I dedicate this thesis to my parents who have shaped my personal and professional development,
I am forever grateful.
ABSTRACT

The neglected coastal edge of the port landscape has left behind unreceptive scars on the city’s urban fabric. These prominent locations are pivotal links between coastal towns and the sea; they are currently in very poor condition.¹ This thesis explores a site with these characteristics, Nelson, nestled between the Southern Alps at the top of New Zealand’s South Island. The compact and intimate geography of the Nelson region is surrounded by the ocean; with the city growing central to its port. Due to the once thriving local exports and industrial trade the port hastily expanded, the inevitable decline of the industrial era has resulted in a landscape of disregard which has distanced the city from the water. These neglected waterfront locations now taint the pristine image of the Nelson Haven.

This thesis examines how a carefully considered architectural design can reintegrate this pivotal location back into the city’s urban fabric while reinforcing the relationship between the people of Nelson and the water. This design-led research utilises the sport of rowing with its link to the water as the catalyst to reconnect the people of Nelson to the waterfront and the water itself.

This design-led thesis employs the ideologies of atmospheric experiences to materialise the importance of water to sense of place. This is achieved by exploiting the atmospheric experiences of material, space and time through an architectural dialogue with the water’s duality. The Nelson Haven experiences vast tidal movements which forms the foundations for the experience observed at the interface of architecture and water. This thesis further argues that this framework of architectural experience has the potential to serve as a catalyst project to rejuvenate and reintegrate the city of Nelson with its prime waterfront location.

Fig. 1: Boat moored in calm waters of the picturesque Nelson Haven.
PREFACE

Throughout my life I have been actively engaged with representative sport within the Nelson region. As a child we were always encouraged to explore the natural beauty of our surrounding environment; with many long summer days spent at the beach, river or on the sports fields. I have always had a strong affiliation with nature; so when the opportunity to create a sport based architectural project within Nelson’s waterfront was first conceived, I was hooked.

Right form my very first encounter with the work of Peter Zumthor, I was in awe of his meticulous planning and attention to the finest of details. Zumthor’s use of atmosphere as design driver has always been inspirational, and I have relished the opportunity to further explore this architectural notion throughout the course of this thesis.

This thesis seeks to integrate three passions that I hold close:

Sport and nature in the creation of atmosphere.
ACKNOWLEDGEMENTS

Firstly, I would like to acknowledge the immense support of my supervisor, mentor and friend, Fabricio Chicca. Your guidance and passion has been very inspirational. This research would not be complete without your expertise.

To my friends and colleagues, thank you for your contribution, criticism and support throughout our academic journey. Well done to you all and all the best for the future.

Finally to my family, you have always been there for me, I am truly grateful. Without your unconditional support completing this thesis would not have been possible.
## CONTENTS

### PART 01 - INTRODUCTION

- PROBLEM .......................... 4
- THESIS QUESTION .................. 6
- SCOPE ................................ 8
- SIGNIFICANCE ....................... 10
- THEORETICAL POSITION .......... 14
- STRUCTURE .......................... 16

### PART 02 - SITE ANALYSIS

- AKERSTEN STREET SITE .......... 22
- EVOLUTION OF PORT NELSON .... 30
- SITE DYNAMICS ..................... 48

### PART 03 - PROGRAMME ANALYSIS

- WHY ROWING? ....................... 72
- PROGRAMME SPECIFIC REQUIREMENTS 88
PART 04 - LITERATURE REVIEW

THEORY OF THE SENSES
ARCHITECTURAL EXPERIENCE
BODIES IN SPACE
THE EMBODIED IMAGE
GROWN MATERIALS
CONCEPTUAL APPROACH
REACTIVATION OF PORT LANDSCAPE

PART 05 - PROJECT REVIEW

COMMUNITY ROWING BOATHOUSE
PLINIO ROWING NAUTICAL BASE
ARCHITECTURAL EXPERIENCE
BODIES IN SPACE
EMBODIED IMAGE
GROWN MATERIALS
LIGHT AND SHADOW
PART 01
INTRODUCTION

Fig. 2: Sunset across Tasman Bay.
Like the many neglected port landscapes which scatter the coastlines of the world, once served their purpose they are left to decay, these forgotten places leave visual scars tainting our countries coastline. For these early coastal towns the port was the heart to which the settlement surrounded, so as the productivity of the port increased so did the immediate township. There was always a reciprocal relationship between the town and its port, the people and the water. In the beginning the Port Nelson was the cities primary means of communication with the rest of New Zealand and the world. With changing times and the reciprocity of this relationship lost, the discarded port landscape burdens the image of the coastline and the city.

With a dramatic peak in local exports during the early 1960s export volumes increased by over 700% over a five year period. This spurred an inevitable reclamation in order to sustain these increasing demands. In current times Port Nelson Ltd is continuing to consolidate storage facilities in order to open up additional neglected land for future development.

Many global cities are investing in the redevelopment of what was previously industrial waterfront land for economic, social and environmental purposes. The drive for economic growth blindsides the importance of the waterfront as an integral part of coastal cultural, in turn disconnecting the people from the water and their coastal surroundings. This thesis investigation explores how this space and its relationship to the city can be re-contextualised through contemporary architecture integrating the water with the people of the Nelson. Port Nelson Ltd has a duty to this mistreated land, to keep their original promise of a recreational complex for the community of Nelson.

THESIS QUESTION

How can an architectural intervention inspired by natural elements of the immediate environment revitalise Nelson’s waterfront presence?

Fig. 4: Row boat moored within the Nelson Haven.
SCOPE

The scope of this thesis sets out to achieve a holistic design solution which contests existing norms of coastal architecture and aspires to imbue the people of Nelson with a greater sense of belonging and appreciation for the urban waterfront. This design will create a new public reference point at the foremost location within the Nelson Haven. Using the design of the rowing facility for the successful and continually expanding Nelson Rowing Club.

The focus of this research directs attention to the communication of intangible qualities and subjective experiences as the design developers and spatial creators of architecture. Although this is a scheme of both public and private proportions, it is intended for all activities to occur in complete harmony, in a mutually beneficial relationship.
SIGNIFICANCE

For a coastal township, the connection to the water is of upmost importance. The bond with water evokes a sense of belonging to urban spaces, due to the water’s visual stimuli to represent natural environments.1 A well designed space near the sea allows for public gathering where people want to linger and can enjoy the benefits of the connection to the sea, which may be understood as the intersection of nature and the city.

Through the industrialisation of port land, public access to the waterfront is restricted, if not completely cut off. This fragments the city and the people from the water, this is the root cause for Nelson’s waterfront locations. This thesis takes the position of reintegrating the people and the city into the context of Nelson’s urban waterfront.

Repurposing neglected waterfront property for public and civic inhabitation is not new. There are many examples in New Zealand and around the world such as Auckland’s waterfront development2, New Plymouth’s Coastal Walkway3, and Hamburg’s HafenCity project4 Of which all three develop existing port infrastructure for the betterment of civic inhabitation within the confines of the city. In this scenario this thesis aims to imbue the qualities of the tide into the repurposed landscape. It intends to offer a deeper appreciation and local link to the people of Nelson. These spaces are often reconfigured without regard to the natural elements that surrounds them and which makes them so unique; like the Nelson Haven, the Boulder bank and the Maitai river – these are the natural environments which distinguish the site for this research. Furthermore, this design-led research investigates the intangible connotations of fluidity and constant rhythm which are associated with the ocean, water and tide. It uses specific architectural mechanisms to connect to the public on a subliminal emotional level and evoke a greater sense of connection to place and respect for the Nelson Haven.

2 “The Waterfront Plan 2012.”
Fig. 7: Looking back along Rocks Road and the Nelson Harbour.
THEORETICAL POSITION

This design approach begins with the desire to portray the intangible qualities associated with water within public spaces, using architecture to capture those qualities and incorporating them into the site. The theory of atmosphere is employed in attempt to materialise the sense of connection between the people of Nelson and the fluidity of the changing tides. This research scrutinises the theoretical components of atmosphere in order to re-contextualise the spaces to evoke desired sensations of water, tide or a personal subjective experience. The two main elements of the locality has been used to connect people and landscape through an architectural design. The first one being the powerful tide in the Nelson Harbour with a maximum vertical displacement of 4.5 meters in any 6 hour cycle. The second is the prestige landscape seized and framed through the architectural design.

The theoretical position established by German philosopher Gernot Böhme is one relating to the production of atmosphere and its potential to evoke emotions. Böhme believes that atmosphere can be a tangible feeling, not restricted to the intangible realm of the human soul. Thus supporting the notion of being able to create atmosphere within spaces of experience through tectonic applications.

Finnish architect Juhani Pallasmaa is an advocate for the embodied image, which he attributes to some of the most powerful architectural experiences. For Pallasmaa, atmosphere is about the subconscious experience of space and time. It is about setting the scene for the experience to take place, this idea is heavily investigated through multiple design iterations and is consequentially is a key factor in the spatial arrangement.

Swiss architect Peter Zumthor is considered the contemporary reference point for architecture relating to the realms of atmosphere. Zumthor places huge emphasis on the emotions of spaces particularly through the manipulation of light and materiality. The writings and works of Zumthor aid in the refinement of space to ensure the desired emotion is correctly perceived.

This research addresses all three facets of atmosphere and delineates a process to aid in the creation of an atmospheric experience. The design will address three alternate methods in which architecture and water can coexist in order to depict the numerous emotions of the Nelson Haven. The purpose of atmosphere in the context of this research it to convey emotions of place, responsibility and respect for the water to further entrench the proposed design into the social fabric of the Nelson community.

3 Ibid. 96.

Fig. 8: Kayaking in the stunning Abel Tasman National Park.
Part 01 entails the structured approach to this thesis and constructs the background for the research problem, aims and objectives.

Part 02 assesses the chosen site and potential site specific concerns which influence and advance the architectural response.

Part 03 presents the programme of rowing and its functional requirements which will inform the spatial configuration.

Part 04 explores the theoretical ideologies from leading theorists, philosophers and architects.

Part 05 explores relevant architectural projects which will assist in the latter creation of atmospheric experiences. The studies include projects by Nextoffice, Snohetta, Moshe Safdie, and Peter Zumthor, which addresses the various categories pertaining to atmosphere. The rowing clubs of Anmahion Winton Architects and Marc Studio present ideologies to aid in the organisation of space and engagement with the water.

Part 06 contains the iterative design experiments which integrate the theoretical and case study findings with the site specific conditions.

Part 07 deciphers the final design outcome in relation to previously established research problems, aims and objectives.

Part 08 critically reflects upon the entire process of this design-led research and reaffirms the findings and future opportunities of this research.

Fig. 9: Janie Seddon Shipwreck in Port Motueka, Nelson.
Fig. 10: View across the Nelson Haven at low tide.
Fig. 11: The Nelson / Tasman Region of New Zealand.
AKERSTEN STREET SITE

In 1841, the advance guard of the New Zealand Company despatched from England to form the Company’s second settlement along the Tasman Bay coastline.¹ The discovery of the Boulder Bank and the Nelson Haven was suitable for more than a minor port, and determined where Nelson would be sited.² The Nelson Haven provided a safe location for maritime vessels and thus became Nelson’s gateway to the world. The growth of Nelson city formed on the success and importance of the local port and its maritime industry, which in the 1860s and 1870s dominated the city’s economy.³ Eras of exceptional growth lead to extensive land reclamation to meet the rapidly increased demands of Port Nelson.⁴ In recent times large vacant lots are now rundown within the Nelson Haven, which Port Nelson Ltd are marketing for future developments.⁵

The Akersten Street site is ideally situated at the most northern point of Port Nelson with panoramas across the Nelson Haven and Boulder Bank. Sitting right at the water’s edge, it experiences the full tidal movement of the Tasman Bay. This site offers an opportunity to explore the connection between architecture and water, in particular the ethereal exchange between the movements of the ocean and static nature of the built environment.

This site analysis chapter works at two levels, firstly understanding the formation and story of Port Nelson and how the present condition has developed. Secondly this chapter will focus on specific areas of interest which make this site unique and will drive the design experiments to follow.

¹ “Thematic Historical Overview of Nelson City.” 13.
² Ibid.
³ Ibid.
⁴ “Yearbook Collection 1893-2012.”
⁵ “Port Nelson: Annual Report 2014.”
Fig. 12: Akersten Street site context within the surroundings of Nelson City and the Nelson Haven.
Fig. 13: Sunrise looking North East from Akersten St at low tide.
Fig. 14: Akersten Street site aerial in context.

Fig. 15: Site proximity to Wakefield Quay, Nelson City centre and the Marina.

Fig. 16: Akersten Street site identified along the Maitai Reclamation.
AKERSTEN STREET SITE
TAHUNANUI RESERVE
BOULDER BANK
EXISTING ROWING FACILITY
AKERSTEN STREET
AKERSTEN STREET SITE
NELSON CITY CENTRE
Port Nelson is the maritime gateway for the Nelson Marlborough region – a vital hub for economic activity and a key stakeholder in our region’s continued growth and prosperity. For over 170 years Port Nelson has been used as an important commercial gateway to the Top of the South Island. Nelson’s strategical location has helped to consolidate its commercial importance and as a result has developed a local community who, because the understanding of its commercial importance, has welcomed visitors and new commercial operators.

Port Nelson Ltd is jointly owned but the Nelson City Council and the Tasman District Council, and operates the largest fishing port in Australasia.¹

¹ “Port Nelson: Annual report 2014.”
Fig. 18: Nelson Haven prior to the 1930 reclamation.
EVOLUTION OF PORT NELSON

Port Nelson has always been the key to the city of Nelson, as its geographic isolation made the sea Nelson’s primary means of communication with the rest of New Zealand and the world.1 Port Nelson has serviced and grown with the regions’ export demands. From humble beginnings in 1843 with just 3 jetties, Port Nelson Ltd now owns 80 hectares of reclaimed land in the Nelson Haven.2 The port and city have prospered from exporting horticultural, agricultural and forestry commodities; and from the brief gold rush of the 1850s and 1860s.3

In 1987 Port Nelson turned their focus to a 14 hectare reclamation which opened as the Maitai Recreational Complex. The recreational complex included a 38 berth marina, three-lane boat ramp, and combined club facility for the Iron Duke Sea Scouts, the Talisman Sea Cadets, and the Nelson Rowing Club in hope that more Nelsonian’s would spend leisure time on the water.4

Port Nelson Ltd has always had a strong social commitment to the city of Nelson as recognised in their company philosophy “Port Nelson is at the heart of the Nelson community, both in location and spirit, and is vital to the ongoing economic and social well-being of the Nelson region.”5 This intended recreational gift to the city saw heavy industrial and commercial operations pop up in the early 1990s, but the industrial demand is no longer there. With changing times here lies the opportunity to re-establish the harbour as an integral part of Nelson City as a public and recreational precinct.

1 “Thematic Historical Overview of Nelson City.”
4 Nelson, Monica. “Port Nelson.”
Fig. 19: The 1962 reclamation from the air, a total of 31.5 hectares.
Fig. 20: Aerial view over Port Nelson and the Nelson Haven.
Fig. 21: Left - Wrecked ship rusting on the Maitai Reclamation.

Fig. 22: Boats dry docked on the Maitai Reclamation.
Fig. 23: An old ship wreck in the Nelson Haven.
Fig. 24: The growth of Port Nelson through staged land reclamation.
Fig. 25: The 1979 plan for the Maitai Basin and Recreational Complex development, completed in 1987.
The Maitai Recreational Complex reveals itself as the strongest link for joining the CBD to Nelson’s iconic coastal edge. The Nelson City Council has identified this reclamation as having significant potential for future development as a “high quality linear park providing passive and active recreation opportunities.”

Fig. 26: The axes of Port Nelson’s development are at odds with each other. This relationship between different angles could be interesting to explore early on in the design process.
Fig. 27: Activity zones for Port Nelson at current.
Fig. 28: Current and future development as part of the "Heart of Nelson" project.
Fig. 29: Nelson's climate, showing wind and daylighting factors.
Fig. 30: The high and low tide levels within the Nelson Haven accompanied by the low tide rowing lanes.
Fig. 31: Sheltered waters of the Nelson Haven.
Fig. 32: Aerial looking back to the city from the Akersten St site.
Fig. 33: Looking at the boulder bank from the northern most point of Akersten Street.
SITE DYNAMICS

Nelson boasts a calm and sunny climate, with the horseshoe formation of the Southern Alps protecting the region from the extreme weather experienced in other coastal areas of New Zealand. The outstretched arm of the Boulder Bank provides additional shelter to the Nelson haven on those wild and stormy days. The picturesque setting of the Nelson Haven has a very strong essence of beauty and tranquillity and would be an ideal aesthetic to employ throughout the design process.

One of the pressing issues with seaside locations, in particular Nelson, is tidal fluctuation which has a maximum vertical displacement of 4.5m over a 6 hour period. This periodic filling and emptying of the Nelson Haven has a commanding impact on the use of the Haven as well as its aesthetic beauty. The tide not only affects the immediate site, but the entire Haven, turning into a calm lagoon. This undying site dynamic of tidal flux through design experimentation could provide the fundamental underpinning for the architectural intervention. The human experience of the tidal movement could be the catalyst to understanding the dialogue between architecture, and the fluidity and solemn serenity of water.

This site analysis chapter helps establish a set of key design principles that can be incorporated into design experiments. While the notion of tidal flux will play a dominant role, being tested through design experimentation of tangible and intangible qualities of time and space, and how this shall contribute to the architectural experience. The axial inconsistency as identified in figure 26 may inspire design experiments to create unique spatial geometries to accommodate the sport of rowing. The technical requirements and psychology of rowing are integral to this research and is explained in the following chapter.

2 "Tide Chart: high tides and low tides in Nelson."
Fig. 35: Nelson Haven at dusk.
Fig. 36: Vista along northern walkway.
Fig. 37: Sunrise viewed from Akersten St site looking over the sheltered waters of the Nelson Haven to the Boulder Bank.
Fig. 38: Sun popping over the eastern ranges and reflecting off the still water.
Fig. 39: Left - Existing site conditions looking south east from the Akersten St site.

Fig. 40: Existing site infrastructure looking back to the city.
Fig. 41: Existing industrial business occupying the most prominent location on site.
Fig. 42: Existing site infrastructure on approach.
Fig. 43: Existing industrial business occupying prominent location on site.
Fig. 44: Sunrise looking east along waterfront walkway.

Fig. 45: Collection of scrap metal on the site.
Fig. 46: The Boulder Bank protecting the Nelson Haven.
The 1.3km stretch of the Boulder Bank is a natural breakwater which shelters the Nelson Haven and harbour from the rough seas of the Tasman Bay. As the Nelson Haven is a tidal estuary with a very low water level, there is not potential for waves to develop within the haven. This makes this site an ideal location where rowers are not affected by waves of tidal swells. Additionally, any architectural intervention will not need to withstand the impact of waves, even in extreme weather conditions.
Fig. 47: The natural protection of the Boulder bank protecting the Nelson Haven from the rough seas.
Fig. 48: The clear separation of the calm waters' of the Nelson Haven compared with the Rough Tasman Bay on the far side of the Boulder Bank.
Fig. 49: The maximum vertical displacement due to the tidal movement.
Fig. 50: High and low tide images at Akersten Street.
Fig. 51: The Nelson Haven at low tide in poor weather conditions.
Fig. 52: The sheltered waters of the Nelson Haven.
“One rower’s demon haunts the entire boat; perfection in one oarsman means nothing. A set boat and solid row is achieved solely when eight minds think identically, eight bodies melt together to form one machine.”

Fig. 54: Rower on the Nelson Haven at sunrise.
WHY ROWING?

The sheltered waters of the Nelson Haven make it an ideal location for a new facility to house the expanding Nelson Rowing Club. Building upon the ideas raised in the previous chapter of interacting with the tidal movements in order to evoke a sense of belonging, so does the architectural programme.

The sport of rowing is one of extreme physical and mental determination, endurance and commitment. For those who are highly committed to the sport develop a sense of connection to the natural environment and describe themselves as being at one with the natural world, or connected through a life enhancing energy. This deeply rooted relationship with the natural environment and water instils the same philosophical notions that this thesis sets out to discover and embody in the architectural intervention.

Rowers and other water based athletes describe themselves as being “totally relaxed and at home on the water.” Although the rower may strive for sporting excellence it is not their sole purpose for partaking in the sport of rowing. There is a deeper meaning, one of respect, desire and passion for the water and environment. An affiliation which this thesis endeavours to permeate into the architectural response, an aspiration for architecture to heighten ones relationship with the water.

3 Ibid. 200.
Fig. 55: Left - existing facilities of the Nelson Rowing Club.

Fig. 56: Above - programmatic relationships of a rowing complex.
Fig. 57: Training on the pontoon at the current rowing club.

Fig. 58: 8 man sweep out on the Nelson Haven.
Fig. 59: 8 man rowing shell getting washed down before storage.
Fig. 60: Rowing shells getting vandalised due to inadequate storage facilities.
Fig. 61: Due to lack of storage many of the expensive rowing shells are having to be stored outside or off site. This has resulted in many shells being vandalised, stolen or damaged due to exposure to the sun.
Fig. 62: The Nelson Rowing Club facilities built in 1976.
Fig. 63: Rowing shell sizes and requirements for proposed 200% increase in participation numbers.  

1 Kevin Strickland (Domestic Manager, Rowing NZ), email message to the author, July 20, 2014.
Fig. 64: Access to the water at the Nelson Rowing Club.
Fig. 65: Rowing shell sizes and requirements for proposed 200% increase in participation numbers.  

1 Kevin Strickland (Domestic Manager, Rowing NZ), email message to the author, July 20, 2014.
Fig. 66: Rowers out on Nelson Haven at sunrise.
The sport of rowing emerged from the fundamental necessities of early water exploration and is now a significant aspect of New Zealand’s sporting heritage. Of New Zealand’s 103 Olympic medals, one fifth (21), have been won by New Zealand rowers.¹ With 65 rowing clubs, 155 secondary schools and 9 universities throughout New Zealand developing young rowers, the future of New Zealand rowing is looking very promising.²

"We are part of nature. We are born in nature; our bodies are formed of nature; we live by the rules of nature. As individuals, we are citizens of the natural world; as societies, we are bound by the resources of our environment; as a species, our survival depends on an ecological balance with nature. Yet as individuals we, societies, and species, we spend our lives trying to escape from nature." 


Fig. 67: Each rower working in perfect harmony.
Fig. 68: Rowing shell on the water preparing to be launched.
PRAGRAMME SPECIFIC REQUIREMENTS

The conceptual process used to develop the spatial configuration is based on the 8man crew. The boat, the crew and the environment have to operate as one, as much as the three functions of the rowing club would operate in perfect harmony; the clubhouse, shell (rowing boat) storage, and the training facility.

The clubhouse serves as the core of the complex, it is visually prominent and acts as the face of the club to welcome the public. It is the most public of the spaces and it works as an attraction and reference point for regular users and the rest of the city. It would be a key element in revitalizing the port area. It is this section of the complex which hosts the clubrooms, a café/restaurant and a function space which is characteristically in a preeminent elevated position with panoramic views over the still waters of the Nelson Haven.

The second function, shell storage, is the practical side of the complex, it safely holds the vast collection of rowing shells and oars; it also houses the changing rooms and the day to day running of the complex. This space will be more controlled and the access will be for athletes only. It is naturally situated adjacent to the water with ramp access and pontoons. By necessity it is sheltered from the harsh daylight in a location with adequate ventilation and space.

Also with restricted access; the third arm, the training room is the workhorse of the complex, it is where the athletes train when weather conditions won’t permit rowing. It is the home to the feared ergometer (indoor rowing machine), the free weights and the rowing tank. Training rooms are often located out of the public eye, where the athletes work behind the scenes to improve themselves individually both physical and mentally.

This graceful yet demanding sporting programme in such a significant location should be seen as a public destination in which the people of Nelson can gather to witness and appreciate the art of rowing, with spectacular panoramic views across the Nelson Haven.
Fig. 69: Technical and spatial requirements for the four key areas of the Nelson Rowing Club complex.
This programme analysis establishes a strategic set of design principles that can be incorporated into the design experiment. The design principles arising from this chapter include; separation of programme, sufficient allocation of space for current and future programme requirements, and effective design of spaces to assist and enhance the performance of Nelson rowers. The following literature review will introduce the ideologies of atmospheric experience which will collaborate with the programmatic requirements during the design experimentation stages of this research.
When a tree falls in a lonely forest, and no animal is nearby to hear it, does it make a sound? Why?


Fig. 70: Sunset across the rock formations of Rack's Road.
Fig. 71: The atmosphere of Olafur Eliasson’s Weather Project.
This literature review introduces the theoretical approach of phenomenology as the creation of atmosphere to imbue the architecture with a sense of belonging. The notion of phenomenology is best understood as the architectural manipulation of space, material, light and shadow to create a memorable encounter through the impact on the human senses. This literature review will be supplemented with further investigations into the architecture of rowing facilities as well as the reactivation of port landscapes, as identified in the site and programme analysis chapters, and is highly relevant to this research.

This theoretical study will look at the interpretations of three current and prominent theorists and practitioners in the field of phenomenology: Finnish architect and theorist Juhani Pallasmaa, German philosopher Gernot Böhme, and Swiss architect Peter Zumthor. Pallasmaa, Böhme and Zumthor refer to the concept of phenomenology as the study of atmosphere, or the idea of presence in architecture. The subsequent critical analysis is derived from Zumthor's publication 'Thinking Architecture'. Here he identifies the key stages in his quest to design atmosphere; experiencing architecture subconsciously, bodies in space, images and moods, and grown materials. This section establishes the fundamental components which shall form the conceptual approach to the rest of this design-led research.

Additionally this section reviews current trends and reasoning behind the global response to reactivate and reintegrate the degraded port landscape back into the urban and social fabric of the city. This also identifies the use of a catalyst project to inspire and spur further development within these regions of neglect.

ARCHITECTURAL EXPERIENCE

Atmosphere is intrinsically linked with spatial experience, for it is one’s experience of a space which defines the atmosphere and creates the interpretation of that moment. It is that initial impression where one senses the feeling of a space without thinking, as Zumthor puts it, “I enter a building, see a room, and – in a fraction of a second – I have this feeling about it.”

Icelandic artist Ólafur Elíasson speaks about atmosphere as an active agent in which we can design for but can never determine the resulting outcome. “An atmosphere cannot be autonomous state; it cannot be in standstill, frozen. Atmospheres are productive, they are active agents… It never stands still. It moves and changes." This point about atmosphere constantly changing is very clear in American architect Steven Holl’s account of his second visit to the Ryōan-ji temple in Kyoto, “the visit could only be arranged in the very hot, humid afternoon. Superficially Ryōanji was the same place, but my experience was extremely different.”

It is not enough to see architecture; you must experience it

The intangible notion of an experience implies a sensation of temporality, change and unpredictability, which is perceived though one’s emotional sensitivities. All key theorists when talking on the topic of ‘atmosphere’ reference the term experience, which implies that something has changed, the current state is different from the last, even if only momentarily. In the following design experimentation the ways in which change is experienced, or more importantly observed, will be crucial to generating these moments of ‘atmosphere’.

BODIES IN SPACE

For an atmospheric or sensual experience to be observed there must be a space, and there must be a body within the space. When several theorists reason with the idea of atmosphere they mention how spaces have moods. Böhme considers the notion that emotions are not restricted to the human soul, but rather “emotions can be on the outside, they can strike you.” Böhme conceives the intangible idea of atmosphere as space, “they are spaces with a mood, or emotionally felt spaces.” But how can a space have a mood without a body there to interpret this mood or feeling?

Pallasmaa has published numerous accounts on the architecture of the senses, he writes, “every touching experience of architecture is multi-sensory; qualities of matter, space and scale are measured equally by the eye, ear, nose, skin, tongue, skeleton and muscle.” Pallasmaa once again draws point to the importance of space being observed by the human body. It is the space itself that is forming the impression upon the body, the space is creating the atmosphere, and we as humans just bear witness to it.

It is not what we see, but how we see it.

It is not adequate to solely create spaces which have ‘atmosphere’, the observer must be engaged with the spaces in a precise manner for the desired effect to be sensed; otherwise the experience of the space may be misleading. The fundamental question here is, how does one create ‘atmosphere’ and can the inhabitant’s observation of the prescribed atmosphere be controlled?

1 Borch, Christian et al. Architectural atmospheres: on the experience and politics of architecture. 96.
2 Ibid.
THE EMBODIED IMAGE

In attempting to understand the philosophical and metaphysical power which evokes emotion within the human subconscious, Pallasmaa comes to the conclusion that "the most powerful architectural experiences are embodied images." Pallasmaa refers to the idea of primary images being hardwired into the human subconscious, for example; if a person sees an image of a fire they feel warm, or an image of a beach reminds them of their last holiday. For Pallasmaa it is about the immediate subconscious experience, as he states; "once aspects of atmosphere become conscious then they tend to lose their atmospheric power." Pallasmaa interprets this phenomenon as the architectural image which relates our experience of the world with the experience of our body through a process of unconscious internalisation, identification and projection. In architecture it is the constant temptation to recreate that of which we feel familiar, but also to recreate that emotion of which we have once felt before, the sensation which has since remained in the form of a memory.

"When I work on a design I allow myself to be guided by images and moods that I remember and relate to the kind of architecture I am looking for. Most of the images that come to mind originate from my subjective experience and are only rarely accompanied by a remembered architectural commentary. While I am designing I try to figure out what the images mean so that I can learn how to create a wealth of visual forms and atmospheres."

For Zumthor the power of an image takes a critical position in the creation of his architecture, it is his way of taking an intangible emotion and trying to make sense of it. The scrutiny of an image breaks down the composition into tangible categories such as; light, shadow, texture, warmth, and enclosure. It is not enough to simply recreate the image, but rather to recreate the emotions of that image; that memory, or that situation.

---

2 Ibid. 45.
“Material is endless. Take a stone: you can saw it, grind it, drill into it, split it, or polish it — it will become a
different thing each time. Then take tiny amounts of the same stone, or huge amounts, and it will turn into
something else again. Then hold it up to the light — different again. There are a thousand different possibilities
in one material alone.”

1 Zumthor, Atmospheres: architectural environments: surrounding objects. 25.
GROWN MATERIALS

A lot of the understanding of atmosphere lies in the realm of the intangible or the immaterial. The analysis of making immaterial aspects of design tangible has established the atmospheric qualities found within the architecture of Zumthor. It is clear that Zumthor gives primacy to materials.1 Materials themselves have their own individual radiance unique to the material and the state in which the material is represented, but materials also react with one another, this is where the real magic lies.2

“Materiality can actually make atmospheres explicit – it can draw your attention and amplify your sensitivity to a particular atmosphere. All materials have psychological content, and the right material can make the atmosphere apparent by giving it a trajectory, by making it almost tangible.”3

It is not only the materials which create and define the mood of a space. The interface or discussion between materials needs to be carefully orchestrated to reinstate the overall desired emotion of the space. It is only when the “materiality of the details forming an architectural space become evident, [that] the haptic realm is opened up. Sensory experience is intensified; psychological dimensions are engaged.”4 The materials of architecture allow architecture the tangible means to create the intangible emotions which we experience as atmosphere. The juxtaposition of contrasting materials creates for an intense dialogue, it is up to the architect to arrange these discussions in a manner which intensifies the sensory experience.

“Our perception of the whole is not distracted by inessential details. Every touch, every join, every joint is there in order to reinforce the idea of the quite presence of the work.”5

---

3 Borch, Christian et al. Architectural atmospheres: on the experience and politics of architecture. 95.
4 Holl, Pallasmaa, Pérez Gómez. Questions of perception: Phenomenology of architecture. 91.
5 Zumthor. Thinking architecture. 15.
CONCEPTUAL APPROACH

The experience of atmosphere is a complete sensorial experience where all aspects of architecture, space, and the human mind are in harmony for a fraction of a second. The fundamental question that Zumthor seeks to answer in his body of architectural works is; “what on earth moves me?"1 Zumthor response to this; “So what moved me? Everything. The things themselves, the people, the air, noises, sounds, colours, material presences, textures, forms too."2 It is the combination of all elements that creates the atmosphere of a space. But “What else moved me? My mood, my feelings, the sense of expectation that filled me while I was sitting there.”3 Drawing from the points mentioned in the 'Bodies in Space’ chapter, it is the mental state of the observer which determines the effect of the atmospheric experience.

Zumthor refers to this as presence, the coming together of both atmosphere and experience, the interface of the tangible and the intangible. Böhme suggests that one should call it the ‘corporeal presence’ of architecture.4 This implies the sense of a justifiably physical object to an idea which still remains in the realm of the ethereal. Through the application of this critical thought process, the engagement between water and architecture has an opportunity to be communicated through subconscious atmospheric experiences. Contemporary examples of these ideologies are reviewed in the following chapter in order to materialise these findings.

1 Zumthor, Atmospheres: architectural environments: surrounding objects. 11.
2 Ibid. 17.
3 Ibid.
“The quality of a space, or place is not merely a visual perceptual quality as is usually assumed. The judgement of environmental character is a complex fusion of countless factors which are immediately and synthetically grasped as an overall atmosphere, feeling, mood, or ambiance.”


Fig. 78: The presence of atmosphere felt within the architecture of Tadao Ando
Fig. 79: Porto Madero in 1925 as an industrial port.
The introduction of global containerization and new technologies changed the economic situation of the port landscape forever. 1 With many industries leaving the port their former site have become derelict leftover land. At an urban level, discontinuity and inconsistencies are chief characteristics of ‘fractured’ cities with increasing amorphous, unordered, and illogical accumulations of buildings due to the decline in port industries. 2

Dirk Schubert argues that waterfront regeneration is less the result of planning and design than the expression of social and economic processes at a global scale. 3 The push to revitalise a space is driven by the people and the need for additional amenities and public spaces. For example the revitalisation project of Porto Madero in Buenos Aires, Argentina was driven by the need for residential and commercial development at the heart of the city, in the neglect docks of the Porto Madero. This 170 hectare development spurred on the success of an individual catalyst project, the conversion, rehabilitation and refurbishment of the old warehouses that surrounded the four inner dock basins. 4

In port cities throughout the world, efforts are being made to adapt to structural changes in cargo handling, ship building and seaport industries. 5 In turn this offers up greater areas of land for redevelopment, as identified, it is the success of the catalyst project that will drive the future success of the area and create demand for further revitalisation projects.

---

3 Ibid.
Fig. 80: Santiago Calatrava’s bridge in Porto Madero.
Fig. 81: The catalyst warehouse conversion in Porto Madero.
Fig. 82: Panoramic vista of Porto Madero at present.
Fig. 83: Sunrise in Golden Bay, Nelson.
Fig. 84: Cloudscapes installation by Transsolar & Tetsuo Kondo Architects at the 2010 Venice Bienal. Where the cloud obscure the vision to where other senses are needing to be used, thus creating a sense of atmosphere.
This chapter reflects upon architectural projects which deal with specific questions and issues relative to the theoretical and programmatic approach to this thesis. It will ascertain tested design interpretations in order to understand the architectural opportunities and implications for the forthcoming design experiments.

This chapter is selectively reduced into two parts:

Part one: Explores projects which directly correlate with the programmatic function and site related issues previously mentioned in the site and programme analysis chapters. They address the organisation of the programme spaces as well as the relationship of the water to architecture.

Part two: Deals with architectural projects which have successfully responded to key theoretical questions revealed in the previous chapter, the conception of architectural atmosphere, and the search for presence. These areas of research are: the architectural image, bodies in space, the embodied image, grown materials and light and shadow. In this case, grown materials has split to include the importance of light and shadow as a secondary layer to enhance the qualities of the materials.
Fig. 85: Main storage area to the Community Rowing Boathouse.
COMMUNITY ROWING BOATHOUSE

This boathouse for the Community Rowing, Inc. in Boston, America, is designed by Anmahian Winton Architects and was completed in 2008. This new rowing facility showcases how concise spatial planning and a clear architectural vision can improve rowing involvement as well as reintegrating a stretch of neglected waterfront property back into the city’s urban fabric.

The strategic separation of activities enables each space to be ideally crafted to suit each specific programme. The tobacco barn inspired cladding system provides sufficient natural ventilation to regulate the temperature and humidity of the shell storage. One of the major drawbacks with the palling of this building is the step back from the water, which is typical in rowing club design. The sport of rowing is so heavily dependent of the water, yet the architecture is set back and disconnected for the waterfront.

This project illustrates how architecture can have a positive influence on both sport and the surrounding community; since the building first opened the membership has doubled. Likewise with this research project, the Community Rowing Inc. has reinvigorated a neglected stretch of public land as an active public park for an underserved urban neighbourhood. In turn making a positive contribution to the riverfront and the city of Boston.

Fig. 86: Main entrance to the Community Rowing Boathouse.
Fig. 87: Main storage area to the Community Rowing Boathouse.
Fig. 88: Ramp access to the Plinio Rowing storage area.
PLINIO ROWING NAUTICAL BASE

The Plinio Rowing Nautical Base in Torno, Italy, designed by Marc Studio and completed in 2006. Although on a small scale, the connection with the water is ever present in this piece of architecture. As water is the primary component in the sport of rowing, the architects have incorporated the calm lake water into the architectural language of the building.

The design was to sink the building down into the cove, getting the building as close as possible to the maximum high tide level of the Como Lake to assist with water access to and from storage. This gesture opens up a strong association between the building and the water blurring the boundary of each domain.

Set within an existing cove is one of very few schemes in which the water in actively welcomed within the interior spaces, albeit below the steel walkway. This small scale scheme possess qualities of architectural connection akin to the aims and objectives of this research and will be explored in the following preliminary design experiments.

Fig. 89: Storage racks cantilevering above the water.
Fig. 90: Space below the shell storage allowing the late water within the building.
Fig. 91: Shell Storage and ramp projecting out from the shoreline.
Project Review – Part 2:

The following architectural projects directly responded to the notions of the key theorists in the previous literature review chapter; Böhme, Pallasmaa and Zumthor.
Fig. 92: Sharifi-ha House front elevation.
This first project is built upon the ideologies of the architectural experience and how architecture can be adaptive to its environment. The Sharifi-ha House in Tehran, Iran by Nextoffice explores the spatial transformation of an ever-changing residential building completed in 2013. This project offers a unique approach to adaptive architecture in regard to its formal configuration, mobile interior spaces and manipulation of the exterior form. This project exhibits the ability of transformation, and allows the observer to experience this transformation as well as the new possibilities created by this altered state.

The project’s strength lies in its ability for the observer to clearly see all stages of the spatial manipulation, as well as to experience it visually and physically. This project illustrates how the transforming units open up additional spaces and creates new opportunities of interaction. In regard to this design-led research, this project provides a physical understanding of how changing site conditions can be perceived and experienced through the architecture. The application of this responsive adaptation in the context of this research is vital to communicating the changing relationship between the water, the site and the architecture.
Fig. 93: Manipulation of the front facade.
Fig. 94: How the internal spaces transform as the facade changes.
Fig. 95: Diagrams depicting the movement of these volumes.
“Uncertainty and flexibility lie at the heart of this project’s design concept. The sensational, spatial qualities of the interiors, as well as the formal configuration of its exteriors respond to the displacement of turning boxes that lead the building’s volume to become open or closed, introverted or extroverted. These changes may occur according to changing seasons for functional scenarios.”

This section address the composition of space in order to perceive a selected architectural experience. The Norwegian Wild Reindeer Pavilion is located at Hjerkinn on the outskirts of Dovrefjell National Park in Norway, it was completed in 2011 by Snohetta. This project fully grasps the concept of viewer observation, and how to set up an experience. The programme for this project dictated a heavy focus on observing the serene surroundings, the architects have meticulously arranged various items in order to control the perceived experience. They have created a space where the atmosphere is not random, but rather, consistent for all who experience it.

The building turns its back to the observers approach and instead focus on what they have been walking towards for the last 1.5km. The form of the interior sets the mood and draws ones focus to the exterior. The formation of the seating fans out like an amphitheatre to draws the focus further forward, controlling the field of view. Thoughtful selection of a soft, warm timber aids the contrast to the surroundings and allows the mountain ranges to be viewed in a far more vivid nature. The subtle addition of a fireplace allows the designer to control the temperature, mood and even set up the smell of the space to complement the viewing experience.

This carefully designed space, though small, allows the designer to regulate the manner in what objects are viewed and experienced. The observer’s interpretation of the activity is therefore not one of chance, but one which has been manipulated and refined. This project highlights a language of tectonic layering, akin to the context of this research, and vital to the development of an atmosphere. It highlights opportunities in which architectural forms can direct and control the experience through the manipulation of visual focus.

Fig. 96: Warm and inviting interior which directs the viewer attention to the external environment.
Fig. 97: Front elevation of this viewing pavilion.
Fig. 98: The approach to the pavilion blocks the view from within the building.
Fig. 99: The formed seating area directing your view.
Fig. 100: The Norwegian Wild Reindeer Pavilion under the night sky.
“The building design is based on a contrast between ideas – a rigid outer shell and a soft, organic inner core. The wooden core is shaped like a rock or ice that has been eroded by natural forces like wind and running water, and is placed within a rectangular frame of raw steel and glass.”

Fig. 101: This powerful space projecting out into the distant landscape.
EMBODIED IMAGE

This project exhibits the act of designing from a personal subjective experience. The Yad Vashem Holocaust History Museum in Jerusalem, Israel, designed by Moshe Safdie and completed in 2005 showcases a documented example in which a mental image and experience has been translated into a successful and functioning piece of architecture. 18 years earlier in 1987 Safdie created the Children’s Memorial on the same site. In reflecting upon this design he states “it had given me an inkling of the power of emerging into light. It meant that life prevailed.”1 Safdie, had uncovered an influential element in his previous design, he used this notion of emerging into light as a counterpoint for the new museum; “we would cut through the mountain, penetrating it from the south, extending under, emerging, indeed exploding, to the north.”2 Safdie talks of his design moves which have been guided by his personal experience of this phenomenon.

This project is a living interpretation of the embodied image, Safdie began with a first-hand experience, he then proceeded to recreate and further develop the emotions of that very first encounter. This transgression from the subjective experience or selected image to an architectural intervention is key to the atmospheric development of this research.

2 Ibid. 94.
Fig. 102: The prism opening out to the world and city of Jerusalem.
Fig. 103: Holocaust memorial.
Fig. 104: View within the dividing prism.

Fig. 105: Looking through the light into the darkness of the Holocaust memorial.
Fig. 106: Acute attention to detail.
“For the new museum, cutting through the mountains and bursting northward, dramatically cantilevering the structure over Jerusalem pine forest to provide views of the hills beyond took this life-affirming experience to another level. To stand on the extended terrace, the side walls of the prism curving away from the site seemingly in infinity… is to understand that, indeed, life prevailed. We prevailed.”  

Fig. 108: Peter Zumthor’s juxtaposition of materiality.
This precedent displays qualities of materiality that enhance the atmospheric experience and make the notion of atmosphere tangible. The Kolumba Museum in Köln, Germany, designed by Peter Zumthor and completed in 2008. This design precedent explores the architectonic layering of materiality to enrich the subconscious experience of architecture. Zumthor, consistently mindful of the use of materials, and specifically their construction details.

Böhme notes, materiality can actually make atmosphere explicit.1 It is the manner in which the architect composes these materials which allows the material to imbue the intangible qualities of atmosphere. This could not be shown clearer than in the work of Zumthor, the cautious juxtaposition of materials marked with a delicate separation. This fissure creates tension, it provokes investigation and invites and dialogue between the materials. This is the architectural rigor which creates mood, spatial feelings and atmosphere which will be explored in the following design experiments.

1 Borch, Christian et al. Architectural atmospheres: on the experience and politics of architecture. 95.
Fig. 109: Light bouncing around within the internal space, making for an magnificent atmosphere.
Fig. 110: Detailed use of light and separation between materials provokes architectural discussion.
Fig. 111: Material juxtaposition.
Fig. 112: Simple detailing of openings in keeping with the overall architectural language of the building.
“The walls are windowless apart from the perforations lining the top, casting filtered light into the double height room. A zigzagging pathway guides you through the archaeological excavations between slim concrete columns pinning up the ceiling. As you stand amidst the room with all the layers of history exposed, protected by the outer walls that gently wraps everything together, there is a serene calmness and odd timelessness.”

Fig. 113: The light and airy space within the foundations of the previous building.

LIGHT AND SHADOW

This project review builds upon the previous review relating to materiality and adds a further layer of emotion to the experience of materials and space. The Bruder Klaus Field Chapel of Mechemich, Germany designed by Peter Zumthor and completed in 2007 is a prime example of the use of light and shadow in the creation of ambience and experience. Zumthor is accustomed to a way of thinking about material as the conveyor of feeling, this project instead gives preference to light and shadow as the creator of atmosphere.

In this design precedent, the observers gaze is pulled up by way of obvious directionality, to the point where the roof is open to the sky and night stars. The conditions of the chapel change with the weather, as rain and sunlight both penetrate the opening and create an ambience and experience very specific to the time of day and year. This project epitomises the ability of light to transform a space both visually, physically and emotionally. The light creates the shadow, the darkness of the space hides more of the architecture from view. Allowing the mind of the observer to fill in the blanks and perceive the space as their own architectural experience. It is light which brings everything together, this is the final element in the creation of architectural presence.

Fig. 115: Glare of looking from the darkness to the light.

Fig. 116: Artificial lighting to add ambience.
Fig. 117: Natural lighting spraying shadows across the rugged concrete interior, evoking different qualities within the material of concrete.
Fig. 118: Clear reduced material palette.
Fig. 119: Light cast along the rough concrete walls.
It is important to note that none of these former case studies are solely focused on one single facet of atmosphere. Each precedent could equally have been used to exemplify any or all of these investigations into the creation of experience. A lot of the ideas overlap between each design, but they are all required in order for a design to reach the status of atmospheric architecture. In the next chapter these materialised ideas of atmosphere will be tested through iterative design experiments.

Fig. 120: Flickering light providing intimacy and comfort within an otherwise rough interior.
Fig. 121: Sunset beyond Haulashore Island, Tasman Bay.
Fig. 122: Early design sketches exploring the notion of a structure which moves with the changing tides.
This preliminary design section brings together the research findings accumulated during the literature and project review chapters. The information gathered has been organized and through a series of design iterations and a final architecture response has been proposed. In order to express the design evolution, this section sequentially presents four design concepts where existing atmospheric ideas have evolved as new architectural and spatial findings come to light. By exploring and developing the ideas of experience, observation, embodied image and materiality this section aims to develop a successful atmospheric experience.

The presented conceptual design experiments addresses the site specific effects of tide and as the essential components in creating an atmosphere evocative of the tidal fluidity in the Nelson Haven. This chapter tests the fundamental components of atmosphere through tentative design experimentation. Particularly exploring the notions of experience and observation as articulated by Pallasmaa, Böhme and Zumthor.

These tentative experiments are necessary to evolve and advance the creation of atmosphere and presence within the confines of the architectural programme. The concluding concept encompasses all these atmospheric notions into a single holistic architectural response which expresses an intrinsic connection the water and the art of rowing.
Fig. 123: First design iteration which floats on and rotates with the Haven tides and currents.
This opening iteration responds to the existing site dynamics of the rhythmic tidal fluidity of the Nelson Haven on a continual 12 hour cycle. It explores the notion of unity across programmes in a single structure which is consistently altered by the motions of the tide. It further depicts the relationship to the water through the rotational force of the verging current of the tightly bound channel.
Fig. 124: First design iteration at low tide, rotated to allow rowing access along the Maitai Channel.
Fig. 125: East elevation at low tide.
Fig. 126: Series of diagrams depicting the rotation of the building at high, mid and low tides.
The clear strength of this proposal is understanding the expression of the water through the architectural response. The rotational aspect of this design further exemplifies the design intent of this research as it showcases superior qualities of the tidal movement within the Nelson Haven. Aside from the issues of spatial requirements, the weakness is the clear separation from the land which disaffiliates the water from the land and opposes the research aim of reintegrating the waterfront into the urban fabric. This design does not make any attempt to integrate the water with the land. This is detrimental to the overall experience of the architecture and the aim of connecting the water, the land and people of Nelson.

Opportunities of further advancement suggest greater integration between the site and the land, in respect to both programme and architectural perception. Thus prompting a more robust rationale to address the objectives of this research.

Fig. 127: Viewed on approach at a mid tide, the building sits nicely within the setting of the Nelson Haven.
Fig. 128: Concept sketch showing the training pavilion rotating relative to the main land based building.
The succeeding sketch experiments explore approaches similar to the Sharifi-ha House where the physical altering of space is clearly evident. These rudimentary diagrams explore the notion of a training pavilion which is receptive to the everyday tidal motions of the Nelson Haven. The floating structure moves relative to an anchored architectural element in order for its tidal fluctuations to be visually observed. This design research experiment emulates the Sharifi-ha House in that it is reliant on a stationary object in order for the body in motion to be fully appreciated.
Fig. 129: Sketches investigating the notion of observation and how the arrangement of volumes can emphasize the tidal movements.
Fig. 130: Most programmes are land based with a training pavilion floating on the water surface.
ITERATION TWO

This second design iteration builds upon the assets of the previous, but promotes an investigation into the architectural experience. It identifies the need for an entity in motion to be conceived as moving relative to a static symbol, thus employing the aid of a land-based element. This design explores rudimentary architectural ideas of visual projection to further encompass and express the qualities of experience.
Fig. 131: Series of diagrams depicting the rotation of the training pavilion at high, mid and low tides.
Fig. 132: Training pavilion rotated as low tide to allow rowing access along the Maitai Channel.
Fig. 133: A strong formal language of traditional rowing clubs expressed through the design of the main building.
The lone training centre moving relative to the rest of the design enhances the visual perception of the changing tides and is the most successful aspect of this iteration. The primary flaw in this proposal is the lack of integration between the main structure and the water, both visually and physically. This is an aspect to further explore in the following iteration through the notion of observation. Additional explorations and experiments into the perception of experience with water and further programme separation will reduce the scale of the scheme to offer greater opportunities for integration of the water and land.
Fig. 135: Exploring the idea of observation and creating spaces from viewing opportunities.
These sketch experiments look carefully at key instances where it is important to set up a scene in order for a specific feeling to be experienced. These undeveloped sketches begin to compose a scene, and break it down into the fundamental aspects in order to understand the whole. Each element will need to be refined so that they do not conflict with one another, and actively work in perfect harmony to achieve the desire state. These experiments emulate the way in which the Norwegian Wild Reindeer Pavilion used all the senses carefully composed to create one universal feeling of space.
Fig. 136: Iteration three shown at low tide.
In an attempt to transgress the constraints of the preceding design experiment, this third design proposal explores the opportunities that observation attributes to the architectural experience. It allows for a multitude of activities to have a direct interaction with the water’s edge in an array of prescribed conditions. These unique observation opportunities further heighten the architectural experience as new vistas evolve around each corner.
Fig. 137: Access to the pontoons at mid tide viewed from the clubroom above.
Fig. 138: Transitional diagram showing the rotation and lowering of the training pavilion from high tide through to low tide.
The perceived reduction in scale is attributed to the careful manipulation of levels to further engage the viewer. The separation of programmes allows more opportunities of interaction between the architecture and the water. The further integration of water into the land allows the architecture to engage the water in a more tactile manner. This allows different qualities of water being observed by inviting the water to flood the shell storage area while the training pavilion continues to float across the channel. Furthermore, this proposal successfully objectifies the art of rowing, it centralises it as the core function and feature of this architectural response.

The concern with this design is around the spatial configuration, namely the dissociation between the training pavilion and the rest of the complex. The main building deserves greater development as it currently lacks the nostalgia of a building in this pinnacle location and neglects the stunning vistas across all areas of the Nelson Haven.

Fig. 139: Simple touches to the training pavilion to further emphasize the notion of lightness on the water.
Fig. 140: The selected image which has influence the atmospheric creation of the shell storage area.
These sketch experiments follow the same path as the design precedent of Safdie. By taking an image which everyone is familiar with or has personally experienced and trying to imbue those subjective emotional qualities upon a particular scene. The experiment draws upon an image to aid in the development of this space attempting to marry the effects of an image with the raw emotions of that subjective experience.
Fig. 141: Developing the interior spaces to recreate the desired mood.
Fig. 142: Sketch of the desired effect within the storage space.
Fig. 143: Using the idea of separation of materials at a detailed level for the training pavilion to further embody the notion of floating above the water.
This assemblage of sketch experiments explores the subtle detailing of materials in the attempt to create a dialogue between these tangible qualities of architecture. It builds upon the idea of separation raised in the work of Zumthor and how this can provoke intangible notions of space and atmosphere.
Fig. 144: Final iteration shown at high tide.
ITERATION FOUR

This final design proposal explores the programmatic opportunities that notion of presence can bring during the initial stages of spatial configuration. As previously discussed, presence exhibits the coming together of all aspects. Likewise this iteration accommodates the four aspects of the previous design iterations and sketch experiments; tide, current, experience and observation, it evolves from the third design iteration to create a greater collaboration amongst the design components.

This final proposal bestows a sense of synergy between the architecture, water and the land. Its primary objective is to uphold the relationship to the water which is so deeply engrained in the history of Nelson.
Fig. 145: Early design sketch of the landscaping and the opportunity for a lookout at the northern corner.
Fig. 146: Initial sketch ideas exploring public engagement.

- Initial sketch ideas exploring public engagement.
- Clear expression of structure, which will diminish the notion of integration.
- Focus on the relationship between water and...
Fig. 147: Integration and manipulation of levels engages the architecture with the immediate surroundings at mid tide.
Fig. 148: The complex fully spread out in the high tide position, evoking a sensation of openness.
This design uses the common grain of water to the architectural forms and programmes. The metaphorical use of water as the symbolic tie between these structures presents alternate methods in which architecture can engage with the fluidity of water. The successful integration of landscaping into the architectural narrative sets up the viewer and allows the architecture to be systematically unveiled to evoke the notion of fluidity and respect for the water. The use of observation as a design tool has effectively enhanced the expression of rowing, the celebration of the delicate training centre and the amphitheatre-like marina which seduces the public into the excruciating yet graceful sport of rowing.

This design aims to evoke a greater sense of attachment to the water to emphasise the unique atmosphere of the Nelson Haven.

CRITICAL REFLECTION

Fig. 149: The training pavilion at high tide viewed from a passing rower.
These preliminary design explorations set up the fundamental components of experience and observation in the creation of atmosphere. The development of these constructed opportunities will be exhibited in the following section where the intangible notions affecting the relationship to water become tangible and are experienced throughout this architectural intervention.
Fig. 150: The existing condition of the site.
This section presents the final design for the new rowing facility and waterfront precinct of the Nelson region. Several critical elements for this scheme have briefly been alluded to in the preceding chapter, but will be resolved throughout the discourse of this chapter.

The underpinning notion of this research is to engage the architecture directly with the water. This was successfully achieved through the separation of programmatic activities. This reduces the perceived scale of the complex and allows for greater opportunities of interaction with the water’s surface. Throughout this research there has been constant discussion and experimentation into the intangible qualities of water.

The resulting architectural intervention is the consequence of a careful fusion between the tidal patterns of the Nelson Haven and the architectural programme of rowing. These forthcoming methods of architectural interaction with the tide simultaneously explore the intangible qualities of water. This final design further aims to reintegrate the Nelson Haven into the urban, social and cultural fabric of Nelson through the temporal notions interwoven with the tidal patterns and coastal history of Nelson.

Fig. 151: Site aerial showing the whole complex, taken at mid tide.
Fig. 152: Site Plan

- ROWING SHELL STORAGE
- WORKSHOP
- FLEXIBLE CLASSROOMS / FUNCTION AREA
- ROWING OAR STORAGE
- CHANGING FACILITIES
- FLEXIBLE OFFICE
- MEETING ROOM
- LIFT
- TRAINING PAVILION
- ROWING TANKS
- LOOKOUT
- CLUBROOM
- CAFE / RESTAURANT
- KITCHEN
- WC
- SITE ENTRY
- PARKING
- ACCESS RAMP
AXIAL INCONSISTENCY

The spatial configuration of the rowing complex has been subjected to the manipulation of spaces in order to achieve the desired atmospheric experiences. The angular planning through plan and section are directly linked to the axial inconsistency of the port development as identified in figure 26 of the site analysis chapter. This creates spaces which are more fascinating and aid the subjective experience of the architecture.
Fig. 153: Level 1 Floor Plan
Fig. 155: North Elevation at high tide.
1. ROWING SHELL STORAGE
2. WORK SHOP
3. FLEXIBLE CLASSROOMS / FUNCTION AREA
4. ROWING OAR STORAGE
5. CHANGING FACILITIES
6. COMPLEX OFFICE
7. MEETING ROOM
8. LIFT
9. TRAINING PAVILION
10. ROWING TANKS
11. LOOK OUT
12. CLUBROOM
13. CAFE / RESTAURANT
14. KITCHEN
15. WC
16. SITE ENTRY
17. PARKING
18. ACCESS RAMP

Fig. 156: Section AA
1. ROWING SHELL STORAGE
2. WORKSHOP
3. FLEXIBLE CLASSROOMS / FUNCTION AREA
4. ROWING OAR STORAGE
5. CHANGING FACILITIES
6. COMPLEX OFFICE
7. MEETING ROOM
8. LIFT
9. TRAINING PAVILION
10. ROWING TANKS
11. LOOKOUT
12. CLUBROOM
13. CAFE / RESTAURANT
14. KITCHEN
15. WC
16. SITE ENTRY
17. PARKING
18. ACCESS RAMP

Fig. 157: Section BB
Fig. 158: Diagrams showing the sequential development of the current roof from inspired by the tradition rowing club form and the design of the rowing oar blade.
Fig. 159: View within the restaurant showing how the structure is offset from the external walls. Leading the viewer eye north and playing with the notion of axial inconsistency.
Fig. 160: Vista from the restaurant seating outside towards the east.
Fig. 161: The three methods of engagement with the water.

1. Allowing the water to flood site.

2. Floating on the water surface.

3. Resisting the water.
The following segments disclose three distinct architectural methods in which different spaces of this design interact and engage with the body of water though notions of; deluge, supernatant and fortification. These three methods of engagement will evoke different intangible qualities found in water and attempt to materialise them through the architectural responses.
Fig. 162: Sketches showing the operation of the slatted door system to the rowing shell storage area.
This first exploitation of architectural interaction with water features the idea of the deluge, enticing the water to stream in and seal the cavities of the structure within the shell storage area. The internal paths, suspended racks and large dynamic fenestration engage and interact with the tidal motion to further depict the oscillating gesture of the tides. This storage area welcomes the water in, making it an integral part of the architectural language within this space.

This space depicts the neglected intangible qualities of water, its malicious nature, flooding and engulfing the manmade intervention with unprecedented power and strength. The darkness of the water is given new life through prescriptive lighting spilling over the concrete walls and softening the mood of the gloomy water. As the surge recedes the evidence is undoubtedly noticeable on the towering walls, expressing the extent and power of this daily cycle.
Fig. 163: Shell storage doors shown at high tide.
Fig. 164: Shell storage doors shown at low tide with openings allowing the rowers to enter and exit.
Fig. 165: Shell storage showing the remnants of the tide along the walls.
Fig. 166: These materials have been chosen due to the architectural dialogue between them. Particularly the ability for one material to evoke emotions within another, or to visually contrast the other in order to make it more visibly to create the desired mood.
This second exploration of interaction with the water’s surface is guided by the idea of the supernatant, floating above the surface of the water. This structure is developed as the visual reference to the tidal movements for the general public to observe and experience. It depicts the vertical rise and fall of the fluctuation tide and engages the cross axial forces of the channel currents.

Through the material selection and subtle detailing of material junctions, in particular the space between the pavilion deck and the water. This training pavilion illustrates the intangible notions of serenity and lightness associated with water as it floats delicately above the water’s surface.
Fig. 168: Left - floor plan of the training pavilion.
Fig. 169: View from the training pavilion on a rainy day.
Fig. 171: Section DD
Fig. 172: Series of diagrams depicting the rotation of the training pavilion at high, mid and low tides.
Fig. 173: The training pavilion is treated as the retreat space of the complex, where the athletes put in the hard hours of training, and justifiably should be the place where they feel the most relaxed and in touch with the water. This design embodies the essence of lightness on the water, as seen in the subtle detailing of the floor and roof edges, it appears to float effortlessly above the water’s surface. Due to the formation of the Nelson Haven this area of the Haven is free from any and all extreme sea conditions, these unique conditions are what makes this elegant design possible.
Fig. 174: Initial sketch experiment for the northern lookout and how it enables physical inhabitation of the waters edge.
The idea of fortification arranges the scene for the interactions that take place at the northern viewpoint. Here the design engages the water in an approach of resistance and acceptance; where the architecture controls the water, but the water controls the experience. This two pronged design at low tide allows the observer to venture down amongst the rocks to the water’s edge. As the tide flows in the path is engulfed by the water, expressing the ability of water to control the experience of the viewer. The other aspect to this design is the stronghold, where the architecture in turn restricts the water. This duel relationship forces the water to play an integral part in the understanding of this viewpoint, allowing the tide to set the scene in which it is observed and ultimately experienced.

This area expresses the intangible notion of water’s ability to command and control is surroundings. But also the constant nature of water, it is always there and always a part of our subjective experience.
1. ROWING SHELL STORAGE
2. WORKSHOP
3. FLEXIBLE CLASSROOMS / FUNCTION AREA
4. ROWING OAR STORAGE
5. CHANGING FACILITIES
6. COMPLEX OFFICE
7. MEETING ROOM
8. LIFT
9. TRAINING PAVILION
10. ROWING TANKS
11. LOOKOUT
12. CLUBROOM
13. CAFE / RESTAURANT
14. KITCHEN
15. WC
16. SITE ENTRY
17. PARKING
18. ACCESS RAMP

Fig. 175: Lookout plan
Fig. 177: Raised view of the lookout at low tide and how it enable a close interaction with the waters surface.
Fig. 178: Sunrise at the northern lookout looking across the Nelson Haven at mid tide.
The following three spaces have employed the principles of the embodied image to create the desired moods within the selected spaces. The first space builds upon the previous segment of fortification at the northern viewpoint, but imbues it with specific qualities from a personal subjective experience. The other space is created from a guiding image, this illustrates how a single image can be used to create a particular mood within a space.
Fig. 179: Image of at the northern most point of the site, the area of inquiry for the mentioned subjective experience. One of calmness serenity, the emotions of the water which effected the observer when experienced at the level of the water.
SUBJECTIVE EXPERIENCE

The idea of the space at the northern most point of the site was conceived following a personal subjective experience on the initial visit. The image featured to the left captures the location at the time of this experience, which has resonated throughout, and in some cases pushed this design-led research.

This space places the observer in a similar situation as during this first encounter in order for the same sensation of the experienced. The arrangement of this design draws from the close proximity to the water’s surface, the horizontal perspective enhanced by the slender Boulder Bank, and the dominance of the larger boulders in the foreground. When the tide is in and the conditions are not suitable for this particular encounter, therefore the protected section of the lookout takes the viewer within the boulders, experiencing proximity to water in a different manner.
Fig. 180: Northern lookout engagement with the water’s edge at low tide.
Fig. 181: The northern lookout at high tide. The glass wall panels allow the view to observe the rising water as it engulfs the rocks, the water resists the water allowing the observer to experience a unique view level with the surface of the calm waters.
Fig. 182: The selected image which has influence the atmosphere creation of the shell storage area.
The guiding images as seen in figure 182 possesses the mood of the space which have been adapted for the shell storage area. This image symbolises the transition experienced by each rower as they being their daily training. This key element within this image is the rich detail of the unadorned materials, the depth of the shadows, and the glare and intensity of the light.

The large cavernous storage rooms uses this image to accentuate the scale of this space. The use of shadow in such a large space arouses a sense of singularity while the water reflects and accentuates the intensity of the light flooding in through the large perforated door. This further emphasises this important transition from the darkness into the light.
Fig. 183: The long slender opening and slatted timber door allows light to flood the space early in the morning when the rowers are preparing to head out. The athletes enter this space through darkness, once the narrow passage opens they are submersed with the incoming light, almost blinding them. They move through this space and transition from the darkness into the light of the new day.

The mechanical storage system automatically raises the shells out of the water and holds the shell stead for the rowers to wash down after each session. The shells are then stored in a sliding rack system which is suspended from the ceiling.
Fig. 184: The presence of the restaurant commanding this pivotal location.
This design critically builds on the ideologies discussed in the literature and project review chapters. It combines these qualities with the discussed qualities of water and the tidal movement to create a temporal atmospheric experience. Materialising the intangible notions of water has formed and developed all aspects of this rowing complex; from spatial organisation, formal and subconscious gestures, experiences, lighting, and materiality.

Manipulation of the form of the spaces has evolved the design and allowed new experiences to be discovered throughout the design journey. The application of images and subjective experiences has progressed the architectural response and imbued it with a greater atmospheric quality.

Elements of axial inconsistency, deluge, supernatant, fortification, experience and the embodied image have shaped the qualities of rowing and architecture into a building which does much more than house an activity. It evokes emotions within the observer, it engages the observer, and it questions the observer; bring it back the words of Zumthor "quality architecture to me is when a building manages to move me."1

1 Zumthor. Atmospheres: architectural environments: surrounding objects. 11.
Fig. 185: South approach to the complex leads the viewer along allowing selected glimpses of selected areas: training pavilion, sheltered alcove, the restaurant and the northern lookout.
Fig. 186: Sunset over the restaurant at high tide within the Nelson Haven.
CONCLUSION & CRITICAL REFLECTION

This design-led research has investigated the rhythmic cycle of the tides within the Nelson Haven as an architectural opportunity to encourage further discourse into the atmosphere of space, in order to create a sense of connection to the water and reinvigorate this neglected section of prime waterfront land. Through observations, this thesis research considers Port Nelson, similar to ports around the world, situated with some of the most spectacular views of the ocean; with changing times these pivotal location are becoming furthermore neglected. This thesis sought to reintegrate these spaces into the city’s urban and social fabric through a water based sporting programme. The design research experiments address the problem by adapting the tidal movements as a conceptual mechanism to generate a greater association with the water amongst the people of Nelson.

The iterative design process comprises of carefully considered contemporary studies into space, motion and materiality within a viable programmatic structure. This complex is successful in both function as well as its ability to subconsciously and consciously move the observer. The resulting design encourages civic activities through the commanding architecture and gathering spaces in a pivotal seafront location. The quality of connection to the water shall firmly integrate this new edifice into the urban and social fabric of Nelson.

The design-led approach undertaken through these experiments has explored the role of atmosphere in its ability to materialise what is deemed immaterial, and how such emotions can be attributed to architectural spaces. This spurred an investigation into architecture’s response and interaction within the fluid medium of water through multiple design iterations. The breakdown of theoretical atmospheric circumstances through the work of Pallasmaa, Böhme and Zumthor helped to identify the components which are crucial to the creation of presence. The project reviews helped materialise the conditions and provided formal and material justification to the composition of space which is vividly clear in the final design outcome. These atmospheric mechanisms became far more apparent within the site as a collective experience through different conditions of the same evocative sensation, the constant fluidity of water.

The constraints and limitations of this research are inherent in the programmatic scope and the intended location. The architectural programme of a rowing facility comes with its own inherent constraints in regards to water access, storage and training facilities. While these aspects had aided the communication of the interaction with water, they also pose their own intrinsic issues. Exploring alternate programmes that integrate the temporal nature of the water may have led to alternate discoveries and experiences, albeit positive or not. These programmatic restraints exposed themselves when creating spaces which are both rich of atmospheric qualities and practically viable for the intended programme. The building has to function efficiently as a material object as well as an immaterial experience. This led to some challenging situations when trying to effectively manage both the private and public function of this proposal.

It was both limiting and challenging when developing a scheme which is intended to spur future development along the waterfront. This design had to operate and integrate with the existing situation as well as any further developments. This particular site experiences an elevated tidal displacement which has aided the perception of change over a period of time. It would be questionable if the same feelings would occur in a different location where the tidal displacement was not of such magnitude.

This archetype of interaction and expression serves to expose the rich qualities that architecture can imbue when given the right circumstances. This approach could effortlessly be adapted for other locations to express similar or alternate emotions. The next step which this research preludes, is an investigation into the future programmes and architecture that could occupy the surrounding site to transform this rundown waterfront into a new vibrant public precinct. The exciting future potential for this typology of atmospheric architecture to activate the way in which people occupy and responded to space, would be a sensational transformative prospect for our neglected waterfront spaces.
As viewed from the position of an approaching rower, this design commands this pivotal location within Nelson’s waterfront. This landmark design offers a unique connection to the water not seen anywhere else and establishes the architectural foundations for the future development of Nelson’s emerging public waterfront. Due to the unique natural environment of the Nelson Haven and Boulder Bank this allows for an intimately close relationship to the water, which in other locations and cities would not have been possible. The picturesque beauty of the Nelson Haven is clearly present in the architectural language.

The unique synergy of architecture, atmosphere and the water surface.


Mann, Charles and George Twiss, Physics. (Chicago: Scott, Foresman and Co, 1910), 235.


SOURCED FIGURES


8. Jonie Seddon Shipwreck in Port Motueka, Nelson. Web <http://1.bp.blogspot.com/-kHpcu1LJbjw/VUHaY0vEqCI/AAAAAAAAGM/V4foHr6al9o/s1600/P3200117.jpg>


All figures not attributed are author’s own.


62. Rowing shell on the water preparing to be launched. Web, http://1.bp.blogspot.com/-sItr29OnLo/Tm9Ub4y_xCI/AAAAAAAACZo/avmwMz3AOomM/s1600/Boathouse+single.jpg


68. Peter Zumthor’s meticulous attention to materials and details. Web, https://s-media-cache-ak0.pinimg.com/originals/0f/3a/92/0f3a92f6d6c219690e48dadc4f1b5f8.jpg

77. The idea of presence within the Chapel of St. Lawrence by Avanto Architects, 2013. Web <https://duranvirginia.files.wordpress.com/2013/02/virginia_duran_blog_chapel-of-st-lawrence-_avanto_architects_interior1.jpg>

78. The presence of atmosphere felt within the architecture of Tadao Ando, 2013. Web <https://hamnakizar.files.wordpress.com/2013/08/28764_1292720145_large-11.jpg>


96 - 100. The Norwegian Wild Reindeer Pavilion in Norway. Web <http://snohetta.com/project/2-tverrfjellhytta-
norwegian-wild-reindeer-pavilion>

yadvashemholocausthistorymuseum>

.com/179679/yad-vashem-holocaust-museum-safdie-architects>

yadvashemholocausthistorymuseum>

museums/>

.com/post/20674194246/elcontexto-peter-zumthor-kolumba-museum>

arcspaced.com/features/atelier-peter-zumthor/kolumba-museum/>

113. Erin Greenawald, The light and airy space within the foundations of the previous building at the Kolumba 

com/44828/583194/photography/international-architecture>

com/2014/03/25/fired-concrete-a-lost-local-building-technique/>

articles/2015/february/04/sacred-stories-bruder-klaus-field-chapel/>

archdaily.com/106352/bruder-klaus-field-chapel-peter-zumthor>


140. The selected image which has influenced the atmospheric creation of the shell storage area. Web <https://farm4.staticflickr.com/3265/3122721913_bcb11d573d_b.jpg>

166. Arrangement of images showing the selected material palette for this design. Web <http://newwayhomedesign.com/wp-content/uploads/2015/01/Appealing-Wood-Panel-house-designs-Modern-Bathroom-San-Francisco.jpg>
   <http://www.masonridge.co.nz/assets/Products/Cedar-Outdoor-Bath-27.jpg>
   <https://s-media-cache-ak0.pinimg.com/originals/64/86/60/64866010510c1768010a9eb862c54625.jpg>

182. The selected image which has influenced the atmospheric creation of the shell storage area. Web <https://farm4.staticflickr.com/3265/3122721913_bcb11d573d_b.jpg>