

GATEWAY TO THE CAPE PENINSULA MARINE PARK



Nikki Onderstall

This dissertation is presented as part fulfillment of the degree of Master of Architecture (Professional) in the School of Architecture, Planning and Geomatics, University of Cape Town
Oct 2014

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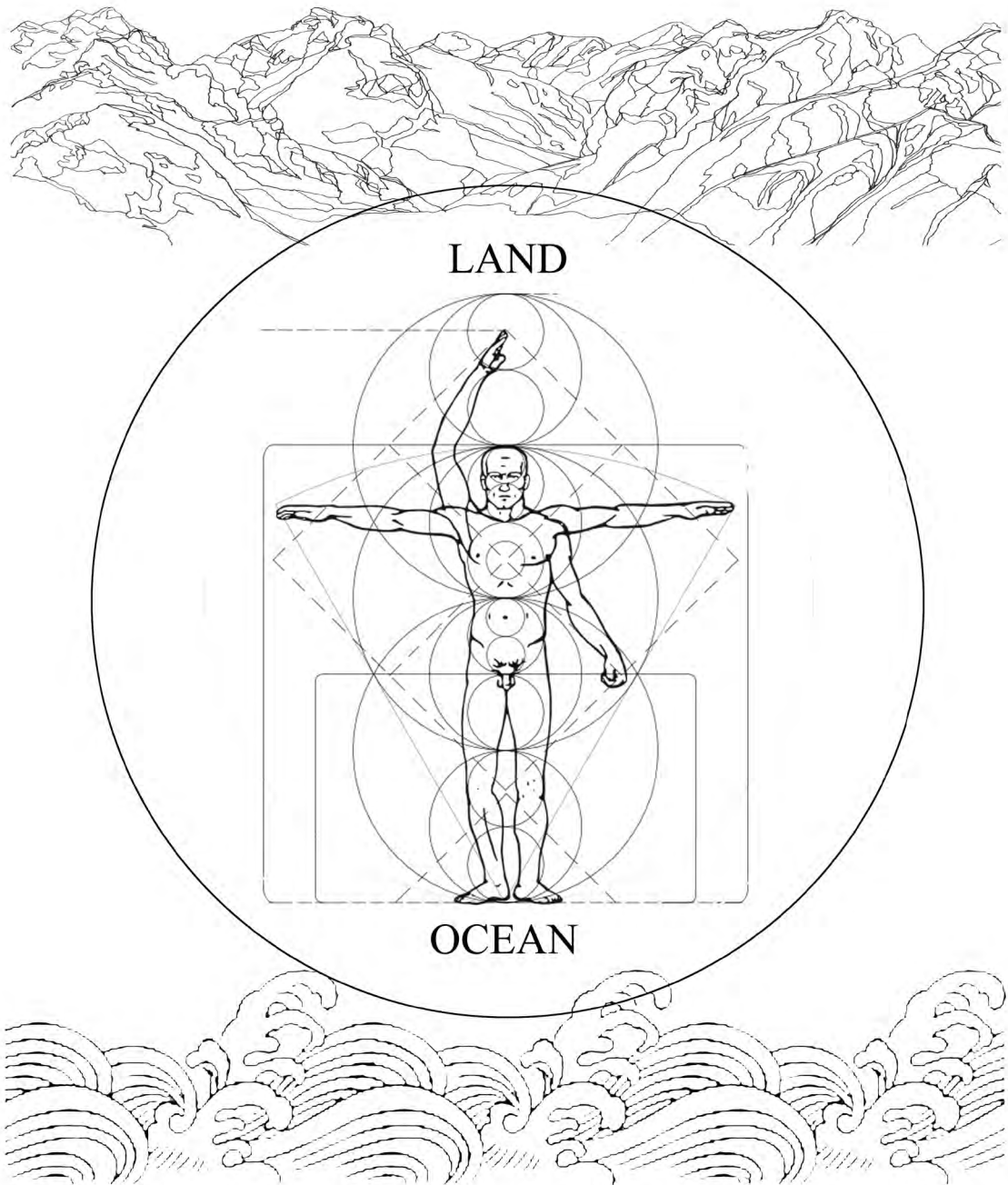
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Man Between Land and Sea

ABSTRACT

The aim of the project is to use architecture as a means to negotiate mans' relationship with the land and sea, through the re-interpretation of coastal archetypes.

The polysemic significance of the archetypes is manipulated as a means to re-organize previous associations with the aim of uncovering the sacred nature of the land-sea threshold.

The project locates Millers Point as the new gateway to the Cape Peninsula Marine Park. Architecture is used as the means to create a social identity and frame the problems addressed by the Marine Protected Areas legislative principles.

Necessary structures are identified as a means to establish or interpret a need for 'Marine Park Infrastructure'. The design of such infrastructure is consciously portrayed architecturally with specific reference to existing coastal archetypes.

The Lighthouse – as a beacon, signifier and orientation tool

The Jetty - as a means to traverse the seascape

The Underwater Platform - as a unique archetype providing an authentic experience unlike a traditional aquarium.

The project aims to instill ethical responsibility within the participants by cultivating sustainable pleasures, through experiential learning and the promotion of non-consumptive recreation.

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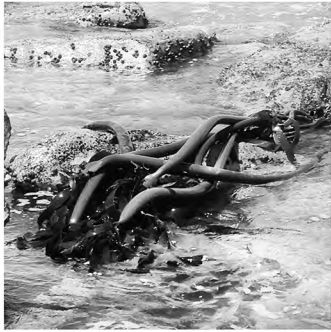
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Study of the life of kelp from its oceanic origins to beached decomposition

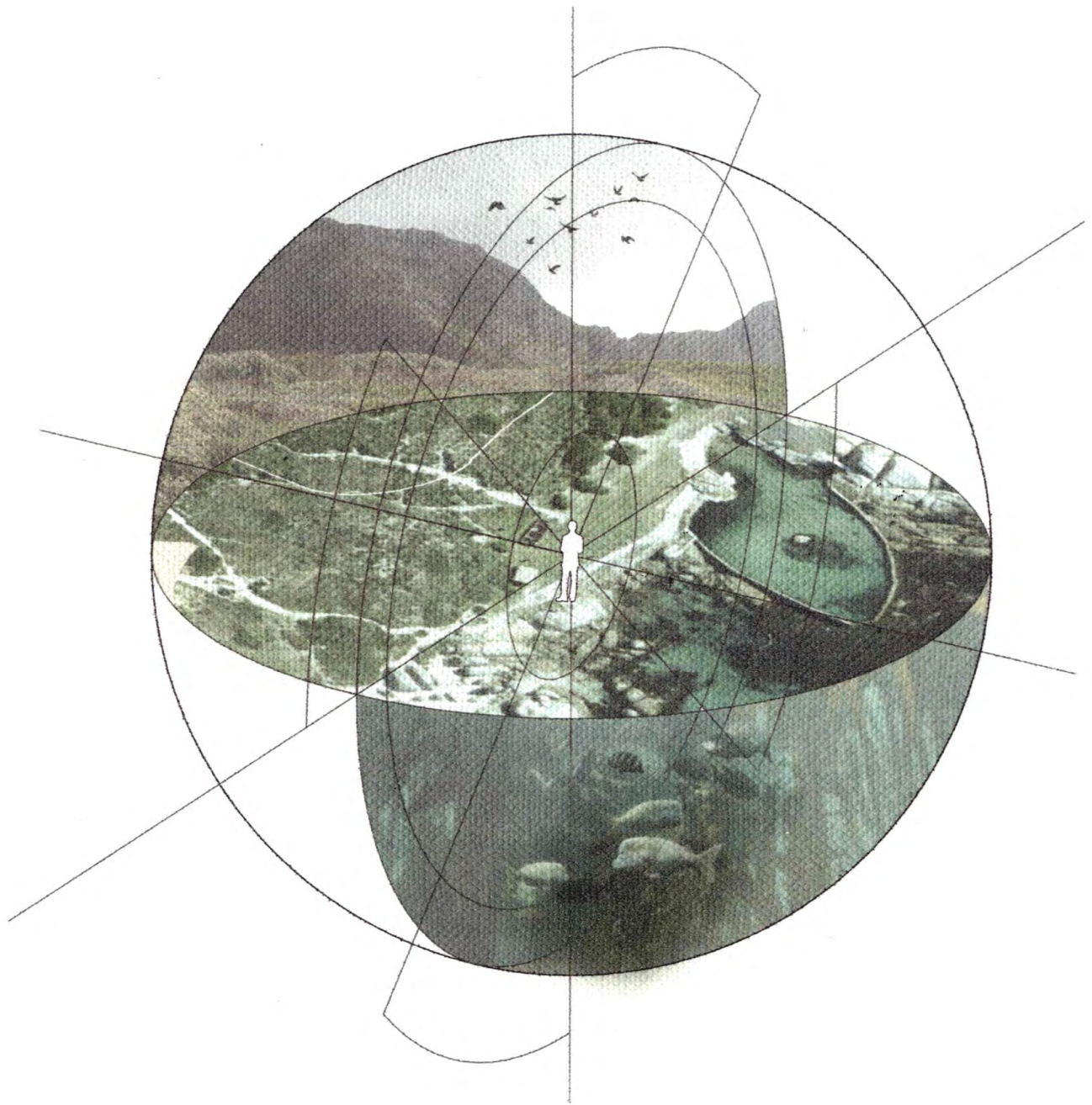
SECTION 1

ARCHITECTURE BETWEEN THE LAND & SEA

Starting this dissertation my interests were about the oceanic realm, its nature both serene and tempestuous.

Mans' relationship with the ocean can be read using architecture as a tool which translates this relationship. Architecture can be understood as an embodiment of how we operate; a device used to decipher or utilise the given environment.

And so it is the responsibility of the architect to transcribe that which the architecture is designed to reveal.



Land vs Oceanic Realm

ARCHETYPAL PHENOMENOLOGY

I started this project with a certain fascination with the oceanic realm and realised our understanding of this interface is extremely limited. We have an idea of the ocean as a surface but only a privileged few have an idea of the life beneath this opaque visual layer.

The intertidal zone is the primordial interface between land and the ocean and - throughout history - architectural intervention has negotiated this interface in a variety of ways. It is through the premise of this intervention that man's relationship with the sea falls under speculation or rather becomes apparent.

Charles Moore speaks extensively on this topic in his thesis *Water and Architecture*, discussing water as an architectural material (Moore, 1994). In this and other examples of Moore's writing, Moore develops the notion that all architecture originated from archetypal phenomenological experiences (Moor, 1994). For him, the post-modern recuperation of historical precedents in architectural design entailed a search for those poetic 'images'.

Martin Heidegger attributes 'being' to building dwelling and thinking, whereby, architecture embodies our practices of existence (Sharr, 2007). Therefore implying that, to look at how buildings occupy the land sea interface, we can understand our existential relationship with this threshold.

Architecture which navigates or stimulates a new interpretation of relationships within this liminal zone can be philosophically interpreted as metaphorical 'bridges' such as the one famously discussed by Heidegger.

Imagine the cliffs of Newport with and without its lighthouse.



Image 1: The presence of the lighthouse occupies the viewers' attention whilst hardly obscuring any of the landscape.



Image 2: Scale becomes ambiguous and the sense of 'place' is lost.

“The bridge swings over the stream with ‘ease and power’. It does not just connect the banks that are already there. The banks emerge as banks only as the bridge crosses the stream. The bridge expressly causes them to lie across from each other. One side is set off against the other by the bridge.”

Martin Heidegger, 1971

This bridge is not praised for any of its technological feats – as it would be if read through a technocratic lens - but rather for its ability to connect. Beyond the bridge's ability to connect two landscapes, the bridge is also attributed to having the ability of connecting people to their natural environment. The bridge ‘renegotiated the role of the river’ (Sharr, 2007). Heidegger here is proclaiming that it is through the making of architecture that our engagement with the world is newly quantifiable.

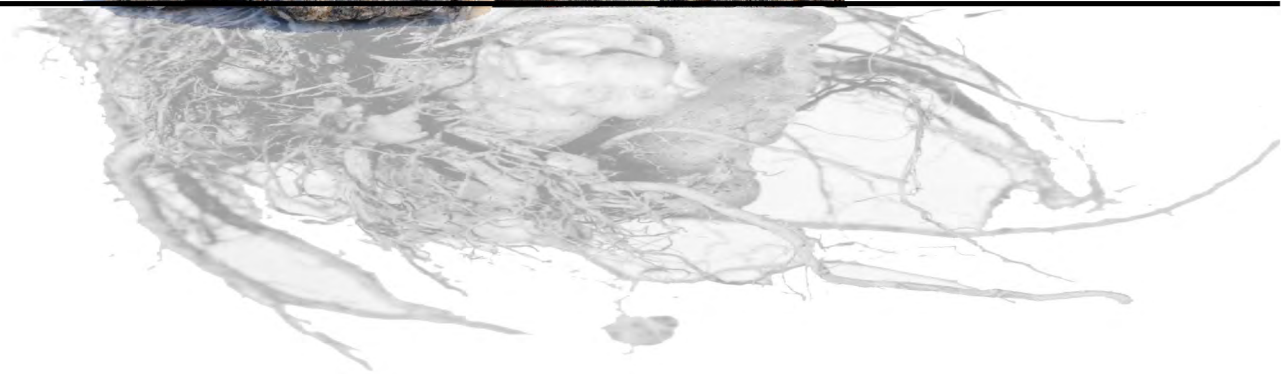
Through a reading of Heidegger's theories, Christian Norberg-Schulz understands that the existential purpose of building (architecture) is to make site become a place, that is, to uncover the meanings potentially present in the given environment. (Norberg-Schulz, 1976)

Man alone is incapable of measuring an adequate engagement with irrepressible vast oceans. However, it is suggested by Heidegger, Moore and Norberg-Schulz, that architecture is the tool by which man negotiates and re-negotiates their relationship with the world.

My dissertation aims to create architecture which can be used as a **device** to stimulate a dialogue between these two interfaces and **re-orientate** understanding.

In the following section I will present three oceanic archetypes, namely the lighthouse, the pier and the aquarium. These archetypes will be examined as orientation tools and polysemic signifiers. Later, these same archetypes will be reconfigured so as to create a new dialogue between the land and sea.

The Lighthouse



The lighthouse performs as landmark, and orientation device, a critical means of reading an environment with polysemic significance.

The Lighthouse, is servant of man's orientation in both a physical and metaphorical responsibility, contextualized between the land and sea.

The lighthouse is a uniquely intertidal landmark and an object of curiosity, an orientation device for ships and people alike and a tool for deciphering the seascape.

The lighthouse is slave to the sea, and guardian of mariner.

Heidegger's understanding of site decrees that any point along the sea bank can be said to be a place, but only once the lighthouse is built there can this place exist by virtue of the lighthouse. (Sharr, 2007)

The presence of the lighthouse engages with our own technocratic desires, working as a tool by which we measure the landscape, a singular counterpoint to an otherwise ineffable horizon.

The Pier



The pier has intimate contact with the sea, creating a sudden transition from land to water, where this defined edge is occupied (Adapted from: Moore, 1994).

The walkable line drawn into the ocean.

“Greek *peras*, A boundary is not that at which something stops, as the Greeks recognized, the boundary is that from which something *begins its presencing*.” (Heidegger, 1971)

Heidegger looks at boundary definition as an act of dwelling, whereby distinction of place loses its ambiguity. In the case of the pier, the threshold between earth and ocean is rendered immediate and concrete.

Offshore breakwaters, and harbor walls conquer oceanic forces and piers, docks and gangways line the ocean surface. Natural systems are controlled and new, designed or engineered coastal conditions exist.

The pier is used to traverse over the sea, a mechanism to immerse yourself in it. To build a pier requires some fairly sophisticated engineering, considering the premise of the pier is usually to fulfill simple luxurious desires, such as having a dry place to fish or pleasant place to walk.

The Underwater Platform



The Under- Water Platform

The threshold between the earth and sea is rendered most ambiguous in the location of an aquarium.

A parcel of the oceanic realm is displaced from its primordial origin and contained in a recreational facility from which it is viewed through a shop front window. The building of an aquarium is the most contemporary of all the archetypes discussed, and subsequently embodies the *'ethos'* of contemporary culture. The aquarium here shows man's engagement with the sea through a consumerist lens, whereby marine life has been packaged for mass consumption.

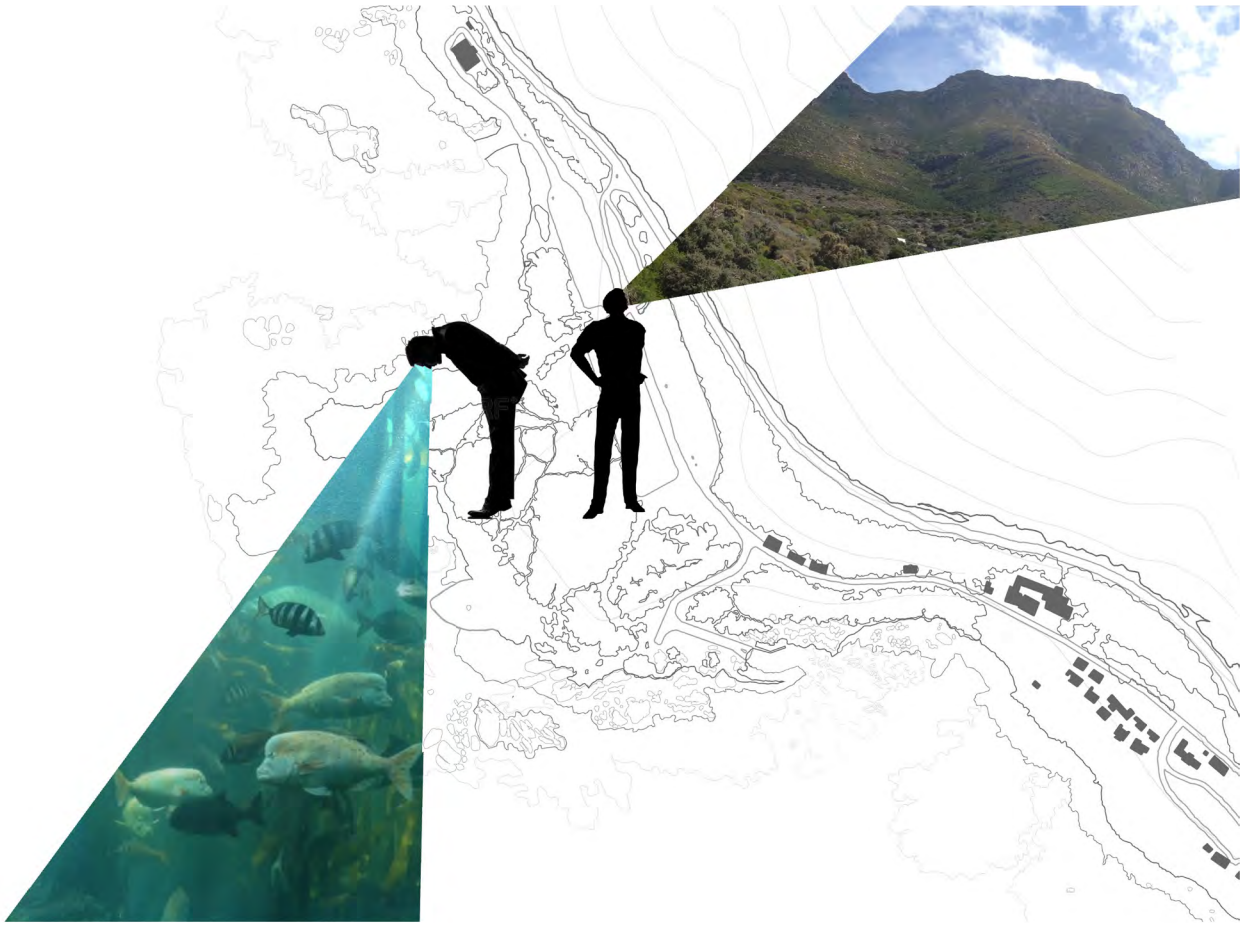
Instead of providing clues as to how to quantify a personal orientation with man's immediate context, the aquarium rather acts as a portal through which an alternative context is demonstrated.

Experiences once privileged only to divers and submarines are choreographed in a theatre engineered to simulate oceanic life. In this terminal, a connection with underwater experiences is augmented, with magnificent sightings guaranteed.

However so, experiences are also inauthentic - or rather - surreal, as the viewer remains dry, surrounded by air.

(Moore, 1994), regards the aquarium as an important genre in oceanic architecture as it reflects or rather entices our attractions of deep mysterious worlds, and the misunderstood creatures which inhabit the ocean.

This simulation of an exceptional 'place' provides clues as to the nature of its authentic counterpart, the architectural intervention works as a device to enhance understanding of a dissimilar context.



Looking up and Looking in

ARCHITECTURE & ETHICS

Heidegger attributes the performance of ‘taking measures of things and phenomena through creative acts’ as reflecting the world inducing responsible re-imagination (Sharr, 2007,p.82). This is to say that is through the making of architecture that our evaluation of a place is augmented.

So if we are using architecture as a means to expose something about a place, a scared nature for example, what needs to be established is why, to what end, the ethical function of architecture needs to be framed.

Karsten Harries makes a committed argument to the validation of architecture; as the device we use to ‘interpret a way of life valid for our period’, a philosophy originally of Sigfried Gideon.

Harries, regards this as architectures ‘ethical function’, further described in etymological terms:

Ethical –ethos – character or disposition – how we exist in the world

Architecture – the spirit that presides over its activities.

The architect needs to find an appropriate language (in the form of stories) capable of modulating a project in view of an ethics, always specific to the task at hand (Perez-Gomez, 2007).

The challenge framed here is to define the current ethic towards a land-ocean relationship and ensure the resulting architecture plays a responsible and appropriate interpretation of that ethos.



**“WOULD YOU CARE MORE
IF I WAS A PANDA?”**

The Bluefin Tuna is being fished to extinction.
So like a few other species, it would appreciate your help.



wwwf.com

*“The Blue-Fin Tuna is being hunted to extinction, so, like some other species, it would appreciate your help”
WWF advert*

AN AGENDA FOR COASTAL ARCHITECTURE

In an effort to define a contemporary attitude towards oceanic encounters, the current and necessary trend of working towards sustainability as a goal is a ubiquitous.

Sustainability raises the question of how one ought to live with respect to nature to ensure that these biological ecosystems remain healthy and productive for future generations. Arjen Oosterman claims that sustainability has come to the rescue of architecture, setting the new agenda for architectural discourse, and even become a ‘politically correct’ term. (Oosterman, 2008)

John Hannigan suggests that society’s willingness to recognize and solve environmental problems depends more upon the way these claims are presented by a limited number of people than upon the severity of the threats they pose. (Hanningan, 1995)

Approaches to sustainability are multifaceted, vastly different and without touching on all of these; this dissertation will focus on an environmental ethic borne from environmental experience.

(source) Alaimo accuses ‘green thinkers’ and techno-capitalists of assuming people as one dimensional consumers who must now ‘deny themselves and take on the grim yoke of asceticism¹ for the cause’. Alaimo elaborates that the struggle to make environmentalism appealing is because environmentalism as it is sold to us is ‘anti-environmental’ as it distrusts the wisdom of the pre-conscious, the sensual, the animal.

In the book *Architecture, Ethics and the Personhood of Place*, a collection of prolific writers discuss architecture and environmental design with regards to ethics. The book challenges the way in which the drive towards sustainability has been handled through contemporary practice and instead asks for a more radical new relationship between the built and natural environment to be established.

1 Asceticism – abstinence from worldly pleasures



The book aims to prove that it is recognition of the sacred character of the place becomes the ethical goal of the architecture.

Juhani Pallasma recognises that the professional responsibility to pause, contemplate, dream and wonder at the beauty and 'givenness' of the world is rapidly being eroded by the high speed tools of the design trade and the expectations of rampant consumerism (Pallasma, 2012).

When successful, architecture allows for participation, in meaningful action, conveying to the participant an understanding of his or her place in the world. In other words, it opens up a clearing for the individual's experience of purpose through participation in cultural institutions. (Perez-Gomez, 2007)

In summary, what these writers are trying to prove is that sustainability can find its beginnings by establishing an embedded understanding of the natural environment. By rooting a participant in the natural universe, they will naturally find their role in caring for their future; although this might sound like a hard sell in some cases.

Encouraging an existential pause as a goal might be an ambitious task, but simple exercises in education and the creation of general awareness is definitely achievable.



South African
NATIONAL PARKS



Cape Peninsula Reserve Collage

SECTION 2

THE GATEWAY TO THE CAPE PENINSULA MARINE PARK

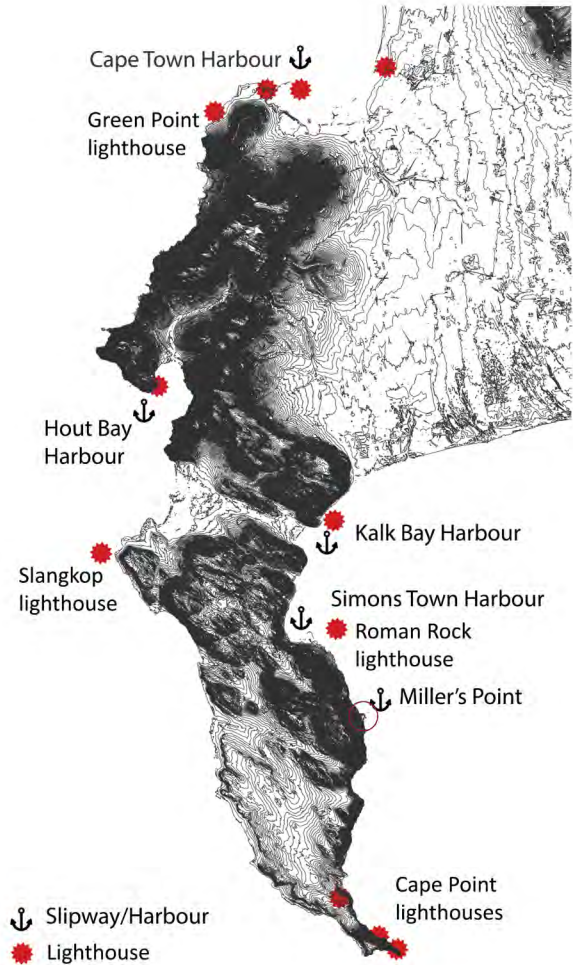
After designing this conscript for architectural intervention, the project needs to be located, its sustainable incentive defined and its spatial construct motivated in terms of site and appropriateness.

The establishment of the Cape Peninsula Marine Park became the driving means to which architectural framing is identified.

On learning of the declaration of False Bay as the new Cape Peninsula Marine Park as a means to demonstrate marine conservation, this design dissertation strives to 'archetecturalize' this legislation as a means to inspire or educate.

With the problem of locating such intervention, Millers Point then proved to serve as the perfect site to launch this cause for numerous reasons, such as its location and diverse user groups.

MARITIME STRUCTURES



1.

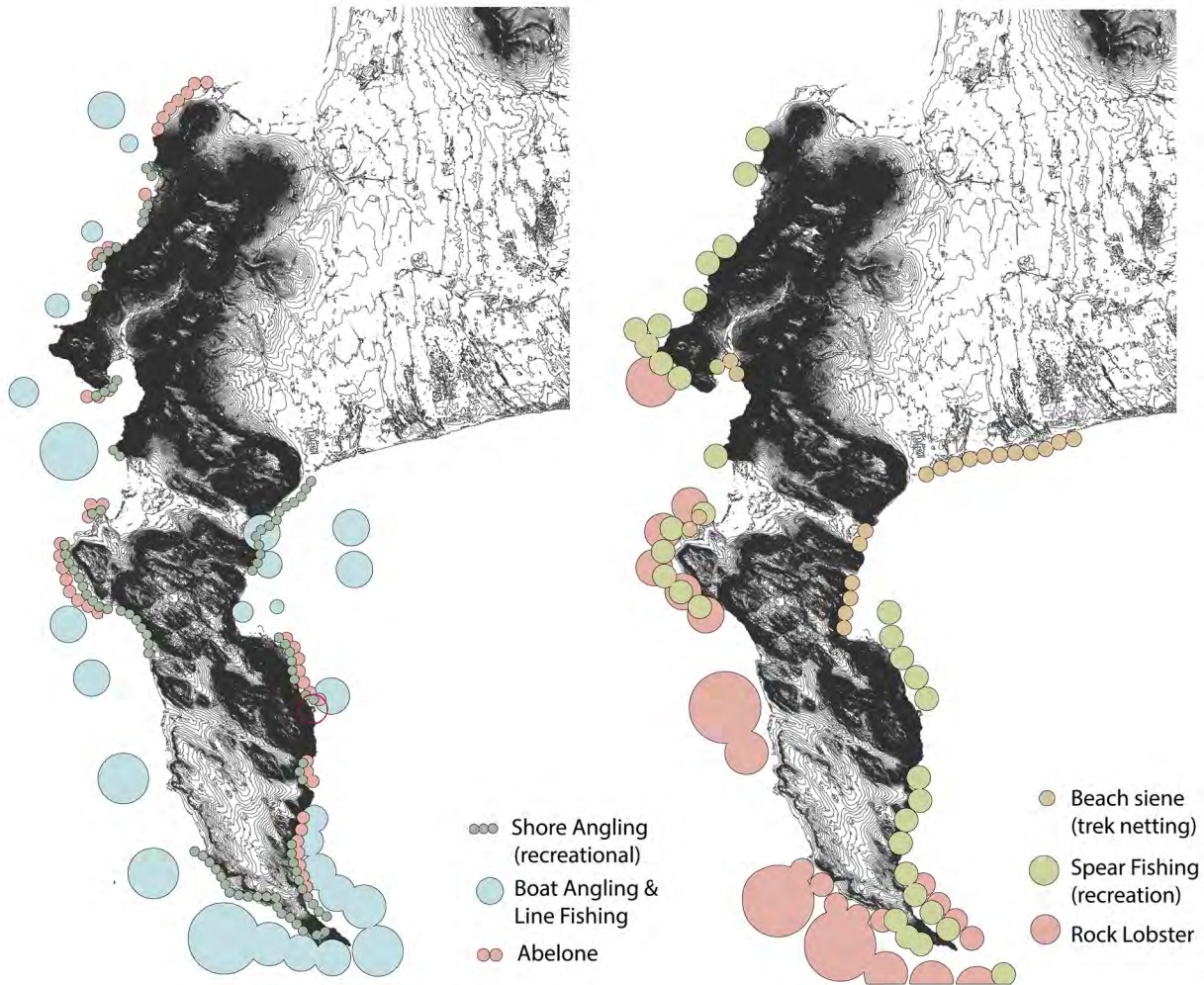
CAPE PENINSULA MARINE PARK

In order to preserve the exceptional marine and coastal biodiversity privileged to the Cape Peninsula, the Government of South Africa declared its waters as a Marine Protected Area or MPA in 2004. Commercial, recreational and industrial activities have placed extreme pressure on the coastlines natural resources, therefore these practises need to be managed and monitored to ensure optimum social and economic benefits without having a harmful impact on the environment.

The establishment of marine protected areas is now considered to be the primary mechanism through which the harvesting of marine resources can be kept within sustainable limits, protecting the highly diverse marine communities surrounding the Peninsula. (Sanparks). There is still a general perception that marine environments are more resilient than terrestrial environments, this perception is told by the WWF to be neither appropriate nor entirely correct. (WWF, 2014)

Map information redrawn from information coming form the Cape Peninsula Marine Park Proposal document

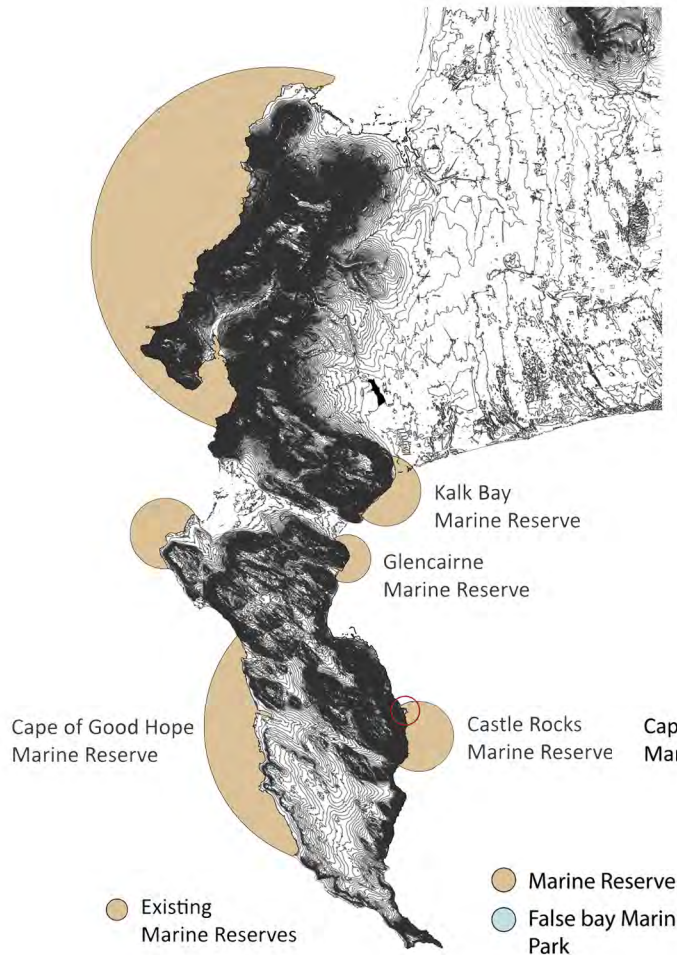
FISHING ACTIVITY ABOUT THE PENINSULA



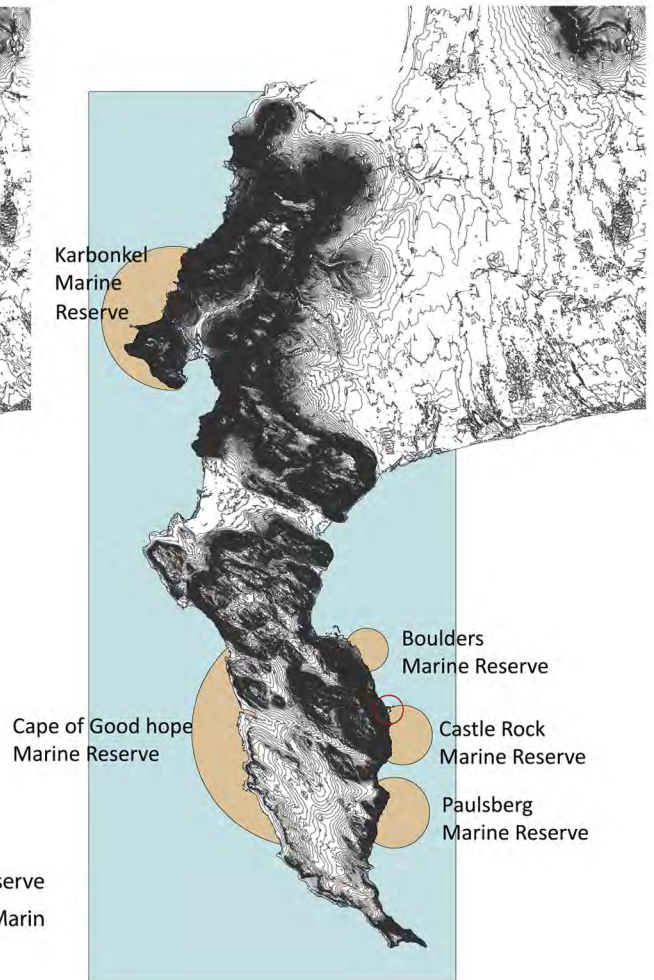
Much of the socio economic well being of a large percentage of the country is dependent on marine bio diversity, however so, 302 marine taxa were listed on the IUCN Red List in 2007, ten of which were declared critically endangered (DEAT 2009, Tunley, 2009)

The Marine Protected Area (MPA) extends from Moullie Point right around the length of the peninsula to Muizenberg. Sustainability is promoted in the form of legislation and the delegation of 'no take zones', which have been identified as important breeding and nursery areas for marine life.

EXISTING MPAS



CAPE PENINSULA MARINE PARK



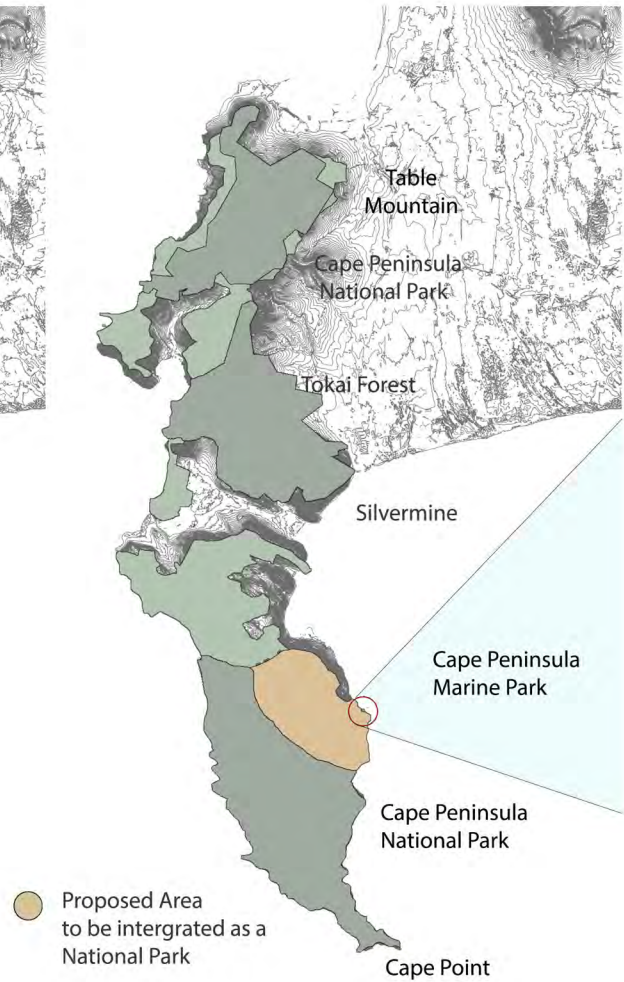
(Tunley, 2009) identifies education and awareness campaigns aimed at creating public support for conservation and compliance as being essential for effective MPA management.

The aims of establishing a MPA are clear: to ensure the protection of rare, localized or endemic species by protecting their habitats. Architecture may have little to do with the actual monitoring of fish population trends, but it can be an effective mechanism for providing necessary MPA infrastructure.

CONSERVATION SITES



PROPOSAL



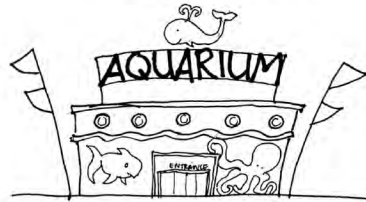
Infrastructure for low impact non consumptive recreation, field based education and tourism facilitation, are all outlined as necessary Marine Park resources (Clark, 2001).

The Cape Peninsula National Park, home of Cape Point is a prestigious reserve and popular tourist destination. Terrestrial reserves have always been falsely considered as 'higher profile', and so for the sake of this dissertation, the Cape Peninsula Marine Park will be re-imagined as an equally significant reserve.

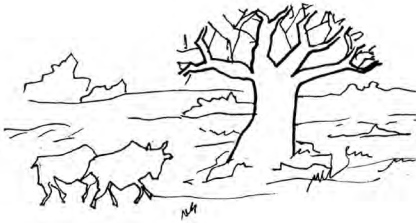
The Johannesburg Zoo



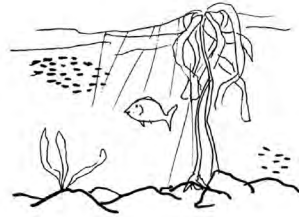
The Two Oceans Aquarium



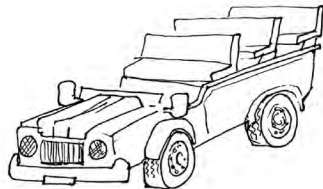
Kruger National Park



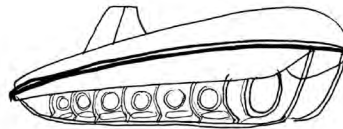
Cape Peninsula Marine Park



Game Viewing Vehicle



Boat & Submarines



Bird & Animal Hide



Aquamarine Platform



PARK INFRASTRUCTURE

Marine Protected Areas are being scrutinized globally for being ineffective and been mockingly referred to as ‘paper parks’. The reasons for this ineffectiveness are usually centered around lack of funding, lack of patrolling and administration and lack of community involvement (Davies, 2001).

Billy Causey motivates that the best way to enforce compliance through a marine protected area is through public education and by enlisting the help of user groups in management.(Causey, 2005)

The ethical drive towards sustainable marine practices is well documented and the legislative aims are clearly defined. However so, I believe the problem has not been framed correctly. What I mean by this is that ‘law is an intangible construct’.

As described earlier, the practices of sustainability are only as effective as they are presented. Presentation needs to be understood as the primary mechanism for inspiring action.

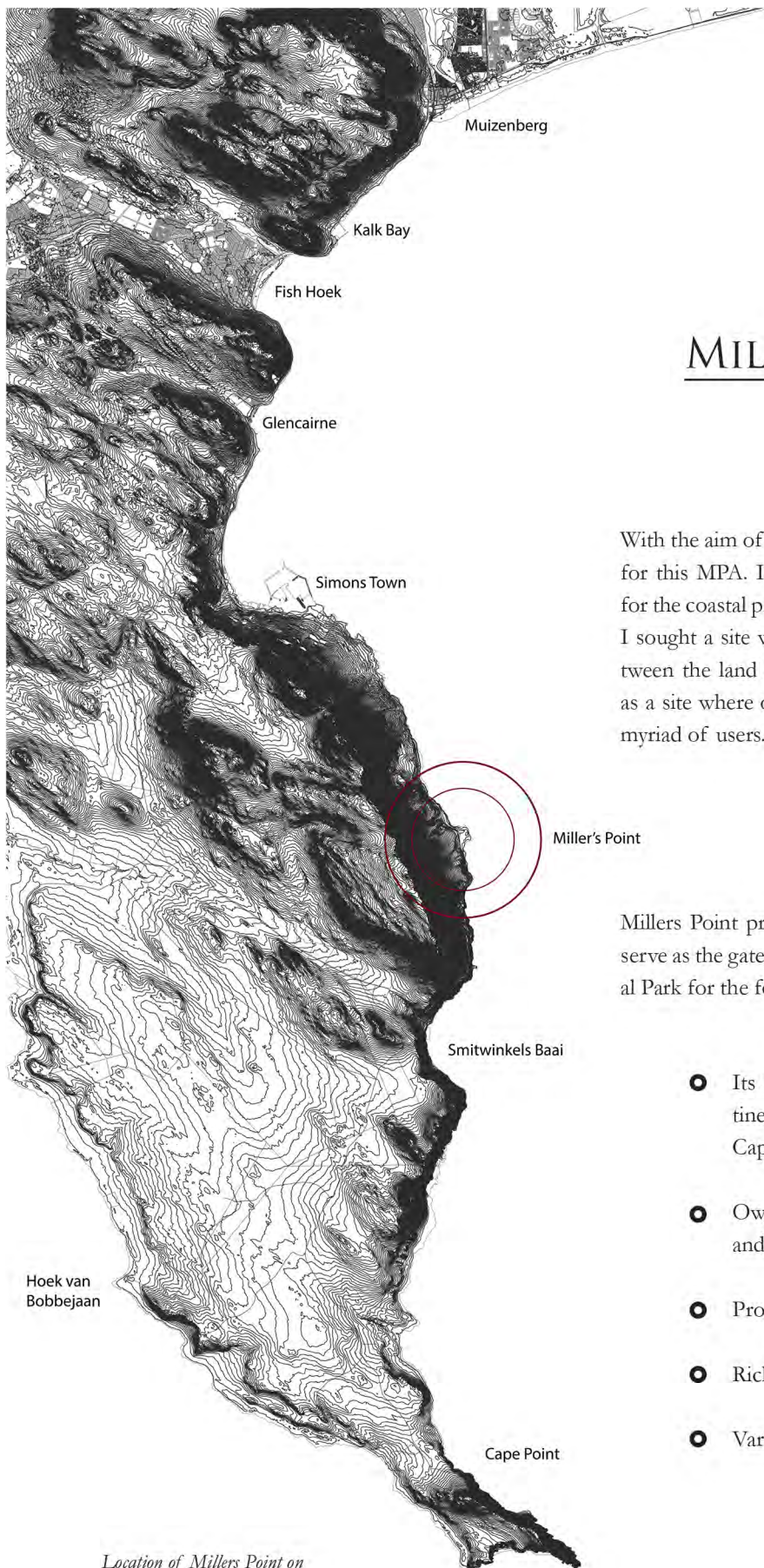
The project therefore aims to strategize an architectural identity synthesizing the aims and imperatives put together by the constitution of a Marine Protected Area. The architecture must both nature the environment and work as an educational tool.

Not only does the MPA need to ‘sited’ physically and given some sort of tangible identity, but its’ aims and initiatives, need to be shared whereby learning can take place through active participation.

The MPA needs to be treated like a National Park with the same attention to infrastructure as its land based counterpart, with the ambition that it will be allowed to be enjoyed similarly.

Looking at typology or archetype, I started to imagine how land based park infrastructure could be interpreted in a marine context. What is unique about enjoying life in a reserve is that the environment is natural and self-regulating, and it is the people enjoying this experience who are removed from their own natural habitat instead of the other way around.

Reserves are unique in providing authentic experiences, and are observed through the act of touring in specialized vehicles, specific for that context, placing the participant in the realm of the other.



MILLERS POINT

With the aim of designing an architectural identity for this MPA, I turned to find a site appropriate for the coastal prototype to accentuate its bearings. I sought a site which had a dynamic interface between the land and sea and fell on Millers Point as a site where oceanic pleasures are enjoyed by a myriad of users.

Millers Point proved to be an appropriate site to serve as the gateway to the Cape Peninsula National Park for the following reasons:

- Its location – tourist potential, pristine environment & proximity to Cape Point
- Ownership by the City of Cape Town and current state of disrepair
- Proximity to the Castle Rocks MPA
- Rich biodiversity of fauna & Flora
- Variety of recreational users

Location of Millers Point on the Cape Peninsula

MILLER'S POINT



Photo of Millers Point in 2006 from the GIS database

Location

Millers Point is located approximately 2km outside of Simons Town on the shore side of the M4 road heading towards Cape Point. This is popular tourist route specifically for international travellers heading out to enjoy the Cape Peninsula National Park home to Cape Point.

Millers Point is located at the foot of the Steenberg Mountains, in a pristine environment with spectacular views stretching out across False Bay. The site is loaded with tourist potential and is already well used as a recreational area by locals.

Ownership

Miller's Point belongs to the City of Cape Town (CoCT), and whilst Millers Point is a reasonably popular leisure destination, the site is in a severe state of disrepair and in need of some bold attention.

Landscape development frameworks (LDFs) have been drawn up by two different landscape architects Earthworks and SMC landscape architects, which have proved to be useful documents in gaining valuable information with regards to this sites problems and ecological treasures.



Panoramic Collage of photos from Millers Point

Castle Rocks MPA

Starting on the southern portion of Millers Point is the beginning of the Castle Rocks Marine Protected Area.

This MPA is home of the sevengill broadnosed cowshark which can consistently be found residing in a clearing known as Shark Alley, and has thus become an internationally acclaimed dive site.

The reefs and kelp forests surrounding Millers Point are home to an exceptionally rich in bio diverse range of marine species.

Fauna & Flora

The vegetation found on the dunes of Millers Point have been recognised as the best remaining example of Coastal duneveld supporting examples of many rare or threatened species.

Chacma baboons patrol the mountains and terrise the campsite, and the boulders are inhabited by dassies and oyster catchers.

The extent of an MPA bleeds into the terrestrial sphere aswell, fauna and flora are included under this zones protection.



ANCIENT HISTORY

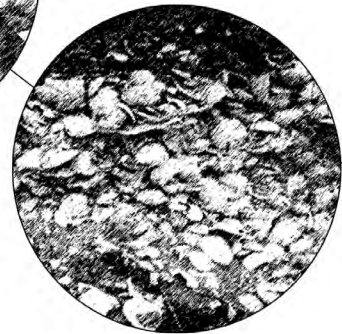
Recreation

Millers Point is a reasonably well used site known for its campsite, restaurant, beaches & tidal pool and is also home to the Cape Boat and Ski Boat Club. The diverse range of activities hosted here makes it an attractive venue for a vast variety of people.



Khoi

Shell Middens evident in dune



Shell middens found on site provide evidence of ancient inhabitation

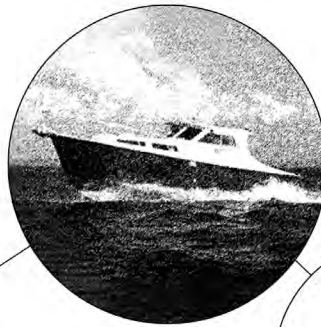
CAPE BOAT & SKI BOAT CLUB



Scuba Diving



Spear Fishing



Boating



Sea Kayak



Kelp forest



Ship wreck



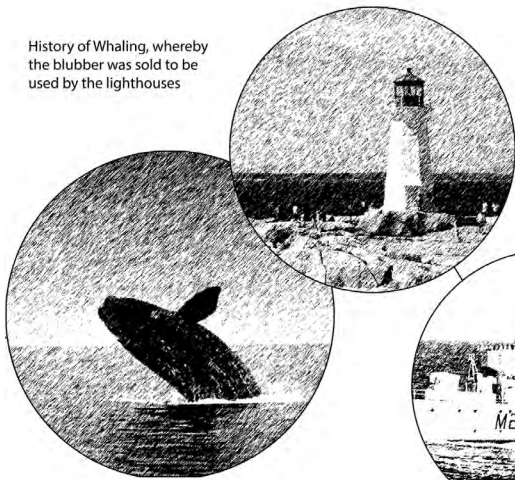
Cape Boat & Ski Boat Club

The reefs and kelp forrests surrounding Millers Point support a hugely diverse population of oceanic species attractive to divers and fishermen alike

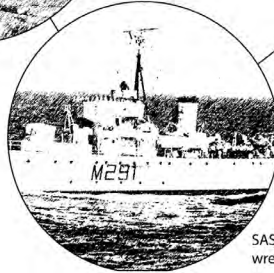
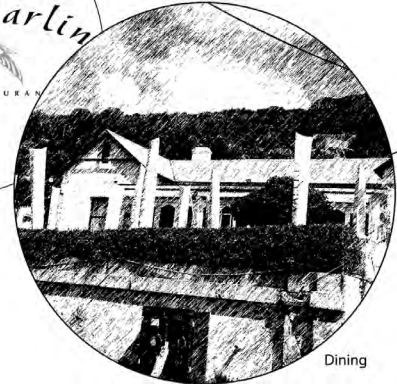
RECENT HISTORY

CURRENT USE

History of Whaling, whereby the blubber was sold to be used by the lighthouses



Edmund Miller's original farmstead is now used as the Black Marlin restaurant



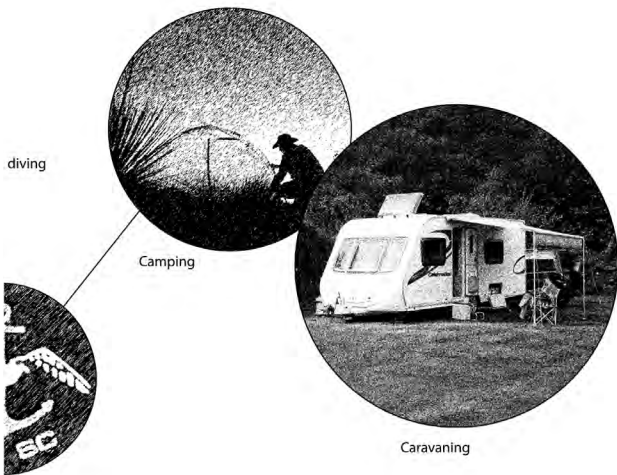
SAS Pietermaritzburg wreck

Dining

The site was once used as a whaling station by sir Edmund Miller whose homestead is now used as a the Black Marlin restaurant

CAMPING

PUBLIC RECREATION



diving

Camping

Caravaning

Braai

Beach Leisure

Swim

Tidal Pool

Millers Point is a popular recreational ground providing for camping and beach activities.



Initial framework

SECTION 3

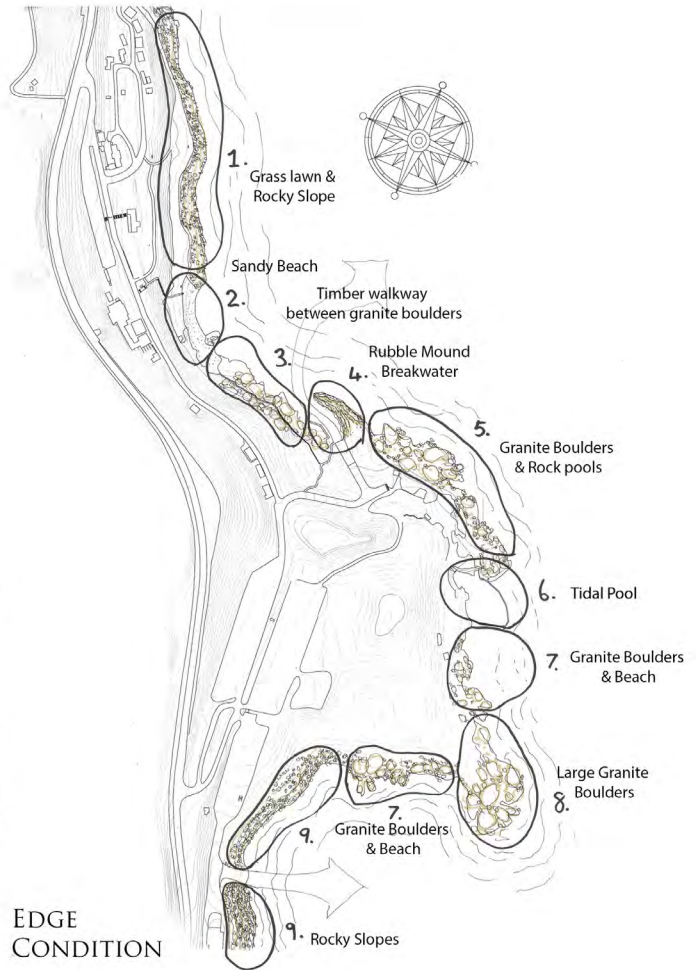
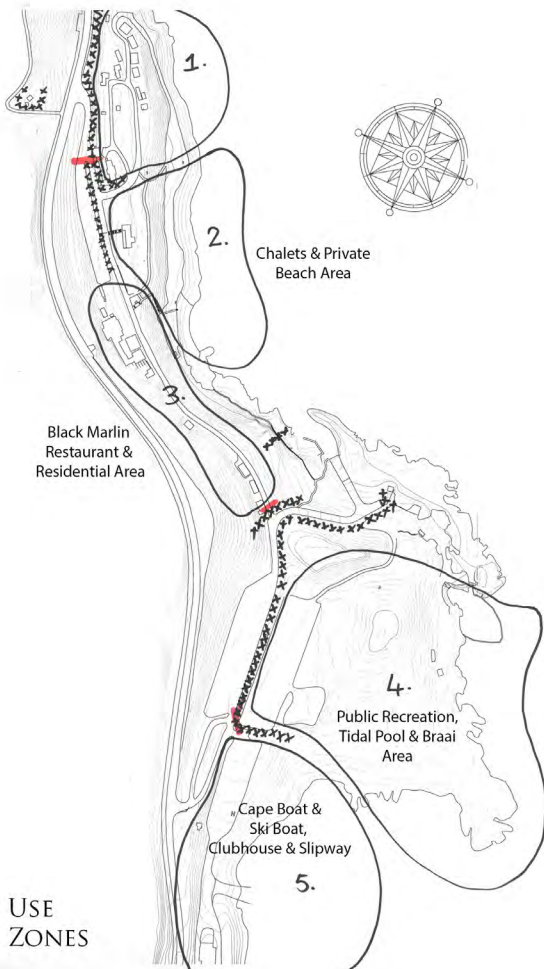
RE-IMAGING MILLERS POINT

Millers Point is been in need for upgrading for the last 10 to 15 years, even though LDFs have been written up by SMC and ELA landscape architects. After visiting the site and studying the frameworks, it is obvious that few to none of the designed spaces have been realised.

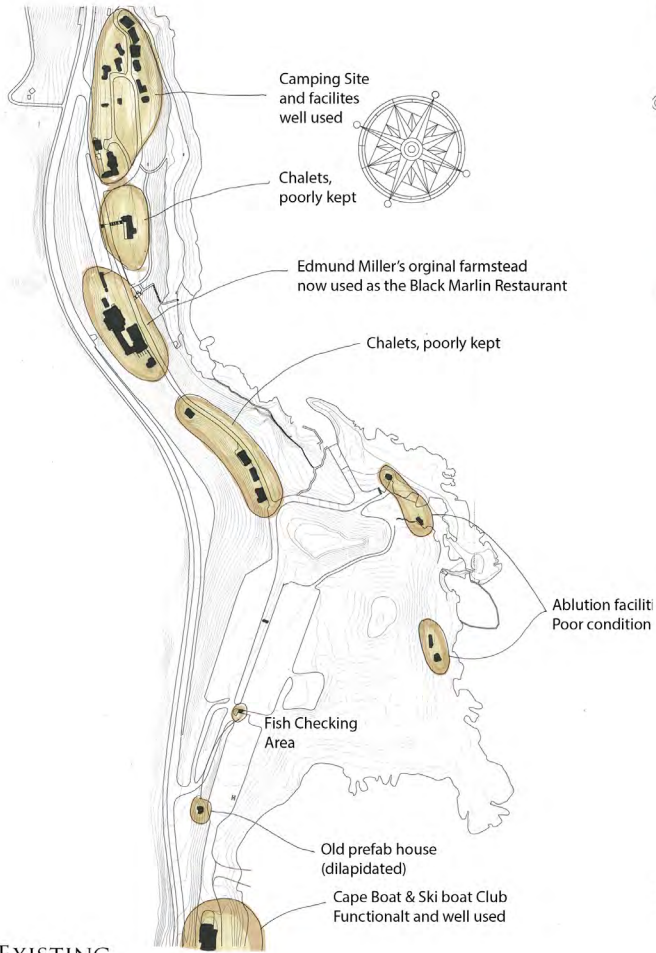
After going through a site analysis and establishing a framework response (FR) as well as analysing the most recent framework of ELA, a new general framework appropriate for a marine park is proposed.

USE ZONES

EDGE CONDITION

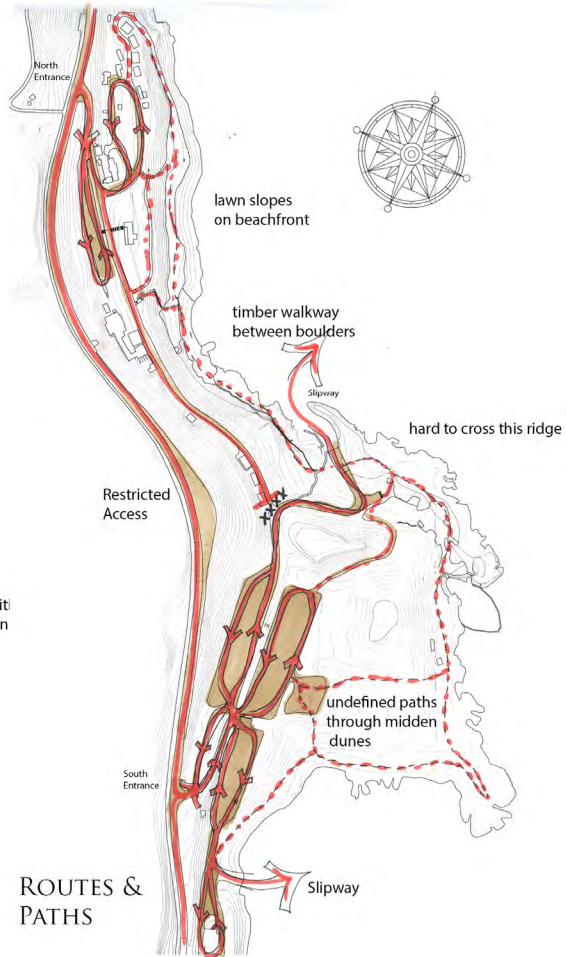


EXISTING STRUCTURES



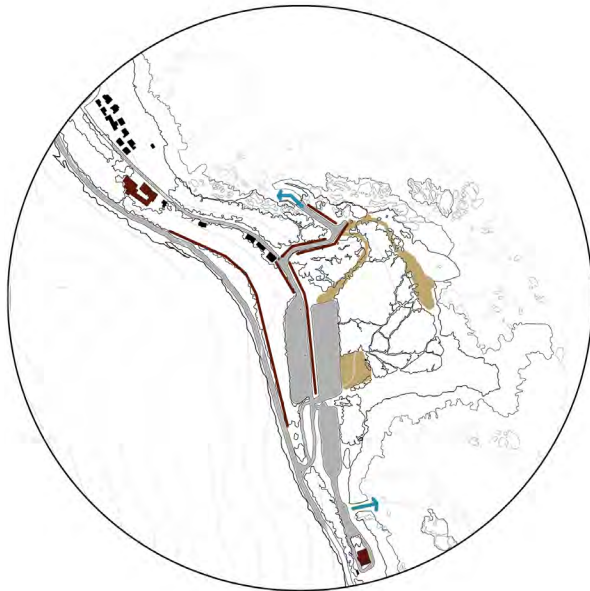
EXISTING

ROUTES & PATHS



ROUTES & PATHS

EXISTING INFRASTRUCTURE

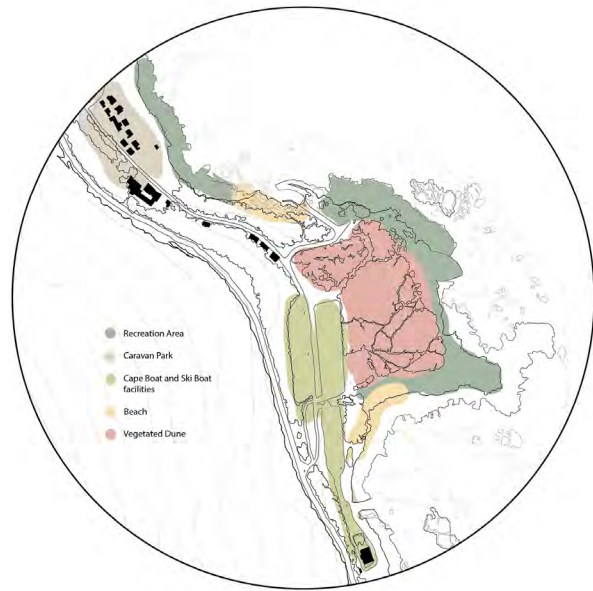


The site is accessible from two entrances, one on the North leading to the Black marlin restaurant and camping grounds, whilst the Southern entrance leads to the Cape Boat & Ski Boat Club.

The ad-hoc placing of fences diminishes the permeability of the site. Large asphalt parking strips scar the landscape. Many informal footpaths lead visitors from the parking lots to the tidal pool

FR: Take down the barrier between the northern and southern portions of the site so they can work together. Formalise the footpaths to diminish damage to the Coastal Duneveld.

LAND USE

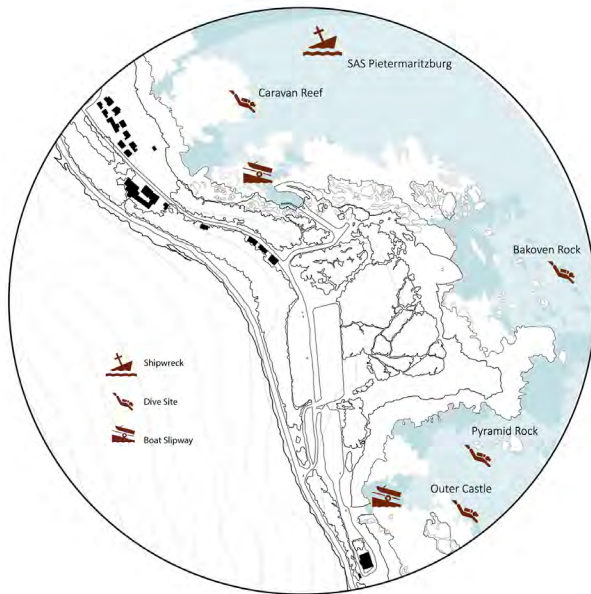


Millers point has been developed as a recreational resort. On the north the site hosts a Caravan Park and the Blue Marlin restaurant with staff living on-site.

Public recreational facilities are more prevalent on the southern portion of the site, which includes the tidal pools and braai areas. This spot is a popular launch site for boats and dive spot for fishing.

FR: Retain the Northern Portion of the site as being for accommodation purposes but diversify the range of activities around the CBSBC

MARINE RECREATION

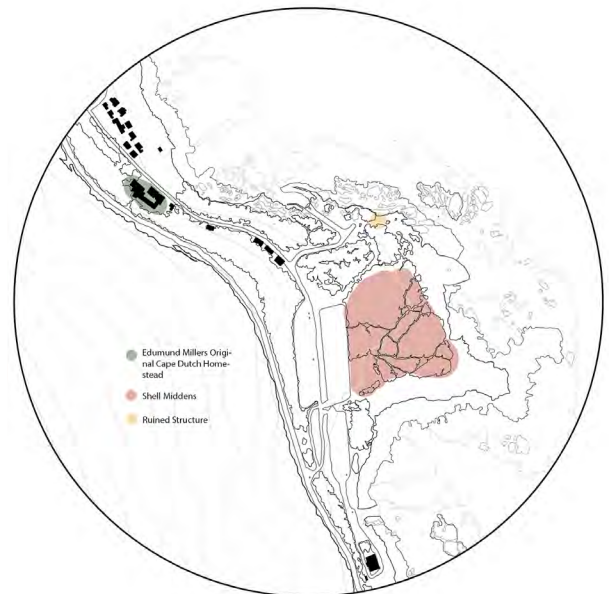


Millers point is located in close proximity to the Castle Rock marine Reserve which runs from millers Point to Partridge Point, a world class scuba diving destination very popular with local divers.

The SAS Pietermaritzburg which was a military minesweeper is a well preserved wreck located just off the Northern Slipway and is still in apparently perfect condition making it an interesting dive site.

FR: Highlight the border of the Castle Rock Marine Reserve. Create an underwater corridor which exposes the oceanic treasures once only afforded to divers (more in following sections)

ARCHEOLOGY

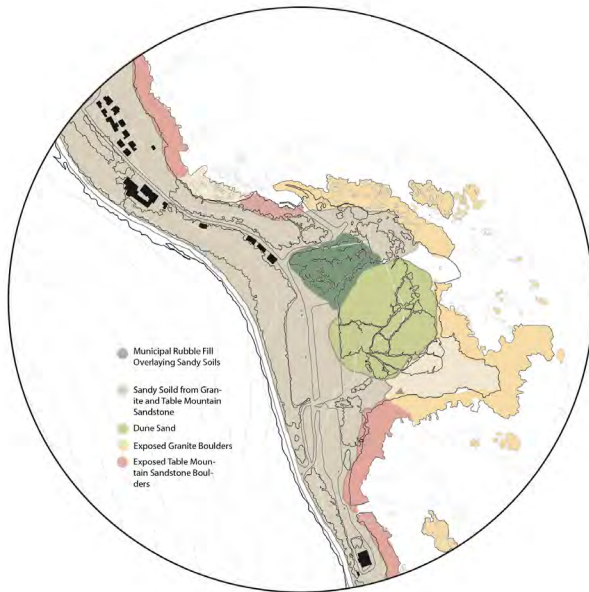


Edmund Miller used the site as a whaling station and the concrete foundations of the blubber cauldrons are still visible by the tidal pools. There are said to be numerous historical remnants that need to be reserved – specifically – the shell middens.

The Black Marlin Restaurant is a historic home-stead with an archetypal Cape design and a ruined structure located near the tidal pool is supposed to have been related to the whaling activities of the site

FR: Use the design of the footpaths around the shell middens to demarcate and create awareness around their location and historical significance

GEOLOGY



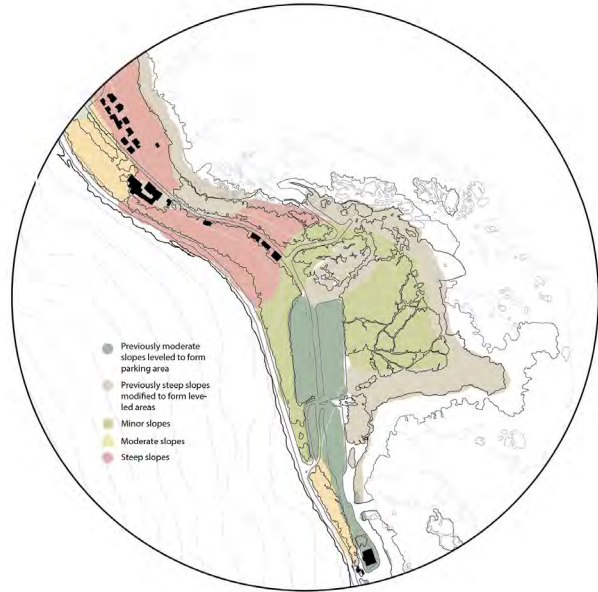
Exposed granite boulders and table Mountain sandstone make up the rocky coastline of Millers Point, the boulders are particularly attractive feature adding to the unique beauty of the site.

The north beach has desirable sand, whilst the southern beach has been affectionately named 'Rumbly Bay' due to the sound it makes when the large smooth stones are moved by the tide.

The site is covered in sandy soils derived from the granite and table mountain sandstone and therefore supports Ericaceous fynbos and must be conserved at all costs.

FR: Restore the Ericaceous fynbos by removing some of the superfluous parking space which horribly scar the landscape.

TOPOGRAPHY

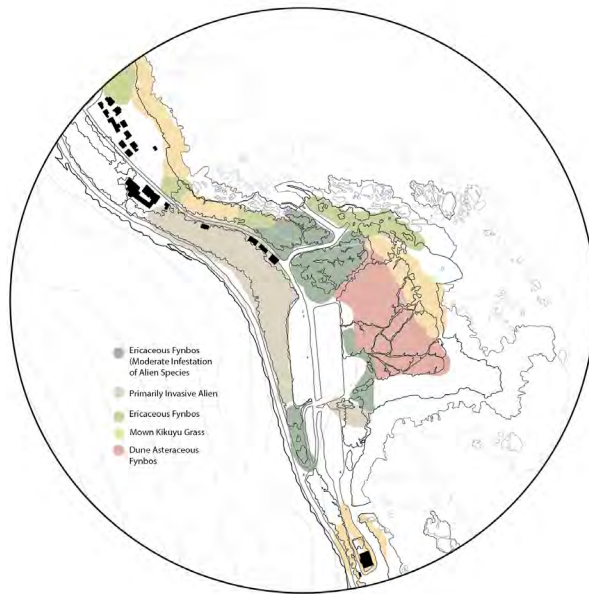


At the foot of the Steenberg Mountains, Millers Point has an interesting topography with a huge variation in slope differences. The slope leading down to the beach from the campsite is very steep.

The route from the campsite to the tidal pool is supported by a timber footbridge which weaves between the rocky outcrops. Slopes in the Southern portion of the site are more moderate with large areas having been levelled to serve as parking areas.

FR: Look at ways of connecting hiking trails up the Steenberg Mountains to use Millers Point as a rest stop or base camp of sirts

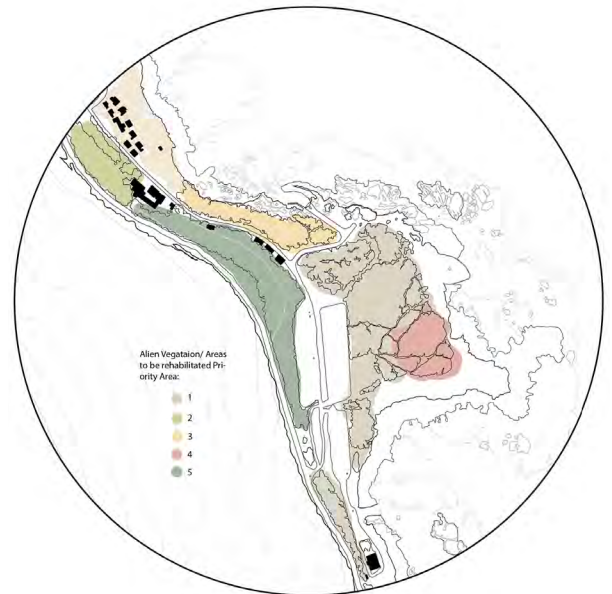
VEGETATION



The most common type of vegetation found on Site which occurs here naturally is the Strandveldt thicket, Coastal Duneveld and Dune (Asteraceous) fynbos.

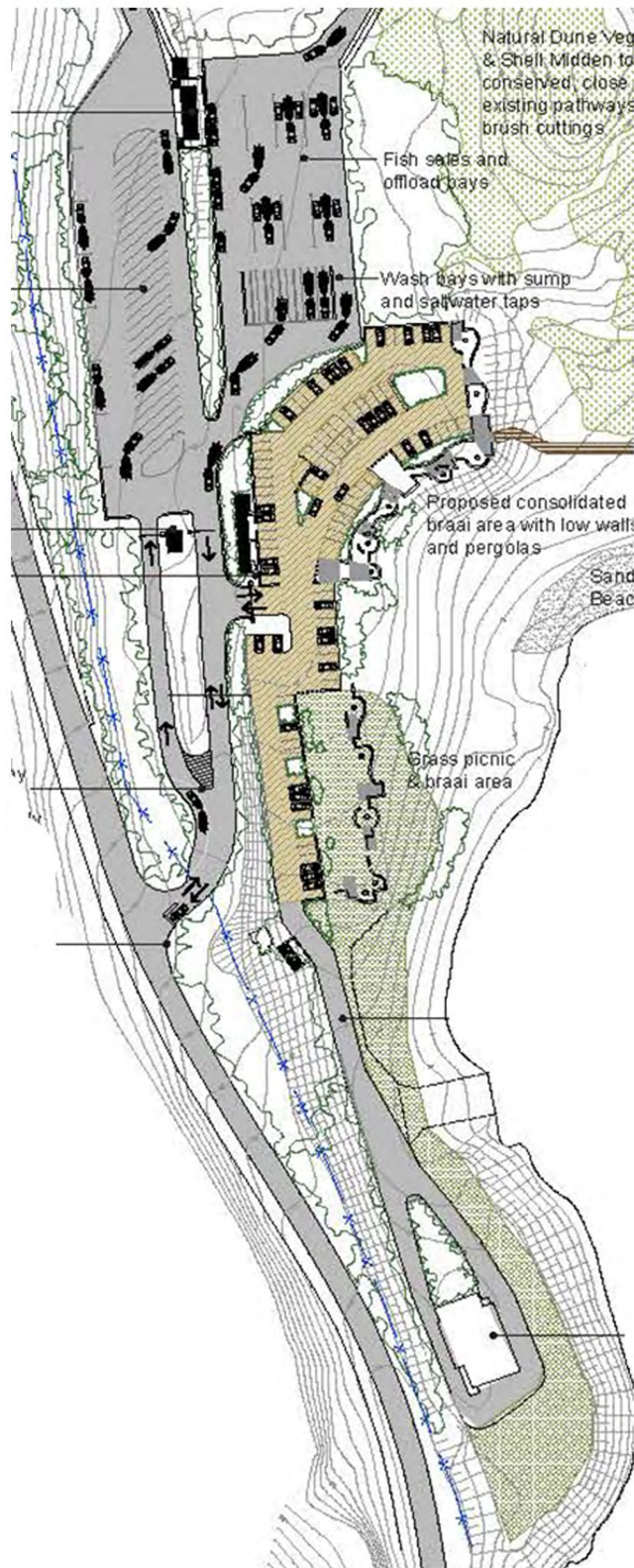
Of particular interest is the vegetation found on the dune west of the tidal pool. This area has been identified as being of high sensitivity and should be protected. The vegetation in this area is considered to be the best remaining example of Coastal Duneveld in the Cape Peninsula and supports examples of rare or threatened species.

INVASIVE ALIEN VEGETATION



According to a study carried out by the City of Cape Town's invasive alien control unit, the site has been divided up into 7 sectors each with their own priority factor.

Some of the invasive plant species include the Austrailina Blackwood, Black wattle, Cherry Pie, Eucalyptus, Giant Reed, Hakea, Drupacea, Kikuyu and the long leafed wattle.



The LDF by ELA divides the sites users into two distinct groups - day visitors & fishermen

The activities of the fishermen are well provided for through a loop network. there is parking for arriving boats leading towards the slipway and a special loading bay area for boats returning from the sea.

The visitors use a separate entrance and have their own braai area leading off the parking lot. Designated and designed pathways lead visitors up to the tidal pool

Access to the CBSBC is limited to members only.

The logic of how the fisherman have been provided for through the designed loop system is irrefutable.

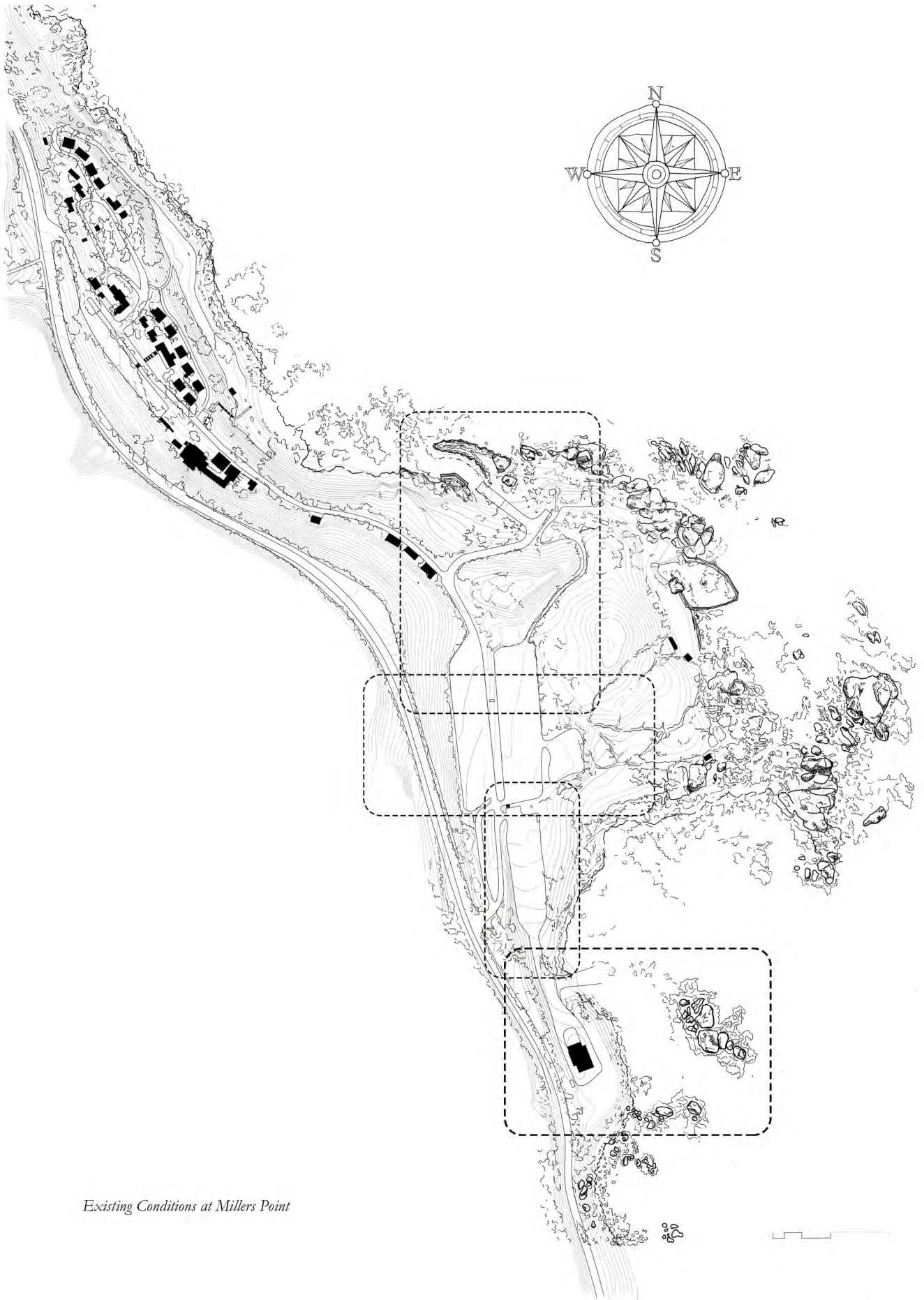
However, the potential for day visitors to involve themselves in the boating activity is lost. The LDF by ELA divides the sites users into two distinct groups - day visitors & fishermen

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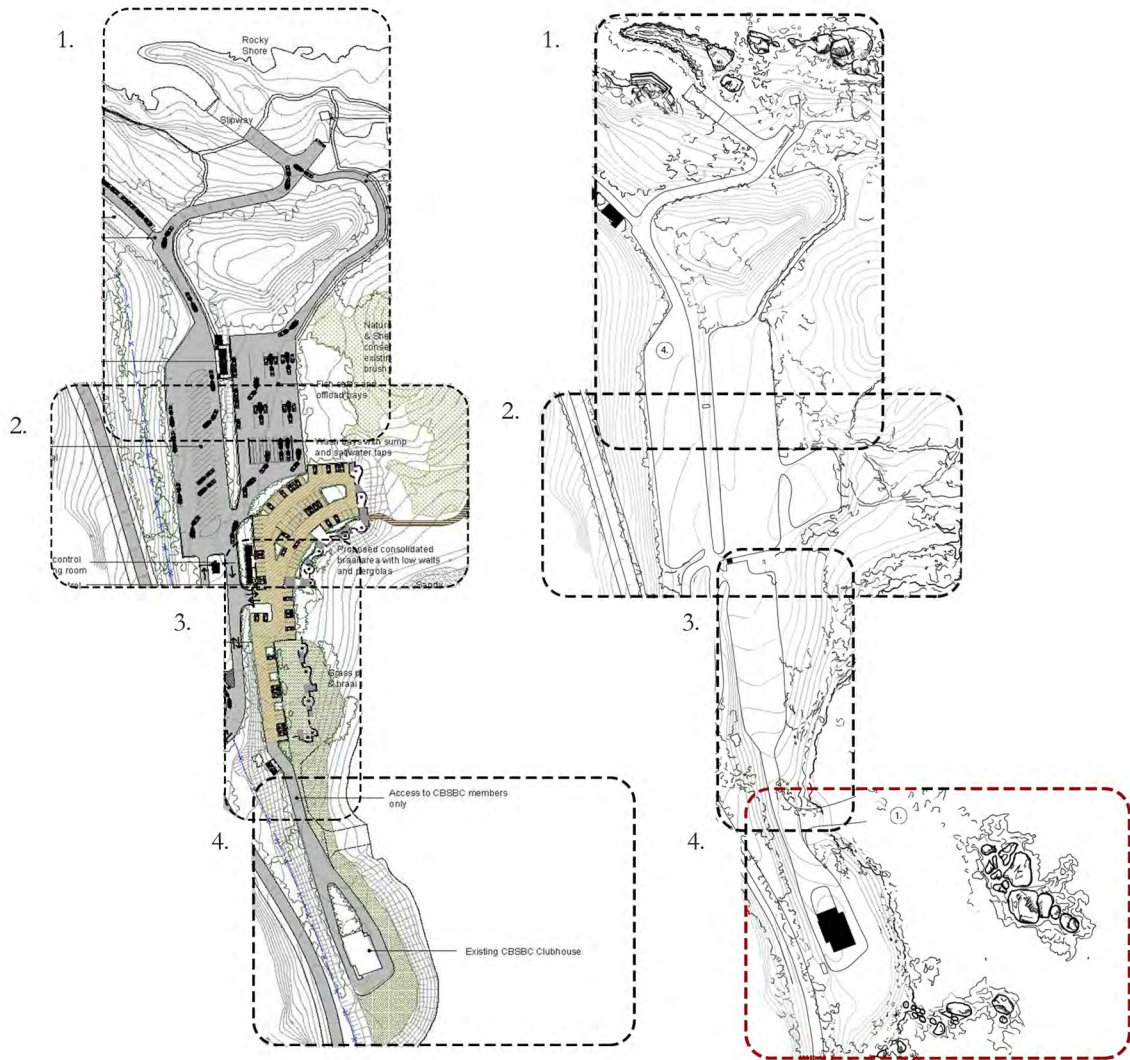
Existing Conditions at Millers Point

1. Keeping ELA's proposal for a fishing network loop the northern portion of the site will continue to be used for boating activities

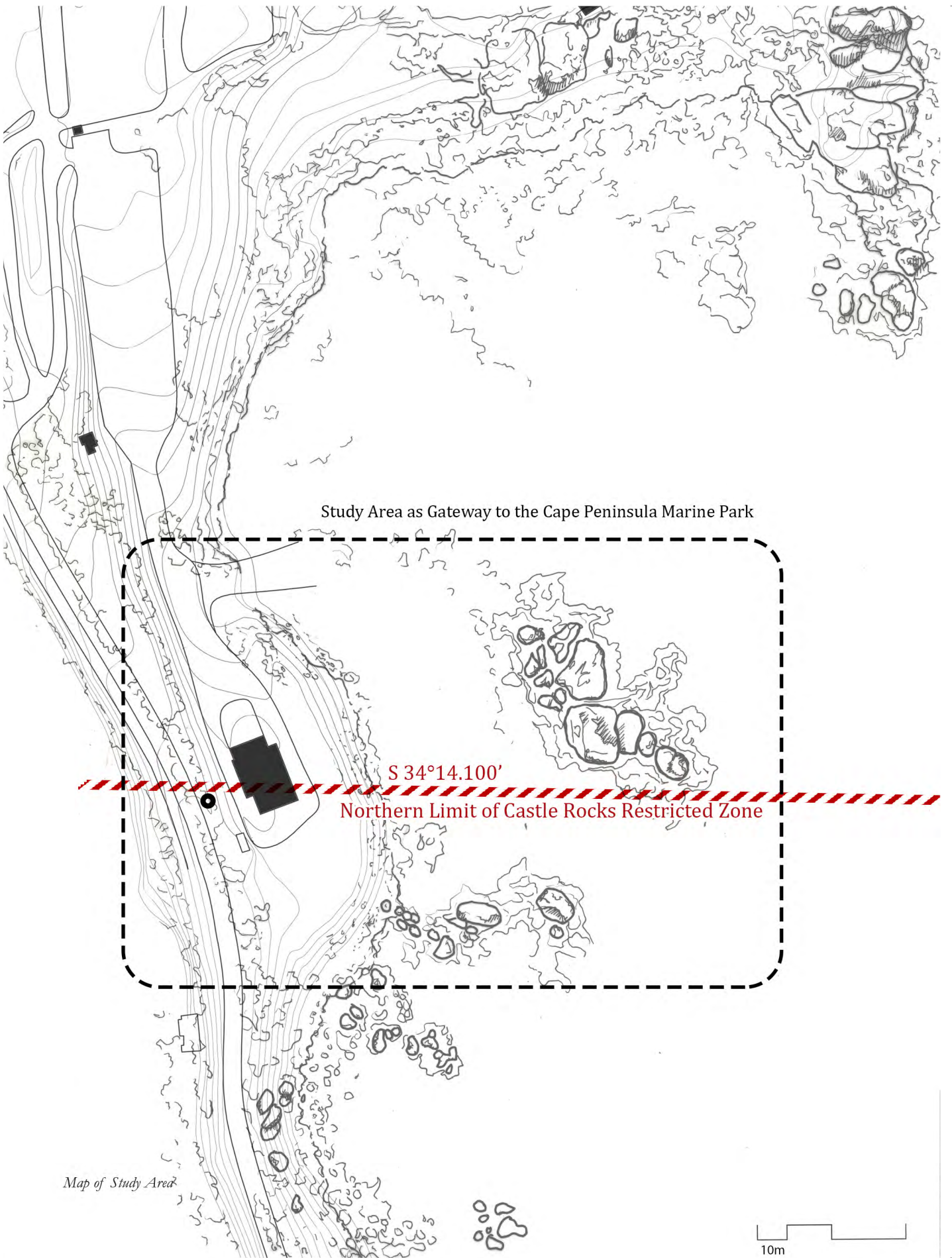
2. Unlike the studied LDF, I would like to reconfigure the separation of the public from the fishing activity and design a mutually beneficial public platform.

3. I would like to extend the public parking areas towards the southern portion of the site as it includes a new vision for the CBSC plinth.

4. This is the chosen study area to be re-interpreted as the Gateway to the Cape Peninsula Marine Park discussed in the following section.



RE-IMAGING MILLERS POINT

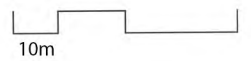


Study Area as Gateway to the Cape Peninsula Marine Park

S 34°14.100'

Northern Limit of Castle Rocks Restricted Zone

Map of Study Area





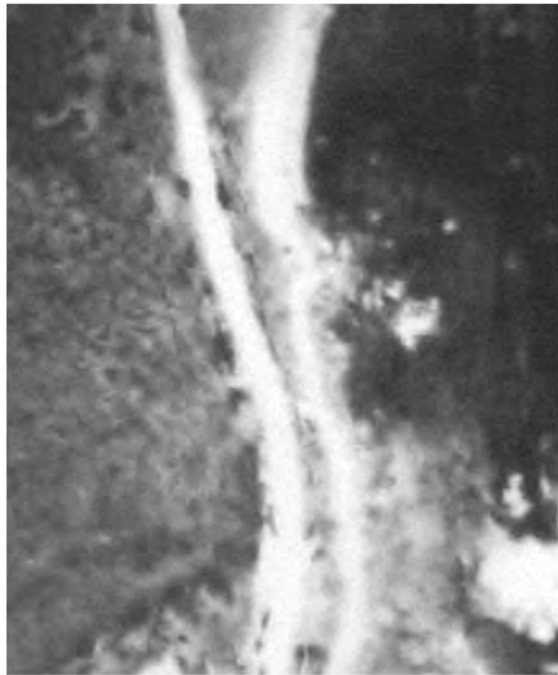
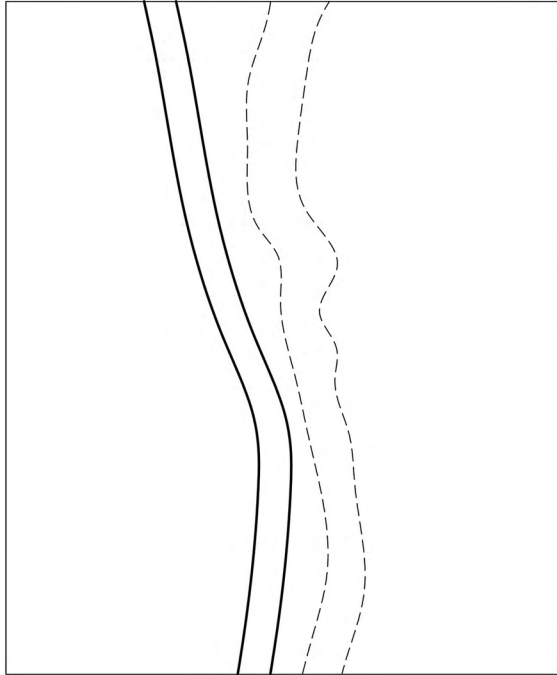
Study Area

After outlining a general framework for the entire extent of Millers Point I made a conscious decision not to try take on the whole site like a landscape architect would, but rather concentrate on the border to the Castle Rocks Marine Protected Area.

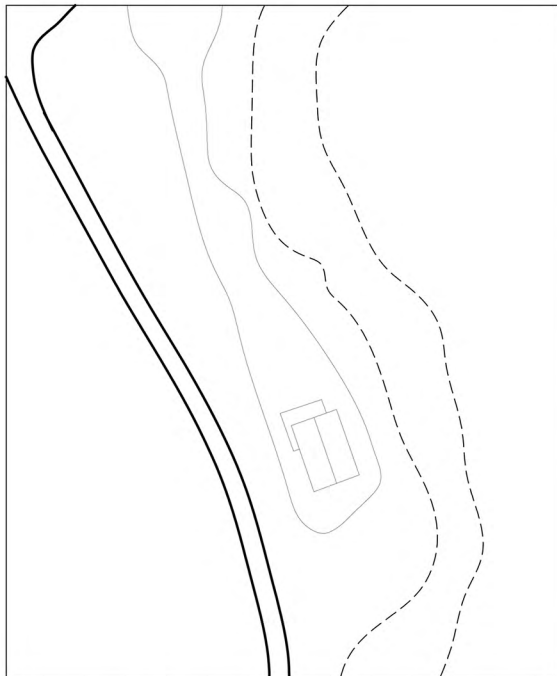
The Northern Limit of the Castle Rocks Restricted Zone lies on S'34°14.100' shown on the map. The only physical evidence of this line is a small road sign, possibly illegible from the relatively high speed passing cars. This zone became the primary study area for architectural intervention.



Current MPA Infrastructure



Clubhouse Site 1945



Clubhouse Site 2011

Mapping of site changes after landslide, both photos from GIS database

On further investigation around this area, I found that there was rock fall in 1969, when the road was cleared; the newly borne plinth created by the rock fall became the site for the Cape Boat & Ski Boat Club. Earthworks Landscape Architects have criticised the location of the CBSBC as being located on unstable subsurface ground and in their initial conceptual framework even proposed demolishing the building and rehabilitating the land (ELA, LDF, 2011).



Aftermath of landslide on the Simons Town-Millers Point coastal road, Cape Town, Cape Argus Photographer, 26/07/1969



Fishermen of the Cape Boat & Ski Boat Club

The Cape Boat & Ski Boat Club

The Cape Boat & Ski Boat Club house stands as a solitary building in the middle of the plinth. This clubhouse is well used by locals - some living closer than others - primarily interested in fishing. The boats used by these fishermen are towed in and launched from either of the two slipways, with none having permanent residency on site.

The Cape Boat & Ski Boat Club house is relatively quiet throughout the week and very popular over weekends. The CBSBC hosts annual fishing competitions during which the area is full to capacity supporting hundreds of spectators and sports fishermen.

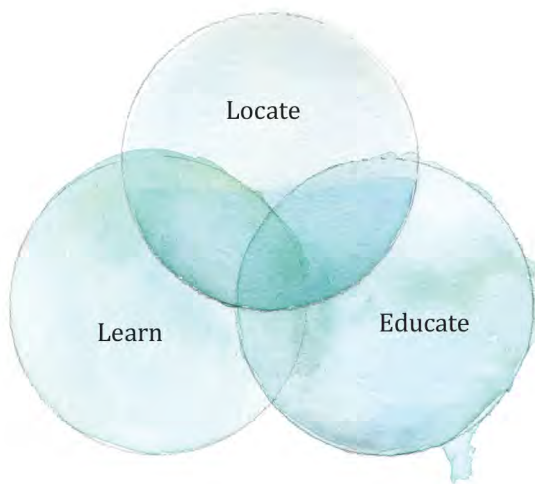
It is evident in the Landscape Development framework by Earthworks Landscape Architects that there is a current conflict between the fishermen of the CBSBC and day visitors (ELA, LDF, 2011). While re-imagining this site as the gateway to the Cape Peninsula Marine Park, the exclusivity of this area needs to be challenged with the aim of diversifying the range of activities which can take place here.

The aim of the design dissertation will therefore be to re-imagine the unstable hostile plinth as a multi-faceted learning centre and part of the Marine Park Infrastructure.

PROGRAMME

The gateway to the Cape Peninsula Marine Park should perform as a democratic all inclusive venture, different users need to be accommodated in such a way they can be mutually beneficial.

In an effort to diversify the range of activities which take place in this area and support the needs of other non-consumptive activities, some of the other sites users need to be accommodated; namely the divers, researchers and tourists.



Tourists

Cape Town is an internationally acclaimed tourist destination with the tourism industry. The location of Millers Point as the gateway to Cape Peninsula Marine Park, between the penguins of boulders beach and en-route to Cape Point makes it the perfect tourist stop-over or destination.

Visitors to Miller Point have a hard time making their way across the site as there is little signage and no designated footpaths. Beyond this, in order to give the gateway to the Cape Peninsula Marine Park a social identity, tourist specific operations must run from the site, in the form of guided tours in specialised boats or submarines.



Requirements:

A promenade to traverse to land sea boundary

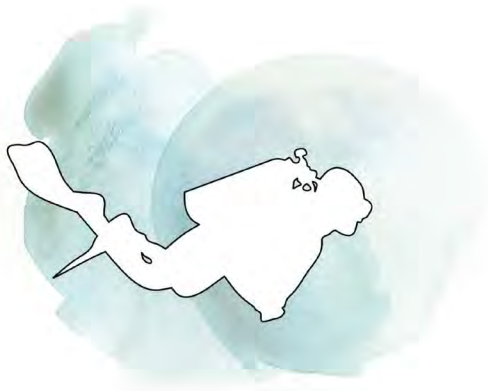
Educational facility and experiential centre

Use watercolour icons

Divers

The Castle Rocks Marine Reserve is an internationally recognised dive site, primarily because it is home to the cape seven gill broadnosed cowshark. These sharks can consistently be found in an area called shark alley just below the Cape Boat and Ski Boat Club.

Divers visiting Shark Alley contest with boat launching activity on the slipway to gain access into the sea, whilst the other entrance into the ocean - located just past Millers Point - is notoriously unsafe.



Requirements:

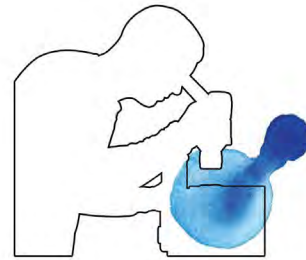
Requirements: a safe and dignified access route into the ocean

Equipment hire and maintenance facilities

Researchers

A common denominator in some of the most successful MPAs in the world is the location of a research institution or field station within the location of the area under protection. The authorities responsible for the monitoring and management of the MPA need to be present on site to take measures of its activities and ensure effective policing.

What would be appropriate here is a field research station which differs from other research stations in that it is located directly within the area of investigation. Field research stations are usually designed to accommodate several scientists for a period of a few months determined by the length of their research, or simply provide the equipment a researcher may only need for a short time.



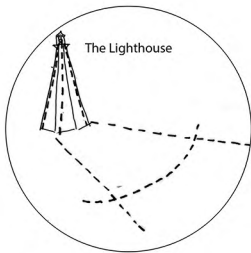
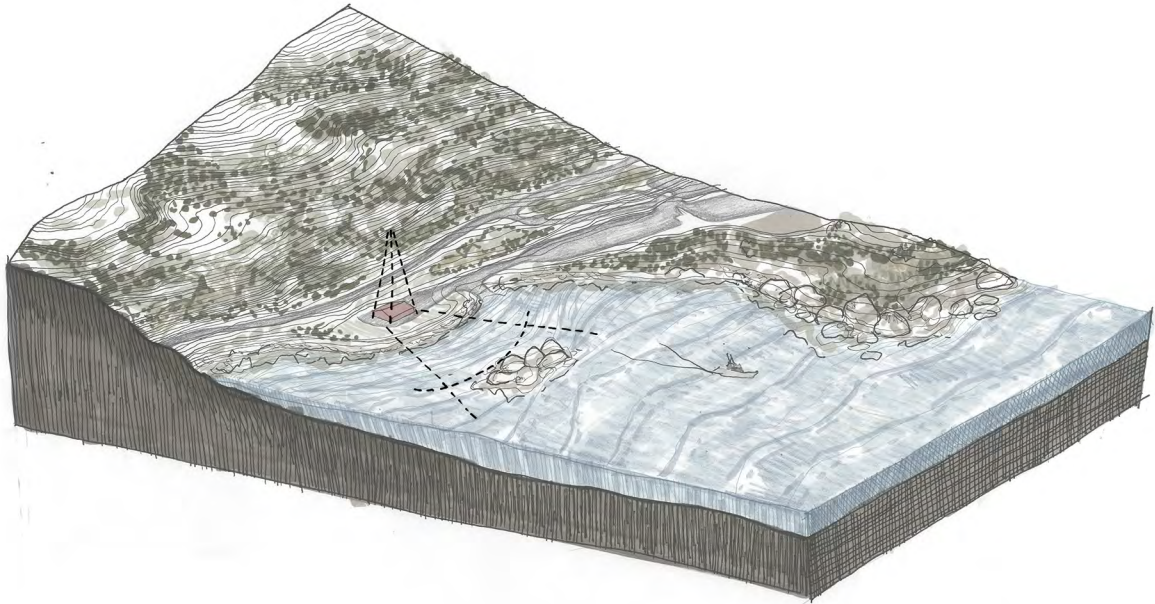
Requirements:

Stock of hireable equipment

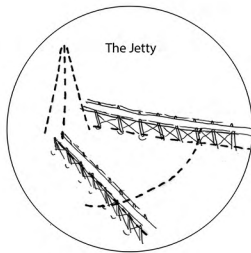
Research vessels – Boat, ROV

Lab Spaces and data capture areas

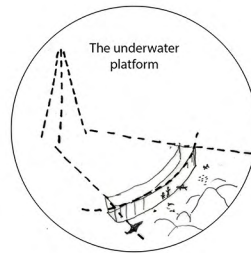
Conference/educational facility



Measure the landscape through place making



Promenade over water thresholds



Immerse in aquatic realm

Coastal Archetypes as Spatial Devices

SECTION 4

DESIGN DEVELOPMENT

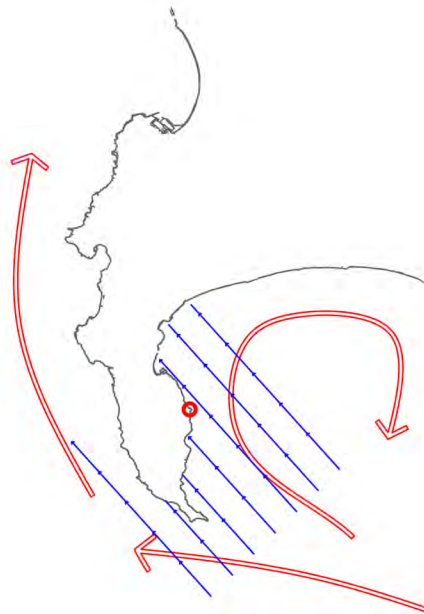
Because the site of Millers Point is such a dynamic landscape, a thorough analysis of the natural systems was needed before any design could be justified.

The design was rationalised into drawing from pre -identified coastal archetypes with the aim of re-interpreting them as spatial devices to define new relationships between the earth and sea.

TIDAL DIAGRAMS

Looking at the bigger picture of Cape Town, you can see how the warm current of the Indian ocean swirls into the False Bay basin causing a clockwise current. This means that the main tidal action approaches Millers point from a South Easterly direction. The highest wave impaction area is along Rumbly bay where the rocks have rubbed smooth and round by constant movement. Whereas on the Northern portion of the site sand is deposited in the quieter waters allowing beaches to form.

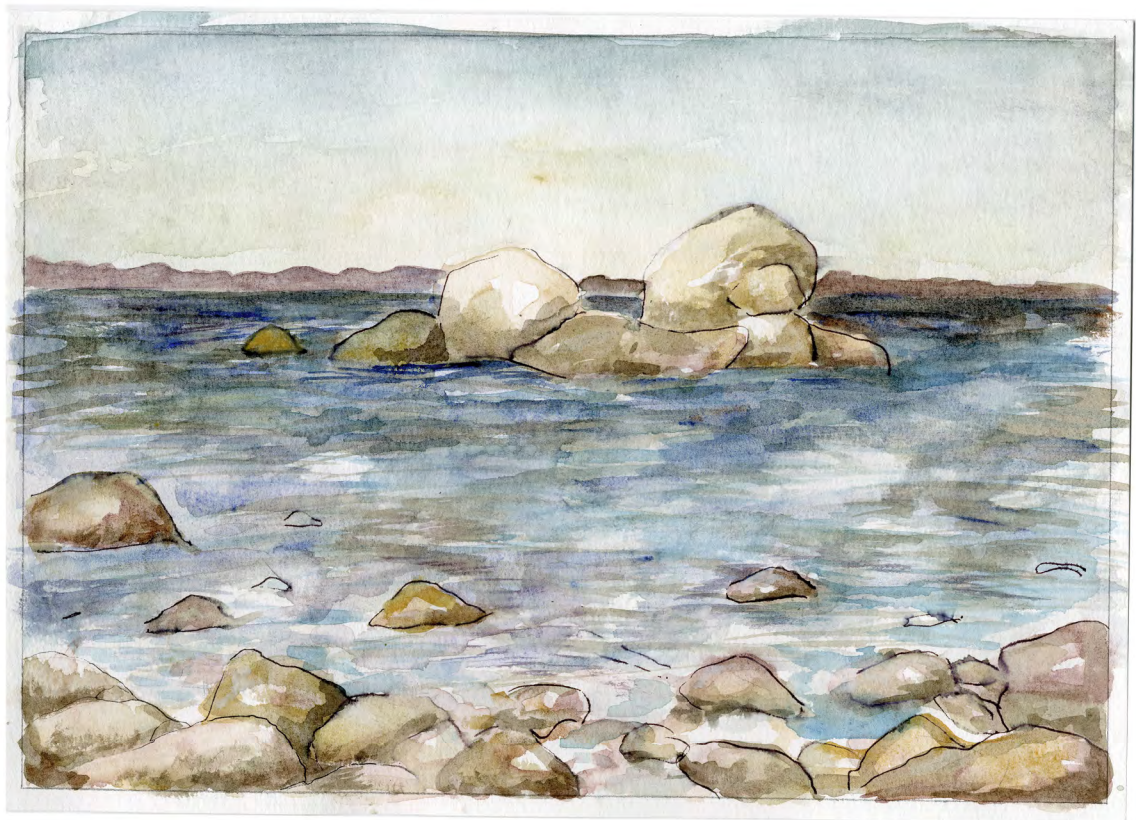
Whilst trying to draw a wave and tidal impact study, I learnt that the addition of any sea structures would have to be permeable so as not to permanently disrupt sedimentation pattern which could drastically alter the nature of the site.



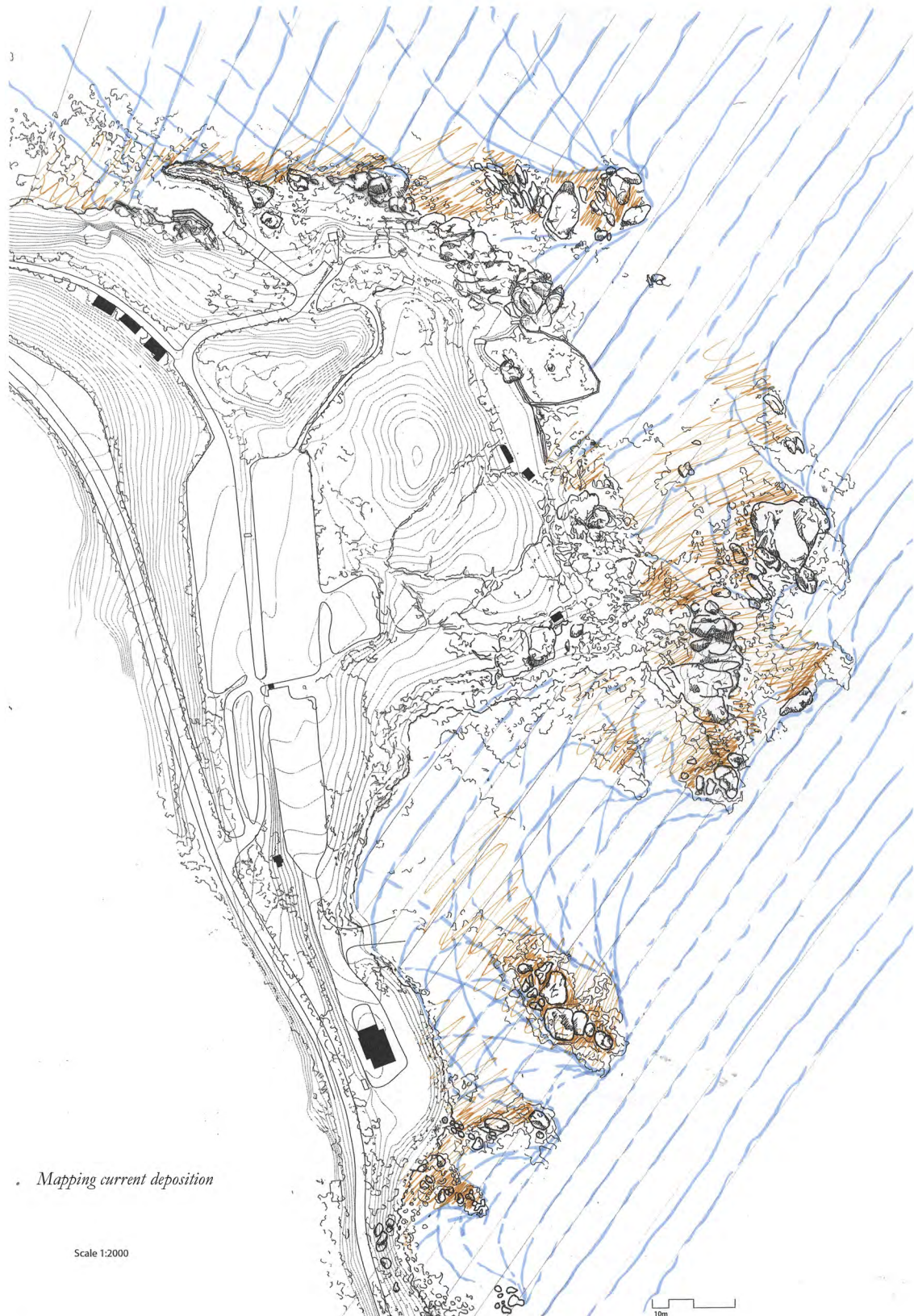
False Bay Current Diagram

ROCK ANALYSIS

Sitting in the water in front of the CBSBC is a prominent and particularly beautiful cluster of boulders. Designing around these magnificent 'earthworks' - two of which rising more than 7m out of the water at high tide - was a daunting task. I decided not to try and tame these rock surfaces into formalized and 'balustraded' entities but rather just provide one particular moment where it wouldn't be difficult for a young adventurer to make their own way to clamber over and engage with their forms.



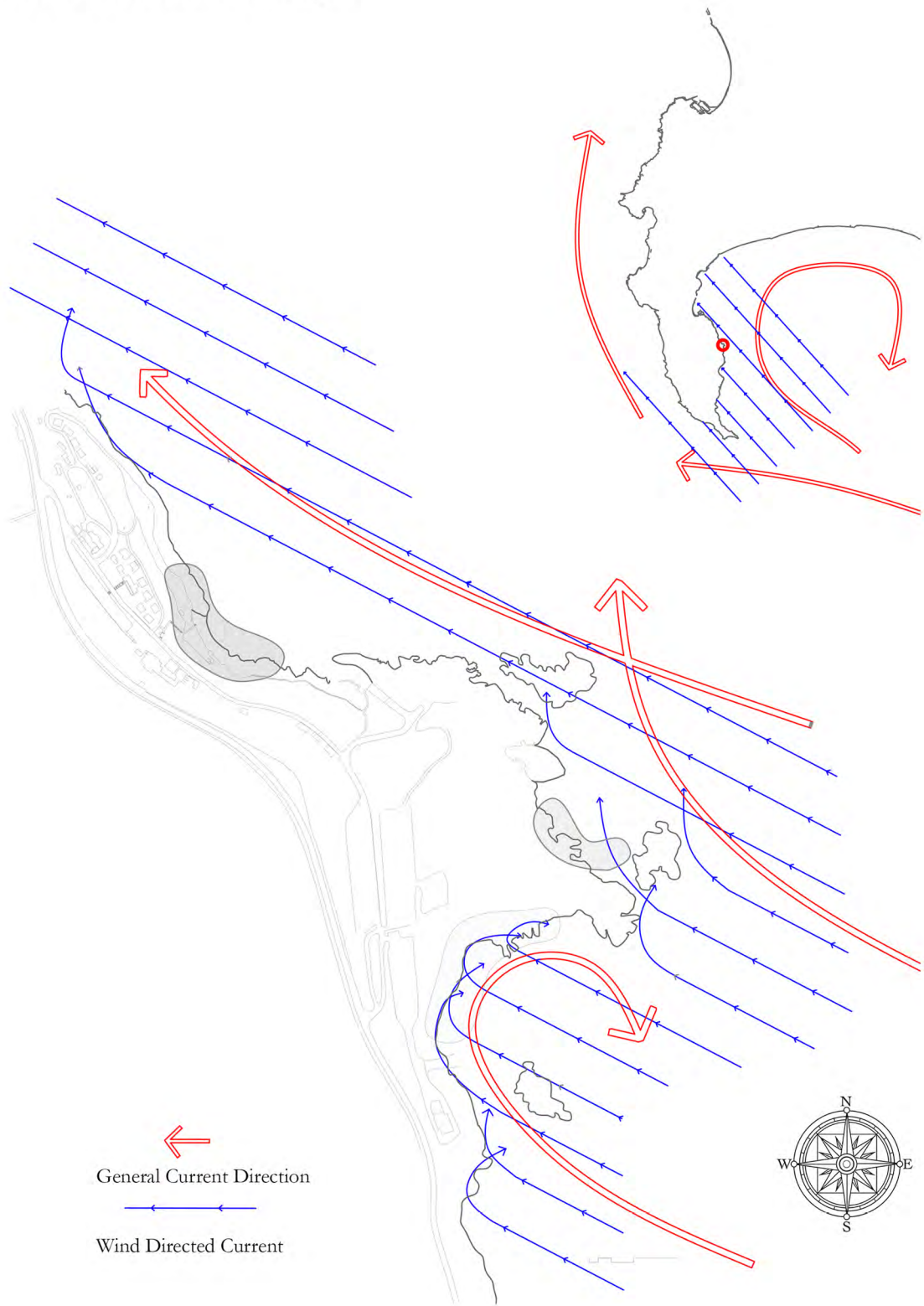
Watercolour of Granite Boulders



. Mapping current deposition

Scale 1:2000

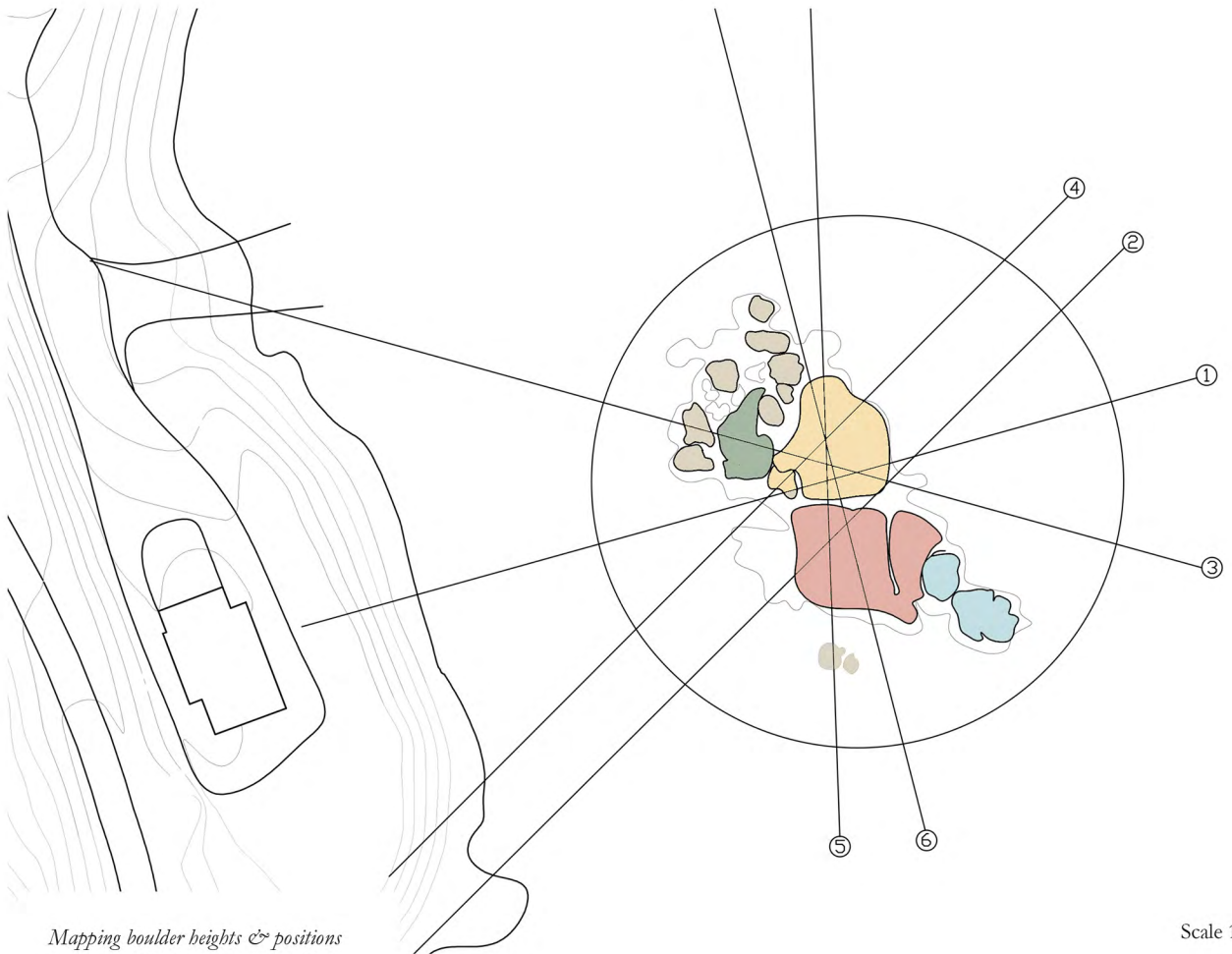
Ocean Current Analysis



①



②



Mapping boulder heights & positions

Scale 1:1000

Rock Study

③



④



①



②



③



④



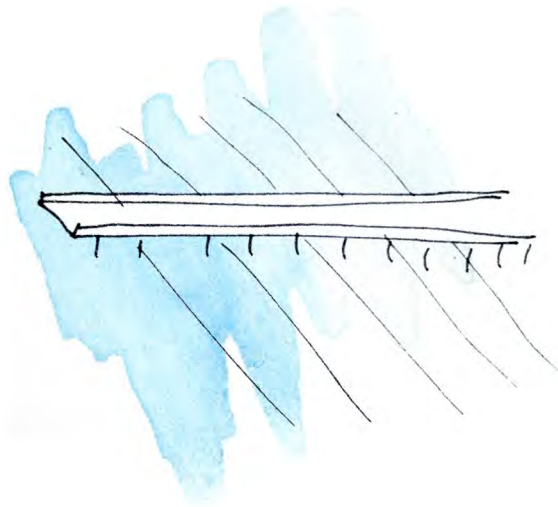
Scale 1:500

SPATIAL DEVICES

In an effort to augment a visit to the ocean and to organise an architectural dialogue between the earth and sea, the project uses the visual language of well known archetypes to work as orientation devices. These spatial devices perform as tools to stimulate a renewed understanding our surrounding environment.

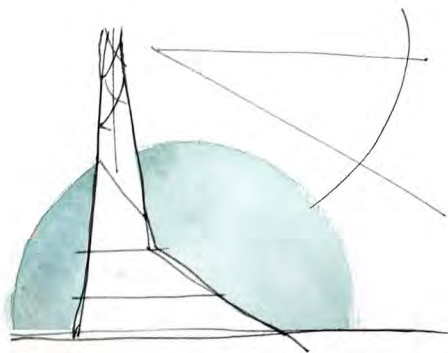
The Pier

The pier is the architects or engineers answer to traversing the seas surface with comfort and ease, placing the person atop its surface on a dry pedestal. The pier extending into the ocean from Millers Point, draws a much more significant line, it draws the S 34°14.100' line which demarcates the border of the Castle Rocks Marine Reserve. By giving this abstract line an architectural, traversable bearing, the border has a concrete presence, distinguished and measurable.



The Beacon

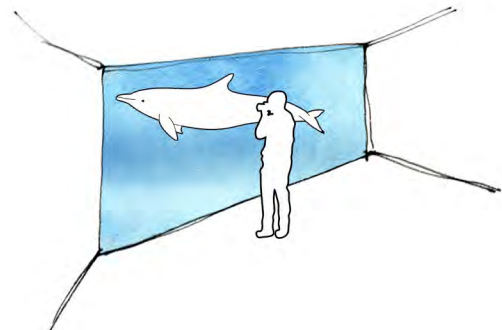
The lighthouse - like beacon, gives the coordinates of Marine Protected Areas parameters a vertically expressive tangible dimension. The beacon here works as a place making device distinguishable from both land and sea. Passers-by on the M4 road will easily be able to locate the Marine Park gateway. The beacon also asserts the location of the MPAs borders to boats far away from the shoreline, demarcating where fishing can happen.

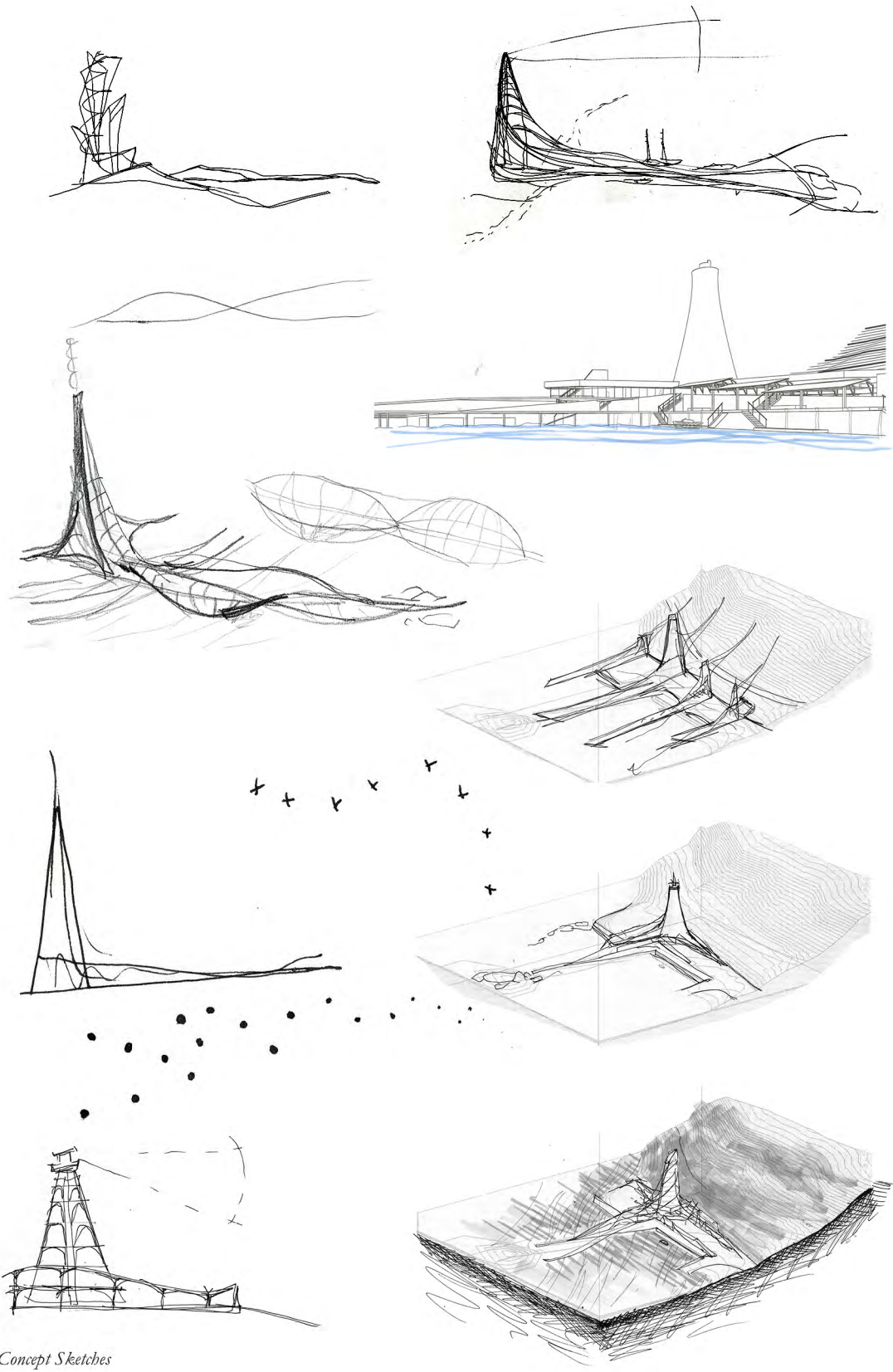


The Underwater Platform

The underwater platform is the experiential mechanism by which the alternative underwater world is demonstrated. The turbulent flow of the oceans force will press against this underwater window, and light will filter through the kelp forest with dynamic complexity.

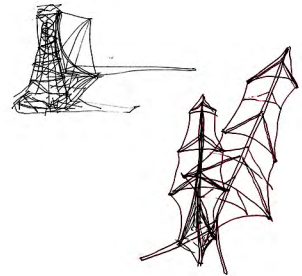
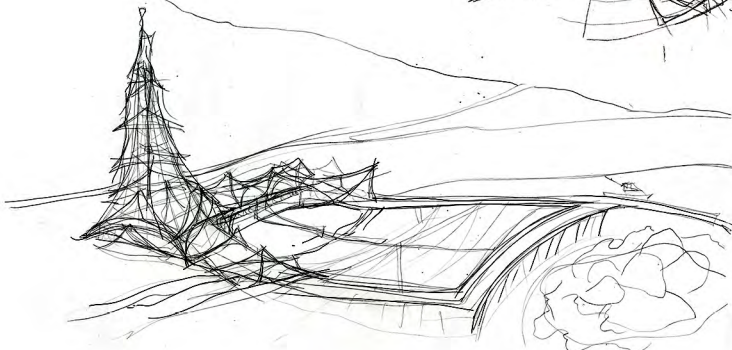
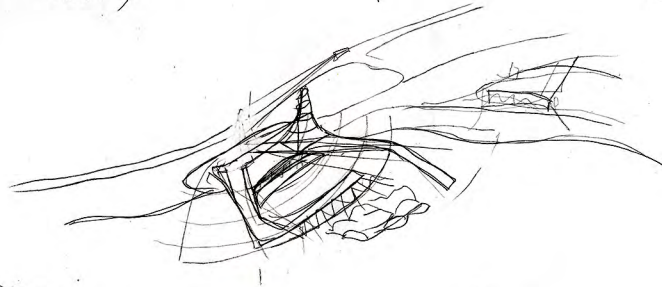
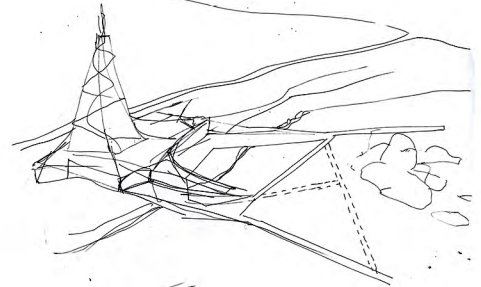
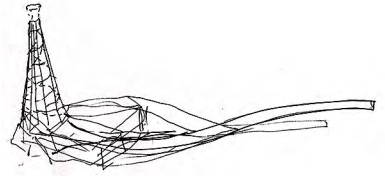
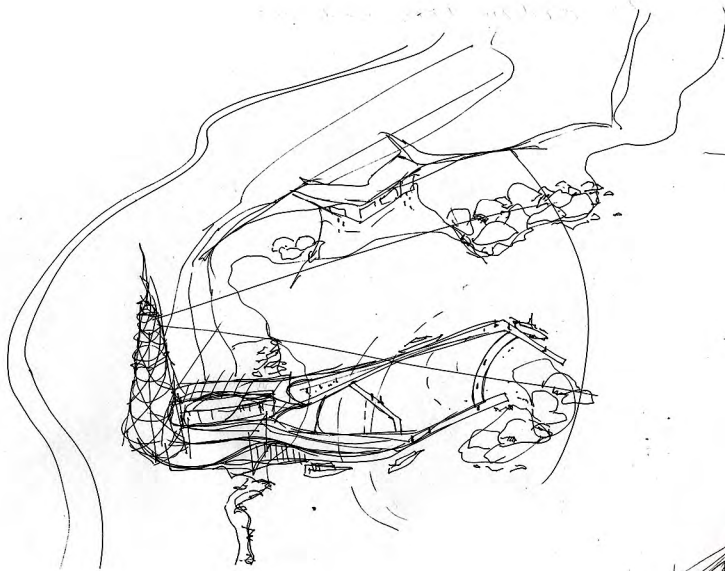
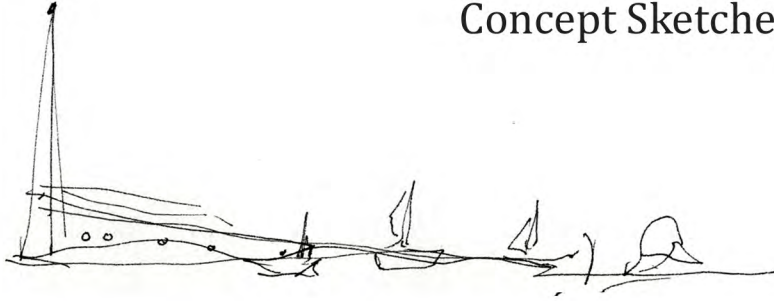
This window works more like an animal hide at a watering hole rather than a curated aquarium. Although marine wildlife sightings may be rare, the few authentic interactions will be rich and authentic, with the pleasure of a happening exclusive to a particular moment in time.

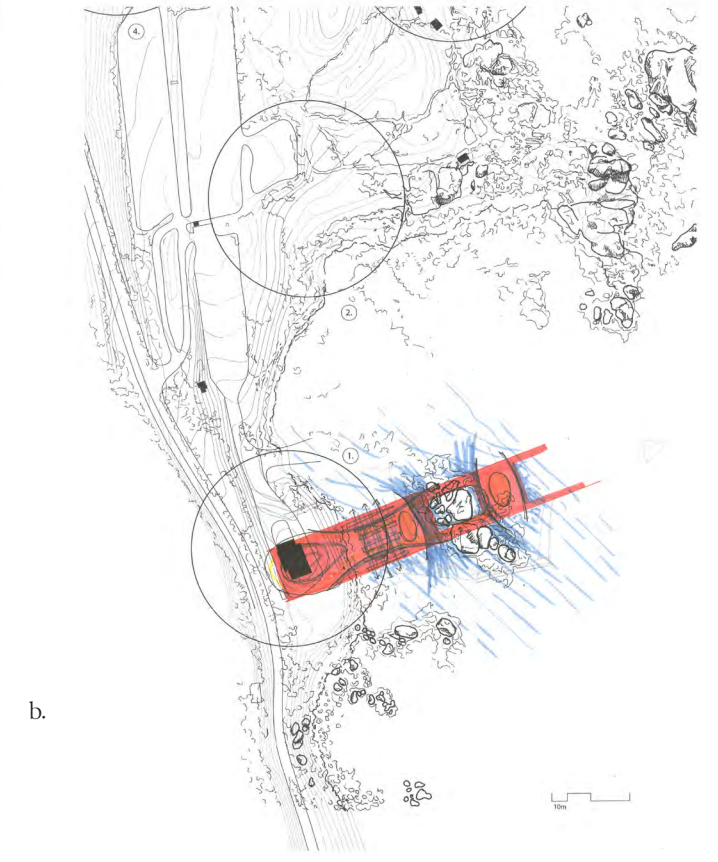
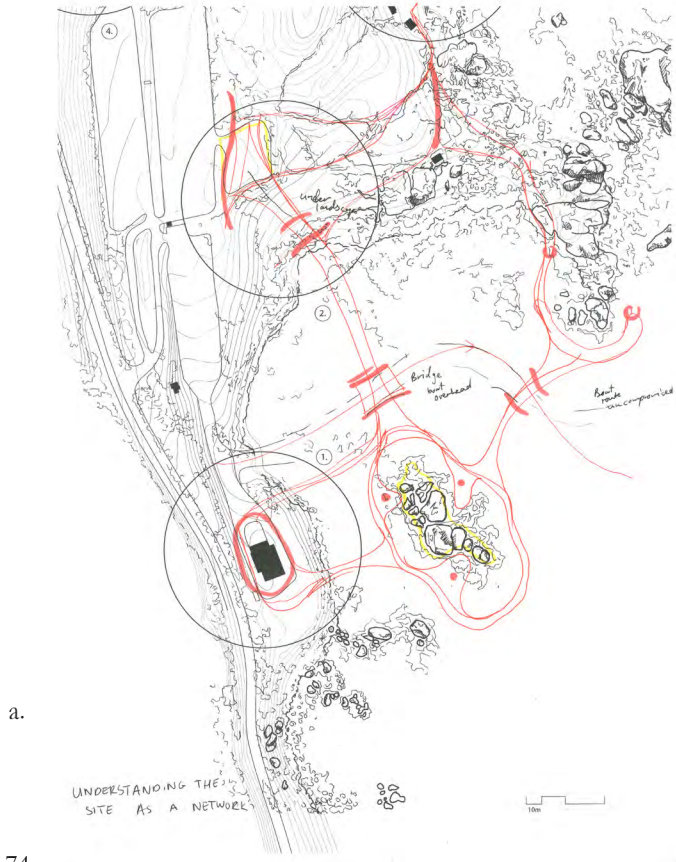
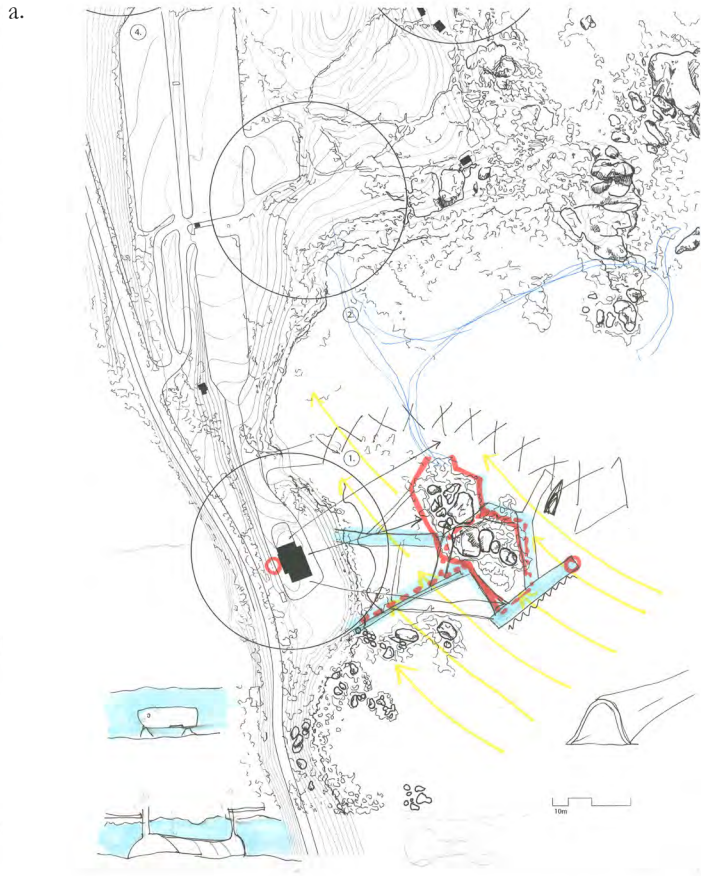
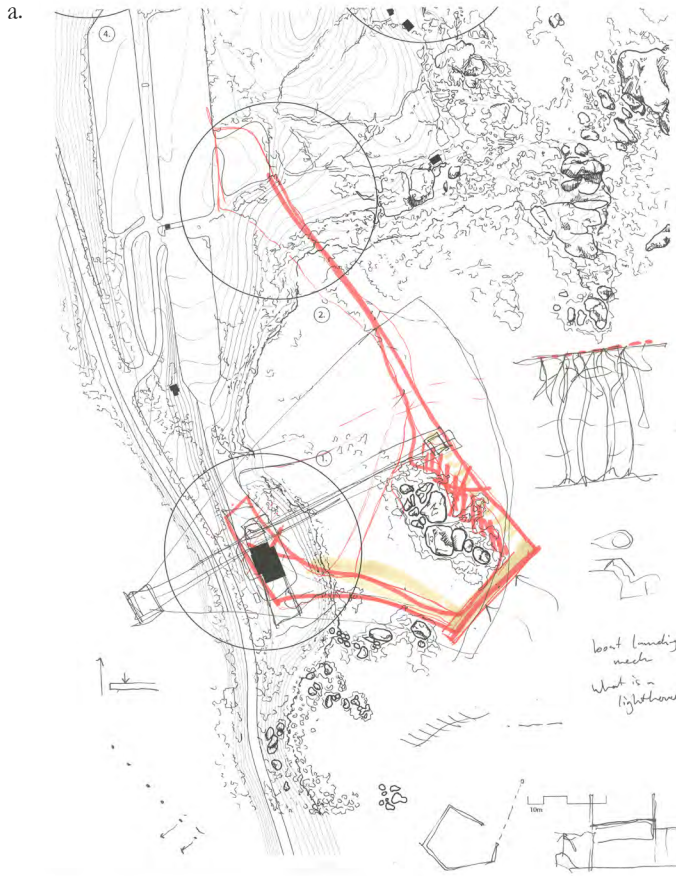




Concept Sketches

Concept Sketches



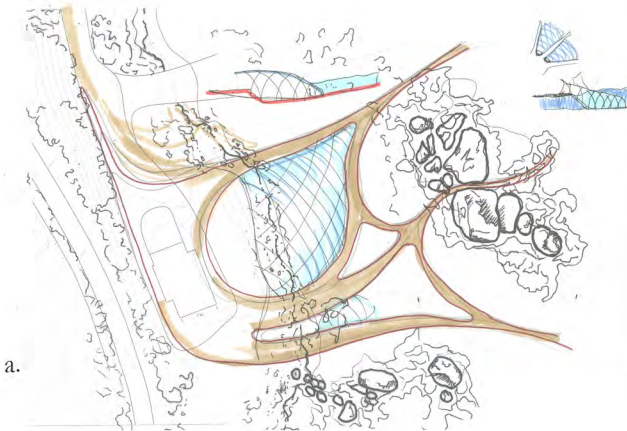


a.

The Network

Initial drawings of the design intervention started by mapping a network through which visitors can make their own way, engaging with the coastline in different regions and discovering things along the way.

This design resolution would have had a very insensitive impact on the natural environment and hugely affected tidal deposition activity

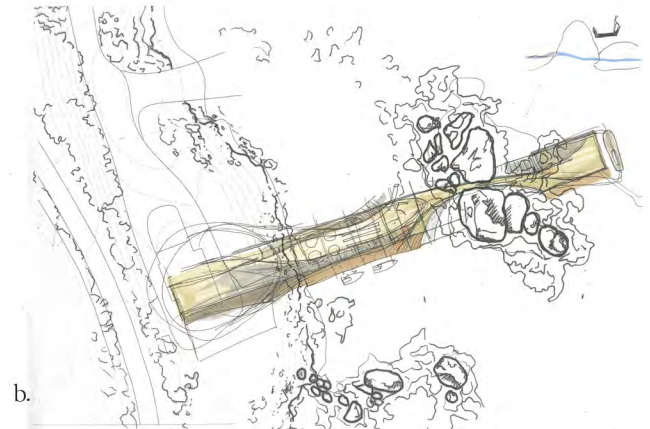
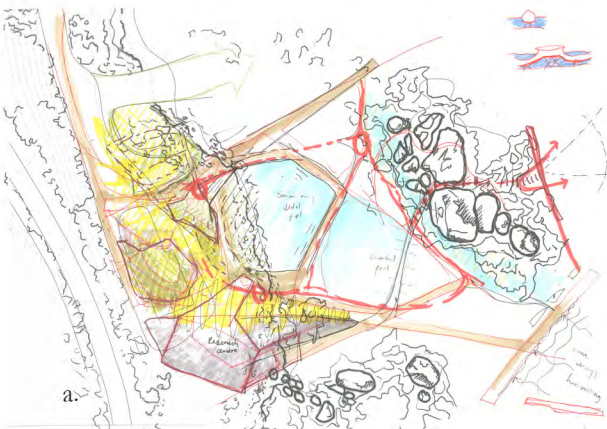
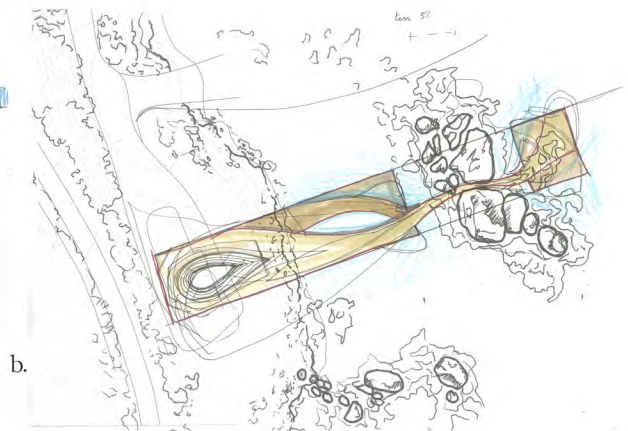


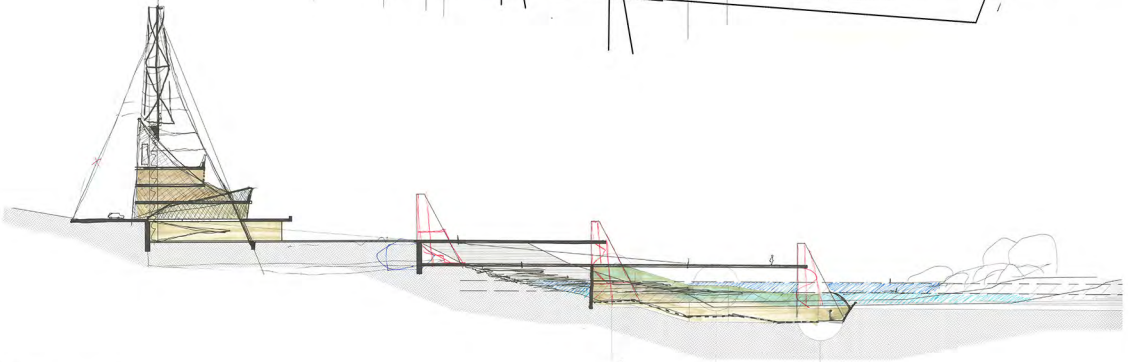
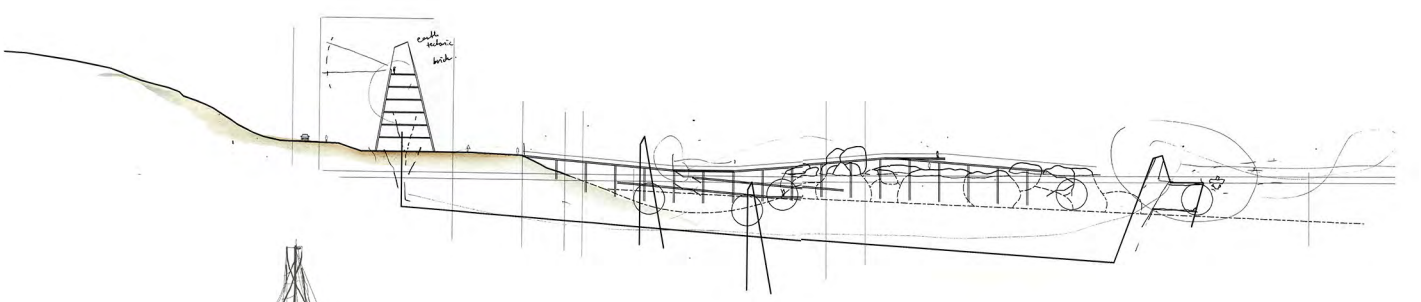
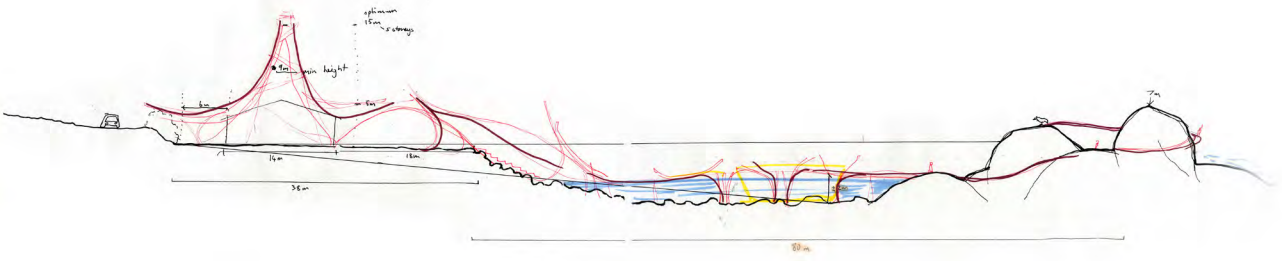
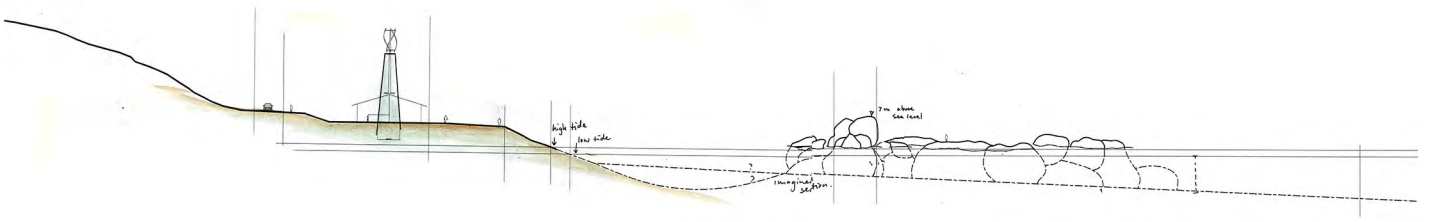
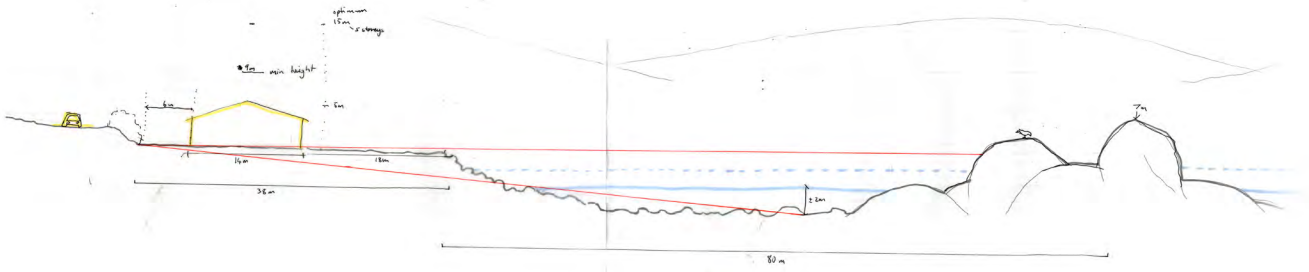
b.

The Bridge

With the aim of returning to the archetypal visual language of polysemic coastal architecture, I decided to retreat to the puritanical typology of the bridge or pier, within which a complexity of layers allows for network like engagement.

This reduced footprint would have a much more manageable and well considered affect on the natural environment.





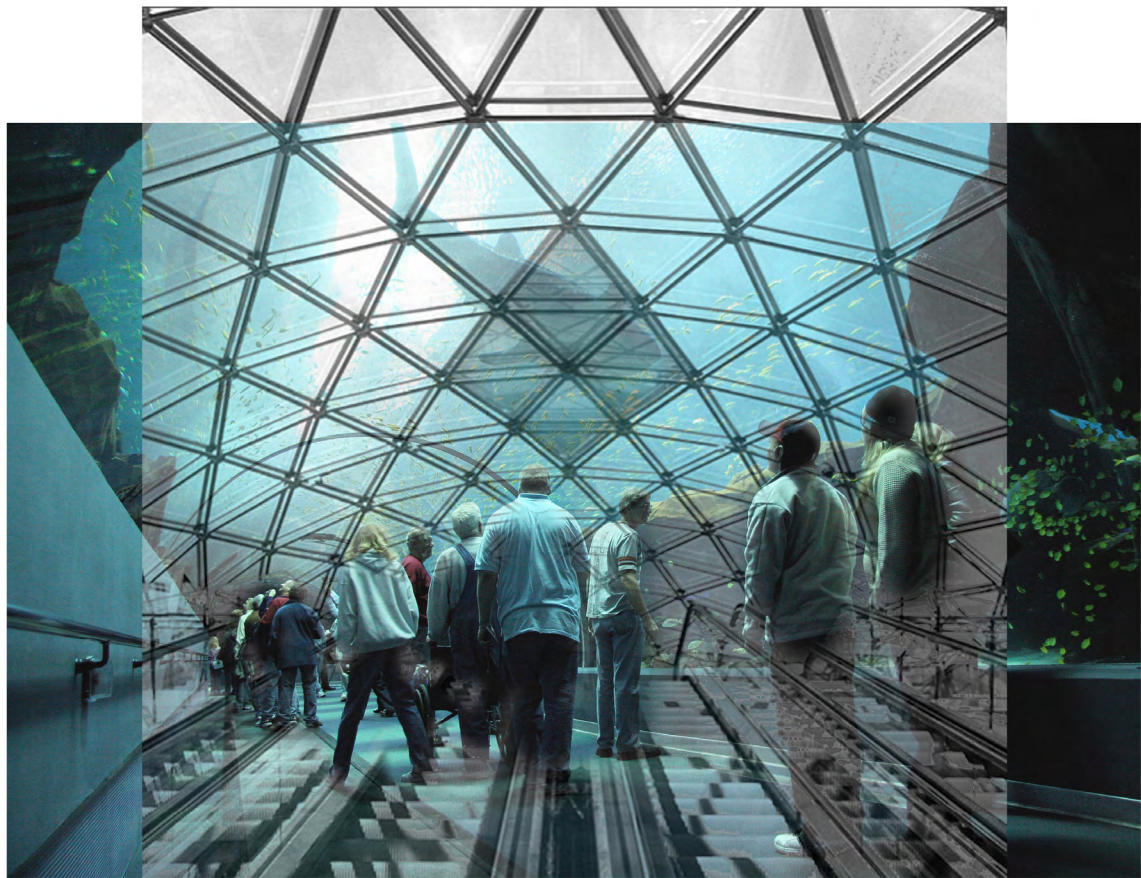
Design Sections

Design Section

The section is arguably the most important drawing for adequately customising a relationship between the land and sea. The challenge was how to transport or consistently locate a person between these two realms. Determining ramp levels and circulation routes was a challenge to grapple with considering the turbulent nature of the tides and currents of this littoral zone.

The aim of the pier is to promote discover and therefore could not perform as a one dimensional extension of the land, it needed to touch the sea in several ways and empower participants to do the same.

The lighthouse or beacon is used to pin the edge of the pier to the earth, it marks the land and stands proudly on the shore.



Conceptual image for the underwater platform

Design Strategy

Just like a cable car can take you up a mountain, I want to create a device which can take you under the sea. The aim of the architecture is to work as a mechanism which people can use to uncover and learn about the mysterious life beneath the ocean's surface.

Working towards cultivating a sustainable future for the marine environment requires the adequate infrastructure to support MPA management. It is the design of such infrastructure which can perform as the tools for educational and locational awareness.

The aims and intentions of the project can be summarised as follows:

- Re – imagine Millers Point as a prestigious public destination
- Intervene by first nurturing and repairing a damaged site
- Drawing a line in the sea physically to architecturalize a marine protected area
- Locating a field research station as a means of effective management
- Police detrimental activities through site activation
- Defining a place and augmenting its 'givenness'
- Use non-consumptive recreation as an educational tool to instil ethical responsibility

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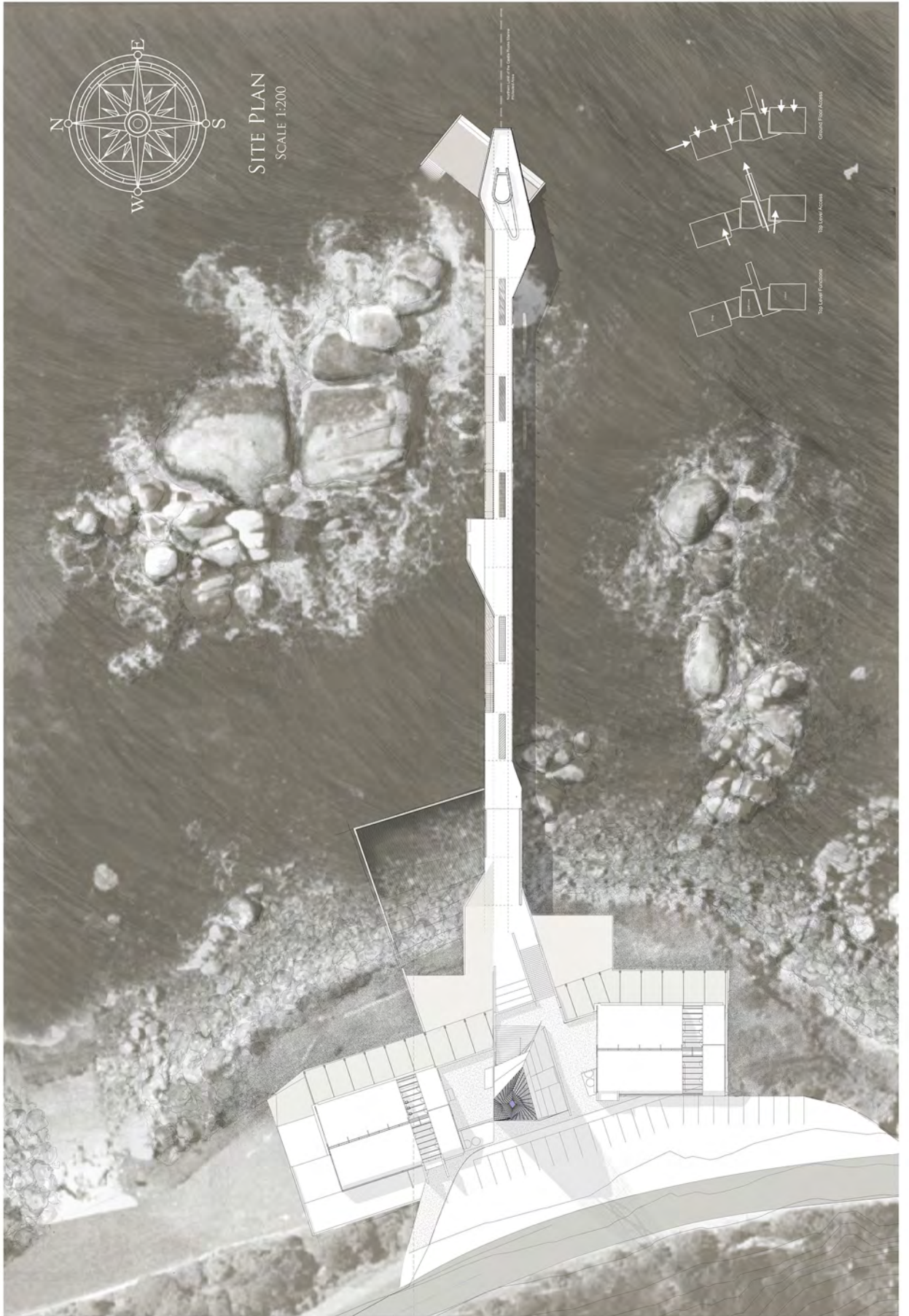
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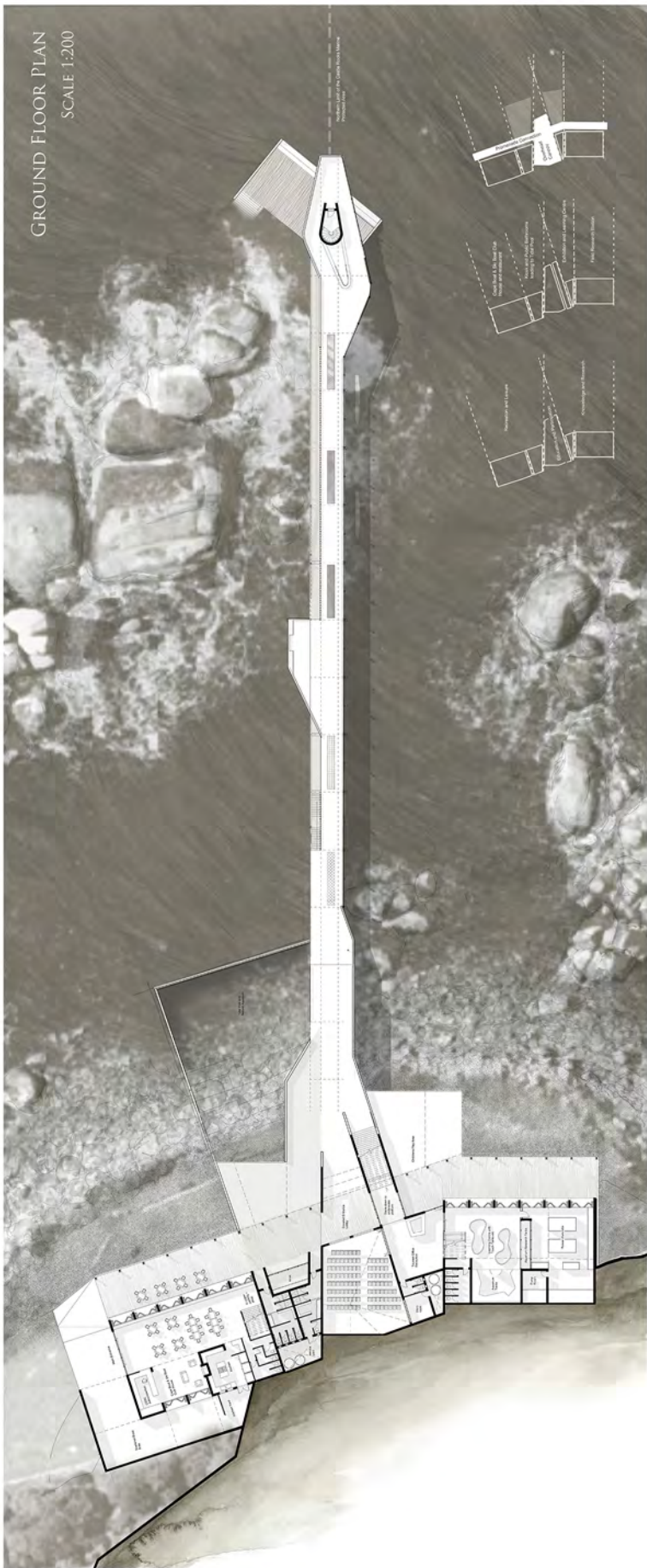
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SITE PLAN
SCALE 1:200

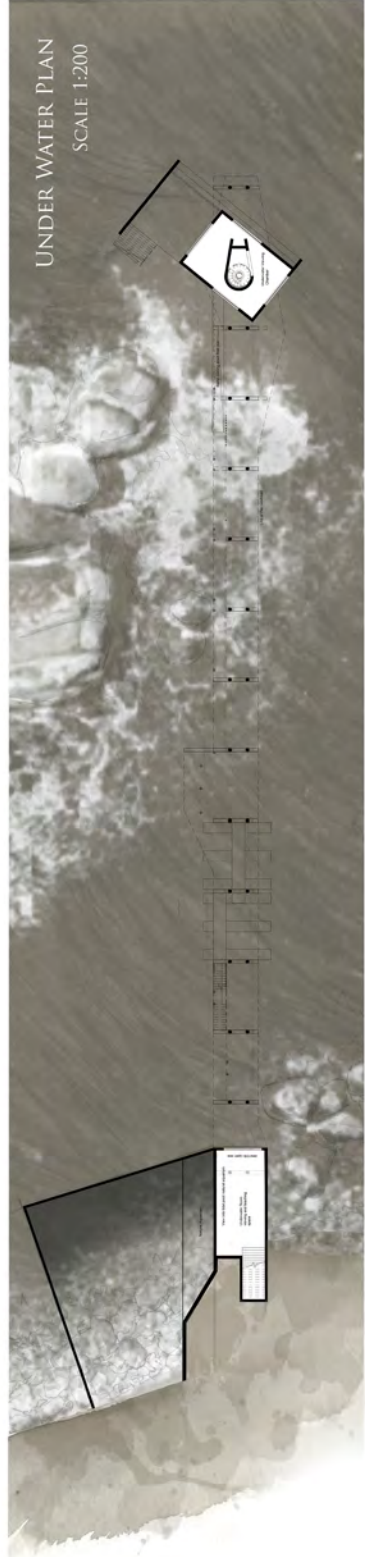
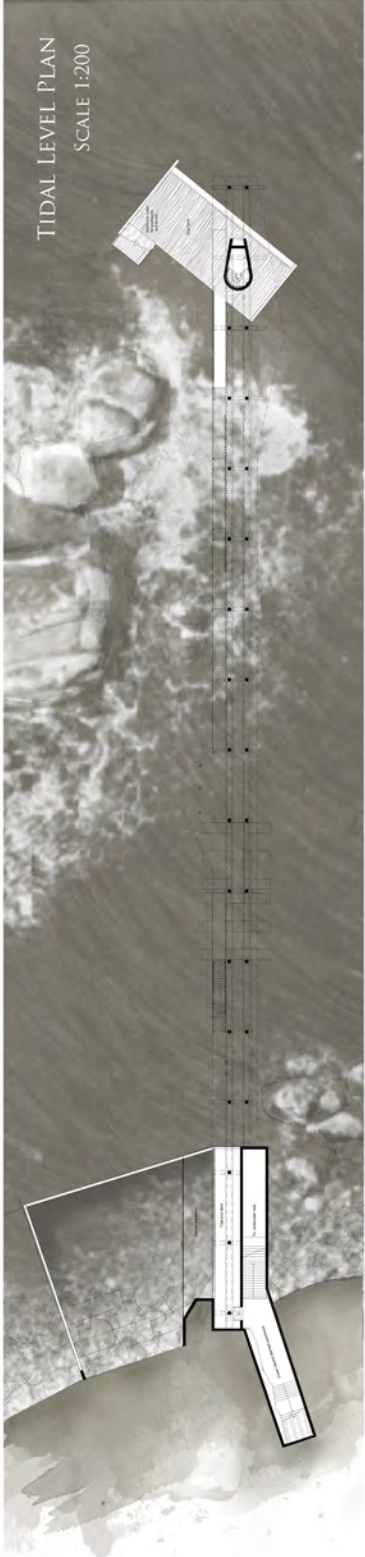


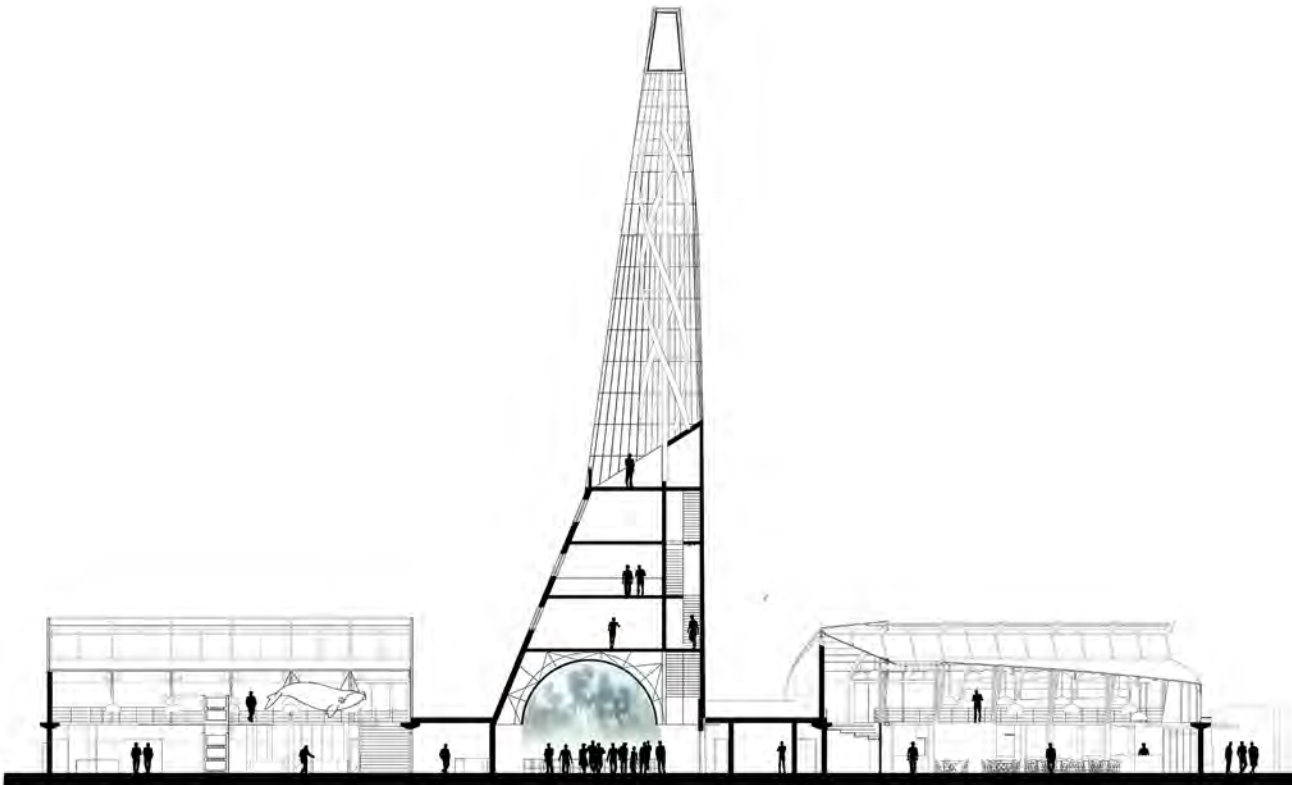
GROUND FLOOR PLAN
SCALE 1:200



Architectural Drawing









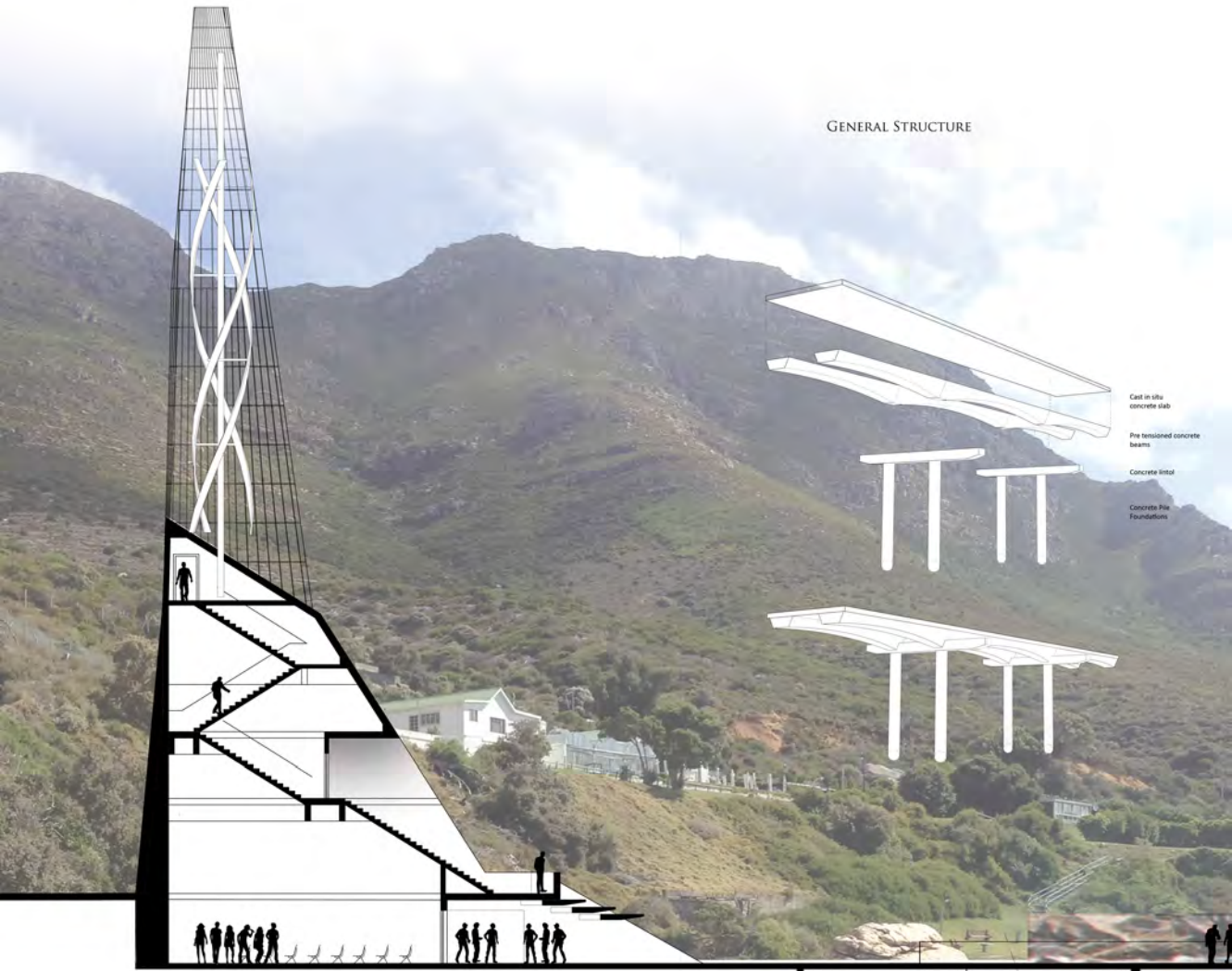


THE CAPE BOAT & SKI BOAT CLUB

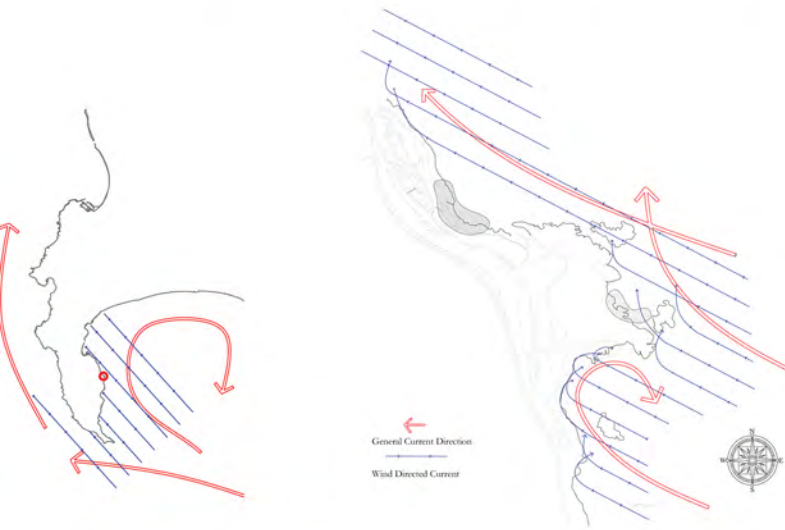
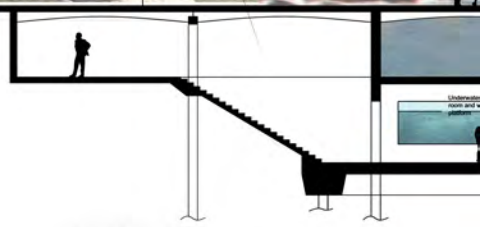


LEARNING CENTRE

GENERAL STRUCTURE



Cast in situ concrete slab
Pre tensioned concrete beams
Concrete lintel
Concrete Pile Foundations

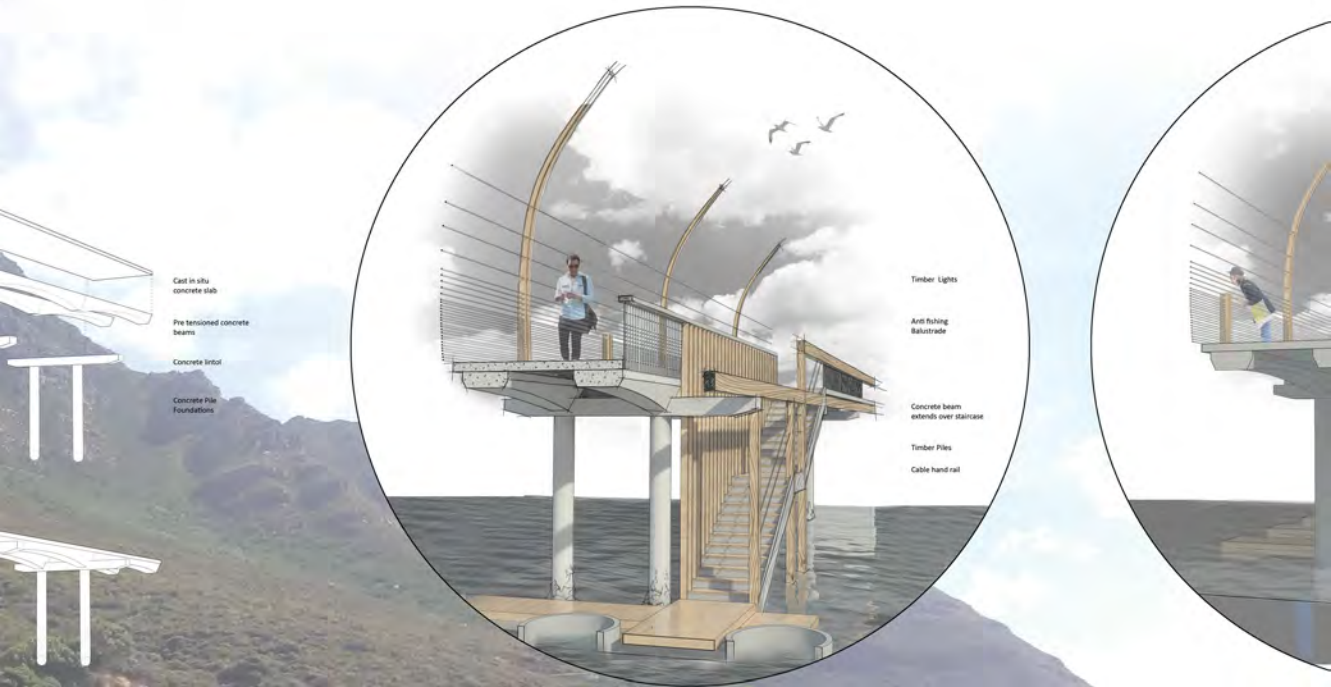


General Current Direction
Wind Directed Current



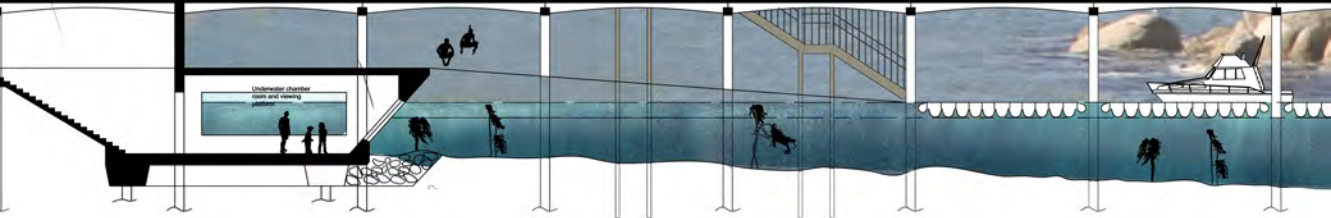
TIMBER STAIRCASE

FISH

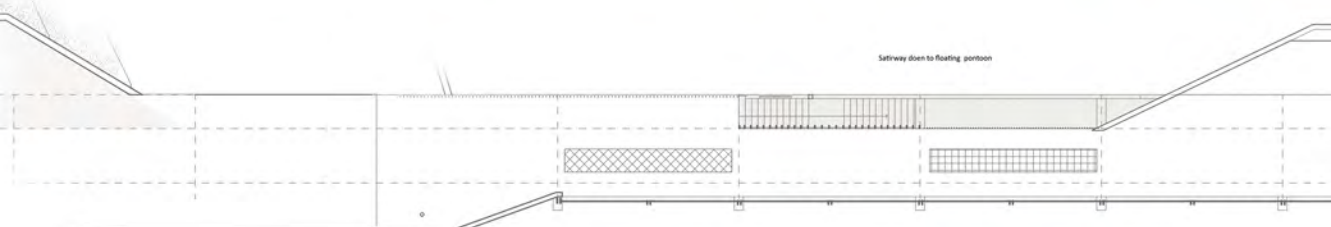


Cast in situ concrete slab
Pre tensioned concrete beams
Concrete lintel
Concrete pile foundations

Timber Lights
Anti fishing Balustrade
Concrete beam extends over staircase
Timber Piles
Cable hand rail



Sitway down to floating gordon



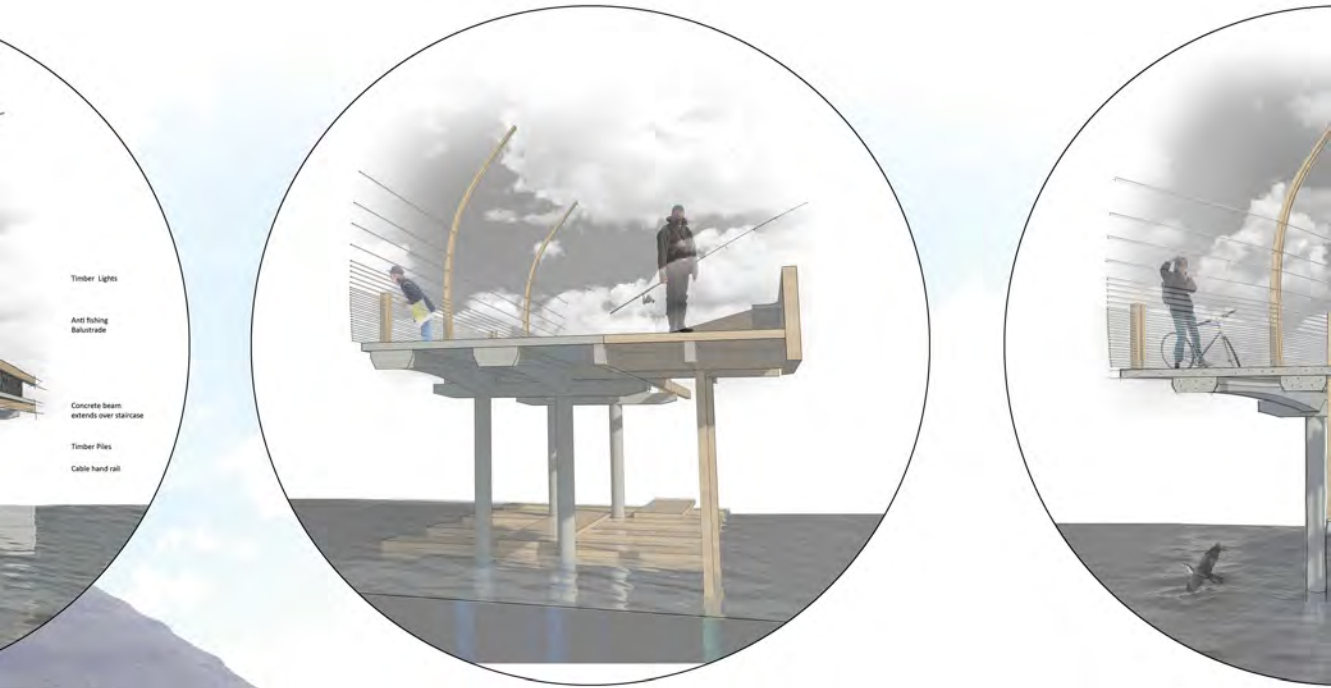
Samples of Table Mountain sand stone are set in a pairing sequence showing the different rock structures starting at the peak of the mountain leading to the sandy shore



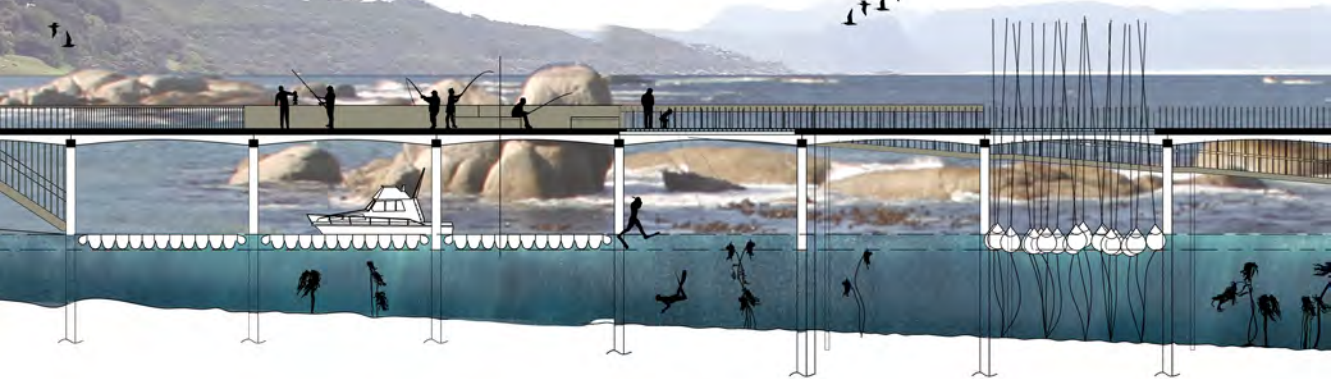
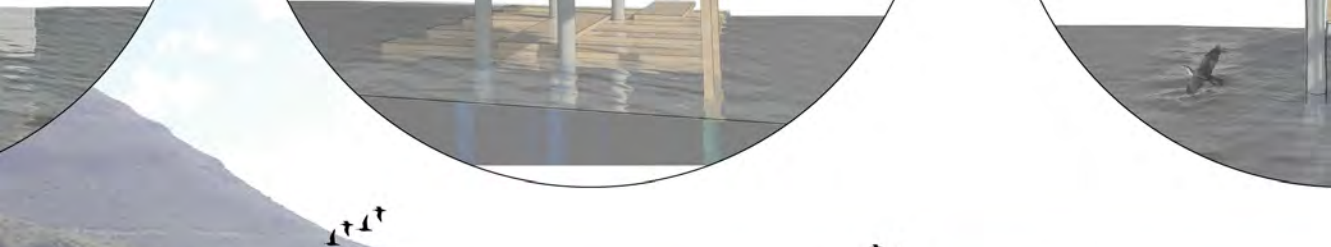
the next material set is sea shells, the finding of which embedded in the dune structures claims evidence of ancient inhabitation.

FISHING & VIEWING PLATFORM

TIMBE



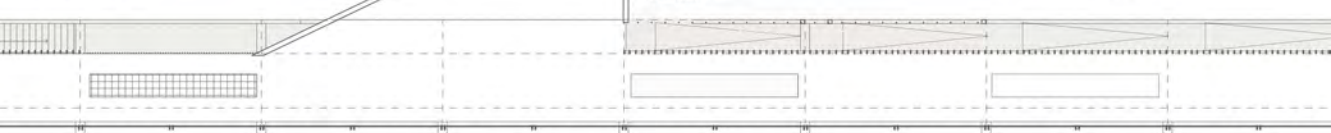
- Timber Lights
- Anti fishing Balustrade
- Concrete beam extends over staircase
- Timber Piles
- Cable hand rail



Stairway down to floating portion

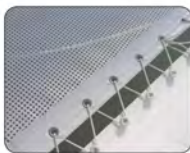
A fishermen's jetty is located in the middle of the pier, from here visitors are invited to step off the main strip and take in the view

Ramp down to Ocean deck

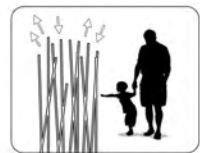


In sand stone showing the starting at the peak to the sandy shore

The nest material is sea shells, the finding of which embedded in the dune structures claims evidence of ancient habitation.



A catamaran trampoline is suspended here on the pier which bends and stretches when walked over, mimicking the full motion of the turbulent surface below.

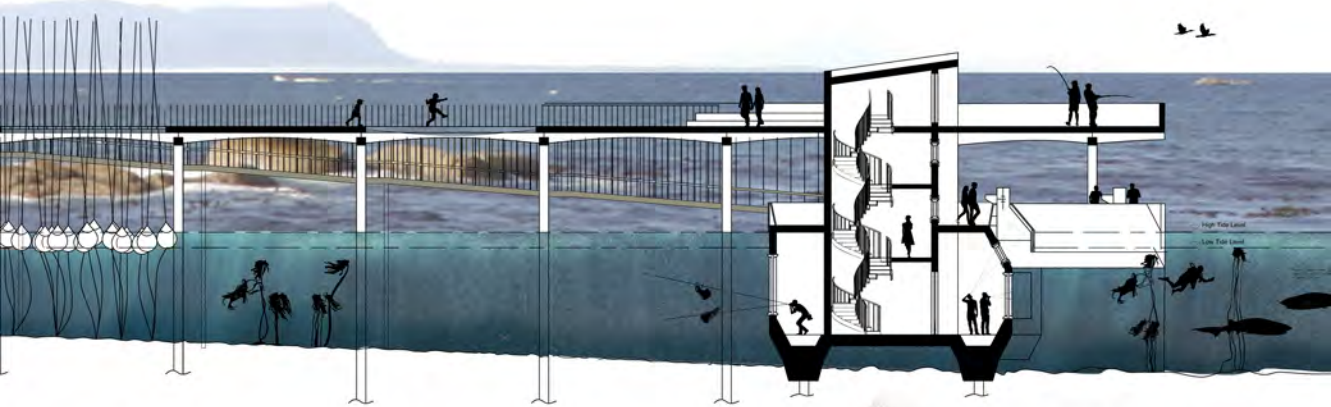
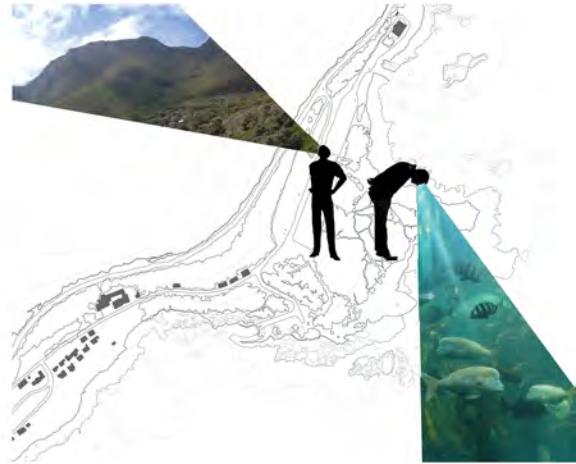


Floating in the water below is a set of booms, attached to these are long steel poles threaded through a steel mesh. As the waves push the booms about, the steel poles swing and dip translating wave movement.

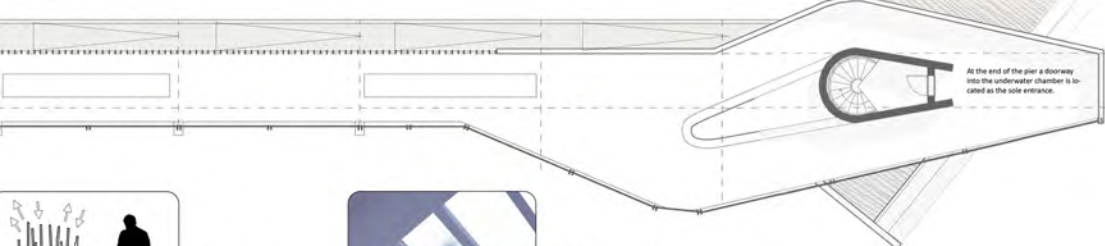
TIMBER RAMP



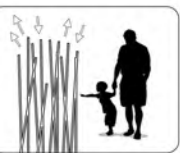
VIEWS TO THE MOUNTAIN & INTO THE OCEAN



Ramp down to Ocean deck



At the end of the pier a floorway into the underwater chamber is located as the site entrance.



Floating in the water below is a set of booms, attached to these are long steel poles threaded through a steel mesh. As the waves push the booms about, the steel poles swish and dip translating wave movement.



The last experiential device is a glass walkway, giving the viewer a clear and surreal view directly onto the ocean surface below.