The Aesthetics of Making.

a study in detail design

Matt Buttimore | 2020

“God is in the details.”

–Mies Van der Rohe

The Aesthetics of Making.
A study in detail design

by

Matthew William Buttimore

a 120 point thesis
submitted to the Victoria University of Wellington
in partial fulfillment of the requirements for the degree
of
Master of Architecture (Professional)

Victoria University of Wellington
Wellington School of Architecture
2021

The aspect of “**making**”, of actively doing, modelling, altering things, is a central aspect of architecture, both in terms of the actual process of **designing** and of how **knowledge** and theories are used and generated.

Making is part of how architects and designers think and how knowledge is generated and used.

– Fredrik Nilsson
(Nilsson 2014)

Abstract

As the architectural design process evolves and embraces new techniques and technologies and mass production is more readily available, the relationship between designer and craftsman has become more distant. As we look to produce more and more architecture every year on a larger production scale, the craft and detail of the architecture begin to fall at the wayside. As we lose this relationship, the culture and identity of a place are also lost as these technologies are not responding to specific site and cultural implications.

One such site where this is applicable is the small coastal town of Onemana in the Coromandel, a town of slightly more than 300 homes constructed as a single development in the 1980s. The rush to produce more homes and on a larger scale has meant the town's architecture does not reflect the community culture or coastal identity of the place or the people who live there.

This thesis argues that there is an existing relationship between craftsperson and designer and explores how this relationship and detail design can generate and inform architectural design. Understanding this relationship will generate detail design that has a more powerful outcome on the spatial qualities of the architecture and generates my own detail design language. It also argues that there exists a relationship between detail design and the urban environment, which is not fully utilised in the industry.

The thesis proposes that this can be achieved by testing and evaluating this hypothesis across three scales and three types of urban context. The three test sites identified are a small scale private dwelling, a mid-scale cultural installation and a large scale town centre. Using the process of beginning with detail design, architectural installations will be implemented and evaluated before moving to the following location. As result the method will be proven to work across multiple scales and reflect a variety of cultural inputs.

bach²

/batʃ/

noun NEW ZEALAND

noun: bach; plural noun: baches

a small holiday house

Preface

Practising architecture at its very core is the most elegant form of problem-solving. Creating an outcome in an elegant, new and beautiful way sets a good architect above an ordinary one.

I have always enjoyed the opportunity to problem solve throughout my architectural studies by creating beautiful and unique architectural outcomes. How architectural elements come together to solve a problem, how a joint is formed in the corner of an opening, or how I might translate a speculative design into a physical model.

From a young age, I have spent many of my holidays staying in small parts of coastal New Zealand and being fortunate enough to travel internationally.

This unique perspective gave me a deeper appreciation for an architectural vernacular, which is very specifically New Zealand. It was not until I began researching for this thesis I found the term bach is a precisely New Zealand term.

Naturally, when I had to decide what I was going to do with a year-long thesis, I had to find a way to combine this perspective with my enjoyment of bespoke problem-solving. I then began to consider what problems someone might face building their bach. I considered baches I had stayed in and well-known ones that had won awards, and considered what gave them a common vernacular.

Eventually, I discovered that many of the detail elements use a raw and truthful aesthetic in their method of problem-solving. The limitations on budget and often remote locations resulted in a designer being forced to achieve a beautiful outcome with limited material or engineering options. I was in awe with the beauty of the detail language created and how these small elements could transform the spaces they created.

This research is looking at the relationship between the detail design and how the details are crafted to ask how they can generate and inform architecture design.

‘Beauty’ the first sense

Art the first word, then **Wonder**

Then the inner realization of **‘Form’**

The sense of the wholeness of inseparable elements.

Design consults **Nature** to give presence to the elements

A work of art makes manifest the wholeness of the ‘Form’ a **symphony** of the selected shapes of the elements. In the elements the joint inspires **ornament**, its celebration.

The detail is the adoration of Nature.

‘In the work of Carlo Scarpa’

Louis Khans last piece of writing, to his friend Carlo Scarpa, before his death in 1974

Mark Southcombe, thank you for your constant positivity and always having the time to talk with me. Your guidance and knowledge have been invaluable and is something I will keep with me for the rest of my architectural career.

Contents

Abstract	v
Preface	vii
Acknowledgments	ix
Table of Contents	xi

Chapter One

Introduction

Problem Statement	3
Research Aim + Objectives	3
Research Site	3
Methodology	5
Thesis Scope	7
Thesis Structure	7

Chapter Two

Hahei House

Initial Site	11
Detail Exploration	13
Elevations	15
Interpretations	17
Physical Model	21

Chapter Three

The Context

Site Introduction	25
Site Analysis	27
Site Images	29
Existing Design Language	33
Plan + Sections	35
Community Needs	37
Case Studies	39
Bach Study	43
Onemana Planning Tests	45
Proposed Site	47
Proposed Design Outcomes	49

Chapter Four

The Research

Books	53
Project Review	55
Reflection	57

Chapter Five

The Bach: *Private Scale + Familiar Perspective*

Terminology	69
Case Studies	71
Building Code	79
Colour Palette	81
Detail as Seed	83
Hearth	85
Fabric	91
Mound	97
Roof	103
Plans	108
Elevations	109
Renders	110
Critical Reflection	119

Chapter Six

The Installation: *Mid Scale Installation + Maori Influence*

Te Arawa + Tainui Canoe	127
Rakau Whakapapa	129
Views + Significance	131
Case Studies	133
Details as Seed	137
Hearth	139
Fabric	145
Mound	151
Roof	157
Plans	162
Elevations	163
Renders	165
Critical Reflections	173

Chapter Seven

The Town: *Urban Scale*

Case Studies	183
Detail as Seed	185
Hearth	187
Fabric	193
Mound	199
Roof	205
Plans	210
Elevations	211
Renders	213
Critical Reflections	231

Chapter Seven

Conclusions

Conclusions	237
References	240
Figure List	242

One

Introduction

Problem Statement	3
Research Aim + Objectives	3
Research Site	3
Methodology	5
Thesis Scope	7
Thesis Structure	7

*{How can
craftsmanship and
detail design generate
and inform architecture
design?}*

Research Aims

- 01. To explore the relationship between designer and craftsmanship.
- 02. To explore the relationship between detail and experience.
- 03. To develop my own detail language.
- 04. To explore how community culture may be expressed through architectural installation.

Problem Statement

Bach is a term specific to New Zealand, usually referring to a small dwelling near the coast or sometimes a lake. Typically, a bach is nothing flash, just enough to stay in for a few weeks of the year, made up from local materials and often a ‘do it yourself’ job. Most New Zealanders can find something romantic about coastal architecture and the bach culture that comes with it.

Because most of these properties are design-build solutions put together by the owner, the materials and form tend to be reasonably inexpensive. However, the detailing solutions this process generates are often very unique and have the most effective outcome on the bach’s spatial properties, which leads to this romantic relationship with bach culture.

It is already understood in the architecture discipline there is a relationship between designer and craftsperson and their relationship to detail design. This thesis, through a series of aims and objectives and architectural installations, looks to explore what that relationship is and how it can be better understood to generate better architectural space.

“The built environment consists of materialised knowledge of many kinds, which can be found, for instance, in the detailing, structure and assemblage of spaces and materials in vernacular architecture, as well as in contemporary design objects and infrastructural projects. It is possible to read these different types of knowledge in a building on various levels: e.g., as patterns of social and cultural processes as well as material and technical patterns and mechanisms.” (Nilsson 2014)

I chose this opportunity to develop my detail design language which reflects New Zealand architecture and embodies what it means to be a New Zealander, and seeks to answer how craftsmanship and detail design generate and inform architecture design?

Research Question

This research explores the developing relationship between craftsperson and detail design and asks how this relationship can generate and inform architectural space. This idea can be expanded upon further by exploring the relationship between the designer and the craftsperson to see how they communicate to produce a finished detail. In doing so, this research also looks at exploring the relationship between the detail and the user of the space and the characteristics of the detail, strengthening this relationship. And finally, can this relationship work at an urban scale as well as a residential scale.

This thesis is looking to explore these questions in the context of Onemana, a small coastal community in the coromandel peninsula. Here, the research also aims to develop a specific detail design language that reflects coastal communities and New Zealand as a whole.

“Language becomes the means of expression... For strictly is it language that speaks.” (Heidegger 2001)

These research objectives will also be explored through three scale shifts and three shifts in cultural and social processes.

Research Site

Unlike other towns in the Coromandel peninsula, Onemana has not developed overtime slowly, shifting and adapting with the culture and climate, but was a single development built in its entirety during the eighties. This site provides an opportunity to ask how the town would be designed differently if it was developed using a process of detail design. The design of the existing town provides an excellent metric to compare to a detail design process. The comparison between the design process of these two sites directly compliments and outlines the benefits of a detail driven design process.

Methodology

The aesthetics of making is a design-led research project. This working method means that after each stage of design, the body of research can be evaluated and developed in the next stage. The emphasis of this research is placed on building upon the body of existing design work through a series of design projects, which results in a final design language as a materialised body of knowledge, which can be read as patterns of social and cultural processes.

Three design projects explore how craftsmanship and detail design can generate and inform architecture design. The aims of this research are; to explore the relationship between designer and craftsmanship, to explore the relationship between detail and phenomenological experience, to develop my detail language. To explore how community culture is related to architectural installation. These research aims and objectives and the three projects have been specifically chosen to further the research question.

“In lots of subtle, but important, ways, design research differs from more traditional modes of research, for example, by reversing the order of research methods. Instead of posing research questions and then finding answers, in much design research the process operates through generative modes, producing works at the outset that may then be reflected upon later. And, in terms of context, while a researcher in the humanities might first explore the context or background for a research question in order to find out the current state of knowledge in a specific field, in some cases design researchers will investigate ideas through the production of a work first, and then later consider the larger field to ask who else is researching the same questions, in order to argue how the particular knowledge they have generated is original.” (Rendell 2013)

Project One, The Bach, starts the research from a familiar perspective and a small private scale. Project two, The Culture, investigates how detail works at an urban scale and how the detail works with cultural implications. Project three, The Town, is the culmination of two cultural implications and investigates how detail works at the most extensive urban scale. The essential methods used in each design were identified, starting with physical sketch ideas and transitioning to digital design.

“Just like craftsmen of the past, the craftsmen of the digital age – the designer working with virtual representations of the material artefacts – seek out unpredictable outcomes by experimenting with what the medium and the tools have to offer “... “Knowing what, why, and how to adjust requires deep knowledge of the processes, tools, and techniques, just as it did in the pre-digital era.” (Kolarevic 2008)

The outcome is a result of working between analogue and digital design methods and a variety of tools. The research from each project further develops the design language being generated and results in a language that reflects this thesis’s research aims and objects.

Thesis Scope

While this thesis aims to have a broad and deep approach to detail design and the cultural implications of such decisions, I also recognise that New Zealand has a rich and challenging history. Furthermore, while this thesis will touch on our past’s relevant parts, writing on Māori architecture is a thesis in its own right, that requires thorough examination and input from Mana Whenua. For the purpose of this research, the design language of Māori architecture in my cultural project will be drawn upon as an influence for considering context and landscape in detail driven design processes only and will not replicate nor appropriate designs of Mana Whenua or Māori culture.

As part of this research, I was able to access written reports and documents on the history of this site. It should be noted that the early history of Māori and Mana Whenua at this site has been predominantly shared through oral retelling passed down through generations. While I was able to cross-reference written documents and materials, I cannot guarantee that these sources capture the narratives and accurate histories of Mana Whenua at this site. The resulting information is therefore limited to the secondary resources that were accessible during the period of this research.

Thesis Structure

This thesis is structured as three projects, which move from the minor scale to the largest and move from a classic New Zealand bach through an installation to an urban structure. The thesis is structured to allow me to approach the thesis from a position of familiarity to a foreign perspective of culture and design and finishing in a design which has both perspectives nested within it.

Within each of the projects, the design methodology will be the same to allow accurate comparisons. Each project begins with sketches before evolving to digital iterations and development. Each project is then evaluated and critically reflected upon before moving into the next project.

Two

Hahei House

Initial Site	11
Detail Exploration	13
Elevations	15
Interpretations	17
Physical Model	21

Macro Site. *Hahei beach township as a wider context, relationship to main routes and waterfront*

fig. 2

Site. *Site Relationship to access routes and beach.*

fig. 3

Micro Site. *Site specific location where this experiment is located.*

fig. 4

Initial Site

This research began, initially, with the development of a small bach on a site in Hahei. This development was designed as an exploration into detail design and to discover what potential it might have as a body of research, and to refine a detail design method. The site at Hahei was chosen for the small towns coastal New Zealand community culture. The specific site within Hahei was chosen due to the proximity to the beach and other site implications which would influence the final design.

fig. 5

Detail Exploration

For this initial study, the detail design method had not yet been refined and therefore the building was produced in the traditional way of design. Starting with massing and working down to the detail. This did however provide an opportunity to work on the detail and begin to explore how they informed architectural design. By working on the details after the design, the limitations of this way of working on details were discovered and the need for a new process could evolve.

fig. 6

Right Night Elevation.

fig. 7

Left Night Elevation.

fig. 8

Right Elevation.

fig. 9

Left Elevation.

fig. 10

Rear Night Elevation.

fig. 11

Front Elevation.

Elevation

The final design of this initial experiment, served as a showcase for the the style of detail and design language to be developed throught this research. Some of the details and principles developed in this project are developed further in the research with a refined process.

Interpretations. *Interior view.*

fig. 12

Interpretations. *View down hall.*

fig. 14

Interpretations. *Front view.*

fig. 13

Interpretations. *Exterior Bathroom.*

fig. 15

Interpretations. *Second Bedroom.*

fig. 16

Interpretations. *Deck + Living Spaces.*

fig. 18

Interpretations. *Structural Detail.*

fig. 17

Interpretations. *Rear Deck.*

fig. 19

Physical Model. *View from the rear*

fig. 20

Physical Model. *View from the front*

fig. 21

Physical Model

Finally, a physical model was generated to better understand how the details would come together and how they might work as larger system. The model also illustrated the scales the details would be able to function at to be able to effectively inform architectural design.

fig. 22

Three

The Context

Site Analysis + Context

Site Introduction	25
Site Analysis	27
Site Images	29
Existing Design Language	33
Plan + Sections	35
Community Needs	37
Case Studies	39
Bach Study	43
Onemana Planning Tests	45
Proposed Site	47
Proposed Design Outcomes	49

fig. 23

Onemana Site Introduction

Growing up in Auckland meant I spent a lot of my summers staying in baches throughout the Coromandel Peninsula from a young age. When I discovered I was interested in becoming an architect, many summer days were spent pondering why I liked certain baches and why I was not too fond of others. Before starting my architecture career, I appreciated buildings of a particular vernacular that went beyond personal preference. It would, of course, be a few years before I developed a critical architectural way of thinking and was able to see how buildings responded to site and what kind of process a designer had followed. Upon starting this research and setting out to answer the question of ‘how can craftsmanship and detail design generate and inform architecture design?’ it, of course, made sense to situate this research where this thinking had first formed.

Therefore, this research begins by simply remembering these beach towns throughout the Coromandel Peninsula I had stayed in many years ago. I found baches that I had stayed in and researched their construction, even redesigning some of them as a simple experiment for helping me to understand them better. I discovered that many of these beach towns had a certain design language and history shared in their development. This discovery was true for almost all coastal towns in the Coromandel Peninsula, apart from one small development in the south end, Onemana.

This chapter of the research looks at the contextual elements of my chosen site and reflects on how these elements provide opportunities for design and research later in the thesis. The chapter then concludes with a new design for the town, creating a new masterplan and interpretations of how this outcome could look.

fig. 24

1944.

fig. 27

1965.

fig. 25

1954.

fig. 28

1980.

fig. 26

1959.

fig. 29

1983.

fig. 30

1994.

fig. 31

2002.

Site Analysis

Onemana, like many other towns in the Coromandel, began as a Māori settlement before being turned into farmland and eventually slowly being developed into a coastal town. However, unlike other towns, Onemana was conceived as a single development which made it a settlement of two or three dwellings to an entire town of over 300 houses in the space of a few years. Onemana was developed in the 1970s within the boundaries of an existing farm, known as Shangri-la. The initial development was subject to several restrictions, specifically the size of the development. This rush to develop an entire town did not allow the town time to evolve and respond to developing needs and design aesthetics. Therefore, I posit that Onemana would serve as a great location to test the aims of this thesis as the resulting spaces can be directly compared to existing architectural installations.

fig. 32

Site Images. *View from Ocean looking to Onemana*

Site Images. *View from Ocean looking to Onemana*

fig. 33

Site Images. *View from Ocean looking to Onemana*

fig. 35

fig. 34

Site Images. *View from Ocean looking to Onemana*

fig. 36

Small Scale Dwelling

This house, reflects the design principles of many of the houses in Onemana.

Oversized materials that don't reflect the environment and overall a design which could exist any where and not specific to Onemana.

fig. 37

Mid Scale Urban Installation

The only mid-scale installation on site is this surf lifesaving club. It is apparent that not only does it not do justice to its site, with terrible design and poor materiality selections, it is also largely un-fit for purpose. Being far too small to store the surf lifesaving equipment, a large shipping container is situated in front. The building is also far too low to provide adequate visibility of the beach.

fig. 38

Large Scale Urban Development

The largest installation on site is the small retail centre on the main road.

The building is made up of a café and restaurant, a dairy and real estate office. While the building's latest addition, a covered patio, begins to reflect the coastal community with its simple and rustic timber façade. The reminder of the building is a simple concrete block design, which gives no consideration to the wider site.

Existing Design Language

These images illustrate the existing design language at Onemana. It is apparent that, not only does it not have a consistent design language, the multiple examples of design do not reflect the coastal community within which they are situated. Much of the design does reflect the period in which the town was developed, and shows how the town has failed to evolve or how individual buildings have not considered the possible future uses of their design.

MAORI PA

MAORI PA

HISTORICAL SITE
SITE ID T12/60

Three.

Two.

One.

HISTORICAL SITE
SITE ID T12/16

HISTORICAL SITE
SITE ID T12/29

HISTORICAL SITE
SITE ID T12/60

HISTORICAL SITE
SITE ID T12/22

HISTORICAL SITE
SITE ID T12/58

HISTORICAL SITE
SITE ID T12/455

FUTURE COASTAL
EROSION LINE

COASTAL EROSION
LINE

fig. 39

fig. 40

Plan + Sections

As part of understanding the site, this research completed a visual study of the site. By removing the town and overlaying the contours and building outline, design opportunities begin to present themselves. In this map, the water ways that run through the site become more evident, and it becomes clear they need a redesign. A series of sections through the site also show how the site drastically changes in elevation, not apparent in plan.

Community Needs

In 2017 The Onemana Ratepayers Association, or ORA, compiled a report of things they believed were operating successfully in the community, things that were not and things they thought they might need or want to avoid in the future. While this thesis explores the relationship between detail design and how it generates architectural space and not necessarily resolving a pre-existing community’s needs, it can be useful to see what is not working in terms of the community’s masterplan. (Association 2017)

This research also found that, because the survey of people had a vested interest in maintaining the current status of Onemana, the information is sometimes at direct odds with what this thesis proposes. It is also in direct contradiction with other report elements, which highlight actual problems the town is suffering.

The research has highlighted just a few of the items listed as “what we need” in the 2017 report.

- A community facility that is big enough to host small and larger groups of people.
- Support for our local café and dairy.
- New Toilet Facilities – in budget 2017/2018
- Recognition of the Māori Pā site with better signage

The ORA survey recognised that the town did not have a community facility that is big enough to host small and larger groups of people. The survey also pointed out how the township thought it was imperative that they support their café and dairy. On site visits it was noted that the café and dairy are often empty during winter months. The survey also states a requirement for new public toilet facilities and this has been approved in the 2017/2018 Thames District Council budget. (Association 2017). The town also recognised the importance of recognising the Māori Pā site, which will also be addressed in project two The Installation

*Image redacted - see
figure list*

fig. 41

*Image redacted - see
figure list*

fig. 42

*Image redacted - see
figure list*

fig. 43

*Image redacted - see
figure list*

fig. 44

*Image redacted - see
figure list*

fig. 45

*Image redacted - see
figure list*

fig. 46

Case Study: One

The Sea Ranch

In 1963 Architect and planner Al Boeke envisioned a community in Sonoma county, California, which would be come to be known as The Sea Ranch. Boeke recruited a number of principal designers to lead the project including; Charles Moore, Joseph Esherick, William Turnbull Jr, Donlyn Lyndon, Richard Whitaker and Lawrence Halprin, who would create the master plan shown to the left (fig 41).

The basic idea behind The Sea Ranch was ‘living lightly on the land’. This was regulated in many ways, namely respecting the landscape and celebrating its natural forms and scale. Also by selecting materials which draw from nature and are rough and simple.

The wider challenge of The Sea Ranch was to demonstrate to the world that it is possible to inhabit the natural landscape whilst preserving its natural beauty.

fig. 41	Masterplan
fig. 42	Sea Ranch Principles
fig. 43	Halprin Cabin
fig. 44	Design Principles One
fig. 45	Design Principles Two
fig. 46	Design Principles Three

*Image redacted - see
figure list*

fig. 46

*Image redacted - see
figure list*

fig. 47

*Image redacted - see
figure list*

fig. 48

*Image redacted - see
figure list*

fig. 49

*Image redacted - see
figure list*

fig. 50

*Image redacted - see
figure list*

fig. 51

*Image redacted - see
figure list*

fig. 52

Case Study: Two

Ahuareka Village

Designed as a masterplan by Crosson Architects, Ahuareka Village is a response to modern development formats which sacrifice productive and natural landscapes. The design makes use of a land analysis, which identifies how the land is being used, areas of ecological preserve and land which can be used as farm land to provide an internal economy. Ahuareka is designed as a village format, where the development is made up of mixed used land and building types, ensuring diversity, preserving natural ecologies and local economies.

fig. 46	Site Aerial Perspective
fig. 47	Sketch
fig. 48	Sketch
fig. 49	Sketch
fig. 50	Plan
fig. 51	Plan
fig. 52	Masterplan

fig. 53

Whitianga.

Materiality:
Rough Size:
Category:
Architect:

Fiberlite, Timber Cladding
80m²
Standard NZ Bach
Unknown

fig. 54

Waihi.

Materiality:
Rough Size:
Category:
Architect:

Board and Batten
100m²
Standard NZ Bach
Unknown

fig. 55

Studio 19 Bach.

Materiality:
Rough Size:
Category:
Architect:

Fiberlite, Timber Cladding
100m²
Architectural NZ Bach
SGA

fig. 56

Great Barrier House.

Materiality:
Rough Size:
Category:
Architect:

Timber Cladding
80m²
Architectural NZ Bach
Crosson Architects

fig. 57

Whangamata.

Materiality:
Rough Size:
Category:
Architect:

Fiberlite, Timber Cladding
110m²
Standard NZ Bach
Unknown

fig. 58

Back Country House.

Materiality:
Rough Size:
Category:
Architect:

Timber Cladding
85m²
Architectural NZ Bach
LTD

fig. 59

Hahei (Concept).

Materiality:
Rough Size:
Category:
Architect:

Timber Cladding
100m²
Standard NZ Bach
Myself

fig. 60

Waihi.

Materiality:
Rough Size:
Category:
Architect:

Fiberlite, Timber Cladding
100m²
Standard NZ Bach
Unknown

Case Study: Three

Bach Study

As discussed previously in this chapter, this research began by recalling some of the baches I had stayed in, researching their designs and construction, and modelling them in 3D to help me in understanding them better. This process was effective in starting to think about bach design and how elements of a New Zealand bach might come together. Therefore, the research continued to complete a study on a handful of other dwellings which could be considered precedents to Project One The Bach.

fig. 53.....	Whitianga bach
fig. 54.....	Waihi Bach
fig. 55.....	Studio 19 Bach
fig. 56.....	Great Barrier House
fig. 57.....	Whangamata Bach
fig. 58.....	Back Country House
fig. 59.....	Hahei House
fig. 60.....	Waihi Bach

fig. 61

fig. 62

fig. 63

fig. 64

fig. 65

fig. 66

fig. 67

fig. 68

Onemana Planning Tests

A series of sketches and parti diagrams were completed to advance the researches understanding of how the new town should be organised. Such considerations were, but not limited to; how to divide beachfront access evenly amongst the residents, maintain the genius loci of a beach town through road layouts and dimensions and having each dwelling sit lightly on the land.

fig. 61	Beach front Distribution
fig. 62	View Planning
fig. 63	Sectional Planning
fig. 64	Walkway Layouts
fig. 65	Park Layout
fig. 66	Suburb Layout
fig. 67	District Layout
fig. 68	Suburb Planning

MAORI PA

MAORI PA

Installation Site.

FUTURE COASTAL
EROSION LINE
COASTAL EROSION
LINE

Town Site.

Bach Site.

New Site.

fig. 69

fig. 70

Proposed Site

From the design and precedent research, a master plan was generated. The master plan would guide the future research in redesigning the town and provide the physical location for each of the projects contained within this thesis.

fig. 71

fig. 72

fig. 73

fig. 74

Proposed Design Outcomes

Interpretations of what the site could look like at the end of the research were generated by populating the masterplan with each study models. These interpretations serve as a proof of concept before moving further into the research.

Four

The Research

Books	53
Project Review	55
Reflection	57

fig. 75
Strange Details – Michael Cadwell

fig. 76
Atlas of Novel Tectonics – Reiser + Umemoto

fig. 77
Loblolly House – Kieran Timberlake

fig. 78
Studies in Tectonic Culture – Kenneth Frampton

fig. 79
Tectonics in Architecture – Reader

fig. 80
The Nature and Art of Workmanship – David Pye

fig. 81
Towards an Ecology of Tectonics – Anne Beim

fig. 82
A Theory of Craft – Howard Risatti

fig. 83
Imaging Decolonisation – Rebecca Kiddle

“Scarpa has eccentrically configured the rail to grasp and joined the teak with nautical brass fittings that provide both visual and tactile accents; the brass more than the wood, conducts the varying temperatures of the air. With great courtesy, then Scarpa takes us by the hand.”

Strange Details – Michael Cadwell

“Fuse culture with vernacular”

Strange Details – Michael Cadwell

“The mason was struck by the fact that expanded energy does not get lost; it remains stored for many years, never diminished, latent in the block of stone , until one day it happens that the block slides off the roof and falls on the head of a passer-by, killing him... in architecture this search is also undoubtedly bound up with the material and with energy; and if one fails to take note of this, it is not possible to comprehend any building, either from a technical point or from a compositional one. In the use of every material there must be an anticipation of the construction of a place and its transformation.”

Atlas of Novel Tectonics – Reiser + Umemoto

We don’t ask to be eternal beings. We only ask that things do not lose all their meaning.
– Antoine de Saint-Exupery

Studies in Tectonic Culture – Kenneth Frampton

Books

The Aesthetics of Making draws influences and builds upon the large body of existing work, not only in detail design but in all aspects of research that this thesis covers. A selection of these books is shown to the left (fig 75–83). The selection of these books is designed to reflect the aims of this thesis;

- To explore the relationship between designer and craftsmanship.
- To explore the relationship between detail and experience.
- To develop my own detail language.
- To explore how community culture may be expressed through architectural installation.

The four main areas of research can be catergorised as craft and detail design, the influence of historic Maori design, experience and precedents which are applicable to this thesis.

fig. 84

fig. 85

fig. 86

fig. 87

fig. 88

Case Study: Four

Carlo Scarpa: Brion Cemetery

One of the largest guiding influences on this research is Carlo Scarpa. His understanding of how details inform architectural design is undoubtedly at the centre of all of his works. Scarpa's theory is discussed in depth in this chapter, however one project has the most direct influence on this research. Brion Cemetery in San Vito d'Altivole, Italy could be considered Scarpa's greatest work. His understanding of materials, their relationship to details and how craftsman work with them culminates in a beautiful piece of architecture.

"In architecture, there is no such thing as a good idea. There is only expression."

(Scarpa 1981)

Reflection

Study One:
Gottfried Semper – The Four Elements of
Architecture.

.....

The theorists listed in the earlier pages were specifically chosen as the theorists to build upon as they have the most relevant body of work pertaining to the aims of this thesis. These theorists directly or indirectly explore the relationship between designer and craftsman, some through the medium of detail or other architectural expressions. The research has also found that the topic of relating detail to the way one experiences space has been extensively written on, and this thesis aims to build on that body of work, in a coastal New Zealand context.

This thesis is based on several theorists' research to critically reflect on how their approach to detail design might be integrated with the aims of this thesis to answer how can craftsmanship and detail design generate and inform architectural design?

To fully explore this question the aims of this research have been crafted and weighted to reflect the existing body of research, three of the four aims relate to detail design;

- To explore the relationship between designer and craftsmanship.
- To develop my detail language.
- To explore how community culture is related to architectural installation

And the fourth aim to user experience;

- To explore the relationship between detail and experience.

The primary theorists who have been evaluated in this literature review are; Kenneth Frampton, Fredrik Nilsson, Marco Frascari and Louis Khan. Secondary theorists have also been explored throughout the research. The main theorists and specifically their writings have been chosen to best advance this research's aims. A summary of their position and writings are as follows;

Gottfried Semper - The Four Elements of Architecture.

Semper's book, *The Elements of Architecture*, is the foundation in which much of modern architecture has been developed. Semper's writings laid the ground work for other theorists such as Frampton, Nilsson and countless others to build upon. In much the same way as these theorists, this research is first grounded by the findings of Semper. This research uses Semper's definition of the four elements of architecture to categorize and give definition to the details being generated.

"The first sign of human settlement and rest after the hunt, the battle, and wandering in the desert is today, as when the first men lost paradise, the setting up of the fireplace and the lighting of the reviving, warming, and food preparing flame. Around the hearth the first groups assembled; around it the first alliances formed; around it the first rude concepts were put into the customs of a cult. Throughout all phases of society the hearth formed that sacred focus around which the whole took order and shape. It is the first and most important, the moral element of architecture. Around it were grouped the three other elements; the roof, the enclosure and the mound, the protecting negations or defenders of the hearth's flame against the three hostile elements of nature." (Semper 2010)

Semper's definition of hearth, is more than a gathering space but an ontological relationship to structure around which he groups the three other elements; the roof, the enclosure and the mound. In Semper's definition these are merely technical elements as they serve to protect the hearth. This research will evaluate how detail can generate and inform architecture through the categorisation of these elements. It is therefore pivotal to this research to understand how these elements relate to each other and what meaning can be applied to them.

Reflection

Study Two:

Kenneth Frampton – Studies in tectonic culture

Study Three:

Fredrik Nilsson – Making as Architectural Thinking
and Practice

.....

Kenneth Frampton – Studies in tectonic culture

Kenneth Frampton is an Architect, critic and architectural historian. He is regarded as one of the world's top architectural historians of modernist architecture. His book, "Studies in Tectonic Culture; the Poetics of Construction in Nineteenth and Twentieth-Century" Architecture has been pivotal to beginning the research. The book begins to explore the relationship between detail and space and the relationship between designer and craftsmanship.

"Semper draws between the symbolic and technical aspects of construction, a distinction that I have attempted to relate to the representational and ontological aspects of tectonic form: the difference, that is, between the skin that represents the composite character of the construction and the core of a building that is simultaneously both its fundamental structure and its substance. This difference finds a more articulated reflection in the distinction that Semper draws between the ontological nature of the earthwork, frame, and roof and the more representational, symbolic nature of the hearth and the infill wall. In my view, this dichotomy must be constantly rearticulated in the creation of architectural form, since each building type, technique, topography, and temporal circumstance brings about a different cultural condition." (Frampton 1995)

In this excerpt, Frampton is building on Gottfried Semper's "Four Elements of Architecture". This writing is a primary resource for this research. Frampton builds on Semper's distinction between the symbolic and technical elements of architecture, which he then relates to the representational and ontological aspects of tectonic form. These are related to Semper's four elements of architecture, Mound, Enclosure, Roof and Hearth. Frampton is relating Mound, Enclosure and Roof to the ontological and Hearth to the representational.

Two opportunities arise from this research to develop this thesis. Firstly, the relationship between representation and ontological, or symbolic and technical. This relationship can be described as truth and meaning; this relationship can be applied to the details' design. Where truth is the functionality of the detail and meaning is the narrative, it conveys to a user in the space. Secondly, Semper's four elements, the categorisation of architecture into four categories, is a useful tool to understand each detail's relationship and purpose; this could be implemented in the iteration of the details.

This thesis found Kenneth Frampton's research vast and provides a good starting point for this research to build on; it lacked the specific depth of exploring how craftsmanship and detail design generate and inform architecture design. The next theorist was found to provide a more specific body of research to this thesis's aims.

Fredrik Nilsson - Making as Architectural Thinking and Practice

Fredrik Nilsson is an Architect and Professor of architectural theory. His Writing, "Making as Architectural Thinking and Practice", explores many of this research's same aims. The book chapter specifically builds on exploring the relationship between designer and craftsman.

"What architects normally make is, as many have argued, not buildings, but rather representations of buildings, cities and rooms or some of their details. But here the kind of "representation" is less mimetic than prospective, because architectural design has always been separated from production. Unlike many craftsmen and tailors, architects do not make the things they design. They make "design information", an equivalent of making a pattern of clothing, with which the architect simultaneously forms the immaterial host - the space - and the material draping or container for it." (Nilsson 2014)

Nilsson also explores the idea of materialised knowledge, or the generation of design information, to say it is possible to read buildings as social and cultural processes. This concept is directly related to this research aim of exploring how detail works at an urban scale, and to a lesser extent how the details designed in this thesis can convey the narratives given to them, and how they relate to each other.

.....
“The built environment consists of materialised knowledge of many kinds, which can be found, for instance, in the detailing, structure and assemblage of spaces and materials in vernacular architecture, as well as in contemporary design objects and infrastructural projects. It is possible to read these different types of knowledge in a building on various levels: e.g., as patterns of social and cultural processes as well as material and technical patterns and mechanisms.” (Nilsson 2014)

These extracts fundamentally support and build on the research aims, implying there is a relationship between designer and craftsman, and detail operating at an urban scale. This theory provides an opportunity for the designs within this thesis to take this exploration further and start to flesh out how these relationships affect user experience.

Marco Frascari – The Tell The Tale Detail

The most critical reading to support this research is “The Tell The Tale Detail” by Marco Frascari. Frascari was an Italian Architect and Architectural theorist. He studied with Carlo Scarpa, the main project study for this thesis, and much of ‘The Tell The Tale Detail’ is based on Scarpa’s work.

In Frascari’s short text, he touches on each of the research aims with his theories, which also build on some of the theorists discussed, such as Gottfried Semper and Kenneth Frampton, and introduces new theorists such as Leon Battista Alberti.

“In Scarpa’s works the relationships between the whole and the parts and the relationships between craftsmanship and draftsmanship allow a direct substantiating in corpore vili of the identity of the processes of perception and production, that is, the union of the construction with the construing in the making and use of details.” (Frascari 1983)

Frascari infers that Scarpa’s understanding of the relationship between craftsperson and designer has directly resulted in the outcome of his detail and its relationship with the occupant in the following quote “...sensory stimuli only supply signs of the presence of architecture, but do not give us an adequate understanding of it. Such signs, that is, the details, acquire a meaning by virtue of which they become a vehicle of knowledge through a long process of association and comparison and through a set of geometric relationships.” This implies that there are multiple levels of meaning instilled within the details, the relationship between craftsperson and designer is just one of them.

Frascari also discusses a method of architectural design similar to one this research employs, starting with the detail design and working backwards to a finished architectural design.

“...details as generators, a role traditionally ascribed to the plan, and to show that technology, with its double-faced presence as “techne of logos” and “logos of techne” is the basis for the understanding of the role of details. That is to say the “construction” and the “construing” of architecture are both in the detail. Elusive in a traditional dimensional definition, the architectural detail can be defined as the union of construction, the result of the logos of techne, with construing, the result of the techne of logos.” (Frascari 1983)

Finally, as well as advancing the aims of this thesis and supporting the methodology, Frascari also shares a fundamental insight into Scarpa’s work. “Scarpa’s architecture stands against the bare structure of logic; it stands for the union of res and verba, that is, for the union of representation and function.” This is an essential idea within the design of this thesis’s details, bringing together the tangible and non-tangible. The next theorist builds on this idea extensively.

Reflection

Study Five:

Louis Khan – Between Silence and Light

.....

Louis Khan – Between Silence and Light

Finally, Louis Khan's text 'Between Silence and Light' explores the research aim; the relationship between detail and experience. In the text, he never directly refers to detail; he is exploring a pivotal concept to this research.

"Louis Kahn saw architecture as the meeting of the measurable and the unmeasurable. He used the word "Silence" for the unmeasurable, for that which is not yet; and the word "Light" for the measurable, for that which is. Kahn saw architecture as existing at a threshold between Silence and Light, which he called the Treasury of the Shadow. He felt that a great building begins with a realisation in the unmeasurable. Measurable means are then used to build it, and when it is finished, it gives us access back to the original realisation in the unmeasurable." (Lobell 1979)

This concept is important to this research because Louis Khan is relating tangible architecture to non-tangible thought and experience. In this way, Louis Khan's treatment of the elements of architecture can be considered as experiments in explorations in this temporal realm of thinking.

This then provides an opportunity for the designs in this research to be based in Louis Khans mode of thinking and further develop his ideas in design, namely; Knowledge, Order, Structure, Material and Art. By considering Khans writings on each of these, and applying this theory when it is applicable to the developments generated in this research, tangible solutions arise for something that by its very nature is not a tangible endeavour, human experience. An example could be to consider Khans writing on structure;

"Structure is the giver of light. When I choose an order of structure that calls for column alongside of column, it presents a rhythm of no light, light, no light, light, no light, light. A vault, a dome, is also a choice of a character of light." (Khan, Between Silence and Light 1979) This can then be applied to structural systems generated in this research to a similar end.

Conclusion

To conclude this chapter, this review of the existing body of work in detail design and mode of thinking has established a set of design guidelines and narrowed the scope of the research. The design guidelines include but are not limited to:

Firstly, exploring the aims of this thesis through categorised iteration, based on Gottfried Semper's four elements of architecture, where various elements explore different relationships between representational and ontological to provide new cultural conditions and processes.

Secondly, exploring the relationship between designer and craftsman through the concept of materialised knowledge which can be read as patterns of social or cultural processes.

Thirdly, developing the depth of the details produced by exploring the layers of inputs each might be instilled with, namely details as a generator for design, the histories of the details and the relationship between details.

Finally, exploring the relationship with human experience via the threshold of the measurable and immeasurable. Building on Louis Khan's modes of thinking; Knowledge, Order, Structure, Material and Art.

fig. 89

Five

The Bach

Onemana House

Terminology.....	69
Case Studies.....	71
Building Code.....	79
Colour Palette.....	81
Detail as Seed.....	83
Hearth.....	85
Fabric.....	91
Mound.....	97
Roof.....	103
Plans.....	108
Elevations.....	109
Renders.....	110
Critical Reflection.....	119

Introduction

As explored in Chapter Three of this research, the concept of intangible elements in the detail, is already a familiar one. As Fredrik Nilsson would call it, a 'materialised knowledge' existed in the threshold between the measurable and the unmeasurable. Louis Khan would call this concept the Treasury of the Shadow. This chapter aims to explore this concept and evaluate what elements generate this design information.

This chapter begins by visiting a series of residential homes; some whose design ethos align with this thesis's aims, and some whose detail design aesthetics would be similar to the details produced in this chapter. The purpose of these site visits was to see what the existing school of thought is around detail design and how it relates to space generation.

The research then moves quickly through the building code, which is intended to be an initial design generator, as covered in the scope of this research.

The research then explores material and colour palette before starting on concept design. This first chapter's development process focuses mainly on taking concept sketches through the design process to better understand the detail design process, narrow the research scope, and discover the inputs that generate details as 'materialised knowledge'.

Detail	.....	The junction of two or more elements
Element	.....	A singular object not yet acting on anything
Component	.....	A collection of details
Sub-assembly	.....	A collection of details and other elements
Assembly	.....	A collection of sub-assemblies
System	.....	A collection of details, elements, components, assemblies
Installation / Architecture	.....	The wider project or building

fig. 90

Terminology

As this body of research evolves a number of key terms are used time and again. To further the understanding of this research these terms have been defined in this chapter. An example of how these terms work together can also be seen in the diagram to above (fig 90) and in the list to the left.

fig. 91

fig. 92

fig. 93

fig. 94

fig. 95

fig. 96

fig. 97

Case Study: Five

Narrow Neck House

Designed by Mitchell Stout Dodd, the elaborate, quirky and sometimes unusual Narrow Neck House was a primary precedent in considering detail design. I was fortunate enough to be able to visit this house in the early stages of my research. How Mitchell Stout Dodd had considered material and how the design elements can come together in new and unique ways, helped develop my understanding of what architectural detail design could be.

fig. 91	Joist Support
fig. 92	Counter-weighted Window
fig. 93	In Situ Concrete
fig. 94	Small Reveal
fig. 95	Handrail Detail
fig. 96	Canterlevered Roof
fig. 97	Lean to Roof

fig. 98

fig. 99

fig. 100

fig. 101

fig. 102

fig. 103

fig. 104

fig. 105

fig. 106

Case Study: Six

339 House

339 House, designed by and lived in by Strachan Group Architects, is a study in site consideration, how detail responds to site and how detail can be used throughout a design to create a consistent theme. SGA has carefully considered the views available in and out of the site and carefully placed or removed the design elements to perfectly capture or block the views. The consideration of detail does not stop with the building itself but also flows through the fixtures, fittings and furniture.

fig. 98.....	Entrance
fig. 99.....	Handrail Detail
fig. 100.....	Table Detail
fig. 101.....	Junction
fig. 102.....	Patio Structure
fig. 103.....	Door Detail
fig. 104.....	Junction to Roof
fig. 105.....	Wall to Window Junction
fig. 106.....	Window Reveal

fig. 107

fig. 108

fig. 109

fig. 110

fig. 111

fig. 112

fig. 113

Case Study: Seven

Belmont Garden Room

Designed and occupied by Mitchell Stout Dodd, Belmont garden room is an addition to a traditional North Shore villa. Throughout the design, the concrete forming used to create moments of pause and consideration is very reminiscent of Carlo Scarpa. This element showcases how detail can generate and inform space.

fig. 107	Joist Detail
fig. 108	Concrete Support Detail
fig. 109	Junction Detail
fig. 110	In Situ Concrete Detail
fig. 111	Materiality Reference
fig. 112	Soffit Detail
fig. 113	Joist to Wall Detail

fig. 114

fig. 115

fig. 116

fig. 117

fig. 118

fig. 119

fig. 120

fig. 121

fig. 122

Case Study: Eight

Studio 19 Bach

Designed and constructed off-site in collaboration with Unitec, Strachan Group Architects has showcased the potential in consideration of material selection. A humble yet elegant installation occupying just 100m2 of total footprint, Studio 19s bach is an example of the possibility to create beautiful architecture with limited size and budget.

fig. 114	Sliding Window
fig. 115	Floor + Ceiling Material
fig. 116	Interior Wall Material
fig. 117	Built in Furniture
fig. 118	Exterior View
fig. 119	Deck View
fig. 120	Indoor/Outdoor Flow
fig. 121	Material Reference
fig. 122	Deck Details

fig. 123

fig. 124

fig. 125

fig. 126

fig. 127

fig. 128

fig. 129

fig. 130

fig. 131

Building Code.

As referenced in this thesis’ scope, the building code was used as a design generator. By considering the existing acceptable solutions and verification methods for the New Zealand Building Code, the research was able to operate with some level of legitimacy and could be seen as not outside the realm of possibility. This selection of details, covers not only the basic areas of any structure, but areas which were deemed applicable to this research. By analyzing each detail to see how they function to achieve their intended purpose, it is possible to redesign them to similar specifications in a re-imagined design.

The majority of the details in this research are concerned with structure, as it would be outside of the scope of this research to ensure every detail meets all eight of the New Zealand building code standards.

fig. 123	Window + Door Detail
fig. 124	Step Detail
fig. 125	Step Detail
fig. 126	Eaves Detail
fig. 127	Internal Gutter Detail
fig. 128	Flashing Detail
fig. 129	Balustrade Detail
fig. 130	Step Detail
fig. 131	Balustrade Detail

Acceptable Solutions

Chosen Palette

Colour Palette.

Having a consistent material and colour palette throughout this project and across all projects would allow the details to speak to each other a bit more clearly, rather than stand-alone as individual creations. The Waikato District Council has devised a colour scheme for new buildings in coastal ‘coastal zones’. The colours shown here are the acceptable solutions to paint the exterior of a dwelling or use as cladding in the Waikato district region, which sits adjacent to the Thames-Coromandel region. This thesis regards the colour scheme as a guideline to ensure consistency across the projects.

“The exterior colour of new buildings (and alterations to existing buildings) is an important consideration for the Coastal Zone environment. Colours that are sympathetic with, and complementary to, the coastal environment are deemed appropriate for this zone.”
(Resene 2020)

JOINERY

BA FOLD'S / DECK CLADDING
IS GONNA BE IMPORTANT

Detail as seed

Detail as seed for design is the first concept tested in the research. The idea is that detail design can function as a starting point for an entire design to flourish. This concept is tested by developing details and then making a space from the series of developed details.

This project’s design phase started with a series of sketches that were intended to embody the ideas of coastal living. For this first project, these ideas began with functionality, truth and elegance. However, these themes would evolve as the research continued. It was also important that these initial sketches were sorted into categories before beginning to develop them. This concept allowed this research to develop a collection of sketches into a single detail or a series of linked details. This process would be consistent throughout the thesis, as it was found to be a very successful process.

Gottfried Semper defined architecture’s origins as evolving from four distinct elements. Namely; Hearth, Roof, Enclosure and Mound. In a modern sense, these could be translated to a gathering space or living room, a roof, cladding and weather tightness, and groundwork or flooring details. This research chose to use this system to categorise the details as it was a proven system and in line with this research’s theorist.

Initial Sketches.

fig. 132

Hearth.

The first category of details in the Bach project is Hearth. In this sense, the bach's Hearth is interpreted as the deck and areas associated with the deck.

"It is the first and most important, the moral element of architecture. Around it were grouped the three other elements; the roof, the Enclosure and the mound, the protecting negations or defenders of the hearths flame against the three hostile elements of nature." (Semper 2010)

In this case, the handrail detail sketches and a structural tie detail sketch are chosen as the hearth elements. After considering what elements a deck is made up of, and what elements would have the most effect on space, the research settled on a handrail for a few reasons, firstly there are very few elements to a deck with which one would regularly interact with, and secondly, a handrail is an extremely tactile detail, one where someone would directly touch and interact closely with it.

Iteration 1.
Standard Timber Sizes.
fig. 133

Iteration 2.
Two Uprights.
fig. 134

Iteration 3.
End Mounting Bracket.
fig. 135

Iteration 4.
Handrail as Railing.
fig. 136

Handrail.

Iterative Process. The initial design and final design for the handrail are fairly similar as it was the first experiment in using detail design as a seed for architecture. The idea for the handrail was to create a system where standard timber sizes could be used and modified with simple cuts on site. A bespoke bracket could then be used to mount the handrail in a variety of situations. The initial design of the handrail being a standard 90mm x 45mm being mounted to an upright, which is capped with a simple piece of aluminum. A second upright was then added to give the handrail more strength and to give the design a feeling of vertical movement. The bottom half of the handrail is then considered and four pieces of steel wire are run through the uprights, allowing the handrail to function as an informal railing. A mounting bracket is also attached at each end of the run to finish railing off.

Reflection. This initial detail design is an important exploration of the relationship between designer and craftsperson. Here the balance between design decisions and how materials are handled is beginning to be negotiated.

Handrail.
fig. 137

fig. 138

Isometric. This view shows the different components which have been designed to form the handrail and railing detail.

fig. 139

In Situ Interpretations. *This view show the atmospheric qualities that the handrail adds to the final design.*

Initial Sketches.

fig. 140

Fabric.

The second category for details is **Fabric**, or the wall and cladding details. This detail began with the idea for a wall panelling system which could be screwed into place. This concept would be developed alongside other elements such as material selections for external cladding and material selection for internal walls.

At this early stage in my research, the definition of a detail element is still vague as the research is working to refine what is being developed. As the research progresses, the details become much more specific to the context in which they are placed. This quote by primary theorist for the research, Fredrik Nilsson, appropriately reflects the research at this stage

“Details can be “material joints,” as in the case of a capital, which is the connection between a column shaft and an architrave, or they can be “formal joints,” as in the case of a porch, which is the connection between an interior and an exterior space. Details are then a direct result of the multi-fold reality of functions in architecture. They are the mediate or immediate expressions of the structure and the use of buildings.”

Nilsson explains that detail can be more than what is currently thought of as a construction detail. This research defines the term detail to mean building element of materialised knowledge. The Bach project was an excellent experiment to refine the detail selection. These early material selection decisions remained consistent throughout the research and this gave the detail design a coherent flow.

Cladding.

Iterative process. The form of the cladding was initially dictated by the materials from which they were crafted. For these initial design tests I started with simplicity and added complexity as the design details developed. This idea suggested that the exterior should only consist of two types of material, one metal and one timber, and that the interior should be simple plywood, with the exception of non structural walls. The iteration process was then making these materials work for the emerging design and detail language. The initial concept for the interior finish was to use a plywood system which mounted to a bracket system to allow the easy replacement of panels. The exterior of the timber cladding was initially made up from large cuts of cedar which would be allowed to silver in time. The silvered cedar was then replaced for a burnt cedar using a technique known as Shou Sugi Ban, as the end result spoke more to the overall aesthetic material properties. The interior panel system was replaced for a much cheaper and simpler solution of mounting the plywood directly on the wall, and allowing smaller tolerances between each panel. The initial design for the metal exterior cladding was to use a profiled aluminium. This was then replaced for a weathered corrugate over a water tight membrane, as the aesthetic properties are more in sympathy with the site and other detail components.

Reflection. This detail was initially generated through detail design, but quickly reverted back to form to detail design. This was due to the back and forth relationship between form and detail, in this case the form design overpowered the detail design and this is evident in some of the iterations.

External and Internal Cladding.
fig. 141

Iteration 1.
Plywood mounting system.
fig. 142

Iteration 2.
Silvered cedar cladding.
fig. 143

Iteration 3.
Shou Sugi Ban.
fig. 144

Iteration 4.
Simplified Plywood.
fig. 145

Iteration 5.
Profiled Metal.
fig. 146

Iteration 6.
Weathered corrugate.
fig. 147

fig. 148

Isometric. *This view shows the different components which have been designed to form the metal cladding and timber cladding.*

fig. 149

In Situ Interpretations. *These views show the atmospheric qualities that the interior and exterior cladding detail elements create when they are brought together.*

Initial Sketches.

fig. 150

Mound.

.....

The third category Mound dealt explicitly with the foundations of the Bach. The sketches selected for this category are for an idea for a new type of flitch plate. This detail is a developed iteration which builds upon the idea of a standard flitch plate to generate something new. This detail would end up being translated into the structure for the foundations for the Bach and a flitch plate was deemed as unnecessary for these conditions. However, this flitch plate concept is re-addressed in chapter six The Town.

Iteration 1.
Pointed arch bracket.
fig. 151

Iteration 2.
Foundation bracket.
fig. 152

Iteration 3.
Floating deck.
fig. 153

Iteration 4.
Angled posts + brackets.
fig. 154

Iteration 5.
Steel ties.
fig. 155

Iteration 6.
Floating deck + foundations.
fig. 156

Iteration 7.
Building Structure.
fig. 157

Foundations.

Iterative Process. One of the informal objectives for this research was to reconsider how structure inhabits the land. This begins to become evident in the development of the foundation detail where the ambition for the substructure was to create something beautiful which touched the ground as little as possible. The iteration processes then takes this into account where instead of using another pile a bracket which made use of a pointed arch system was generated. Another bracket, which could be implemented to add strength and help install the foundations faster, was then also developed. These are similar to a bowmac angle bracket. As well as having a small impact on the ground there was also the desire to create the effect of having the design floating. Elements were then allowed to run past where they would need to finish and tapered the end. The foundations are then designed to better fit the site and the front ones sloped back. The piles are allowed to sit as far away from each other as possible by making use of a series of ties. The foundations are then extended up into the structure itself. Similar to the handrail a double post system is used to create the feeling of vertical movement. They are also extended past where they need to finish. The tops of the posts are again run past.

Reflection. By restraining what I am able to do with the materials and pushing the elements as far as they can go, the solutions to the problems become more elegant. This is due to the spans of smaller members being longer and lighter, therefore more refined and elegant.

Structure.
fig. 158

fig. 159

Line Drawing. This view shows the wide range of elements which have been designed and brought together to create an elegant solution for the foundations and part of the building structure. Further refinement would develop support for the edge of the deck and co-developing the handrail into the structure to align uprights with joists and finally testing max cantilever spans.

fig. 160

In Situ Interpretations. *These views show the atmospheric qualities that generated from the structural detail design.*

FLASHING ??

Initial Sketches.

fig. 161

Roof.

For the final category, Roof, two sketches were selected, one of a parapet roof and internal roof, as well as a mounting bracket for a roof rafter. This mounting bracket is a continuation on from a detail designed in the three-week thesis exercise.

These details would be re-imagined in the development stage, where the parapet detail becomes an internal skylight and the bracket entirely transformed into a sliding wall.

Sliding Wall.

Iterative process. The concept for a dynamic wall which could be lifted up to allow access as well as shelter was generated early in the design. Not only did the physical movement serve a functional purpose of securing the bach, the contrast between static and dynamic elements served an aesthetic purpose as well. This idea is heavily influenced by Olsen + Kundig, namely chicken point cabin, where they achieve a similar result. The static option was to peel back part of the roof and allow a skylight to run the length of the building. The first iteration for a dynamic wall was to have the top of the wall be a pivot point and a chain and hand crank system to pull the wall up and down. Only part of the pulley had to be resolved as the wall would never go all the way around. This design was then replaced for a folding system as it was a simpler and more elegant solution. The wall is counterweighted with a small concrete weight to make it easier to lift. The wall runs along a track and the chain runs around a top pulley down to the counter weight. The sky light is the only window which would be framing a view, but it has been used here to allow for light to extenuate the interior properties of the design. The skylight is also the gutter for this section of the roof, which again allows the light to be refracted and alter the interior properties of the design.

Reflection. This exploration in the dynamic wall and roof system is the first which sought to investigate the relationship between the part and the whole, or the details and subassembly and how that relates to the assembly as a whole.

Sliding Wall.
fig. 162

Iteration 1.
Dynamic wall.
fig. 163

Iteration 2.
Pivot Point.
fig. 164

Iteration 3.
Folding Wall.
fig. 165

Iteration 4.
Concrete Counterweight.
fig. 166

Iteration 5.
Pulley System.
fig. 167

Iteration 6.
Skylight as Gutter.
fig. 168

fig. 169

Line Drawing. This view show how the sliding wall is assembled. Showing how the walls fold to create a roof, how it is attached to a chain which runs through a pulley and is then counterweighted.

fig. 170

In Situ Interpretations. These views shows how the dynamic and static elements of the roof create atmospheric qualities at the element edges that create awareness of the outside when inside and connection between inside and outside.

fig. 171

Plan

Line Drawing. This plans shows how the interior of the bach is designed in relation to the parts and the exterior.

fig. 172

fig. 173

Elevation

Line Drawing. *These elevations show how the bach is situated on the site and the relationship with the view and the road.*

fig. 174

Kitchen. This is a visualisation of the culmination of details in the kitchen + living space.

Hallway + Skylight. a view down the hall to the bathroom on the left, under the light from the skylight.

fig. 175

fig. 176

Master Bedroom. *A visualisation of how the details have generated a bedroom embodying coastal living*

Exterior. *The final view of the culmination of all parts assembled to form the whole.*

fig. 177

Chapter Five Critical Reflections

Aims of this thesis.

01. To explore the relationship between designer and craftsmanship.
02. To explore the relationship between detail and phenomenological experience.
03. To develop my own detail language.
04. To explore how community culture may be expressed through architectural installation.

In the first design stage of this thesis, I set a series of parameters within to limit the detail language that was beginning to be generated and how it could answer the question ‘How can craftsmanship and detail design generate and inform architecture design?’

Such parameters which would put limitations on the design were; reduced material palette, testing through several scales such as at the detail, element and architectural scale.

The parameters continually evolved as the research moved through the design iteration and scales. Reflecting upon the current design and detail language, there are two underlying design generators: Functionality and Truth. That is to say that within each detail element which has been designed, each has a functional purpose and is true to the materials they are formed from.

The parameters that the detail elements were developed with gave the detail design, architecture and wider site design a common purpose. For example, treating the site as sacred and attempting to disturb it as little as possible, motivated the research to rethink the traditional foundations of the design, and more importantly to reconsider how the detail elements within the foundations would operate to allow this to work.

Coming back to this research document’s overall question and aims, through this set of experiments, the research has begun to better understand how detail elements operate to generate space and the experience they give the user. The outcome of this design to date has addressed the aims of the thesis as follows;

- 1) Investigating the relationship between detail and experience has undoubtedly been the most challenging part of this thesis as experience is subjective. An example of the immense effect detail can have on experience is the dynamic wall (the detail generated in the roof portion of the process, page 103) which was a collection of intricate detail elements. The critical reflection for that segment reflects upon how “This exploration in the dynamic wall and roof system is the first which sought to investigate the relationship between the part and the whole, or the details and subassembly and how that relates to the assembly as a whole.” This experiment was also the first good development in exploring the threshold between interior and exterior and how that can be manipulated with detail design.
- 3) The series of detail experiments throughout the first stage of design has ordered the research to examine the relationship between designer and craftsperson and become the designer / craftsperson. At this stage in the research, the two must become one in the same, with the designer understanding the craft to extract the potential from every element. It is impossible to generate a detail design language without understanding how to manipulate the materials’ properties to generate beautiful architecture. This is similar to the way in which Carlo Scarpa would work hands on with a selected group of crafts people he trusted to be able to carve out his designs. Scarpa’s hands on approach also meant he had a deeper understanding on the physical interaction of details and how to manipulate them.

Detail Design Method.

fig. 178

Chapter Five Critical Reflections

4) As brief requirements of the details change, and parameter sets evolve so too does the detail language. Therefore the importance of parameters within the brief must be recognized to develop a specific detail language.

At this point in the thesis, the research has begun to critically understand that generating a design language means reconsidering the way in which architecture is designed. To use detail design as a seed for architectural design, a designer must consider the minor elements first and work outwards to the overall form, which is in contrast to most traditional processes, which work from the whole to the part and the part to the whole. However, good architecture also relates well to its site, therefore to use this process, a designer must also consider the site with the detail and work towards detail at the same time. The graph for this process can be seen to the left (fig 178)

Finally, the following questions arose from this initial experiment. Because there are so many actions to constructing a space and even more detail elements, how can the research outline just a few of the most important ones and what makes them more important? As experience by its very nature is individual, how can this thesis more rigorously test to what level a collection of details affect a user's experience in the space?

Key Learnings from Project One.

Tactile (something a user directly interacts with) detail design options have a more particular focused impact on the space being generated.

Human scale details impact on the outcome of the space due to their relationship to human ergonomics, such as eye level and physical human dimensions.

The overall design needs to consider site as well as detail.

Material + Colour palette selection can help to link the details.

Emerging Questions for Project Two.

How does detail work at an urban scale?

What is the role of structure?

What links the details together?

How can exploration of a collection of details affect on user experience be further developed?

What areas/details are more important to the outcome of the design?

What are the key material choices?

What are the material implications for detail design?

fig. 179

Six

The Installation

Site Analysis + Context

Te Arawa + Tainui Canoe.....	127
Rakau Whakapapa.....	129
Views + Significance.....	131
Case Studies.....	133
Details as Seed.....	137
Hearth.....	139
Fabric.....	145
Mound.....	151
Roof.....	157
Plans.....	162
Elevations.....	163
Renders.....	165
Critical Reflections.....	173

While standing on its own as a single project development, this chapter builds upon the lessons learned from Project One The Bach. Project Two, however, is a cultural installation with the aim of testing the method again with cultural implications, and beginning to test the aim of, how does detail work at an urban scale?

Project One was developed from a place of familiarity, but project two is influenced by Māori culture. This chapter begins by researching mana whenua to better understand their perspective and the site history.

The existing site does not acknowledge or reference the existing Pā site or the cultural history. This design seeks to address this suppression of history via the implementation of a cultural bridge, that both connects and draws attention to the history of the site and surrounding key sites. The design is also restores the former wetlands on the site.

Te Haukapua
Torpedo Bay

Mt Moehau

Manukau Harbour

ONEMANA

Tauranga Moana

Maketu

Whaingaroa
Raglan

Te Ahurei

Mokau

fig. 180

Tainui + Te Arawa Canoes

From the preliminary research, this map was generated, to describe the Tainui and Te Arawa canoe paths. The findings suggest that both canoes came from Hawaiki, the traditional Māori place of origin. Hawaiki is also known in Māori mythology as the place where Io created the world and its first people. It is unknown whether Hawaiki is a real, physical island, or a mythical place. (Royal 2015)

Both canoes then make landfall in Whangaparaoa (Cape Runaway). Te Arawa canoe then stops in Tōrere, then Maketu and up to the Coromandel Peninsula where they first see Mt Moehau before returning to Maketu where the canoe made its final resting place.

Tainui canoe continued from Whangaparaoa to Tauranga, up the coast and into Te Haukapua (Torpedo Bay) before crossing over modern-day Auckland and launching into the Manakau Harbour, continuing down the coast to Whaingaroa (Raglan), to Te Ahurei, stopping in Mokau, before finally returning to Kawhia Harbour which is its final resting place. The path of the canoes is roughly a 650km trip around New Zealand's North Island.

Later in the research, we learn that descendants of Tainui Canoe would leave the Taranaki region and travel to Hauraki Region, to overthrow descendants of the Te Arawa Canoe who had inhabited this part of the Coromandel for some 300 years.

Rākau Whakapapa

Part of understanding the Mana Whenua was understanding where they originated from.
The research suggests that many tribes lay claim to Onemana and the areas surrounding it. To understand how many various tribes could lay claim to the same area, it is crucial to see how these tribes related to the original Tainui and Te Arawa Canoes.

From some early research, the whole Coromandel Peninsula was home to Marutūahu, a confederation of five tribes, Ngāti Rongoū, Ngāti Maru, Ngāti Paoa, Ngāti Whanaunga and Ngāti Tamaterā. All of the Marutūahu tribes are descendants of Marutūahu, son of Hotunui.

However, after further investigation, it was likely that Ngāti Hei were the original settlers of parts of the coromandel and specifically Onemana. Ngāti Hei are descendants of Te Arawa Canoe, as shown in the Rakau Whakapapa. It was not until much later that Marutūahu himself returned to the Hauraki region from the Taranaki region and conquered the people and settled there. The reason for this was because, before Marutūahu was born his father, Hotunui had been exiled and went to the Hauraki region where the locals mistreated him. When Marutūahu was grown up, he sought to restore his father’s reputation.

After the Marutūahu conquered much of the Hauraki region, only Ngāti Hei and Ngāti Hako survived, with most other tribes being absorbed into Marutūahu’ tribes. These tribes left their vulnerable Pā sites, moving to more secure locations inland. This was likely the fate of the Pā site on Onemana beach.

AM The Aesthetics
of Making.

It's all in the detail.

Coromandel Peninsula Thames District

DEPTHS IN METRES
SCALE 1:100 000 (36")

Depths in metres (under thirty-one in metres and decimals) reduced to Chart Datum which is approximately Lowest Astronomical Tide. Heights in metres. Underlined figures are drying heights above Chart Datum; all other heights are above Mean High Water Springs. Navigational Marks: IALA Maritime Buoyage System Region A (Red to Port). Positions are on World Geodetic System 1984 (WGS84). Projection: Mercator. Sources: For information on the quality of the hydrography see the Source Data Diagram. Topography derived mainly from Land Information New Zealand data.

SATellite DERIVED POSITIONS
Further charted from satellite navigation systems referred to WGS 84 Datum can be added to the chart. Chart users should be advised in the transfer of geographic coordinates to other charts not in terms of WGS 84 Datum.

MARINE FARMS
Marine farms are shown as a hazard to navigation. They are represented by their own symbols. These symbols are shown in the chart. Chart users should be advised that not all farms have a symbol on the chart.

VOLUNTARY CODE
Private boats with all of other licensed boats are shown in both red and blue to help at least 5 nautical miles of the land. No other group or any other group is shown in the chart. Chart users should be advised that not all boats have a symbol on the chart.

RESTRICTED AREA
The waters of the Thames and Coromandel District are restricted to the use of the Thames District. The waters of the Thames and Coromandel District are restricted to the use of the Thames District. The waters of the Thames and Coromandel District are restricted to the use of the Thames District.

NATURE RESERVE
Coastal Marine Reserve and Marine Reserve are shown in the chart. Chart users should be advised that not all reserves have a symbol on the chart.

MAINTENANCE RESERVE
All waters are and shall be under the jurisdiction of the Department of Conservation. The waters of the Thames and Coromandel District are restricted to the use of the Thames District. The waters of the Thames and Coromandel District are restricted to the use of the Thames District.

Tidal Levels referred to Datum of Soundings									
Place	Lat S	Long E	Highs in metres above Datum	Low in metres below Datum	MLWS	MLWS	MLWS	MLWS	Datum and Remarks
Tryphena	36°19'	175°29'	2.6	2.2	0.9	0.4	0.3	0.2	3.378 metres below LMSL
Port Charles	36°31'	175°28'	2.3	1.9	0.6	0.1	0.1	0.1	2.895 metres below LMSL
Huruhui Harbour	36°36'	175°46'	2.5	1.9	0.6	0.2	0.2	0.2	3.378 metres below LMSL
Whitanga	36°50'	175°42'	2.1	1.8	0.6	0.3	0.3	0.3	2.415 metres below LMSL

fig. 182

fig. 183

- Historic Site A
Four small area deposits of shell
midden in disturbed contexts.
Artefact - obsidian, pre-1769
- Historic Site B
Midden / Oven
- Historic Site C
Burial / Cemetery

Views + Significance

These two maps briefly summarise the sites key cultural and visual references. The map to the left shows how Onemana directly relates to the path of the Canoe. In comparison, the Map above indicates the relationships of the Pā to locations of importance around the site to each other.

fig. 184

fig. 185

fig. 186

fig. 187

Case Study: Nine

Hākari Stage

Seen here is a massive Hākari stage; each layer of the structure is the height of a person. During an enormous feast, food would be stored in the Hākari Stage to demonstrate the host’s generosity. The research draws upon the influences of the structural design for this project.

“... the Hākari temporary feasting stage was another prestige structure associated with food. European accounts of these buildings appear around and before the mid nineteenth century, so it is not clear whether they had a long heritage of construction. Most of these large Hākari were built for inter-tribal hui (meetings)...” (Brown 2009)

“The stages varied in shape and size from lines of stacked food, long low structures, and tall, and tall conical or pyramidal multi-level platforms.” (Brown 2009)

fig. 184	Hākari Stage
fig. 185	Hākari Stage
fig. 186	Hākari Stage
fig. 187	Hākari Stage

fig. 188

fig. 189

fig. 190

fig. 191

Case Study: Ten

Palisade Wall + Notch

Seen here is the palisade wall at Puke-i-aahua Pā located in Ngāruawāhia. This wall is a recreation of a traditional Palisade wall, which would surround a Māori Pā and provide another layer of fortification. A typical palisade wall could be made from a variety of timber poles, this one is made from native kanuka and totara poles. It also has pine poles, but this would have been uncommon in historic Pās as it is an introduced species. The posts are sharpened on top and lashed together with a traditional vine binding. Some of the posts have carved heads, typically structural members and others have fully carved figures. By analysing the methods in which this wall has been constructed, the detail elements can be abstracted to create a detail language which recognises the Māori Pā at Onemana. An example of this could be abstracting the treatment of the carved top of the pole.

fig. 188.....	Head Carving
fig. 189.....	Head Carving
fig. 190.....	Wall
fig. 191.....	Wall + Gate

SPLITTING !!

To DO

- MATCH DESIGN ELEMENTS
- CATEGORY + ELEMENTS OF DESIGN
- WRITE - CONSTRUCTION DETAIL
- SPAN/STRESS

HANNAI SURGE

POST BASE

WEAVING

POST PROFILE

INVERTED HANNAI SURGE ?

COLE CONNECTIONS

BRACKET

PULL/SHADE

NOTCHING

ROOF ENVELOPE

To DO

- BRACKETING
- POST NOTCHING
- LIST DETAIL ELEMENTS

BRACKET HEADS

ROOF STRUCTURE

TIME TO SERIES

EXTENSION BAR

TOP BRACKET

Detail as a seed

As with project One The Bach, the process of detail design began the same way with a series of detail sketches. These sketches were based on the research conducted and ideas for the final design.

In Project One The Bach, the research discussed how the key principles that influenced the details were, functionality, truth and elegance. Some of these principles remained consistent in these initial sketches. However, the cultural and historical implications of the site have now also been incorporated as future influences.

Gottfried Semper's classification of the four elements of architecture was once again used to categorise the detail elements.

Initial Sketches.

fig. 192

Hearth

Considering the gathering space of a sculptural bridge itself is somewhat complicated. Once again, the handrail detail and balustrade detail has been treated as a gathering space detail, as this is likely to be the detail with which most users would directly interact. This process also builds on from the handrail system from project one the bach, where it is also considered part of the hearth. These initial sketches seek to develop a more complete system that drew influence from a palisade wall and my initial handrail design.

Iteration 1.
Bespoke Mounting Bracket.
fig. 193

Iteration 2.
Adjustable Mounts.
fig. 194

Iteration 3.
Simplified Mounts.
fig. 195

Iteration 4.
Simple Mount for Brackets.
fig. 196

Iteration 5.
Bespoke Mount for Brackets.
fig. 197

Iteration 6.
Uprights.
fig. 198

Iteration 7.
Shifted Uprights.
fig. 199

Handrail + Handrail Bracket.

Iterative Process. Similar to the handrail design from project one, The Bach, the handrail here uses standard timber dimensions, to allow faster and easier construction. A new mounting bracket was then developed, building on the designs of project one while incorporating the new implications of project two. A new balustrade was then developed by drawing influence from traditional Māori pallisade walls. A mounting bracket had to be developed to allow the balustrade to appear to float around the edges of the installation. The initial idea for the bracket was to design something which would allow the individual movement of each upright. This concept was then refined and made more practical. The bracket then had to be mounted under the walkway and onto the structure. The initial design was a simple bracket but was developed further along the principles of duality from project one. This allowed the brackets to be spaced further apart and follow consistent ideas throughout the research. Finally the uprights were individually shifted about their axis to give the appearance they were random and drew influences from natural patterns.

Reflection. The development of these two details in conjunction with each other highlighted how details can operate in direct or hidden view to achieve an outcome on the space. Whilst the handrail required less development the direct result it has on the user is more impactful.

Handrail.
fig. 200

fig. 201

Line Drawing. *This view show a partially assembled walkway, with the balustrade and handrail.*

fig. 202

In Situ Interpretations. *This interpretation shows how the handrail, while simple can have a strong outcome on the resulting space.*

Initial Sketches.

fig. 203

Fabric.

As this is a sculptural bridge installation, there is no cladding. Therefore, the research took a slightly more literal approach and considered anything which made up the fabric of the installation as Fabric. In this case, the idea for a suspension system which drew influence from traditional Māori notchings arose. In the sketch phase of this detail, the idea of duality had developed and became an evermore present theme throughout the work thus far.

Suspension + Notching.

Iterative Process. Project two saw the need for the development of large structural columns. The design brief called for them to be simple yet true to their materiality. Māori influence was then drawn upon to create a simple and elegant solution. The design started with a perfect post with a simple notch around the top. The posts here are also intended to be initially constructed from pine and slowly replaced with native timbers, from a sustainable source as required. This was intended as a subtle reference to decolonisation. An experiment in developing a structural member from the bach was tested before moving back to a post, this time a natural one. The post was then split in half and reinforced to create the principle of duality. A bracket to hold a suspension bridge was required and developed. This was further refined to be smaller and not draw attention away from the simple design. The mounting bracket started as a development from the handrail design before being overhauled into a new design. This new bracket was then doubled up to add strength and once again implement a principle of duality.

Reflection. The influence this detail draws from Māori design strikes the balance between influence and innovation. By considering the materials and the ways in which they are handled allows the design to reference history while implementing new design.

Suspension Bridge.

fig. 204

Iteration 1.
Perfect timber post.
fig. 205

Iteration 2.
Dual angled posts.
fig. 206

Iteration 3.
Natural post.
fig. 207

Iteration 4.
Split Post.
fig. 208

Iteration 5.
Initial Mounting Point.
fig. 209

Iteration 6.
Refined Mounting Point.
fig. 210

Iteration 7.
Cable to Structure Bracket.
fig. 211

Iteration 8.
Refined Bracket.
fig. 212

Iteration 9.
Dual Brackets.
fig. 213

fig. 214

Isometric. This view shows the intricacies which have been brought together to form the suspension bracket.

fig. 215

In Situ Interpretations. *This view portrays the balance between complex and simple as well as influence and innovation*

Initial Sketches.

fig. 216

Mound

Similarly to Project One The Bach, this project attempted to touch the landscape lightly and consider the site context it inhabits. Therefore mound is considering the structure and how it interacts with the site. As the installation was placed over a wetland, the consideration became how it might weave around native flora and riverways.

The research also worked on giving the details an air of movement through the use of the aforementioned theme of duality and trying to balance the design with a system of pin joints. As if to say, if this design was not sitting just right, the whole thing could shear on its axis. This concept is most evident in the design of the footings of the structure.

Iteration 1.
Natural Post.
fig. 217

Iteration 2.
Concrete Base.
fig. 218

Iteration 3.
Base with Pivot Point.
fig. 219

Iteration 4.
Post Bracket.
fig. 220

Iteration 5.
Post Bracket.
fig. 221

Foundation + Weaving bracket.

Iterative Process. After the development of the structural uprights, the need to be able to secure them into the ground as well as to other structural elements was established. Initially the posts would simply run down into the ground, however there was an opportunity to further implement the principle of motion into the design. Therefore a pin joint was developed to hold the structure. Although the structure is not intended to move, nor will it, the use of a pin joint gives the notion that it could simply shift at any time. The pin joint is then doubled up for strength and secured into a concrete base. The concrete base is moulded with a negative along between the pin joints. This further reinforces the duality principle. A plate is then welded to the pin joint to allow the timber member to sit on the foundation. Coupled with this detail, a structural tie was also developed which draws heavy influence from Māori Weavings.

Reflection. These detail elements were developed along two major principles, Duality and Movement, as well as the established principles Functionality and Truth. These details were able to be developed so readily as these principles had already been established and put limitations on the brief.

Handrail.
fig. 222

fig. 223

Isometric. Here a clearer view can be seen of the components making up the foundation. Additional strength could be added to this design in the form of securing the post to the plate.

fig. 224

In Situ Interpretations. *This view shows how the footing occupies the site.*

Initial Sketches.

fig. 225

Roof

This project's roof is not used to provide a weather-tight enclosure but frames specific views and creates moments of pause through the design. This implication gave more freedom to the design of roof detail elements as they directly influenced how one would experience the space.

Roof.

Iterative Process. Development of the roof assemblies began by re-imagining how a roof might come together. Removing the waterproofing limitations opened the design up to a variety of outcomes. The need for the development of a bracket to suspend the roof from above was established. A bracket from the initial experimentations of the thesis was drawn upon, as well as influence from an existing Bowmac bracket. These features were then developed to have a protruding thread which a plate could be mounted down onto. This meant weathered corrugate could be held in place and easily replaced as it slowly deteriorates. Mounting this system to the structure meant developing a simple bracket which could hold timber lengths spanning between elements. Two lengths of timber were used to convey the principle of duality. A long threaded rod could then be pushed through and bolted off.

Reflection. This detail explored to what level of complexity did a detail and sub assembly need to be to have a strong outcome on the space. In this case, while the detail works well with the overall design, as a standalone detail it is too simplistic to be able to incorporate the developing principles of this thesis.

Handrail.
fig. 230

Iteration 1.
Hahei House Bracket.
fig. 226

Iteration 2.
Inverted Bracket.
fig. 227

Iteration 3.
Joist Supports.
fig. 228

Iteration 4.
Supports Through Post.
fig. 229

fig. 231

Line Drawing. This view shows how the roof assembly attaches to the structure of the installation.

fig. 232

In Situ Interpretations. Shown here is how the roof provides a simple and elegant solution to basic protection from some of the elements .

fig. 233

Plan

Line Drawing. *This plan shows how the bridge sits on the site, connecting the residential area to the south to the Pā site to the north.*

fig. 234

fig. 235

Elevation

Line Drawing. *These elevations show how the user would be perfectly level with the Pā site (at the hill top) and then step down and walk up the hill.*

fig. 236

Wetlands. *This is an interpretation of the structure over the wetlands near the middle of the site.*

Wetlands. *This is another interpretation of the bridge crossing the wetlands leading up to the Pā site on the hill.*

fig. 237

fig. 238

Entrance. *This is the entrance to the sculptural bridge.*

Views. This interpretation shows how the structure works to frame views. Here the view to the Pā site is directly ahead.

fig. 239

fig. 240

Chapter Six Critical Reflections

Questions arising from Project One The Bach:

- *How does detail work at an urban scale?*
- *What is the role of structure?*
- *What links the details together?*
- *How can a collection of details affect on user experience in the space be further developed?*
- *What areas/details are more important to the outcome of the design?*
- *What are the key material choices?*
- *What are the material implications for detail design?*

The second design phase of this thesis looked at answering how detail works at an urban scale to generate and inform architecture. This question followed on from project one, where several questions about the method and outcome arose. Questions such as;

- What is the role of structure?
- What links the details?
- What are the cultural implications for detail design?

To answer these questions, the research needed to test the method at an urban scale and in a cultural context. An installation connecting to and indicating the importance of the historical Māori Pā site was the means to test this.

Early on in the design and research for this project, I understood that it would be difficult for me to design a cultural installation that is influenced by Māori architecture without appropriating knowledge from a culture that was not my own. However, this challenge also helped narrow the approach to the problem to draw influence from the methods in which historic Māori details are assembled, or the resulting affect they have on a design.

In an ideal world, I would be able to work with Mana whenua and together ask questions, such as how detail informs Māori architecture? However, this was not possible within the scope of this thesis. The installation highlights the importance of the historical site to the coastal settlement, connects to it and through its detail design process is inspired by and references Māori detail design in an abstract manner.

The research was able to start developing the details thought necessary to include in the installation. Moreover, in doing so began to resolve some of the lingering questions about *how detail works at an urban scale?*

It became apparent in the detail design process what details are going to have the most powerful outcome on space and how someone interacts with that space. Consequently, the best scale for the detail to be developed is the human scale, as this is the scale with which everyone can interact with and understand architecture.

The question then arose “how does detail at one scale integrate with a project operating on a different scale?” This question was not apparent in project one as both detail and project were working on the same scale.

The overall component that the detail may be a part of (ie the assembly) could be linked to the project’s scale, but the scale of the detail (ie the subassembly) can always be brought back down to the human scale. This is best illustrated in the diagram to the left, which was developed in project one (fig 240)

Detail Design Method.

fig. 241

Chapter Six Critical Reflections

"Relations of exteriority guarantee that assemblages may be taken apart while at the same time allowing that the interactions between parts may result in a true synthesis." (DeLanda 2018)

This quote from Manuel DeLanda is possibly best evaluated by Fredrik Nilsson, "A theory of assemblages and the exteriority of relations imply a certain autonomy for the parts, and the properties of a whole are not the result of an aggregation of the components' properties, but of the actual exercise of their capacities." (Nilsson 2014)

Combined detail components (assemblies) at larger scales is becoming more critical to the outcome each detail has on the design. By operating at the human scale, each detail has a sort of ergonomic relationship to it whether, it is the literal relationship of how a hand fits around a handrail, or doesn't, or a figurative relationship of how one could imagine themselves touching or holding a suspension bracket slightly out of reach.

During the design process, the design of each detail is always related back to human dimensions.

This could be due to the fact that, for now, architecture is still crafted and assembled by people and the man made tools, including large cranes used to lift heavy components. Consequently, each detail has a tactile property in which someone within that space can directly relate to the detail. Whether consciously or not, one can imagine how an element feels, how heavy it might be or what kind of loads it is operating under.

The role of structure in the design is as important as any other area of the design someone might interact with and following that what details are the most important. Structure is the skeleton, the armature, either integral to or underlying any design. So detail must connect to or cover structure directly or in layers. In the case of this design (project two) structure is pivotal to the design, and other designs in this research (project one) to date. Not only is structure thoroughly expressed as a key system in the design, but hiding the structure would contradict the key principle of allowing design to be truthful.

"However much the emphasis on structural expression may have been exaggerated in the past by a craving for ostentation, or reduced by the competing emphases on spatial effects, sculptural effects and new planning requirements, it is still potentially one of the most vigorous ideals of the modern age, and it would not be an exaggeration to say that it is the notion which offers the most fruitful prospects for the future development of modern architectural thought." (Collins 1998)

Finally, some questions which arose at the end of project one previously thought to be important in resolving the thesis, now hold less value. These questions are;

- What areas/details are most important to the outcome of the design?
- What are the material implications for detail design?

fig. 242

Chapter Six Critical Reflections

What is it about each detail that is important to the design? The material selection of a detail has implications, but they are as simple as how the element can structurally perform and what material is the best to select to tell that part of the narrative. For example, in the cultural installation, native timbers would replace non-native species as they could be seen as a form of colonisation.

To conclude, just as the process was re-evaluated at the end of project one, so too is it re-evaluated here. Similar to how site datum lines were found necessary to come before the detail design process, it has also been found that the cultural implications of the site and project must be researched as part of a design process. At this stage in the research, these elements are being considered brief parameters for the detail design process. This is also illustrated in the graph to the left. (fig 242)

Key Learnings from Project Two.

.....

Human Scale is still the best scale for details to operate at even when the project is operating at the urban scale. However, there are a hierarchy of scales in which as the detail moves up through component to assemblages and finally architecture.

Cultural and contextual histories may link details together and to place

Families of details can exist together

The work of Craftsman and Designer are interconnected.

Questions for Project Three.

.....

How does detail at one scale integrate with a project operating on a different scale?

And how does detail inform the architectural space?

What is it about each detail that is going to make it important to the design?

What is the story each detail is trying to tell?

How do the details talk to each other?

What are the limitations of this method of design?

fig. 243

Seven

The Town

Connecting with History

Case Studies	183
Detail as Seed	185
Hearth	187
Fabric	193
Mound	199
Roof	205
Plans	210
Elevations	211
Renders	213
Critical Reflections	231

Introduction

This chapter translates the detail vocabulary developed to date to a larger town centre and suburb and explores how coastal culture may be expressed through architectural installation.

Project Three also extends Chapter Two: The Site new masterplan which served as a guiding hand in laying out the towns specific requirements and how they would interact with each other and the users.

fig. 244

fig. 245

fig. 246

fig. 247

fig. 248

Case Study: Ten

Loblolly House

Loblolly house designed by Kieran Timberlake uses a very similar detail design process to this research. The house was developed using the same method of detail design, instead of using the Constructions Specifications Institute traditionally used to categorise the many facets of a building, Loblolly house instead divided the process into four new elements of architecture. Similarly to how this research categorises the developed details into traditional architecture elements, Loblolly house developed its own categories, namely; Scaffold, Cartridge, Block, and Equipment.

fig. 242	.....	Exterior Perspective
fig. 243	.....	Night Perspective
fig. 244	.....	Folding Shutters
fig. 245	.....	Exterior Facade
fig. 246	.....	Interior Components

STAGE C

ERIC MIMARS

SUPERMARKET

BATHROOM

BRIDGE

TERRACES

BENCH

SECTION

MARKET VIEWS

CRASH BARRIER

LOUNGE

CAPE → RESTAURANT

• TALL POLE LIGHTS
→ LOW LIGHTS + TREES

• CAR PARK A

• LANDSCAPE

Detail as seed

Project Three The Town is a slight variation on the formula the research has followed so far.

In the preliminary sketches, I began to think about how the details generated from the last two projects could come together for the final installation. More consideration was also given to how coastal community culture is expressed through architectural installation. The sketches are a visual translation of my process experimenting with larger forms and details and how they are linked together, from the detail to the component to the architecture.

Hearth.

Similarly to Project Two The Culture, defining an urban installation's hearth provides its own set of challenges. The research started by grouping together details and elements with which a user would interact. These were typically considered the most tactile details and were often details of public amenities and public fittings.

Iteration 1.
Small Spotlight.
fig. 250

Iteration 2.
Low-Level Lighting.
fig. 251

Iteration 3.
Street Light.
fig. 252

Iteration 4.
Rubbish Bin.
fig. 253

Iteration 5.
Coastal Boardwalk.
fig. 254

Iteration 6.
Terraces.
fig. 255

Iteration 7.
Pavers.
fig. 256

Public Fixtures.

Iterative Process. The first set of components developed for the hearth of the town was the lighting. This was because lighting can have such a strong affect on the spatial qualities. These lighting outcomes ranged from a small spotlight, used to highlight elements of other areas of design. To small area lights and streetlights. Development of the two larger lights drew directly upon the details generated in Project Two: The Installation, the uprights for each light is pulled from the steel structure from the posts. This was then iterated again as a rubbish bin, where the structure is widened to be able to store a bin. As the site consisted of several structures, landscaping between them became important, and concrete elements were added to the design language in the form of terraces and a re-imagined paver, which allows grass to grow through. Finally the walkway from Project Two was further refined to be implemented as a beach side boardwalk.

Reflection. This set of detail experiments is the first exploration into *how does detail work at an urban scale?* Drawing influence from previous projects which have been tested with different scales and cultural implications allowed this set of details to have consistent principles.

Boardwalk
fig. 257

Lighting
fig. 258

fig. 259

Line Drawing. This view show how each of the smaller details work together to form a component which is then situated within the urban architecture.

fig. 260

In Situ Interpretations. *This interpretation illustrates how effective lighting is at generating atmospheric qualities.*

Fabric.

For this final project, the research extended the structural details and systems developed in Project One The Bach. This system was then to be integrated into each of the buildings of Project Three, to group the details of these elements under the category Enclosure, as the enclosed spaces one would inhabit.

Structure.

Iterative Process. A new structural system was developed for the coalition for the previous two projects. This system was to be used to express the structure of the larger building which would make up the town centre. This process began by collating already generated detail items into a component. From the sketches a massing of the structural member was generated and the component adjusted to work within these parameters. The flitch plate from Project One: The Bach is also realised here to give structural strength to long spanning members.

Reflection. This collection of details working in this component was an important step in both method and outcome. The method of using existing detail items and being able to adjust them to fit a component mass shows the detail library reaching a turning point of implementation. Secondly, the outcome is a great exploration into how detail items of one scale can operate together to create components operating at a larger scale.

Portal frame.

fig. 262

Iteration 1.
Initial Structure
fig. 263

Iteration 2.
Modified Concrete Base
fig. 264

Iteration 3.
Pivot Point.
fig. 265

Iteration 4.
Additional Flitch Plate
fig. 266

fig. 267

Line Drawing. This view show how the sliding wall is assembled. Showing how the walls runs along tracks, how it is attached to a chain which runs through a pulley and is then counterweighted.

fig. 268

In Situ Interpretations. *These views shows how the dynamic and static elements of the roof create atmospheric qualities inside and outside the design.*

Initial Sketches.

fig. 269

Mound.

The development of the masterplan left two areas for water crossings. These areas were intended to allow the research to test and develop the foundation and structure detail elements had produced thus far as seen in the preliminary sketches and thought processes to the left (fig 269). A new system of bridges was intended. As these ideas began to develop, they did not fit within the framework of the overall design, because the overall town design included Project Two: The Installation. The final design will therefore integrate learning from project One and Two at town centre scale with detail connected to adjacent installation and buildings.

Iteration 1.
Cable Suspension.
fig. 270

Iteration 2.
Parametric Elements.
fig. 271

Iteration 3.
Japanese Testing.
fig. 272

Iteration 4.
Japanese refined.
fig. 273

Iteration 5.
Modified Project Two System.
fig. 274

Bridges.

Iterative Process. Unlike other design segments within this research the second bridge design explored component design as a methodology. By assembling existing details or massed components into a system to more efficiently produce multiple iterations. The iterations began with taking the structure from the Fabric design segment and combining this with the suspension system from Project Two: The Installation. An option for a parametric timber lattice was briefly considered before moving on. A development on Project One: The Bach's structural system was then thoroughly explored to create a bridge influenced by traditional Japanese architecture. However, this option was heavy and did not fit the wider context of the site. The suspension system from Project Two: The Installation was then revisited and tweaked to generate a creative new solution.

Reflection. This experiment in component assembly was pivotal to the understanding of how detail works at an urban scale and how my methodology could evolve in the future to be more generative.

Structure.
fig. 275

fig. 276

Line Drawing. This view shows the multiple components which have come together to form the final design option.

fig. 277

In Situ Interpretations. *This interpretation shows how the multiple long slender elements of the bridge make the structure light and elegant.*

Initial Sketches.
fig. 278

Roof.

During the masterplan development, the aim of having a perfectly framed view of the water was established. This view would come into frame as one drives on the main road into town. This goal arose from the realisation that the existing town centre of Onemana had little to no connection to the water and the intention to link the town to the beach.

For the preliminary ideas, the thesis began to develop a detailed roof system that would capture the view and simultaneously link to the detail vocabulary of the overall design. This is evident in the design and detail sketches to the left (fig 278).

Roof.

Iterative Process. This development began by taking the structural system designed in an early segment of this project and adjusting it to form a massed component. This component was developed to be in line with the initial sketches of this design. Once the component had been massed, the intricate details could be designed accordingly. In this case a tie system, which drew influence from the previous two projects, was implemented to allow the roof to cantilever over a structure. Danpalon panels were then suspended from the structure to provide rudimentary shelter. This was further developed by having the panels form their own suspension system to allow them to curve around the edge of the roof.

Reflection. This development is the culmination of multiple details from multiple projects and influence working together. This final experiment in detail design and now component assemblage, embodies the learning from the all design to date.

Sliding Wall.
fig. 279

Iteration 1.
Centre Post.
fig. 280

Iteration 2.
Angled Tie Down.
fig. 281

Iteration 3.
Additional Cable Support.
fig. 282

Iteration 4.
Roof Element Testing.
fig. 283

Iteration 5.
Corner Wrap.
fig. 284

Iteration 6.
Edge Suspension.
fig. 285

fig. 286

Line Drawing. This view show the complex detail and components working together to create a truly elegant system.

fig. 287

In Situ Interpretations. *This interpretation captures the juxtaposition of slim elegant seemingly weightless beams with the heavy yet intricate support systems.*

fig. 288

Plan

Line Drawing. *This view shows how the structures interact with each other and how they occupy the site.*

fig. 289

fig. 290

Elevation

Line Drawing. These elevations show the relationship between the structures and overall scale of the project.

Community Hub. *A view of the community hub at the rear of the surf club.*

fig. 291

Surf Club. *A view from the front of the surf club.*

fig. 292

Supermarket. *A view from the river looking back at the supermarket.*

fig. 293

217
The Town

fig. 294

Store. A visualisation of details coming together to form a collection of stores on site.

219

The Town

Boardwalk + Bathroom. A public bathroom on the boardwalk along the beachfront.

fig. 295

fig. 296

Roof Detail. *The walkways around the cafe under the cantilevered roof.*

Café. A view from within the Café looking out over the beach.

fig. 297

fig. 298

Café + Restaurant. *The cafe and restaurant sitting on the very edge of the beach, giving access into the town centre.*

Chapter Seven Critical Reflections

Questions from Project Two The Culture

- How does detail at one scale integrate with a project operating on a different scale?
- And how does it inform the architectural space?
- What is it about each detail that is going to make it important to the design?
- What is the story each detail is trying to tell?
- How do the details talk to each other?
- What isn't working with this method of design?

Project three extended the scale of the design by focussing on several pieces of architecture and landscape design: a surf club, a supermarket, a café + restaurant, a collection of stores, two public bathrooms, two bridges, and a terraced public area. There was an added level of development between and within each form and space.

Having multiple buildings, landscapes and spaces within one project highlighted the relationships between several of the detail elements that were physically separate. This forced the research to closely examine how the details relate together, which ties into the question from project two, "how do the details talk to each other?"

Umberto Eco's quote reflected similarly on the question I had about my details, as he understood about books.

"Until then I had thought each book spoke of the things, human or divine, that lie outside books. Now I realised that not infrequently books speak of books: it is as if they spoke among themselves. In the light of this reflection, the library seemed all the more disturbing to me. It was then the place of a long, centuries-old murmuring, an imperceptible dialogue between one parchment and another, a living thing, a receptacle of powers not to be ruled by a human mind, a treasure of secrets emanated by many minds, surviving the death of those who had produced them or had been their conveyors." (Eco 1994)

Similarly, Umberto Eco understood that books are not always telling new stories, but drawing on other stories or research. This research's details are not individual creations but instead, rely on their relationship to each other to tell their narrative. They achieve this while also learning from designers who came before, such as Carlo Scarpa or traditional Māori architects, to push the detail design dialogue further.

Project Three built on the findings from project two and specifically answered the questions that arose from the critical reflections.

Firstly, how does detail at one scale integrate with a project operating on a different scale? This was a development directly from project two, which was then compounded in project three. This fits the theory from Fredrik Nilsson and Manuel DeLanda, that the relationship between the details functions as a more significant component and that there is a level of autonomy for the parts where the outcome is not based on the whole but the capacity of the detail to express itself.

Chapter Seven Critical Reflections

Secondly, what is it about each detail that is going to make it essential to the design? As the research has demonstrated through projects one and two, and now the culmination of project three, there are multiple implications which would make a detail essential. That is to say, there are a variety of inputs which, when considered before the detail design process, will have a direct effect on the outcome of the detail and the component it is a part of. So far, this research has recognised the importance of inputs such as site datum lines and cultural implications. This is also reflected in the preliminary research where Fredrik Nilsson discussed that the built environment consists of ‘materialised knowledge’ which can be read “as patterns of social and cultural processes as well as material and technical patterns and mechanisms.” (Nilsson 2014)

Thirdly, how do the details talk to each other? The way the details talk to each other is similar to how any design element talks to each other, through themes of design, scale, material palette and colour palette. The more important question I have found is why is it essential to have the details talk to each other, and what methods are most effective at making the details talk to each other?.

The primary factor between linking the details is the scale on which they operate. This is the most effective method to link the details as it gives the details a sense of tactility, and puts them in the range of human sense and interaction. The other methods that have often been used in this research are themes, duality and handcrafted, and a consistent material palette. However, the reason for this is not only to try and make the link between the details stronger but to convey a shared narrative of my own form of coastal New Zealand architecture.

Finally, what is not working with this method of design? It has been found that the problem with this method of design is the level of autonomy the process maintains over the final outcome of the whole. That is to say, if a designer was looking for a specific outcome outside of the cultural or site-specific implications, these inputs would have to be observed at the beginning of the process. Once the process of detail design is complete, the ability to implement these inputs becomes challenging. However inputs can be observed throughout the process

Key Learnings from Project Three.

.....

The details are not individual creations but instead rely on the relationships they create with each other.

The details do not exist in a vacuum, they are building upon designers before them and trying to further the dialogue of detail design.

As project scale increases more variation in the detail design is required.

Given the cultural contexts, physical location as well as urban contexts, themes naturally evolved in the details. Proving that contexts are some of the inputs for detail design.

Implementing inputs into detail design after the process has been complete is difficult, however if these inputs are considered early they will naturally evolve.

Eight

Conclusions

{How can craftsmanship and detail design generate and inform architectural design?}

Key Learnings from each project:

.....

Project One

- Tactile (something a user directly interacts with) detail design options have a more particular focused impact on the space being generated.
 - Human scale details impact on the outcome of the space due to their relationship to human ergonomics, such as eye level and physical human dimensions.
 - The overall design needs to consider site first to have a successful design
 - Material + Colour palette selection can help to link the details
-

Project Two

- Human Scale is still the best scale for details to operate at even when the project is operating at the urban scale. However, there are a hierarchy of scales in which as the detail moves up through component to assemblages and finally architecture.
 - Cultural and contextual histories may link details together and to place
 - Families of details can exist together
 - The work of Craftsman and Designer are interconnected.
-

Project Three

- The details are not individual creations but instead rely on the relationships they create with each other.
- They do not exist in a vacuum, they are building upon designers before them and trying to further the dialogue of detail design.
 - As project scale increases more variation in the detail design is required.
- Given the cultural contexts, physical location as well as urban contexts, themes naturally evolved in the details. Proving these some of the inputs for detail design.
- Implementing inputs into detail design after the process has been complete is difficult, however if these inputs are considered early they will naturally evolve.

Final Conclusions

The Aesthetics of Making is a series of architectural installations split into three projects, which looks at answering how can craftsmanship and detail design generate and inform architecture design? The research showed how the detail design and craftsmanship can generate and inform architecture design through a variety of scales and cultural contexts. The thesis explored the question from three main standpoints, namely; the relationship between designer and craftsmanship, the relationship between detail and experience and how community culture is expressed through architectural installation. The research also sought to improve my understanding by developing an individual detail design language. The research from each stage of the thesis culminates in the successive exploration of each of the aims to further build upon the existing body of architectural knowledge.

The question how can craftsmanship and detail design generate and inform architecture design, was selected to be the main testing point for this thesis due to the recognition of the potential of this method of design to restore and develop some of New Zealand’s coastal towns.

The research took place at three scales and addressing two cultural contexts; a coastal settlement context and a historic Māori settlement context. The multiple scales and particular site and brief contexts widened the scope of the research and ensured the detail design being tested could be evaluated as part of a wider architectural and suburban town centre.

The key learnings from this investigation are listed to the left, however they could be summarised as detail design exists in two modes; as the individual detail and as part of a larger assemblage. Some basic elements such as materiality and colour palettes can be useful at linking the details together. However, ultimately details always operate at a human scale, and this is the most effective scale for the details to operate at. This research has found that, even if it appears a detail does not operate at a human scale it is likely a component which is able to be reduced to an assemblage of parts that are operating at a human scale.

Site

Onemana was selected as the location in which to test the research and explore the question and aims of the thesis. The research was able to be evaluated against the existing urban development, to directly see how the process of detail design was generating architecture. A master plan was also generated to provide a guiding hand and give the research a visually structured and coherent approach.

.....

Private Scale + Familiar Perspective

The research began with the development of a small batch, which was from the understanding of coastal New Zealand architecture. This initial development saw the categorisation of detail elements and explored the detail design method.

This initial experiment revealed that tactile (something a user directly interacts with) detail design options have a more focused impact on the space being generated. The scale of the details operate most effectively at the human scale, and even more so when related to human ergonomics, such as eyelines. Consideration of the site is crucial before beginning the detail design process, as these considerations will be baked into the final design. This initial installation also developed the process of detail design more thoroughly. All of these were important learnings which could be brought forward into the next project of the research.

Mid Urban Scale + Māori Influence

The second experiment explored the how details work at an urban scale and found that, there is a hierarchy to the details being generated. Details are able to exist on their own, but are also able to move up the hierarchy to function as part of a component, component up to assemblage, assemblage up to architecture. The cultural implications of a site and its respective contextual histories also function as a way to link the details together.

Large Development Scale + Culmination of Cultural Contexts

The final experiment in detail design saw the culmination of the learnings from Project One and Two. This experiment revealed that details rely on the relationships they create with each other. The details are embedded with histories from their inception, they build upon the existing body of work from designers before them and further the dialogue of detail design. It is also important to give careful consideration as to what inputs (i.e site conditions, cultural implications) will be selected before the detail design process.

Key finding and opportunity moving forward.

This body of research has allowed me to begin developing my own detail design language. This is something that I imagine will never end but instead be an evolving process that grows as I grow as an architect. This detail design language is already evident within this research as it begins to extend between the designs. As this research has considered site and cultural implications, I imagine my projects in the future will consider other key implications, further evolving and refining my detail vocabulary and eventually define my work based on my detail language.

Concluding Statement

.....

This research proposes a detail design method that embodies the relationship between craftsperson and designer, where the detail generated informs the architectural space being generated. Through this method, community culture may be expressed.

This detail design method provides an understanding of architectural tectonics that allow for a rapid improvisation of design as a building or installation is being formed. As the details are being generated implementation of the rest of the design can easily be implemented around the core details.

Works Cited

.....

- Association, Onemana Ratepayers. 2017. "Have your say." Thames-Coromandel District Council. January 1. Accessed November 5, 2020. https://www.tcdc.govt.nz/Global/5_Have%20Your%20Say/Community%20Plans%202019/Onemana%20Community%20Plans%202017.pdf.
- Brown, Deidre. 2009. *Maori Architecture: from fale to wharenuī and beyond*. Auckland: Penguin Group.
- Cadwell, Michael. 2007. *Strange Details*. Massachusetts: Massachusetts Institute of Technology.
2020. *Climate-Data.org*. November 16. Accessed November 16, 2020. <https://en.climate-data.org/oceania/new-zealand/waikato/coromandel-12749/>.
- Collins, Peter. 1998. *Changing ideals in Modern Architecture, 1759-1950*. Montreal: McGill-Queen's Press.
- Frampton, Kenneth. 1995. *Studies in Tectonic Culture; The Poetics of Construction in Nineteenth and Twentieth Century Architecture*. Massachusetts: Massachusetts Institute of Technology.
- Frascari, Marco. 1983. "The Tell The Tale Detail." In *Semiotics 1981*, by Margot D. Lenhart John N. Deely, 325-336. Boston: Springer.
- Heidegger, Martin. 2001. *"...Poetically Man Dwells..."*. New York: Perennial Classics.
- Khan, Louis. 1979. "Between Silence and Light." In *Between Silence and Light*, by John Lobell, 34. Colorado: Shambhala.
- . 2010. *Light is the theme*. Kimbell Art Museum.
- Kiddle, Rebecca. 2019. "Colonisation Sucks for Everyone." In *Imagining Decolonisation*, by Bianca Elkington, 30-42. Wellington: Bridget Williams Books.
- Kieran, Timberlake. 2008. *Loblolly House; Elements of a New Architecture*. New York: Princeton Architectural Press.
- Kolarevic, Branko. 2008. "The (risky) Craft of Digital Making." In *Manufacturing material effects : rethinking design and making in architecture*, by Kevin Klinger Branko Kolarevic, 119-128. New York: Routledge.
- Leatherbarrow, David. 2001. "Architecture is its own Discipline." In *Discipline of Architecture*, by Andrzej Piotrowski and Julia Williams Robinson, 83-102. Minnesota: University of Minnesota Press.
- Lobell, John. 1979. *Between Silence and Light; Spirit in the Architecture of Louis I. Khan*. Colorado: Shambhala Publications.

Works Cited

.....

- Nilsson, Fredrik. 2014. "Making as Architectural Thinking and Practice." In *Towards an Ecology of Tectonics; The Need for Rethinking Construction in Architecture*, 83-97. London: Edition Axel Menges.
- Pye, David. 1968. *The Nature and Art of Workmanship*. Cambridge: Cambridge University Press.
- Reader. 2018. *Tectonics in Architecture*. Langagervej: Aalborg University Press.
- Resene. 2020. *Colours for buildings within the Waikato Coastal Zone*. December 1. https://www.resene.co.nz/homeown/use_colr/Waikato.htm.
- Royal, Te Ahukaramū Charles. 2015. *Te Ara: Encyclopedia of New Zealand*. April 20. Accessed November 15, 2020. <http://www.TeAra.govt.nz/en/hawaiki>.
- Risatti, Howard. 2007. *A Theory of Craft; function and aesthetic expression*. North Carolina: University of North Carolina.
- Scarpa, Carlo. 1981. *RASSEGNA 7 Frammenti 1926/1978*. Cipia.
- Semper, Gottfried. 2010. *The four elements of architecture and other writings*. Cambridge: Cambridge University Press.
- Sheil, Bob. 2012. "From Making the Bespoke to Manufacturing the Bespoke." In *Manufacturing the Bespoke*, by Bob Sheil, 14-27. West Sussex: John Wiley & Sons.
- Stacey, Michael. 2012. "Digital Craft in the Making of Architecture." In *Manufacturing the Bespoke*, by Bob Sheil, 58-77. West Sussex: John Wiley & Sons.
- Umemoto, Reiser +. 2006. *Atlas of Novel Tectonic*. New York: Princeton Architectural Press.

List of Figures

.....

All unattributed images are authors own.

Figure 24–31. LINZ. Retrieved on 13 May. 2020, <https://retrolens.co.nz/map/#/1850917.1720746416/5880938.216654006/1858976.501244672/5886866.863660531/2193/10>

Figure 41. Halprin, Lawrence. Dezeen, Dezeen, 25 Sept. 2018, www.dezeen.com/2018/09/25/interview-sea-ranch-architecture-environment-idealism-jennifer-dunlop-fletcher-sfmoma/.

Figure 42. Halprin, Lawrence. “Sea Ranch Principles.” *Journey to The Sea Ranch*, Sept. 1984, searanch.ced.berkeley.edu/s/sea-ranch/page/design-principles.

Figure 43. Halprin, Lawrence. “Halprin Cabin.” *Journey to the Sea Ranch*, Oct. 1973, searanch.ced.berkeley.edu/s/sea-ranch/item/2073#?c=0&m=0&s=0&cv=0&xwh=-598%2C0%2C2695%2C1006.

Figure 44–46. Halprin, Lawrence. “Sea Ranch Principles.” *Journey to The Sea Ranch*, Sept. 1984, searanch.ced.berkeley.edu/s/sea-ranch/page/design-principles.

Figure 46–52. Crosson Architects. “Ahuareka Village.” Crosson Architects, crosson.co.nz/ahuareka-village-whitford/.

Figure 75. Cadwell, Michael. 2007. *Strange Details*. Massachusetts: Massachusetts Institute of Technology.

Figure 76. Umemoto, Reiser +. 2006. *Atlas of Novel Tectonic*. New York: Princeton Architectural Press.

Figure 77. Umemoto, Reiser +. 2006. *Atlas of Novel Tectonic*. New York: Princeton Architectural Press.

Figure 78. Kieran, Timberlake. 2008. *Loblolly House; Elements of a New Architecture*. New York: Princeton Architectural Press.

Figure 79. Frampton, Kenneth. 1995. *Studies in Tectonic Culture; The Poetics of Construction in Nineteenth and Twentieth Century Architecture*. Massachusetts: Massachusetts Institute of Technology.

Figure 80. Reader. 2018. *Tectonics in Architecture*. Langagervej: Aalborg University Press.

Figure 80. Pye, David. 1968. *The Nature and Art of Workmanship*. Cambridge: Cambridge University Press.

Figure 81. Nilsson, Fredrik. 2014. “Making as Architectural Thinking and Practice.” In *Towards an Ecology of Tectonics; The Need for Rethinking Construction in Architecture*, 83–97. London: Edition Axel Menges.

Figure 81. Risatti, Howard. 2007. *A Theory of Craft; function and aesthetic expression*. North Carolina: University of North Carolina.

List of Figures

- Figure 82. Kiddle, Rebecca. 2019. "Colonisation Sucks for Everyone." In *Imagining Decolonisation*, by Bianca Elkington, 30–42. Wellington: Bridget Williams Books.
- Figure 84–88. LINDMAN, ÅKE E:SON. "Brion Cemetery." *Divisare*, 6 Mar. 2017, divisare.com/projects/338908-carlo-scarpa-ake-e-son-lindman-tomba-brion.
- Figure 114–122. Devitt, Simon. "Studio 19 Bach." *Strachan Group Architects*, 2011, www.sgaltd.co.nz/studio-19-bach/mqheu3t6a6gw47fzoie1d1l5rw7dhf.
- Figure 123–131. Ministry of Business, Innovation and Employment. "New Zealand Building Code Compliance." *Building Performance*, 27 June 2019, www.building.govt.nz/building-code-compliance/.
- Figure 184. Oliver, Richard Aldworth. 1849. *Feast at the Bay of Islands, September 1849*. Museum of New Zealand Te Papa Tongarewa, Wellington.
- Figure 185. Clarke, Cuthbert Charles, 1818–1863. [Clarke, Cuthbert Charles] 1819–1863 :[A hakari, or food stage, Bay of Islands. September 1849]. Ref: B-030-006. Alexander Turnbull Library, Wellington, New Zealand. /records/22757655
- Figure 186. Clarke, Cuthbert Charles, 1818–1863. Clarke, Cuthbert Charles, 1819–1863 :The stage erected to contain the food at the feast given by the native chiefs, Bay of Islands, September 1849. Ref: B-030-007. Alexander Turnbull Library, Wellington, New Zealand. /records/23015432
- Figure 187. Williams, Samuel, 1788–1853. Williams, Samuel, 1788–1853 :A stage erected for a New Zealand feast [1835].. Yate, William, 1802–1877 :An account of New Zealand; and of the formation and progress of the Church Missionary Society's position in the northern island. London, Seeley & Burnside, 1835.. Ref: PUBL-0101-139. Alexander Turnbull Library, Wellington, New Zealand. /records/22304550
- Figure 188–191. Miranda. "Puke-i-Aahua Pa Palisade, Ngaaruaawahia." *Gorgeous with Attitude*, 15 Sept. 2010, gorgeouswithattitude.blogspot.com/2010/09/puke-i-aahua-pa-palisade-ngaaruaawahia.html.
- Figure 244–248. Halkin, Mason. "Loblolly House: Prefabricated Architecture Integrated with Nature." KIERAN TIMBERLAKE, 6 Sept. 2013, kierantimberlake.com/page/loblolly-house.