

TURNING THE TIDE

An Exploration of an Educational Portal to Hot Water Beach



Turning The Tide

An architectural project addressing the urgent need for awareness and education on water safety at New Zealand Beaches

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Master Thesis Explanatory Document

with supervision from
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Abstract

As an island nation the ocean is an integral aspect of New Zealand's culture and we enjoy being in, on and around our coastline waters. However, within the short time of European settlement, the respect and caution that the Maori of New Zealand once had for the ocean has diminished, and as a result loss of life due to drowning has become a nationwide dilemma. Organisations such as Surf Lifesaving New Zealand dedicate their focus on reducing the number of drownings and aim to ensure our beaches are safe environments. Although the presence of the lifeguards assist in preventing drowning at New Zealand beaches, the majority of the public are unaware of the oceans strengths and therefore are at risk. An increase in education and awareness needs to be raised to ensure kiwis and tourists can interact with our coast in a safe and informed manner.

This research project "Turning the Tide" addresses a limitation in current respect and awareness for the risks and dangers at New Zealand beaches. Architecture provides a possible solution in altering the current Surf Lifesaving Club typology to not only support means of rescue but also tackle the issue of education in water safety at the beach. The research will explore the possibility of integrating the architecture with both the beach environment and the visitors to the beach. An exploration into the unforgiving risks will assist in forming a space of education that can play an active role in restoring the awareness and respect for the potential dangers that come hand in hand with a visit to our coast.

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1.0
INTRODUCTION

Figure 1.1 - Hand reaching from water



1.1 Background

New Zealand is an island nation and the coast is an integral part of our culture and lifestyle. Polynesian culture is fundamentally shaped through the interaction between the people and the sea that surrounds their communities. "In general the smaller the island, the more intensive are the interactions with the sea, and the more pronounced are the sea's influences on culture."¹ In New Zealand water is a way of life, we enjoy experiences in, on and around the water and all live within a maximum of one and a half hours drive from a beach.² However, sadly in the short amount of time of European settlers in New Zealand, our respect for the coastline and the oceans strength has diminished. As this respect and lack of awareness continues to diminish, New Zealand's drowning statistics are a growing concern, with on average 81 drowning's annually. Drowning is the fourth highest cause of accidental death in New Zealand, with majority of these accidents occurring at beaches along the New Zealand's coastline.

This project was born out of a love for the ocean and a personal passion for Surf Life Saving. Understanding both the enjoyment and thrill the ocean can provide but also the dangers and trauma it can cause. Surf Life Saving New Zealand is an organisation that aims to ensure the safety of beach goers and arrived on New Zealand beaches in 1910.³ Surf Life Saving has adapted and developed over the years influence from technology advancements, culture and infrastructure, however the goal of 'saving lives' remains the constant focus. My personal background into this project consists of nine years as a Surf Lifeguard at Auckland's Piha Beach as well as complete emersion into the competitive Surf Life Saving scene for over ten years. Aspects of the project refer to or stem from personal experience and knowledge while lifeguarding, racing, swimming and surfing at many beaches around New Zealand.

¹ Epeli Hau'ofa, "The Ocean in Us," University of Hawaii Press, The Ocean in Us, Accessed 15/05/17, <https://scholarspace.manoa.hawaii.edu/bitstream/10125/13234/1/v10n2-392-410-dialogue.pdf> Page 403

² Water Safety New Zealand, "Water Safety Sector Strategy 2020," Published September 2015, Vimeo, Video, <https://vimeo.com/140233212>

³ Surf Life Saving New Zealand, "About us", Accessed June 2017, <http://www.surflifesaving.org.nz/organisation/about-us/about-us/>

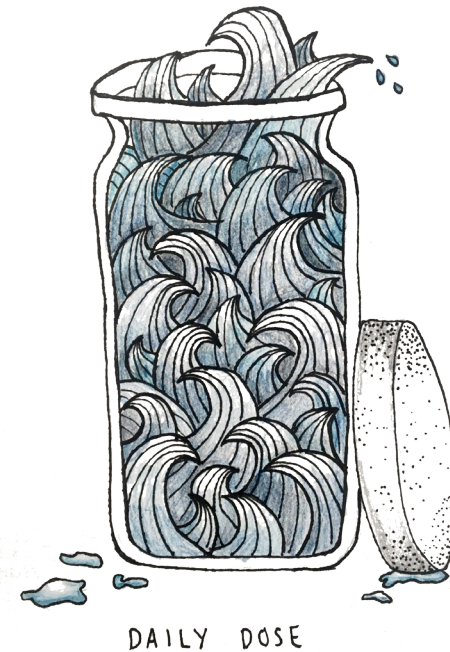


Figure 1.2 - Daily Dose Illustration

1.2 Project Outline

This project addresses a limitation in thinking regarding the oceans strength and the risks it poses. Lifeguard services are the eyes of many New Zealand beaches. Even though the lifeguards prevent many lives from being taken by the sea, it is not feasible or logical to be the constant supervision and surveillance for the public. The ocean does not discriminate⁴ and the hazards that occur at the beach exist with or without the presence of a lifeguard service.

The focus of this project aims to lower the number of deaths, rescues and preventable actions at New Zealand beaches, by raising awareness and providing education through the means of observation and engagement.

Education through observation: Perception and understanding are two elements of human nature received through observation. The project will explore the possibilities of the surf club typology in how it can assist in providing opportunities for public education and understanding through observation.

⁴ Water Safety New Zealand, "Water Safety Sector Strategy 2020," Published September 2015, Vimeo, Video, <https://vimeo.com/140233212>

Education through engagement: Providing a solution that people can be involved in is also important when trying to form awareness of an issue. An architecture that engages with its occupants poses the opportunity for change in human behaviour or attitude towards the risks at New Zealand beaches.

The typologies of architecture used in this project require careful consideration, to ensure that the enjoyment of visiting the beach is not suppressed. The Surf Lifesaving club has the ability to function as a transitional space connecting the land to the beach environment. Furthermore, in order to educate and raise awareness without the architecture being oppressive on the beach environment, this project will aim to utilise the natural human activities carried out at the beach such as the existing access routes. This allows the projects education and awareness aspect to occur in a subtle and less invasive way.

This project does not aim to only be successful at one New Zealand beach but instead has a goal to produce a model that demonstrates how a beach's dangers and risks can be expressed and taught to the public through the application of architecture. However, a specific site will be selected to be the host for this proposal, and it's dangers will be expressed and explained through architectural means.

1.3 Research Question

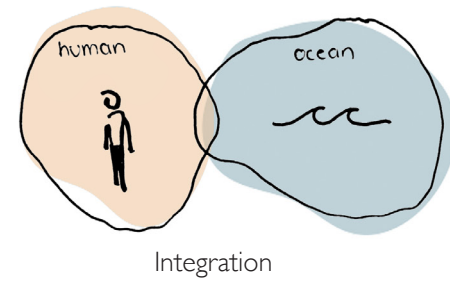
How can aspects from our coastal environment and history be considered to inform the architectonic design of Surf Life Saving facilities?

1.4 Aims and Objectives

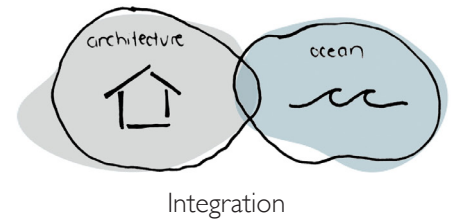
The aim of this project is to produce a design solution that raises awareness and provides education on the dangers and risks at New Zealand beaches.

The following objectives to achieve are:

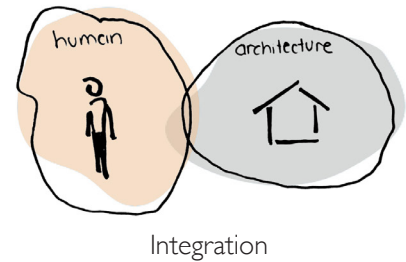
1. To highlight the dangers that public beachgoers may not be aware of, through the use of formal architectural means that create an engaging and educational experience.
2. Utilise the Surf Life Saving Club as the mechanism to explore these architectural ideas in order to educate through observation
3. Integrate the design into the sites natural landscape as well as the natural progression and activities of the beachgoer.



Integration



Integration



Integration

Figure 1.3 - Integration Illustration



Figure 1.4 - Awareness Illustration

"Knowledge or perception of a situation or fact. Concern about and well-informed interest in a particular situation or development."⁵

⁵ Oxford Dictionary English, "awareness Definition of awareness in English", accessed September 2017, <https://en.oxforddictionaries.com/definition/awareness>

1.5 Scope and Limitations

Water safety is a considerable issue throughout New Zealand and drowning occurs at our beaches, lakes, rivers, swimming pools and while boating. This project solely focuses on the safety of the public at New Zealand beaches. The scope is specifically restricted to providing an architectural response that creates awareness and educates on the dangers at the beach, instead of creating a solution for them.

While safety is upmost important when at the beach, the main intention when visiting is to receive a feeling of enjoyment or relaxation, to embrace being outside and to intensify our relationship with the ocean. It needs to be clear that this project does not intend to diminish any of these emotions, but instead will focus on enriching these relationships by providing one with awareness for the dangers and risks of the beach, as well as knowledge on how to approach and respect our coastline.

1.6 State of Knowledge

Although Maori have swum and engaged with the ocean that surrounds New Zealand for centuries, Surf Life Saving has a history of 100 years, making the surf club a 'young' typology in terms of architecture, even though the history is rich with memories of old rescue techniques, tough competition and stories of heroism, the Life Guard's goal has remained the same; to save lives at New Zealand beaches.

This project is driven by the devastating figures and statistics on drowning in New Zealand. Water Safety New Zealand collaborate with Surf Life Saving New Zealand to collect and analyse the drowning statistics and collate an annual report that breaks down this data into different demographics and water typologies.

Both government organisations, Surf Life Saving New Zealand and Water Safety New Zealand recognise the concerning issue of drowning in New Zealand and have mutual goals to prevent loss of life in, on and around the water. There is no argument when it comes to drowning been issue that requires addressing, however there are multiple initiatives in place in hope to lower these concerning statistics:

- Water education in Primary schools
- Learn to Swim Programmes
- Information on how to keep safe around water on organization websites
- (Specific to this project) signage at beaches that aim to raise warning

Although these actions are steps in the right direction they are proven to not be enough as our average annual drowning toll is not decreasing. This project aims to present these risks that cause drowning at New Zealand beaches using alternative methods by applying architecture to the transition zone between land and beach and utilising the space for means of education and to form awareness.

Beach safety and architecture are not two issues we have seen hand in hand in the past, the only typology that has common elements and opportunities is that of the Surf Life Saving Club. The surf club precedents show how the clubs of New Zealand have evolved and adapted to the new developments of rescue techniques and club culture of the last century. The precedent exploration allows insight into the functions of the club and also how they integrate the public or if they miss this opportunity.



Figure 1.5 - Photograph of Rescue from IRB

This project will use two types of framework; research 'for design' and research 'by design'.

The research 'for design' phase will undertake both literature and precedent reviews based on the dangers at New Zealand beaches and the history and activity of Surf life Saving New Zealand. Quantifiable information such as drowning statistics, preventable actions and demographics sourced from government websites (Water Safety New Zealand and Surf Life Saving New Zealand) will be acknowledged to pin point the issues that require addressing within this project. Whilst a long personal background in Surf Life Saving is present it is important that a further understanding of the topic at hand is achieved in order to produce a successful outcome

Due to the fundamental focus of this project being about creating awareness and education, an exploration into how the formal characteristics of the beach and dangers can inform the architecture and therefore create a more engaging and successful proposal.

Even though this proposal aims to be a solution that can be applied to many New Zealand beaches, the success of the architectural response is partially dependent on an in depth understanding of the site physically, historically and environmentally. The site analysis of Hot Water Beach will consist of initial visits during multiple weather and surf conditions. A small insight into the history of the site will look at both environmental aspects and common occurring dangers. Hot water beach has a unique feature of natural hot springs that is not only fascinating to understand but will also play an influential role in the design decision and process.

This will lead to research 'by design;' the fundamental design stage of the project. This element of the research will apply the information collated to form a design response. It will address the primary issues that arose out of the literature and precedent review by using architectural techniques and elements to find an acceptable solution. Design methods of sketching,

model making, three dimensional design and documentation will assist in finding the solutions to the issues posed through the research 'for design' stage.

The design phase will also raise further issues that will require investigation and a continuous cycle of design and research will be formed. Both aspects of this cycle will work cohesively until a design intention is achieved.

Opportunities of reflection will be gained through critiques by staff, students and Surf Life Saving members and enthusiasts through the research 'for and by design' stages.

Eventually this will result in an appropriate design response that will propose a solution to the research question initially established in this project. The design proposal will contribute in creating awareness and further educate the public on water safety at New Zealand beaches.



Figure 1.6 - Photograph of belt rescue race (original rescue technique)



Figure 2.1 - Photograph of colliding waves

2.0

'Turning the Tide' - THE PROJECT

East Coast

New Zealand's East Coast is made up of small bays and long stretches of white sandy beaches. The commonly calm conditions make the beaches popular playgrounds for many water based recreational activities. During the summer months, these beaches are busy both on the shore and in the water; meaning lifeguard services are required to ensure the safety of beach goers. The East Coast is more sheltered and does not experience the harsh surf and wind conditions as often as the West. We tend to be less cautious on the East Coast, exposing ourselves to the views and natural elements.

The East Coast is often perceived as calm and safe however it is more often than not underestimated and its hazardous conditions can be dangerous if not approached with care. Shallow waters, sudden drop offs, rips and waves are all common hazards along the East Coast, and when strong winds and a large swell pulse occurs the beach can turn from calm and safe to rough and unpredictable. The unpredictability of the East Coast is probably its most dangerous feature; both locals and tourists find themselves in unexpected and dangerous situations due to the perception of East Coast beaches being golden and glistening water.



Figure 2.2 - Cathedral Cove Photograph



Figure 2.3 - Sandy Bay Photograph



Figure 2.4 - Learner surfer at Tawharanui Beach



Figure 2.5 - Outline of New Zealand illustration (East Coast highlighted)

West Coast

New Zealand's West Coast is renowned for its wild and unforgiving conditions. The notoriously rough Tasman Sea crashes against the cliff faces and along the stretches of black sand, creating the West Coast's rugged beauty. It is this rugged beauty that draws locals and tourists to the remote West Coast beaches.⁶

Along with the extraordinary sites the wild coast has to offer, comes extreme hazardous conditions that can be unforgiving if one is not prepared. The large waves, strong rips and forever changing

seafloor create havoc for swimmers and lifeguards on busy summer days. It is these hazards that are often the cause of fatalities and near drowning's at West Coast beaches. However, they also bring much enjoyment for many beach goers who take the opportunity to surf and play in the waves. Being exposed to the elements the West Coast is forever changing due to the natural process of erosion. The rough sea conditions and strong winds mean that rock and debris is forever falling from the cliffs, creating the ever-changing landscapes of the West Coast.



Figure 2.6- Piha Beach Photograph



Figure 2.7 - Wave breaking on west coast rock formation photograph



Figure 2.8 - Wave breaking at Piha Beach photograph



Figure 2.9 - Outline of New Zealand illustration (west coast highlighted)

⁶"Beaches".New Zealand. Accessed May,2017. <https://www.newzealand.com/int/feature/beaches/>.

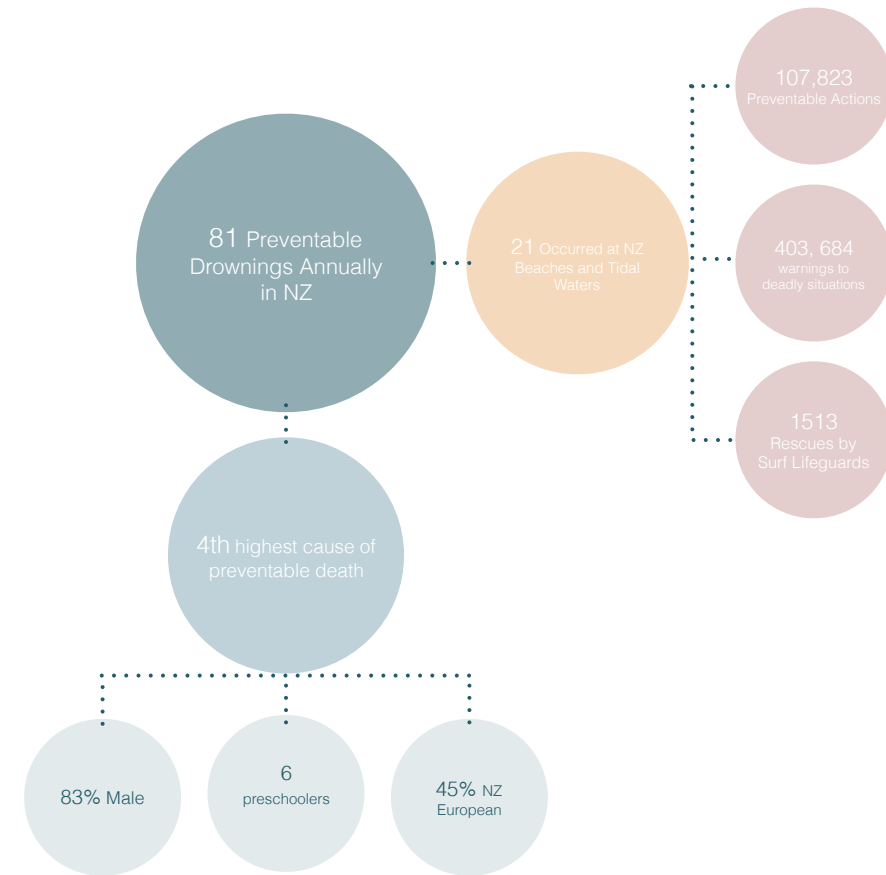


Figure 2.10 - Diagram of drowning facts

Drowning as defined at the World Congress on Drowning 2002 is, “the process of experiencing respiratory impairment from submersion/immersion in liquid”.⁷ Meaning one’s lungs fill with water when submerged and result in death due to the lack of oxygen. Once someone begins to drown the outcome is most likely fatal and therefore prevention is vital. With roughly 18,000 kilometres of coastline, recreation around and in the water is a natural and popular activity for millions of New Zealanders.⁸ With any water comes risk and New Zealand’s drowning statistics prove concerning with an average of 81 preventable drownings occurring annually. In 2016, 27% of the drownings occurred at our magnificent beaches as well as over 1500 rescues performed by Surf Lifesavers.⁹ Prevention is vital when aiming to lower the number of deaths due to drowning and the low chance of survival once one begins to drown; resuscitation is required immediately on the scene.

⁷ David Meddings, “Global Report on Drowning: preventing a leading killer”, *World Health Organisation*.(2014): 1
⁸ Nancy Swarbrick, “Life Saving and surfing – Origins of surf lifesaving”, Te Ara – the Encyclopedia of New Zealand, <https://teara.govt.nz/en/lifesaving-and-surfing/page-1>
⁹ “Water Safety New Zealand Drowning Prevention Report 2016”, *Water Safety New Zealand*. (January, 2017):2-7, <http://www.drownbase.org.nz/assets/Annual-Drowning-Reports/2016-Provisional-Drowning-Prevention-Report-13Jan2017.pdf>

A Preventable action is when a lifeguard or member of the public acts upon a situation that has the potential of requiring a rescue, or from becoming deadly. This essentially prevents a rescue or drowning from occurring. New Zealand Lifeguards performed 102,823 preventable actions in 2016 and alerted over 403,000 people to dangerous situations that could have become deadly throughout the 222,501 patrol hours.¹⁰ Evidently these actions prevented many lives from ending at New Zealand beaches. However, lifeguards are not always present at all beaches, nor is it feasible for them to be on surveillance 24/7. Therefore, it is important for the millions of New Zealanders who visit the beach each year, to individually recognise and be educated on the risks and dangers that pose potential danger to themselves and others.

¹⁰ Water Safety New Zealand, “Water Safety Sector Strategy 2020,” Published September 2015, Vimeo, Video, <https://vimeo.com/140233212>

HISTORY

In New Zealand throughout the late 19th century bathing in the ocean was still restricted by laws. When these laws were eventually lifted at the beginning of the century, weekend trips and holidays to the beach became increasingly popular.¹¹ With this popularity, in combination with the dangers that came hand in hand with the ocean, the need for a Surf Lifesaving service became increasingly apparent. In 1910 the Surf Lifesaving movement arrived on the shores of Lyall Bay, Wellington and South Brighton, Christchurch.¹²

Even though Surf Lifesaving was introduced from Australia, New Zealand's coastline is vastly different and does not have the golden sands and predictable surf of many Australian beaches. Many lives were lost on our beaches during the early years of the 20th century due to the rough surf on the West Coast and unsuspected rips and currents on the East Coast. Both coasts posed extreme dangers for unsuspecting or unaware swimmers.¹³

During the 1930's Surf Lifesaving reached its golden years and lifeguards both patrolled beaches and competed in surf sports competitions. They were renowned as local heroes and it was not uncommon to draw 10,000 spectators to a Surf Lifesaving event

¹¹ Nancy Swarbrick, "Life Saving and surfing – Origins of surf lifesaving", Te Ara – the Encyclopedia of New Zealand, <https://teara.govt.nz/en/lifesaving-and-surfing/page-1>

¹² Bob Harvey, *Between The Flags: 100 years of Surf Life Saving in New Zealand* (Wellington: Surf Life Saving New Zealand, 2010), 11

¹³ Harvey, *Between The Flags: 100 years of Surf Life Saving in New Zealand*, 12

at the beach.¹⁴ The clubs were positive environments that broke down social barriers and status's that existed 'back in town'. The members shared a common goal of saving lives from the risks and dangers that New Zealand beaches posed. The members and their clubhouses were recognised by the public and they became spaces for community gatherings, as they were on the beach front with minimal infrastructure and surroundings.

Further more just as we evolved as humans over time, so did the Surf Lifesaving movement within New Zealand. The member rolls grew and club culture was established at beaches up and down the long stretches of New Zealand's coastline

The following section is a brief insight into some of the major aspects of Surf Lifesaving and how over time they have transformed. It is important to understand these developments and to note what changes had an effect on New Zealand's loss of respect and awareness for the oceans strengths and risks. It is significant that this project takes into account design and social elements within Surf Lifesaving clubs that may assist in regenerating awareness within the visitors to our beaches.

¹⁴ Harvey, *Between The Flags: 100 years of Surf Life Saving in New Zealand*, 13



Proud patrolmen beside their new pavilion, 1913. [PHOTOGRAPHER UNKNOWN, LYTELTON TIMES COLLECTION, CANTERBURY MUSEUM]

PREVIOUS PAGE: Club members gather for an opening day demonstration beneath the New Brighton pier, 1911. [PHOTOGRAPHER UNKNOWN, LYTELTON TIMES COLLECTION, CANTERBURY MUSEUM]

Figure 2.10 - Digging for the new pavilion

Figure 2.11 - New Brighton Surf Cub 1913



Figure 2.12 - Belt and Reel race Photograph

Figure 2.13 - Modern Board Rescue Race Photograph

Figure 2.14 - Modern IRB Rescue Race Photograph

PAST AND PRESENT

Competition & Patrolling

When Surf Lifesaving began in New Zealand in 1910, the men who established the Surf Lifesaving clubs were the same men who both patrolled the beaches on the weekends and represented their clubs at the district and national Surf Lifesaving Competitions. Lifeguarding and competing came hand in hand and the races carried out in these competitions were direct simulations of rescue techniques used on the beach. Success at competitions usually resulted in the success of the surf club as a whole.¹⁵ Winning the national competition and obtaining the 'Nelson Cup' usually resulted in being welcomed home as 'hero's' and many top lifeguards became household names, as those of the All Blacks are today.

Today many aspects make up the lifesaving organization, with patrolling and competition still remaining as major elements. They do however; tend to run independently from one another, with the only national requirement to compete being your lifeguard award and completing a refresher course each season. Not only has the competition and patrolling become somewhat independent from one another, the competition scene also has divisions amongst the different typologies of racing. The I.R.B racing circuit is completely separate to the other sectors and the rowing and canoe competition also have independent events to the general surf sport competition.

Not all competitors are interested in patrolling responsibilities and vice versa. Many lifeguards do not join a surf club with the desire to compete but instead are content with volunteering at the beach on the weekends to keep the public safe. This divide within the lifesaving community does not detract from the patrolling service, as many skills established through competition, complement the skills required to be an effective lifeguard. However, some elements of racing have not developed or evolved at the same pace as that of the rescue techniques. Many of the surf sports events are still similar versions of the original races introduced at the beginning of Surf Lifesaving, whereas the means of rescue have progressed immensely with the introduction of new technology and machine powered devices Today the public recognizes Surf Lifesaving for what they observe on the beach, and the means of rescue are not always reflected in all aspects of competition.

15 Harvey, *Between The Flags: 100 years of Surf Life Saving in New Zealand*, 45



Figure 2.15 - Piha SLSC five founders Photograph

Figure 2.16 - Selection of current Piha SLSC members Photograph

Figure 2.17 - Young Lifeguards jumping Photograph

Members

The establishing members of New Zealand's surf clubs came from a variety of sporting backgrounds. It was these young sporting men that came together and recognized the need for Surf Lifesaving clubs.¹⁶ These were also the same men that volunteered and patrolled the beaches on the weekend. This combination of different backgrounds in sport, careers and lifestyle still occurs in clubs today. It is strongly evident in the surf sports arena where many serious athletes cross over from other sports such as swimming, kayaking, athletics and rowing in search of a new challenge, or to embrace the more social and unique style of racing. Both when Surf Lifesaving was established and now, there is no divide in the club's due to social or financial status. When lifeguards are patrolling the beach together they are all there with the same purpose, to save lives and ensure the safety of the New Zealand public at our beaches.

16 Sandra Coney, *Piha Guardians of the Iron Sands: The first 75 years of the Piha Surf Life Saving Club* (Piha: Piha Surf Life Saving Club Inc, 2009), 11

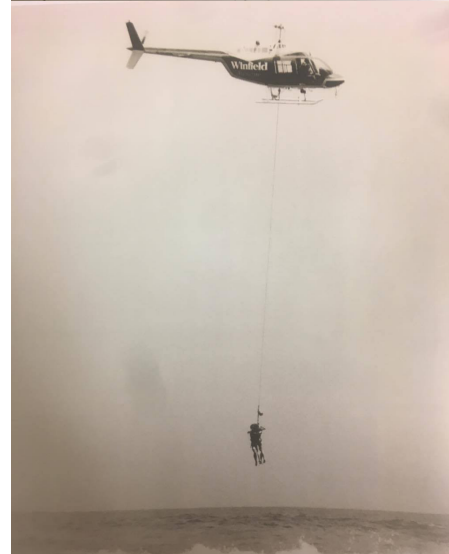


Figure 2.18 - Reel and Belt Rescue Technique Photograph
 Figure 2.19 - Westpac Helicopter Rescue Technique Photograph
 Figure 2.20 - Modern IRB Rescue Technique Photograph

PAST AND PRESENT

Rescuing

When lifesaving was established in New Zealand the lifeguards relied on manpower to save a patient when a hand was raised. The rescue belt was used in the early days, which involved swimming to the patient with a rope secured to a belt, which in turn was secured around the rescuers chest. Both the rescuer and patient were then wound back to shore with a reel. The rescue board and surf ski were other manpowered devices used to rescue patients. These apparatus' have evolved and been developed for racing and rescuing throughout the years. The introduction of the I.R.B (inflatable rescue boat) means these 'man powered' devices are used less on the beaches (especially rough beaches) as the motor powered boat is able to reach the patient at greater speeds, reducing the chance of drowning.¹⁷ Today at New Zealand beaches, lifeguards main focus is on prevention, trying to alert the public to dangerous situations that could become deadly. On average New Zealand lifeguards perform 107,823 preventable actions each season across our beaches. Man powered techniques are still effective today to carry out preventable actions as well as small-scale rescues. The combination of both man and machine powered apparatus' allow lifeguards to carry out a range of rescues and choose the best technique possible to increase the chance of patient survival.

¹⁷ Coney, *Piha Guardians of the Iron Sands: The first 75 years of the Piha Surf Life Saving Club*, 52,96



Figure 2.21 - Lyall Bay SLSC -1920's
 Figure 2.22 - Piha SLSC - 1934
 Figure 2.23 - Piha SLSC - 1952
 Figure 2.24 - Maranui SLSC- 2000
 Figure 2.25 - Muriwai SLSC- 2015

Club Rooms

When the establishment of surf clubs began across New Zealand's beaches, the need for a clubroom became apparent. The beaches were not populated, as we know them today, they were holiday destinations, mostly visited on the weekends where families camped and sparse few baches stood. Therefore, Surf Lifesaving clubs at the beach became the local community building where social events and meetings were held, and not only were members included, the entire beach community was welcome. The design for the early clubs were usually based on the 'Australian Lifesaving Handbook' and only required the minimum means for patrolling duties. They usually consisted of a hall area, watchtower, bunkroom, bathrooms, a casualty room and some space allocated for storage. Of course today the main purpose of a lifesaving club remains the same and is firstly there to help keep the beach safe. However there is a large influence from a financial aspect as well as a social one. These aspects have led clubs to introduce bars, restaurants and more; to assist and support the financial means required to administer a club today. The bars and restaurants along with the social events these bought are still very 'clubbie' focused and generally attract the people who feel comfortable in a surf club, which is not usually the general public. The size of surf clubs has also changed dramatically and this has occurred along with the development of technology and therefore the means of rescue. Large storage facilities are included in club designs as well as communication rooms, offices and larger accommodation facilities for the lifeguards over summer. Development in first aid techniques and skills that a lifeguard learns and embraces whilst on patrol means the first aid facilities are included in all modern club designs today. The primary focus of all these alterations and additions is to help improve the way lifeguards carry out their volunteer service and ensure safety on our New Zealand beaches.

THE PATROL TOWER

The Patrol Tower is an aspect that is typically associated with the Surf Club Typology. As ever beach conditions and landscape vary from one another the positioning of the towers also changes to ensure the tower offers the best vantage point to view the surf from. Not all New Zealand Surf Life Saving clubs have a tower incorporated in their design, if the club is positioned on the beach with of all different sizes an forms, they are designed and position specifically for the beach at which they are located. Club located on the beachfront with unobstructed views of the beach.



Figure 2.26 - Old Wainui patrol tower photograph

Elements such a roads, footpaths and dunes separate the club form the beach. A tower is placed on the front of the dunes.

Club located a fair distance from the beach and dunes pose potential of blocking views. An individual tower is placed upon the dunes.

Views from the club are obstructed by the sand dunes. A tower is placed individually on top of the dunes.

The tower is placed on top of the surf club to gain elevated views over sand dunes.

The club is located on the beach edge wall and the use of veranda takes the role of the tower.

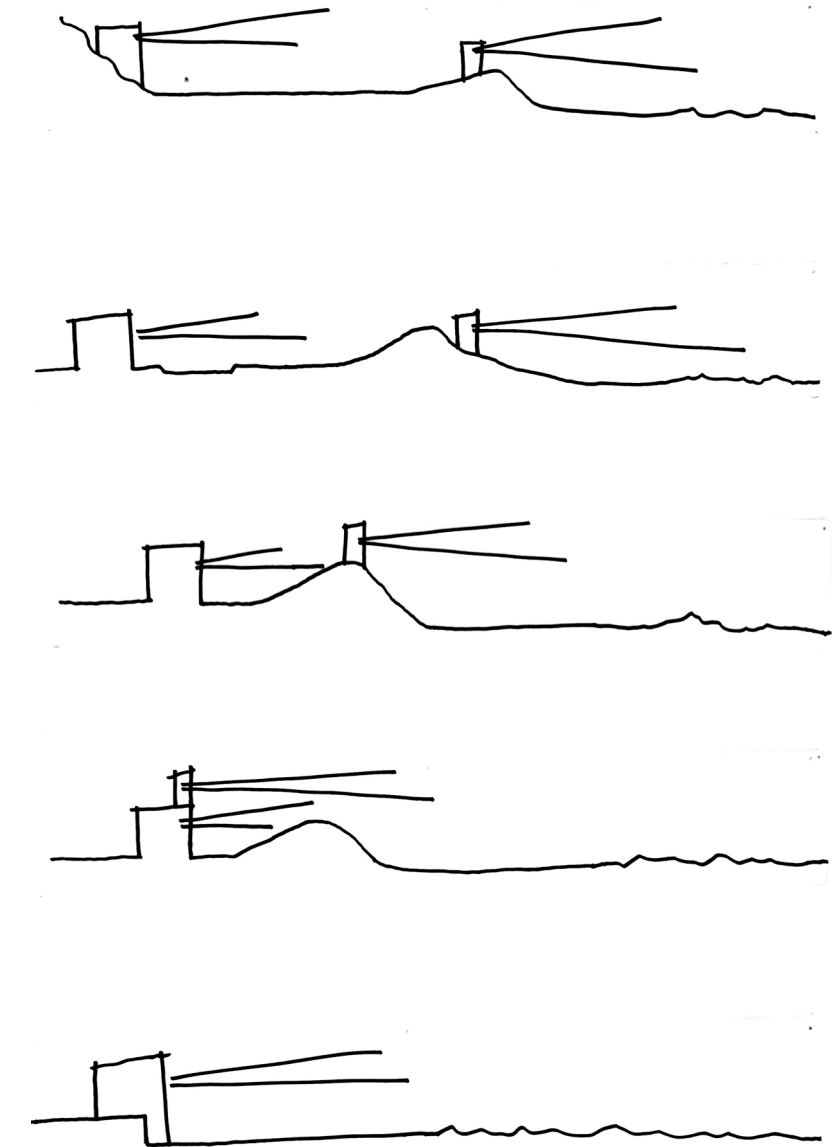


Figure 2.27 - Exploration of tower location illustration

Figure 2.28 - Typical kiwi bach on Rangitoto Island



2.4 The Kiwi Bach

The 'holiday home' or Bach as we know it, has been a kiwi icon since it originated in New Zealand in the late 19th century. It has transformed from rudimentary sheds built into cliff faces near beaches, lakes and rivers, to architecturally designed mansions that tower over the beachfronts.¹⁸ This evolution of design is also evident within the development of the architecture of surf clubs throughout New Zealand. The early baches went hand in hand with the oxford dictionary's definition of 'a shelter of the most basic form of habitat, a simply furnished house or weekend cottage'.¹⁹ These were the baches of the workingmen and were built completely by the owners during the 1890's, usually in the cliff faces above beaches, lakes or rivers. The forms were simplistic and used modest materials such as corrugated iron.²⁰

During the early 1900's many modest structures were being built along the New Zealand coastline and the beaches were becoming busy weekend and holiday destinations.²¹ It was because of the beaches newfound popularity that it became apparent that clubhouses were required and this began the establishment of Surf Lifesaving clubs. The baches at the time were still constructed with

¹⁸ Raewyn Peart, *Castles in the Sand: What's happening to the New Zealand Coast?* (Nelson: Craig Cotton Publishing, 2009), 7

¹⁹ Kevyn Male, *Good Old Kiwi Baches and a Few Cribs Too* (Auckland: Penguin Books (NZ) Ltd, 2001), 5

²⁰ Peart, *Castles in the Sand: What's happening to the New Zealand Coast?*, 77

²¹ Peart, *Castles in the Sand: What's happening to the New Zealand Coast?*, 78

the 'do it yourself' kiwi attitude and their small size and lack of supporting infrastructure meant they sat amongst the natural coastal environment, rather than dominating it.²²

Post World War Two (1940-1970's) was the 'boom' of the Bach and it is these designs that are fondly remembered and form the iconic kiwiana image that so many New Zealander's reconcile with. They still followed the 'do it your self' tradition and were generally rectangular in form, with simple open plan lay out which allowed for indoor/outdoor connectivity to the natural environment, which the structures sat within.

The surf clubs of the time followed these modest designs of simple forms along with the bare minimum means to rescue.²³ These were located on flat sites along the sparsely populated beachfront and did not dominate the coastline. However, the common addition of the watchtower or viewing deck made it recognizable/distinguishable from the other simplistic structures.

²² Peart, *Castles in the Sand: What's happening to the New Zealand Coast?*, 78

²³ Coney, *Piha Guardians of the Iron Sands: The first 75 years of the Piha Surf Life Saving Club*, 13

Baches would grow and evolve in parallel with the expansion of the family that occupied the space²⁴ and likewise as the surf club member numbers increased so did the size and capacity of the club house. It was in the 1950's that the first architecturally designed holiday homes started to appear along New Zealand's coastline and as lifesaving techniques advanced and Surf Lifesaving continued to grow, they too reached out to architects for innovative and unique designs that topped the dunes with glazed front facades that provided surveillance of the beach below. However, being a volunteer service meant funds were restricted so the clubs still followed the kiwi 'do it your self' tradition meaning spaces remained modest even with the addition of programs that allowed for social activities within the clubhouse.²⁵

As the popularity of beachfront properties and the desire for ocean views grew the baches along the coast became more opulent and extensive in both size and facilities.²⁶ These structures began to resemble urban mansions that dominated the coastline rather than humble simplistic structures that we connect with the word bach throughout New Zealand.

²⁴ Peart, *Castles in the Sand: What's happening to the New Zealand Coast*,80

²⁵ Coney, *Piha Guardians of the Iron Sands: The first 75 years of the Piha Surf Life Saving Club*,13

²⁶ Peart, *Castles in the Sand: What's happening to the New Zealand Coast*,91

This mansion style extensive holiday home has influenced the surf club design of today. Clubs being designed and built today follow both these scale and multi-facility ways. No longer are they a club to provide patrols and first aid for our beaches many now provide restaurants, bars, and community halls for hire, offices and more. It seems the fundamental reason that lifeguards are here (to save lives) has lost its priority within this new architecture of these clubs.

Although areas of New Zealand coast are dominated by these extravagant holiday home designs, many New Zealander's who own land on the coast are now returning to the 'bach roots' of simplistic forms and the minimal means to holiday. These minimalistic ideologies paired with modern technologies are creating architecturally deigned structures that integrate with their context as well as achieving a high level of functionality.²⁷

These ideas need to be considered throughout the design aspect of this project. A surf club needs the minimum means to rescue and assist the public but also the modern surf club should create awareness of the dangers that come hand and hand with the ocean. Not only does the architecture require integration with its immediate physical context, but it also needs to integrate with the public using the beach.

²⁷ Peart, *Castles in the Sand: What's happening to the New Zealand Coast*, 90

It is important to focus on how the club will be perceived and experienced by the public. Consideration needs to go into both how the members will use the space to patrol our beaches, but also how a beach goer may move through and occupy the site and structure. Looking through the evolution of the New Zealand bach and surf club will help recognized elements that perhaps supported this idea of integration and how this can help form an awareness and respect for the oceans risks.

In relation to this project it is clear to see that both the development of the bach and surf club have had an effect on the community focus of the beach. With the beachfront becoming a commodity and being privatised, the community focus that was once apparent in both baches and the surf club has been lost, along side New Zealander's engagement with the ocean. This demand for beachfront positioning for baches is not about to diminish nor can it be stopped but the surf club does not need to follow suit in terms of privatising its land and structure but instead poses opportunities to act as a transition zone between land and beach and reinstate the community focus that has been somehow lost. The Surf club requires both direct access to the beach as well as direct access from the road; it therefore is commonly positioned on the verge between land and beach. This positioning can either create disconnect to the ocean by forming a barrier or more excitingly invite the public through as an access way and create a simulating and educational experience as one transitions from beach to land.



Figure 2.29 - Evolution of the kiwi bach

RIP CURRENTS



Figure 2.30 - Rip warning symbol illustration

What is a Rip?

A rip current is a body of water travelling out to sea. When waves break along the beach the water is being pushed towards the shoreline, and needs a way back out to sea.

The water flows into the deeper channels and the away from the shoreline.²⁸

Rips do not all work the same; they form, flow and behave in different ways, some are formed against headlands, others flow directly out to sea while some even circulate back to shore.

There are two aspects that form a rip. First the feeder currents, this is the water moving along the shallow parts of the shoreline towards the deeper channels where the second aspect of the rip forms; the main current, this is the strong part of the rip that usually heads away from the shore, either at perpendicular or diagonal direction.

28 "Surf Safety," SLS Beach Safe, accessed July 13, 2017, <https://beachsafe.org.au/surf-safety>

Identifying a Rip

To the unaware eye, rips can be extremely difficult to identify. But there are key visual aspects of a rip that can help inform (you) when choosing a safe place to swim at the beach.

The visual aspects of a rip current are listed below:

- Deeper and dark coloured water
- Calm patches with fewer breaking waves
- Rippled surfaces surrounded by clam waters
- Anything floating out to sea/ sandy & foamy water flowing out beyond the waves

Rip currents will not display all of these visual aspects but in some cases only one or two may appear. It is important that beach goers are educated and aware of all visual features that form a rip to ensure the safest zone is selected to swim or, the water is not entered if it appears unsafe.

The strength of some rips may mean the feeder currents travelling along the beach may drag a bather into a rip even when an initial 'safe swimming area' has been selected. Therefore it is also important that beach goers have the required knowledge on what to do if they find themselves in the dangerous situation of being in a rip.

Permanent

Flash

Travelling

Tidal

Permanent Rips occur in the same location all year round and their intensity increases proportionately with the intensity of the surf. They are often situated where a barrier stops water movement along the beach, and the water then heads out to sea.

These barriers can be of natural form such as rocks and headlands. Permanent rip currents also occur around manmade barriers such as wharves.²⁹

Flash Rips occur suddenly when a large set of waves comes in to shore and the volume of water rapidly increases.³⁰ This large volume of water then travels at a fast and aggressive pace back out to sea, taking unexpected bathers from what was just seconds before a safe swimming area out to sea.³¹

Travelling Rips move along the beach as well as out to sea and are forced by the prevailing direction of the wind. They are commonly present when the swell is dominant in one direction. These rips are aggressive and strong, their strength means they are almost impossible to swim or walk against and are notorious for pulling larger numbers of swimmers off shore.³²

Rip Tides are formed by wave energy, unlike rip currents they are caused by the tidal action, where water rushes from estuary and inlet entrances during a change in tide.

29 "Be Safe," findabeach.co.nz, accessed May 05, 2017, <http://www.findabeach.co.nz/besafe/>

30 SLS Beach Safe, "Surf Safety."

31 findabeach.co.nz "Be Safe."

32 findabeach.co.nz "Be Safe."



Figure 2.31 - Headland Rip at Karekare Beach
 Figure 2.32 - Permanent Rip at North Piha Beach
 Figure 2.33 - Flash rip caused by wave
 Figure 2.34 - Dye showing a rips form

WAVES



Figure 2.35 - Wave warning symbol illustration

What is a Wave?

"A wave is a body of water moving along the surface of the ocean."³³ Swells are formed by kinetic energy transferred from the friction caused the wind travelling over the oceans surface. The swell size depends on the winds speed, the faster the wind the more kinetic energy and therefore larger waves are formed. The strength of the wave is dictated by both the length of time the wind blows for and the distance of water covered by the wind. The longer the wind blows for and the more distance of water covered the stronger the swell.³⁴

These undulations caused by the wind travel thousands of miles ad gather together to form waves and as they reach a shoreline or reef the wave continuously increases in height and become narrower until it collapses and topples over, creating surf.

33 findabeach.co.nz "Be Safe."

34 "Waves," GeophrahyaTnotes, accessed August 10, 2017, <https://geographyas.info/coasts/waves/>

Wave Typologies:

Waves break in different ways depending on their strength and size as well as the formation of the ocean's floor. It is important that beach goers can recognise the different typologies as some pose more threat while others are more suitable for swimming.

Spilling

Spilling waves are relatively safe for swimming and surfing, and occur when the top of the breaking wave tumbles down the face.³⁵ These waves are usually less aggressive and break at a consistent pace.

Dumping

Dumping waves are strong and aggressive; they break with extreme force, usually due to a steep incline of the sea floor. This causes the waves height to increase rapidly and break on the shallow water or shoreline. These waves can be extremely dangerous as their strength can easily throw a swimmer to the bottom often disorientating them.

Shore Break

Shore break. Much like a dumper these waves are aggressive and pose great danger to beach goers. They are dumping waves that break on the steep beach face and can cause serious harm as they are a threat not only to swimmers but also beach goers along the shore and and in the shallows.

Surging

Surging waves never actually break because they travel over deeper areas of water, and are common around rocks. Their strength is often underestimated and they are likely to knock people off their feet and then sweep them out to sea with the returning surge.³⁶

35 findabeach.co.nz "Be Safe."

36 findabeach.co.nz "Be Safe."

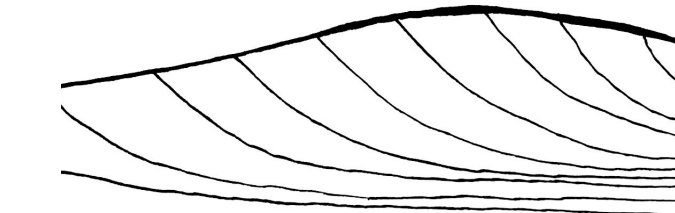
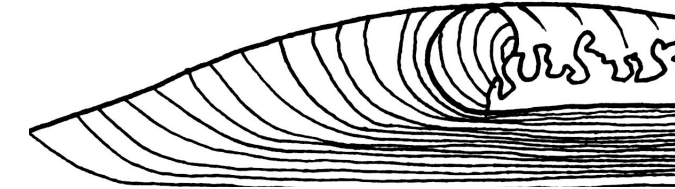
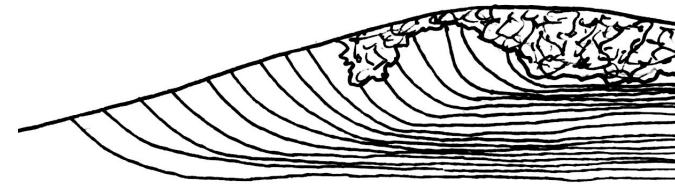


Figure 2.36 - Wave typologies illustration

TIDES

Tides are often an over looked hazard at New Zealand beaches, however a change in tide can effect the water in many ways causing dangerous situations for the unaware beach goer. The attraction of the moon and sun cause the alternate rise and fall of the surface of the ocean. A high tide means an increase in water level and less of the beach is visible than at low tide. Even though tides occur twice a day six hours apart, depending on the moon and suns position this rise and fall of water levels vary. A beaches conditions can vastly change between tides for example the

waves at a beach may spill at low tide but as the water level increases and the tide becomes full the waves break on the steeper face of the beach, creating dumping or surging waves which pose more threat and aggression. Tidal movement is continuously occurring, and tides are never stationary; once a low or high tide level is reached the water begins to move in the opposite direction. This movement in the water can cause tidal currents, which pose threat to the unexpected swimmer or floating objects, as they too will get pulled in the direction of the tidal movement.

HOLES & DEEP WATER

A hole is a deeper area in the seabed,³⁷ which is formed by rip currents and surf conditions at a beach, however can still remain once a rip and surf is not present. They are commonly trough like in form and run parallel to the shoreline. Holes pose extreme danger for the unexpected beach goer as a rapid change on depth can take a swimmer by surprise as they are washed into a trough by the back wash of returning water. Not only is awareness achieved through education but also a sense of understanding and perception.



Figure 2.37- Lyall Bay high and low tide lines
Figure 2.38- Hole danger Symbol illustration

WEATHER

Weather is an important variable in all hazards at a beach and due to the fact that it is uncontrollable it is important to understand how the change in weather can affect beach conditions. A change in wind speed or direction can mean what was only moments ago a safe swimming situation can turn extremely dangerous or deadly for even an experienced swimmer or beach goer.

SUMMARY

All these investigated hazards have individual formal characteristics. These elements will be influential through out the research 'by design' phase as they pose opportunity to dictate the formal properties of the architecture. The nature of the dangers can inform design decisions and create educational opportunities throughout the structure, helping to re-establish a sense of awareness for the ocean and its dangerous characteristics.

37 findabeach.co.nz "Be Safe."

It is this understanding of the coastline dangers and also the knowledge on how these should be approached, that will lead to a wider awareness and therefore an act of caution taken when enjoying our beaches.

People obtain information differently and the signage currently used at the beach, warning the public does not effectively convey the message that our beaches can be dangerous and caution should be taken.

These dangers and issues need to be expressed and experienced in a way that the information and awareness is retained and a change in attitude and relation towards, and with the ocean is achieved.

This following section looks into how we as humans learn in unique ways and also explores how these learning typologies may be explored in relation to the architecture.

Education plays a vital role in this project and understanding how we as humans absorb

information is crucial. We retain information through different types of learning; some through physical approaches while others may benefit more through visual or verbal techniques.³⁸ We all vary from one another, and it is important to have an understanding of these different learning types in order to ensure all can gain an awareness of the oceans strength and the risks that come along with enjoying it.

³⁸ "The 7 Styles of Learning," Edudemic, accessed August 01, 2017, <http://www.edudemic.com/styles-of-learning/>

Below is a brief description of the seven types of learners and how each type prefers to learn and absorbs information effectively.

- Visual (spatial): Prefer to use pictures, images and spatial understanding
- Aural (auditory/musically): Prefer using sounds and music
- Verbal (linguist): prefer words through both speech and writing
- Physical (Kinaesthetic): prefer body and hands on learning, sense of touch
- Logical (mathematical): prefer using logic, reasoning and systems
- Social (interpersonal): prefer to learn in groups or with others
- Solitary (intrapersonal): prefer to work alone, self study³⁹

³⁹ Edudemic, "The 7 Styles of Learning"

Awareness can only be achieved if the information being provided is being absorbed; therefore it is important that the architectural response in this project considers all seven learning mechanisms. These learning typologies will be a driving factor for the architecture and will ensure that maximum types of people will be influenced. By translating the seven types of learning into one or multiple architectural elements such as different forms, sizes of spaces, materials, varied light and sound, and contextual relations, the architecture will allow an achievable awareness and understanding in most people.

Similarities in learning environments can be drawn between the typologies above. For example Aural (auditory) learning can be paired with Solitary (intrapersonal) learning, for the reason that an individual can listen and absorb lessons more effectively while being independent and in a quieter environment. Categorising the types of learning will allow insight into what each architectural zone is attempting to target or prioritise.

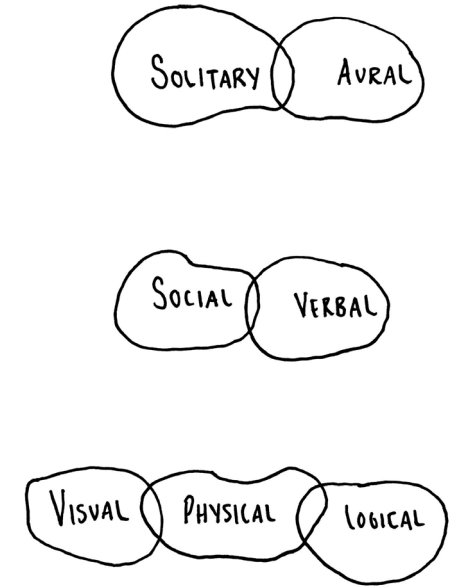


Figure 2.39- Learning types illustration



Figure 3.1- Piha Cub member hand standing on patrol tower

3.0 PRECEDENT STUDY

'The Modern Surf Club'

The Muriwai Surf Life Saving Club provides a vital service to the Auckland west coast beach that has over 1.3 million visitors annually. The new clubhouse was designed to replace the original sand eroded club that was built in the 1970's. The new 2013 design aimed to provide not only for the lifesaving members but also the local community groups.⁴⁰ The local community was a driving force in the design, with the idea of the club and beach being a second home, much like that of a bach and therefore the Jasmx Architect's designed the concept based on the kiwi holiday home.

Program -

The design successfully prioritises the means to rescue and allows for quick access to Surf Life Saving equipment without interfering with other functions.⁴¹ Although the community-based programs are integrated into the design and allow for an increase in activity in the facility, their purpose is not focused for the general public or the average beachgoer. It is not likely that someone visiting the beach for the first time would interact with the Muriwai Surf Club as apart of his or her natural journey and movements to and at the beach. The club is located 300 metres back from the sand dunes and is not intergraded with the beach physically, as well as minimal visual connections both to and from the beach.

Circulation-

The fragmented form of the building allows for external circulation around and through the different zones of the club. This begins to achieve integration between architecture and people, the building opens to these circulation spaces, which form areas to meet and gather. The building has multiple entranceways that meet at a central deck. One entrance follows a more formal approach; a narrow path stretches from the club car park through the main axis of the building. While the second one is located centrally and along the front façade of the club, it is wide and direct. The stairs approach the main axis perpendicularly and act as a place of interaction itself as well as a means of access.

Muriwai Surf Club Site Map



Figure 3.2 - Muriwai Surf Club and Tower location plan

40 "Muriwai Surf Club/Jasmx," ArchDaily, published February 02, 2015, <http://www.archdaily.com/593851/muriwai-surf-club-jasmx>

41 ArchDaily, "Muriwai Surf Club/Jasmx"



Figure 3.3 - External Access route through Muriwai club
Figure 3.4 - Muriwai Surf Club Sketch

'The Story Teller'

Piha Beach is notorious for its unforgiving conditions of aggressive surf, rugged coastline and black sand shoreline. Piha's Surf Life Saving Club was the first on the west coast of New Zealand and has a strong club culture and rich history dating back to 1934.⁴²

Along with the establishment of the surf club in 1934 came the requirement for a clubhouse, a place to store equipment, a base to observe from and to spend time socialising with other club members and the community.

The architecture of the New Zealand Surf Club has adapted over time in parallel to the growth of the clubs in terms of members, technological developments and rescue techniques. Piha's Surf Club located on the Sothern end of the beach has a long history of clubhouses, with three major new builds and a future proposal on the cards. This history successfully represents the transition of New Zealand's surf club architecture and how it has developed with influence from the 'kiwi bach' as well as adapting to the changes within the Surf Life Saving Organisation.

⁴² Coney, *Piha Guardians of the Iron Sands: The first 75 years of the Piha Surf Life Saving Club*, 13-15



Figure 3.5 - Removal of the original club with the new club in distance

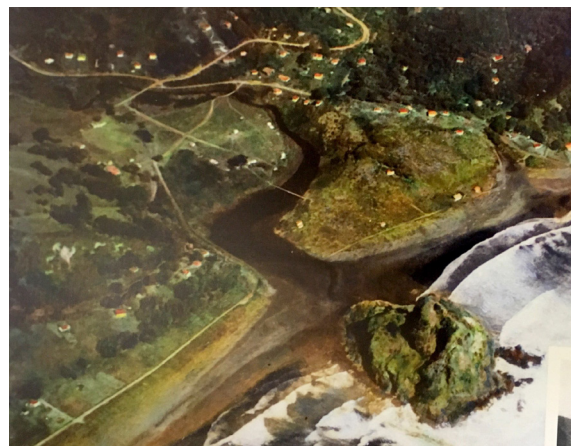


Figure 3.6 - Aerial view of Piha Beach during the 1930's

PIHA CLUBHOUSE #1 - 1934

Program -

A clubhouse or pavilion was always on the cards and in February of 1935 the first club was opened on the donated beachfront quarter acre section. The plans were based off the model in the 'Australian Surf Life Saving Handbook'. The design was a simple single story structure with a veranda out front and tower on the southwest corner.⁴³

The club was small in scale and only consisted of the required means to rescue and to support the lifeguards in their heroic actions.

- Clubroom with six bunks
- Tower
- Veranda
- Kitchenette
- Lavatory and shower
- First Aid/ casualty room

These basic facilities meant that saving lives was the main focus and priority for the club and the architecture spoke of this with the watchtower being a distinctive feature. While other visual elements reflect the baches of the era the tower was a noticeable difference that not only assisted the guards in viewing over the beach but also made the club a recognisable structure and the focus of the beach, somewhere to go if help was required.

⁴³ Coney, *Piha Guardians of the Iron Sands: The first 75 years of the Piha Surf Life Saving Club*, 13-15

Circulation -

The clubs beachfront location made it the focal point of the beach with no other structures close by. Having no road between the club and beach meant the clubs integration with both the beach and beachgoers was intensified. The club was visible from the beach and visa versa, the guards had an unobstructed view of the surf especially from the tower. The club bridged the transition between land and beach and acted as a hub for members, locals and beach visitors. Although no public could circulate through the club during patrol hours, many community events welcomed in locals and beach goers after hours.⁴⁴ Architecturally the space around the club including the veranda became a place of interaction, no boundaries or fences presented the idea of exclusion or privacy but instead the club was a place for all to be involved and to engage and interact, all while providing a service of saving lives at the notoriously dangerous beach on Auckland's West Coast.

⁴⁴ Harvey, *Between The Flags: 100 years of Surf Life Saving in New Zealand*, 45



Figure 3.7 - The first club and members on dunes at Piha Beach

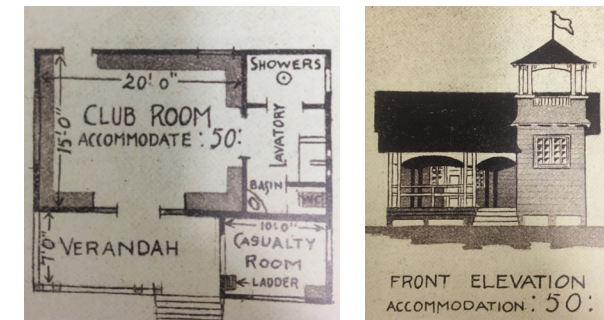


Figure 3.8 - The first club design, plan and elevation

PIHA CLUBHOUSE #2 - 1952

At the commence of World War Two the club had grown from the original five members to having 22 active, 11 probationary and 14 active reserve members, as well as large amounts of rescue gear consisting of; a surfboat, ten single and two double surf skis and three reels.⁴⁵ The requirement for a larger surf club was certain and multiple architects were approached for initial concept drawings. The design chosen was by Rigby and Mullen who provided drawings and a three dimensional model to showcase their design. The design was modern and followed the 'dune topper' bach style that was gaining popularity during the era. The building consisted of a vast single pitched roofline and banks of windows that aimed to flood the hall area with natural light.

Six large square windows faced seaward and played the eyes of the beach, suggesting that club was always on watch.⁴⁶

Program-

The growth in members and equipment meant a larger scale club was designed with more facilities including:

- Boat Shed
- Observation Deck
- Bunkroom (slept 24)
- Function Hall
- Kitchen
- Bathrooms and Showers

The programs did not change radically from the original clubhouse but instead the scale and means of socialising inside were prioritised. The hall was the main focus of the design and was intended for community activities such as events, meetings, dances and indoor sports.

The Missing Tower-

The major change in program was the exchange of the watchtower for an observation deck located out the front of the club. The deck was placed on the second level above the boat storage and still provided unobstructed views of the beach. However the club was built behind the original structure and therefore a further distance to view occurred within the new design. This observation deck spoke differently to that of the tower and was a less distinctive feature. Although it still assisted the guards in viewing the beach, because it was a horizontal element instead of vertical the club had lost an architectural element that assisted in making the structure distinguishable.

⁴⁵ Coney, *Piha Guardians of the Iron Sands: The first 75 years of the Piha Surf Life Saving Club*,44

⁴⁶ Coney, *Piha Guardians of the Iron Sands: The first 75 years of the Piha Surf Life Saving Club*,45



Circulation-

The new club was built less than 20 years after the original and similarly took the form of the popular bach of the era – the modern 'dune topper' with large amounts of glazing stretching along the seaside façade. The 1950's surf club had large amount of windows on the front façade and the transparency of the glass made it appear open and welcoming to those viewing from the outside. The land surrounding the club was still open with only a few baches in close proximity and the property consisted of no fences and boundaries between the club and the public. The vehicle access of Marine Parade was still sand and gravel and the clubs position remained beachfront remaining an almost seamless transition from the club to the beach. The front of the club was still a place of gathering and social activity, the beach rolled to the entrance, achieving both integration with the beach and the public.

Figure 3.9 - Complete 1952 Piha Surf Club front facade

Figure 3.10 - Hall area with bunk room mezzanine

Figure 3.10 - Club view from rear of site over looking beach

PIHA CLUBHOUSE #3 - 1996

The 60th Anniversary of the Piha Surf Life Saving Club in the 1990's came with the realisation that the new club was run down and out-dated, and a replacement was required.⁴⁷ The new plans had a goal to provide for suitable facilities for women, incorporate caretakers flat and a new large and well-equipped medical room. This 1990's design is the existing clubhouse of Piha Surf Life Saving Service.

Program-

- Offices
- Bunkrooms (male and female)
- 3 large storage sheds
- Caretakers flat
- Bar and Restaurant / Hall Space
- Members lounge
- Kitchen
- First aid room
- Large external deck
- Changing rooms and Toilets
- Operations Room
- Restaurant Toilets

All these programs resulted in an immense increase in scale and almost the entire site was utilised in the plans. However the long narrow site

proved difficult and resulted in many of the means to rescue, including the equipment storage being placed at the rear of the building out of view from the general public and instead the social aspects such as the bar and restaurant were celebrated at the front and centre. An article in the New Zealand Herald wrote about the proposed club as an "expensive way of socialising."⁴⁸ It seemed that the means to rescue were no longer the priority of the architecture.

Patrol Tower-

The Existing club design does not include a tower like that of the original however due to the fact that the club is located back from the dunes and separated by the car park a tower has been placed on top of the dunes where patrolling is based. The tower is not an enclosed but provides protection from the harsh summer sun and allows the lifeguards an elevated view of the beach. The tower allows for a more approachable and interactive area of the club where beachgoers head if help is required as well as the form of the tower being visible from the beach and recognised as this refuge. The tower is the only built form upon the dunes and therefore stands out as well as having the interaction with the public and the beach.



Figure 3.11 - Views of Piha's current patrol tower

Circulation-

Due to the extensive size and programs of the 1995 clubhouse no space exists around the club any longer and only by accessing the second story deck is the beach visible, and no visual connection from the beach is achieved due to the height of the sand dunes and the distance the club is located back from the beach itself. The present surf club has a formal entrance located along the front faced at ground level and is accessed by a central footpath. Through the front door the occupant is confronted with double doors that states member access only and immediately segregation between the members and public occurs. Not only are the private means and running of the surf club physically inaccessible but no visual connections are present, relating to the well-known idea 'out of sight out of mind'. It creates disconnection and also a sense of awareness of the lifeguard's role and importance is lost.

The deck of the club is attached to the restaurant and bar and provides a visual relationship to the surf, however this is only experienced by minimal amounts of visitors as the club takes on the role of a destination of purpose instead of bridging the transition between land and beach; utilising the opportunities to become a part of the public's natural progression as well as providing the main priority of the means to rescue. The addition of

the tar seal car park creates segregation; barriers were formed between the club and the car park as well as the car park and the dunes. The car park is not a space of public interaction nor does it provide interaction with the beach, with a change in surface comes a sense of disconnect from the beach environment and therefore a sense of awareness can be lost.

Bach Relation-

The third and final club design once again as architectural elements that reflect the baches of the era. The plaster exterior is an obvious visual element that was a popular building material during the 1990's and helped to achieve the more contemporary and unique forms of the baches of this era. The clubs extensive list of programs also is comparable to that of the 1990's bach designs where they become second homes or holiday homes and include many extras including 'the kitchen sink', rather than minimalistic spaces to enjoy family time and simplistic holiday activities. Many of the programs in the existing club do not assist in the 'saving lives' aspect; yes they provide spaces to socialise and interact with other club members and potentially some visitors but miss the opportunity of being a transition space and to be integrated with the public and beach.



Figure 3.12 - Fences and gates along the front boundary of the site

⁴⁷ Coney, *Piha Guardians of the Iron Sands: The first 75 years of the Piha Surf Life Saving Club*, 118

⁴⁸ Coney, *Piha Guardians of the Iron Sands: The first 75 years of the Piha Surf Life Saving Club*, 119

'The Minimalistic Surf Club'

The Bicheno Surf Life Saving Club and Boat Shed is located in Tasmania, Australia with a principal purpose to assist in training the nippers (young surf club members) to swim and enjoy the ocean safely. The building succeeded in meeting functional and practical means of a club but fear of creating a visually unappealing building that conflicted with the sensitive site was a concern in the early design stages.⁴⁹

The Building not only serves the purpose of a surf club and boat shed but psychologically speaking the community of Bicheno see the building in the same perspective as that of a church. When the doors are raised opening the club to the elements, families of the community occupy and surround the building; it becomes a happy and joyful space.⁵⁰ The architecture has a poetic aspect, using the crayfish pot as a design driver, both the boat shed and pot are "powerful and tactile, lending themselves to create a sense of place that serves and defines the community of Bicheno."⁵¹ The surf club has many successful elements that relate to this research project including: The integration between the built form and nature, materiality and details and its simplicity and functionality.

49 "Bicheno Surf Life Saving Club + Boathouse," Birrell, accessed September 10, 2017, <http://birrelli.com.au/bicheno-surf-life-saving-club-boathouse/>

50 "Bicheno Surf Life Saving Club + Boathouse," Birrell, accessed September 10, 2017, <http://birrelli.com.au/bicheno-surf-life-saving-club-boathouse/>

51 2017 Tasmania Architecture Awards. "Small Project Architecture – Bicheno Surf Life Saving Club Boathouse – Birrelli Art Design Architecture." April 15, 2015. Accessed August 17, 2017. <http://wp.architecture.com.au/tasawards/2014-awards/smallprojectarchitecture/bicheno-surf-life-saving-club-boathouse-birrelli-architects/h>

Integration of Building and Nature-

The Surf Club structure blends with the nature in a sculptural way; it has become art of the land.⁵² The buildings cubism form does not isolate itself from the natural environment and uses visual elements that stem from the towns history and culture to help ground the architecture amongst its landscape.

Materiality and Details-

The architects reduced material palette of untreated timber, steel and masonry offers maximum simplicity and allows the building to sit with in the landscape rather than dominating it - similar to that of the early rudimental New Zealand baches.⁵³ The building's cladding and form represent the intricate hand weaving of a crayfish pot, the horizontal timber battens vary in width and meet at each corner using alternating finger joints. The battens left untreated weathered naturally allowing the structure to sit amongst its context respectfully and creating an intimate relationship between building and nature.⁵⁴

Simplicity and Functionality-

The building has minimal aspects but succeeds in serving its purpose as a surf club and boat shed, a place to assist in educating young members of the community. The cube like form and simplicity of materials aims to preserve the landscape and social life of the site.

52 Small Project Architecture – Bicheno Surf Life Saving Club Boathouse – Birrelli Art Design Architecture." April 15, 2015. Accessed August 17, 2017. <http://wp.architecture.com.au/tasawards/2014-awards>

53 Peart, Castles in the Sand: What's happening to the New Zealand Coast, 7

54 Birrell, "Bicheno Surf Life Saving Club + Boathouse



Figure 3.13 - Bicheno Surf Club from ocean view
Figure 3.14 - Bicheno Surf Club from shoreline
Figure 3.15 - Bicheno Surf Club from land

This Project-

The Bicheno Surf Club and Boat Shed assists this project by demonstrating how a simplistic form and functioning building has the ability to become the focal point of a community. The structure manages to achieve a balance of integrating both the natural environment with the architecture and the architecture with the people.

'The Transition'

The Pools was one of architects Alvaro Siza's early work and is still half a century later an internationally recognised building as it is a prime example of his reconciliation between nature and built form.⁵⁵ Located at the Leca de Palmeria beaches on the northern coastline of Matosinhos, the pool facilities are integrated into the rocky coastline showing respect for the context and natural surroundings. The facilities consist of minimal programs and include:

- Changing rooms
- A Café
- Two Swimming Pools (adult and children)

The architect strategically sunk the structure, meaning it does not obstruct the view from the road and also creates a disconnect between the pools and the infrastructure of the city behind. The precedent offers insight into integrating of coastal environments with built form, materiality and circulation opportunities.

Integration of coastal environment and built form-

Siza's design preserved a lot of the natural rock formations to assist in blurring the architecture into the landscape, the pools extend out into the ocean and blends with the naturally formed rock pools along the Atlantic Coast.⁵⁶

⁵⁵ "AD Classics:Lecca Swimming Pools/ Alvaro Siza," ArchDaily, published August 05, 2017, <http://www.archdaily.com/150272/ad-classics-lecca-swimming-pools-alvaro-siza>

⁵⁶ ArchDaily "AD Classics:Lecca Swimming Pools/ Alvaro Siza,"

Materiality-

The architect uses concrete to assist in the blur between nature and the built form as well as utilising multiple textures to create contrast between different elements, such as the floor and walls. The rough walls relate to the rock formations however Siza's careful decision to use concrete a lighter shade and straight to walls demonstrates his restraint to avoid imitation.

Circulation-

The ramped pathway directs the occupants through to the changing rooms acting as a gradual transition between the road and pools. The placement of walls control viewpoints, at one point both the road and coast are out of sight and the ocean becomes audible creating a sensory experience of transition between built form and nature.⁵⁷ In contrast once exiting the changing rooms the walls turn the occupant to reveal a dominant view of water, where the pools are nestled between the observer and the vast ocean beyond.⁵⁸

⁵⁷ ArchDaily "AD Classics:Lecca Swimming Pools/ Alvaro Siza,"

⁵⁸ ArchDaily "AD Classics:Lecca Swimming Pools/ Alvaro Siza,"

**This Project-**

These three aspects of the precedent's design support this project by suggesting how certain architectural elements can assist in the integration of ocean and architecture to avoid having a negative effect on the beach environment. They offer insight into how the form of the architecture can dictate and guide the movement of the occupant as well as influence what they will see or hear at certain points of the progression. This Project does not aim to be successful at only one beach with in New Zealand as it is about altering the Surf Life Saving Club facilities. Therefore the research and design exploration of this project should have the ability to be adapted and applied to most beaches.

Figure 3.16 - Lecca Pools wall formation

Figure 3.17 - Looking back at the structure from pools

Figure 3.18 - Ramped entrance with concrete walls

Figure 3.19 - looking up the ramp - contrasting textures

Figure 3.20 - Pools visually extending into the ocean

4.0

DESIGN PART ONE

PROGRESSIVE

Tides are created by the push and pull forces of two components, the sun and moon. The water that rises and falls with the tidal forces is continuously moving. The architecture proposes to push and pull the beach goers through a space becoming the force pull the beach and land together. The approach suggests using the spaces at stepping-stones, creating a journey of education that allows for different types of learning and lessons at different points throughout the space. The aim is to create an access way that allows for continuous movement through while transitioning between the two forces; the safety of the land and the unforgiving ocean.

Learning through observation being placed near the entrance and beginning the process while interactive learning is at the exit that then exposes the occupant to the beach. The guarding services are located centrally along the journey as a means of observational learning by watching the lifeguards.

PROGRESSIVE

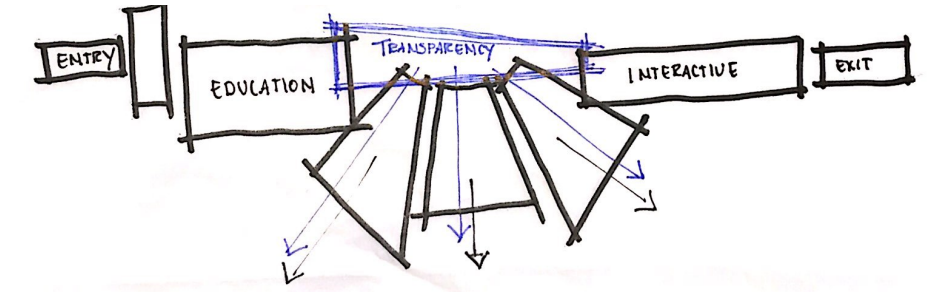
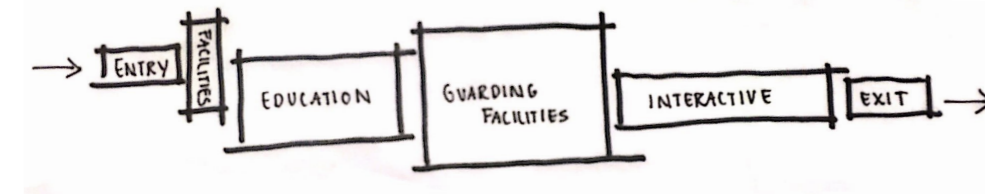


Figure 4.2 - Plan exploration of the progressive approach

FRACTURED

Rips form breaks within the surf, creating zones of danger and safety. The forming of this natural hazard creates division along the surf breaks giving the ocean a disjointed appearance. The feeder currents transport the water to deep channels where the rip is formed; these feeders are the circulation of the rip dragging water and beach goers from a safe zone in the water to one that can pose risk. Formalising these attributes of a rip resulted in the fractured approach where the architecture looks at pulling apart the lifeguard facilities and placing the zones of education between. Much like a rip the separation creates contrasting spaces between the zones. This allows the public to occupy all the spaces between and around the surf club elements creating a sense of inclusion.

FRACTURED

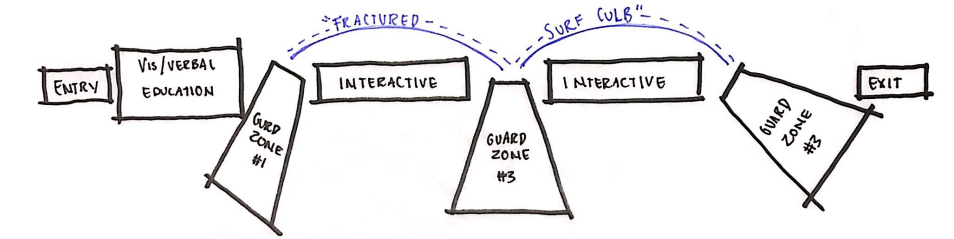
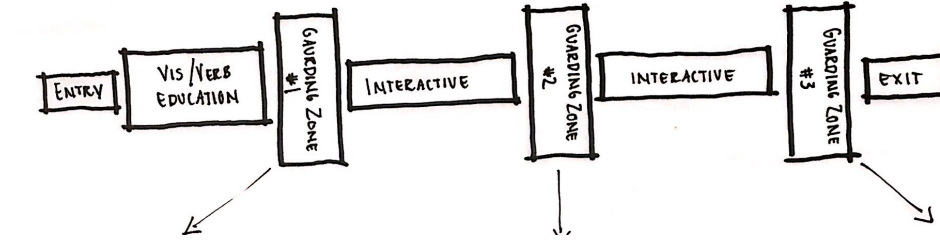


Figure 4.3 - Plan exploration of the fractured approach

DECONSTRUCTED

Waves approach the beach in sets, commonly consisting of four to five waves. These lulls between sets allow a surfer, swimmer or boat-user to utilise the time to either paddle or swim out further, rest and regain their breath or simply absorb and enjoy the contrasting calmness. This approach applied these breaks in activity within the water to the architecture by further separating the surf club components along different points of a beach. The different aspects incorporate visual and interactive educational and rescue means at each. The different elements aim to respond to areas and dangers of the beach and the movements and actions carried out by a general beach visitor while providing periods to rest, reflect and absorb each zones lessons and observations.

DECONSTRUCTED

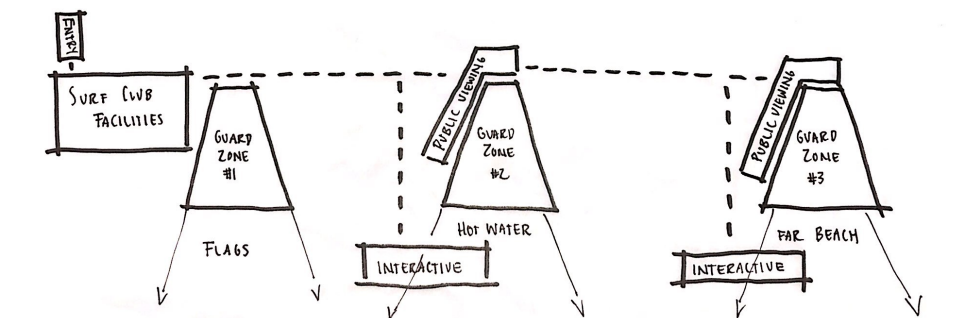
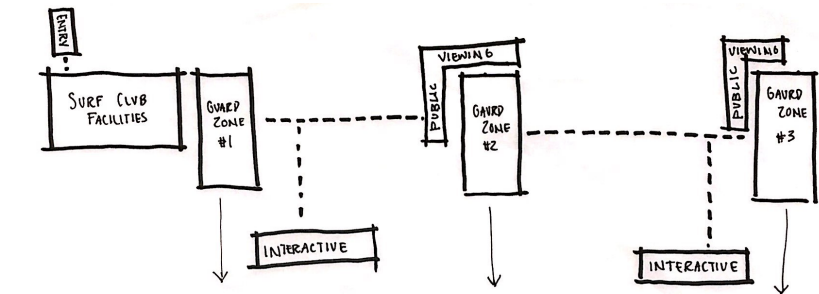


Figure 4.4 - Plan exploration of the deconstructed approach

The progressive approach was investigated and explored during the early stages of this project. Bubble diagrams were used to locate different programs and zones. The focus at this point of design was the guarding facilities and public education being combined within one building. This exploration looked into providing educational rooms, guarding facilities and interactive learning zones. When creating three-dimensional views of the building from the plans investigated the structure turned into a rather dominating building that did not focus on the natural progression of a beach goer. Instead the building would require placement over the beach due to the lifeguard's requirement of unobstructed views. Also the combination of both public educational and guarding facilities all with in one elongated structure would affect the means of rescue.

This exploration presented the ideas that the built form on the beach needs to be restricted as it has the ability to diminish the beaches natural beauty. This lead to pulling the learning facilities into access routes or into individual educational structures that did not affect the means of rescue.

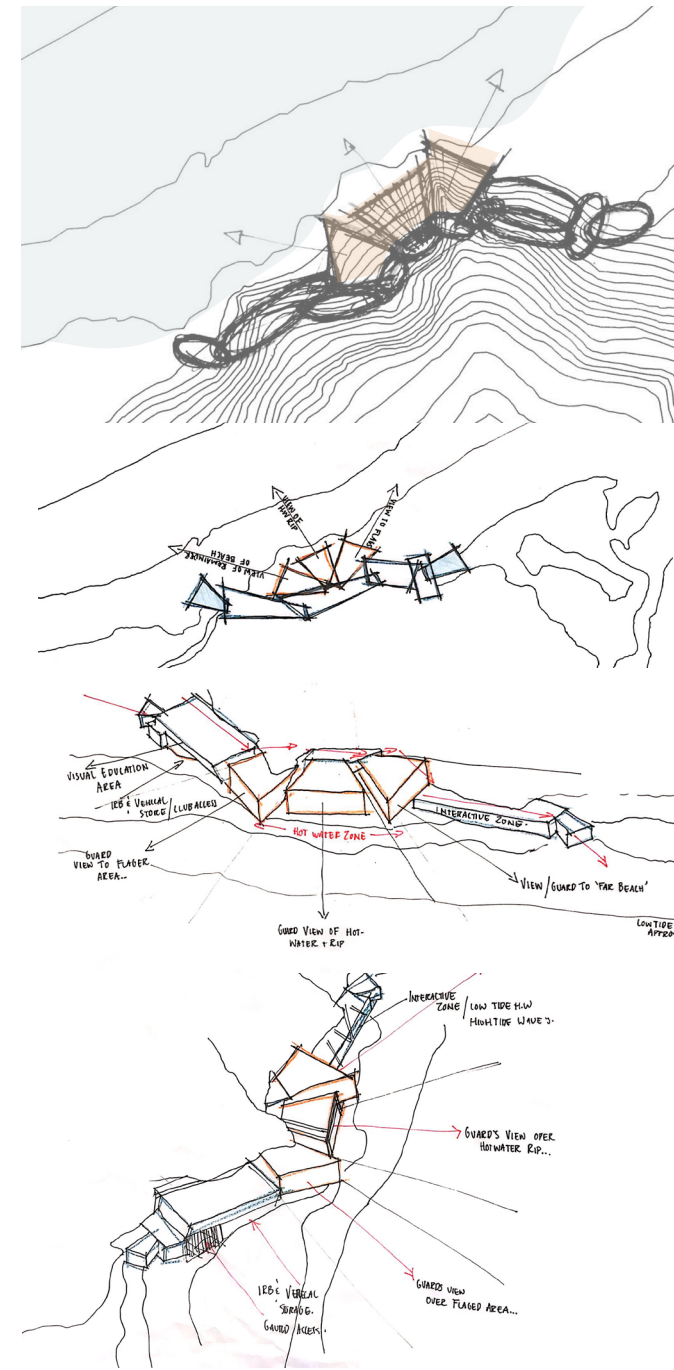


Figure 4.5 - Conceptual sketches of the progressive approach

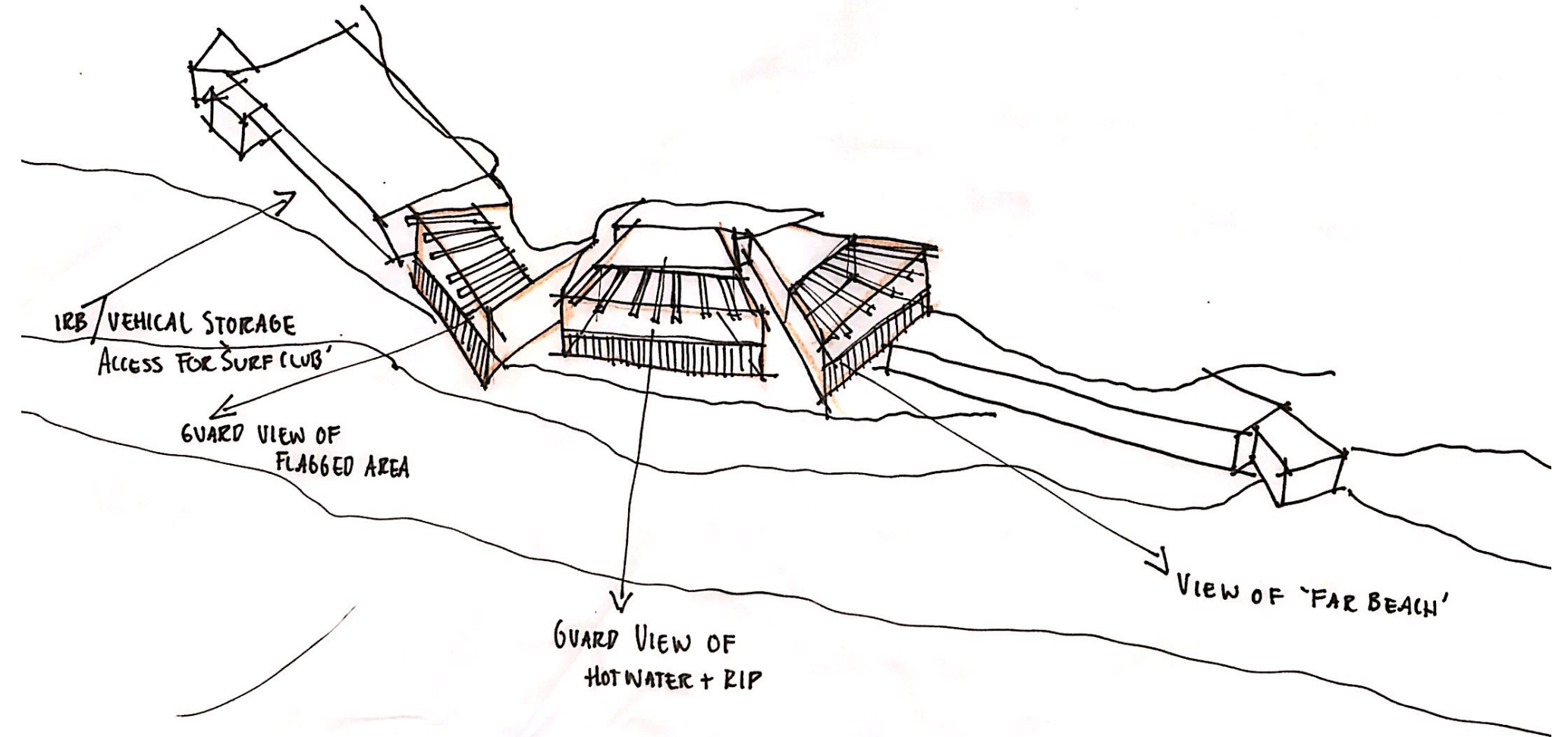


Figure 4.6 - Conceptual 3D view of progressive approach in cliff face

5.0
SITE

Figure 5.1 - Off duty rescue tube at Southern end of Hotwater Beach



This project proposal will situate at Hot Water Beach in the Coromandel, as a preliminary model of how the public can be informed on beaches dangers through the utilisation of the surf club facilities.



Figure 5.2 - Aerial view of Coromandel Peninsula

The Coromandel Peninsula is located on the East Coast of the North Island and is popular holiday destination during the summer months and its spectacular beauty makes it a tourist attraction all year round. This popularity insures that the project will educate a large portion of the New Zealand public and tourists.



Figure 5.3 - Aerial view Mercury Bay framing Hot Water Beach

Due to the natural wonder of the hot springs located at the beaches southern end this Coromandel Beach becomes extremely busy in the summer months but also draws crowds throughout the year. The east coast is often perceived more forgiving than the west, however the surf conditions at Hot Water Beach are unpredictable and it is often overlooked as being a dangerous beach. However over the 2016 and 2017 Patrolling season the Hot Water Beach Lifeguard Service carried out 101 rescues and more than triple the amount of preventable actions, making it one of New Zealand most dangerous beaches.⁵⁹ The lifeguard service does not have a proper clubhouse but instead a few storage and patrol units scattered around both the Southern and Northern ends of the beach.

These aspects mean that this site allows the project opportunities to reach many beach goers as well as provide a Surf Life Saving Club that assists in both means of rescue and education.

⁵⁹ "Hot Water Beach SLSC," Surf Life Saving New Zealand-Hot Water Beach, accessed September 05, 2017, <http://www.slsnz.org.nz/organisation/find-a-club/find-a-sls-club-in-nz/hot-water-beach-slsc/>

HOT WATER BEACH

Hot Water Beach is located on the East Coast of New Zealand, along the Coromandel Peninsula. The 80-kilometre peninsula is home to many picturesque white sand beaches and is a popular holiday destination for Kiwi families as well as drawing many tourists throughout both summer and winter months. Hot Water Beach gains its name from the natural hot springs that release hot water through the sand. It is this natural wonder that attracts many locals and tourists at low tide, where the visitors dig a hole and enjoy their natural spa.

As well as the unique feature of the natural hot springs, Hot Water Beach is a popular surf destination, providing quality surf spots along the beach. A busy summers day sees multiple full car

parks and kerbs lined with parked cars, families scattered along the southern end of the beach, guards observing the flagged area and surf, swimmers and board riders throughout the surf and of course at low tide large groups of people gathered at the hot springs by the headland.

The patrolled area of the beach is located at the Southern end in close proximity to the hot springs, public toilets, showers and stores. While the Northern end is mostly utilised by regular beachgoers or surfers, who walk along the beach in order to escape crowds or to find a surf bank.

This projects focus is on the Southern end of the beach as this is where the lifeguards patrol and place the flags, it is also where the large amounts of visitors arrive and occupy, as the hot water is located here.



Figure 5.4 - Natural hotpools at Hot Water Beach

Typography

Hot Water Beach stretches North to South curling east under the headlands at either end and is apart of the Coromandel Peninsula that was formed over 150 million years ago as a result of uplift and folding of the ocean floor.⁶⁰ The volcanic activity that played a large role in shaping the Peninsula is the catalyst for the Hot Water Beach's hot springs located at the headland near the southern end of the beach. The springs occur as water seeps through fissures in the base rock leach down thousands of metres to the hot molten magma, and then is sent back to the surface as hot water exiting through the sand on the beach. The springs are accessible at low tide and are not restricted to the area between the high and low tide lines, but stretch quite some distance off the the shore line. The springs reach extremely high temperatures and steam can be observed rising form the sand creating a unique site for eyes at the beach.

⁶⁰ "History," Hot Water Beach- The information spot, accessed September 01, 2017, <http://www.hotwaterbeach.org.nz/history/>



Figure 5.5 - View of southern end of beach with northern end in the distance

HOT WATER BEACH

Estuaries

Two estuaries meet the ocean along the beach, one situated at the far southern side and the other at the far north corner. The estuary at the southern end of the beach requires crossing when accessing the beach from the most southern car park on Pye Place, this can be difficult after large amounts of rain or intense surf conditions as the water flow increases as well as the width and depth of the estuary. Younger beach goers often occupy the Southern estuary, and use the body of water as a safer option when the conditions are rough between the flags. However caution is to be taken when using estuaries as an area for recreational activities as rip currents commonly form around these tidal mouths as the water retracts back out to sea during a change in tide.



Figure 5.6 - Southern Estuary looking towards the shoreline



Figure 5.7 - Southern Estuary looking North along the beach

Beach Transitions

The sand dunes are moderate in size and height; they do not obstruct views from the lifeguards base, nor from the far southern car park. The dunes are more dominant near the central pedestrian access way that arrives at the hot water. The access route passes through them and they provide a small elevated view of the beach. Behind the dunes the land formation contrasts at different parts of the beach:

Northern: Farmland lies behind the majority of the beach at the Northern end, meaning it is moderately flat. However this land is all private meaning there is no access to the beach along these areas.

Headlands: The major headland toward the southern end of the beach is in complete contrast to the moderately flat farmland at the northern side. The headland protrudes out onto the beach, is extremely steep and covered in New Zealand native bush. The foliage runs down the cliff and meets both the estuary and the golden sands creating an unusual junction of textures and natural elements.

Southern: The far end of the beach transitions to the car park, which is elevated slightly above beach level. The guards have situated their patrol in the far southern corner of the beach, which provides unobstructed views to this end of the beach.

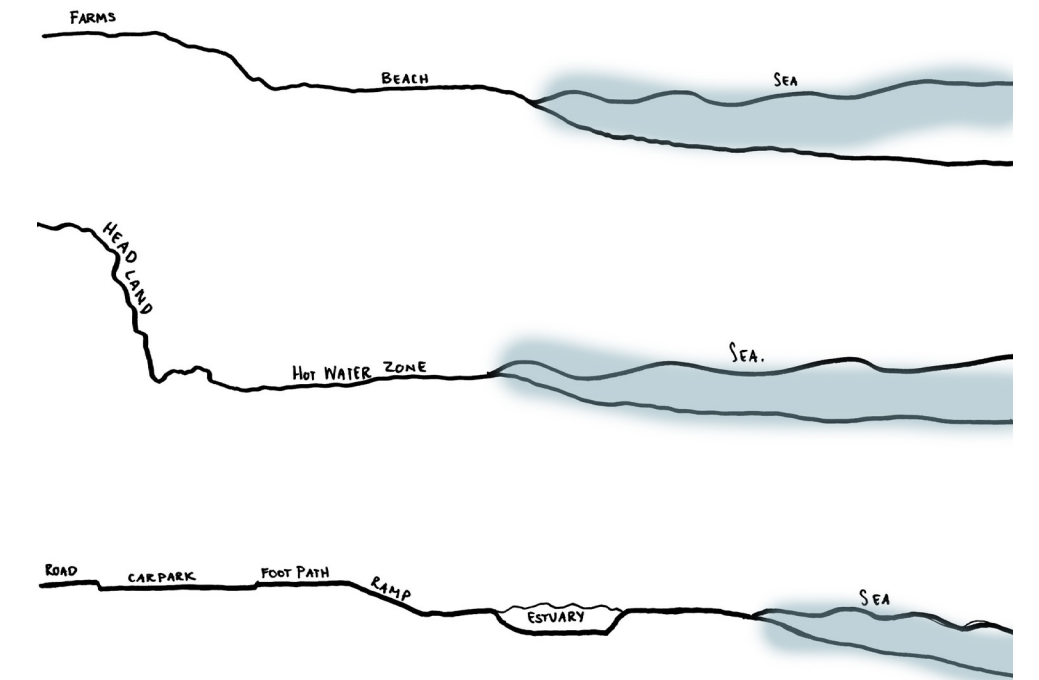


Figure 5.8 - Exploration of land to beach transition sections

HOT WATER BEACH

Access Routes

The beach has three public routes of access which all stem from the multiple car parks. The three access routes attract different types of beachgoers.

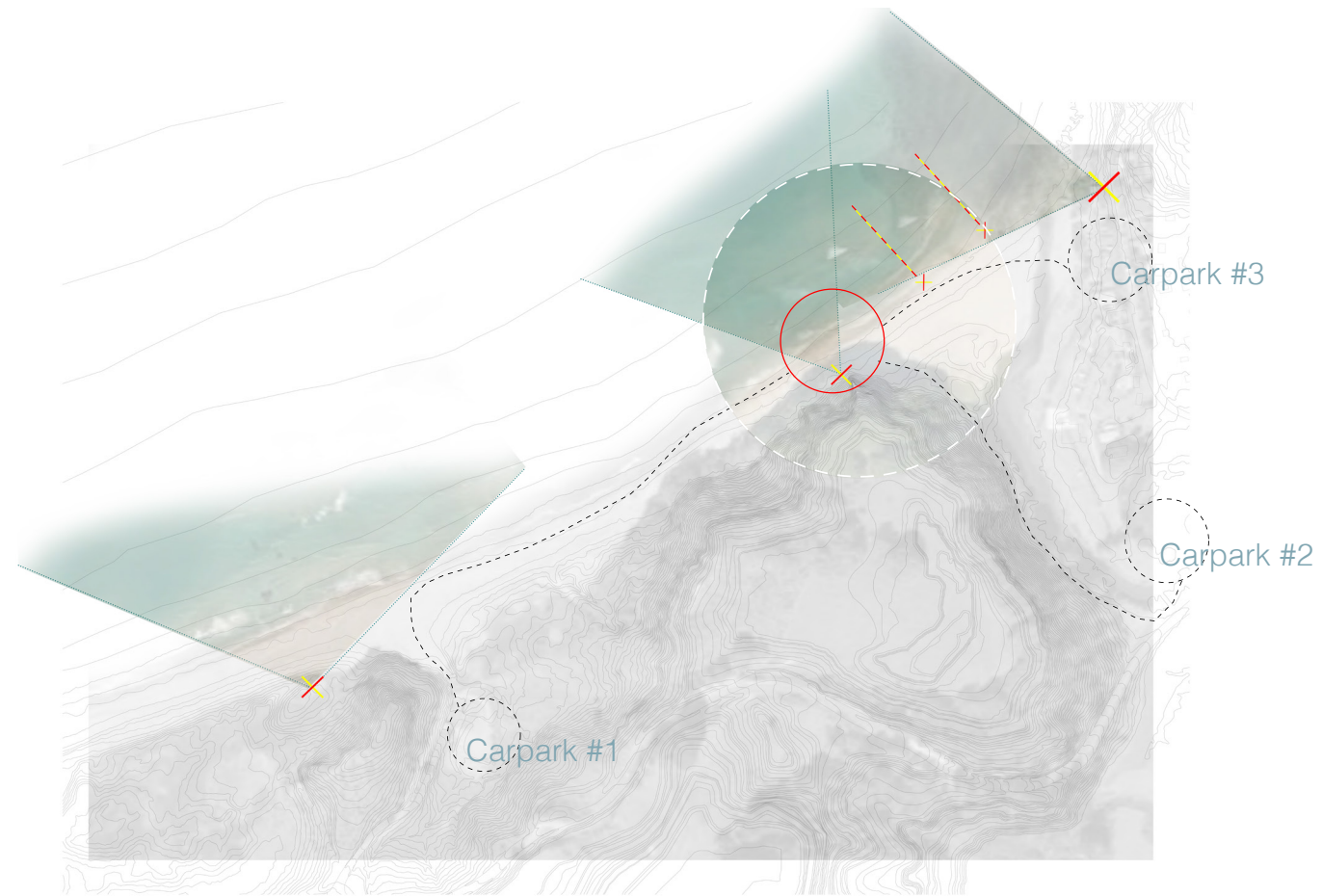


Figure 5.9 - Site Analysis map showing access and current guarding positions

Carpark #1 The first car park is located at the Northern end of the beach and is mostly used by locals and surfers who intend to use the Northern end of the beach, which poses more danger, as it is unpatrolled. The beach threshold is directly off the end of the car park.

Carpark #2 The second or central car park is the largest in scale and is commonly used by tourists with a path that runs along side the estuary and arrives in very close proximity to the hot water located at the headland. The path is approximately 200 metres long and the native bush that cantilevers from the cliff above forms a canopy above the pedestrians that contrast with the vast openness of the beach they are about to approach.

Carpark #3 The third car park is small in scale and located at the far southern end of the beach near the store, gallery, toilets, showers and the Surf Life Saving Service. Stairs that bridge the height gap between the tar-sealed car park and the sand accesses the beach. However the beach is fully visible from this car park and the access route is short and direct, with an obstacle of crossing the estuary to gain access to the patrolled beach and also the hot water springs.



Figure 5.10 - Aerial view of the Northern car park

Figure 5.11 - Access route to the beach from the central car park

Figure 5.12 - Beach access from far Southern car park

Waves

Hot Water Beach experiences both extremes in surf conditions and rip currents; one day can be flat with no waves and little water movement, then next has the potential to have large aggressive surf and large amounts of water movement causing dangerous Rips. The tides, weather and swell all dictate the risk and danger level that the ocean poses in a certain day.

There are two common wave typologies at Hot Water Beach, Dumping or Shore Breakers as well as spilling waves.

The tide plays a large role in determining the type of wave that occurs at Hot Water Beach due to the formation of the sea floor as well as the shore itself.

High Tide: The waves at high tide break on the steep shoreline, resulting in aggressive dumping waves that can pose extreme harm to bathers in the shallows, as the waves gain height rapidly and break down with great force in the sand.⁶¹

Low Tide: Waves can prove difficult to read at low tide, depending in the swell size and sandbanks Hot Water Beach experiences both dumping and spilling waves when the water is drawn out to sea. Dumping waves occur on the sandbanks at Hot Water Beach during low tide and pose more threat and usually come with more power than that of spilling waves. Spilling waves usually occur when smaller swells are present or in deeper parts of the beach and are more enjoyable for the average swimmer or board-rider.



Figure 5.13 - Dumping waves at hot water beach
Figure 5.14 - Dumping waves at hot water beach
Figure 5.15 - Shorebreak at hot spring location during high tide

Rip Currents

Hot Water Beach has strong undertows and multiple rips form along the beach. All rips strength is determined by tides, weather and swell intensity.

Estuary mouths are common places for rip currents to form especially during an out going tide. The rips created by the tidal mouths are usually categorised as permanent rips due to the fact that they only move marginally along the beach. Hot Water Beach has two estuary outlets and rips are commonly formed at their mouths, where they meet the ocean. It is these zones that can be a clear indication on where a potential rip may be found.

One Rip at Hot Water Beach is located in an extremely hazardous position on the beach, straight in front of the hot springs. This results in many visitors getting unexpectedly caught in the rip that travels diagonally out to sea when they enter the sea directly in front of the springs to cool off.

At low tide seabed trenches form feeder currents within the shallows of the beach, it is where the water that needs to return to sea travels parallel to the shore in search of a deeper channel heading out to sea (Rip Current). These trenches can take the unexpected swimmer by surprise as the seabed drops away rapidly, and loss in footing can result in being swept sideways towards a rip.

Tides

The tides at Hot Water beach have a dramatic effect on both rip and wave conditions as discussed. However they also pose their own risks by dramatically changing the beach environment. The tides make certain areas of Hot Water Beach inaccessible as well as concealing the main attraction of the hot springs, meaning the unaware beach goer could get stranded on either side of the headland or be swept away trying to cross.



Figure 5.16 - Rip current location exploration carried out by Hotwater Beach Lifeguard Service

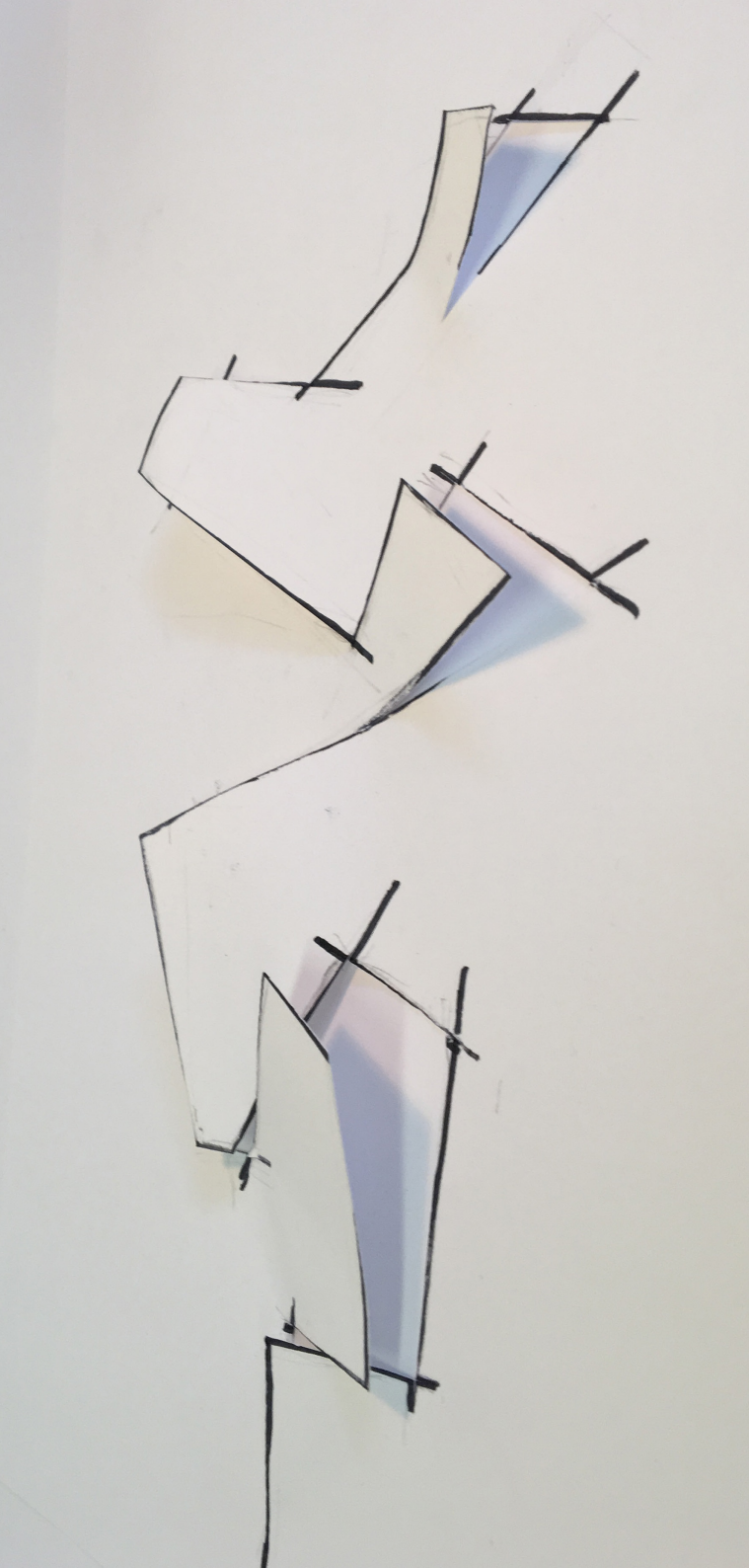


Figure 6.1 - Paper Line Model

6.0
DESIGN PART TWO

6.1 The Brief

This project is a combination of two components; a Surf Life Saving Club to assist the means of rescue and an Education Space to help create awareness of the beach dangers. Consideration into how the programs for both components can interrelate with one another will be explored with in the design process.

Hot Water Beach Surf Life Saving Service has three goals; to provide lifeguarding, water safety and education services to the community and beach goers. Their current minimal facilities are fractures and do not assist in achieving all their goals. The storage and patrol facilities a spread between an insecure shelter at the Southern end of the beach and a container structure located at the North. Both these facilities assist in the means of lifeguarding however due to their lack of connection to the beach and public access they do not respond to educational goal nor do they encourage water safety. Hot Water Beach Surf Life Saving Service's goals align with that of this project. The design solution aims to achieve these goals of service in line with providing an intellectual response to the architectural question that is the foundation to this project.

The success of lowering the risk of drowning is reliant on educating the public. This will be supported by exhibiting the dangers at the beach to the public in order to form a sense of awareness' through the means of architecture.

A brief has been formed to ensure each component and aim is achieved as well as a consideration for the goals of this project is introduced and carried through out the design process. The incorporation of the results and realization through the research 'for design' into the design decisions and development holds importance to ensure the design solution responds to the issues raised.

Experience- the primary focus is to educate and therefore create awareness within the general public of New Zealand and tourists that on the dangers that come hand in hand with visiting a beach. The projects intention is to encourage safe and informed decisions when enjoying the ocean at the beach and subsequently decrease the risk of drowning through an increase in education. The project will aim to establish a respect for the oceans strengths and dangers by educating beachgoers on the following risks at Hot Water Beach:

- Waves
- Rips
- Holes
- Tides

Aesthetic - The aesthetic of the spaces produced shall aim to respond and reflect the natural surrounding and beach environment. Visual elements will display sensitive and respectful relationships between the beach and built form. Visual aspects that will require consideration include:

- Materials
- Forms
- Scale
- Textures

Function-The two components require different programs and functions, the project will provide facilities for:

Education Means: the educational aspect of the project aims to be integrated into the natural progression that visitors will follow when arriving at Hot Water Beach.

- Engaging and Interactive Learning Spaces
- Observation Areas
- Changing and Wash Rooms
- Communal Areas of Social Behaviour

Surf Club Means: the surf club first requires the means to patrol and rescue, however will also aim to provide areas where the public can observe from and become integrated with the surf club system and activities.

- Observation Tower
- Storage
- Club Room
- Bunkrooms
- Operations Room/ Office
- Beach and Road Vehicle Access
- First Aid Room
- Wash and Changing Rooms
- Public Restroom and Showers
- Café
- Pedestrian Beach Access

Potential Drivers - The proposed building and facilities would be run by the Hot Water Beach Surf Club who would have the opportunity to work with the following organisations:

- Surf Life Saving New Zealand
- Water Safety New Zealand
- Education New Zealand (school visits)

The project comprises of two components; A Surf Life Saving Club and a Beach Safety Education Centre. They both require different architectural elements in accordance with the brief. Going to the beach is an outdoor experience and this project must juggle trying to use architecture as means of education while not interfering with the enjoyment of visiting and spending time at the beach. The structure will provide facilities for the Lifeguard service and exhibit the possible dangers at the beach to public. These two components can be broken into two structures; 'The Club' and 'The Walkway'. 'The Club' will provide both the facilities for the Surf Life Saving Service as well as awareness opportunities through public observation and integration into the Surf Club environment. While the focus of 'The Walkway' is use the natural progression of beach goers to educate. This will be achieved through interactive architecture that provides opportunities to observe and learn about the beaches dangers.

Each component will be explored as its own entity, however the architecture will speak together as they both aim to spread the same message and achieve a mutual goal. 'The Club' component requires placement that provides the guards with an unobstructed view of the beach and surf as well as vehicle access both to the beach and from the public road. Where as 'The Walkway' is best suited along the most popular access route to the main destination, the natural hot springs, in order to reach the majority of beach goers. The project becomes a progressive journey and the proposed positioning of the two components shown in Figure 6.3 creates a loop that circulates in both directions and incorporates the common activities and routes of the average beachgoer.



Figure 6.2 - Sun and Moon illustration

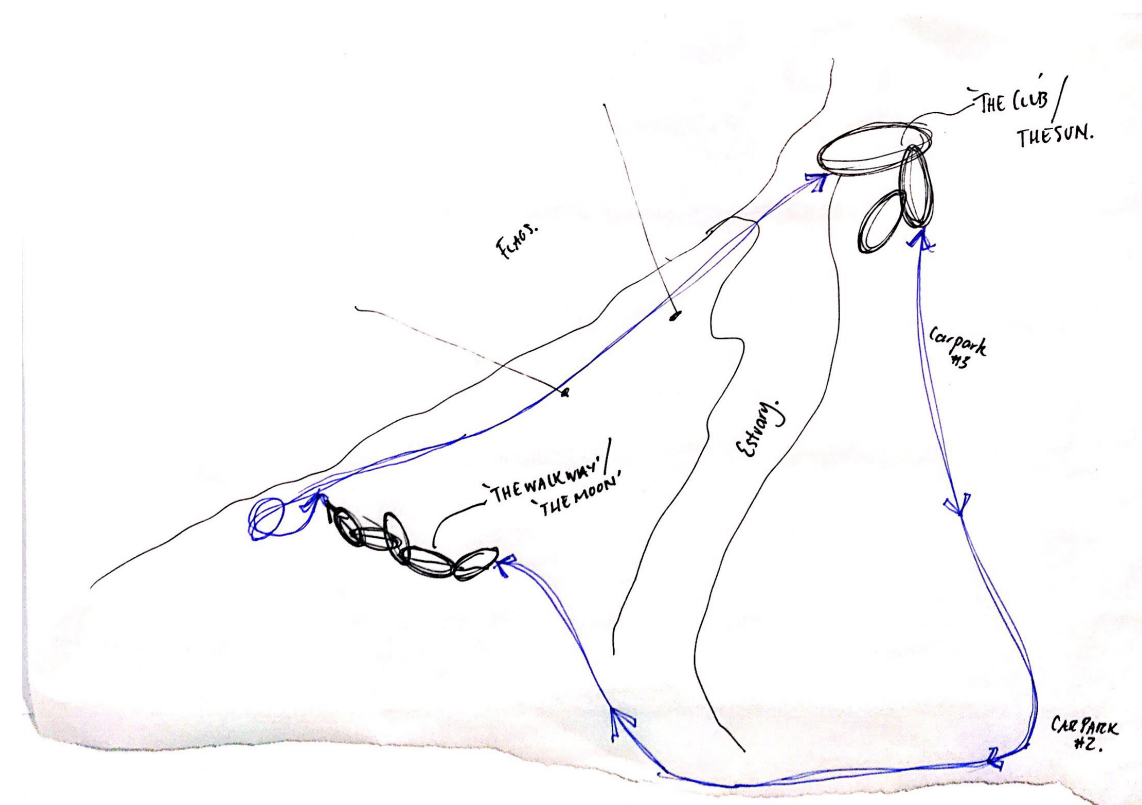
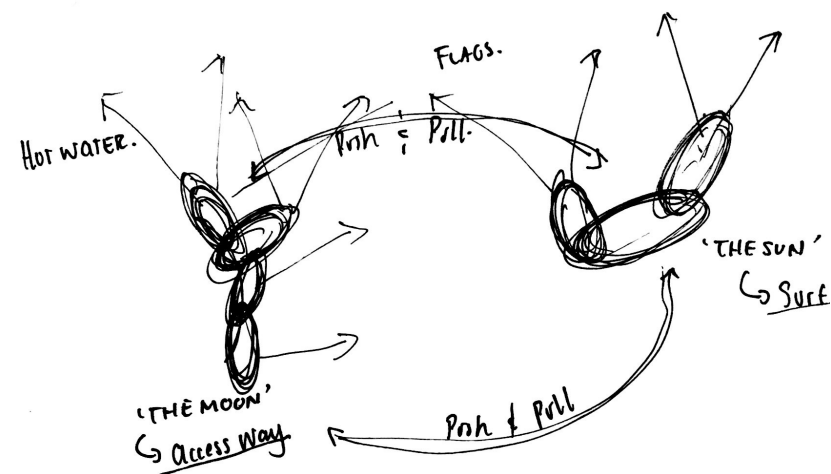


Figure 6.3 - Exploration sketches showing positioning 'the club' and 'the walk way'

'The Sun'

This aspect aims to act as the bridging element between land and beach, and reflect the transition quality of the original surf clubs and early baches discussed in section 2.4.

'The Club' aspect of the structure becomes solid and grounded, working cohesively with the natural transition between the surfaces of sand and earth. It will play the vital role of the surf club and support the Hot Water Beach Lifeguard Service in its role of preventing drowning as well as being a means of beach access from the far Southern car park. Drawing beachgoers through the surf club provides an opportunity to learn through observation. Also the design decision to incorporate the public facilities in this space encourages the inclusion and integration of the public around and through the club.

In this component learning will be achieved through visual means; observation of the lifeguards at work, the oceans characteristics as well as incorporating messages of safety and warnings within the architecture. The architecture provides opportunities to stop, view and interact, however these areas require consideration as the public interaction shall not interfere with the programs of the Life Saving Service. A visual and verbal relationship will be focused rather than a physical one.

Programs that are included in this component are categorised into two typologies, the first being Private (the surf club) and the others being Public:

1. Private:
 - Observation Tower
 - Storage
 - Club Room
 - Bunkrooms
 - Operations Room/ Office
 - Beach and Road Vehicle Access
 - First Aid Room
 - Wash and Changing Rooms
2. Public
 - Public Restroom and Showers
 - Café
 - Pedestrian Beach Access
 - Public Observation

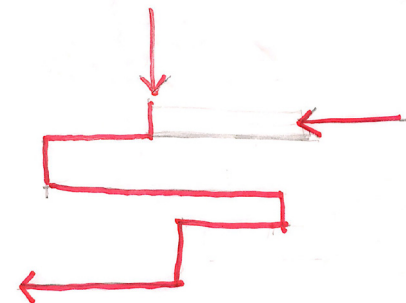
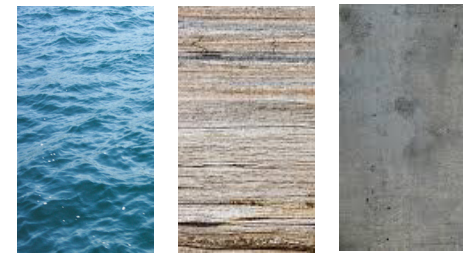


Figure 6.4 - Line sketch representing access through site

Materiality: The materials should respond to the role of a bridge, being grounded and solid. They should be able to withstand the harsh beach environment as well as enforce a sense of safety and security to reflect what a Surf Club stands for.

Glazing – observation
 Concrete – Structure and Strength
 Timber – Durable in beach environment.



Simple bubble diagrams help to arrange spaces and facilities to observe what relationships can be formed between each area. Careful consideration into how both the public and club members' access and how they utilise the space plays a role of importance. Members of the public will use the mostly as a transition zone while the club members will occupy the spaces when carrying out their duty as a lifeguard.

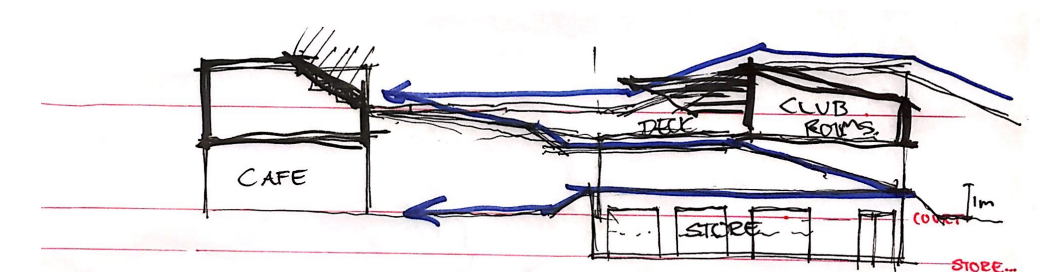
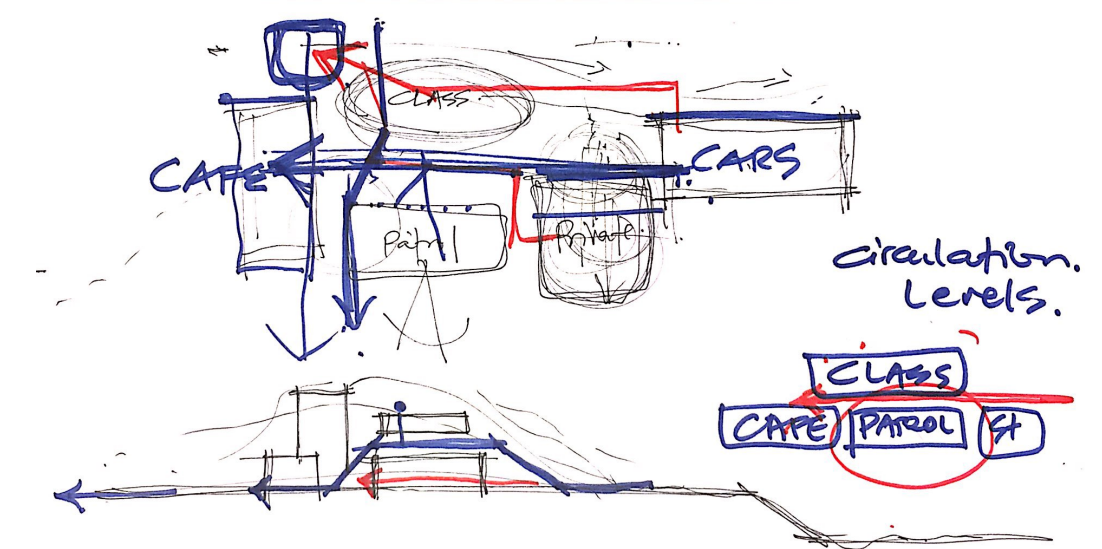


Figure 6.5 - Concept sketches exploring program and access

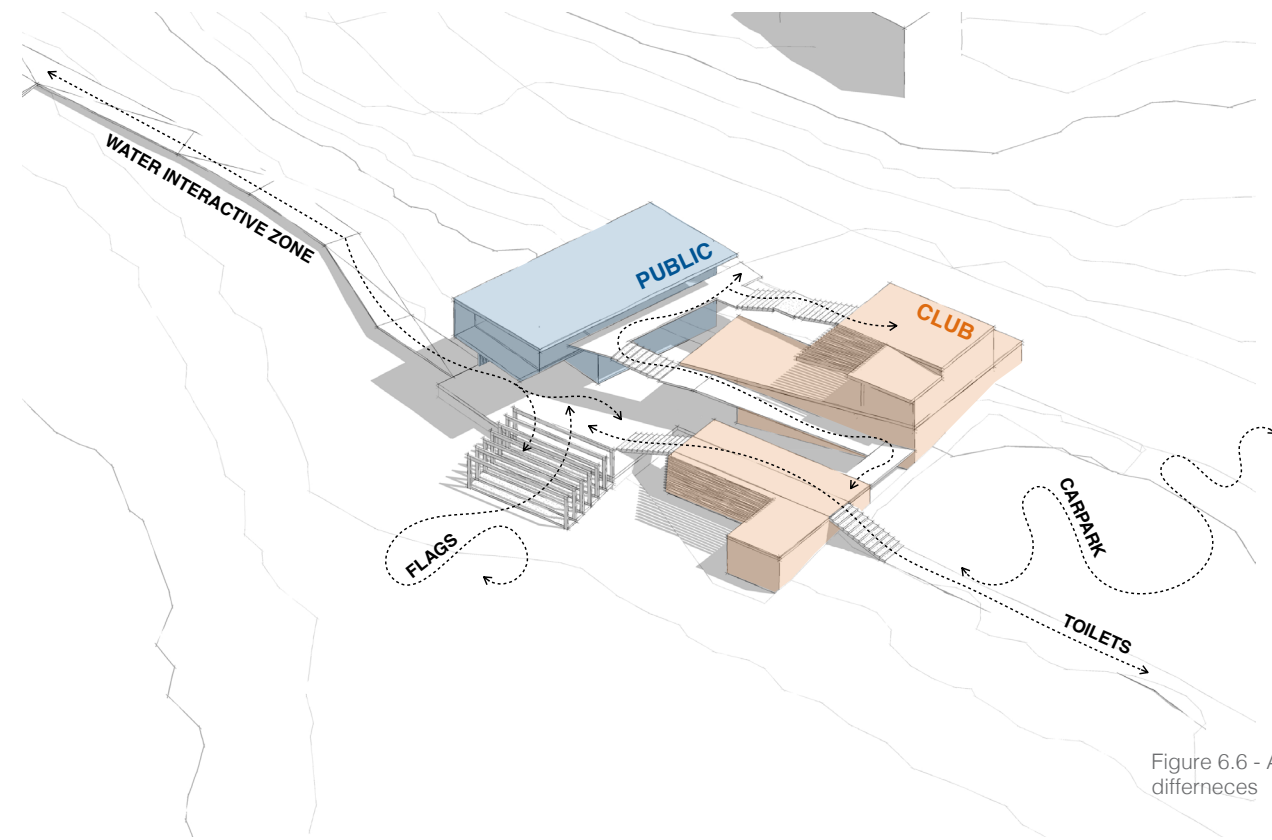


Figure 6.6 - Aerial view showing program differences

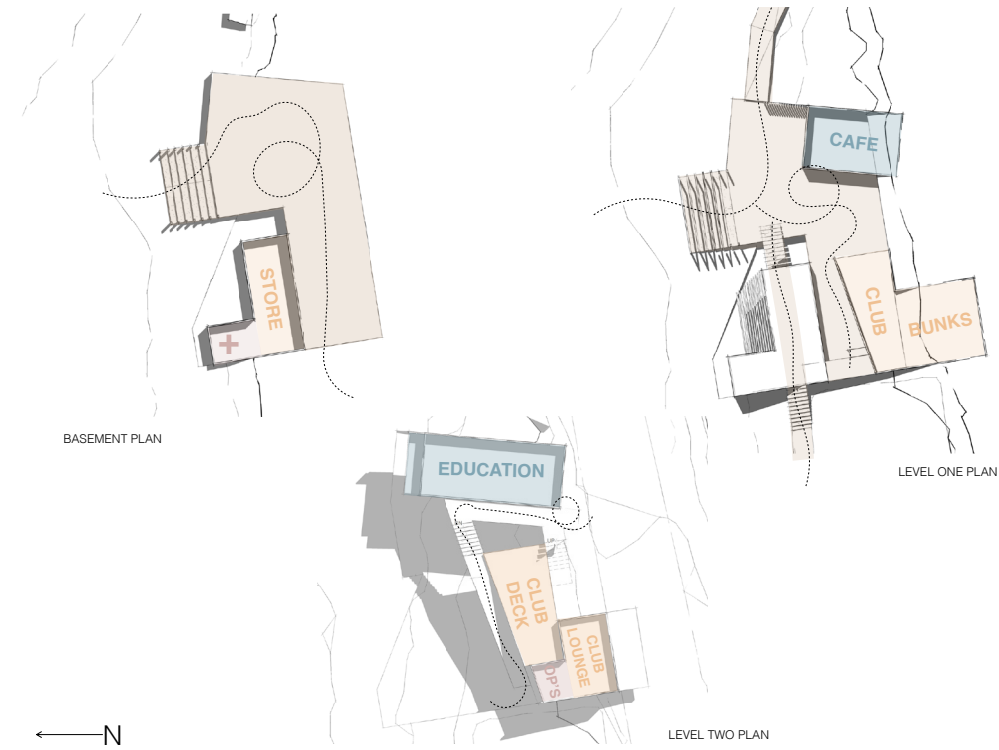


Figure 6.7 - Conceptual floor plans of programs within 'the club'

Design Summary

These images look into program planning and circulation through the site. The division of public and private is explored however require further investigation in order to successfully integrate the public within this space. This stage of the design process has looked into the areas required for the club however further investigation into public observation and the removal of the public education room will occur in the next stages of design. Instead the education at the club will be limited to observation means while traveling through 'The Club' space and the interactive architecture has been positioned within 'The Walkway' component. The successful elements of this stage of the proposal are the ramp, which acts as the access and transition to the beach. It allows the beachgoers to remain outside without confining them into a room in order to be educated, but instead encourages education through both observations of the lifeguards and the beach.

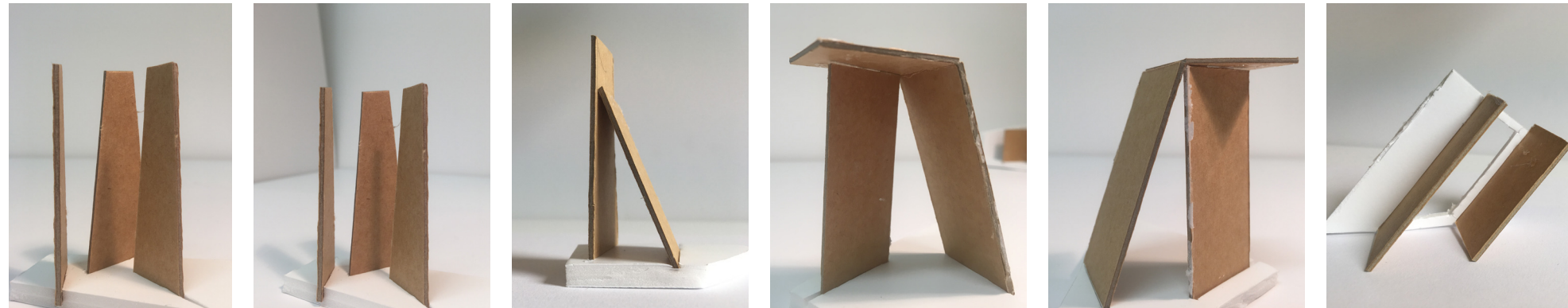


Figure 6.8 - Observation exploration with card models

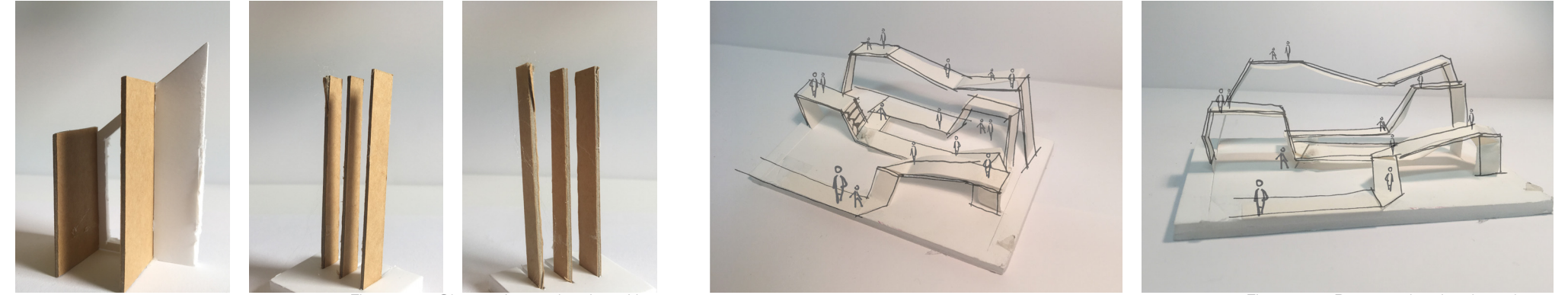


Figure 6.9 - Ramp exploration through models

'The Moon'

This component aims to utilise the natural progression and routes taken by a beachgoer as a means of education. The zone will act as a portal that prepares the occupant for the dangers at the beach by creating awareness through interactive architecture. These architectural elements will balance both internal and external spaces as well as incorporating both natural and built to support the educational aspects.

The formal properties of the dangers at Hot Water Beach drive the architectural properties in these spaces, with the aim to create an engaging educational experience.

'The Walkway' will include architectural elements that target visual and social, aural and solitary, and physical and logical educational typologies. Observation of the dangers is a critical aspect and the architecture aims to support in providing spaces to view and learn about dangers. Providing opportunity to reflect and take in the information exhibited result in spaces of aural and solitary learning. Listening to the ocean when sight is hindered can allow insight into the conditions and how rough they may be or not. These spaces aim to evoke emotion through different senses and ensure more than one type of learner is being reached and made aware.

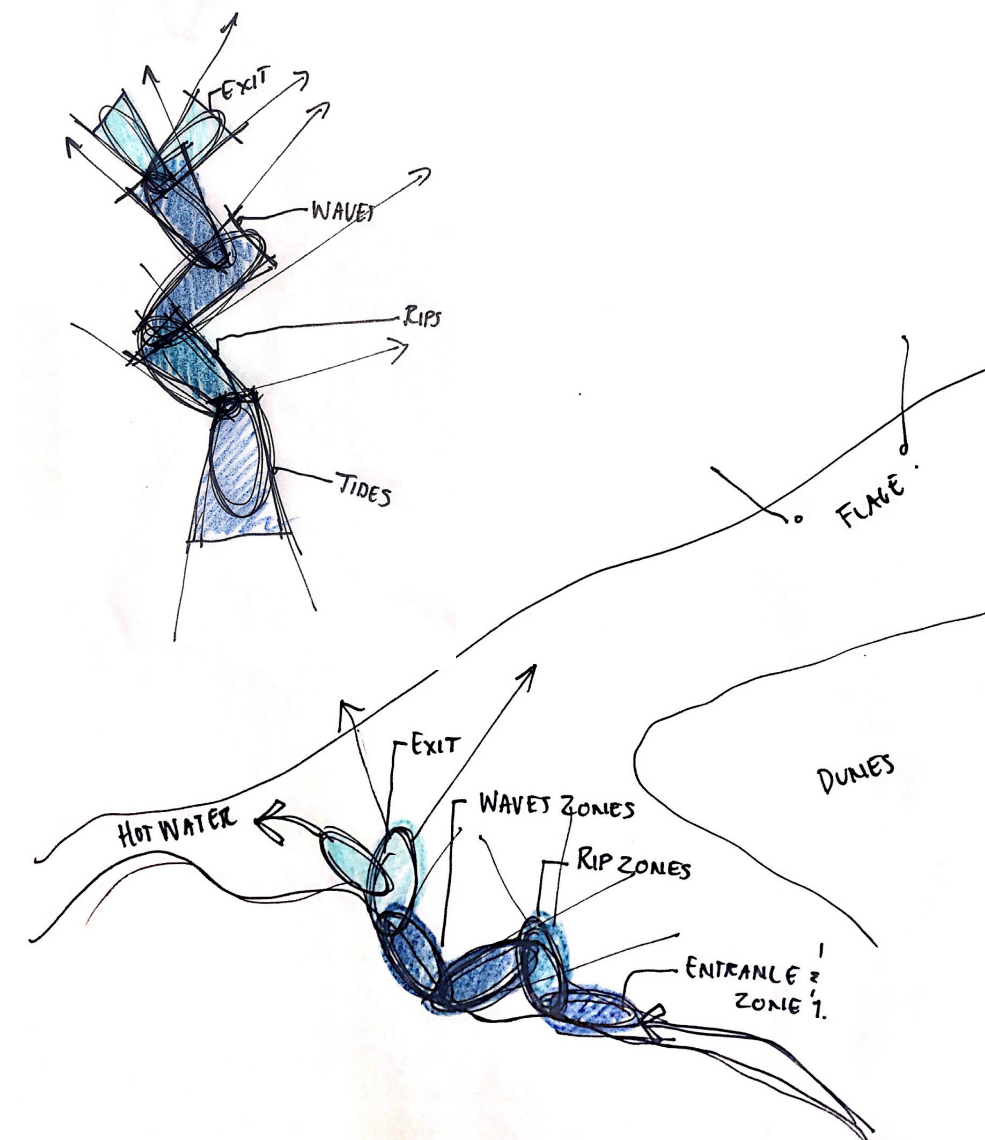
By using the formal characteristics of the dangers described in section 2.5 and 5.2 to drive the architectural elements such as form, circulation and movement, a physical experience can be achieved. These architectural elements should make the occupant move and travel through the architectural space in certain ways that reflect the dangers of the beach. These physical movements and relationships through the architecture aim to create an experience that engages the beachgoer in the hope to raise their level of awareness.

Programs: the dangers that will be enforced and exhibited through this access route will be direct reflections of the possibility of dangers that the beach goer may face while enjoying the ocean at Hot Water Beach:

- Rips and Holes
- Waves
- Tides

Areas of amenities will also be provided that assist in the general activities of arriving at the beach and the specifically deigned 'Walkway':

- Briefing/ Teaching Areas
- Changing and Wash Rooms



Materiality: The materials used in this component aim to compliment the natural elements of the native bush and sand, while providing resilience against the harsh conditions of the beach. Using existing rock form to support the structure and intergrate seamlessly with the surroundings. Timber will help enforce the idea of nature as well as not distracting form what is important; the dangers that the building aims to exhibit.



Figure 6.10 - Concept sketches of 'the walkway'

This component gets broken down into small zones that address and educate the different dangers at Hot Water Beach while using the formal characteristics of the dangers to drive and inform architectural elements in order to reinforce the lessons and warnings.

Zone One: Entrance

- Briefing area
- Changing facilities

Zone Two: Tides

- Tidal observation
- Restricting access in response to current tides

This zone explores the different shore lines during the alternate tides. The walkway alternates its gradient as well as exploring how the integration of tidal waters can work with presenting the idea of restricted access that can be caused by the rise and fall of the ocean.

Zone Three: Waves

- Movement informed through wave forms
- Circulation rise and fall
- Aural learning (sound focused areas)

This zone has explored the rise and fall of both the water and the seabed in order to create a wave. Different walkways have been designed that represent and respond to the different walk typologies. Looking into what attributes the waves have, whether they are heavy and aggressive or break in a more predicable and uniform fashion. Also exploring how the architecture can enhance the understanding of the waves through different senses.

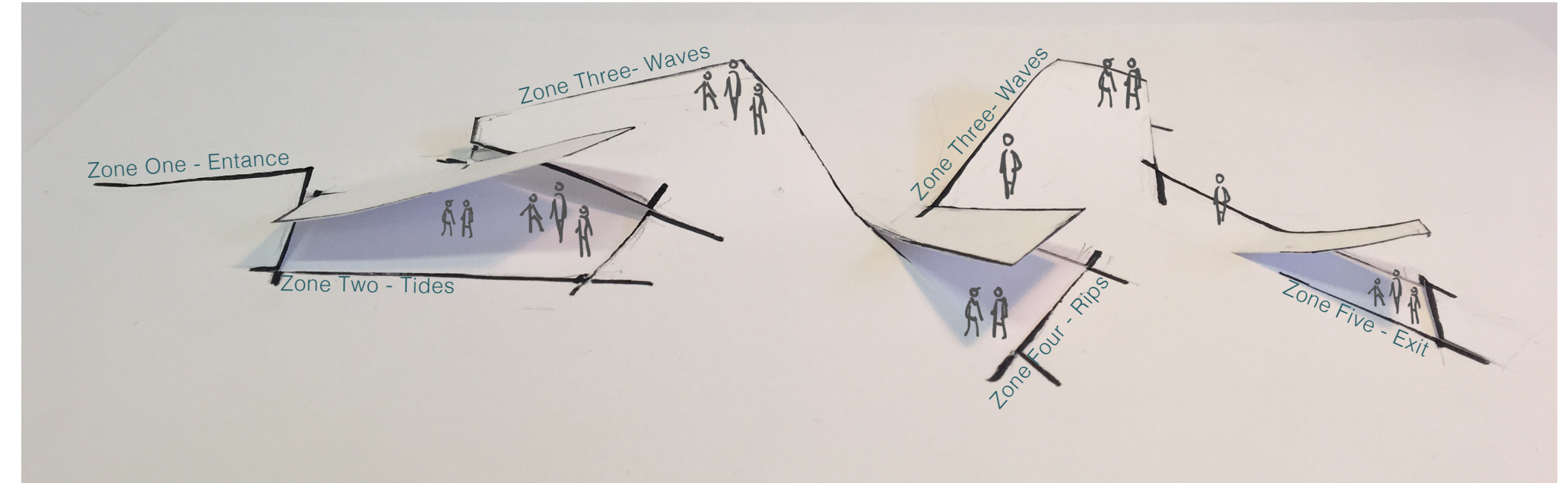
Zone Four: Rips and Holes

- Funnelling of occupants
- Different routes colliding
- Varied ground levels
- Narrow circulation routes
- Darker areas

This zone has looked into how the occupants of the space can move through the portal the same way the water moves through the deeper areas in the sea bed that form rips.

Zone Five: Exist

- Built form decreases
- Exposure to the beach environment increases



Conceptual Paper Progression Model

Exploration conceptual Model, looking into how both interior and external spaces can be used in order to educate and relate to the dangers. The paper concept model is suggestive of how the zones may be positioned.

Figure 6.11 - Cut Line model exploring internal and external spaces

Tide Zone

The forces between the moon and sun push and pull the ocean to cause tides. Tides can cause dramatic change in both the visual and physical properties of a beach. This model explores how Hot Water Beach's shoreline changes at different tides. At low tide beachgoers are able to walk lower on the beach and along a flat area of sand, while in comparison during a high tide beachgoers are forced up the beach onto the steeper slope. This is shown by the change in the pathway gradient with in the model, the images show how different tidal levels can push and pull the occupants to different areas of the walkway. This also represents how the estuaries tidal differences can present the risk of restricted access, using the estuary to push and pull the occupants to either the flat 'low tide' path or the steeper 'high tide' path. The architecture of this model also suggests using frame like mechanisms that aim to represent the repetitive and consistent nature of the tides. Their change in angle responds to the alternate tides as well as exploring the visual properties of the risk, where more of the beach is revealed at low than during a high tide.

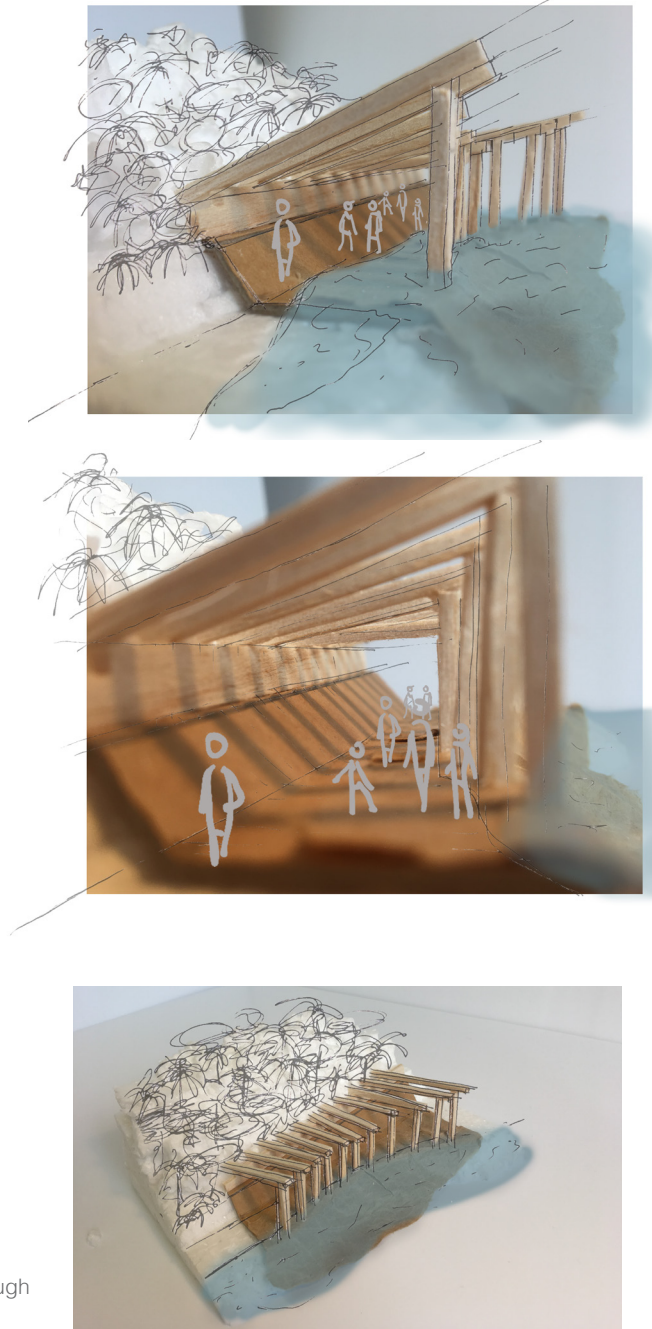


Figure 6.12 - Tide exploration through modeling

Wave Zone - Spilling

Spilling waves usually break gradually and usually in a predictable manner, and are suitable for swimming, surfing and board riding. However spilling waves still pose potential threat to the unaware or unexpected bather. The conceptual model explores how a consistent gradient change of the walls can present the idea of the gradual break, it also allows for uniform rays of light to enter the space. The walls are placed on a slant and aims to create a sense of unease, reminding the occupant that the wave typology still has potential risks and should be approached with caution. The use of ramps to represent rise and fall of the seabed enforces the typologies less aggressive physical properties. This means the proposed space draws the beachgoers through in a uniform and controlled manner.

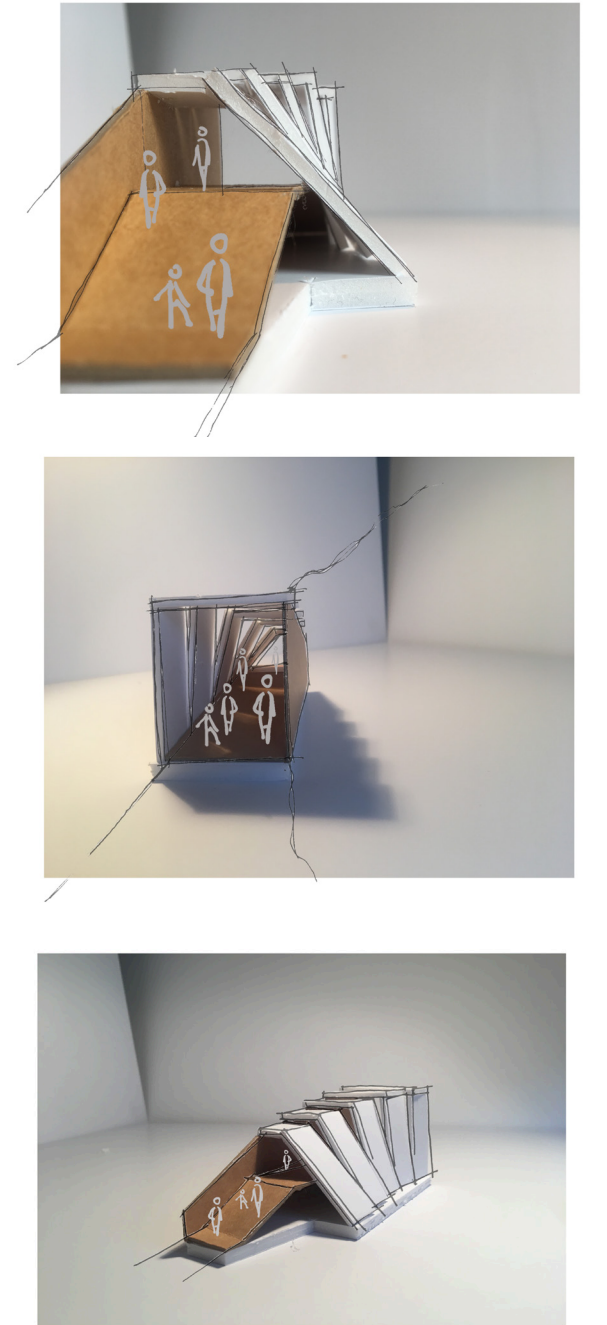


Figure 6.13 - Wave exploration through modeling

Wave Zone - Dumping & Shore Break

Two models have been explored below and focus on representing the aggressive and dangerous properties of a dumping wave and shore break wave. Dumping waves rise and fall at a fast and aggressive pace; the ocean floor becomes steep and causes the swell to rise rapidly and to break suddenly with great force. These types of wave consist of large bodies of water crashing down onto the ocean surface or the shore line and pose great threat to both swimmers in deep and shallow waters. The models investigate the use of stairs driving the occupants to rise and fall in a similar nature to the water of a dumping wave.

The first model also explores the idea of solitary and aural learning by pushing the occupant into the cliff face and hindering their ability to observe. The occupant's ability to view is diminished by limiting the amount of light and changing of wall angles and formations. This aims to heighten one's sense of hearing and attempts to explain the waves strength through the sense of sound. Even though dumping and shore break waves can look aesthetically pleasing when breaking cleanly, the sound of the wave can present their true aggression as they forcefully crash onto the ocean's surface or the shoreline. Slithers of light have also been introduced with in this model that differ in length and spacing. This mechanism aims to create disorientation that relates to the consequence of being thrown around by the force of a dumping wave as well as present the idea of wave sets and the unappreciable nature of their size and strength.

The second model explores the rise and fall of stairs discussed above as well as using the curved nature of a dumping wave to create a confined space. This confined space aims to reflect the force of the aggressive wave typology.

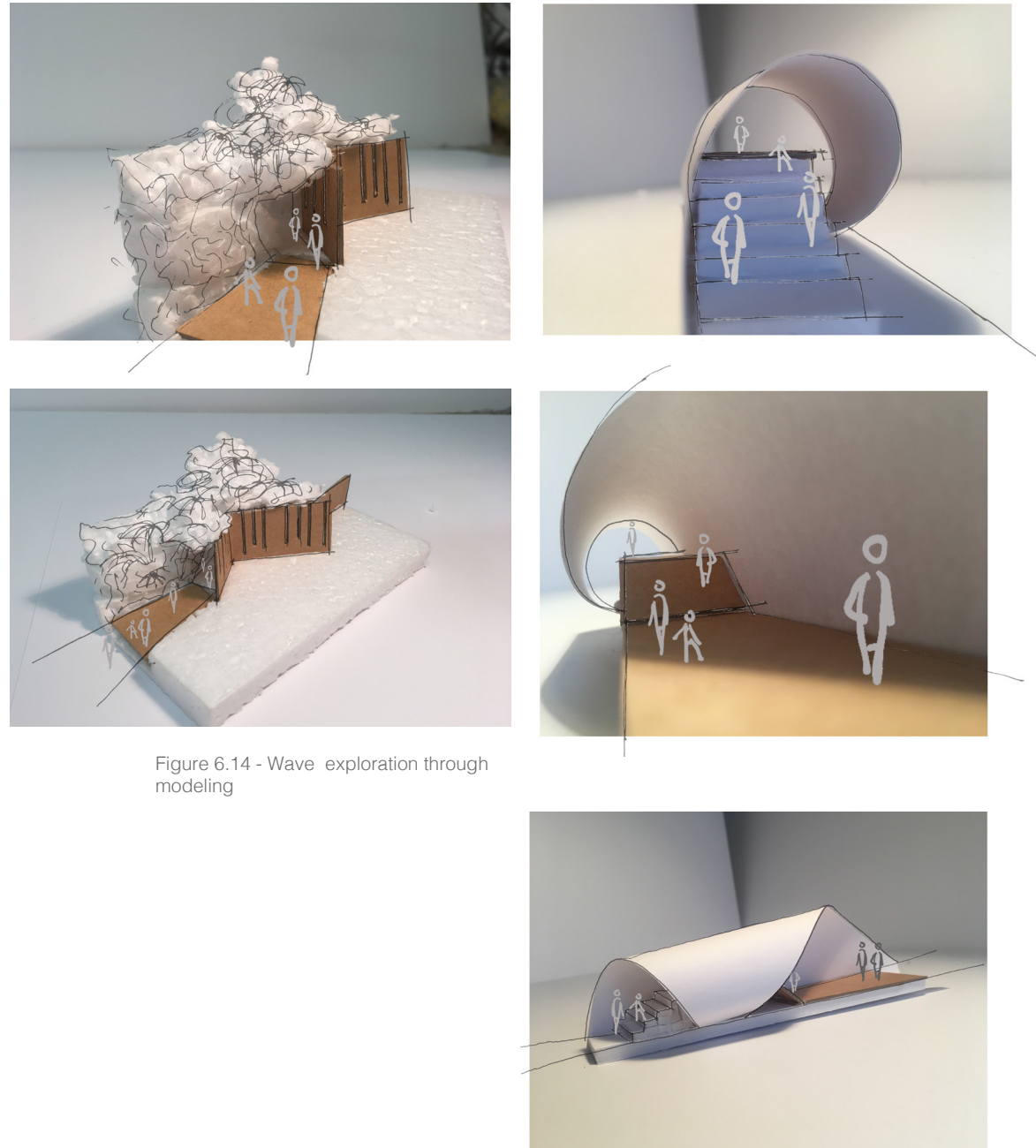


Figure 6.14 - Wave exploration through modeling

Rip Zone

Rips commonly act in a funnel like manner, pulling bathers into and through a deep channel and out to sea. This model takes on the physical properties of a rip such as:

Darkening space through restriction of light to reflect the decolouration and darker areas within the water that assist in identifying a rip.

The exploration into an uneven floor surface represents the criss-cross and rippled nature of the water within a rip.

The use of light positioned at the end of the access way to present the safest approach when being stuck. The light and view in the distance will draw the occupants through the space as though they are going with the flow of the rip and once at the end an essay exit is provided.

The funnel form of the space represents the feeder, neck and head of the rip and the composition of narrow and wide spaces assists in directing and dictating how the beachgoers may move through the space.

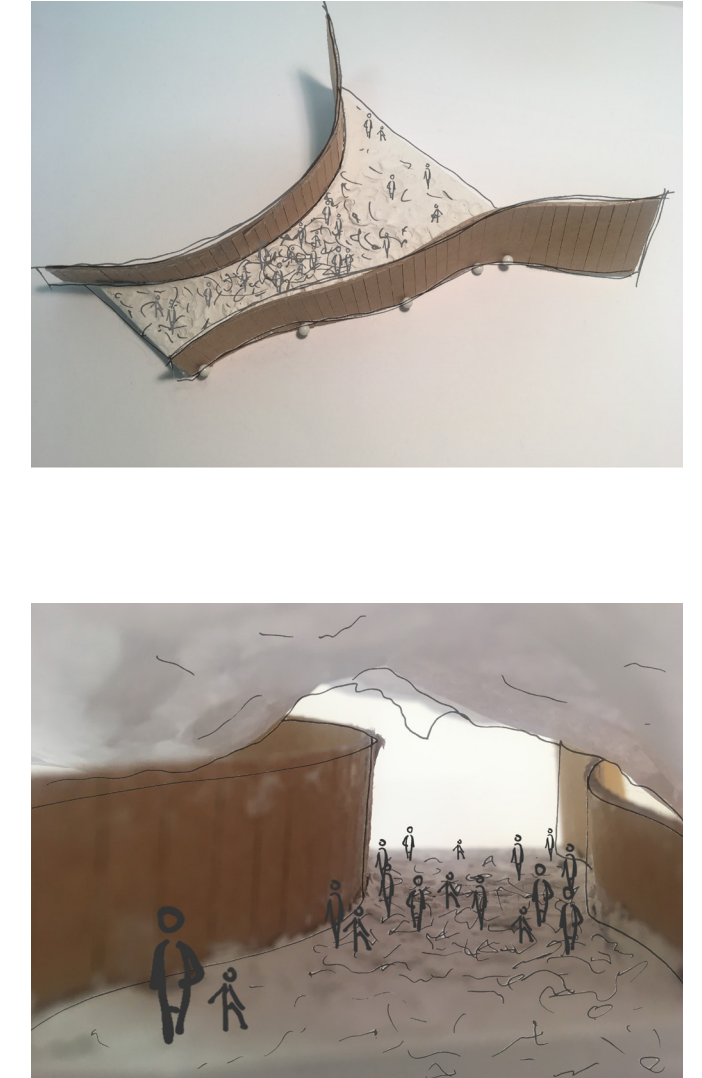


Figure 6.15 - Rip exploration through modeling

'The Missing Link'

The existing natural progression and movement of the lifeguards and the beachgoers at Hot Water Beach dictate 'The Club and The Walkway' locations. As a result these two elements are placed at opposite ends of the Southern side of the beach and do not have a physical connection. However the two structures work together to achieve the mutual goal of this project. The architecture reflects that they are a two structures working together through the inclusion of 'The Towers'. The guard tower is an architectural element that is typically associated with the Surf Club typology, not only does it assist in elevating the lifeguards view but also makes the club differentiable from the beachfront baches and other structures.

Two Towers are used in this proposal to firstly support the lifeguard's purpose to overlook the beach but also plays an important architectural role of tying the two components together through visual means. The towers are locations where influenced by the current positioning of the lifeguards during majority of patrolling hours. One is placed at the far southern end while the other is placed to watch over the hot springs area. Their angles of vision cover the southern end of the beach and not only become a recognisable element from shore but also from the water, hinting at a sense of safety.

The architecture of the tower responds to both their own positioning as well as what they aim to view. However in order for the structures to read as building visual elements such as materiality and form need to relate, respond and reflect one another.

'Tower A':

The first tower is located in 'The Club' component of the design and is the primary tower for the Hot Water Beach Surf Life Saving Service and aims to be occupied by approximately 4-6 guards. The tower is positioned strategically with in the design to enable unobstructed and elevated views of the common flag locations and surf. The public access routes do not interfere with the lifeguard access to the tower and ensure the means of patrolling do not become affected by the public interaction.

'Tower B':

The other tower is located at the headland and is incorporated into 'The Walkway' component of the design. It aims to guard the swimmers using the area of surf around the hot springs. Access to 'Tower B' is only provided for the lifeguard service, however an element of public observation has been incorporated to allow beach goers to have the opportunity to view this area of water through the perspective of a lifeguard. 'Tower B' has been designed for a small number of guards and aims to cater for 2-3 guards along with means of communication back to the main life saving service located at 'The Club'.

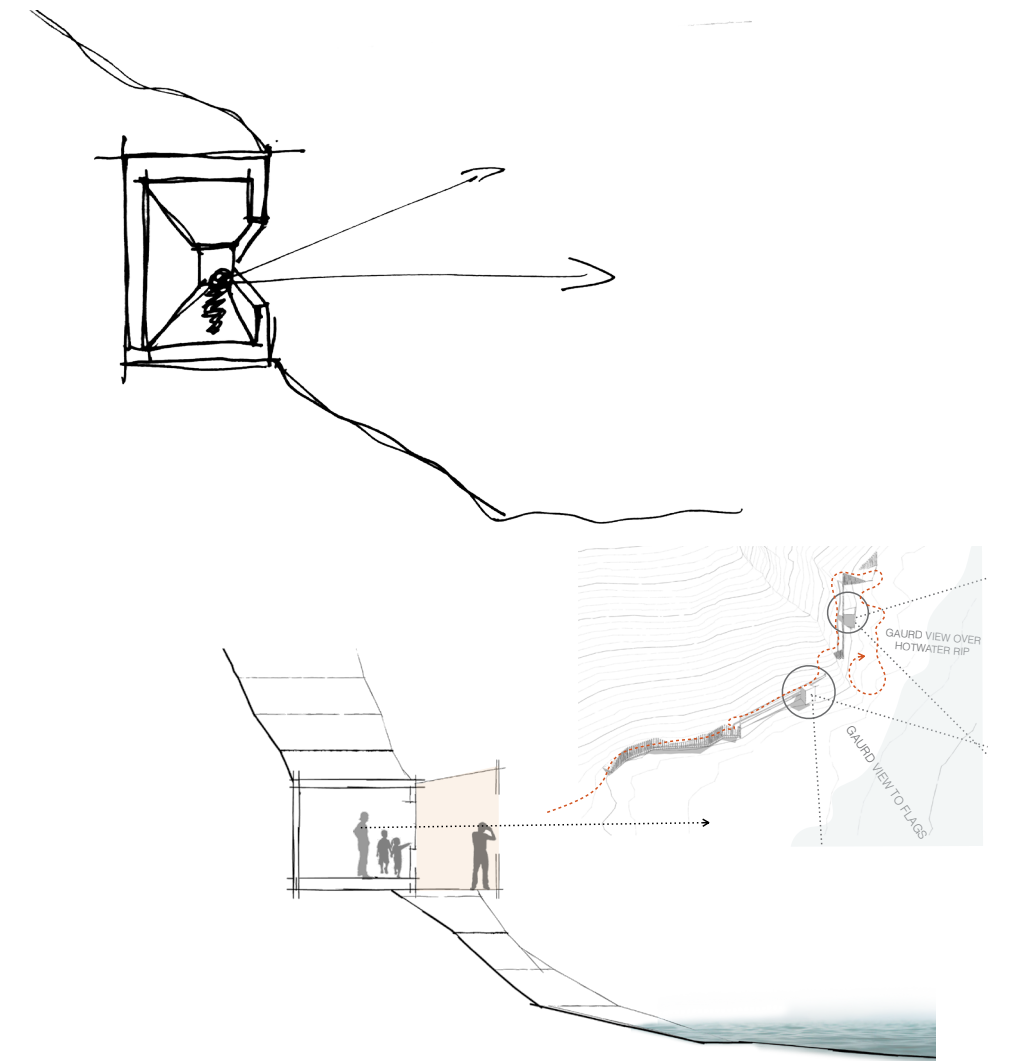


Figure 6.16 - Initial Tower ideas

7.0

CONCLUSION

Being surrounded by 18,000 kilometres of coastline means the beach will always be an integral part of New Zealand's culture, and Surf Lifesaving New Zealand will remain the eyes for many of these natural playgrounds. Introducing a public education scheme into the Surf Lifesaving facility will undoubtedly raise awareness for the dangers and risks that come hand in hand when visiting our coastline.

The focus of natural progression and transition zones became the driving force of this project. While the exploration and translation of the dangers formal properties created a fundamental framework for the project to stem from.

These two aspects aim to educate through the means of observation and interaction, by adapting the access routes and surf club into educational portals to the beach. Fundamentally, at the heart of education for Surf Lifesaving is prevention, and simple messages such as; knowing what dangers look like in the surf, rips or holes, also to be safe always "swim between the flags" and knowing your limits and abilities in the surf. These simple learnings can be taken by individuals to other beaches and water activities.

The proposal becomes more than an alternative Surf Lifesaving Club design, but instead creates an educational transition zone that allows for public engagement with the ocean and the means of Surf Lifesaving. The public become engaged by interaction between themselves and the ocean, the ocean and the architecture as well as the architecture and themselves. These different levels of integration combine to create and spread a sense of awareness and respect for the oceans strength and dangers at New Zealand beaches.

The dangers at Hot Water Beach, rips, holes, waves and tides dictated the form and architectural mechanisms proposed within the design's two components.

The architecture allows the risks to be explored and experienced through both observational and interactive educational means, creating a tool for overall awareness of the risks.

This project is not a solution to stop the occurrence of drowning and loss of life at New Zealand beaches. But instead a framework for how the public can further their education on the dangers at the beach.

This projects proposal does not aim to be successful at one beach but the framework and components can be carried to other Surf Lifesaving Clubs and access route designs to assist in spreading a sense of understanding and awareness for our oceans risks throughout New Zealand.

Our drowning toll is not decreasing and change will not occur while our respect and awareness for the natural environment continues to diminish. The ocean is New Zealand's largest playground but comes with great risks and dangers that are out of our control.

By exploring these hazards through architectural tools and elements it becomes clear that by utilising the natural progression and transition of the surf club and access routes, a sense of awareness of our ocean can be formed and spread throughout New Zealand. Through this architectural experience we can gain control of our understanding of the dangers and education gives us the ability to make informed decisions when entering and enjoying our favourite playground.

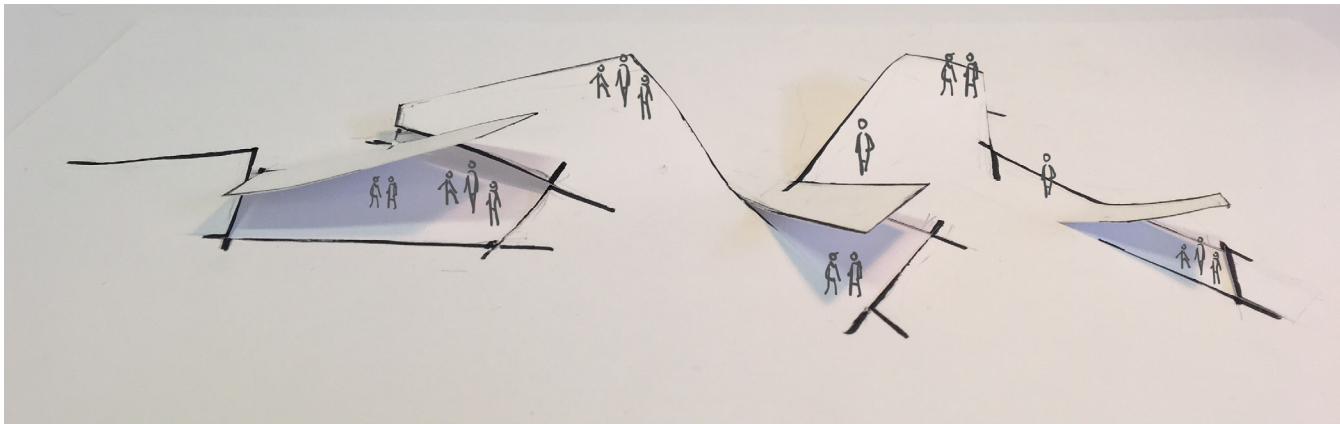
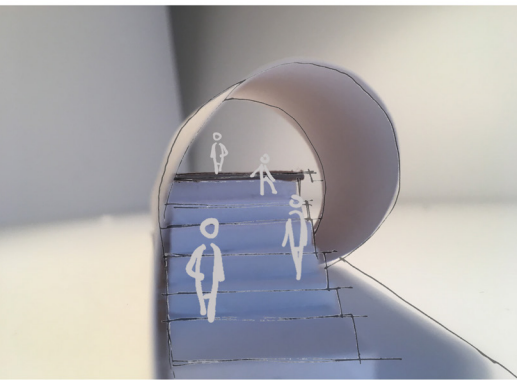
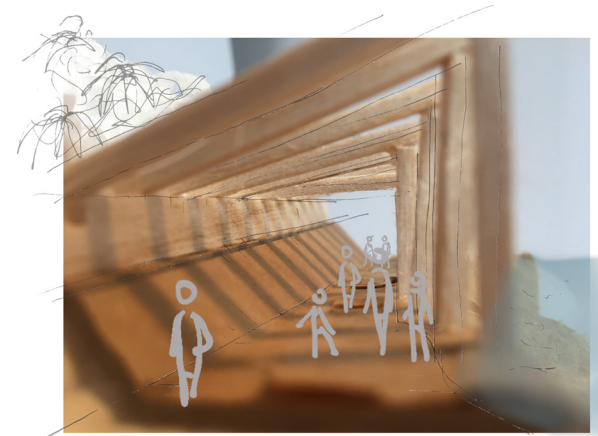


Figure 7.1 - Collection of models that form an aspect of the educational Portal



8.1 Bibliography

2017 Tasmania Architecture Awards. "Small Project Architecture – Bicheno Surf Life Saving Club Boathouse – Birrelli Art Design Architecture." April 15, 2015. Accessed August 17, 2017. <http://wp.architecture.com.au/tasawards/2014-awards/smallprojectarchitecture/bicheno-surf-life-saving-club-boathouse-birrelli-architects/>

Arch Daily. "AD Classics: Lecca Swimming Pools/Alvaro Siza." Last Modified August 05, 2017, Accessed September 11, 2017. <http://www.archdaily.com/150272/ad-classics-lecca-swimming-pools-alvaro-siza>.

Arch Daily. "Muriwai Surf Club/Jasmax." Last Modified February 02, 2015. Accessed August 12, 2017. <http://www.archdaily.com/593851/muriwai-surf-club-jasmax>.

Birrell. "Bicheno Surf Life Saving Club + Boathouse." Accessed September 10, 2017. <http://birrelli.com.au/bicheno-surf-life-saving-club-boathouse/>.

Coney, Sandra. *Piha Guardians of the Iron Sands: The first 75 years of the Piha Surf Life Saving Club*. Auckland: Piha Surf Life Saving Club Inc, 2009.

Coney, Sandra. *Piha: a history in images*. Auckland: The Keyhole Press, 1997.

Edudemic. "The 7 Styles of Learning." Accessed August 01, 2017. <http://www.edudemic.com/styles-of-learning/>.

findabeach.co.nz. "Be Safe." Accessed May 05, 2017. <http://www.findabeach.co.nz/besafe/>.

Foster, Catherine. *Small House Living*. New Zealand: Penguin Random House NZ, 2015

GeographyATnotes. "Waves." Accessed August 10, 2017. <https://geographyas.info/coasts/waves/>.

Grigor, Jeff. *Baches and Cribs: A pictorial journey through New Zealand's favourite holiday places*. Auckland: Penguin Group (NZ), 2008.

8.1 Bibliography

Harris, Sarah. "New Zealand's preventable drowning toll at a 6 year high – reveal Water Safety NZ." *The New Zealand Herald*, February 12, 2017.

Harvey, Bob. *Between The Flags: 100 years of Surf Life Saving in New Zealand*. Auckland: Surf Life Saving New Zealand, 2010.

Hau'ofa Epeli. "The Ocean in Us," University of Hawaii Press, The Ocean in Us, Accessed 15/05/17, <https://scholarspace.manoa>.

Hot Water Beach – The Information Spot. "History." Accessed September 01, 2017. <http://www.hotwaterbeach.org.nz/history/>.

Lanahetau, Carolyn. *Voices From the Surf: 80 years of the Karekare Surf Life-saving Club*. Auckland: Karekare Surf Lifesaving Club, 2015.

Male, Kevyn. *Good Old Kiwi Baches and a Few Cribs Too*. Auckland: Penguin Books (NZ) Ltd, 2001.

Meddings David. "Global Report on Drowning: preventing a leading killer", World Health Organisation.(2014)

New Zealand Surf Lifesaving. "Surf lifeguard Award Candidate Workbook". Last Update September, (2017): <http://www.slsnz.org.nz/clubhouse/training-room/manuals,-workbooks-and-online-resources/>

New Zealand Surf Lifesaving. "Surf lifeguard Award Instructor Resources". Last Update September, (2017): <http://www.slsnz.org.nz/clubhouse/training-room/manuals,-workbooks-and-online-resources/>

New Zealand Surf Lifesaving. "Surf lifeguard Award Training Manual". Last Update September, (2017): <http://www.slsnz.org.nz/clubhouse/training-room/manuals,-workbooks-and-online-resources/>

New Zealand. "Beaches." Accessed May, 2017. <https://www.newzealand.com/int/feature/beaches/>.

Peart, Raewyn. *Castles in the Sand: What's happening to the New Zealand Coast?*. Nelson: Craig Cotton Publishing, 2009.

Plumb, Simon. "Revealed: NZ's most dangerous beaches." *New Zealand Herald*, October 30, 2016.

Robinson, Stephen. *Cribs and Bach: a Kiwi journey*. Auckland: Penguin Books (NZ) , 2005.

SLS Beach Safe. "Surf Safety." Accessed July 13, 2017. <https://beachsafe.org.au/surf-safety>.

Stuff, NZ. "Five of New Zealand's most dangerous beaches." *Fairfax Media*, September 3, 2016.

Surf Life Saving New Zealand – Hot Water Beach. "Hot Water Beach SLSC." Accessed September 05, 2017, <http://www.slsnz.org.nz/organisation/find-a-club/find-a-sls-club-in-nz/hot-water-beach-sls/>.

Surf Life Saving. "About Us." Accessed June, 2017. <http://www.surflifesaving.org.nz/organisation/about-us/about-us/>.

Swarbrick, Nancy. *Te Ara – The Encyclopaedia of New Zealand*. "Life Saving and surfing – Origins of surf lifesaving." <https://teara.govt.nz/en/lifesaving-and-surfing/page-1>.

Vimeo. "Water Safety Sector Strategy 2020." Filmed September, 2015. 3:10. <https://vimeo.com/140233212>.

Water Safety New Zealand. "Water Safety New Zealand Drowning Prevention Report 2016." (2017): <http://www.drownbase.org.nz/assets/Annual-Drowning-Reports/2016-Provisional-Drowning-Prevention-Report-13Jan2017.pdf>.

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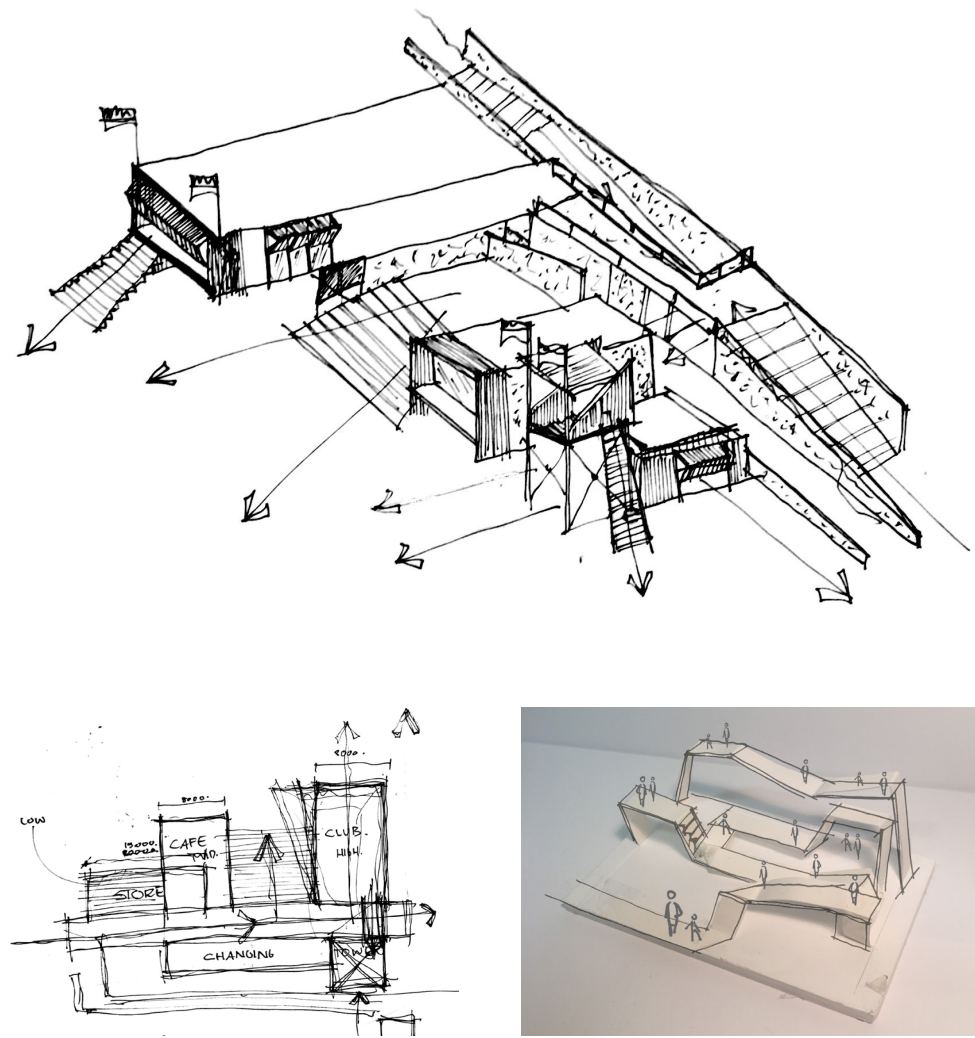
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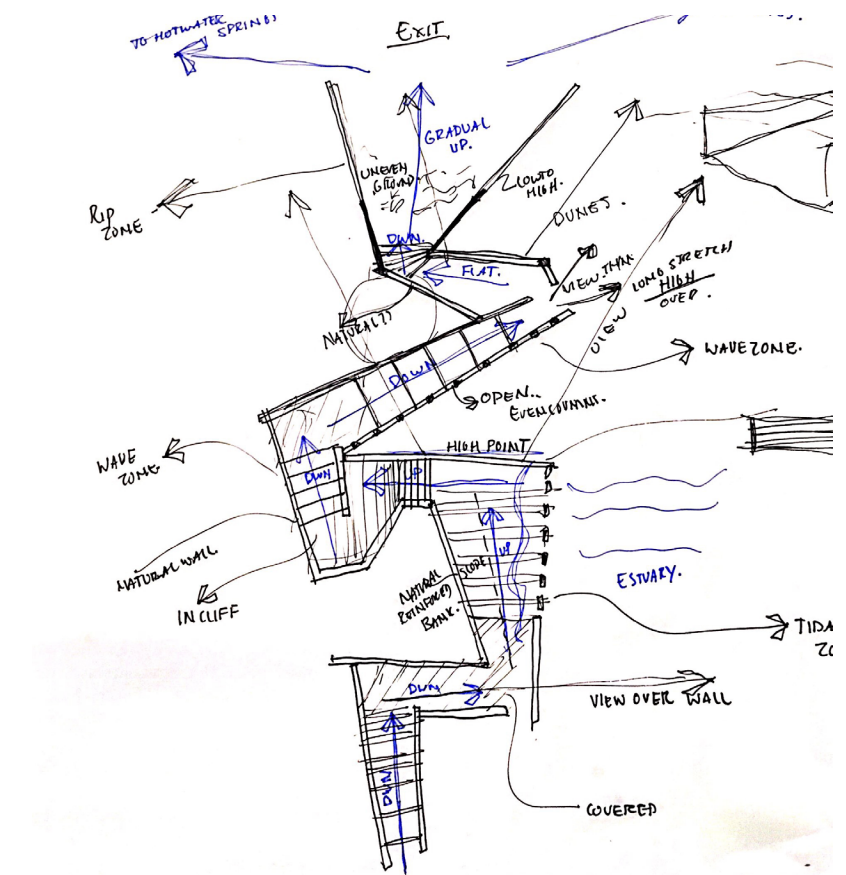
FINAL DRAWINGS

'The Sun'

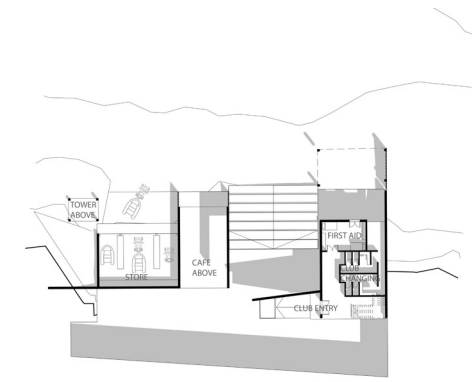


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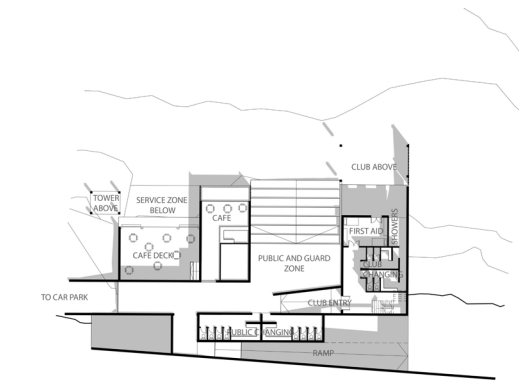
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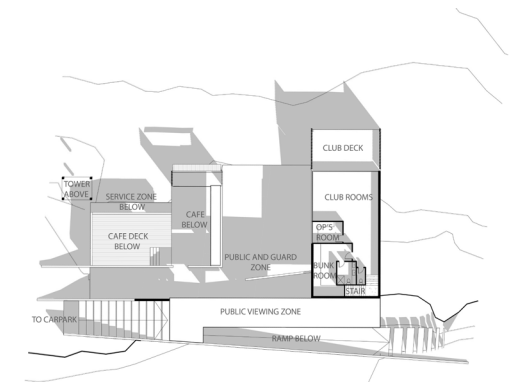
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SLSC STORE PLAN

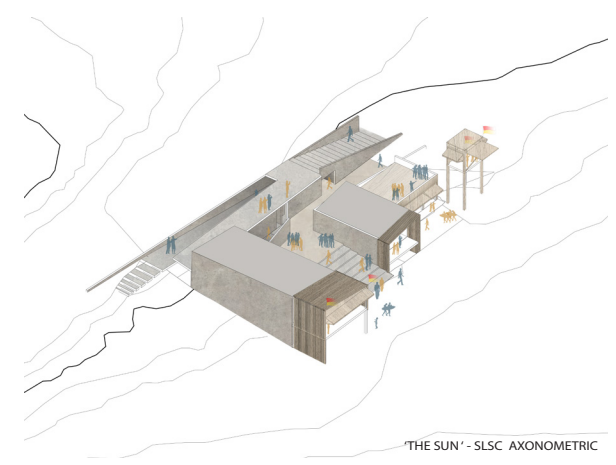
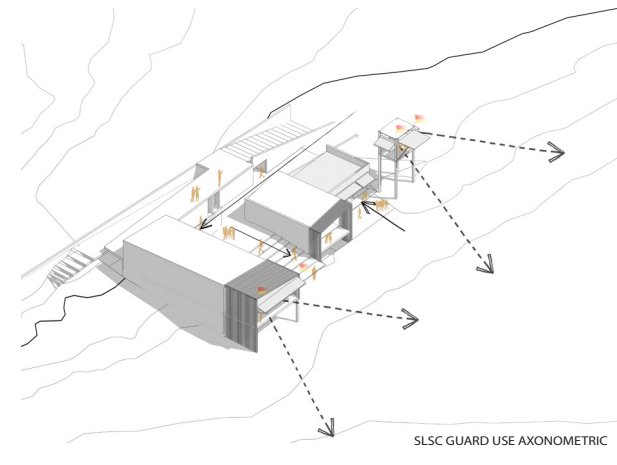
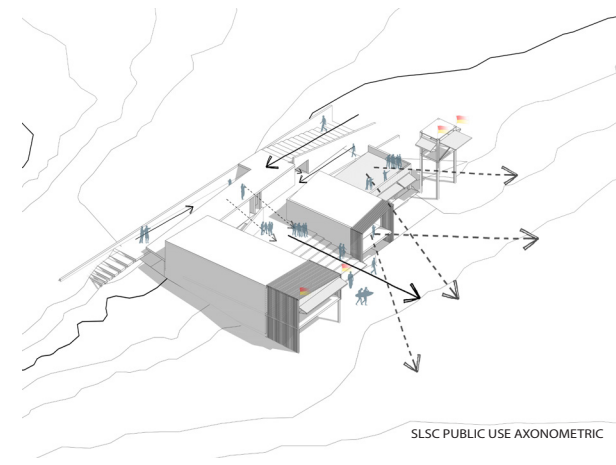


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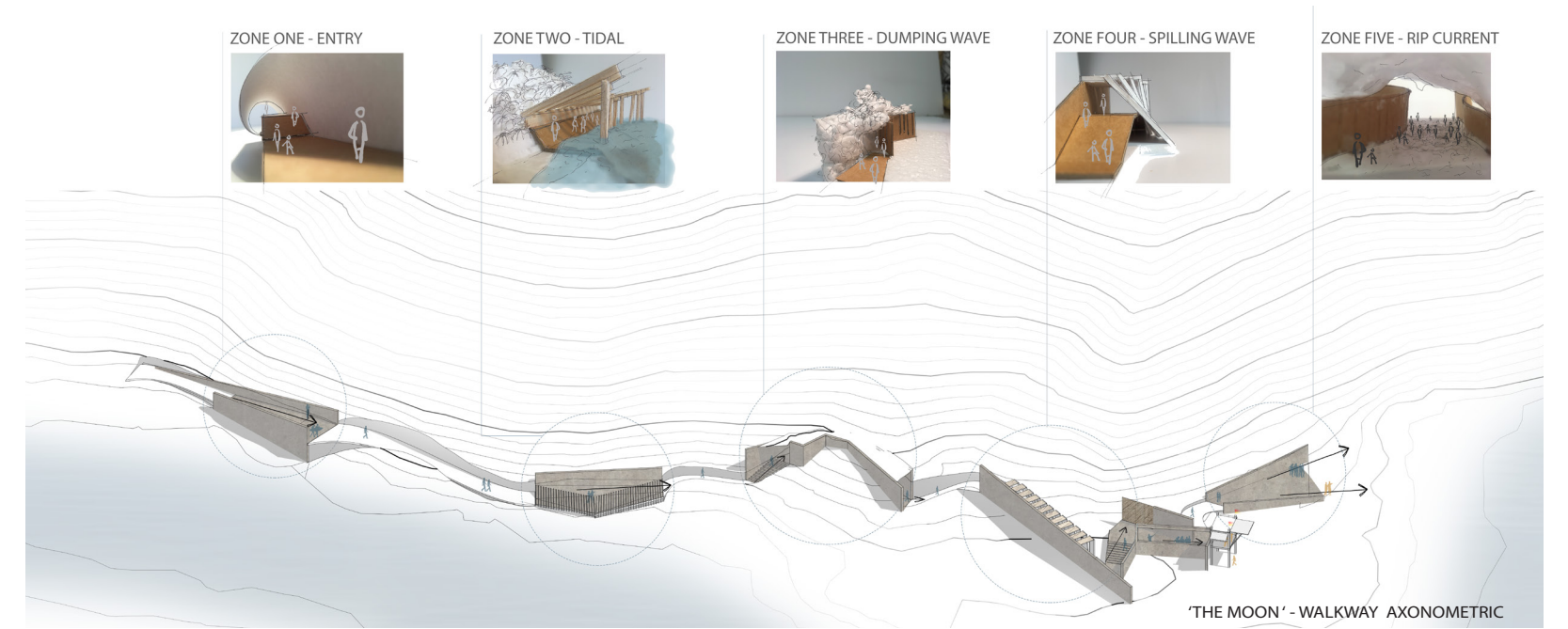


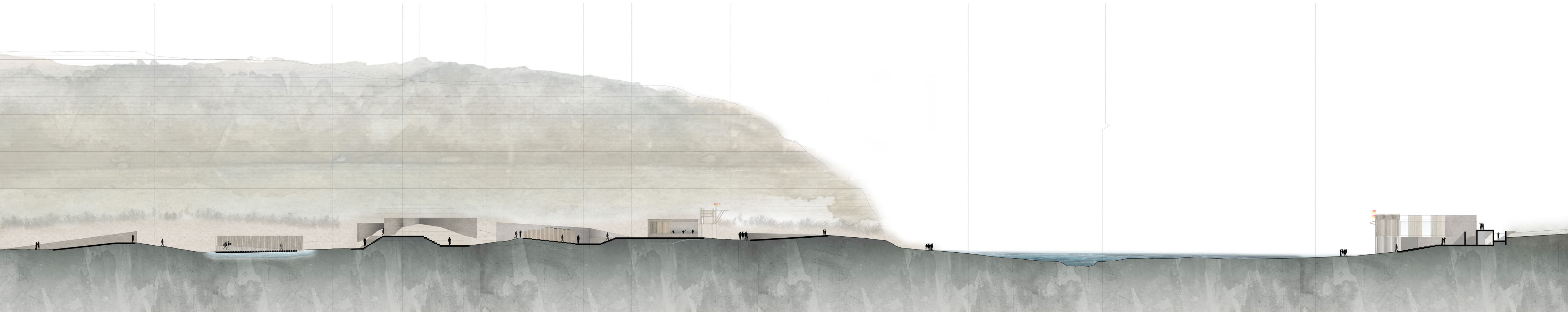
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'The Sun'



'The Moon'



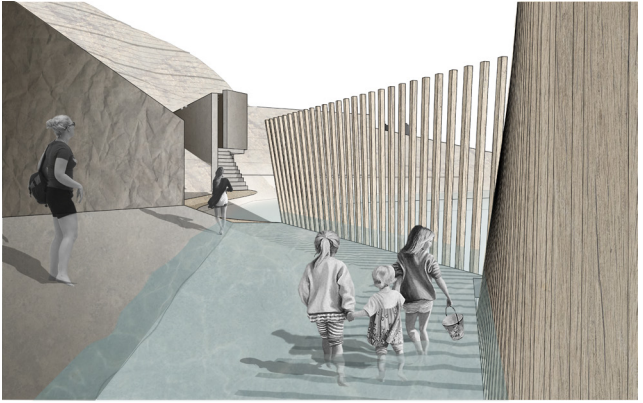


STEPPED SECTION THROUGH WALKWAY AND CLUB

Final Perspectives



Zone one - Entry



Zone two - Tidal



Zone three - Dumping Waves



Zone four - Spilling Waves



Zone five - View back at SLSC



Club and Walkway view from between flags



View From Public SLSC Area

Final Presentation Pin-up



Final Site, Club and Walkway Model Working Models (infront)



Institute of Technology

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is submitted in partial fulfillment for the requirements for the Unitec degree of
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Principal Supervisor: PETER McPHERSON

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