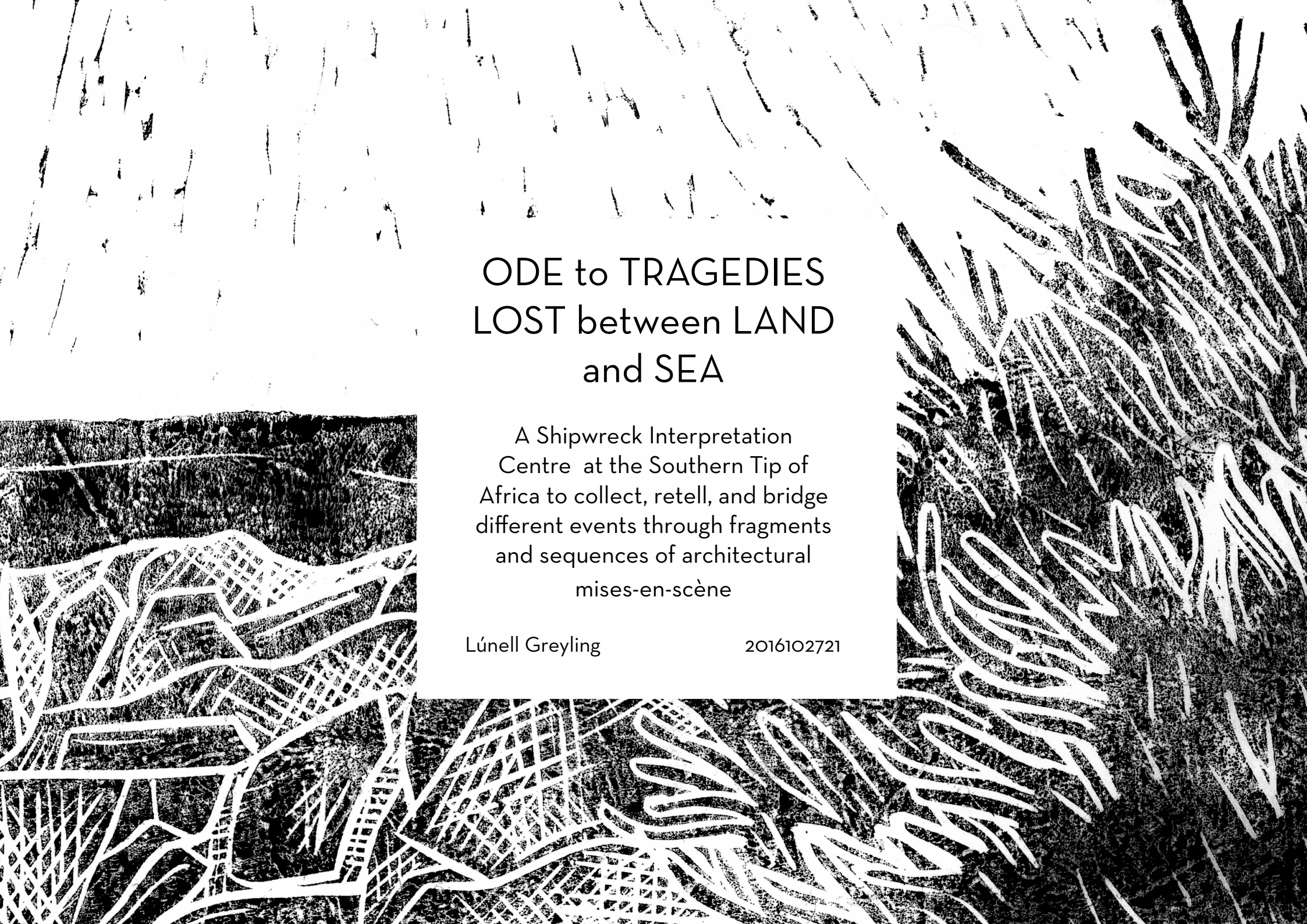

ODE to TRAGEDIES LOST between LAND and SEA

A Shipwreck Interpretation Centre at the Southern Tip of Africa to collect, retell, and bridge different events through fragments and sequences of architectural mises-en-scène

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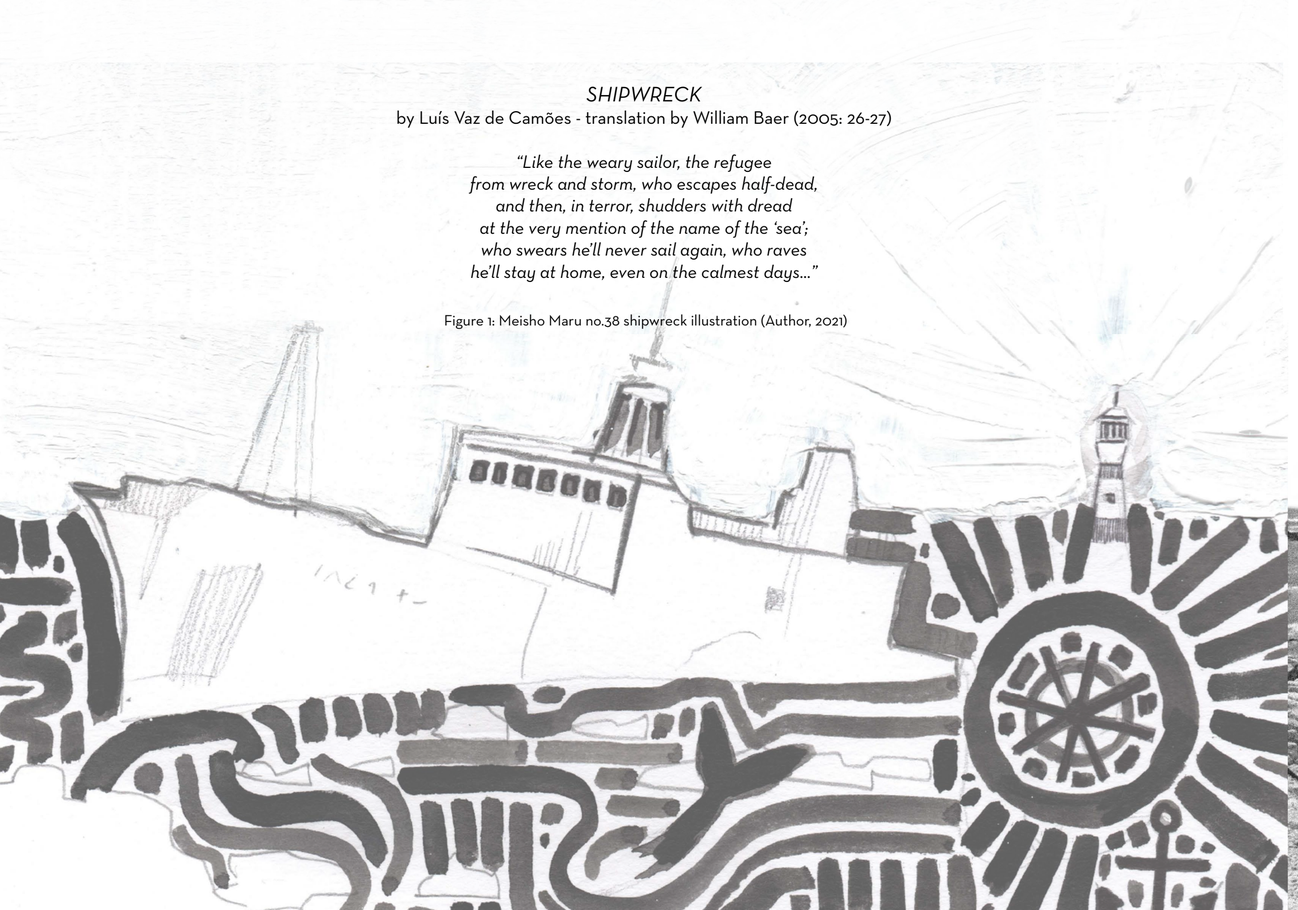
Declaration:
This dissertation is submitted in partial fulfillment of the requirements for the degree **M.Arch.(Prof).** at the **University of the Free State**. The research in this document is my own work, unless stated otherwise.

SHIPWRECK

by Luís Vaz de Camões - translation by William Baer (2005: 26-27)

"Like the weary sailor, the refugee
from wreck and storm, who escapes half-dead,
and then, in terror, shudders with dread
at the very mention of the name of the 'sea';
who swears he'll never sail again, who raves
he'll stay at home, even on the calmest days..."

Figure 1: Meisho Maru no.38 shipwreck illustration (Author, 2021)



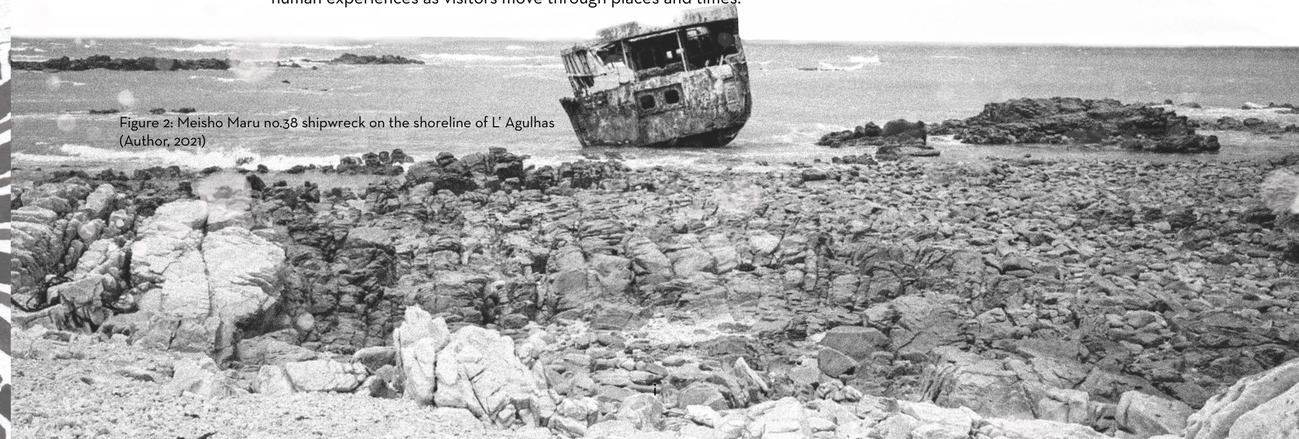
ABSTRACT

The ocean, a vast and mysterious force, sets the stage for tragic shipwreck events around the Southern Tip of Africa. Nearly 3 000 historical shipwrecks of different nationalities met their untimely demise at the hands of the ocean (SAHRA, 2020: online). Some are rooted in the depths of the ocean while remnants of others still protrude the surface of the sea clinging to the land awaiting their end.

Meisho Maru no.38 fishing trawler, em-placed in the scene of the Southernmost Tip of Africa, is an icon in the larger shipwreck narrative caught between land and sea. Time has taken a toll on this icon with each year the memory rusts and fades away, as the ocean finishes what he started on 16 November 1982 (Atlasobscura, 2021: online).

A Shipwreck Interpretation Centre, located next to Meisho Maru no.38 and Agulhas National Park, is proposed to preserve and recount forgotten shipwreck tragedies. The strong film quality of the setting inspires an intervention that builds on the experiential cinematic elements, creating architecture that tells a story. The Shipwreck Interpretation Centre, funded by SAN Parks, proposes sequences of architectural mises-en-scène which articulates both the dualities between and interconnectedness within human experiences as visitors move through places and times.

Figure 2: Meisho Maru no.38 shipwreck on the shoreline of L' Agulhas (Author, 2021)



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STAGING THE RESEARCH FRAME

My interest in the tragedy of human experiences, as told by shipwrecks, stems from an engulfing personal encounter I had at Cape Agulhas. Standing on the coastal ridge of the Southern tip of Africa, I saw in front of me the wreck of the Meisho Maru No. 38 (figure 3), a small Japanese fishing vessel. Anchored on a rocky outcrop, like a small island just of the land but mysteriously connected to the land, it was surrounded by sea. So close to the ground I was standing on and at the same time unreachable without entering the sea, the shipwreck simultaneously appeared as a bridge between land and sea, while articulating the duality between these two very different places. Not only did the coinciding closeness-distance of the wreck connect and disconnect distinctive places, but also made me aware of the familiarity and strangeness inherent to time.

In part, the ruin preserved a specific time, a date: 16 November 1982 when the Meisho Maru No. 38 run aground. That moment in a storm with 17 people struggling to swim to the coast was ultimately very different from the moment I stood looking at the wreck, and moving over the landscape towards the ruined object (Atlasobscura, 2021: online). Yet, in the presence of the mise-en-scène created between land and sea, marked by this shipwreck, I found myself able to imagine an experience in empathy with the survivors; transported back into time and place, reliving a scene or event, precisely because of the stage set up by the wreck at Cape Agulhas.

I asked myself... How can architecture serve the same function as the wreckage, how can it bring experiences closer or remove experiences, how can architecture act as a mimetic tool, just like the scene created by Meisho Maru No.38 em-placed against the backdrop of a specific meeting of land and sea, to amplify and/or bridge differences in place and time through the movement in space?

Considering the mystery, which the decaying shipwreck holds as a vessel of the memories of the past - stranded in the in-between - the following question presented itself: is it important to employ architecture at all to collect, retell and bridge shipwreck events? Is the image of the wreckage, a symbol of interpretation without any explanation, not what draws us to its presence?

Figure 3: Meisho Maru shipwreck caught between land and sea (Author, 2021)



This question lead me to realize that: yes the ruin of what once was, memories lost in time, alludes us to remissness on the past. I realized how little I know of the Meisho Maru No. 38 or for that matter, by extension, how little most of us probably can recall of the tragedies of shipwrecks as such. But if there is nothing to hint at what once was we would never think twice about the tragedies lost at sea. Preserving these memories is therefore important that the history can be re-experienced and remembered.

My first premise is that it is important to collect and retell tragic events. The second that in being em-placed and embodied within scenes and moving through scenes allow a visitor to imagine the experience closer. To become more aware of the dualities and interconnectedness of place and time, and human experiences of such dualities and their interconnectedness.

From this personal experience, I formulated the leading theme of this research, written into my master's subtitle:

A Shipwreck Interpretation Centre at the Southern Tip of Africa to collect, retell and bridge different events through fragments and sequences of architectural mises-en-scène.

By extending this subtitle, the aim of this design project is explored:

This theme and aim attempts to **preserve and recount forgotten shipwreck tragedies through sequenced architectural mises-en-scène which articulates both the dualities between and interconnectedness within human experiences as visitors move through places and times.**

The dual theme and aim may subsequently be reformulated into the following problem statement and research question.

PROBLEM STATEMENT:

If many tragedies
of shipwrecks are lost to
memory;
if being part of the stage of a tragedy
allows us to experience the dualities and
interconnectedness of events; and
if architecture is the curation experiences
though fragments and sequences of scenes;
then architecture as fragments and sequences of mise-en-scène can situate us experientially on the stage of a tragedy and
allow us to collect and retell lost
tragic stories

RESEARCH QUESTION:

How can architecture employ
a series of experiential cinematic
scenes to
interpret, frame, and preserve
shipwreck events?

While the wreckage is the main driver for this project, the unique positioning of the site extends the viability of the scheme as there is a link with Agulhas National Parks owned by SAN parks shown in figure 4. The development of a Shipwreck Interpretation Centre, that conserves the cultural heritage of Agulhas, supplements the mission statement of SAN parks for Agulhas National park:

"To implement and promote the conservation and sustainable use of the globally unique terrestrial, freshwater and marine biodiversity and cultural heritage of the Agulhas Plain. Building on the spirit of place of the Southernmost Tip of Africa, to unlock benefits together with local communities, now and in the future". (San Parks, 2020: 39)

The proposed site as well as the Park lies on the Agulhas Plain in the Overberg region of the Western Cape. The park is west of L' Agulhas and also the location of the Southern Tip of Africa and Agulhas lighthouse (San Parks, 2020: 16-26).

The proposed site, shown in figure 4, which forms part of SAN park's short-term expansion is outside of the national park in a buffer zone which is currently at the hands of the Agulhas Municipality.

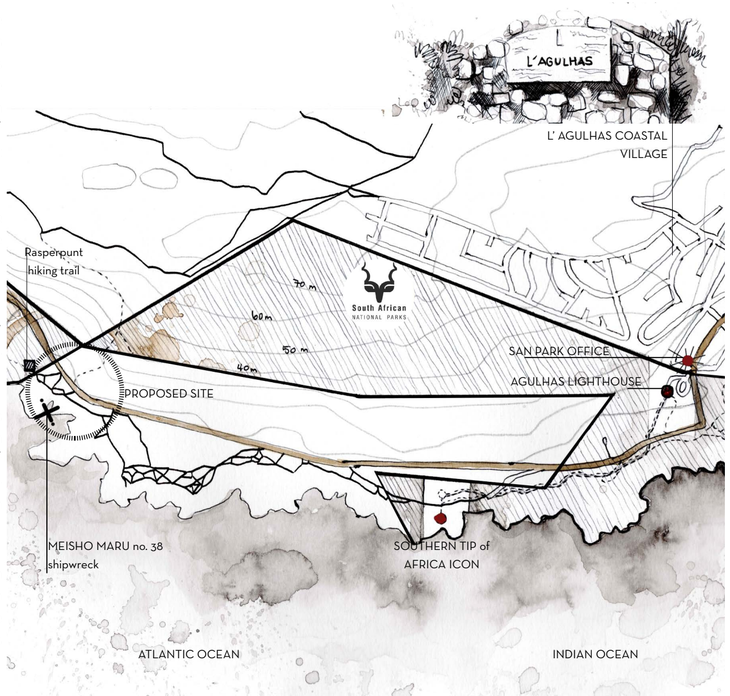


Figure 4: Map illustrating the location of icons in Agulhas, Meisho Maru shipwreck and SAN parks (author, 2021)

The site is adjacent Rasperpunt hiking trail which forms part of Agulhas National Park which together with The Southern Tip of Africa monument attracts many day visitors that creates an opportunity for the development of another tourist attraction which can benefit the local community of Agulhas and SAN Parks.

Given this unique setting of the site, this dissertation accepts that SAN Parks is the best client for the Interpretation Centre. The Shipwreck Interpretation Centre can then accommodate a SAN Park visitor's reception with hikers orientation which links with Rasperpunt Hiking trail and administrative facilities which allows the functional needs of the park to be accommodated while still including experiential spaces. The existing SAN Park office is situated outside the park adjacent the lighthouse (figure 4). The addition of an office more integrated into the park and closer to the hiking trails creates easier access for day visitors who wants to obtain information and permits for the Rasperpunt hiking trail.

Within my research focus, the design project centers on staging the fragments and sequences of different INTERPRETATION SPACES (experiential pavilions), which emplace and embody the visitor within the narrative of the tragic shipwreck events. The interpretive space's connection with the shipwreck becomes important as the ruin should be honoured seeing that as it can soon be washed away and disappear from memory.

Walkways and raised boardwalks become these dynamic connection spaces linking the Agulhas National Park Visitors Centre, and shipwreck interpretive pavilions with the Agulhas National Park and Meisho Maru Shipwreck

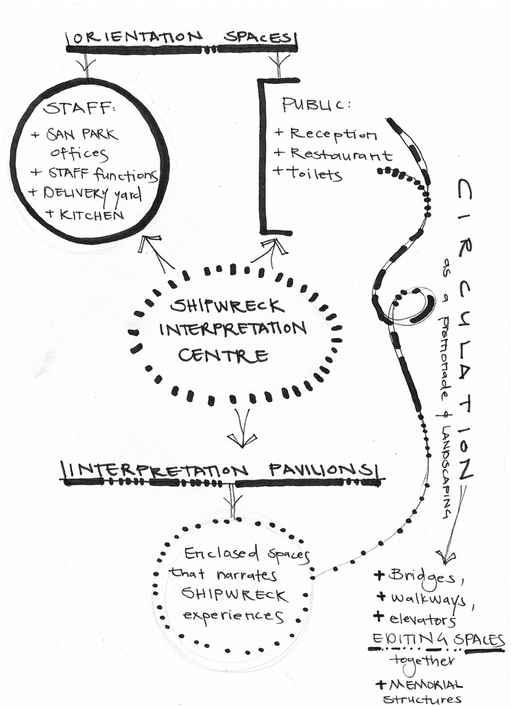


Figure 5: Interpretation Centre program (Author, 2021)

SITING the CONCEPTUAL REACTION

Chapter ONE tells and interprets the cinematic quality of the prefigured scene within which the project is set. This aids in the understanding of what influences the feeling of the place and acts as a first attempt at a conceptual reaction.

SITUATING CONCEPTS and IDEAS

Chapter TWO serves as the theoretical underpinning, which investigates and interprets architecture as cinematic spaces. The theoretical concept develops a better understanding of an experiential quality within different cinematic shots and how it can be translated into architectural spaces to convey a certain narrative.

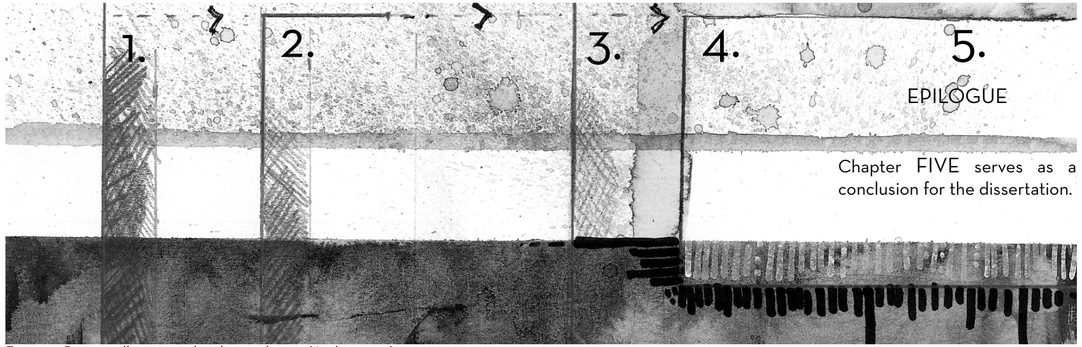
Investigating the TYPOLOGY, MORPHOLOGY and TOPOLOGY

Chapter THREE analyses the macro, mezzo, and micro environment together with architectural precedents which inspire and influences the design. This investigation attempts to develop an appropriate understanding of the topology, morphology and typology.

RETELLING EVENTS through ARCHITECTURAL SCENES

Chapter FOUR synthesizes the previous chapters to develop architectural mise-en-scenes towards a final proposal and technical resolution.

This chapter aims to merge theory, design, and construction in a symbiotic relationship in to create a Shipwreck Interpretation Centre.



Chapter FIVE serves as a conclusion for the dissertation.

Figure 6: Diagram illustrating the chapter layout (Author, 2021)

RESEARCH TOOLS:

The research tools aim to address the problem statement and answer the research question. These tools are used throughout the chapters to reach a design solution that interprets, frames and preserves shipwreck events. The research tools include:

CHAPTER 1 :
- A photo analysis supplemented by factual information of the places in Agulhas influence the feeling of the place and specific site.
- Touchstone and conceptual analysis of the place which captures the essence of the project and the site, which develops the theoretical ideas of the project.

CHAPTER 2:
- Literature review and interpretation of cinematic elements and techniques that serve as a theoretical underpinning for design and construction decisions.

CHAPTER 3:
- Site analysis that investigates the macro-, mezzo- and micro influences of the site that influences the design and construction.
- Architectural precedent analysis that pertains to theory, design and construction further reinforce decisions made in the design process.

CHAPTER 4:
-Design and construction exploration sketches and models which are used to reach the final design proposal.

CHAPTER ONE

SITING the CONCEPTUAL REACTION

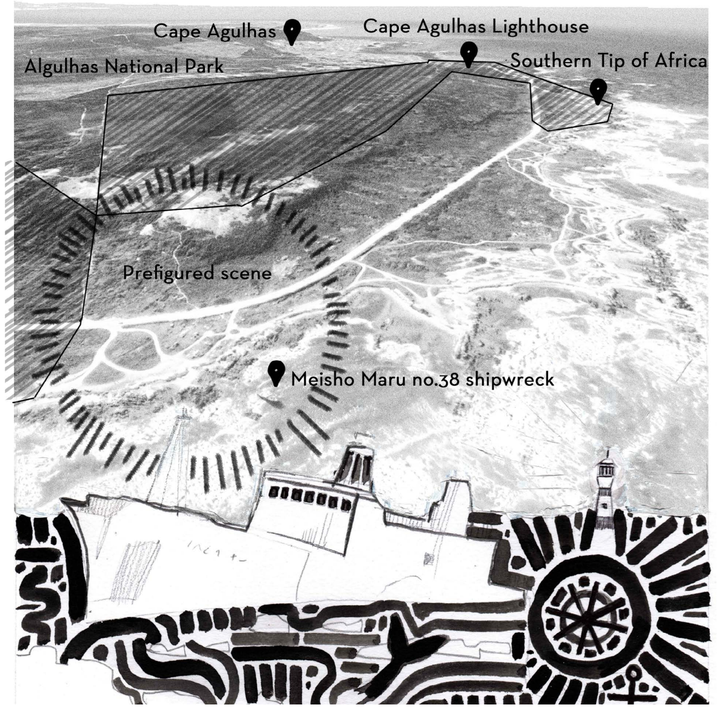
Telling and Interpreting the CINEMATIC QUALITY of the PREFIGURED SCENE

Figure 7: Aerial image of the prefigured scene (Google earth, 2021: online. Adapted by author)

The prefigured scene understood as the proposed site of the Shipwreck Interpretation Centre before my intervention, is located between the Agulhas National Park and the sea overlooking Meisho Maru no.38 Shipwreck. The prefigured scene stretches from the coastal mountain over the R319 gravel road towards the Meisho Maru shipwreck and the sea. The R319 does not only divide the site but also connects it with Cape Agulhas, the Cape Agulhas Lighthouse, the Southern Tip of Africa, and Agulhas National Park. All these places and landmarks become important to the overall feeling of the place.

The feeling of Cape Agulhas, in my opinion, is based on the visual experience gathered in the sensory experiences moving in and through the place. It has a cinematic quality about it where each view becomes a scene framing the feeling of the place. No text or audio tells you how to feel. The climate, land, sea, man-made and in-between sets the scene for interpretation allowing the viewer to react and feel certain emotions.

Extracting and interpreting these experiences allows for a conceptual reaction that listens and reacts to the spirit of the place.



IDENTIFYING THE PREFIGURED SCENE

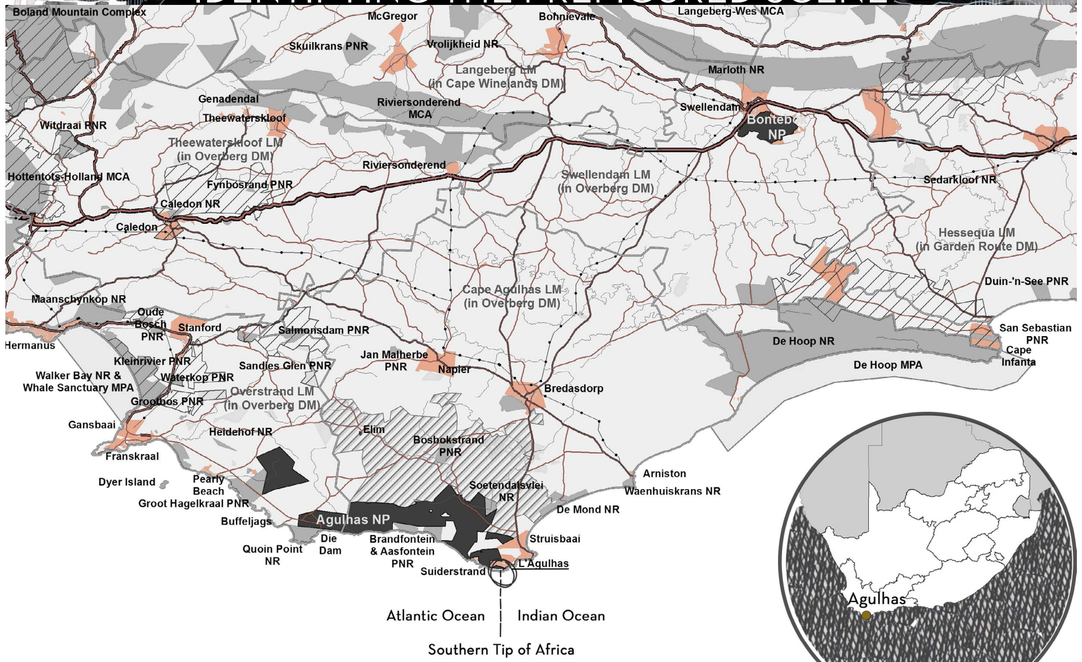


Figure 8: Prefigured scene located in Agulhas, Western Cape (San Parks, 2020: 159. Adapted by author)

INTERPRETING THE PREFIGURED SETTING

The Agulhas plain has an exceptionally rich archaeological history. Remnants of Khoe-San settlements can be found along the coast including stone hearths & pottery, shell middens, and ancient fish traps (San Parks, 2020: 16-26). The extraordinary winds along the Southern tip of Africa lead to a graveyard of ships in the region (San Parks, 2020: 16-26).

The shipwrecks lead to the development of the coastal area as the shipwrecks survivors settled in the coastal village:

'*The shipwrecked strangers from the sea, whether they were the Phoenicians, Chinese or Europeans, left behind a heritage in the form of specific skills, naming of places, building material and intermarriage with the local people*' (San Parks, 2020: 16-26).

The shipwrecks played a significant role in the region and influenced the vernacular style and other landmarks in the area. Interpreting these landmarks becomes important to the dissertation as it forms part of the history of the place.



Figure 9: Interpretive sketch of the development of Agulhas (Author, 2021)

HOTAGERKLIP FISHERMAN COTTAGES - Vernacular architecture

Fisherman cottages are located at Hotagterklip in Struisbaai, Western Cape (Artefacts, n.d: online). Struisbaai forms part of the Overberg region part of the greater Agulhas context. Stone structures are dominant in the region and they relate rocky coast and limestone outcrops.

The form-giving of the structure draws on the typical Cape Dutch gable with the fireplace extending past the top of the gable. The stone walls are more exposed towards the base grounding the structure. The whitewash finish on the exterior gets more towards the gable creating contrast between the wall and the roof.

Between the grass-covered rocky landscape, the white buildings appear as contradictory figures. Depending on different times of the day, seasons, and the light quality these white figures may seem growing from the landscape or as ghost ships drifting above the earth.

This vernacular architecture prefigures the design intervention, acting as an already-there order, form, and type, associated with the contexts.



Figure 10-13: Fisherman cottage interpretations (Author, 2021)

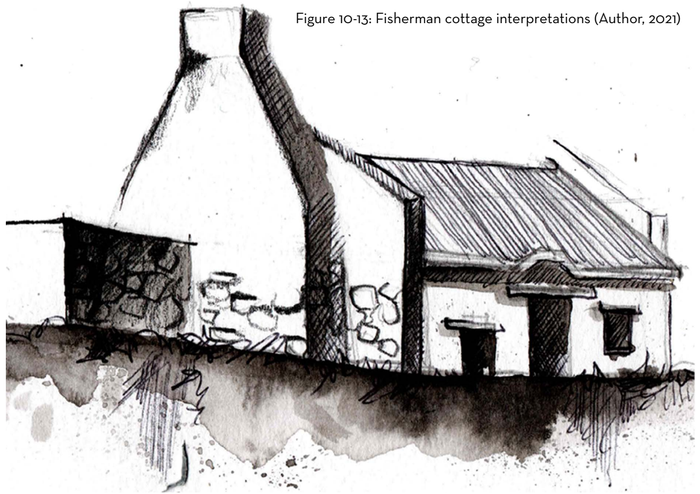




Figure 14: Perspective of Fisherman cottages (Author, 2021)

CAPE AGULHAS LIGHTHOUSE- Colonel CC Mitchell (1847)

The Cape Agulhas Lighthouse is the second oldest lighthouse in South Africa and it was designed by Colonel C.C. Michell in 1847. The lighthouse was declared a provincial heritage site in 1973 (San Parks, 2020: 16-26).

The lighthouse was constructed to guide ships around the Tip of Africa and ensure safe passage. The lighthouse beam of hope and safety was however no match for the strong current and rocky coast of Agulhas and it could not save the Meisho Maru from its impending doom. The lighthouse is till present an icon in Agulhas as it reaches past the coastal mountains towards the sky.

The Agulhas lighthouse connects to the Southern Tip of Africa with a kilometer-long raised timber boardwalk that leads visitors along a visual journey.

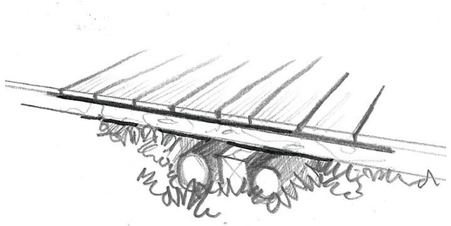


Figure 15: Raised boardwalk (Author, 2021)



Figure 16: Sketch of Agulhas Lighthouse (Author, 2021)



Figure 17: Image of lighthouse in the Agulhas context (Author, 2021)

SOUTHERN TIP of AFRICA ICON- Agulhas Icon Design Group (2019)

The Southern Tip of Africa is another landmark in Agulhas as it is where the Atlantic and Indian ocean meets. A sandstone (23 October 1986) monument commemorates this meeting point (Xplorio, n.d: online).

Due to the monument not being visible to tourists an additional icon was built in 2019 that was designed by the Agulhas Icon Design Group. The landscaped project links with the monument to celebrate the southern tip of Africa (Henegan, 2019: online). The icon consists out of a sculpted relief of the map of Africa that measures 18m in length with a weathered steel shard pointing South (figure 20). The map of Africa is surrounded by low sandstone curved walls that blend into the surroundings and allow for visitors to gather (Henegan, 2019: online). It not only becomes a space where two oceans meet but also where people come together and celebrate the natural elements.

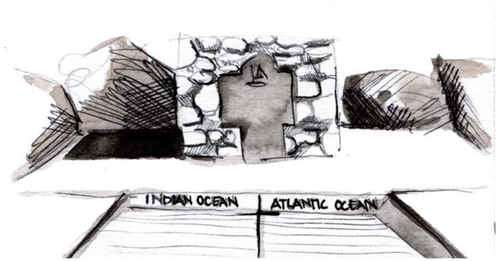


Figure 18: Tip of Africa monument (Author, 2021)

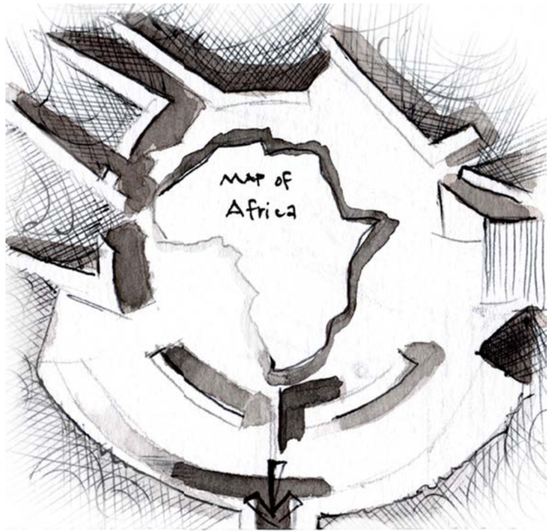


Figure 19: Tip of Africa Icon from above (Author, 2021)

Figure 20: Image of Tip of Africa icon from eye level (Author, 2021)

MEISHO MARU no. 38

The Meisho Maru shipwrecked, 16 November 1982, on the Agulhas shoreline (Xplorio,n.d: online) is another landmark in the region and the main inspiration for the project. The shipwreck is one of the last visible shipwrecks on the Agulhas shoreline.

The extreme forces of the ocean combined with strong winds, rocky reefs, primitive navigational technology, and inaccurate maps lead to the graveyard of ships (Grootbos, n.d: online). The Meisho Maru shipwreck can be argued to be an icon of all these shipwrecks scattered along the coast as it is firmly anchored at the location of the Southernmost tip of Africa where the Indian and Atlantic oceans meet. It finds itself at the meeting point of the tip of Africa and the two oceans.

The shipwreck is caught between land and sea left behind by the 17 survivors falling into disuse and decay. The rear section of the shipwreck has already been claimed by time and the ocean, like the memories and narratives of all these wreckages the Meisho Maru is at risk of becoming just another memory lost at sea. The Southern Tip of Africa Icon re-articulates the point where the two oceans meet a Shipwreck Interpretation Centre can re articulate the memories of Meisho Maru and the symbolism it holds.



Figure 21: Illustration of Meisho Maru Shipwreck (Author, 2021)

Figure 22: Close up of Meisho Maru no. 38 Shipwreck (Author, 2021)

SOUTHERN TIP of AFRICA SHIPWRECKS

The Interpretation Centre aims to commemorate the multiple instances of shipwrecks around the tip of Africa. The Meisho Maru acts as a mimetic icon, anchoring the tragic memories of vessels that cannot be seen from the coast. Nearly 3 000 historical shipwrecks of different nationalities are scattered around the coast of the Cape (SAHRA, 2020: online). The shipwrecks are classified under the four different categories of vessels namely Sailing, Steam, Motor, and Fishing Vessels:

1. Sailing Vessels Shipwrecks

Sailing vessel shipwrecks include barque, schooner, brig, full rigged ship, hooker, brigantine, cutter or sloop types of ships. Some of the sailing shipwrecks according to South African Heritage Resources Agency (Moss, 2005 : online) includes:

Name (Date wrecked) | Nation | Area wrecked
Zoetendal (08\23\1673) | Dutch | Struis Bay
Meermin (02\22\1766) | Dutch | Agulhas
Joanna (06\08\1682) | British | 19km west of Agulhas
Juno (03\02\1852) | Dutch | Agulhas Point

Figure 23: Commodoro II (1946) | United Stated | Milnerton (Flax, 2020: online)



2. Steam Shipwrecks

Steam shipwrecks include tug, lighter, tramp or mailship ships. Some of the Steam shipwrecks according to South African Heritage Resources Agency (Moss, 2005: online) includes:

Name (Date wrecked) | Nation | Area wrecked
Birkenhead (02\26\1852) | British | Birkenhead Rock
Hektor (03\23\1913) | Norwegian | South of Dyer Island
John Patterson (06\01\1906) | British | Off Kogel Bay
Soeptre (05\22\1925) | British | Northumberland Point (Struis Bay)
Queen of the Thames (03\18\1871) | Australian | Ryspunt (Arniston)

Figure 24: SS Clan Stuart (1914) | British | Simon's Town (Flax, 2020: online)

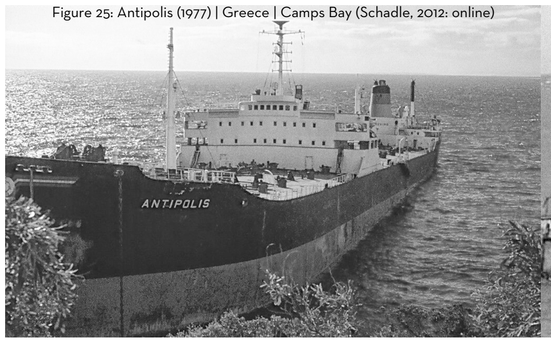


3. Motor Vessel Shipwrecks

Motor vessel shipwrecks include cargo ship, coaster, salvage vessel or oil tanker ships. Some of the motor vessel shipwrecks according to South African Heritage Resources Agency (Moss, 2005: online) includes:

Name (Date wrecked) | Nation | Area wrecked
Felicia II (01\04\1973) | unknown | Danger Point
Frontalini (01\01\0975) | unknown| Danger Point
Stromgans (01\01\1975) | unknown | Danger Point
Imp (06\04\1920) | South African | Hangklip
Otori Maru 8 (03\19\1984) | unknown | Near Quoin Point
Diana (01\26\1961) Quoin Point
Wafra (03\12\1971) | American | Off Cape Agulhas
Esso Wheeling (11\05\1948) | American | The Point
Oriental Pioneer (07\22\1974) | Chinese | Northumberland Point

Figure 25: Antipolis (1977) | Greece | Camps Bay (Schadle, 2012: online)



4. Fishing Vessel Shipwrecks

Fishing shipwrecks include Trawler ships. Some of the fishing shipwrecks according to South African Heritage Resources Agency (Moss, 2005: online) includes:

Name (Date wrecked) | Nation | Area wrecked
Andre Hugo (10\16\1994) | South African | 11km south of Agulhas
Boela (06\15\1905) | unknown | Off Danger Point
Una (05\01\1929)| South African | Sony Point
Zuiderkruis (10\01\1959) | South African | Walker Bay
Zuidam (02\09\1990) \ South African | West of Stuis Point (Agulhas)
Bella Gambi (08\01\1974) | South African | Cape Infanta
Hannington Court (07\14\1941) | British | 10 Miles off Dyer's Island

Figure 26: Meisho Maru 38 (11\16\1982) Japanese | Beyond lighthouse (Agulhas) (Flax, 2020: online)



QUALITY of PREFIGURED SCENE

The prefigured scene that overlooks the shipwreck and sea, into the horizon has a strong cinematic quality. The existing hiking trail that travels up the coastal mountain takes the viewer on a journey. At the lower part of the trail large limestone rocks hide the shipwreck with glimpses where steel parts are visible beyond the rocky outline. With the journey up the hill, the shipwreck becomes more visible and starts to look small and fragile in contrast with the vastness of the sea as can be seen in figure 29 that frames the scene.

The fynbos layer over the limestone rocks mimics the shipwreck as it also floats, but not on water, rather on sandstone mountains. Protruding limestone outcrops create moments of solidity within the porosity of the fynbos blanket. The shipwreck, like the fynbos, is porous in a sense as time has weathered its once-solid exterior.

Dualities between the materiality of different forces are very present in the prefigured scene and contribute to the sense of place. Extracting the essence and spirit of the place through the touchstone and concepts develops the main conceptual ideas that will support the design process.

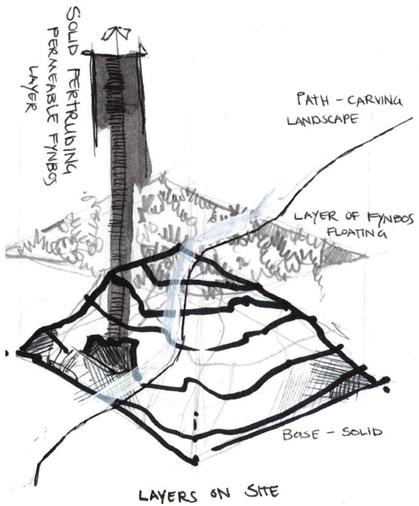


Figure 27: Sketch showing quality on site (Author, 2021)



Figure 28: Materials on site (Author, 2021)

Figure 29: View from the top of the hiking trail overlooking the shipwreck (Author, 2021)

TOUCHSTONE

The touchstone explores the essence of the site and the project which is to pull apart and extract the rich history of the place; to give back meaning to the shipwreck that has lost its purpose through its stagnancy. It aims to celebrate the voice of the place caught between land and sea, linking the present with the memories of the past. The human act of movement and the landscape as an actor with verticality, horizontality, sea, earth and wind setting the stage for the temporal em-placed event.

The BASE represents the limestone hills that form the base that stories and memories get carved into.
The MECHANISM and CHAIN act as a pulley that draws all the elements apart to extract the narratives embedded between land and sea.

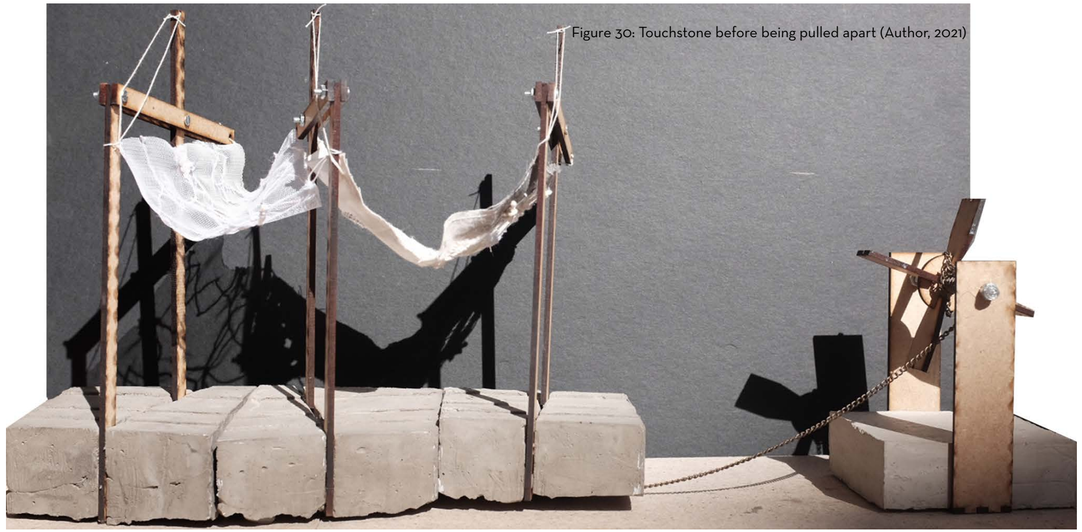


Figure 30: Touchstone before being pulled apart (Author, 2021)

The STRUCTURE connects the memories to the specific place, without it the narratives will only float and not be grounded in place. The WOVEN TEXTILES narrates the history of the shipwrecks. It tells the story of search, wreckage, disconnect, redevelopment and decay that shaped the Agulhas Plain. The LIGHT illuminates the stories suspended like sails of a ship, creating shadows that make them visually tangible. It showcases the history of the place that has been extracted through the process of pulling the existing apart.

The touchstone, therefore, acts as a catalyst that listens, interprets and retells the narratives that are becoming lost in time.

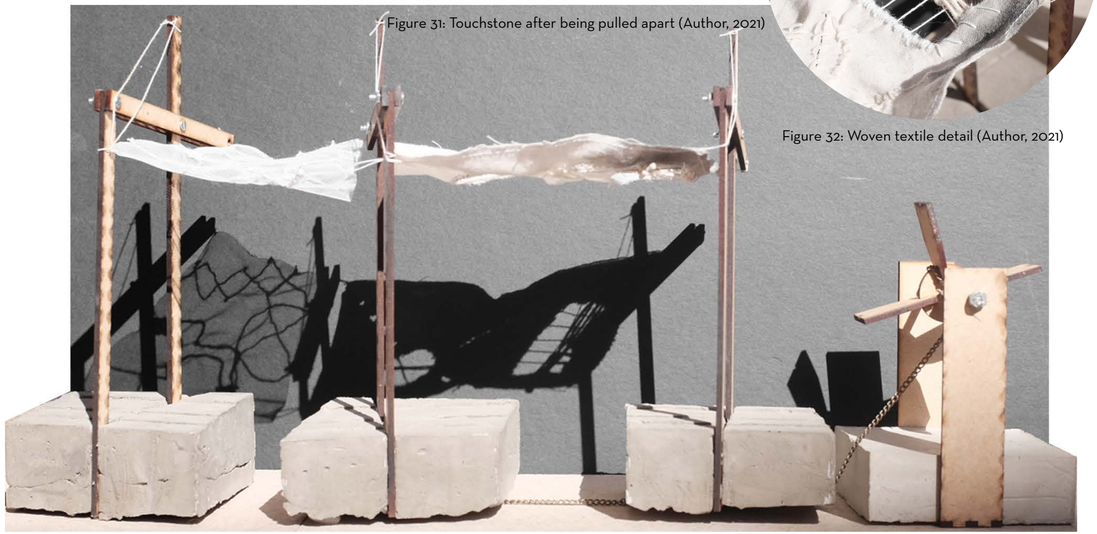


Figure 31: Touchstone after being pulled apart (Author, 2021)



Figure 32: Woven textile detail (Author, 2021)

CONCEPTUAL DEVELOPMENT

The conceptual ideas further narrate and interpret the quality of Cape Agulhas and how it can be linked to the essence of the dissertation extracted in the touchstone. The three concepts draw on different qualities on-site to find a way to best celebrate the lost voice of the shipwreck caught between land and sea through architectural elements.

1. TENSION between the POLARITIES of PLACE

The coastal village of Cape Agulhas that becomes the setting for the project has many polarities that influence it. These polarities are for example between the village grid and the nature reserve, land and sea, above water and below water, heavy and light. The concept draws on the tension between these polar forces to create a balance that respects the dualities rather than working against them. It further explores the notion of cause and effect. The natural environment has a big impact on the architectural outcome. The man-made structure has to react to the natural environment to create a symbiotic relationship between nature and architecture.



Figure 33: Sketch of concept 1 (Author, 2021)



Figure 34: Images of concept 1 model (Author, 2021)

2. The DIALOGUE BETWEEN LIGHT and SHADOW

Light plays an important role in the history of the place as it relates to the shipwreck. Light was used as a guiding element to lead ships to their safety. The concept plays on the dialogue between light and shadow. The one cannot exist without the other, structures and void become a way to mould light and shadow to create texture and articulate spaces. The concept further explores how light and shadow can be used on site to allow for movement and the feeling of safety in the exposed coastal plain

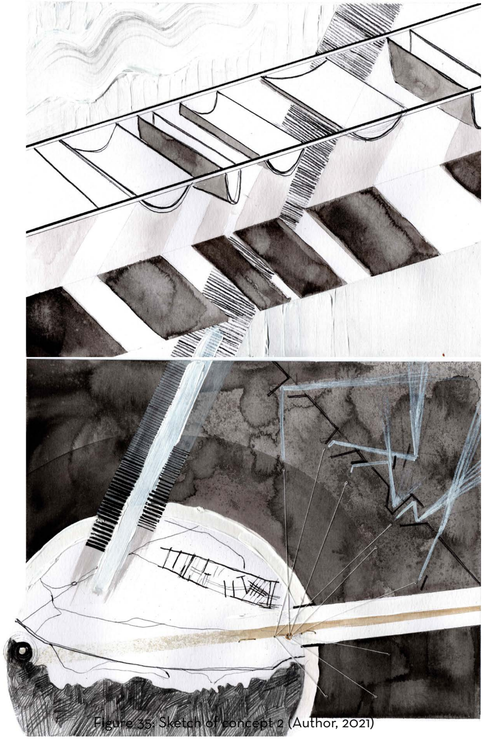


Figure 35: Sketch of concept 2 (Author, 2021)



Figure 36: Images of concept 2 model (Author, 2021)

3. BRIDGING the MAGICAL REAL SPLIT

The wreckage on site becomes a symbol of the memories lost at sea and all the mystery and magic it possesses. The concept explores the idea of bridging the magical real divide. The limestone outcrops that protrude through the fynbos blanket become an anchor point that starts connecting the magical and the real. It creates a solid base on where the narrative can be constructed upon. The real environment is very concrete and dematerializes towards the ruin to indicate the passage of time.



Figure 37: Sketch of concept 3 (Author, 2021)



Figure 38: Images of concept 3 model (Author, 2021)

STRUCTURAL TOUCHSTONE

The structural touchstone explores ways of telling a story through “making” in the complex coastal environment. The different parts of the structure react to the environment and act as ways to embody the narratives of the place and the wreckages. The assembly and connection of the different elements further explore the concept of architecture as cinematic spaces, to create a structural language that relates to the theory.

The sandstone foundation walls mimic the limestone outcrops and act as the base onto which the narrative will be connected. It becomes the real and tangible elements that create stability and root the design in the specific setting. The foundation walls edit the different spaces and becomes a promenade element as it starts to emphasize routes that relates to the existing limestone route up the site. The timber structure latches onto the base becoming the magical element which is in contrast to the solidity of the foundations, cross bracing will however be necessary to support the structure against the strong winds in the region. The morphology of the timber structure relates to the masts of wooden sailing vessels creating a link between the structure on the land and those wrecked at sea. The infill boxes create the mise-en-scènes that capture the experiences of the shipwrecks lost at sea.

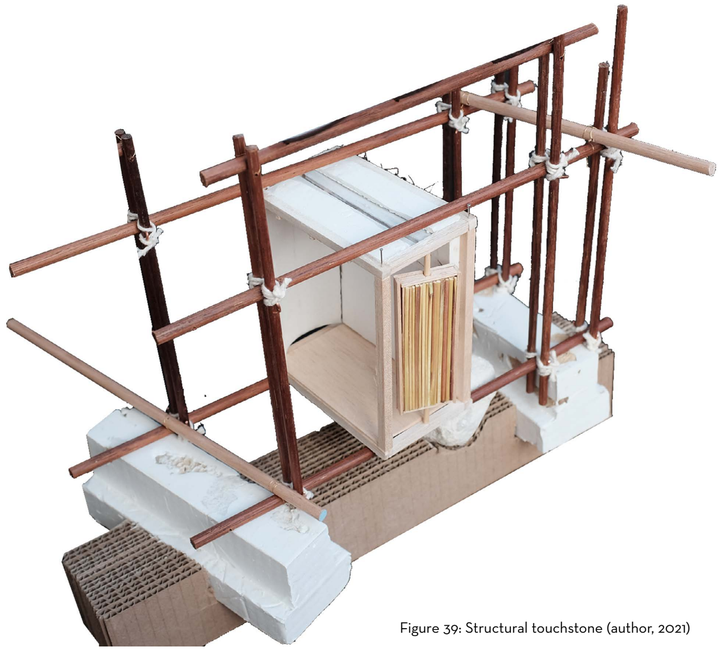


Figure 39: Structural touchstone (author, 2021)





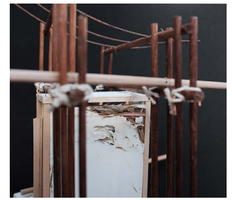


Figure 40: Images of structural touchstone parts and details (author, 2021)

The structural system is not overly complicated similar to the rudimentary fisherman cottage. The complexity lies in the material choices, detailing of internal elements and how openings are treated to allow in different types of light to create certain atmospheres. The materiality and construction methods are mostly derived and reinterpreted from structural elements in the region:

1. The sandstone foundation walls are inspired by the Southern Tip of Africa Icons low sandstone walls.
2. A braced timber structure relates to the raised timber boardwalks, the timber structure latch onto the foundation walls and supports the infill boxes that frame spaces.
3. The infill boxes use elements like the sandstone walls and thatch that are reinterpreted from the fisherman cottages. Thatch is used as walls rather than the traditional use which is as a roof covering. Timber is used as structural elements and possible floor coverings. The boxed explores different floor wall and roof interpretations and does not represent the morphology of the proposed structure.

Initially, a double roof system was explored with the upper roof being a curved weathered steel roof that allows wind to pass through. This would however not work in the context as the winds are too strong. However, weathered steel as a possible material should still be considered as it relates to the Meisho Maru wreckage, even though it is not a material used in the vernacular style of the region.

The construction touchstone, therefore, aids in translating theory into possible structural solutions, it is however only the initial reaction and can with the design explorations develop and change.

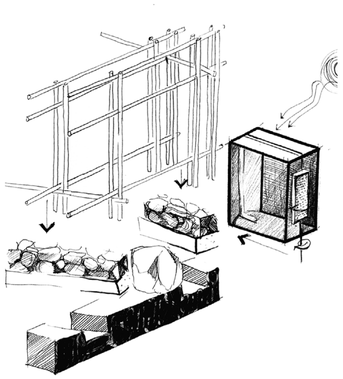


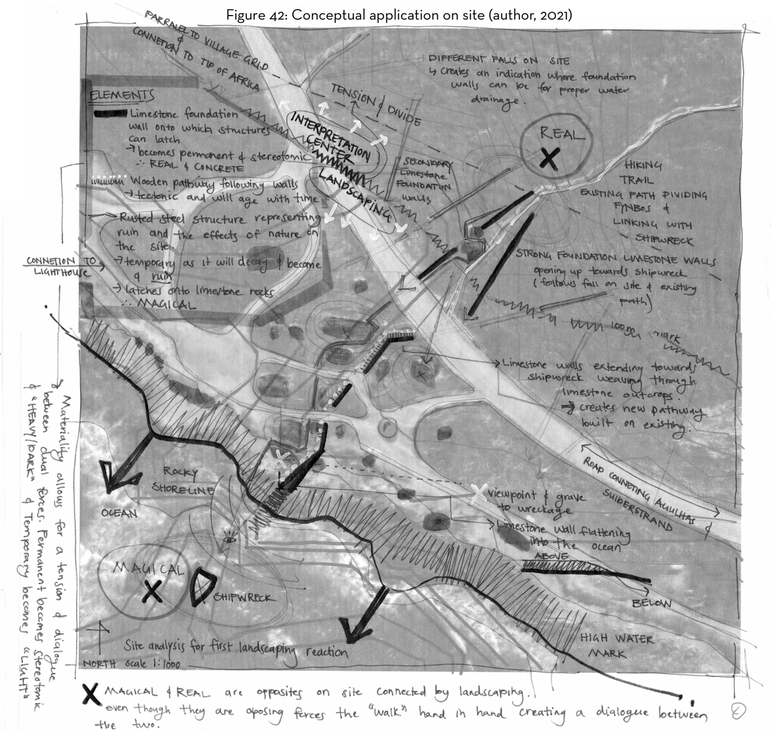
Figure 41: Exploded view sketch of structural touchstone (author, 2021)

APPLICATION

Interpreting the quality of the prefigured scene served as the first reaction towards the complexities of the site. The touchstone serves as the link between the site and the project as it developed the essence which aims to celebrate the voice of the place caught between land and sea, linking the present with the memories of the past. The three concepts proved useful in developing a deeper conceptual understanding of the site. The common thread that links the concepts is narrative, as all of them explore ways to convey the existing narrative through re-articulating existing memories and events of the setting. How narrative is conveyed is constantly dual: man-made/nature, light/shadow and magical/real. Instead of choosing one concept, the concepts starts to merge under the bigger theme of narrative with each concept being a way that experience and stories are conveyed. Figure 42 on the adjacent page illustrates how the dual narrative, especially the idea of the duality between the magical and real, may take shape on site. The illustration starts connecting the concepts to the site serving as an initial conceptual approach that organizes the site employing landscaping possibilities.

Interpreting the landscape as a set of cinematic images together with the theme of narrative extracted from the concepts lead to the main theoretical idea of architecture as cinematic spaces. Architecture can be used to frame and preserve experiences already existing in Cape Agulhas. Chapter two further explores the notion of architecture as a series of cinematic experiences that retells the narrative lost between land and sea.

Figure 42: Conceptual application on site (author, 2021)



CHAPTER TWO

SITUATING CONCEPTS and IDEAS

Investigating and Interpreting Architecture as CINEMATIC SPACES

To successfully capture the latent narratives set out on site as visual and experiential stories, the role of architecture, as a series of cinematic spaces, is explored.

In The Architecture of Image: Existential Space in Cinema (Pallasma, 2000: 17) Jean Nouvel declares cinematic imagery and experience as a significant inspiration for his architectural work: *"Architecture exists, like cinema, in the dimension of time and movement. One conceives and reads a building in terms of sequences. To erect a building is to predict and seek effects of contrast and linkage through which one passes.... In the continuous shot/sequence that a building is, the architect works with cuts and edits, framings and openings .... I like to work with a depth of field, reading space in terms of its thickness, hence the superimposition of different screens, planes legible from obligatory joints of passage which are to be found in all my buildings ....."*

Films use imagery - set out in a series of scenes - to convey different emotions concerning the bigger picture of the story. These scenes have specific elements that contribute to the success of the emotion it aims to evoke and the experience the narrative of the story wants to convey. The type of film sets the theme which gives a guideline to the type of experiences the cinematic scenes aims to convey. The key elements filmmakers use are divided into the categories of mise-en-scènes, cinematography, sound, and editing (Yale University, 2021: online). Mise-en-scènes, cinematography and editing are focused on together with lighting, shots and angles that fall under the categories as illustrated in figure 43.

Interpreting these cinematic elements in existing architectural works further explores their value in translating the past into meaningful experiences in the present. By investigating and interpreting architecture as cinematic spaces an experiential language can be developed which can be applied to the Shipwreck Interpretation Centre.

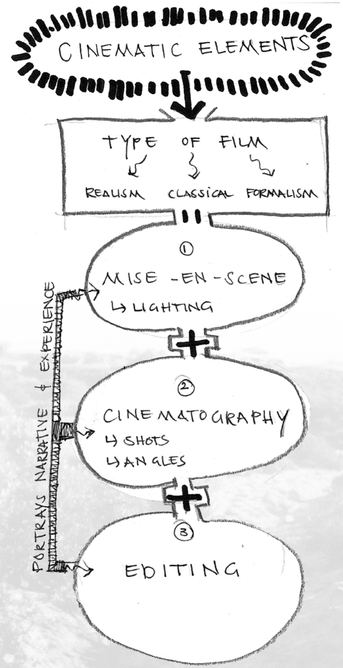


Figure 43: Diagram of cinematic elements (Author, 2021)

TYPE of FILM

Juhani Pallasma, Finnish architect and theorist, draws many parallels between cinema and architecture, both having moments of "embodied thinking and embodied memory and thought" (Koeck, 2013: 67). The human body becomes a site of memory that exists and responds to space and time (Koeck, 2013: 67) Both cinema and architecture are therefore part of human's experienced spatial memory, which is stored in the archives of our minds (Koeck, 2013: 67). Pallasma states in *The Thinking Hand: Existential and Embodied Wisdom in Architecture* (2009: 114) *'In the same way that cinema is a mode of cinematic thinking, painting as means of articulating painterly ideas, ... architecture is a means of philosophizing about the world and human existence through the embodied material act of construction'*

Cinematic acts are typed according to the style and genre employed in the production of a film. The style and genre set the scene for space and time which allows for embodied memory and thought. Hellerman (2019: online) claims that there are three main film types: Realism, Classical and Formalism. Under the typology of realism, magical realism forms a subcategory, which I believe relates closest to this design project given that - in my interpretation - the prefigured scene contains magical elements bleeding into and with the reality of the present. Magical realism is a genre of fiction where magical elements are seamlessly integrated with elements of realism to create a deeper understanding of reality (Haeng, 2013: 8).

The characteristics of magical realism in narratives, according to Haeng (2013: 9-10) includes:

Fantastical elements: It is when characters are subjected to extraordinary and magical elements in their everyday life. This creates an idea of fantasy that is linked with the real.

Hybridity: In magical realism, the plot is usually riddled with dualisms like dream and reality constantly mixing and changing worlds that almost seems to become one.

Authorial reticence: This refers to the character never having a clear opinion of the accuracy of events unfolding. Time is never linear; past, present, and future constantly overlap to indicate how the characters experience it. This not only suggests the emotional state of the characters, but it also allows the readers to construct their reality based on the non-linear events unfolding.

MAGICAL REALISM in the PREFIGURED SETTING

When reinterpreting these forgotten narratives of the sea, a magical realist style comes into play. Shipwreck may poetically appear as the ghost, projecting the past in the present, retelling other stories of other places and times in the now. These stories only hold fragments; partly factual and partly imagined by the viewer of the wreck. This blurs the line between the magical and the real. To fully represent and interpret all the individual shipwrecks stories becomes impossible. Creating ways to reinterpret these stories and events becomes important in the retelling of the narratives lost at sea. In the section below, I attempt to situate the magical experiences next to the real events, both in the larger site of Agulhas and the temporal experiences related to shipwrecks.

This process allows me to find common magical experiences and real events, which I can employ to organize the program of the project and the difference between the interpretive pavilions, on the one hand, and the visitor Centre and larger site, on the other.

THE MAGICAL EXPERIENCE

By sorting the wreckages into three categories of tragic experiences: Heroism vs Suffering, Oppression vs Freedom and Survival vs Decay (figure 35-37) their stories can be reinterpreted by the viewer in a more immersive way. Each category is dual because it does not group the wreckages according to time periods, the origin of the ship, nationality or size.

Each category, therefore, has a non-linear time line jumping around in time and place to represent an experience. Each experience has underlying dualities, which relate to the concepts reacting on the prefigured setting, creating a complex rather than a singular experience.

THE REAL EVENTS

The categories represent tragic experiences of the different shipwreck events falling into the magical realm. To further deepen the narrative the real shipwrecks information is memorialized. This is achieved by grouping the wreckages names and dates in types of vessels it was. The types of vessels, interpreted in chapter 1, include motor, steam, sailing and fishing vessels. Not all the narratives of the Southern Tip of Africa shipwrecks are known and can be retold, but by remembering their names their memory is not forgotten. There is however still a magical element intertwined with the realness of the shipwreck memorial as the viewer jumps through times and places imagining possible shipwreck events that unfolded. Even though most of the shipwrecks are not visible anymore, visual clues can be lent from the types of ships they were. This allows the visitor to relate the names of the shipwrecks to a certain typology allowing the narrative to come to life.

Another real element is the main hub of the Interpretation Centre. It orientates the visitors and has functions that serve the needs of the visitors like a reception, restaurant and toilets. These spaces are rooted in the site as it is centered in the present activities and almost becomes the gateway to the magical elements.

CATEGORIES of TRAGIC EXPERIENCES

1. Heroism versus Suffering

This category includes all the shipwrecks that lost brave soldiers and passengers to the ocean. Their deaths were tragic even though they died due to heroic acts. These wreckages include HMS Birkenhead and Arniston wreckage (Flax, 2020: online).

2. Oppression versus Freedom

This category includes all the slave ships that had an oppressive nature and innocent people needlessly died due to this oppression. These shipwrecks include Soa Jose Paquette and The Meermin (Moss n.d : online). The slave was set free by the ocean even though they did not survive the ocean freed them from their oppressors.

3. Survival versus Decay

This category encompasses all the wreckages whose crew and passengers all survived. This includes the Meisho Maru. Even though all the passengers survived the ship's lifetime came to an end, left stranded on the coast or in the ocean to decay.

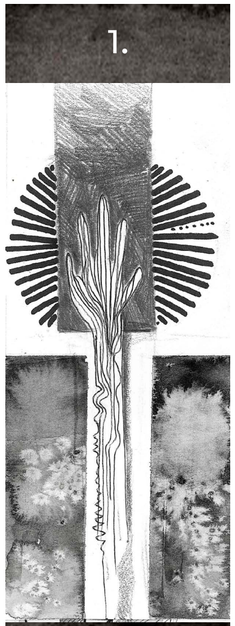


Figure 44: Heroism vs Suffering (Author, 2021)

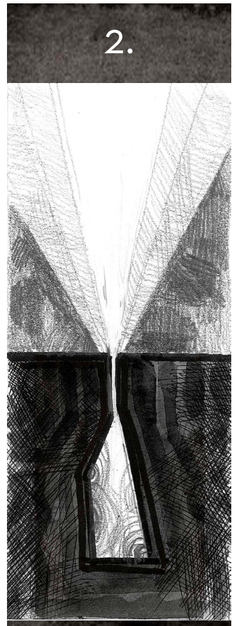


Figure 45: Oppression vs Freedom (Author, 2021)



Figure 46: Survival vs Decay (Author, 2021)

TYPES of SHIPWRECK VESSELS

a. Motor vessels:

Motor vessels use engines to propel them forward and are therefore more solid compared to sailing vessels that use wind. The vertical elements protruding from the main structure dematerializes the solid body of the vessel.

b. Steam vessels:

Steamships use steam for power. The cylinders where the smoke escapes become a point of hierarchy and symbolism in a steamship.

c. Sailing vessels:

The essence of a sailing vessel is the masts and sails. These elements are tectonic and create a rhythm on the ship.

d. Fishing vessels:

The most noticeable element of a fishing vessel is the pulley system to which the nets are connected to. On smaller fishing boats it takes shape in the form of a fishing rod and line.

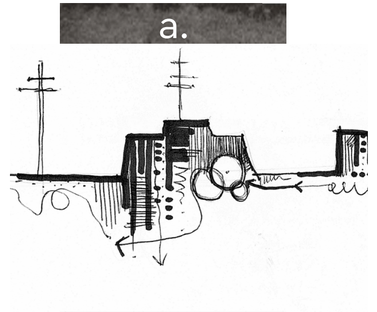


Figure 47: Motor vessel (Author, 2021)

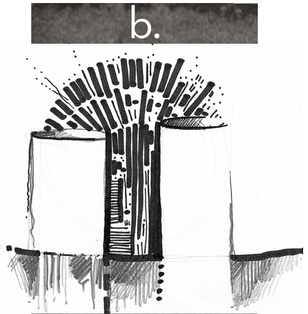


Figure 48: Steam vessel (Author, 2021)

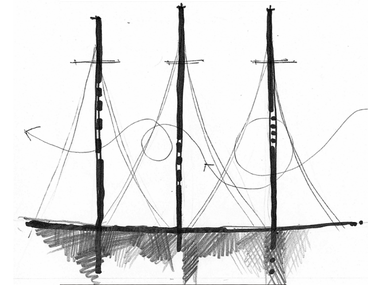


Figure 49: Sailing vessel (Author, 2021)

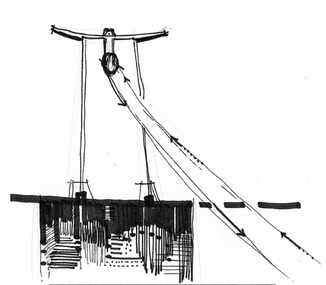


Figure 50: Fishing vessel (Author, 2021)

MISE-EN-SCÈNE

Mise-en-scène means “placed on the stage” in French (Hellerman, 2019: online). Mise-en-scène functions as an organization element in cinematic arts, and by extension architecture, as it arranges elements on camera to convey meaning in a film. Decor and lighting form part of the Mise-en-scène, it creates the time and space in which the narrative takes place. Decor can be used to amplify the emotion or the experience the film wants to convey (Yale University, 2021: online). The decor can therefore transport the viewer into different times and spaces without actually being in the specific time or place. According to Vidler in The Explosion of Space: Architecture and the Filmic Imagery (1993:46-47) architecture does not only serve as décor but sets the scene by merging space and time to create a visual dialogue that supports the narrative.

Architecture plays an important role in the Mise-en-scène (staging) of cinema, but architecture in itself can also become a stage that narrates lived space and preserves images of the past (Pallasma, 2000: 13). *“ The dimension of the event is subsumed in the very structure of the architectural apparatus; sequence, open series, narrativity, the cinematic, dramaturgy, choreography. “* (Derrida, 1997: 325)

This leads to the research question of the project: **How can architecture employ a series of experiential cinematic scenes to interpret, frame and preserve shipwreck events?**

Reinterpreting, framing and narrating the tragic shipwreck events becomes important to the overall experience of the Shipwreck Interpretation Centre. By creating architectural Mise-en-scène (figure 51), the viewers can be transported back into time to relive the tragedies caught between land and sea, preserving the memories of those no longer here to narrate them. By extracting the essence of lighting, shots, angles and editing an experiential framework can be developed that can be translated to an architectural language. This architectural language can then be applied to the design of the scheme to effectively retell the magical and real shipwreck events.

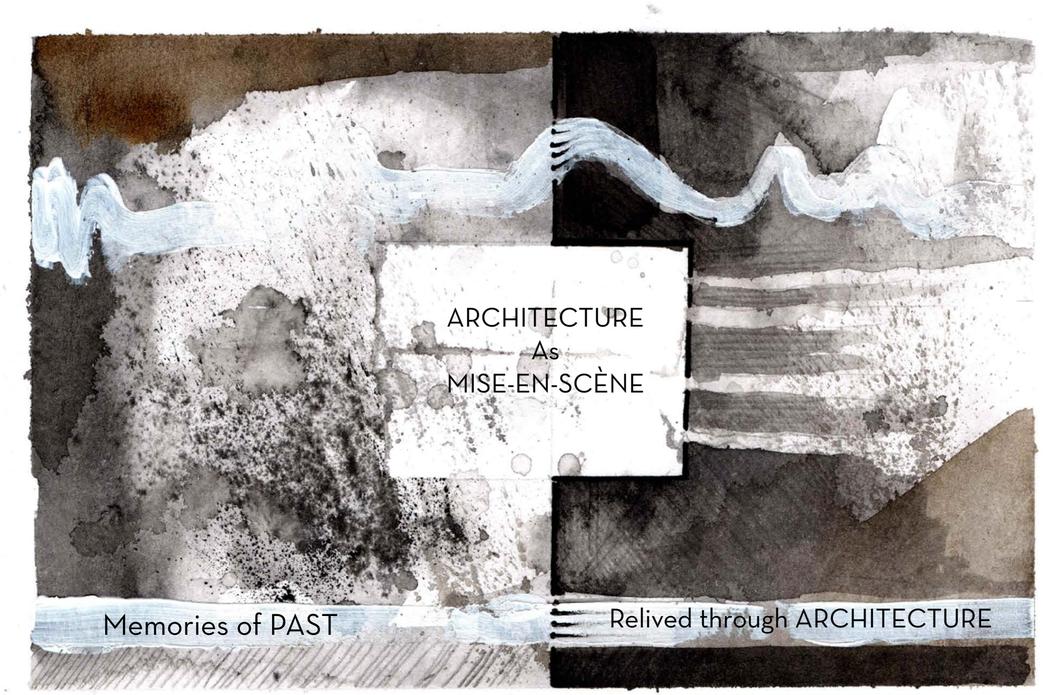


Figure 51: Interpretive sketch of architecture as a mise-en-scene (Author, 2021)

The INFLUENCE LIGHTING has on the NARRATIVE

Lighting is an important element in films as it not only creates ambiance in a scene but it also affects how images are perceived (Yale University, 2021: online). Different types of lighting have different emotional effects on the viewer. Film lighting and architectural lighting draw parallels as both historically originated from the two primal light sources: daylight and fire (Poland, 2015: 14-22).

"Lighting creates the environment for storytelling. The first lighting for storytelling was the fire" (Brown, 1996, 12).

When firelight was not bright enough for the development of theatre daylight was used to enhance the narrative. With the development of electricity artificial light took the place of fire. Lighting became more advanced with techniques like high key, low key and key lighting to emphasize certain emotions and experiences. High key light creates a low contrast meaning effect. This type of lighting is very neutral and can either create a sterile atmosphere or a peaceful atmosphere. Low key light creates a stronger contrast almost a chiaroscuro effect. This lighting creates a sense of drama and mystery. Key light places emphasis on the subject as the main source of light is placed on the subject (Dise, 2017: online).

Lighting plays an important role in the prefigured setting of Cape Agulhas. The natural sun rays emphasize the decay of the rusting shipwreck, the glimmer in the sea and the dust rising from the fynbos-covered landscape. The artificial light of the Cape Agulhas Lighthouse creates a dramatic effect when the light beam breaks the darkness of the night. It illuminates the feeling of the place and creates a cinematic atmosphere. Natural and artificial light may function as a tool in the development of the experiential spaces in the design. Interpreting the effects of artificial and natural light spatially design tools can be formulated that may be applied to the interiors of the Interpretation Centre to enhance the feeling of the space.

ARTIFICIAL and NATURAL LIGHT illustrated in FILM and ARCHITECTURE

THE PILLOW BOOK- Peter Greenaway (Film, 1996)

Artificial Lighting: In the Romantic drama the Pillow Book the narrative is based on the idea of the main character Nagiko becoming the pages upon which words are calligraphed. Words as images constantly intertwine in the love story and acts as the main premise of the narrative (EFA, 2019: online). The director used artificial light as words projected on the flesh of Nagiko to give these words and act of calligraphy a three-dimensional form. The projections jump off the skin of the character and create a chiaroscuro effect that emphasizes drama and mystery. Artificial light as projection can therefore be used to create interactive spatial experiences where the viewer becomes the canvas for the narrative not just the architectural space.

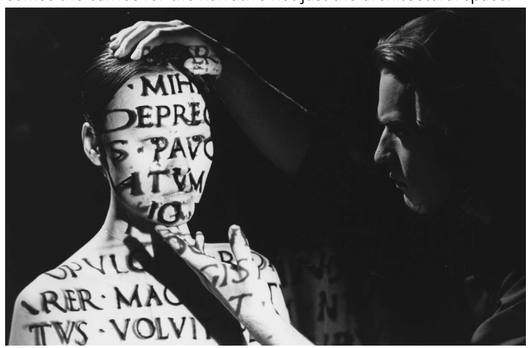


Figure 52: Scene in The Pillow Book film depicting words projected on skin (The Pillow Book, 1996)

The AFRIKAANS LANGUAGE MONUMENT- Jan van Wijk (Paarl, Western Cape 1974)

Natural Lighting: The Afrikaanse Language Monument in Paarl, Western Cape, celebrates the Afrikaans language and all its influences. Light is used symbolically in the monument especially in the spire reaching to the heavens. The spire represents the growth of the Afrikaans language and is supported by openings that allow natural light to enter the spire. According to the architect Jan van Wijk:*"At any time of the year, on any day, under any circumstances whatsoever, there is a display of light ..."* (ATM, 2016: 21-22) The opening allow for a light display that changes throughout the day, it also strengthens the idea of Afrikaans as a "gleaming tool". Light also emphasizes and softens the brutal materiality of the raw concrete (ATM, 2016: 21-22)



Figure 53: Light falling into the spire (Author, 2021)

CINEMATOGRAPHY

Cinematography refers to the elements that play a role in the construction of different shots and scenes (Poland, 2015: 9). Cinematic elements that fall under cinematography include shots and angles. The different types of shots and angles create different atmospheres in films. Shots and angles are ways to convey emotion and can be a very useful tool when applied to architecture. Shots frame what the director wants you to see and notice just like architecture frames a space or a landscape.

The space from which these shots and angles are observed is equally important in the experience conveyed. The dark space of the cinema creates a loss of awareness of physical cinema-place transporting the viewer into the space and time of the film (Koerch, 2013: 62). The German philosopher, Martin Heidegger, argues that: "*our thoughts about locations and spaces are not limited by geographical distance*" (Koerch, 2013: 57). Thinking of a space seen in a film recalls the same sensation as thinking of a physical space (Koerch, 2013: 57). Heidegger explores the 'essential nature of human existence in time and place' through the themes of *'place' (Ort), 'situatedness' (Befindlichkeit), 'nearness' (Nähe), and 'being there' (Dasein)* (Malpas, 2006: 224-25). These themes correlates with the cinematography as shots can also place, draw near and situate the viewer in a certain time and place as illustrated in figure 54. Different types of shots include extreme long shot, full shot, medium shot, close up, over the shoulder and point-of-view shot (Dise, 2017: online). The angles of shots namely, eye level, high, low and oblique angle, further express the feeling of a scene.

Cinematography allows the viewer to understand and experience a place and time without physically being there. Translating shots and angles towards physical architectural spaces in the Shipwreck Interpretation Centre may allow the visitor to experience the tragic shipwreck events without being in the specific time and place of the shipwreck event.

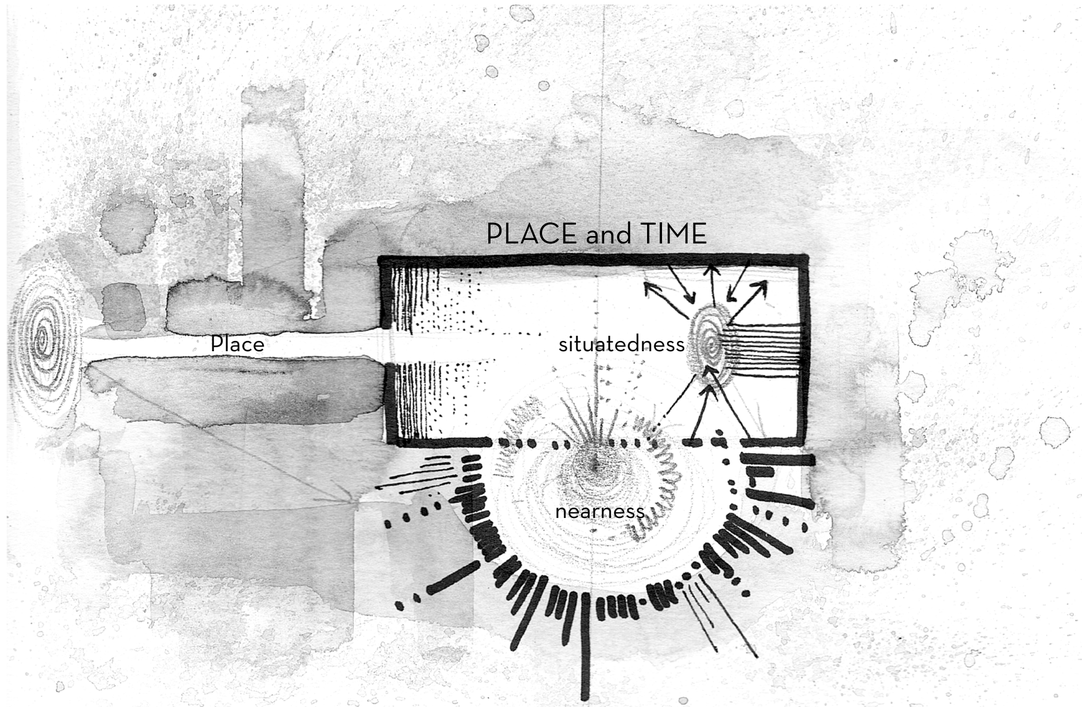


Figure 54: Cinematography illustrating the ideas of drawing near, situating and placing a person in a specific place and time (Author, 2021)

The different EMOTIONS and EXPERIENCES SHOTS and ANGLES convey

Extreme long or wide shot is used to show the subject matter from a distance. This shot is useful in establishing a scene in terms of the character's relationship with the environment and also the time and place within which the event is situated. Full shots frame the subject, allowing the subject to be placed central to the context within the frame. This shot focuses more on movement than the character's emotional connection to a place. Medium shots show the subject in more detail compared to the full shot. It is more zoomed in on the character while still showing the environment. Close-up shots focus on the subject as the subject fills the screen. Emphasis is placed on the characters reactions and emotions. Over the shoulder shot shows a view over the subject's shoulder engaging with something or someone else. It emphasizes on the connection between two subjects. Point of view shot shows what the character is seeing from their point of view. It places the viewer in the character's place showing their experience and emotions (Dise, 2017: online).

Eye-level angle is taken from the human eye level creating a neutral steady effect. High angle is taken from above the human eye level resulting in the subject matter seeming weak, frightened or vulnerable. Low angle is taken from below eye level which can result in the subject looking dangerous, heroic or powerful. Oblique angle is when the camera is tilted resulting in an uneasy or disoriented effect (Dise, 2017: online).

The architectural designs of architects like Peter Zumthor achieve a distinct sense of space that allows for sensory experiences (Koerch, 2013: 62). Zumthor's designs act as a useful tool in understanding how narratives and experiences can be translated into architectural space. The different types of shots and angles are illustrated in the architectural precedent Allemannjuvet Zinc Mine Museum in Suada Norway by architect Peter Zumthor to relate the cinematic tools spatially and experientially towards architectural elements.

SHOTS illustrated in ARCHITECTURAL PRECEDENT

ALLMANNJUVET ZINC MINE MUSEUM - Peter Zumthor (Suada, Norway 2016)

Extreme long or wide shot: The wide shot shows the pavilions in relation to the Ravine, it almost sets the scene for the feeling the whole design captures. In the Zinc Mine Museum the pavilions mimic the environment through materiality and the way they are raised like trees growing from the rocky soil. The structures are therefore rooted in place drawing and complimenting the existing qualities.



Figure 55: Wide shot of Zinc Mine Museum (Berntsen, 2016: online)

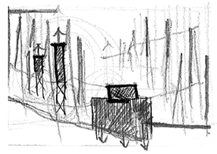


Figure 56: Illustration of wide shot (Author, 2021)

Full shot: One of the pavilions is shown in full from the walkway towards the pavilion. The shot shows how visitors move into the structure and also from within through the window. The pavilion adapts to the soil conditions and climate through the use of a flexible wooden structure, therefore the shot also shows how the pavilion itself moves in the environment. The shot conveys the interactive nature of the pavilion within the landscape.



Figure 57: Full shot of Zinc Mine Museum (Berntsen, 2016: online)

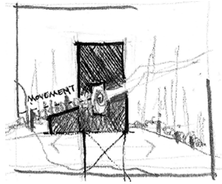


Figure 58: Illustration of full shot (Author, 2021)

Medium shot: By creating a singular stairwell leading up to the pavilion the viewer is forced to see the pavilion in more detail but still within the context of the natural landscape. It creates a sense of drama as the viewer is about to move across the threshold between outside and inside.



Figure 59: Medium shot of Zinc Mine Museum (Berntsen, 2016: online)

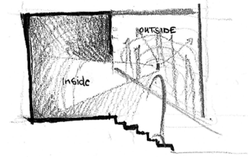


Figure 60: Illustration of medium shot (Author, 2021)

SHOTS illustrated in ARCHITECTURAL PRECEDENT

ALLMANNJUVET ZINC MINE MUSEUM - Peter Zumthor (Suada, Norway 2016)

Close up: The close up shot moves into the pavilion space of the mine museum space. Emphasis is placed on the interior of the pavilion and the information on the mining history. The viewer is immersed in the experience inside the space without the influence of the external environment. The close up shows the emotions and memories of the past.

Point of view shot: This shot places the viewer in the shoes of the miners by including the mining instruments with views to the exterior where the miners mined for zinc. The viewer starts to become more immersed in the past as the pavilion transports them through time.

Over the shoulder: When exiting the museum building, an over the shoulder shot is shown. This shot shows how two of the pavilions are engaging with each other in the landscape. Even though the one is suspended in the air and the other is seemingly rooted they are still in dialogue with each other. This view creates a visual connection between the scattered pavilions.



Figure 61: Close up of museum pavilion (Berntsen, 2016: online)

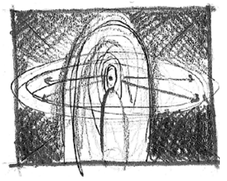


Figure 62: Illustration of close up (Author, 2021)



Figure 63: Point of view shot (Berntsen, 2016: online)

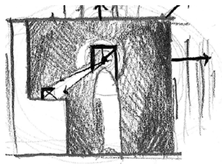


Figure 64: Illustration of point of view shot (Author, 2021)



Figure 65: Over the shoulder shot (Berntsen, 2016: online)

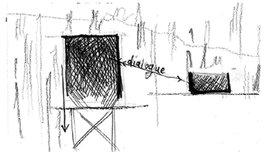


Figure 66: Illustration of over the shoulder shot (Author, 2021)

ANGLES illustrated in ARCHITECTURAL PRECEDENT

ALLMANNJUVET ZINC MINE MUSEUM - Peter Zumthor (Suada, Norway 2016)

High angle: The first three pavilions are suspended on a high angle compared to the Ravine below and eye level. By elevating the spaces the context becomes less intimidating as the viewers see the environment from the trees viewpoint. The high angle gives the idea of floating within the Ravine. Even though the angle makes the context less intimidating there is still a sense of vertigo because the structure is not solidly rooted in the earth, it moves like a tree in the wind.

Eye level: The interiors of the pavilions are on a more human scale compared to the exteriors of the structures. Because the design is placed in a very layered and sloped environment it becomes important to create moments of steadiness where the viewer can almost recenter and take a breather from the immersive landscape. There are however few moments of steadiness as the spaces attempts to convey the experiences the miners had facing the danger of the tunnels.

Oblique angle: Diagonal walls are used in the exhibition spaces to relate to the carved rock tunnels where the miners mined for Zinc. These skew angles create an almost disorientating effect which relates to the feeling the viewer gets when they are standing next to the sloping sides of the Ravine or within the claustrophobic mining tunnels. These angles brings the exterior context and the experience it conveys into the spaces without being to direct.

Low angle: The last pavilion is placed on the lowest point of the Ravine compared to the other three which is suspended. Unlike the other pavilions it is not an enclosed space but rather just a thin canopy held up by wooden columns. This angle emphasizes the power of the landscape and how the miners was almost oppressed working in the tunnels in dangerous conditions. The viewers become exposed to the experiences and conditions the miners had to work in on a daily basis.

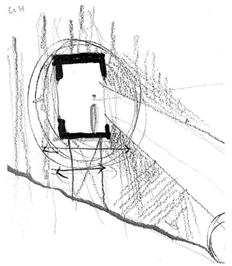


Figure 67: Illustration of high angle (Author, 2021)

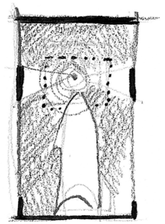


Figure 68: Illustration of eye level (Author, 2021)

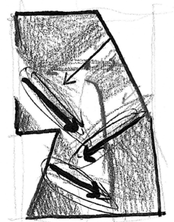


Figure 69: Illustration of oblique angle (Author, 2021)

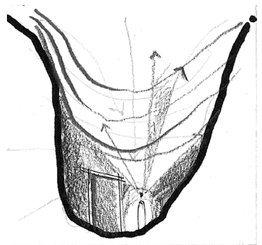


Figure 70: Illustration of low angle (Author, 2021)

EDITING

The editing of a film is where the different mise-en-scène and cinematography elements are compiled to create a narrative: it therefore becomes the golden thread that ties all the emotions together (Hellerman, 2019: online). When editing the shots together the way it is stitched enhances the narrative. It can either be fluid and linear or non- linear jumping through time (Hellerman, 2019: online).

Editing in the cinematic context could relate to the idea of a promenade that relates to both cinema and architecture. In the cinematic context, the term promenade was used by film maker Sergei Eisenstein to describe a "synchronization of the senses" (Louw, 2016: 12-33). The architectural promenade can be defined as "interpretive experience in and through architectural space" (Laubscher 2015: 103). The concept of the architectural promenade is one of the main elements in the work of Swiss-French architect Le Corbusier (Penz, 2004: 42). In Vers une architecture, Le Corbusier suggests the idea of an architectural promenade when he says, "*The architect therefore Assigns destinations to his axes*" (Penz, 2004: 42). William Curtis states in Le Corbusier: ideas and forms (1986) that the ramp as an honorific path becomes the spine of the idea of the architectural promenade (Penz, 2004: 42). Le Corbusier relates this version of the promenade to Arab Architecture (Penz, 2004: 42), expressing that: *"Arab architecture teaches us a valuable lesson—it's best appreciated on foot. Walking—you have to walk through a building with a changing viewpoint, to see the articulation of the building deployed."* (Le Corbusier, 1929: 24).

The notion of the promenade acts as a catalyst that allows movement and interaction through different spaces, events and perspectives, becoming a connector in architecture.

As an editing device, the promenade may function as a connecting mechanism in the Shipwreck Interpretation Centre, linking different experiences, times and spaces together to configure one dynamic and immersive narrative. The act of editing, interpreted as a promenade, is illustrated in Le Corbusiers Le Sainte Baume scheme to analyze how the promenade can transport the viewer through different times and experiences.

EDITING illustrated in ARCHITECTURAL PRECEDENT

Scheme at LE SAINT BAUME - Le Corbusier (1945-1960)

Le Corbusier drew inspiration from the Egyptian processional routes in the creation of the scheme of Le Saint Baume. The scheme in itself is a promenade through a mountain, shown in figure 71, that forms part of the Compagnons du Tour de France pilgrimage of the Masonic group (Louw, 2016: 12-33).

The scheme illustrated in figure 72 starts at stage 1 that is the pilgrimage towards the mountain. At stage 2, there is a moment of disorientation as the dweller moves from outside into the cave-like mountain. At stage 3 there is a *"descent to the sources of sensation"* where the dweller moves down into the mountain being cut off from the exterior surroundings (Louw, 2016: 12-33). At stage 4 the dweller ascends towards the exit out of the mountain. This is where reorientation takes place as the dweller starts to adapt to their surroundings. At stage 5 enlightenment takes place as the dweller becomes re-aware of present as they exit the other side of the mountain with views of the horizon and sea (Louw, 2016: 12-33).

The scheme was designed to remove the dweller from the present to transport them to another time. The maze-like promenade design uses narrative, manipulation of light and different levels to disorientate and remove present time (Louw, 2016: 12-33).



Figure 71: Sketch by Le Corbusier (Louw, 2016: 12-33)

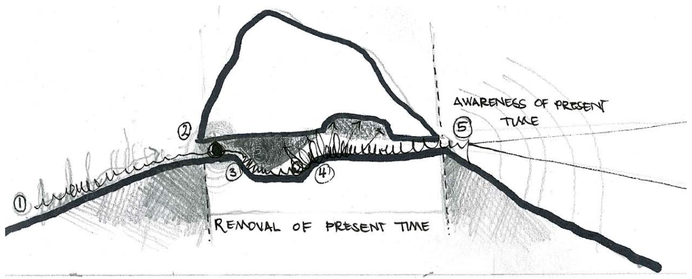


Figure 72: Illustration scheme at Le Saint Baume (Author, 2021)

APPLICATION

Figure 73 on the adjacent page illustrates how cinematic experiences is translated into an architectural language. This language is used to inform the design of the Shipwreck Interpretation Centre.

Application to the "MAGICAL" spaces:
The architectural promenade, which can be a zig-zagged walkway in the landscape, stitches the different pavilions (mise-en-scenes) together that symbolize the categories of tragic experiences. The promenade takes the viewers on a visual journey that uses different shots (i-iv) to convey the different experiences:
i. Wide shot- used to set the scene showing the Interpretation Center's relationship to the place and shipwreck.

ii. Full and Medium shots- These shots are used on the promenade towards each pavilion focusing on the specific mise-en-scène and how it reacts to the environment and movement.

iii.Close up and Point of view shots- In the interiors of the pavilions these shots are used to articulate the experiences and emotions of the tragic shipwreck events. It takes the viewer across time and space towards the shipwreck experience, creating a space of interpretation and deeper understanding of the past. Merging the present with elements of the past strengthens the idea of magical realism. Different angles and light can be utilized to convey these experiences:
1. Heroism vs Suffering: Natural light can emphasize as it makes the viewer look up creating a low angle that makes the object look heroic. Artificial light can be used to shine down on the viewer projecting images below eye level creating a high angle that makes the images look vulnerable referring to the tragedies.
2. Oppression vs Freedom: Oblique angle can be used to emphasize oppression by using slanted walls creating an uneasy effect. Light entering from above can symbolize freedom from oppressive circumstances.
3. Survival vs. Decay: Openings on eye level that overlooks the landscape can convey the experience of survival as it creates a steady and rooted effect. Decay can be symbolized by weathered steel as it suggests the passage of time, which can be emphasized by key light.

iv. An over-the-shoulder shot can be used at the end of the journey as the viewer can reflect and see the interaction between the Interpretation Centre and the Shipwreck.

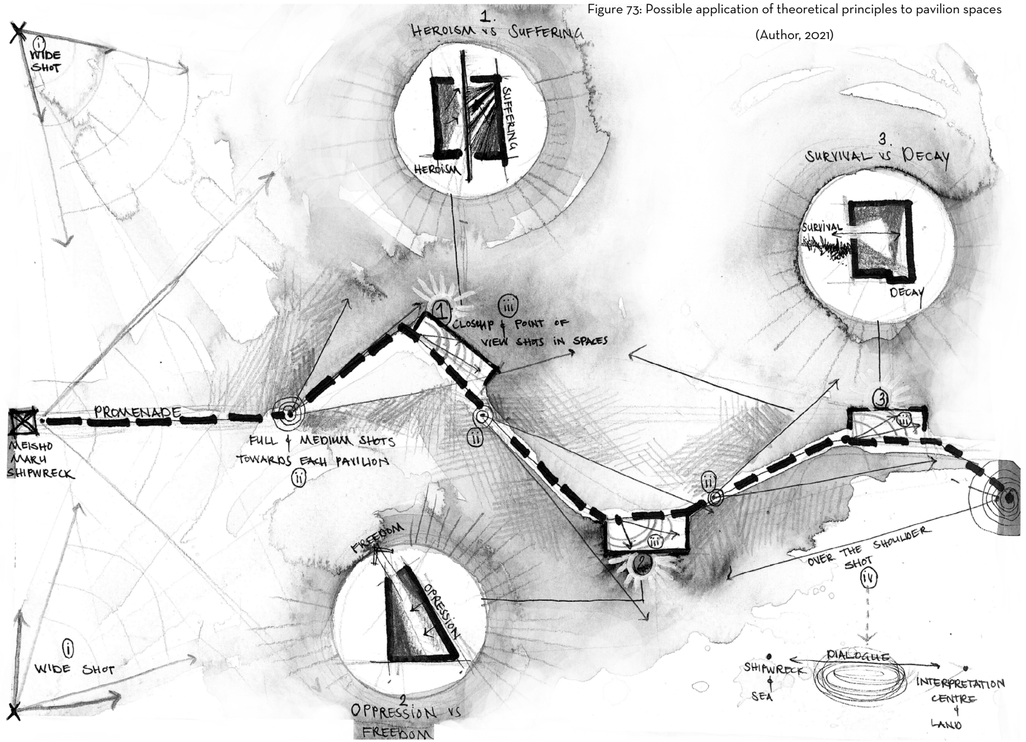


Figure 73: Possible application of theoretical principles to pavilion spaces
(Author, 2021)

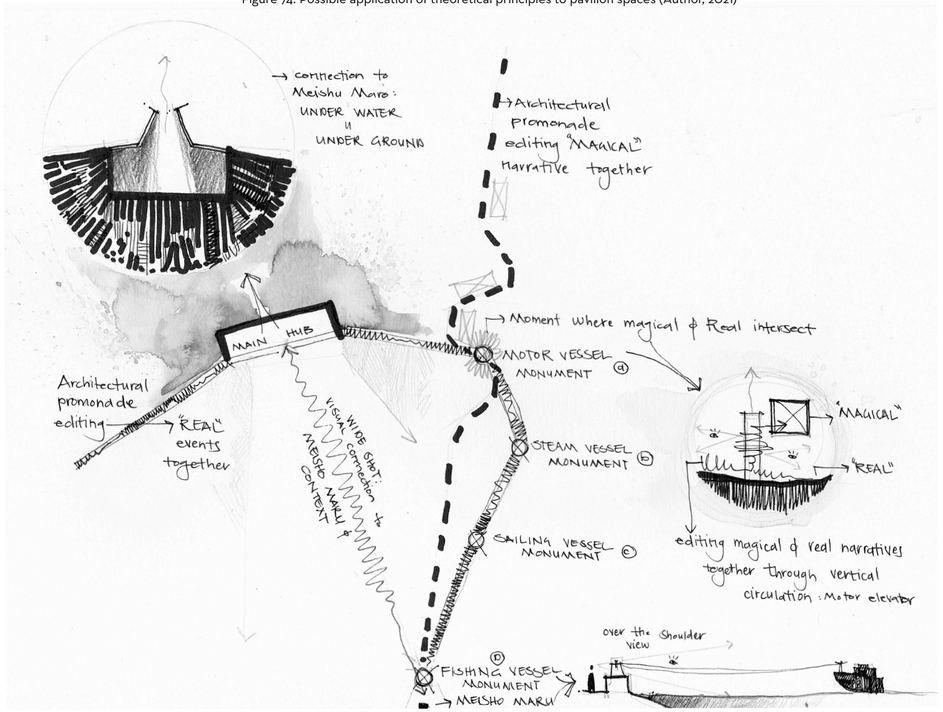
Application to the "REAL" spaces:

Figure 74 on the adjacent page illustrated how the cinematic tools could possibly be translated in the real spaces. The Main Hub and memorial structures may also function as mise-en-scène, conveying different narratives through which the viewers move to comprehend more of different shipwreck events. The architectural promenade stitches together the Main Hub of the Interpretation Centre and the memorial spaces. This promenade contradicts the regularity of the Main Hub and memorial spaces, and follows the irregular pattern of the natural contours. This irregular patterned promenade could emphasize the magical and real split on site. Where the interaction between the magical and the real becomes very important, vertical circulation spaces (elevators) and pause spaces can be used to articulate this connection while creating different angles and views. The magical and real come together to tell the tragic shipwreck events, emplacing the viewer in another time where they can relive these events.

The main hub can take design clues from specific site and the narratives it holds. By sinking the structure into the ground a connection can be made to Meisho Maru shipwreck as it is also partially underwater and rooted to the site. Light shafts could be used to bring in natural light. The light shafts further relate to the limestone outcrops as well as the shipwreck is still visible above water. Wide shot view of the shipwreck can be used in the placement of the main orientation spaces. This allows a view of the shipwreck caught between land and sea, making the visitor aware of the narrative of the place.

The fishing vessel monument can be located close to Meisho Maru Shipwreck as it is also a fishing vessel shipwreck. An over-the-shoulder view can be used to visually narrate the dialogue between the memorial, Meisho Maru and the ocean.

Figure 74: Possible application of theoretical principles to pavilion spaces (Author, 2021)



CHAPTER THREE

Investigating the TYPOLOGY, MORPHOLOGY and TOPOLOGY

Analyzing ENVIRONMENT, FUNCTION and PRECEDENTS

This chapter builds on the conceptual interpretations done in chapter 1 and 2 to develop a more detailed understanding of how the conceptual and theoretical ideas ties into the program, site, design and structural solutions. This chapter expands on the brief and program concerning the interpretations done in chapters 1 and 2. A deeper understanding of the site macro, mezzo and micro influences are gained to create appropriate structural solutions that merge the context, function and theory. Precedents studies are also analyzed to investigate possible functions, materials, structural systems and spatial qualities towards the final design proposal.



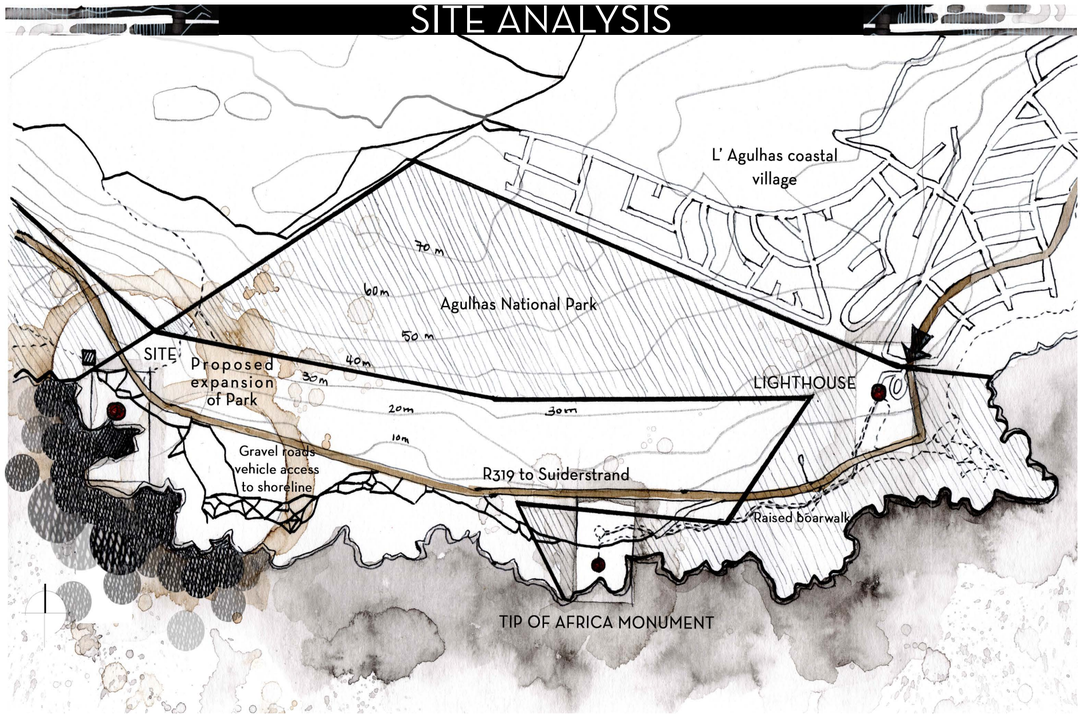


Figure 75: Macro site analysis (author, 2021)

REGULATIONS impact on LOCATION OF MAIN FOOTPRINT

According to Government Notice R544 of 18 June 2010 listing notice 1 activity 16:
Construction or earth moving activities in the sea, an estuary, or within the littoral active zone or a distance of 100 meters inland of the high-water mark of the sea or an estuary, whichever is the greater, in respect of:
i) fixed or floating jetties and slipways,
ii) tidal pools,
iii) embankments,
iv) rock revetments or stabilizing structures including stabilizing walls,
v) buildings of 50 square meters or more, or
vi) infrastructure covering 50 square meters or more
(Enviro, 2012: online)

The main footprint of the site is therefore situated on the other side of the R319 road to comply with the regulation.

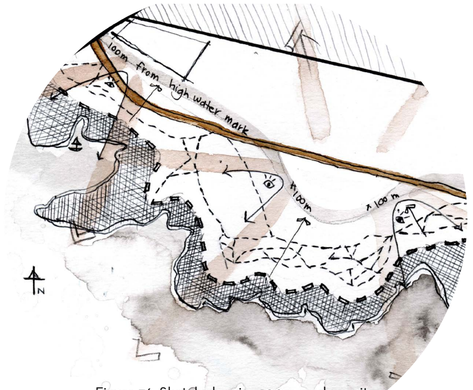


Figure 76: Sketch showing 100m mark on site (author, 2021)

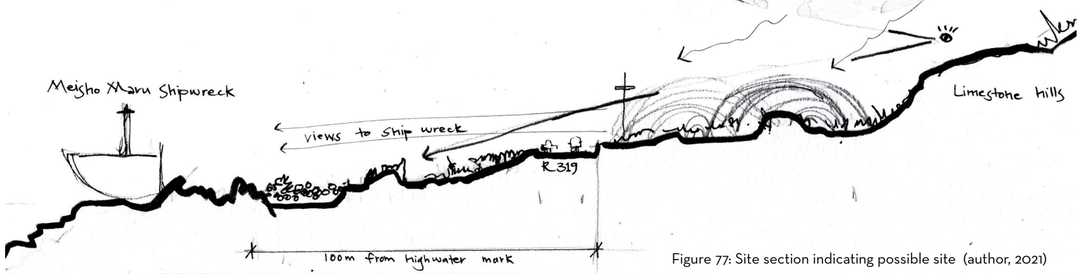


Figure 77: Site section indicating possible site (author, 2021)

SOIL CONDITIONS

The coastal plain of Agulhas is essentially covered by calcareous sands of the Tertiary age. The site is situated in the coastal mountains of Cape Agulhas, the soil of this area is Cape Fold Belt sandstone which is capped in some areas by limestone (San Parks, 2020: 16-26). These types of rocks are very porous and cannot be used as structural elements, it can however be combined with structural concrete to form structural walls.

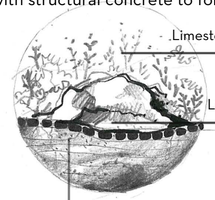


Figure 78: Section of Cape Fold Belt sandstone soil (Author, 2021)

Figure 79: Existing hiking trail (Author, 2021)

Figure 80: Fynbos on site (Author, 2021)

FLORA

The park has nine vegetation types with four classified as high conservation status:

+Central Rûens shale renosterveld (critically endangered);
+Elim ferricrete fynbos (endangered);
+Agulhas sand fynbos (vulnerable);
+Cape inland salt pans (vulnerable);
+Agulhas limestone fynbos (least threatened);
+Cape lowland freshwater;
+Cape seashore vegetation (least threatened);
+ Overberg dune strandveld (least threatened);
+ Overberg sandstone fynbos (least threatened).
(San Parks, 2020: 16-26).

The area in which the site is situated consists mostly out of Agulhas Limestone Fynbos and Overberg Dune Strandveld. These two vegetation types falls under the least threatened species but it should still be protected and respected in the design.

Figure 81: Mezzo and micro analysis of site (Google earth, 2021: online. Adapted by author)

CLIMATE

The area has a Mediterranean climate with warm summers and cold winters (San Parks, 2020: 16-26). Figure 82 shows the maximum and minimum temperatures throughout the year. Figure 82 indicates the average precipitation in millimeters per month throughout the year (Meteoblue, 2021: online).

Cape Agulhas is very windy especially along the coast line with winds almost all year round (San Parks, 2020: 16-26). The predominant wind direction, as indicated in the wind rose figure 83 is from the East and West direction.

The proposed structure and design should take into account the strong winds and the impact it has on the experience of spaces. Using both sheltered and exposed spaces in the design can aid the dual narratives of the design as it plays on the idea of safety versus being exposed.

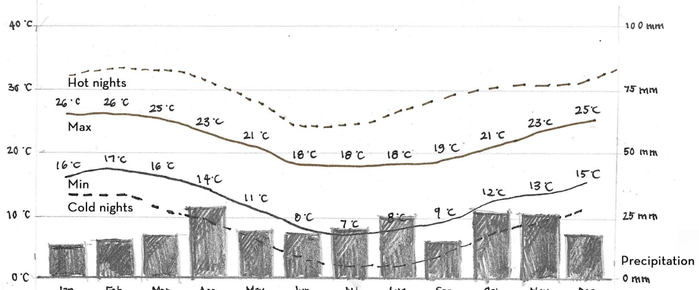


Figure 82: Monthly temperature and precipitation table (Meteoblue, 2021: online. Adapted by author)

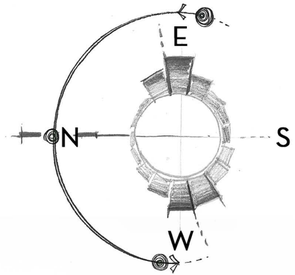


Figure 83: Wind rose of Cape Agulhas winds (Meteoblue, 2021: online. Adapted by author)

CLIENT and USER

South African National Park is responsible for managing South Africa's National Parks, in the case of Agulhas it manages Agulhas National Park. SAN Park own 19 parks to date since they formed in 1926.

Agulhas National Park was established on 14 September 1998 by SAN Parks. The mission statement of SAN parks for Agulhas National park:

"To implement and promote the conservation and sustainable use of the globally unique terrestrial, freshwater and marine biodiversity and cultural heritage of the Agulhas Plain. Building on the spirit of place of the Southernmost Tip of Africa, to unlock benefits together with local communities, now and in the future" (San Parks, 2020: 16-26).

The Shipwreck Interpretation Centre forms part of this mission as it promotes the conservation of the cultural heritage of Agulhas Plain whilst building on the spirit of the place. Conservation of the terrestrial and marine biodiversity does not form part of the scope of the program, but it still plays an important part in the design consideration as they should be treated with respect.

The intended users are locals and tourists who want to learn more about the rich history of the Southern Tip of Africa Shipwrecks together with hikers that want to explore the beautiful Agulhas Plain.



Figure 84: Rasperpunt Hiking trail (Author, 2021)

BRIEF and PROGRAM development

The brief is to create a Shipwreck Interpretation Centre that accommodates SAN Park administrative functions to create an important link between the Site and the Park. The brief builds on the narratives of the shipwrecks and expands the hiking and SAN Park amenities.

The real experiences are based on the present events which include the visitor orientation spaces that include the information, gathering, service and SAN Park administrative spaces. The real experiences also include the outdoor shipwreck memorial that gives information on the Southern Tip of Africa Shipwrecks according to Name (Date wrecked) | Nation | Area wrecked. The magical experiences are based on the tragic shipwreck events categorized in chapter 2. These spaces include enclosed and outdoor public spaces that narrate the shipwreck events and pay homage to those lost at sea. The circulation spaces edit the magical and real narratives together through walkways, stairs, bridges and elevators that create vertical and horizontal movement.

Figure 85: Meisho Maru Shipwreck (Author, 2021)



ACCOMMODATION LIST

Main Orientation hub:

Reception:	**40m²**
Toilet facilities:	**55m²**
Toilets	21m²
Locker rooms	17m²
Storage	18m²
Service ducts	
Restaurant:	
Restaurant seating indoor	155m²
Amphitheater seating	142m²
Kitchen	76m²
Coffee bar	22m²
Circulation and waiting areas	172m²
Roof garden walkway and lookout	33m²
Staff facilities:	
Staff lounge	40m²
Toilet	5m²
Managers office	15m²
Staff lockers and dressing room	15m²
Storage for outdoor equipment	10m²

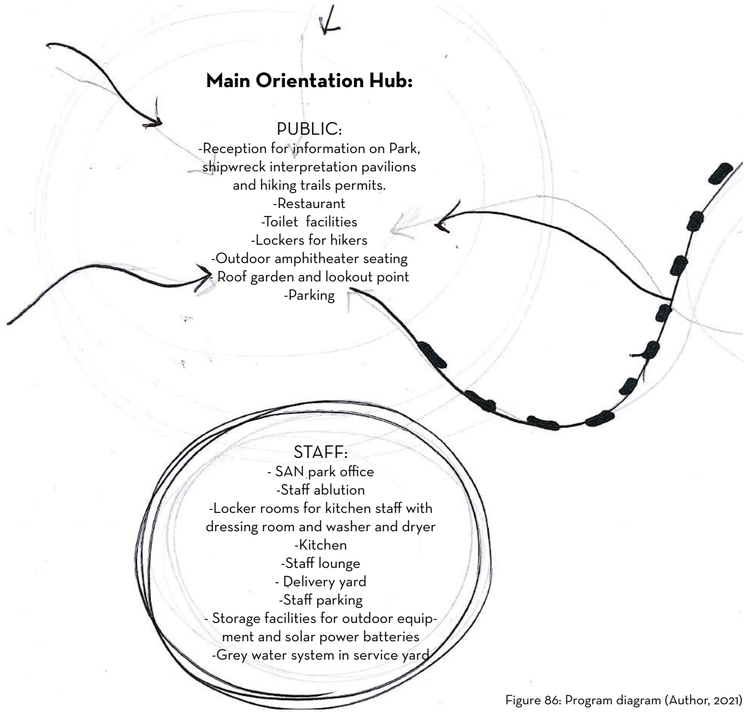
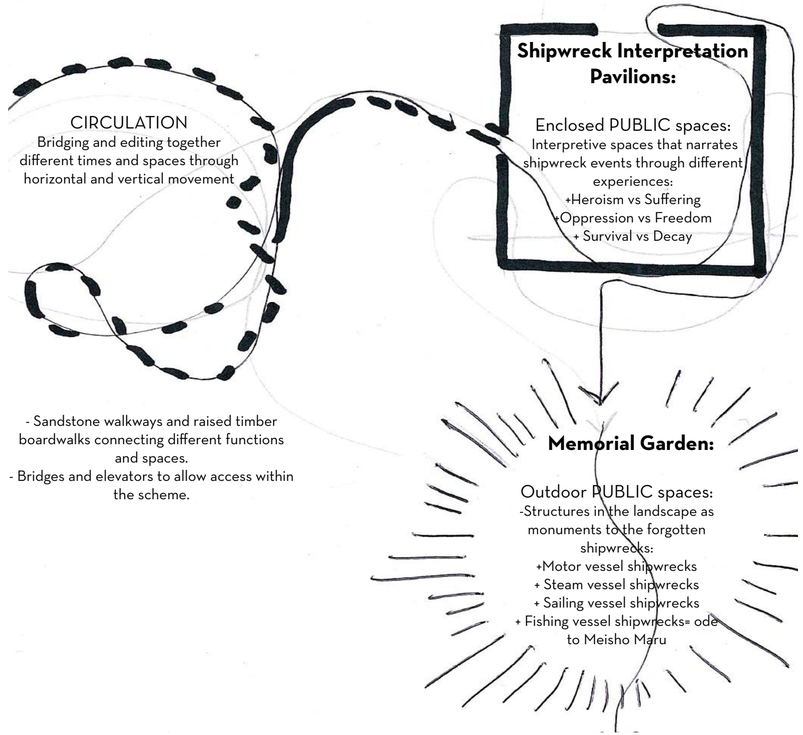


Figure 86: Program diagram (Author, 2021)



Experiential pavilions:	
Heroism vs Suffering	74m²
Oppression vs Freedom	74m²
Survival vs Decay	110m²
Circulation, seating and waiting areas connecting experiential pavilions	230m²
Memorial garden:	
Motor vessel monument	4m²
Steam vessel monument	9m²
Sailing vessel monument	8m²
Fishing vessel monument	50m²
Memorial garden route	
Landscaping	
Parking	
Total area (excluding area of landscaping, parking and memorial garden route)	**1395m²**

MAPUNGUBWE INTERPRETATION CENTRE- Peter Rich Architects (South Africa)

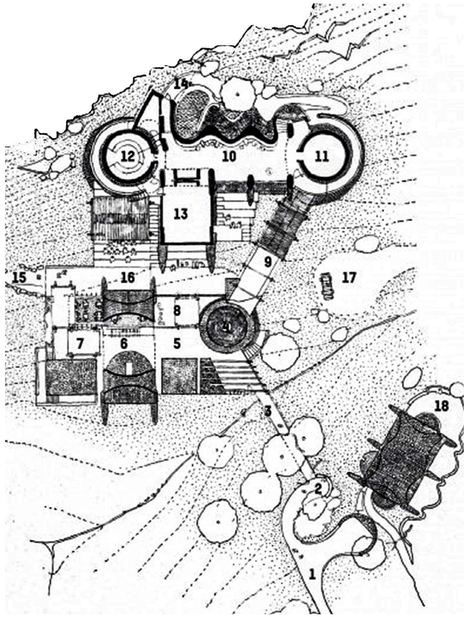
The Interpretation Centre is located in Mapungupwe on South Africa's northern border with Botswana and Zimbabwe (Baan, 2010: online). It houses the rich cultural history of the region together with tourist facilities and SAN Park Headquarters (Baan, 2010: online). The building type and client is therefore similar and can be interpreted to supplement the design process and thinking.

The functions of the building as illustrated in figure 87 includes a reception, restaurant, ablution facilities, exhibition and SAN Park offices. The SAN Park headquarters are separate from the main building dividing public and private.

'Delicate walkways create a zigzagging ramped route through the complex, through exhibition spaces, gently climbing the mesa to the highest point on the site, providing the visitor with a multiplicity of experiences and views, evoking the complex social interactions of the many cultures that have traversed the land.' (Rich, 2009: online)

Space on plan:
1. Pedestrian arrival/departure
2. Arrival landing
3. Bridge
4. Reception
5. Outdoor Court
6. Ablutions
7. Restaurant
8. Craft Shop
9. Floating walkway
10. Main vaulted exhibition space
11. East cairn
12. West cairn
13. Teaching and Learning
14. Mesa walkway access
15. Return route
16. External teaching
17. Game drive drop off
18. SAN Parks headquarters

Figure 87: Plan of Mapungupwe Interpretation Centre (Rich, 2009: online)



The exhibition space shown in figure 88-90 uses water ponds to reflect light into the dome spaces. This enhances the atmosphere in the spaces and articulates the objects on display.



Figure 88: Water features that reflect light into the spaces (Baan, 2010: online)

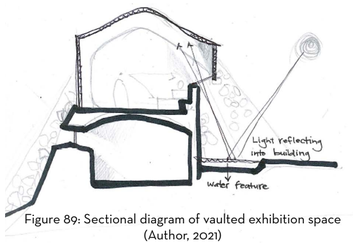


Figure 89: Sectional diagram of vaulted exhibition space (Author, 2021)

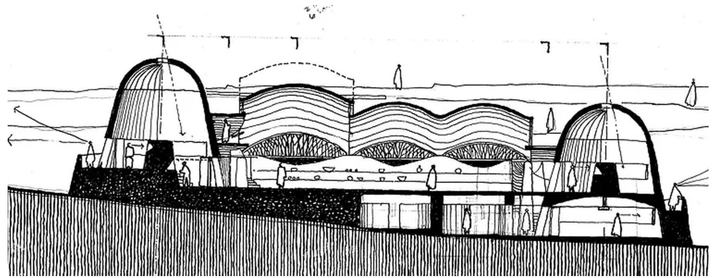


Figure 90: Section of Mapungupwe Interpretation Centre (Rich, 2009 : online)

APPLICATION TO DESIGN

- The functional program can inform the different spaces in the design as it is also SAN Parks owned.
- Creating zig-zigged ramped walkways creates an architectural promenade that connects spaces and emphasizes different views and moments in the design which links to the theory of editing different shots together.
- Using water and reflection ponds as a way to redirect and reflect natural light which links with the theory of light that enhances spaces and the narrative.
- The use of local and natural materials creates an architectural language that blends into the natural environment.
- Following the slope of the site to integrate with the environment.

ALLMANNJUVET ZINC MINE MUSEUM - Peter Zumthor (Suada, Norway 2016)

The precedent was partly analyzed in chapter 2 where it was used to illustrate shots and angles in an architectural example. The precedent further relates to the typology and possible structural system of the project.

The Norwegian Public Roads Administrators commissioned Peter Zumthor in 2002 to design a museum that welcomes visitors to the old mine in Sauda that fell into disuse.

The Museum is inspired by the history of the mining operations and the daily lives of the miners in Sauda. The zinc museum's functions include a mining gallery, a mining café, a staging area, toilets and parking facilities and a path that connects all the functions (Berntsen, 2016: online).



Figure 91: Mining Cafe (Berntsen, 2016: online)

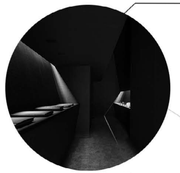


Figure 92: Mining Museum (Berntsen, 2016: online)



Figure 93: Staging area (Berntsen, 2016: online)

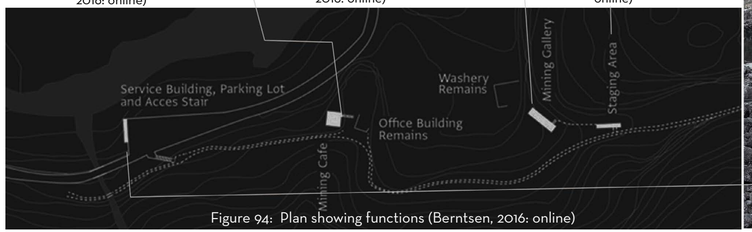


Figure 94: Plan showing functions (Berntsen, 2016: online)

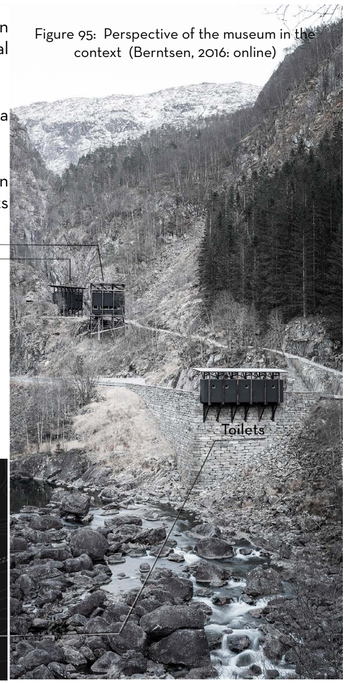


Figure 95: Perspective of the museum in the context (Berntsen, 2016: online)

ROOF:
The structure of the roof becomes an extension of the cross-braced scaffolding system. The roof structure is clad in corrugated zinc sheets. The materiality of the roof therefore ties in with the zinc mines of the area (Saiello, 2018: online).

INFILL BOXES:
The solid infill boxes is held up by die scaffolding and is in contrast with the lightness of the cross-braced structure. The box's exterior walls are made out of 18 mm plywood sheets and jute burlap, coated with a German acrylic material (PMMA).
The interiors are painted black to resemble a gallery (Berntsen, 2016: online).

SCAFFOLDING:
The cross-braced scaffolding structure just like the rest of the structure was prefabricated and assembled on site. The scaffolding is made out of creosote pressure impregnated Nordic pine glulam. The Nordic pine is fixed together with hot dipped galvanized steel nuts and bolts (Saiello, 2018: online).

FOUNDATIONS:
The foundations are fixed to the existing rocky ridge using hot-dip galvanized steel footings that support the cross braced scaffolding structure. The foundations of the toilets are a dry stone masonry retaining wall (Saiello, 2018: online).

APPLICATION TO DESIGN

- Using separated pavilions connected by a path that links the different functions together to form a narrative.
- Structure of the pavilions that are more tectonic raised from the ground and latched onto stone retaining walls.

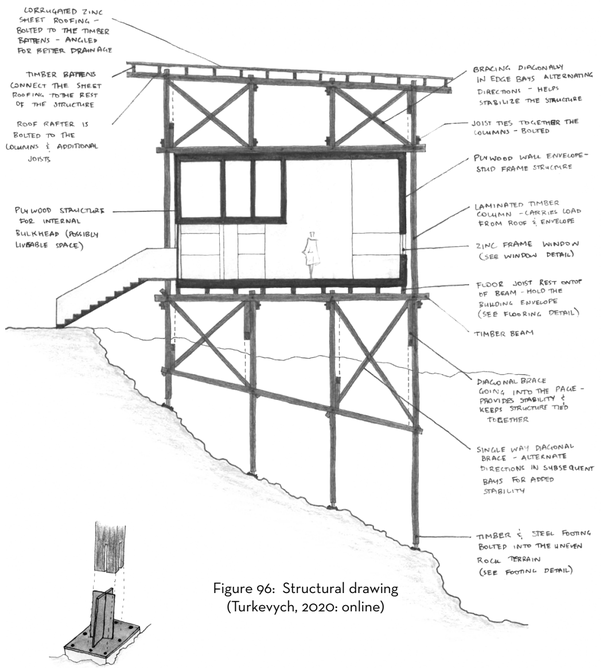


Figure 96: Structural drawing (Turkevych, 2020: online)

SKIN OVER REED - Armin Kammer, Anke Wollbrink and architecture students of University of Stuttgart (Vorarlberg, Austria, Europe 2019)

The hut investigates alternative skins of Alpine architecture which is usually clad with stone, concrete, wood or metal. Thatch is used as a renewable alternative that is similar to concrete but much more sustainable. Thatch used in a modern way to clad the roof and walls that creates a wrap around effect (Dezeen, 2019: online).

The 3,5x6x4m high wooden substructure was made in a workshop of site by carpenters. The prefabricated substructure was then flown to the mountains by helicopter and placed on site (Kammer, 2019: online). After the structure was placed on site it was clad in short stem reed that took less than two weeks (Kammer, 2019: online).

APPLICATION TO DESIGN

- Links with the vernacular use of thatch roof but it can extend to the roof and wall coverings of the pavilion structures creating a more contemporary application. The materiality adds to the narrative of place as it celebrates the history of Agulhas.
- Using thatch incorporates local materials and uses local laborers to construct the pavilions creating job opportunities.
- The pavilion structures frameworks can be prefabricated and placed on site ready to be thatched minimizing on site construction.
- The use of thatch facades creates structures that blend in with the fynbos surrounding allowing for a more sensitive design.



Figure 97: Skin over reed hut (Kammer, 2019: online)



Figure 98: Cladding process (Kammer, 2019: online)

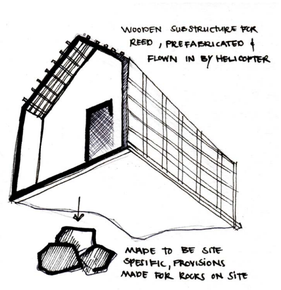


Figure 99: Prefabricated structure (author, 2021)

LA RAMPINYA ELEVATOR - Santamaria Architects (Sallent, Spain 2018)

The Rampinya neighbourhood located in the municipality of Sallent is 17m above the access road to the village (Ott, n.d: online). Santamaria architects designed a public elevator to create as a visual and physical connection between the different levels and neighbourhoods. The corten steel clad elevator structure has a glass facade together with the platform on the level of the Rampinya neighbourhood. This creates viewpoints towards the village and the river.

APPLICATION TO DESIGN

- Vertical connector that links the different pavilions and emphasizing the verticality of the hillside, whilst creating viewpoints towards the Meisho Maru shipwreck.
- Allow universal access to those not able to use the stairs connecting the pavilions.
- The mechanical nature of an elevator can become a memorial structure to the motor vessel shipwrecks, with weathered steel information panels fixed to the motor-driven elevator.

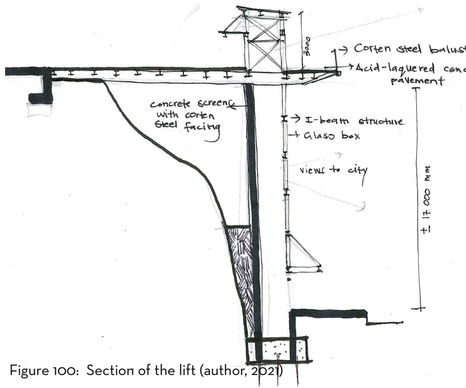


Figure 100: Section of the lift (author, 2021)



Figure 101: Top part of lift shaft (Plana, 2019: online)



Figure 102: Lower structure of lift (Plana, 2019: online)

HAKKA INDENTURE MUSEUM - DNA Architects (Lishui, China 2017)

The Hakka Indenture Museum was built to commemorate the story of the village of Shicang (Wong, 2018: online). The name Shicang can be translated to “stone storage” which refers to a legend in the area. The architects used local construction and materials to form thick stone lattice walls to create exhibition spaces that merge the internal and external environment (Wong, 2018: online). The museum nestles itself into the landscape linking the village with the natural environment. The existing irrigation channel was rerouted over the roof to provide water to the planted roof which sometimes flows into the internal spaces creating a design feature. Linear roof opening allows in natural light that emphasizes the water feature and the exhibition spaces (Wong, 2018: online). The natural elements flow into the internal spaces.



Figure 103: Museum becoming the buffer between the village and the natural surroundings (Wong, 2018: online)

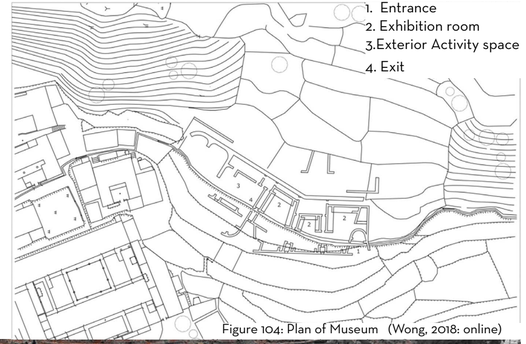


Figure 104: Plan of Museum (Wong, 2018: online)

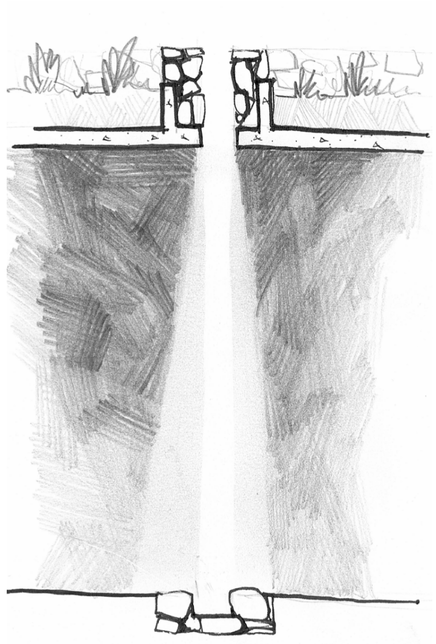


Figure 105: Natural light flowing into the exhibition space from opening in planted roof (Author, 2021)



Figure 106: Waterfall feature flowing in from roof opening (Wong, 2018: online)

APPLICATION TO DESIGN

- The way the building sits on the site rooted in the hill with planted roofs and thick stone walls which can influence the Main Orientation hub structure and morphology.
- The building becomes an extension of the terraced vegetation on the hill, the orientation Hub structure can do the same through the roof becoming an extension of the fynbos blanket covering the limestone hill.
- Linear openings and other forms of light shafts can be used in the design to draw in natural light illuminating certain elements in the design.
- The water channel that catches rainwater and water from the irrigation system can be used in the experiential pavilion spaces that are more exposed to the natural elements. It can be used to divert storm water from the steep slope and to create a water feature. Water plays an important role in the area due to the close proximity to the sea, making water elements appropriate.

CHEMIN DES CARRIERES - Reiulf Ramstad Architects (Rosheim, France 2019)

The design consisting out of pavilion structures that follows a 11km trail through the rural villages and landscapes of Rosheim, France. The design is split into 5 chapters that signify sequences of landscapes on the old Rosheim to St Nabor railway stops (Frearson, 2019: online). Each chapter builds on the peculiarities of place emphasizing the narrative of the past to draw the visitor back in time (Frearson, 2019: online).

1. Rosheim, the beginning of the walk, tells the story of the past. The structure of curved corten steel walls becomes a space of labyrinth reflection framing views with seating areas where the visitor can contemplate the past (Pintos, 2021: online). Reiulf Ramstad Architects stated that *"The pavilion has a labyrinthine character and play with an irregular concave and convex interior,"* (Frearson, 2019: online). The train track's footprints are conserved as an ode to the past.

2. Boerch tells the story of water. The seating pavilion, looking out onto the river, that is a dynamic feature in the region (Frearson, 2019: online).

3. Leonardsau narrates the story of the land with two angular corten steel panels becoming the gateway to the open landscape (Frearson, 2019: online).

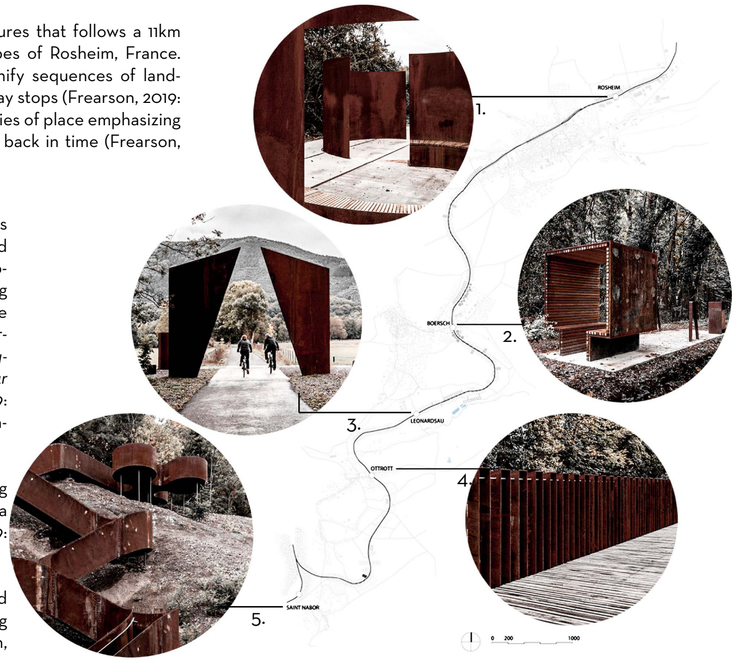


Figure 107: Five chapters of sequences of landscapes along a 11km route (Pintos, 2021: online. Adapted by author)

4. Ottrot tells the story of travel. The pavilion retells the history of the train station by emphasizing elements like the pump, bridge and crane (Frearson, 2019: online). It combines heritage elements with new structures to commemorate the past.

5. Saint- Nabor the last stop on the journey tells the story of luck. A corten steel platform built on the hillside accessed by a staircase creates a viewpoint over Rosheim (Pintos, 2021: online). Reiulf Ramstad Architects stated that *"from this viewpoint inspired by a four-leaf clover, the visitor will feel lucky to enjoy the view of such a beautiful territory,"* (Frearson, 2019: online)

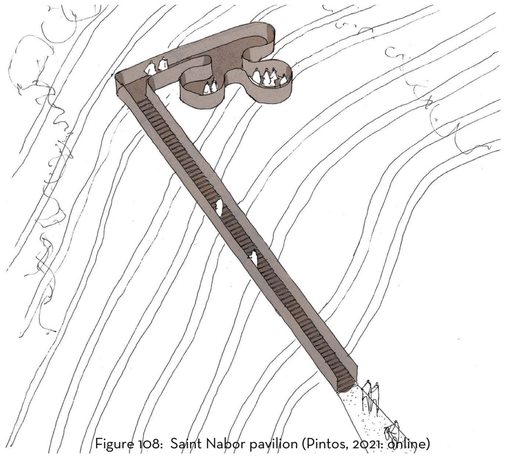


Figure 108: Saint Nabor pavilion (Pintos, 2021: online)

APPLICATION TO DESIGN

- The consideration for the particularities of place in the structures can inform the memorial garden structures narratives that they build on the specific shipwrecks they represent.
- Moulded corten steel panels can be used in the memorial structures as corten steel correlates with the passing of time and the Meisho Maru Shipwrecks materiality.
- The curved corten steel panels of Rosheim labyrinth can possibly inform the steam ship memorial structures as the curved corten plates resemble the cylinders of steam ships.
- The use of corten steel exterior plates with wooden paneling on the inside of the seating structures can inform the bridge structures in the design.
- Framing the natural landscape with openings and strong geometries can be applied to the design to frame and capture certain moments in the landscape.
- The idea of a viewpoint at the end of the journey reflecting on the narrative and route can be considered in the design. This can make the visitor aware of the connection between the land, the Shipwreck Interpretation Centre, the sea and Meisho Maru Shipwreck.
- The way movement is seen as a device to transport the viewer through different times and places effectively, connecting the different architectural moments and narratives can be a useful tool in the proposed design. It refers back to the idea of an architectural promenade that edits different scenes and spaces together to form a spatial narrative.

CONCLUSION

The site, theory, function and structure was investigated and interpreted throughout chapters 1 towards chapter 3 to create possible design tools. The site analysis creates a better understanding of the complexities and spatial qualities of the site which in turn informed the theoretical approach and function of the Shipwreck Interpretation Centre. The theoretical investigation developed an architectural language that builds on the cinematic principles to create spaces that retell the forgotten shipwreck narratives. The precedent analysis done in chapters 2 and 3 created a better understanding on functional and structural aspects and how to integrate the theory in architectural spaces. The knowledge gained in chapters 1-3 will now be applied in chapter 4 where the design of the Shipwreck Interpretation Centre is developed from the initial stages towards the final design.

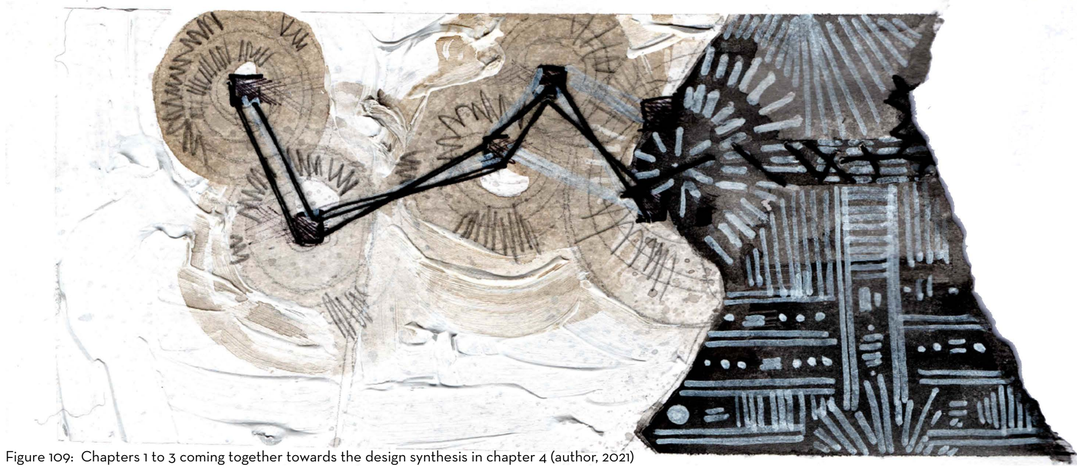


Figure 109: Chapters 1 to 3 coming together towards the design synthesis in chapter 4 (author, 2021)

CHAPTER FOUR

Retelling Shipwreck EVENTS through ARCHITECTURAL scenes

Developing experiential MISE-EN-SCÈNES edited together through the narrative of Cape Agulhas

This chapter builds on chapters 1 to 3 to come to a design synthesis. The design development of the Shipwreck Interpretation Centre is illustrated in the chapter indicating how the place, function and theory influenced the design decisions from the initial thoughts towards the final proposed designs. A technical investigation further explores the different influences that shaped the design to create a Shipwreck Interpretation Centre that collects and retells tragic shipwreck events through fragments of architectural mise-en-scènes.



Figure 110: Image from hill overlooking the site with Meisho Maru no.38 in the distance (author, 2021)

DESIGN DEVELOPMENT

The design scheme was developed in three phases, responding to the specific site, environment, function and theoretical discourse discussed in the previous chapters. The phases are:

SCHEME 1 DEVELOPMENT:

The first scheme serves as an initial response to the site. The main structures are scattered across the gravel road working with the contours. Paths connect the almost floating spaces to each other and the shipwreck in a very geometric way.

SCHEME 2 DEVELOPMENT:

Scheme 2 starts integrating the theoretical discourse. A linear axis connects the shipwreck with the existing hiking trail where the smaller pavilion spaces (magical) form. A semi-circle that is more organic follows the contours and connects the larger orientation spaces (real) closer to the gravel road. The orientation spaces extend towards the west with strong linear lines.

SCHEME 3 DEVELOPMENT:

Scheme 3 builds on scheme 2 developing the circular datum and the linear axis. The linear axis zigzagged reacting to the site. While the circular shape relates to the Southern Tip of Africa Icon's sensitive circular landscaping. This phase developed into the final design proposal integrating site, function and theory.

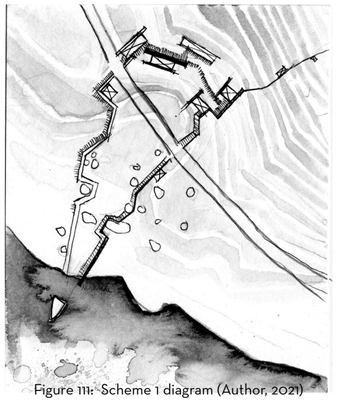


Figure 111: Scheme 1 diagram (Author, 2021)

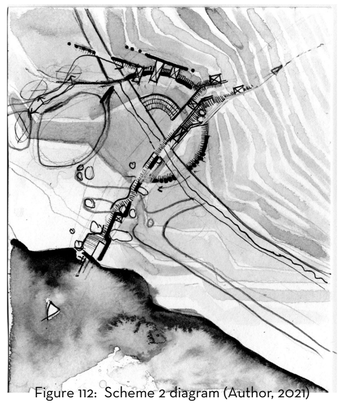


Figure 112: Scheme 2 diagram (Author, 2021)

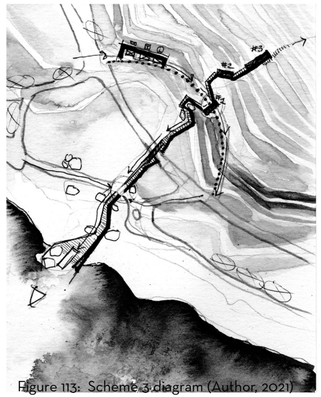


Figure 113: Scheme 3 diagram (Author, 2021)

SCHEME 1 DEVELOPMENT

The site plan in figure 115 indicates the initial development of the massing and placement of spaces on the site. Figure 114 starts developing possible roof structures for these spaces reacting to the environment.

Roof structures #1 and #2 are curved double structures that latch onto the main structure of the spaces. These roof structures do not suit the climate and vernacular of place.

This resulted in roof #3 which, is a modern take on the thatch roofs of the fisherman's cottages. The roof system wrap around to form the walls creating a thatched asymmetrical pitched structure. This roof system and materiality relates to the vernacular architecture of Cape Agulhas making it an appropriate reaction. The roof form giving was further developed in scheme 2.

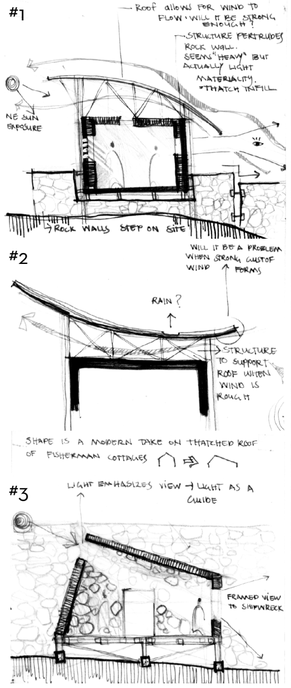


Figure 114: roof possibilities (Author, 2021)

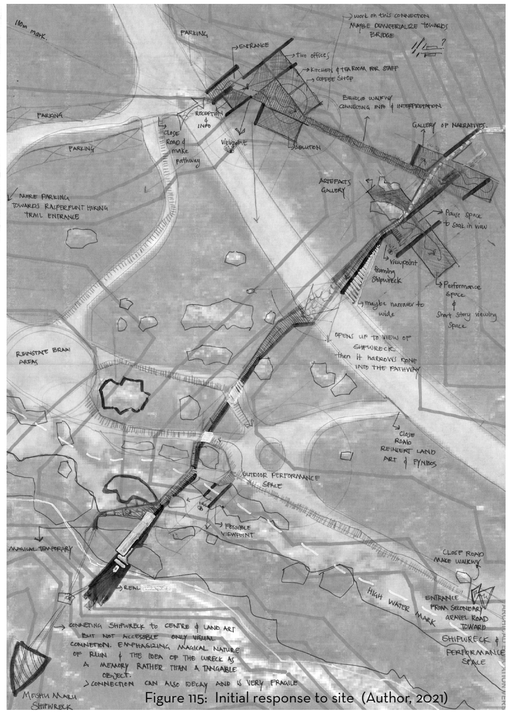


Figure 115: Initial response to site (Author, 2021)

SCHEME 2 DEVELOPMENT

The development of scheme 2 deviated from the geometric form giving of scheme 1 with a more organic approach.

Figure 116 indicates how land art connects spaces and integrates the idea of magical realism within the scheme. The pavilions spaces which forms the magical spaces sits on the axis that connects the existing hiking trail path with Meisho Maru Shipwreck. This linear axis zig zags around existing rock formations reacting to the site. The model in figure 118 shows how these pavilion spaces massing develops onto the limestone hill. To create a continuous route from the pavilions to the shipwreck a pedestrian bridge over the gravel road developed shown in figure 117. By sinking the gravel road in, as shown in figure 117, the bridge walkway does not obstruct views.

The real spaces forms closer to the gravel road parallel to the semi-circle. These spaces sits in-between two strong linear lines opening up towards the west. The model indicates how the orientation spaces massing could possibly sit on site.

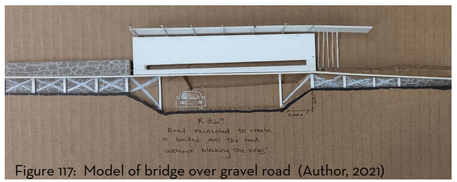


Figure 117: Model of bridge over gravel road (Author, 2021)

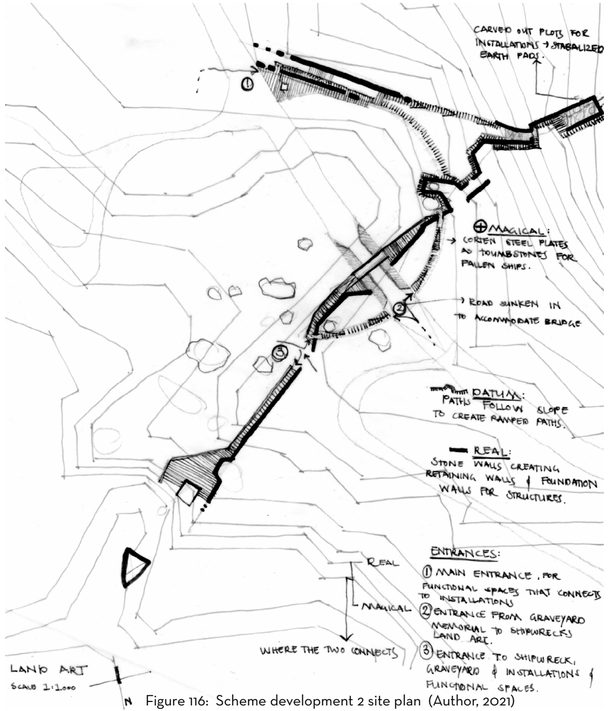


Figure 116: Scheme development 2 site plan (Author, 2021)

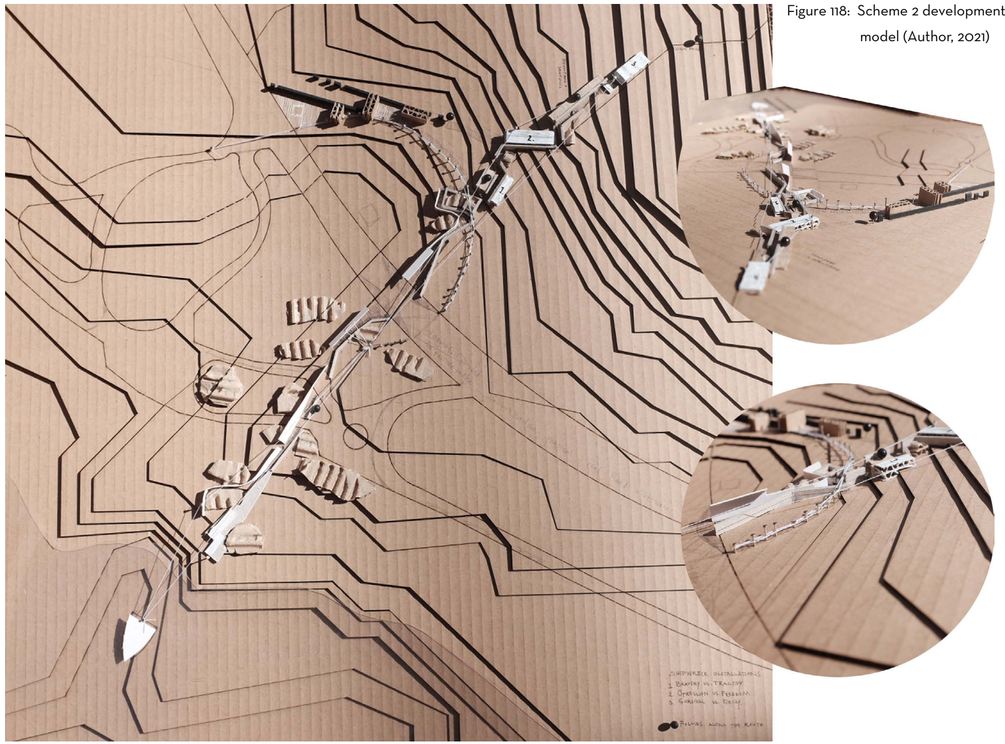
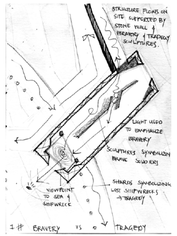


Figure 118: Scheme 2 development massing model (Author, 2021)





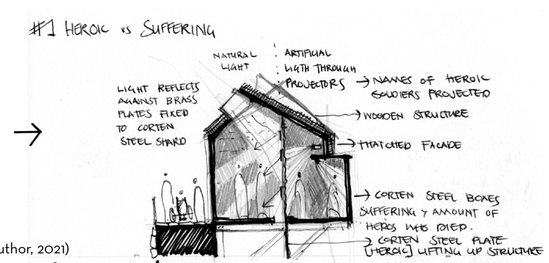
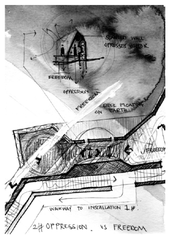


Figure 119: Pavilion 1 development (Author, 2021)





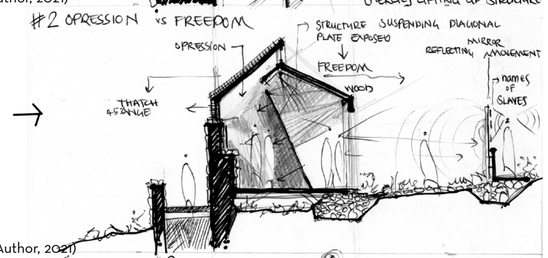
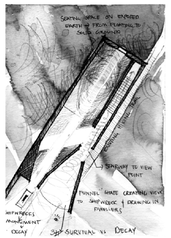
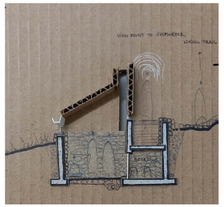


Figure 120: Pavilion 2 development (Author, 2021)





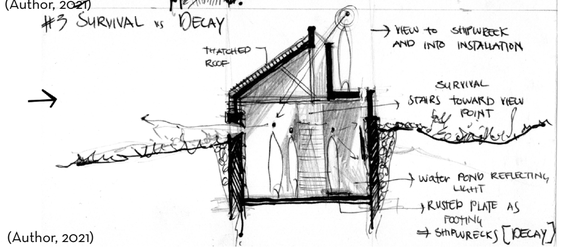


Figure 121: Pavilion 3 development (Author, 2021)

ORIENTATION HUB SPATIAL AND STRUCTURAL DEVELOPMENT

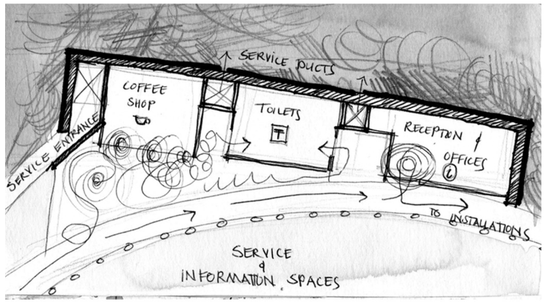


Figure 122: Orientation hub sketch plan (Author, 2021)



Figure 123: Orientation hub section model development (Author, 2021)

The orientation hub forms part of the site allowing the fynbos blanket to extend to the roof of the spaces. Gable roof extends past the planted roof drawing on the chimney of the traditional fisherman cottages. This allows the structure and spaces to be rooted in place.

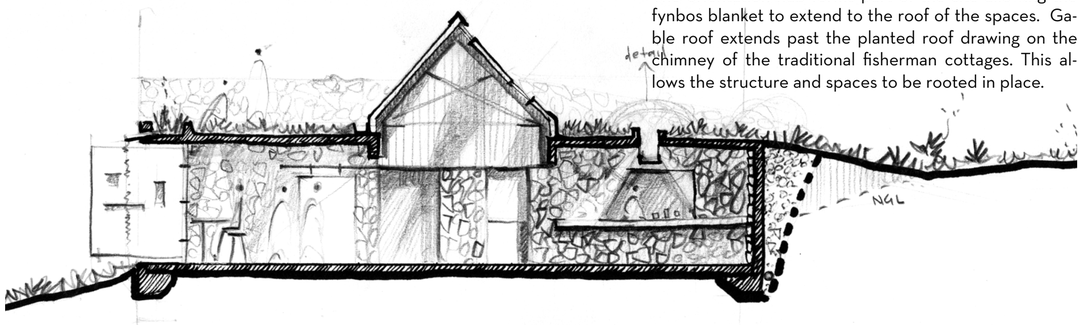
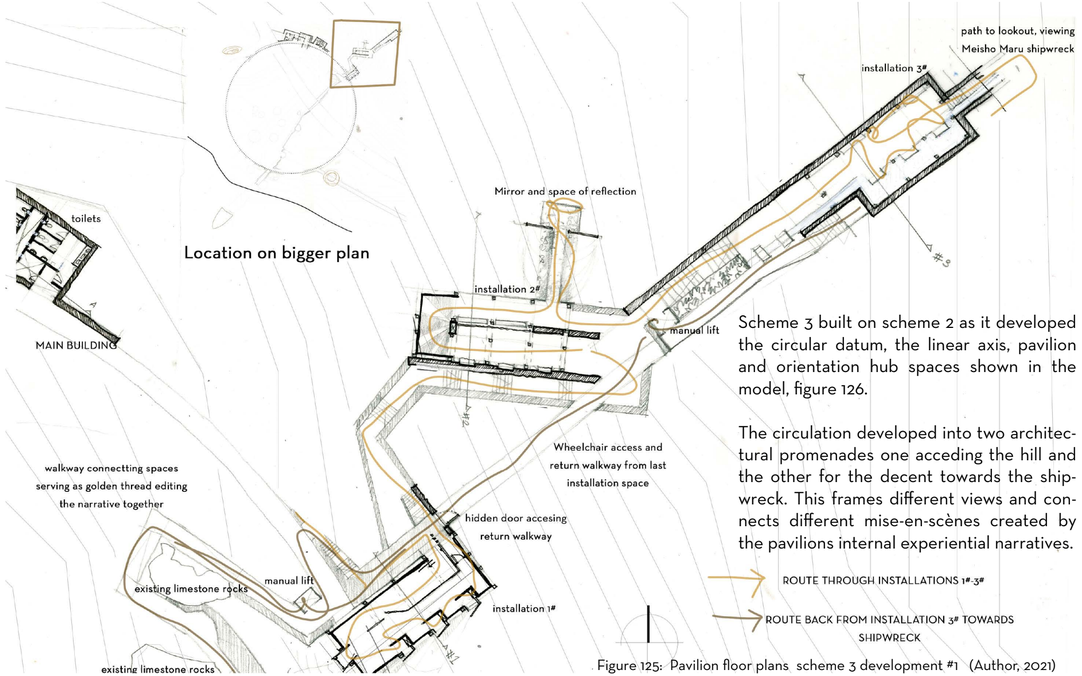


Figure 124: Restaurant section and structural development (Author, 2021)

SCHEME 3 DEVELOPMENT

MODEL, PLANS, SECTIONS and ELEVATION DEVELOPMENT #1



Scheme 3 built on scheme 2 as it developed the circular datum, the linear axis, pavilion and orientation hub spaces shown in the model, figure 126.

The circulation developed into two architectural promenades one acceding the hill and the other for the decent towards the shipwreck. This frames different views and connects different mise-en-scènes created by the pavilions internal experiential narratives.

ROUTE THROUGH INSTALLATIONS 1#-3#

ROUTE BACK FROM INSTALLATION 3# TOWARDS SHIPWRECK

Figure 125: Pavilion floor plans scheme 3 development #1 (Author, 2021)

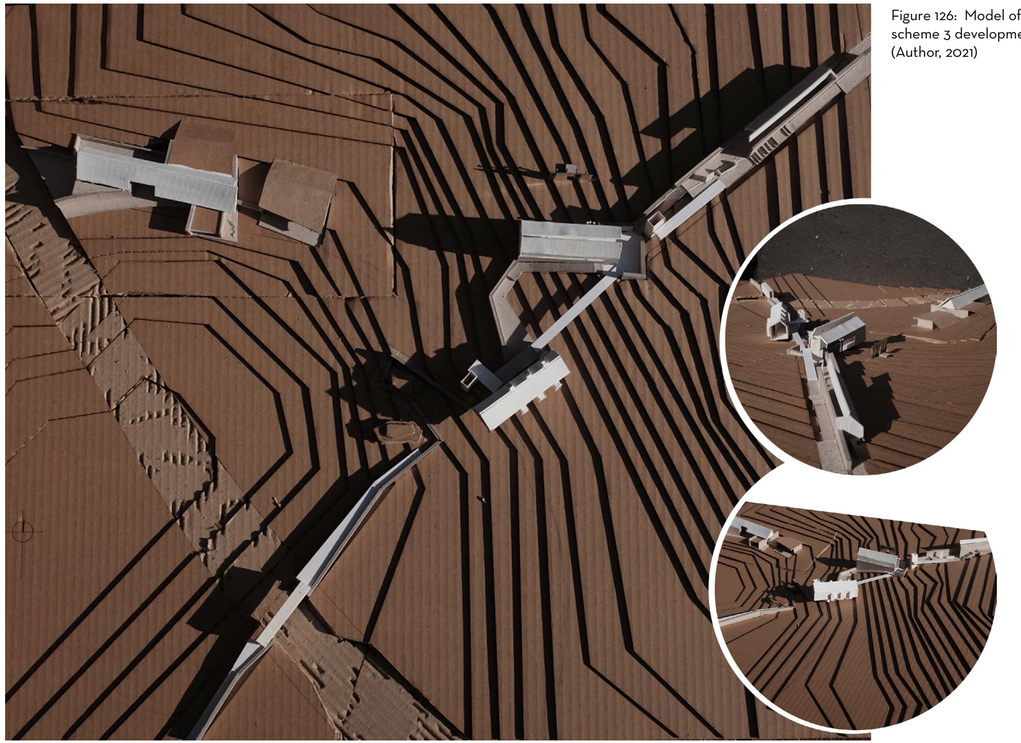


Figure 126: Model of scheme 3 development #1 (Author, 2021)

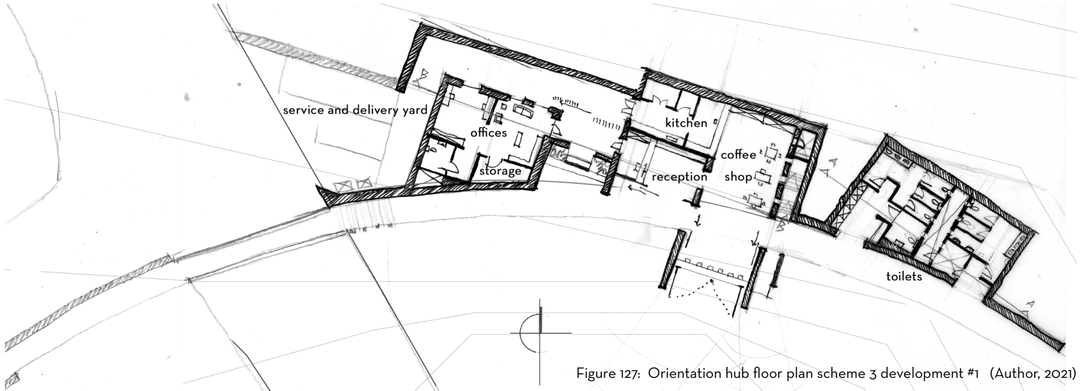


Figure 127: Orientation hub floor plan scheme 3 development #1 (Author, 2021)

The main Orientation Hub developed from the very linear form giving in scheme 2 towards a more organic shape. The plan follows the circular shape of the walkway, which allows a more sensitive approach as it follows the contours. The layout of the functions on plan shifted that the delivery yard and staff facilities could be closer to the gravel road for functional purposes.

Light shafts extend past the green roof to allow in natural light. The coffee shop has a mono pitched roof reaching towards the shipwreck to create hierarchy within the Orientation Hub (figure 128).

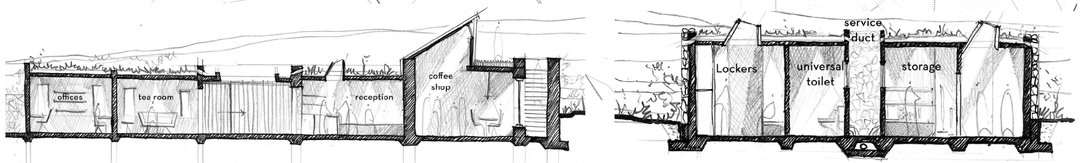


Figure 128: Orientation hub sections scheme 3 development #1 (Author, 2021)

The internal spaces and structures of the pavilions, figure 129, developed from the initial sketches in scheme 2. Thatch as a wall and roof covering fell away and developed into wood clad structures.

This development however lead to the structures losing their experiential quality. Resulting in the materiality and structure reverting back to thatch in the second development section of scheme 3.

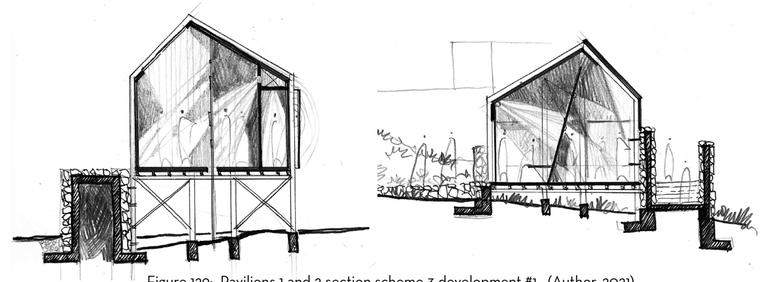


Figure 129: Pavilions 1 and 2 section scheme 3 development #1 (Author, 2021)

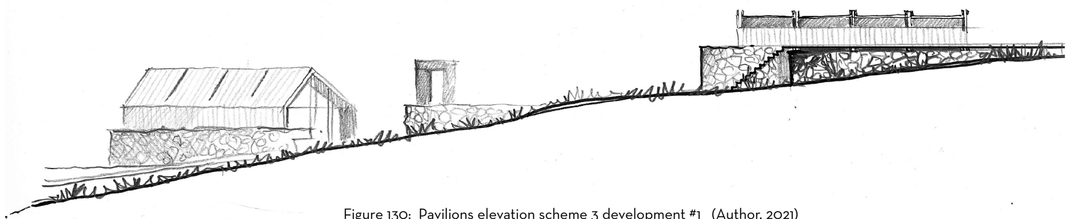


Figure 130: Pavilions elevation scheme 3 development #1 (Author, 2021)

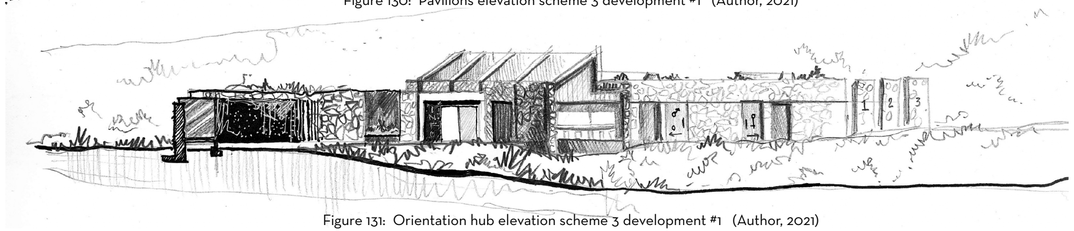


Figure 131: Orientation hub elevation scheme 3 development #1 (Author, 2021)

SPACE REQUIREMENT- PAVILION no. 3 SURVIVAL vs. DECAY

A space requirement of pavilion no. 3 investigated the experiential quality of the specific pavilion. It aided in understanding how structural systems, light and the natural environment could be used to tell the narrative of survival versus decay.

The pavilion space aims to capture the narratives of the shipwrecks that are beached around the Southern Tip of Africa. Although the vessels and most of the passengers survived storms, the ships are left subject to the passing of time leading to their decay.

Survival and decay are the two main experiences the space conveys. Corten steel plates, used for the seating, information panels and platforms hovering over the reflection pond, are used to capture the feeling of decay.

The foundation structure is made out of concrete raft foundations with limestone clad retaining walls that cut into the site. A timber deck is build upon the concrete floor slab and the reflection pond forms part on the concrete floor slab. The roof structure and walkway over the space is made from a timber frame structure with timber walls that creates lateral support. Minimal openings creates an atmospheric light quality. The structure has no windows or door and is exposed to the elements aiding in the natural process of decay.

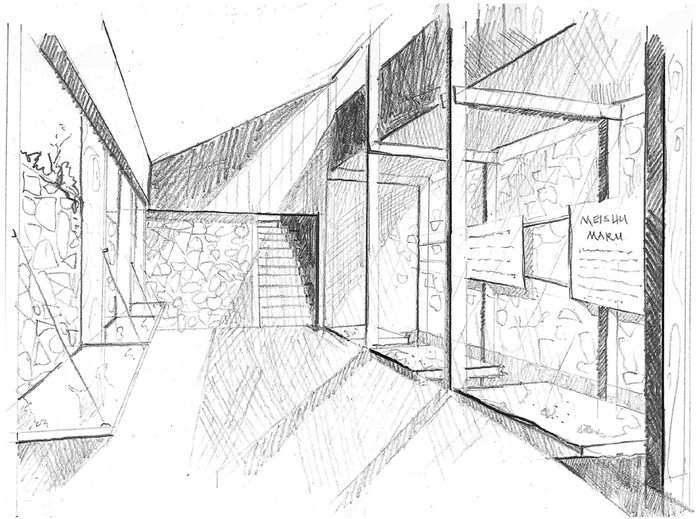


Figure 132: Pavilion 3 interior scheme 3 development #1 (Author, 2021)

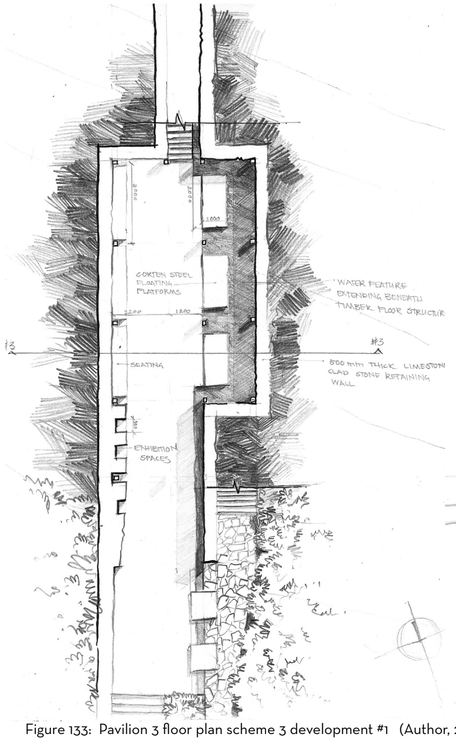


Figure 133: Pavilion 3 floor plan scheme 3 development #1 (Author, 2021)

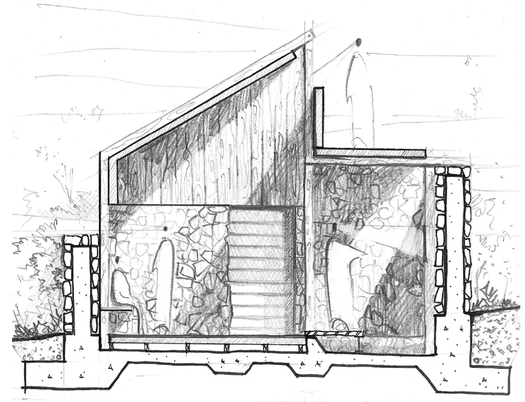


Figure 134: Pavilion 3 section scheme 3 development #1 (Author, 2021)

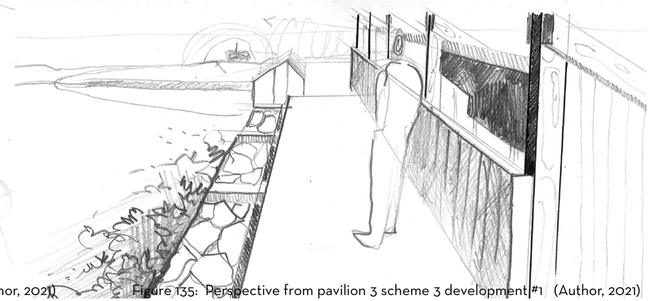


Figure 135: Perspective from pavilion 3 scheme 3 development #1 (Author, 2021)

STRUCTURAL SYSTEM DEVELOPMENT

PLANS, SECTIONS and ELEVATIONS SCHEME 3 DEVELOPMENT #2

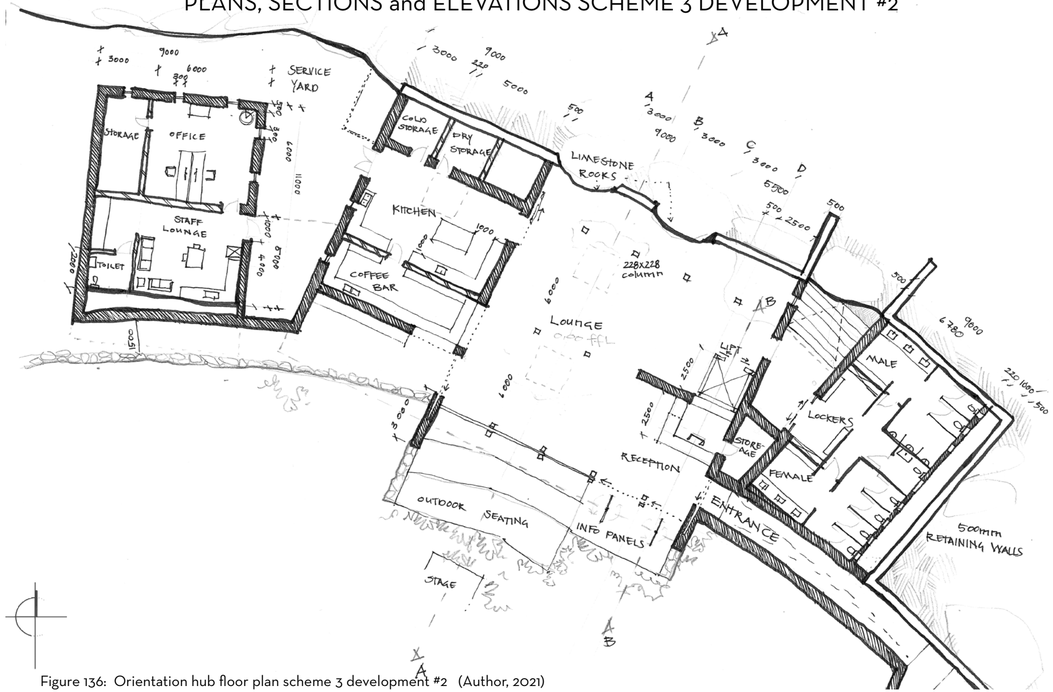
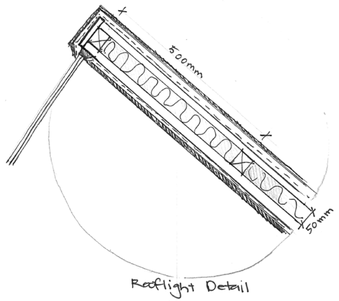


Figure 136: Orientation hub floor plan scheme 3 development #2 (Author, 2021)



Initially a wooden structure was proposed for the main orientation hub's planted roof. Because the structure is sunken into the earth and has a planted roof the wooden structure was reconsidered to avoid problems with the wood rotting. The northern facade of the design was completely closed of with a retaining wall at first. This developed to create a void between the natural rock face and a north facing glazed facade. This development allowed more natural light to enter the sunken in structure and resolve the drainage problems that arose in the section below (figure 137).

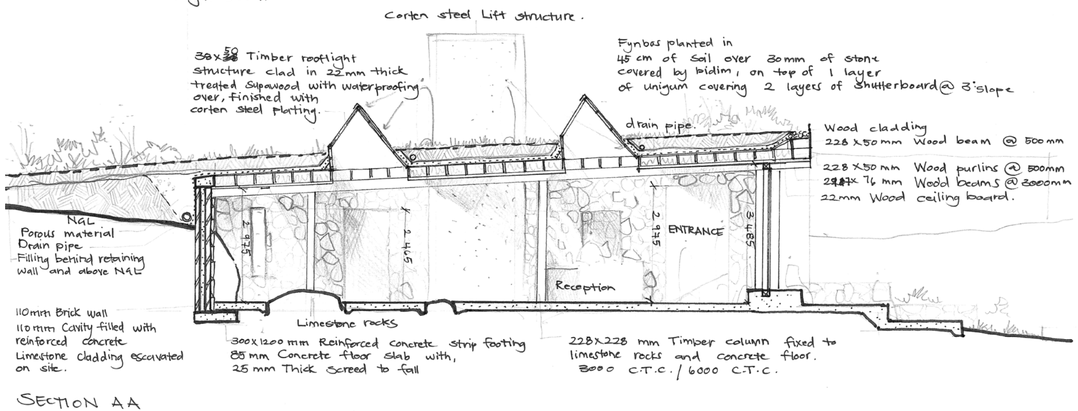


Figure 137: Orientation hub structural section scheme 3 development #2 (Author, 2021)

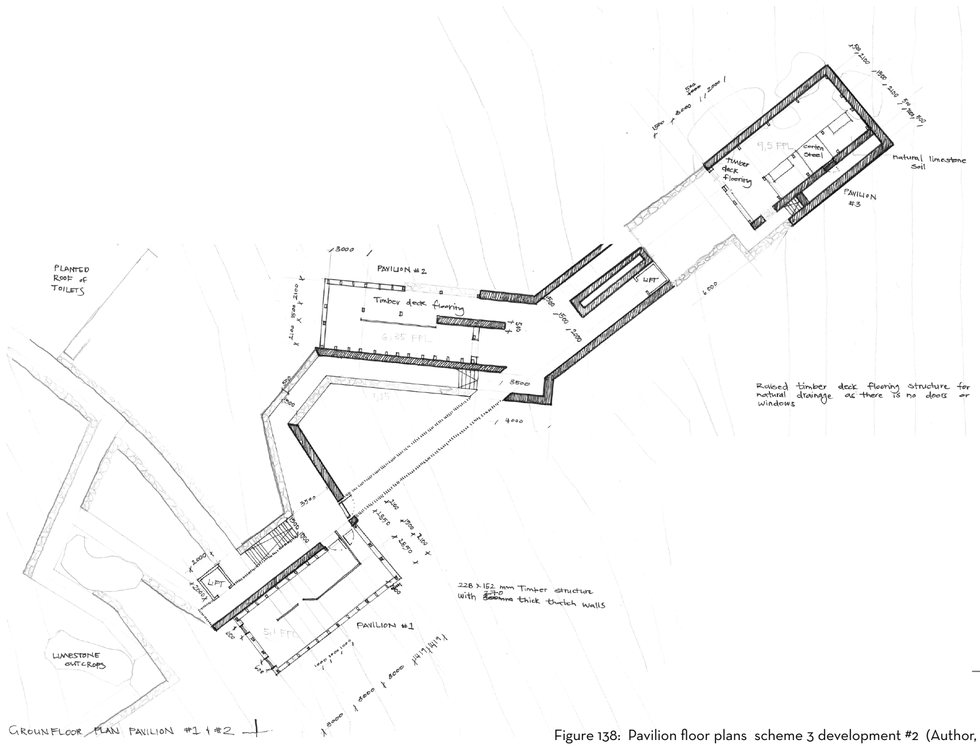


Figure 138: Pavilion floor plans scheme 3 development #2 (Author, 2021)

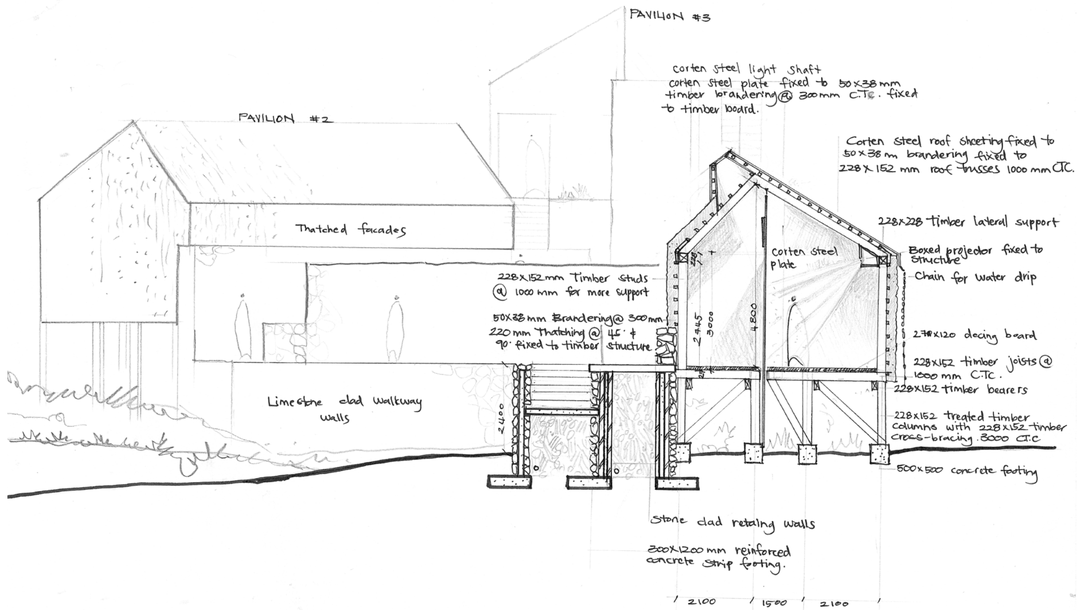


Figure 139: Pavilion 1 Heroism vs suffering structural section scheme 3 development #2 (Author, 2021)

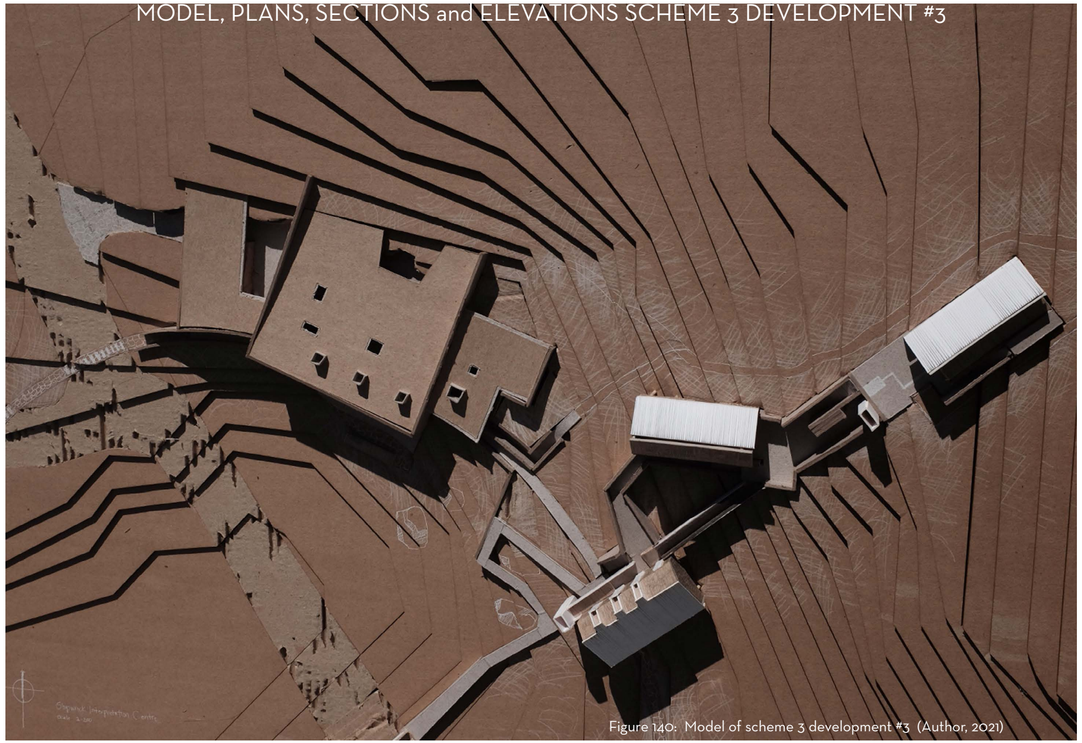


Figure 140: Model of scheme 3 development #3 (Author, 2021)

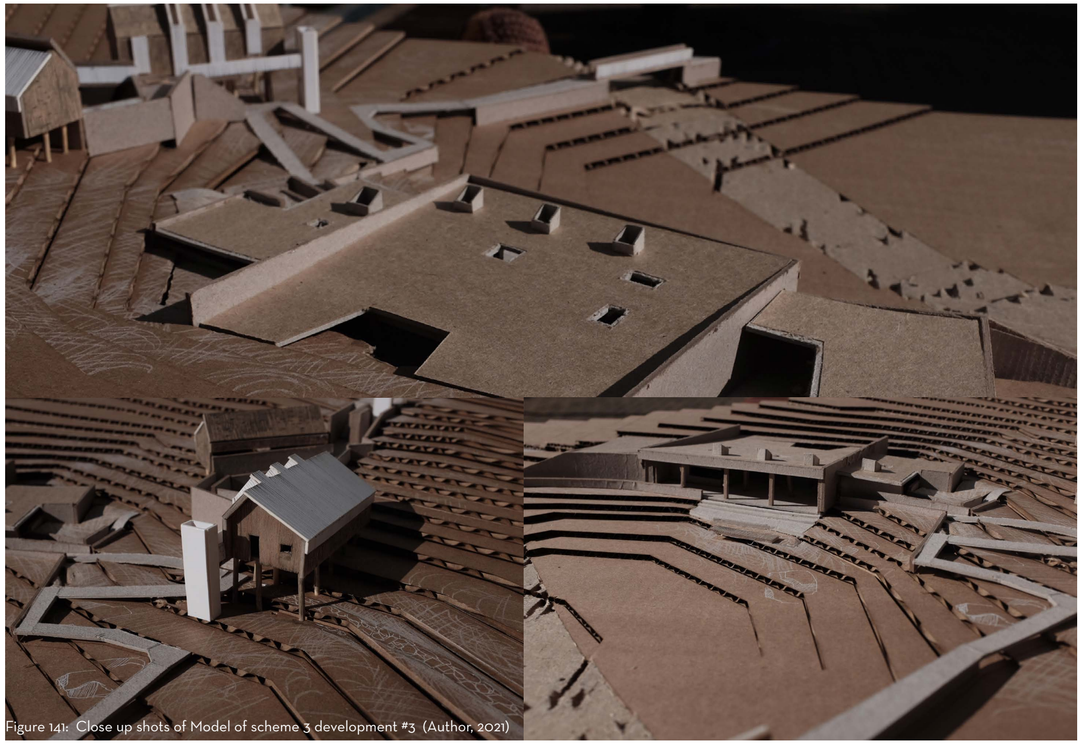


Figure 141: Close up shots of Model of scheme 3 development #3 (Author, 2021)

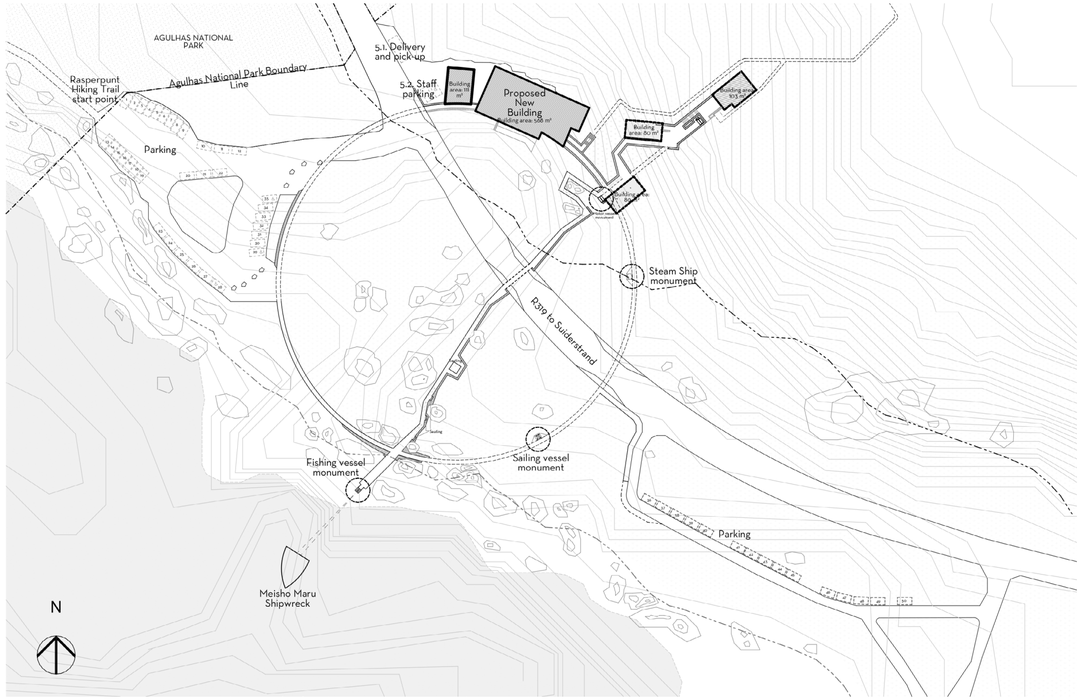


Figure 142: Site plan scheme 3 development #3 (Author, 2021)

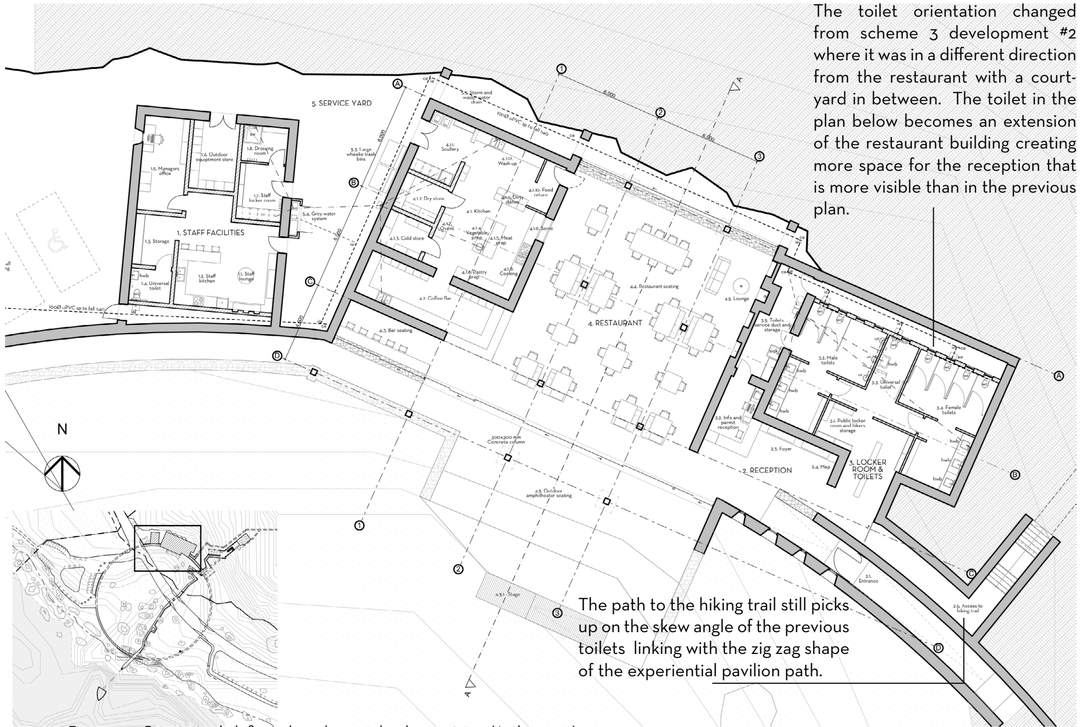


Figure 143: Orientation hub floor plan scheme 3 development #3 (Author, 2021)

The concrete light shafts shown in the section below did not communicate enough with the experiential pavilions. This lead to the development of the light shaft in the final design proposal that builds on the form giving of the Meisho Maru shipwrecks triangular mast which reeled in the fishing nets.

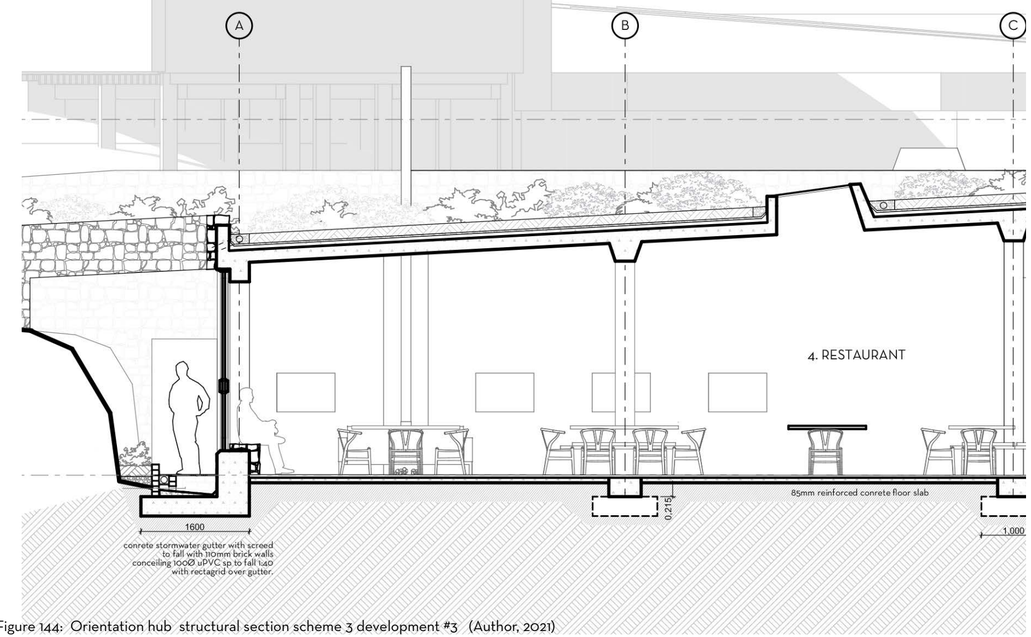
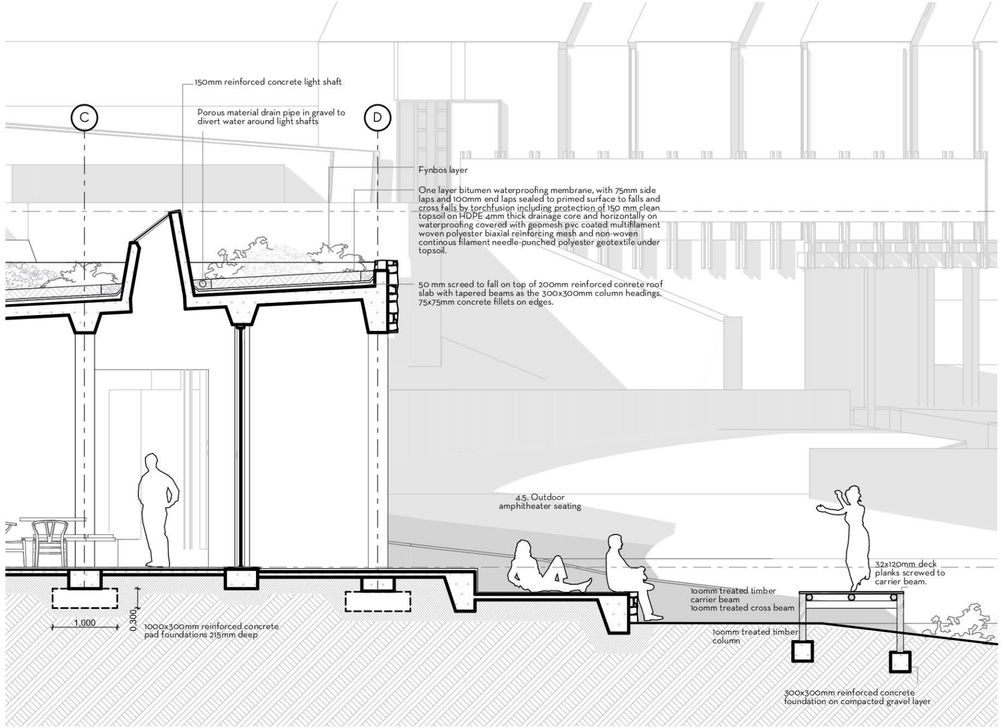


Figure 144: Orientation hub structural section scheme 3 development #3 (Author, 2021)



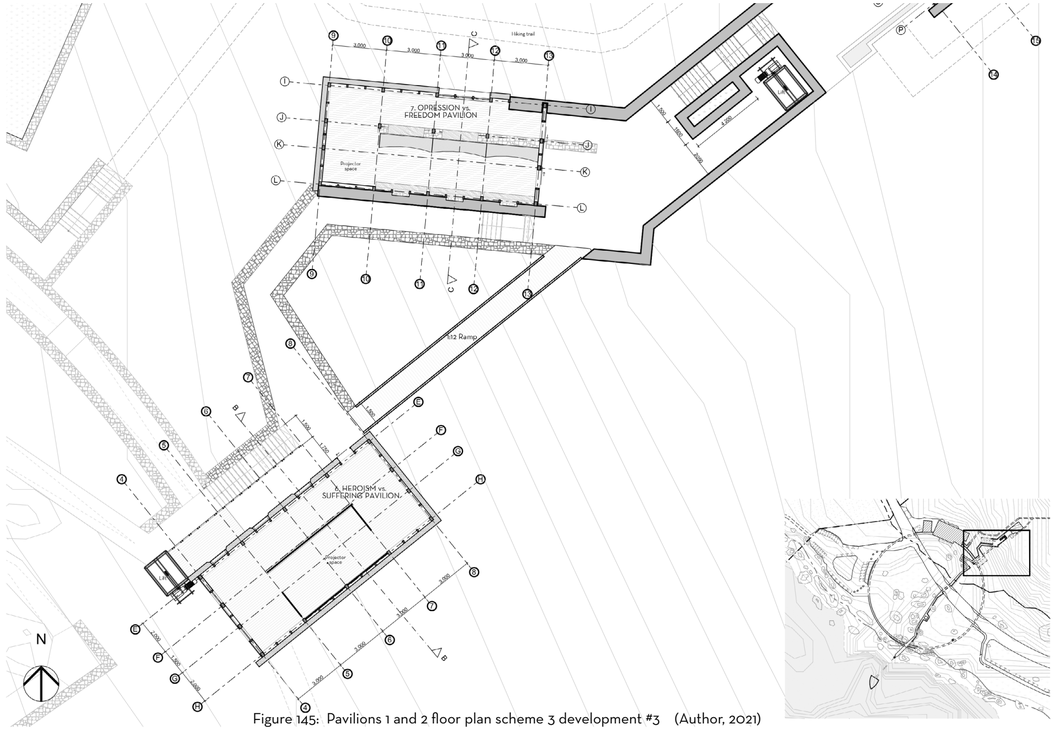


Figure 145: Pavilions 1 and 2 floor plan scheme 3 development #3 (Author, 2021)

The timber columns supporting the pavilions structure did not communicate the idea of floating effectively. This lead to the final proposal of a singular stone wall that supports the structure and allows the structure to float in the landscape.

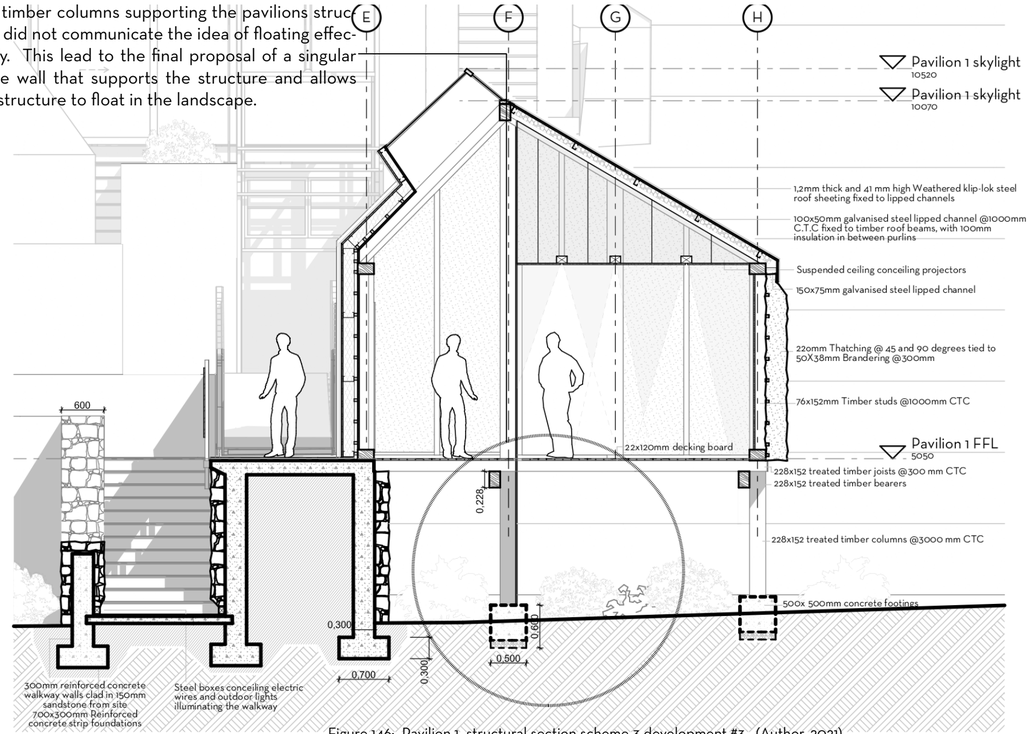


Figure 146: Pavilion 1 structural section scheme 3 development #3 (Author, 2021)



The experiential pavilions, especially pavilion 3, got wider with the development of the spaces. This expansion of the pavilions however made their proportions less elegant compared to the previous form giving in scheme 3 development #1. This made me revisit the massing of the pavilions to make them thinner again, to create better proportions for the final design proposal.

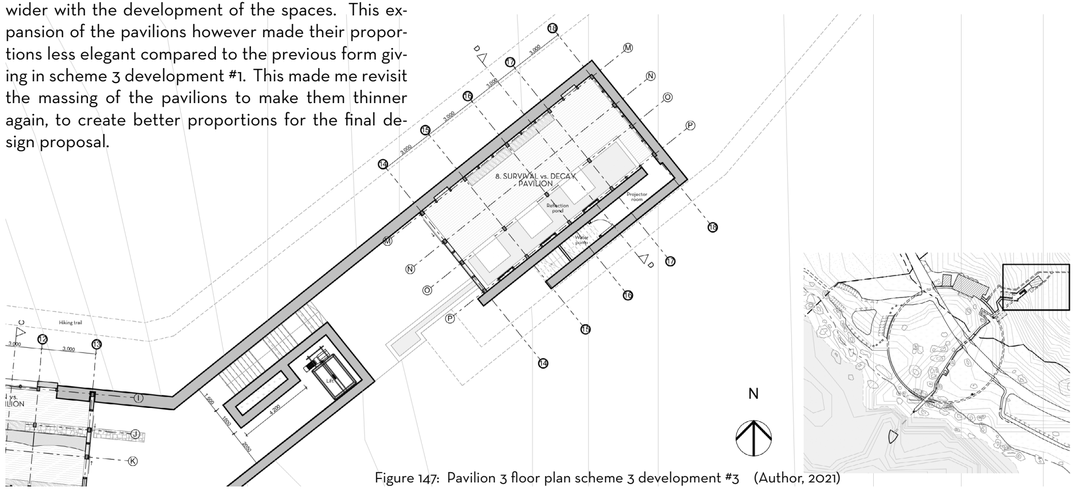


Figure 147: Pavilion 3 floor plan scheme 3 development #3 (Author, 2021)

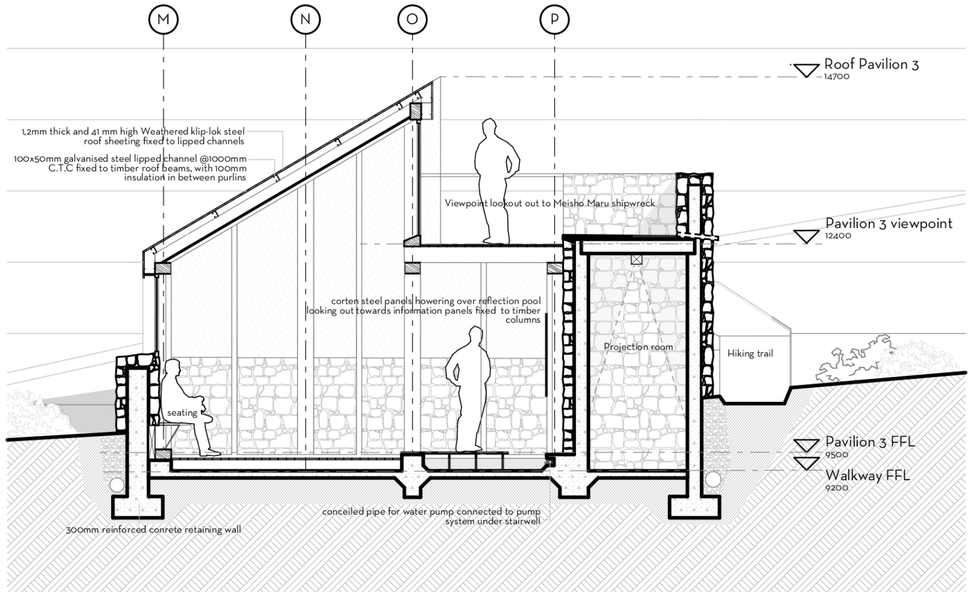


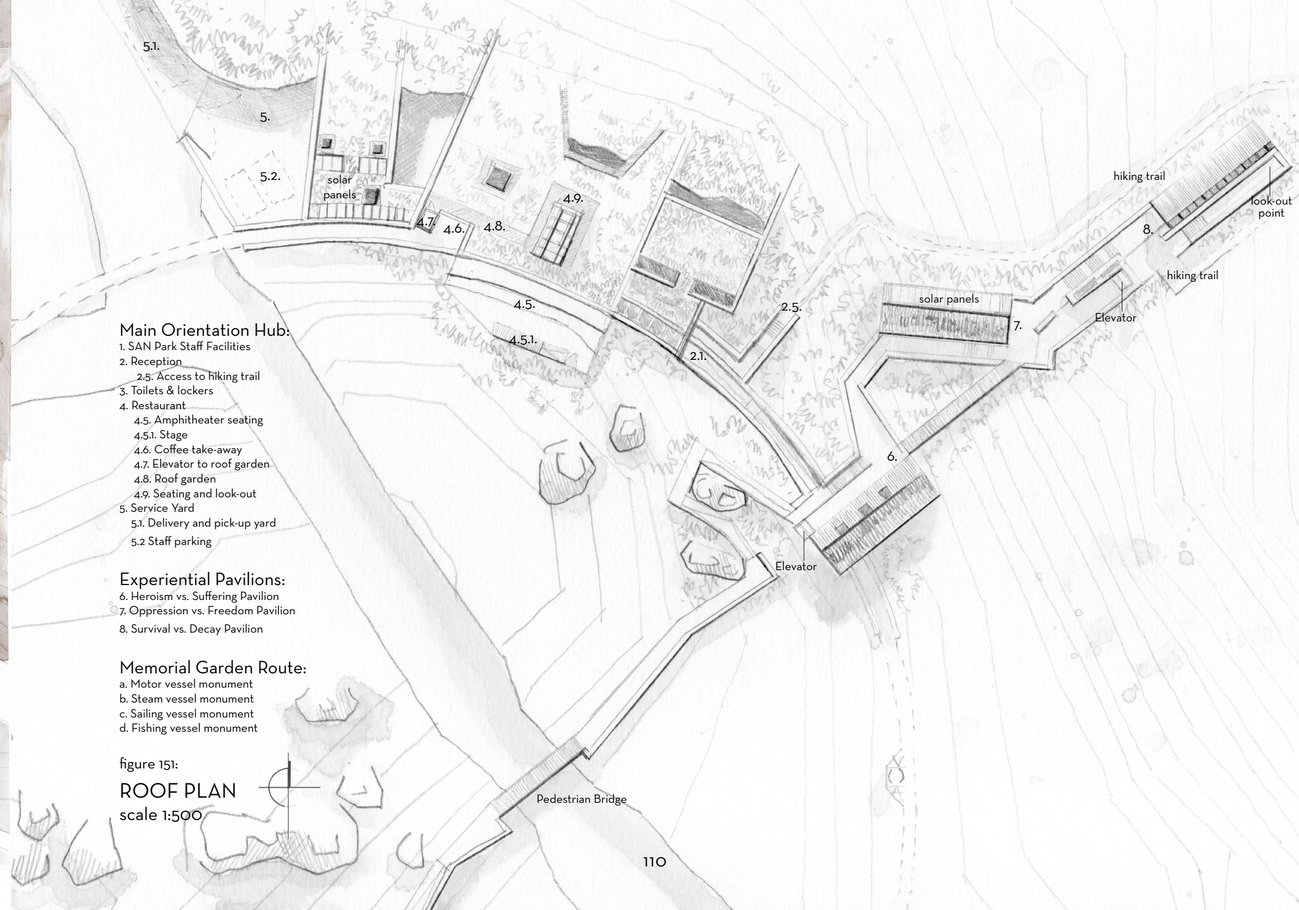
Figure 148: Pavilion 3 structural section scheme 3 development #3 (Author, 2021)

figure 149:
SOUTH WEST ELEVATION





figure 150:
SITE PLAN
scale 1:1000



Main Orientation Hub:

1. SAN Park Staff Facilities
2. Reception
   - 2.5. Access to hiking trail
3. Toilets & lockers
4. Restaurant
   - 4.5. Amphitheater seating
   - 4.5.1. Stage
   - 4.6. Coffee take-away
   - 4.7. Elevator to roof garden
   - 4.8. Roof garden
   - 4.9. Seating and look-out
5. Service Yard
   - 5.1. Delivery and pick-up yard
   - 5.2 Staff parking

Experiential Pavilions:

6. Heroism vs. Suffering Pavilion
7. Oppression vs. Freedom Pavilion
8. Survival vs. Decay Pavilion

Memorial Garden Route:

a. Motor vessel monument
b. Steam vessel monument
c. Sailing vessel monument
d. Fishing vessel monument

figure 151:
ROOF PLAN
scale 1:500

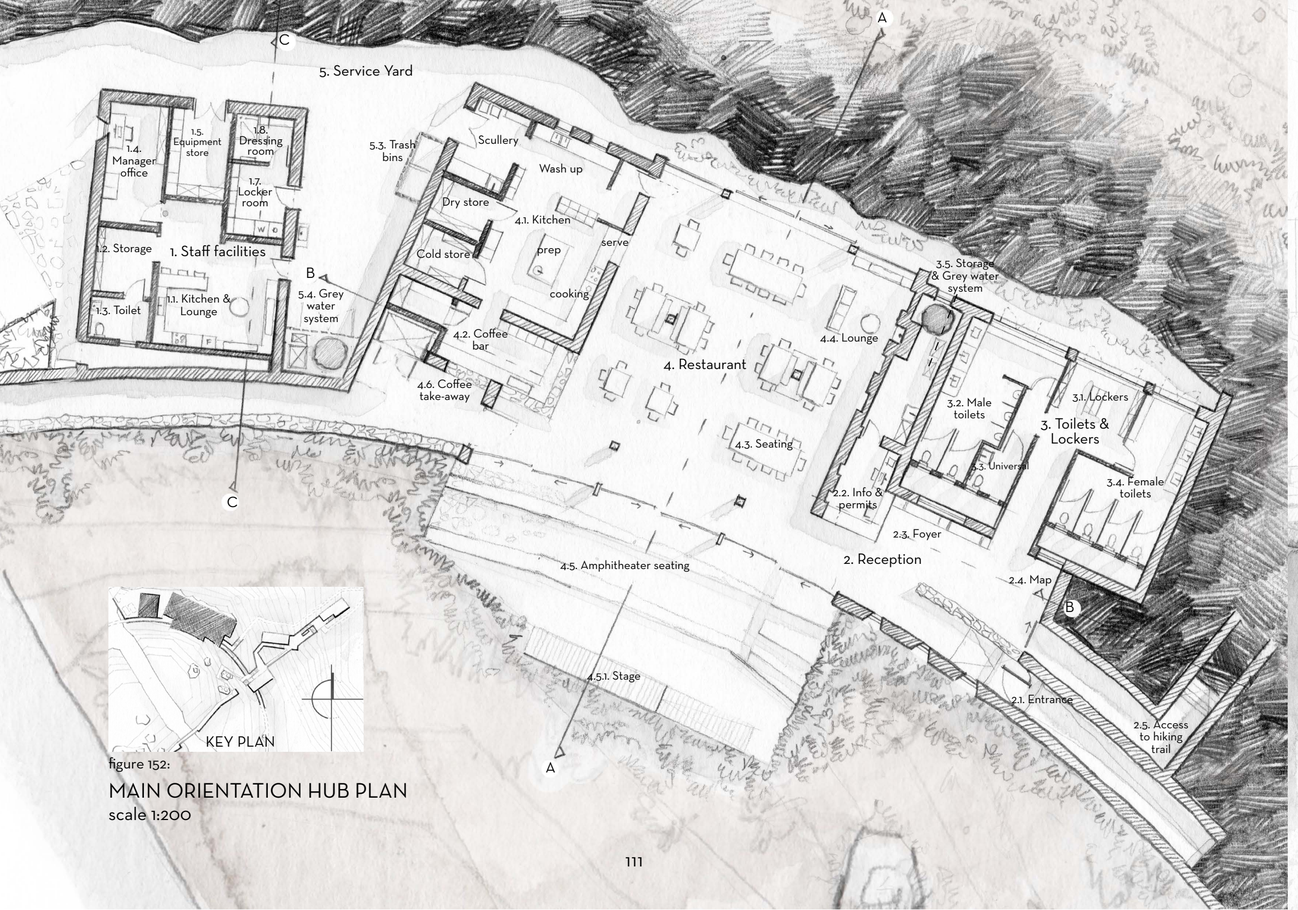


figure 152:

MAIN ORIENTATION HUB PLAN

scale 1:200

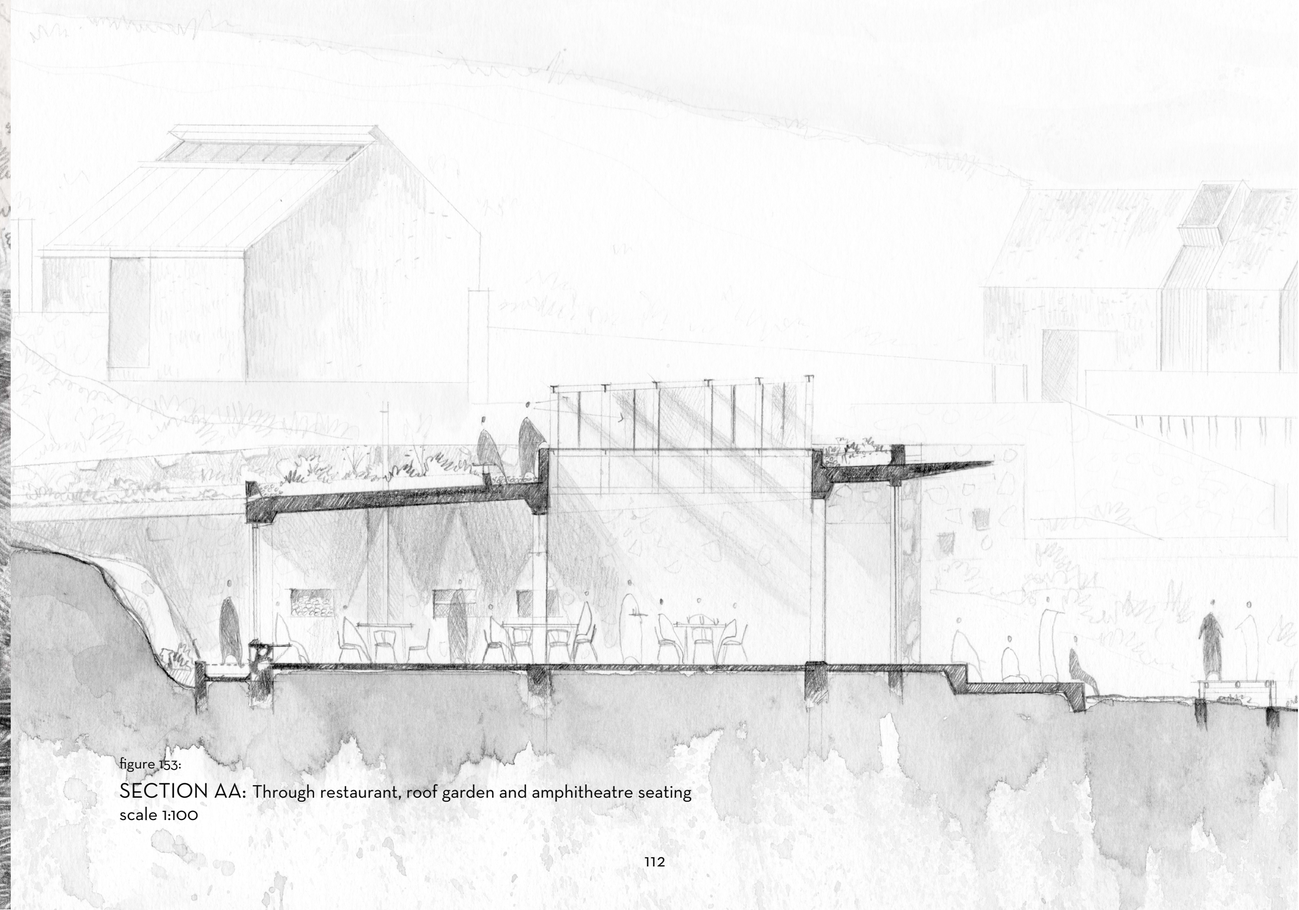
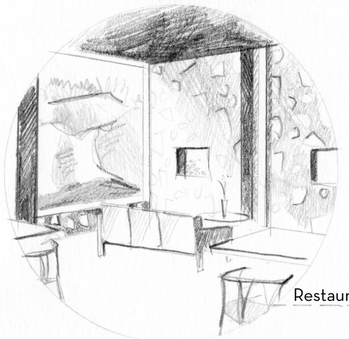


figure 153:

SECTION AA: Through restaurant, roof garden and amphitheatre seating

scale 1:100



Restaurant Lounge

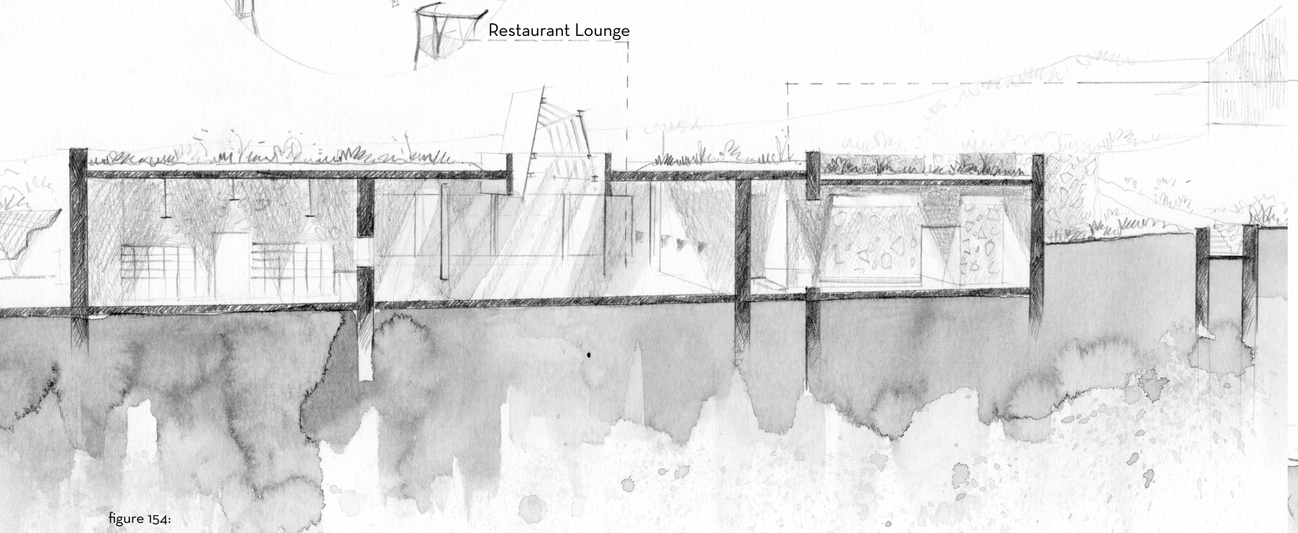
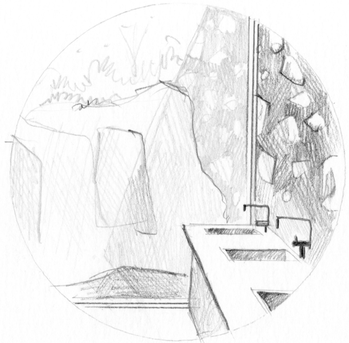
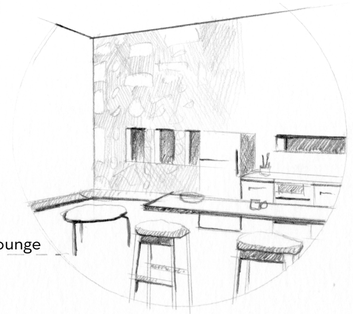


figure 154:
SECTIONAL PERSPECTIVE BB: Through Coffee bar, restaurant and reception

Hand washbasins
in female toilet





Staff lounge

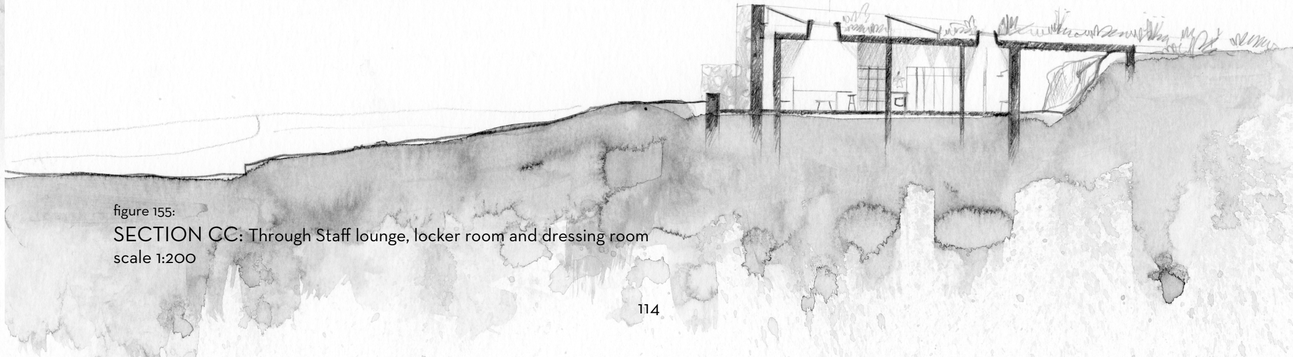


figure 155:
SECTION CC: Through Staff lounge, locker room and dressing room
scale 1:200



figure 156:
RESTAURANT INTERIOR

figure 157:
ROOF GARDEN PERSPECTIVE

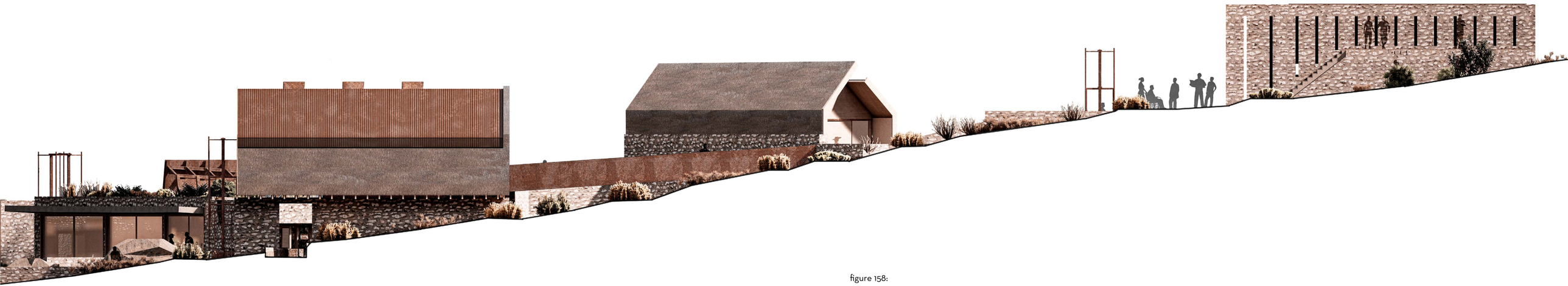


figure 158:
SOUTH EAST ELEVATION

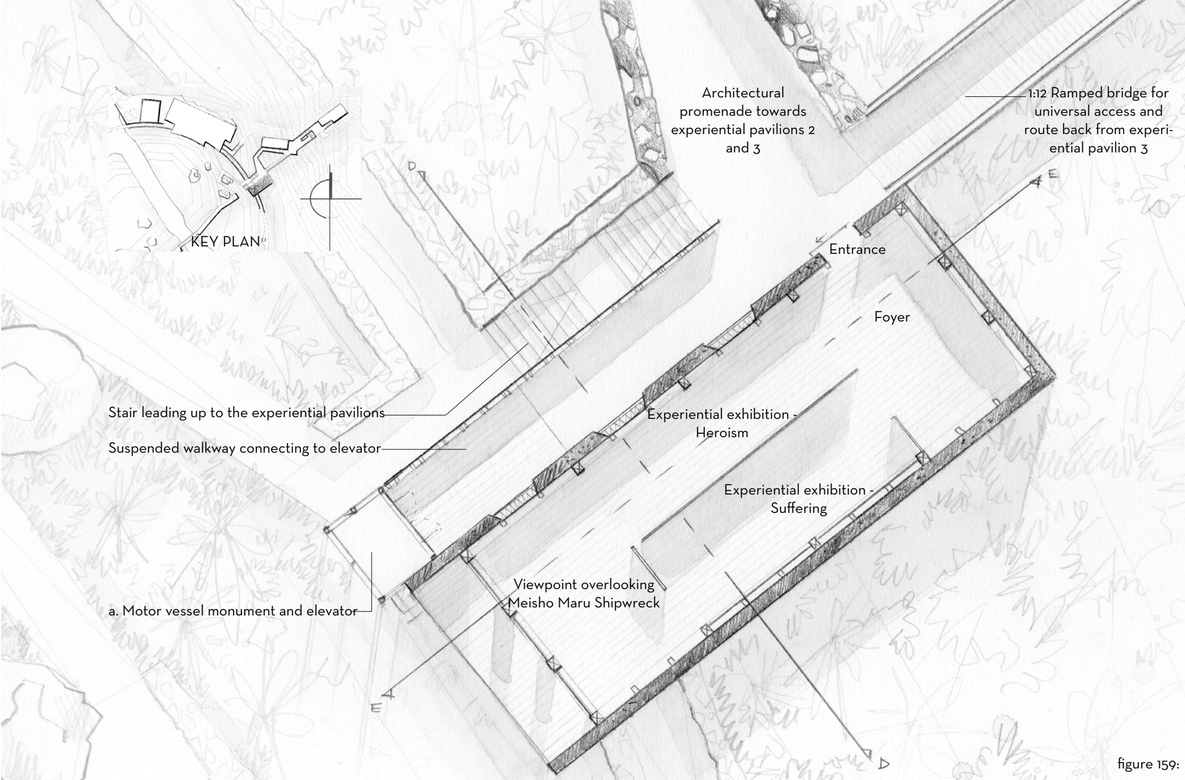


figure 159:
HEROISM vs. SUFFERING EXPERIENTIAL PAVILION PLAN
scale 1:100

Experiential exhibition - Heroism

A weathered steel information plate latching onto the stone foundation wall protrudes into the pavilion dividing the space in two. A small gap around the plate gives the idea that the steel plate heroically supports the almost floating pavilion. Brass plates are fixed to the weathered shard, reflecting natural light flowing in from the light shafts. The exhibition is designed to illuminate the steel shard which symbolizes all the brave soldiers on the shipwrecks.

Experiential exhibition - Suffering

A projection space is created by the weathered steel panels. Projectors suspended from the ceiling uses artificial light to display narratives of tragic shipwreck events onto the visitors passing through the space. In contrast to the very bright heroism exhibiting this exhibition is melancholy and much darker to convey the idea of suffering on the shipwrecks.

figure 160:
SECTION DD: Cross-section through experiential pavilion 1
scale 1:50

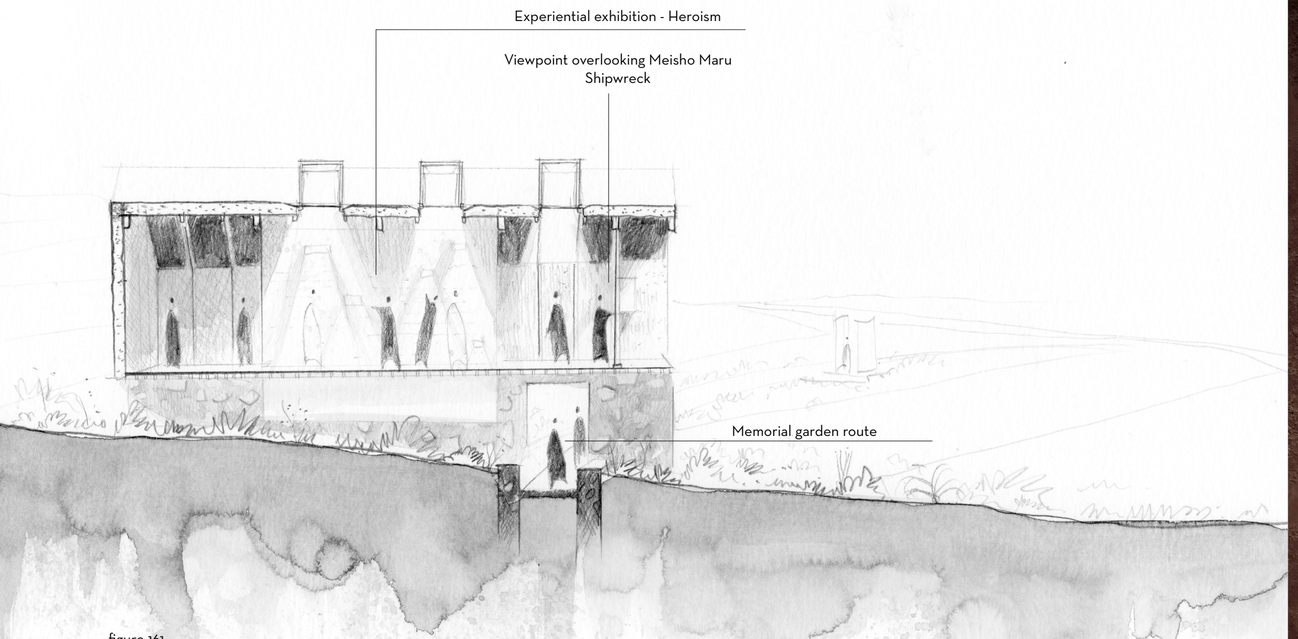


figure 161:

SECTIONAL PERSPECTIVE EE: Experiential pavilion Heroism vs Suffering, memorial garden path

figure 162:

HEROISM vs. SUFFERING EXPERIENTIAL PAVILION INTERIOR

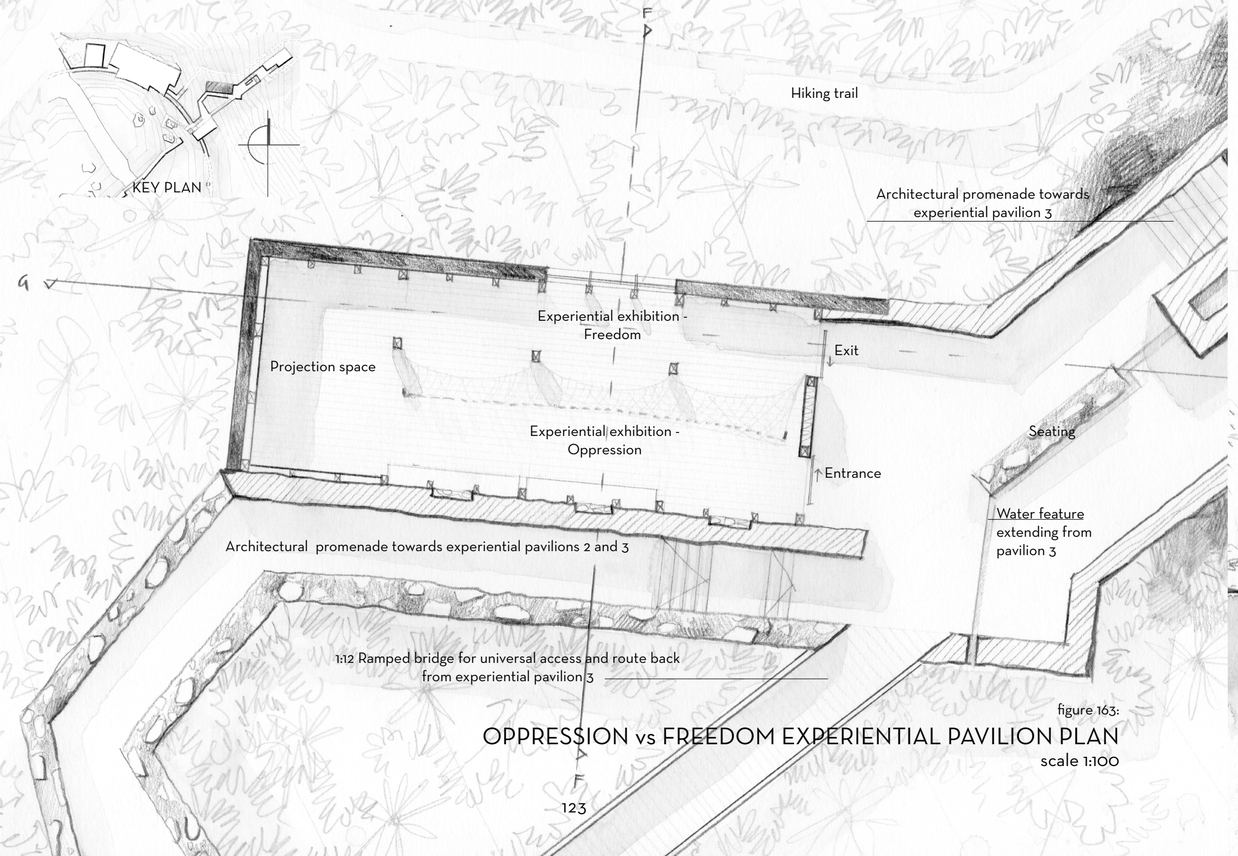


figure 163:

OPPRESSION vs FREEDOM EXPERIENTIAL PAVILION PLAN

scale 1:100

Experiential exhibition - Oppression

A woven fabric screen is suspended from the ceiling to an angle to "suppress" the visitor when they move through the exhibition. The narrow walkway with the sail-like wall forces the visitor towards the display tables where information on the slave ships is exhibited. This confronts the visitor with the harsh and oppressive nature of the slave ships wrecked at sea. The sail filters natural light to create a diffused effect. The narrow walkway channels the visitor into the projection room where images of the slave shipwrecks are projected on the walls. This creates a point of view shot where the viewer is placed in the time and place of the slaves creating a heightened awareness of their circumstances.

Experiential exhibition - Freedom

After the visitor moves through the exhibition space and projection room the space suddenly opens up with natural light flowing in. The visitor is now on the other side of the suspended screen which opens up towards the light shaft. The names of the slaves who were freed from the ships are projected on the screen creating a more optimistic tone compared to the oppression exhibition. A large north-facing window opens up to the limestone hill where hikers pass through, indicating a sense of freedom.

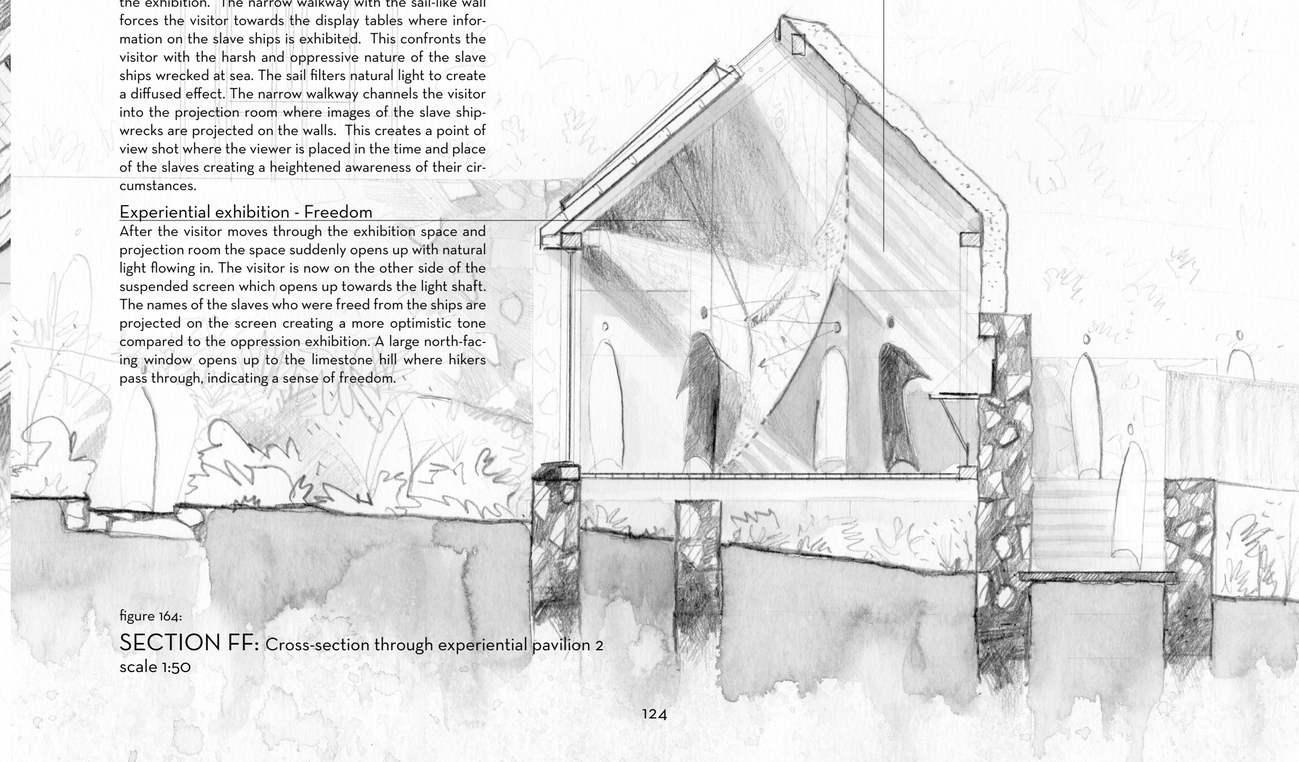


figure 164:

SECTION FF: Cross-section through experiential pavilion 2

scale 1:50

Experiential exhibition - Freedom

The sail screen articulates the duality between oppression and freedom as it is not completely solid, allowing the visitor to see movement from the other exhibition without physically being in the space.

Projection space

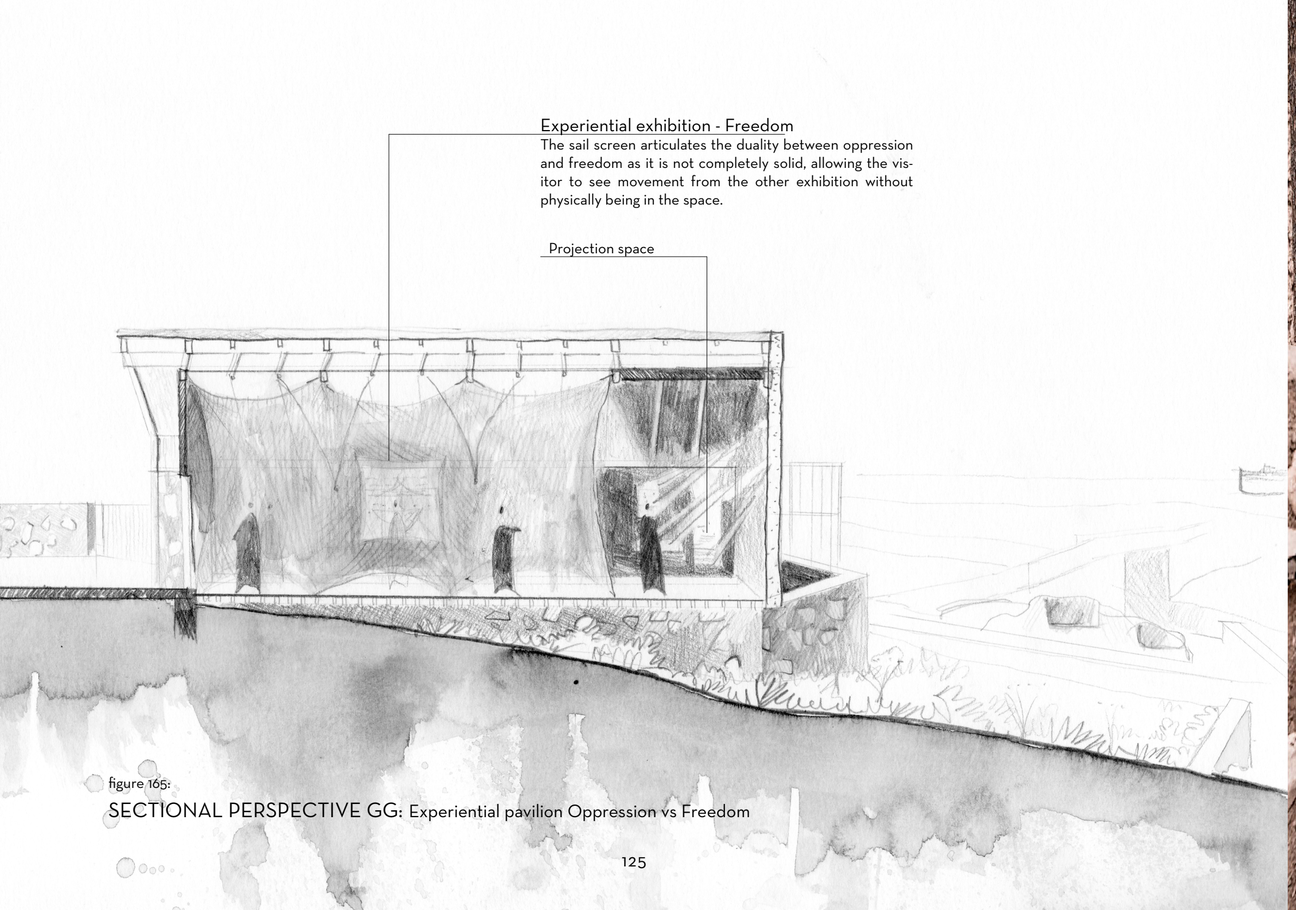


figure 165:

SECTIONAL PERSPECTIVE GG: Experiential pavilion Oppression vs Freedom



figure 166:

OPPRESSION vs FREEDOM EXPERIENTIAL PAVILION INTERIOR



figure 167:

SURVIVAL vs DECAY EXPERIENTIAL PAVILION PLAN

scale 1:100

Experiential exhibition - Decay

In contrast to the other experiential pavilions pavilion 3 has no windows and doors leaving it exposed to the natural elements. This design consideration allows for natural decay to take place within the pavilion. The weathered steel plates hovering over a reflection pond play on the idea of the shipwrecks that are left stranded and decaying in the ocean around the Southern Tip of Africa. Openings in the roof draw in natural light that reflects from the pool of water and illuminates weathered steel panels with the narratives of the shipwrecks still visible around the Tip of Africa. This includes the story of Meisho Maru no.38.

Experiential exhibition - Survival

A narrow water channel in the floor grows from the reflection pond and extends out of the pavilion towards pavilion 2. This water feature refers to the people who survived the wild storms of the ocean and escaped the shipwrecks. After exiting the pavilion a stairwell takes the visitor to a viewing platform that overlooks Meisho Maru no. 38 and the ocean. The viewpoint allows the visitor to reflect on the experiential journey overlooking all 3 pavilions, knowing they survived the journey just like others survived the tragic shipwreck events.

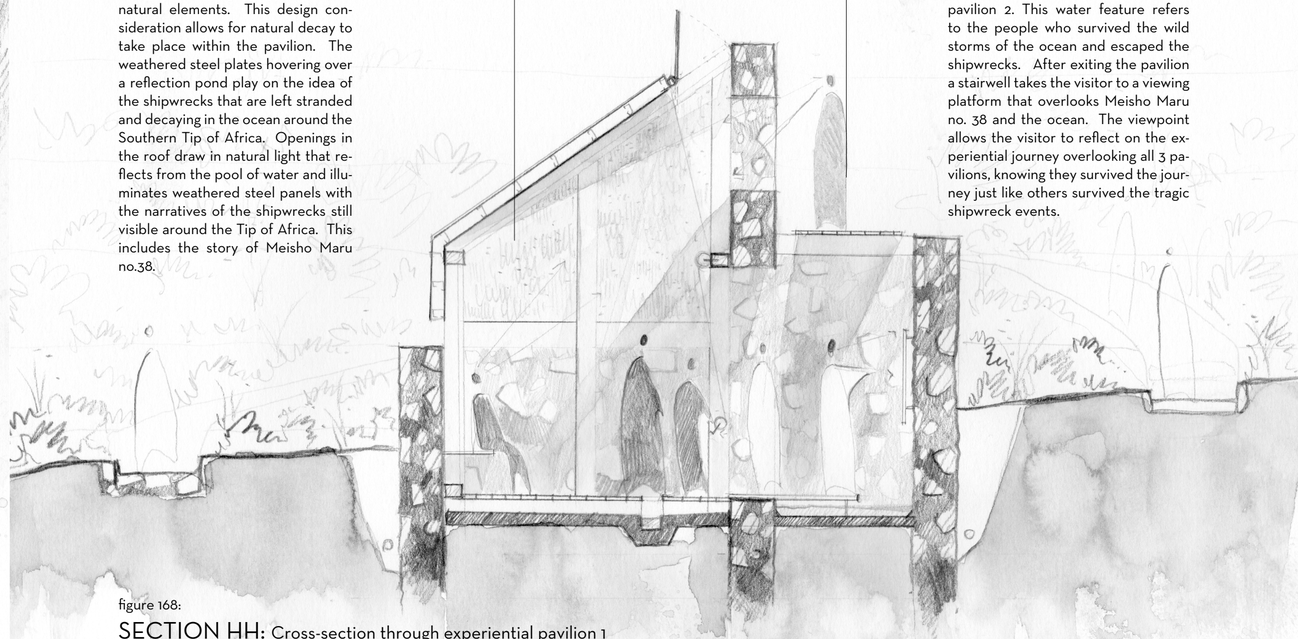


figure 168:

SECTION HH: Cross-section through experiential pavilion 1

scale 1:50

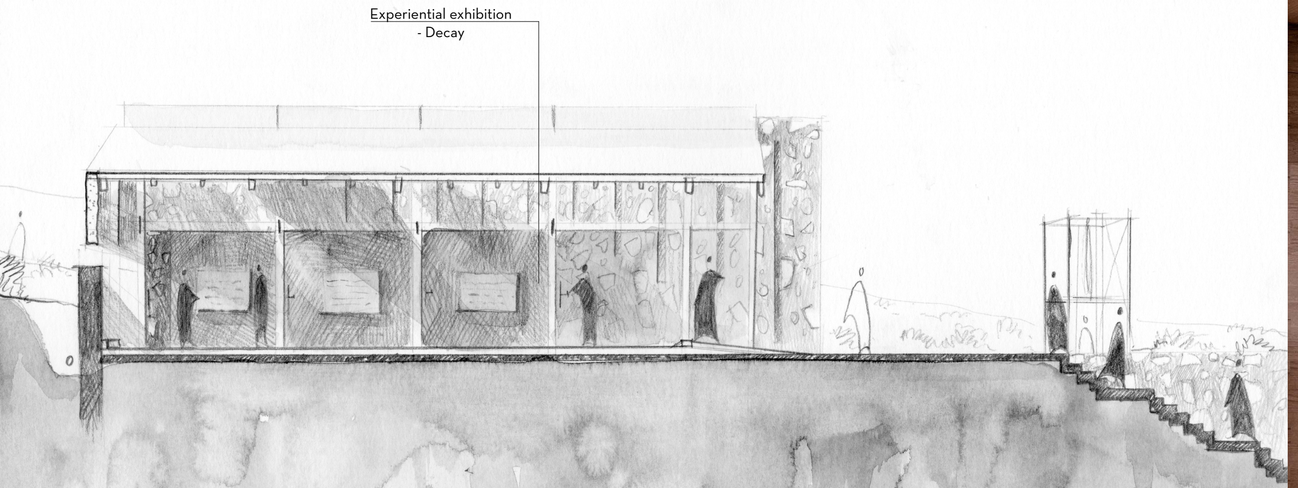


figure 169:

SECTIONAL PERSPECTIVE II: Experiential pavilion Survival vs Decay

figure 170:

SURVIVAL vs DECAY EXPERIENTIAL PAVILION INTERIOR



figure 171:
PERSPECTIVE of EXPERIENTIAL PAVILION 3
Overlooking Meisho Maru Shipwreck and the experiential pavilions

figure 172:
PERSPECTIVE of EXPERIENTIAL PAVILION 2 & 1



figure 173:
PERSPECTIVE of MOTOR VESSEL MONUMENT and
EXPERIENTIAL PAVILION 1

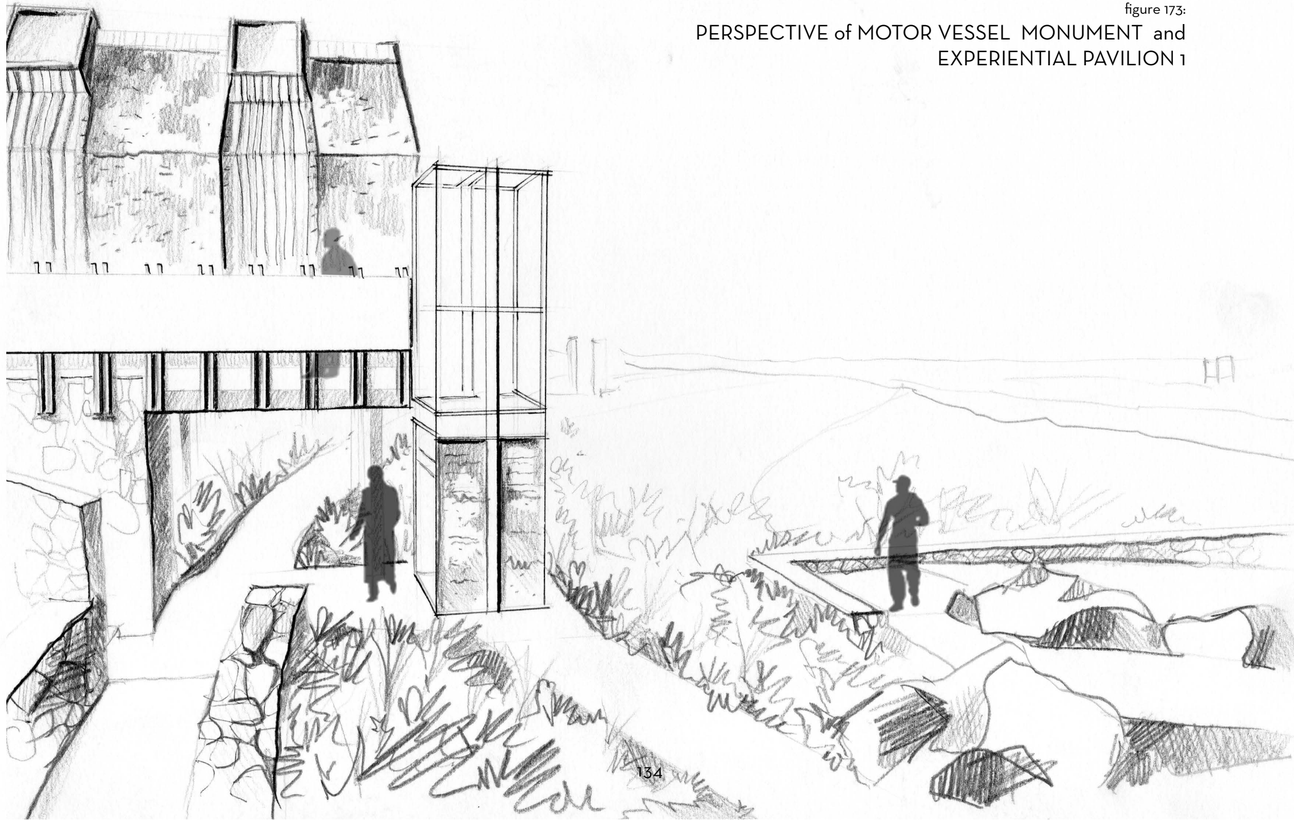


figure 174:
PERSPECTIVE of STEAM VESSEL MONUMENT

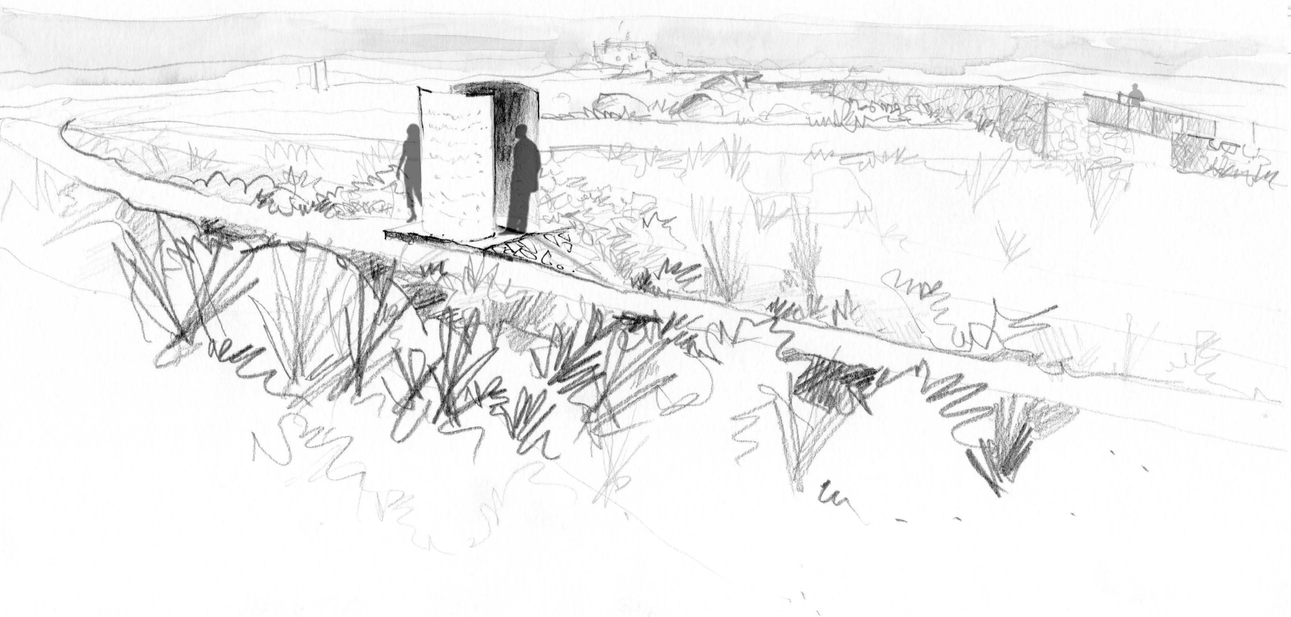


figure 175:
PERSPECTIVE of SAILING VESSEL MONUMENT

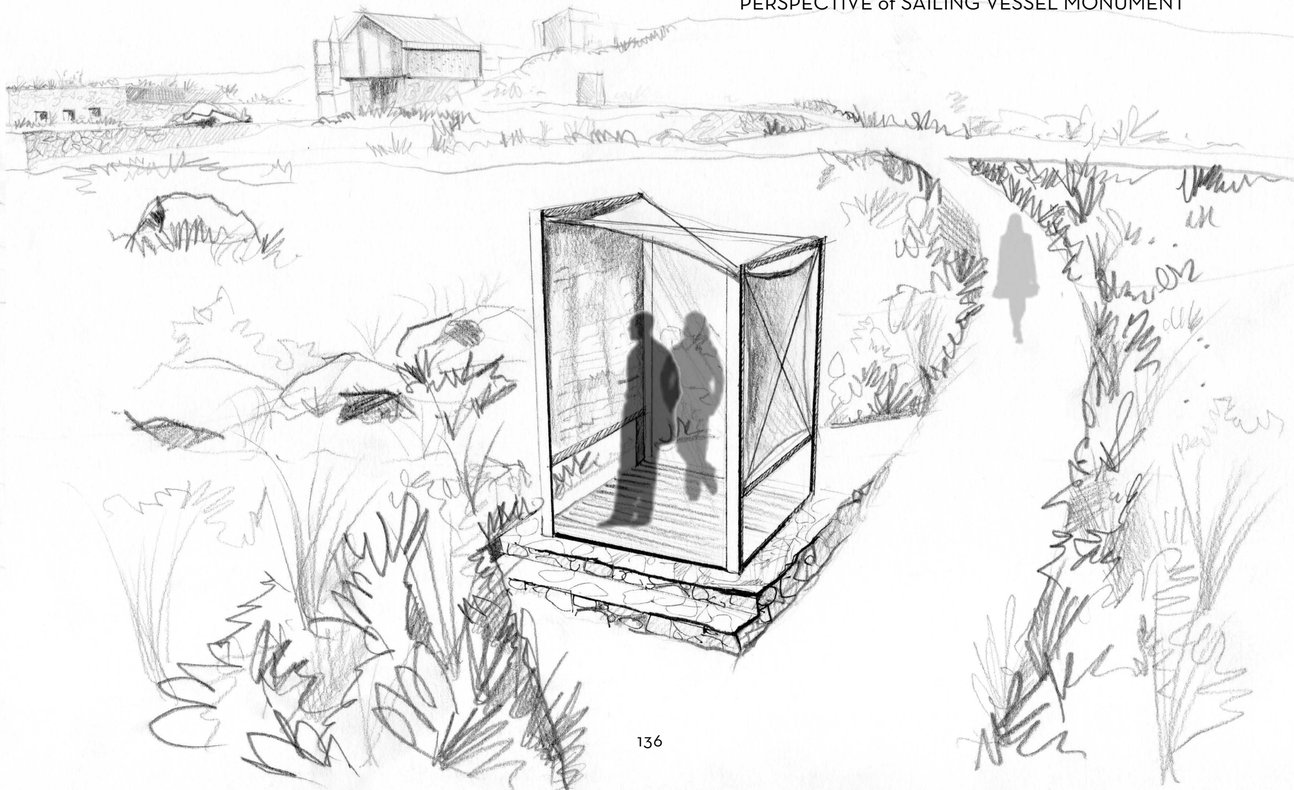
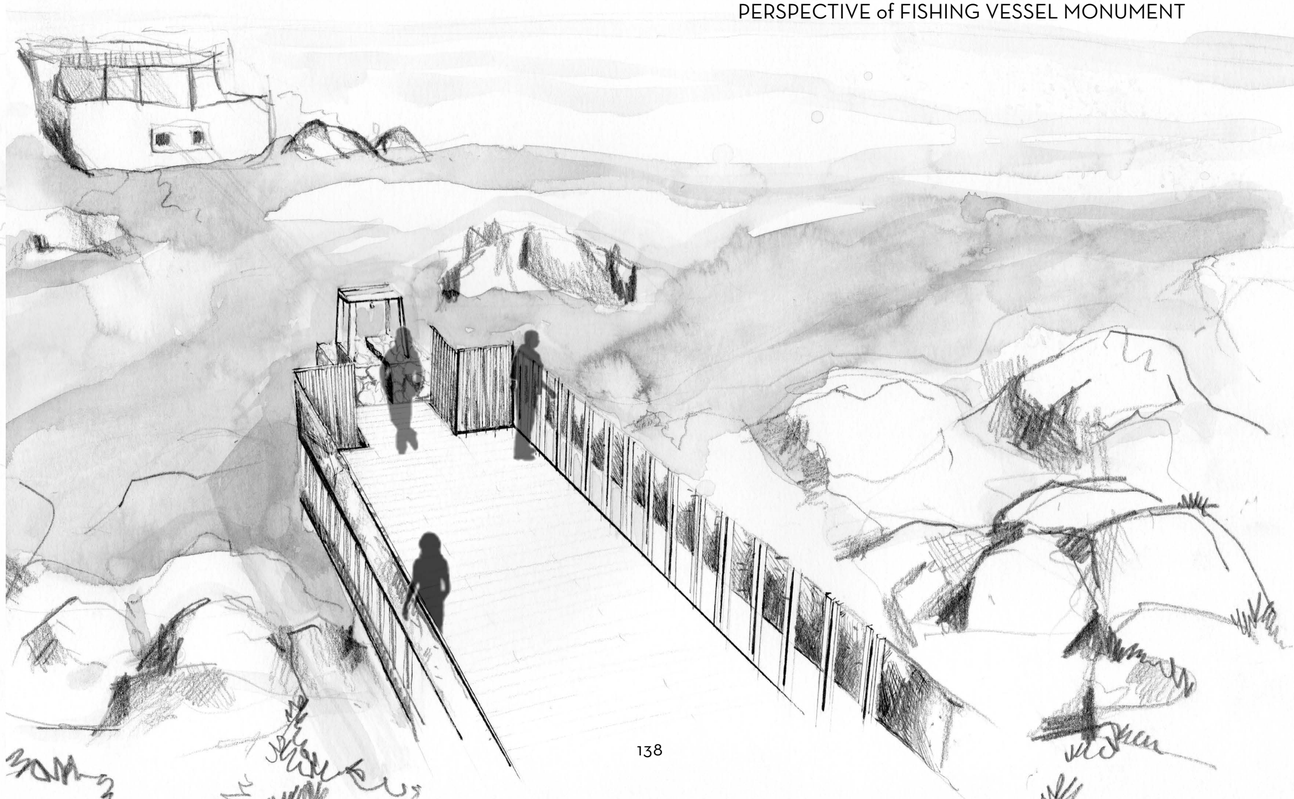


figure 176:
PERSPECTIVE of WALKWAY
Connecting Shipwreck Interpretation Centre and Meisho Maru Shipwreck

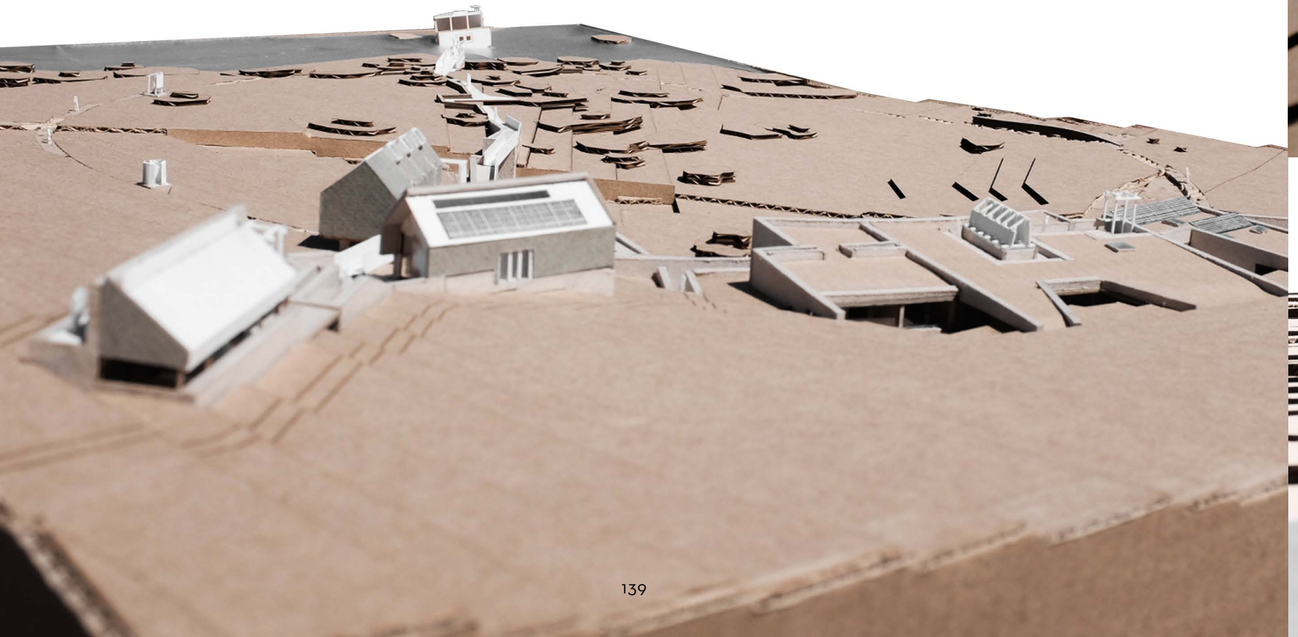


figure 177:
PERSPECTIVE of FISHING VESSEL MONUMENT



FINAL MODEL

figure 178:
VIEW FROM EXPERIENTIAL PAVILION 3



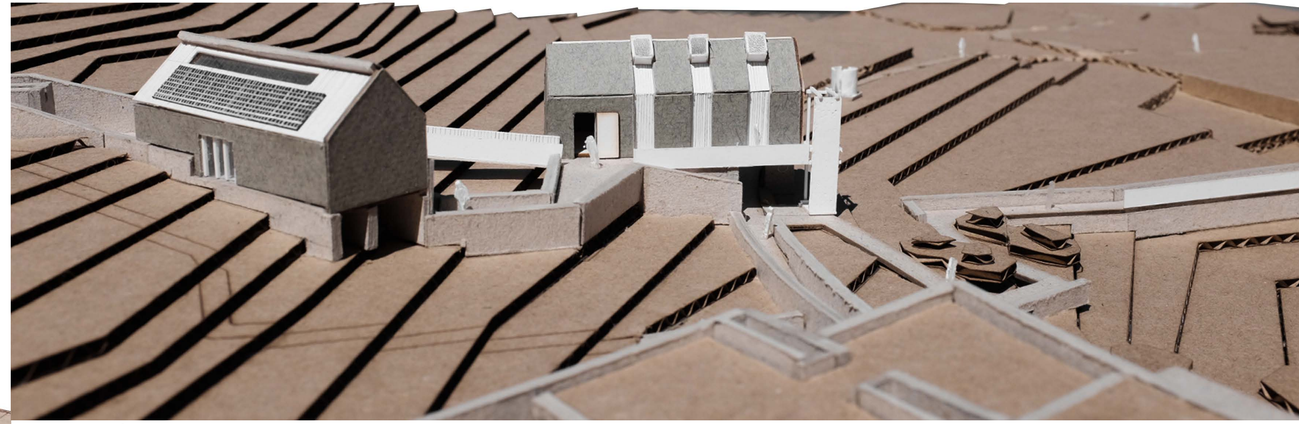


figure 179:
EXPERIENTIAL PAVILION 1 & 2

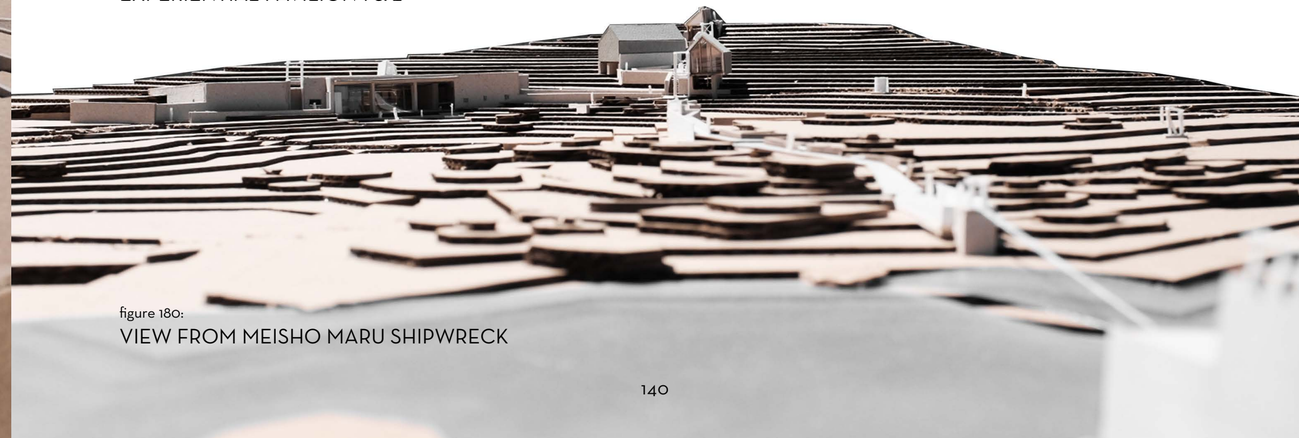


figure 180:
VIEW FROM MEISHO MARU SHIPWRECK

figure 181:
FINAL MODEL

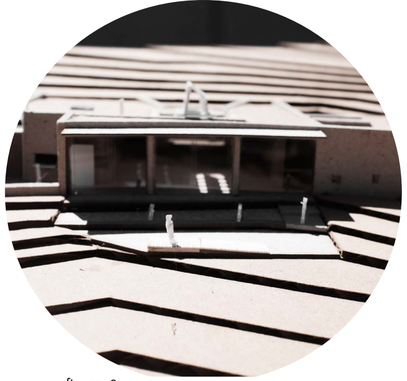


figure 182:
MAIN ORIENTATION HUB

figure 183:
EXPERIENTIAL PAVILIONS





figure 184:
EXPERIENTIAL PAVILION 3

figure 185:
SECTION MODEL
Experiential pavilion 3

TECHNICAL INVESTIGATION

The investigation starts to compile all the previous chapters explorations, interpretations and development towards a design resolution combines function, structure and theory to create a Shipwreck Interpretation Centre. The technical investigation explores the influences of the site and environment on the design together with the building services, circulation, structural and experiential approaches which all work together in a symbiotic relationship to preserve and recount the forgotten shipwreck events.

SITE and ENVIRONMENT

TOPOGRAPHY

The site, located in Cape Agulhas coastal region, is at the highest point is approximately 30 m above sea level. The site is situated in the coastal mountains of Cape Agulhas, resulting in large limestone outcrops on site that cap the Cape Fold sandstone soil. The fall on the site has an overall difference of 28m from pavilion 3 towards the Fishing monument that connects with Meisho Maru Shipwreck. The fall of the site and the limestone outcrops has a large impact on the form giving of the design as it informed the zig-zagged shape of the stone walls and the layered nature of the design.

VEGETATION

The two main vegetation types in the area namely Agulhas Limestone Fynbos and Overberg dune strandveld. The predominant species on site is Agulhas Limestone species grow on south-facing, moderately steep limestone hills with shallow alkaline soil. The height of the vegetation ranges from 0,5m to 2,5m growing in approximately 0,14 m deep soil. The Agulhas Limestone fynbos become an important part of the design as it is the main vegetation on site.



Figure 186: Limestone outcrops on site (Author, 2021)

SITE PLANNING
STORM WATER CONTROL

Storm-water control becomes an important factor on site as the Orientation Hub is carved into site on the lower section of the limestone hill. The limestone walls of the experiential pavilions together with falls created by landscaping redirect the storm-water around the design and through gutters that are placed under the pavilions and through the walls. A storm-water gutter is situated between the cut out limestone rocks and the north facing glass facade (figure 188). This gutter collects all the storm-water coming down the hills and from the planted roof, and redirects it towards the gravel road. A storm-water catchment area is placed under the bridge to gather the storm-water flowing down the hill. The storm-water is stored in a Jojo tank to irrigate the vegetation.



Figure 187: Storm-water drainage indicated on roof plan (Author, 2021)

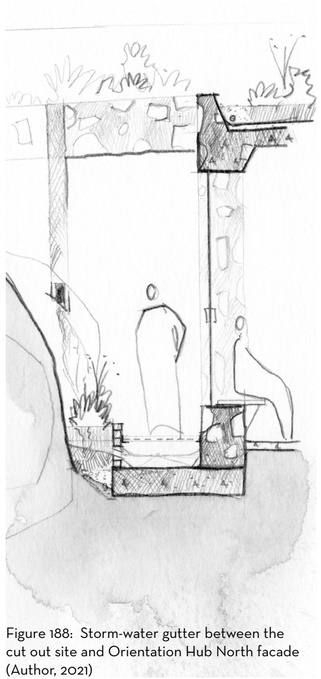


Figure 188: Storm-water gutter between the cut out site and Orientation Hub North facade (Author, 2021)

PARKING and LANDSCAPING

PARKING

The parking is located to the west next to the entrance of the Rasperpunt hiking trail and to the east as parallel parking. The parkings are on existing gravel roads where visitors usually parked when hiking or visiting Meisho Maru Shipwreck. The 60 parking spaces are integrated in the natural landscape and are marked with rocks found on site. This makes the visitors aware of where they should park without creating a harsh parking lot. Disabled parking spots are located close to the pathways leading to the entrance and have 1,5m clearance to the side for wheelchair access.

There are two staff parkings in the service area of the design that is accessed through a secure gate at the staff entrance. A delivery bay is located close to the service yard and staff entrance for easy access to the kitchen and wheelie trash bins.

LANDSCAPING

The landscaping forms a large part of the scheme as it connects the Shipwreck Interpretation Centre to Meisho Maru Shipwreck. Sculptural concrete walls with cut up limestone rock from site form sculptural walls that wrap around rock outcrops on site. These walls forms an zig-zagged axis connecting the experiential pavilions and the shipwreck (figure 191).

Figure 189: Parking and landscaping illustrated on site plan (Author, 2021)

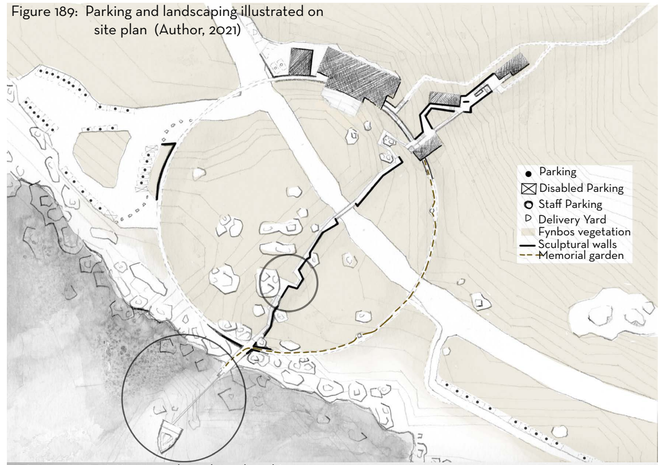


Figure 190: Existing gravel roads and parking on site (Author, 2021)



To the south of the bridge the stone walls are combined with raised timber walkways where visitors can walk and sit on the low stone walls. To the North of the bridge the stone walls become more stereotomic with concrete paths leading the visitor through spaces. The walkways are surrounded by Agulhas limestone fynbos giving the idea that the paths are floating in a sea of fynbos.

The memorial garden route mimics the hiking trail, figure 192, that goes past pavilion 3. The circular route is created by taking away the fynbos and exposing the natural limestone soil to create a path. The route does not read as strong as the linear zig zagged path. The four monuments on the circular memorial route creates moments that stand out from the fynbos covered site.

The last memorial structure, which memorializes the fishing vessel, connects with Meisho Maru shipwreck to the South of the site. The pier structure allows the visitor to walk closer to the shipwreck before stopping at a concrete and limestone monument that connects with the shipwreck through steel cables. L-shaped steel columns and beams create a structure that mimics the structure that once was on Meisho Maru fishing trawler that was used to pulley in the nets catching fish. The structure supports the steel cables which creates a visual connection and with time the cables will rust and break. This decay links with the temporary shipwreck as with time it will also break away and return to the sea.

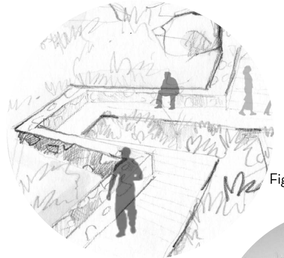


Figure 191: Zig-zagged landscaped walkway (Author, 2021)

Figure 192: Hiking trail path (Author, 2021)



Figure 193: Raised timber walkway structure (Author, 2021)



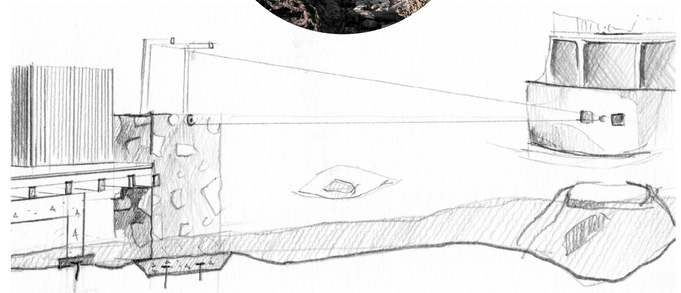


Figure 194: Fishing monument connecting with Meisho Maru Shipwreck (Author, 2021)

HORIZONTAL and VERTICAL CIRCULATION

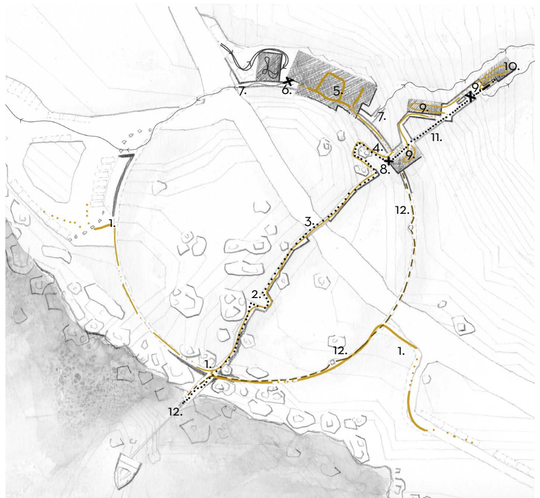


Figure 195: Circulation routes on site plan (Author, 2021)

Staff access

Horizontal circulation from parking towards Shipwreck Interpretation Centre

Horizontal and vertical circulation route back to shipwreck and parkings from pavilions

Hiking Trail routes

Memorial garden route

Vertical circulation- Elevators connecting different levels and allowing universal access

Circulation plays an integral role in the design of the scheme as it edits the different spaces and narrative together. The circulation is seen as an architectural promenade that takes the viewer through different "mise-en-scènes" that frame certain times, places, experiences and narratives via horizontal and vertical movement.

The NARRATIVE of the circulation:

1. The visitor walks from the western and southern parking towards a circular route that leads them to an intersection where the zig-zagged architectural promenade begin. With the Interpretation Centre to the North and the Meisho Maru Shipwreck to the South, the visitor is confronted with the beginning and end of the narrative at the same time.

2. The first section of the zig-zagged promenade serves as landscaping making the viewer aware of their surroundings, as it emphasizes the limestone rocks and fynbos.

3. This promenade leads to a ramp that takes the visitor over a bridge crossing the R319 gravel road. This bridge articulates the connection between the building and the landscaping, almost floating in the air which connects it with the shipwrecks floating in the ocean. The materiality of the bridge, figure 196, connects to the shipwrecks as it uses weathered steel cladding on the exterior and wooden planks on the interior (figure 196)

4. The visitor then reaches another intersection between the "magical" experiential pavilions above and the "real" Orientation Hub below them. This emphasizes the idea of above and below water connecting to the shipwrecks on land and other under in the ocean.

5. The curved ramp takes the visitor down to the Orientation Hub where they move through the reception, restaurant and toilets.

6. The visitor can then access the roof garden with the elevator, where they can view the shipwreck from another perspective.

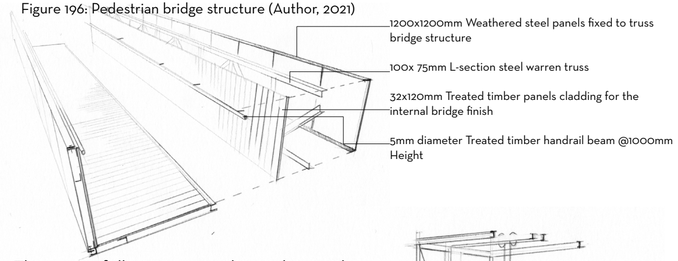
7. From the Orientation Hub hikers can access the hiking trails either from taking the circular path to Rasperpunt hiking trail or from the stairs leading to the hiking trail past the experiential pavilions after leaving their belongings in the locker rooms.

8. From the reception the visitors follow the curved road back to the intersection where they either take the stairs or elevator to pavilion 1. The elevator is the first monument part of the memorial garden with information panels fixed to the it educating the visitor on the different motor vessel shipwrecks around the Southern Tip of Africa. The elevator is an exposed steel structure (figure 197) allowing for 360 views while moving vertically. It serves as a vertical connection between "magical" and "real".

9. The experiential route begins as the visitors move through the different experiential pavilions. After each pavilion the visitor walks up stairs towards the next pavilion, clearing the viewers mind by exposing them to the environment before they enter the second space.

10. When the visitor reaches the viewpoint on the third pavilion they can see the route back towards the Shipwreck, the end of the narrative.

Figure 196: Pedestrian bridge structure (Author, 2021)



11. The route follows a more linear line with ramps and elevators instead of stairs. This route also serves as a universal access for people with disabilities.

12. The visitor then reaches the motor vessel monument where they go down the elevator and can choose to either take the memorial garden route to the Shipwreck or the zig-zagged promenade route they came with. The memorial garden route takes the visitors through 4 different monuments each with information on the different shipwrecks. The route starts with the motor vessel, then the steam vessel and sailing vessel monument and ends with the fishing vessel monument that is located close to Meisho Maru Shipwreck, the ending of the narrative.

Circulation in the form of architectural promenades therefore edits together different architectural fragments to preserve shipwreck events.

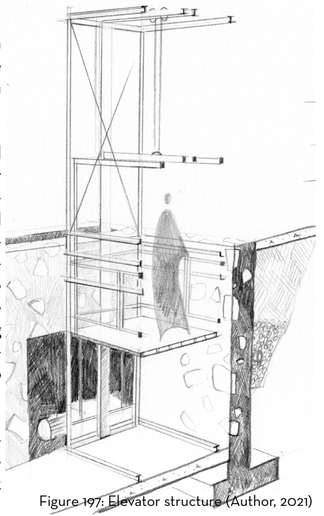
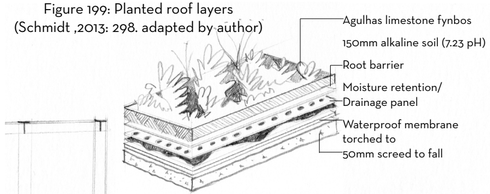


Figure 197: Elevator structure (Author, 2021)

STRUCTURAL SYSTEM

MAIN ORIENTATION HUB STRUCTURE

Figure 199: Planted roof layers
(Schmidt ,2013: 298. adapted by author)



Foundations: The foundation for the concrete columns consist out of a 1000x300mm reinforced concrete pad foundations that are 300 mm deep. 1000x 300 mm reinforced concrete strip foundations are used for the 500m thick load-bearing walls. 300x300mm reinforced concrete foundation on compacted gravel layer are used for the stage of the amphitheater and the wooden walkways. Raft foundations are used for the amphitheater seating.

Floor: The interior floors are 85mm reinforced concrete floor slab cast in-situ with a polished finish to reflect natural light in the design. The exterior concrete ramps and walkways uses a course texture to make it slip resistant.

Walls and structural columns: 500mm thick stone walls, consisting out of 250mm and smaller limestone rocks from site mixed in with concrete, form the outer shell of the building. 220mm and 110mm load-bearing walls are used in the interior together with 300x300mm concrete columns spaced in a 6000mm grid in the restaurant. Sliding glass door facades to north of restaurant and toilets for natural light and to the south of restaurant for indirect light views to shipwreck.

Roof: Planted roof on a 200mm reinforced concrete roof slab with tapered beams as the 300x300mm column headings. 75x75mm concrete fillets on edges with a perforated drainage pipe to divert water around light shafts. Agulhas limestone fynbos is planted on the roof and needs 150 mm soil depth to grow. Figure 199 indicates the different layers of the planted roof.

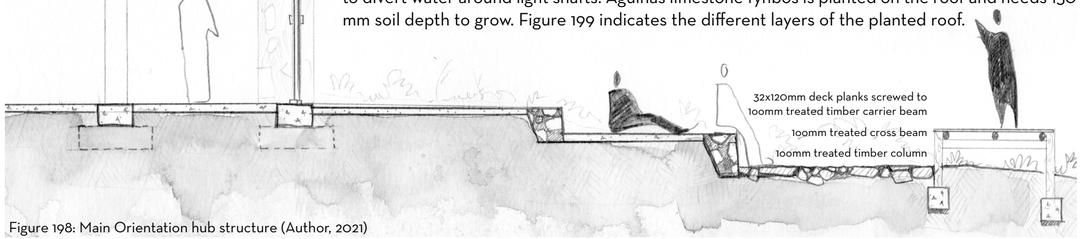


Figure 198: Main Orientation hub structure (Author, 2021)

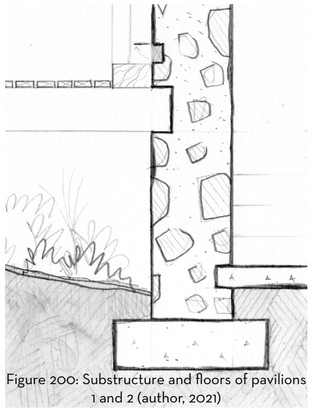


Figure 200: Substructure and floors of pavilions 1 and 2 (author, 2021)

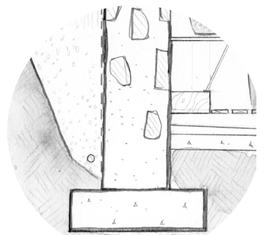


Figure 201: Substructure and floors of pavilion 3 (author, 2021)

PAVILIONS STRUCTURE

Foundations: All the pavilion structures load-bearing foundation and walkway walls have 1000x300mm Reinforced concrete strip foundations that are 300mm deep.

Foundation walls: Similar to the load-bearing structure of the Orientation Hub, the pavilions have 500mm thick stone walls, consisting out of 250mm and smaller limestone rocks from site mixed in with structural concrete. These foundation walls support the timber structures of the pavilions. The foundation walls extends to form the structure of the walkways that is very stereotomic in the landscape giving the illusion that it is a thick continuous wall wrapping around the pavilions and limestone outcrops.

Floor: The floors of pavilions 1 and 2 are suspended timber structure floors of 228x76mm treated timber joists @600 mm CTC which are supported by the 500mm foundation walls. 32x120mm treated timber decking board is fixed to the timber joist with 5mm gaps in between the boards for natural ventilation and drainage.
Pavilion 3 uses the same timber floor structure but it is placed on a 85mm cast reinforced concrete surface bed as the pavilion is cut into the hill and not suspended like pavilion 1 and 2. Pavilion 3 is exposed and therefore needs a way to drain rainwater from the pavilion. 50mm screed to a fall is poured in between the timber joist with a torched on waterproof membrane. The screed falls towards a 200x200mm concrete gutter that falls towards south west, using the slope to direct storm-water out of the pavilion towards the vegetation. The reflection pond in pavilion 3 comprises out of a 100mm waterproofed reinforced concrete surface bed with 20mm cement render which falls to the water outlet pipe that connects to the pump room. The overflow of the reflection pond connects to the concrete gutter. 1500x2000x15mm weathered steel panels hover over the reflection pond allowing the visitor to "float" on the pond.

Figure 202: water gutter detail (author, 2021)

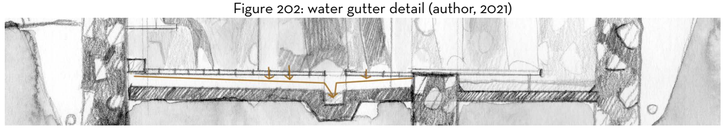


Figure 203: Grid of structural columns (author, 2021)

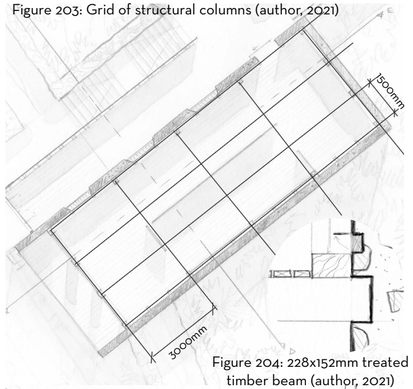


Figure 204: 228x152mm treated timber beam (author, 2021)

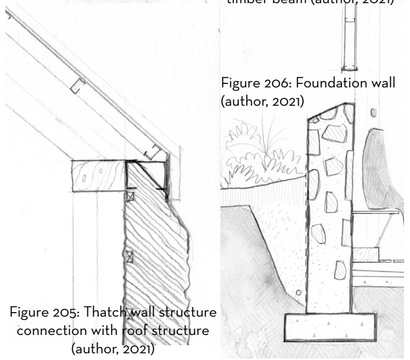


Figure 205: Thatch wall structure connection with roof structure (author, 2021)

Figure 206: Foundation wall (author, 2021)

Structure: The main structural shell of the pavilions that support the walls and roof are 228x152mm treated timber columns spaced at 3000mm CTC at the length of the pavilions and 1500mm CTC at the width of the pavilions. These columns are fixed to a 228x152mm treated timber beam around the edges of the pavilion that is supported by the floor joist and foundation walls. 152x76mm timber studs spaced 1000 CTC are placed in between the timber columns to support the thatched and infill walls.

Walls: Four wall types are used throughout the pavilions:

1. The foundation walls are extended at pavilion 2 and 3 to become structural walls that are cut in at places to from exhibition boxes.

2. 300mm thick thatch walls are found on all the pavilions relating back to the vernacular of the region. 350mm thatch bundles are fixed to 50x38mm timber brandering spaced at 300mm CTC and 150mm CTC on the edges. The brandering is fixed to the timber columns. After the thatch is fixed it is cut to +/- 300mm thickness.

3. Some of the timber columns and studs are clad with 20 mm timber panels and insulated with 100mm bulk insulation to create walls.

4. In pavilion 1 200x100mm lipped channels structure is fixed to the timber columns. The structure is clad in 0.53mm untreated ZINCALUME® kliplock sheeting which is left to form a natural patina on the exterior and 20mm wooden panels on the interior.

Roof: 152x76mm treated timber beams spaced at 1000 CTC are used for the roof structure. These beams are at 40 and 45 degree angles creating an off-center gable. The timber beams are fixed to a 228x152mm timber beam which is supported by the timber columns. The roof structure 40 degree roof beams are 100x50mm galvanized steel lipped channel @500mm CTC fixed to timber roof beams, with 100mm insulation in between purlins, clad in 0.53mm untreated ZINCALUME® kliplock sheeting, that is left to form a natural patina on the exterior and 20mm wooden panels on the interior. The roof structure of the 45 degree beams is a thatch roof system of thatch reeds fixed to 50x38mm timber brandering spaced at 300mm CTC and 150mm CTC on the edges.

PASSIVE DESIGN STRATEGY

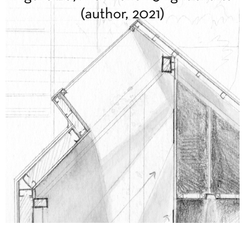
Passive design solutions are used throughout the design to increase the energy efficiency of the building. This minimizes the amount of electricity the design uses, as the design only depends on solar energy.

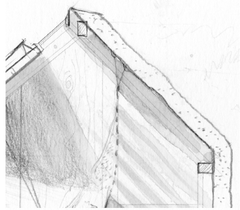
The **orientation** of the spaces are north and east to allow in natural light. Light shafts and a northern glazed facade is used in the orientation hub to minimize the use of artificial light. Light shafts and openings are strategically placed in the experiential pavilions to use natural light to create a certain atmosphere in these spaces and emphasize certain moments and narratives. Experiential pavilion 3 uses an manually adjustable panel to regulate the amount of natural light and rain entering in the roof opening. Western exposure is limited while a large part of the southern side is open to allow in indirect southern light.

The **materiality** of the building further contributes to the passive design strategy. The thatch walls, thatch roofs, planted roof and thick concrete and stone walls, create a good thermal mass that naturally regulates the building's temperatures.

Cross ventilation is used to naturally ventilate and cool the spaces especially in the Orientation hub as it is cut into the site and therefore needs ventilation.

Figure 207: Pavilions 1-3 light shafts (author, 2021)





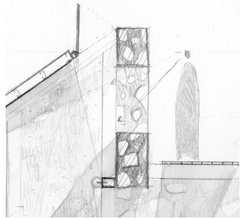
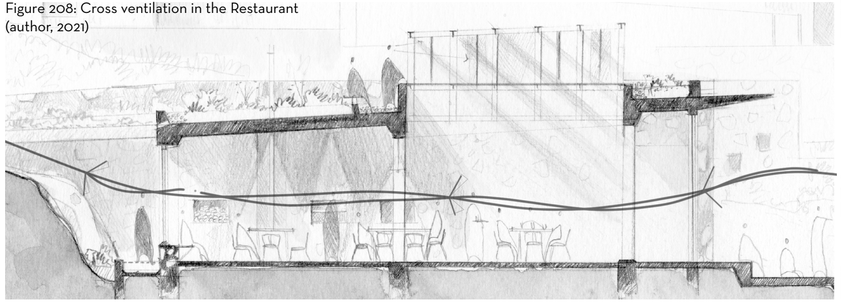


Figure 208: Cross ventilation in the Restaurant (author, 2021)



BUILDING SERVICES

SOLAR POWER

Solar power is used to power the design. 18 north facing solar panels of 1700x1000mm are used to power the main Orientation Hub. They are mounted on the roof of the staff facilities. The batteries of the solar system are located in the staff facilities for easy access and maintenance.

10 north facing solar panels of 2100x1000mm are used to power the projectors, water pump and lights of the pavilions and the motor elevators and lights in the landscape. The battery of the solar panels is hidden in the walls of the walkways in a steel box that can be accessed when needed.

PROJECTORS

Artificial light in the form of projections play an important role in the experiential pavilions. The projectors are used to project narratives and information onto the visitors and pavilion walls creating an immersive experience. The projectors in pavilion 1 is hidden in the suspended ceiling over the projection space. In pavilion 2 the projector is hidden in a steel box fixed to the 228x152mm timber beam. Projectors with wifi is used allowing the projectors to be operated from the reception, this is nearby for adequate connection.



Figure 209: Solar panels' location on roof plan (author, 2021)

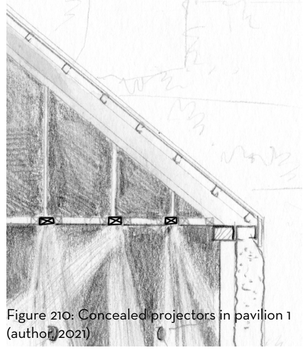


Figure 210: Concealed projectors in pavilion 1 (author, 2021)

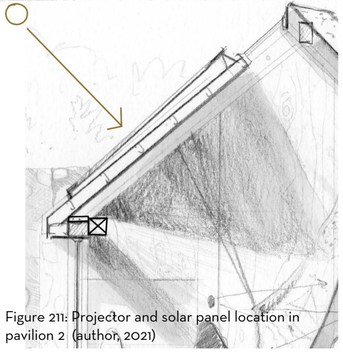


Figure 211: Projector and solar panel location in pavilion 2 (author, 2021)

SEWAGE DISPOSAL

There is no municipal sewage connection on site. A septic tank is therefore used for the sewage system. 100 diameter sewage pipes at a 1:40 fall divert the black water from the toilets to the septic tank at the lowest point of the site, more than 3 meters away from the building.

GREY WATER SYSTEM

A grey water system is used to irrigate the roof gardens and landscaping. One of the grey water systems are located in the service yard which filters the water from the laundry room and the kitchen and stores it in a Jojo tank. A irrigation system is connected to the Jojo tank for watering the roof garden. The grey water overflow connects to the sewerage pipes that takes the water to the septic tank. A similar system is used for the toilets where the hand-wash basin water is diverted to the grey water system. This grey water is stored in a Jojo tank which is located in the service duct of the toilets and is re-used for the toilets.

WATER SUPPLY

Water is supplied by the municipality connecting to the water line that runs from L' Agulhas to Suiderstrand. Water is heated by the solar geyser for the kitchen and the staff shower. Storm water is gathered as an alternative water source to make the design more sustainable.

LIGHTNING CONDUCTOR

A lightning conductor is located at the highest point of the hill for the thatch construction.

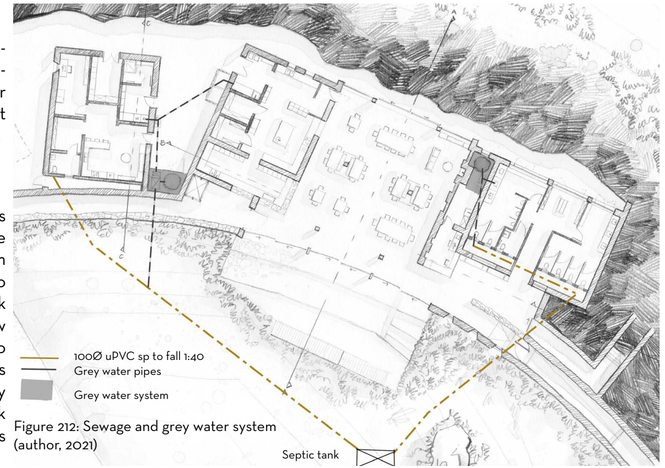


Figure 212: Sewage and grey water system (author, 2021)

DETAILING CONSIDERING ACCESSIBILITY

Universal access toilets are included in the public and staff toilets that it is accessible to everyone. Due to the steep slope of the site 1:12 ramps and lifts are used that everyone can access the functions of the Shipwreck Interpretation Centre and experience the narratives that is lost at sea. Braille is included on all the information panels for the blind together with guided audio tours. Guided tours through the experiential pavilions for people in wheelchairs are also available to allow easy access through the exhibition spaces. Making the building accessible to everyone becomes very important aspect of the design as it wants to retell the forgotten narratives of the sea, if it is not universally accessible some will never learn and experience these narratives.

CHAPTER FIVE

EPILOGUE

SHIPWRECK
by Luís Vaz de Camões - translation by William Baer
(2005: 26-27)

"...but then, in time, forgets his fearful ways,
and seeks, again, his fortune above the waves...."

The weary sailor after swearing off the sea ultimately returns to the waves;
with every heroic act there is some sort of suffering;
Oppression ultimately leads to freedom whether it be in mind, body or soul;
Although all 17 crew members on Meisho Maru no.38 the shipwreck was left to decay.

The interpretation and explorations done in the document al works together to in the end answer the research question:
How can architecture employ a series of experiential cinematic scenes to interpret, frame and preserve shipwreck events?

Experiential cinematic scenes developed using cinematic tools like mise-en-scène, cinematography, sound and editing were used as a narrating device. Architectural mise-en-scène retells the narratives that cannot speak for themselves, the shipwrecks' who became voiceless at the bottom of the ocean. The polarities of Cape Agulhas and the Southern Tip of Africa shipwreck events are constantly intertwined in the Shipwreck Interpretation Centre, creating dual experiences that bridge different places and times. The experiences are edited together by an architectural promenade, that takes the viewer through a visual and experiential journey framing and preserving tragic shipwrecks events. The Shipwreck Interpretation Centre ultimately becomes a monument serving as an ode to the narratives lost between land and sea.

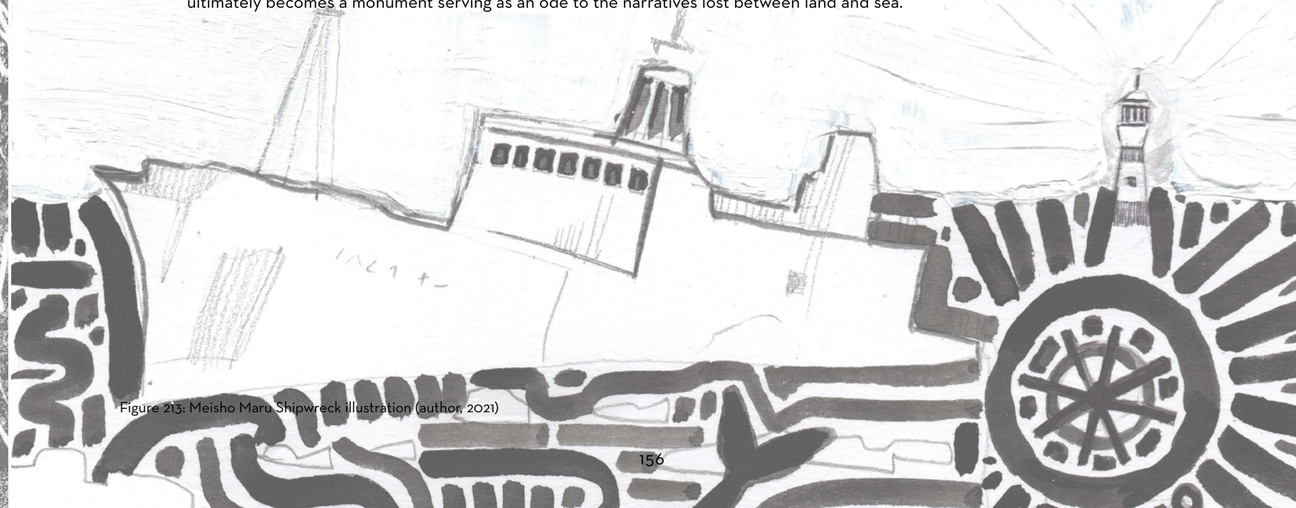
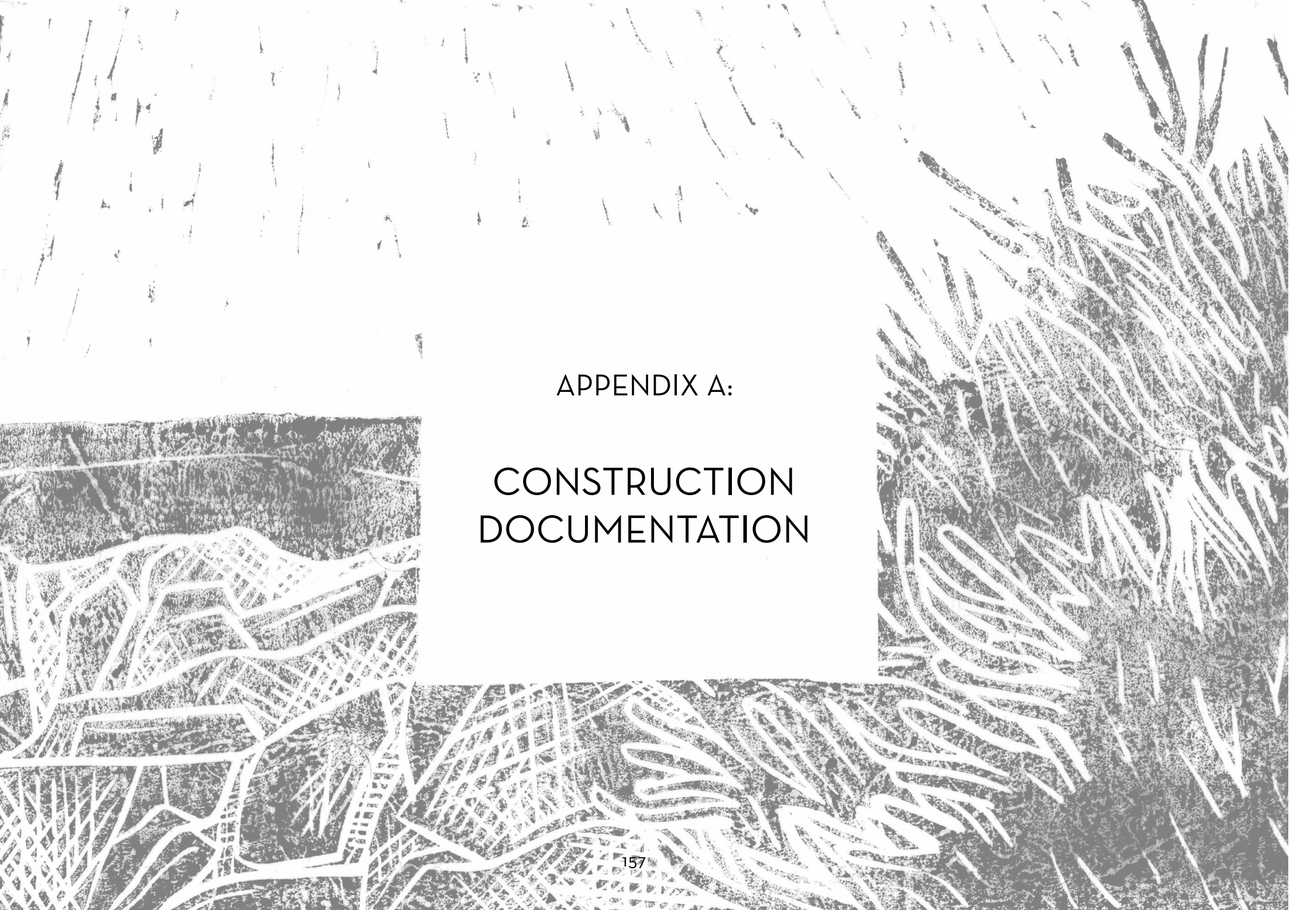
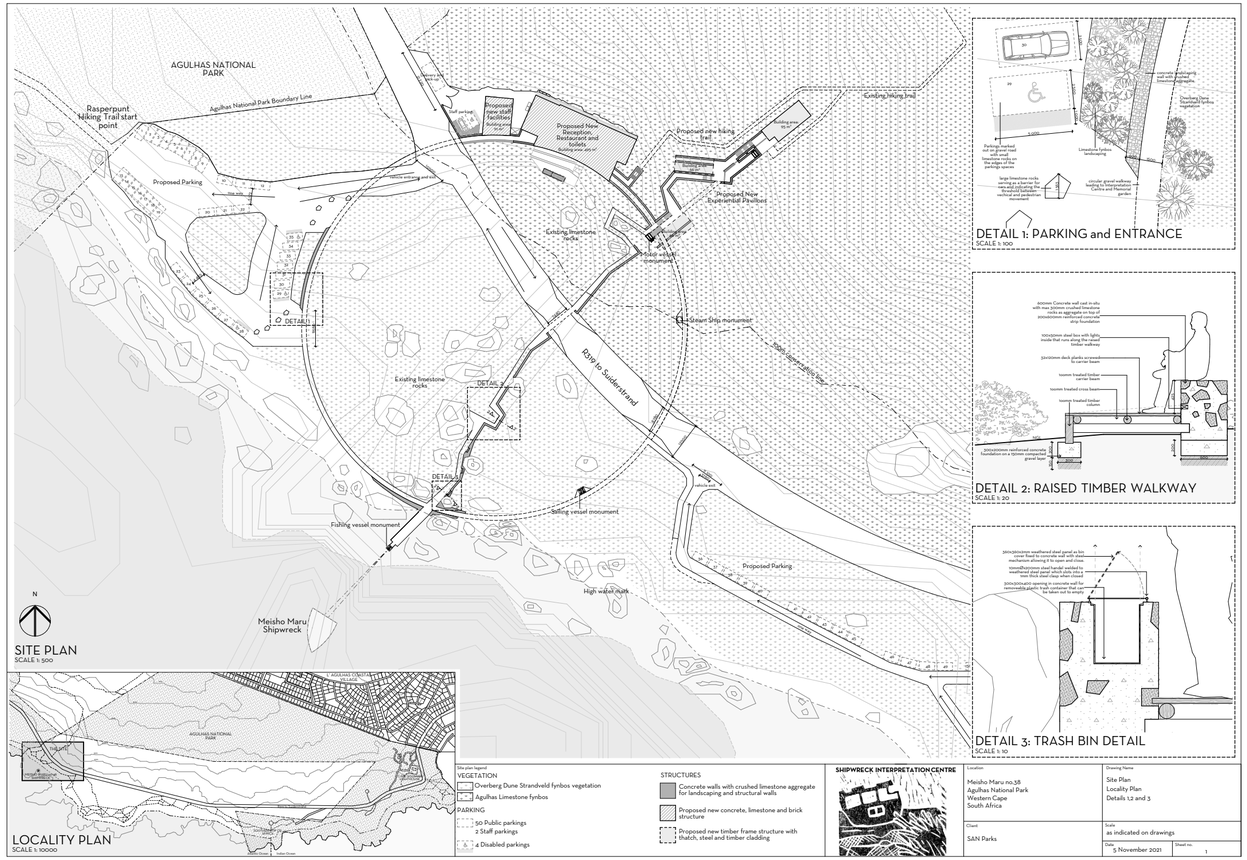


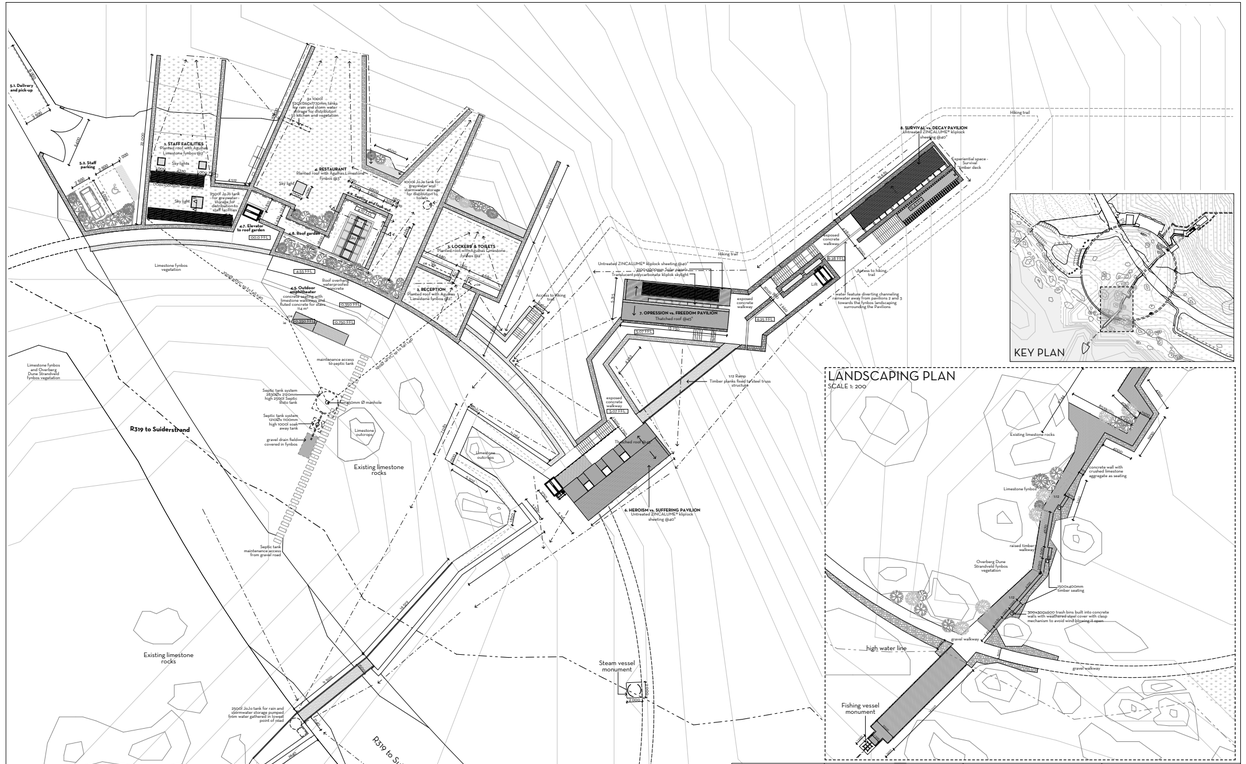
Figure 213: Meisho Maru Shipwreck illustration (author, 2021)

APPENDIX A:

CONSTRUCTION DOCUMENTATION






5.1 Delivery and pick-up
5.2 Staff parking
1 STAFF FACILITIES
Masonry unit walls with facebrick
Limestone Fynbos roof
5.3 Staff parking
2 RESTAURANT
Overhead roof supported on timber posts
5.4 Overnight guest parking
5.5 Roof garden
5.6 LOCKERS & TOILETS
Masonry unit walls with facebrick
Limestone Fynbos roof
3 RECEPTION
Framed roof with facebrick
Sandstock Fynbos roof
5.7 Outdoor seating area
Concrete seating with timber inserts on concrete block plinth
Raised concrete floor slabs on
Roof overhang supported on timber posts
Limestone Fynbos vegetation
Limestone Fynbos roof
Limestone Fynbos vegetation
maintenance access to septic tank
Septic tank system 1000lt/ milower high-flow inlet baffle
Septic tank system 1000lt/ milower high-flow outlet baffle
grated drain Rainbow covered in Fynbos
R319 to Suiderstrand
Existing limestone rocks
Septic tank maintenance access from gravel road
Existing limestone rocks
R319 to Suiderstrand
10000 JoJo tank for rain and stormwater storage pumped from water gathering system to point of use
Steam vessel monument
Fishing vessel monument
4 SURVIVAL vs. DECAY PAVILION
Unloaded (ENCAUSTIC Walnut shelving stair)
Essential space - Survival timber deck
Hiking trail
Uniloaded (ENCAUSTIC Walnut shelving stair)
Translucent poly-carbonate Kayle skylight TYP.
5 OPRESSION vs. FREEDOM PAVILION
Translucent roof
Timber planks fixed to steel Unpc structure
Timber planks fixed to steel Unpc structure
Timber planks fixed to steel Unpc structure
4 HEROSH vs. SUFFERING PAVILION
Unloaded (ENCAUSTIC Walnut shelving stair)
Timber planks fixed to steel Unpc structure
Timber planks fixed to steel Unpc structure
Timber planks fixed to steel Unpc structure


5. SERVICE YARD
exposed concrete
1. STAFF FACILITIES
2. RECEPTION
4. RESTAURANT
3. LOCKERS & TOILETS
5.1 Delivery and pick up compacted gravel
Staff and delivery entrance
exposed concrete with max 300mm limestone aggregate around compacted gravel parking
1a. Managers office
1b. Outdoor equipment store
1c. Staff lockers
1d. Staff kitchen
1e. Staff lounge
1f. Ablutions
1g. Storage
2.1. Drawing room
2.2. Lower reception area
2.3. Upper reception area
2.4. Office
2.5. Storage
2.6. Cloakroom
2.7. Ablutions
2.8. Staff entrance
Outdoor shelf seating area
Limestone Fynbos vegetation
walkway to parking and Exposure Centre
Limestone Fynbos and Quartzberg Mountain Fynbos vegetation
R319 to Suiderstrand
Septic tank system
Limestone outcrops
3.1. Kitchen
3.2. Coffee Bar
3.3. Cold store
3.4. Dry store
3.5. Shower
3.6. Store
3.7. Plant room
4.1. Restaurant seating
4.2. Coffee bar area
4.3. Outdoor restaurant seating
4.4. Lounge
4.5. Restaurant seating
4.6. Fireplace
4.7. Storage
5.1. Male toilets
5.2. Female toilets
5.3. Universal toilet
5.4. Female toilets
5.5. Foyer
5.6. Storm water drain
5.7. Access to fishing trail
5.8. Entrance
5.9. Access to fishing trail
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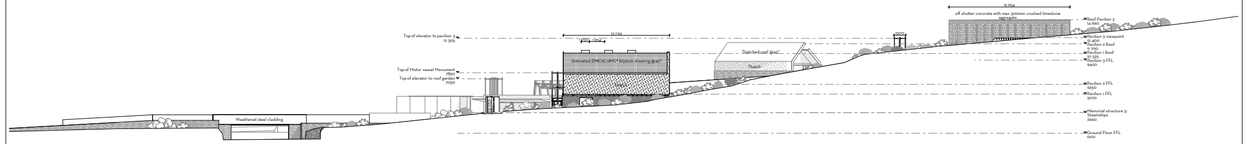

SOUTH EAST ELEVATION
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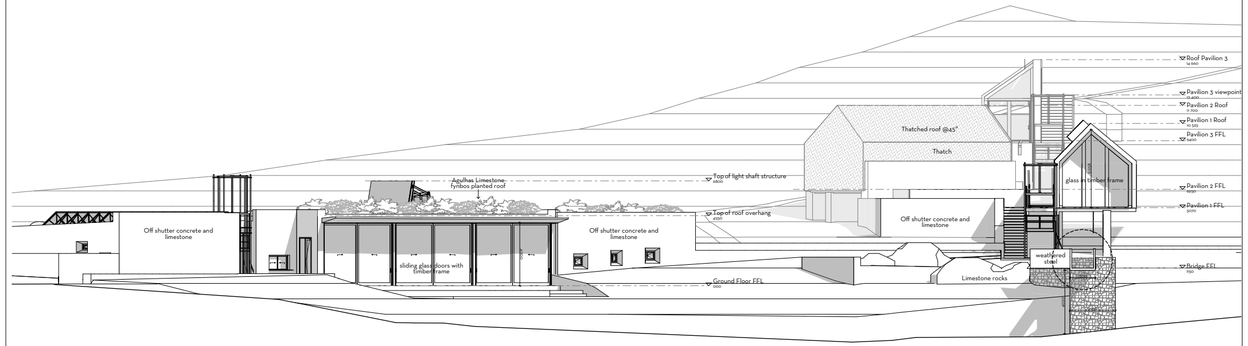
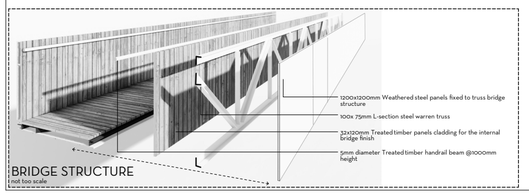
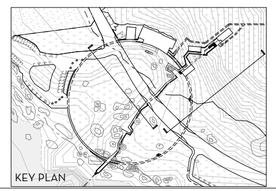


SOUTH WEST ELEVATION
SCALE 1: 100

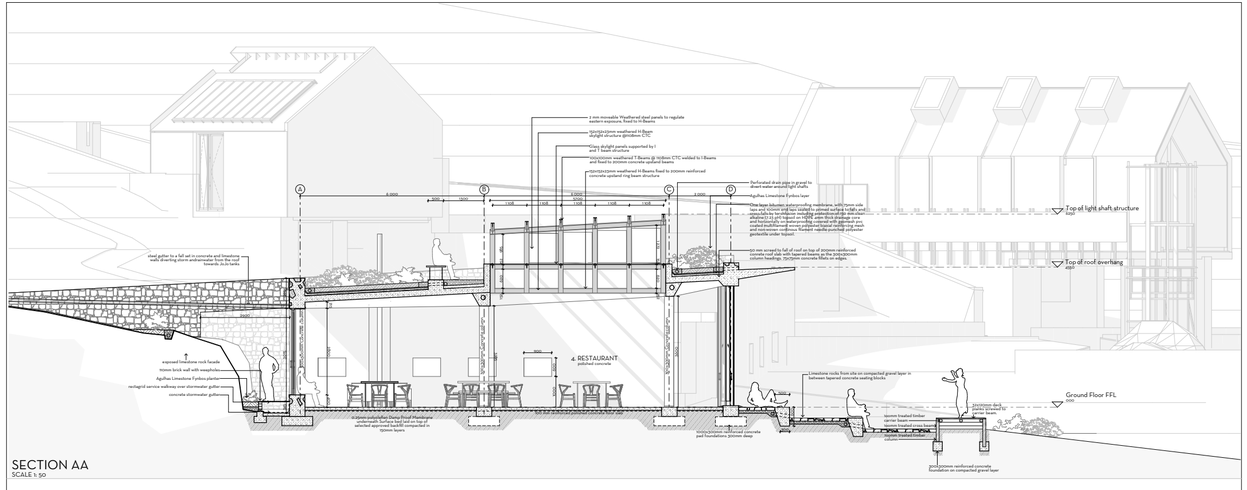


BRIDGE STRUCTURE
not too scale

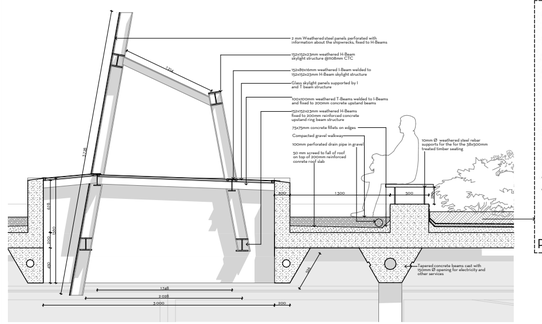


KEY PLAN

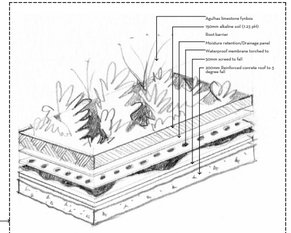
SHIPWRECK INTERPRETATION CENTRE	Location Meisho Maru no.38 Agulhas National Park Western Cape South Africa	Drawing Name Elevations Bridge detail	
	Client SAN Parks	Scale as indicated on drawings	
		Date 5 November 2021	Sheet no. 6



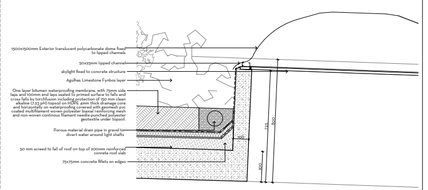
SECTION AA
SCALE 1: 50



DETAIL 4: RESTAURANT SKYLIGHT and ROOF GARDEN
SCALE 1: 20

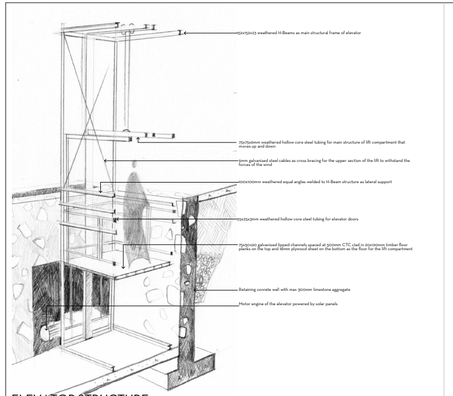


PLANTED ROOF COMPOSITION

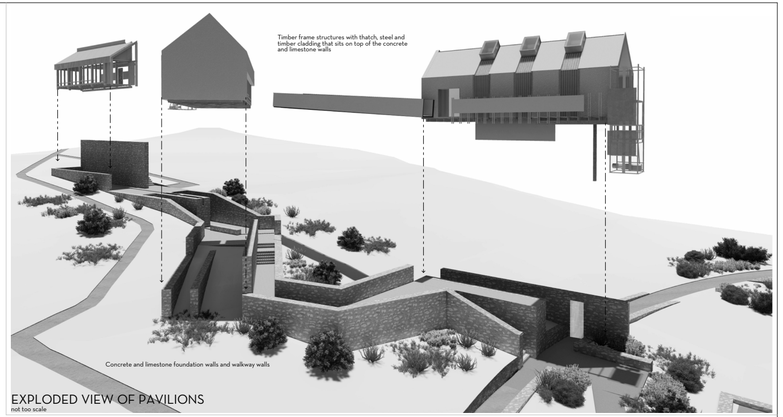


DETAIL 5: DOMED SKYLIGHT
SCALE 1: 10

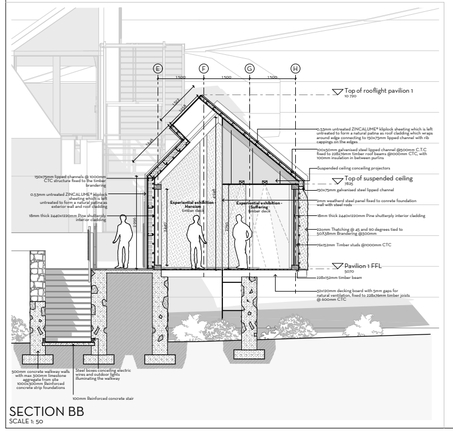
SHIPWRECK INTERPRETATION CENTRE	Location Meisho Maru no.38 Agulhas National Park Western Cape South Africa	Drawing Name Section AA Details 4 and 5	
	Client SAN Parks	Scale as indicated on drawings	
		Date 5 November 2021	Sheet no. 7



ELEVATOR STRUCTURE
not too scale



EXPLODED VIEW OF PAVILIONS
not too scale



SECTION BB
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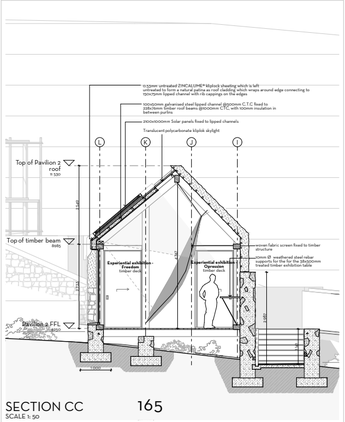
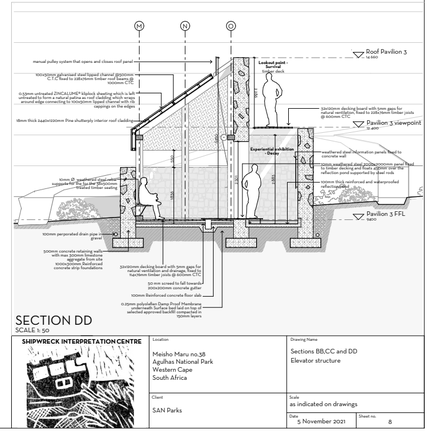


SECTION CC
SCALE 1: 50



SECTION DD
SCALE 1: 50

SHIPWRECK INTERPRETATION CENTRE

Location Meisho Maru no.38 Agulhas National Park Western Cape South Africa	Drawing Name Sections BB,CC and DD Elevator structure
Client SAN Parks	Scale as indicated on drawings
	Date 5 November 2021
	Sheet no. 8

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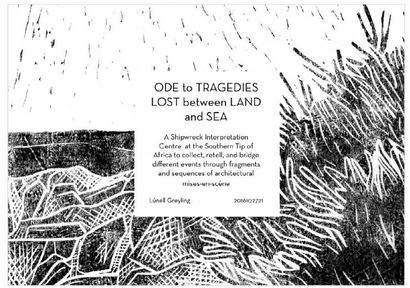

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