

SURFING AND THE ARCHITECTURE OF THE DREAM GLIDE

Celebrating the surfer life through an architectural interpretation



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Declaration:

This dissertation is submitted in partial fulfilment of the requirements for the degree M.Arch.(Prof). The research in this document is my own independent work, unless stated otherwise.

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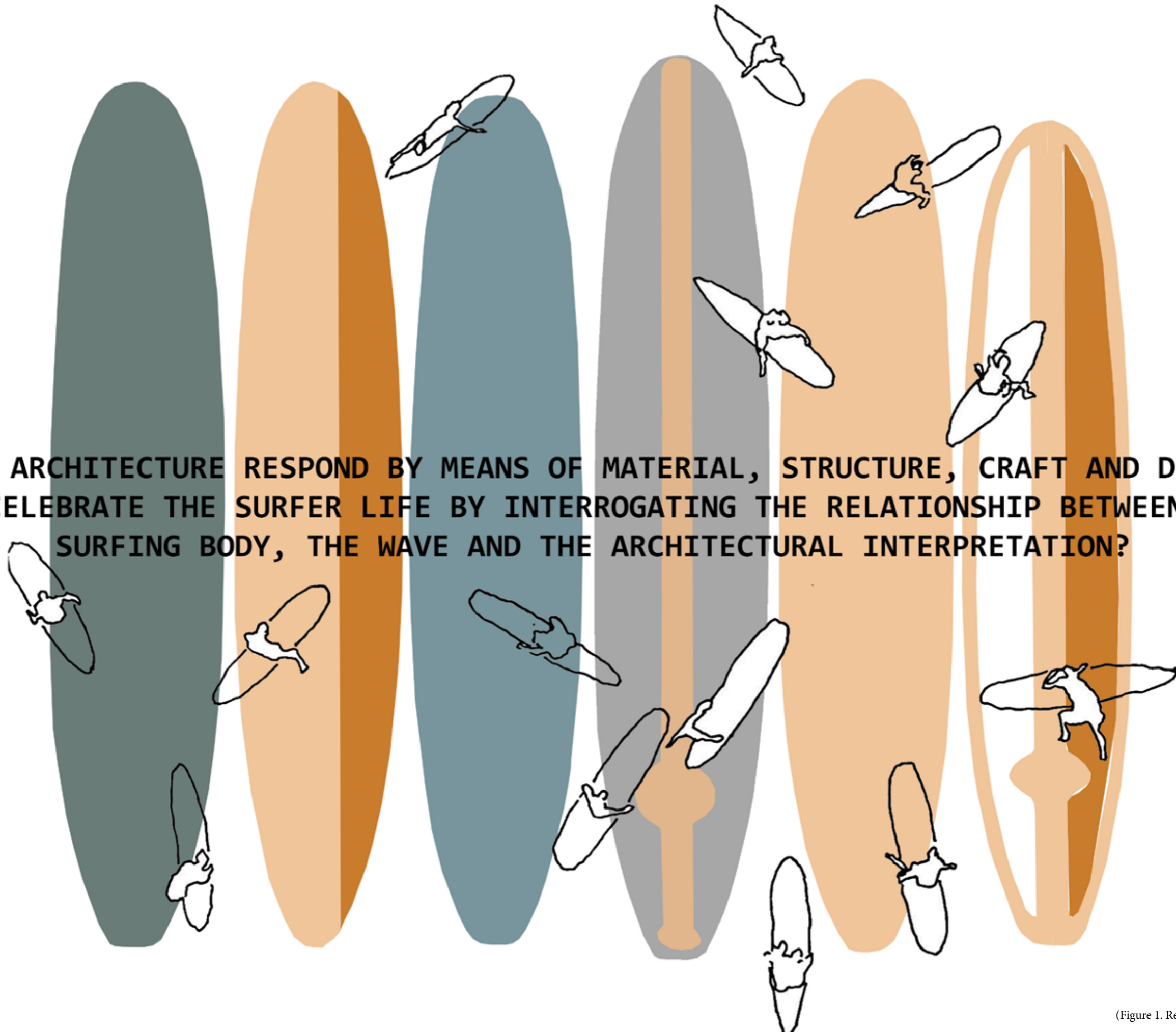
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Declaration of original authorship:

The work contained in this dissertation has not been previously submitted at this or any other institution of higher education. To the best of my knowledge, this dissertation does not contain material that has been previously published or written by another person except where due reference is made.

HOW CAN ARCHITECTURE RESPOND BY MEANS OF MATERIAL, STRUCTURE, CRAFT AND DETAILING TO CELEBRATE THE SURFER LIFE BY INTERROGATING THE RELATIONSHIP BETWEEN THE SURFING BODY, THE WAVE AND THE ARCHITECTURAL INTERPRETATION?

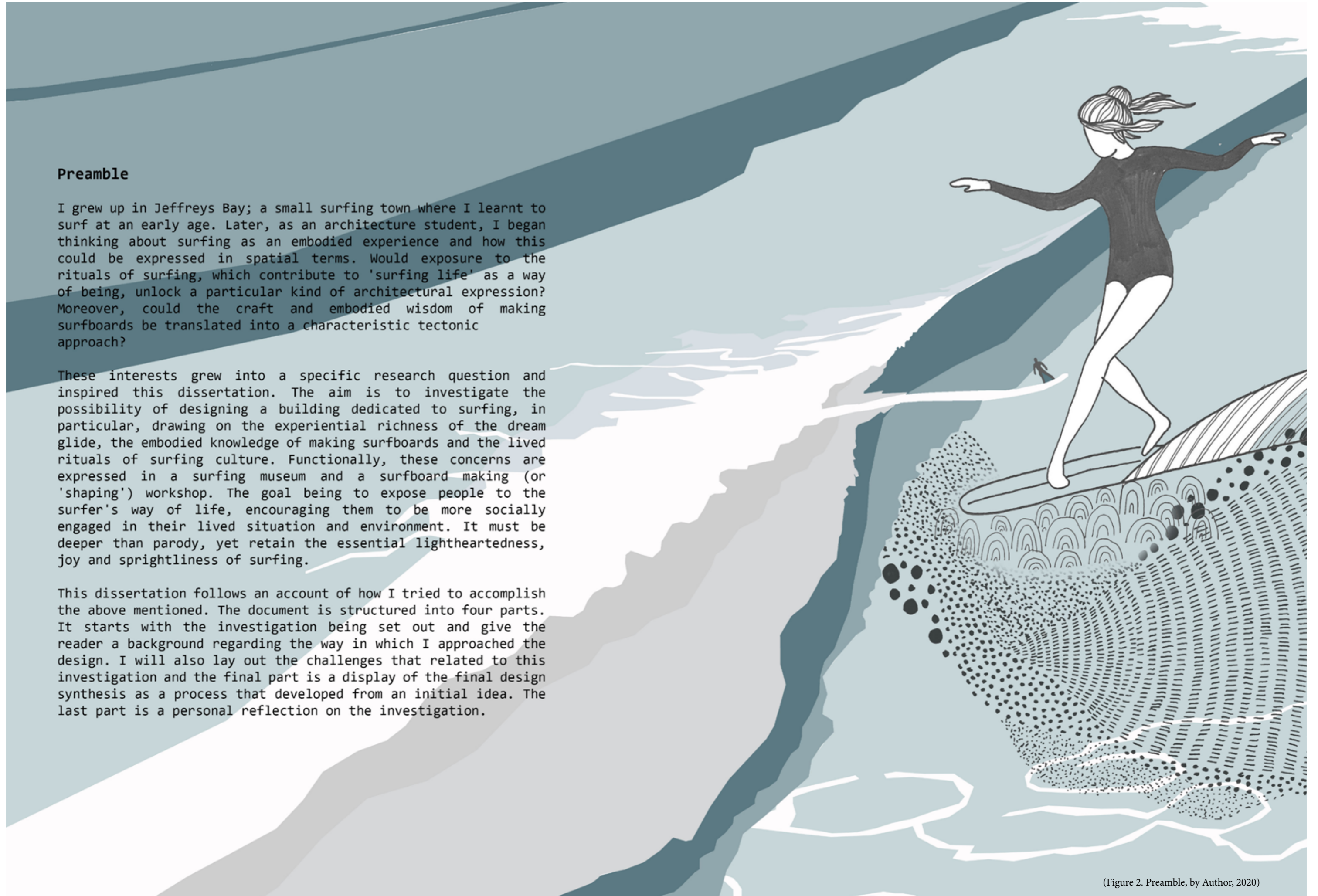


Preamble

I grew up in Jeffreys Bay; a small surfing town where I learnt to surf at an early age. Later, as an architecture student, I began thinking about surfing as an embodied experience and how this could be expressed in spatial terms. Would exposure to the rituals of surfing, which contribute to 'surfing life' as a way of being, unlock a particular kind of architectural expression? Moreover, could the craft and embodied wisdom of making surfboards be translated into a characteristic tectonic approach?

These interests grew into a specific research question and inspired this dissertation. The aim is to investigate the possibility of designing a building dedicated to surfing, in particular, drawing on the experiential richness of the dream glide, the embodied knowledge of making surfboards and the lived rituals of surfing culture. Functionally, these concerns are expressed in a surfing museum and a surfboard making (or 'shaping') workshop. The goal being to expose people to the surfer's way of life, encouraging them to be more socially engaged in their lived situation and environment. It must be deeper than parody, yet retain the essential lightheartedness, joy and sprightliness of surfing.

This dissertation follows an account of how I tried to accomplish the above mentioned. The document is structured into four parts. It starts with the investigation being set out and give the reader a background regarding the way in which I approached the design. I will also lay out the challenges that related to this investigation and the final part is a display of the final design synthesis as a process that developed from an initial idea. The last part is a personal reflection on the investigation.



(Figure 2. Preamble, by Author, 2020)

TABLE OF CONTENTS

0.

- Introduction
- Research methodology

01.

- 1.1 Client and users
- 1.2. Initial brief
- 1.3. Problem statement
- 1.4. Aims
- 1.5. Precedents


02.

- 2.1. Interviews
- 2.2. Touchstone
- 2.3. Conceptual ideas
- 2.4. Conceptual framework
- 2.5. Theoretical framework

03.

- 3.1 Design synthesis
- 3.2. Initial design ideas
- 3.3. Concept to form
- 3.4. Final design solution

04.

- Technical synthesis
 - Reflection and evaluation
 - Reference list
- 

PART 01.

The dissertation consists out of four parts that will guide the reader through the dissertation.

ORIENTATION

This introduces the problem statement as well as the aim of the project and as the site analysis.

PART 02.

INVESTIGATIVE PROCESS

This part consists out of the conceptual development and the theoretical framework.

PART 03.

UNDERSTANDING AND DECISION MAKING

This part shows the application as well as the tectonic synthesis of the design process. It also shows and explainsthe design development throughout part 1 and 2.

PART 04.

PERSONAL REFLECTION

This part consists out of a personal reflection based on the process and the development of this dissertation.

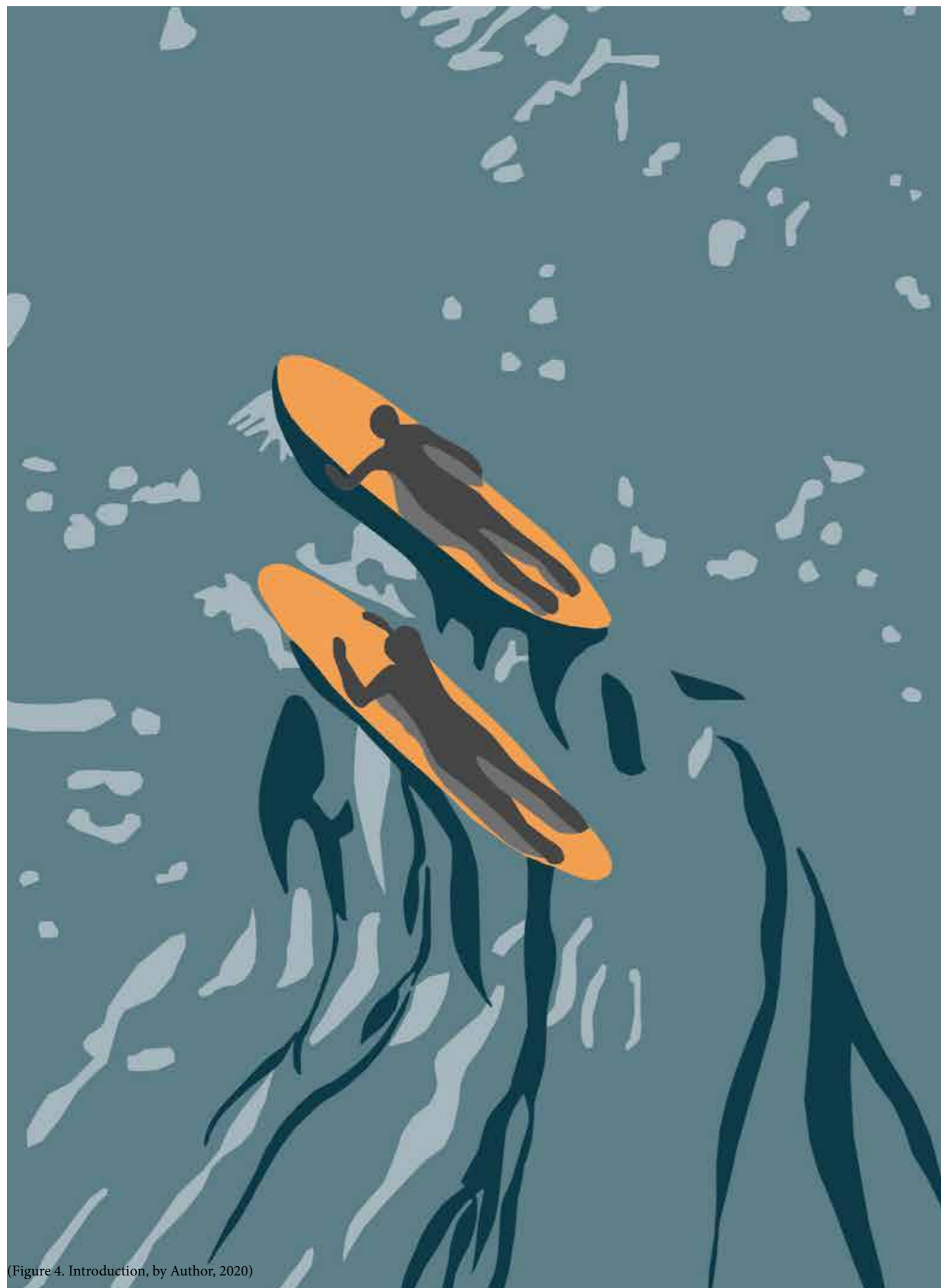


0.

Introduction

Research methodology

(Figure 3. Introduction, by Author, 2020)



Introduction:

Surfing and the architecture of the dream glide

A few explosive maneuvers, moving through the barrel, alarming whiteness of sun-lit foam, moving through the highs, glide along the edge of the sea and sky. This is only a few expressions that can be connected to surfing (Ford and Brown, 2006). It is a form of glide that moves along an momentary line expending its force and energy along the sea. It is an embodied experience with an addictive tendency that inflicts the endless search for the mythical perfection of the "dream glide" (Ford and Brown, 2006). Therefore, how can architecture respond by means of material, structure, craft and detailing to celebrate the surfer life by interrogating the relationship between the surfing body, the wave and the architectural interpretation?

Surfing has developed from ancient times and has become a twenty first century phenomenon. Surfing is a sport, lifestyle and art. The dissertation will investigate the popular surf culture as well as exploring topics such as embodiment, ritual and rhythm, which is in essence connected, to both surfing and architecture. The dissertation will also speak about the dream glide and what the dream glide is and how the proposed architecture could only strive to become the dream glide of the surfer and the surfboard shaper.

The chosen site is in Jeffreys Bay. It is a small town that is famous for its surfing culture, as this investigation is concerned about surfing and how the different elements of a surfboard has an impact on the body's capacity to engage with the wave in order to experience this dream glide. The investigation will explore dream how people could experience the dream glide this in the form of an architectural building.

A building that responds through the structure, detailing and craft in essence to celebrate the life of the surfer and to make the public aware of this through creating a building where people can engage with this experience as well as take part in the process of surfboard making and experience the significance of this craft.

This dissertation will address the ritual, embodiment as well as rhythm that form part of the surfing experience.

Through a qualitative context analysis and precedent studies, information was gained to develop a synthesis. The key impact of this dissertation is to determine a designed building that addresses the key aspects of the surfing culture and the dream glide through creating a place for the community and tourists to engage in the Jeffreys Bay experience.

(Figure 4. Introduction, by Author, 2020)

Research methodology

The research methodology is based around exploratory research. The investigation leads to the problem statement, which is aimed at obtaining a final design solution. The problem statement addresses for whom the design is envisioned and where the design is proposed to take place. The design is put together and influenced through the investigation.

The research in this document is based around the making of a surfboard as well as the lives of surfers and why the craft of surfboard making is so significant; it originated from my interest and adoration for surfing, the story behind surfing and surfboard crafting as well as the history of surfing and why so many people find this sport exhilarating. There were different sources of knowledge used and explored to obtain a design methodology that is specific to this design proposal.

The explanatory research sources entailed the following methods:

- There was a site investigation done as well as a historical investigation on the site itself and how surfing was originated.

- A touchstone was built to identify the essence of the project and it lead to the concepts that were generated.

- The conceptual ideas were used to shape the initial ideas and concepts. The concepts were originated through theoretical aspects as well as precedent studies.

- There is also an analysis of precedent studies that lead to ideas for the proposed project. The studies are an interpretive analysis aiming at the outcome of this dissertation.

- The analysis includes an investigation of surfboard making and the process that a shaper goes through in order to create the perfect surfboard. The analysis also includes theoretical aspects that involve surfing, architecture and the human.

- The analysis also includes own experiences on site as well as with surfing and the experience of surfing and the surfing culture.



(Figure 5., Research Methodology, by Author, 2020)

01.

- 1.1. Client and user
- 1.2. Initial brief
- 1.3. Problem statement
- 1.4. Aims
- 1.5. Precedents



(Figure 6. Client and user, by author, 2020)

The clients and users:

The clients:

The clients are the municipality of Jeffreys Bay together with Jeffreys Bay's tourism department.

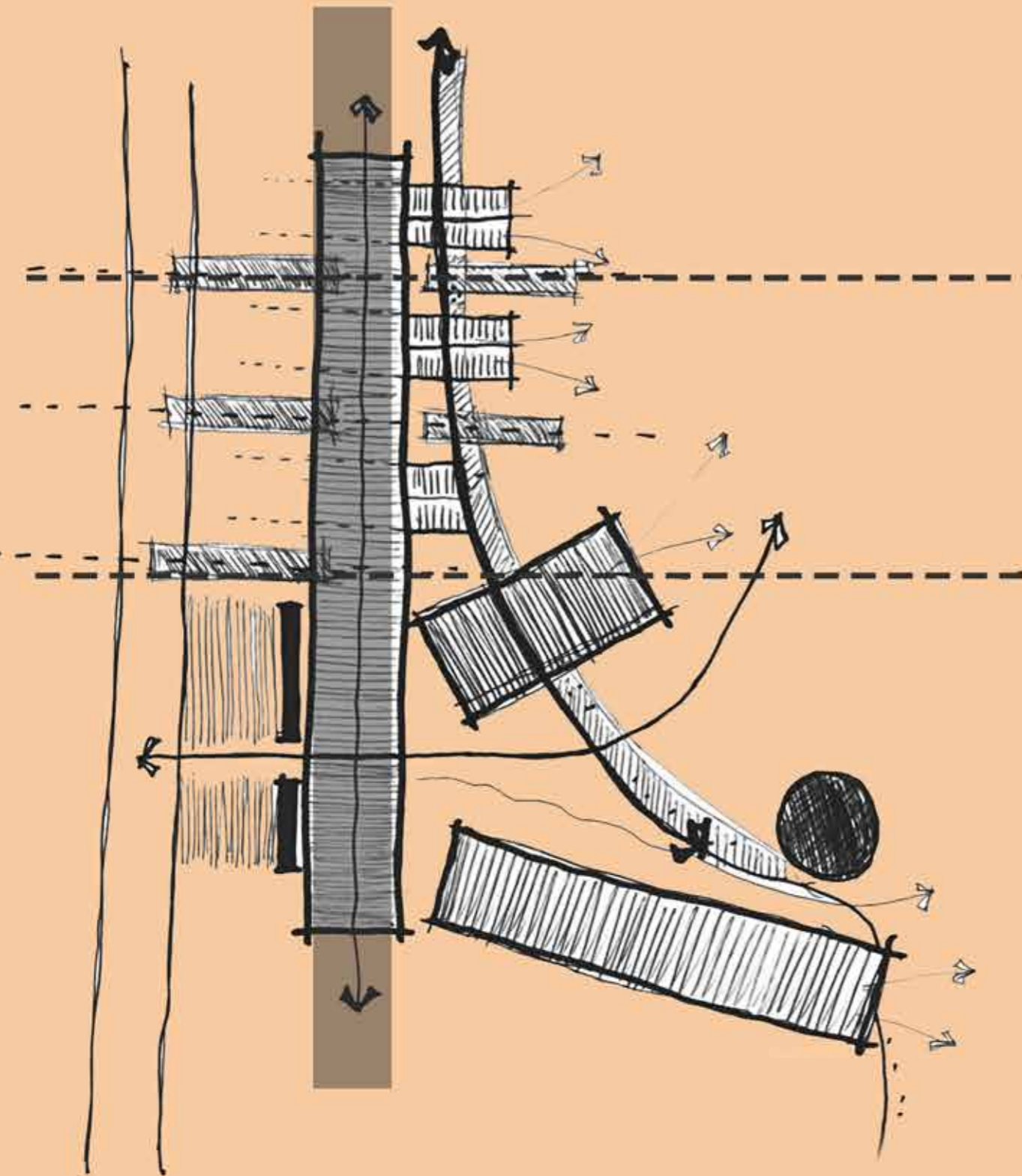
They aim in obtaining a building that will be a representation of Jeffreys Bay and the surfing culture of Jeffreys Bay.

The users:

The users of the building will be tourists and locals that go to the building to see the surfboard crafters and the process of it as well as experience it as a hang out place. The local surfboard crafters will also make use of the building and other local crafters such as the brewery in Jeffreys bay that will sell in the proposed Bar, which is part of the proposed building.



(Figure 7. Client, by author, 2020)



(Figure 8. Concept of building , by Author, 2020)

What is the building's role in this investigation?

The role of the building is to create a place that locals will be proud of; the building should be a voice of Jeffreys Bay. The building should capture the importance of surfing in the town as well as the culture of the town and what the dream glide is.

The building should be a space where people will engage and interact with one another through different parts of the building for example the workshop spaces will be open to the public to make use of, there will also be specific times when workshops will be presented and people can take part in designing their surfboards and taking part in the craft of surfboard shaping.

The exhibition spaces in the museum will also be open to the public. The exhibition spaces will consist of the history of surfing in Jeffreys Bay, the development of surfboards and a walk through exhibition of some of the most renowned surfers' surfboards that has survived the waves of Jeffreys Bay. The exhibition spaces will draw people to the building and it will encapture the surf culture of the town for the tourist and public to see.

The bar/restaurant on the first floor of the building is also a means of attracting people into the building, by creating a place where people could engage and become aware of what is happening within the building, around the site and overlook the prominent surf spot.

The courtyard space as well as the outside spaces of the building is also of importance as these are spaces where people will gather and experience the building in a different way through informal seating and spaces around the building. This also speaks of the informal culture of the town. The spaces will act as the connection between the building, the ocean and the people just as the surfboard is the connection between the ocean and the people.

Due to the wide variety of functions within the building, it does not only cater for one group, but it will draw attention to many different groups of people. The surfing culture consist out of many different people and due to the variety of spaces within the building it will aim to cater for everyone.

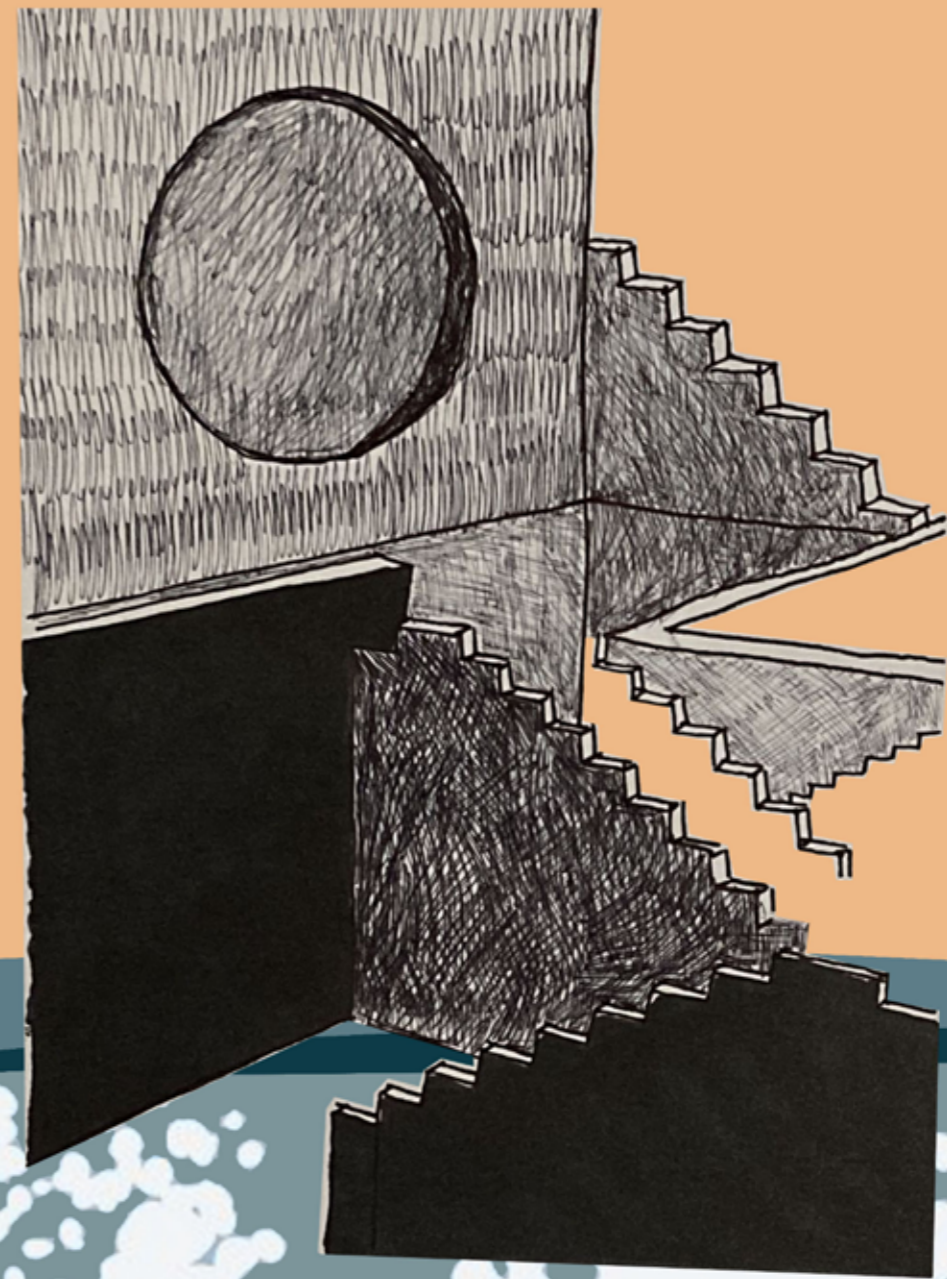
What does the design synthesis aim to accomplish?

“Free man, you will always love the sea! The sea is your mirror, you contemplate your soul” (Richardson 1975:50).

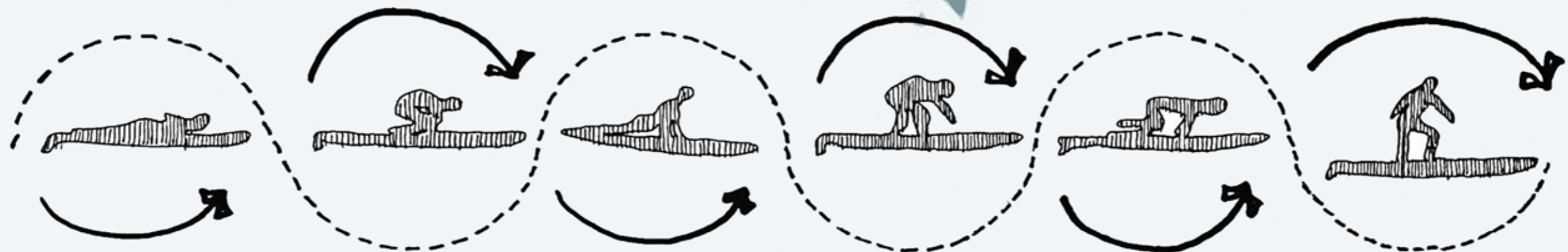
The ocean is seen as a immeasurable potentiality of freedom. The relation to the sea and the shore is the borderland of where surfing takes place. This is a physical encounter with the ocean and allows the surfer to experience the embodiment of the wave. The aim of the design synthesis is to develop a building that will make the visitor aware of the rationality between the individual in the world as felt in the liminal space/ activity of surfing and the dream glide. This is where the surfer experience the freedom.

The building will aim to allow people to experience the daily ritual of the surfer and the embodied experience of the surfer should be felt in moving through the building.

The building should act as a connection of the topology and the morphology where they become one, as the liminal activity of surfing the dream glide.



(Figure 9. Design synthesis, by Author, 2020)



(Figure 10. Movement of the surfer, by Author, 2020)

ACCOMMODATION LIST

CULTURAL

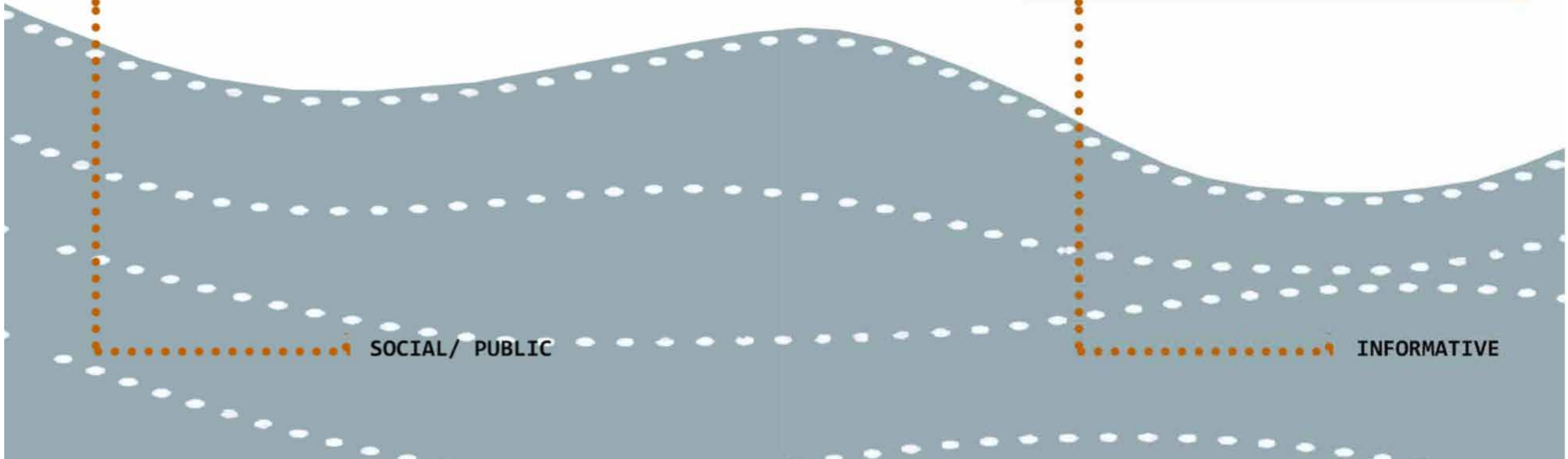
HISTORY



- RECEPTION/ INFORMATION
- SURFBOARD MAKING EXHIBITION
- SURFBOARD MANUFACTURING
- SURFBOARD WORKSHOP AREAS
- SURFBOARD SHOP AND RENTALS
- BAR/ RESTAURANT
- LOOKOUT POINTS
- AMPHITHEATER

- SURFING MUSEUM
- SURFBOARD MAKING EXHIBITION
- TOWER
- EXISTING LIGHTHOUSE

**COURTYARDS
VIEWPOINTS**

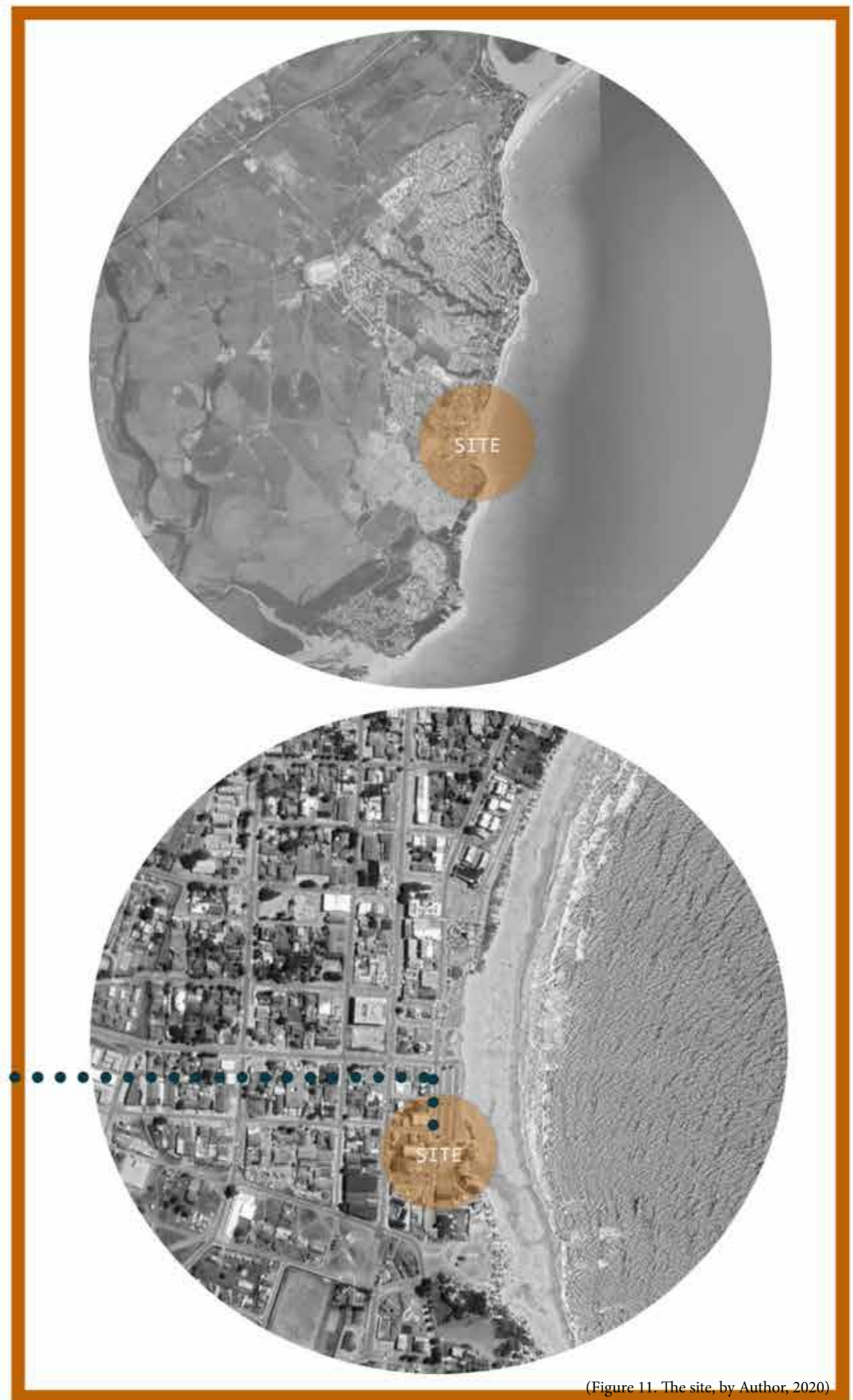


SOCIAL/ PUBLIC

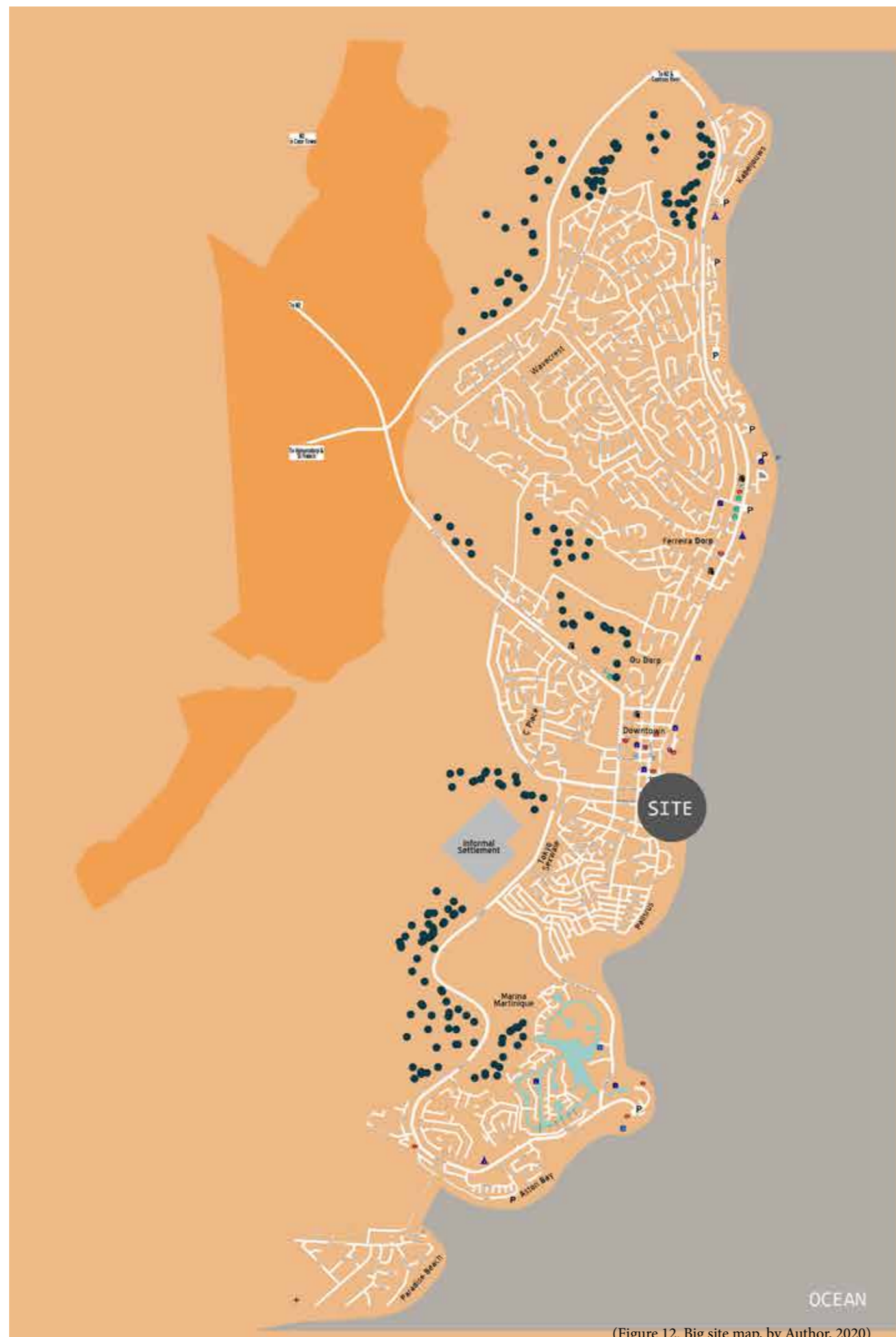
INFORMATIVE

THE SITE

The site is located in the Eastern Cape, Jeffreys bay.



(Figure 11. The site, by Author, 2020)



(Figure 12. Big site map, by Author, 2020)

The site:

Jeffreys Bay is a small town in the Eastern Cape. It has the best right hand surf breaks in the world, international surfers all around the world come to ride these legendary waves. Jeffreys Bay is a paradise of aloes, dolphins, shells and the classic reefs. Jeffreys Bay is also famous for its local craft industry and all of its surf shops all around the town. The different shop shows the diversity of the locals and their talents. The town is also found between two nature reserves and two rivers, the Kabeljous and Seekoei River.

Jeffreys Bay has people from all over the world, at any given time; there are representatives from at least 20 different countries. Jeffreys is a popular tourist destination because of the surfing and blue flag beach, but also its unique culture.

The specific site was one of the main drives for the project; it holds personal significance and has been part of my life since the age of two. Jeffrey's bay for many is just a small town with a lot of surfers, this might be true but for people living in the community, Jeffreys bay has a very unique culture. Jeffreys Bay is a town where people find the time to do the things they love, it is a town where local talents are used to draw the attention of tourist, it is the uniqueness that allows people to fall inlove with the place.

Jeffreys Bay is not the usual small coastal town with white beach houses, it is a mix of different people, cultures and this holds significance to the town itself.



The main roads in Jeffreys Bay. It is also the road to the site.

(Figure 13. Main roads, by Author, 2020)



The area of focus for this dissertation

(Figure 14. Site specific, by Author, 2020)



(Figure 15. Street view, SEO, 2020)



(Figure 16. The site street view, SEO, 2020)



(Figure 17. Site specific, by Author, 2020)



(Figure 18. surfboards, SEO, 2020)



(Figure 19. Bruce, SEO, 2020)



(Figure 20. Street view, SEO, 2020)



(Figure 15. Street view, SEO, 2020)



(Figure 21. Surf village, by Author, 2020)



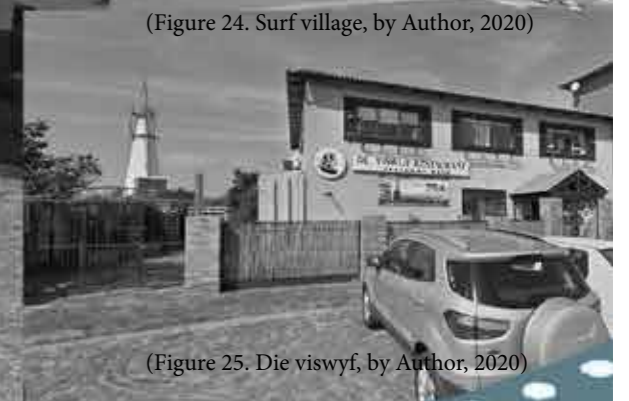
(Figure 22. Surf village, by Author, 2020)



(Figure 23. Street view surf village, SEO, 2020)



(Figure 24. Surf village, by Author, 2020)



(Figure 25. Die viswyf, by Author, 2020)





(Figure 26. site collage, by Author, 2020)

History of Jeffreys Bay

The south west coast of South Africa was initially populated by the nomadic San people. They later interbred with the Khoi-khoi tribes and became known as the Khoi-San. These people inhabited the coastline of South Africa and lived from the sea. They never took ownership of any place and they became known as the Strandlopers (Jeffreys Bay History | Jeffreys Bay South Africa, 2020).

Many years later, Jeffreys bay was named after Captain Jeffreys. He sailed his cargo ship at the East Coast of South Africa on trading voyages in the 1840's. An unfortunate event of scurvy broke out on his ship. This forced him to dock the ship. He saw the potential of the place and built a primitive port on what we now know as the main beach where the site and the lighthouse is also located. The site was initially used as a harbor and a trading post. Jeffreys Bay later became a small fishing town.

John Whitmore in the 19th century, 1959 spotted waves at Jeffreys Bay, however the break was not discovered until 1964 when four surfers tried to surf the break at a spot that is now known as 'Supertubes'. They discovered that the waves were too fast for their long boards and they moved north of Supertubes to Point. Supertubes was only regularly surfed in the very late 60's(Jeffreys Bay History | Jeffreys Bay South Africa, 2020).

Bruce Brown from California filmed Robert August and Mike Hynson in 1963. They said that the perfect wave was located at Cape St Francis, 25km from Jeffreys Bay. The Movie "Endless summer" was filmed on this by Bruce Brown. This film was shown in theaters across America and advertized in all surfer magazines and was named "quest for the perfect wave", then at Cape St Francis, but it was found that the waves were too unreliable and the waves were much more dependable in Jeffreys Bay. This resulted in surfers all around the world to camp out along the shore of Jeffreys Bay to surf the waves.

The beach front used to be covered by sand and aloe plants, at that time a small Afrikaner fishing township developed at Jeffreys Bay.

Jeffreys bay was famous for its waves from the beginning. Later in the early 90s surfboards became thinner and narrower. This as a shock actually decreased the performance level as the surfer's boards was not able to hold the turns that are so demanded in these surf spots. Kelly Slater and Tom Curren mastered these lines and they set a new standard for surfing in Jeffreys Bay.

Jeffreys Bay has become a home to many talented surfers all over the world.



(Figure 27. Historical photo of Jeffreys Bay Since 1964, 2020)



(Figure 28, J-Bay open collage, by Author, 2020)

THE J-BAY OPEN

Supertubes, one of the beaches in Jeffreys Bay, is known for the greatest right hand point break in the world for more than 50 years surfers from in over the world have come to this iconic spot to surf the waves.

The first international surf contest took place in 1981, it was known as the Beach Hotel Classic and it was then won by South Africa's first champion, Shaun Tomson.

Many big names in the surfing world have since then competed in Jeffreys Bay and this event became one of the most popular events on the World surfing league (WSL) tour.

People from all over the world travel to Jeffreys Bay for this annual event. It is an event filled with the best surfers as well as plenty activities and events throughout the surf league.

The Surfing league usual takes place between June and July. It is the time of the year that the waves at Supertubes is at its best due to the weather conditions in the winter times and the swells and wind that occurs at this time. The large swells during this time creates the barrel that supertubes is most famous for.

Supertubes in the olden days was seen as too dangerous to surf due to the strong right hand point break and low reefs found in the surf spot. The surfers later on learnt how to surf this iconic wave and it d takes an experienced surfer to surf at this spot and it would not be recommended for beginners. This is the reason why this sport is one of the ten top surf spots in the world.



The whole of Jeffreys Bay was developed along the coast line and as the town grew it developed more inward towards Humansdorp, Aston bay and Paridise beach.

There are a lot of farms located around Jeffreys Bay, mostly dairy farms as well as wind farms.

(Figure 29. Site analysis, by Author, 2020)

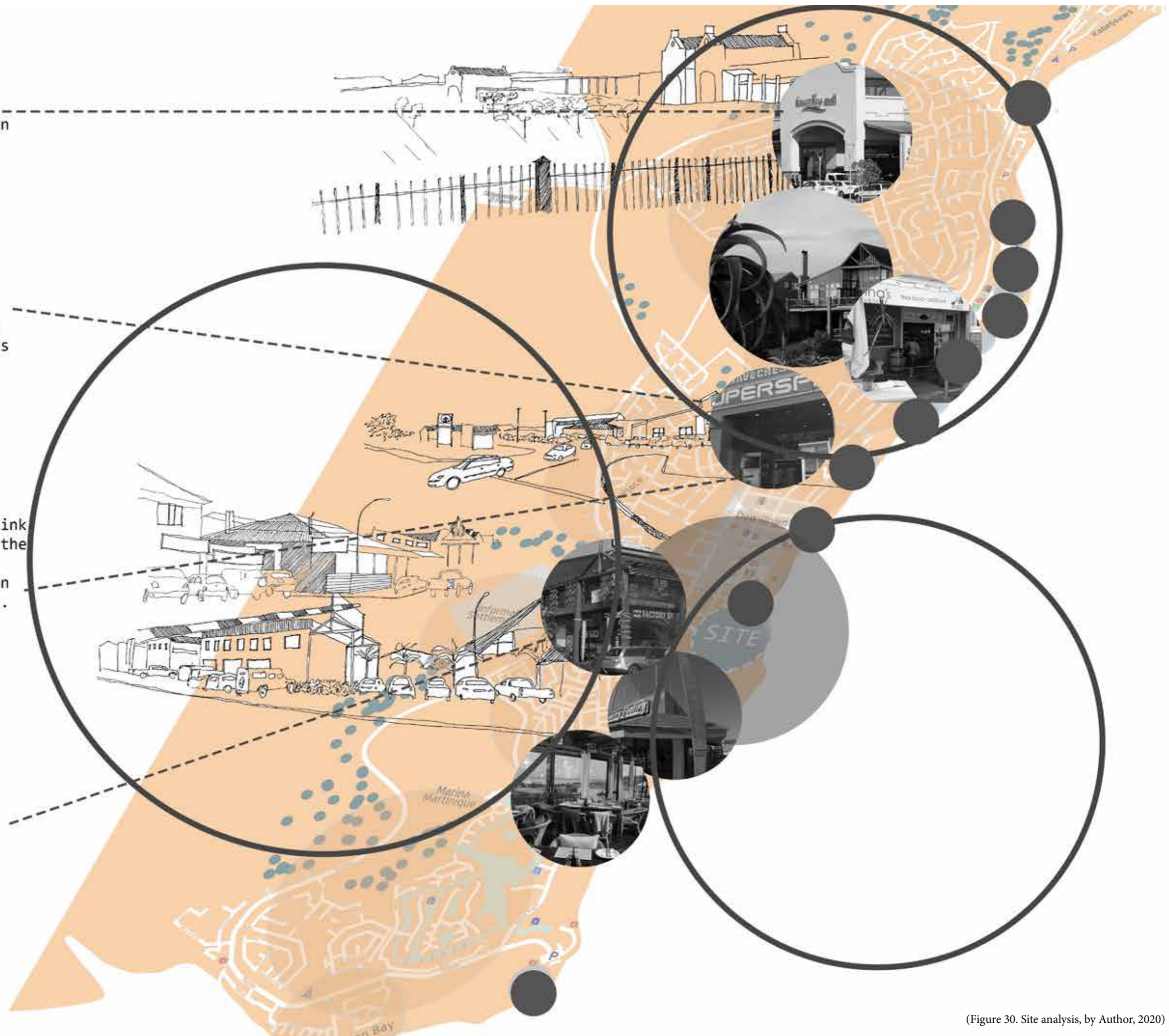
URBAN SPACE

Fountains Mall is the main retail shopping centre in Jeffreys Bay, it was opened in 2009.

This retail space was one of the first retail shops in Jeffreys Bay, it consists of food chains and it is located in the main street in Jeffreys Bay, known as Dagama Road.

These retail spaces forms a link between the surf village and the chain food shops in the main road, as it is also located in the main road of Jeffreys Bay.

The Jeffreys Bay Surf Village is one of the main tourist attraction points in Jeffreys Bay. It consists out of numerous restaurants, Billabong-surf shops and a skate park



(Figure 30. Site analysis, by Author, 2020)

Surf Museum in Jeffreys Bay, Eastern Cape

The museum is located on the first floor in one of the many surf shops in Jeffreys Bay. It is in the main road, Da Gama road in Jeffreys Bay. This museum pays tribute to the legends and the pioneers of the surfing sport as well as the historical relationship between man and the dream glide. The museum tells the story of how surfing started in Jeffreys Bay and how the town has evolved over the past 50 years. The museum also shows how surfboards are made and how the process of surfboard making has evolved.

The museum is however very small and not a lot of people are aware of this museum, therefore the dissertation proposes a museum where these current artifacts and historical boards could be placed so that tourists can visit the museum. The museum will aim to tell the surfing story of Jeffreys Bay in a fluent and self explanatory manner. The aim would also be to locate other artifacts in the town adding them to the collection and presenting it as a whole. It would be a well known place recognized as a surf museum.



Figure 31. Jeffreys bay museum(Jeffreys Bay Surf Museum in Jeffreys Bay, Eastern Cape, 2020)



Figure 32. Jeffreys bay museum(Jeffreys Bay Surf Museum in Jeffreys Bay, Eastern Cape, 2020)



Figure 33. Jeffreys bay museum(Jeffreys Bay Surf Museum in Jeffreys Bay, Eastern Cape, 2020)



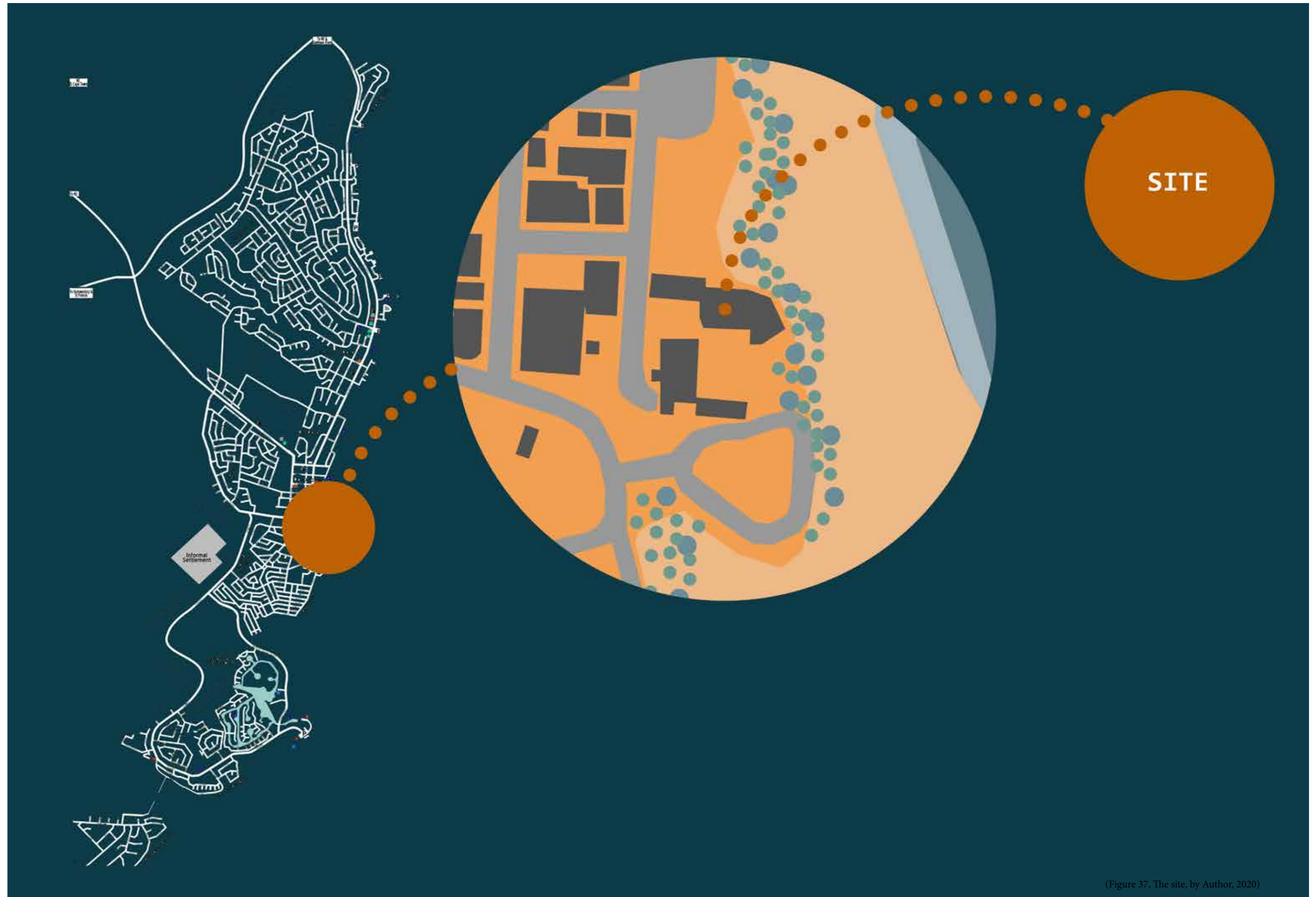
Figure 34. Jeffreys bay museum(Jeffreys Bay Surf Museum in Jeffreys Bay, Eastern Cape, 2020)



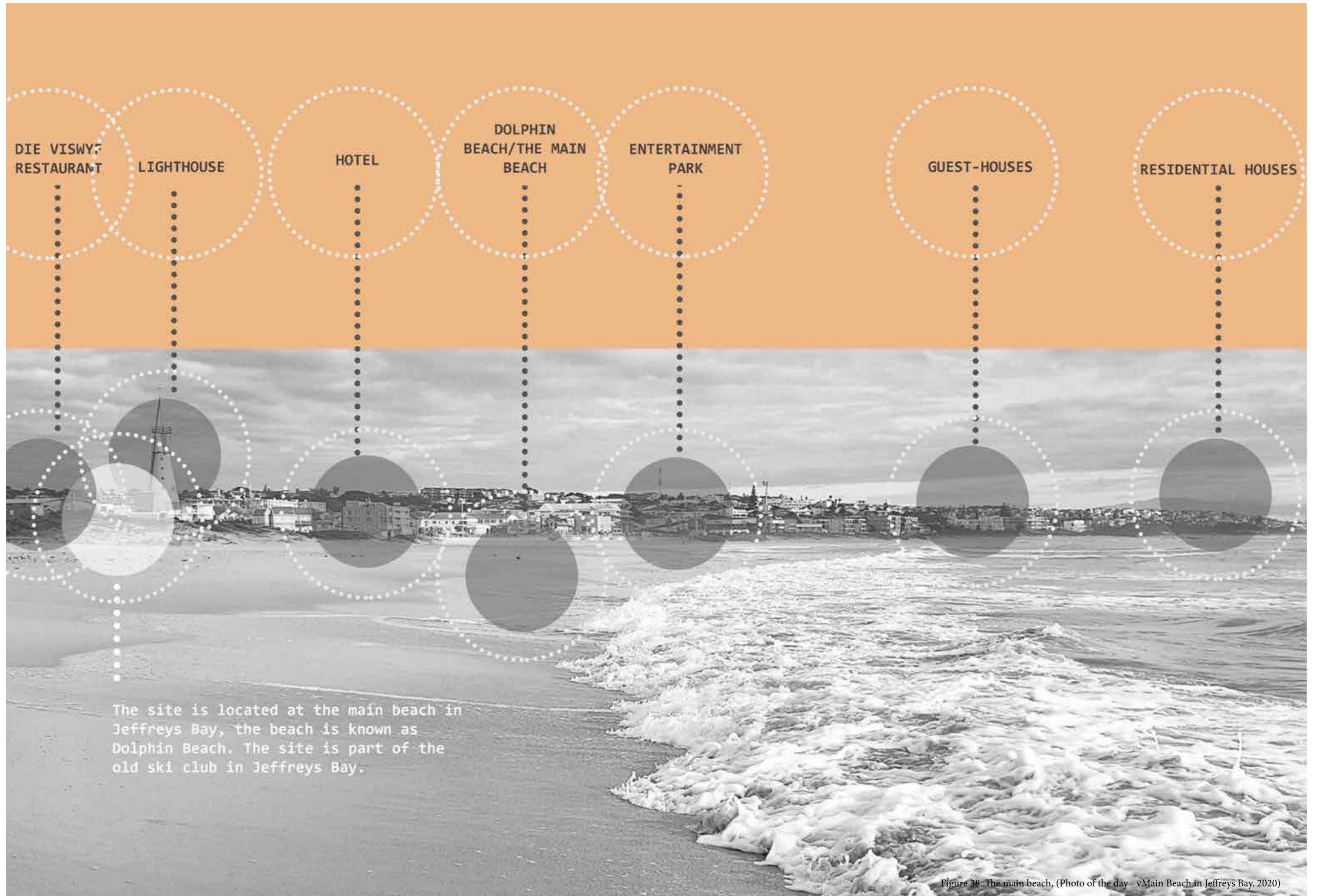
Figure 35. Jeffreys bay museum(Jeffreys Bay Surf Museum in Jeffreys Bay, Eastern Cape, 2020)



Figure 36. Jeffreys bay museum(Jeffreys Bay Surf Museum in Jeffreys Bay, Eastern Cape, 2020)



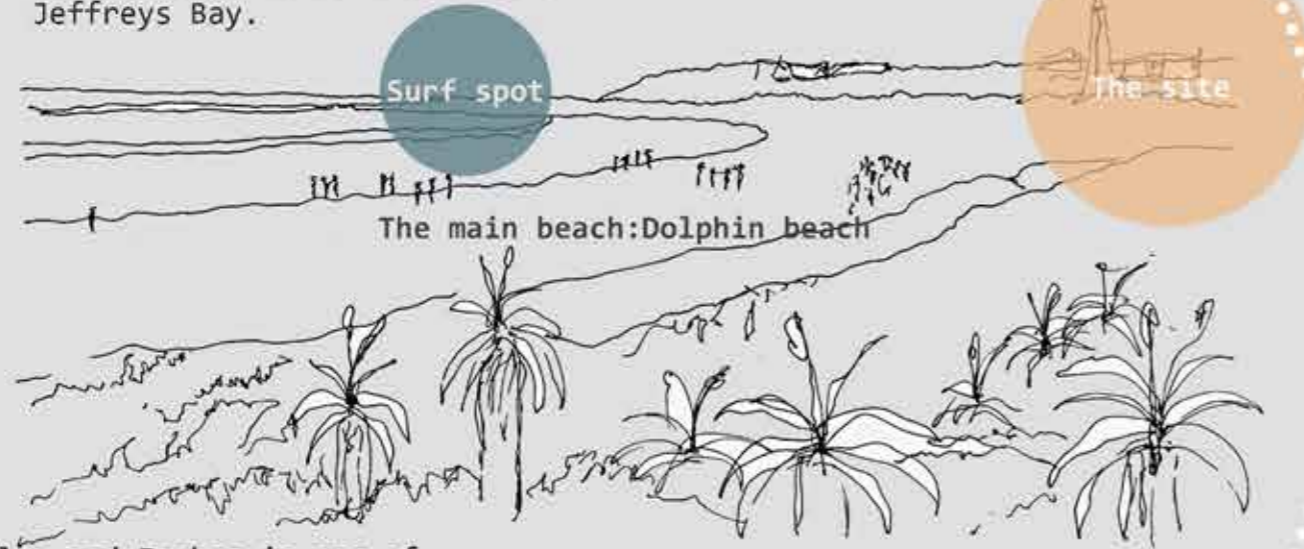
(Figure 37, The site, by Author, 2020)



The site is located at the main beach in Jeffreys Bay, the beach is known as Dolphin Beach. The site is part of the old ski club in Jeffreys Bay.

Figure 38. The main beach, (Photo of the day - vMain Beach in Jeffreys Bay, 2020)

The surf spot is for a beginner to moderate surfer. It is where all the surf schools teach and it is ideal for tourists and people that want to experience the waves of Jeffreys Bay.



Aloe and Fynbos is one of the main types of plants found on site and most of it is protected.

(Figure 39. The site, by Author, 2020)

Current parking

The site: old ski club



The site will be accessed from the west side of the site. the main axis through the site will continue from the existing axis through the surf village across the road. The site opens up towards the east, where the beach is located.

(Figure 40. The site from the road, by Author, 2020)



(Figure 41. Site, by Author, 2020)



(Figure 42, Light house, by Author, 2020)

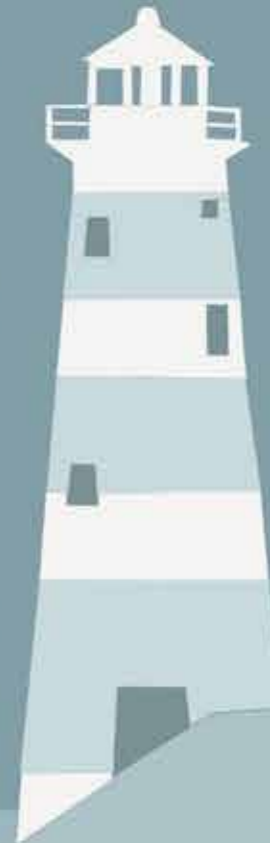
In the figure above it shows the Lighthouse on the site as well as some of the sea rescue equipment on site.



(Figure 43, The site, by Author, 2020)

The site

The site forms part of the Light house that is also on site. The lighthouse was built to warn ships of the dangerous reefs that can be found in the sea. Jeffreys Bay used to be a small fishing town and is still renowned for its fishing, especially choka fishing. The site is the ideal location in terms of tourists, it is opposite the surf village in Jeffreys Bay, which makes it easily accessible for tourists as well as locals. The site has a large Northern facade as well as a large eastern facade towards the beach, this allows views from the beach.



(Figure 44, The site from the west, by Author, 2020)

The figure above and to the left shows the ski club building that is currently on site.



(Figure 45, North facade, by Author, 2020)

The sea rescue and ski club:

The sea rescue club that is also currently found on the site consist of two offices where one is on the site and the other one is directly opposite the main beach. The proposal will be to move the office at the proposed site across the main beach and to move equipment next to the site where there is an open space as well as direct access to the beach as well as a large parking lot for people to park their ski equipment during the holidays at peak times.

(Figure 46, Lighthouse, by Author, 2020)



Figure 0, (Jeffreys Bay - Garden Route Travel Guide, 2020)

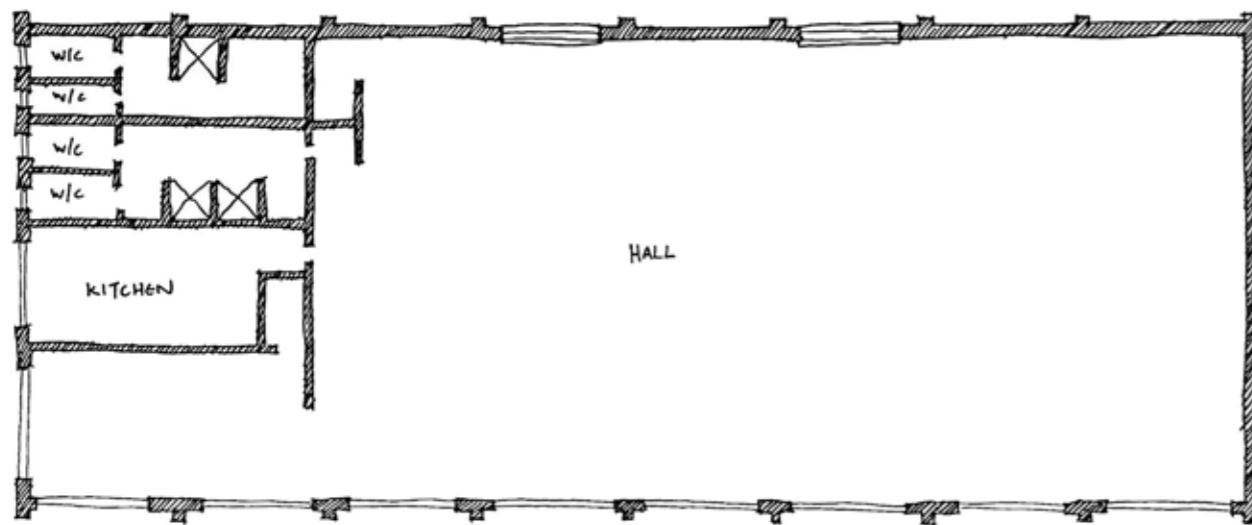


(Figure 47, site collage, by Author, 2020)

The current building on site

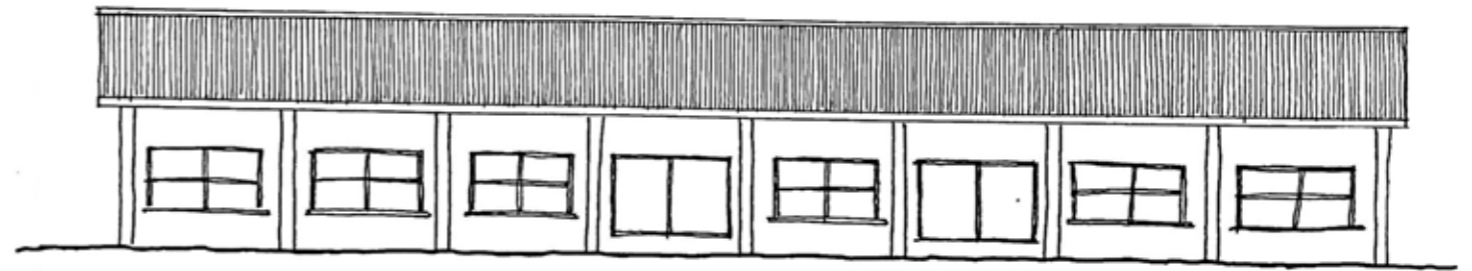
The building is currently a ski club and rescue, however the building has had many other functions such as a library and a dance studio.

The building is built out of a simple structure, red brick and a corrugated iron roof. The proposal is to demolish the structure and to only make use of the footprint of the building in the dissertation; reason being that the building does not hold much significance and it is not noticed as a historical building in the town.



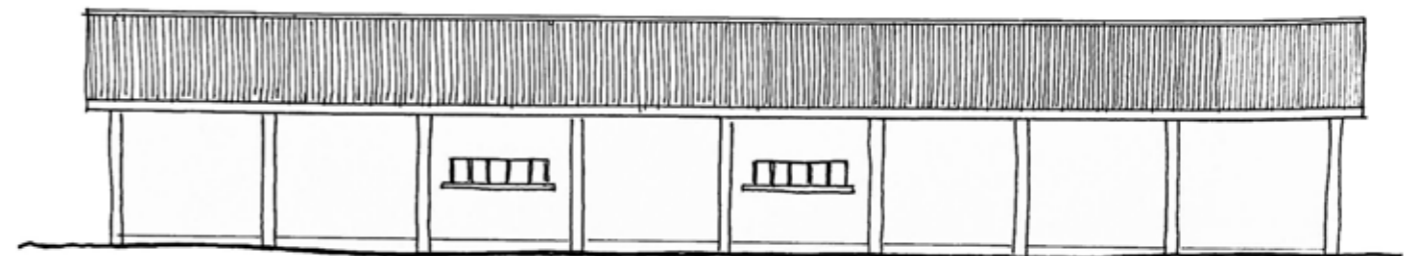
FLOOR PLAN

(Figure 48. Drawings of the current building on site, by Author, 2020.)



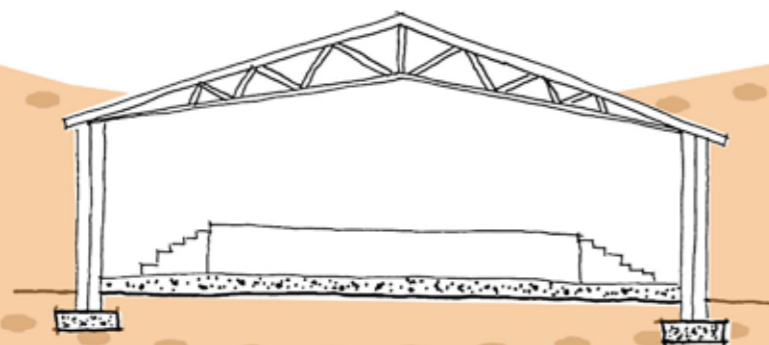
NORTH ELEVATION

Figure 0. Drawings of the current building on site , by author.



SOUTH ELEVATION

(Figure 50. Drawings of the current building on site , by Author, 2020.)



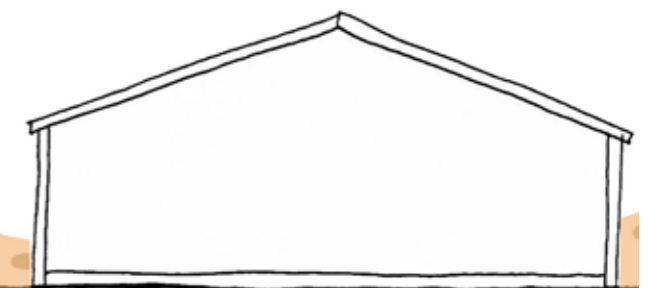
SECTION

(Figure 49. Drawings of the current building on site, by Author 2020.)



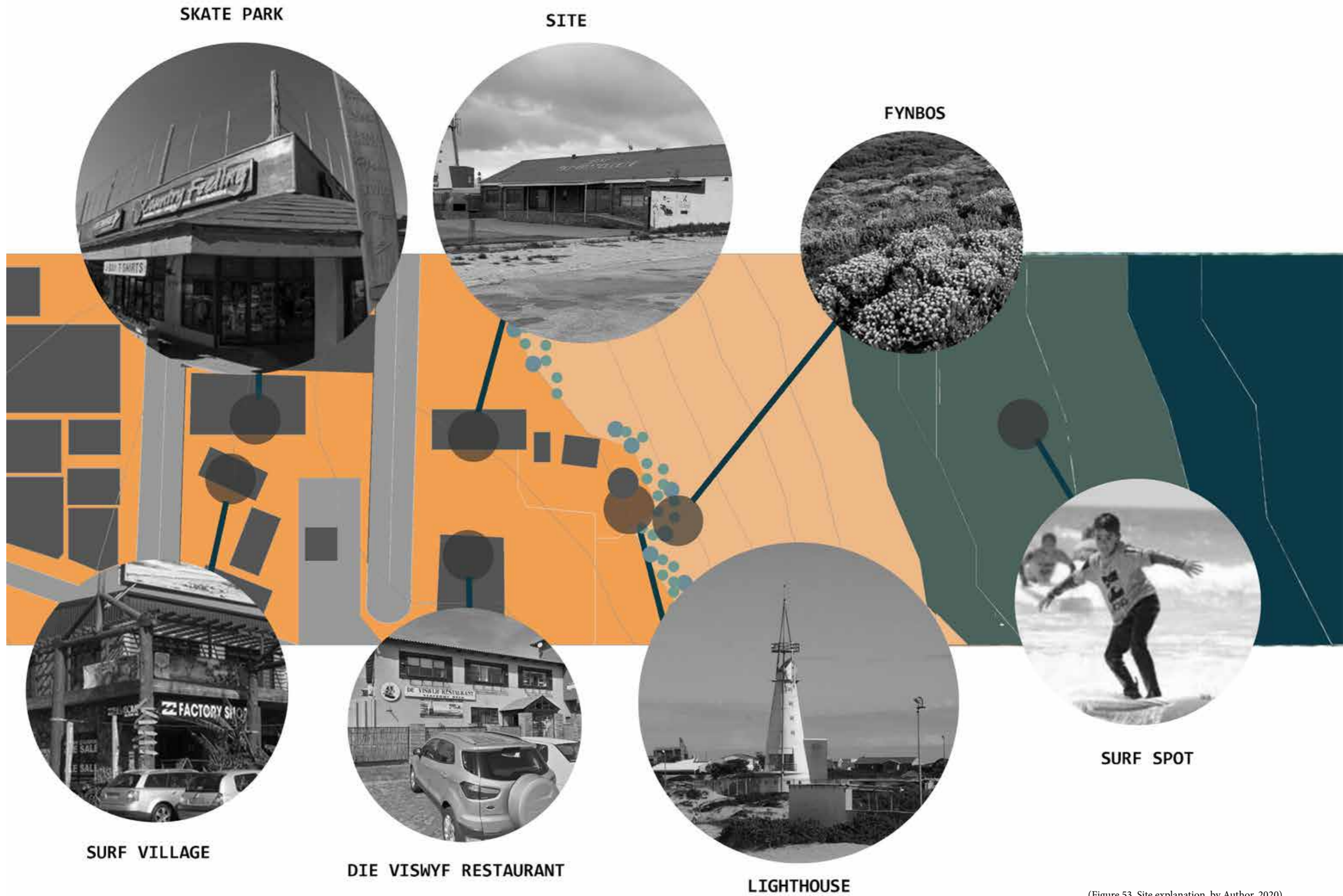
EAST ELEVATION

(Figure 51. Drawings of the current building on site, by Author, 2020)

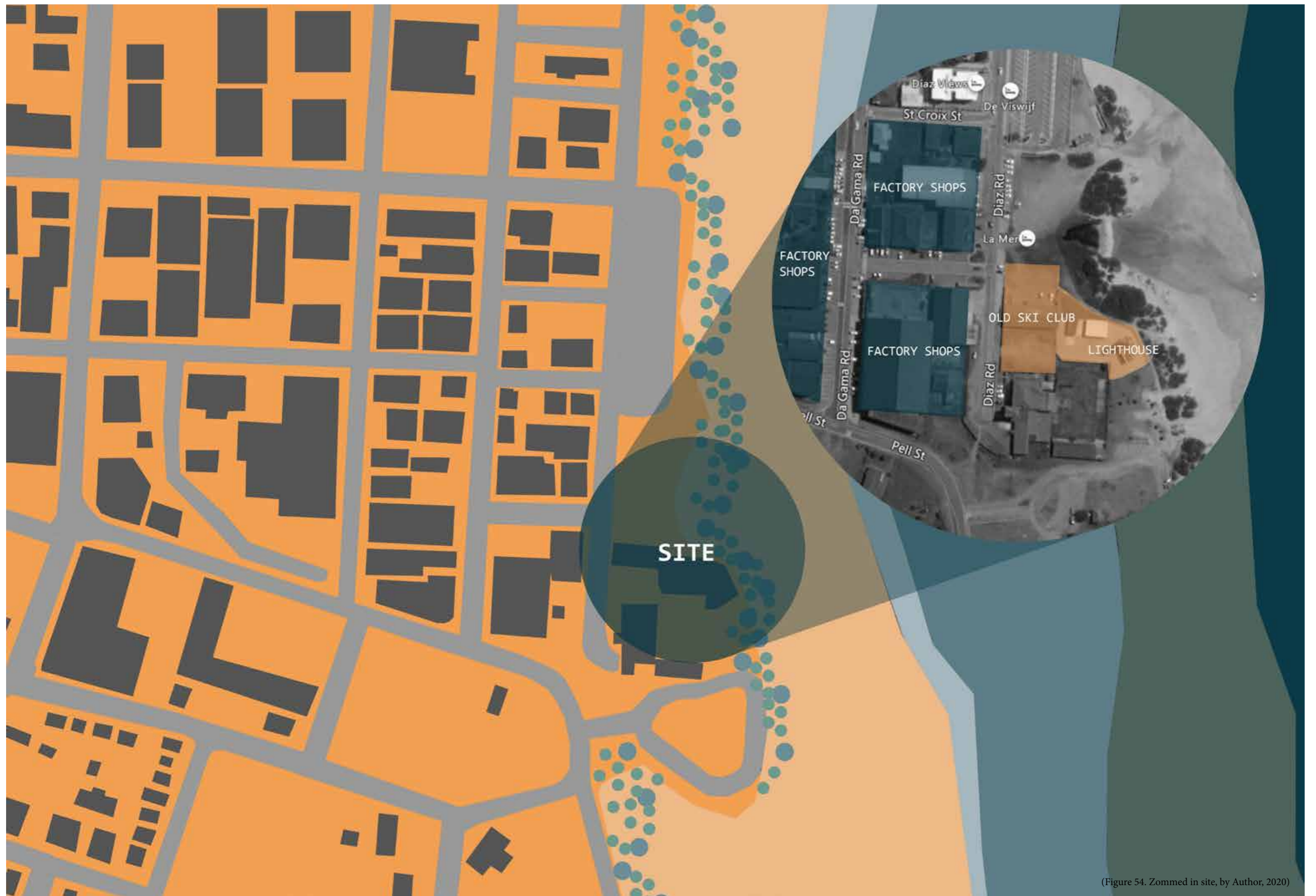


WEST ELEVATION

(Figure 52. Drawings of the current building on site, by Author, 2020)



(Figure 53. Site explanation, by Author, 2020)



(Figure 54. Zommed in site, by Author, 2020)



(Figure 55. The site's character collage , by Author, 2020)

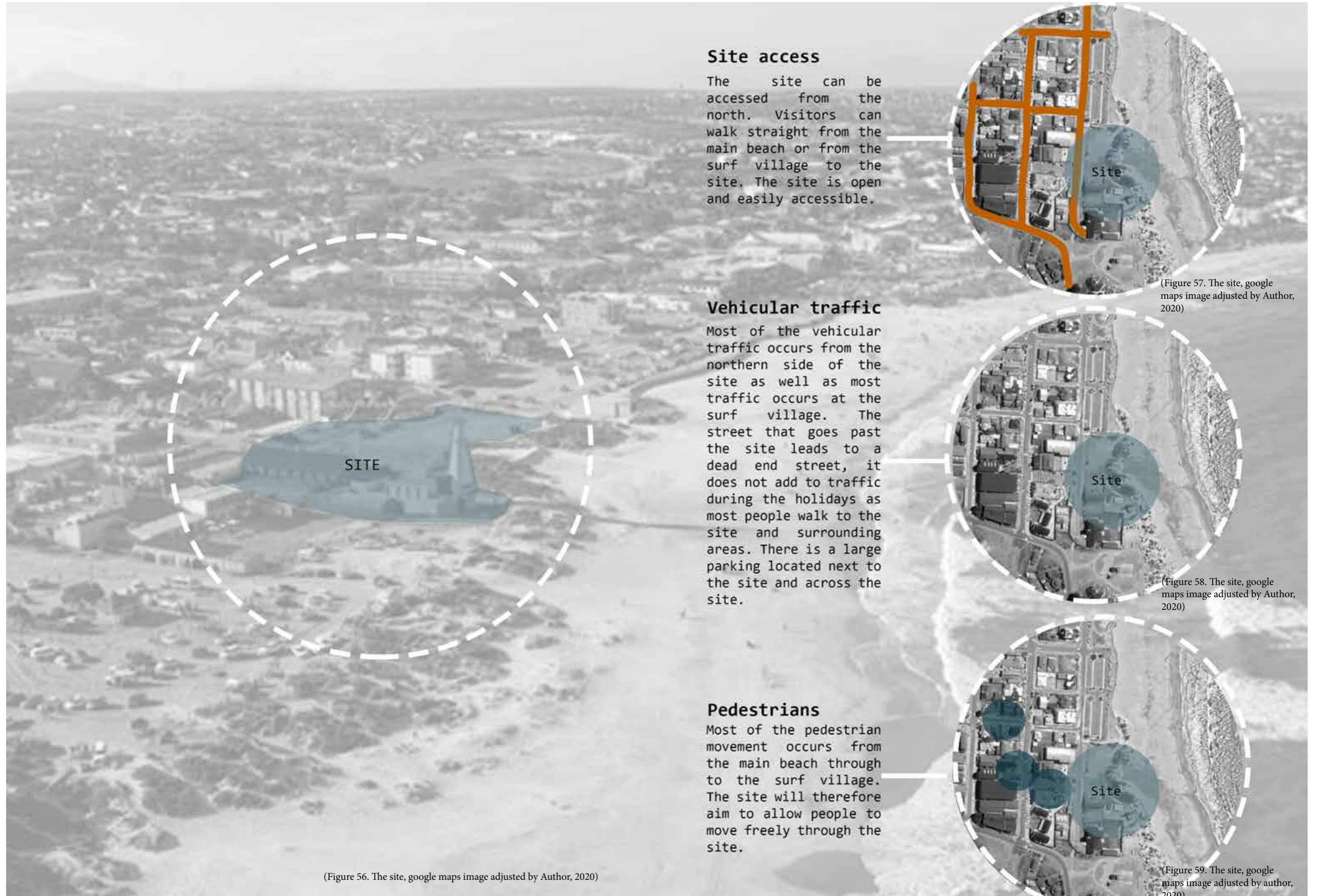
The character of the site:

The site itself is situated in a very busy street; the surrounding environment shouts colour and the J-bay culture. The surrounding environment is a usual hang out place for students, such as the Skate Park, the coffee shops and surf shops. It is a place where the locals and the tourists interact on a daily basis, whether it is in the ocean on a surf outing or a waiter serving a newcomer to the town. There are also a lot of surf shops and surfing schools surrounding the site.

People pass by the site on a daily basis, whether it is on their way to surf in the early mornings, a quick swim in the ocean, on a practice sea rescue patrol or even just having an ice cream along the walkway of the site.

The surrounding buildings are very unique and they speak of different times/ history of the town as well as the unique culture of the town. There is an unconscious layering of materials and this improves and intensifies the tactility of the spaces as well as an overall sensory experience of the environment.

The site holds the potential to become a place of social encounters. A place where people can have gatherings which unveils the potential of the environment to a larger extent.



(Figure 56. The site, google maps image adjusted by Author, 2020)

Site access

The site can be accessed from the north. Visitors can walk straight from the main beach or from the surf village to the site. The site is open and easily accessible.



(Figure 57. The site, google maps image adjusted by Author, 2020)

Vehicular traffic

Most of the vehicular traffic occurs from the northern side of the site as well as most traffic occurs at the surf village. The street that goes past the site leads to a dead end street, it does not add to traffic during the holidays as most people walk to the site and surrounding areas. There is a large parking located next to the site and across the site.



(Figure 58. The site, google maps image adjusted by Author, 2020)

Pedestrians

Most of the pedestrian movement occurs from the main beach through to the surf village. The site will therefore aim to allow people to move freely through the site.



(Figure 59. The site, google maps image adjusted by author, 2020)

Why is Jeffreys Bay a heaven for surfers?

Jeffreys bay upholds a reputation that spreads far and wide, the streets of Jeffreys Bay are full of people from sunrise to sunset hoping to live their own Endless summer dream (Lange, 2020) .

Jeffreys bay is a place where surf legends are born, waves are ridden and it is a place that draws the best of the best of surfers from all around the world(Lange, 2020) . It is a place where you will feel free, a place to find your soul, in search of the dream glide.

Jeffreys bay consist out of numerous beaches to surf and in the winter months the waves can reach up to 12 feet, these waves usually create the famous tubes of Jeffreys Bay.

Jeffreys bay is an iconic surf town because there is not only one beach to surf but also many surfing spots all less than 4km apart from each other. Jeffreys bay is good for surfing not only because of the famous tubes but the numerous surfing spots offers a place for everyone on every surfing level from beginner to expert.



(Figure 60. The oceanf, by Author, 2020)

Jeffreys Bay and the Surfing spots

Surfing in Jeffreys Bay:

Jeffreys bay has been attracting surfers from all over the world for more than 40 years to ride the very legendary tube wave at the Supertubes spot, it is one of the top ten surf spots in the world.

The owner of country feeling, Cheron Kraak, started the Surf Classic in Jeffreys Bay in 1980. This started to encourage South African Surfers to become top world-class competitors.

Since then, the event has become one of the main events each year in the World Surf League. It is the longest running event on the South African coastline.

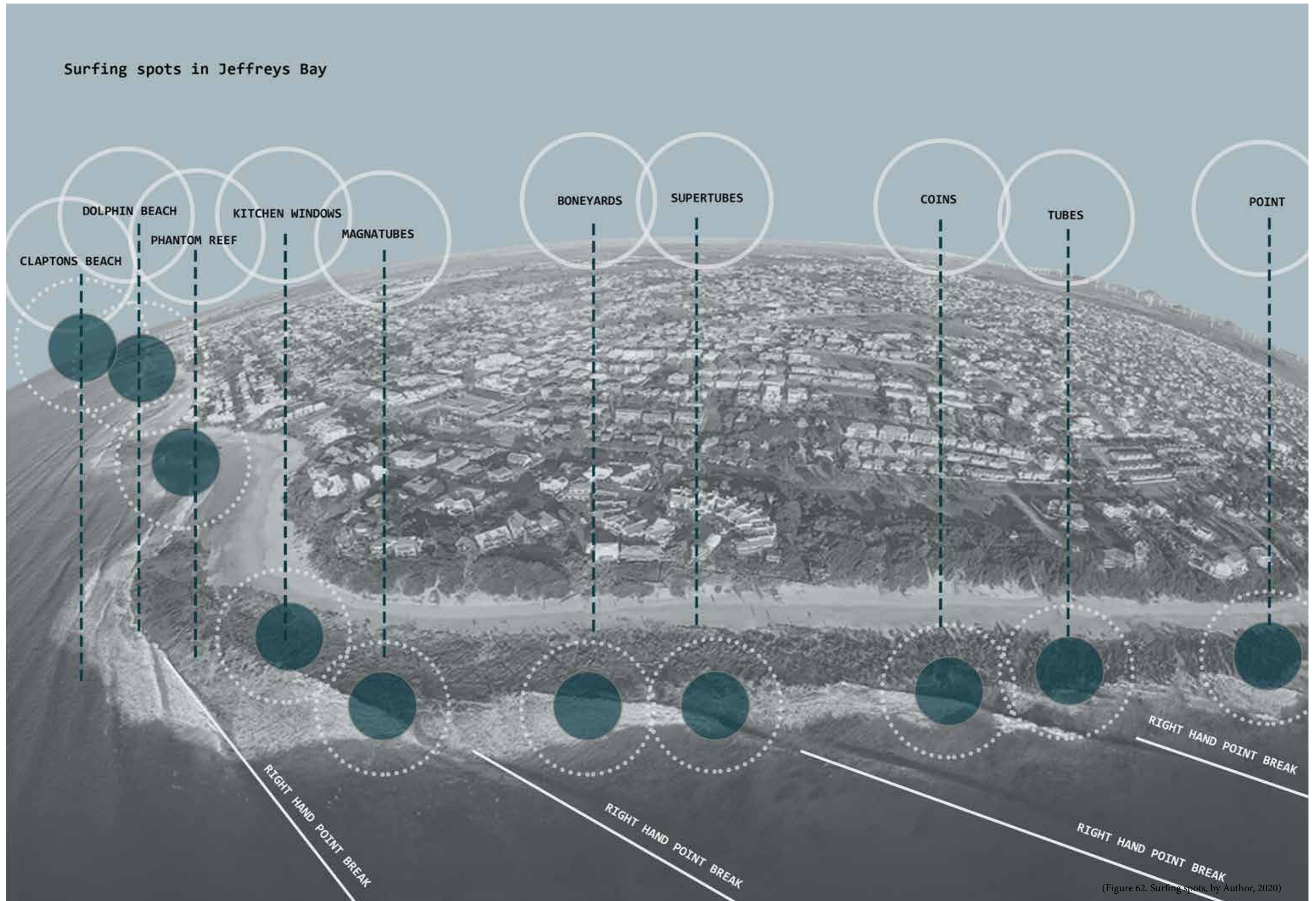
The first surfing league was run from the Beach Hotel Classic in 1981. During this event SA and the international surfing legend Shaun Tomson beat a field of 27 in a 5 foot surf at the Supertubes.

Jeffreys Bay consists of a long curving lava reef that has been jagged south-facing and it continues for at least a mile down into the inside edge of the bay. Gaps in the reefs are caused by the sun flow from beaches to the west. This occasionally causes a difference in the character of the sections of the waves. Jeffreys Bay consists out of; Magnatubes, which is a right and semi-left wave, it is more exposed to the swell than most of the other beaches. The next one is Boneyards, it has a quick hollow right reef that predominates on smaller days and an occasional left. Supertubes has a long powerful wall, it draws larger swell energy from the upper reefs and funneling it around for about 200 yards. mTubes the next beach is where the waves begin to slow and ease into the final connected section of the wave which is Point Beach. It is a playful mellow wall flowing down into the last closeout across the weed-softened albatross, Albatross on some days acts as the end section on the extremely rare giant days.

The sections in Jeffreys bay is not always open to everyday swells, however a strong southwest or southeast storm is needed to push the waves into the bay. These storms are mostly accompanied by an offshore southwest wind.



(Figure 61. Surfing spots, by Author, 2020)



(Figure 62. Surfing spots, by Author, 2020)

The daily movement of the sun and tides in Jeffreys Bay:

Jeffreys Bay has the the most perfect, longest right-hand point break in the world. It has 10 different beaches with amazing wave sections and these all include; Kitchen Windows, Magnatubes, Boneyards, Suppertubes, Impossible, Salad Bowls, Coins, Tubes, The point as well as Albatross. When the swells are just right ther is about a 1km ride between Boneyards and The Point. The pro competitors surf the section of Suppertubes, as it is a stellar section where Point and Albatross are slower and it is more suitable for intermediates as well as longboarders. It is critical to maintain a high line. The SW-W wind is an offshore wind which creates most of the sections, where as the NW-NE Berg wind or known as the Devil wind flows from the mountains and blows right into the barrels that creates a bad chop in the water that is difficult to handle on a wave that is fast.

There are numerous factors that influences the tide tables in Jeffreys Bay. The local winds and pressure systems might influence the tides.

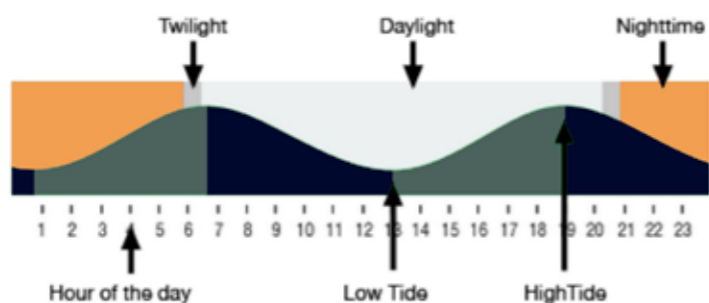


Figure 63. Pressure system,(Jeffreys Bay (J-Bay) Tide and Daylight Times, 2020)

The swell Consistency and Wind Overview.

The data below shows an average expectation and it may vary from time to time.

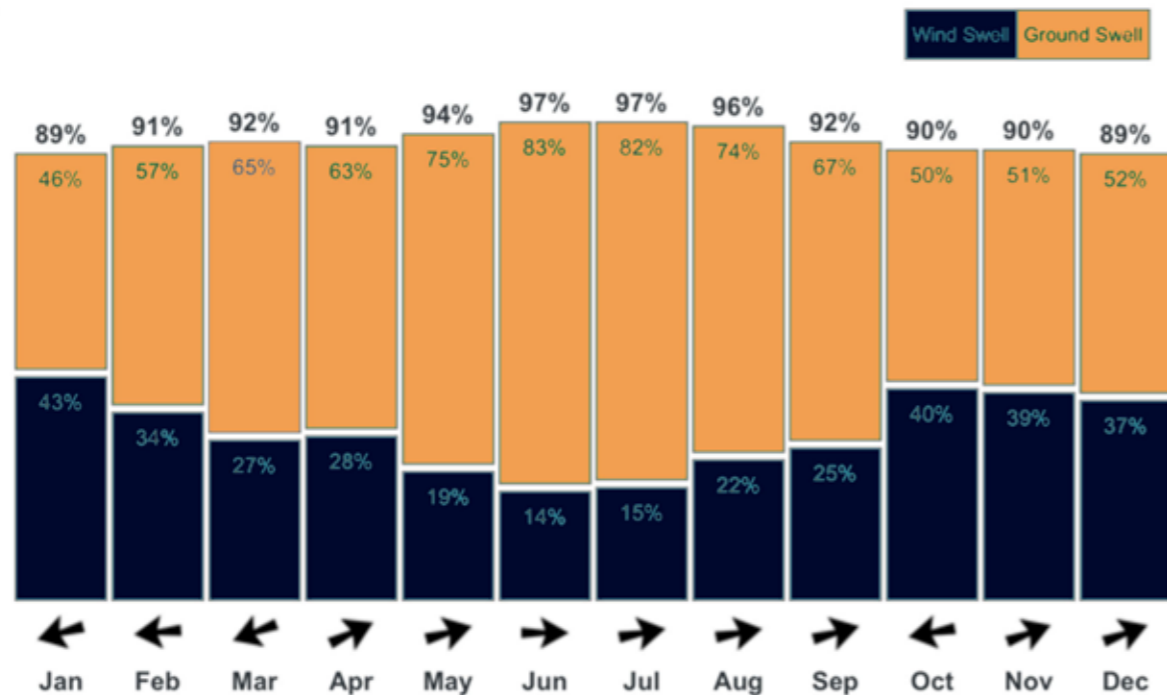


Figure 64. Swell and wind overview.(Jeffreys Bay (J-Bay) Tide and Daylight Times, 2020)

The graph shows the number of days in percentage that had a wind swell that was able to be ridden. It also shows the wind direction and not all of these days will have excellent surfing weather.

The monthly overview

Jan	Feb	Mar	Apr
Swell Consistency 89%	Swell Consistency 91%	Swell Consistency 92%	Swell Consistency 91%
Average Swell Height 9ft	Average Swell Height 9ft	Average Swell Height 9ft	Average Swell Height 10ft
Average Swell Period 10s	Average Swell Period 10s	Average Swell Period 11s	Average Swell Period 11s
Dominant Wind ←	Dominant Wind ←	Dominant Wind ←	Dominant Wind →
Dominant Swell ↖	Dominant Swell ↖	Dominant Swell ↖	Dominant Swell ↖
May	Jun	Jul	Aug
Swell Consistency 94%	Swell Consistency 97%	Swell Consistency 97%	Swell Consistency 96%
Average Swell Height 11ft	Average Swell Height 11ft	Average Swell Height 12ft	Average Swell Height 12ft
Average Swell Period 11s	Average Swell Period 12s	Average Swell Period 12s	Average Swell Period 11s
Dominant Wind →	Dominant Wind →	Dominant Wind →	Dominant Wind →
Dominant Swell ↖	Dominant Swell ↖	Dominant Swell ↖	Dominant Swell ↖
Sep	Oct	Nov	Dec
Swell Consistency 92%	Swell Consistency 90%	Swell Consistency 90%	Swell Consistency 89%
Average Swell Height 11ft	Average Swell Height 10ft	Average Swell Height 10ft	Average Swell Height 9ft
Average Swell Period 11s	Average Swell Period 10s	Average Swell Period 10s	Average Swell Period 10s
Dominant Wind →	Dominant Wind ←	Dominant Wind →	Dominant Wind →
Dominant Swell ↖	Dominant Swell ↖	Dominant Swell ↖	Dominant Swell ↖

Figure 65. Monthly overview, (Jeffreys Bay (J-Bay) Tide and Daylight Times, 2020)

The data collected by Magicseaweed shows that the average swell are only more than 7 seconds at a time. This shows that the average height of the swell is able to produce ridable surf. The period is known as the average period over 7 seconds. Some days will have shorter periods and the swells will not be able to produce ridable waves.

How are the waves formed and what is the anatomy of a perfect wave?

You do not have to be a surfer to be in awe of the waves, a daze -inducing sound and sight rolling in the ocean. The question is, how are these waves formed?

What creates the perfect surfing conditions and what is the cause of the ocean's restlessness? This is all the result of the anatomy of the wave and the way it breaks close to the shoreline (How Are Waves Formed? The Anatomy of a Perfect Wave - BookSurfCamps.com, 2020).

What is a wave?

The Ocean's waves travel through the mass of water, it is the transmission of energy and the waves is the result of the passing through of the energy. This energy is furthermore a result of the wind together with other elements. If there are no obstructions the energy moves in oscillating movements on the surface of the sea till it reaches the shoreline(How Are Waves Formed? The Anatomy of a Perfect Wave - BookSurfCamps.com, 2020) . The simple answer is that waves transport energy out onto the shoreline.

The most known waves are as a result of the winds that drive the waves. This is due to the friction between the body of water and the wind. The wind allows the water to move in a direction towards the shore and produces a wave crest.

What is a swell?

A swell is a group of waves that are formed by the wind. The wind blows for hundreds of kilometers off the coast and these winds can produce good waves. The quality of a swell is determined by the; strength of the wind, the interval of the wind and the way which the wind blows on the open surface in the same direction without obstacles getting in the way (How Are Waves Formed? The Anatomy of a Perfect Wave - BookSurfCamps.com, 2020).

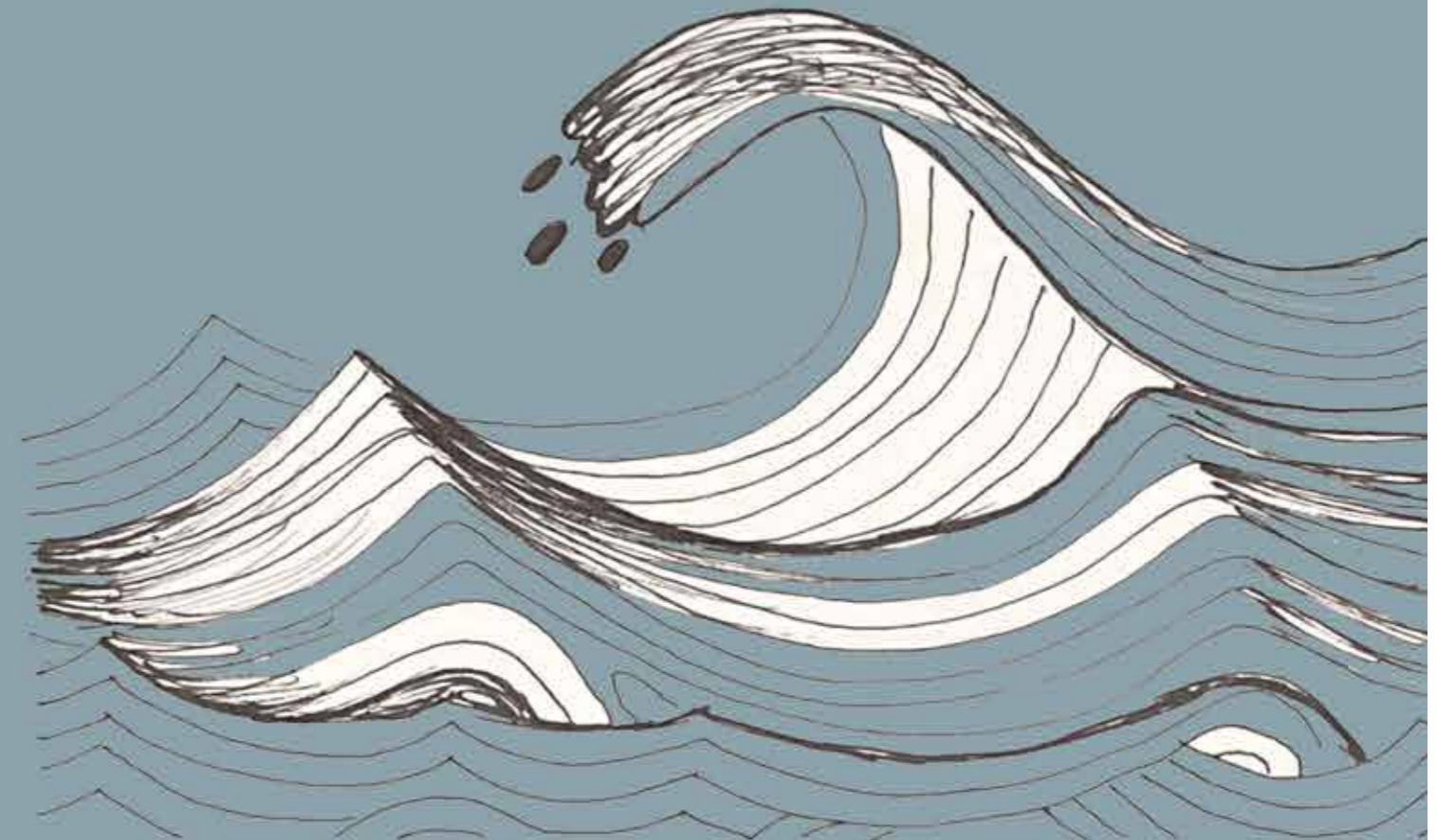
The influences named above have an effect on the wave period, this is the time that is taken in between the successive waves, and the size of the swell. There are two different types of swells, namely; a windswell and a groundswell.

A windswell:

these are waves with 10 seconds or less between the periods and the sets are most of the time due to local winds that are closer to the shore.

A Groundswell:

These are wave periods with 13 seconds or more between periods and they are due to the strong winds that blow further from the shore. These wave sets are strong and powerful waves and they are usually much bigger as a result of more energy being transferred into the water. These waves are of better quality for surfing and they are able to move further along the shore without losing any power.



(Figure 66. The wave, by Author, 2020)

Wave anatomy:

A wave moves through deep water with ease, the wave moves towards the shore with a large force and when the wave reaches shallow water it slows down and the waves crest starts to raise (How Are Waves Formed? The Anatomy of a Perfect Wave - BookSurfCamps.com, 2020). The crest on the surface is only a little part of the wave that we are aware of and see, but the wave extends down towards the ocean floor.

In the case where a wave hits an obstacle, the bottom part of the wave starts to move at a slower speed and the upper part of the wave still moves forward. The surfers are interested in the part of the wave that spills over.

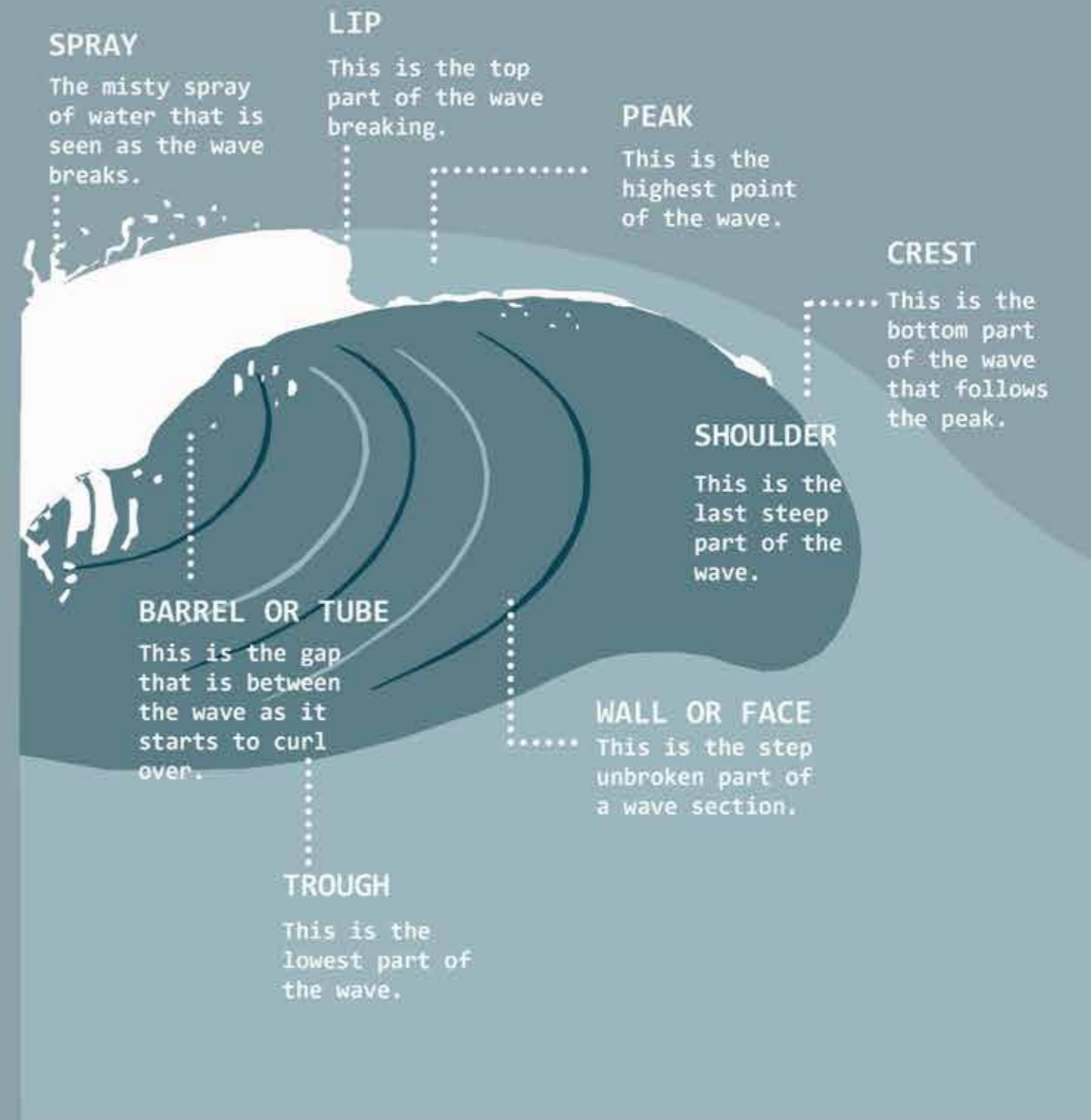
The shape of the wave is dependent on the seabed. The steeper the steeper the result of the wave. A barrel wave is formed when the deep water all of the sudden comes into contact with the shallow water. If the seabed is smoother then it will result in a more gentle wave that is more for beginners.

As a result of the seabed there are four types of surf breaks:

- Beach breaks: This is when the wave breaks over the seabed.
- Reef breaks: This is when the waves break over the reef and these types of waves are treacherous.
- Point breaks: This is when the waves swell comes across a rocky point along an angle; this allows the wave to break across the shoreline.
- River mouth Breaks: This is where a sandbar is formed due to the fact that a River mouth and a wave breaks over this sandbar.

There are also different types of waves in terms of right and left and it refers to the direction in which the wave breaks. In Jeffreys Bay it is a right hand break and this means that the wave breaks from the right to the left along the shoreline.

The image on the right shows the anatomy of a wave and how each part adds to the surfing experience.



(Figure 67. Wave anatomy, by Author, 2020)

The tide:

The tide also has an impact on the wave, the size and strength. The tides are a result of the gravitational pull on both the moon and sun(How Are Waves Formed? The Anatomy of a Perfect Wave - BookSurfCamps.com, 2020) . The tides have an impact on the shape of the seabed and therefore on the wave as the wave breaks over the seabed.

When it is low tide then the water will break in the shallow water and it will be steeper than during high tide. If there is a change from low tide to high tide then it will cause a momentum in the waves and will result in more powerful waves.

How to know in what direction and how the wind is blowing:

The study of pressure charts gives information regarding the wind direction as well as when and where the wind might be blowing. The wind blows due to air moving from a high pressure into a low-pressure system.

Low-pressure systems are a result of rainy weather and skies filled with clouds. This weather is responsible for groundswells and they produce powerful waves. When these winds blow on the surface of the sea for a prolonged period then the swells become even larger.

You should therefore look at the pressure charts to get an idea of where and when the wind might be blowing and at what speed it will be blowing because it will determine the size and the speed of the waves. There are also different types of winds that occur such as the onshore and offshore winds.

Onshore winds:

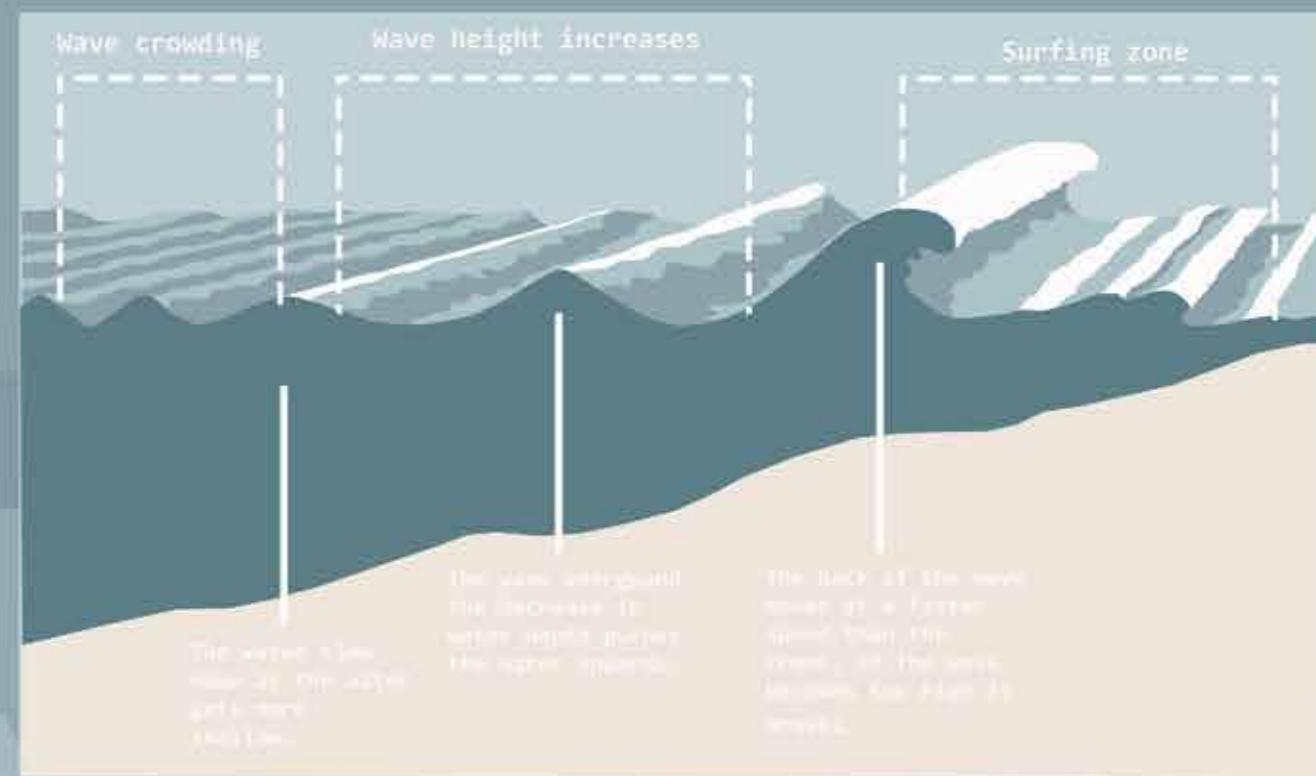
These winds occur when the wind blows from within the sea towards the shore and it usually pushes in the same way that the wave is going. If the onshore winds are strong, the waves will not be as suitable for surfing as the waves would break too quickly and they are usually the messy kind of wave that is not a so called surfing wave.

Offshore winds:

This is the wind that flows from the shore out into the sea and this wind becomes great surfing waves as it creates a large swell that is not messy at all and these waves are also fast and they are usually hollow which creates the barrel in the wave that the surfers so desperately want to surf. These winds usually occur during the earlier hours of the day.

As a result the wind plays a huge role in the anatomy of a wave and it is what will determine a great surfing wave or not (How Are Waves Formed? The Anatomy of a Perfect Wave - BookSurfCamps.com, 2020).

In the image below it shows what part of the wave becomes the surfing wave and surfing zone and it shows how the waves form as a result of the onshore and offshore winds.



(Figure 68. The swell, by Author, 2020)



Surfing schools:

There are numerous surfing schools in Jeffreys bay, most of the surfing schools are located around the surfing village Their usual surf spot is the main beach- Dolphin beach. The surfing village also has other activities located in the area such as the skate park, which is a usual hang out spot for visitors as well as for the surfers.

The surfing school coaches visitors and surfers that are further developed. There is a range of different types of surf lessons such as; learn to surf, improver surfing lessons, advanced surfing lessons, competitive coaching and surf camp. These schools offer a surfing experience in a safe and professional environment.

These surfing schools will be integrated into the proposed design dissertation through the surfboard work shops and surfboard shop. Here the people will be allowed to rent surfboards and go for surfing lessons.

(Figure 69. Surfing school and skate park, by Author, 2020)

The surfing school is where I learnt to surf during one school holiday. They give many opportunities for kids during the holiday to learn to surf for free. There is also a surfing school in Jeffreys bay that aims to teach the kids of the community to surf and the kids have become so good that they take part in the junior competitions and they receive a lot of support from the community in the town.



Crafts in Jeffreys Bay:

Jeffreys Bay contains numerous crafts within the town. One of the crafts that takes place along the shoreline are ladies that pick up sea shells and make ornaments out of them and then sell these to the shell museum as well as the visitors.

The shell museum is located at the main beach in Jeffreys Bay as well as the wooden structures where the ladies make and sell their crafts.

Other crafts that also take place along the shore is beadwork, mosaic and pottery. All these products are sold near the main beach in local shops.

(Figure 70. Crafts in J-Bay, by Author, 2020)

Something that also adds to the unique surfing culture of the town, is the graffiti all around the town that is done by local artist and it is a representation of the town's culture.



(Figure 71. Surf village, by Author, 2020)

The surf village:

The surfing village consist out of numerous surf shops with courtyard spaces in-between that act as hang out spots for the visitors. The Surf shops consists of famous surfing brands and most of the shops sell these items at a discount price, such as wetsuits, surfboards and clothes. There are also shops that sell custom Jeffrey's Bay merchandise in the village.

There are also numerous coffee shops and restaurants within the village. These restaurants and coffee shops speak of the culture of Jeffrey's bay and they are all local branded shops with a unique culture. The restaurants are also proud to sell their own local beer as it is brewed locally and unique recipes can also be found in Jeffrey's Bay.

The village also has a very popular skate park on-top of one of the surf shops. This is a place where students as well as school kids practice their skills and hang out together.

The surf village is a popular destination for travelers all around the world. There is also a monthly market that takes place at the village, this is where locals sell their crafts and musicians show off their skills.

Precedent studies:

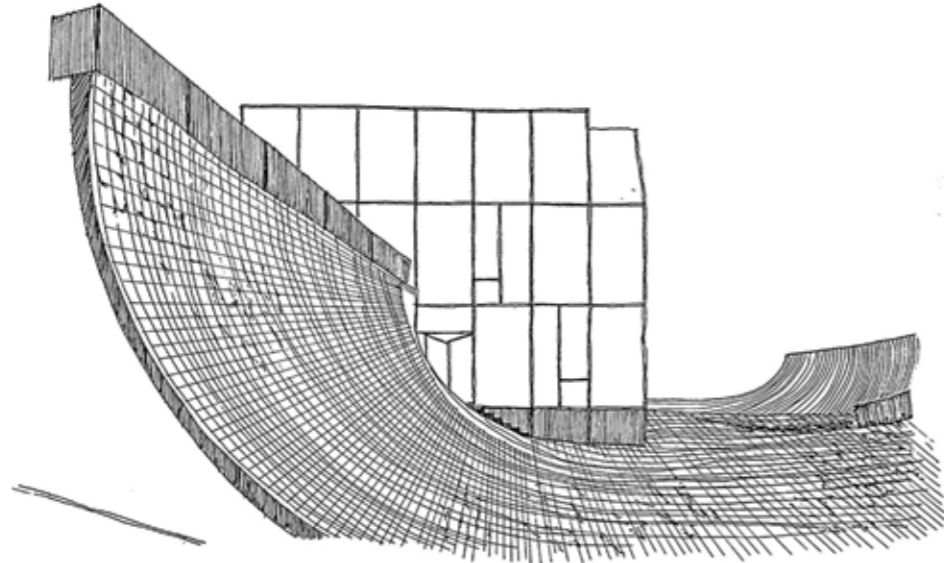
The following section consist out of precedent studies. The precedent studies are analysed in a way that is purposeful to the design in this dissertation. The aim with these precedent studies are that they will help with the development and design process of this design project.

The precedent studies to follow consist out of an in-depth study that is relatable to the theme of the project in a similar way and the other precedent studies are studies done in therms of design and specific elements that are relevant in the project.



Museum of Ocean and Surf

(An in depth precedent study)

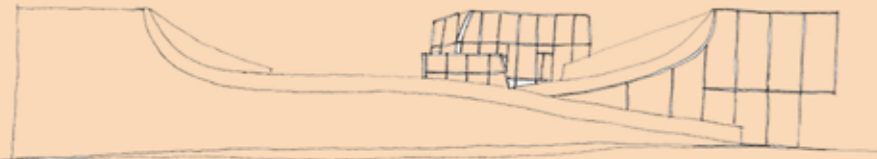


(Figure 72. Perspective, by Author, 2020)

This precedent study is relevant to this dissertation in terms of the program of the building as well as the function of the building.

PROJECT INFO:

Museum of Ocean and Surf, by Steven Holl Architects and Solange Fabiao was finished in June 2011.



(Figure 73. Perspective, by Author, 2020)

THE CLIENT:

City of Biarritz/ Adim Sud Ouest

The USER REQUIREMENTS:

The project was for an international competition. The scheme was collaboration by Steven Holl Architects and Solange Fabiao. The Museum of Ocean and surf investigated the role of surf and sea together with science and ecology (Museum of Ocean and Surf, 2020). The aim of integrating surf and sea together in reference to the proposed design in this dissertation will also look at the role of surfing and how this culture can be integrated in to the design.

THE LOCATION:

It is located in Biarritz, France, which is known for its shores and resorts along the seaside. The museum acts as a central point of gathering for visitors in the town together with the purpose of educating people on oceanography, ecology, and surfing.

In relation to the building that I am proposing it will also serve the purpose of educating people on surfing as well as act as a gathering place for visitors.



(Figure 74. Site plan, Museum of ocean and surf, 2020)

THE SITE:

The site is located next to the beach. It is at the edge of the city of Biarritz. Tourism plays a huge part in the composition of the urban population in this region. The public space of the museum educates and gathers both the visitors and the locals indoors and outdoors (Museum of Ocean and Surf, 2020). The building's form forms part of the landscape of the city and it is adjacent to the coast. The southern side of the building contains most of the landscape and there are fairly spread residential buildings at the northern side of the building.

In relation to the proposed building in this dissertation, the site is also located at the edge of the city along an urban population, the building will also aim to form part of the landscape of the town.

THE BUILDING:

The building form was initiated from the concept “under the sky/under the sea”. The “under the sky” forms a concave shape that forms part of the main exterior space (Museum of Ocean and Surf, 2020). The “under the sea” forms the structural ceilings that are convex in shape, this forms part of the exhibition spaces. In the proposed design the wave and the ocean also plays a significant role in the design in terms of form and structure.



(Figure 75. Perspective, Museum of ocean and surf, 2020)



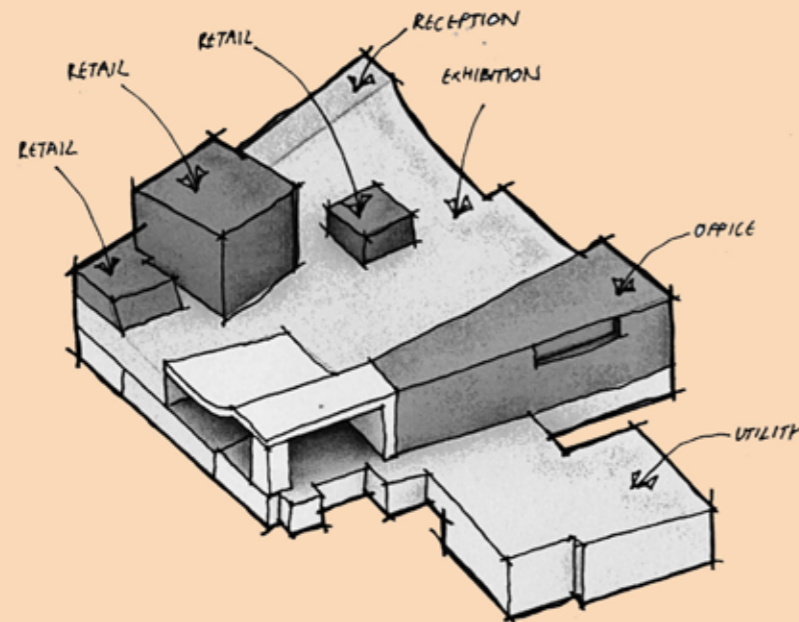
(Figure 76. Gallery space, Museum of ocean and surf, 2020)

THE BUILDING FUNCTION AND PROGRAM:

The building consists out of gallery spaces, a restaurant, an auditorium, cafeteria and administrative offices as well as a public landscape that forms part of the museum’s plaza. Some of the other programs include the lobby that connects the exterior point of entry with the interior spaces. The service and storage spaces are located underground. The skate pool sits at the corner of the exterior roof plaza; this serves as the roof for the outdoor porch, which is right underneath it (Museum of Ocean and Surf, 2020).

Looking at the function and program of this building in relation to the proposed building for the dissertation the function and program is very similar in terms of the museum area as well as the outdoor spaces that are specifically created as hang out spots for surfers as well as the tourists.

In the image below it shows the different spaces in the building in terms of mass.

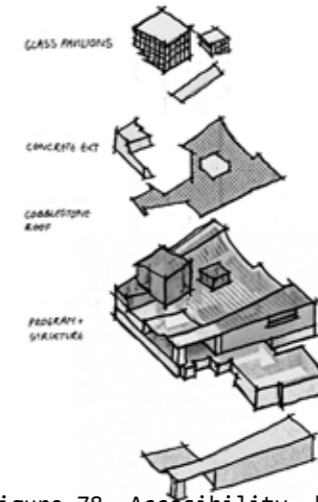


(Figure 77. Building functions, by Author, 2020)

ACCESSIBILITY:

The store of the museum is located at the center level of the exhibition spaces. It has direct access to the auditorium and the entry lobby from outside. The more public spaces such as the restaurant and the outdoor terrace are located at the top level of the museum. This allows for open views across the ocean (Museum of Ocean and Surf, 2020). Southwest of the building there is a skate pool that was created specifically for the surfers as a dedicated hangout plaza with an open porch. This connects the exhibition spaces with the auditorium on the inside of the museum. The area that is covered acts as a shelter space for interaction that might take place outdoors, events or even meetings. The way that the spaces connect with one another will be an aim in the proposed design as public space such as the bar. It will also be located at the top level to capture the views on the site and the outside spaces will also act as a hang out space for the surfers and visitors.

The two images on the right shows the main circulation ramp as well as the different levels of circulation within the building. The proposed design will also consist out of independent circulation points as well as independent accessibility.



(Figure 78. Accessibility, by Author, 2020) (Figure 79. Staircase, Museum of ocean and surf, 2020)

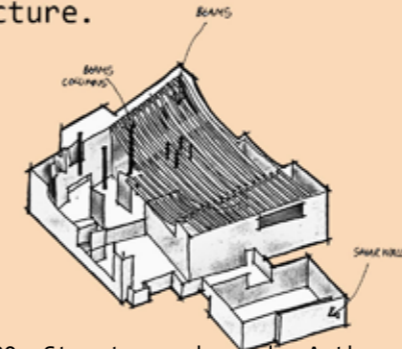


STRUCTURAL IMPLICATION:

The primary curves consist out of structural beams. The beams are cast in re-bar that extends to the top of the building. A concrete slab is cast on top of this. The critical system is beam and columns, the structural concrete walls acts as secondary vertical support systems in the exhibition spaces. Concrete walls are wrapped around the outside of the building.

In the proposed design the curves of the roof will also consist of structural beams but in this case wood. The system will also be of beam and columns and supporting brick walls in-between that will also act as a secondary structural support system.

As seen in the images below, the curve is due to the beam and column structure.



(Figure 80. Structure, drawn by Author, 2020)

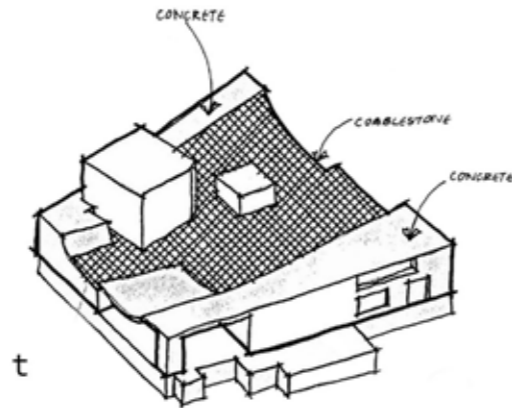


(Figure 81. Roof Structure, Museum of ocean and surf, 2020)

FORM AND FUNCTION:

The form shapes the space, it is a cup form and the entire exhibition spaces opens up below. It was all about the surfing culture and to educate the public about the health of the ocean. It is a shaper of space. One side moves you towards the ocean and the other side moves you into the distance (Museum of Ocean and Surf, 2020).

The concept and topographical integration provides the building with a unique profile. The proposed building will also make use of the topographical integration, by allowing movement throughout the building and encapturing the views on site.



(Figure 82. Form and function, by Author, 2020)

SPATIAL ENHANCEMENT:

When entering the building, there is a lobby with a ramp that gives a glimpse aerial view of the exhibition area. The ramp also passes along a very dramatic surface that is curved and in constant animation by the moving image of light.

The two structures in the middle (glass structures) consist out of the restaurant and the surfer's kiosk. This is an activation method for the plaza that is outdoors and it connects the two structures on the beach in the distance. The two structures could be entered through the main lobby. The lobby connects the street level with the cafeteria and the surfer's kiosk. The kiosk is also accessible separately from within the plaza that acts as the main gathering space available to the public.



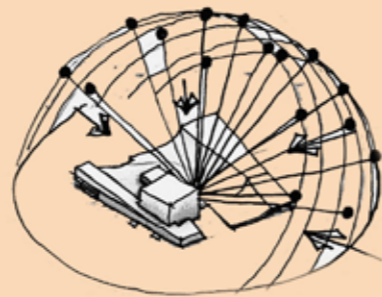
(Figure 83. Section, by Author, 2020)



(Figure 84. Section drawn by Author, 2020)

CLIMATE:

The area gets a significant amount of rainfall throughout the year. The climate is also temperate, with precipitation. The ocean had an influence on the building's design in terms of climate. The warm temperature in the location encourages visitors to spend time outside on the roof and the plaza of the museum as well as the skate pool that forms part of this integration.

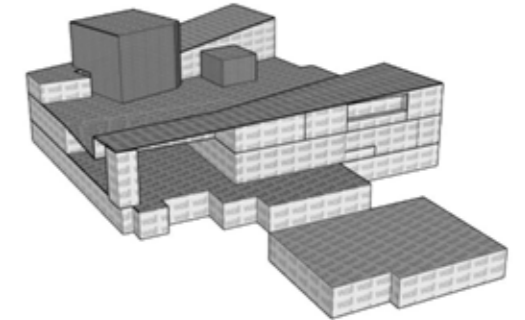


(Figure 85. Sun angles, by Author, 2020)

PERCEPTION AND PERFORMANCE:

Daylight gets distributed into the interior of the museum through the glass units(Museum of Ocean and Surf, 2020). The insulating glass panels also help to distribute the natural light into the underground exhibition spaces. The natural light that enters the building allows for an interior comfort with little artificial lighting required. The cobblestones on the outdoor plaza help with the infiltration of rainwater into the ground.

The proposed design will also rely on natural light to enter the building as well as the use of cobblestones in specific outdoor spaces, to allow water to move into the ground.



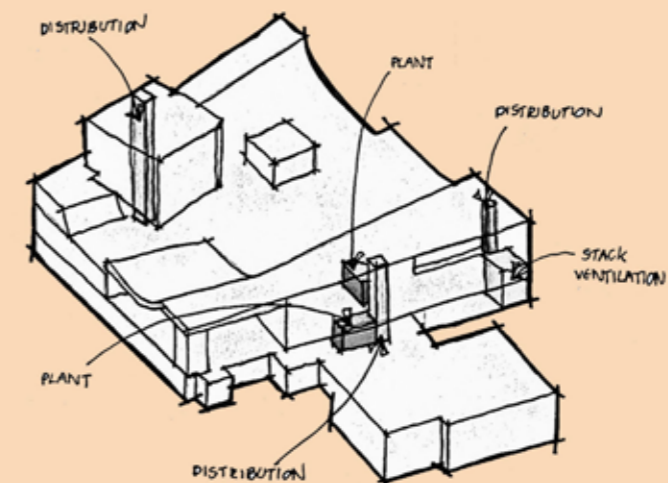
(Figure 86. Percipitation and performance, Museum of ocean and surf, 2020)

THERMAL AND VENTILATION SYSTEMS:

The distribution of air is allowed through vertical shafts that are spaced around the building. There are however two main systems that maintains the thermal comfort of the building. Stack ventilation is also an aid in the building's ventilation and it influences the movement of air through all the spaces (Museum of Ocean and Surf, 2020). Air gets distributed in the interior spaces so that the multiple levels will have movement of air. There are also plants that are in the service blocks at the bottom floor, this helps to maintain the thermal comfort of the building as well.

The proposed building will also make use of a central system in the building for ventilation, however most of the ventilation will take place naturally by means of strategic openings.

The image below shows the different ventilation systems i the building.

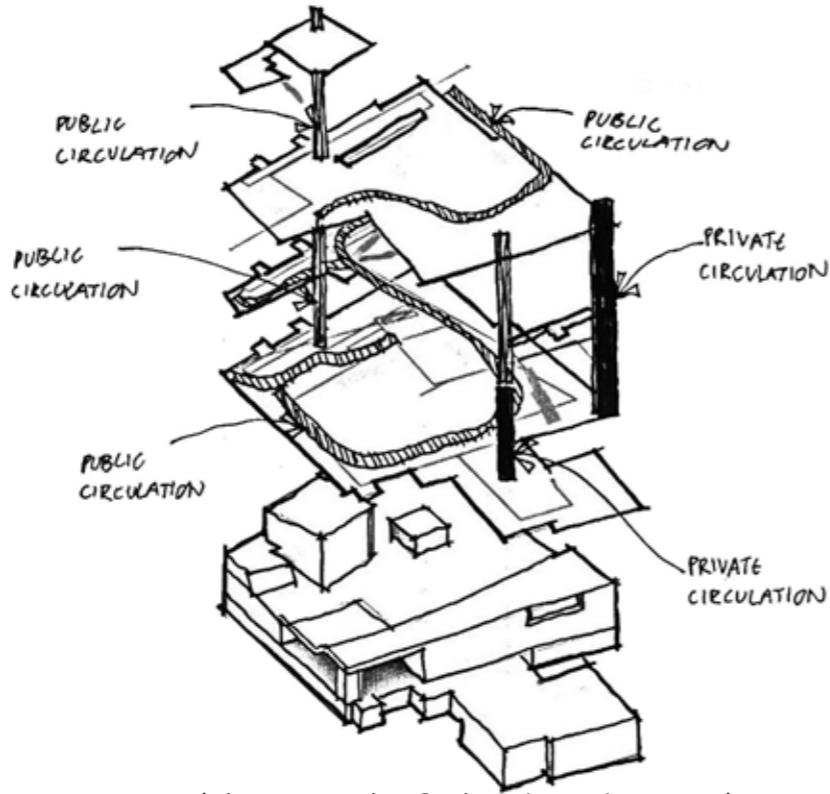


(Figure 87. Thermal ventilation system, by Author, 2020)

Circulation:

The exterior circulation is a very important part, it forms part of the whole experience of the museum. The building is designed in such a way that the visitors are encouraged to move from the ground to the roof area. Different spaces are connected to the roof plaza such as the skate pool and the restaurant. The main entry point allows the visitors to look down onto the exhibition spaces. The reception area is connected to the auditorium through a bridge that overlooks the exhibition (Museum of Ocean and Surf, 2020). The visitors can walk into the exhibition area through the reflecting curved structural ceiling.

In relation to the proposed building in this dissertation, the circulation will also aim to form part of the whole experience of the building in the way you move through the building and the way that different areas are connected to one another.

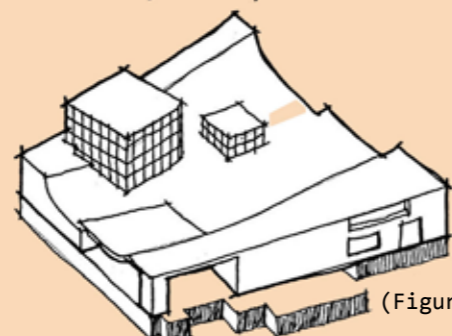


(Figure 88. Circulation, by Author, 2020)

The envelope

There are certain glass elements that add to the aesthetic profile of the design; it also allows natural daylight into the interior spaces. The two units on top of the roof plaza consist mostly of glass units. The facades of the reception space that is found behind the pavilions also have IGUs for daylight access. The insulated glass and the acid-etched spans across the heavy mass of the concrete exterior walls.

A large part of the building consist of concrete together with French stone aggregates that is added to the exterior to produce an overall textured white appearance. Portuguese cobblestones are layered on top of the roof plaza. Rainfall and infiltration is designed to take place on the roof (Museum of Ocean and Surf, 2020).



(Figure 89. Envelope, by Author, 2020)

Conclusion:

In conclusion, this precedent study shows many aspects of the building that will be aimed for in the proposed building in this dissertation. In terms of the physical structure as well as climate the precedent study could be seen as less relevant, but referring to the program and function of the building it is relevant.

As in the precedent study the proposed building will also aim to bring the ritual of the surfer into the building as well as the embodied experience of the surfer. As seen in the precedent study, the flow through the building is done intentionally to get the user to follow a specific path that is almost layed out for them.

Precedent study Parc de la Villette/Bernard Tschumi Architects

(Design precedent study)



(Figure 90. (AD Classics: Parc de la Villette / Bernard Tschumi Architects, 2020)

This Precedent study relates to specific design elements that is relatable in the proposed building in this dissertation.

The Precedent study relates to the proposed building in the way that the park is put together as well of the aims of the park and the proposed design.

Project info:

The project was part of an international competition.

The site:

It is located in Paris, in an urban development. The proposed design in this dissertation is also located urban developments and the proposed design is to integrate the urban environment with the building itself.

The Building:

The park was not designed in a traditional way. The landscape and the nature are the drive behind the design, a place where culture, the natural and artificial are forced together. This is also an aim in the proposed design where the nature and the culture around the site is the drive of the design and how these elements could form together to become a design. (AD Classics: Parc de la Villette / Bernard Tschumi Architects, 2020).

The idea of this park is that the visitor will explore it and that there would be spaces for activity and interaction. The park also aimed to create a certain sense of freedom within the superimposed organization of the plan that would act as a reference point for the visitor.

The project also aimed to create a space where people will relax, meditate and play. This also relates back to the proposed design as the project aims to create a space for the visitors in a formal and informal way for them to explore. The proposed design will also consist out of a structured plan that is organized in a way that the visitor can still move freely from one point to another and experience the freedom in the proposed design.



The walkways create spaces below for people to interact and take in what is going on around them.

(Figure 91. (AD Classics: Parc de la Villette / Bernard Tschumi Architects, 2020)

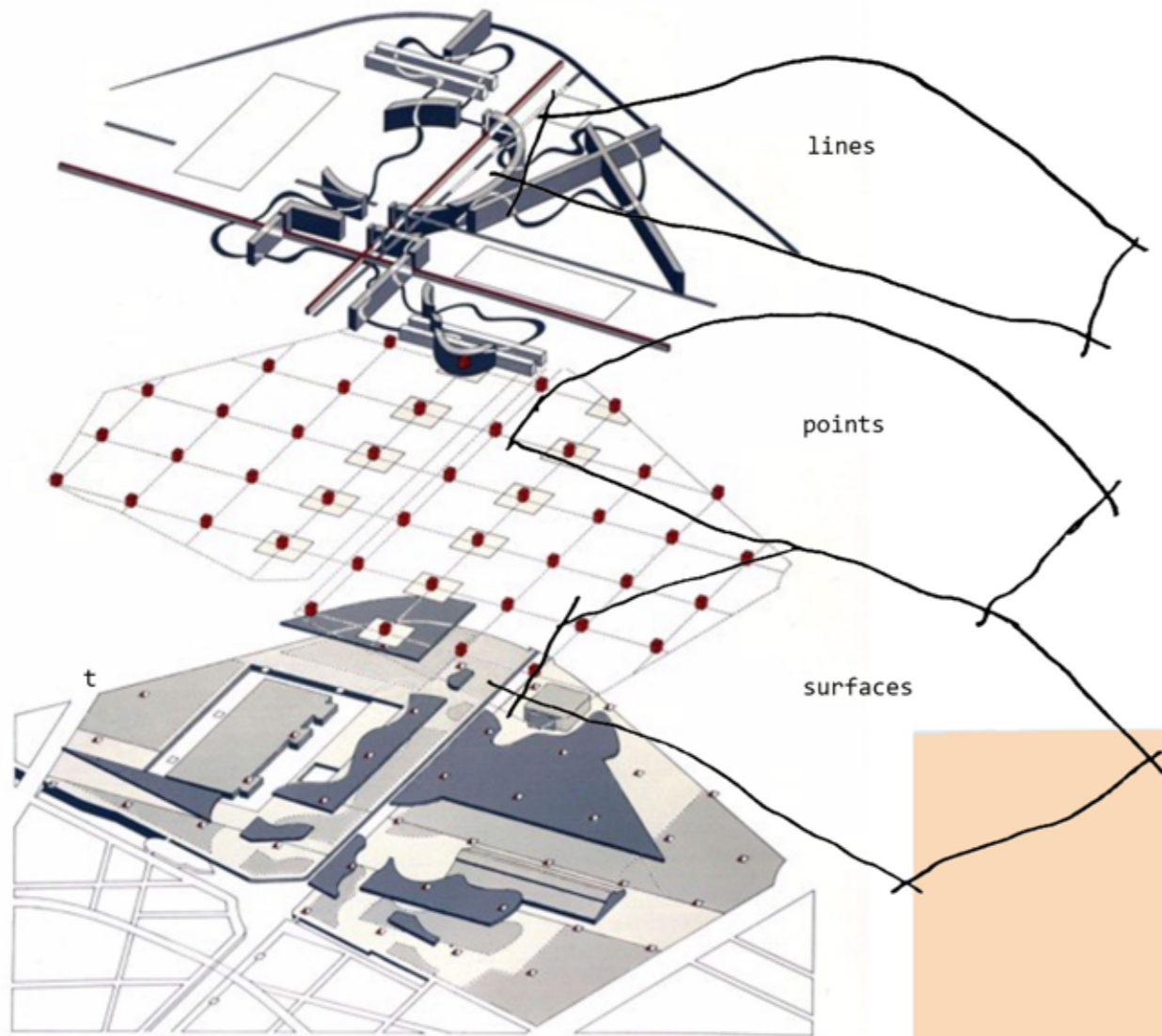
The park was designed with three principles; points, lines and surfaces. These are organized spatially through a grid of points and these series of points provide a dimensional and organizational quality to the park (AD Classics: Parc de la Villette / Bernard Tschumi Architects, 2020). The point line system in the proposed design will make use of specific structural elements that acts as points and lines where people can move freely.

Looking at how the park was designed and how each walkway was designed intentionally to provide spaces for people to interact as well as the chairs that are placed on site in a specific way so that people can sit down and take in what is going on around them. These chairs also allow a person to turn it around and allow each person to choose which direction they want to face, these are important design elements that will be made use of in the proposed design. The proposed design aims at also creating walkways that are placed with an intention to frame and capture the view as well as look out points that are designed so that a person can sit down and take in what is going on around them.

The park was designed around the visitor and how the visitor would experience the site, therefore this is appropriate in the proposed building of this dissertation as the building will aim to create spaces for the visitors where they can have interaction and explore but also a place where there is a certain organization to the plan.

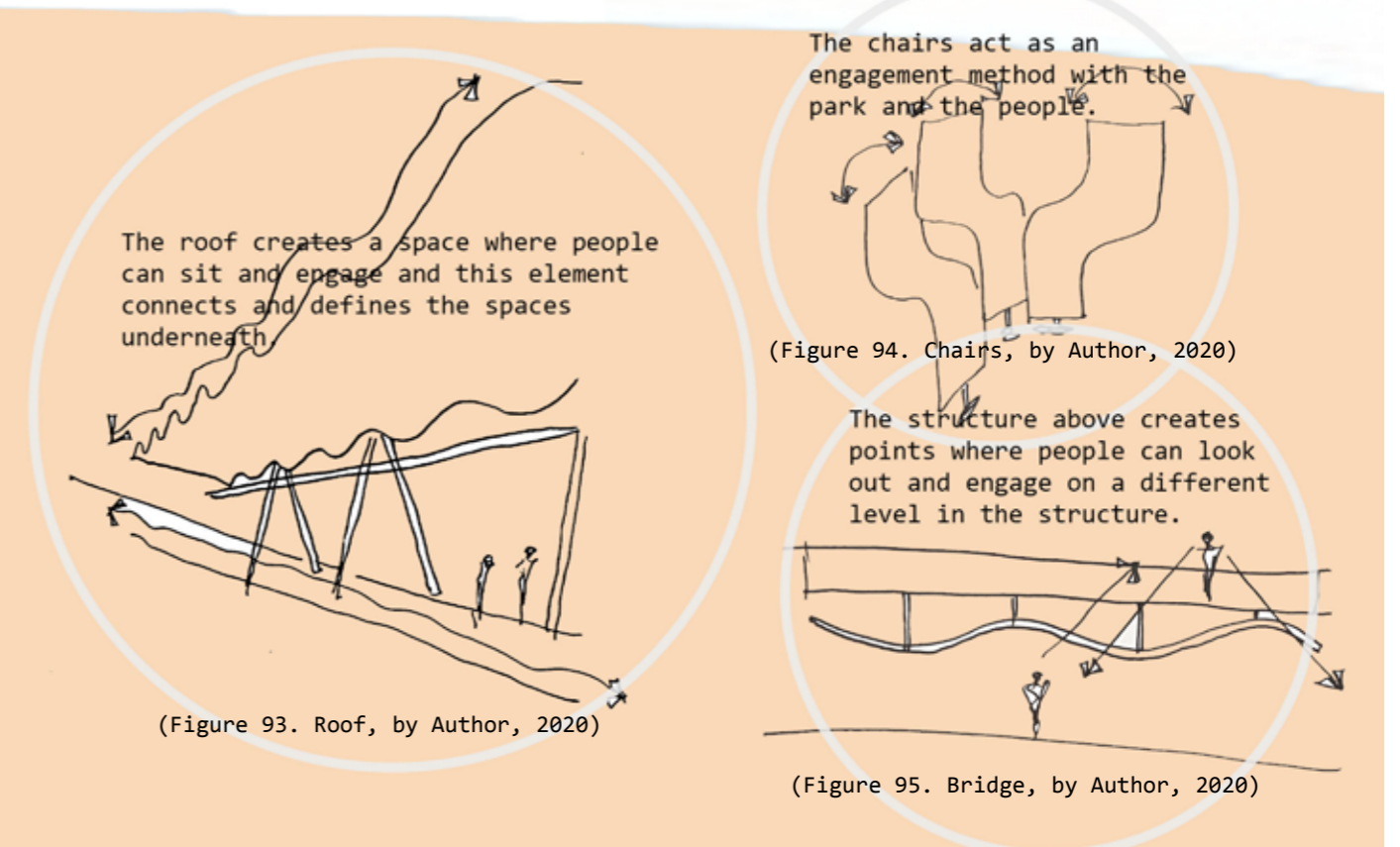
The project also holds many informal programs of spaces within the park, which could be related back to the proposed building for this dissertation as it aims to create hang out spots for people in not just a formal way but also in an informal way when taking the walkways and courtyards and in-between spaces into consideration.

The walkways in the park are also placed very cleverly under a structure that is extended throughout the main axis of the park. The structure also allows people to walk on ground level as well as on top of the structure, which also creates a unique interaction with the site and the people passing by, this creates informal spaces.



(Figure 92. (AD Classics: Parc de la Villette / Bernard Tschumi Architects, 2020))

The three principles creates a certain play in the plan while being organized accordingly. The idea of taking three different types of elements and superimposing them on the site is a clever way to add a unique quality to the park. The proposed design will make use of the idea of taking three different types of elements and placing it on site in a way that creates play within the plan.



(Figure 93. Roof, by Author, 2020)

(Figure 94. Chairs, by Author, 2020)

(Figure 95. Bridge, by Author, 2020)

Chapel of St. Ignatius/ Steven Holl Architects

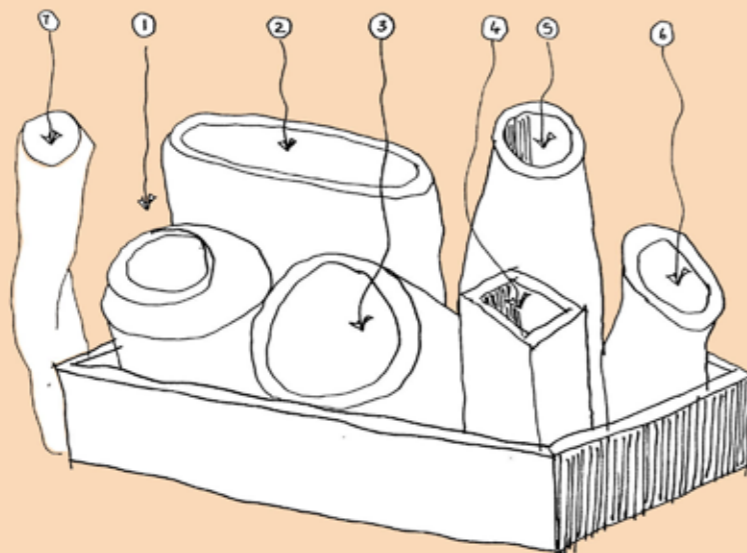
(Design precedent study)



(Figure 96. (AD Classics: Chapel of St. Ignatius / Steven Holl Architects, 2020)

This Precedent study relates to specific design elements in the precedent that is relatable in the proposed building in this dissertation.

The image shows the conceptual idea of different sculptural pieces allowing light into the building.

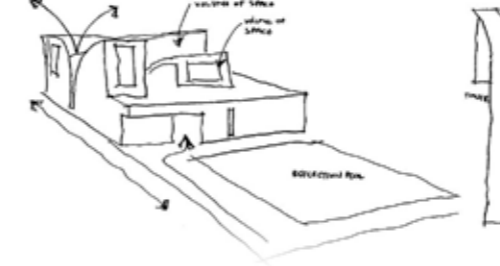


(Figure 97. The 7 bottles, by Author, 2020)

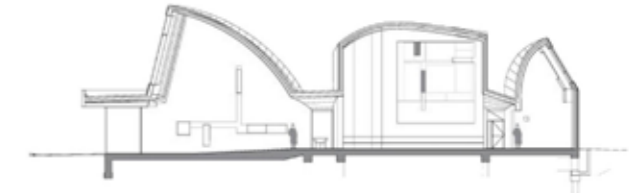
Project info:

The Chapel of St. Ignatius is a Jesuit chapel that was designed for Seattle University.

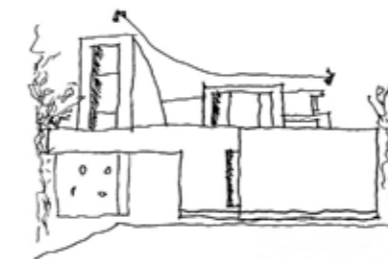
The image shows the different elements of the building



(Figure 98. Elements of building, by Author, 2020)



(Figure 99. (AD Classics: Chapel of St. Ignatius / Steven Holl Architects, 2020)



(Figure 100. The front of the building , by Author, 2020)



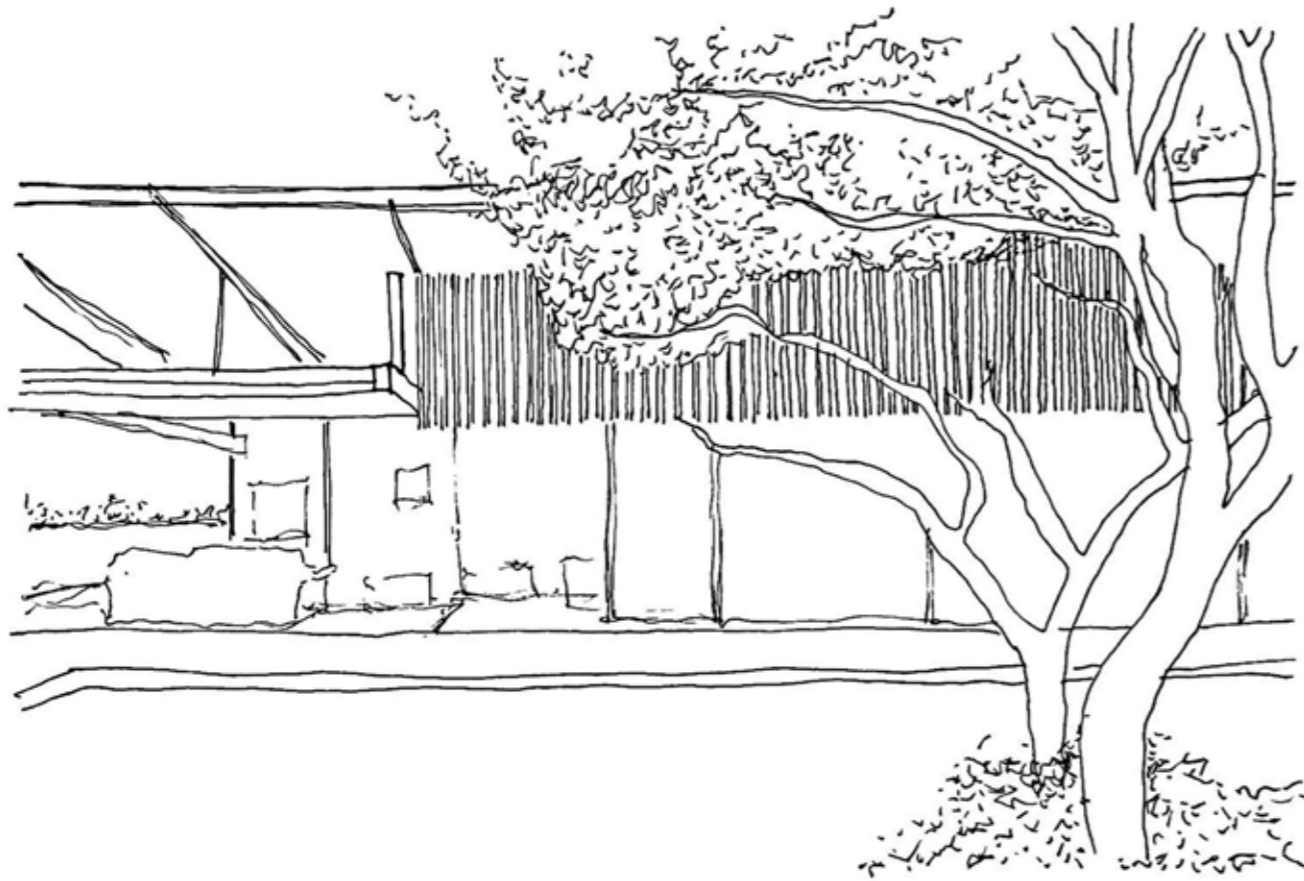
(Figure 101. Light, by Author, 2020)

One of the most important elements in this Precedent study is light, the way that the light is sculptured through the different volumes that emerges from the roof. Each element in the roof is sculpted in a specific way to get a different light quality into the building (Architects, 2020). The sculpting of light is an important aspect in the proposed design as it will add to the embodied experience of the building, therefore the design will also aim to create sculptural spaces through different elements in the design.

The main concept of the building is; different lights, this is also developed in the building through a combination of pure colored lenses and a field of reflected colour within each light volume (Architects, 2020). As with the proposed design one of the main concepts is embodiment and light therefore play a large role in the building experience and where colored lenses were used in this building the proposed design will look at ways that light enters the building and how it will illuminate a space to get the same feeling that the surfer experiences in the water and under the sky.

The different volumes that are placed together in this precedent study creates a certain poetic feeling as well as the way that the light enters the different spaces. This will also be an aim in the proposed building to create different volumes that enraptures a specific feeling and allows the embodied experience of the visitor.

Case study:House Meerholz/Earthworld Architects
(Design precedent study)



(Figure 102. House Meerholz, by Author, 2020)

This case study relates to specific design elements that is relatable in the proposed building in this dissertation.

The case study specifically focuses on the roof structure and insulation method of the building.

Project info:

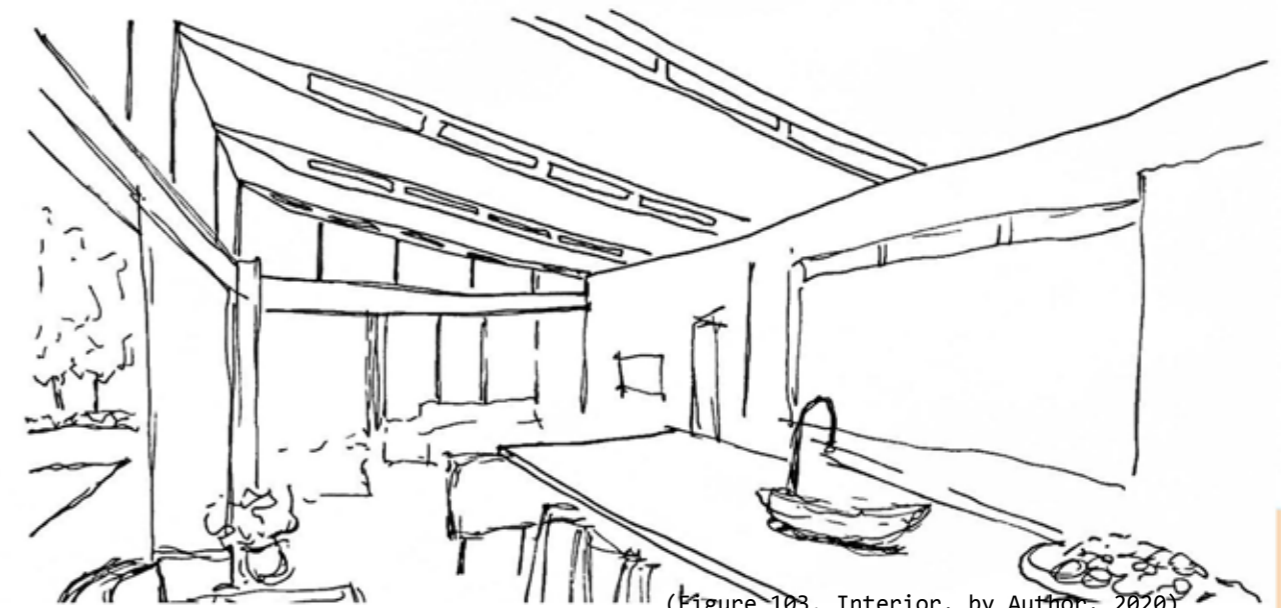
The project was a residential house.

The site:

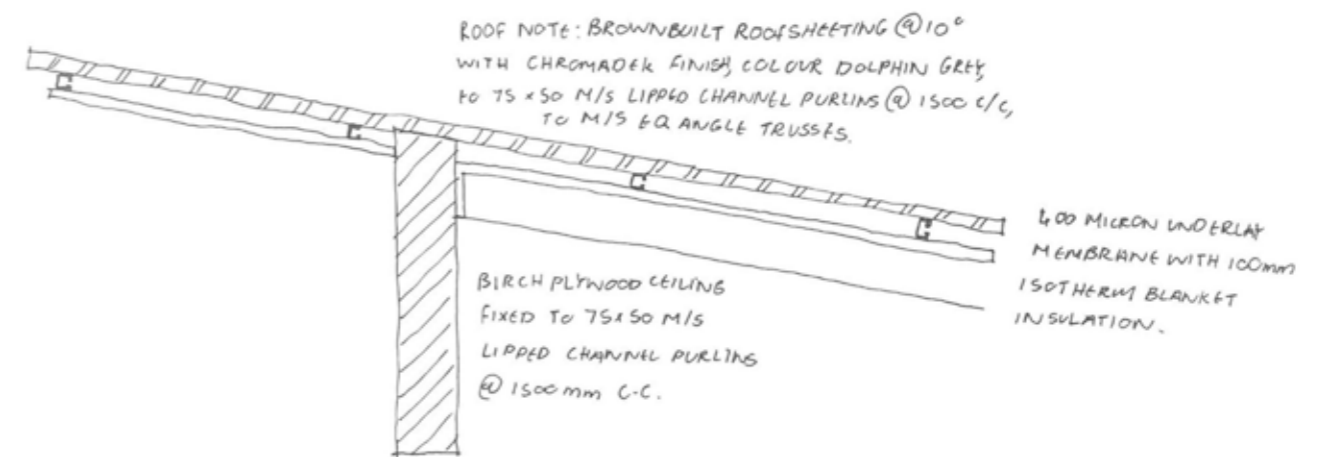
It is located in Pretoria.

The Building:

The project aimed to create a structure that was unique and had numerous small detailing. The roof itself is a steel structure with a Birch plywood ceiling that is fixed to lipped Channel Purlins that is the proposal for the bar area in the dissertation as the elements combined together forms an elegant structure that is in search for the proposed project. The roof system has a thick insulation layer that is also appropriate to make use of in the area of Jeffreys bay as it is a means of keeping the building cool, specifically the bar area as it is very open.



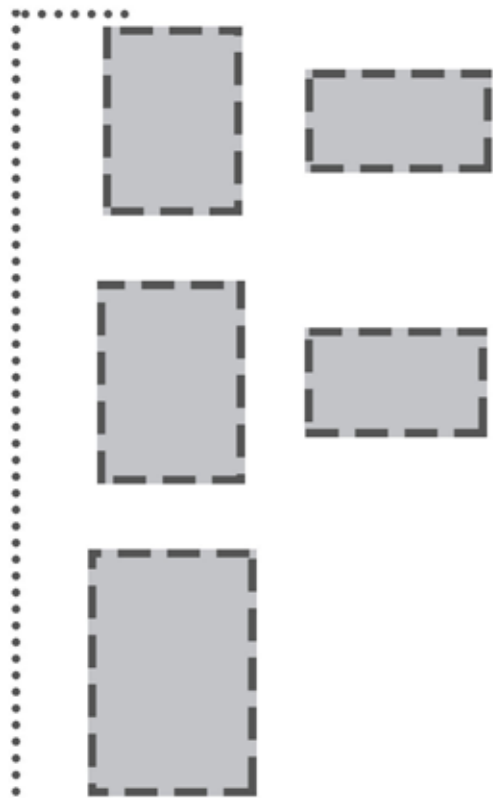
(Figure 103. Interior, by Author, 2020)



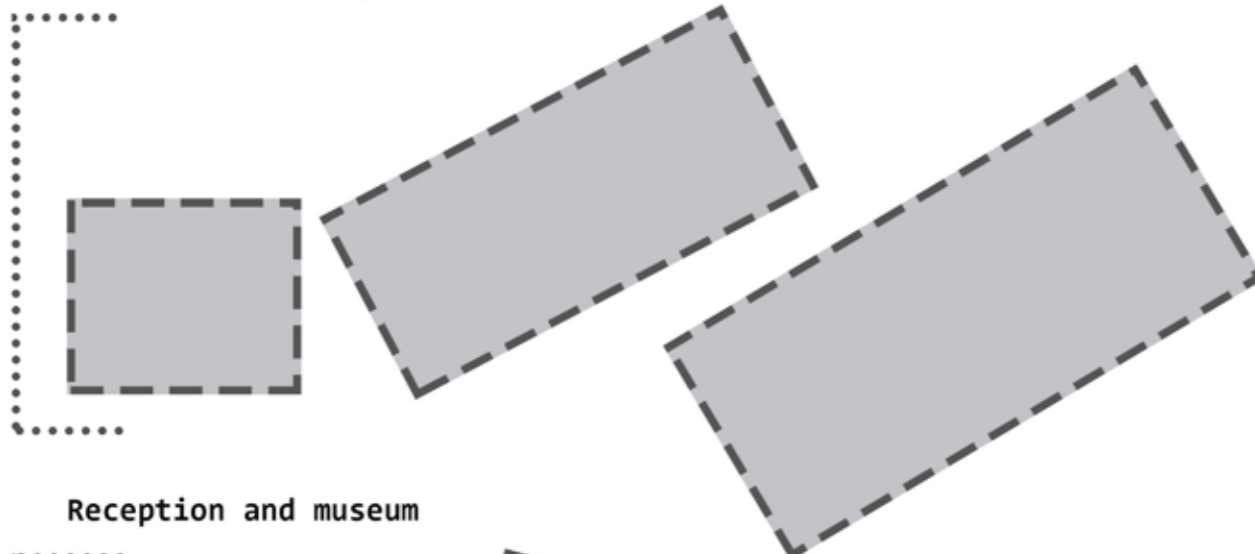
(Figure 104. Roof structure, by Author, 2020)

Towards an accommodation list

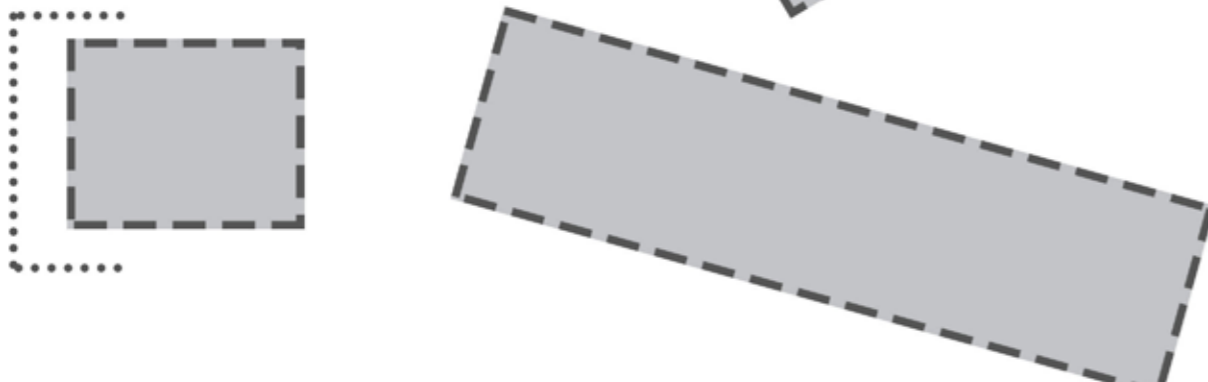
Surfboard workshops, look out points and surfboard and surfing shop



Surfboard making, reception and bar



Reception and museum



(Figure 105. Accommodation list, by Author, 2020)

Accommodation list

Surfboard workshops, look out points and surfboard and surfing shop

- surfboard workshops
- storage
- circulation
- look out points
- surfboard shop

Surfboard making, reception and bar

- Reception and reception office
- Exhibition
- Ablution
- Bar
- Storage
- Surfboard making space
- Storage rooms
- Manufacturing rooms
- office space

Reception and museum

- Reception
- Exhibition space
- Storage space
- Circulation: story telling
- Ablution

Building requirements:

Referring to the accommodation list, a museum is a body that collects documents, preserves and exhibits information or material. The museum will serve a purpose in sustaining the history of Surfing in Jeffreys bay and the narratives of the site and environment around the site. It is part of the community and it is a collection of the stories and history in the area of Jeffreys bay.

The surfboard making will capture the process of the surfboard shapers.

Use of space:

- Enough space allocated to collection storage and exhibition spaces.
- Well-ventilated exhibition spaces with enough natural light entering these spaces.
- The shop will be separated from the exhibition and museum area for the purpose of the narrative within the museum.

Gathering facilities:

- The storage areas should be separate and made use of internal room storage.
- The building should be well ventilated and the temperature and fluctuations should be minimized.
- Security aspects are also of importance in the building, the building will therefore be designed in a way that the separate parts of the building can function independently for security purposes as well, so that whichever part is not being used can be closed off.

Visitor flow and comfort:

- There will be a main point of entry to the museum and the surfboard making together with multiple entry points through the site to the different parts of the building in attempt to create an open flow through the plan.
- Seating will be placed at strategic places throughout the entire building to capture the views of the site.
- Toilets will be located in convenient spaces as well as changing rooms for the surfers.

02.

2.1. Interviews

2.2. Touchstone

2.3. Conceptual ideas

2.4. Conceptual framework

2.5. Theoretical framework

2.5.1. Own surfing experience

2.5.2. The history of surfing

2.5.3. Surfing culture/ surfing

as a subculture and lifestyle

2.5.4. Experiencing the wave/ The embodiment of surfing

2.5.5. The tectonic experience of the wave



(Figure 106. Surfing, by Author, 2020)

Interviews:

Zoe Bella Smith:

Zoe is a local J-Bay surfer, She grew up in Jeffreys bay and explains that surfing has been a part of her life from the very beginning, she started surfing when she was 4 years old, both her two sisters and dad surfed, she however started competing seriously at an age of 8 years old. She and both of her sisters are top South African surfers and they represent multiple surfing brands from all over the world. She explains that J-Bay is a unique and special place with good waves, almost always. The beaches are beautiful and she says that due to the town not being over crowded it makes surfing more fun because you get to catch multiple waves and the locals makes it fun (Smith, 2020).

She further explains that Supertubes and Point is her favorite surfing spot in Jeffreys Bay due to the tube wave, which is the dream glide for every surfer.

She is inspired by all surfers,her two sisters Emma and Gina Smith, Bethany Hamilton as well as Stephanie Gilmore, She explains that she will never be able to give up surfing as it became a part of her, a daily ritual.

Her current favorite surfboard is a 5,6 foot. It is a high performance board with a shallow tail, 18 and ¼ liters and it is super fast, her bigger wave board is 5,7 and it is built for bigger heavier waves and it is a squash tail and it also moves well. Both these surfboards are also locally designed and it is her one in a million board, the one you can only wish to replicate (Smith, 2020).

Gerhard landman:

Gerhard has surfed all over South Africa. He only started surfing when he was about 17 years old. He says that he had always loved watching the surfers go out whenever he visited J-bay during the holidays. He then decided to give it a go after a couple of years. He explains that, learning to surf in J-bay makes you spoilt to some extent, as you get used to world class waves and it is not comparable to any place in the country (Landman 2020).

Gerhard stated that there is a couple of things that are unique about the J-bay wave. First of all, it is one of the longest right shoulder waves, as explained, and he has a regular stance on the board, so the right shoulder is the preferred direction. He also explains that unlike most of the other places, the wave keeps forming from the right and it does not cut you off very quickly. Secondly, the wave is very consistent and thirdly, there is a variety of shapes on the waves between various surf spots in J-bay.

Point, is probably the most surfed spot in town, as he mentions it is where you will get the longest rides and it is suited to most surfers' abilities, if you are not a pro.

Gerhard explains that he will never give up surfing, as it is really good exercise and he says that there is something about being in the water that makes you take a break from everything that is going on and almost forces you to just be in the moment. He also says that the culture also plays a role in him wanting to keep on surfing (Landman, 2020).

Gerhard does not call himself a pro surfer, but he enjoys the exercise of the sport and fun with friends. He is inspired by surfer John John Florence from Hawaii, he states that he has a temperament that he admires and is very soft spoken and humble, he is also a fan of Carissa Moore, she does a lot of work with young people and invests a lot of time and charity into the next generation, which is quite cool.

His favourite board is a newly bought board, a Firewire Evo, it has a strange shape, compared to more traditional surfboards. It is without the very pointed nose, like most short boards, but it has some advantage if you are not that fit, paddle wise.

Country Feeling in J-Bay is the only authorized resellers of the firewire brand in South Africa. The brand is partly owned by Kelly Slater, who is probably the most well known surfer in the world. Most of the Firewire boards are influenced by Slater.

Conclusion:

Both the interviews that were done were from two very different surfers, one an athlete and one a leisure surfer, which shows that the sport is enjoyable by more than one group. This also enriches the surfing culture even more and which makes it so unique.

Touchstone 01.

A touchstone as described by the Oxford Dictionary, "a piece of fine-grained dark schist or jasper formerly used for testing alloys of gold by observing the colour of the mark which they made on it" (Oxford Dictionary, 2016). In this dissertation, a touchstone is used to show the physical essence of the proposed project and to which referring it back to the touchstone tests every idea.

The tube ride is the be all and end all for surfer. As a wave breaks, if the conditions are ideal, the wave will break in an orderly line from the middle to the shoulder, enabling the surfers to position themselves inside the wave as it is breaking. It becomes a life connotation in the community, no matter how bursting the outside world is.

The touchstone represents the essence of the project in terms of creating a place where people need to engage with the architecture through texture and craft within the structure.

The tube ride is the safest place the surfer can be at that stage and how can this then be related to architecture through light, material and structure in order to create an experience for the user.

The wave represents the water, the support represents the land and you find yourself in the middle of this system and in order to understand it you need to experience it yourself through touch.

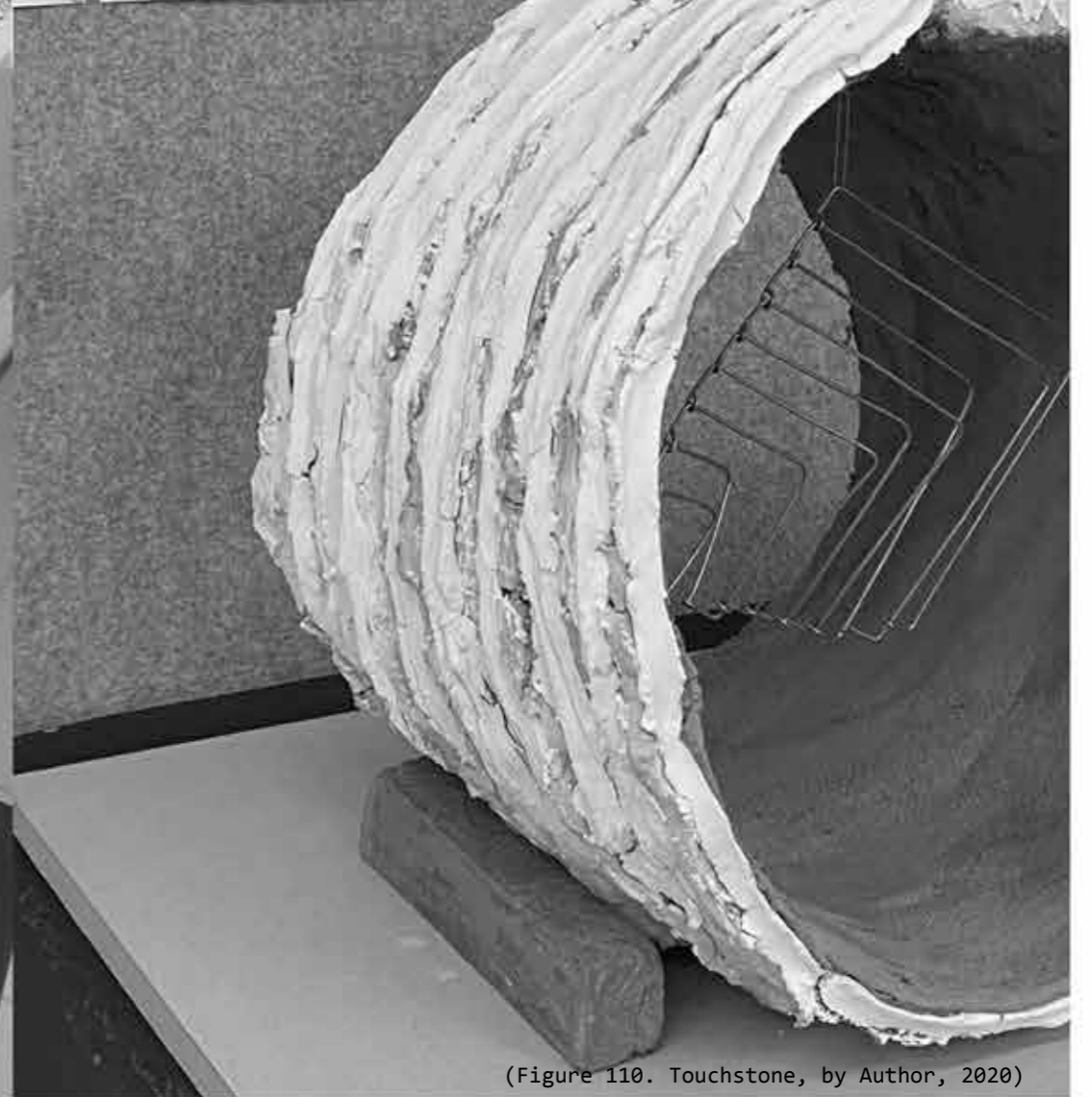
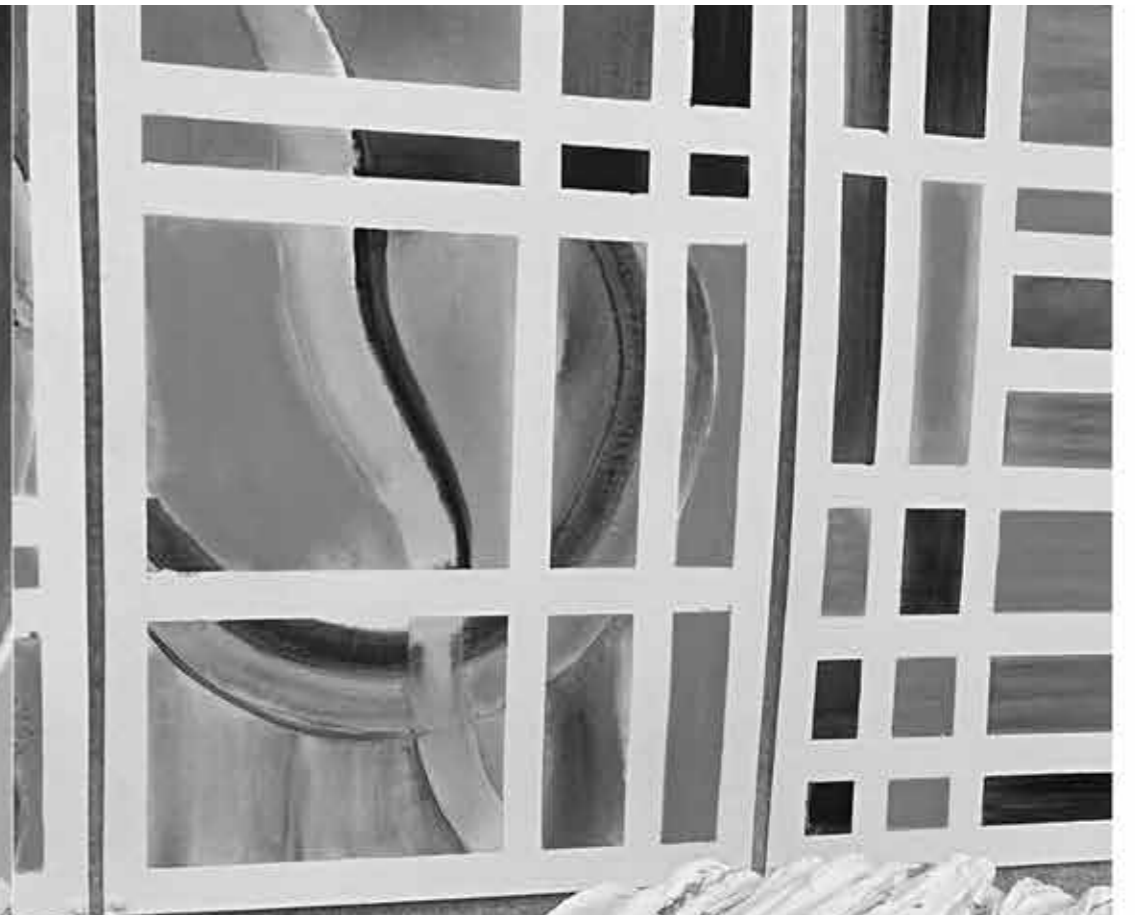
The different textures used are a way of allowing interaction with the user of the building. In the end the master surfboard crafter is all about allowing an experience of water through a tactile-level.



(Figure 108. Touchstone, by Author, 2020)



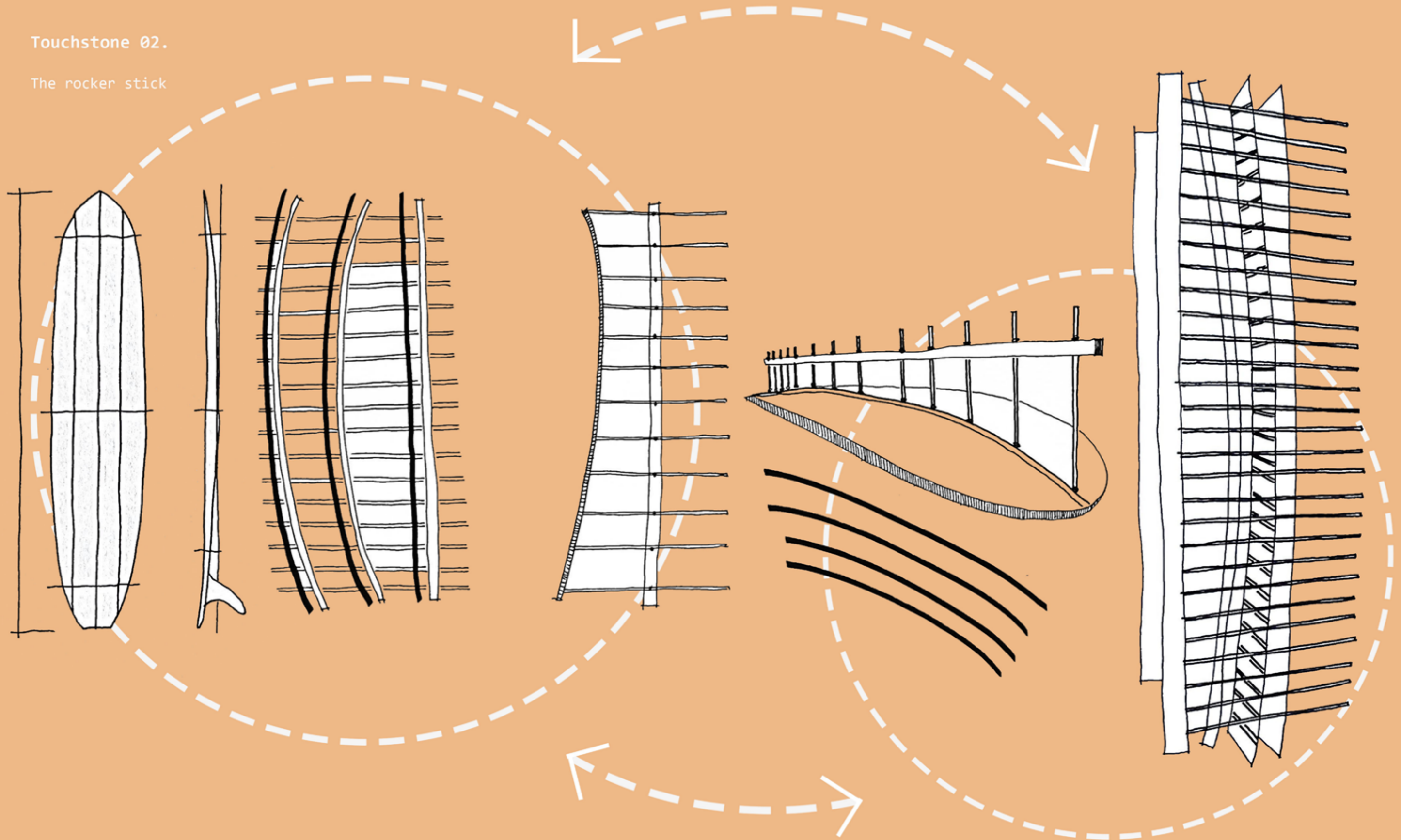
(Figure 109. Touchstone, by Author, 2020)



(Figure 110. Touchstone, by Author, 2020)

Touchstone 02.

The rocker stick



(Figure 111. The rocker, by Author, 2020)

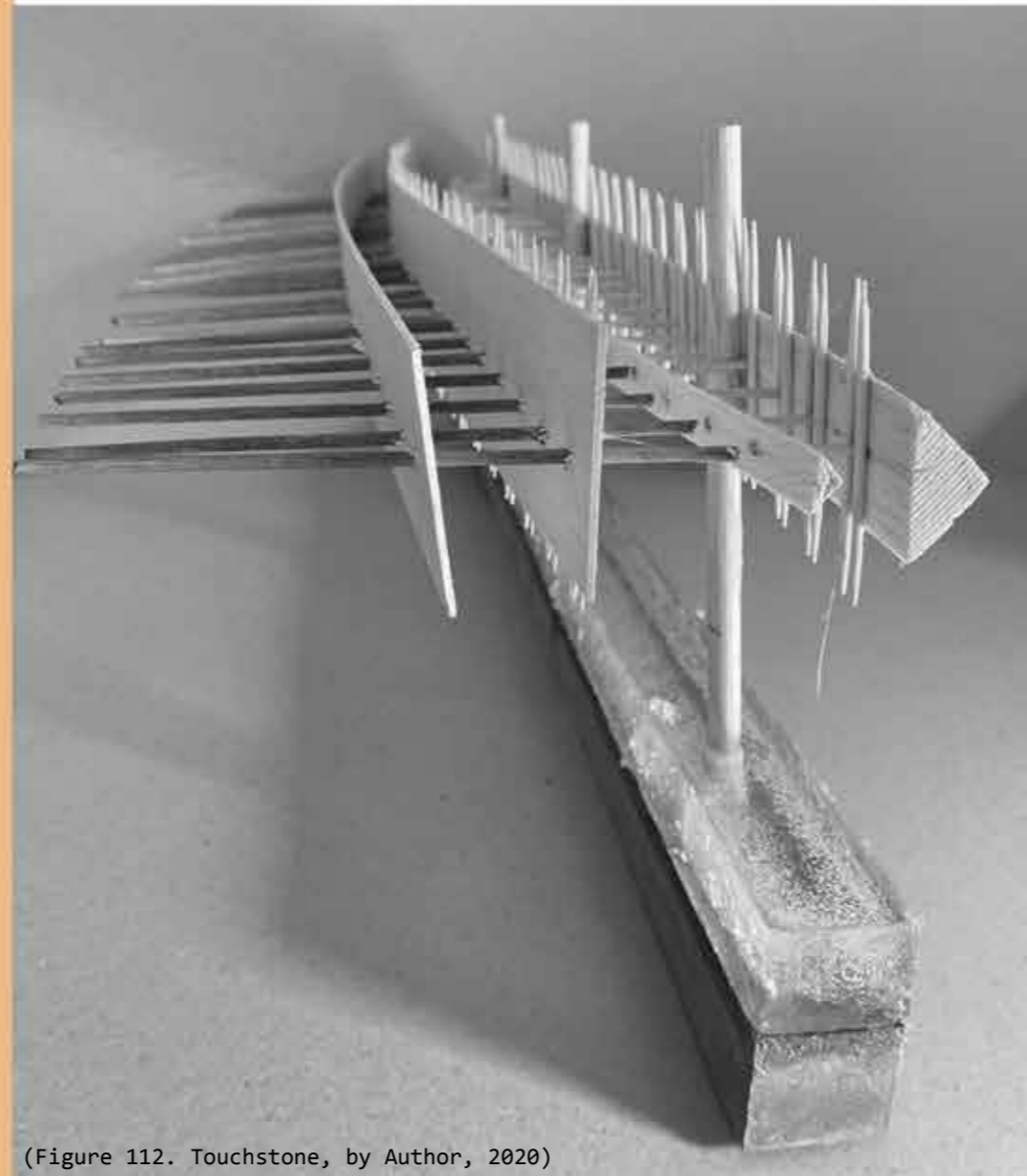
Touchstone 02.

After careful analysis it was realized that touchstone nr 1 did not reflect the full purpose of this dissertation and a second touch stone was developed which suits the purpose and the aims of the project in a better way.

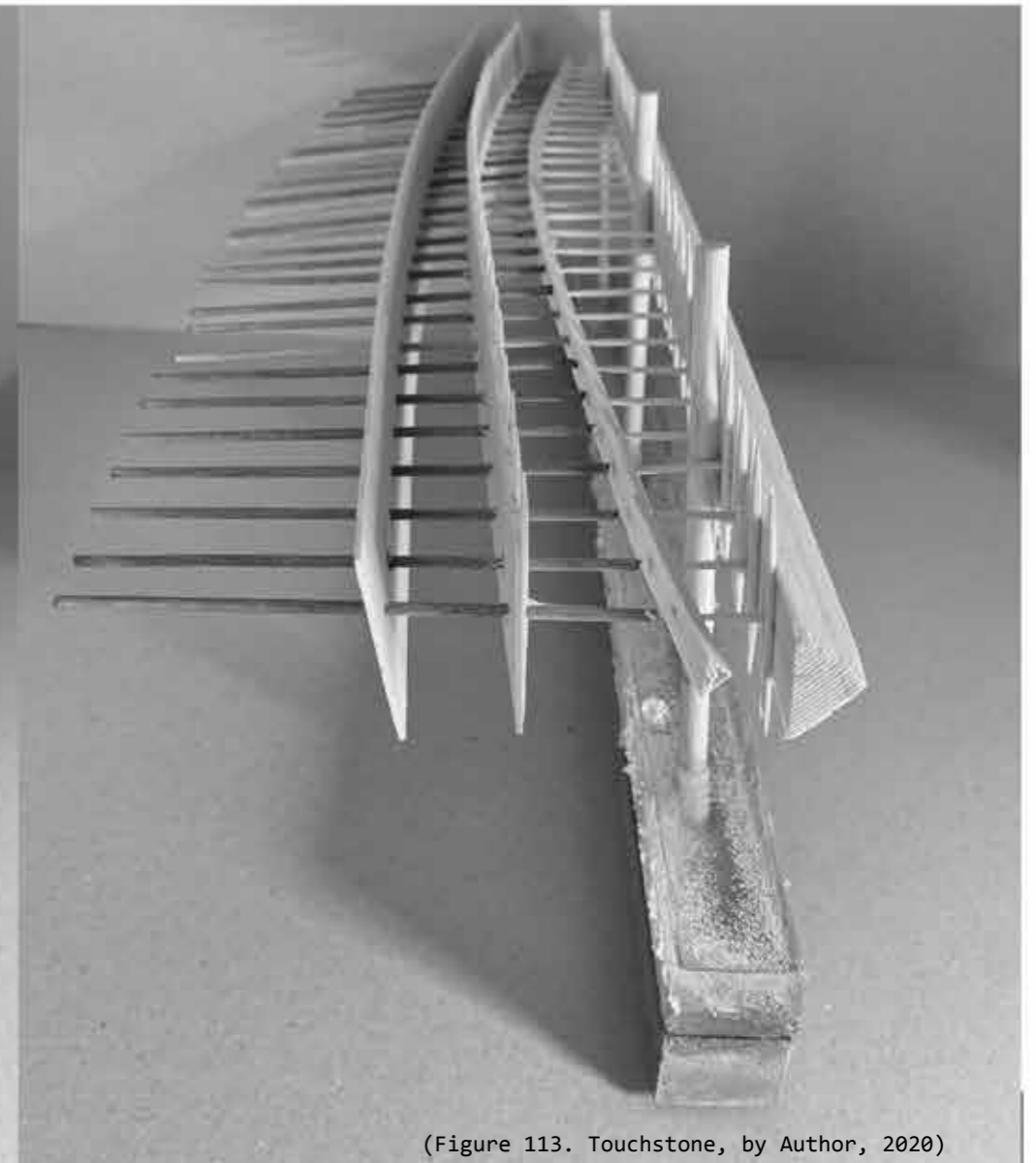
The touchstone is a representation of the rocker stick and the rocker tool and the connection that is between the rocker and the water when a surfer finds himself on a wave. The rocker is the most fundamental part of a surfboard and the shaper makes use of a rocker tool to measure the curvature of the rocker to shape the perfect surfboard.

The touchstone shows the importance of the rocker stick and the tool and their connection with the wave, the surfer and the movement of the surfing body on the wave.

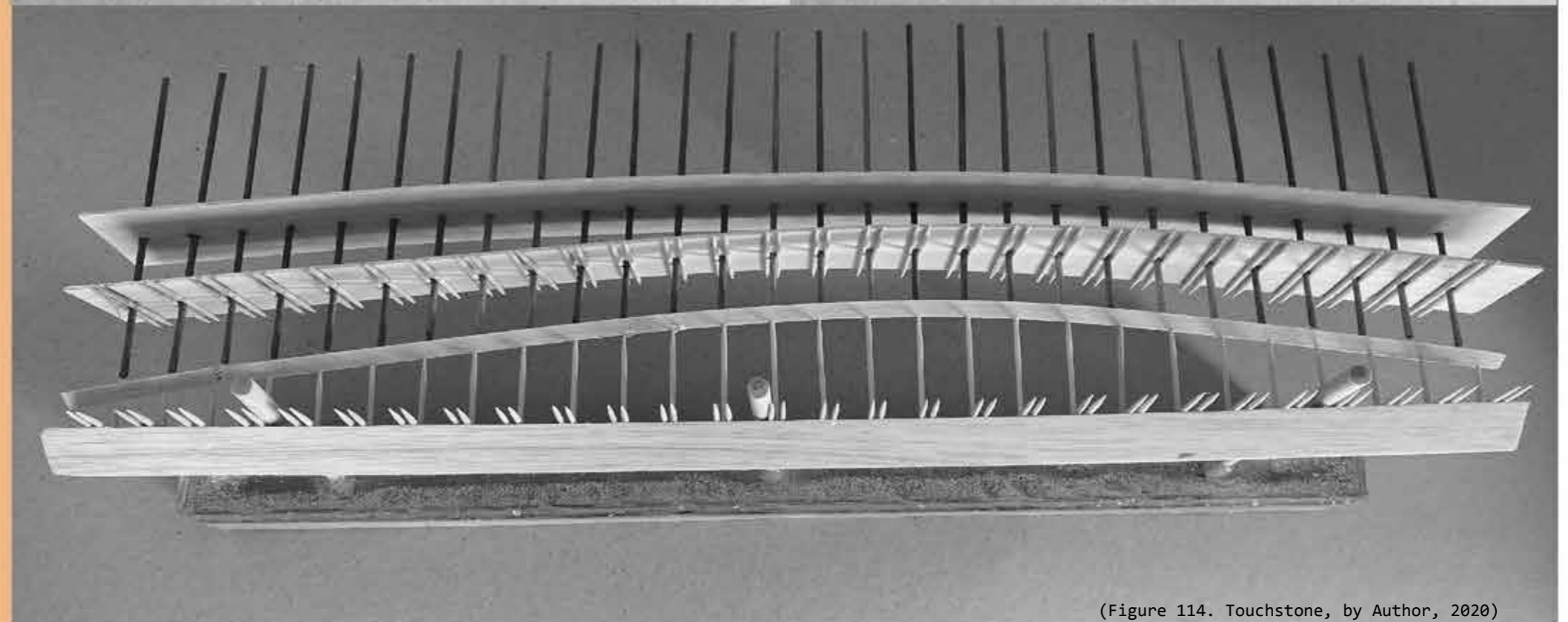
This touchstone will be used as a measure throughout the entire process of design in this dissertation.



(Figure 112. Touchstone, by Author, 2020)



(Figure 113. Touchstone, by Author, 2020)

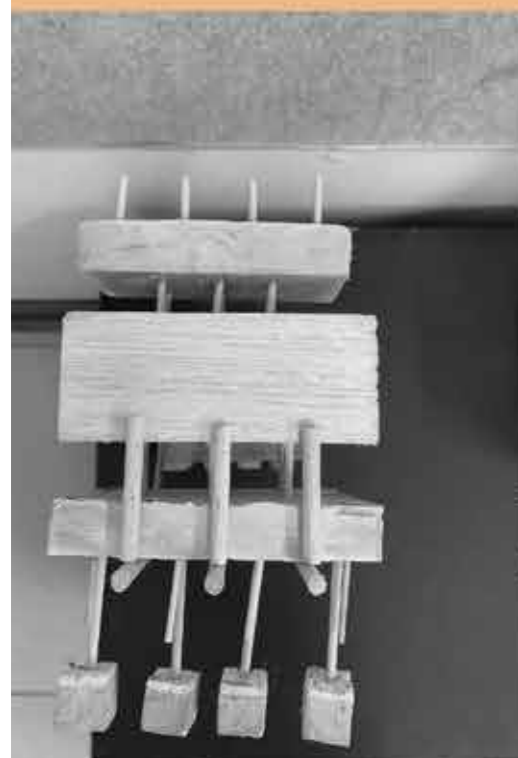


(Figure 114. Touchstone, by Author, 2020)

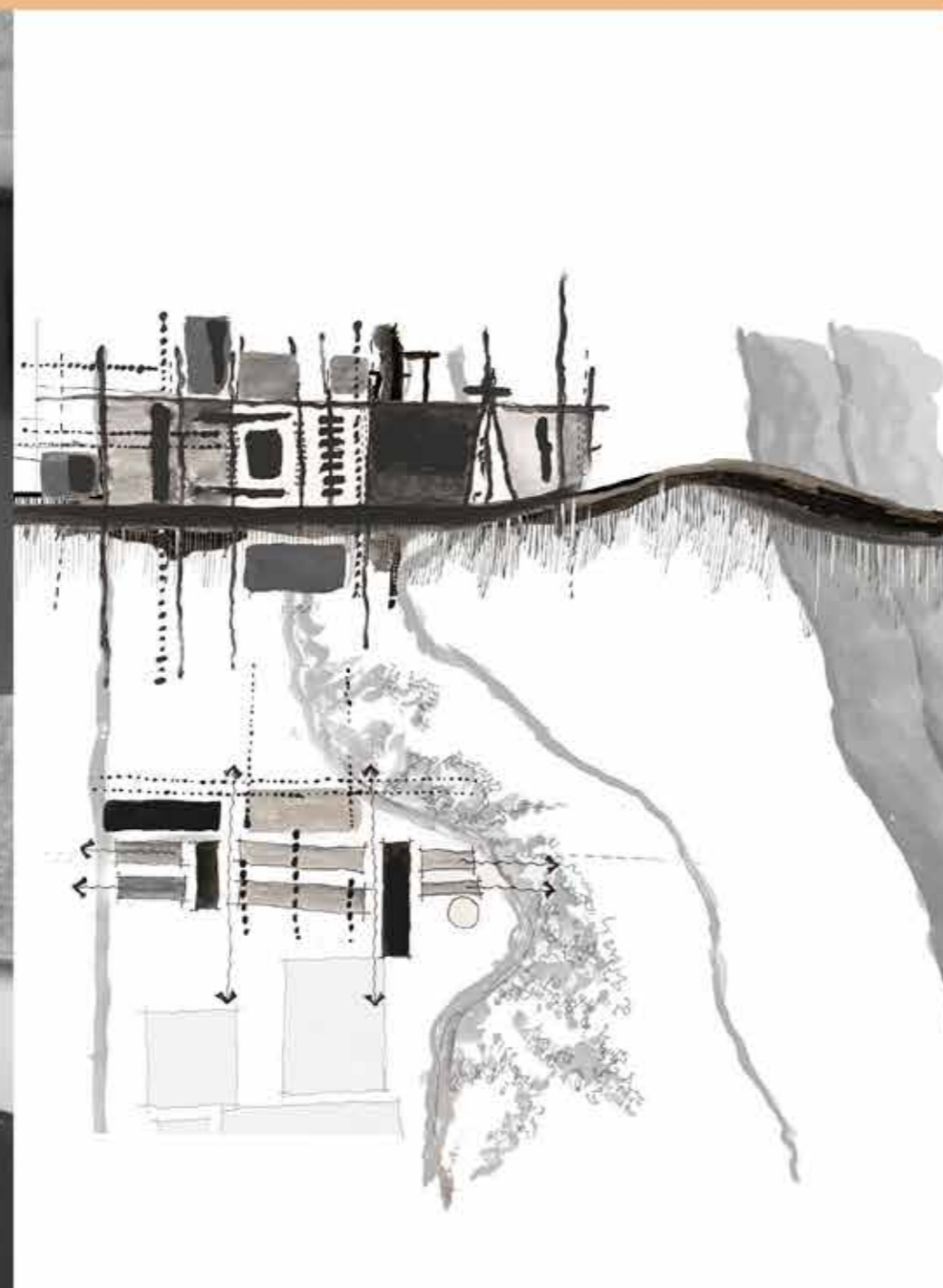
01 EMBODIMENT

The surfing experience consists out of endless senses and emotions while performing this act. Through embodiment looking at the practical body, the interacting body and the stored body in both surfing and architecture and how these can relate to one another.

Looking at the concept model the model tries to portray the liminal space where surfing takes place as well as the important connection between the ocean and the land and how architecture can connect these two.



(Figure 115. Concept embodiment, by author, 2020)



(Figure 117. Concept embodiment, by author, 2020)



(Figure 116. Concept embodiment, by author, 2020)



(Figure 118. Concept embodiment, by author, 2020)

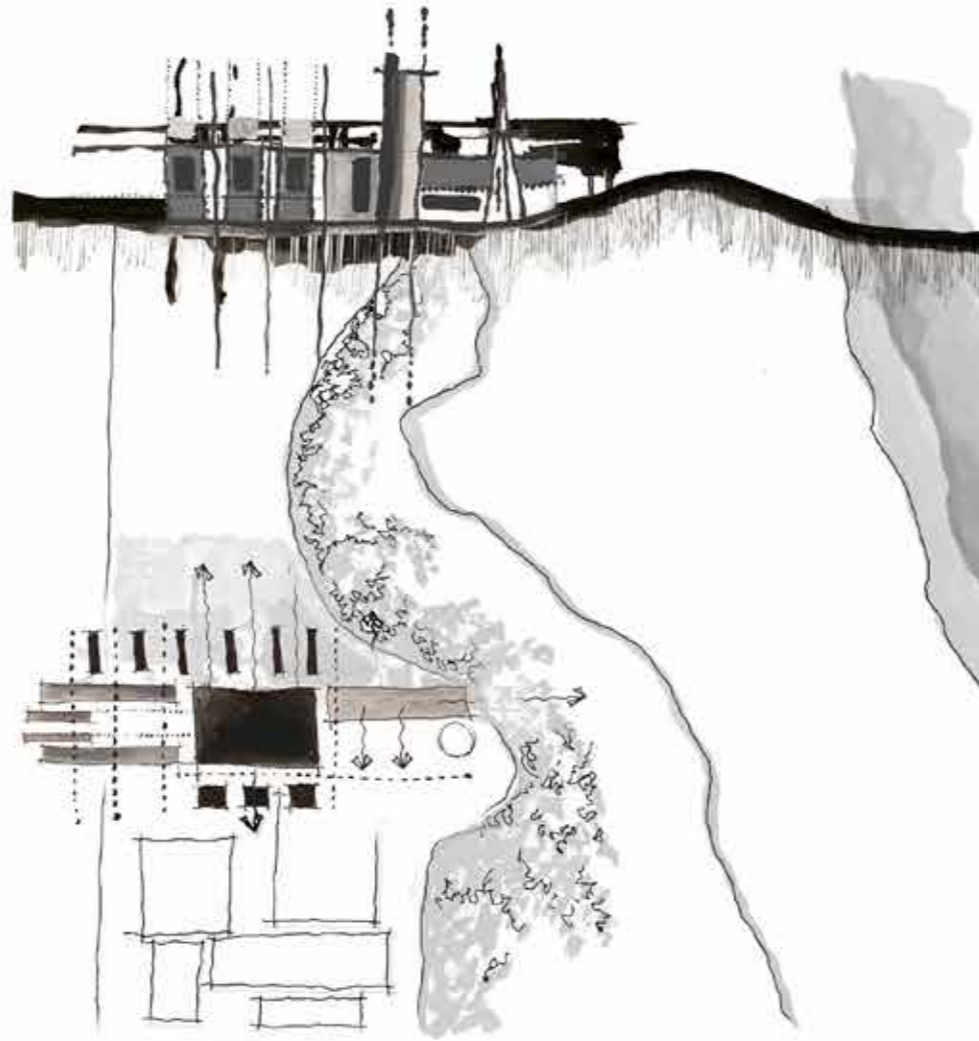
02 RITUAL

Surfing becomes part of the everyday life, it becomes a ritual event. How can this then be related back to architecture?

The model looks at ritual in a way that it becomes a gathering point in the structure and a point of hierarchy. It also looks at the ritual of the surfer and how this can be voiced through the structure.



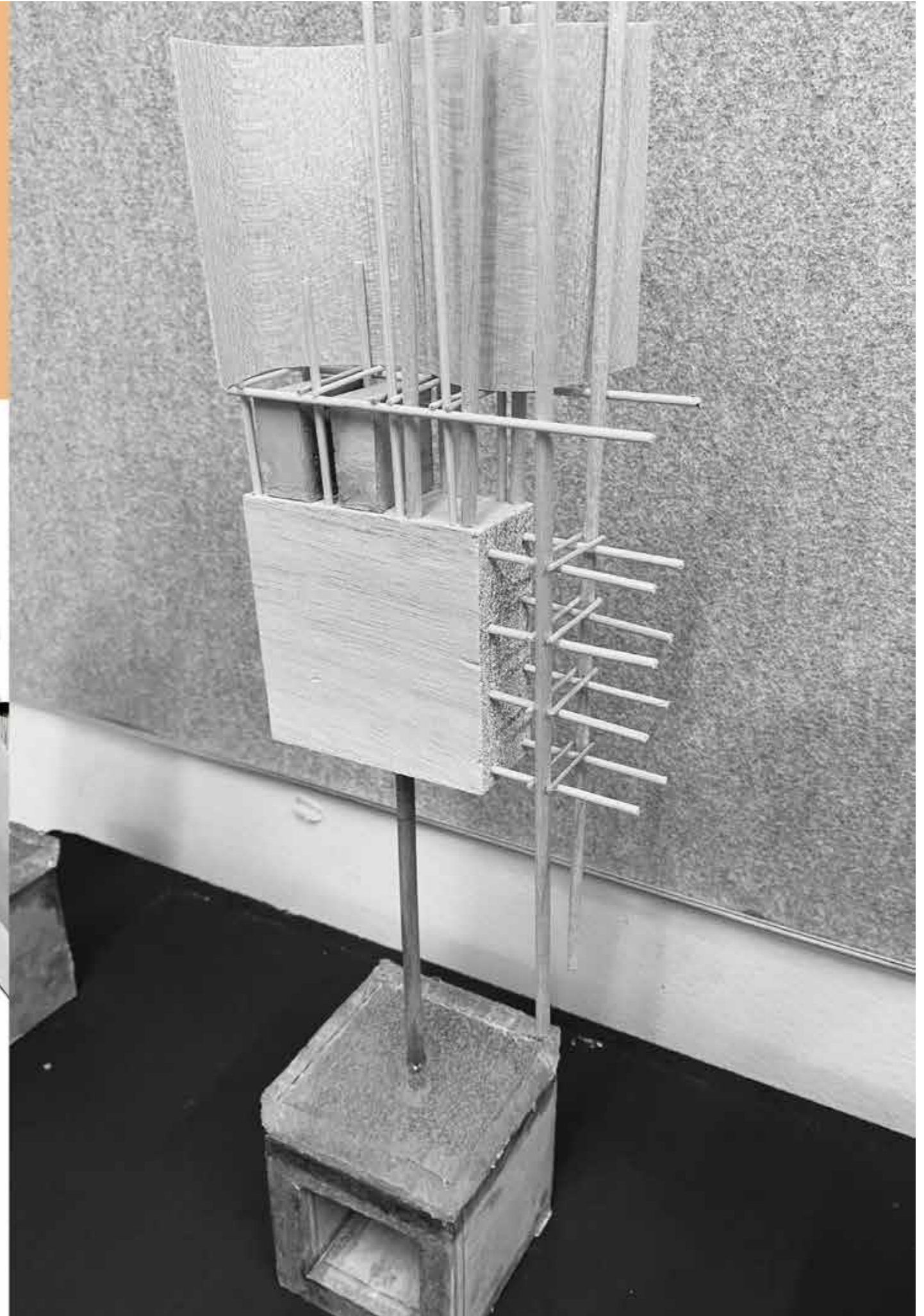
(Figure 119. Concept ritual, by Author, 2020)



(Figure 121. Concept ritual, by Author, 2020)



(Figure 120. Concept ritual, by Author, 2020)

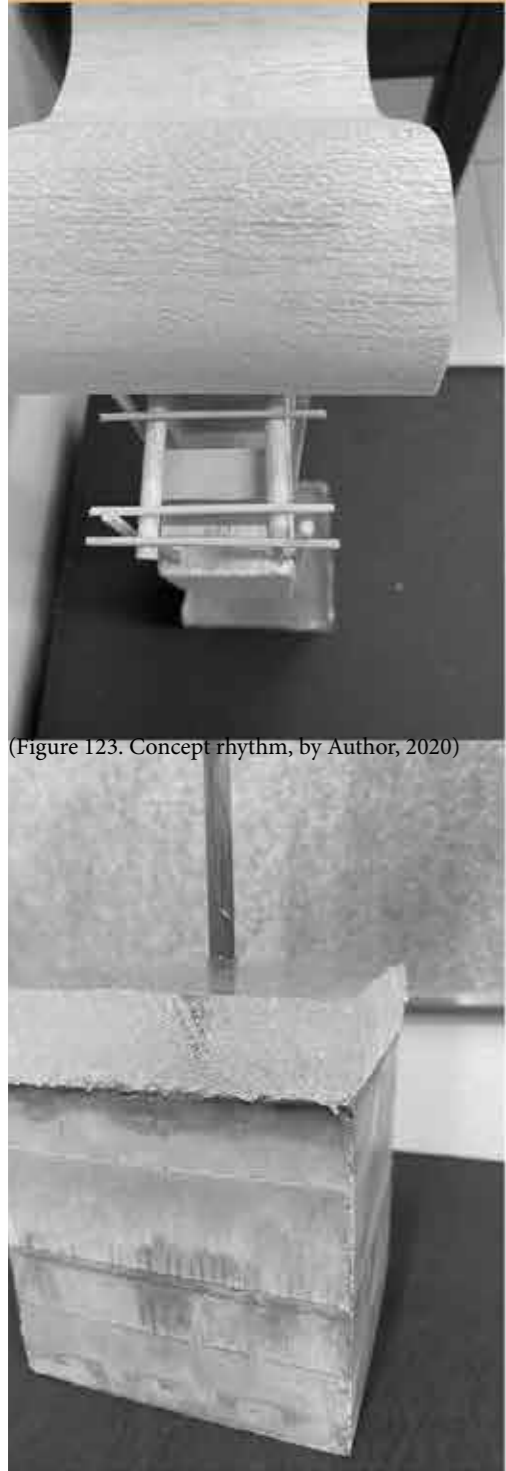


(Figure 122. Concept ritual, by Author, 2020)

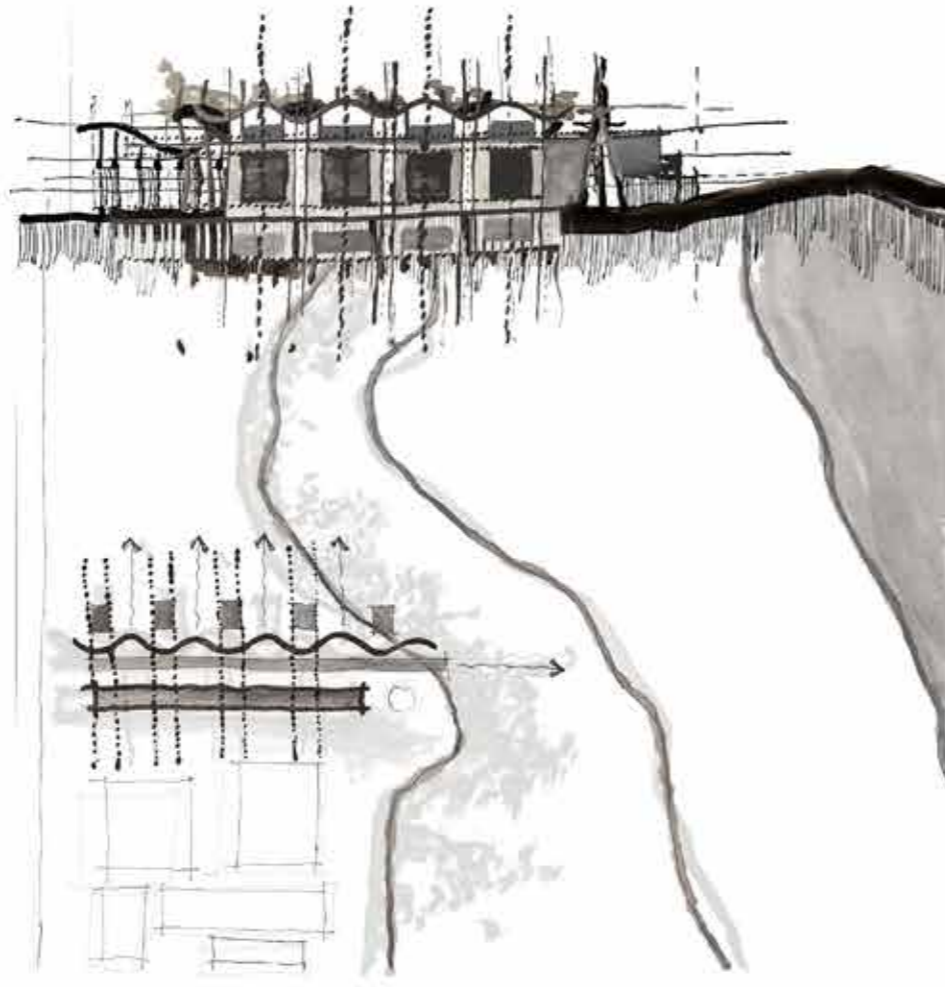
03 RHYTHM

How can rhythm be connected to time and movement in terms of the wave that the surfer finds so sacred, how can it be related back into architecture to create a place where people can interact.

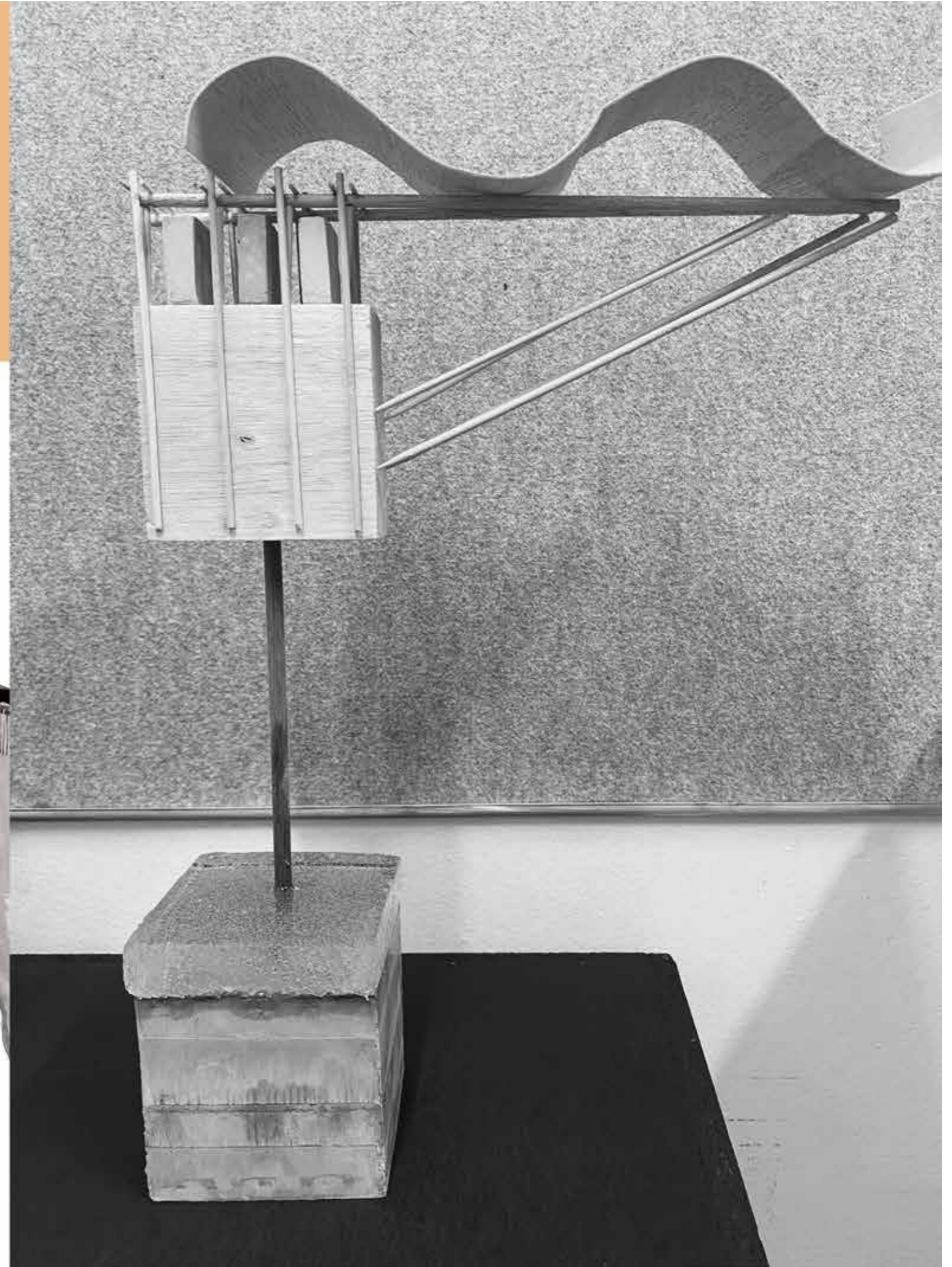
The model looks at how the rhythm of time and movement can be portrayed in the structure and how it could give the feeling of a constant motion that occurs.



(Figure 123. Concept rhythm, by Author, 2020)



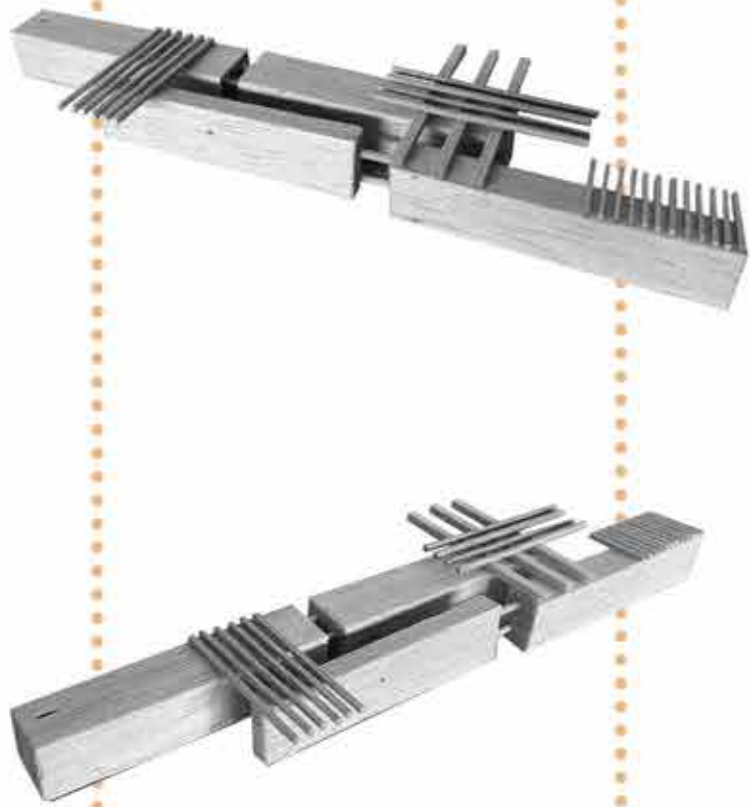
(Figure 125. Concept rhythm, by Author, 2020)



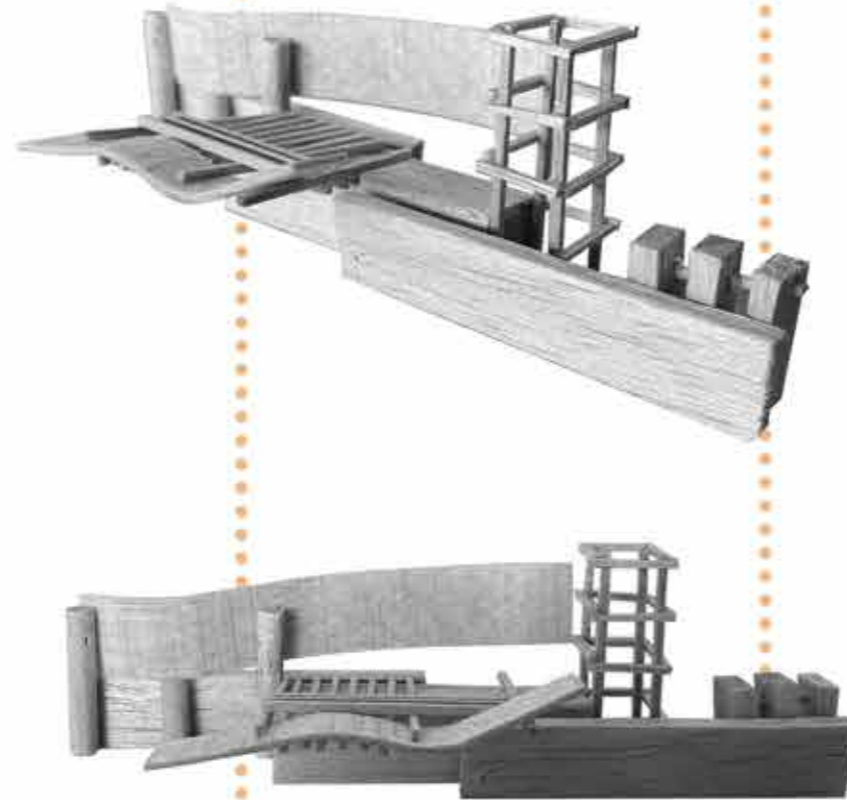
(Figure 126. Concept rhythm, by Author, 2020)

DEVELOPMENT OF CONCEPTS ON SITE

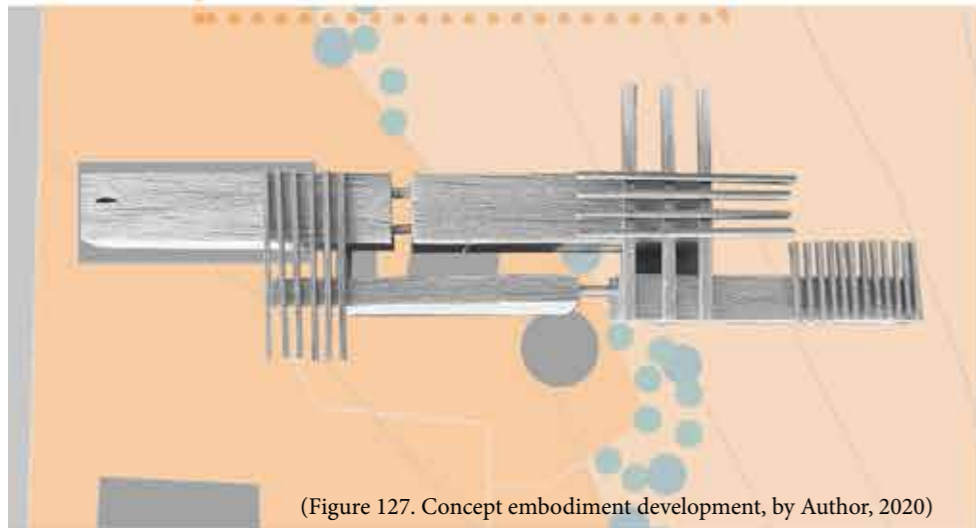
EMBODIMENT



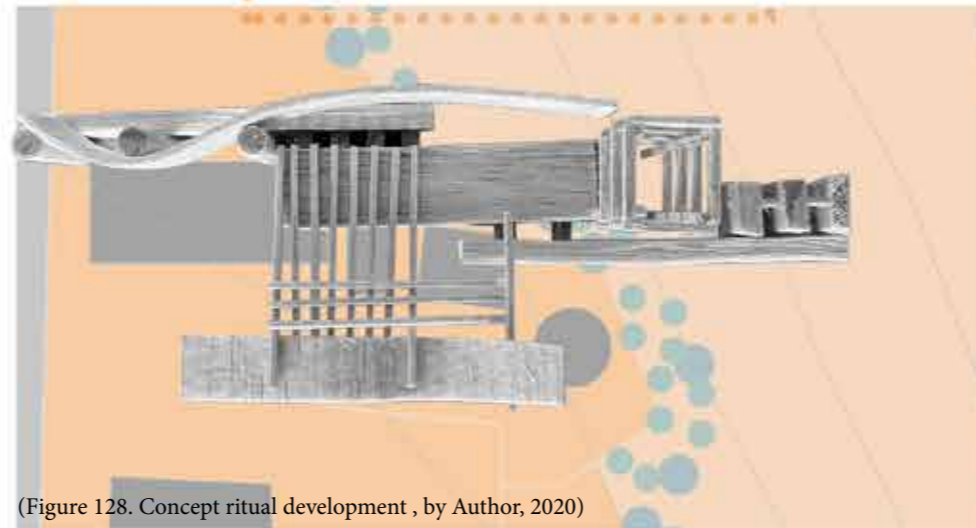
RITUAL



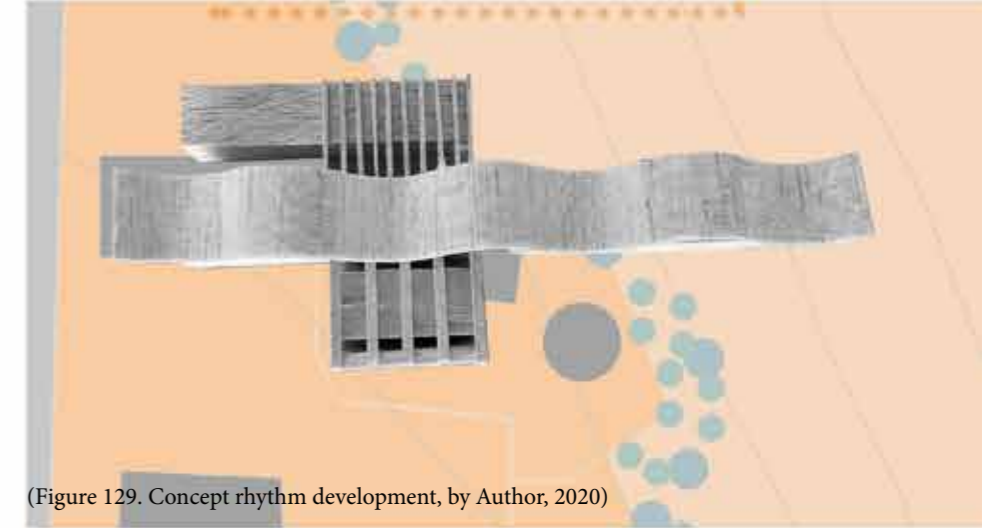
RHYTHM



(Figure 127. Concept embodiment development, by Author, 2020)

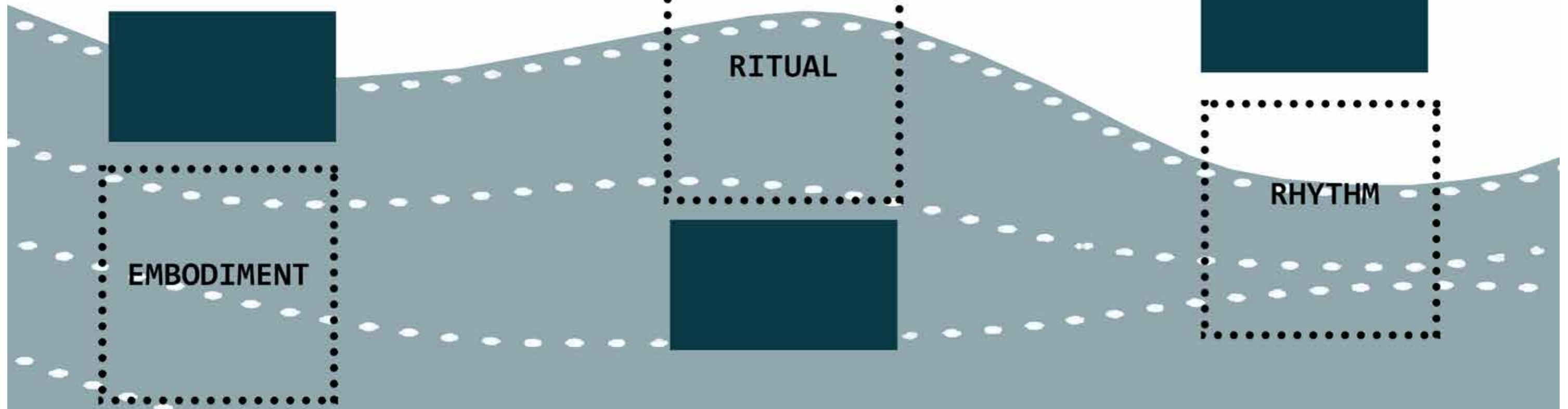
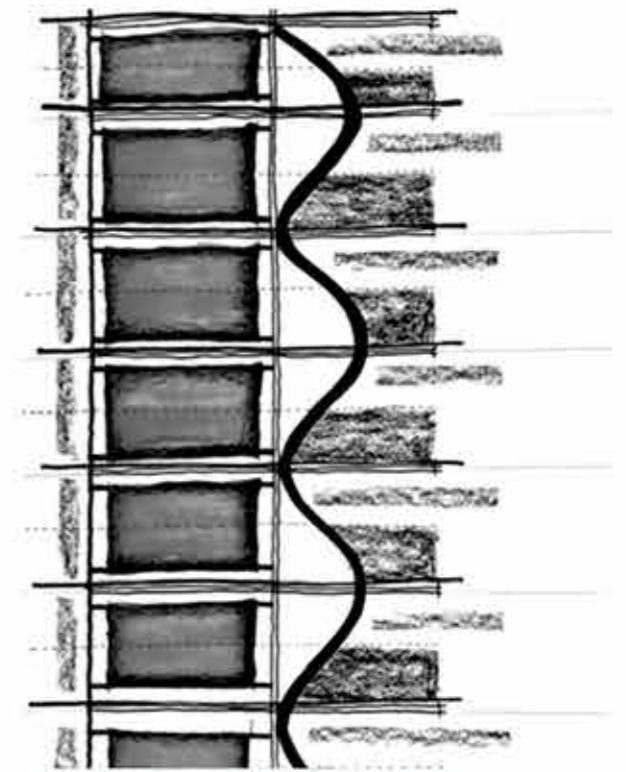
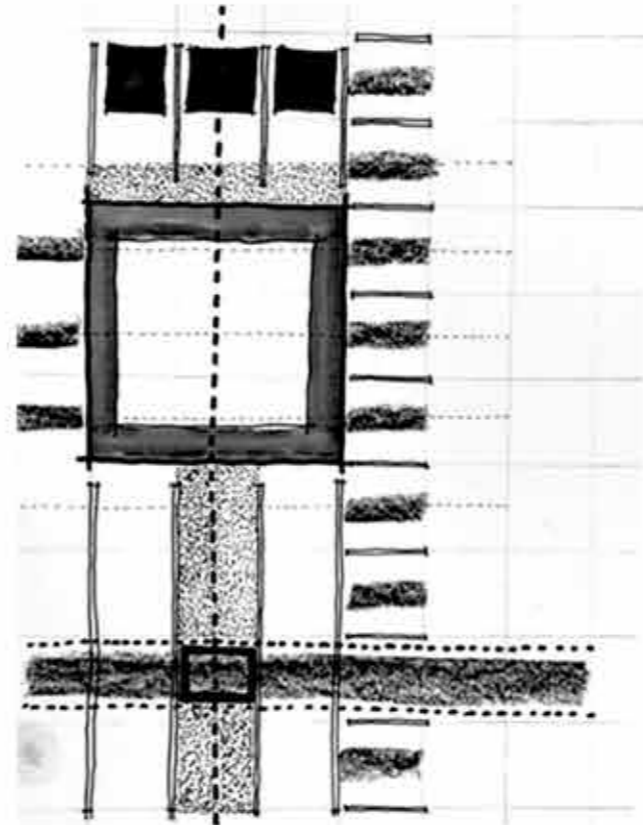
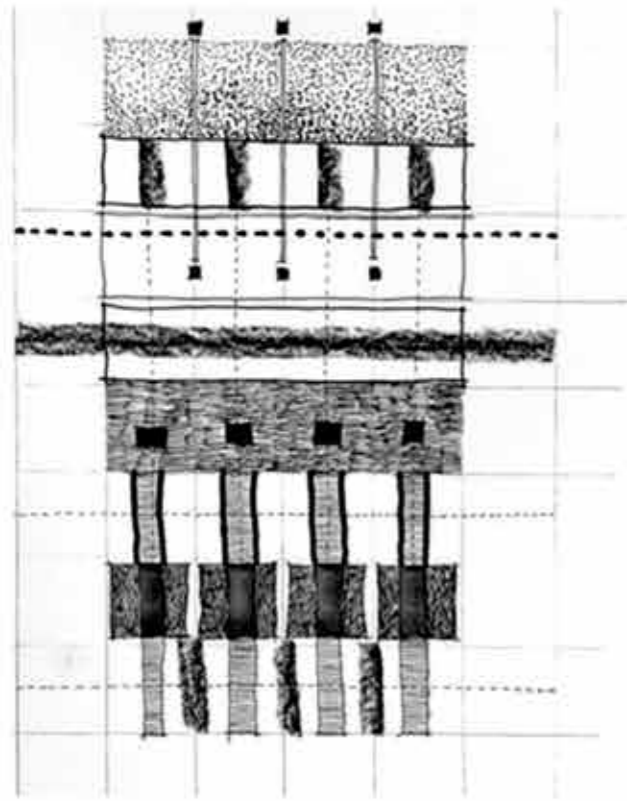


(Figure 128. Concept ritual development , by Author, 2020)



(Figure 129. Concept rhythm development, by Author, 2020)

THEORETICAL FRAMEWORK



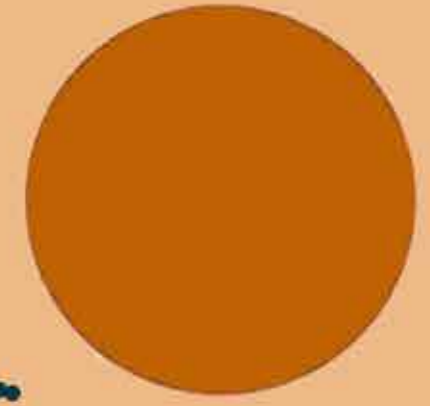
(Figure 130. Embodiment, by Author, 2020)

(Figure 131. Ritual, by Author, 2020)

(Figure 132. Rhythm, by Author, 2020)

THE EMBODIED EXPERIENCE THROUGH RITUAL AND RHYTHM

THEORETICAL FRAMEWORK OVERVIEW



THE EXPERIENCE AND EMBODIMENT OF SURFING

- + OWN SURFING EXPERIENCE
- + THE HISTORY OF SURFING
- + SURFING CULTURE/SURFING AS A SUBCULTURE AND LIFESTYLE

- + THE EMBODIMENT OF THE WAVE
- + THE RITUAL OF SURFING
- + THE TECTONIC EXPERIENCE OF THE WAVE

THE ARCHITECTURAL EXPERIENCE

- + EMBODIMENT AND ARCHITECTURE
- + RITUAL AND ARCHITECTURE
- + THE TECTONIC EXPERIENCE OF ARCHITECTURE

Own surfing experience

We all come from the sea, but we are not all of the sea. Those of us who are, we children of the tides must return to it again and again. There is something about lying on your surfboard in the ocean and waiting for a wave. It is the feeling of adrenaline that rushes through your body instantly. There is a kind of freedom that you feel when you surf that is indescribable.

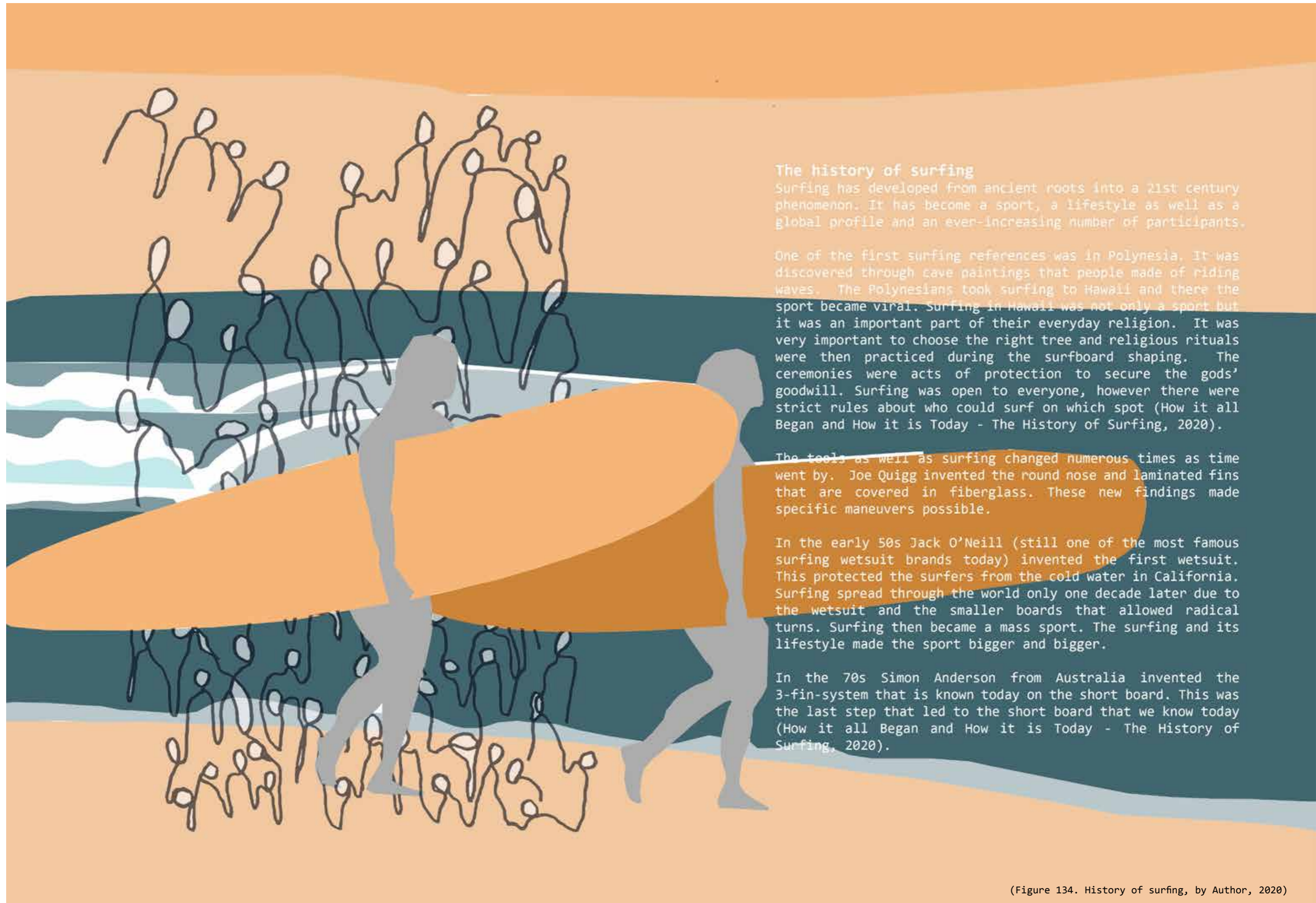
Surfing connects with your physical experience as well as the emotional and spiritual. Through surfing patience is taught as well as courage and persistence. Surfing like most sports that takes place in nature teaches resilience. Surfing can make you feel calmer and more creative. Surfing has a kind of uncertainty or an expectation; it is a feeling of taking a risk or a leap of faith every time you paddle out.

As in chasing the mavericks “we all come from the sea, but not all are of the sea”, we are constantly aware of people moving around us, in a way independent and free. We are however connected in mind, body and spirit. In the water a surfer is connected aimlessly to the dreams drifting out of sight, through situational awareness, surfing gives perspective of the heart and emotional intelligence.

I got to know Jeffreys Bay when I was only two years old, at first it was our family holiday destination every year, but then my parents fell in love with the place and its waves. We moved there when I was about 10 years old. Since then I came to know Jeffreys Bay as the locals know Jeffreys Bay. This very unique surfing kind of small town with many -many different cultures combined. I got into surfing when I was only 8 years old. My first wave I surfed was on the main beach, Dolphin Beach, across the lighthouse, since then I have become familiar with the sea and its currents and the different types of waves. Only a surfer could explain to you the true difference between a normal wave and that one in 10 that is really spectacular. Now, I am not a pro, rather I see it as something I enjoy and find enjoyment in the culture of it, meeting different people when you are behind the waves and the feeling of freedom you have when you are in the water. There is a specific feeling of excitement rushing through your body as you wait on a wave. I have also surfed the famous surfing spots n Jeffreys Bay and believe me they call it ‘the wave’ because it truly is, there is a significance in how the waves form along the coast in Jeffreys Bay that is so unique.



Figure 133. Own surfing experience, by author, 2020)



The history of surfing

Surfing has developed from ancient roots into a 21st century phenomenon. It has become a sport, a lifestyle as well as a global profile and an ever-increasing number of participants.

One of the first surfing references was in Polynesia. It was discovered through cave paintings that people made of riding waves. The Polynesians took surfing to Hawaii and there the sport became viral. Surfing in Hawaii was not only a sport but it was an important part of their everyday religion. It was very important to choose the right tree and religious rituals were then practiced during the surfboard shaping. The ceremonies were acts of protection to secure the gods' goodwill. Surfing was open to everyone, however there were strict rules about who could surf on which spot (How it all Began and How it is Today - The History of Surfing, 2020).

The tools as well as surfing changed numerous times as time went by. Joe Quigg invented the round nose and laminated fins that are covered in fiberglass. These new findings made specific maneuvers possible.

In the early 50s Jack O'Neill (still one of the most famous surfing wetsuit brands today) invented the first wetsuit. This protected the surfers from the cold water in California. Surfing spread through the world only one decade later due to the wetsuit and the smaller boards that allowed radical turns. Surfing then became a mass sport. The surfing and its lifestyle made the sport bigger and bigger.

In the 70s Simon Anderson from Australia invented the 3-fin-system that is known today on the short board. This was the last step that led to the short board that we know today (How it all Began and How it is Today - The History of Surfing, 2020).

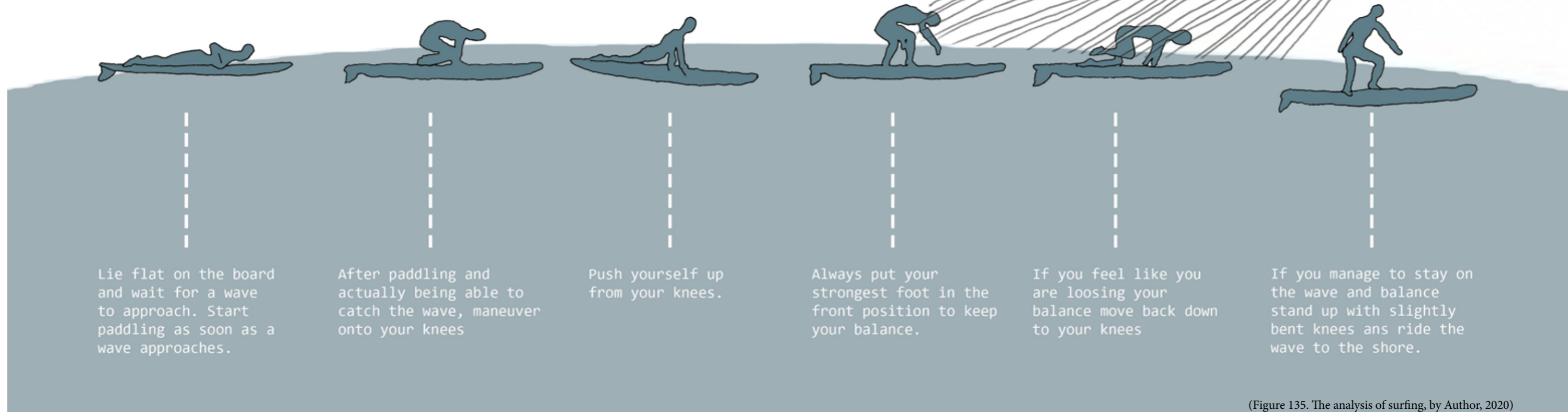
(Figure 134. History of surfing, by Author, 2020)

The analysis of surfing:

The Surfer paddles out on the surfboard into a position to reach the take off. The surfer then waits upon a suitable wave and paddles with a few strokes to give the board the necessary power to gather speed by the swell (Elementssystem, 2020). Surfers must accelerate to wave velocity using a combination technique of paddling and gravity. If the wave is caught, the surfer then needs to stand up quickly and move along the wave through maneuvering the board to his/her abilities. The surfer will usually surf the wave out until the wave breaks on the beach. This process will then be repeated again and again by the surfer.

Surfing does however take a lot of practice and is not as easy as it sounds, it takes numerous failed attempts before you can even start with sharp turns or any maneuvers with the board. It is a process of constantly shifting the pressure in your feet between the rails on the board in order to be able to accelerate from the energy in the wave and to maneuver around on the wave. The glide follows a series of curves that shifts in pressure and the body of a human being aligns itself through the weight of the skull, the thorax and the pelvis (Olsen, 1998). It is all about moving the body's energy through and together with the surfboard.

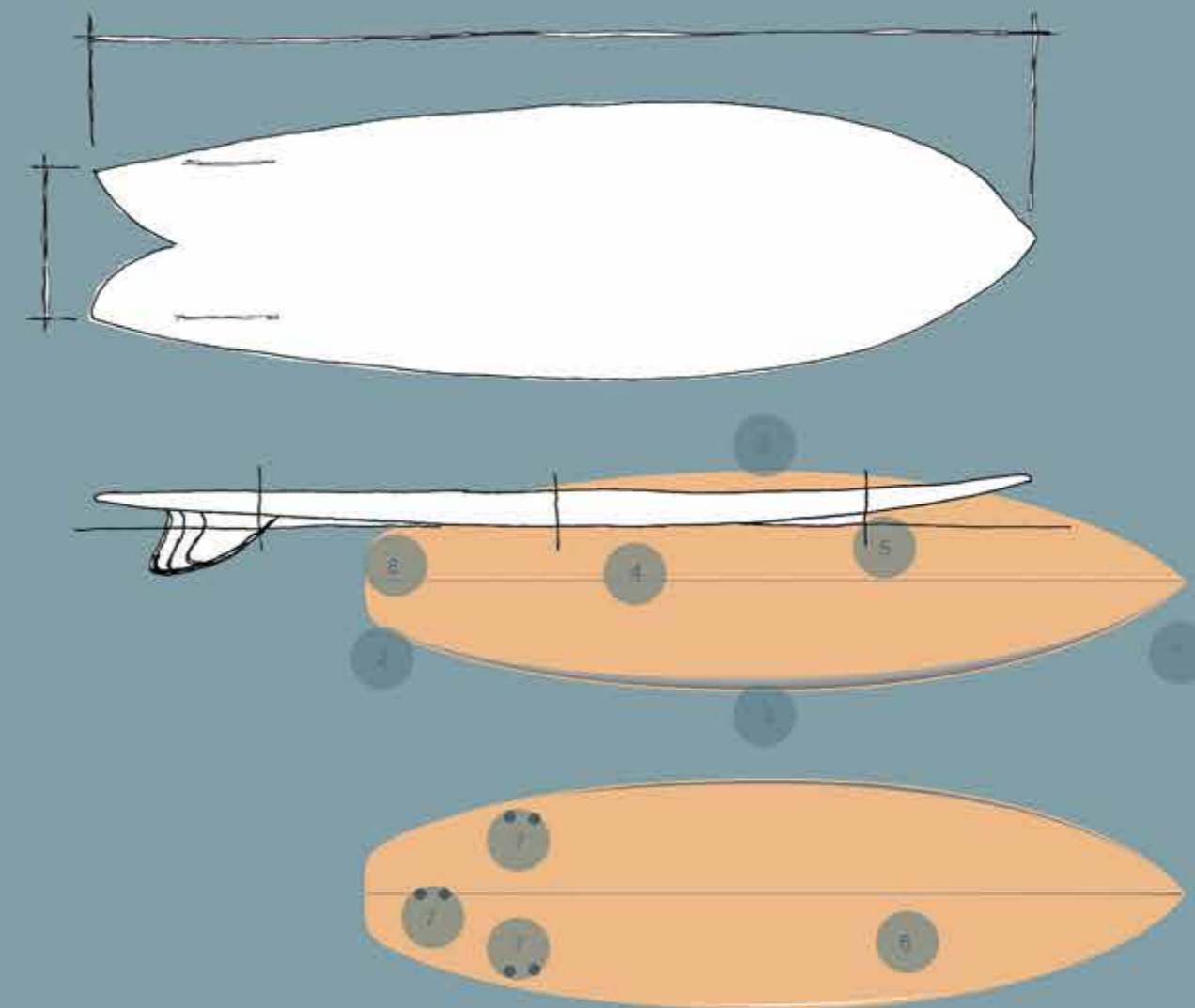
It could be questioned why surfers enjoy surfing a wave over and over again? Surfing is a plus mediating technology that manages to interact with natural forces. It is the rush of adrenaline that pumps through your heart. It is a breathless experience that has a positive impact on your health. Every wave that gets surfed has a different feeling to it, in essence you never know what you are going to get. The more you surf the better you maneuver a surfboard on the wave and the more you feel compelled to do it again. It becomes a ritual event.



(Figure 135. The analysis of surfing, by Author, 2020)

The Fundamental parts of a surfboard:

1. **The Nose:** it influences the maneuverability as well as paddling. It is the first 12 inches of a surfboard (SurferToday.com, 2020).
2. **The tail:** it is the backside of the surfboard; it influences the speed and the means to move around.
3. **Rails:** this is the edge that are rounded or better known, the sides of the surfboard.
4. **Stinger:** it increases strength and reduces the flexibility of the surfboard, it is a strip that is placed along the vertical center of the surfboard (SurferToday.com, 2020).
5. **The deck:** it is the top surface of the surfboard. This is where the surfer stands.
6. **Bottom:** this is where the surfboard touches the water.
7. **Fins:** the fins are used as stabilizing mechanisms, they are fixed to the bottom of the board (SurferToday.com, 2020).
8. **Leash Plug:** this is a small part placed on the deck of the surfboard and it is where the surfer attaches the surf leash.
9. **Length:** this is the measurement from the nose to the tail.
10. **Width:** this is the measurement from the rail to the rail.
11. **Thickness:** this is the measurement from the bottom to the deck.
12. **Outline:** this is referred to the shape of the surfboard.
13. **Foil:** this is the change in the thickness of the board from the nose to the tail.
14. **Rocker:** this is the term for the amount of the surfboard's curve from the tail to the nose.
15. **Concave:** this is on the bottom of the board and it is in order to channel the water.



(Figure 136. The fundamental parts of a surfboard, by Author, 2020)



(Figure 137. Surfboards, by Author, 2020)

Surfboard crafting (history):

Objects evolve through explosive design resolutions, however they always have a never-ending process of refinement and improvement, therefore the surfboard is no exception (The History of Surfboard Design, 2020).

The surfboard is a perfect example of a design development and mutation that occurred over a long time. There are key moments of surfboard design that will be discussed in a series of time of how it took place and how it developed.

The ancient origins:

Peru is one of the earliest places where there is evidence of wave-riding craft. The ancient South Americans made long, high-powered crafts through binding together the local totora reed that is known as the Californian Bullrush (The History of Surfboard Design, 2020). This was done so that fishermen could paddle out to sea through the surf and then be able to ride the waves back to the shore when they return.

The reeds were dried and then bundled together, the sizes ranged between 3-5m in length and about 3ft wide. This was used to make a shaped raft that would withstand the white-water. When the Spanish arrived in Southern America, the art of riding the waves with the crafts had developed and it was known as a Caballitos de Totora.

The First Contact:

The Polynesians migrated across the Pacific Ocean and then settled in the Hawaiian Islands. The Polynesians brought with their culture of He'e nalu. There were three surfboard types from this period, the regal Olo, the Alaia, and the commoners Paipo. These were all made from Ula, Koa, Williwili as well as breadfruit trees.

The planks of wood were part of the Hawaiian rituals and their society, it was used as their training for their chiefs and a way of resolving conflict as well as for recreational activities.

The smallest board was known as a Paipo. It had a round-nose, flat belly-board and children and commoners were usually the ones to ride these.

The next surfboard was Alaia, this board was one of the most widely and versatile surfboards used. This surfboard was 18 inches wide and about 7-12 foot long with a round nose and a square tail.

The Olo surfboard was exclusive to the royal, these boards were used to ride and catch unbroken waves in a straight line to the shore. The board was usually between 3-6 meters in length and almost 1 meter wide.

1900-1920s

The interest in surfing and surfboard crafting escalated during the 20th century. This was due to the Hawaiian and American settlers who arrived in the islands and developed a curiosity for the culture and craft of surfboards.

The first two decades of the 20th century two types of hardwoods were used for surfboard crafting, these woods were shipped to Hawaii from the mainland. George Freeth was one of the people who spread surfing to the United States (The History of Surfboard Design, 2020). This led to the development of the 'plank surfboard'. This was a board that was shorter and lighter, which allowed for more free movement.

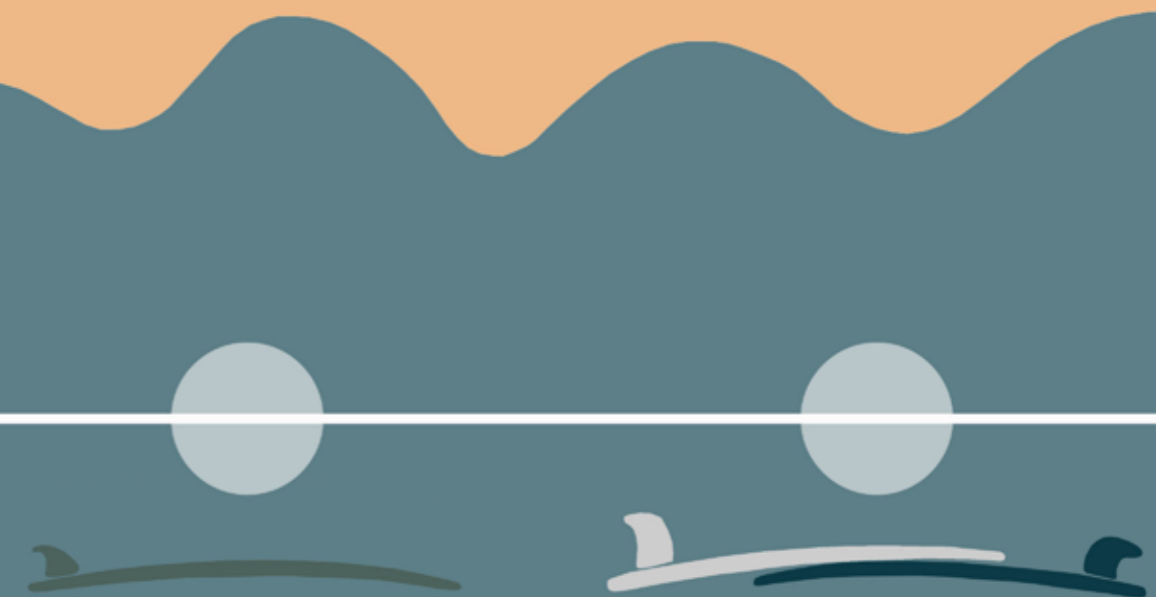
It was the search for the perfect relationship between the board and the person in order to surf the waves.

1930s

In 1929, the first hollow surfboard was created by Tom Blake, this was a revolution in the surfboard design. Tom Blake developed his idea not a 'skin on frame' (The History of Surfboard Design, 2020). This was an approach to develop a board that will give the surfer the ability to connect the board more with the water and to make the relationship between the body, wave and board lighter.

During this time, Meyers Butte also launched his line of Swastika branded solid wooden plank surfboards.

John Kelly and Fran Heath took the next step by taking off parts of the tail and the rail; this was to allow a better control over the surfboards on turns. This board allowed the surfers to maneuver the 'curl' of the wave, which makes the surfer experience the embodied movement of the curl of the wave.



(Figure 138. Surfboard crafting timeline, by Author, 2020)

1940s

The development in technology and materials after WW2 led to further changes in surfboard crafting and the way that the surfers shaped the boards.

Pere Peterson, in Santa Monica 1946, developed a hollow surfboard out of molded plastic, with redwood and a sealed fiberglass tape (The History of Surfboard Design, 2020). This was supposed to make the board lighter for the surfer to paddle easier onto the wave.

Joe Quigg, in 1947, developed a balsa and redwood board shape. During the same year Quigg and Bob Simmons developed the first foam-core board. It had a thin layer of plywood along with solid balsa rails and it was covered in fiberglass (The History of Surfboard Design, 2020). They saw that the rails of the board had a big impact on how the surfer would experience the wave.

Quigg, in 1948, developed a series of different boards, he attached a glass fin at the tail (The History of Surfboard Design, 2020). This was to improve the surfboard to move the fast lines. This will enable the surfer to surf the dream glide because of its speed, or at least it was aimed to do so.

Simmon, by 1949, developed a board with a spoon-like nose and a thin squared-off tail. He was also one of the first people to experiment with a double fin board, he also transformed the surfboard into a smooth curve and not only a flat plank. He saw what difference the curve in the surfboard made and how this has a big influence on the rocker.

1950s

George Downing, in 1950, developed the first big wave surfboard, It was constructed out of balsa and was about 10 feet long and a narrow board (The History of Surfboard Design, 2020). It was covered in fiberglass and resin that acted as a sealant.

Downing, in 1951, discovered the introduction of a removable fin system. After this Surfboard crafter started to experiment more with new plastic foams. This became an alternative material to use than balsa.

Tom Blake developed the first "double-pinned swallowtail" in the mid 50s. He made this development by reshaping one of Bob Simmons boards. Simmons also introduced the longitudinal concave idea. This was done to increase the speed of the surfboard.

In 1958 the surfboards started to appear with a stinger as a way of strengthening the surfboard.

During this time it was discovered that each element had a large impact on the way that the surfer will surf the wave and that it had a larger impact on the relationship between the wave and the board.

1960s

During the 60s many companies developed molded plastic surfboards. These were specifically for the beginners market. These boards did not have a very concave rocker and were more float-able which made it easier for the beginners.

The Short-board Revolution took place in 1967, the designs were influenced by both Mc Tavish and Dick Brewer. Mc Tavish developed the "plastic Machine Model", it was a 9 foot board with a v-shaped keel through the back of the board along with a wide tail (The History of Surfboard Design, 2020). This development took place to develop a smaller and lighter board.

Dick Brewer, in 1967, developed the "mini-gun". The design had a drawn out tail together with a flat bottom with a vee tail and rails, which increased the speed of the surfboard Tom Morey, in the same year, made the removable fin even more popular (The History of Surfboard Design, 2020).

In the mid 60s the plastic fin replaced the wood and fiberglass designs. The fins also developed into a dorsal fin of a dolphin, this made the sharp turns easier. The round-tail was introduced in the late 60s and it was one of the biggest steps in the short board revolution.

1970s

Gerry Lopez and Jack Shipley, in 1970, developed the Lightning Bolt. They added a single fin and colour on the deck of all their boards (The History of Surfboard Design, 2020).

Malcon and Duncan Campbell, in 1972, designed a three-fin surfboard known as the "Bonzer". The fins allowed more maneuvers than the single-fin board.

Brewer developed his own version of down rail profiles, to create a harder "tucked under" edge.

Geoff McCoy and Cheyne Horan created a shape with a wide tail and it was called the "Needle Nose". It was designed to ride the waves faster with more rigid turns.

The boards and way of craft is a constant development and change in how the surfer experiences the wave while surfing.

In 1979, Michel Barland invented the first computerized shaping-machine.

This changed the culture of surfboards only being handcrafted.



(Figure 139. Surfboard crafting timeline, by Author, 2020)

1980s

In 1981 Simon Anderson redeveloped the idea of a three-fin setup, it was a combination of the one fin and the two-fin idea. It allowed the surfer to surf at higher speeds with more maneuvers.

During this period there was a constant development of surfboard, aiming at being able to surf at higher speeds as well as designing lighter surfboards.

These type of surfboards allowed the ascetic development of the surfboards, it allowed a development in the way that the surfboard is being crafted and the way that the surfboard will glide on water.

1990s

Maurice Cole, in the early 90s, introduced the board "reverse vee", this was to increase the speed of the board (The History of Surfboard Design, 2020).

The width of surfboards were reduced as well as made thinner. Greg Webber also experimented with deeper concaves.

Computer Design and computer manufacturing, in 1994, developed to the extent that surfboards could be shaped through these machines and much of the process became automating. This development allowed that surfboards could be produced quicker and almost identical, but some surfboard can be made with the same process and will never be able to resemble the same surfboard. Some surfboards are just that one of a kind board.

Tom Morey in 1968, developed the idea of being able to change the fins and this system took over in the late 90s.

There was a reinvention of the concave bottom configuration in the mid 90s and it had a shallow, wide concave part in the middle along with the board being shaped into two concaves through to the tail.

A California company made the idea of a molded surfboard popular, this took place in 1997.

2000s

Carl Ekstrom , Richard Kevin, Rayan Burch and Hydroflex ,n the beginning of the 21st century developed the idea of the asymmetrical surfboard that took place in 1965 (The History of Surfboard Design, 2020).

Tom Wegener, in 2004, developed Alaias that were made out of paulpwina wood.

The volume of a surfboard became a big deal in the 90s and the development of machinery allowed the volume of a surfboard to be calculated with ease.

Clark Foam, in 2005, one of the biggest producers in polyurethane stopped producing these boards and started a revolution to make use of different materials.

Almost about 10% of the surfboards that were being produced were laminated with a system known as the epoxy resin system.

Environmentally systems developed at a fast speed by 2006 and other methods were being developed that was friendlier towards the environment.

Hyman and Burger, in 2006, lunched their surfboard line the Fire wire. It was an innovative way to make use of new materials; this could be done through the use of new technology.

Parker Borneman and Edison Conner, in 2006, mainly focused to use advanced technology to develop their surfboards in order to allow a greater performance in the surfboards.

In the mid 2000s the surfers and surfboard crafter experimented with shorter, wider and thicker surfboard designs.

All the development of the surfboards aim to create the million dollar board that will allow the surfer to surf their dream glide. A board that is fast, able to make quick maneuvers and have the right relationship between board, wave and person as the surfboard ultimate connects the surfer to the dream glide and this embodied experience.



(Figure 140. Surfboard crafting timeline, by Author, 2020)



Figure 141. Surfing (Photo of the day - Main Beach in Jeffreys Bay, 2020)



Figure 142 Surfing (Photo of the day - Main Beach in Jeffreys Bay, 2020)



Figure 143. Surfing, (J'Bay Surf Camp South Africa, Lodge, School & Guided Surfaris, 2020)

Surfboard crafting:

For the architect, the modern surfboard builder fights this disconnect by being involved in a craft that gives the greatest level of respect to water. A master surfboard builder marries the history of the craft with the personal ingenuity and contemporary technology to preserve and reactivate a craft that has deep roots in Jeffreys Bay's history.

An object might have a disconnect when placed in the sea, but the surfboard does not impose anything onto nature, but rather it makes use of the natural elements and the way of the rolling wave to fulfill its purpose.

Surfing happens inside the edge condition, this condition needs to be taken into consideration while designing. This is done through the shape and size and weight and the fins that the surfboard has, all elements that are designed to be able to handle the edge condition. It is all about the elements having an impact on the body's capacity to engage with the wave.

Therefore, surfboard crafting is a constant experimentation in designing and it could be linked to architecture as well, because technology and time changes constantly as well as our needs and what we find important at that time. Surfboard crafting keeps on changing due to new technologies and new ideas that people develop and it is a never-ending process of trying to be satisfied.

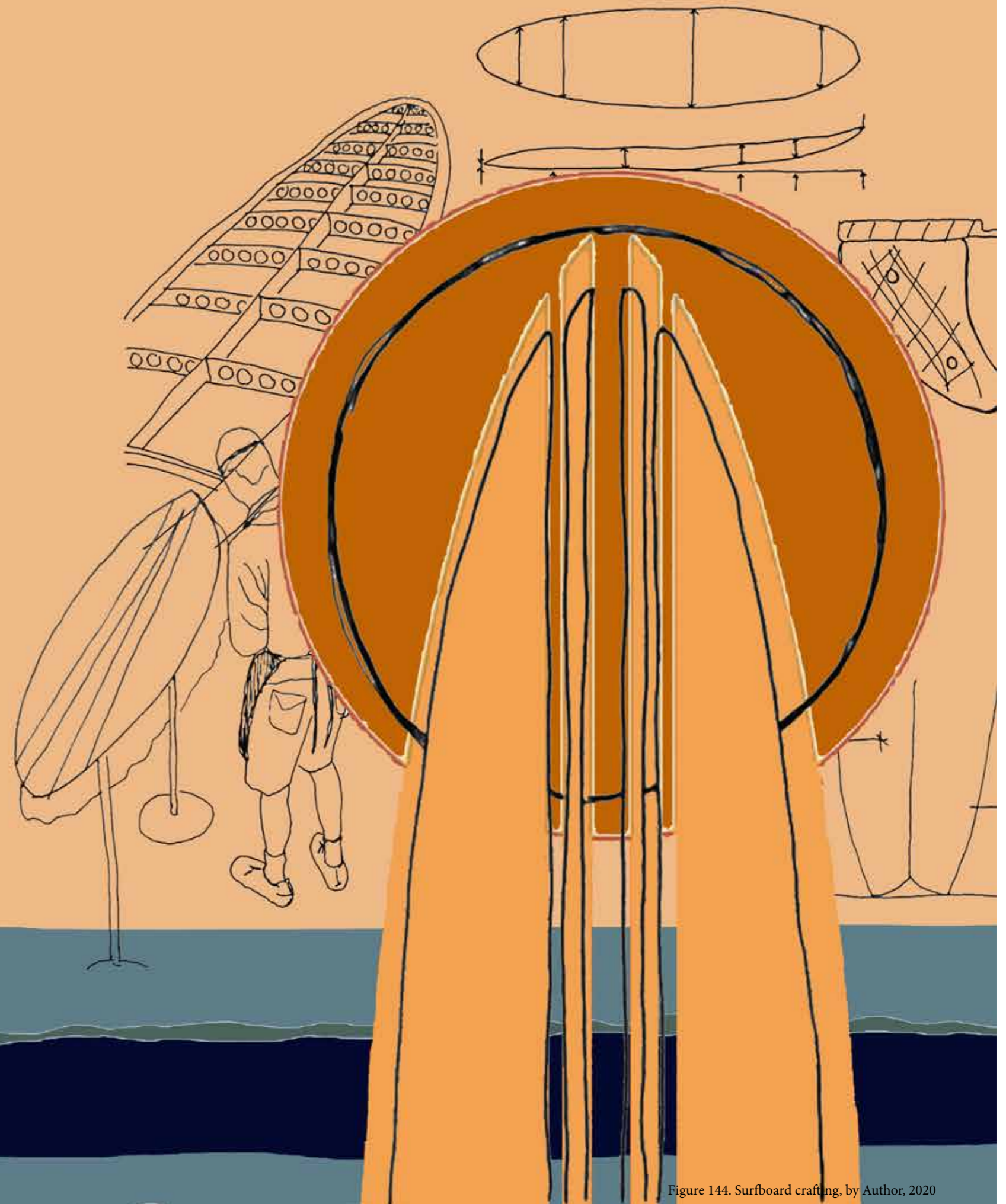
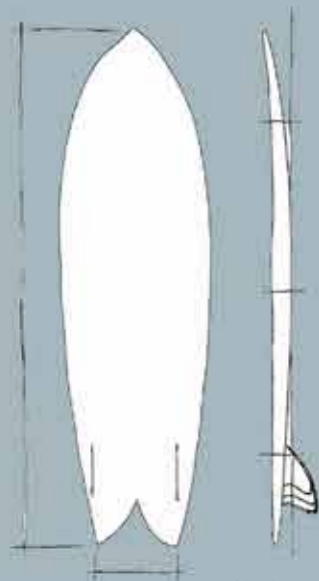


Figure 144. Surfboard crafting, by Author, 2020

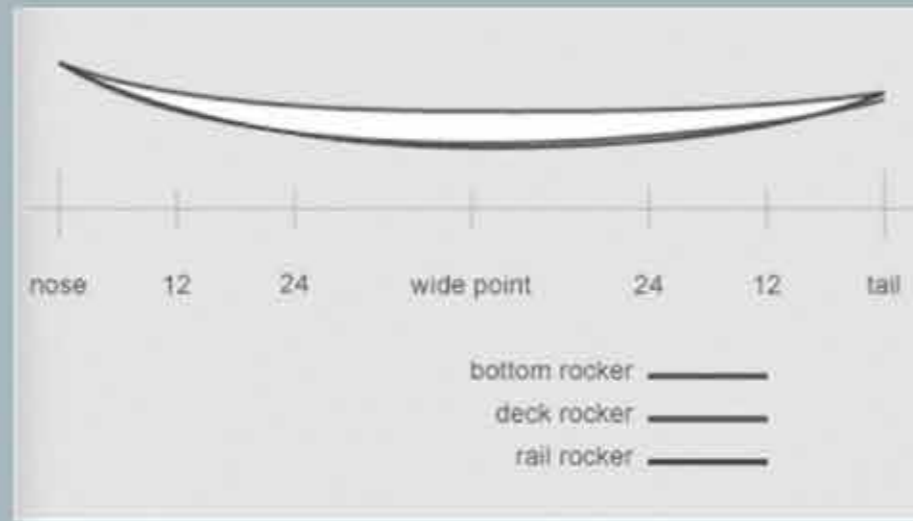
The rocker stick:

The rocker stick has a very big impact on how the board reacts on the water and how fast it glides as well as turns in the water. The rocker is seen as the most important component to the design of a surfboard, but it takes a complex combination of multiple curves (Understand The Surfboard's Rocker - Surf Equipment Tips, 2020) . It is the marriage of all the curves and elements to create a surfboard working in harmony.

The rocker is the curve on a surfboard; this can be seen by looking at the profile of the surfboard. As you become a more advanced surfer the rocker will have stronger curve. In the image below it shows the curve of the surfboard by looking at the profile of the surfboard.



(Figure 145. The rocker profile, by Author, 2020)



(Figure 146. The different rockers, (Understand The Surfboard's Rocker - Surf Equipment Tips, 2020))

The image on the right hand above shows the different types of rockers on the board. Each one of these rockers has an impact on the other and they need to come together at precise measurement as it has a huge impact on the performance level of the surfboard.

Interior curves:

The spinal chord of the surfboard is the easiest to calculate. The rail rocker is more difficult to measure and calculate. The link between the perimeter rocker and the spine is what is the result of the bottom shape.

The flex of the board can be built into a surfboard. The rocker is not the only important component but also the state of flux. The thickness, the rail shape, the fins and the position of the fin will not change during a wave ride, but the board rocker, the bottom curve can change, depending on the weight and force.

Shapers are concerned by the millimeters of a design, but other factors such as lamination, resin shrinking all add to the outcome of a board and it might cause a rocker to twist slightly. Epoxy is about 2%, polyester 6% and the reaction time as well as the temperature of the batch can have an effect of the final product (Understand The Surfboard's Rocker - Surf Equipment Tips, 2020) . Therefore the rocker can be adjusted unintentionally after it leaves the shapers hand and this causes the variance.

The image below shows how the different curves in the surfboard comes together and how they have an effect on one another.

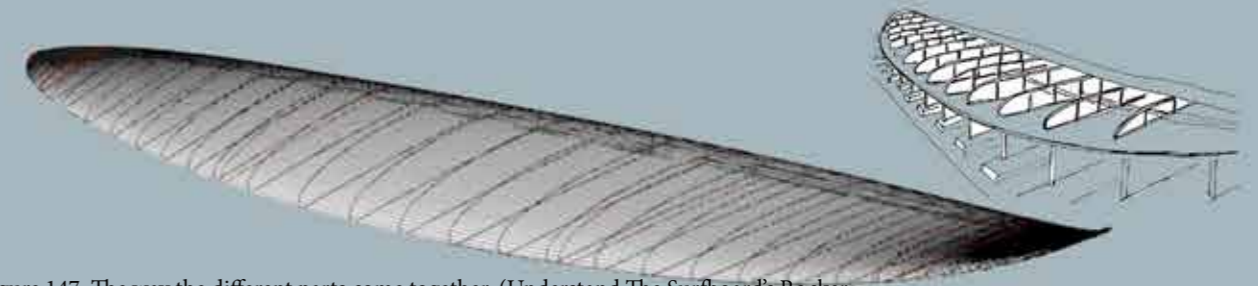
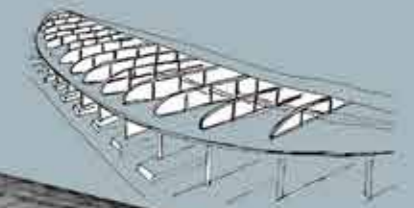
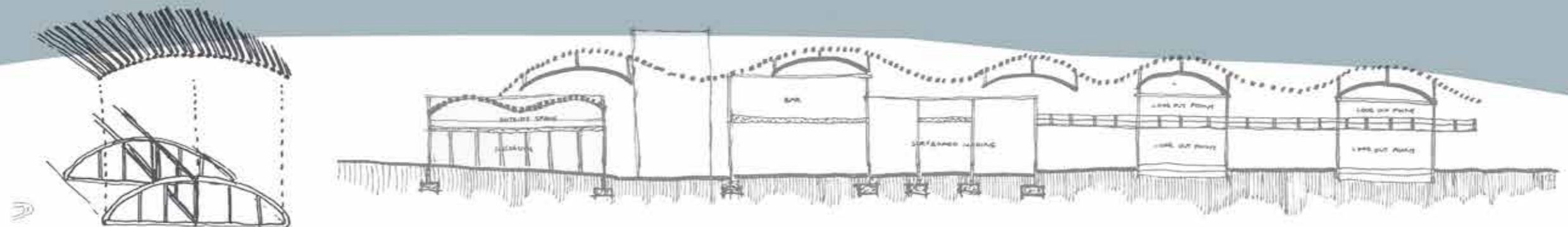


Figure 147. The way the different parts come together, (Understand The Surfboard's Rocker - Surf Equipment Tips, 2020).



(Figure 148. Surfboard structure, by Author, 2020)



(Figure 149. Roof structure, by Author, 2020)

Measuring the rocker:

Most shapers make use of a straight edge that is placed on the center point from the bottom. The board is usually placed on racks to give it stability. Using a beam as a line marks the board's center. a few shapers make use of a straight edge of a half template. Shapers make use of a light touch on the rocker beam. The measurement of a board that is done is not a problem, but using a light press in the board when it is on its side. The pressing of the beam against the middle point should not make a difference in the measurement (Rusty explains how curves affect your ride, 2020) . When measuring the board the shapers needs to make sure that the reference point is consistent with the previous measurements. You cannot measure a board by placing it down on the ground as the balance of the board is affected by the distribution of mass and the rocker will not be measured correctly.

In the early days, most shapers made use of rocker templates; this is a curve that fits the bottom of the board in a correct way as the middle third and half of the surf board. The center lengths are more complicated to obtain and this requires more equipment.

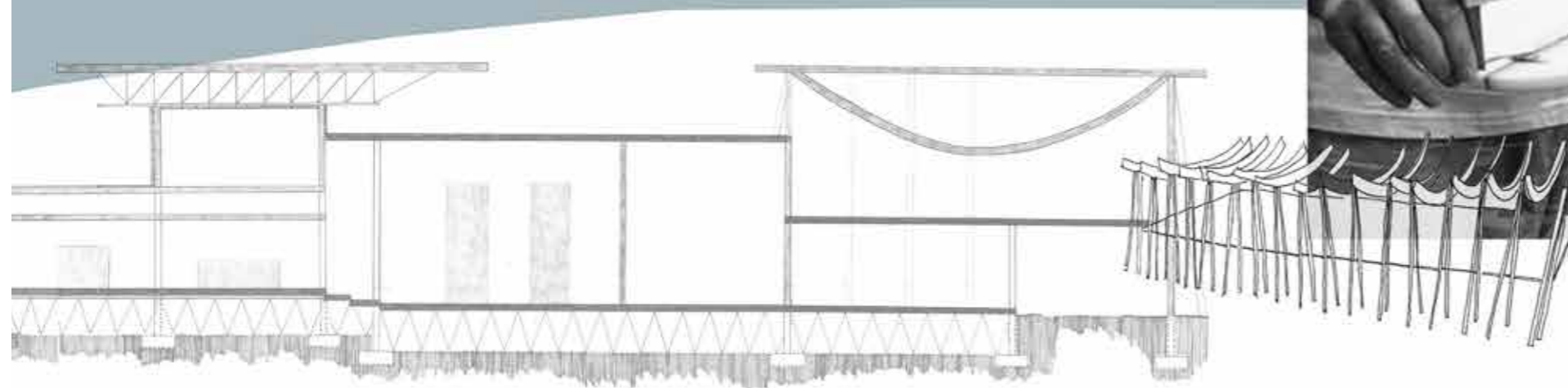
The rocker templates in the middle, half way and the entry to the exit are important. The middle curve is also important because it determined the curves at the ends (Rusty explains how curves affect your ride, 2020). If there is a small change that occurs in the middle section it affects the numbers and the measurements away from the center.



Figure 150. The rocker, (Understand The Surfboard's Rocker - Surf Equipment Tips, 2020).



Figure 151. The shaper measuring the rocker, (Understand The Surfboard's Rocker - Surf Equipment Tips, 2020).



The rocker allows the surfboard to sit on the steeper part of the wave section. If there is no rocker then it would be difficult to catch a wave without being whiplashed through nose diving in the wave. The rocker is also responsible for the maneuvers of more advanced surfers; this is because many of these maneuvers take place in a critical part of the wave and where the wave has a very deep curve.



(Figure 156. The rocker profile, by Author, 2020)

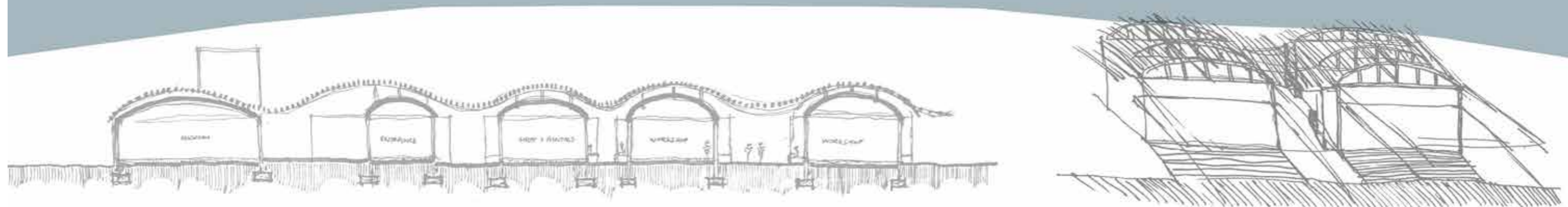


(Figure 152. The rocker profile, by Author, 2020)

The larger boards makes it easier to float as well as catching a wave, however it makes maneuvers much more difficult and the movability is limited due to the size and the rocker.

The larger the curve of the rocker, the easier it is to move around on a wave and the surfboard is very quick to respond. A rocker however does slow you down on a wave, as the curve has a large impact on the drag under the water, this slows you down when you are paddling out. This is why surfers who are experiences ride from one side to another so that the steep rocker curve does not slow them down(Understand The Surfboard's Rocker - Surf Equipment Tips, 2020).

Most of the boards have a curve that is very similar in comparison. If a surfer turns the board, it is important to be aware of the waterline arc of the board and to visualize how it is going to glide through the water. If there is some kind of imbalance in one of the ends of the board it can create a drag on the board.



(Figure 157. Roof structure, by Author, 2020)

The instrument used to shape the rocker:

One of the instruments that has been used for decades are "rocker jigs" (Rusty explains how curves affect your ride, 2020) . This is a tool that measures the deck, the curve and can be translated as a template. The tool is placed onto the bottom of the board and it has a flexible baton or strip of plastic that is in place along with adjustable spars. This tool allows you to develop a template of the board and transfer it onto another board (Understand The Surfboard's Rocker - Surf Equipment Tips, 2020).

The instrument used to measure the rocker is a way of recording the profiles that the great surfers make use of, however it is not an exact science, some boards are just mysteriously increasable even if you try to remake them it would be impossible. The so-called million-dollar board is often impossible to remake and the architecture in this dissertation will try to attain that, even if it is an elusive and most probably in-attainable goal. The design will still try to portray the feeling of the million-dollar board.

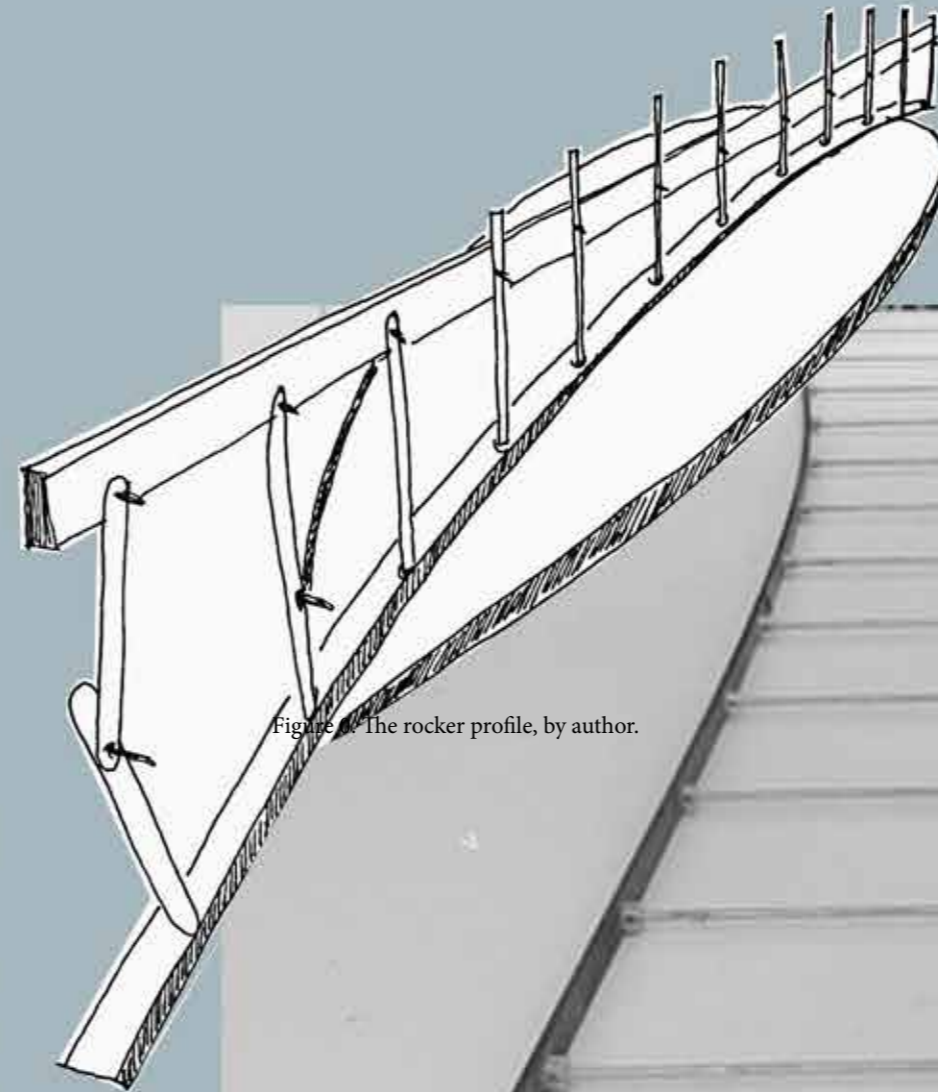
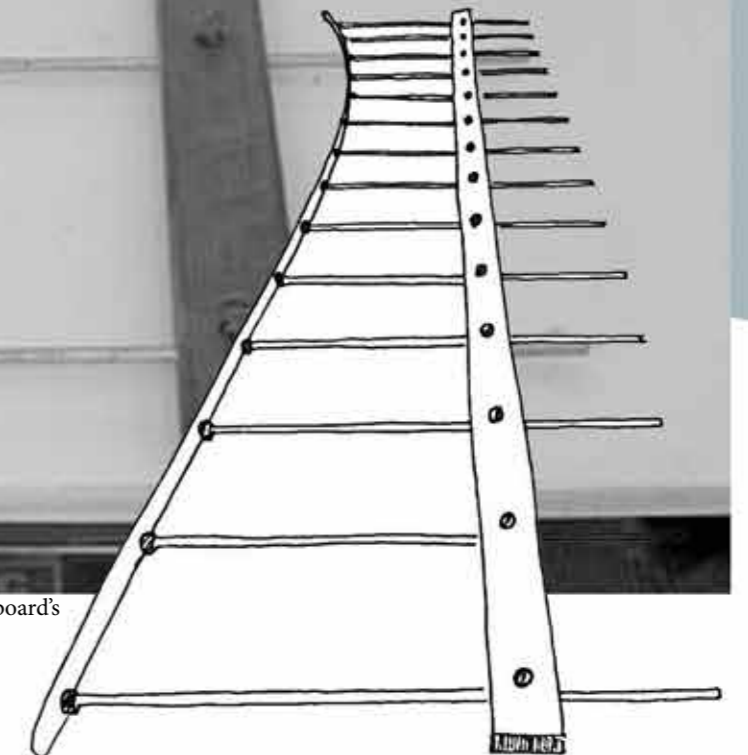


Figure 157. The rocker profile, by author.



(Figure 158. The rocker measuring tool, (Understand The Surfboard's Rocker - Surf Equipment Tips, 2020).



(Figure 159. The rocker profile, by Author, 2020)

Surfboard shaping

Many of the surfboards now a days involve a software program where 3D renders are made of the surfboard and a customer can totally customize their board, it is then shaped 3D and from there a piece of foam is placed onto a machine that is specifically to shape surfboards. In the olden days the boards were mostly shaped by hand. Therefore the process of surfboards has changed a lot due to technology, because the technology allows the surfboard to be shaped very quickly. This new technology allows boards to be replicated, which is almost impossible through hand shaping. The board is then hand sanded to finish the shape of the board. The board is then glassed and it seals the foam board and the design of the board.

Every board has a fingerprint; the foam is put into a mold. There is magic in the built of a surfboard, the form and the shape of a surfboard, hand shaping, using skill and making use of three points on the board. Cutting the board by hand is much like building. There is a constant connection between what the board is going to look like while in the process. It is a mythological process while designing. Everything needs to be perfect. Each board designed holds the question, is it the magic board? The hand shaped boards is measured from the rocker and then from the tail to the nose. Every millimeter needs to be measured and the data is then taken into the computer for the 3D renders to occur. The rails, thickness, volume and the curve are looked at as the data is placed into the computer. Once a board is placed in the machine it is quickly skimmed. It is amazing to see how perfect the machines are able to cut the board. The board then needs to be glassed and sealed as explained above. There is a method to everything in the surfboard design process. The fins and the plug are placed in last.

The surfboard will always evolve and change but the love of surfing to the surfers will always remain.



(Figure 160. The shaper, by Author, 2020)



(Figure 161. The shaping process, by author.)

Surfboard shapers in Jeffreys Bay:

The local shapers in Jeffreys Bay are world-renowned. They produce high quality boards and local craftsmen shape the boards.

The surfboard factory:

Thys Strydom is one of these shapers in Jeffreys Bay, he has shaped more than 8000 surfboards in just the past 15 years. His reputation grew by shaping boards for international labels like; Blue Hawaii, Town & Country and Vudu. He is now in contract with Quiksilver Boardriders and shape their Q-Stix range surfboards (Jeffreys Bay Surfboards - Rebel Surfboards J-Bay South Africa, 2020). He hand shapes all the surfboards and finish them off with a glazed finish.

The employees of the surfboard factory are all local craftsmen who have developed the skill of shaping over many years. All their materials are from throughout the world. Their trademark is quality and this makes them so credible in the industry (Jeffreys Bay Surfboards - Rebel Surfboards JBay South Africa, 2020).

The factory has three of their own labels:

- T.S.D.: This is their house brand and it is a label that has been established across South Africa for more than 15 years.

-Rebel: This surf label has become international and it is a label that is very popular amongst the competitive surfers. The design is simple and the label works with almost any design that the customer would like.

-Surf Star: This is still a relatively young label that is very popular among the young surfers. This label is perfect for outstanding designs and it is a very edgy surfboard.

The factory consists out of a shaping room, Lamination room, Spray room and a sanding room.

The Shaping room is where Thys shapes the boards himself, from here they go to the lamination room and then to the spray room where a design is placed onto the board. After the design is placed onto the board then it gets sanded as the last finishing touch.



Figure: The shaping bay, (Jeffreys Bay Surfboards - Rebel Surfboards J-Bay South Africa, 2020)



Figure: The lamination room, (Jeffreys Bay Surfboards - Rebel Surfboards J-Bay South Africa, 2020)



Figure: The spray room, (Jeffreys Bay Surfboards - Rebel Surfboards J-Bay South Africa, 2020)



Figure: The sanding and polishing room, (Jeffreys Bay Surfboards - Rebel Surfboards J-Bay South Africa, 2020)

Theory introduction:

Taking in the aims and problems identified by the nature of the project and the client, a research statement was made in order to provide direction with regard to the theoretical discourse and exploration, to come to an architectural solution. The research statement developed into the investigation of specific notions as well as specific precedents to enforce the way of the design process to develop the best possible solution for the design project.

This dissertation aims to explore the dream glide and the surfing culture.

The ideas that developed the research statement, which was followed by the chosen site, called for an in-depth understanding of the surfing body, ritual, rhythm and embodiment.

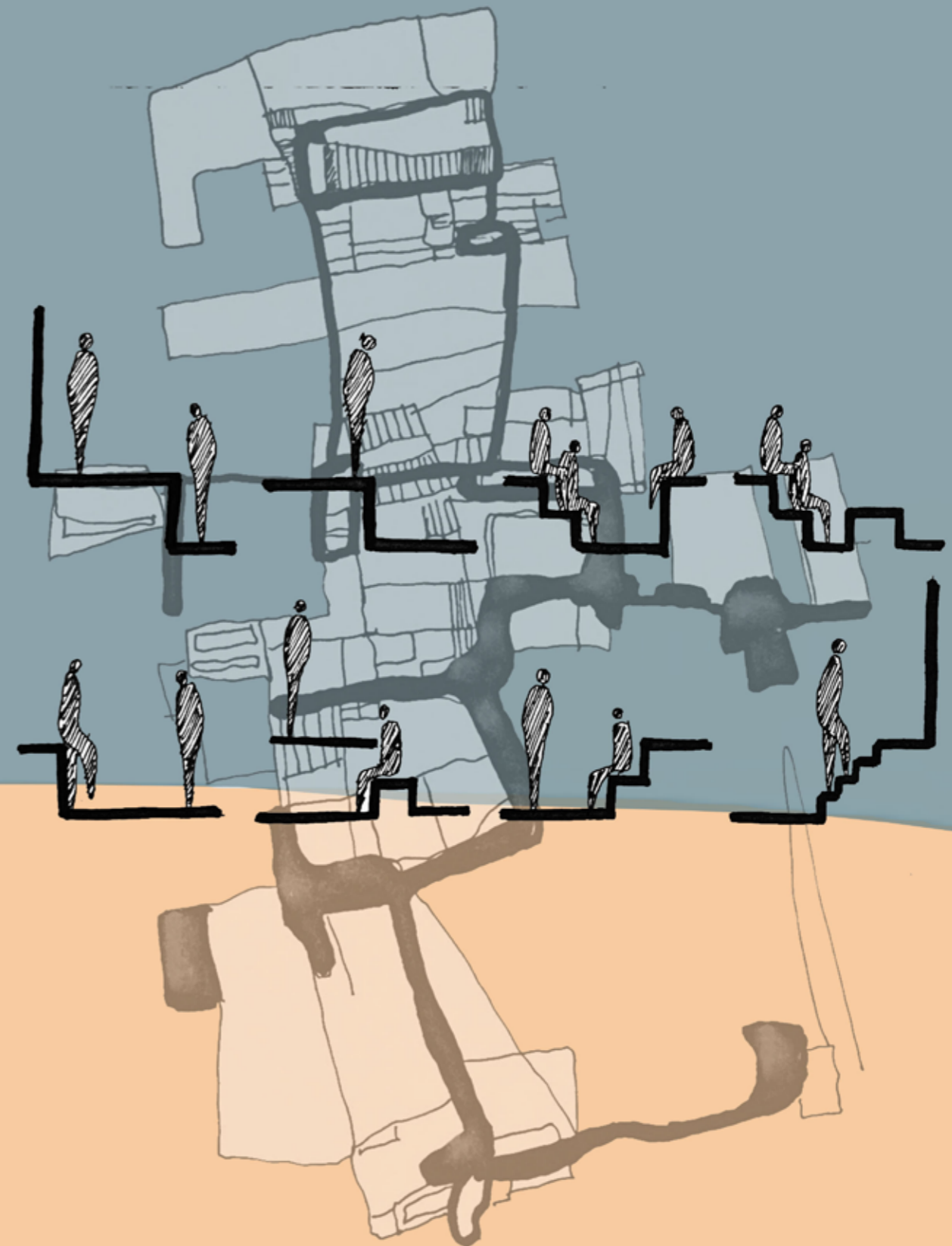
The section to follow is an in-depth exploration of theoretical aspects such as; surfing culture and surfing as a subculture and lifestyle, experiencing the wave, surfing and ritual, The embodiment in architecture, Architecture and ritual. These theoretical terms can be divided into two sub-categories; surfing and architecture. The aim with these categories is to discover through theoretical terms the connection that can be found between them. This is done through selective investigation in order to gain research about the design in this dissertation.

The theoretical exploration started with the conceptual ideas of embodiment, ritual and rhythm and developed into a theoretical exploration of these themes.

The underling themes of surfing such as the surfing culture and lifestyle will also sho how it affects the act of surfing itself and the embodied experience.

The design in this dissertation will be an expression of these theoretical themes and how it can become an architectural expression.

The section will start with what this so called dream glide is and how surfers experiences the dream glide and how it becomes an embodied experience.



(Figure 166. Theory abstraction, by author, 2020)

Surfing and the dream glide:

What is the dream glide?

Surfers will say that the ideal dream glide is a wave that breaks down the line, it is where the surfer speeds down the wave and make bottom and cut back turns along the wave. If the wave continues along a clear break all the way to the shore it is seen as the perfect wave or in essence the dream glide. For the surfer it is all about surfing the perfect wave (Team, 2020).

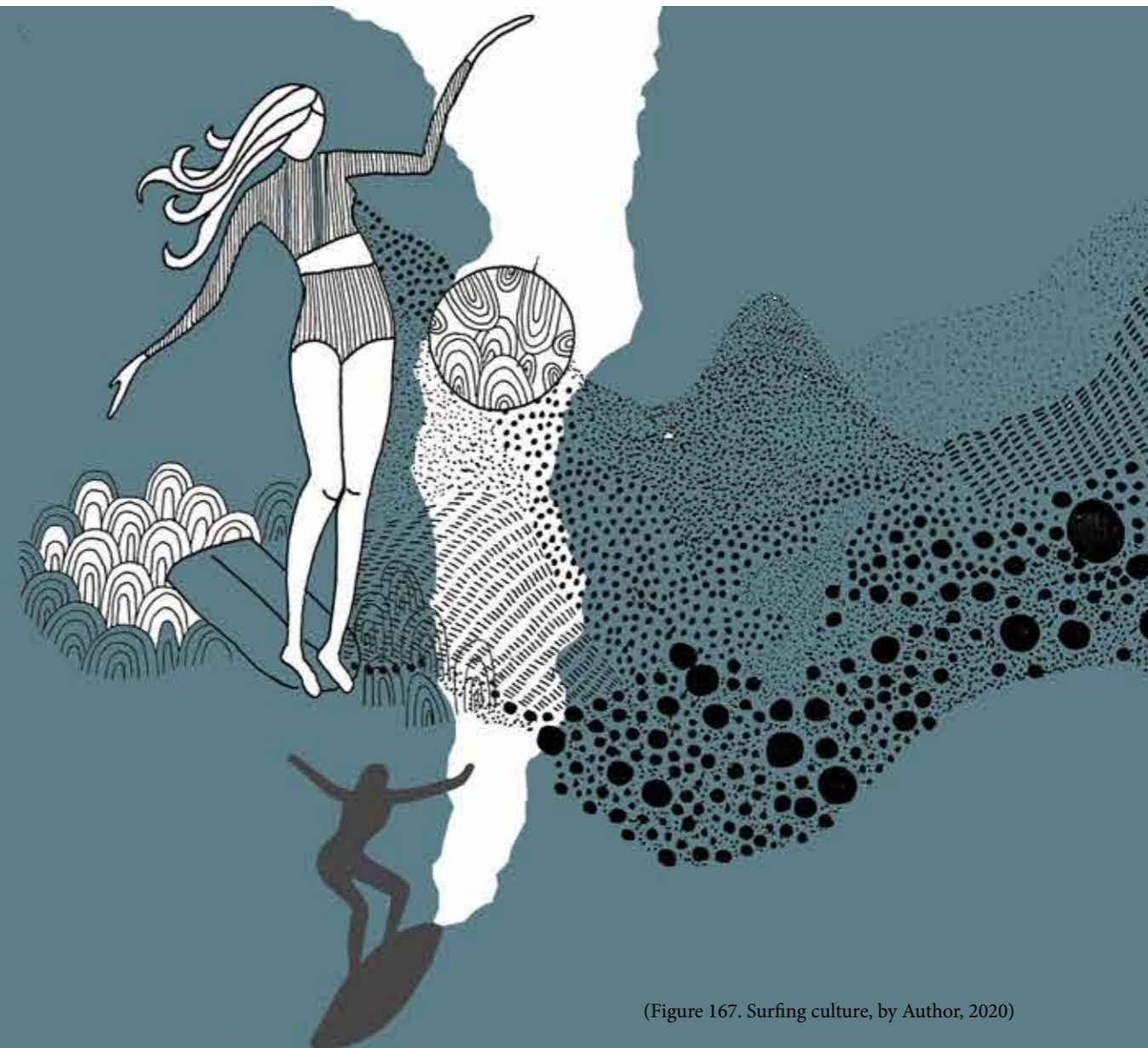
The dream glide...It was an early morning, paddling through the waves as the sun starts to rise. A light breeze, gazing out over the reef. This is one of my favorite times to paddle out at the famous Point beach. As the sun rises the sets start coming in, the next bigger than the one before. There is a slight wind, which is helping the size of the wave; it is enabling the perfect surfing conditions.

Waiting upon a wave, taking in everything around you. Your senses become heightened as you hear the waves breaking over the reef and the white fluff in the wind for a moment of time before exploding forward in a mass of white-water foam.

The wave moves along the reef in an orderly controlled manner. As another set comes in, I turn my board and make a few strokes with confidence into the wave. The feeling of being on a surfboard with the back rising as the takeoff almost suddenly begins. I find myself staring down a huge, vertical wall of water, it was almost horrifying. The bottom of the wave gets sucked backwards as it moves over the reef. The reefs in Jeffreys Bay are quite shallow and you need to be aware of it at all times. During this time the water is already a few meters deep and the chance of a wipeout increases even more as the water gets even more stacked down onto the reef.

If not careful the walls of the wave can roll you along the reef. The water in this case of a wipeout will then allow you to move to the surface and you will paddle out again across the water. When looking back it almost seems harmless and if you are not aware of the currents in the surrounding area, you might get caught in the wrong place.

However, today was not a wipeout day and I got to surf my dream glide, with my perfect short board and experience the magic of the point wave. It is a connection to the incredible feeling of the perfect wave. It is speed without wind, or at least not noticing it for in the moment the wave appears smooth and totally quiet. It is as if it appears motionless at the moment when you are on the board, surfing the face of the wave. It is the feeling of total excitement and exhaustion at the same time. It is pushing your limits further than before every time, it is about obtaining an experience that only a few are privileged to have. It is the ocean's treat of unnerving beauty, almost as an act of friendship.



(Figure 167. Surfing culture, by Author, 2020)

The dream glide is what each surfer is compelled to find, some find their dream glide, to glide where seconds appear everlasting, the wave appears motionless along the utmost feeling of freedom and adrenalin rushing through your body. It is the embodied experience that the surfer longs for and will carry with them for the rest of their life. For other surfers the dream glide is yet a mythical idea of the perfect wave. It is a never-ending search of the perfect surfboard and the perfect wave, the dream glide (Team, 2020).

The surfboard's design has a huge influence on the way that the surfer experiences the wave and it will influence the surfer in finding this dream glide, because being able to catch up enough speed and perform the maneuvers it takes precision in the design of the surfboard to make it possible.

The dream glide is the perfect connection between mind, body and the surfboard on the wave. It is the transition of the common mind-body dual that makes the experience a dream experience.

Surfing culture / surfing as a subculture and lifestyle

For surfers the sea is not just the sea, together with the beach it holds personal significance and meaning to all surfers. "The cultural representations that surround surfing for the wider society are also imbued with the almost archetypal images of the wave as a natural energy force and the seashore as margin of cultural periphery". (9pg 7. Surfing and social theory) Surfing is not just a sport it becomes a culture to the participants, it is an everyday lifestyle.

Subcultures consist out of values, beliefs and norms that are shared and participated in by a few people within the particular culture. The term subculture refers to a secondary culture, which refers to a group within a society or culture. The subculture focuses on the daily meanings, interactions and interpretations that take place. Subculture is a more permanent population than community, as it is usually aligned to some territory and constituted by collections of families.

Irwin explored subcultures as (1970/1997 in Gelder and Thorn 1997): social worlds, explicit lifestyle as well as action system, he explored each of these concepts and their meanings. Firstly he explained that social worlds as a subculture means that there is no tie to any specific territory as well as any collectivity. Secondly he explained that the explicit lifestyle more generally has a shared commitment of some type and it may be variable. Thirdly- action system, this refers to a set of values and cultural meanings that are seen as making up a whole, where there is some form of unity.

Through the three different statements that Irwin made, he states that a subculture portrays that an individual may choose to be identified with more than one social scene that is available to them.

Surfing is much more than just standing on a surfboard, it is a culture. The culture is unique and within the surfing culture you get many different types of surfers, from the surf-hippies to the surf athletes and those in between.

One very well known surfer in Jeffreys Bay, Bruce Gold, will be classified more to the hippie side of surfing as he calls himself a hippie.

Bruce lives for surfing and surfing only. He sees surfing as a purifying influence. Bruce is a legend in Jeffreys Bay, he left everything he had and came to surf the best waves in the world. He has a kind of love affair with surfing. He survives without any job, he picks up oysters and lives of the sea. He said that he was good at school and was working for the police after school, at that time he was still surfing but he realized that he was not surfing enough. He says that he has often been without a place to stay, he sometimes even stayed in the dunes, however this was one of the compromises he made in his life. He then went on buying a tent and this was his home for a long time. All he wanted to do was to stay in Jeffreys Bay and surf the waves. Bruce says that he was born to surf and that surfing is the peak of his life.

He chose not to have a wife or kids or a proper work, it is sometimes difficult to be a hobo, as he says, but he also says that it has its rewards.

Many surfers look to find the simple lifestyle, a lifestyle that is adventurous and revolves around surfing, rather than a life that is filled with an everyday work from 8 am to 5pm, maybe not as extreme as Bruce Gold's story, but as a common saying in the surf culture; "work less, surf more".

Bruce is one of the very few people in life that lives out the life of being able to surf all the time without having a job. Bruce's story is important in the surfing culture, as people listen to his story there is a realization that his lifestyle has both positive and negative sides.

Experiencing the wave / the embodiment of surfing:

Surfing, the act of standing upright on a board and guiding it across the face of a breaking wave, is a form of dance in which the board rider, or surfer, "dances" to and with a natural energy force. (Booth 2003: 315-336)

To understand the social importance of the surfing body, the body needs to be placed at the center. Surfers usually are able-bodied people; they are flexible and enforce a level of skill. A surfing body needs to feel at home in water and content in it. The surfing body is a creative body that interprets dance-like movements across the glide of a wave.

During this dream glide that the surfer takes there is a contrasting idea between the surfboard, paddling and riding the wave. In the first part of the glide the surfer is aware of the board as it being an object, but further in the glide the sense of the separation between the object, the board, and the body, becomes one as a moving body, which is more systematic. This awareness of the surfer during the glide is a direct image of the speed of the glide and the impression with a non-cognitive mode of consciousness. It is in contrast to the visual sense when paddling out, the first part, however during the glide there is little alertness of this sense. This refers to the non-representational theory "to be aware of an experience means it has passed" (Norretranders in Thrift, 2001:37). This therefore shows that when the surfer rides the wave, the ability to do so is through the knowledge of the body, which avails the ability to automatic responses while being on the wave. The body is therefore seen as the central focus in the experience of surfing taking place.

The body is a central focus in the activity of surfing as mentioned above; surfing is an activity that shapes the body through a mostly inadvertent exercise. This takes place through the practice for the body to become the so-called surfed body. Goffman (Goffman, 1983) refers to the body as three different types of bodies. Firstly, the practical body, secondly the interacting body and thirdly the storied body.

A surfing body experiences all three bodies in an intersecting experience. All of these are part of surfing and the body's way to interact in the surfing experience of the dream glide. The different parts of the body are what add to the experience and the rush that the body experiences through this act.

The first mentioned body; the practical body (Goffman, 1983), surfing is a practical activity and it requires competence and experience of the body. The body however is not only a body but through this activity it is a surfed body it becomes one with the surfboard and no longer acts on its own. The experience is shaped through the practice of surfing, practicing the skill of the activity will start to shape the experience into a known and exciting experience. This allows the surfer to draw on the experiences when the surfer goes back again and makes the body activity of becoming one with the surfboard much easier. The surfer therefore relies on the bodies' practical functions. This also allows the surfer to be able to surf a wave over and over again.



(Figure 169. The embodiment of surfing , by Author, 2020)

Secondly, the interacting body (Goffman, 1983) is the self, the environment and objects found around the body. The surfing body can also be seen as an interacting body and there is thought of the surfed body and the body that is in a constant interaction with everything happening around the body. The surfed body is in constant awareness of the glide and all the aspects around the glide. The body is therefore always aware of what is happening around in the environment and is in constant interaction with the surrounding environment, which makes it an interacting body.

The storied body (Goffman, 1983) it is the unfolding or telling of the experience into a type of form to the lived body. Frank (Frank, 1991) states that the story of an individual's body in a way responds to the sensations and the stories are as a result of the relationships that an individual has with their body. The storing of the body usually happens within specific social aspects that are based on the narrative assets that the body is able to construct from its culture and society and thing around it. The storied body is an important aspect because it lights the relationship of the body, the self and society. The Storied body is an important aspect in the act of surfing as it is what becomes a result of the sensations while surfing and this allows the body to feel the compelling need of doing it again and again.

In this dissertation the building will aim to entail the 3 different elements of the embodiment of surfing; the practical body, the interacting body and the storied body, through creating a physical experience as well as an experience that allows interaction and a place that will become a storied body, a place that will tell the story of the surfer and become an embodied experience.

As a result surfing is an embodied experience with an addictive affinity, which may connect with the apparently infinite search for some form of fictitious perfection, the 'dream' of surfing (Ford and Brown, 2006), the dream glide. The experience of surfing consists of endless emotions together with senses while performing this act. All these senses allows the surfer to experience the dream glide, if the surfer gets the chance to do so.

Surfing is the physical embodiment of flow. Riding a wave is restricted by your skill and imagination; you choose to ride the wave. It is about the feeling in the moment. The more you practice the more you can maneuver around the wave. It is all about the feeling in the moment (What Surfing Teaches Us About Resilience - Resilience Institute Europe, 2020). It is this feeling that makes the surfer compelled in an endless search for the dream glide and it is the embodied experience that will allow the surfer to take in the experience through the three different bodies.

The resilience and endless search for the feeling in the moment is why surfing becomes a part of a person's everyday life and becomes a ritual to a surfer. It is about the constant adrenalin rush and feeling of excitement.



(Figure 170. The embodiment of surfing , by Author, 2020)

Surfing and ritual:

Ritual is described as a set of secure actions and often words acted out regularly, especially as part of a ceremony (RITUAL | meaning in the Cambridge English Dictionary, 2020). Surfing can therefore be seen as an everyday ritual. It is an act that gets performed often and it becomes part of a persons life and every day doing. Surfing is something that a person wants to indulge in over and over again.

The ritual events such as the paddle out ceremony and the myth of Sisyphus will be discussed below in order to come to an understanding of the ritual of surfing. Through discovering the plot behind the ritual of surfing it will be an aid in the design development of this dissertation as the design is developed around the ritual of the surfer as well.

Surfing and ocean based death ritual: the paddle -out

The paddle-out is an ocean based death ritual. This is when a deceased are symbolically placed in the ocean and their memory is celebrated through highly physical ritual actions. The surfing communities often pinpoint a specific location and occasionally more than one place is located, where they come together to tell stories of the member that is missing, they also acknowledge him and share memories (Surfing and ocean-based death ritual: the paddle-out ceremony, 2020). The paddle-out ceremony is a practice passage for both the living and the dead and the profoundly physical nature of the ritual provides a transformational experience of emotional release while also creating restoring bonds and group harmony. The circle formation in the ritual is a key in the practice of this ritual, it is connected to the self-recognition of the community as participants face each other with the bereaved placed in the center of the circle, and this portrays a physical act of support (Surfing and ocean-based death ritual: the paddle-out ceremony, 2020). The deceased is also placed in the middle as the ritual mourns their loss and celebrates their life and surfing identity.

The ritual of the paddle-out only takes place in specific communities, it originated in Hawaii and other places such as Australian surfers also started to practice this ritual. This practice is what we commonly see as a ritual event, however it still does not explain why a surfer paddles out, rider a wave and perform this action over and over again, therefore the Myth of Sisyphus will be investigated below in order to try and understand this seemingly absurd action that a surfer performs again and again.

The myth of Sisyphus

Sisyphus is known for his punishment in the underworld, he was doomed to roll a rock up and down a mountain. Every time he reached the top, the rock rolled back again. This futile labor was a harsh punishment. Every time that the rock rolls down the mountain, Sisyphus is free from his labour and he is consciously aware of his absurd fate, therefore it could only be seen as tragic because he is aware of his fate and understands it and he therefore has no hope to repeat it again and again. This however places him above his fate due to the understanding that he has (SparkNotes: The Myth of Sisyphus: The Myth of Sisyphus, 2020). It might also be seen that Sisyphus approaches this labor task with a kind of joy. The moment when he accepted his fate, the sadness disappeared. There was only sadness when he looked back at the world he had left behind.

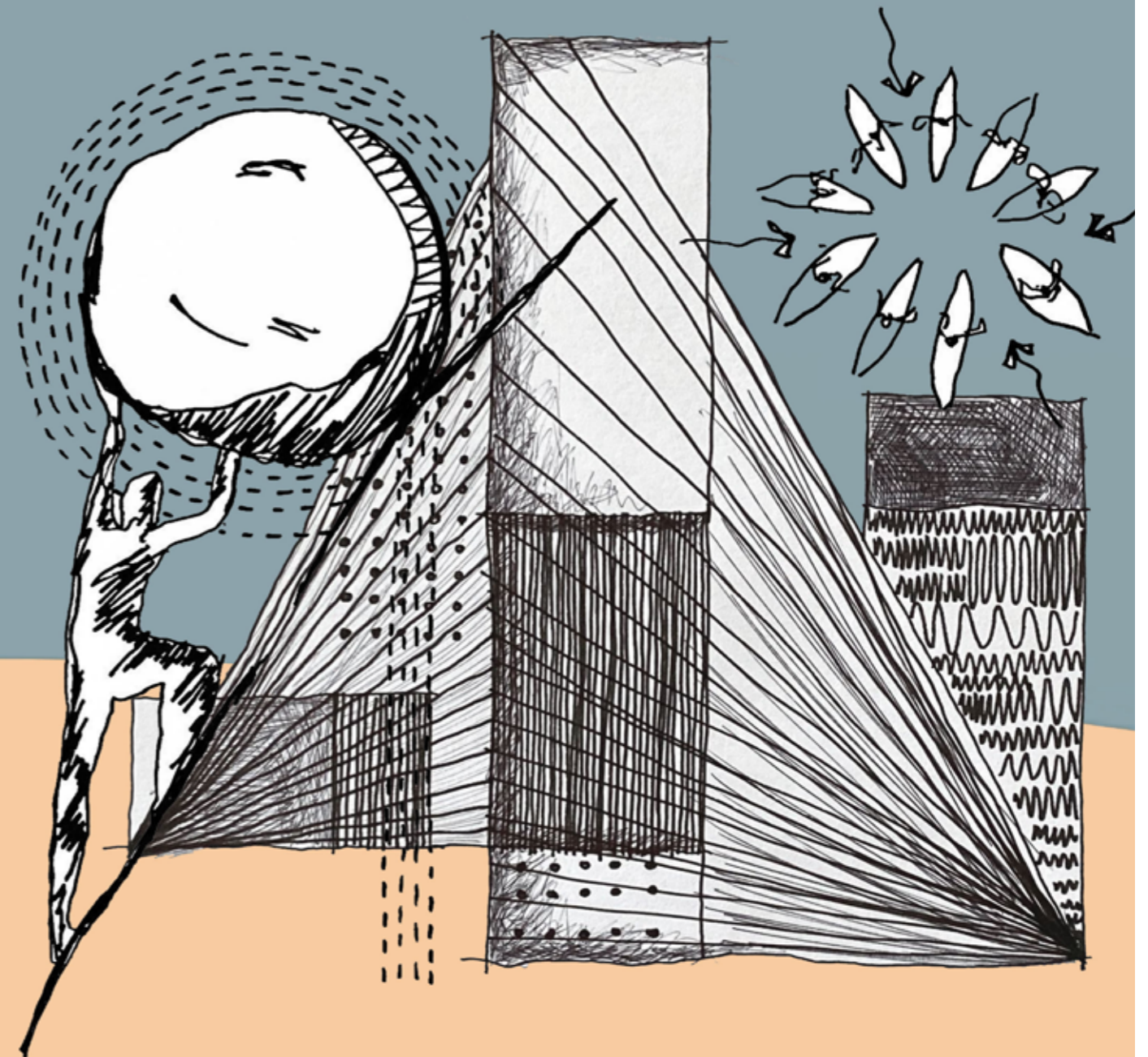
The myth of Sisyphus could be seen as a ritual, it was part of his everyday life and it happened again and again just as the ritual of the surfer that paddles out to catch a wave, rides it out and starts again. It could be argued that it can be compared to the myth of Sisyphus as it is a form of labor that takes place again and again, although the surfer was not bound to this through a punishment but rather a choice and due to this activity the surfer also accepts his/her fate through paddling out and in a way each time also looks back on his/her life in the quiet moment just before a wave is caught. This action can also be linked to the dream glide that the surfer is always out to find, the surfer paddles out again and again almost in search of a better fate each time, just as Sisyphus rolled the rock up and looked back into his past I the search of a better fate, yet understanding it.

Camus argues that happiness and the absurd are somewhat linked closely and that both are linked to our way of discovering the world and our fate and that it is our own (SparkNotes: The Myth of Sisyphus: The Myth of Sisyphus, 2020). Through both ways there is a discovery that our life is only what we make of it and that our fate is our own.

For the surfer paddling out each time into the ocean is their way of discovering their fate and making life their own. The ritual event is a way of determining their fate and it puts the surfer at ease.

Camus also states that the absurd goes through life as a never-ending struggle, with no hope and through any attempt to avoid the hardship is an attempt to run from the absurd condition. Camus further positions that; his only requirement for Sisyphus is that he needs to be aware of his absurdity. Sisyphus does not achieve anything from pushing the rock up the mountain, but it is in the moment when he is free from the rock that rolls down the mountain that he takes joy because for a moment, just a moment he is free from his burden that is getting him nowhere. It is in the same moment when a surfer catches a wave that the surfer feels a kind of freedom in this act. It is the feeling of adrenalin and freedom rushing through your body that makes the surfer paddle out again and again.

The ritual of the surfer will be portrayed in the building as an aim for the visitor to experience the ritual of the surfer through different spaces and elements in the building. The aim is to allow the visitor to experience the same kind of freedom and understanding that the surfer has of this ritual event that takes place daily. The ritual event will be part of the architectural experience and the architectural embodiment and how this experience can be embodied through architecture.



(Figure 171. Surfing and ritual, by Author, 2020)

The embodiment in architecture

The following section will be an investigation into the embodiment in architecture. The investigation aims to discover what makes a building a place of embodiment and therefore an embodied experience as well as the search for how the surfed body, the embodied experience of surfing, can be linked to embodiment in architecture. As the aim of investigation is to understand how the two different embodied experiences can be linked with one another and how the surfing body can be portrayed through architectural experience.

Merleau-Ponty (1962,p129,1964) stated that, "the body is our general medium for having the world", and therefore our mode of experiential access to the world of architecture. By investigating how people experience built spaces, it is important to rethink in enactive terms the perception and the related phenomenological concept of the lived body.

When an experience is embodied, experience is relative to the individual body that experiences, that is to the live body as subject. As with the embodied experience of surfing it is also an individual bodily experience that takes place in the lived body, through different bodily experiences.

The Vitruvian idea of embodiment has been linked to different bodily experiences resulting from architectonic perception, or to the observer's bodily feelings and impressions conferred by the architect encounter. This shows states that our bodied make use of different types of bodily experiences in order to obtain an over all embodied experience in the architecture. Therefore in architecture the perception, feelings and impressions can be related back to the surfers experience as an interacting, storied and physical body. They both consist out of the actual physical and emotional factor to convey a type of experience in the act or building itself.

The objects form generated an emotional affinity. The observer was thought to locate himself within the inner structure of the observer stationary object and to thus reenact its volume with his body by tracing the object from its center to the boundaries this is based on the emphatic projection into the form of the object and the observer was able to gain a conscious idea which resulted in a symbolic content. Therefore Heinrich Wölfflin argues that our own bodily organization is the form through which we apprehend everything physical act (Hajric, 2020). What we as beings experience and the way we make sense of experiences around us is not only dependent on our body, but also in the environment and our interaction with it. We inhabit the world through embodiment and our body that play a part in it. Embodiment is not only about the body because the body is never alone in the activity preformed (Hajric, 2020). There is always an engagement with the world, such as culture for example.

The cultural engagement plays a huge role in the embodied experience as it adds to the body never being alone and in constant interaction with the environment itself, these aspects such as the surfing culture also adds to the embodied experience as a whole and the architectural environment and culture within it will add to the overall experience. Embodiment is experienced through substance, which is associated with a specific time and space. Our bodies are consciously aware of our own historical development as well as others (Hajric, 2020). This adds to the body never acting alone on an embodied experience. It is also a result of action, emotion and perception.

The link between action, emotion and perception is a fundamental basis for taking in our reality as lived bodies, in order to experience things around us.

The body schema is a concept used to explain one's ability to act coherently in the world and be aware of one's own body (Berlucchi and Aglioti, 2010). This concept is closely related to the phenomenological understanding of the lived body, which acts as a living and feeling body. Therefore, the body schema is directly involved in the pre-reflective bodily self-awareness (Merleau-Ponty, 1962). These two views are important characteristics of the body schema. The body is a system of prognostic and close-to-automatic processes that regulate the movement and posture of the body constantly, but at the same time the body play an important role through providing us with a sense of self, with a pre-reflective consciousness of ourselves as experiencing, lived bodies (Gallagher, 2005; Gallagher and Zahavi, 2008; Berlucchi and Aglioti, 2010).

The body scheme brings together the personal and sub-personal interpretation that takes place through embodiment. This can then be related back to the discussion on embodiment and surfing, the three different bodies; the practical body, the interacting body and the storied body, this can be the state for architecture as well as the three different bodies that bring together the personal and the sub-personal interpretation that takes place. We make use of our bodies in a practical way to experience what is going on around us through a interacting way and we then make use of the third body, the stored body, as our bodies remember the acts we perform and the significance of it, these three bodies are then what is known as embodiment.

In this dissertation the aim is to create an embodied experience through the practical, interacting and storied body in the architecture that speaks of the embodied experience of surfing.

Architecture and ritual

Ritual, the performance of ceremonial acts prescribed by tradition or by sacerdotal decree. Ritual is a specific, observable mode of behavior exhibited by all known societies. It is thus possible to view ritual as a way of defining or describing humans. - Encyclopedia Britannica

Architecture and ritual investigates how the different rituals of the everyday life can be defined and framed by spaces in buildings. We are unconscious of the ways in which buildings shape and reflect our experiences. All buildings provide some kind of orientation to spatial practices for those who make use of these buildings.

Ritual is not necessarily a set of events that forms part of a religion or culture, it could occur in the everyday life, where a set of actions becomes a ritual.

Ritual and architecture are connected as both serves as identifying features of culture and different groups of people.

Rituals could act as nodes in time, where they suggest pre-ritual and a post-ritual state. The pattern or sequence of events that takes place may be prescribed by the individual or by a social or cultural setting or construct. There, however might not be an actual change through the enactment of a ritual, but in the individual or in the eyes of the society the state of being a person subjected to the ritual has changed.

(pg 10 joubert)

One state of being to the next, a person's life develops from different states of being. There are specific events and celebrations that take place, which marks the occasion and the passage of time.

According to Mircea Eliade(1957:183), a ritual becomes a measured approach to the everyday. The most habitual act can develop into a ritual.

Rituals leading to the program:

Can the abstraction of the ideas of ritual lead to the program of a building? Does ritual in its conceptual sense contribute to the expression of the built form?

Rituals are important in everyone's life therefore the role of rituals in spatial perception of an individual within the built environment acts as a place for social frameworks. There is an importance of placing oneself into a context central to architecture, as it determines the relation of the person to the domain, built or un-built, where they find themselves.

It is therefore important to study the current rituals on the site and place oneself into the central context.

Currently the main ritual on site is the ritual of the surfer, the surfer goes for an early morning surf, hangs out in the nearest coffee shop and goes back for a second surf in the afternoon. This becomes a daily habit that then easily becomes a ritual.

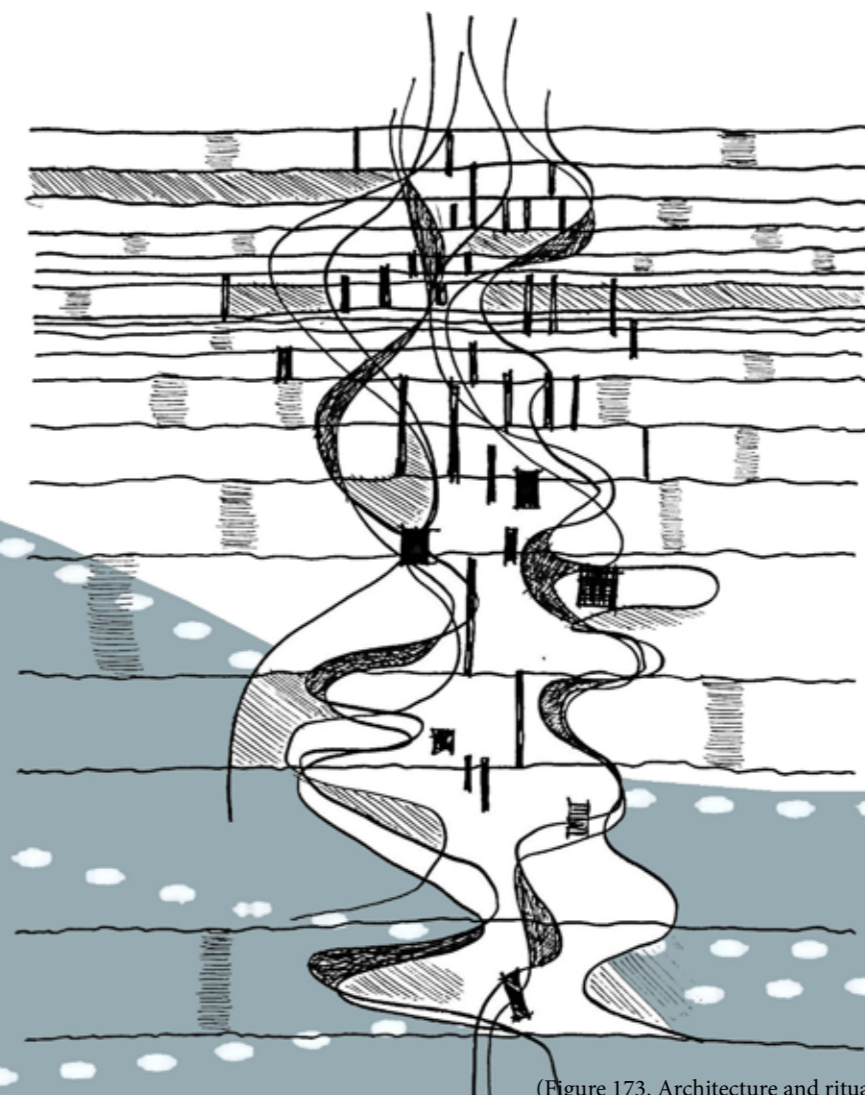
It is the abstraction of a ritual like this, of the surfer, which could lead to the program of a building.

Developing new rituals:

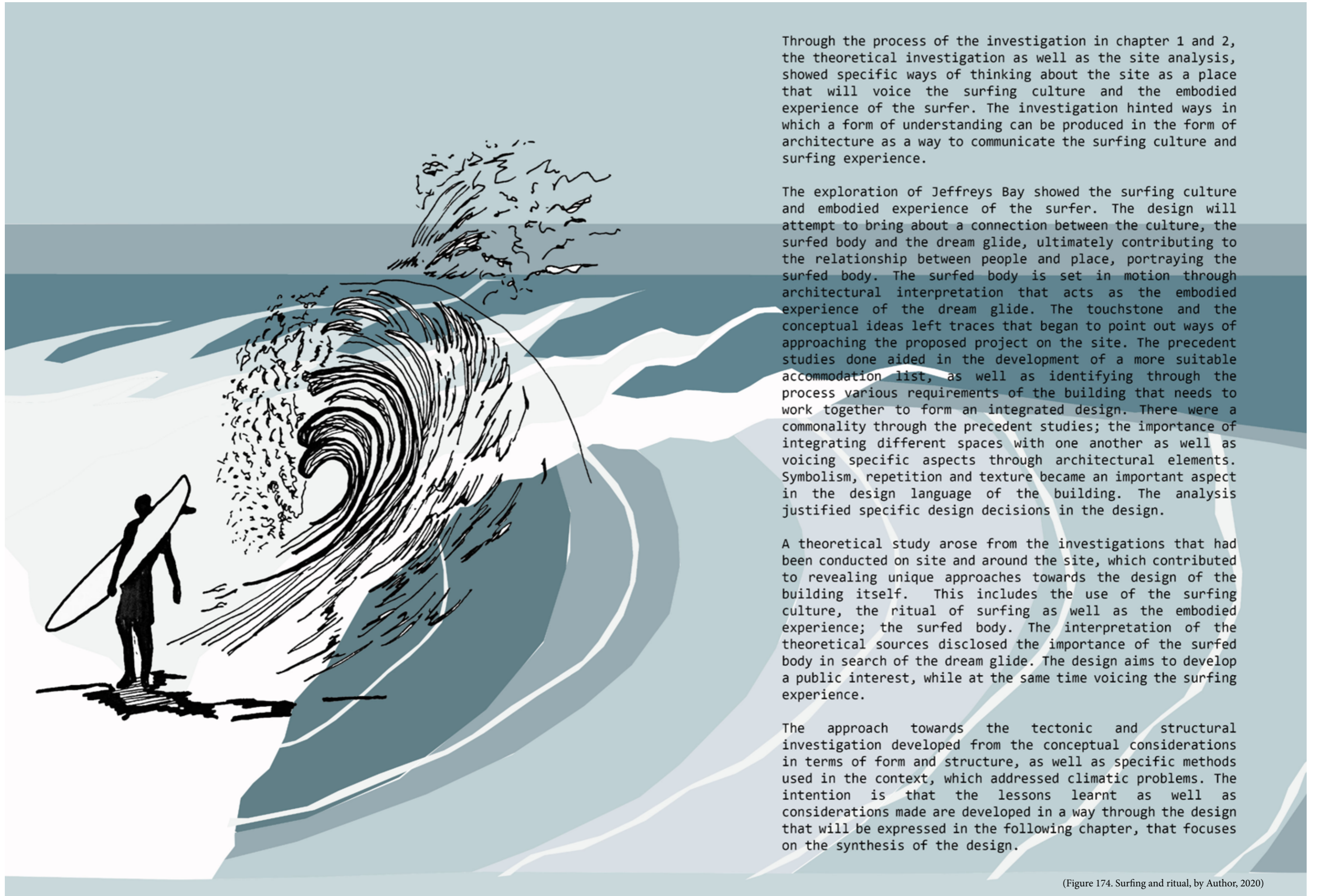
Creating new rituals is a way of drawing a community closer. This can also be seen through a new building that creates a new ceremonial procession when entering the building or what is taking place in the building.

The building will attempt to create new rituals such as walls in the courtyard, which will be open to paint/ graffiti on which will act as a hang out spot for the surfers as well as visitors. The building will also entail a bar/restaurant that will encourage new rituals. It will draw people closer and form new rituals and also contribute to the current rituals that happen on the site. The building will be based on the rituals that is currently taking place on site and the ritual of the surfer, the building will combine these rituals together with some of the new rituals that will be added in the building.

The ritual of the surfer is an important part in this investigation; it is the daily routine of a surfer that becomes a ritual as well as the act of surfing. Through different parts of the building, the building will try to voice these rituals.



(Figure 173. Architecture and ritual , by Author, 2020)



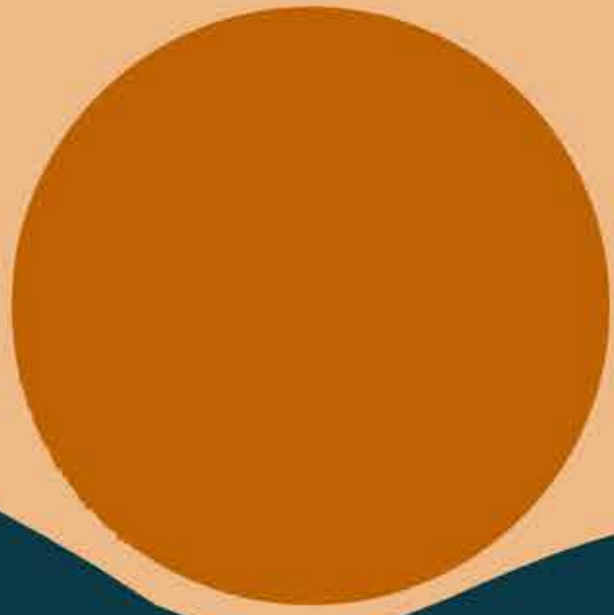
Through the process of the investigation in chapter 1 and 2, the theoretical investigation as well as the site analysis, showed specific ways of thinking about the site as a place that will voice the surfing culture and the embodied experience of the surfer. The investigation hinted ways in which a form of understanding can be produced in the form of architecture as a way to communicate the surfing culture and surfing experience.

The exploration of Jeffreys Bay showed the surfing culture and embodied experience of the surfer. The design will attempt to bring about a connection between the culture, the surfed body and the dream glide, ultimately contributing to the relationship between people and place, portraying the surfed body. The surfed body is set in motion through architectural interpretation that acts as the embodied experience of the dream glide. The touchstone and the conceptual ideas left traces that began to point out ways of approaching the proposed project on the site. The precedent studies done aided in the development of a more suitable accommodation list, as well as identifying through the process various requirements of the building that needs to work together to form an integrated design. There were a commonality through the precedent studies; the importance of integrating different spaces with one another as well as voicing specific aspects through architectural elements. Symbolism, repetition and texture became an important aspect in the design language of the building. The analysis justified specific design decisions in the design.

A theoretical study arose from the investigations that had been conducted on site and around the site, which contributed to revealing unique approaches towards the design of the building itself. This includes the use of the surfing culture, the ritual of surfing as well as the embodied experience; the surfed body. The interpretation of the theoretical sources disclosed the importance of the surfed body in search of the dream glide. The design aims to develop a public interest, while at the same time voicing the surfing experience.

The approach towards the tectonic and structural investigation developed from the conceptual considerations in terms of form and structure, as well as specific methods used in the context, which addressed climatic problems. The intention is that the lessons learnt as well as considerations made are developed in a way through the design that will be expressed in the following chapter, that focuses on the synthesis of the design.

(Figure 174. Surfing and ritual, by Author, 2020)



03.

3.1.Design synthesis

3.2.Initial design ideas

3.3.Concept to form

3.4.Final design solution

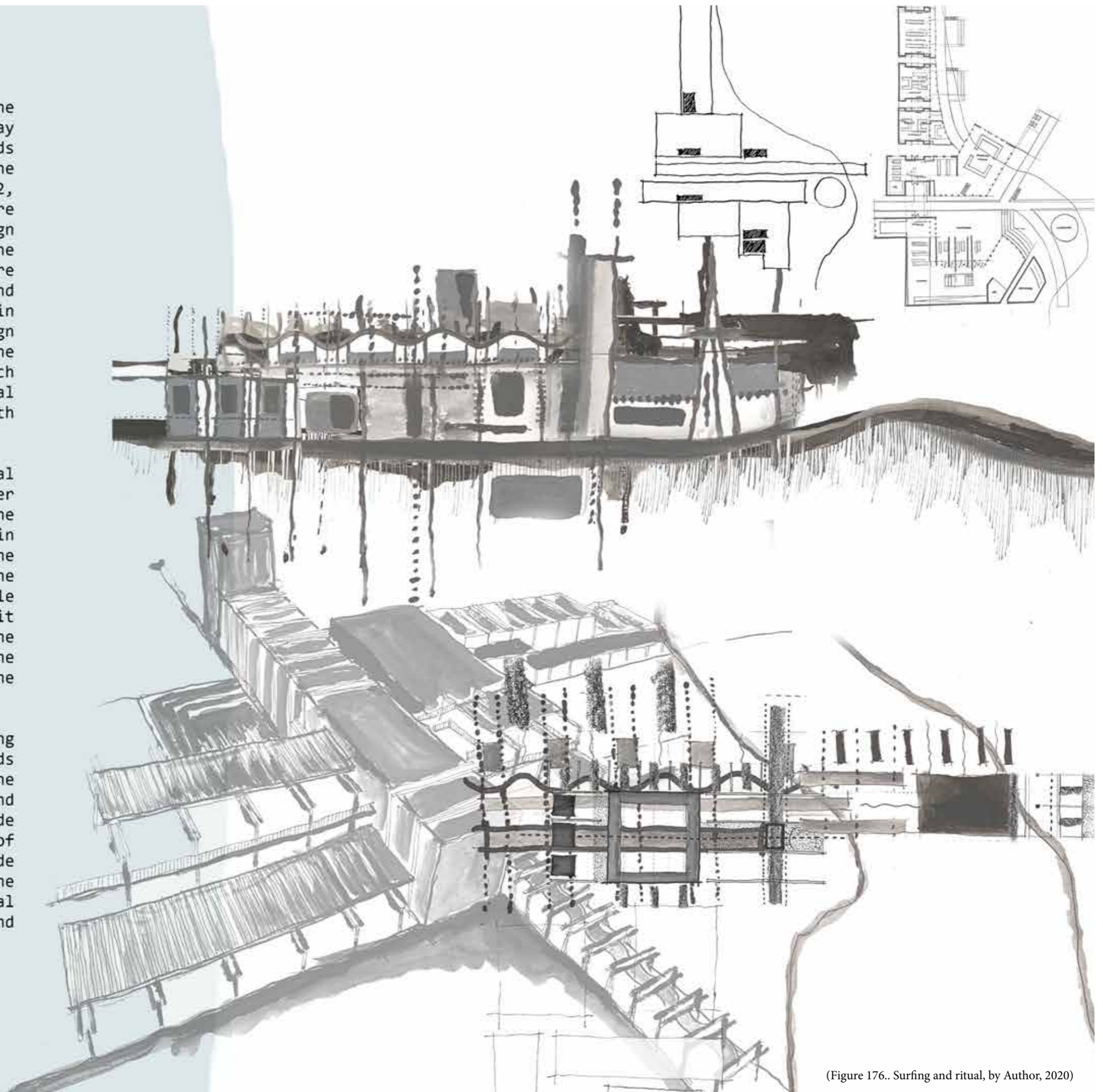
(Figure 175. Surfing and ritual, by Author, 2020)

Design synthesis:

The design synthesis aims to show the development of the design project in a way where it started with conceptual models towards a more established design. It started with the investigation and research done in chapter 2, as well as the aims and challenges that were identified in the 1st chapter, the design process started. The traces left by the investigations concerning the surfing culture and surfing experience, the site analysis and precedent studies started to form certain guidelines and boundaries for the design approach proposed in this project. The theoretical research showed unique way in which the design could be approached. The structural development was in a constant parallel with design decisions.

The design process started through conceptual sketches and model building to provide a better understanding of the nature of the site and the proposed building's relationship to the site in terms of placement and the structure of the building in terms of scale and proportion. The models developed from using the multiple conceptual models to the development of one, it was merging different conceptual ideas with one another to be successful. The ideas voiced the initial conceptual models and it led to the interpretation of the design models.

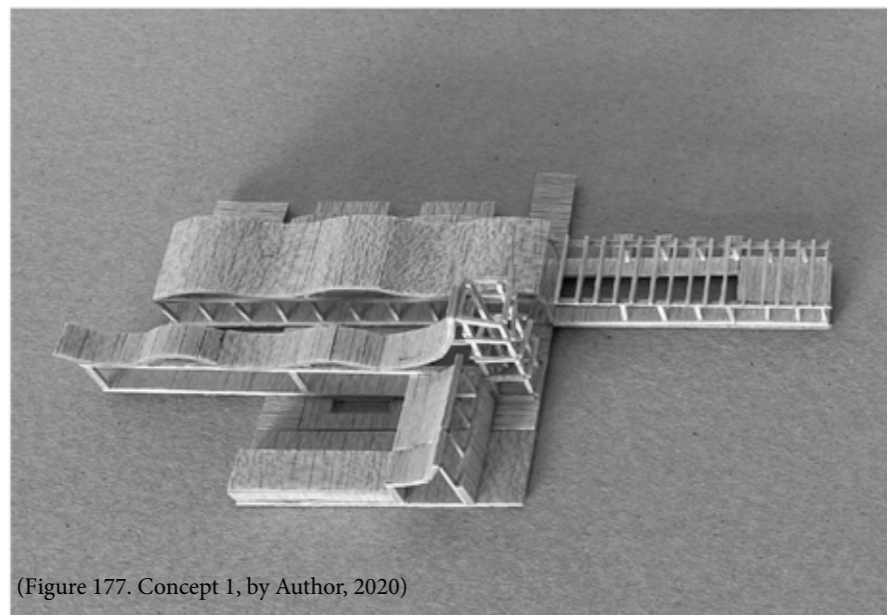
The design development was more challenging than what was initially expected, in regards with placement on site as well as the structural development. The models and sketching led to the decisions that were made in the project. Chapter 3 is a combination of design and technical decisions that were made through hand drawings and models, only once the design was more finalized did an architectural program benefit in visualizing the tectonic and design purpose.



(Figure 176.. Surfing and ritual, by Author, 2020)

CONCEPT DEVELOPMENT
RHYTHM + EMBODIMENT + RITUAL

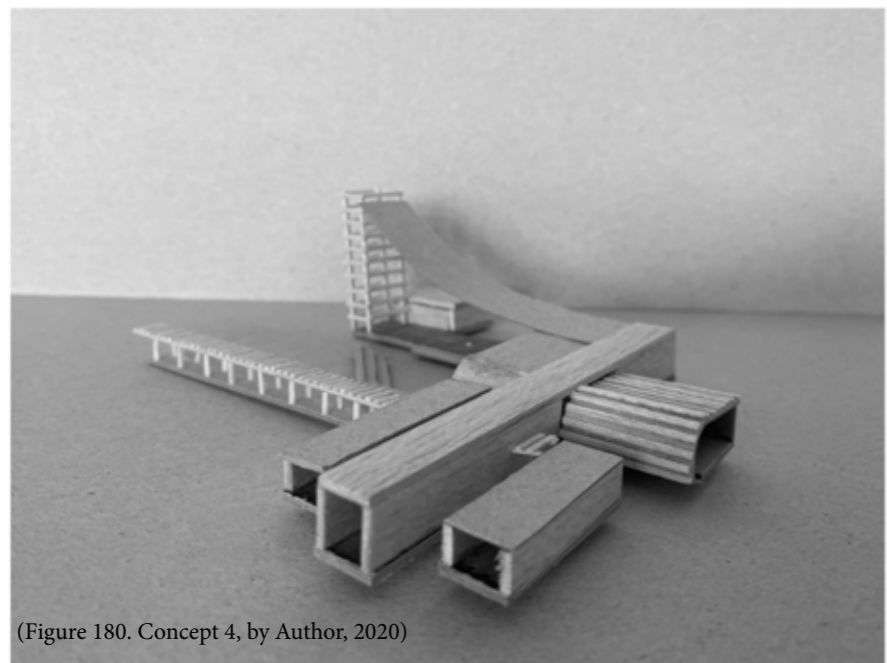
CONCEPT 1



(Figure 177. Concept 1, by Author, 2020)

This attempt was a combination of all three concept models combined, ritual, rhythm and embodiment. The form however was too strong for the site.

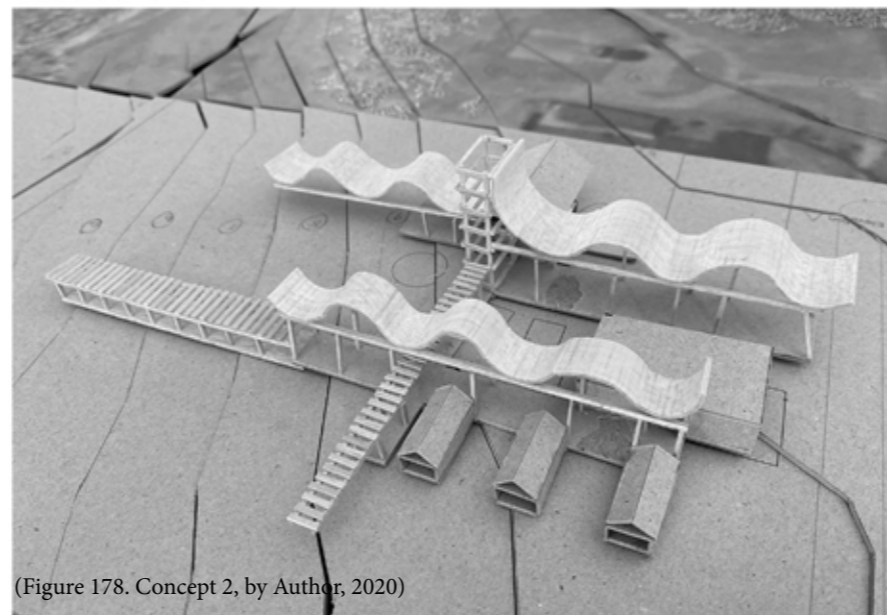
CONCEPT 4



(Figure 180. Concept 4, by Author, 2020)

This concept experimented with the form giving and the different spaces of the different functions of the building.

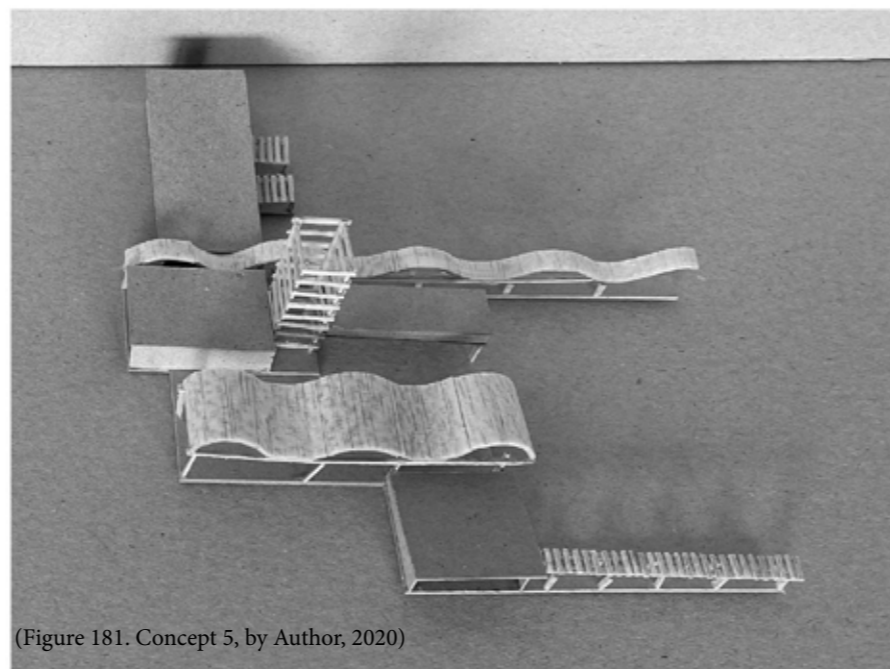
CONCEPT 2



(Figure 178. Concept 2, by Author, 2020)

This approach experimented with different forms in the structure.

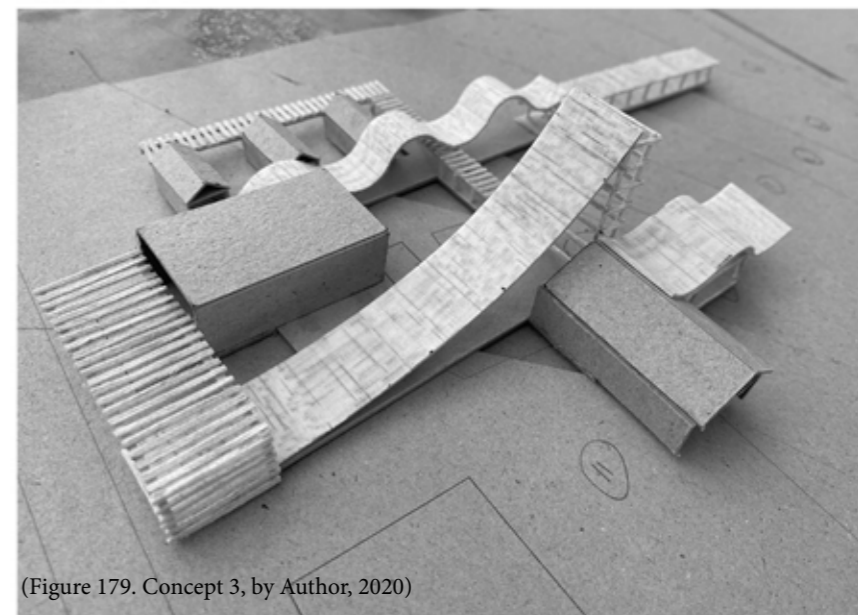
CONCEPT 5



(Figure 181. Concept 5, by Author, 2020)

This approach was back to the waves as a roof structure, combined with different volumes

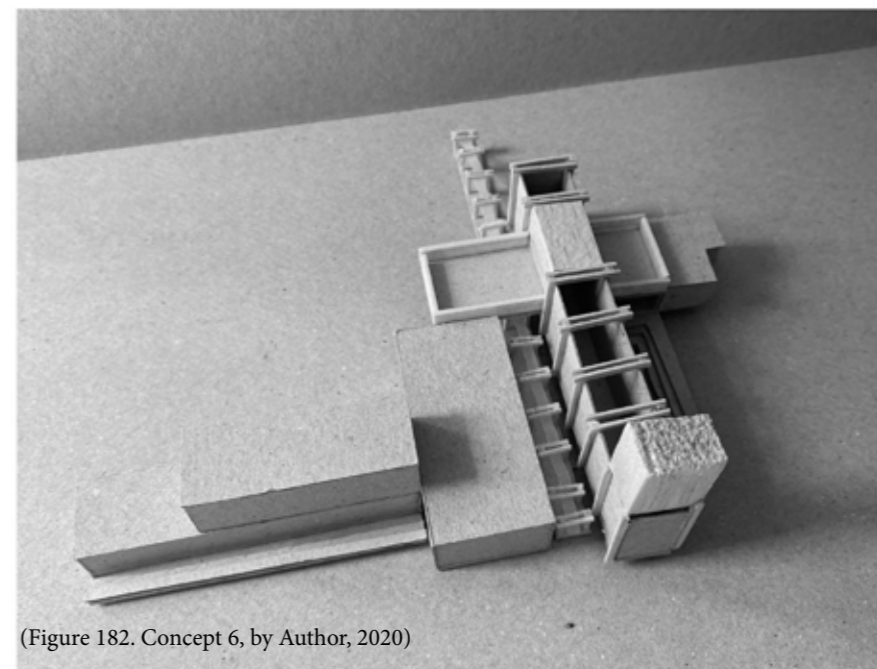
CONCEPT 3



(Figure 179. Concept 3, by Author, 2020)

This approach experimented with different volumes and spaces in the design.

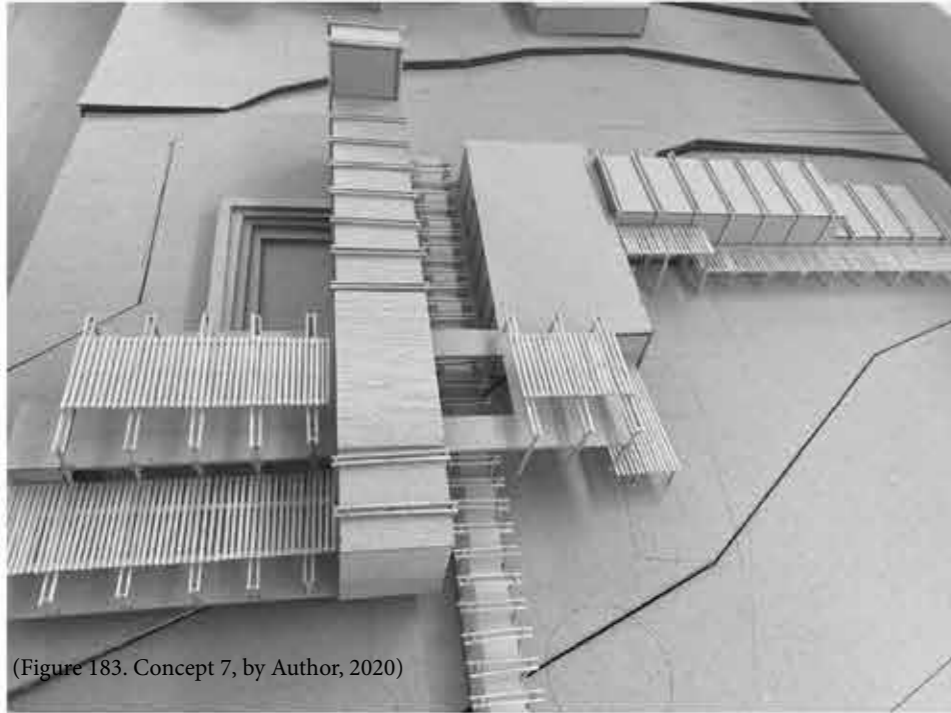
CONCEPT 6



(Figure 182. Concept 6, by Author, 2020)

This approach responded more to the site and the surrounding elements as well as an experimentation of the structural elements.

CONCEPT 7



(Figure 183. Concept 7, by Author, 2020)

This approach needed to be developed more in terms of the architectural theory.

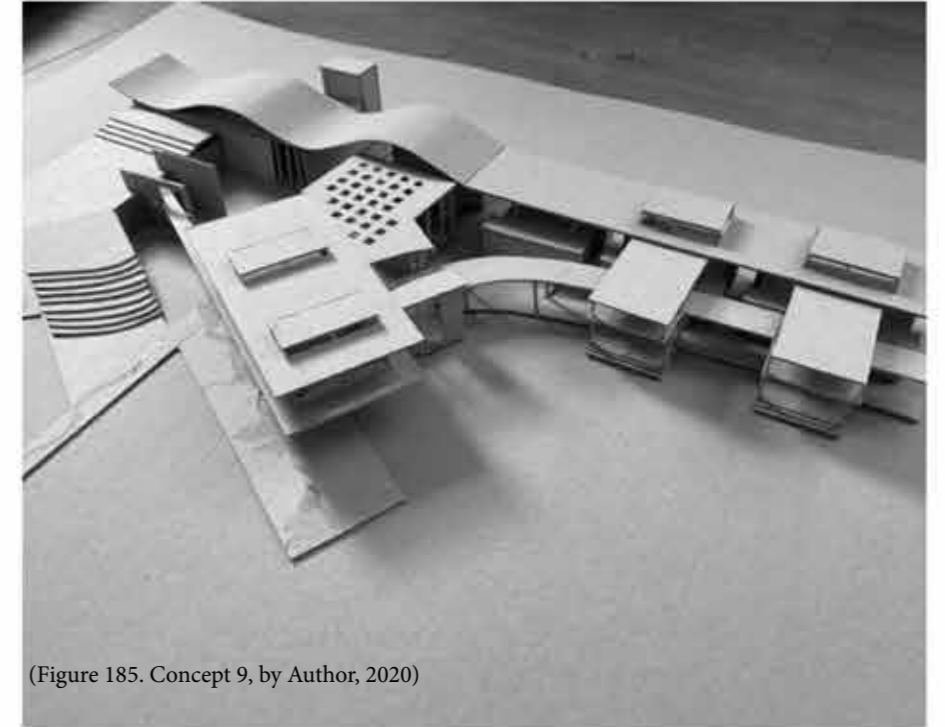
CONCEPT 8



(Figure 184. Concept 8, by Author, 2020)

This approach tries to capture the embodiment of surfing.

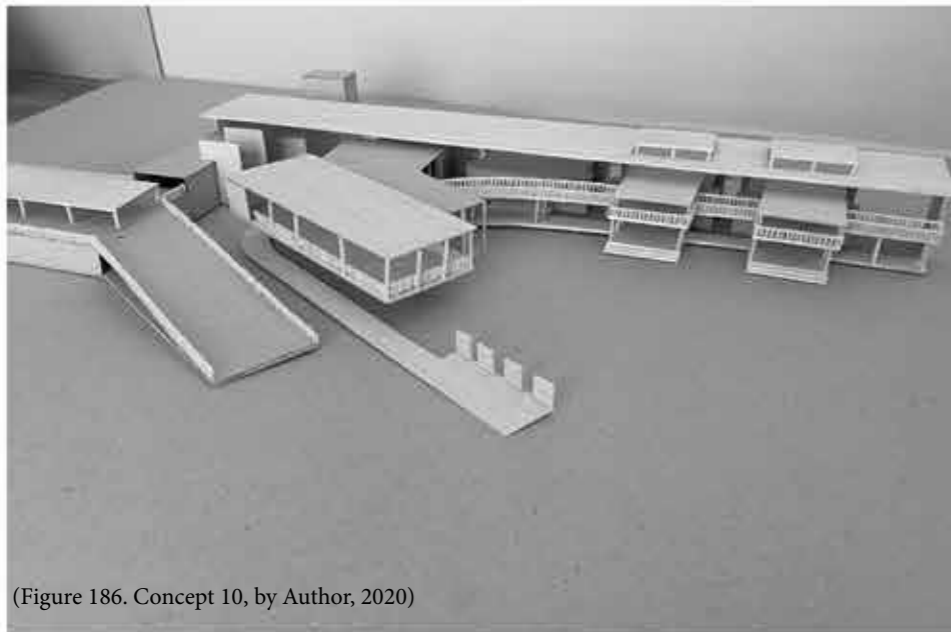
CONCEPT 9



(Figure 185. Concept 9, by Author, 2020)

This approach had too many elements combined together.

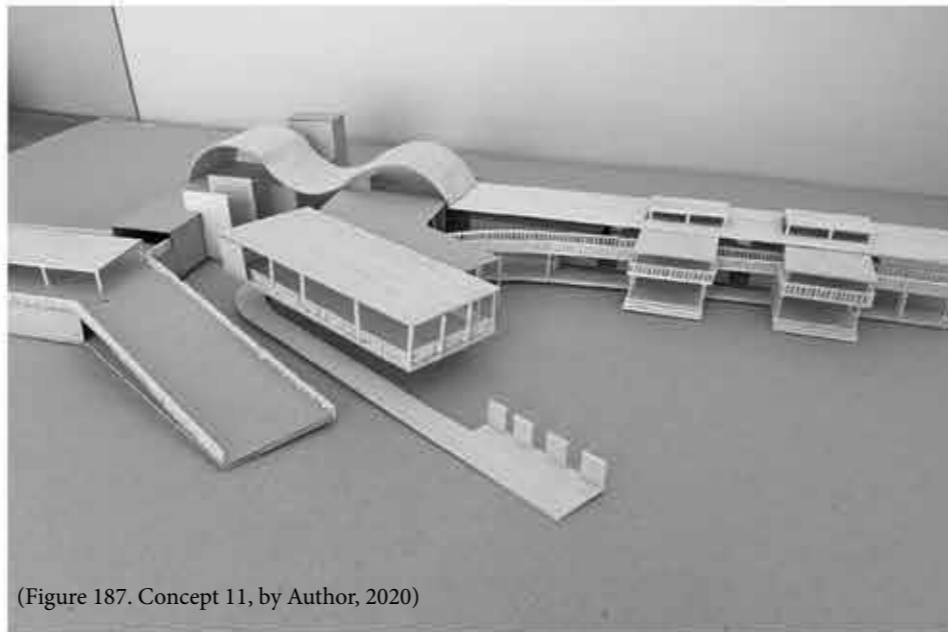
CONCEPT 10



(Figure 186. Concept 10, by Author, 2020)

This approach experimented with the different materials as well as spaces within the structures.

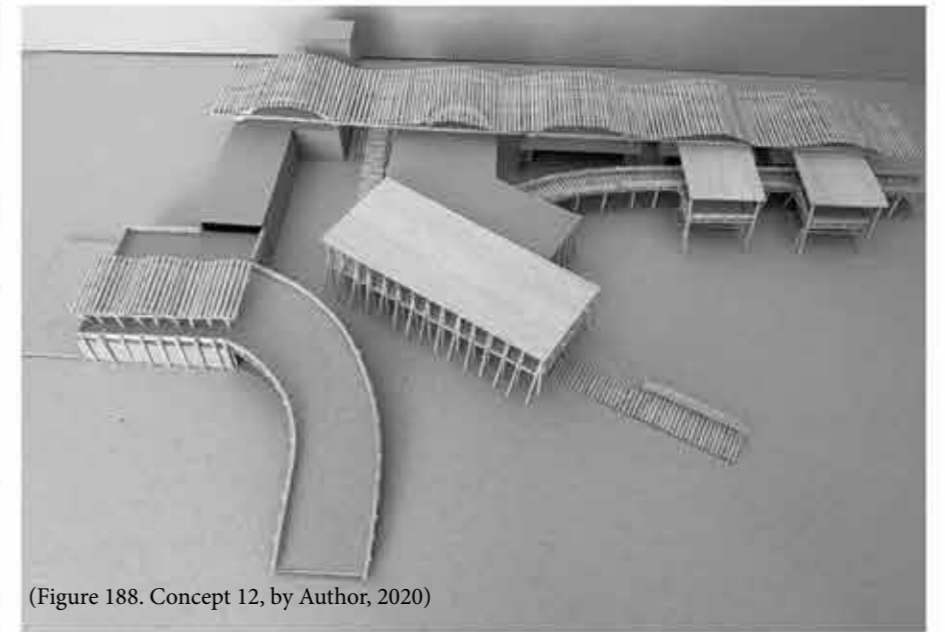
CONCEPT 11



(Figure 187. Concept 11, by Author, 2020)

This approach tried to incorporate the element of the wave.

CONCEPT 12

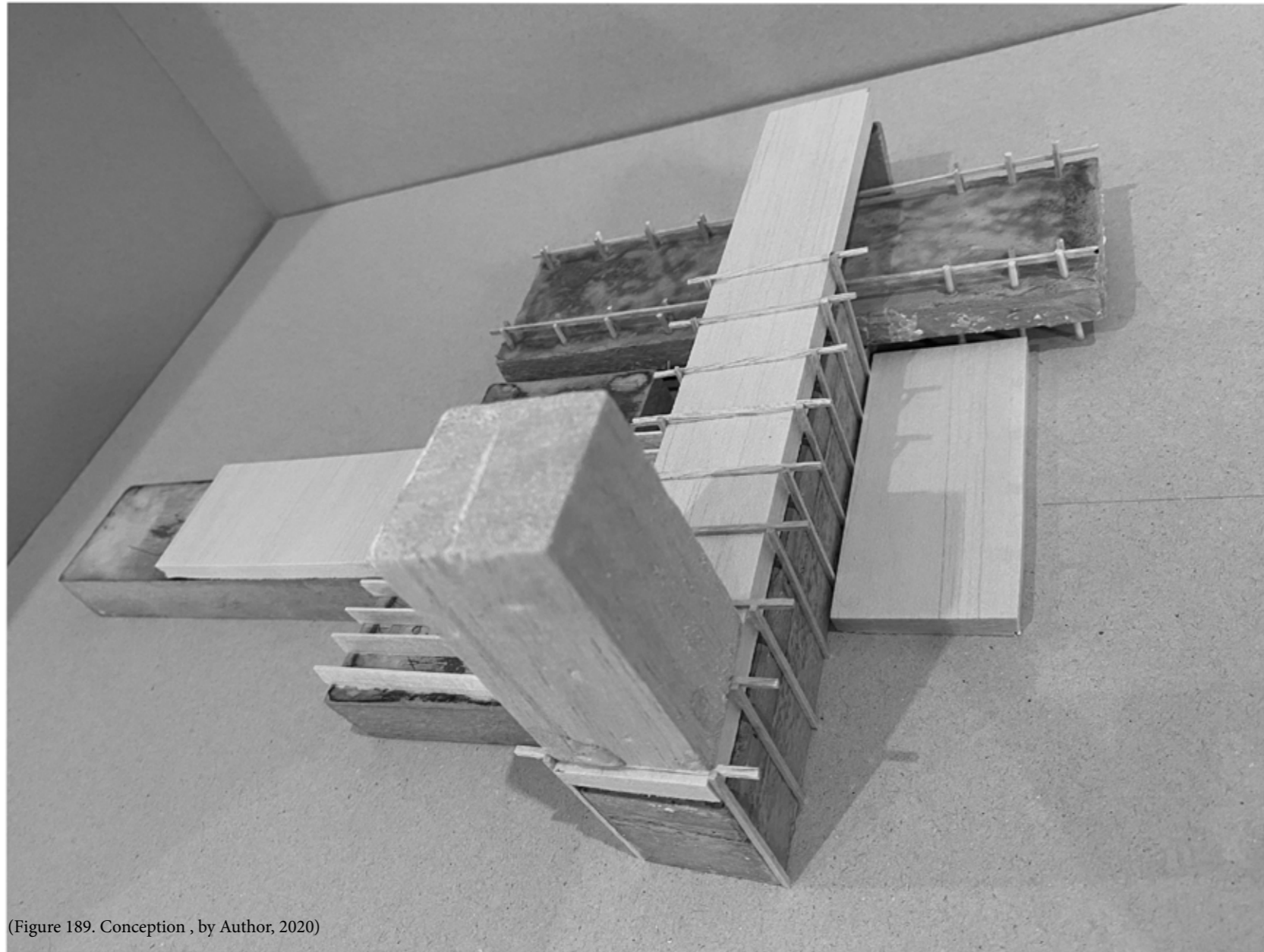


(Figure 188. Concept 12, by Author, 2020)

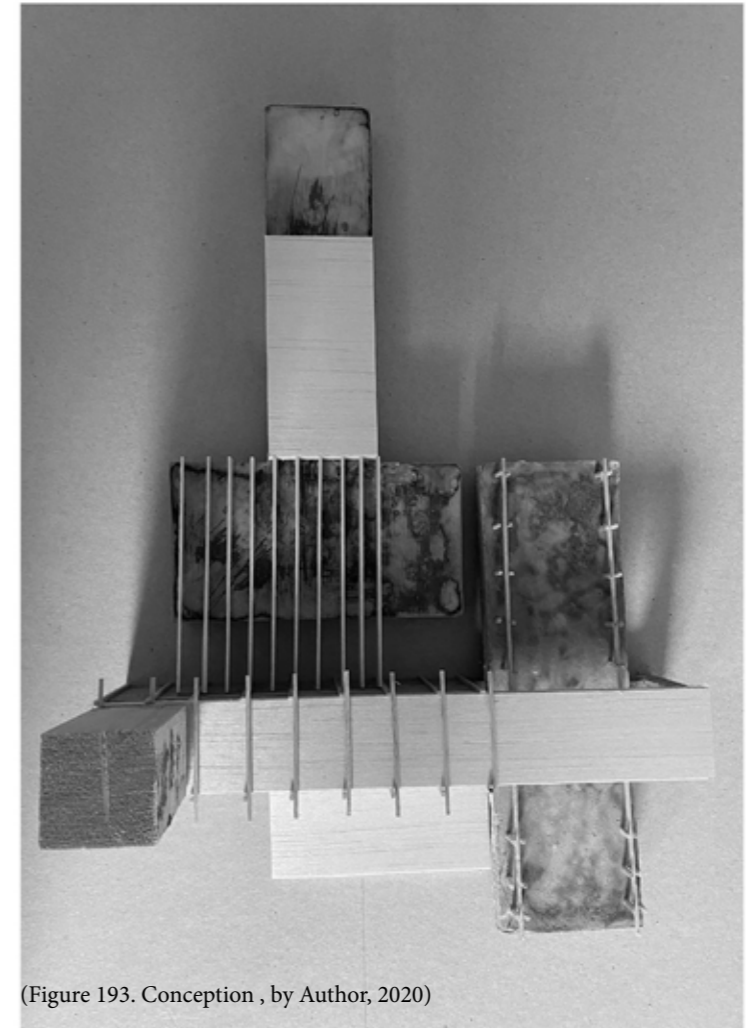
This approach was an experimentation of the different roof structures.

CONCEPTION MODEL

RHYTHM + EMBODIMENT + RITUAL

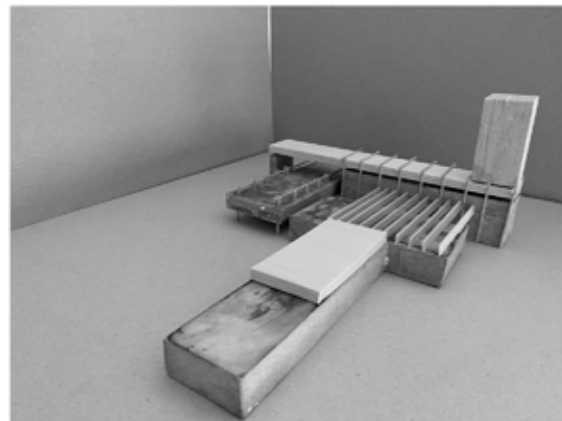


(Figure 189. Conception , by Author, 2020)

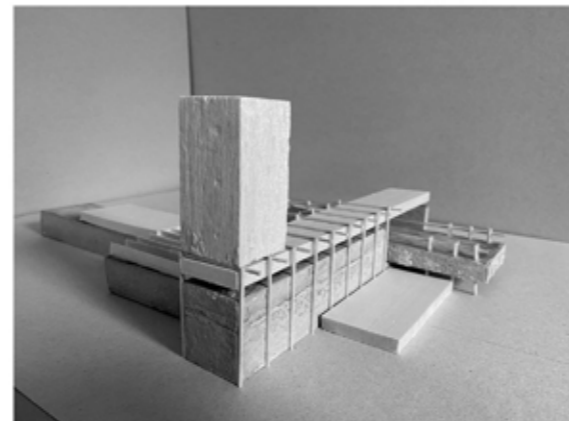


(Figure 193. Conception , by Author, 2020)

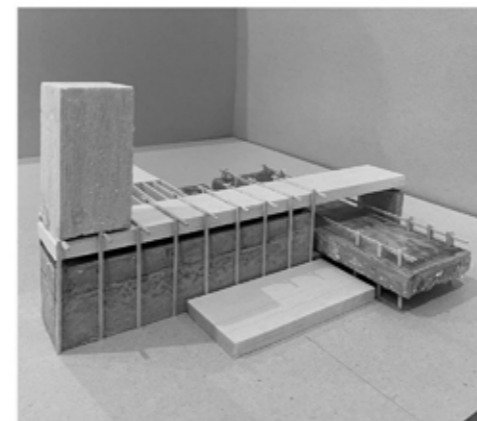
This model experimented with different forms as well as materials on site. It also experimented with the massing of the building on the site. This model was a development from the concept models.



(Figure 190. Conception , by Author, 2020)



(Figure 191. Conception , by Author, 2020)



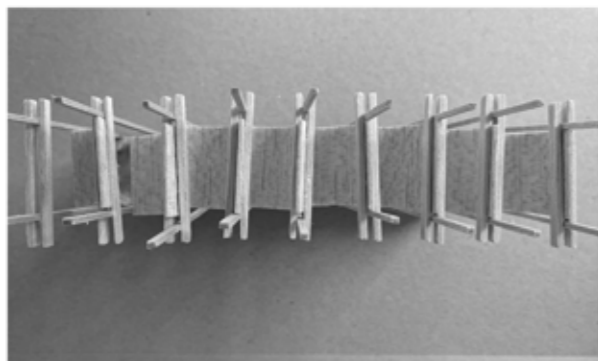
(Figure 192. Conception , by Author, 2020)

CONSTRUCTION TOUCH STONE MODEL

RHYTHM + EMBODIMENT + RITUAL



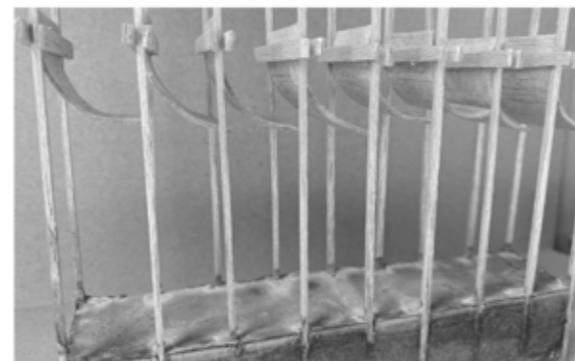
(Figure 194. Structural touchstone , by Author, 2020)



(Figure 195. Structural touchstone , by Author, 2020)



(Figure 196. Structural touchstone , by Author, 2020)



(Figure 197v. Structural touchstone , by Author, 2020)



(Figure 198. Structural touchstone , by Author, 2020)



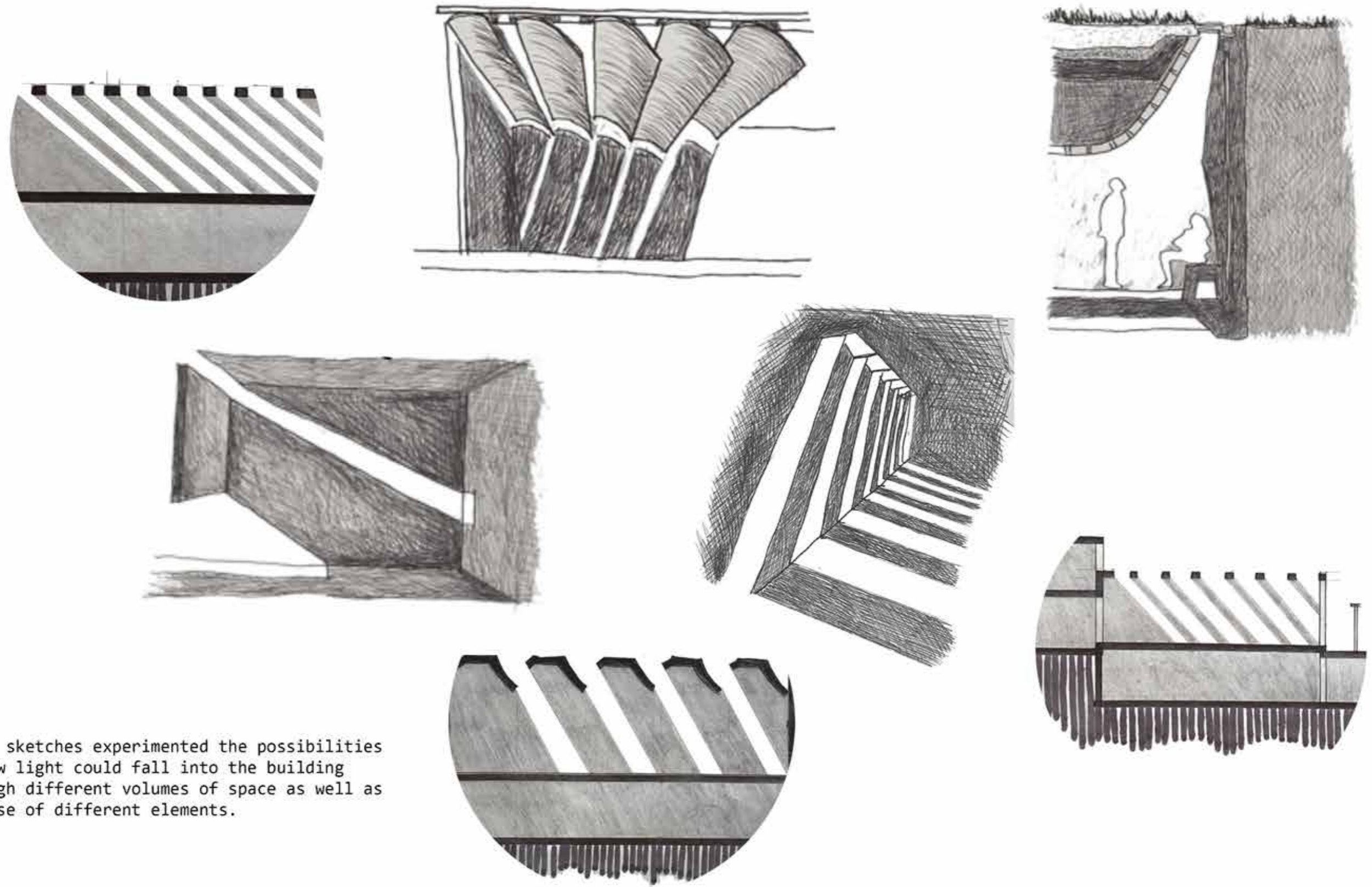
(Figure 199. Structural touchstone , by Author, 2020)

The structure focuses on a heavy structure at the bottom, combined with a light structure on top and focusing on light as one of the main elements.

The touchstone explored how light will enter through different volumes. The structural touchstone was an exploration for one of the spaces of the proposed building.

The structure after further exploration still needs to be explored further and refined as it does not yet portray the ritual of surfing and surfboard making through the model.

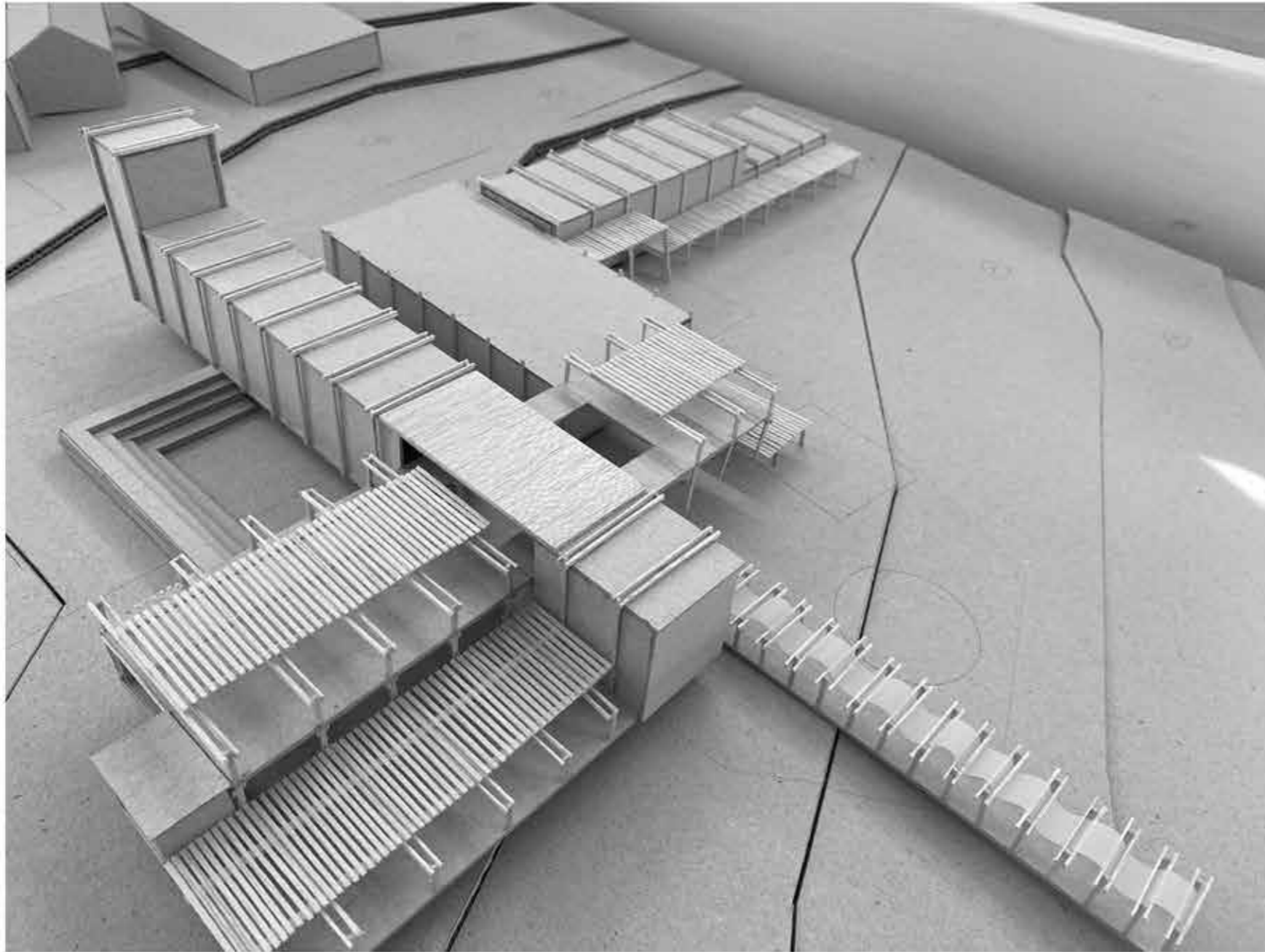
Conceptual sketches of light within the proposed building



These sketches experimented the possibilities of how light could fall into the building through different volumes of space as well as the use of different elements.

(Figure 200. Light study, by Author, 2020)

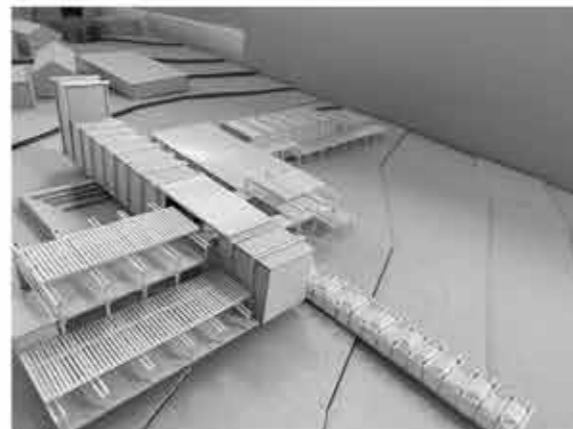
Design approach 1



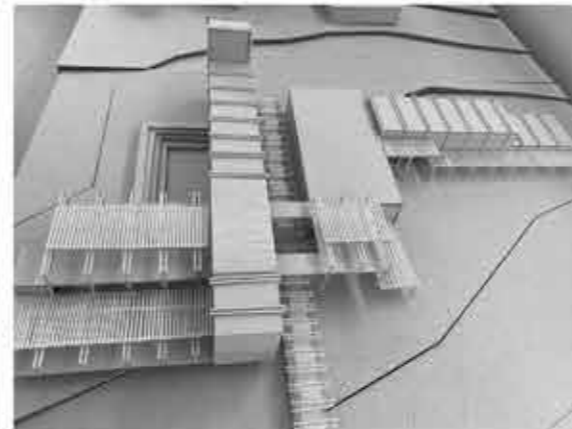
(Figure 201. Design approach , by Author, 2020)



(Figure 202. Design approach , by Author, 2020)



(Figure 203. Design approach , by Author, 2020)



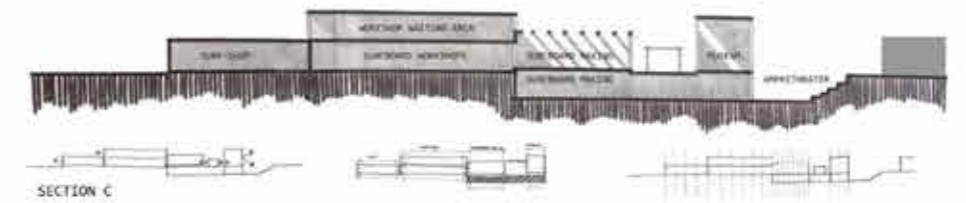
(Figure 204. Design approach , by Author, 2020)



(Figure 205. Section , by Author, 2020)



(Figure 206. Section , by Author, 2020)



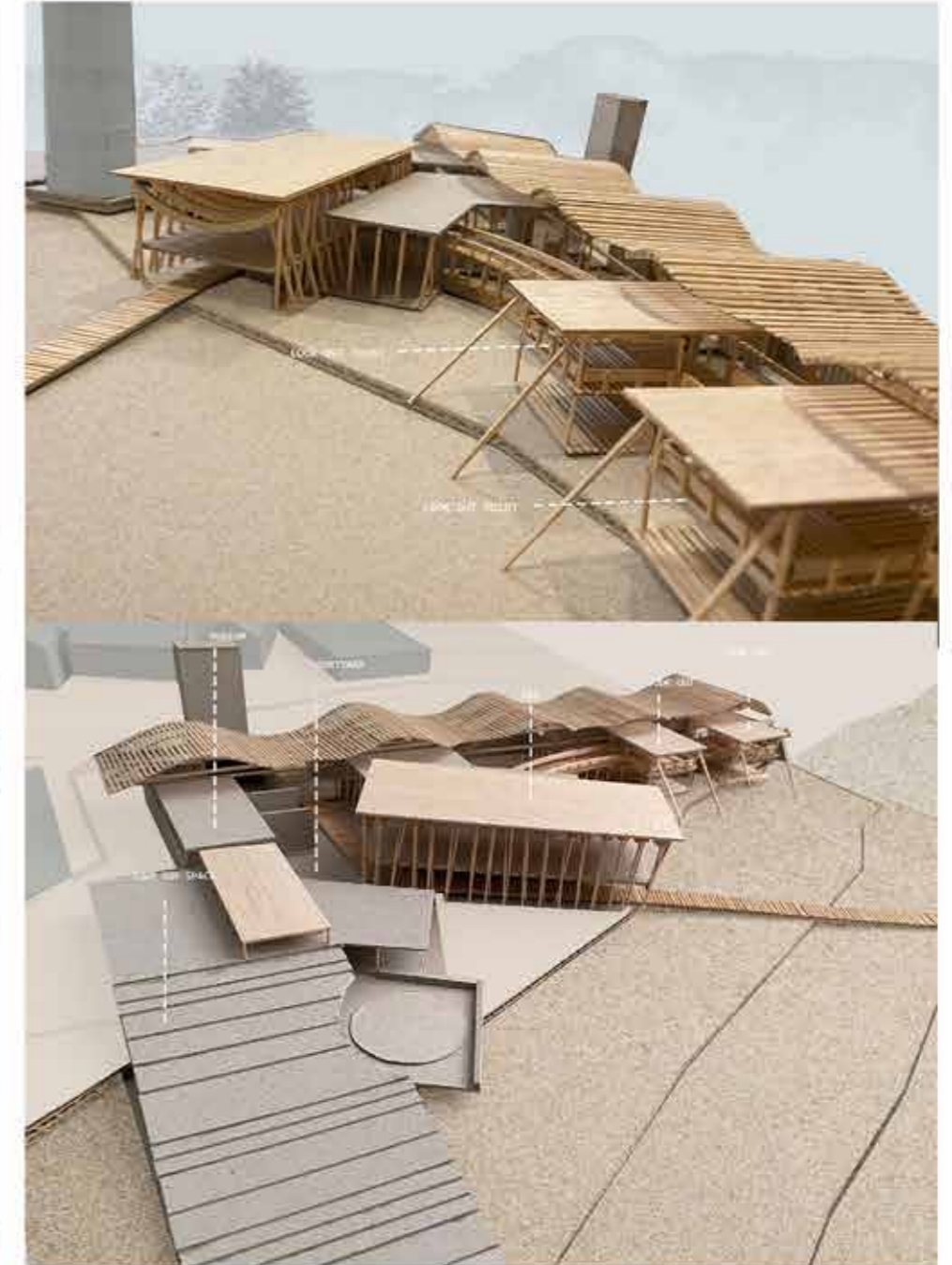
(Figure 207. Section , by Author, 2020)

Not compatible enough with the initial approach
Not opening to the beach enough
Does not show the surfing embodiment
Uninteresting

Design approach 2



(Figure 208. Design approach 2 , by Author, 2020)



(Figure 210. Design approach 2 , by Author, 2020)

The design does not yet fully speak of the surfboard shaper and the embodied experience of the surfer.

The plan needs to be adjusted in terms of form.

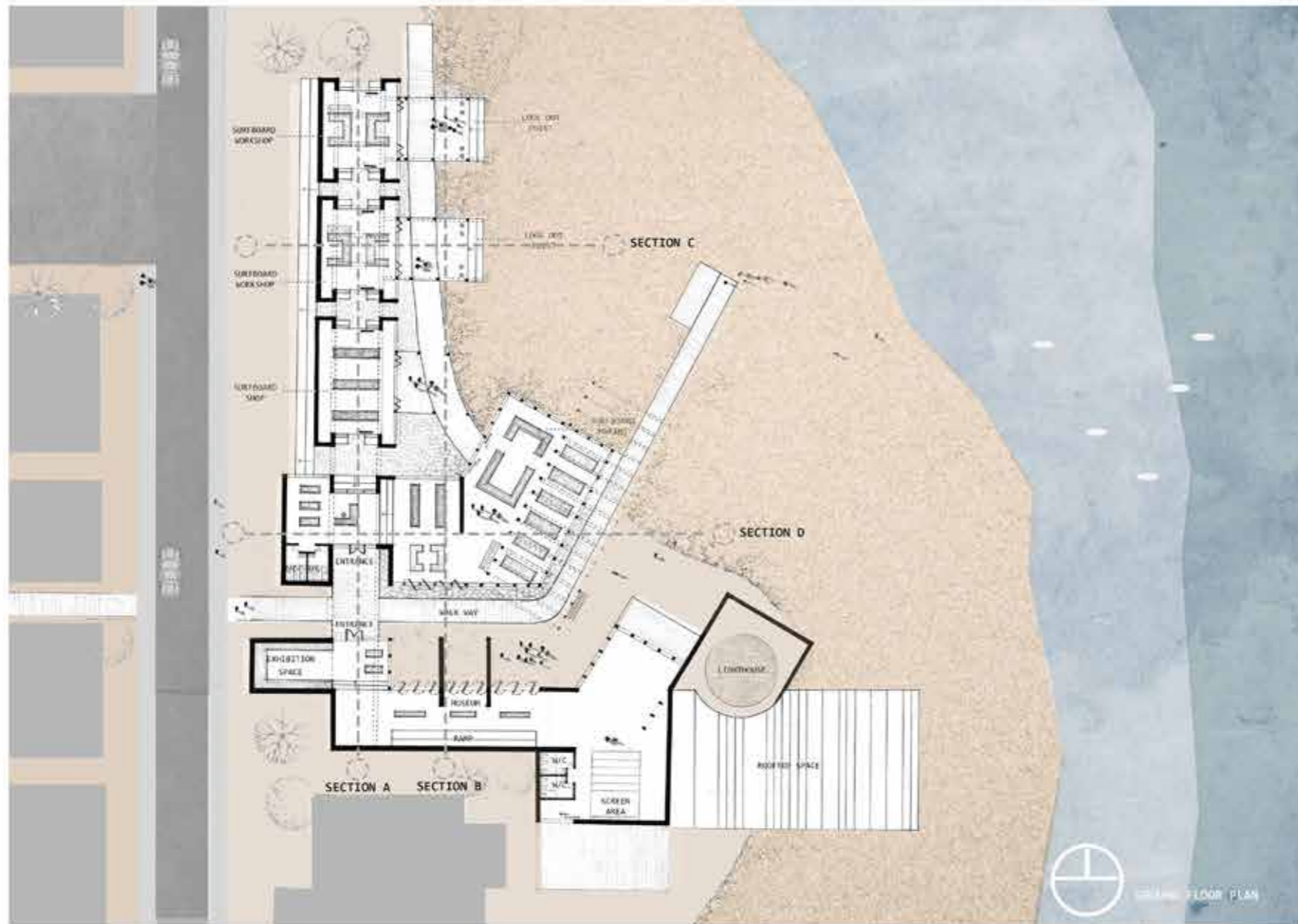
The structural elements needs to be integrated more and it needs to express the idea of the shaper in the design.

The roof is currently not in proportion to the bottom structure and therefore needs to be adjusted.



(Figure 209. Design approach 2 , by Author, 2020)

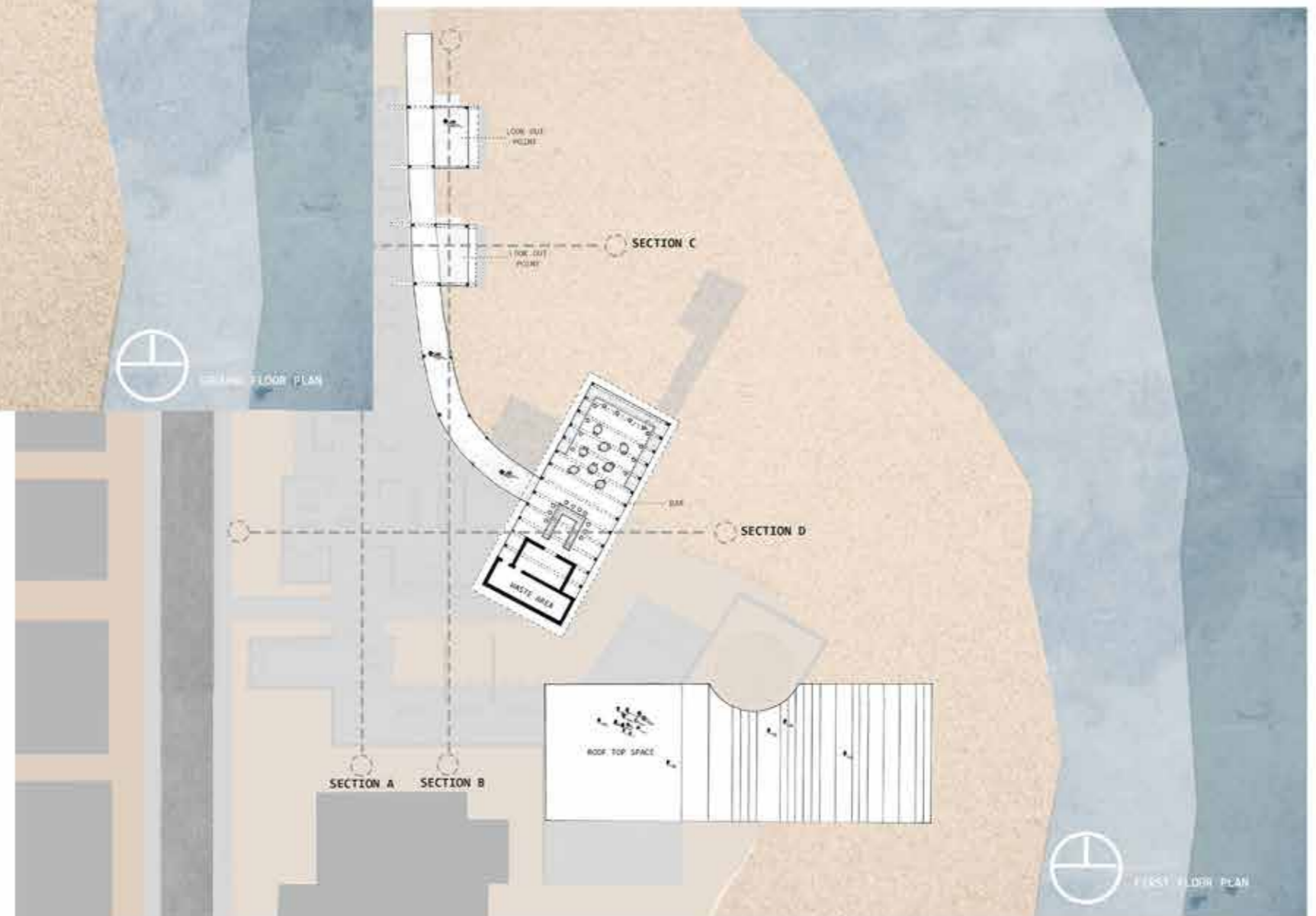
Design approach 2



(Figure 211. Design approach 2 , by Author, 2020)

The ground floor plan shows what the workshops consist of; the surfboard making area, museum, a bar and look out points, there are two main axis through the plan, horizontally and vertically. The different functions of the building are designed in a way that they can all function independently. The plan is also spaced out so that people can move through the site from the surf village to the beach, the shape of the plan was developed from the views on site, the regular surf spots and the way that the ocean curves to encapture the views.

The plan however does not yet fully encapture the connection between the rocker, the surfboard and the visitor moving through the site.



(Figure 212. Design approach 2 , by Author, 2020)

CONSTRUCTION SECTION MODEL



(Figure 213. Construction section , by Author, 2020)



(Figure 215. Construction section , by Author, 2020)

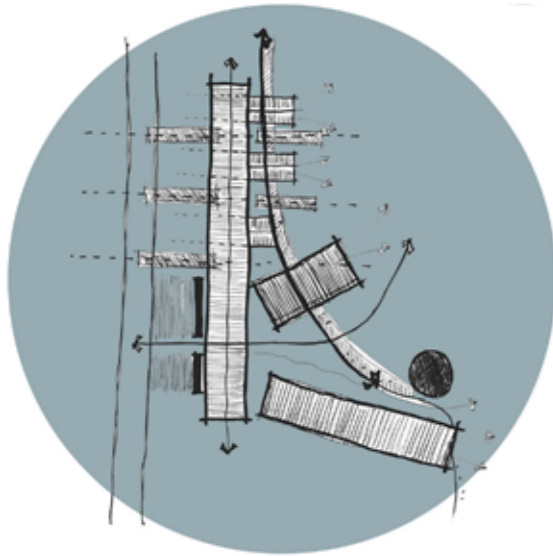


(Figure 214. Construction section , by Author, 2020)

The section model goes through one of the main axis of the design, the model is of one of the surfboard workshops. The model shows that the structure consist out of a heavy bottom, brick, and a light top. There is a two roof system in the structure, the top part of the roof structure acts like an umbrella like element above the building. The wooden slats will be at an angle of 35 degrees so that the summer sun will not heat up the building and the winter sun will allow subtle light into the building. The part below the truss is covered with polycarbonate sheets so that the top part of the roof structure can still be seen through.

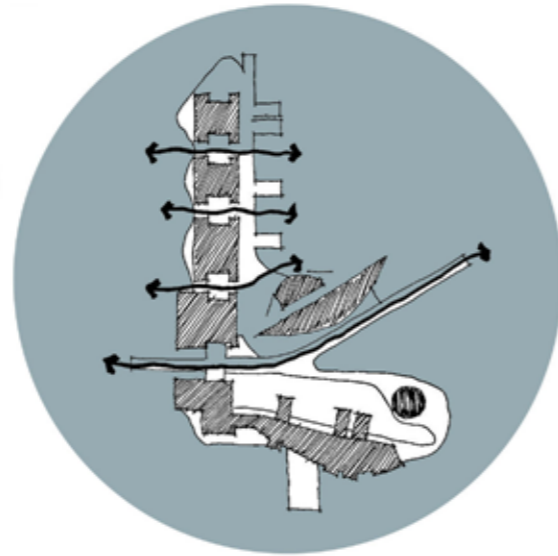
Design approach 3

After design approach 2, the plan was reconsidered in terms of form and to bring the theoretical aspect of the rocker stick more into the plan. The main axis were kept and the rocker was introduced on the plan. This allowed the plan to start developing as the shaper would have done with a surfboard. to start to create a certain edge to the plan.



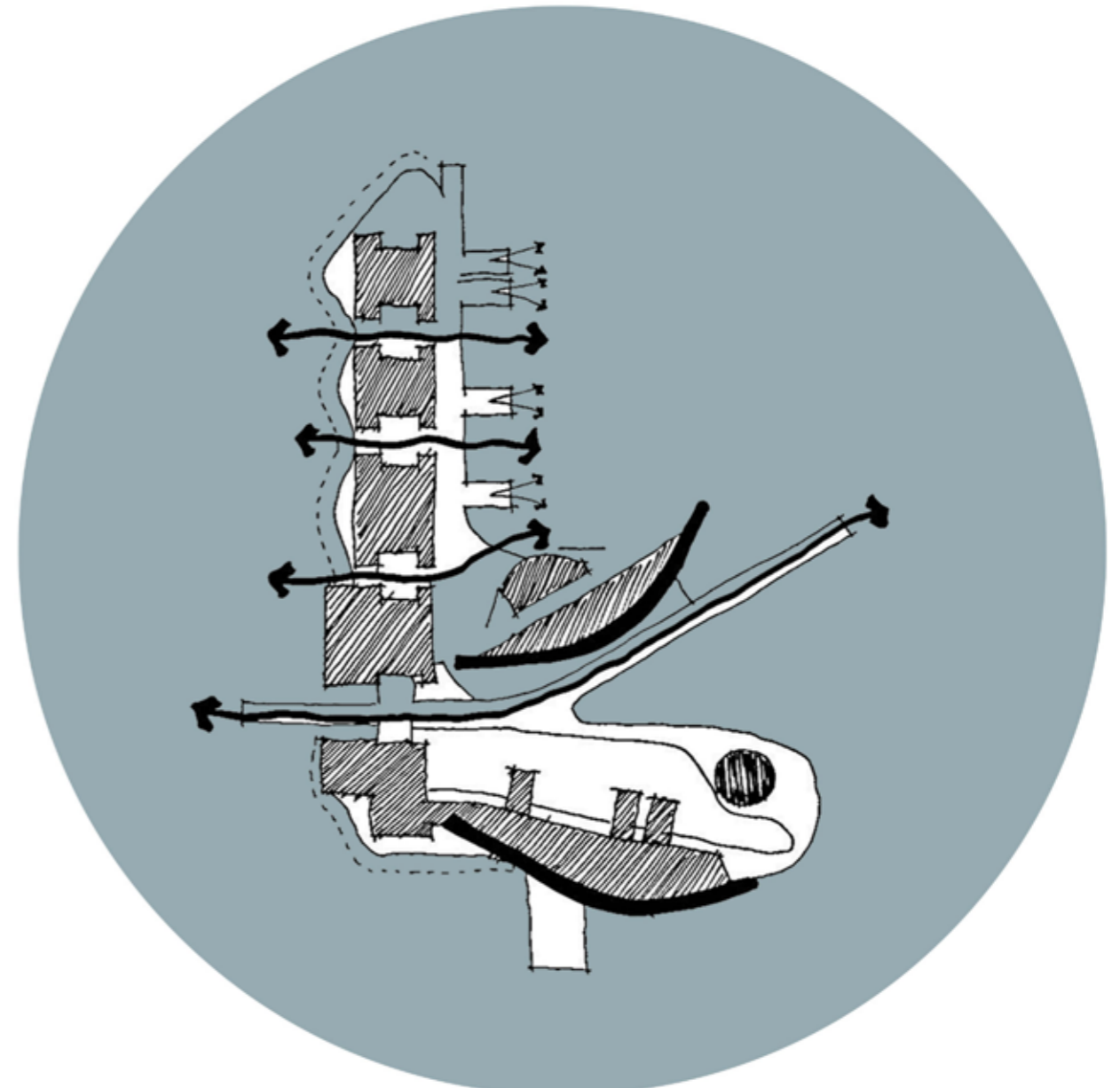
(Figure 216. Plan development , by Author, 2020)

The plan shows two main axis that were generated from the site. The first axis follows an existing route from the surf village that allows you to move from the surf village through the main entrance point of the building towards the surfing spot.



(Figure 217. Plan development , by Author, 2020)

The development of the plan shows how the building allows secondary routes where people can move through from the street to the beach. This acts as a connection point between the street and the beach and allows the visitor to experience the building.



(Figure 218. Plan development , by Author, 2020)

The plan shows how the rocker stick influenced the plan's form. The surfboard making space becomes a center point in the plan and "looks" like the rocker stick on plan. This creates the hierarchal point on plan and emphasizes the surfboard making and its importance.

A secondary curve was also added in the Museum area, to frame the plan.

Design approach 3



The plan captures the connection between the rocker, the surfboard and the visitor moving through the site. This approach shows the connection much better than the previous approach.

The plan does however not yet take in the wider beach front and will be taken into account in the following development of the plan.

(Figure 219. Design approach 3 , by Author, 2020)

Design approach 3



(Figure 220. Design approach 3 , by Author, 2020)

The design tries to translate the ritual of the surfer more as well as the way that the shaper shapes his surf board the building is being shaped.



(Figure 221. Design approach 3 , by Author, 2020)

CONSTRUCTION SECTION MODEL



(Figure 222. Construction model, by Author, 2020)



(Figure 223. Construction model, by Author, 2020)

This section model also goes through the main axis of the design as the same with the previous one.

The model shows a change in the roof structure, the roof structure tries to incorporate the rocker stick more into the design along with experimentation with different types of polycarbonate sheeting in the structure in attempt to find the best suitable solution for water.

The structure is however not fully resolved, but better solved in terms of theoretical forms.

04.

Technical report

Final design

Reflection and evaluation

Reference list



(Figure 224. Technical report, by Author, 2020)

Technical report

The technical investigation forms a large part of the design process, it explores the different influences on site and the influences that the proposed project has. The structural system and approach to the project is with regard to the stereotomic and tectonic expression of the project, as well as how the different elements in the building portray the dream glide and surfboard making. These different components therefore contribute largely to the overall structure. In a conceptual way the structure attempts to make use of the idea of a rocker stick that is one of the main elements in the surfboard. The structural investigation was largely about how to develop a system in a structural way in order to portray the rocker stick. This should be a reflection architecturally through the design and the structural considerations.



(Figure 225. Technical report, by Author, 2020)

The site:

The proposed site needed to be analyzed in order to resolve the structural approach of the proposed design. The design should also be respectful to the larger context in which it is found and its built form. A large part of the structure will be resolved through the quantitative phenomenology and this will also influence the project's technical aspects. The analysis of the micro-site is an investigation of the site's topography, vegetation, climate and geological information.



(Figure 226. The site, by Author, 2020)

Environment and micro climate:

The climatic considerations have a large influence on the technical aspects of the design. Jeffreys Bay is located in the Eastern Cape in South Africa, where the climate is fairly moderate. The climatic zone has an influence of the design of the building in terms of material choice and the structural system.

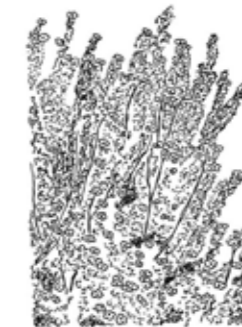
- Design responses that developed from the climate zone
- Adjustable panels for inflow of air
- Utilize shading devices
- A double roof system for sun protection as the site faces east/west with the ocean view on the east.
- Proper sealing for water against rain
- Making use of cross ventilation as well as natural ventilation
- Making use of double glazing on the east and west

Vegetation

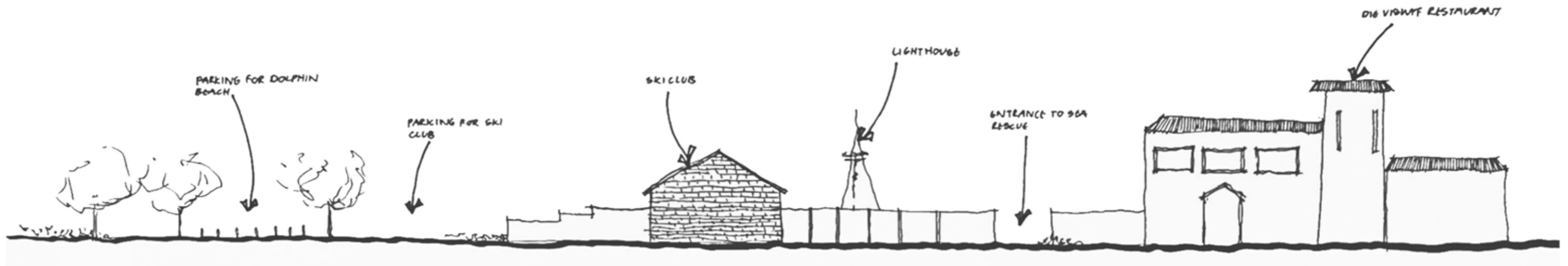
The area of the Eastern Cape, such as Jeffreys Bay, holds 6 of the 7 biomes. The most iconic is succulent trees, fynbos and aloes that are found along the coast of J-Bay. The type of grass that is found in this area is considered as a halfway mark between forest and savannah. There are also numerous nature reserves in this area, which showcases these different biomes and vegetation.



(Figure 227. Aloes, by Author, 2020)



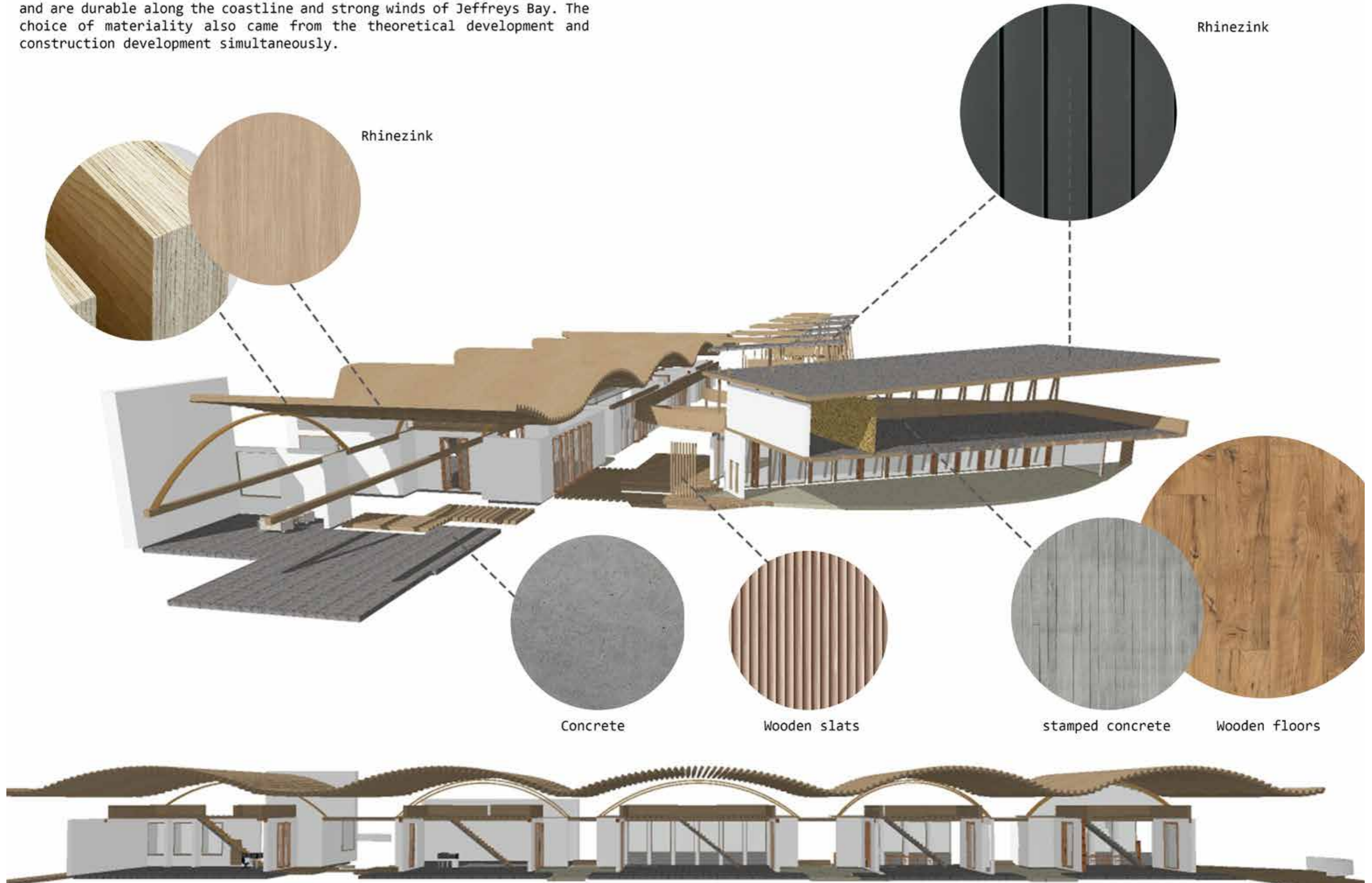
(Figure 228. Fynbos, by Author, 2020)



(Figure 229. Site elevation, by Author, 2020)

MATERIALS

The materials used are materials that are suitable in the specific area and are durable along the coastline and strong winds of Jeffrey's Bay. The choice of materiality also came from the theoretical development and construction development simultaneously.



(Figure 230. Materials, by Author, 2020)

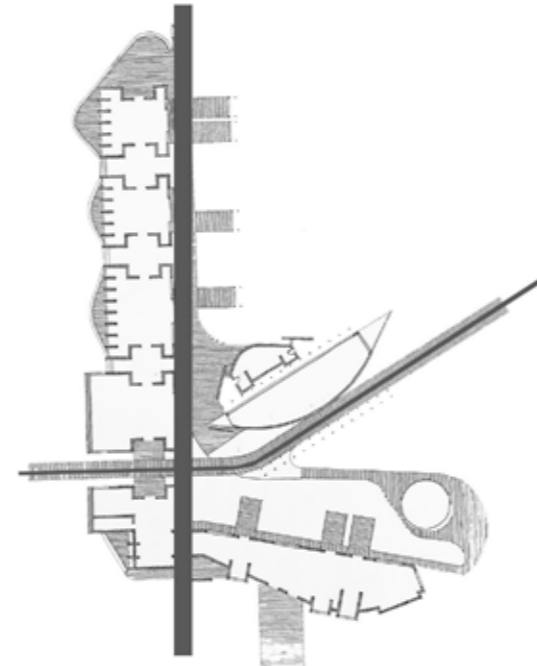
Horizontal and vertical circulation

Horizontal:

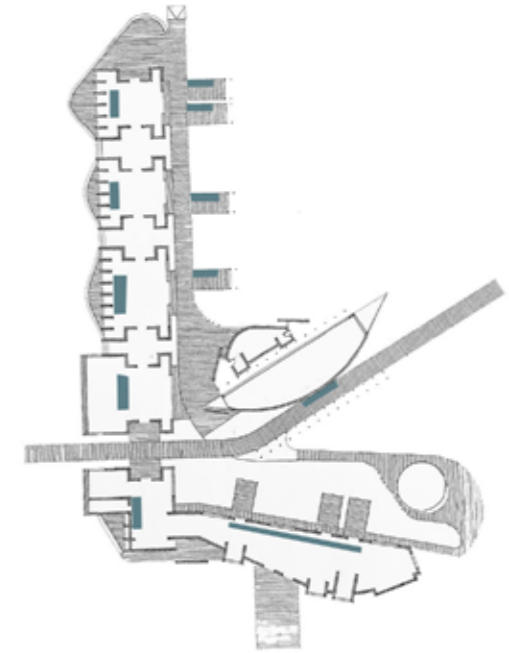
The horizontal circulation forms part of a very important axis that follows through from the ground floor. There is a constant interaction in a horizontal manner between the visitors as the horizontal circulation forms specific view points as well as interaction spaces between the users.

Vertical:

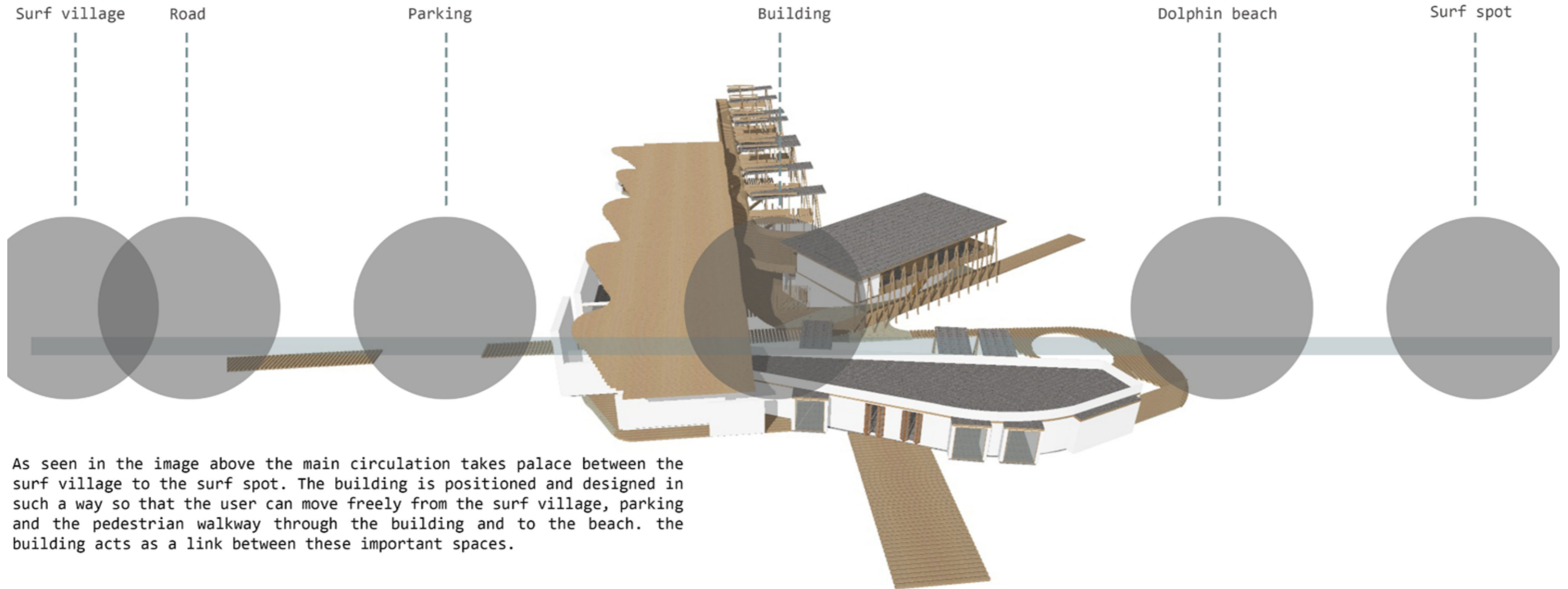
The vertical circulation consists of two main routes along with other informal routes. The two main circulation routes form along the main axis along with the informal circulation that allows people to move from the street through the building to the sea and create a moment within the structure.



(Figure 231. Horizontal circulation, by Author, 2020)



(Figure 232. Vertical circulation, by Author, 2020)



As seen in the image above the main circulation takes place between the surf village to the surf spot. The building is positioned and designed in such a way so that the user can move freely from the surf village, parking and the pedestrian walkway through the building and to the beach. the building acts as a link between these important spaces.

(Figure 233. Circulation from the surf village, by Author, 2020)

Structural system

Stereotomic structure:

A large part of the building consists of solid masonry brick. The walls act as load bearing with a double bricklayer for structural integrity.

Tectonic structure:

The wooden structure of the building also makes up a large part of the design along with steel connections throughout the building. The tectonic structure adheres to a 2000x2000 grid and it supports the roof structure with timber trusses and polycarbonate roof sheeting. The framing supports the double roof system in the structure.

Sub-structure foundations:

The foundations will be ribbed pile foundations> These type of foundations give an increased capacity of a pile. The depth of the foundation will be specified by the engineer as the ground consist mostly of sand and therefore deep foundations are necessary.

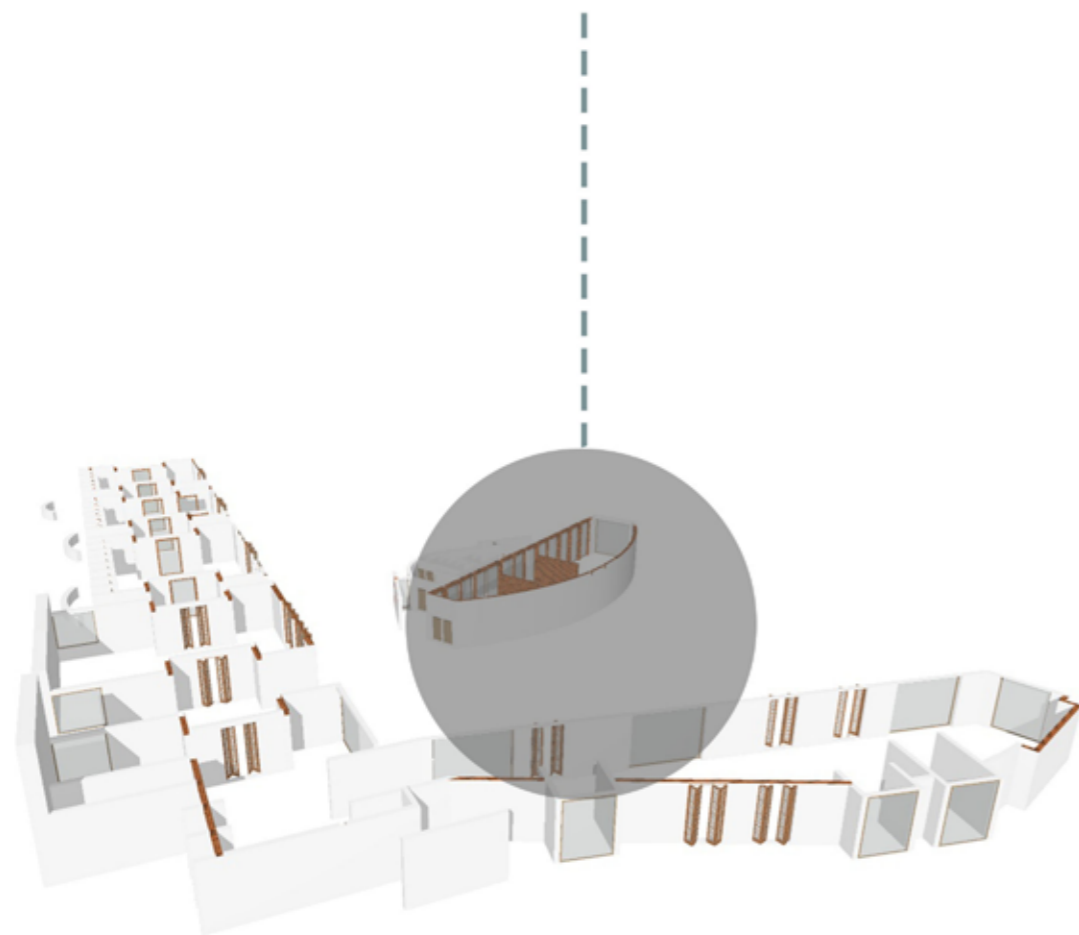
Floor:

The floors in the building are mostly made up of wood or a cast-in-situ flooring that is about 75mm thick.

Glass:

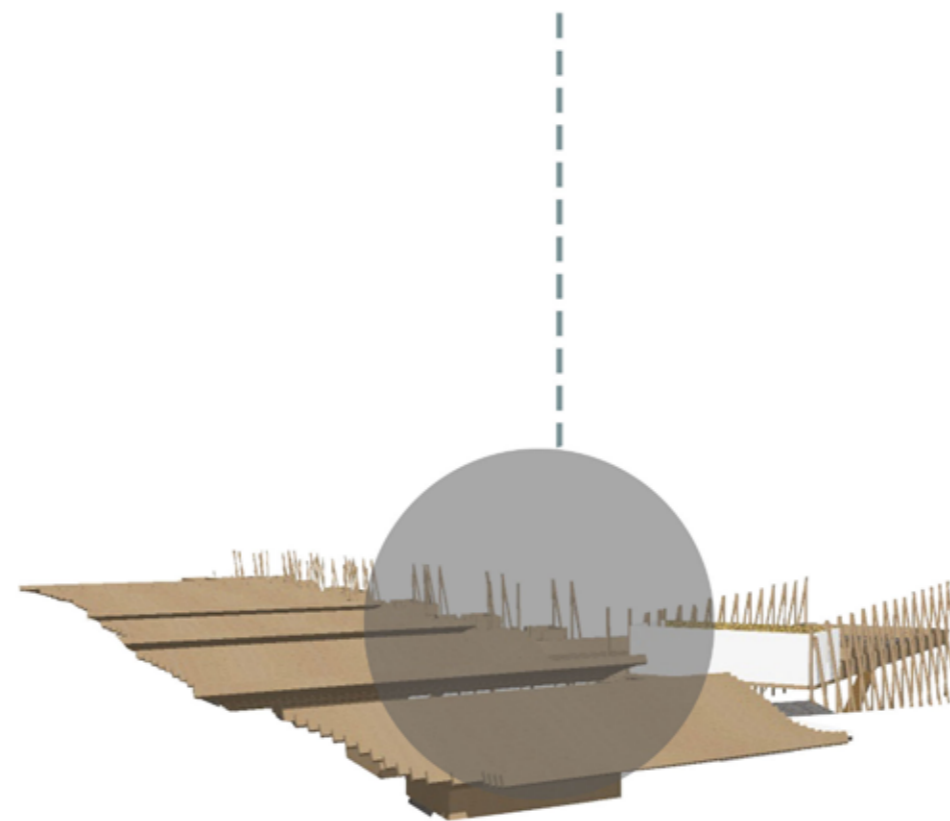
The glass that is used is thick laminated safety glass that adheres to SABS 1263 part 1. The glazed glass is 6mm.

Stereotomic structure



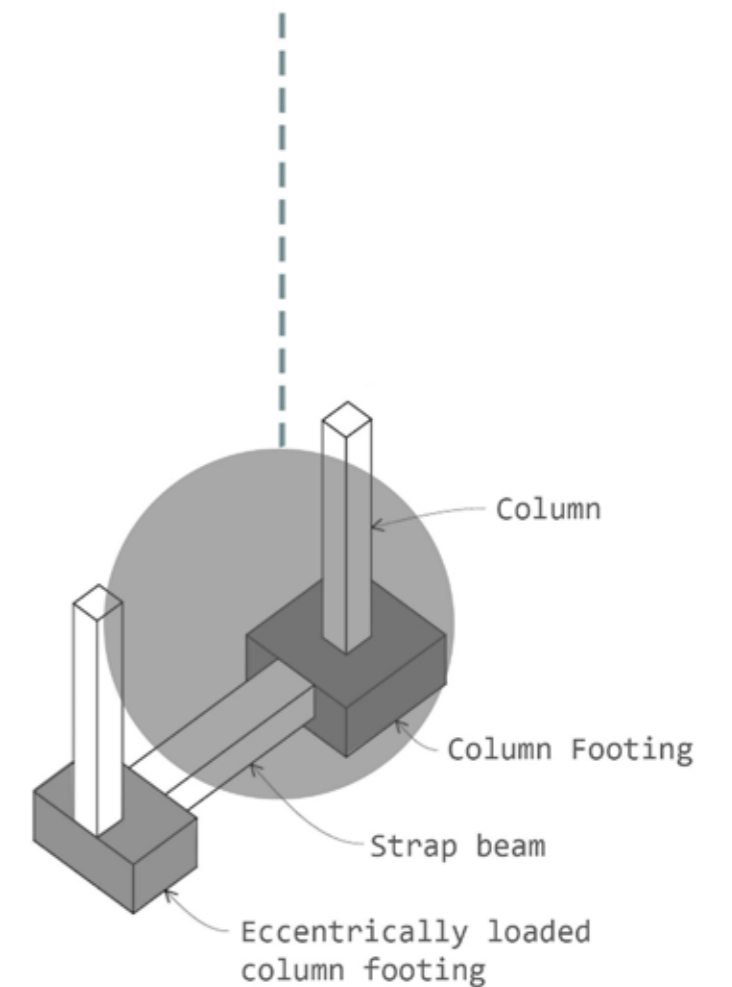
(Figure 234. Stereotomic structure, by Author, 2020)

Tectonic structure



(Figure 235. Tectonic structure, by Author, 2020)

Sub-structure foundations



(Figure 236. Sub-structure, by Author, 2020)

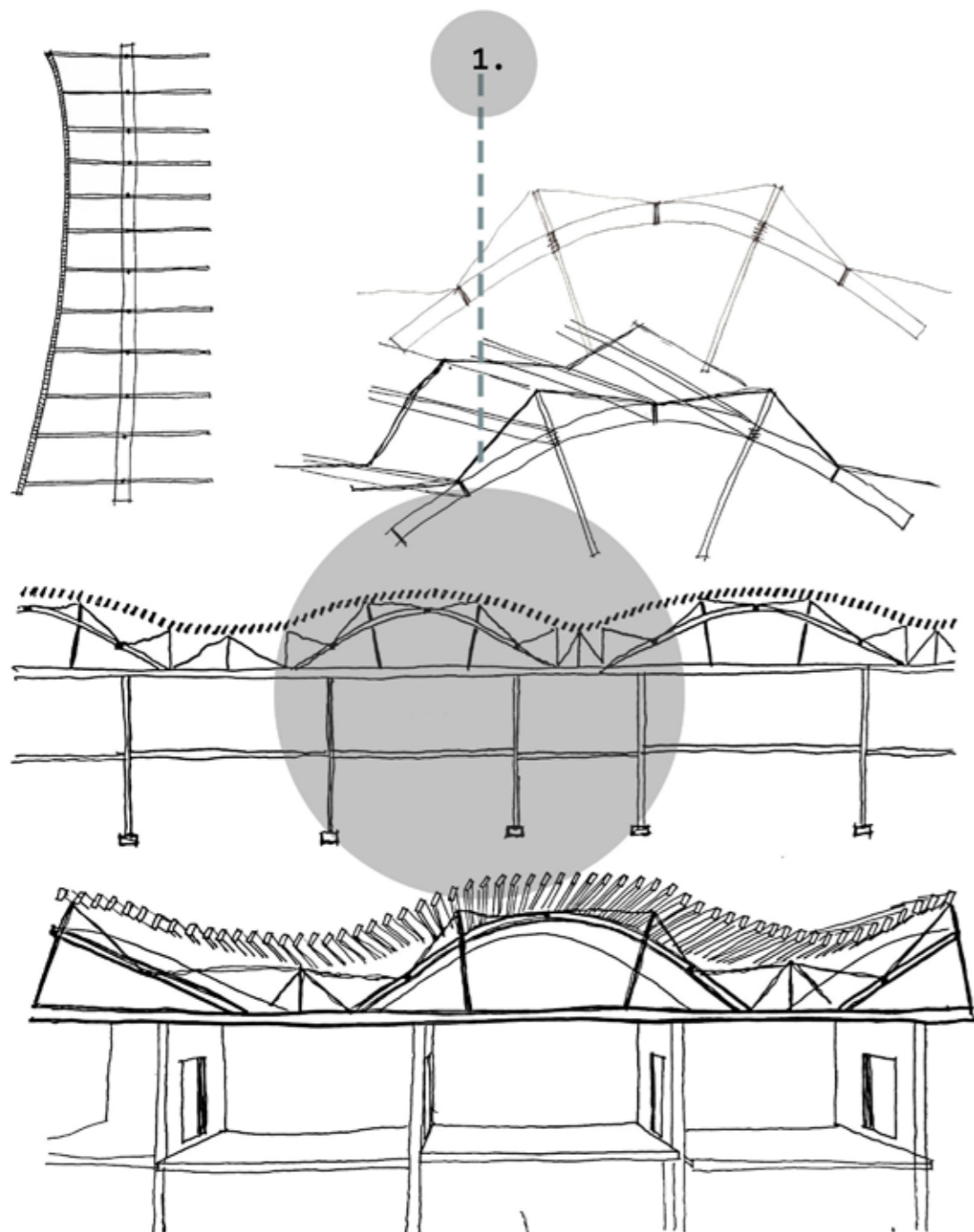
Roof:

There are three types of roofs within the structure, a double roof system, a green roof as well as a mono pitched roof.

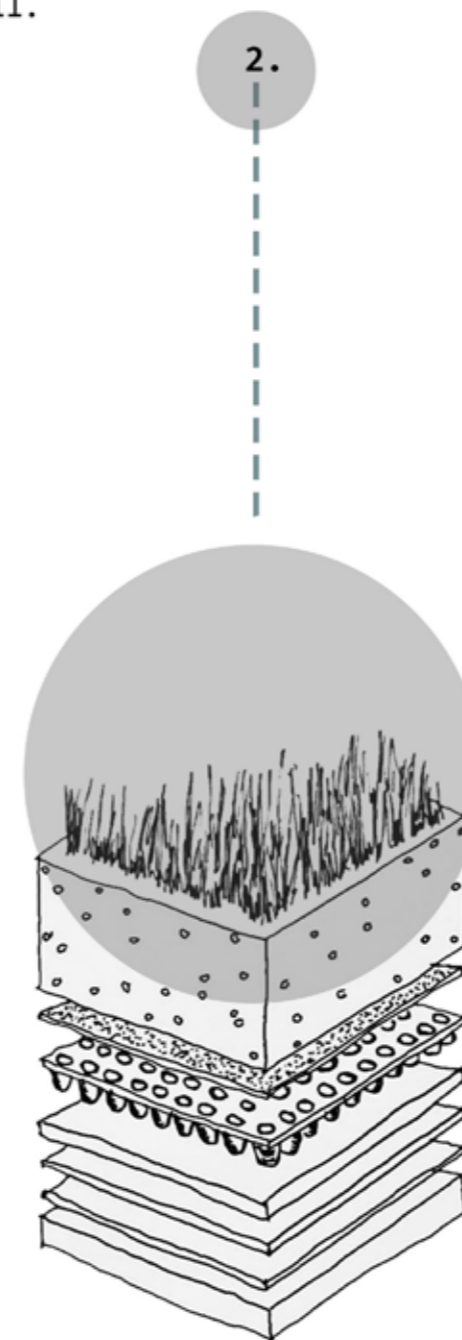
1. The double roof system was developed from the idea of a surfboard and the structure itself developed from the rocker stick that is used to determine the curve of a surfboard. The roof structure consists out of a wooden truss that supports the wooden slats, which forms the double roof structure. In between this there is polycarbonate sheeting that covers the roof and it allows the sunlight to move in freely.

2. The second type of roof structure is a green roof. This acts as a space where people can look out over the surfing spot. The same roof also consists out of concrete light shafts that allows light into the museum space. These light shafts pushes through a wooden ceiling detail.

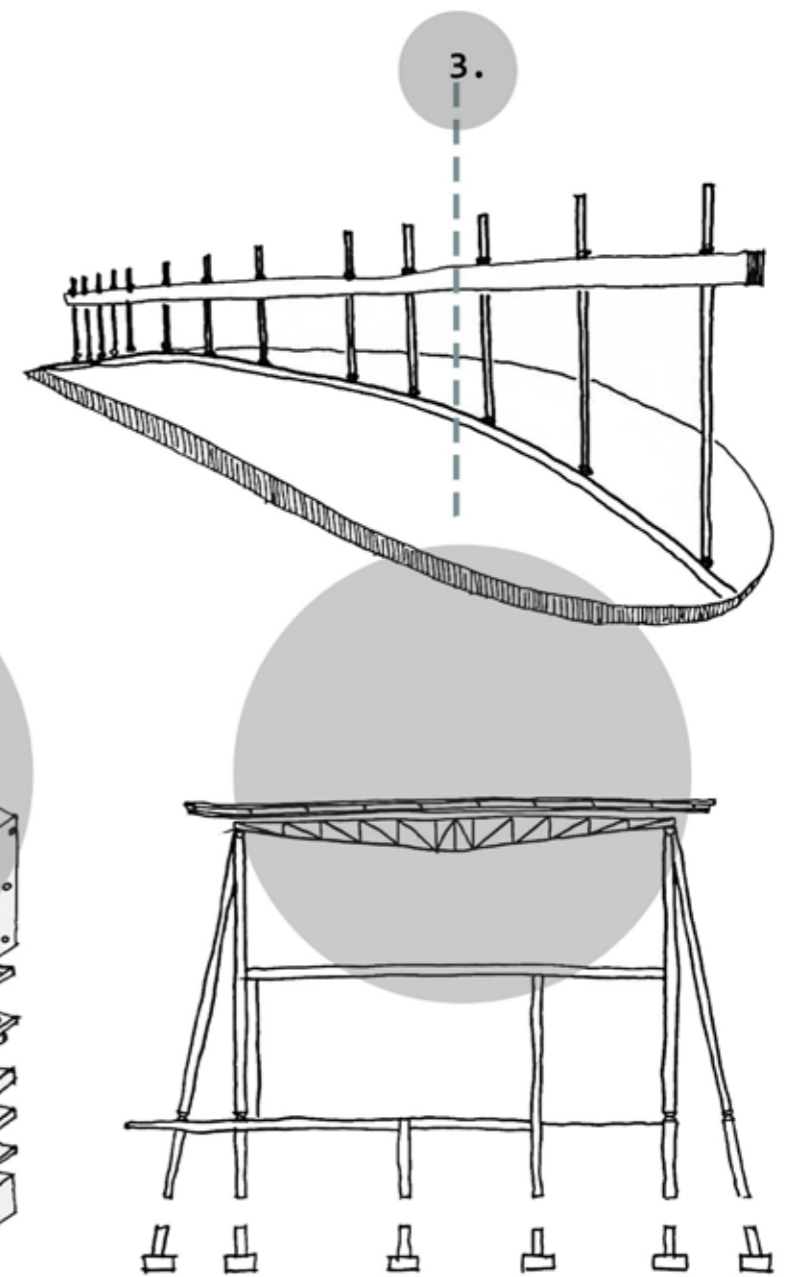
3. The third roof structure is an inverse of the first roof structure in terms of the truss system. It is also developed from the idea of a rocker stick. There are two large wooden trusses that is connected in the middle by a steel detail that represents the importance of the rocker stick in a surfboard.



(Figure 237. Roof structure development, by Author, 2020)



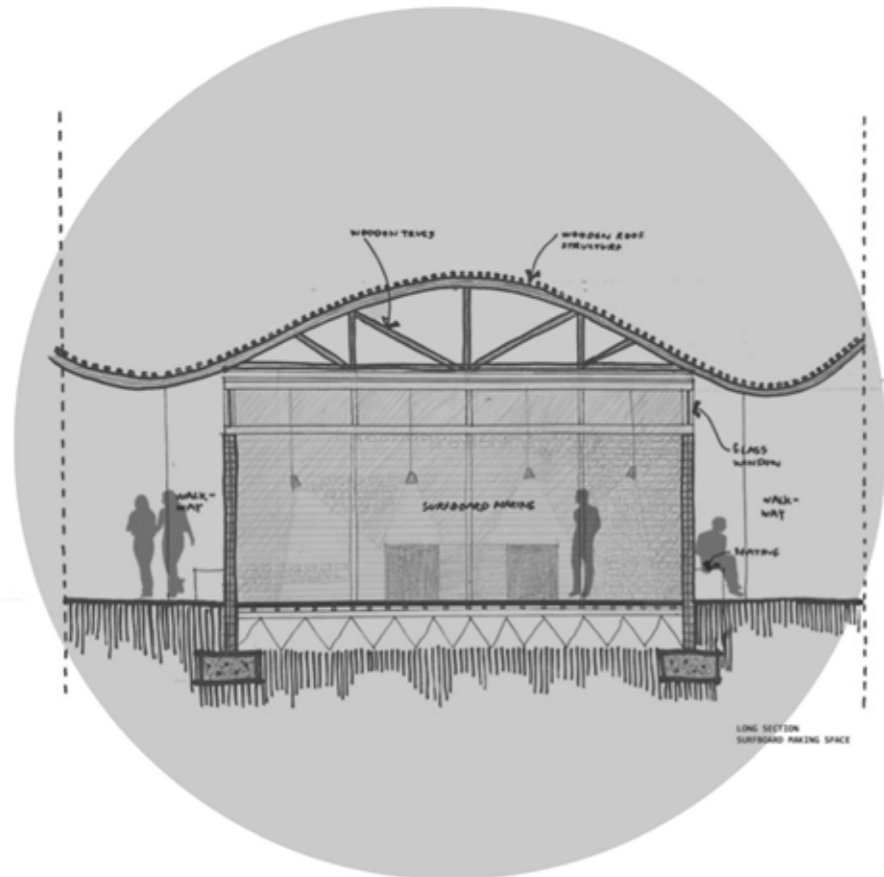
(Figure 238. Green roof structure, by Author, 2020)



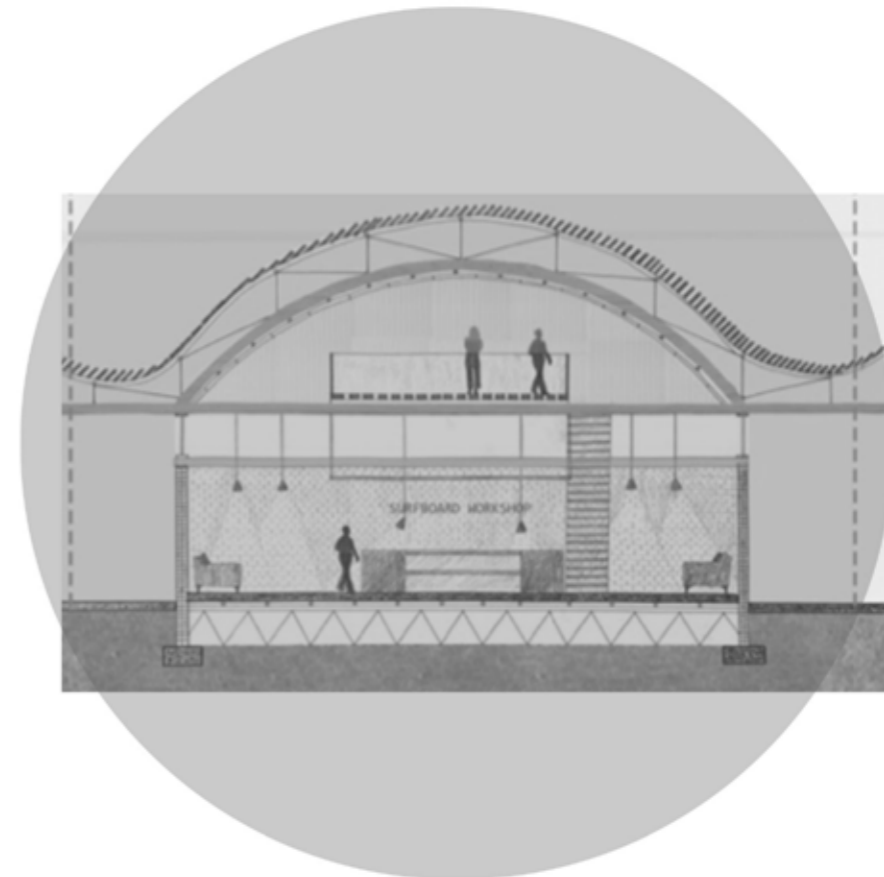
(Figure 239. Bar roof structure, by Author, 2020)

SECTION DEVELOPMENT

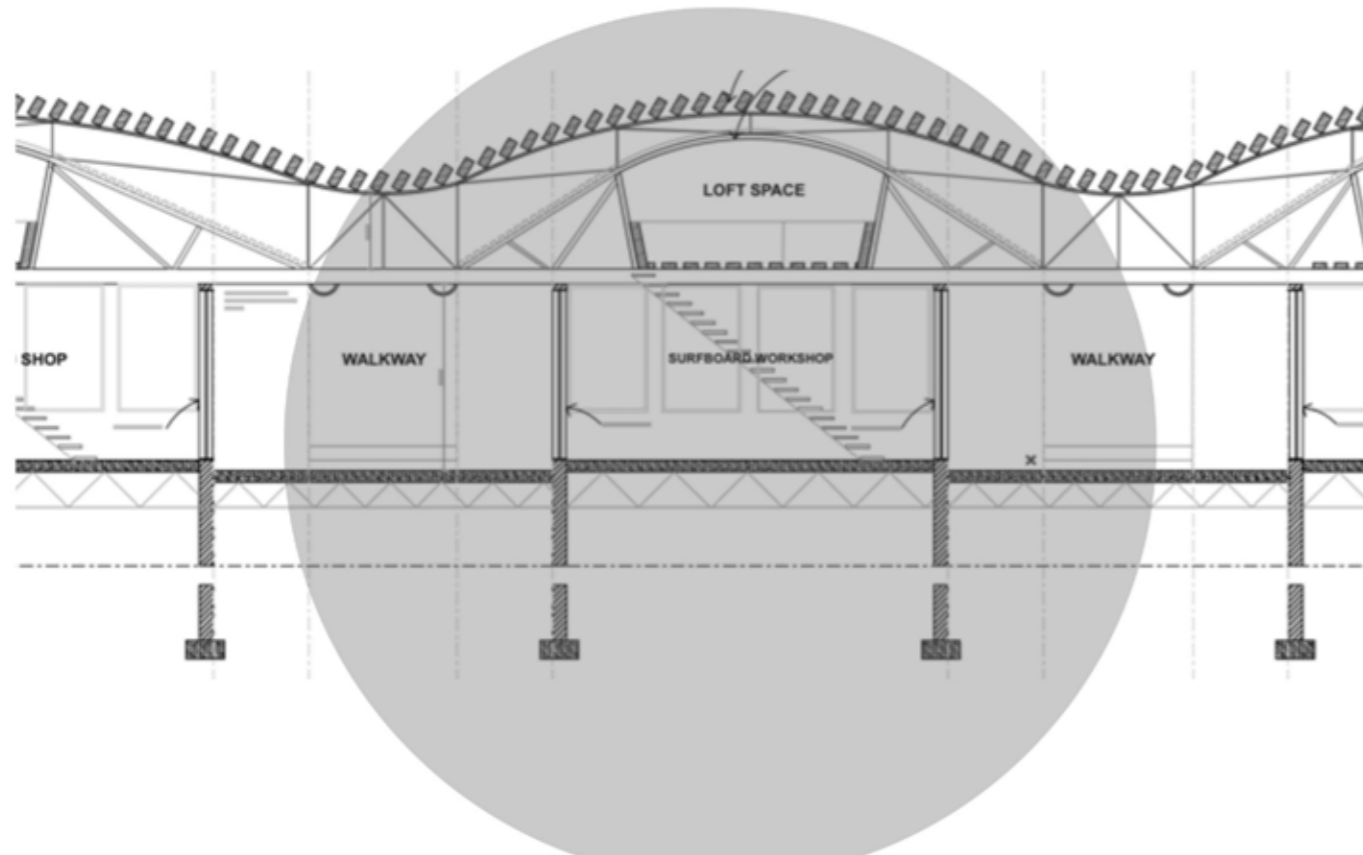
The sections show how it developed throughout the designing and construction process.



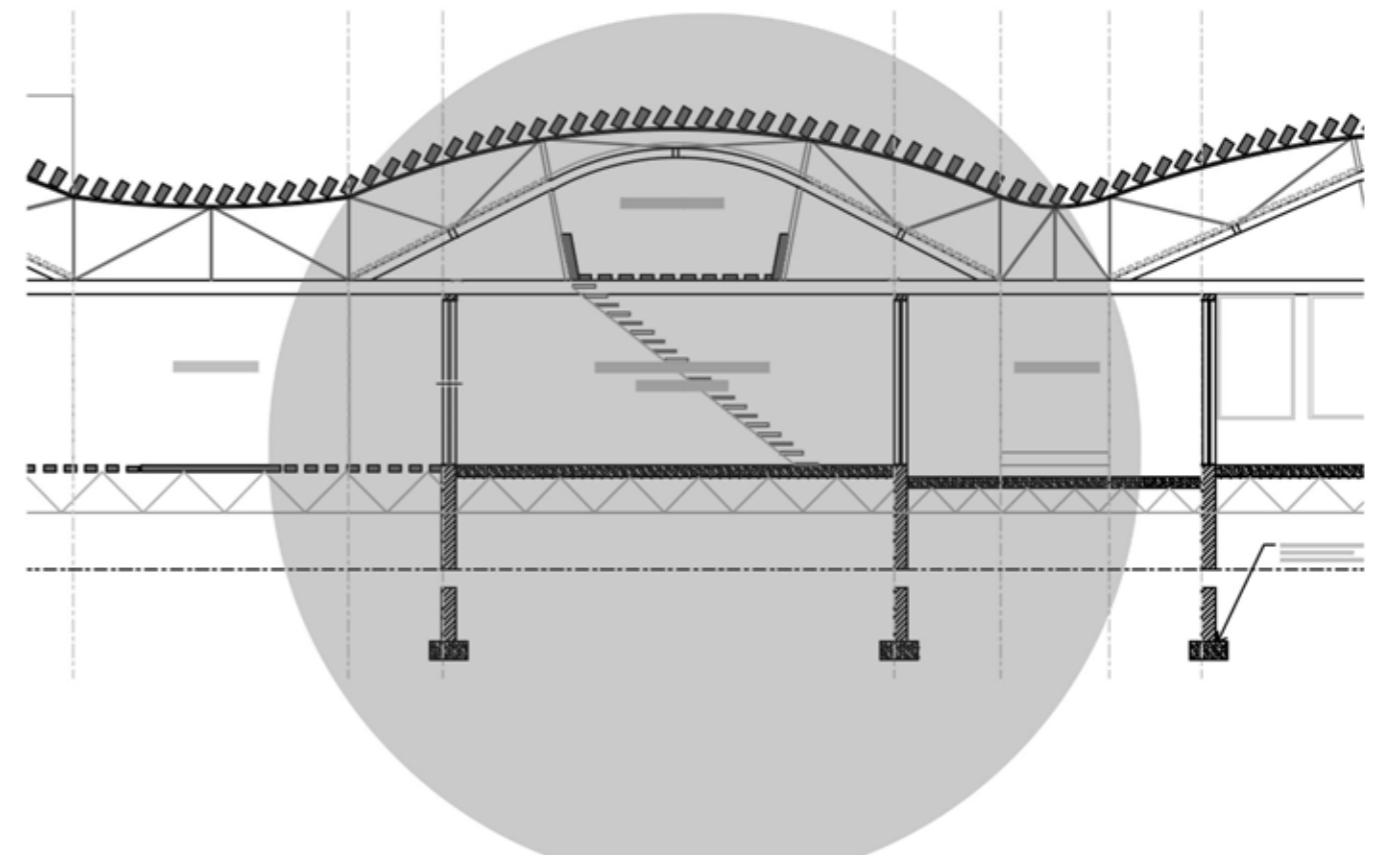
(Figure 239. Section development, by Author, 2020)



(Figure 241. Section development, by Author, 2020)



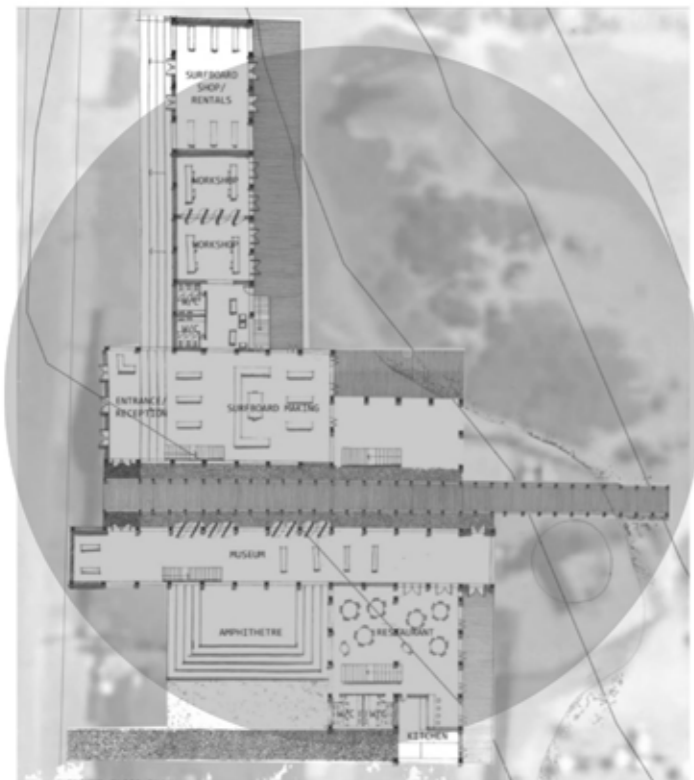
(Figure 240. Section development, by Author, 2020)



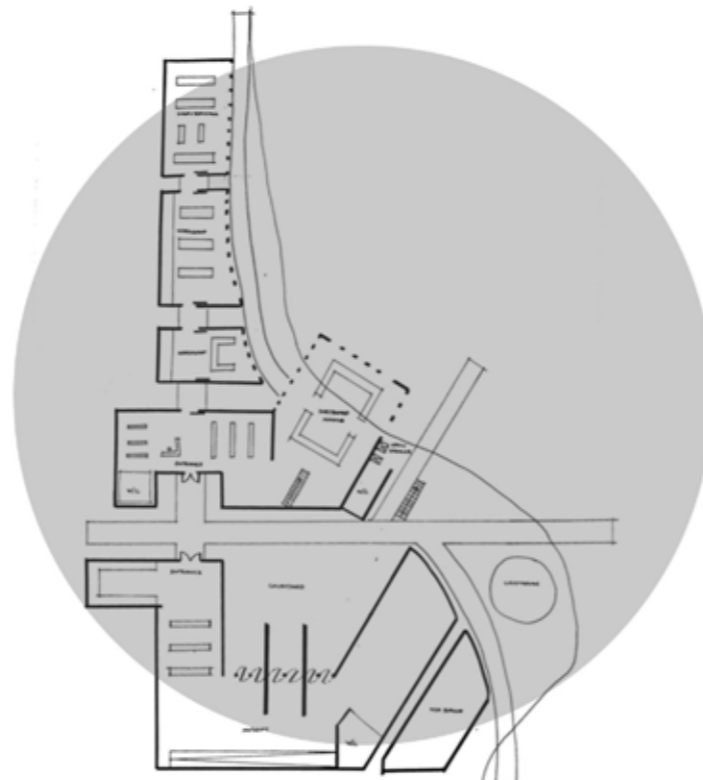
(Figure 242. Section development, by Author, 2020)

PLAN DEVELOPMENT

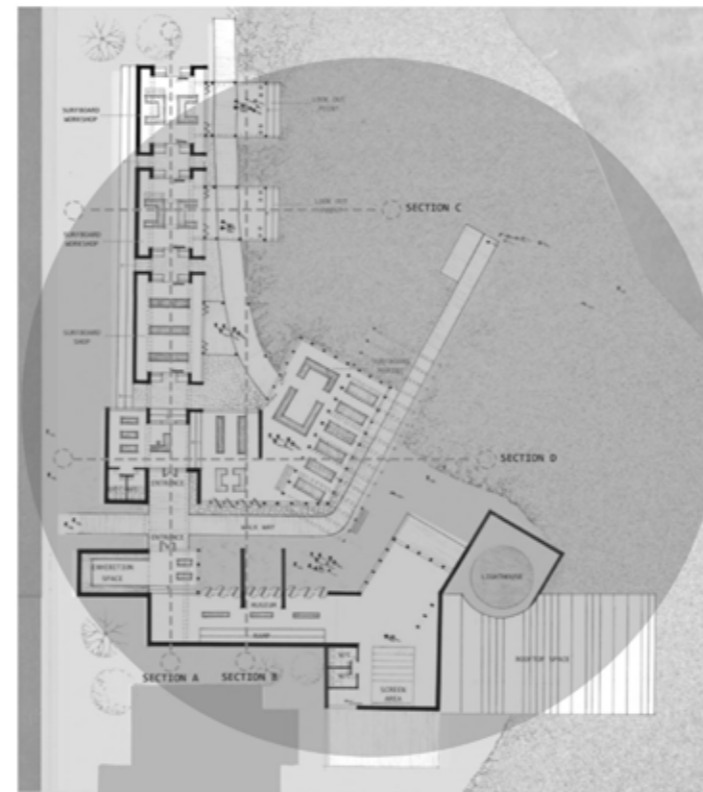
The development of the plan shows how the idea of the rocker and the surfboard got integrated more in the design process as well as the movement and circulation of users throughout the building.



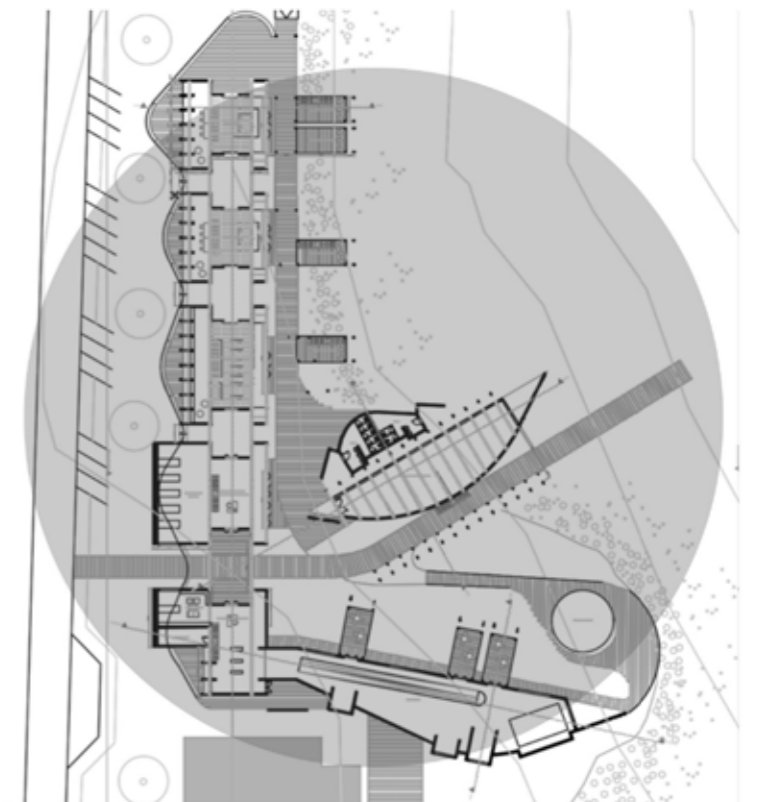
(Figure 243. Plan development, by Author, 2020)



(Figure 244. Plan development, by Author, 2020)



(Figure 245. Plan development, by Author, 2020)



(Figure 246. Plan development, by Author, 2020)

Utility and space enhancement

The roof of the main structure becomes a landmark on the site as it forms part of the surfing culture and surfing experience.

The western elevation of the structure consists out of deep walls with large openings and a big roof overhang to accommodate the harsh sun. The roof system is a double roof system with a means of a rain and shade roof in order to accommodate the climatic responses along with the design implications. The thick walls also insulate the building so that it does not become too hot or to cold.

The exhibition space in the museum area is single storied with an interactive green roof. The space is a public space that allows the visitor to move through a story like exhibition space.

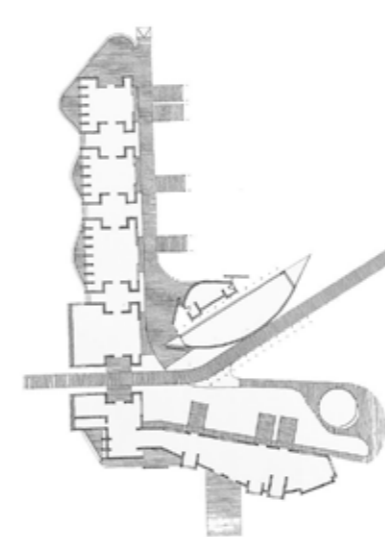
The surfboard making space on ground floor consist out of a reception area and a more private space where people can walk past and through the structural elements to get a glimpse of the surfboard making taking place in the structure.

Form and function

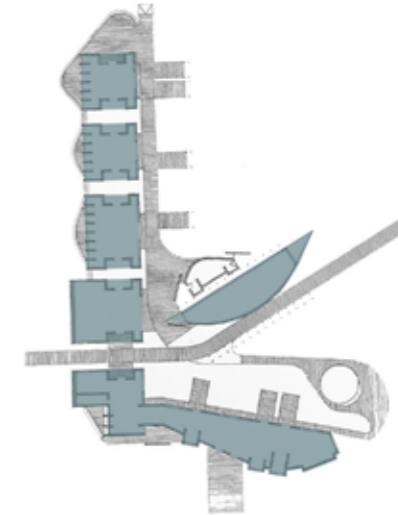
The proposed project's form was derived from the surfboard, the rocker stick. The project also forms a connection between the surrounding context through the size, scale and the materials used.

The project also tries to link the social areas and surf village with the proposed project as a way of respect and connection to the larger contexts of the site.

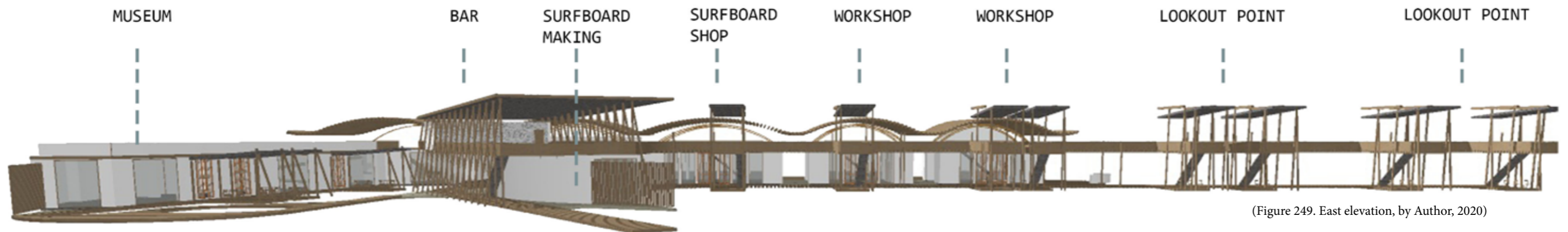
The form of the building encourages people to move through from the street to the beach and allows an interaction with the building.



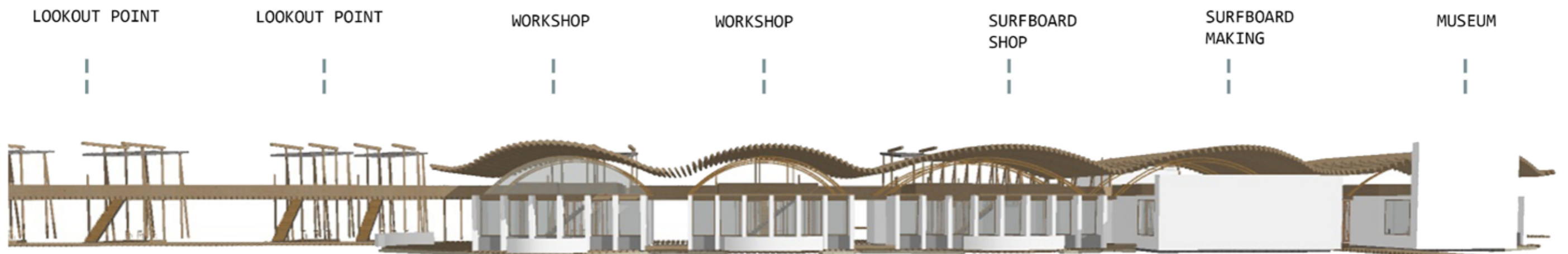
(Figure 247. Form and function, by Author, 2020)



(Figure 248. Form and function, by Author, 2020)



(Figure 249. East elevation, by Author, 2020)



(Figure 250. West elevation, by Author, 2020)

Building services

The building services in the building are installed for comfort, safety and efficiency. It is supported by SANS 10400-XA: 2011 and SANS 204:2008 documents. These documents support the national building regulations.

Fire protection

Protection against fire is vital as there will be constantly tourists moving around in the building and surfboard shaping.

There is a use of a fire alarm system in the building, which will include thermal, flame and smoke detectors. These systems will be installed in the walls of the building to allow easy access in case of emergency and a fire is detected before the system. There is a fire hose located within the service space on first floor as well as in the surfboard making area. The workshops and museum are will have portable extinguishers located as use for emergency.

The building itself is designed in such a way that in the case of a fire people can make use of multiple routes to get to the safe assembly point.

Water supply

The municipality supplies water.

Sewage disposal

The waste and soil water from the building is directly connected to a connection point provided by the Kouga municipality.

Security

Security is essential in the building and each part of the building can be closed off or locked and another can function independently the main reception points also acts as areas where the entrance is controlled.

Sustainability

Buildings should be designed in a manner, which adhere to social, economic and design in a sustainable manner. These manners might include economic and environmental considerations.

Energy and environmental sustainability

The proposed design makes use of design solutions that reduces the use of artificial cooling and heating in order to achieve a comfortable interior space. Materials such as the brick used have a good thermal mass along with large open window systems in the west and eastern facade.

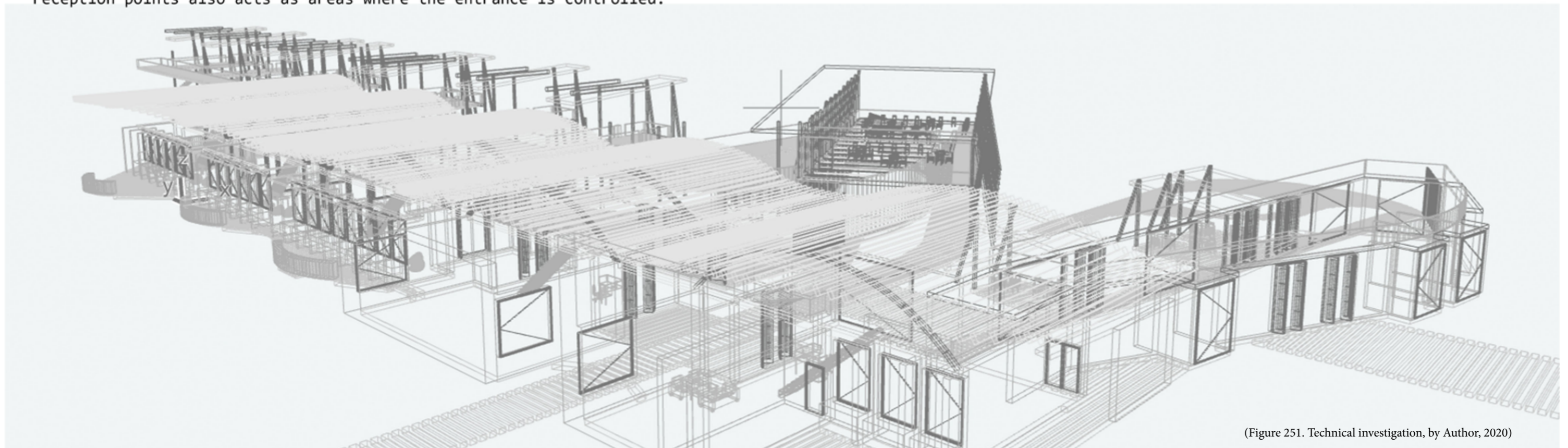
The spaces are also designed in such a way that it allows northern light into the building and all spaces allow cross ventilation.

Lighting

The building makes use mostly of natural light during the day. Artificial lighting is also made available throughout the design for night times and to enhance the quality of light in the building. The electrical wiring of the lights is located in the service area.

Orientation

The orientation of the structure is a result of the context and the specific look out points on site, as well as the connection between the surf village and the surf spot. The structure is orientated east west, but the structure is broken up into smaller pieces, which allows the north orientation to take place.

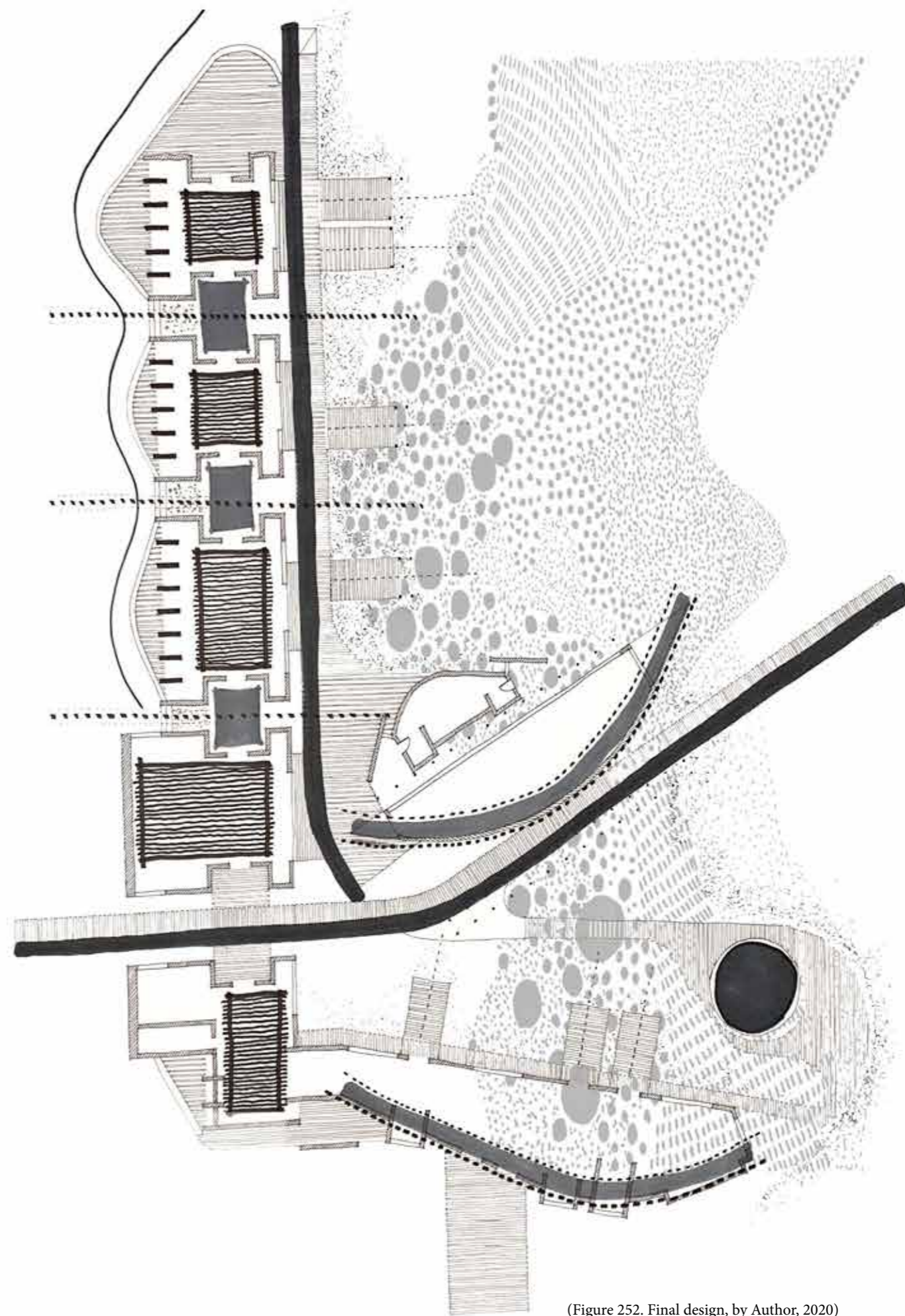


(Figure 251. Technical investigation, by Author, 2020)

The final design:

The final design is an architectural interpretation of the surfer life.

The architectural interpretation was resolved through the use of materiality, structure, craft and detailing within the building in order to show the relationship between the surfer life and the architectural interpretation.

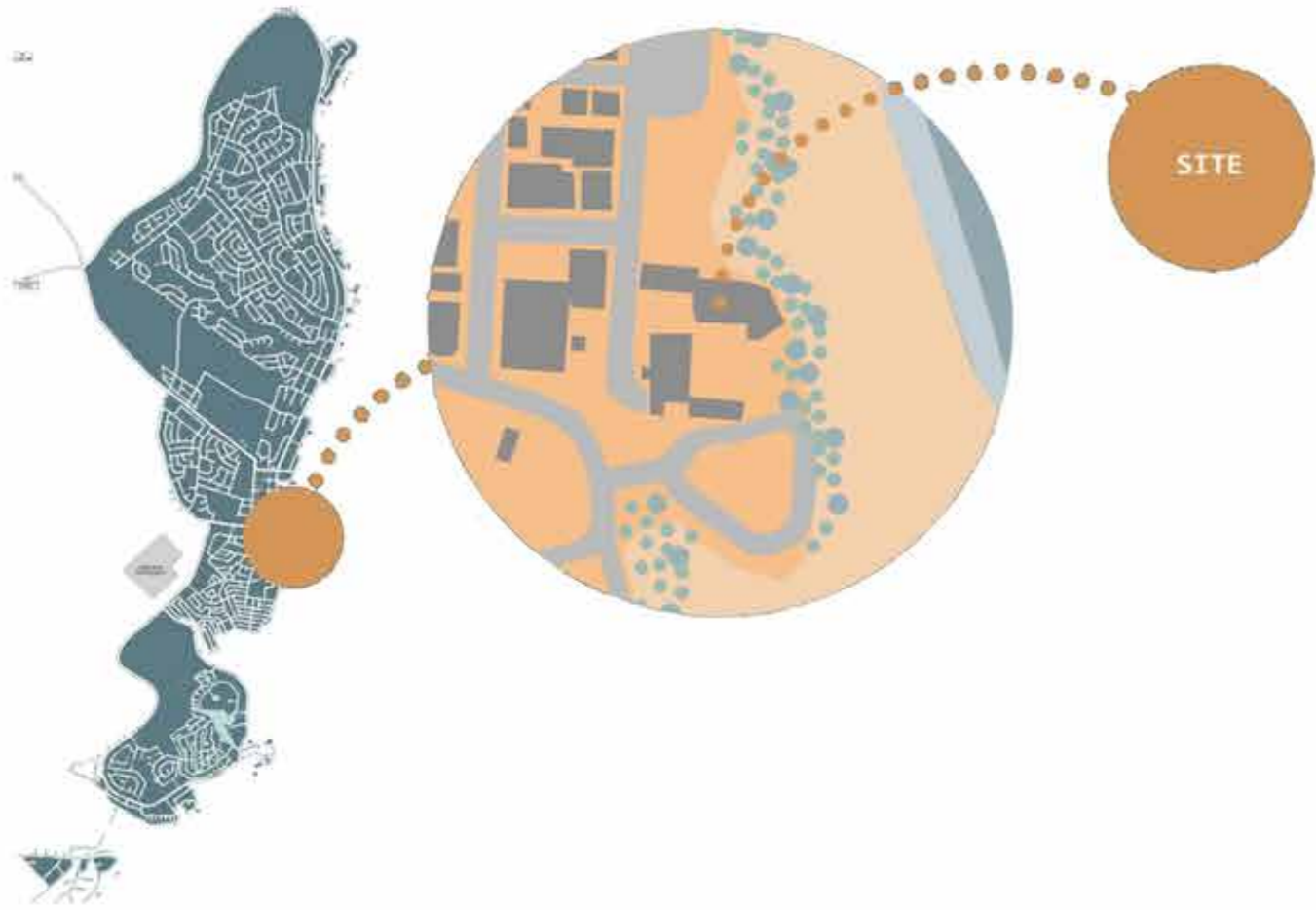


(Figure 252. Final design, by Author, 2020)



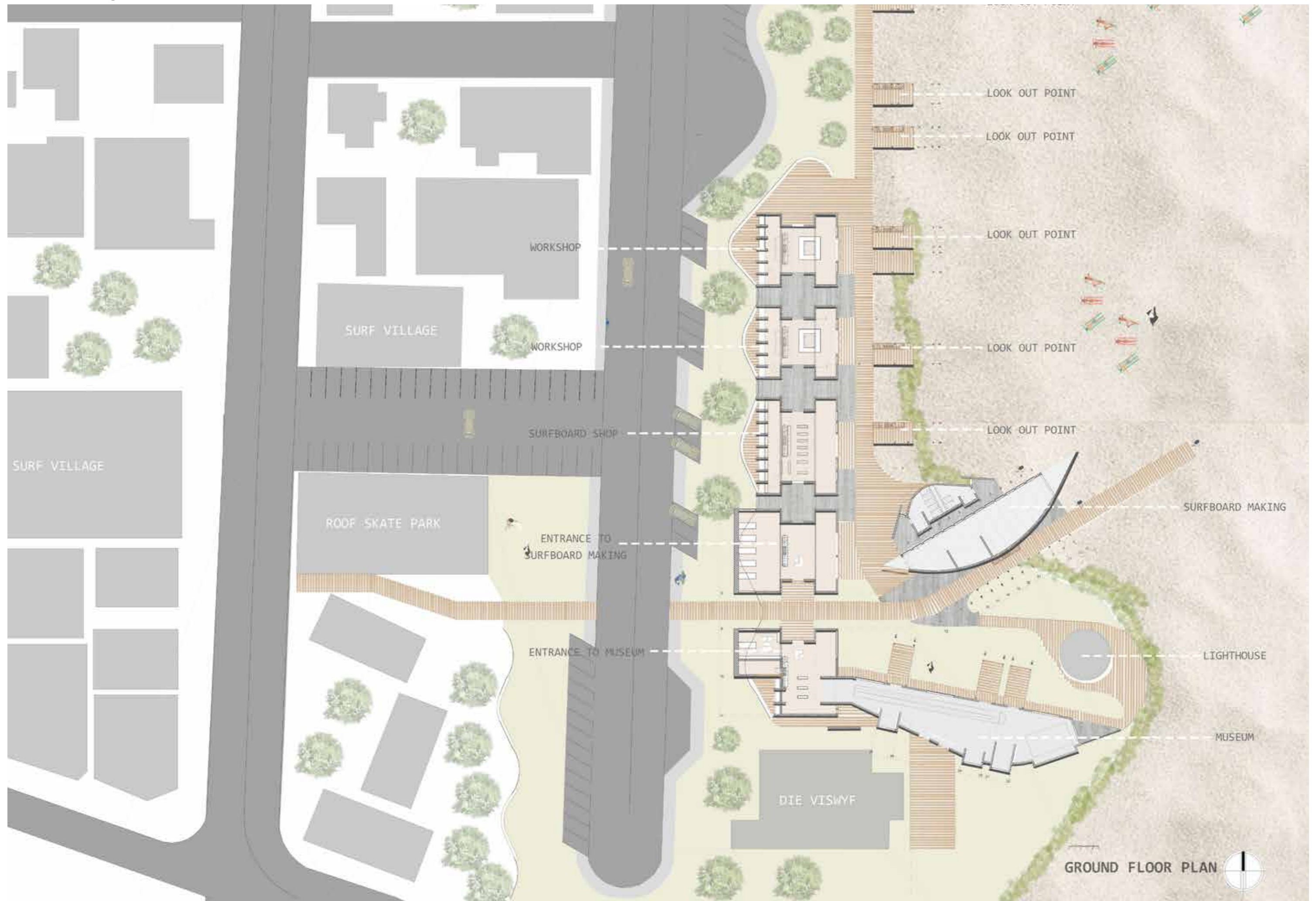
EXISTING SITE PLAN









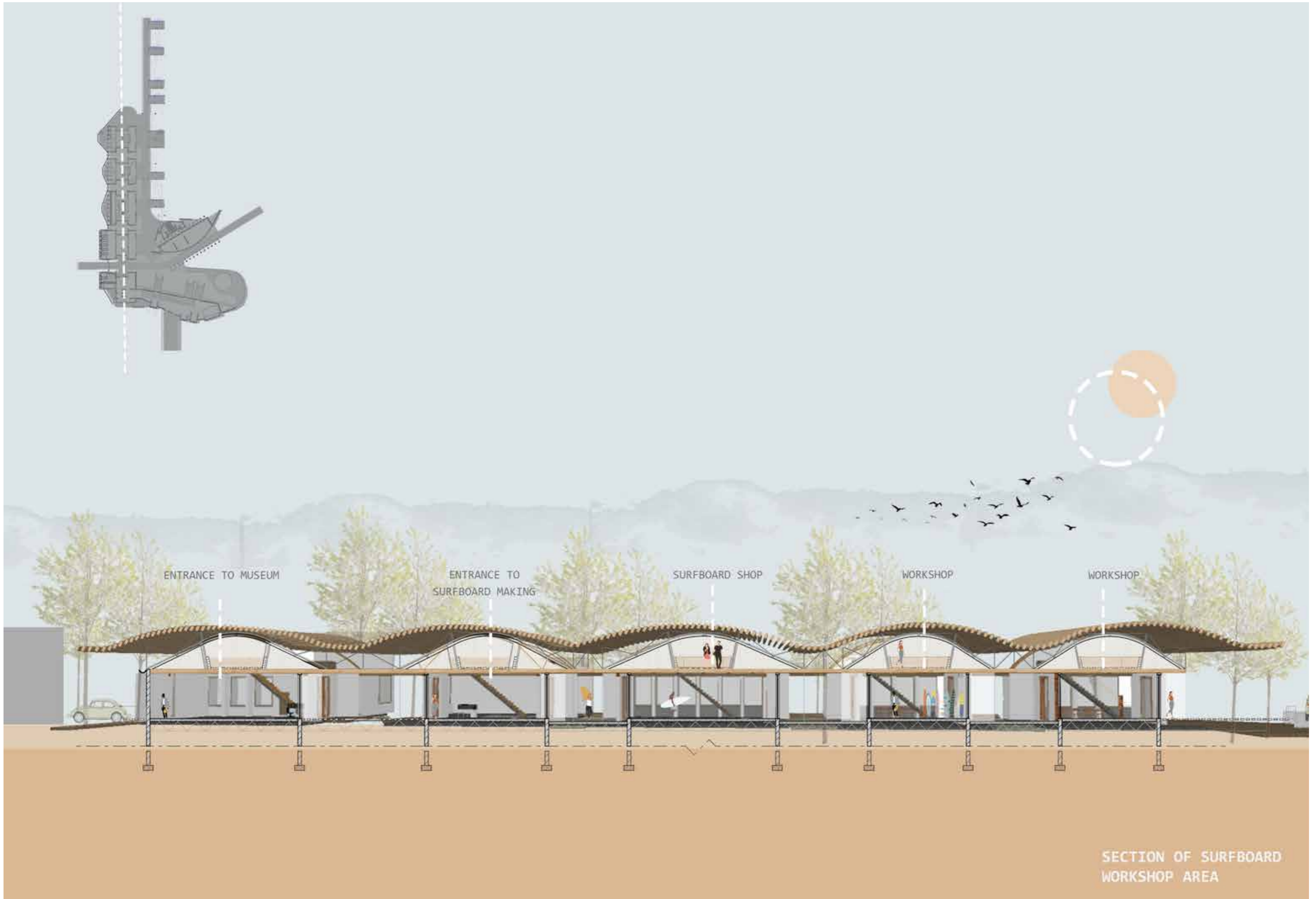




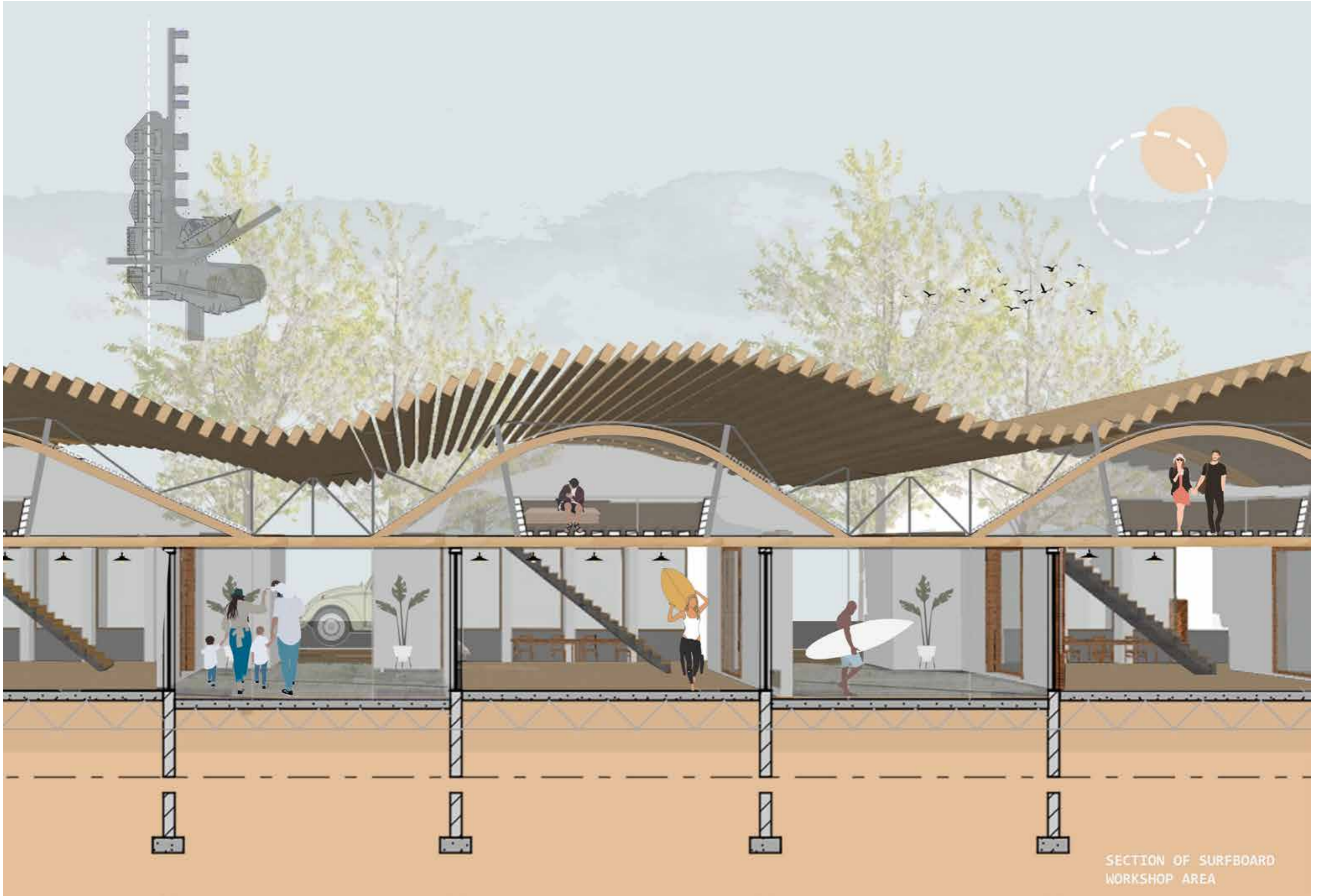


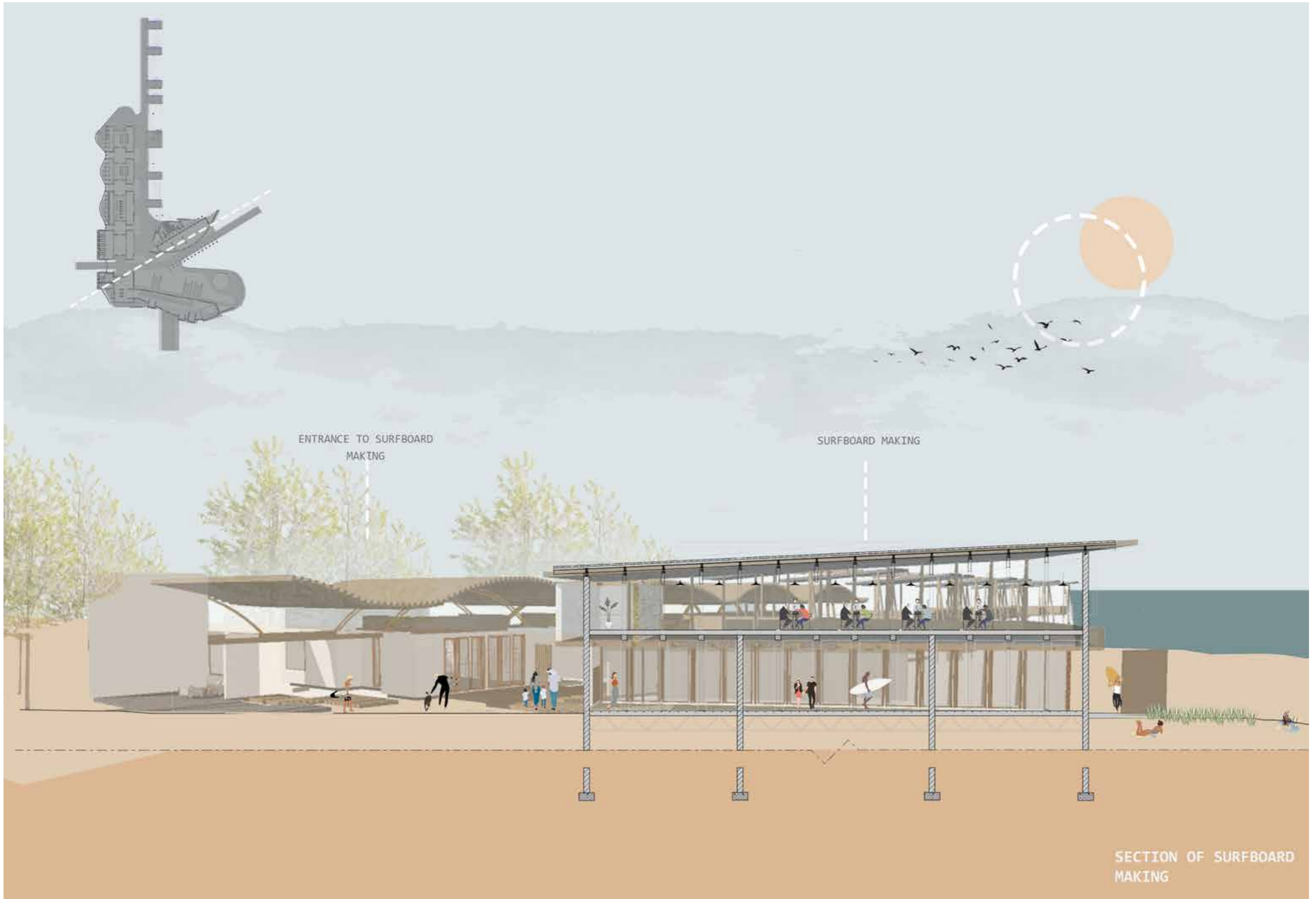
SITE SECTION



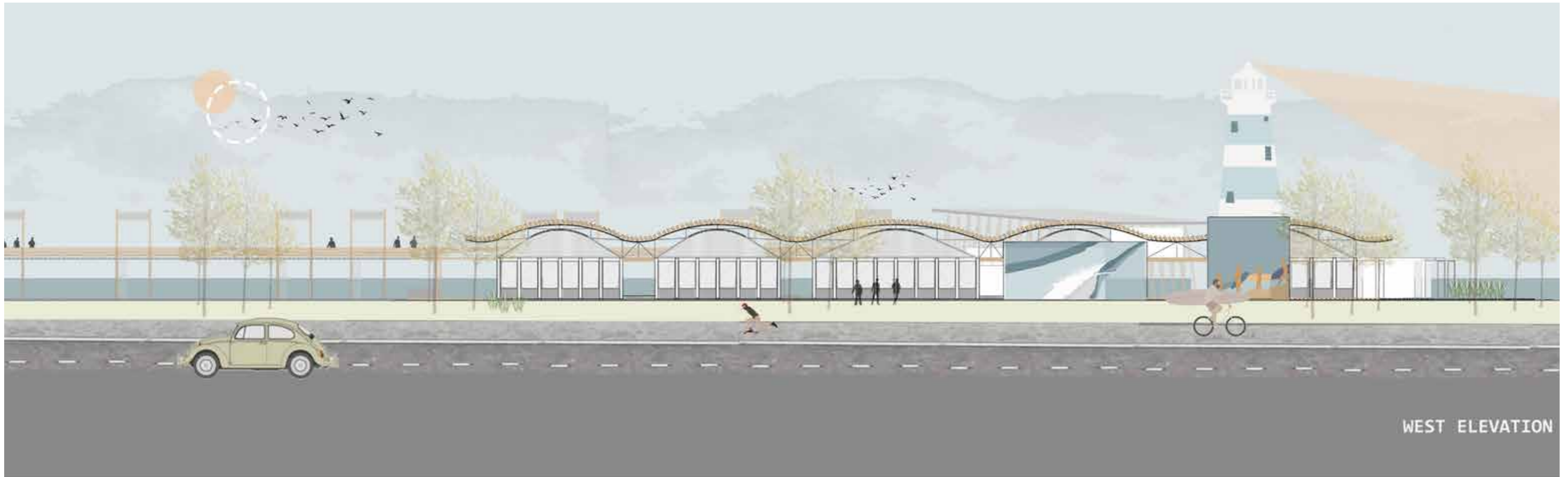


SECTION OF SURFBOARD
WORKSHOP AREA









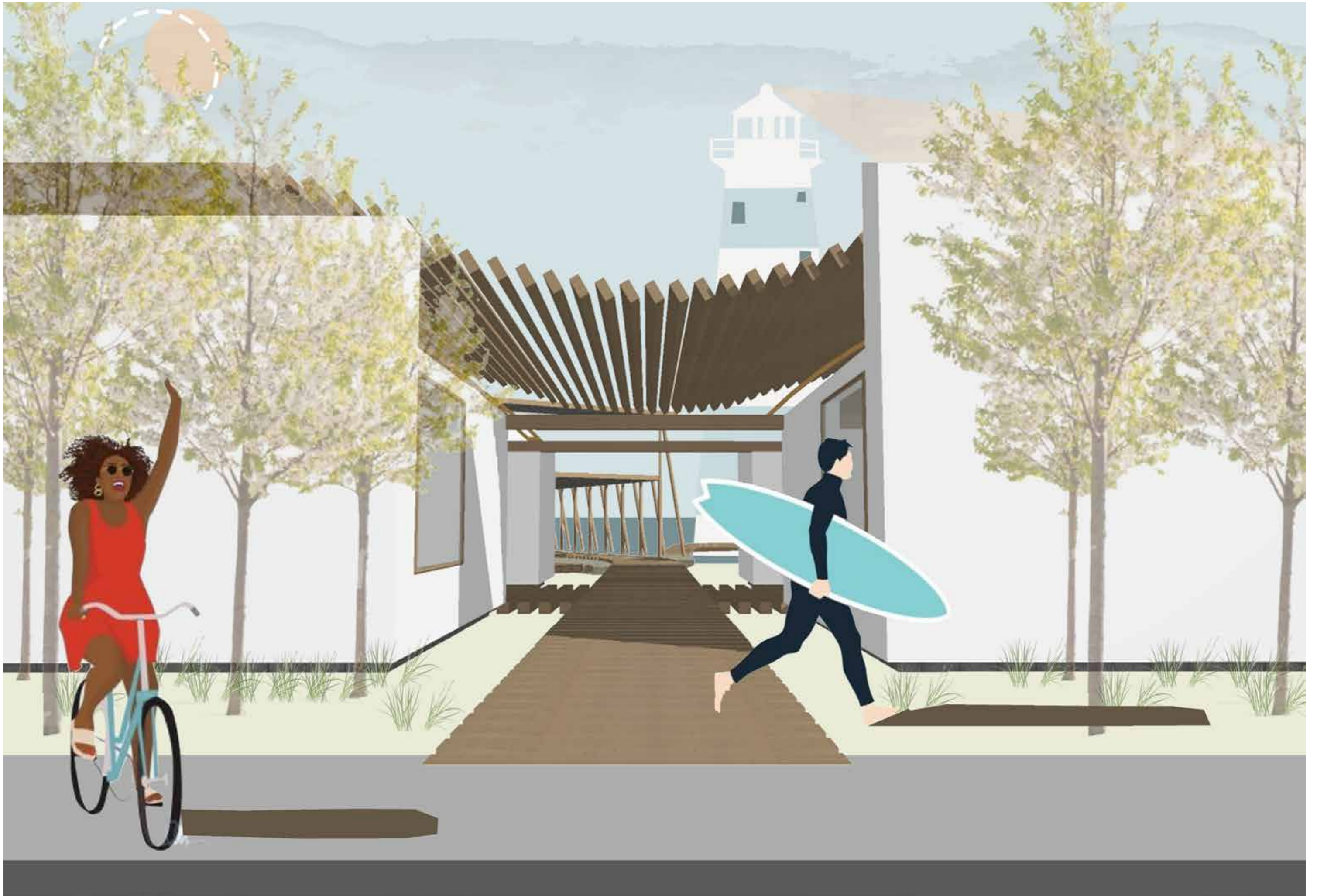






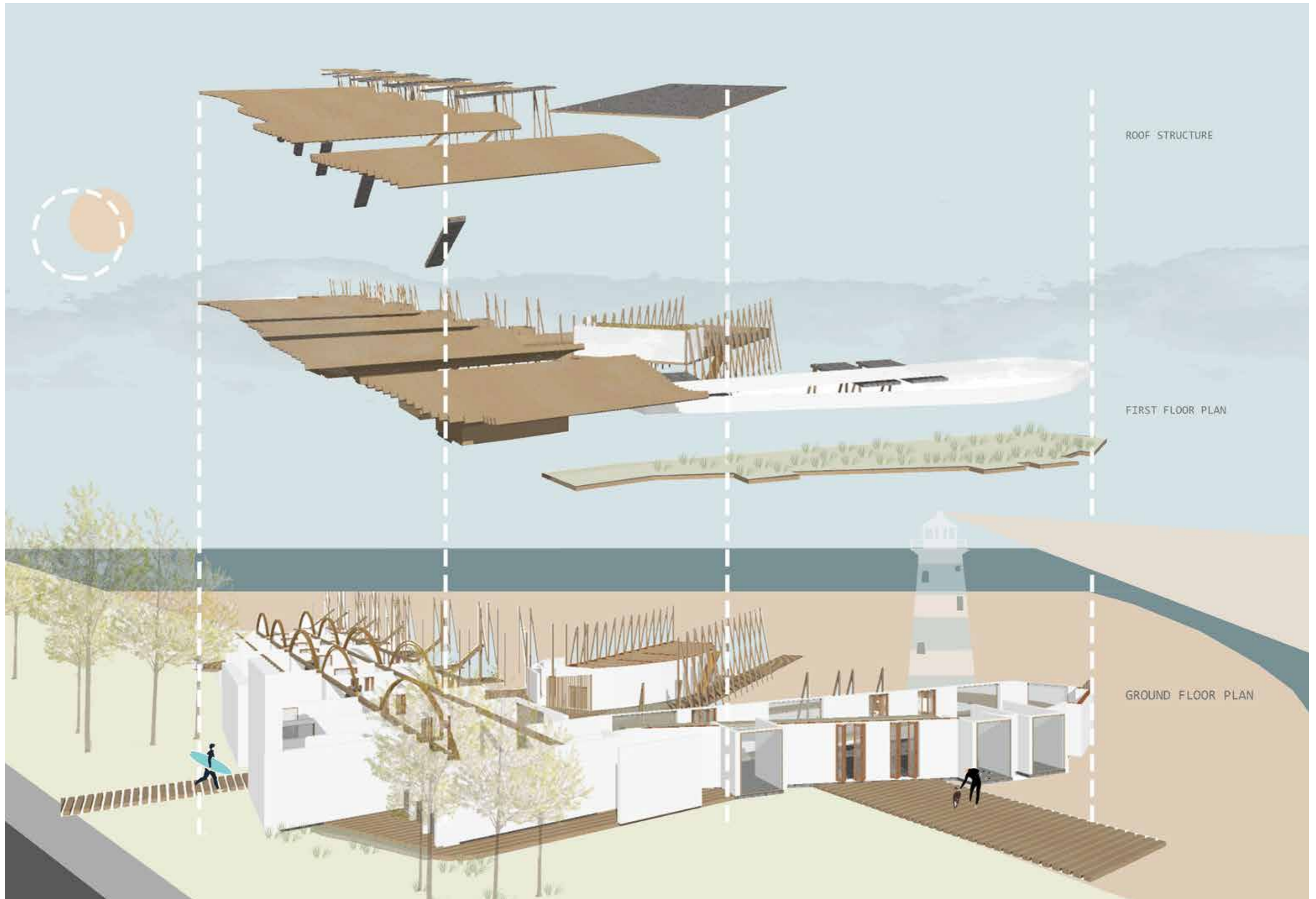














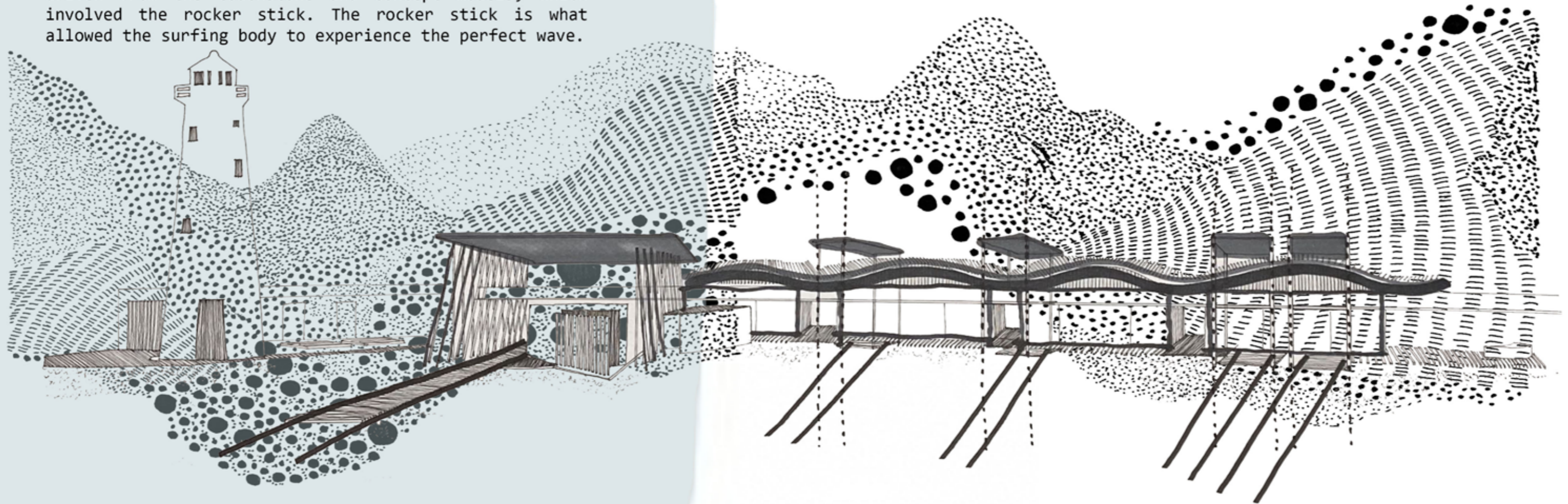
Reflection:

The site and topic is very close to my heart, as it is where I grew up and learnt to surf myself. As stated in the topic; surfing and the architecture of the dream glide is what the investigation was concerned about and how to celebrate the surfer life through an architectural interpretation. Through further research and investigating the topic it led to a research question: How can architecture respond by a means of material, structure, craft and detailing to celebrate the surfer life by interrogating the relationship between the surfing body, the wave and the architectural interpretation. It was a constant battle between the surfing body and the architectural interpretation and how these two could form one or rather are the architectural interpretation.

It started with producing a touchstone. It was difficult to produce a touchstone that captured the essence of the project and to which everything could be related back to, however after further research and experimentation through drawing and building, the touchstone was revised and the exercise developed a more clear understanding about what the building itself should be and how it should be assembled. The building's structure and form was driven from the touchstone and concept models, which involved the rocker stick. The rocker stick is what allowed the surfing body to experience the perfect wave.

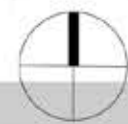
Many plans and sections were generated from the concept of the rocker stick until a final design proposal was reached. A design proposal that spoke of the surfer life and the dream glide. It was difficult to reach equilibrium between the surfer life and architecture through ritual, embodiment and rhythm.

The proposed design at the end tries to capture the ritual of the surfer, the embodied experience and rhythm in the structure.





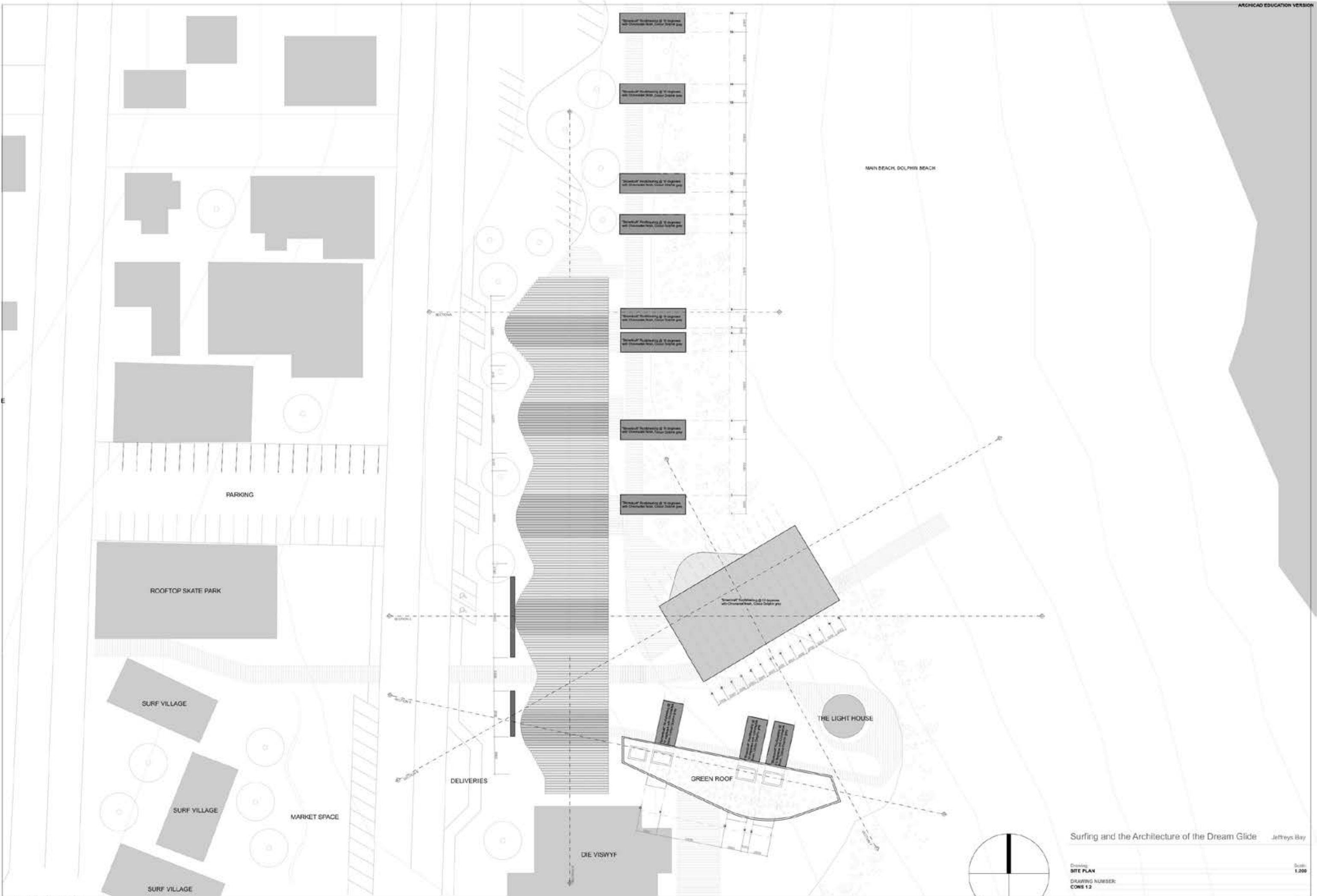
Surfing and the Architecture of the Dream Glide Jeffrey's Bay



Drawing: LOCATION PLAN
 DRAWING NUMBER: CONS 1.1
 SCALE: 1:1000

2020
 University of the Free State
 M.Arch(Port)

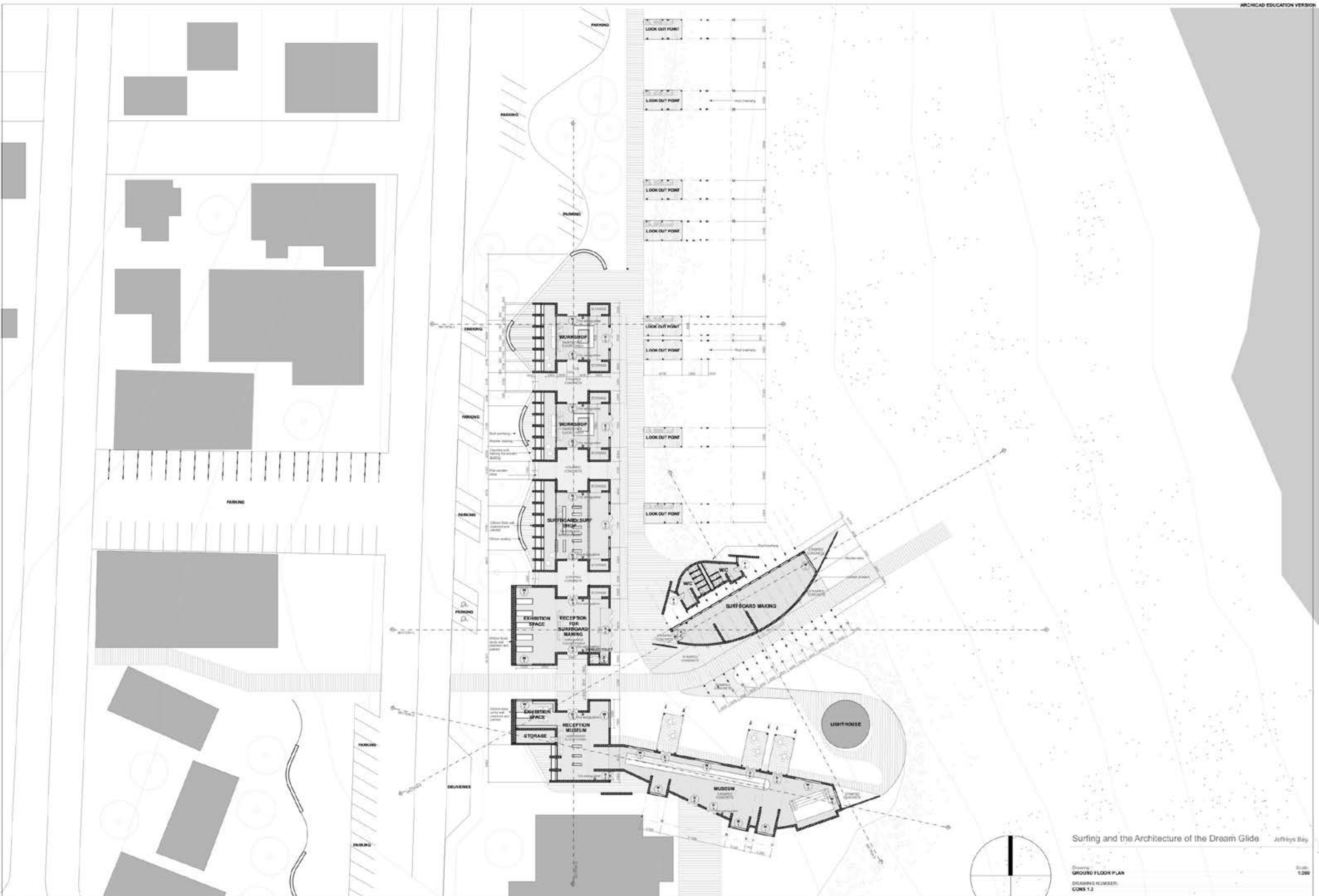
LOCATION PLAN
 SCALE 1:1000



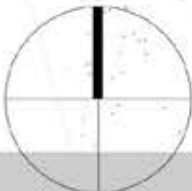
SITE PLAN
SCALE 1:200

Surfing and the Architecture of the Dream Glide Jeffrey's Bay

Drawing: **SITE PLAN** Scale: **1:200**
DRAWING NUMBER: **CONS 12**

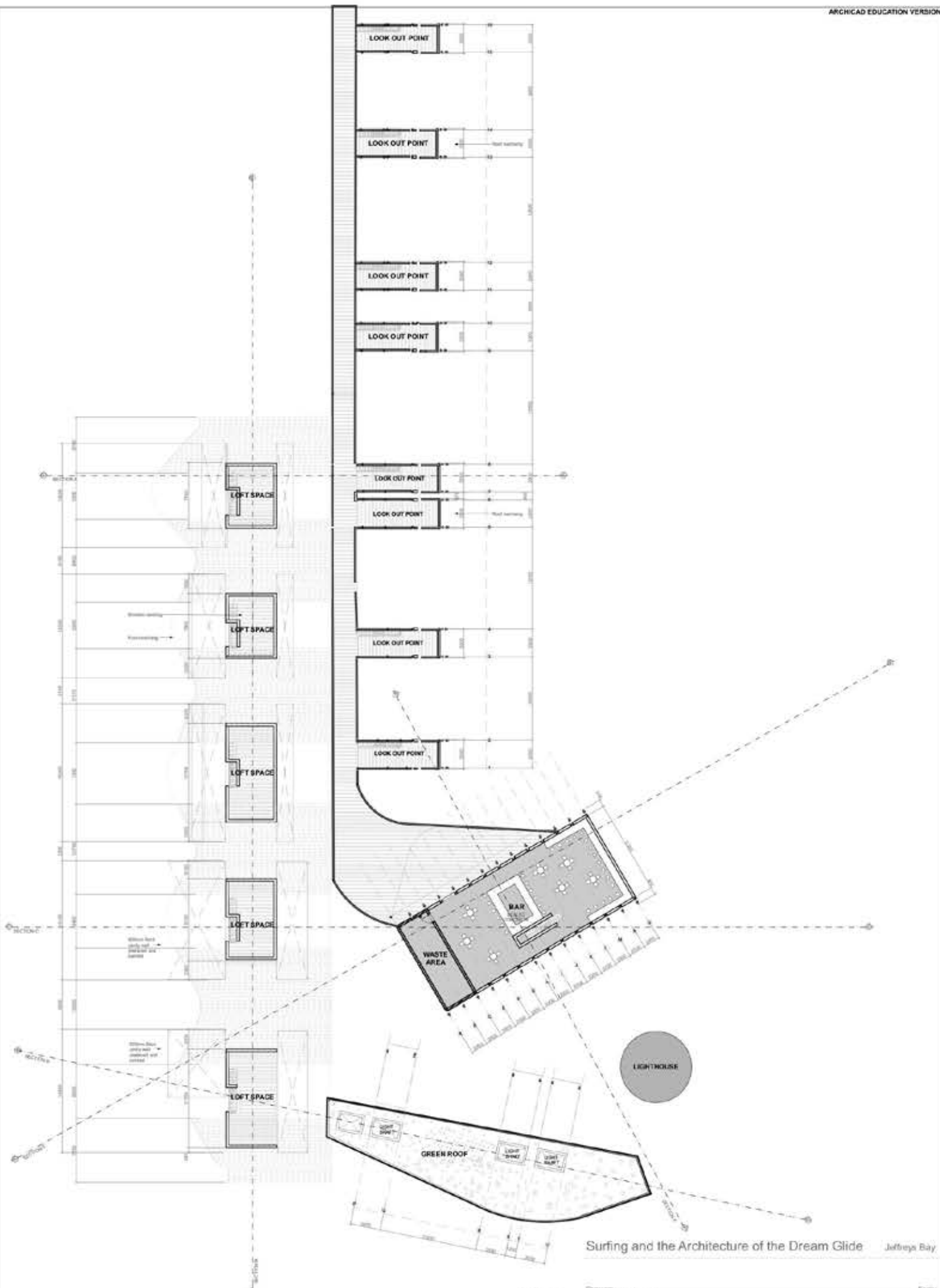


GROUND FLOOR PLAN
SCALE 1:200



Surfing and the Architecture of the Dream Glide Jeffrey's Bay

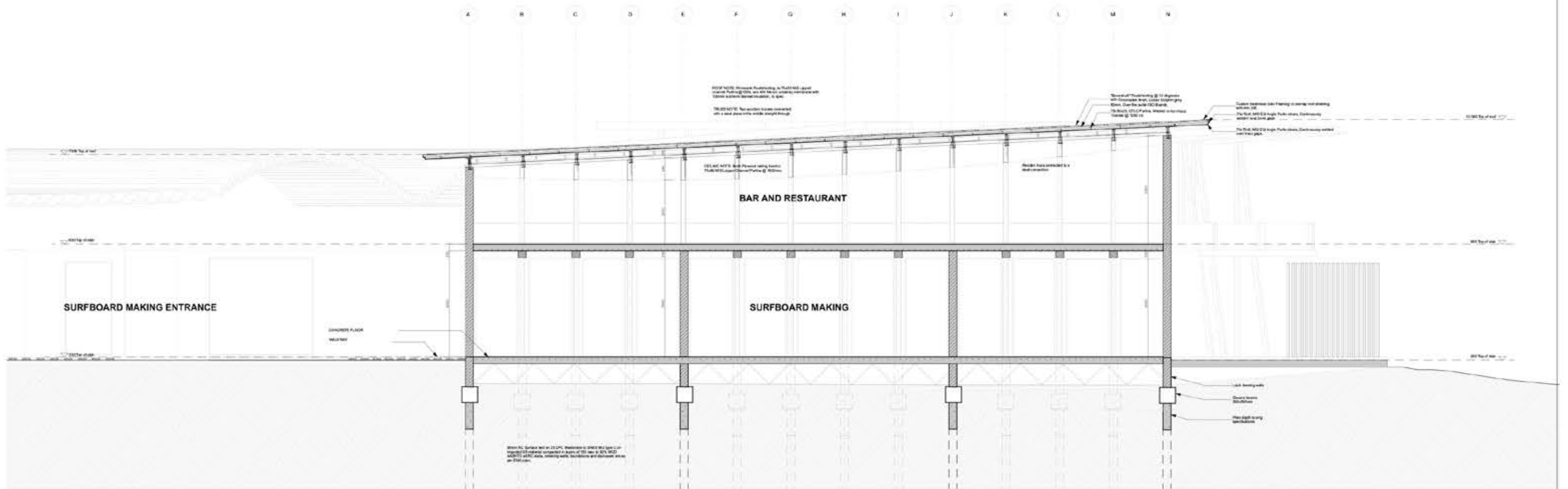
Drawing: **GROUND FLOOR PLAN** Scale: 1:200
 DRAWING NUMBER: CONS 1.3



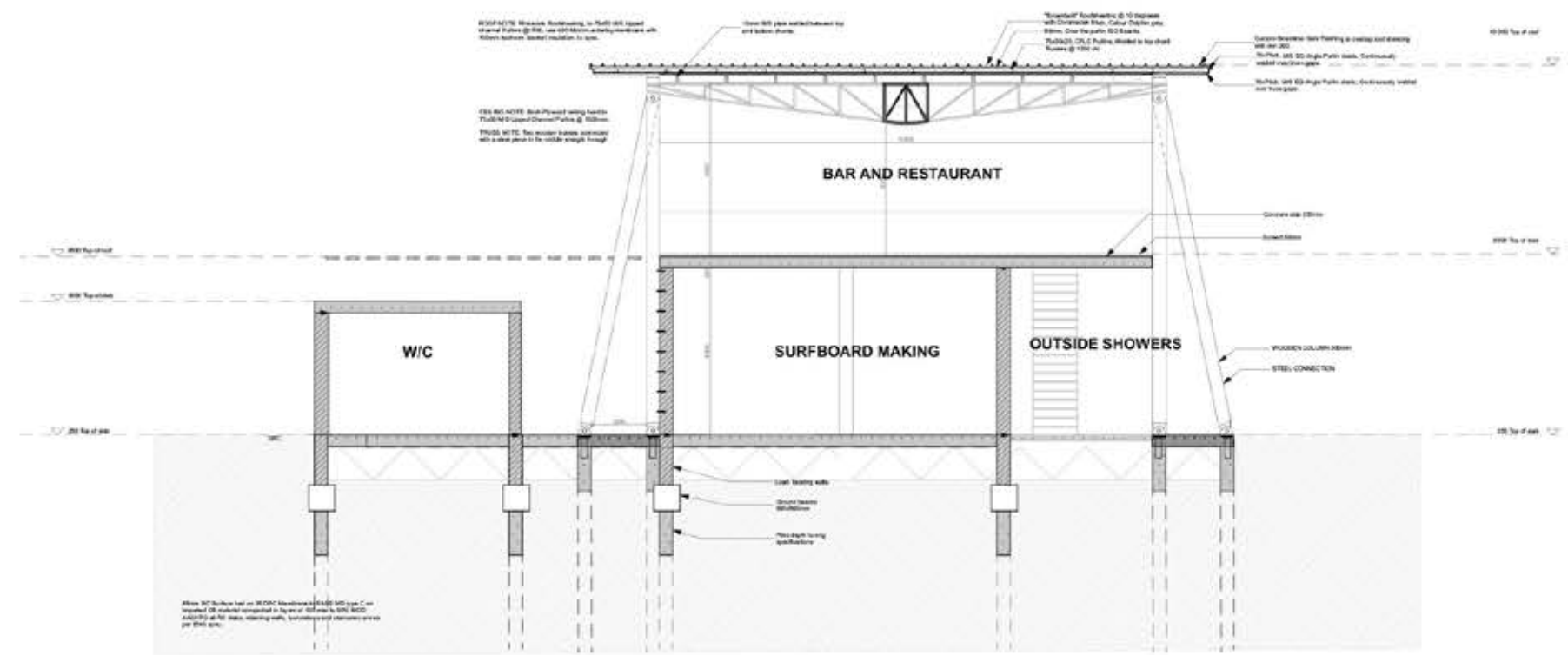
Surfing and the Architecture of the Dream Glide Jeffrey Bay



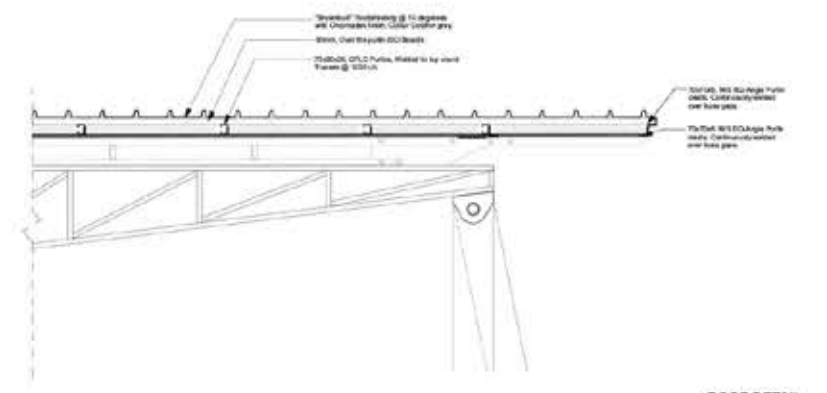
Drawing: **FIRST FLOOR PLAN** Scale: 1:200
 DRAWING NUMBER: **CONS 14**
 Date: 2010-01-01
 University of the Free State
 M. van der Merwe



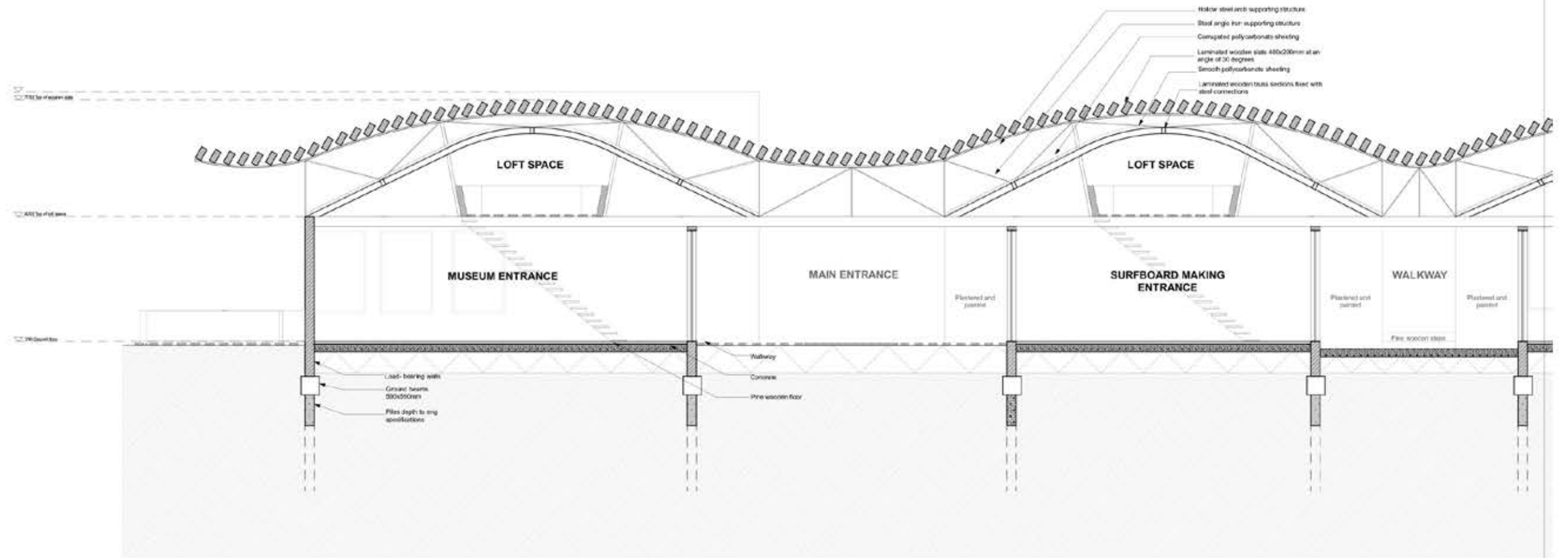
BAR LONG SECTION
SCALE 1:50



BAR LONG SECTION
SCALE 1:50



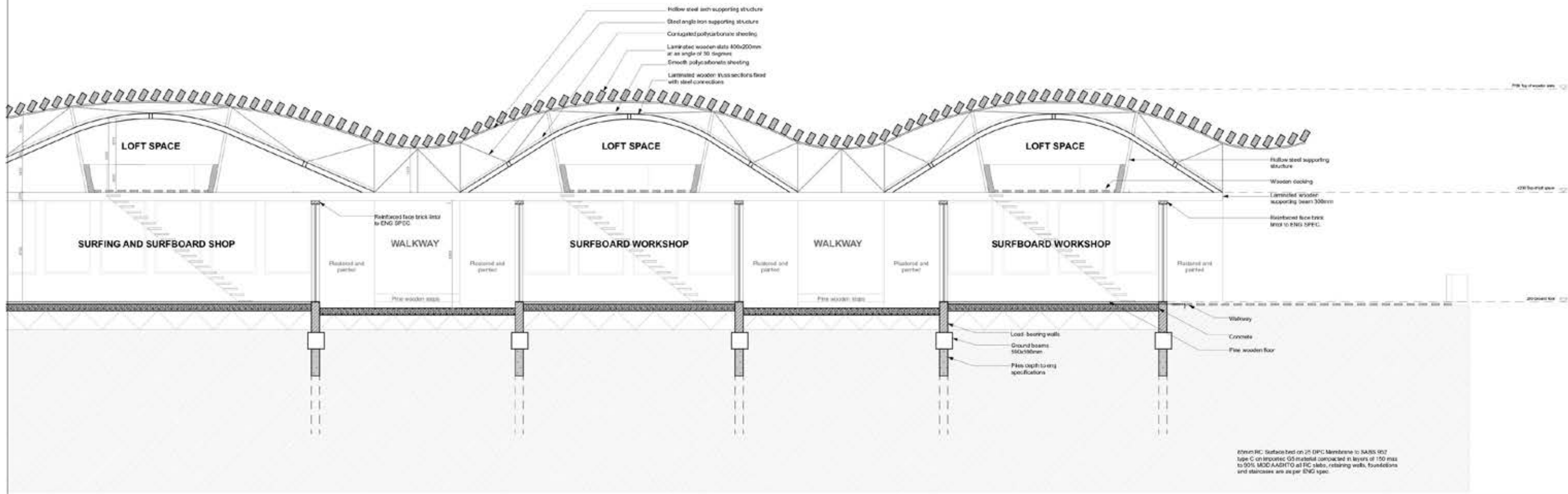
ROOF DETAIL
SCALE 1:20



Surfing and the Architecture of the Dream Glide Jeffreys Bay

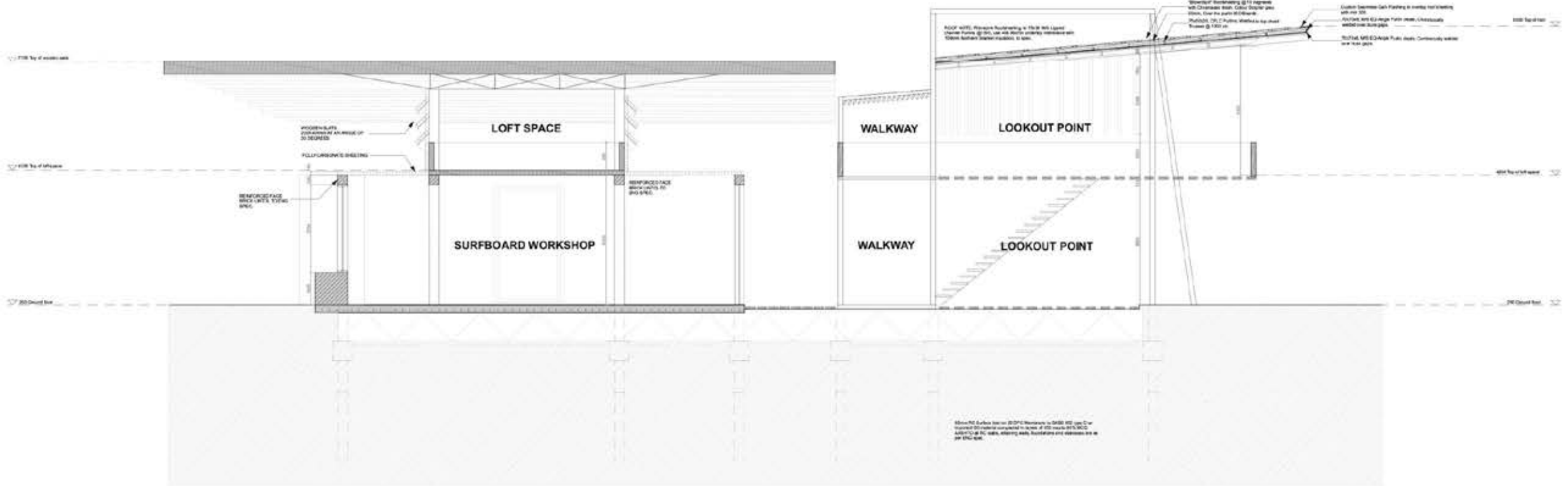
Drawing: **SECTION A, SECTION B** Scale: **1:50**
 DRAWING NUMBER: **CONS 1.6**

© 2000
 University of the Free State M.A.M.H.(Pvt)



80mm RC. Surface bed on 20 DPC Membrane to SANS 902 type C on imported G5 material compacted in layers of 150 mm to 90% MDD AASHTO all RC slabs, retaining walls, foundations and staircases are as per SNG spec.

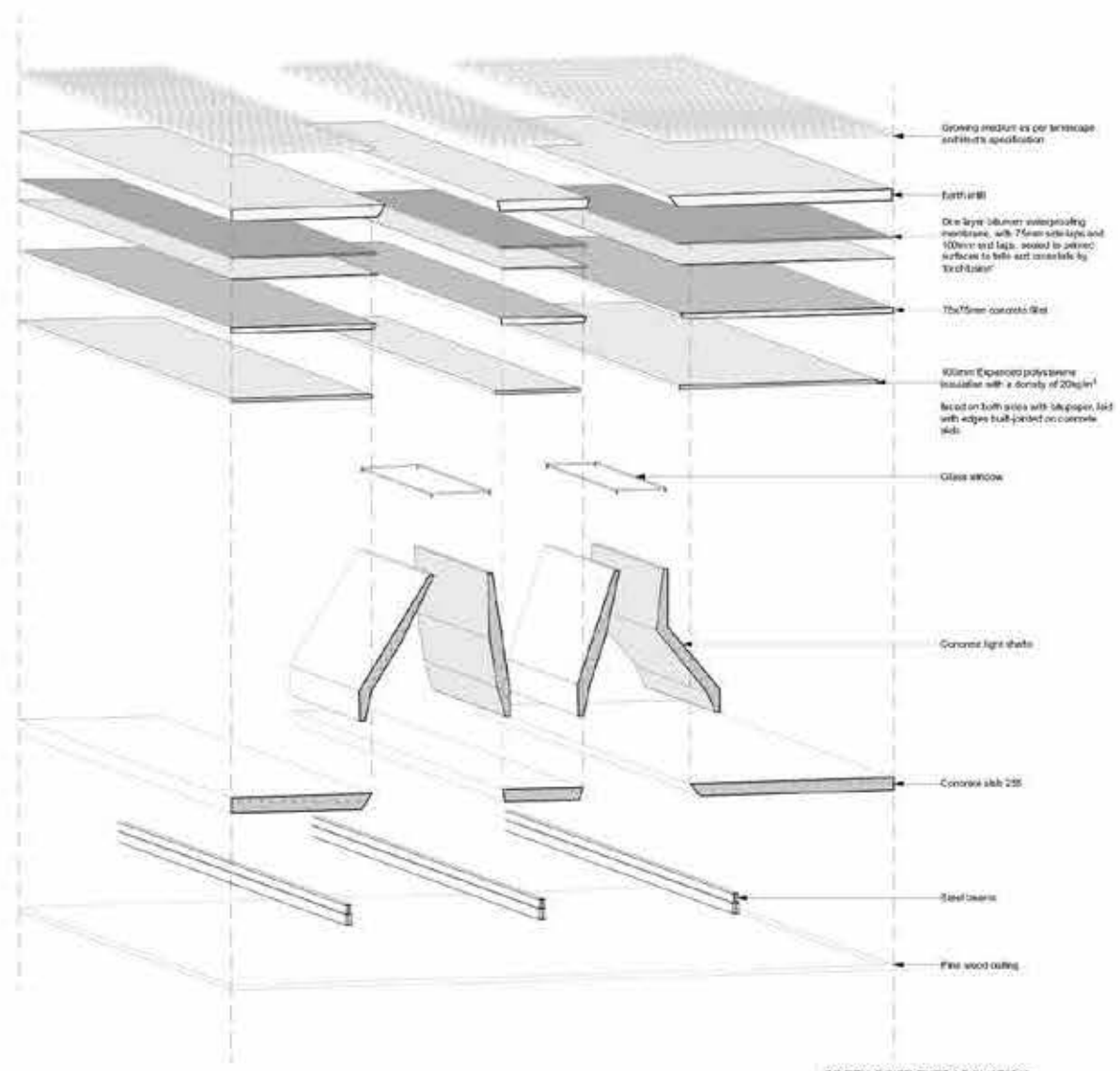
SECTION B
SCALE 1:50



SECTION A
SCALE 1:50

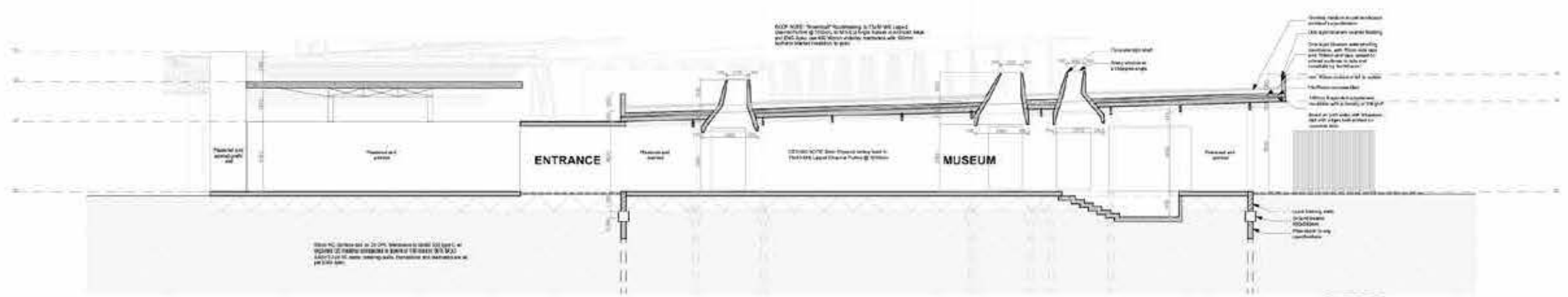
Surfing and the Architecture of the Dream Glide Jeffreys Bay

Drawing: SECTION A, SECTION B Scale: 1:50
DRAWING NUMBER: CONS 1.7



GREEN ROOF EXTRAPOLATION
SCALE 1:50

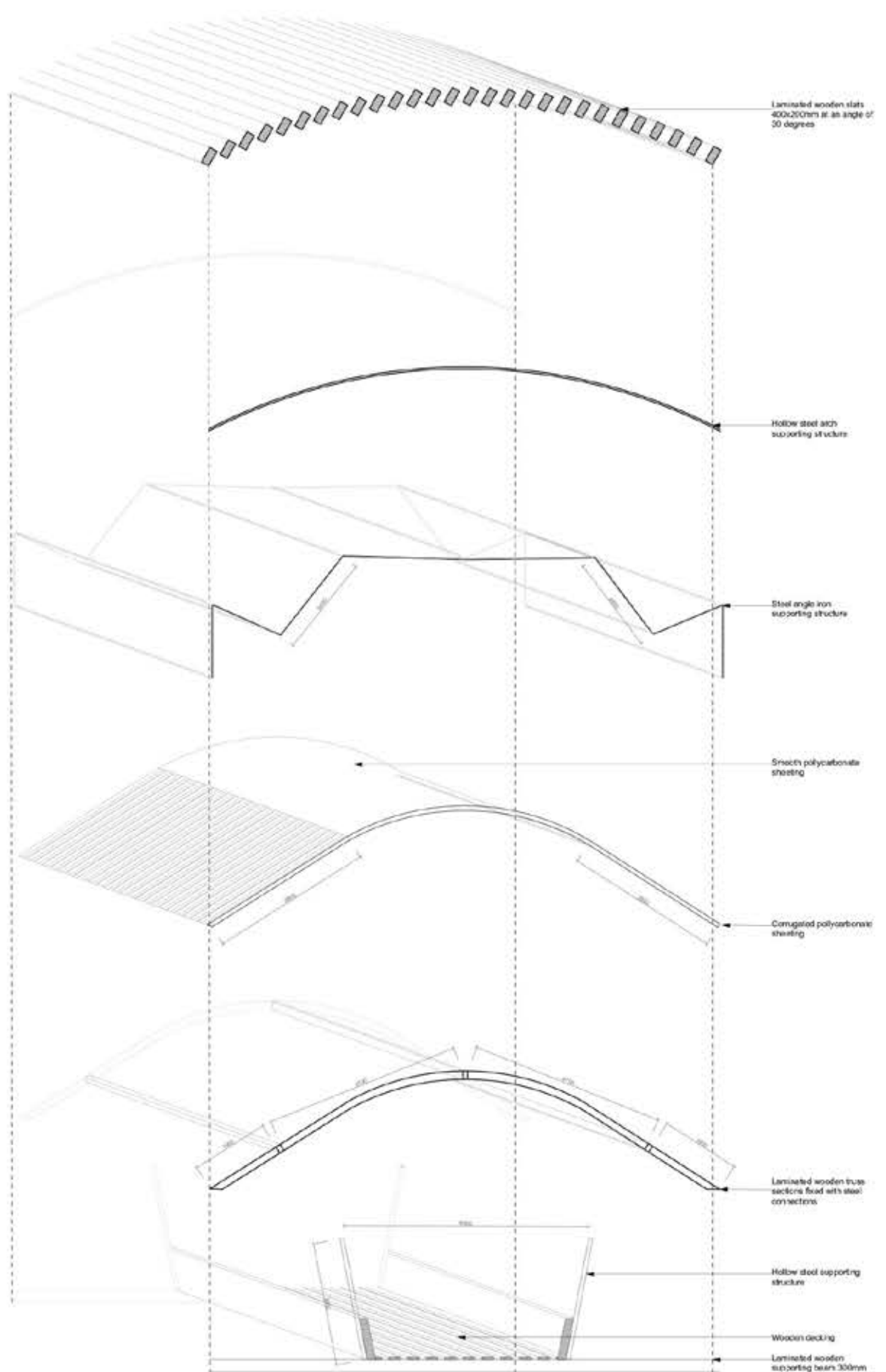
O P Q R S T



SECTION D
SCALE 1:100

Surfing and the Architecture of the Dream Glide

Client: GREEN ROOF EXTRAPOLATION SECTION D
DRAWING NUMBER: GUNS 1A
Stonks & Co. Group
University of the Free State



Laminated wooden slats
400x200mm at an angle of
30 degrees

Hollow steel arch
supporting structure

Steel angle iron
supporting structure

Smooth polycarbonate
sheeting

Corrugated polycarbonate
sheeting

Laminated wooden truss
sections fixed with steel
connectors

Hollow steel supporting
structure

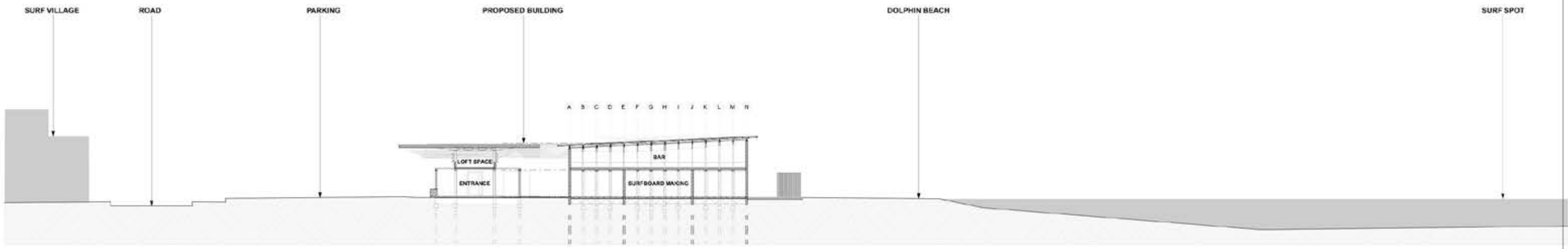
Wooden decking

Laminated wooden
supporting beams 300mm

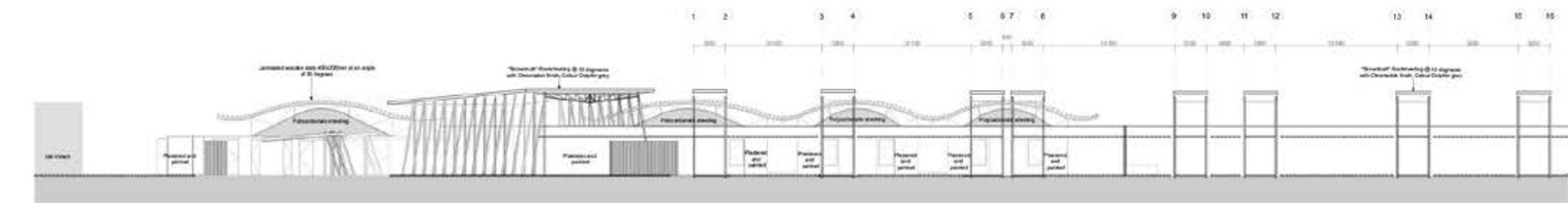
ROOF EXTRAPOLATION
SCALE 1:50

Surfing and the Architecture of the Dream Glide Jeffrey Bay

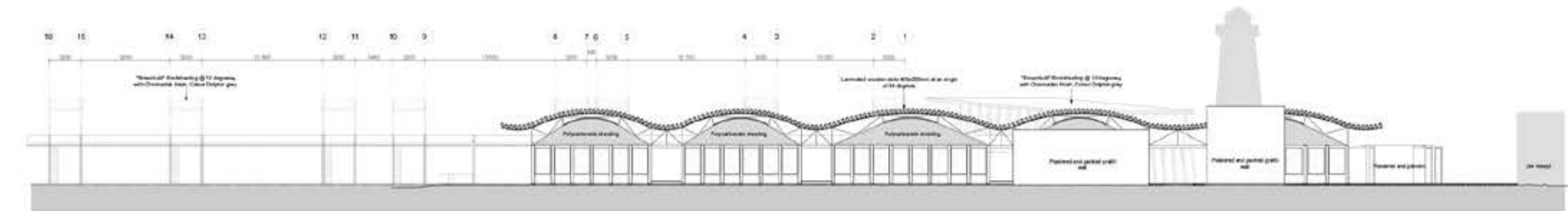
Drawn by:	Scale:
ROOF EXTRAPOLATION	1:50
DRAWING NUMBER:	
CONS 1.10	



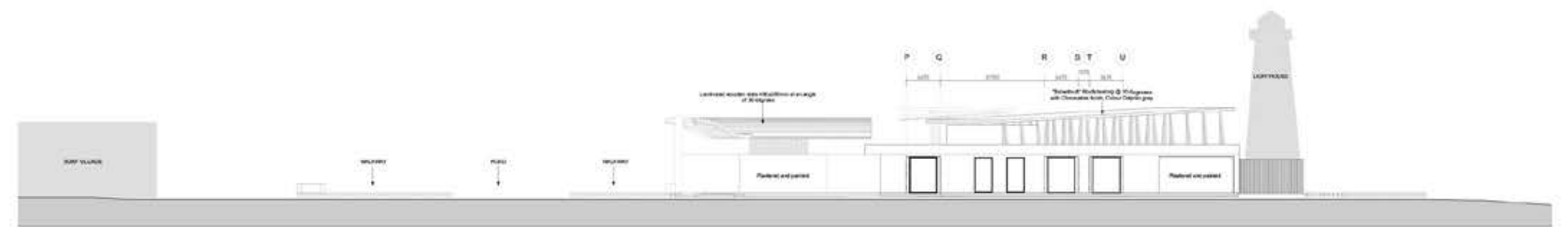
SITE SECTION
SCALE 1:200



EAST ELEVATION
SCALE 1:200



WEST ELEVATION
SCALE 1:200



SOUTH ELEVATION
SCALE 1:200

Surfing and the Architecture of the Dream Glide Jelkeys Bay

Drawing: SITE SECTION, EAST ELEVATION, WEST ELEVATION, SOUTH ELEVATION Scale: 1:200
DRAWING NUMBER: CONS 1.11

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