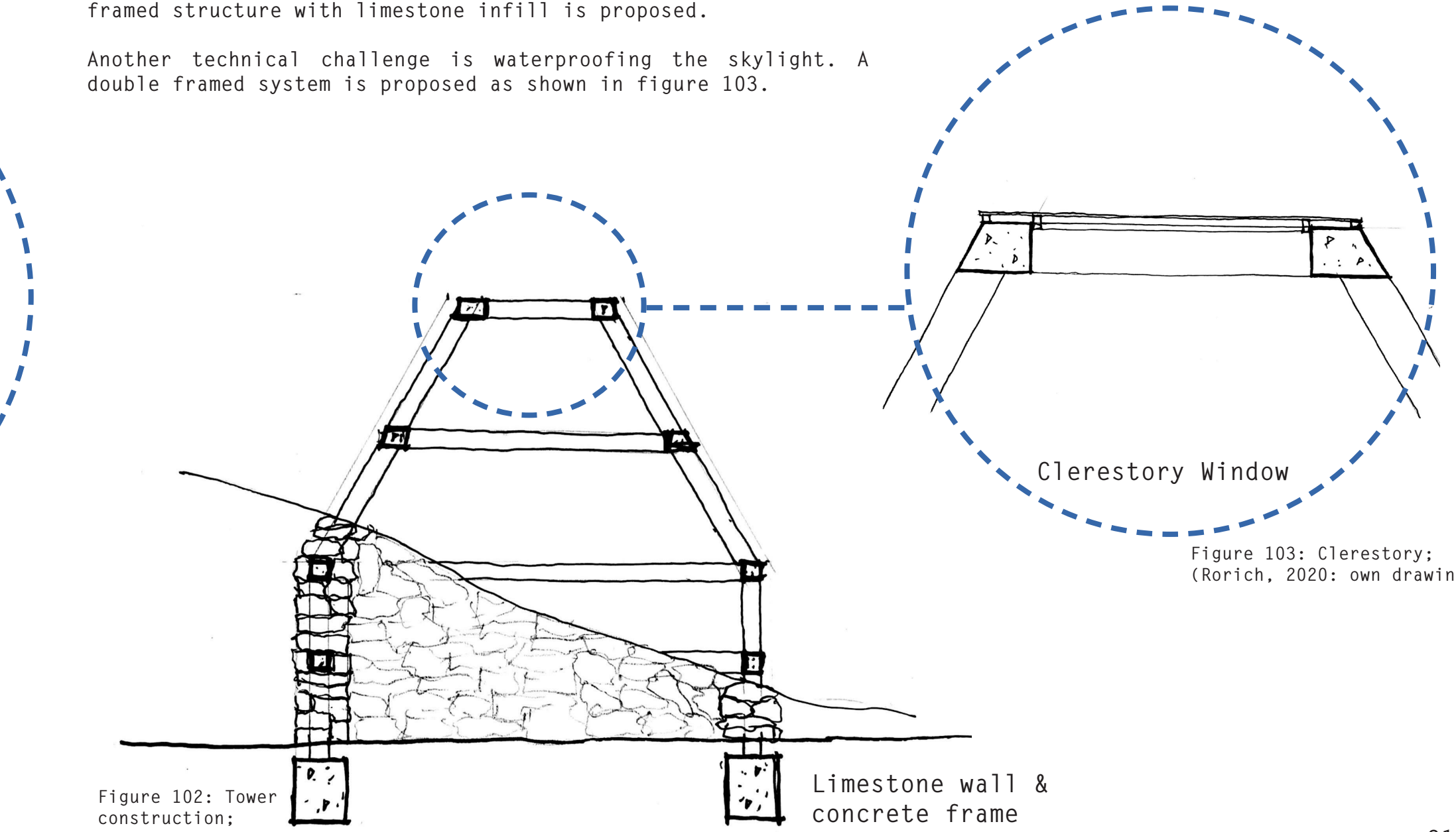


Figure 103: Clerestory;
(Rorich, 2020: own drawing)

Figure 102: Tower construction;
(Rorich, 2020: own drawing)

Viewing Deck Primary Structure

The existing jetty is constructed of a dry stack pioneer layer, almost like an island. Creating the challenge of ensuring that this will be structurally stable enough to support the viewing deck. It is proposed to cast 2x2m concrete blocks into the edge of the pioneer layer at 6m apart. The primary steel stantions will cast into that base which will form the primary support of the viewing deck.

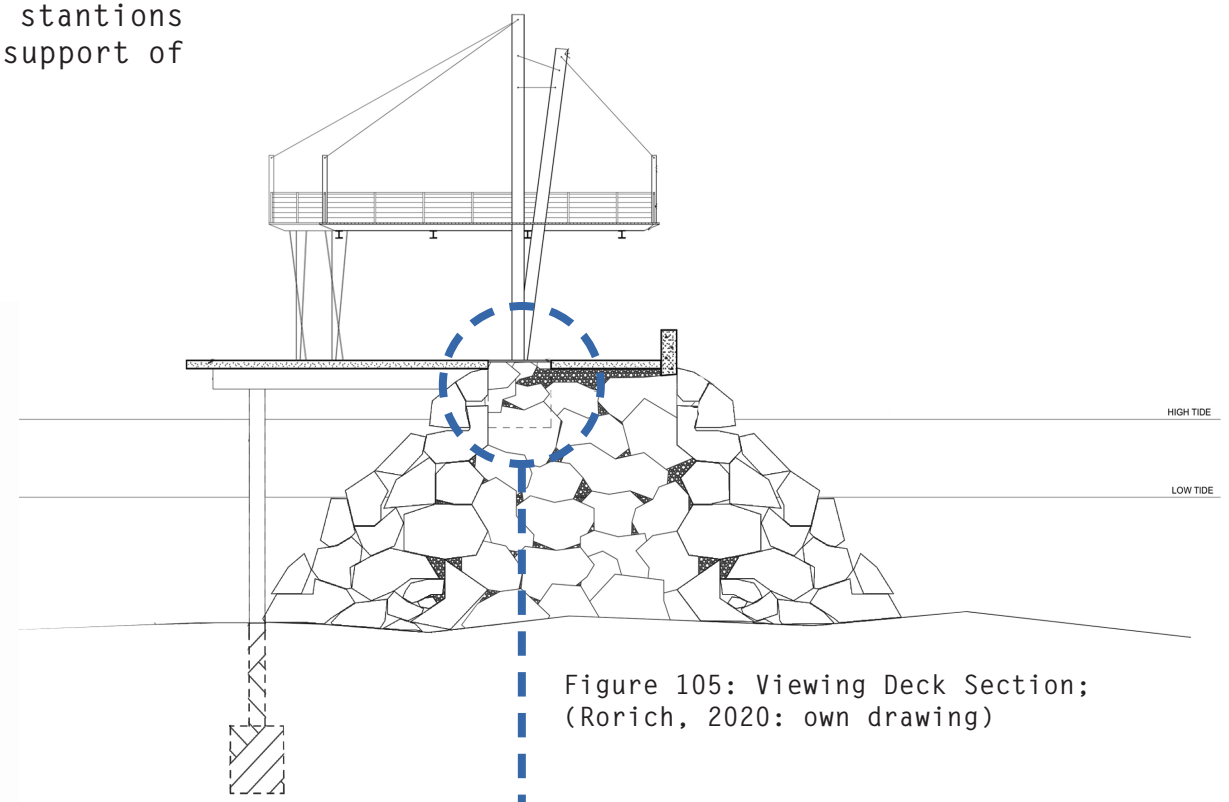


Figure 105: Viewing Deck Section;
(Rorich, 2020: own drawing)

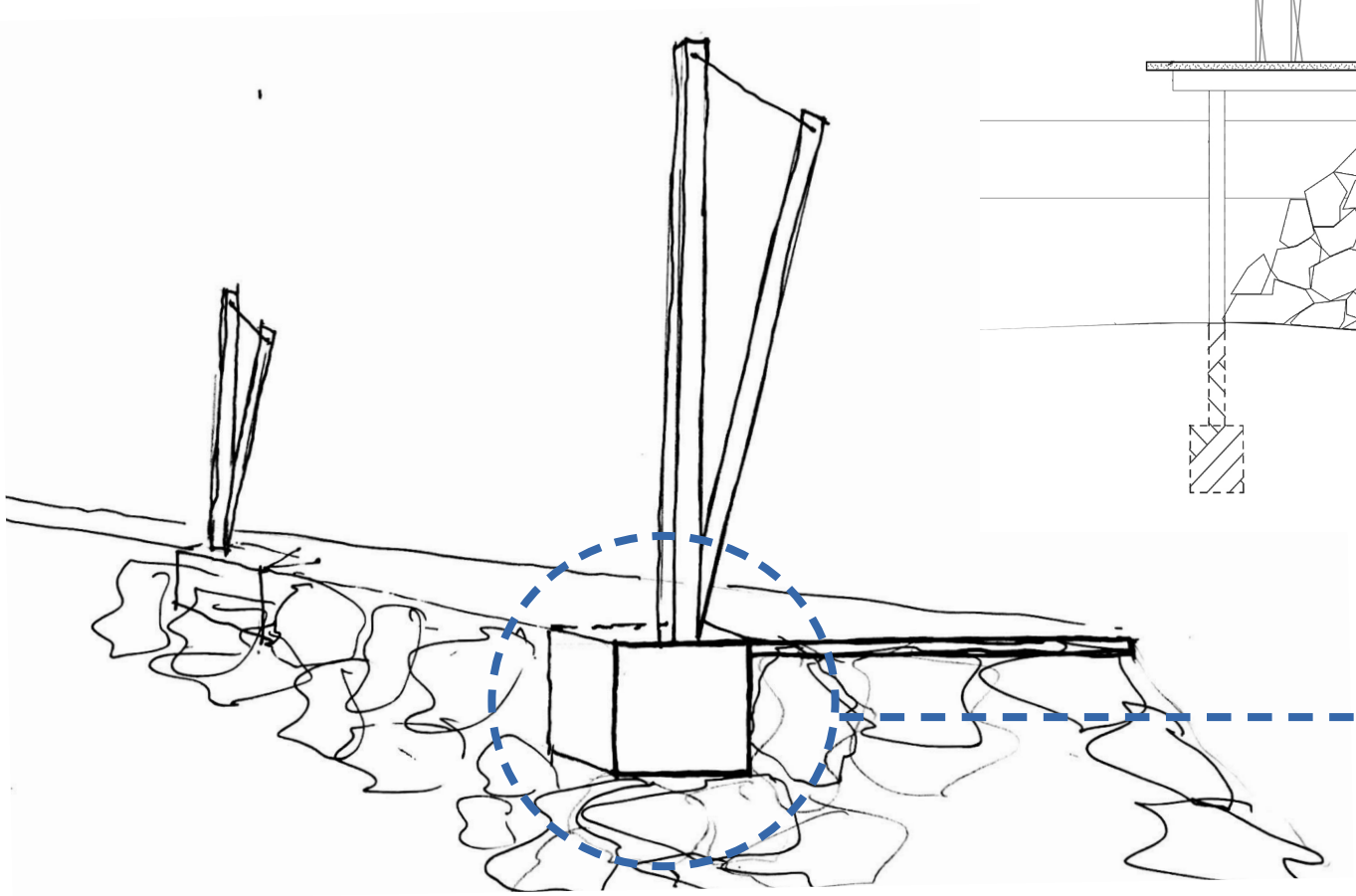


Figure 104: 2x2m Concrete block;(Rorich, 2020: own drawing)

Swimming Platform

The swimming platform will be mainly constructed from timber elements attached to an anchoring wall secured in the ocean bed and also to the promenade on land. The design of this platform plays with level differences, stairs and other forms that will allow users access to the water.

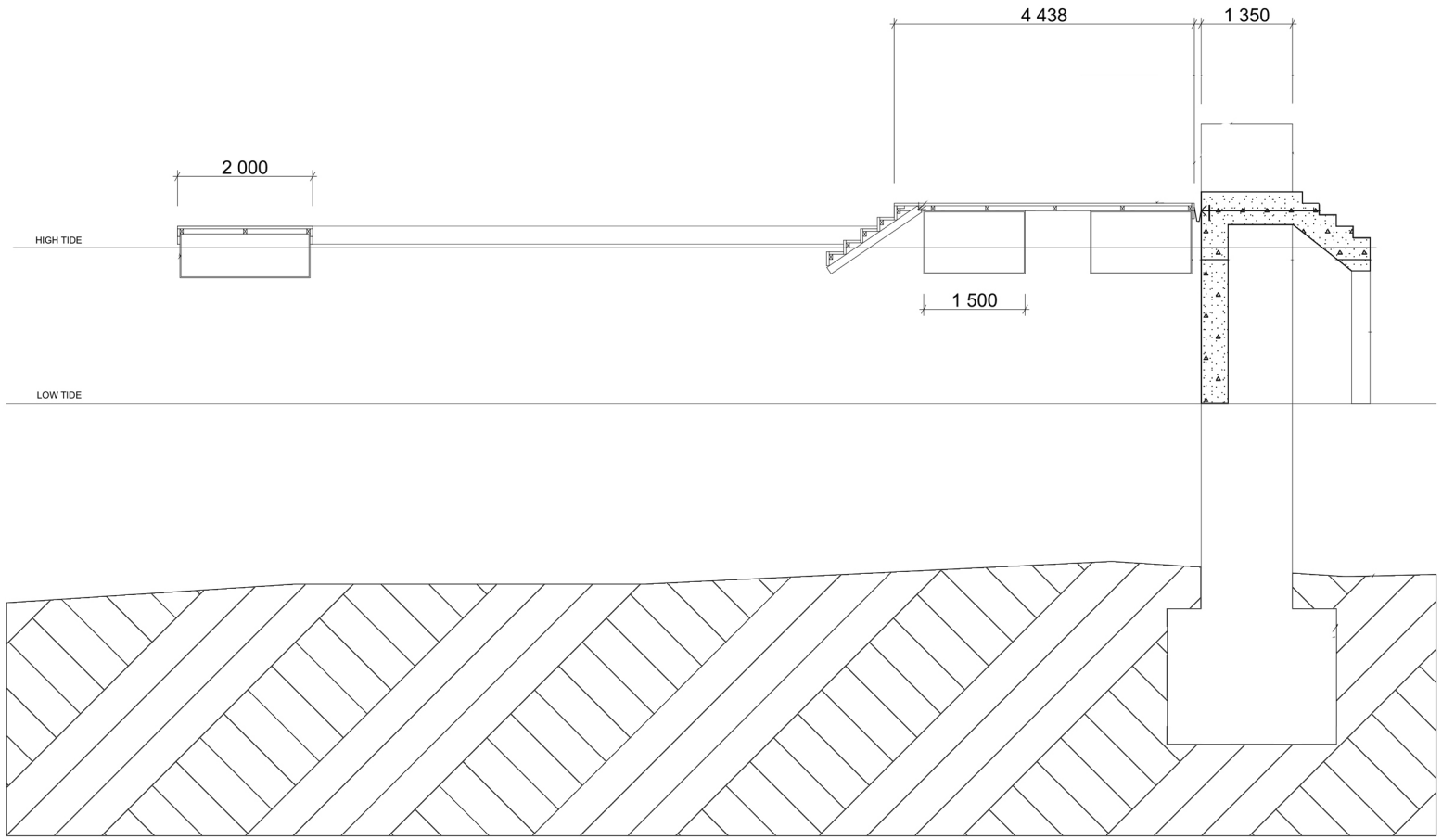


Figure 106: 2Swimming platform section;(Rorich, 2020: own drawing)

Promenade Level Difference

There are distinct level differences to the promenade which serve specific functions. The top part allows for relaxed strolling and pedestrian flow whereas the bottom part focuses on beach and water activities. The dressing rooms, lockers and lifeguard office are placed below the top promenade section. Rampsa and thresholds are introduced to ensure connection between the top and bottom part of the promenade as well as to the beach. Storm water drainage is important and therefore a drainage system is incorporated into the design, this system is illustrated in figure 107.

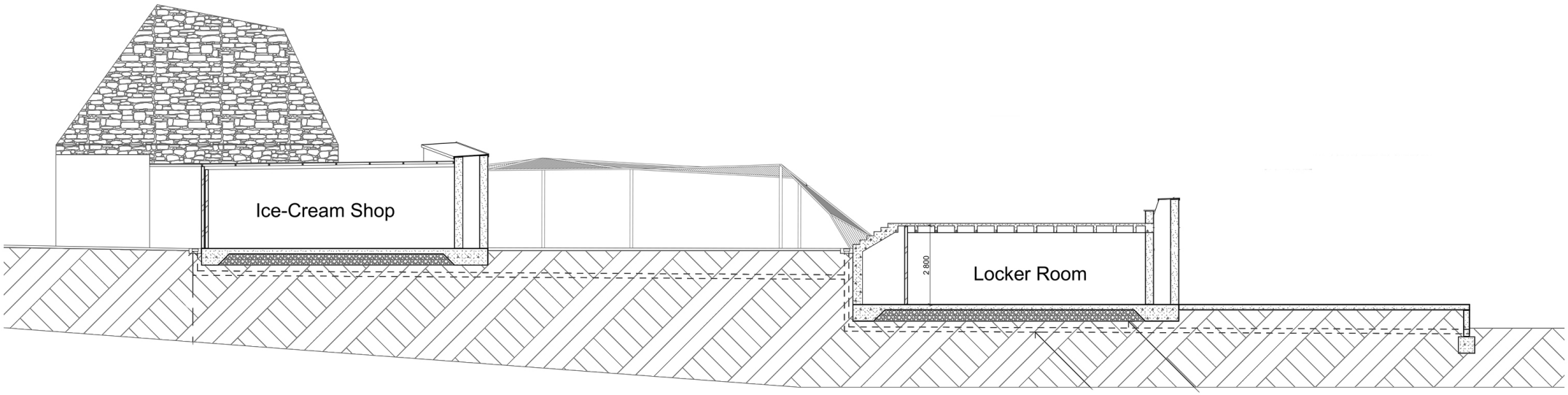


Figure 107: Promenade Section;(Rorich, 2020: own drawing)

a. Limestone

A unique form of limestone is found in the area stretching from Gansbaai to Riversdale. This limestone type is a relatively new/young limestone in geological terms, and is only a few million years old (Heydenrych, 1994: 69-72). The formation of the limestone held much importance to the fynbos in that area and created an evolution of the fynbos vegetation (ibid.). Because of its uniqueness to the Overberg area, I believe that using this material in the proposed intervention could add meaning to the design.

Limestone was used in many places and buildings in Struisbaai and Agulhas. One of the most prominent buildings was the Lighthouse, which has recently been restored to its original state and therefore the limestone has been removed. It remains an important material and will definitely be featured in this design proposal.

The limestone will be used to construct the tower elements of my buildings. This material will create a textured tower element with colours that blend in with the natural environment. Another place that will make use of the limestone is the promenade platform, where the larger areas will be paved with limestone. I believe that using limestone as a paving element will contribute to the promenade resembling the natural area around the sites, the dunes and fynbos.

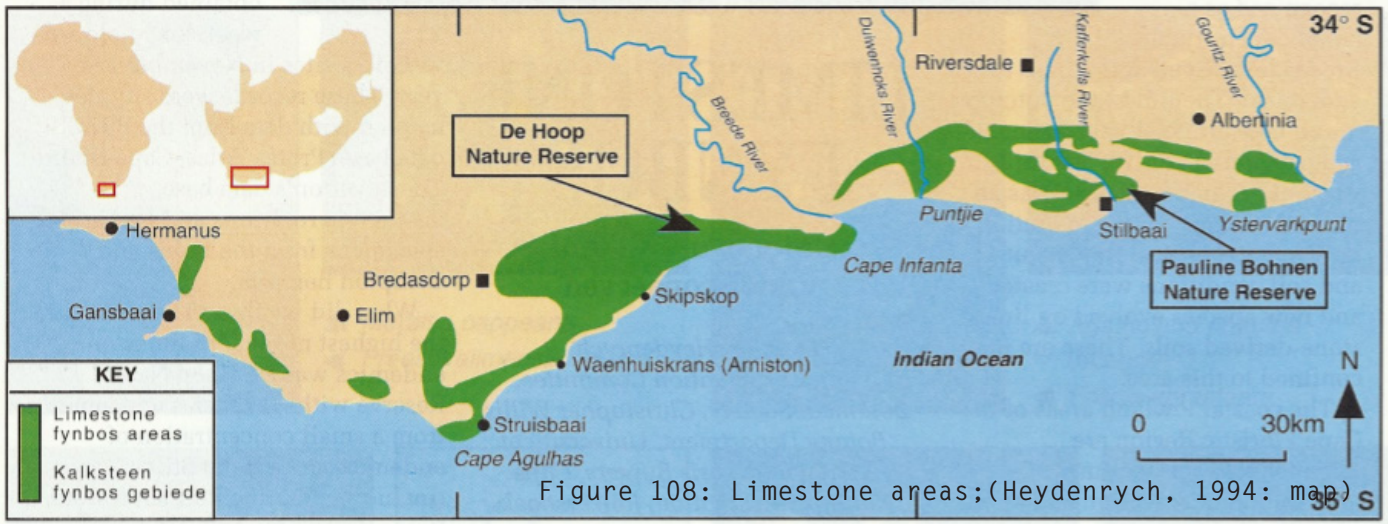


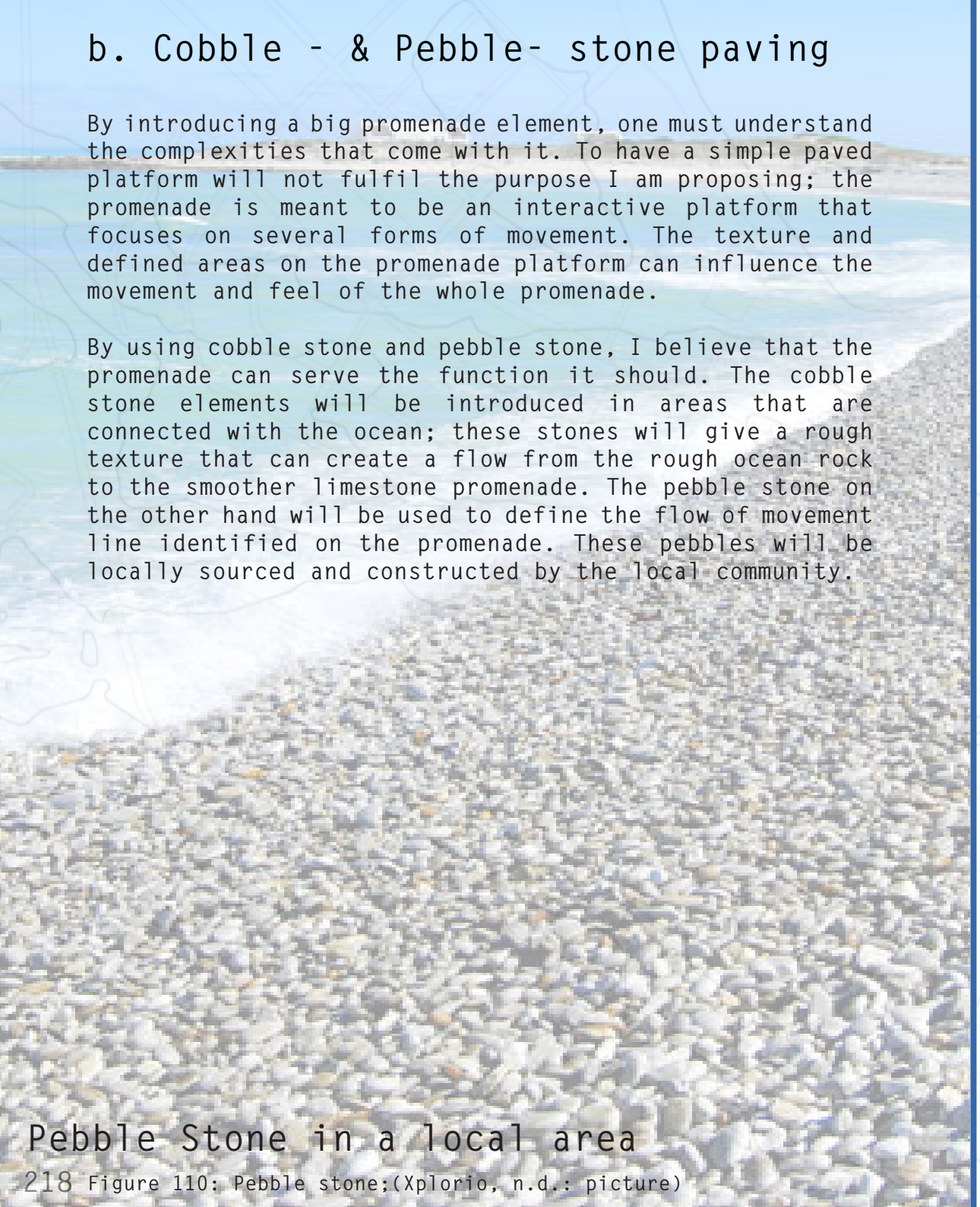
Figure 108: Limestone areas;(Heydenrych, 1994: map)


Figure 109: Limestone;(Heydenrych, 1994: picture)

b. Cobble - & Pebble- stone paving

By introducing a big promenade element, one must understand the complexities that come with it. To have a simple paved platform will not fulfil the purpose I am proposing; the promenade is meant to be an interactive platform that focuses on several forms of movement. The texture and defined areas on the promenade platform can influence the movement and feel of the whole promenade.

By using cobble stone and pebble stone, I believe that the promenade can serve the function it should. The cobble stone elements will be introduced in areas that are connected with the ocean; these stones will give a rough texture that can create a flow from the rough ocean rock to the smoother limestone promenade. The pebble stone on the other hand will be used to define the flow of movement line identified on the promenade. These pebbles will be locally sourced and constructed by the local community.



Pebble Stone in a local area

 Figure 110: Pebble stone;(Xplorio, n.d.: picture)

Conclusion

At the end of the day as architects we must ensure that the building is suitable to its environment. By respecting and learning from the vernacular the building becomes a true replication of the area. The intervention accommodates for all the complex climatic conditions this is done through implementing sensitive design elements.

C. Reflection

The architectural thesis year is a year that all students dream about but also fear. It's a year that you never believe you will achieve and to be honest I cannot believe its finally coming to an end. Not to say that I have actually put out a whole thesis project, wow.

The year turned out very different than everyone pictured it to be, with the whole pandemic situation. Having to return home was more challenging than I thought it would've been. I guess I never wanted to accept that this pandemic and lockdown situation will become a part of our lives. Working from home, with no exposure to my classmates and little contact with lecturers was a challenging task but I believe that at the end of the day it had a positive contribution to us all as designers. I am proud of the fact that I completed this thesis without all the other face to face contact perks that previous students had.

Throughout the year there were four key stages of the design process that I went through:

Stage 1: Concept & Project Underpinning

Initially, I knew that I wanted to work in Struisbaai but in this stage, the importance of a project like this was explored and from there on applicable concepts were formed to identify the core problem and to create a conceptual solution for the problem identified. This stage was all about creating a project that will contribute to the whole community of Struisbaai.

Stage 2: Deeper Research & Understanding

Once the project outlines and aims were identified I started to go into a deeper investigation to place myself at the insider perspective of the community and to be able to understand what must be the core focus of the project. And that clearly became to be the Fishmarket. In this stage, research was done on the community and a possible architectural solution by looking at precedents. The theoretical concept started to play a pivotal role in the design development.

Stage 3: Looking at what will be appropriate

In this stage, I started to investigate what form of architecture and materials will be appropriate to implement in this project. I looked at vernacular architecture and explored how to interpret it in a new way. I also looked at the locally found materials and incorporated that into the design proposal.

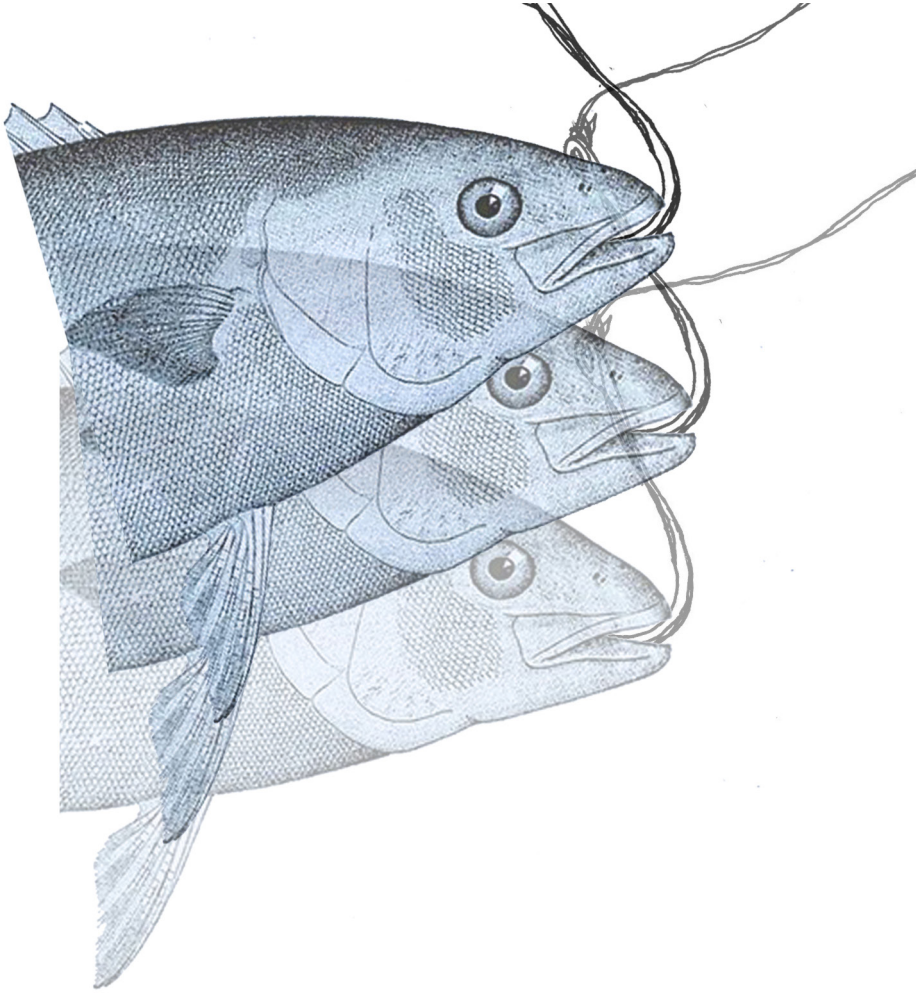
Stage 4: The Final Result

After all the research and investigations into creating an appropriate design and a design program that will benefit the whole community of Struisbaai. I was able to design the final proposal that responds to all the aspects explored.

To critically analyse my own project is challenging. I am very proud of how the project turned out. Looking back at all my development I believe that the design process that I went through took several turns that lead to a successful outcome. This project responds to the needs of the local fishers on-site as well as the tourists. Through implementing aspects of the vernacular, the project will form part of the local community. The most challenging aspect of this design was to bind the whole site together and to create a uniform language. The promenade element and the wall acting as a datum connects the whole site. One aspect that might still need more attention is the direct approach to handling the wind on site. Another element that is a challenging aspect is the parking, the need for parking is important and therefore I quickly looked at a way to introduce parking that doesn't look like 'Checkers parking' but that becomes an urban park when not being used.

This year has had its ups and downs, but I cannot wait to present my final presentation and to look back at what I have achieved. This thesis has taught me a lot about creating architecture for the people because without people we wouldn't need architecture. I believe that this project has equipped me with new skills based on construction, understanding the context or even designing buildings on the coast. I am very excited to start my career as an architect especially because of what I have achieved in this dissertation year.

Struisbaai Holidays



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C. Appendix A [Arina Wagener Interview, Commercial Fisher]

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Fish Market and Tourist Hub at Struisbaai Harbour

M.Arch (Prof) Student Dissertation Project form the University of the Free State

1. What is your role/involvement within the Struisbaai fishing industry?
   Ek is kommersiele visserman vir 32 jaar. Is vanaf 2005 woonagtig in Struisbaai en vang net hier vir.

2. How would you describe the current fishing activities in Struisbaai? Is it up and running or is it slow?
   Dit is nou baie stadig. Ons Geelstert seisoen is gewoonlik vanaf so Desember tot Februarie Maart. Beste tyd gewoonlik Februarie. Laaste seisoen was baie swak ons water is koud en die vis wou nie byt nie. Hulle het ook die 45 myl bank en die Alphreds banke toegemaak.
   As die geelstert seisoen klaar is vang ons gewoonlik silvervis.
   Winterseisoen wanneer daar bittermin see toe gaan weer is, is gewoonlik tussen Julie tot Oktober.

3. How would you describe the infrastructure of Struisbaai harbour? Does it provide good enough services for the activities happening on site? And would you have any suggestions on how to better the conditions of the harbour?
   Daar is gladnie dienste nie. Die waterpype is toegemaak so daar kan gladnie eers water getap word nie. Die groot freezer wat hulle daar neergesit het seker al 5 jaar gelede is seer vir die oog en nog nooit gebruik nie. Daar is ook geen vistafels vir mense om vis op skoon te maak nie.

4. Do you perhaps have a rough estimate of the fish amount caught daily, monthly, or yearly?
   In seisoentyd as Geelstert volop is word daar baie tonne vis gevang.
   Op die oomblik word daar seker as hulle kan see toe gaan gemiddeld so 100 – 200kg op bote wat naby gaan. My man met die ski-boot wat verder kan gaan en silwervis kan gaan vang het laasweek so 600kg silvers gevang.

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5. Is there conflict between the fishing industry and the tourists? For example, does the tourist activities on the site influence the fishing success at the end of the day?
   Hier is baie bote en mense oor Desember vakansies wat dit bietjie moeilik maak vir die kommersiels. Hulle werk maar om dit gee bietjie van bakleiery af soggens op die hawe, want dan is daar omtrent so 200 bote wat wil see toe gaan. Die kommersiels kan nie insien wat doen die naweek mense 3uur in die oggend op die hawe.
   Op die hawe as ons aflaai na die dag is dit nie probleem nie hulle het net baie vrae wat ons maar beantwoord,

6. I am proposing a Fish Market on the site that would hopefully uplift the fishing community and that would bring more economic benefits to the town, I would just like to know if you believe that an element like this would be contributing to the fishing industry and the local community? [For me to propose a fish market I must be able to justify that the amount of fish caught is enough to sustain an element like this]
   Die Vis mark sal net sekere tye van die jaar kan werk want die vis is nie elke dag daar nie. Wintertyd is ons dorp baie stil deur die week.

Hoop dit sal help vra maar as daar nog vrae is.

Groete
Arina

[Brendon Smith, Senior Conservation Inspector of Struisbaai Harbour]

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Fish Market and Tourist Hub at Struisbaai Harbour

M.Arch (Prof) Student Dissertation Project form the University of the Free State

1. What is your role/involvement within the Struisbaai fishing industry?
   My rol in die hawe is, ek is 'n senior mariene bewaring inspekteur. Werksaam by die Departement van Omgewingparke, Bosbou en See visserye. Ek kyk na twee verskillende lyn seksies. Die een is die kommersieele bote. Ek kyk na al die vis se mates. Kommersieele bote mag vang soveel soos hulle kan. Ek kyk ook of hulle 'n wettige visvang permit het van ons Dept. Hulle moet ook 'n wettige vissersboot lisesnsie besit. Die kommersieele bote mag hulle vis verkoop.
   Die tweede een is die ontspannings bote. Hulle mag vis vang op 'n permit wat hulle by die kantoor kry. Hulle mag net 10 vis vang per dag en hulle mag dit nie verkoop nie.

2. How would you describe the current fishing activities in Struisbaai? Is it up and running or is it slow?
   Die vis vang aktiwitiete het maar verswak deur al die jare. Al hoe meer mense en bote word gebruik. Ons plaaslike en kommersieele bote is so =- 15 bote. In hoof seisoen tyd wanneer die vis byt dan kry jy +- 150 kommersieele bote in struisbaai. Almal van Kaapstad, Weskus, Gansbaai en Hermanus.

3. How would you describe the infrastructure of Struisbaai harbour? Does it provide good enough services for the activities happening on site? And would you have any suggestions on how to better the conditions of the harbour?
   Die infrastruktuur van die hawe is baie baie klein vir soveel bote in seisoen. Daar is hopeloos te min parkeering vir al die boot trailers.

4. Do you perhaps have a rough estimate of the fish amount caught daily, monthly, or yearly?

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Die statestiek wissel van jaar tot jaar. Die geelstert waarvoor Struisbaai bekend is. Die seisoen is vanaf Oktober tot en met Paasnaweek die volgende jaar. As die vis goed byt dan sal elke boot so +- 1 ton tot 1,5 ton vis aflaai. Dan praat jy van so 50 – 60 kommersieele bote. Dan kry jy so +- 80 ontspannings bote wat net 10 geelstert mag vang. (Maak jou sommetjie!)

Dan kry jy die wintervis, wat na Paasnaweek tot September maand is. Dan vang die bote Meestal die rooivis (Rooi Stomp, Rooi Roman) wat nie volop is nie. In die tyd dan is dit net plaaslike bote wat hier vis vang. Die ander kommersieele bote is dan terug na hulle areas toe om Snoek te vang.

Meeste van die vis word vekoop aan die kaapse kopers.

5. Is there conflict between the fishing industry and the tourists? For example, does the tourist activities on the site influence the fishing success at the end of the day?
   Daar is geen konflik tussen vissermanne en toeriste nie. Dit is 'n baie groot toerisme aantrekking vir die mense; hoe die bote in kom, aflaai, op die skaal sit vir gewig en die verkoop daarvan. Hier word nog als op die ou manier gedoen. Die bakke vis word van die bote af gelaai en met die hand gedra tot by die skaal.

6. I am proposing a Fish Market on the site that would hopefully uplift the fishing community and that would bring more economic benefits to the town, I would just like to know if you believe that an element like this would be contributing to the fishing industry and the local community? [For me to propose a fish market I must be able to justify that the amount of fish caught is enough to sustain an element like this]
   Nee hier is nie 'n vismark op die hawe nie. Maar 'n persoon kan wel vis koop by die aankopers of die kommersiele bote.

d. Appendix B

[Translation of the poem Struisbaai by Spooksage]

And now
Unpasteurised
Am I saying his name
With thin
Vocal cords

His mouth
My windshield
And we are casted
In everything
Inside
All implicit
In his
Summer arms
Is laugh flowing from my tummy
His kisses
Seasons
Pitched up in waves

In my
Sea curling hair
His hands tangled
In his
Sunburn freckles
My heart captured

[Translation of Brendon Smit's letter on the local fishers]

The modern harbour as we see it today was completed in 1989.

Then there were +- 45 'Chukkies' that laid on the moorings in the harbour. [Chukkies are the old timber ships]. Today there are only 9 local boats and 7 ski-boats both commercial. On every boat there is approximately 10 fishermen. So now we are talking about +- 160 families in Struisbaai that is dependent on the ocean.

[Translation of the poem Septembersee by Breyten Breytenbach]

Do you still remember
-I think it was at Cape Agulhas-
The long yellow brush from the lighthouse on the point
Brushing regularly, such knock rhythms as we get tired
And the post boat far in the bay
Its quiet blood arrow against the evening light
Away to a strange who knows where

Do you remember how the white moon-high waves
Quickly after one another
Like muzzles on a show
That could thunder down on the Beach's sand,
Do you remember how we rode the waves
With our bay pants our mouths full of sand?

Do you still remember
Those purple tummy evenings
Between reed bushes and mouldy ocean
When the smoke goes upwards
In Struisbaai
How sore our bodies were
How the shark ate us up?

Invoice

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An ecotourist friendly fish market at Struisbaai harbour

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