**Building A New Zealand Surf Life Saving Club
Vernacular**

Building A New Zealand Surf Life Saving Club Vernacular

An investigation into the Surf Life Saving Club vernacular through
architectural analysis of the building traditions and character

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ABSTRACT

New Zealand's coastal landscape is a desirable position that holds great significance to our country's culture. Surf Life Saving Clubs are prominent architectural entities that sit proudly upon New Zealand beaches. Surf Life Saving Clubs have a rich history and are representative of the Kiwi lifestyle. Yet, Surf Life Saving Club buildings, as architecture, have received little serious attention. This thesis investigates characteristic features of Surf Life Saving Clubs in their coastal setting and shows how those qualities can be recognised in future club development.

A review of existing research indicates a gap in scholarship around the understand of Surf Life Saving Club buildings as a facet of coastal development. In this research an extensive range of Surf Life Saving Clubs are surveyed in order to gain a greater understanding of the building type; siting, form, and orientation. This is then followed by detailed case studies of active Surf Life Saving Clubs. The research deduces patterns in site, placement, orientation, form, function layout, structure and materiality that influence the buildings' character.

Design Guidelines are formulated whilst utilising Critical Regionalism as a lens to reconcile the opposing imperatives that are inherent in creating a building that is both of the vernacular and architecture.

Finally, a Design Case Study allows the Design Guidelines to be developed and tested. Based on these investigations a Design Case Study is produced that models the application of a contemporary Surf Life Saving Club vernacular to a considered work of architecture.

CONTENTS

ACKNOWLEDGEMENTS	V
ABSTRACT	VII
CONTENTS	IX
LIST OF FIGURES	XII

1 INTRODUCTION	1
1.1 Context of Research	3
1.2 Surf Life Saving Clubs	3
1.3 Our Relationship to the Water	4
1.4 Problem Statement	5
1.6 Research Approach	5
1.7 Research Limitations	8

2 BACKGROUND	9
2.1 Introduction	11
2.2 Surf Life Saving Clubs	11
2.3 Sensitive Coastal Environments	15
2.4 Vernacular Building	18
2.5 Critical Regionalism	21
2.6 The Future	23
2.7 Design Guidelines	24

3 COMPARATIVE ANALYSIS	25
3.1 Introduction	27
3.3 Part 1: Nation-wide Analysis	29
3.4 Part 2 Case studies: Urban	37
3.5 Part 3 Case studies: Detailed	60
3.6 Conclusions	86
3.7 Design Guidelines	87

4 PRECEDENTS	91
4.1 Introduction	93
4.2 Method	93
4.3 SLSC Precedents	94
4.4 Sensitive Environments	98
4.5 Vernacular Buildings	102
4.6 Critical Regionalism	105
4.7 Conclusions	108
4.8 Design Guidelines	109

5 SITE ANALYSIS	113
5.1 Introduction	115
5.2 Site Description	115
5.3 Site Analysis	118
5.4 SLSC Building Context	125
5.5 Conclusions	127
5.6 Design Guidelines	129

6 DESIGN CASE STUDY	135
6.1 Introduction	137
6.2 Design Process	137
6.3 Design Overview	139
6.5 Site	141
6.4 Form	143
6.6 Program	145
6.7 Construction	147
6.8 Material	154
6.9 Conclusions	180

7 CONCLUSION	181
7.1 Introduction	183
7.2 Critique of Design	183
7.3 Research Process	186
7.4 Limitations	186
7.5 Design Outcomes	186
7.6 Using The Design Guidelines	187
7.7 Conclusion	188
7.8 Design Guidelines	189

BIBLIOGRAPHY	193
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LIST OF FIGURES

[Figure 1.1 Pauanui Surf Life Saving Club. Image by Author]

[Figure 1.2 Surf Life Saving Group Outside Clubhouse, Wellington, ca 1930. Source: Alexander Turnbull Library, Wellington, New Zealand] Retrieved April 10, 2012 from: <http://natlib.govt.nz/records/22836497>.

[Figure 1.3 Opening the Maranui SLSC New Clubhouse, Lyall Bay, Wellington 1956. Source: Alexander Turnbull Library, Wellington, New Zealand] Retrieved July 2, 2012 from: <http://natlib.govt.nz/records/22501519>.

[Figure 1.4 Tairua Surf Club Storage Shed. Image by Author]

[Figure 1.5 Tairua Surf Club Storage Shed. Image by Author]

[Figure 1.6 Pauanui Surf Club + Public Toilets. Image by Author]

[Figure 2.1 Maketu Surf Life Saving Club. Image by Author]

[Figure 2.2 A Crowd at the Surf Club, ca 1925. Source: Alexander Turnbull Library, Wellington, New Zealand] Retrieved November 10, 2012 from: <http://natlib.govt.nz/records/22421983>.

[Figure 2.3 Demolition of old Lyall Bay Surf Club Headquarters, 1958. Source Alexander Turnbull Library, Wellington, New Zealand] Retrieved November 10, 2012 from: <http://natlib.govt.nz/records/22781787>

[Figure 2.4 Bathing Sheds and Surf Life Saving Club building, Titahi Bay, 1960. Source: Alexander Turnbull Library, Wellington, New Zealand] Retrieved July 15, 2012 from: <http://natlib.govt.nz/records/30634739>.

[Figure 2.5 ArchHaus Lyall Bay Surf Club Proposal, 2012. Source: The Dominion Post] Retrieved November 16, 2012 from: <http://www.stuff.co.nz/dominion-post/news/3556211/Locals-alarmed-at-seriously-ugly-surf-club-plans>

[Figure 2.6 Tolaga Bay Surf Club. Image by Author]

[Figure 2.7 Pauanui Surf Club. Image by Author]

[Figure 2.8 Wainui Surf Club. Image by Author]

[Figure 2.9 Whakatane Surf Club. Image by Author]

[Figure 2.10 Interior of Lyall Bay Surf Club. Source: Alexander Turnbull Library, Wellington, New Zealand] Retrieved November 10, 2012 from: <http://natlib.govt.nz/records/23251809>.

[Figure 2.11 Crew in Worser Bay Surf Life Saving Boat, 1975. Source: Alexander Turnbull Library, Wellington, New Zealand] Retrieved November 10, 2012 from: <http://natlib.govt.nz/records/23104644>.

[Figure 2.12 Line Up of Surf Life Saving Teams, Wellington, ca 1930. Source: Alexander Turnbull Library, Wellington, New Zealand] Retrieved October 3, 2012 from: <http://natlib.govt.nz/records/23065563>.

[Figure 2.13 Interior of Maketu Surf Club. Image by Author]

[Figure 2.14 Incremental Change to Surf Club. Image by Author]

[Figure 2.15 Maketu Beach and Surf Club. Image by Author]

[Figure 3.1 New Zealand Surf Club Sites. Image by Author]

[Figure 3.2 New Zealand Surf Club Locations. Image by Author: *adapted from www.koordinates.co.nz*]

[Figure 3.3a Site Images Arranged by Region. Image by Author]

[Figure 3.3b Grid Separation. Image by Author]

[Figure 3.3c Simple Form. Image by Author]

[Figure 3.3d Figure Ground Arranged by Regions. Image by Author]

[Figure 3.3e Location Type. Image by Author]

[Figure 3.3f Form Size. Image by Author]

[Figure 3.3g Figure Ground Arranged by Built Form Layout. Image by Author]

[Figure 3.3h Layout Context. Image by Author]

[Figure 3.3i Building Scale. Image by Author]

[Figure 3.3j Figure Ground arranged by SLSC Building Size. Image by Author]

[Figure 3.4 NZ SLSC Regions. Image by Author: *adapted from www.koordinates.co.nz*]

[Figure 3.5 a, b NZ SLSC Building Locations and Regions. Image by Author: *adapted from www.koordinates.co.nz*]

[Figure 3.6 Eastern Region SLSCs. Image by Author: *adapted from www.koordinates.co.nz*]

[Figure 3.7 SLSC Case Studies. Image by Author: *adapted from www.koordinates.co.nz*]

[Figure 3.8 Case Study Site Images. Image by Author: *adapted from www.koordinates.co.nz*]

[Figure 3.9a, b, c, d, e, f, g, h, i, SLSC Sketch. Image by Author]

[Figure 3.10a, b, c, d, e, f, g, h, i SLSC Map Series. Image by Author]

[Figure 3.11 Figure Ground Diagrams and Common Characteristics. Image by Author]

[Figure 3.12 Plot Diagram and Common Characteristics. Image by Author]

[Figure 3.13 Water Proximity Diagrams and Common Characteristics. Image by Author]

[Figure 3.14 Dune Diagrams and Common Characteristics. Image by Author]

[Figure 3.15 Greenspace Diagrams and Common Characteristics. Image by Author]

[Figure 3.16 Connectivity Diagrams and Common Characteristics. Image by Author]

[Figure 3.17 Parking Diagrams and Common Characteristics. Image by Author]

[Figure 3.18a Omanu SLSC Plan. Image by Author]

[Figure 3.18b Omanu SLSC Sketches. Image by Author]

[Figure 3.18c Omanu SLSC Elevation aa. Image by Author]

[Figure 3.19a Pauanui SLSC Plan. Image by Author]

[Figure 3.19b Pauanui Sketch. Image by Author]

[Figure 3.19c Pauanui SLSC Elevation aa. Image by Author]

[Figure 3.20a Pukehina SLSC Plan. Image by Author]

[Figure 3.20b Pukehina SLSC Sketches. Image by Author]

[Figure 3.20c Pukehina SLSC Elevation aa. Image by Author]

[Figure 3.21a Tairua SLSC Plan. Image by Author]

[Figure 3.21b Tairua SLSC Sketches. Image by Author]

[Figure 3.21c Tairua SLSC Elevation aa. Image by Author]

[Figure 3.22a Tolaga Bay SLSC Plan. Image by Author]

[Figure 3.22b Tolaga Bay SLSC Sketches. Image by Author]

[Figure 3.22c Tolaga Bay SLSC Elevation aa. Image by Author]

[Figure 3.23a Waikanae SLSC Plan. Image by Author]

[Figure 3.23b Waikanae SLSC Sketches. Image by Author]

[Figure 3.23c Waikanae SLSC Elevation aa. Image by Author]

[Figure 3.24a Wainui SLSC Plan. Image by Author]

[Figure 3.24b Waikanae SLSC Sketches. Image by Author]

[Figure 3.24c Wainui SLSC Elevation aa. Image by Author]

[Figure 3.25a Whakatane SLSC Plan. Image by Author]

[Figure 3.25b Whakatane SLSC Sketches. Image by Author]

[Figure 3.25c Whakatane SLSC Elevation aa. Image by Author]

[Figure 3.26a Whiritoa SLSC Plan. Image by Author]

[Figure 3.26b Whiritoa SLSC Sketches]

[Figure 3.26c Whiritoa SLSC Elevation aa. Image by Author]

[Figure 3.27 SLSC Building Plans. Image by Author]

[Figure 3.28 Program Diagrams. Image by Author]

[Figure 3.29 SLSC Level Outlines. Image by Author]

[Figure 3.30 SLSC Building Elevations. Image by Author]

[Figure 3.31 Elevation Diagrams (beachside). Image by Author]

[Figure 4.1 Pauanui Surf Life Saving Club. Image by Author]

[Figure 4.2 a, b, c Devonport SLSC Sketches. Image by Author]

[Figure 4.2d Devonport SLSC Site. Image by Author: *adapted from Devonport City Council, 2010*] Retrieved 11 August, 2013, from Devonport City Council: http://www.devonport.tas.gov.au/upload/documents/yourcity/planning_and_development/cityprojects/eoi_032010.pdf

[Figure 4.2e Devonport Functional Layout. Image by Author: *adapted from Devonport City Council, 2010*] Retrieved 11 August, 2013, from Devonport City Council: http://www.devonport.tas.gov.au/upload/documents/yourcity/planning_and_development/cityprojects/eoi_032010.pdf

[Figure 4.3 a,b,c Seaford SLSC Sketches. Image by Author]

[Figure 4.3d Seaford SLSC Site. Image by Author: *adapted from Robert Simeoni, 2010*] Retrieved 10 August, 2013, from RMIT: <http://researchbank.rmit.edu.au/eserv/rmit:11159/Simeoni.pdf>.

[Figure 4.3e Seaford Functional Layout. Image by Author: *adapted from Robert Simeoni, 2010*] Retrieved 10 August, 2013, from RMIT: <http://researchbank.rmit.edu.au/eserv/rmit:11159/Simeoni.pdf>.

[Figure 4.4 a,b,c Endemico Resguardo Silvestre Sketches. Image by Author]

[Figure 4.5 a,b,c National Tourist Route Sketches. Image by Author]

[Figure 4.6 a,b,c Hakka Walled Village Sketches. Image by Author]

[Figure 4.7 a,b,c Cape Cod Farmhouse Sketches. Image by Author]

[Figure 4.8 Walsh House Sketches. Image by Author]

[Figure 4.9 Sliding House Sketches. Image by Author]

[Figure 5.1 Ohope Beach. Image by Author]

[Figure 5.2 Pukehina New Zealand Context. Image by Author]

[Figure 5.3 Pukehina SLSC Building. Image by Author]

[Figure 5.4 Pukehina Beach Region. Image by Author]

[Figure 5.5 Pukehina SLSC Building. Image by Author]

[Figure 5.6 Significant Features - Pukehina SLSC. Image by Author]

[Figure 5.7 Regional Mapping Diagram. Image by Author]

[Figure 5.8a Pukehina Building and Land Use. Image by Author]

[Figure 5.8b Pukehina Connectivity. Image by Author]

[Figure 5.9 Pukehina Mapping. Image by Author]

[Figure 5.8c Pukehina Water Type: Image by Author]

[Figure 5.10 Topography+Sunpath Diagram: Image by Author]

[Figure 5.11 Functional Layout. Image by Author]

[Figure 5.12 Structural Outline. Image by Author]

[Figure 5.13 Existing Pukehina SLSC Building. Image by Author]

[Figure 5.14 Pukehina Site Photo. Image by Author]

[Figure 6.1 Pukehina Site Photo. Image by Author]

[Figure 6.2 Pukehina Site Locator. Image by Author]

[Figure 6.3 Key Form Generation. Image by Author]

[Figure 6.4 Key Site Contributors. Image by Author]

[Figure 6.5 Summer + Winter Sun Angles (Refer figure 5.10). Image by Author]

[Figure 6.6 Design Case Study Movement + Parking Diagrams. Image by Author]

[Figure 6.7 Site Plan. Image by Author]

[Figure 6.8a Existing Program Organisation Diagram. Image by Author]

[Figure 6.8b Proposed Program Organisation Diagram. Image by Author]

[Figure 6.9 Typical SLSC Functional Separation + Heavy Base/Light Top. Image by Author]

[Figure 6.10 Site Organisation. Image by Author]

[Figure 6.11a Ground Floor Plan. Image by Author]

[Figure 6.11b First Floor Plan. Image by Author]

[Figure 6.12 Key Features of the Design. Image by Author]

[Figure 6.13 Southeast Elevation. Image by Author]

[Figure 6.14 Northwest Elevation. Image by Author]

[Figure 6.15 Northeast Elevation. Image by Author]

[Figure 6.16 Southwest Elevation. Image by Author]

[Figure 6.17 Section AA. Image by Author]

[Figure 6.18 Section BB. Image by Author]

[Figure 6.19 Section CC. Image by Author]

[Figure 6.20 Perspective, From Pukehina Parade towards SLSC. Image by Author]

[Figure 6.21 Perspective, From Southeast Corner towards SLSC. Image by Author]

[Figure 6.22 Perspective, Ocean side of SLSC. Image by Author]

[Figure 6.23 Perspective, Estuary side of SLSC. Image by Author]

[Figure 6.24 Perspective, Seaward Facade of Equipment Block. Image by Author]

[Figure 6.25 Perspective, Seaward Facade of Inhabitation Block. Image by Author]

[Figure 6.26 Perspective, From Dotterel Point towards SLSC (beachview). Image by Author]

[Figure 6.27 Perspective, From Dotterel Point towards SLSC (estuaryview). Image by Author]

[Figure 6.28 Perspective, Estuary Side Facade of Equipment Block. Image by Author]

[Figure 6.29 Perspective, Estuary Side Facade of Inhabitation Block. Image by Author]

[Figure 6.30 Perspective, Interior of Inhabitation Block towards Estuary. Image by Author]

[Figure 6.30 Wanui Surf Life Saving Club + Beach. Image by Author]

1 INTRODUCTION

[Figure 1.1 Pauanui Surf Life Saving Club. Image by Author]

1.1 CONTEXT OF RESEARCH

This thesis investigates the characteristic features of current Surf Life Saving Club buildings in New Zealand. This research explores how Surf Life Saving Club buildings evolved in a vernacular manner and how this can be successfully acknowledged when considering new Surf Life Saving Club buildings as considered works of modern architecture. This will be achieved by developing Design Guidelines that can be used as a tool by professional designers. The Pukehina Surf Life Saving Club will be used as a Design Case Study that will test these Design Guidelines. Pukehina, The Bay of Plenty, New Zealand, presents as an opportune design exemplar because of the growing membership size and the dilapidated building facility coupled with insufficient storage space. This offers the chance to display how Pukehina Surf Life Saving Club, and similarly other Surf Life Saving Clubs, can address the need for development, with a better understanding of their vernacular traditions and the sensitive coastal locations.

[Figure 1.2 Surf Life Saving Group Outside Clubhouse, Wellington, ca 1930. Source: Alexander Turnbull Library, Wellington, New Zealand]

1.2 SURF LIFE SAVING CLUBS

In New Zealand, Surf Life Saving Clubs were first built in the early 1900's. They are important community based facilities because they enable water safety services to local areas. The Surf Life Saving New Zealand (SLSNZ) organisation helps to provide lifeguard services that include a summer period of daily patrols, training for members, and surf sport competitions. Local lifeguard patrols indicate safe areas for swimming on designated beaches and practice accident prevention. Lifeguards also perform rescue operations when bathers need assistance and provide support at other events involving water that require safety precautions. Originally, Surf Life Saving Clubs were small and only required simple sheds that housed life saving equipment such as surf skis and six man reels. Over the past 100 years membership and club numbers have increased and technological advancements have improved equipment. The once simple sheds have been altered slowly as the storage and social demands of the building have increased. The buildings have evolved, somewhat informally, over generations into what are today's larger Surf Life Saving Club buildings.

[Figure 1.3 Opening the Maranui SLSC New Clubhouse, Lyall Bay, Wellington 1956. Source: Alexander Turnbull Library, Wellington, New Zealand]

1.3 OUR RELATIONSHIP TO THE WATER

New Zealand's recreational beachfront is a sensitive margin and does not have many buildings sited directly on the coastal edge. Surf Life Saving Club buildings are a unique set of buildings because they are all positioned extremely close to, if not on, this coastal edge. The nearest neighbours are usually residential dwellings, yet these are commonly separated from the beach by a road. Another point of significance is that Surf Life Saving Club buildings are essentially community buildings that occupy a large number of New Zealand beaches. Despite the prominent locations of Surf Life Saving Clubs, the buildings are seldom considered as 'considered' works of architecture. It is therefore important that these sensitively placed community buildings are dealt with thoughtfully and knowledgeably.

[Figure 1.4 Tairua Surf Club Storage Shed.

Image by Author]

1.4 PROBLEM STATEMENT

How can we ensure that new Surf Life Saving Club building designs will be responsive to vernacular traditions and the sensitive coastal location?

New Zealand Surf Life Saving Club buildings are becoming dilapidated and impractical with many requiring or undergoing comprehensive renovations. Originally Surf Life Saving Club buildings evolved somewhat informally. However, as the size and complexity of the buildings increase and as greater care is taken of the sensitive locations, the new designs will be the work of architects and other professionals. At present, there is little scholarly knowledge of these buildings and their environment. This highlights the issue of making sure designs are responsive to the sensitive locations and their vernacular traditions. The new generations of Surf Life Saving Club buildings serve a wider range of functions including social and commercial activities. This potentially increases the risk of poor design responses which are disruptive of the coastal environment.

This research therefore investigates what the characteristic features of New Zealand Surf Life Saving Club buildings are. The research then establishes how these characteristics can be retained within future Surf Life Saving Club building designs. The thesis produces a set of Design Guidelines, which offer guidance to professional designers. This will contribute to a new generation of Surf Life Saving Club buildings that are responsive to their vernacular traditions and the sensitive coastal locations.

1.6 RESEARCH APPROACH

1.6.1 Framing the Research

The research is framed between the vernacular traditions of Surf Life Saving Club buildings and professionally designed contemporary architecture. The vernacular, as discussed in Chapter 3, involves practices that have evolved through ‘unconscious’ design over time. This is challenging because the concept of retaining the vernacular is contradictory to the notion that the next generation of Surf Life Saving Club buildings will be professionally designed ‘considered’ works of architecture. To reconcile this problematic relationship the research engages with critical regionalist theory as a conceptual framework. This framework is used to establish a primary design objective, which encapsulates ‘unconscious’ vernacular qualities and offers a guide for contemporary ‘considered’ works of architecture.

[Figure 1.5 Tairua Surf Club Storage Shed.
Image by Author]

1.6.2 Research Structure

The research is divided into 7 Chapters, consisting of written and graphic material.

- 2.0 Background

This chapter addresses four key subjects:

- Surf Life Saving Clubs & Buildings
- Sensitive Coastal Environments
- Vernacular Building
- Critical Regionalist Theory

This section summarises the key ideas of each research subject, within the context of this investigation. The key findings from this section will contribute to formulation of a primary design objective and high-level design strategies for the initial Design Guidelines. These will be used to direct further research.

- 3.0 Comparative Architectural Analysis

This chapter presents the findings from a comparative analysis of the site images of all the Surf Life Saving Club buildings in New Zealand. This is followed by a detailed analysis of nine Surf Life Saving Club Buildings in the Eastern Region of New Zealand. There has been no academic research investigating this area of study, therefore a graphic analysis of these New Zealand Surf Life Saving Club Buildings was necessary. The analysis identifies characteristic features of the Surf Life Saving Club building type, which will be used to generate design principles.

- 4.0 Precedent Analysis

This chapter will present the analyses of a selection of international case studies that are divided into four sections. The first is of two examples of Surf Life Saving Club buildings that have been architecturally designed in the last five years. The second looks more generally at architecture in sensitive environments. The Third looks at two examples of vernacular buildings. The fourth looks specifically at contemporary works of critical regionalism. These analyses will identify characteristic features of architecturally designed surf clubs and thoughtfully designed architecture in sensitive environments. And how the contemporary and traditional imperatives can be united within modern architecture, which will be used to amend the initial Design Guidelines established in Chapter 2 & 3.

- 5.0 Site and Context

This chapter presents the detailed site analysis that was completed for the Design Case Study. A rationale is given for choosing Pukehina Surf Life Saving Club as the site of the Design Case Study. The graphic analysis of the site is presented. Finally, Site-Specific Design Criteria are defined and further revisions are made to the Design Guidelines established in Chapter 2, 3 & 4.

- 6.0 Design Case Study

This chapter presents the proposed Design Case Study for Pukehina Surf Life Saving Club. The Design Case Study applies the Design Guidelines established in the previous chapters. The key design moves and formal concepts are illustrated and the proposal is presented as an exemplary scheme. The chapter discusses how the design addresses the

[Figure 1.6 Pauanui Surf Club + Public Toilets. Image by Author]

established Design Guidelines and offers evaluative discussion on the final outcomes.

- 7.0 Conclusion

Surf Life Saving Club buildings possess many vernacular traditions that can be retained and interpreted while evolving into the next generation of contemporary architecture, which will in turn help to foster a continued sense of place and meaning. Furthermore it is found that Surf Life

Saving Club buildings can be designed in an environmentally sensitive manner that permits a contemporary building that embraces the natural coastal landscape

1.7 RESEARCH LIMITATIONS

The Surf Life Saving Club buildings, as architecture, in New Zealand have had little scholarly attention. For this reason, first hand collection of primary data was necessary. This includes simple descriptions of the sites and the buildings. In addition to the initial location analysis, the scope of the inquiry is limited to an accessible area of the country (the East Coast of the North Island). It is therefore acknowledged that Surf Life Saving Clubs in other areas of the country may have different characteristics. While the study also contains necessary historical material, this is not an attempt to undertake complete historical or heritage-based study of the subject; this work remains to be done by other scholars.

2 BACKGROUND

[Figure 2.1 Maketu Surf Life Saving Club. Image by Author]

2.1 INTRODUCTION

This chapter addresses the four key themes:

- Surf Life Saving Clubs of New Zealand
- Sensitive Coastal Environments
- Vernacular Building Tradition
- Critical Regionalism

2.2 SURF LIFE SAVING CLUBS

2.2.1 Early Surf Clubs

In his comprehensive book, *Between the Flags: 100 Years of Surf Life Saving New Zealand*, Robert Harvey shares an illustrative account of the evolution of New Zealand Surf Life Saving (Harvey, 2010). Surf Life Saving was first established in New Zealand in 1910 (Harvey, 2010, p. 19). It is widely accepted that the concept of Surf Life Saving was imported from Australia and that New Zealand adopted Australian life saving techniques. Initially the governing body of Surf Life Saving within New Zealand was the Royal Life Saving Society (RLSS). The RLSS was established in 1904 as a result of the high number of drownings in the 1880s. However the RLSS focus was more on still water rescues, rather than open water incidents and by 1933 a change was made to the independent body of the New Zealand Surf Life Saving Association. This change recognised the specific knowledge and requirements that were necessary for life saving in a surf beach as opposed to a pool (Jackson, 2006, p. 14-46).

[Figure 2.2 A Crowd at the Surf Club, ca 1925. Source: Alexander Turnbull Library, Wellington, New Zealand]

The 1930s saw a growth in membership and this time period is often referred to as the “Golden Years” of Surf Life Saving (Harvey, 2010, p. 69). Volunteers were depicted as living legends and modern heroes of the ocean. This went to the extent that at surf carnivals thousands of people would gather for grand opening ceremonies. As Harvey states:

At surf carnivals Prime Ministers on both sides of the Tasman delivered powerful speeches on moral fibre and sense of duty demonstrated by the lifesavers patrolling the beaches of Australasia (Harvey, 2010, p. 42).

Initially, Surf Life Saving Club buildings were built because of a necessity to store equipment such as the traditional six-man reel and line (Harvey, 2010, p. 183). This equipment was heavy and cumbersome and required storage space within very easy access of the water. As the Surf Life Saving Club movement gathered momentum the number of volunteers increased and the range of equipment grew to include tools such as the modern inflatable rescue boat (IRB). This resulted in an increase in the number and scale of Surf Life Saving Club buildings. Surf Life Saving Club buildings often went through numerous additions or rebuilds, which were driven by the community volunteers (Harvey, 2010, p. 33). This has eventuated in sixty-nine Surf Life Saving Club buildings throughout New Zealand

Recent changes to the Surf Life Saving movement have introduced professionalism, equipment advancements and registered the sport on an international scale (Booth, 1991, p. 152). These changes have continued to contribute to the alteration of Surf Life Saving Club buildings and their operations.

2.2.2 Traditional buildings

In the early 20th century, Surf Life Saving Clubs were first setup in the areas that had high population density such as, Wellington, Dunedin and Christchurch (Harvey, 2010, p. 223). It is notable that Surf Life Saving Club Buildings were placed in close proximity to other amenities such as public toilets, parks and beachfront access ways.

Traditionally, Surf Life Saving Club buildings served a particular purpose that was directly related to the coastal location. The local communities built in response to the local resources and conditions and, for this reason; outcomes vary from place to place. One example of building variation in the context of this research is the observation tower. The observation tower is a structure that was built to provide an elevated position for lifeguards to survey the beach. Some Surf Life Saving Clubs did not require an observation tower due to the natural surveillance afforded by local topography.

The built forms of Surf Life Saving Club buildings were traditionally very simple. The simple forms contributed to making the buildings adaptable. Local volunteers adopted everyday construction methods to create basic structures that could be easily cut open, extended or added upon. The simple and adaptable form contributes to the vernacular traditions of Surf Life Saving Club buildings. A good example of this is St Clair Surf Life Saving Club, which has been “consistently rebuilt or extended” (Harvey, 2010, p. 33).

Traditional Surf Life Saving Club buildings had little or no input from professional designers. The buildings were built by the local community, for the local community. Additionally, on going

[Figure 2.3 Demolition of old Lyall Bay Surf Club Headquarters, 1958. Source Alexander Turnbull Library, Wellington, New Zealand]

[Figure 2.4 Bathing Sheds and Surf Life Saving Club building, Titahi Bay, 1960. Source: Alexander Turnbull Library, Wellington, New Zealand]

maintenance and building up keep was carried out by local volunteers (Harvey, 2010, p.191). This is a significant vernacular feature of the building type.

All of these factors have helped to produce a vernacular building tradition for Surf Life Saving Club Buildings. The importance of the vernacular is expanded upon in section 2.4 of this chapter. In Chapter 3 the comparative analysis of New Zealand Surf Life Saving Club buildings provides a detailed analysis of the vernacular building character.

2.2.3 Modern Surf Clubs

The Surf Life Saving culture is a national phenomenon and SLSNZ has an influential position within New Zealand's identity. Harvey clearly argues this contention.

"It (Surf Life Saving) has not only stood the test of time but become part of New Zealand's national identity."

(Harvey, 2010, p. 14)

It can be concluded that due to the strong history of Surf Life Saving culture, that Surf Life Saving Club buildings have a significant impact within New Zealand's identity

As discussed in Section 1.7, there is little known about Surf Life Saving Club buildings, as architecture, and there has been no previous academic research into the building type. This shows a gap in knowledge around the understanding of Surf Life Saving Club buildings.

Surf Life Saving Club buildings are a public facet of the SLSNZ organisation and are coming under increased public evaluation. Local communities are

critiquing design proposals for new Surf Life Saving Club buildings in the sensitive coastal locations. One example of this is the level of debate that has been published over the design scheme for the new Lyall Bay Surf Life Saving Club by ArcHaus Architects (Easton, 2010).

New or redeveloped Surf Life Saving Club buildings are needed because the existing building stock is ageing and becoming dilapidated. Figure 2.3 shows an old Lyall Bay Surf Life Saving Club building being demolished after it was damaged beyond repair from a strong storm during 1958.

The contemporary Surf Life Saving Club building has moved beyond the scope of a vernacular building and now requires the input of professional designers. Surf Life Saving Club buildings are growing in size and complexity, and serve a wider range of functions such as wedding, cafes etc (Refer section 4.2.3). This creates new challenges for professional designers, as some functions are not specifically related to the coastal environment. This may lead to poor design decisions that are not responsive to vernacular traditions or the sensitive coastal locations.

[Figure 2.5 ArcHaus Lyall Bay Surf Club Proposal, 2012. Source: The Dominion Post]

The next generation of New Zealand Surf Life Saving Club buildings may possibly develop like overseas examples. In Australia some new buildings are large conspicuous forms that are not respectful of their surroundings (Refer section 4.3.1). These types of buildings are not always responsive to building traditions or the valued coastal landscape.

2.3 SENSITIVE COASTAL ENVIRONMENTS

2.3.1 New Zealand Environment

The coastal environment is also a significant part of the New Zealand national identity because of the distinct ecological qualities and natural resources that are essential to social, economic and cultural well-being. National and Regional governments have implemented schemes to promote the sustainable management of the coastal environment. The *New Zealand Coastal Policy Statement 2010* (NZCPS) is a national policy document that enacts the objectives of the *Resource Management Act 1991* (RMA). The NZCPS policy strategically identifies key issues specific to the coastal environment. These include; indigenous biodiversity, coastal hazards, water quality, natural character, natural features and landscapes and public access (Department of Conservation, 2010, p. 5-6).

The NZCPS is enacted locally by Regional District Plans that are tailored to each area and include policies and objectives that fulfil the obligations set about in the NZCPS and RMA. These policies illustrate how environmental issues such as the management of indigenous habitats are catered for in their specific regions. One example of this is the schedule of scientifically identified significant

[Figure 2.6 Tolaga Bay Surf Club. Image by Author]

[Figure 2.7 Pauanui Surf Club. Image by Author]

[Figure 2.8 Wainui Surf Club. Image by Author]

[Figure 2.9 Whakatane Surf Club. Image by Author]

ecological sites in the *Western Bay of Plenty District Plan 2012*, which contains essential landscapes (including coastal) that are protected (Western Bay of Plenty Council, 2012).

Wellington City Council District Plan 2010 has specific design guidelines for residential development in the Shelly Bay area. Any new development is controlled by the guidelines to ensure the “development recognises and respects” the distinctive “coastal location and visually prominent natural setting” (Wellington City Council, 2000. p. 2-3). Specifically, Elevational Modelling guideline G1 states, “new building elevations should relate to the scale, character, and elevational modelling of adjacent buildings” (Wellington City Council, 2010, p. 9). This is a clear example of a District Plan that controls building character within the coastal environment.

2.3.2 Connection with the Sea

Surf Life Saving Clubs are distinctive built forms that are located on a significant number of beaches across the coastal landscape of New Zealand. Surf Life Saving Club locations are typically associated with a large beach area, a recreational open space and a sandy beachfront (Refer section 3.4). Surf Life Saving Club buildings are located in coastal areas with building restrictions. However, the NZCPS recognizes that “functionally some uses and developments can only be located on the coast or in the coastal marine area” (Department of Conservation, 2010, p. 10) The significance of Surf Life Saving Clubs, as discussed in section 2.2, to the beach safety of local communities, affords the prominent coastal locations.

The NZCPS also acknowledges ecological issues that are significant to the coastal margin. The NZCPS Objective 2 acts to:

“preserve the natural character of the coastal environment and protect the natural features and landscape values

(Department of Conservation, 2010, p. 9).

This is enacted by the identification of areas where various forms of development would be “inappropriate” and encourages the “restoration of the coastal environment” (Department of Conservation, 2010, p. 9). While the continued development of Surf Life Saving Clubs is essential to New Zealand beach safety, the development of Surf Life Saving Club buildings should not inhibit or detract from the natural character of the coastal environment.

The Design Case Study presented in Chapter 6 is located on Dotterel Point Recreational Reserve, which is managed under the *Maketu Ward Reserves Specific Policy*. Dotterel Point Reserve is stated as a “habitat and nesting area for the rare Dotterel birds” (Western Bay of Plenty District Council, 2007, p. 43). The reserve is a good example of areas that have sensitive ecological issues within the coastal environment.

2.3.3 Coastal Development

Most towns and cities in New Zealand are located within the coastal margin (NZCPS, 2010, p. 5). In *Castles in The Sand*, Raewyn Peart warns that the

[Figure 2.10 Interior of Lyall Bay Surf Club. Source: Alexander Turnbull Library, Wellington, New Zealand]

New Zealand coastline is becoming dangerously overdeveloped and there is a need for strategic coastal management to ensure that future generations can continue to enjoy the unspoilt nature of the diverse shoreline (Peart, 2009). New Zealand Surf Life Saving buildings are co-located in the most intensively used areas for coastal recreation. And while protecting the coast environment from overdevelopment, management of the coastal zone also needs to acknowledge the importance of recreational space and amenity.

While there is much development within the coastal area, there are few buildings that actually occupy the shoreline. This is one of the attributes that make Surf Life Saving Club buildings unique and possibly more significant.

2.4 VERNACULAR BUILDING

2.4.1 Defining the Vernacular

The tradition of vernacular building is rooted in the buildings of the people. Paul Oliver has studied this extensively in *Dwelling: The House across the World* (Oliver, 1987). Oliver argues for a deeper understanding of both “process and artefact” (Oliver, 1987, p. 7). The “process” represents the interactions of living in a specific environment. The “artefact” represents the physical outcome that results from such interactions. Both the process and the artefact are part of the vernacular. John May is supportive of this contention in *Buildings Without Architects*, as he explains the vernacular;

Any examination of vernacular building is full of surprises and, by its very nature, interdisciplinary. These buildings do not exist in a vacuum – they are built as part of people's lives and culture. These structures are shaped not only by physical circumstances and available materials, but also by the beliefs, myths, customs, and tradition of the ... group that builds them.

(May, 2010, p. 44)

Vernacular buildings are the “buildings of the people” and are not a product of conscious “design” (Oliver, 2003, pg 15). Architects do not produce vernacular buildings, but they can respond to or translate vernacular qualities. However, this approach requires an understanding of traditions or customary practices and their significance.

John May extends this definition, proposing that vernacular buildings are not static and that modifications/adaptations are made over time as the situation or context changes (May, 2010, p. 42).

The qualities discussed here are identifiable in the Surf Life Saving Club Buildings. The forms relate to their environment and resources of the time. The buildings were traditionally owner/community driven/built and made with conventional construction methods. And importantly, Surf Life Saving Club buildings accommodate the values, practices and knowledge of the people that produced them. It is through this definition that the research argues that Surf Life Saving Club buildings are an inherently vernacular building type.

2.4.2 The Significance of the Vernacular

It is important that the vernacular traditions of Surf Life Saving Club Buildings are understood and

responded to in the next generation of buildings. The Surf Life Saving Club vernacular traditions are important because they are expressions of the history, culture, environment, values, skills and knowledge that developed over the past 100 years.

Vernacular buildings have a richness within them that comes from the strong historical, cultural and environmental connections. This connection sometimes gives important meaning to vernacular buildings as historical expressions of traditional values and relationships. By translating the historical expression of the vernacular into contemporary Surf Life Saving Club buildings the local communities can continue to identify with, appreciate and support local clubs.

The significance of the vernacular traditions also comes from the traditional values, skills and knowledge that influenced the building construction. There is a danger that these values, skills and knowledge will be lost. This has been noted at an international scale by May;

All over the world, meanwhile, traditional vernacular architecture is disappearing – not only the building forms themselves, but also the knowledge, skills and customs behind their creation.

(May, 2010, pg. 43)

This is not to say that new Surf Life Saving Club buildings should simply replicate traditional buildings. An important argument here is that the social and culture practices of Surf Life Saving Clubs will evolve, and the next generation of Surf Life Saving Club buildings must be responsive to change while also referencing the past. One example of the shift in building practices is that the club members

[Figure 2.11 Crew in Worser Bay Surf Life Saving Boat, 1975.
Source: Alexander Turnbull Library, Wellington, New Zealand]

[Figure 2.12 Line Up of Surf Life Saving Teams, Wellington, ca 1930. Source: Alexander Turnbull Library, Wellington, New Zealand]

are unlikely to build their own clubs rooms.

Traditionally, Surf Life Saving Club buildings considered materials in the region, used everyday construction methods and were responsive to natural systems. The vernacular traditions of Surf Life Saving Club Buildings are embodied with historical and cultural knowledge. The historical and cultural knowledge can be transposed into contemporary Surf Life Saving Club building design by the identification and translation of the significant qualities of the vernacular characteristics, as identified in Chapter 3. The research develops a set of Design Guidelines that reflect this.

2.4.3 A New Vernacular

The modernisation of Surf Life Saving Club buildings is presenting a possible shift away from local traditions, and towards ‘considered’ works of architecture and conspicuous built forms. There also exists the peculiarity that could exist if traditional building form is maintained long after the companion practices have disappeared. The design of the next generation of Surf Life Saving Club buildings will fall to architects and other professionals. Although contemporary Surf Life Saving Club buildings are going to be professionally designed works of architecture, they may also give reference to the vernacular. Current examples of contemporary Surf Life Saving Club building design, such as the Lyall Bay proposal (Refer figure 2.5), display architectural outcomes that have no compulsion to reference traditional qualities. This presents the question; How can a contemporary Surf Life Saving Club building be both “vernacular” and “architecture”?

2.5 CRITICAL REGIONALISM

2.5.1 The Critical

This section addresses how Surf Life Saving Club buildings can be treated as ‘architecture’ yet can also reference their ‘vernacular’ traditions. The objective is to generate new contemporary architecture that has a strong sense of place and meaning. As such, the concept of Critical Regionalism is particularly relevant because of its focus on place-making and community through the delicate synthesis of the universal tendencies and traditional culture (Frampton, 1983).

Architectural theorists and authors, Alexander Tzonis and Liane Lefaivre (1983) first introduced the term Critical Regionalism in 1983, in *The Grid and the Pathway*. Tzonis and Lefaivre (1983) introduced Critical Regionalism partly as an attempt to rescue local culture through architecture, and partly as a reaction towards modernism. The theory engages with the physical and non-physical attributes of the local context

Critical regionalism is discussed as;

a bottom-up approach to design, that recognizes the value of the identity of a physical, social and cultural situation, rather than mindlessly imposing narcissistic formulas from the top down
(Lefaivre and Tzonis, 2003, pg. 11).

Surf Life Saving Club buildings have important values that stem from the unique physical, social and cultural situation. These have manifested over time as vernacular traditions and are identified in

[Figure 2.13 Interior of Maketu Surf Club. Image by Author]

Chapter 3. The two main issues within this research are the vernacular traditions and the sensitive coastal locations of Surf Life Saving Club buildings, and how these can be acknowledged in the design of the next generation of Surf Life Saving buildings.

Critical Regionalism provides the conceptual framework to create of a set of Design Guidelines that brings together all of these factors and which also indicates an architectural response.

2.5.2 The Local and the Universal

Kenneth Frampton, an architectural theorist and critic, is supportive of Critical Regionalism. In his book *Modern Architecture: A Critical History* he discusses the universalisation of the modern movement and architecture that is disconnected from traditional culture. Frampton (1980) urges designers to frame the relationship between the universal and local as harmonizing.

The ‘universal’ in Critical Regionalism refers to the amalgamation of information, ideas, goods, services and cultural values. Progressive global networks enable architectural forms, material, ideas and concepts to be transplanted from one place to another almost instantly. The increased level of standardisation and the mass production of cheap building materials are major contributors to architecture becoming monotonous and place-less (Frampton, 1980, p.314-315).

The ‘local’ in Critical Regionalism refers to the unique physical and cultural conditions of the local context. Emphasis is placed on site-specific environmental conditions such as topography and light conditions, as well as the availability of local skills, traditions, and materials and construction

methods. Frampton (1980) argues that these physical and cultural conditions create a unique local identity and cultivates a strong sense of place.

Critical Regionalism seeks to find a point of equilibrium between the tension of the universal and the local. Value is placed on both the universal and the local, and by consciously balancing the two, contemporary architecture can foster a sense of place and meaning (Frampton, 1983). In the context of this research, a connection is made with Critical Regionalism as a way to consider Surf Life Saving Club buildings as a piece of contemporary architecture while also referring to the qualities of the vernacular.

2.5.3 The Vocabulary

Frampton (1980) calls for a critical understanding of both the universal and the local. The aim of this is to create an architectural solution that is a interpretation of local traditions and also integrates modern technological advancements.

The new generation of Surf Life Saving Club buildings have two key attributes that identify with the ‘universal’. Firstly, the program within Surf Life

[Figure 2.14 Incremental Change to Surf Club. Image by Author]

Saving Club buildings is becoming an amalgamation of different building functions. This includes; conference centre, restaurant, cafe, gym, and as multi-purpose venues. The integration of complex program elements within one building brings increased design pressures. Secondly, there is pressure to adhere to international building styles. This is influenced by the availability of modern materials, construction techniques, and information.

The vernacular traditions of Surf Life Saving Club buildings are distinguishable within Frampton's (1980) Critical Regionalist 'local' concept. The vernacular traditions are responsive to the local topography, light, climate, construction methods and materials available.

One primary Objective was extracted from a critical reading of Frampton's (1980) position within critical regionalism;

Contemporary Surf Life Saving Club building designs should respond to their vernacular traditions and the sensitive coastal locations while also integrating modern building practice to generate architecture that has a strong sense of place and meaning.

2.6 THE FUTURE

This chapter identifies Surf Life Saving Clubs as a key element of New Zealand's national identity and despite the buildings being an integral part of the coastal landscape, they have received little attention. The subject of Surf Life Saving Club buildings, as architecture, is an area of research that is lacking from contemporary discourse.

Discussion of the existing Surf Life Saving Club

building condition finds that new or re-developed buildings are needed and this will be the work of professional designers. Due to the increasing building size and complexity, and deficiency in the knowledge around the building type, it is likely possible that poor design decisions will be made. The research aims to remedy this situation by developing an in-depth understanding of the building type. Concurrently developing a set of Design Guidelines for professional designers to use as a tool in the development of new Surf Life Saving Club buildings.

The coastal landscape is highlighted because of the sensitive environment and the cultural and environmental significance. The discussion highlights some of the restrictions around development within the coastal margin and touches on the inherent opportunities and significance of the unique locations of Surf Life Saving Club buildings.

A definition of the vernacular is discussed and it is argued that vernacular traditions should influence new Surf Life Saving Club building developments. The importance of vernacular traditions, as historical expressions within contemporary Surf Life Saving Club architecture is discussed and design strategies are explained in terms of their contribution to the building's character and sense place.

Finally, Critical Regionalism is introduced as a conceptual framework for the research to consider new Surf Life Saving Club building design as a synthesis of contemporary and vernacular imperatives that also acknowledges the sensitive coastal location. Mechanisms for the reconciliation of the 'vernacular' and 'architecture' are explored further through the precedent analysis in Chapter 4.

2.7 DESIGN GUIDELINES

Primary Objective

Contemporary surf life saving club designs should respond to the vernacular traditions and the sensitive coastal locations while also integrating modern building practice to generate architecture that fosters a strong sense of place and meaning.

High-level Design Strategies

Integrate-

New Surf Life Saving Club building developments must take due care to acknowledge the characteristics and qualities of existing Surf Life Saving Club building vernacular traditions.

Restore-

New Surf Life Saving Club building developments should enhance/respond to the cultural and ecological characteristics of the adjacent sensitive coastal environment.

[Figure 2.15 Maketu Beach and Surf Club.
Image by Author]

3 COMPARATIVE ANALYSIS

[Figure 3.1 New Zealand Surf Club Sites.
Image by Author]

Bethel Beach

Beth North

Cape Kane

Carleton

Channing Bay

Mangawhai Heads

Maruau

Eglar

Red Beach

Eureka

South Beach

United North Pika

Waipi Cove

Whangarei Heads

Omaha

Orere

Pika

Pukerua

Whore

Tonga Bay

Tama

Maneta

Moway

Mt Mangapai

Omara

Upari

Epariora

Parauai

Wahi Beach

Wakame

Wana

Whakare

Whangarei

Wore Bay

West Shore

East End

Hingy

Pison

Leish - Waiare

Ural Bay

Marau

New Plymouth Old Boys

Pacific

Pukarua

Pukerua North

Pukerua

Utah Bay

Wamama

Wapahi

Ocean Beach Cove

Opurake

Owe

Warington

South Brighton

Itangi

Open park

Brighton

East Point

Kowai

Nelson

New Brighton

North Beach

Ota

St Clair

St Kilda

Smeke

Teyon Moke

Waiaka Beach

Wamatt

3.1 INTRODUCTION

Historically there has been little direct research in relation to New Zealand Surf Life Saving Club buildings as architecture. Therefore a comparative analysis of this building group was necessary to provide a strong foundation for the research.

First, a survey of all New Zealand Surf Life Saving Club buildings was completed. This was followed by a more detailed investigation of 9 Surf Life Saving Club buildings as case studies.

The analysis provided clarity and understanding of the characteristic features and settings of existing New Zealand Surf Life Saving Club buildings. It also established what characteristics are common, and what characteristics display great variation.

The significant findings are identified and discussed throughout the chapter, and informed the initial principles of design for the Design Guidelines. These are presented in full at the end of the chapter.

3.2 METHOD

3.2.1 Methodology

A range of different analytical techniques were completed at various scales to develop an in-depth understanding of the building type. A number of patterns were found, verifying the similarities/dissimilarities in Surf Life Saving Club buildings. This comparative analysis is in three parts, with each part contributing further knowledge to the research.

[Figure 3.2 New Zealand Surf Club Locations.

Image by Author

adapted from www.koordinates.co.nz]

Part 1 Nation-wide analysis
Part 2 Case studies: Urban
Part 3 Case studies: Detailed

Part 1 of the investigation began with desktop survey of the locations of all Surf Life Saving Club buildings in New Zealand. The images of all sixty-nine Surf Life Saving Clubs were collated from satellite imagery and served as the base for the nation-wide analysis (www.koordinates.co.nz).

Surf Life Saving New Zealand (SLSNZ) divides the country into 4 geographical areas for the purposes of program delivery and management. These are;

- Northern region
- Eastern region
- Central region
- Southern region

Part 2 and 3 of the analysis focused on 9 case studies selected from the Eastern Region. These are;

Omanu SLSC
Pauanui SLSC
Pukehina SLSC
Tairua SLSC
Tolaga Bay SLSC
Waikanae SLSC
Wanui SLSC
Whakatane SLSC
Whiritoa SLSC

Part 2 of the analysis involved a more comprehensive investigation of the key urban characteristics. Maps were completed and combined with information that was collected first hand from site visits to generate descriptions of each case study

Part 3 of the analysis focused on a more detailed examination of the existing buildings. The building plans and beachfront elevations were drawn for comparative analysis. These were combined with information collected first-hand from site visits to generate a series of diagrams.

Key observations from each part (1, 2, 3) are discussed in turn. The discussion outlines what the diagrams show and how the findings are relevant to the design.

3.2.2 Findings

The significant findings from the comparative analysis are used to inform the initial principles of design for the Design Guidelines. The principles of design are set within 5 architectural ‘threads’ that encapsulate the key physical and spatial characteristics of the research (site, form, program, structure, and materials). The Design Guidelines are applicable to New Zealand Surf Life Saving Clubs (Eastern Region) and are presented at the end of the chapter.

3.3 PART 1: NATION-WIDE ANALYSIS

3.3.1 New Zealand SLSC

The Surf Life Saving New Zealand organisation recognizes seventy-three registered Surf Life Saving Clubs (SLSCs). Sixty-nine of the New Zealand SLSCs have permanent buildings. The site images of all sixty-nine SLSC buildings were collated from satellite imagery (www.koordinates.co.nz). The squares cover approximately a 150 metre squared area with the local SLSC building placed at the centre of the image.

3.3.1.1 Mapping

The mapping process helped to reveal and understand key characteristics of the site and location of SLSC buildings. The process also helped to manage the information that could be obtained from such a large data set. The patterns and characteristic settings of the SLSC buildings that were made apparent through this series of maps are summarised into diagrams and presented systematically.

[Figure 3.3a Site Images Arranged by Region. Image by Author]

NORTHERN REGION

EASTERN REGION

CENTRAL REGION

SOUTHERN REGION

150m

3.3.2 Regions

The figure ground diagram (Refer figure 3.3d) helped develop an understanding of the built environment around SLSC buildings in New Zealand. The figure ground graphically simplifies the coastal locations to clearly show; SLSC buildings (red), built forms (black), and the approximate high tide water line (dashed blue).

Character Observations

[Figure 3.3b Grid Separation. Image by Author]

Grid Separation

There is notable separation of SLSC buildings from the surrounding built forms. The separation is commonly orientated towards the water. Additionally, SLSC buildings typically maintain alignment with the grid pattern, even though the buildings are positioned outside of regular street and property divisions.

[Figure 3.3c Simple Form. Image by Author]

Simple Form

There is regularity in the figure shapes of SLSC buildings. Simple rectilinear building outlines are composed of rectangular elements. Shapes are varied but are orthogonal and don't contain curves.

[Figure 3.3d Figure Ground Arranged by Regions.
Image by Author]

NORTHERN REGION

EASTERN REGION

CENTRAL REGION

SOUTHERN REGION

150m

3.3.3 Location and Layout

Figure 3.3g illustrates the relationship between SLSC buildings and other nearby development (typically residential housing). It was found that the location type can be summarized into 1 of 5 types. The figure ground on the opposite page is arranged from higher density built environment to lower density (approximate).

Character Observations

[Figure 3.3e Location Type. Image by Author]

Location Type

The location of SLSC buildings within the urban layout can be characterised into one of the five diagrams above. The diagrams show;

- 1 -complete isolation
- 2 -forward of a line of development
- 3 -part of a line of development
- 4 -at the end of a line of development
- 5 -within a uniformly distributed field

[Figure 3.3g Figure Ground Arranged by Built Form Layout.
Image by Author]

[Figure 3.3f Form Size. Image by Author]

Form Size

The size of SLSC buildings is typically slightly larger than the surrounding built forms (typically residential dwellings).

150m

3.3.4 Size

Figure 3.3j illustrates the relationship between the size of SLSC buildings and the density of the surrounding built environment. The figure ground is arranged from largest to smallest SLSC buildings (approximate).

Character Observations

[Figure 3.3h Layout Context. Image by Author]

Layout Context

There are two different layout patterns that characterise the layout of the development around SLSC buildings. The first case follows a strict grid format. The second case is distinguished by a more organic layout.

[Figure 3.3i Building Scale. Image by Author]

Building Scale

SLSC buildings are similar in scale to the built development around them. When the built environment is larger, SLSC buildings are larger as well.

[Figure 3.3j Figure Ground arranged by SLSC Building Size.
Image by Author]

3.4 PART 2 CASE STUDIES: URBAN

Surf Life Saving New Zealand (SLSNZ), divides the country into four geographic regions. The four regions align with the SLSNZ management structure. Each of the four regions have operational staff that help to deliver and supervise regional programme delivery. The organisational head office offers additional support to all the regions.

The regions are indicated here;

NORTHERN

Bethals Beach
Far North
Kare Kare
Kariaotaki
Mairangi Bay
Mangawhai Heads
Muriwai
Omaha Beach
Orewa
Piha
Raglan
Red Beach
Ruakaka
Sunset Beach
United North Piha
Waipu Cove
Whangarei Heads

EASTERN

Hot Water Beach
Maketu
Midway
Mt Maungau
Omanu
Onemana
Opotiki
Papamoa
Pauanui
Pukehina
Tairua
Tolaga Bay
Waihi Beach
Waikanae
Wainui
Whakatane
Whangamata
Whiritoa

CENTRAL

Brighton
Buller
Kaka Point
Kotuku
Nelson
New Brighton
North Beach
Oreti
Rarangi
South Brighton
Spencer Park
St. Clair
St. Kilda
Sumner
Taylors Mistake
Waikuku Beach
Waimairi
Warrington

SOUTHERN

East End
Fitzroy
Foxton
Levin-Waitarere
Lyll Bay
Maranui
Oakura Beach
Ocean Beach Kiwi
Opunake
Otaki
Pacific Marine Parade
Paekakariki
Palmerston North
Riversdale
Titahi Bay
Waitara
Waimarama
Wanganui
Worser Bay
Westshore

3.4.1 Boundaries

The geographical boundaries that separate the SLSCs were determined with input from club members. This was part of a national restructure of the organisation and is visible on the locator map (figure 3.5 a, b). It also shows a correlation between the highly populated areas of New Zealand and the number of SLSC buildings.

[Figure 3.4 NZ SLSC Regions. Image by Author:
adapted from www.koordinates.co.nz]

[Figure 3.5 a, b NZ SLSC Building Locations and Regions. Image by Author:
adapted from www.koordinates.co.nz]

3.4.2 Location

The Eastern region SLSCs are located as far north as the Coromandel and as far south as Gisborne. The only significantly population centre is the Tauranga district, which can have significant influence of membership numbers and subsequently affects the buildings.

From the 18 SLSCs in the Eastern region, 9 were selected as case studies. This was decided in the early stages of the research to allow time for a detail examination of the building.

3.4.3 Selection

The 9 SLSC case studies were purposefully selected and are representative of their geographical position in the Eastern region. They were also selected to illustrate the range of different building types and ages.

- Hot Water Beach
- Tairua
- Pauanui
- Onemana
- Whangamata
- Whiritoa
- Waihi Beach
- Mt Maunganui
- Omanu
- Papamoa
- Maketu
- Pukehina
- Whakatane
- Opotiki
- Tolaga Bay
- Wainui
- Waikanae
- Midway

[Figure 3.7 SLSC Case Studies. Image by Author:
adapted from www.koordinates.co.nz]

3.4.4 Case Studies

The following section is the first stage of the detailed investigation into each of the 9 case studies. A summary of the analysis for each of the SLSC case studies is presented.

The following mapping investigations were completed for each case study;

- Site
- Figure ground
- Plot
- Water Proximity
- Dunes
- Greenspace
- Connectivity
- Parking

A drawing study and a discussion of the building orientation, form and functional layout accompanies the series of maps. The discussion also evaluates the significant features that were observed during site visits.

This is followed by a set of comparative diagrams. The key findings from each diagram are discussed and presented with smaller summary diagrams.

Site images of the 9 SLSC case studies that were used for the starting point of this research are shown in Figure 3.8. The site image measures 150 metre diameter area with the SLSC building placed in the centre (www.koordinates.co.nz).

Tairua

Omanu

Pauanui

Whakatane

Wainui

Tolaga Bay

Pukehina

Whiritoa

Waikanae

[Figure 3.8 Case Study Site Images. Image by Autho:
adapted from www.koordinates.co.nz]

3.4.4.1 Omanu Surf Life Saving Club

Officially formed in: 1947

Club house built in: 2006

Omanu Surf Life Saving Club is located in the Western Bay of Plenty District. The SLSC site is orientated towards the water and the building is forward of a line of surrounding development. The new SLSC building was completed in 2006 and is a simple rectilinear form. This case study is unique as it is the only example with a curved roof. This is an exception, to the typically pattern of simple low to moderately pitched roof forms. The building was designed as a single volume that incorporates a large 'equipment' storage space at basement level and 'inhabited' space, including a gym and administration spaces, in the upper levels.

[Figure 3.9a Omanu SLSC Sketch. Image by Author]

[Figure 3.10a Omanu SLSC Map Series. Image by Author]

3.4.4.2 Pauanui Surf Life Saving Club

Officially formed in: 1973

Club house built in: 1999

Pauanui SLSC is located in the Thames-Coromandel District. The SLSC building is located on council leased land that is zoned as a recreational reserve. The building is forward of the line of line of local development. The form of this case study contradicts the earlier ‘simple form’ characteristic (Refer section 3.3.2). However, it is evident that the building is in a state of disrepair. It is argued this is the result of placing a complex building with complicated joints in such a tough environment. The first aid and lifeguard ‘equipment’ spaces are located in the lower levels, whilst the ‘inhabited’ spaces and lookout are located in the upper level.

[Figure 3.9b Pauanui SLSC Sketch. Image by Author]

[Figure 3.10b Pauanui SLSC Map Series. Image by Author]

3.4.4.3 Pukehina Surf Life Saving Club

Officially formed in: 1999

Club house built in: 1988

Pukehina beach was originally patrolled as a satellite service that was run by the Maketu SLSC. In 1998 the Pukehina SLSC building was constructed on top of the preexisting public toilets. The building is situated at the end of a line of development. A unique element to this case study is the location between two bodies of water. The building form is simple, with further additions built to create more equipment storage space in the lower level. The lower level 'equipment' storage area has also been extended with the use of shipping containers. In the functional separated upper level the 'inhabited' areas include; a small kitchen, toilet, and meeting space.

[Figure 3.9c Pukehina SLSC Sketch. Image by Author]

Site

Figure ground

Plot

Water Proximity

Dunes

Greenspace

Connectivity

Parking

[Figure 3.10c Pukehina SLSC Map Series. Image by Author]

3.4.4.4 Tairua Surf Life Saving Club

Officially formed in: 1970

Club house built in: 1980

Tairua SLSC is located in the Thames-Coromandel District. The site boundary and main building volume are both positioned forward of the line of local development. This case study is interesting because it was originally a residential home that was sited elsewhere. This is a very literal example of adapting the local residential vernacular into a SLSC building. The main building form is simple and houses the meeting space with a small toilet and kitchen. Tairua SLSC is an example of the distinct separation of ‘equipment’ storage space and ‘inhabited’ spaces into different building volumes.

[Figure 3.9d Tairua SLSC Sketch. Image by Author]

Site

Figure ground

Plot

Water Proximity

Dunes

Greenspace

Connectivity

Parking

[Figure 3.10d Tairua SLSC Map Series. Image by Author]

3.4.4.5 Tolaga Bay Surf Life Saving Club

Officially formed in: 1964

Club house built in: 1998

Tolaga Bay SLSC is located 45mins north of Gisborne. This is the only case study that has two buildings situated on two different properties. The original SLSC building was blown down in a strong storm and the existing SLSC clubhouse was built in the new location while the storage shed remains at its beachfront location. Both buildings are in isolation from any local development and are situated within the beachfront recreational reserve. The building forms are simple and rectilinear in plan. This is another more pronounced example of the separation of 'inhabited' space and 'equipment' storage space.

[Figure 3.9e Tolaga Bay SLSC Sketch. Image by Author]

Site

Figure ground

Plot

Water Proximity

Dunes

Greenspace

Connectivity

Parking

[Figure 3.10e Tolaga Bay SLSC Map Series. Image by Author]

3.4.4.6 Waikanae Surf Life Saving Club

Officially formed in: 1950

Club house built in: 1986

Waikanae SLSC is located in Gisborne. The existing property is situated within a central city area. The building is conventionally positioned in line with the local development. The original building was a lot smaller and a simple form. The club membership has grown and there have been two notable additions. The layering effect of the additive process has resulted in a form complexity. The building volume is slightly larger than that of the typical residential vernacular. The lower level is used for equipment storage with large roller doors that allow easy access. The 'inhabited' multi-purpose space, bar, and kitchen is situated on the upper level.

[Figure 3.9f Waikanae SLSC. Image by Author]

Site

Figure ground

Plot

Water Proximity

Dunes

Greenspace

Connectivity

Parking

[Figure 3.10f Waikanae SLSC Map Series. Image by Author]

3.4.4.7 Wainui Surf Life Saving Club

Officially formed in: 1937

Club house built in: 2005

Wainui SLSC is located 10 minutes North of central Gisborne and is situated in complete isolation from immediate local development. The building is positioned within the beachfront recreational reserve and at the end of a single access drive. The Wainui SLSC building was originally small, but has since had three extensions. This case study is a good example of retaining a simple building form while extending building volume. The retention of a simple building form is also reflective of the residential vernacular character. The lower level of the building functions as an area for 'equipment' storage, whilst the upper level is 'inhabitable' space.

[Figure 3.9g Wainui SLSC Sketch. Image by Author]

[Figure 3.10g Wainui SLSC Map Series. Image by Author]

3.4.4.8 Whakatane Surf Life Saving Club

Officially formed in: 1933

Club house built in: 2007

Whakatane SLSC is located in Ohope. The property and the building volume are both orientated toward the water. The new SLSC building was constructed in place of the original building and is situated in a forward position from the line local development. The new clubhouse is a particularly good example of the use of residential vernacular that is adapted for the use of a SLSC building. This building appears like a large house, with subtle differences such as the extensive basement. This is a necessary adaptation to house the extensive amount of lifeguard and surf sport equipment that SLSCs require.

[Figure 3.9h Whakatane SLSC Sketch. Image by Author]

[Figure 3.10h Whakatane SLSC Map Series. Image by Author]

3.4.4.9 Whiritoa Surf Life Saving Club

Officially formed in: 1975

Club house built in: 1980

Whiritoa SLSC is located in the Hauraki District. The site is orientated towards the beach and is situated forward of the line of local development. The building is prominently located within the beachfront recreational reserve. The building is a rare example of a complex form, comprised from simple elements. The complexity of form has not helped the aging of the building, which shows visible signs of wear and tear. Whiritoa SLSC is also unique because it is the only case study that is a single storey building within one building volume. This may be the result of the elevated site position above the beachfront and contributes to the complex built form.

[Figure 3.9i Whiritoa SLSC Sketch. Image by Author]

[Figure 3.10i Whiritoa SLSC Map Series. Image by Author]

3.4.5 Figure ground

[Figure 3.11 Figure Ground Diagrams and Common Characteristics.

Image by Author]

The figure ground is used as an abstract representation of the physical environment and helps understand several significant features. The location of SLSC buildings within the local building layout was clarified further. The SLSC building location, degree of isolation, relationship to the grid, and the grid type are all illustrated. It can be concluded that there is a high level of flexibility in the location of SLSC buildings.

It is also apparent that SLSC buildings are slightly larger than their surrounding built environment and the majority of the SLSC facilities are contained within a single building volume. It can be concluded that SLSC buildings have strong similarities with the forms of surrounding residential development.

3.4.6 Plot

The plot diagram is a representation of the property size, position and edges. In this diagram the SLSC property edges are consistently extended toward the beach further than their neighbouring properties. The plots are also typically a larger size than those of the residential development in the local area. Additionally, the plot is commonly located within beachfront recreational reserves.

It can be concluded from this analysis that plot size, position and shape is more dissimilar to those of the surrounding residential development than that of the building form size.

[Figure 3.12 Plot Diagram and Common Characteristics.

Image by Author]

3.4.7 Water

These diagrams show the relationship between the body of water and the SLSC buildings. Unsurprisingly, the water is typically located to one side of the SLSC buildings and usually very close. The water is only separated from the SLSC buildings by recreational beachfront or sand dunes. The building forms are also found to configure with the water edge. This is characterised by facade orientation that is loosely parallel to the waterline.

[Figure 3.13 Water Proximity Diagrams and Common Characteristics.

Image by Author]

The proximity of SLSC buildings to the waters edge is a characteristic that displays little flexibility. It has become apparent that there is less flexibility with the water separation distance than with the plot size, position or shape. It can also be concluded that the waterline has a governing power over the orientation of the built form.

3.4.8 Dunes

Across all of the case studies there was an extensive area of sand dunes. The common relationship is that the building is placed on (or near) the edge of the dune area. This exercise illustrated that the sand dune areas are of various shapes. The exercise also confirmed that the most common type of sand dune area is a linear strip that runs parallel to the waterline. It was also discovered that sand dune areas are, in a few cases, intervened by open spaces.

It can be concluded from this analysis that SLSC buildings are typically placed in close proximity to various shaped foreshore sand dunes, but there is flexibility to the exact distance the building is set back. However, this flexibility must maintain a close connection to the water across what is typically a linear band of dunes.

[Figure 3.14 Dune Diagrams and Common Characteristics.

Image by Author]

3.4.9 Greenspace

[Figure 3.15 Greenspace Diagrams and Common Characteristics.

Image by Author]

The greenspace diagram shows the recreational spaces that are in the vicinity of SLSC buildings. The majority of the case studies are placed on the edge of a greenspace. The plots are typically placed within or bisect the boundaries of recreational reserves. It was also illustrated that the greenspace is typically a substantial scale. Furthermore, there is a great deal of variation in the shape of the greenspace but less flexibility in the greenspace layout and position.

Of note, SLSC buildings are often interruptive of a strip of greenspace. Some of the buildings also appear to be placed on top, or within, greenspace. It can be concluded from this exercise that the relationship of SLSC buildings to greenspace offers much more flexibility than with dunes and the building orientation.

3.4.10 Connectivity

The connectivity diagram shows how SLSC buildings are connected to local development. It is significant that SLSC buildings are typically set away from main highways and close to secondary or tertiary roads. Additionally, this exercise showed that two types of roads connect SLSC buildings: 1) A single access way that terminates at the building. 2) An access way that passes by the property boundary.

[Figure 3.16 Connectivity Diagrams and Common Characteristics.

Image by Author]

It is clear that the SLSC buildings are well connected to the surrounding area. It can be concluded from this exercise that the SLSC buildings have dual orientation. With the primarily focus towards the water, but also secondary focus towards the road and/or car park. It is also shown that there is a need for vehicular access, with limited flexibility in the layout of vehicle accessways. Importantly, roads never cut between SLSC buildings and the water.

[Figure 3.17 Parking Diagrams and Common Characteristics.

Image by Author]

The parking diagram shows the parking areas in close proximity to the SLSC buildings. The layout of parking solutions has a great number of variations. Typically there are a small number of reserved 'lifeguard' parking spaces. There are typically a larger number of parking spaces in the adjacent area that are for public use. Parking is somewhat disjointed from the SLSC buildings and is somewhat fragmented in several cases.

It is interesting that the SLSC buildings illustrate an apparent detachment from main parking areas. The off street parking for SLSC buildings is not a main priority and the different combinations of parking layouts create a great deal of variation. The fragmented character of the parking spaces increases this variation even more. This allows a great deal of flexibility to the method that is used to resolve parking issues.

3.5 PART 3 CASE STUDIES: DETAILED

The following section presents the detailed investigation into each of the 9 case studies. Illustrations of the plans, beachfront elevation, and sketches are presented to give a clear understanding of each individual building.

This is followed by a set of comparative diagrams. Each diagram is accompanied with a detailed discussion that describes the key findings and their relevant design implications.

3.5.1.1 Omanu SLSC

- 1 Lookout
- 2 Kitchenette
- 3 Lounge
- 4 Bunkroom
- 5 Kitchen
- 6 Multi-purpose space
- 7 First aid
- 8 Toilets
- 9 Storage and offices
- 10 Public toilets
- 11 Changing rooms
- 12 Equipment storage

[Figure 3.18a Omanu SLSC Plan. Image by Author]

[Figure 3.18b Omanu SLSC Sketches. Image by Author]

[Figure 3.18c Omanu SLSC Elevation aa. Image by Author]

3.5.1.2 Pauanui SLSC

[Figure 3.19a Pauanui SLSC Plan. Image by Author]

[Figure 3.19b Pauanui Sketch. Image by Author]

[Figure 3.19c Pauanui SLSC Elevation aa. Image by Author]

3.5.1.3 Pukehina SLSC

[Figure 3.20a Pukehina SLSC Plan. Image by Author]

[Figure 3.20b Pukehina SLSC Sketches. Image by Author]

[Figure 3.20c Pukehina SLSC Elevation aa. Image by Author]

3.5.1.4 Tairu SLSC

[Figure 3.21a Tairua SLSC Plan. Image by Author]

[Figure 3.21b Tairua SLSC Sketches. Image by Author]

[Figure 3.21c Tairua SLSC Elevation aa. Image by Author]

3.5.1.5 Tolaga Bay SLSC

- 1 Deck
- 2 Equipment storage
- 3 Multi-purpose space
- 4 Kitchen
- 5 Disabled Toilet

[Figure 3.22a Tolaga Bay SLSC Plan. Image by Author]

[Figure 3.22b Tolaga Bay SLSC Sketches. Image by Author]

[Figure 3.22c Tolaga Bay SLSC Elevation aa. Image by Author]

3.5.1.6 Waikane SLSC

[Figure 3.23a Waikanae SLSC Plan. Image by Author]

[Figure 3.23b Waikanae SLSC Sketches. Image by Author]

[Figure 3.23c Waikanae SLSC Elevation aa. Image by Author]

3.5.1.7 Wainui SLSC

- 1 Deck
- 2 Multi-purpose space
- 3 Patrol base
- 4 Toilets
- 5 Kitchen
- 6 Equipment storage
- 7 Changing rooms + toilets

■ [Figure 3.24a Wainui SLSC Plan.
Image by Author]

[Figure 3.24b Waikanae SLSC Sketches. Image by Author]

[Figure 3.24c Wainui SLSC Elevation aa. Image by Author]

3.5.1.8 Whakatane SLSC

- 1 Deck
- 2 Lookout
- 3 Multi-purpose space
- 4 Kitchen
- 5 Services
- 6 Bunkroom
- 7 First aid
- 8 Equipment Storage

[Figure 3.25a Whakatane SLSC Plan.
Image by Author]

[Figure 3.25b Whakatane SLSC Sketches. Image by Author]

[Figure 3.25c Whakatane SLSC Elevation aa. Image by Author]

3.5.1.9 Whiritoa SLSC

[Figure 3.26a Whiritoa SLSC Plan. Image by Author]

[Figure 3.26b Whiritoa SLSC Sketches]

[Figure 3.26c Whiritoa SLSC Elevation aa. Image by Author]

3.5.2 SLSC Plans

There are a considerable number of key findings that were extracted from Part 3 of the analysis. These were drawn from patterns of similarity and dissimilarity. The significant characteristics are summarised in the discussion that follows.

The SLSC building plan image above (figure 3.27) clearly shows that the planning of SLSC buildings follows a rectilinear pattern. There is a number of different configurations, however from this drawing it is concluded that SLSC building plans are typically guided by orthogonal references. This supports previously discussed 'simple forms' characteristic discussed in 3.3.2.

This drawing also shows that SLSC buildings are typically constructed with straightforward construction methods. Furthermore, the building forms are also typically aligned with the beach edge. This orientation governs wall and roof directions.

It was concluded that the integration of public toilets is characteristic of SLSC buildings. The public toilets that are integrated to SLSC buildings are operable in isolation to the rest of the buildings. This allows the public to use the bathroom facilities even when the rest of the building is vacant. Two good examples of this are Whakatane (2007) and Pukehina (1988).

SLSCs are characterised by a single dominant building volume. Secondary forms are rare, and when employed they are used for additional

equipment storage space and coheres with the dominant form. An example of this is Tairua SLSC (1980).

Furthermore, it was discovered that numerous extensions have been built onto several SLSC buildings. Extensions were built to increase the size of the facilities, mainly storage areas. It is concluded that it is common for SLSC building forms to be added to over time.

SLSC buildings are semi-public buildings. The SLSCs are member-based organisations. The SLSC buildings are not open to the public as casual visitors. However, SLSC buildings are often available to the public for hire as function venues.

[Figure 3.27 SLSC Building Plans. Image by Author]

Office	First aid
Kitchen + bar	Public toilets
Lounge	Changing + toilets
Multi-purpose space	Equipment storage
Bunkroom	Lookout
Gym	Circulation
Deck	Services

3.5.3 Functional Layout

There are common program elements in SLSC buildings. These are listed here;

kitchen/kitchenette
multi-purpose space
equipment storage
toilets/changing rooms
deck
lookout

Kitchen - SLSC kitchens are modest in scale. The kitchens are often in upper levels.

Multi-purpose space - The multi-purpose space of SLSC buildings is typically a large volume that is often the primary program element. The multi-purpose space is often in the upper levels.

Equipment storage - The storage areas of SLSC buildings are often in lower levels of the building with easy access to the beachfront and driveways that connect to local networks.

Toilet/changing room - The toilets and changing facilities usually relate strongly to the equipment storage area as a combined 'wet' area.

Deck - The deck space is predominantly to a sunward facing elevation. Occasionally there are multiple decks to ensure one over looks the beach.

Lookout - The lookout provides clear visual surveillance of the beach for lifeguard duty. When necessary a lookout is constructed as a separate volume at a location that has a strong visual connection to the beachfront. The lookout is unique because it is often located in the upper levels by areas associated with 'inhabitation' to take advantage of building height.

[Figure 3.28 Program Diagrams. Image by Author]

3.5.4 Outlines

SLSC buildings are characterised by functional layout that is divided into two areas.

The first area is primarily for people (such as club meetings and events). This is an area for 'inhabitation'. This area is typically located in upper levels (Refer yellow/green spaces figure 2.28).

The second area is a service area that houses lifeguard/surf sport equipment and other water related program elements. This is an area for

'equipment'. This area is always located in lower level

The area for 'equipment' is always focused on the lower level and is well connected with the beach accessways. In some cases public amenity is integrated into the 'equipment' area (Refer blue/purple space figure 2.28)

The area for 'equipment' is a heavy structure. The use of concrete block construction is common. The use of this type of construction method contributes to the robustness and strength of the area. This also creates a 'heavy base' to SLSC buildings that can withstand harsh weathering from the challenging

[Figure 3.29 SLSC Level Outlines. Image by Author]

locations and contributes to the vernacular character. The area for ‘inhabitation’ is conventional located in an elevated position (upper levels) and has a strong connection with the external landscape.

The area for ‘inhabitation’ is a light structure. The use of light timber framing construction is common. The use of this type of construction method contributes the warm and soft character of the area. This also creates a ‘light top’ to SLSC buildings and contributes to the buildings adaptability and vernacular character.

Most areas for ‘equipment’ are characterised by large openings for access but little to no visual permeability.

Most areas for ‘inhabitation’ are characterised by large windows and openings that create high visual and physical permeability.

[Figure 3.30 SLSC Building Elevations. Image by Author]

[Figure 3.31 Elevation Diagrams (beachside). Image by Author]

3.5.5. SLSC Elevations

There is a limited range of surface materials used in SLSC buildings. Painted light timber-cladding systems are typical for exterior walls and light material such as corrugated iron is commonly used for the roof.

SLSC buildings exhibit inconspicuous use of materials to 'fit' to the near by residential vernacular and the natural environment. This typically includes the use of light or neutral toned colours. The use of

bright colours that stand out is avoided.

Material variation and the use of modular cladding materials are common and help to create rich exterior textures. Examples of the variation in materials are shown in figure 3.31.

The roof forms of SLSC buildings are simple. Simple gabled and hipped roof forms with a low to moderate pitch are the predominant shapes. This is a notable vernacular characteristic.

SLSC buildings typically have more openings in upper levels than the lower levels. Lower levels typically have large access doors, however these are not visually permeable. This offers the lower level greater protection to the harsh weather and possible wilful damage.

The majority of SLSC buildings are one or two storey dwellings. It was summarized that SLSC building height is similar to that of the residential buildings in the area.

3.6 CONCLUSIONS

The characteristics identified have outlined design opportunities and limitations for future SLSC building development. These have informed the principles of design that achieve the primary objective and high level design strategies of the Design Guides established in the previous chapter. The Design Guidelines are presented in the following pages.

3.7 DESIGN GUIDELINES

Primary Objective

Contemporary surf life saving club designs should respond to the vernacular traditions and the sensitive coastal locations while also integrating modern building practice to generate architecture that fosters a strong sense of place and meaning.

High-level Design Strategies

-Integrate-

New Surf Life Saving Club building developments must take due care to acknowledge the characteristics and qualities of existing Surf Life Saving Club building vernacular traditions.

-Restore-

New Surf Life Saving Club building developments should enhance/respond to the cultural and ecological characteristics of the adjacent sensitive coastal environment.

DESIGN PRINCIPLES

SITE

[A1] *Beach Connectivity.* Create strong visual and physical connections to the beachfront that provide natural surveillance, beachfront user orientation, and clear access routes.

[A2] *Vehicle Routes.* Provide clear access route to the surrounding development.

[A3] *Integrate Open Space.* Integrate new development with local public recreational areas to provide enhanced open space amenity.

[A4] *Parking Composition.* Parking should be articulated as to not dominate the site or appearance of the development. This can utilize variations in natural landscaping, materials and paving to give visual aesthetic that is similar to the natural landscape.

FORM

[B1] *Vernacular Forms.* New developments must acknowledge the nearby residential vernacular. Generally the buildings are simple geometric forms. This allows for the possibility of incremental form development.

[B2] *Dual Orientation.* Provide dual building orientation that addresses the beachfront and the surrounding development

[B3] *Building Dimensions.* Design building height, scale and size in response to local residential buildings. Forms are typically one or two storeys high with a slight larger building footprint.

[B4] *Simple Forms.* Design simple roof forms. Typically gabled or hipped roof forms that are not conspicuous or intrusive to the beachscape.

[B5] *Future Proofing.* Provide building adaptability.

PROGRAM

[C1] *Simple Program + Amenity.* Provide a simple resolution to the building program and integrate public amenity

[C2] *Inhabitation Program.* Group program elements that are associated to the 'Inhabitation' area. For example; the multi-purpose space, and kitchen.

Equipment Program. Group program elements that are associated to 'Equipment'. For example; the equipment storage, toilets/change rooms, and first aid area.

[C3] *Planning Character.* The planning of SLSCs contains the following spaces. Consider the typical character of these spaces when designing new developments. The character of each space is discussed at the end of the design guides.

STRUCTURE

[D1] *Commonplace Construction.* The use of commonplace construction methods is encouraged.

[D2] *Heavy Base.* Construction techniques used for 'equipment' areas must be strong and robust to withstand harsh weathering and high levels of activity. Typically a heavy base.

[D3] *Light Top.* Construction techniques used for 'inhabitation' areas must contribute to the warm and soft character. This also contributes to the buildings adaptability and links with the local residential vernacular character. Typically a light top.

[D4] *Facade Permeability.* Provide façade openings for visual and physical permeability from inhabitation areas to the external environment.

MATERIALS

[E1] *Typical Materials.* Integrate typical SLSC materials into new development with reference to site-specific historical responses. Commonly the materials are soft and colours are dull to negate excessive interruption of coastal landscape. Typical materials include, painted weatherboards, corrugated iron, and unfinished timber.

[E2] *Surface Materials.* Consider and/or reference the existing patterns of surface material. This pertains to both the pre-existing SLSC and to the local residential vernacular character.

[E3] *Elevation Texture.* Utilise material variation to create texture, depth and richness in elevations.

SPATIAL CHARACTERISTICS

Kitchen - The SLSC kitchens are mostly very modest in scale with a strong connection to the hall space. Often there is a bar associated with the kitchen. The kitchens are often in upper levels.

Multi-purpose space - The multi-purpose spaces of SLSCs are typically a single large volume that's closely associated with the private deck. Often the hall space is the primary hub that other elements of the program are based around. The hall space is often in the upper levels and takes advantage of beach view.

Storage - The storage areas of surf clubs are often in lower levels of the building with easy access to the beachfront and driveways that connect to the urban grid. The storage space is typically large and very secure with low visual permeability when enclosed.

Toilet/change - The toilets and changing facilities are often in the lower levels. They usually relate strongly to the equipment storage area as a combined 'wet' area.

Deck - The deck space is predominantly to a sunward facing elevation. Occasionally there is multiply deck to ensure a space takes advantage of beachfront views. The deck space is commonly in the upper floors and connected off the hall space.

Lookout - The lookout provides clear visual surveillance for lifeguard duty and takes advantage of building height to achieve this when necessary. It is characteristically included as part of the building form when appropriate to the site attributes. When necessary a lookout is constructed as a separate volume at a location that has strong visual surveillance over the beachfront.

4 PRECEDENTS

[Figure 4.1 Pauanui Surf Life Saving Club. Image by Author]

4.1 INTRODUCTION

This chapter outlines the analysis that was completed of key international precedents. Each of the selected precedents relate to one of the four research themes;

Surf Life Saving Clubs
Sensitive Environments
Vernacular Buildings
Critical Regionalism

Special attention is given to the significant findings and how they have informed amendments to the initial principles of design formed in Chapter 3 as part of the Design Guidelines.

4.2 METHOD

The research themes are addressed in turn;

Surf Life Saving Club buildings

Devonport SLSC
Seaford SLSC

Sensitive Environments

Endemico Resguardo Silvestre
National Tourist Route Trollstigen

Vernacular Building

Hakka Walled Villages
Cape Cod Farmhouse

Critical Regionalism

Walsh House
Sliding House

The key information of each precedent is presented first. This is followed by a discussion of the significant characteristics and a summary of the extracted findings.

The conclusions from the analysis have informed a number of amendments to the initial principles of design. The outcome from the amendments is a set of principles that are pertinent to New Zealand SLSCs and also respond better to contemporary SLSC design, sensitive environments and vernacular traditions.

The amended Design Guidelines are presented at the end of the chapter.

4.3 SLSC PRECEDENTS

The SLSC precedents were selected to illustrate international examples of professionally designed contemporary SLSC buildings. The precedents highlight both positive and negative characteristics of SLSC building design.

4.3.1 *Devonport SLSC*

4.3.1.1 Key Information

Location – Devonport, Tasmania, Australia

Founded – 1927

Constructed – 2011

Designer – Jaws Architects

Membership – 300+

4.3.1.2 Significant Characteristics

The Devonport SLSC building design resulted from a council initiative. The building is owned by the council, but is under the operational control of Devonport SLSC. The Devonport SLSC building is a significant precedent because it is a contemporary ‘considered’ work of SLSC architecture that provides valuable insight into the forms and functional layout of a professionally designed contemporary SLSC.

The Devonport SLSC building is contained within a single building volume that is located adjacent to the beach edge. The building is wrapped in a folding aluminium skin, which performs as a wall and as a roof. The cladding is connected with the ground plane, as shown in figure 4.2b, to shelter the elevation of the building. The skin also extends to the ridge line of the roof and folds over to cover the top of the building, as shown in figure 4.2a.

[Figure 4.2 a, b, c Devonport SLSC Sketches. Image by Author]

4.3.2 *Seaford SLSC*

4.3.2.1 Key Information

Location – Port Phillip Bay

Founded – 1919

Constructed – 2008

Designer – Robert Simeoni

Membership – 300+

4.3.2.2 Significant Characteristics

The local council initiated the design for the new Seaford SLSC. This is similar to the Devonport SLSC. The Frankston City Council proposed a design competition for the Seaford SLSC and the design by Robert Simeoni was the winning entry. The competition asked for a scheme that combined the SLSC with a community meeting space and public amenity, while addressing urban and landscape issues.

The Seaford SLSC design was conceived as a part of the landscape, as opposed to a ‘sculptural piece’. The buildings are positioned near the edge of the dune and overlook the beachfront. There is a clear connection between the water edge and the SLSC.

The building forms are simple and the same construction method is used throughout the building (heavy timber frame). The materiality is also consistent throughout the project. The predominant material that is used is naturally finished timber. This is similar to the materiality to the adjacent wharf, as visible in figure 4.3.c. This reinforces the connection between the building and the local environment.

[Figure 4.3 a,b,c Seaford SLSC Sketches. Image by Author]

[Figure 4.3d Seaford SLSC Site. Image by Author
adapted from Robert Simeoni, 2010]

The facility is comprised of a collection of smaller buildings with interstitial outdoor space. The collection of buildings can be considered as a single entity or they can function individually. The ability to use the buildings individually creates a variety of different sized spaces. The spaces between the different buildings are designed to be adaptable. Movable screens can modify the spaces in different ways depending on weather, time of year, or day.

Multi-functional community meeting space is integrated into the program. It is interesting that this precedent conveys a sense of restraint, unlike the previously discussed Devonport precedent. This SLSC precedent is a good example of how normal and affordable materials can be used in innovative ways.

Additionally, the integration of more program elements (cafe, community space) makes it important that the different areas of the building are visually defined for users. It can be argued that the various spaces are not easily understandable due to the consistent use of timber construction/cladding.

[Figure 4.3e Seaford Functional Layout. Image by Author
adapted from Robert Simeoni, 2010]

4.3.2.3 Summary of Extracted Findings

- Contemporary SLSC design can assume simple forms using a simple material pallet in innovative ways to resolve a modern design brief while acknowledging the environmental and built context.
- Creating clear spatial definitions is a key element to ensuring the operations of SLSC buildings. This is important when considering new SLSC developments with an increased number of functions.
- The Seaford SLSC is a much more modest scale, material, and form than the previously discussed Devonport SLSC. However, both precedents have similar separation of the functional layout. SLSC space and community space are functional divided with shared space in-between. This suggests that contemporary SLSCs need a degree of separation in the function layout between different clusters of program elements.

4.4 SENSITIVE ENVIRONMENTS

The precedents that were selected for this research theme illustrate professionally designed facilities that are based within sensitive environments. These precedents are examples of the characteristics of buildings in sensitive environments.

4.4.1 Endemico Resguardo Silvestre

4.4.1.1 Key Information

Location – Ensenada, Mexico

Constructed –2011

Architect – Graciastudio

4.4.1.2 Significant Characteristics

The Endemico Resguardo Silvestre is a branch of hotel accommodation that is part of a winery estate. The buildings are a collection of 20 units that are located along the hillside. The winery is located at the foot of the hill within the 99-hectare property. Each building is independent and is designed to accommodate up to two people.

The design has been placed delicately above the landscape too minimise the disruption of environmental systems. This gesture implies a thoughtful admiration for the ground and natural environment. Of the precedents in this section, this example offers the lightest touch on the landscape.

The Endemico Resguardo Silvestre is split into small building volumes that are spaced apart, along a hillside. Each volume is built with the same construction method and are connected by an informal pathway. The intent behind designing

[Figure 4.4 a,b,c Endemico Resguardo Silvestre Sketches.

Image by Author]

small individual volumes may have been to develop a high level of privacy for the occupant(s). However, the distribution of the forms along the varying topography also minimises the visual impact of the built form on the picturesque wine country vistas.

4.4.1.3 Summary of Extracted Findings

- It is important that the local environmental systems are acknowledged in new developments. New development should not encroach or harm the significant local ecological habitats. This can be resolved in a variety of ways. The light footing of this precedent is one good example.

- The same construction methods and materials are used for all the buildings. The repetition of materials and construction creates a visual link that connects the building. The link is identified through the rich timber cladding, the pitched corrugate roof, and the corten steel structural frame. These similarities contribute to the understanding of the building as a whole.

- When building in sensitive locations it is important to consider the visual impact of the building on the character of the local environment. This precedent limits the building's visual impact on the character of the local environment by designing a series of small volumes rather than a single large and dominant volume. This is important because the scale of SLSC buildings and the visually prominent coast locations means miss-guided new development could have disastrous effects on the natural character.

4.4.2 National Tourist Route Trollstigen

4.4.2.1 Key Information

Location – Romsdalen – Geiranger Fjord, Norway

Constructed – 2005-2012

Architect – Reiulf Ramstad Architects

4.4.2.2 Significant Characteristics

The Trollstigen tourist route is situated along a scenic mountain plateau in Norway. The area is well known as a tourist centre and the route is only open in the summer months as the weather conditions in winter are so severe that the site is inaccessible.

The tourist route consists of several different architectural projects that connect together along a sixty-six mile stretch of scenic mountain road. The projects include a restaurant, visitor centre, mountain lodge and a roadside rest stop.

Each architectural intervention has been considered as a part of the project as a whole. As a result the buildings can be understood collectively through the similar forms, materials and construction.

Due to the harsh winter climate, the structure and materials of the architectural intervention required an equally excessive durability. The corten steel and concrete are strong and resilient to the weathering. Additionally the corten steel will change colour with age and enhances the building character over time.

The design was also resolved with respect to the visual aesthetics of the site because in the summer months the area is regarded as one of the most beautiful areas in Norway. The projects, which twist through the mountainous area, are moulded around

[Figure 4.5 a,b,c National Tourist Route Sketches.
Image by Author]

and into the landscape. Clear pathways are easily identifiable for user orientation and direction. This can be seen in pathway sketched in figure 4.6a, which is elevated above the landscape and connects the visitor centre with the lookout.

4.4.2.3 Summary of Extracted Findings

- Durable and robust materials are used in this precedent that is located in sensitive environment. The difficult climate is very hard wearing on buildings. This is comparable to the hard wearing environment of NZ SLSC buildings. It can be concluded that the use of materials that are strong and durable and relate to the local environment would be pertinent for NZ SLSC buildings.
- On the national tourist route the pathways through the natural environment are designed with conventional construction elements such as steel balustrades, and concrete paving. The conventional building elements make pathways clear for the user. Clarity of the pathways is a key design quality for the access ways around SLSC buildings.
- This precedent is considered as a significant tourist route that runs through the mountains in Norway. The architectural interventions perform as nodes along the route for rest and activity. SLSC buildings are similar nodes in the recreational beachfront on New Zealand. There is opportunity for the next generation NZ SLSC buildings to perform as a network of nodes that enhance coastal recreational spaces.

4.5 VERNACULAR BUILDINGS

4.5.1 *Hakka Walled Villages*

4.5.1.1 Key Information

Location – Southern China

Constructed – 17th century onwards

Community – Indigenous Hakka Population

4.5.1.2 Significant Characteristics

Hakka villages are traditional dwellings that were built in China in the 17th Century. These buildings were created to house entire villages and provided protection from attackers. The need to have an easily defensible village evolved from conflict between villages over local resources and territorial disputes.

Typically the villages were circular in shape with a single entry point. The walls were very deep to give the structure extremely good strength. There were typically very few windows and they were normally small openings. Also, the windows were always located in the upper levels. The height and small size of the windows made the structure easy to defend. The structures incorporated additional defensive systems such as turrets. This all helped to create a safe internal area where the village could survive if under siege.

The structures made efficient use of local natural resources such as brick, stone, and rammed earth. The local villages had to make the most of very little resources. The innovative use of simple materials like mud and stone is a traditional vernacular characteristic. SLSC traditional showed a similar pattern of development by adopting strong/robust lower levels for functionality (Refer chapter 3).

[Figure 4.6 a,b,c Hakka Walled Village Sketches.

Image by Author]

A stock of necessary resources was stored in the communal living areas to ensure the village could survive if a prolonged attack happened. This way the walled villages evolved in response to the needs of the people of the time.

4.5.1.3 Summary of Extracted Findings

- Haka walled villages illustrate a practical built response to the needs of a local community. This is similar to the traditional SLSC. New SLSC developments need to acknowledge the importance of what can be considered the first priority of the building, the service of life guard patrol and beach safety.
- A key vernacular characteristic of this precedent is the buildings 'strong bone'. The building is built for a need and each part of the building (the main entrance, the small windows, the thick walls) is built, as it needs to be without ornament. There is no superficial building decorations or fake motifs.
- The precedents of this section clearly illustrate some key design characteristics of vernacular buildings. The Haka walled villages created a functional structure that was socially responsive and used building material extremely efficiently. It is concluded that the efficient use of materials and local resources is a key element to the new development of NZ SLSCs.

4.5.2 *Cape Cod Farmhouse*

4.5.2.1 Key Information

Location – Cape Cod, New England, America

Constructed – 17th century

Community – Early English Settlers

4.5.2.2 Significant Characteristics

Traditional Cape Cod dwellings were first built in the early 17th Century. The early settlers brought building knowledge from England that was adapted to the local conditions. The houses were simple and strong. The gable pitched roof and orthogonal volumes were resilient to the unforgiving climate. The simple structures also made the building easy to adapt.

The roof pitch was steep to ensure that snow did not build up too high in winter. The climate was known for being strong and stormy. The development of window shutters was an environmental response of the time that provided protection to glazed openings during storms. The early settlers also had to import all the glazing for their homes, which was very expensive. The windows were made up of smaller pieces of glass to mitigate the possibility of breakages over the long transport distances.

Traditional Cape Cod dwelling had a central space that had a fireplace in the middle, which was the focal point. This made the heating of the house extremely efficient, even more so, when window shutters were closed. When the weather was warmer the window shutter could be opened and the openings allowed natural cross ventilation.

[Figure 4.7 a,b,c Cape Cod Farmhouse Sketches.

Image by Author]

4.5.2.3 Summary of Extracted Findings

- New SLSC development should take into account the variety of weather conditions and should be suitably designed to perform resiliently against climate changes.
- Passive environmental control systems are important tools for the control on internal building comfort. A key design characteristic to passive environmental control is the ability to generate natural cross ventilation. New development should make use of openings to facilitate natural cross ventilation.
- The simple forms of traditional Cape Cod dwellings are similar to the simple forms of traditional SLSC buildings. The use of a simple modular building system meant that building could be extended upon when it was required. Future SLSC building development should provide space for expansion and use a building system that it can be adapted over time.

4.6 CRITICAL REGIONALISM

4.6.1 *Walsh House*

4.6.1.1 Key information

Location – Kangaroo Valley

Constructed – 2005

Architect – Glen Murcutt

4.6.1.2 Significant Characteristics

The Walsh House is a single family home located just outside of Sydney. Built for a small family the house is a case of environmental sustainability. The form is orthogonal and linear with a mono pitch roof.

The building is contained within a single storey structure. The house incorporates strong modern linear lines and crisp contemporary edges. The building engages with the landscape in a variety of ways. The roof extends out to protect windows from strong northerly summer sun responding passively to the climate. This allows the window to remain unscreened and frames the natural winter light that is allowed to penetrate the façade. The manipulation of light is continued in the use of adjustable louvres in lower spaces of the north façade. The louvres can be altered to individual light needs, depending on the particular function of the internal space.

The building has an inherent local farmhouse character that introduces its self through rustic materiality and a sense of respect given to the land. This is reinforced through the retention of conventional construction elements such as the covered veranda, which is traditional to local rural homes. The local materials or construction elements are reinterpreted and translated in modern ways.

[Figure 4.8 Walsh House Sketches. Image by Author]

4.6.1.3 Summary of Extracted Findings

- The use of materials and construction techniques that are linked to local built forms are key qualities of buildings that are considered examples of critical regionalism. It is important that the materials and construction techniques are not used to simply replicate that local character. The materials and construction techniques must be used when they are the most suitable.
- A deep understanding of the site is an important part of design. Critical regionalism calls for a deep understanding and a delicate response to the environmental forces. New SLSC buildings need to employ this point to respond to the seasonal patterns of the weather such as winter and summer sun paths.
- The local built context can be referenced through the use of conventional building components. New SLSC building should consider the retention of conventional construction components and building materials as a way to reference local typologies.

4.6.3 *Sliding House*

4.6.3.1 Key Information

Location – Halifax, Nova Scotia, Canada

Constructed – 2012

Architect – McKay-Lyons Sweetapple Architects

4.6.3.2 Significant Characteristics

The Sliding House is situated in Halifax, Canada. The building is a small family home located on an upper half of a farm property. The design is fundamentally a modern piece of architecture. The building also acknowledges the local historical context.

The placement and orientation of the building move with the landscape and layout of the local built forms. The location references the old farmhouse and the concept for the form is inspired from the adjacent farmhouse that has been distorted by the local wind. The wind had pushed the farmhouse into a sloped volume.

Corrugate iron is a typically building material of traditional farm structures. The corrugate iron has been translated and transformed into the contemporary house. This is achieved through the monotonous corrugated iron skin that envelops the building. The use of the local building material in a new contemporary way creates tension between the local history and the new house. The wooden interior tests the limits of the local even further by manipulating the soft texture through monotonous reiteration

[Figure 4.9 Sliding House Sketches. Image by Author]

4.6.3.3 Summary of Extracted Findings

- This precedent is significant because it is a good example of the ways that traditional materials can translate into modern architecture. This creates a connection between the regional patterns of development and the contemporary disposition. New SLSC building development can take heed of this example and consider the characteristics of the local materials and how they can be used in new, slightly unfamiliar ways.
- Both critical regionalist precedents illustrate a design response that takes cues from the local natural environment. In this example the design develops an intimate relationship with natural slope of the land.
- This precedent transforms the qualities of the vernacular traditions of the local farmhouse dwellings into a new and contemporary home. The process of translating and/or transforming the characteristics/qualities of vernacular traditions is an important design process. New SLSC development needs to acknowledge/translate/transform the historic regional characteristics of SLSC buildings in a contemporary manner.

4.7 CONCLUSIONS

This chapter refines the learnings from Chapter 2 & 3 and discusses international examples of contemporary SLSC design. The chapter develops the potential for contemporary SLSC building design to combine the benefits of vernacular traditions and all the benefits of sensitive environmental design. A critique of critical regionalist works of architecture distils imperatives that provide a reconciliation of vernacular and architecture.

The key findings from this chapter have informed a number of amendments to the principles of design as part of the Design Guidelines. The amended Design Guidelines are presented in full in the following pages.

4.8 DESIGN GUIDELINES

Primary Objective

Contemporary surf life saving club designs should respond to the vernacular traditions and the sensitive coastal locations while also integrating modern building practice to generate architecture that fosters a strong sense of place and meaning.

High-level Design Strategies

-Integrate-

New Surf Life Saving Club building developments must take due care to acknowledge the characteristics and qualities of existing Surf Life Saving Club building vernacular traditions.

-Restore-

New Surf Life Saving Club building developments should enhance/respond to the cultural and ecological characteristics of the adjacent sensitive coastal environment.

DESIGN PRINCIPLES

SITE

[A1] *Beach Connectivity.* Create strong visual and physical connections to the beachfront that provide natural surveillance, beachfront user orientation, and clear access routes.

[A1a] *Beach Access Ways.* Provide clearly marked and well-defined beach access ways that complement the natural character of the site. Typical methods to achieve this include; timber posts and railing, timber bollard and rope, and timber boardwalks.

[A2] *Vehicle Routes.* Provide clear access route to the surrounding development.

[A3] *Integrate Open Space.* Integrate new development with local public recreational areas to provide enhanced open space amenity.

[A4] *Parking Composition.* Parking should be articulated as to not dominate the site or appearance of the development. This can utilize variations in natural landscaping, materials and paving to give visual aesthetic that is similar to the natural landscape.

[A5] *Environmental Systems.* New development should take care to not cause any undue harm to the coastal environment systems including; vegetation, dunes, and natural features and reserves

FORM

[B1] *Vernacular Forms.* New developments must acknowledge the nearby residential vernacular. Generally the buildings are simple geometric forms. This allows for the possibility of incremental form development.

[B1a] *Form Rearticulation.* Consider the use of form characteristics of nearby residential vernacular in new and slightly unfamiliar ways.

[B2] *Dual Orientation.* Provide dual building orientation that addresses the beachfront and the surrounding development

[B3] *Building Dimensions.* Design building height, scale and size in response to local residential buildings. Forms are typically one or two storeys high with a slight larger building footprint.

[B4] *Simple Forms.* Design simple roof forms. Typically gabled or hipped roof forms that are not conspicuous or intrusive to the beachscape.

[B5] *Future Proofing.* Provide building adaptability.

PROGRAM

[C1] *Simple Program + Amenity.* Provide a simple resolution to the building program and integrate public amenity

[C1a] *Functional Separation.* Create functional separation between SLSC operations and additional site-specific program functions (café or restaurant).

[C2] *Inhabitation Program.* Group program elements that are associated to the 'Inhabitation' area. For example; the multi-purpose space, and kitchen.

Equipment Program. Group program elements that are associated to 'Equipment'. For example; the equipment storage, toilets/change rooms, and first aid area.

[C3] *Planning Character.* The planning of SLSCs contains the following spaces. Consider the typical character of these spaces when designing new developments. The character of each space is discussed at the end of the design guides.

[C4] *Amenity Routes.* Ensure access routes to public amenity are clear and legible. This can be achieved by placing amenity in clear public view by access route and beach access ways.

STRUCTURE

[D1] *Commonplace Construction.* The use of commonplace construction methods is encouraged.

[D1a] *Vernacular Construction.* Provide variation in construction techniques to provide visual connection with residential and SLSC vernacular.

[D2] *Heavy Base.* Construction techniques used for 'equipment' areas must be strong and robust to withstand harsh weathering and high levels of activity. Typically a heavy base.

[D3] *Light Top.* Construction techniques used for 'inhabitation' areas must contribute to the warm and soft character. This also contributes to the buildings adaptability and links with the local residential vernacular character. Typically a light top.

[D4] *Facade Permeability.* Provide façade openings for visual and physical permeability from inhabitation areas to the external environment.

[D5] *Passive Comfort.* Provide openings within the structure that allow natural ventilation for passive environmental control systems

[D6] *Innate Ornament.* Construction methods should be used to integrate innate ornament. Deny superficial ornament.

[D7] *Transform Components.* Consider the retention/translation of conventional building components as a way to reference local vernacular traditions.

MATERIALS

[E1] *Typical Materials.* Integrate typical SLSC materials into new development with reference to site-specific historical responses. Commonly the materials are soft and colours are dull to negate excessive interruption of coastal landscape. Typical materials include, painted weatherboards, corrugated iron, and unfinished timber.

[E1a] *Material Innovation.* Consider using typical materials in new innovative and slightly unfamiliar ways

[E2] *Surface Materials.* Consider and/or reference the existing patterns of surface material. This pertains to both the pre-existing SLSC and to the local residential vernacular character.

[E3] *Elevation Texture.* Utilise material variation to create texture, depth and richness in elevations.

[E3a] *Material Mixture.* Consider the mixture of modern and traditional building materials.

[E4] *Material Strength.* Materials need to be strong and durable to withstand the harsh coastal environment.

[E5] *Material Efficiency.* Materials should be used efficiently.

SPATIAL CHARACTERISTICS

Kitchen - The SLSC kitchens are mostly very modest in scale with a strong connection to the hall space. Often there is a bar associated with the kitchen. The kitchens are often in upper levels.

Multi-purpose space - The multi-purpose spaces of SLSCs are typically a single large volume that's closely associated with the private deck. Often the hall space is the primary hub that other elements of the program are based around. The hall space is often in the upper levels and takes advantage of beach view.

Storage - The storage areas of surf clubs are often in lower levels of the building with easy access to the beachfront and driveways that connect to the urban grid. The storage space is typically large and very secure with low visual permeability when enclosed.

Toilet/change - The toilets and changing facilities are often in the lower levels. They usually relate strongly to the equipment storage area as a combined 'wet' area.

Deck - The deck space is predominantly to a sunward facing elevation. Occasionally there is multiply deck to ensure a space takes advantage of beachfront views. The deck space is commonly in the upper floors and connected off the hall space.

Lookout - The lookout provides clear visual surveillance for lifeguard duty and takes advantage of building height to achieve this when necessary. It is characteristically included as part of the building form when appropriate to the site attributes. When necessary a lookout is constructed as a separate volume at a location that has strong visual surveillance over the beachfront.

5 SITE ANALYSIS

[Figure 5.1 Ohope Beach. Image by Author]

5.1 INTRODUCTION

This chapter presents the detailed site analysis that expands on the comparative analysis completed in Chapter 3. This is by focusing specifically on Pukehina SLSC. The analysis was completed in preparation for the Design Case study that follows in Chapter 6.

The site analysis begins with an overview of the Pukehina region and the local SLSC building. This is followed by the presentation of the graphic analysis and the key findings. The key findings highlight significant opportunities and limitation of the site.

The key findings from the analysis are discussed in the following pages and were used to create a set of Site-Specific Design Criteria and make further amendments to the Design Guidelines.

The Site-Specific Design Criteria are used in conjunction with the Design Guidelines to guide the Design Case Study in Chapter 6.

5.2 SITE DESCRIPTION

Pukehina beach is a small Township located on the East Coast of the North Island. It is located in the Maketu Ward, which is part of the Western Bay of Plenty District. The Western Bay Plenty district has a population of approximately 46000 people (Statistics New Zealand, 2011).

5.2.1 History

In pre European times the flat lands of the Pukehina area were covered in wetlands and swamp forests. Today there are extensive drainage systems, which

[Figure 5.2 Pukehina New Zealand Context. Image by Author]

[Figure 5.3 Pukehina SLSC Building. Image by Author]

have enabled the agricultural use of the land. The majority of the Pukehina Township developed along the beachfront. The buildings along the main road Pukehina Parade are holiday homes. In the area inland there are a number of widely spread out farm buildings. The white sandy beach and consistent good weather contributed to the concentration of holidaymakers and farmers.

5.2.2 Current Position

Pukehina has an estimated population of 250 permanent residents, which increases to over 7000 people during peak summer months (Gillespie, 2011).

SLSCs are frequently established in coastal towns that are affected by fluctuating seasonal populations. The seasonal population comprises of temporary residents and visitors that travel to these coastal settlements during summer months and often increase the population by five times or more. The fluctuating population puts pressure on the water, waste, and transport infrastructure. Pukehina Township is one such settlement.

The increase in population creates a number of issues for the SLSC building with the increase in vehicular and pedestrian activity around the building and the sensitive environment. In the winter months the area is less populated and this creates issues of building maintenance and security.

Local volunteers traditionally did SLSC Building maintenance. As contemporary SLSC buildings become more complex they are requiring more advanced maintenance and this may move beyond the scope of volunteer works. If the building maintenance and management cannot be kept up

[Figure 5.4 Pukehina Beach Region. Image by Author]

[Figure 5.5 Pukehina SLSC Building. Image by Author]

to date, year round, the Pukehina SLSC building condition will deteriorate.

Security is also an issue for the Pukehina SLSC building, especially during low populous winter months. The small number of permanent residents makes dependable natural surveillance unlikely and makes the SLSC buildings more vulnerable to vandalism and/or wilful damage.

5.2.3 Surf Hazards

The Pukehina SLSC was officially established in 1988. Maketu SLSC had previously helped to run lifeguard patrols. Originally there was a public toilet located next to the beach access way. The Pukehina SLSC building was built onto the pre-existing public toilet building. The SLSC is necessary as the beach has a number of hazards such as the adjacent Waihi Estuary.

The mouth of Waihi estuary borders the Pukehina SLSC location and can be extremely dangerous. This was highlighted in the accident that occurred during the summer of 2007/08. A boat was attempting to enter the estuary when it was caught by a wave and rolled. The Pukehina SLSC lifeguards acted quickly to help save the lives of the 5 people that were on board. The dramatic rescue was recognised as the Surf Rescue of the Year (SLSNZ, Annual Report Section 6, 2008).

[Figure 5.6 Significant Features - Pukehina SLSC. Image by Author]

The information list here shows the number of rescues performed by Pukehina SLSC from 2008-2011. The information was gathered from the annual reports published by SLSNZ.

Summer 2008/09 - 17 rescues
Summer 2009/10 - 11 rescues
Summer 2010/11 - 2 rescues
Summer 2011/12 - 13 rescues

Pukehina beach is exposed to high-energy waves and the beach has a steep drop off into deep water (Law, 2008, p. 25), contributing to the beach being a dangerous swimming area, despite it being a noted summer holiday destination.

5.2.4 Site Selection

Pukehina SLSC was selected for the Design Case Study for several reasons. The main reason being, Pukehina has a number of characteristic features that represent the typical NZ SLSC, as discussed in Chapter 3. The site reflects common challenges and opportunities that are faced by NZ SLSCs. These are highlighted and discussed throughout the analysis.

5.3 SITE ANALYSIS

The following graphic analysis is discussed and explains the design implications of the key findings.

5.3.1 Regional Study

Figure 5.7 indicates the notable features of the region around Pukehina. The diagram shows the topography, main transport links, major reserves, open natural waterways, and areas of development.

Topography

Maketu is located to the Northwest of Pukehina and has a raised topography of up to 60+ meters. The surrounding area is predominantly low level farming planes. To the South of the farming planes there is steep and complex topography. The topography acts as an isolating barrier and limits the number of transport links and affects the climate (Refer figure 5.7).

Road networks

There are two State Highways that provide arterial transport links through the region. State Highway 2 (SH2) loosely follows the coastline from East to West. State Highway 35 (SH35) diverges off SH2 near the centre of the diagram and provides a Southern transport link. Pukehina Township is connected with the State Highway network by one road that connects with SH2 (Refer figure 5.7).

Reserves

The Department of Conservation reserves indicated on figure 5.7 are a combination of different types of open spaces. This includes; recreational beachfront, estuarine areas, wetland areas, dunescape, and salt marsh areas. Forest reserves have been omitted from this diagram for clarity. There is great variety in the shapes, layout and types of the public open spaces. However, reserve locations are predominantly in coastal areas.

Waterways

The rivers and streams in the Pukehina region are fed by water that is collected in the adjacent Kaimai mountain ranges. The waterways drain into the two

estuaries that straddle Maketu. Maketu Estuary is to the North and Waihi Estuary is to the South. Many of the natural waterways in the area have been transformed into man-made drainage that supplies irrigation systems. This is due to the intensive farming of the flatland areas. This diagram only shows existing natural waterways (Refer figure 5.7).

Regional Development

There are four areas of development in the regional mapping diagram. These are listed here from largest to smallest:

Papamoa
Te Puke
Maketu
Pukehina

Pukehina Township can be considered a very isolated community due to the topography, limited transport links, and the long distances to near-by development. The mountainous topography to the south is a key element to the isolation of Pukehina. The mountain ranges act as a long range barrier that provides a degree of shelter from harsh southerly weather.

[Figure 5.7 Regional Mapping Diagram. Image by Author]

5.3.2 Local Environment

Land and Building Use

Pukehina Township has a reserve margin that borders the coastal edge. Dotterel Point recreational reserve is located within the marginal strip at the end of the township. There are two more reserves that link from the road to the beachfront and estuary. On those reserves there are small playgrounds. Pukehina SLSC building is located in a prominent location within the network of local reserves. Integrating the new Pukehina SLSC building with the public space network is an important opportunity to enhance the public amenity of Pukehina (Refer figure 5.8a).

There are two car parks in the Pukehina SLSC area. One is located next to the boat ramp and the other is located next to the SLSC building at Dotterel Point. As discussed in Chapter 3, SLSC parking areas can be resolved in a variety of ways. The large format parking area at Pukehina provides an opportunity to reconfigure the parking location, size, and shape (Refer figure 5.8a).

Residential dwellings are the predominant building type in Pukehina. The only non-residential building in this diagram are the SLSC building and the public toilet facility that is adjacent the boat ramp. The next closest non-residential building in the township is a dairy and takeaway food convenience that is approximately 2km Southeast of the SLSC (Refer figure 5.8a).

Connectivity

Pukehina Parade is the only road into Pukehina and comes to a dead end at Dotterel Point reserve, adjacent to the SLSC building. Several pedestrian

pathways connect the road to the beachfront or estuary. At the SLSC building there are two access ways that connect to the beachfront with clearly defined edges. One of these paths is very important as it facilitates SLSC IRB access. There is also an access route to the estuary but it does not have clearly defined edges. There is an opportunity to increase the legibility of the estuary access way and enhance the existing movement routes (Refer figure 5.8b).

[Figure 5.8a Pukehina Building and Land Use. Image by Author]

[Figure 5.8b Pukehina Connectivity. Image by Author]

[Figure 5.9 Pukehina Mapping. Image by Author]

[Figure 5.8c Pukehina Water Type: Image by Author]

Water

Pukehina SLSC is a unique site because it has water located in two different directions. As discussed in Chapter 3, the typical SLSC location has water in only one direction. In Pukehina the Waihi Estuary is to the Southwest, and the Pacific Ocean is to the Northeast. The Waihi Estuary mouth is at the tip of Dotterel Point and connects the two a bodies of water. Although they are connected, there are significant characteristics that differentiate the Waihi Estuary from the South Pacific Ocean.

In the case of the estuary, the water level is low, demonstrated by the area that is covered during the tidal cycle. Additionally, the estuary is a relatively small size and is protected from the full force of prevailing winds by local topography. Due to the shallow water, small area, and protected location the estuary is a relatively calm environment that is not greatly effected by weather conditions.

The South Pacific however, is extremely large, has a deep ocean floor, with an ocean surface that is completely exposed and influenced heavily by weather conditions. Due to the size and exposure the South Pacific is a harsh and uninviting environment when the weather is bad.

Sun Paths

In figure 5.10 the sun paths for the summer and winter solstice are diagrammed. The sun paths are significant environmental factors that need to be responded to through the design. Although the sun provides warmth and light, it can also be invasive. It can over-heat spaces and contributes to uncomfortable internal building environments. The functional layout of SLSC buildings typically has inhabited spaces with a lot of openings. There is a design opportunity to adjust the building layout and use vernacular forms to create comfortable spaces with adequate shading.

Local Topography

Figure 5.10 shows the organic topography of Dotterel Point. The ground elevation rises from zero meters (sea level) up to ten+ metres. This map informed the research by highlighting the shape and height of the topography. The low elevation, especially towards the end of Dotterel Point, indicates that the area is more susceptible to sea level changes.

[Figure 5.10 Topography+Sunpath Diagram: Image by Author]

5.4 SLSC BUILDING CONTEXT

The following section presents a discussion of the existing Pukehina SLSC building. The analysis identifies the characteristics of Pukehina SLSC building that are typical to NZ SLSCs and those that are unique.

5.4.1 Form

Pukehina SLSC building is a simple form. As discussed in the comparative analysis this is a common vernacular characteristic of NZ SLSC buildings. The new SLSC building needs to reference the simple forms because it is a key feature of the vernacular traditions. Additionally, there are practical reasons for keeping the building form simple. The building won't weather as quickly and will be more easily maintained using low-tech, non-expert (volunteer) methods.

5.4.2 Functional Layout

Pukehina SLSC building has undergone several extensions to create larger spaces for equipment storage, as mentioned in Chapter 3. The buildings extensions include a shipping container that is currently placed next to the existing building and again highlights the importance of 'future proofing'.

The addition of the shipping container illustrates Pukehina SLSC has out grown the existing SLSC building. This supports the selection of Pukehina as the Design Case Study.

A unique characteristic of Pukehina SLSC building is the external staircase. The external staircase is the only access route between the upper and lower levels. This creates notable separation between the

[Figure 5.11 Functional Layout. Image by Author]

two areas of the functional layout. The building levels are structurally connected but can perform independently. This is an existing design feature that could be explored further through the Design Case Study (Chapter 6).

[Figure 5.12 Structural Outline. Image by Author]

[Figure 5.13 Existing Pukehina SLSC Building. Image by Author]

5.4.3 Construction

The underlying structural composition of SLSC buildings helps to differentiate between the areas for ‘equipment’ and the area for ‘inhabitation’.

The upper level of the existing Pukehina SLSC building is constructed with light timber frame construction (Refer figure 5.15). This typical SLSC construction method has qualities of lightness and warmth that contribute to the character of the ‘inhabitation’ areas of the SLSC building. The use of this everyday construction technique is a significant characteristic and contributes to the vernacular character.

As in most SLSC buildings, the equipment storage or ‘equipment’ area at Pukehina is constructed with robust concrete blocking. One of the most important characteristics of SLSC buildings is the use of this traditional construction method and its contribution to a structure that bears vernacular qualities. The use of concrete blocking gives the building a strong, durable and heavy base that can withstand the harsh weather and high level of activity. It is also significant that this construction method is always in the lower level of SLSC buildings and creates a clear connection to the ground. The Design Case Study must use and/or give considered reference to these construction methods, for the qualities discussed, as an important Site-Specific response to the established Design Guidelines

5.4.4 Materials

Pukehina SLSC building has a simple material palette. It's important these materials are used and/or referenced in the new SLSC design because they contribute to the vernacular character and are suitable for the sensitive coastal location. As mentioned previously this includes light timber framing and robust concrete blocking. Additionally this includes;

Timber Weatherboard Cladding

It is typical of NZ SLSC buildings to have a strong relationship with the local building development. This cladding system is important as it relates to the local residential character.

Light and Natural Coloured Paint

Colours that are inconspicuous within the natural environment are important. The use of natural and muted tones keeps the building from visually dominating the landscape. This can also provide additional strength to the connection with local residential development

5.5 CONCLUSIONS

This chapter refines the lessons from Chapter 2, 3 & 4 and discusses the contributing regional, local, and building attributes. The chapter develops the potential for the Pukehina SLSC building to become a contemporary 'considered' work of

[Figure 5.14 Pukehina Site Photo. Image by Author]

SLSC architecture that combines the benefits of vernacular traditions with all the benefits of sensitive environmental design.

The key findings from this chapter have informed several amendments to the Design Guides and the development of a set of supplementary Site-Specific Design Criteria for Pukehina. The amended Design Guidelines and Design Criteria are presented in full in the following pages.

[Figure 5.15 Pukehina Elevation Diagrams. Image by Author]

5.6 DESIGN GUIDELINES

Primary Objective

Contemporary surf life saving club designs should respond to the vernacular traditions and the sensitive coastal locations while also integrating modern building practice to generate architecture that fosters a strong sense of place and meaning.

High-level Design Strategies

-Integrate-

New Surf Life Saving Club building developments must take due care to acknowledge the characteristics and qualities of existing Surf Life Saving Club building vernacular traditions.

-Restore-

New Surf Life Saving Club building developments should enhance/respond to the cultural and ecological characteristics of the adjacent sensitive coastal environment.

DESIGN PRINCIPLES

SITE

[A1] *Beach Connectivity.* Create strong visual and physical connections to the beachfront that provide natural surveillance, beachfront user orientation, and clear access routes.

[A1a] *Beach Access Ways.* Provide clearly marked and well-defined beach access ways that complement the natural character of the site. Typical methods to achieve this include; timber posts and railing, timber bollard and rope, and timber boardwalks.

[A2] *Vehicle Routes.* Provide clear access route to the surrounding development.

[A3] *Integrate Open Space.* Integrate new development with local public recreational areas to provide enhanced open space amenity.

[A4] *Parking Composition.* Parking should be articulated as to not dominate the site or appearance of the development. This can utilize variations in natural landscaping, materials and paving to give visual aesthetic that is similar to the natural landscape.

[A5] *Environmental Systems.* New development should take care to not cause any undue harm to the coastal environment systems including; vegetation, dunes, and natural features and reserves

[A5a] *Natural Character.* Complement the natural character of the site. Including the visual appearance of the landscape and the natural formation of the landscape outline/silhouette.

FORM

[B1] *Vernacular Forms.* New developments must acknowledge the nearby residential vernacular. Generally the buildings are simple geometric forms. This allows for the possibility of incremental form development.

[B1a] *Rearticulate Form.* Consider the use of form characteristics of nearby residential vernacular in new and slightly unfamiliar ways.

[B2] *Dual Orientation.* Provide dual building orientation that addresses the beachfront and the surrounding development

[B3] *Building Dimensions.* Design building height, scale and size in response to local residential buildings. Forms are typically one or two storeys high with a slight larger building footprint.

[B4] *Simple Forms.* Design simple roof forms. Typically gabled or hipped roof forms that are not conspicuous or intrusive to the beachscape.

[B4a] *Building Outline.* Consider/reference the conventional SLSC simple building outline as a way to capture the traditional SLSC character.

[B5] *Future Proofing.* Provide building adaptability.

PROGRAM

[C1] *Simple Program + Amenity.* Provide a simple resolution to the building program and integrate public amenity

[C1a] *Functional Separation.* Create functional separation between SLSC operations and additional site-specific program functions (café or restaurant).

[C2] *Inhabitation Program.* Group program elements that associate to inhabitation or 'people'. For example; Multi-purpose space, kitchen, and deck.

Equipment Program. Group program elements that associate to services or 'Equipment'. For example; equipment storage, toilets/change rooms, and first aid area.

[C3] *Planning Character.* The planning of SLSCs contains the following spaces. Consider the typical character of these spaces when designing new developments. The character of each space is discussed at the end of the design guides.

[C4] *Amenity Routes.* Ensure access routes to public amenity are clear and legible. This can be achieved by placing amenity in clear public view by access route and beach access ways.

STRUCTURE

[D1] *Commonplace Construction.* The use of commonplace construction methods is encouraged.

[D1a] *Vernacular Construction.* Provide variation in construction techniques to provide visual connection with residential and SLSC vernacular.

[D2] *Heavy Base.* Construction techniques used for 'equipment' areas must be strong and robust to withstand harsh weathering and high levels of activity. Typically a heavy base.

[D3] *Light Top.* Construction techniques used for 'people' areas must contribute to the warm and soft character. This also contributes to the buildings adaptability and links with the local residential vernacular character. Typically a light top.

[D4] *Facade Permeability.* Provide façade openings for visual and physical permeability from inhabitation areas to the external environment.

[D5] *Passive Comfort.* Provide openings within the structure that allow natural ventilation for passive environmental control systems

[D6] *Innate Ornament.* Construction methods should be used to integrate innate ornament. Deny superficial ornament.

[D7] *Transform Components.* Consider the retention/translation of conventional building components as a way to reference local vernacular traditions.

MATERIALS

[E1] *Typical Materials.* Integrate typical SLSC materials into new development with reference to site-specific historical responses. Commonly the materials are soft and colours are dull to negate excessive interruption of coastal landscape. Typical materials include, painted weatherboards, corrugated iron, unfinished timber.

[E1a] *Material Innovation.* Consider using typical materials in new innovative and slightly unfamiliar ways

[E2] *Surface Materials.* Consider and/or reference the existing patterns of surface material. This pertains to both the pre-existing SLSC and to the local residential vernacular.

[E3] *Elevation Texture.* Utilise material variation to create texture depth and richness in elevations.

[E3a] *Material Mixture.* Consider the mixture of modern and traditional building materials.

[E4] *Material Strength.* Materials need to be strong and durable to withstand the harsh coastal environment.

[E5] *Material Efficiency.* Materials should be used efficiently.

SPATIAL CHARACTERISTICS

Kitchen - The SLSC kitchens are mostly very modest in scale with a strong connection to the hall space. Often there is a bar associated with the kitchen. The kitchens are often in upper levels.

Multi-purpose space - The multi-purpose spaces of SLSCs are typically a single large volume that's closely associated with the private deck. Often the hall space is the primary hub that other elements of the program are based around. The hall space is often in the upper levels and takes advantage of beach view.

Storage - The storage areas of surf clubs are often in lower levels of the building with easy access to the beachfront and driveways that connect to the urban grid. The storage space is typically large and very secure with low visual permeability when enclosed.

Toilet/change - The toilets and changing facilities are often in the lower levels. They usually relate strongly to the equipment storage area as a combined 'wet' area.

Deck - The deck space is predominantly to a sunward facing elevation. Occasionally there is multiply deck to ensure a space takes advantage of beachfront views. The deck space is commonly in the upper floors and connected off the hall space.

Lookout- The lookout provides clear visual surveillance for lifeguard duty and takes advantage of building height to achieve this when necessary. It is characteristically included as part of the building form when appropriate to the site attributes. When necessary a lookout is constructed as a separate volume at a location that has strong visual surveillance over the beachfront.

5.7 PUKEHINA SITE-SPECIFIC DESIGN CRITERIA

SITE

[A1p] Dotterel Reserve. Contribute to the amenity of the open space reserve network. Specifically, this is in reference to the adjacent dotterel recreational reserve.

[A2p] Pukehina Pde. Provide clear access from Pukehina Parade and provide improved parking solutions that are marked and clearly defined with identifiable vehicle circulation routes.

[A3p] Environmental Design. Respond to the site-specific environmental forces. Specifically, Onshore Northeast trade winds and summer and winter sun paths (ref diagram 5.10).

[A4p] Assemble Parking. Reconfigure the existing large format parking area so it is legible and the area includes a central orientation space.

[A5p] Estuary-Ocean Path. Ensure defined pathways provide a link the Waihi Estuary and Pacific Ocean.

FORM

[B1p] Estuary-Ocean Orientation. New development must orient toward both the Wahi Estuary and the Pacific Ocean.

[B2p] Shelter Entry. Shelter building entry points for public and private spaces.

[B3p] Building Space. Provide space within the existing marginal edge for future building development.

PROGRAM

[C1p] Pukehina Program. Cater to the increased needs of the Pukehina SLSC. Additional needs include;

- Increased storage
- Increased multi-functional space
- Partol base/lookout
- First aid room
- Private changing rooms

[C2p] Pukehina Pde + Toilets. Locate/position public toilets within the sight lines from Pukehina parade.

STRUCTURE

[D1p] Specific Construction. The use of concrete blocking, light timber framing and a light roof is encouraged. This can be done in conjunction with modern construction techniques in new and slightly unfamiliar ways.

MATERIALS

[E1p] Specific Materials. Acknowledge/Reference the typical conventional materials that were used in Pukehina SLSC; concrete, weatherboards, timber balustrades, light and naturally toned paint, and corrugated iron.

6 DESIGN CASE STUDY

[Figure 6.1 Pukehina Site Photo. Image by Author]

6.1 INTRODUCTION

This chapter presents the Design Case Study that was completed for Pukehina SLSC in the Western Bay of Plenty District. Pukehina SLSC is representative of the typical challenges and opportunities being faced by existing NZ SLSCs and was of personal interest to the researcher.

The Design Case Study responds to the Design Guidelines that were developed in the Chapters 2, 3, 4, and 5 and offers an architectural response. More specifically, the design outcome is presented as an exemplary case of the application of the principles of design set about in five identified architectural threads (site, form, program, construction and materials).

The design process is outlined and the key design features are discussed with reference to the applied Design Guidelines. The Design Case Study serves as a site-specific critique of the Design Guides and evaluative comments are summarised at the end of the chapter.

6.2 DESIGN PROCESS

The Design Case Study is proposed as a new ‘considered’ work of contemporary SLSC architecture that replaces the existing Pukehina SLSC building. The new design incorporates all the typical NZ SLSC building program elements (Refer section 3.5) in response to needs of Pukehina SLSC and to ensure that the outcomes from the design research are applicable elsewhere.

The design was guided by the principles of design outlined in five architectural ‘threads’ of the Design Guidelines. The design process required a delicate balance of ‘vernacular’ and ‘architecture’. This involved weaving together the different architectural ‘threads’ to generate a design response.

The concluding solution is the design that follows and how this transforms the vernacular qualities (Refer section 3) of traditional SLSC buildings into architecture, while also responding intelligently to the sensitive coastal location.

[Figure 6.2 Pukehina Site Locator. Image by Author]

6.3 DESIGN OVERVIEW

The Design Guidelines clarified the design process by providing an indication of suitable building qualities for the SLSC. An overview of the key design outcomes is described in the list that follows and although the list is sequential it must be emphasised that the design process was not a linear progression (Refer figure 6.3). A discussion and presentation of the design follows this, which is loosely ordered by the five architectural threads of the principles of design.

A] The building size is increased to incorporate a full SLSC program that responds to the needs of the SLSC, local community, and the typical functional areas that were identified in Chapter 3.

B] The building is developed as two smaller volumes that respond to the scale of local residential built forms and the natural character of the sensitive coastal location.

C] The program elements are consolidated and grouped within the two volumes (one for 'inhabitation' and one for 'equipment'), achieving a functional and practical building layout that reformats the traditionally vertical composition.

D] Built forms are reconfigured to create a building whole that is comprised of two volumes, which can function individually or collectively depending on the event or activity.

E] The construction and materials are developed to further integrate vernacular qualities. The Heavy Base/Light Top characteristic is rearticulated within the new and slightly unfamiliar horizontal built form arrangement.

F] The building facades respond to the external environmental forces and the internal program hierarchy while incorporating qualities of the vernacular traditions.

[Figure 6.3 Key Form Generation. Image by Author]

6.5 SITE

This section discusses the key design moves that were made in response to site-specific threats and opportunities identified through the research methodology.

Movement; Approaching the Building

The Pukehina SLSC site is important because it is a focal point of recreational activity for the local community and is prominently located at the end of the only road through the development. The layout of the two volumes (Refer section 6.3) is arranged so the built form has a low visual impact on the natural landscape, especially when viewed from the main approach angle (Pukehina Pde).

Refer Principles:

- [A5a] *Natural Character*
- [B3] *Building Dimensions*

Movement; Approaching the Beach

The Design Case Study recognises the necessity of clear pathways to/through the coastal marginal strip. The existing access ways are made wider. The benefit of maintaining the existing pathways is a lower environmental impact and by widening the beach access ways the SLSC building connects better to the main beach area. The two main beach access ways align with the two building volumes.

Ref Principles:

- [A1] *Beach Connectivity*
- [A1a] *Beach Access Ways*
- [A5p] *Estuary-Ocean Path*

Parking Resolution

The new SLSC building design improves visual appearance and clarity of the existing parking area. The parking spaces are positioned around the

‘equipment’ volume to soften the visual impact of vehicles. A clearway is intentionally provided to ensure SLSC/emergency vehicles can gain access.

Refer Principles:

- [A2] *Vehicle Routes*
- [A4] *Parking Composition*
- [A4p] *Assemble Parking*

Recreational Reserve Access

The public use of Dotterel Point recreational reserve is encouraged but in a ‘restrained’ way because of the sensitive coastal ecology and nesting indigenous dotterel birds (Western Bay of Plenty District Council, 2010). The entry point into Dotterel Point reserve is formalised to guide pedestrian activity to marked pathways. The ‘gateway’ leads from the northeast corner of the SLSC building. Natural materials and low horizontal lines integrate and differentiate the pathway from the unmarked trails. In this way the design creates a landscape gesture that leads the public onto marked walking trails.

Refer Principles:

- [A1p] *Dotterel Reserve*
- [A1a] *Beach Access Ways*
- [A3] *Integrate Open Space*
- [A5] *Environmental Systems*

The two volumes are positioned on the site in a way that encroaches no further onto Dotterel Point reserve or the coastal marginal strip. The ‘equipment’ volume occupies part of the existing parking area and lowers the parking capacity. However, this deficiency can be resolved with additional roadside parking as fractured parking layouts were identified as common for NZ SLSC in Chapter 3.

Refer Principles:

- [A4] *Parking Composition*
- [A4p] *Assemble Parking*
- [A5] *Environmental System*

[Figure 6.4 Key Site Contributors. Image by Author]

[Access, sightlines, pathways, primary onshore seabreeze, secondary wind direction from estuary, local reserves, sensitive ecologies and existing development]

[Figure 6.5 Summer + Winter Sun Angles (Refer figure 5.10).
Image by Author]

Sun Design Response

Figure 6.5 shows the mid-day summer and winter sun angles for the solstices. The roof placement, size, orientation, and pitch are arranged to allow winter sun to naturally warm the building and restrict harsh penetration of summer sun.

Refer Principle:

[A3p] *Environmental Design*

Wind & Sea-Spray Design Response

Onshore winds blow from the North-Northeast (Refer figure 6.4). In the warmer summer months the onshore sea breeze becomes more frequent and the building is more active. The protection of the building from the unforgiving sea-spray is very important. The opposing imperative for the SLSC building to have a strong connection to the beach means that the architecture must be forward and resilient to the environment pressure.

Refer Principle:

[A3p] *Environmental Design*

Sight Lines

A strong visual connection is made between the building and the main beach. Clear sight lines promote natural and active surveillance of the beach from the building. Building occupants that can see the beach offer natural surveillance and SLSC Lifeguards that are using the elevated lookout/observation tower offer active surveillance. The clear sight lines between the elevated lookout and the beach also provide a reference marker to orientate beach users.

Refer Principles:

[A1] *Beach Connectivity*

[C3] *Planning Character*

6.4 FORM

One building: Two volumes

The building is split into two volumes that perform together to fulfil the SLSC program requirements, while also resolving key issues of the site. A key feature of the design is the placement of the 'equipment' and 'inhabitation' areas side-by-side rather than one on top of the other. This re-formats the conventionally vertical layout type (Refer figure 6.9) in a horizontal manner. The horizontal layout reduces the vertical scale of the building and calls for an elevated observation post, which draws from a tradition of freestanding lookout towers.

Refer Principle:

[B1a] *Rearticulate Form*

The volumes are deliberately similar in form, shape and size, construction and materials, with slight differences distinguishing the two. The similarities visual link the volumes to create the feeling that the two volumes are a single building. The subtle differences allude to the different internal functions. The similarities and subtle differences are discussed further in the following sections.

The two smaller volumes reduce the scale of the architecture so it complements the scale of local residential development and also lowers the visual impact of the architecture on the natural landscape.

Refer Principles:

[A5a] *Natural Character*

[B3] *Building Dimensions*

Simple Roof

The roof planes of the two volumes give reference the simple vernacular forms typical of SLSC buildings. Each volume is intentionally designed with a single plane low pitch roof that works with the horizontal

SLSC vehicle routes

Public vehicle routes

Pedestrian routes

Parking area

[Figure 6.6 Design Case Study Movement + Parking Diagrams.
Image by Author]

lines of the natural landscape. Subtle differences in the pitch and depth of overhangs differentiate the volumes while responding to the internal and external conditions

Refer Principles:

[B4] *Simple Forms*

[B4a] *Building Outline*

The horizontal layout of the volumes means that the 'inhabitation' volume is more susceptible to wilful damage. This is a possible security issue for the Design Case Study because there is no vertical separation that is traditionally provided by the solid lower level 'equipment' area. The isolation of the site location and the transient population compound this issue further. One resolution is the integration of a security system.

6.6 PROGRAM

The program elements of the Design Case Study respond to the needs of Pukehina SLSC and are common to NZ SLSCs. The partition of the building enables a separation of the SLSC functional layout, which responds to the typical functional segregation identified in Chapter 3. This is beneficial as the 'inhabitation' volume can easily be rented out while the 'equipment' volume remains locked and secure. Additionally, the built form separation is arranged to strengthen the connection between the Estuary and the Ocean (Refer figure 6.7).

Refer Principles:

[A1] *Beach Connectivity*

[A5p] *Estuary-Ocean Path*

[C1a] *Functional Separation*

The functional layout of the pre-existing building and the proposed Design Case Study are diagrammed in figure 6.8a & 6.8b.

Program

The new building program is increased to include the following;

'Inhabitation' volume:

Full kitchen

Private toilet

Increased multi-purpose space

Integrated lookout/patrol base

'Equipment' volume:

Increased equipment storage

First-aid room

Private change rooms

Public toilet

Refer Principles:

[C1] *Simple Program + Amenity*

[C1p] *Pukehina Program*

[C3] *Planning Character*

'Inhabitation' Program

Within the 'inhabitation' volume there is a utility core. The kitchen, toilet and services are on the lower level of the utility core, with the patrol base/ observation tower is located on the upper level. This efficiently locates the services within one block of the volume.

Refer Principles:

[C1] *Simple Program*

[C3] *Planning Character*

The 'inhabitation' volume is designed to be a community building that can accommodate a range of different functions. The single disabled toilet limits the capacity of the multi-purpose space as an assembly venue. Additional toilets need be developed to allow large groups to use the space comfortably and fulfil health and safety requirements

[Figure 6.7 Site Plan, Image by Author]

‘Equipment’ Program

The ‘equipment’ volume is designed to facilitate the water related activities of SLSC members as well as accommodate public toilets. The public toilets are intentionally located in the Southern end of the ‘equipment’ volume so the public amenity is easily recognisable and accessible from the beach and Pukehina Parade.

Refer Principles:

[C4] *Amenity Routes*

[C2p] *Pukehina Pde + Toilets*

The private changing area is also located in the Southern end of the ‘equipment’ volume, which ideal for the functionally related public toilets. However, because the Design Case Study is formatted in a horizontal layout, this could result in a complete break between changing activity and other club member activities in the clubhouse (‘inhabitation’ volume). Locating the changing area at the far end of the ‘equipment’ volume increases this separation.

The private changing rooms are equipped with showers and a changing area. The integration of a private toilet would make the space more functional and mitigate the possible need for SLSC members to use the public toilets.

Cross Circulation

The space between the two volumes creates a channel that frames a route between the beach and the estuary. The space is deliberately over sized so it can function as a path and also as an inhabitable landscape entity. The layout of the volumes provides shelter within the cross circulation space from the Northwest and Southeast.

Refer Principles:

[A1] *Beach Connectivity*

[A5p] *Estuary-Ocean Path*

The space in front of the beachside elevation of the ‘equipment’ volume is intentionally open and paved with hardwearing material. This allows the area to be used as a ‘crush’ space by SLSC members for group assembly or manoeuvring equipment.

In a similar way the space adjacent to the south facade of the ‘equipment’ volume and the grassed area on the edge of the dunes are public assembly spaces. The spaces perform as overflow areas for meeting and are well connected with the parking area, beach access ways, and Pukehina Pde.

Disability Access

The Design Case Study will be a key community building. Therefore the integration of disability access was an important functional requirement. In the ‘equipment’ volume the public toilets are in an easily accessible location and are wheelchair friendly. In the ‘inhabitation’ volume there is a wheelchair friendly access route and the private internal toilet/washroom accommodates disabled users.

6.7 CONSTRUCTION

Heavy Base

The ‘equipment’ areas of NZ SLSCs are conventionally located in the lower building level(s) with a robust concrete base. The Design Case Study gives considered reference this tradition by setting the ‘equipment’ volume within the ground on a concrete slab. This references traditional qualities and contributes a subtle difference in levels between the two volumes.

Refer Principles:

[D2] *Heavy Base*

[D7] *Transform Components*

[Figure 6.8a Existing Program Organisation Diagram.
Image by Author]

[The existing program has functional separated areas for the equipment and for the multi-purpose space. There is limited connectivity within the building and the program is currently not meeting the storage needs of the SLSC. This diagram shows the different spaces and the movement into and through the spaces.]

Light Top

The 'inhabitation' areas of NZ SLSCs are conventionally located in the upper building level(s) and constructed of light timber framing. To reference this tradition, the Design Case Study has a slightly elevated 'inhabitations' volume. This creates a subtle visual and physical separation from the sensitive environment. The volume 'hovers' slightly above the ground, which is complemented by an 'aerial' feature in the form of the lookout. The elevated position is also practical as it mitigates the amount of sand that penetrates the internal space.

Refer Principles

[D3] *Light Top*

[B1a] *Rearticulate Form*

Incorporating pile foundations into the design of the 'inhabitation' volume also makes it easier to adapt the building. In future the volume could be relocated or removed off the piles in response to things such as club development or climate change.

Refer Principle:

[B5] *Future Proofing*

The articulation of the structural qualities of the two volumes applies the heavy base/light top principle in a new and slightly unfamiliar way. The heavy base/light top building fabric is rearticulated to the left and right (the two volumes).

Building Facade - Northeast (Ocean-side)

The Ocean-side façade importantly controls the exposure of the SLSC building to the public recreational beachfront. The façade is intentionally anchored in the sand with a 'heavy base' (concrete block wall) to show that the building is robust within the harsh environment. The two volumes are visual linked as a single building by the continuity of the concrete block wall. The height of the heavy

protective wall is manipulated in different areas of the facade to reveal the various operations within.

The concrete wall section is higher and employed more vigorously in the 'equipment' volume as a response to the more abrasive internal functions. The light roof of the 'equipment' volume is intentionally lifted above the heavy concrete blocking. This further acknowledges the traditional heavy base/light top relationship (Ref figure 6.9).

-For example the public toilets are fully engaged with the robust concrete, which wraps the building end and encloses the public amenity. This provides the space with privacy and makes it hardwearing and easier to maintain.

Refer Principles:

[D1p] *Specific Construction*

[D2] *Heavy Base*

[D7] *Transform Components*

In the 'habitation' volume the concrete wall performs as a foundation plinth and is articulated in a lower position to allow views and access to the beachfront. The strong horizontal line of the concrete plinth acknowledges an axial relationship with the more vertical observation tower. The larger timber upper section adjoined to the concrete wall gives reference the local residential and NZ SLSC building vernacular qualities. (Refer figure 6.9)

Refer Principle:

[D1a] *Vernacular Construction*

[D3] *Light top*

[D7] *Transform Components*

Building Facade - Estuary Side

The design has a more forthright estuary-side facade that visual separates the two volumes. The two sections ('equipment' volume and 'inhabitation' volume) of the facade have two very different design languages that reflect the internal imperatives.

[Figure 6.8b Proposed Program Organisation Diagram.
Image by Author]

This diagram shows the spaces for the proposed design case study. There is a utility core within the inhabitations volume that houses the kitchen, toilet, and patrol base/observation tower. The movement pathways are shown and how the spaces are placed within each individual volume.

The facade of the 'inhabitations' volume is articulated as a 'glass wall', which blurs the definition between opening and wall, inside and outside. The wall is completely visually permeable and enables an intermit relationship between the internal and external environment to develop. This arrangement does privilege the view of the estuary as opposed to the conventional ocean views. This is a site-specific design response to the unique site attributes at Pukehina.

Refer Principles:

[B1p] *Estuary-Ocean Orientation*

[B2] *Dual Orientation*

[D1p] *Specific Construction*

[D4] *Facade Permeability*

The estuary-side facade of the 'equipment' volume has a less visually permeable composition. The fenestrations are elevated to the upper clearstory of the wall, which provides internal light while also maintaining a high level of security. The horizontal pattern of the windows also acknowledges an axial relationship with the lower wall plinth.

Refer Principles

[C3] *Planning Character*

[D1p] *Specific Construction*

[D1a] *Vernacular Construction*

[D2] *Heavy Base*

[E1p] *Specific Materials*

The Estuary-side facade and the Ocean-side facade rearticulate the conventional heavy base/light top principle in a new and slightly unfamiliar way. The heavy/light building fabric is rearticulated to the front and the back (the open estuary-side and the closed ocean-side).

Roof Structure

A subtle difference between the 'equipment' volume and the 'inhabitation' volume is the exposure of the internal roof structure. The roof structure and internal services are revealed in the 'equipment' volume to reiterate the industrial character that is characteristic of lifeguard activities. A similar treatment is used in a 'lighter' manner in the design of the lookout tower, which also accommodates lifeguard related activities. The roof structure in the inhabitation block is concealed and the volume is insulated. This contributes to a comfortable building environment and another point of differentiation that gives the similar volumes unique identities.

Refer Principles

[D1a] *Vernacular Construction*

[D6] *Innate Ornament*

[E2] *Surface Materials*

[Figure 6.9 Typical SLSC Functional Separation + Heavy Base/Light Top. Image by Author]

[This diagram reiterates the typical relationship of the upper and lower levels of traditional SLSC. The lower level has a heavy base that associates to the equipment area. There is functional separation between the levels. The upper level is commonly associated with inhabitation and is generally light materials.]

[Figure 6.10 Site Organisation. Image by Author]

This diagram shows the movements of users on the site. There is a distinction between public users and SLSC users. Public refers to recreational bathers and SLSC refers to club members or guests using the facilities for lifeguard services of other community activity. This diagram shows the shift in public movement from vehicular to pedestrian and how this differs from the vehicular access warranted by SLSC users. It also shows how the public and SLSC movements pathways intersect. The SLSC movement routes are given priority to illustrate the importance of accessibility for patrol services.

6.8 MATERIAL

Robust Materials

The material palette for the 'equipment' volume and the 'inhabitation volume are similar in design language.

The equipment volume is clad with slightly heavier and more industrial products such as the thick plasterboard and cement board. The equipment volume also uses materials in more robust and more durable manner. One of the main reasons for this is to make the volume resilient to the hardwearing activities. The industrial qualities of the materials contribute to the design language, which is linked with the 'equipment' volume internal functions.

Refer Principles:

[E1] *Typical Material*

[E2] *Surface Materials*

[E4] *Material Strength*

Light Materials

Overall the 'inhabitation' volume has a lighter and warmer material palette than the 'equipment' volume. Horizontal shiplap timber is used to clad the upper section of the Oceanside wall. This gives reference to the vernacular character of local residential buildings and typical NZ SLSC buildings. The materials and detailing are more 'polished' compared with that of the 'equipment' volume. The walls are insulated and the internal linings are finished with paint, which is similar in character to the typical finishes of the local residential buildings.

Refer Principle

[D3] *Light Top*

[E1] *Typical materials*

[E1p] *Specific Materials*

For the purposes of the research there is a strong focus on the building site, form, program, construction, and materials. The principles of design set about in the Design Guidelines and the Design Case Study response reflects the focus on these five architectural 'threads'.

It was found that an integration of modern building practise and qualities of 'unselfconscious' vernacular characteristics can be simultaneously balanced with a 'considered' work of contemporary architecture. The architecture engages with common building components/material and acknowledges the importance of a modest, simple and elegant building composition. The building transforms the vernacular language of New Zealand SLSC buildings in a new contemporary way while maintaining/translating traditional qualities that instil a sense of meaning and place.

[Figure 6.11b First Floor Plan.
 Image by Author]

Two individual volumes. One for “equipment” and one for ‘inhabitation’

Cross Circulation ‘path’ that divides the building. This creates strong sight lines, cross circulation from estuary to ocean, and provides additional sheltered areas.

The Utility Block that houses the kitchen, toilet, and observation tower/patrol base which also forms an ‘aerial feature’

Ocean side Concrete wall. The wall wraps the buildings exposed Northwestern facade. The facade treatment is varied between the two volumes in response to the internal layout.

Simple roof forms that keep unwanted environmental forces out and have minimal impact on natural character while interpreting vernacular characteristics.

Heavy Base/Light top. The lower, more robust, grounded ‘equipment’ volume. In contrast to the lighter, slightly elevated, more delicate ‘inhabitation’ volume

[Figure 6.12 Key Features of the Design. Image by Author]

[Figure 6.13 Southeast Elevation.

Image by Author]

scale 1.200

[Figure 6.14 Northwest Elevation.

Image by Author]

scale 1.200

D

[Figure 6.15 Northeast Elevation.

Image by Author]

scale 1.200

3750
First floor

100
Ground floor

Pukehina Surf Rescue

A

450
Sub floor

A

[Figure 6.16 Southwest Elevation.

Image by Author]

scale 1.200

3750
First floor

450
Sub floor

D

[Figure 6.17 Section AA. Image by Author]
scale 1.200

[Figure 6.18 Section BB. Image by Author]

scale 1.200

[Figure 6.19 Section CC. Image by Author]
scale 1.200

ocean-side

2

[Figure 6.20 Perspective, From Pukehina Parade towards SLSC.

Image by Author]

[Figure 6.21 Perspective, From Southeast Corner towards
SLSC. Image by Author]

[Figure 6.22 Perspective, Ocean side of SLSC.
Image by Author]

[Figure 6.23 Perspective, Estuary side of SLSC.
Image by Author]

[Figure 6.24 Perspective, Seaward Facade of Equipment Block.
Image by Author]

[Figure 6.25 Perspective, Seaward Facade of Inhabitation Block.
Image by Author]

[Figure 6.26 Perspective, From Dotterel Point towards SLSC (beachview). Image by Author]

[Figure 6.27 Perspective, From Dotterel Point towards SLSC
(eastuaryview). Image by Author]

[Figure 6.28 Perspective, Estuary Side Facade of Equipment Block. Image by Author]

[Figure 6.29 Perspective, Estuary Side Facade of Inhabitation Block.
Image by Author]

[Figure 6.30 Perspective, Interior of Inhabitation Block towards Estuary. Image by Author]

6.9 CONCLUSIONS

The discussion and evaluation of the design outcomes have highlighted several areas of the Design Case study that can be improved. The following conclusions are a summary of the overall success of the building. The final conclusions for the research as a whole are present in the following chapter.

-There are not enough toilets for the 'inhabitation' volume to perform as a space for assembly

-There is not enough storage space in the 'inhabitation' volume for things such as colapsable table and chairs.

-The horizontal layout of the buildings creates possible security issues, especially during winter months.

-There are not enough toilets for the changing rooms to perform without the additional public toilets.

-The location of the changing rooms and the horizontal building format may create a complete break between lifeguard activities and clubhouse activities.

-The position of the 'equipment' volume reduces the size of the immediate parking area.

-The visual connection between the 'inhabitation' volume and the main breachfront edge is secondary to the view of the esturay.

-The public toliets and the equipment storage area are situated next to each other and could raise issues of amenity accesssability during large SLSC events.

-The ground treatment has been less developed in places, as apart of a landscape enitivity.

-The assembly location for public at the South end of the building is too small for larger groups.

-Passive environmental controls systems were not considered at in detail.

7 CONCLUSION

[Figure 6.30 Wanui Surf Life Saving Club + Beach. Image by Author]

7.1 INTRODUCTION

This chapter sets out the discussion and conclusion for the research. The chapter draws together the findings and conclusions in a collective response to the research question. Following this discussion the implications of the research are considered, along with the research process.

How can we ensure that new Surf Life Saving Club building designs will be responsive to vernacular traditions and the sensitive coastal location?

7.2 CRITIQUE OF DESIGN

This discussion is set within the three themes that were prominent through the preceding chapters. The three main themes are:

- 1) The vernacular traditions of NZ SLSC buildings.
- 2) The sensitive coastal locations of NZ SLSC buildings.
- 3) The relationship between the 'vernacular' and the 'sensitive'.

7.2.1 Vernacular Tradition

A number of significant vernacular characteristics are found in New Zealand Surf Life Saving Club buildings. The key physical and spatial characteristics were identified in Chapter 3: Comparative Analysis.

These were defined further into the five architectural threads of the principles of design.

Some key points are;

- 1) SLSC buildings are typically located in prominent coastal locations with a strong orientation to the beach edge and are situated within/bordering a range of different development layouts.
- 2) It is common for SLSC buildings to be simple and related in dimensions, scale, and form shape to the local residential development.
- 3) There is conventionally a functional 'separation' of areas of the program that relate to lifeguard activity and inhabitation activity.
- 4) It is common for SLSC building materials to be simple, modest and related to the local residential vernacular.
- 5) The construction methods used are typically commonplace techniques with a heavy base and a light top building fabric

The research argues that it is worthwhile for new SLSC building design to be responsive to the vernacular characteristics to ensure there is a continued connection to the historic patterns of development. This fosters an architectural outcome with a continued sense of place and local identity.

The research approaches two different (but related) vernaculars. First, the vernacular pattern/type of the NZ SLSC buildings. Second, the vernacular styles of nearby residential buildings. It is shown that the SLSC buildings draw some of their character from the qualities of local residential dwellings i.e. materials, motifs and forms.

The Design Case Study shows that vernacular traditions can be applied within a considered 'Architectural' design approach. The Guidelines are used as a tool for design, which indicates an architectural response that translates vernacular qualities in a contemporary manner.

A key issue in this process was developing a balance of the ‘unconscious’ vernacular and the ‘self-conscious’ architecture. This required a clear understanding of what the different elements and their relationships with each other, which was clarified throughout the research process. The vernacular patterns could be expressed in an abstract way, or they could be applied in a flexible manner. One good example of this is in the Design Case Study is the re-interpretation of the base/top and heavy/light patterns, as architecture

As discussed previously, a key benefit of addressing vernacular traditions is the connection that can be made with the local built form identity and the sense of place and meaning instilled within the vernacular traditions. ‘Vernacular’ designs are different to what might be called ‘business-as-usual’ SLSC architecture in several key ways.

‘Business-as-usual’ architecture can often be driven by an individual’s agenda. This can result in ‘considered’ work of architecture that is used as a sculptural piece or introduces a completely unknown design language that is disconnected from the local identity. ‘Vernacular’ SLSC designs are modest in scale and are driven by the community objectives. ‘Vernacular’ SLSC designs also place a strong value on the qualities of the vernacular characteristics, whereas ‘business as usual’ architecture often disregards the historic patterns in favour for fashionable new ‘styles’ or ‘concepts’

The design principles that ensure the building is visually and physically connected with the beach/water edge [A1-Beach Connectivity] were critical in the development of the Design Case Study. This principle worked well in tandem with the integration of the vernacular tradition of freestanding towers [C3-Planning Characteristics]. Including the

elevated lookout meant the bulk of the design form could be lowered to a single level rather than a full two storeys. Both these principles were in conflict with the imperatives that preserve the natural character of the landscape, so a delicate balance of the form dimensions was necessary.

Through the design process it became apparent that the [D2 & D3 -Heavy Base/Light top] principle, which recommends suitable building fabric qualities based on vernacular traditions, was a secondary design directive for the building design. This principle was developed in a new, slightly unfamiliar way because the directive relating to the [B3-Building Dimensions] building dimension took precedent and split the building into two volumes and rearticulated the typically vertical layout.

The research clarified that there are common functional ‘groups’ within the SLSC program. The ‘groups’ are generally somewhat separated from each other, typically by a vertical level change. The principle [C1a-Functional Separation], acknowledges this vernacular character and it has been explored through the Design Case Study. However it was found that level of separation could create a complete break in the normal building composition and the extent of the ‘separation’ needs to be carefully considered.

7.2.2 Sensitive Coastal Location

There are several key generalisations that were made about the demands of working in a sensitive coastal location. The locations are visually prominent, physically difficult climates, and include sensitive ecologies.

The ‘sensitive’ coastal locations of SLSC buildings are prominently situated in areas of high recreational

activity. Additionally, the coastal environment also holds significant cultural meaning within New Zealand's identity. The research concluded that the buildings are under added public pressure to be intelligently 'considered' architectural design responses.

The 'sensitive' coastal locations can be volatile environments and are exposed to the full force of extreme weather systems, and the damaging effects of sea spray. This has considerable implications on the architectural design of new SLSC buildings. The architectural response needs to be resilient to the weathering and one option is to employing durable and robust materials that can be easily maintained.

The coastal landscape of New Zealand is ecological sensitive and the architectural design responses need to be responsive to the unique habitats and natural systems. Architectural design needs to mitigate any further intrusion on to sensitive sand dune environments

Some key features of 'sensitive' SLSC architectural design is the use of neutral and natural tones, and simple, scaled forms, which are articulated to complement and 'fit' the natural character of the coastal landscape. This differs from an 'business-as-usual' SLSC architectural responses, which may cluster the program within one large, cost effective, noticeable form that utilizes materials that are conspicuous in the natural landscape.

The research concluded that the principle of design that advises suitable dimensions for the built form of SLSC architectural designs is more critical than others. The separation of Design Case study form into two volumes was primarily a response to the 'sensitive' coastal location.

The design principle that addressed the parking solution of SLSC designs was not a primary directive. The research concluded that due to the flexibility of parking arrangements identified in Chapter 3, that parking could be adapted around other more critical principles.

7.2.3 The relationship between 'vernacular' and 'sensitive'

The research concluded that working in a 'vernacular' idiom was reinforced by the demands of working in a 'sensitive' coastal location. The principles of design integrated well together. This is shown in the way the individual design features contribute to the resolution of a number of different 'vernacular' and 'sensitive' principles.

As discussed previously, the SLSC building vernacular is strongly related to the residential vernacular. The careful application of the SLSC vernacular allows the new clubhouse to 'fit' into its close context of residential dwellings, which responses to both the 'vernacular' and the 'sensitive'.

The need to respond to the 'sensitive' environment was the main reason why the Design Case Study form was shifted horizontally rather than vertical separation of 'inhabited' and 'equipment' volumes. This worked in tandem with the reinterpretation of the heavy/light pattern to formulate the architectural concept. The reconciliation of the 'sensitive' and the 'vernacular' was what produced a considered 'architectural' response.

7.3 RESEARCH PROCESS

Vernacular characteristics instilled in NZ SLSC buildings are understood through the comparative analysis that took place at a national scale, local scale, and building scale. The comparative analysis was heavily weighted on drawing conclusions from the building plans and elevations. This was effective for revealing common physical and spatial attributes, which became the focus of this research. However, it is acknowledged that the analysis of building plans could not successfully define less tangible building characteristic such as activity levels, seasonal changes to movement patterns, building uses and social/cultural developments.

Additionally, further analysis of international SLSC precedents would have been beneficial to create more valid generalisations. In future research the development of a more detailed analysis of contemporary SLSC precedents could follow a similar format as Chapter 3 Comparative Analysis.

The development of Design Guidelines was based around the common characteristic of existing NZ SLSC buildings and forms a large body of new work for academic research. This body of work can serve as a base for further research into NZ SLSC buildings as architecture.

Other approaches to the research such as oral history, interviews, surveys and photo archives would add to the understanding in the little studied field. The plan-based approach to the study was undertaken as it was aligned with the skills of the researcher as an architect.

7.4 LIMITATIONS

One of the limitations to the research process was geographical area that could be covered in the limited amount of time. The collection of primary data from SLSC locations was crucial to developing an understanding of the building group. This was limited to one accessible area for practical and financial reasons and means the scope of the study somewhat restricted.

Another limitation of the research was time restraints. This also contributed to the limited number of case studies, precedents and the distances travelled for primary data collection.

7.5 DESIGN OUTCOMES

The splitting of the building into two volumes was primarily a response to the 'sensitive' but it also divided the functional layout in a 'vernacular' manner. This strongly suggests that the two principles can work well in tandem with each other.

As the building split was primarily a response to the 'sensitive' it can be concluded that the 'building dimensions' principle is more important than others. This is consistent with the preservation of natural character but was in conflict with the heavy base/light top principle. The Design Case Study resolved this by shifting the building fabric to the left and the right (the two volumes) and the front and back (the open estuary-side and closed ocean-side).

Further revisions were made to the Design Guidelines after the Design Case Study. The concluding Design Guidelines are presented in full at the end of this chapter. The Design Case Study revealed a need for an exterior working area for

the SLSC to manoeuvre equipment. Additionally, the [D5 Passive Comfort] design principle was reconsidered, as this is a general sustainable design guide that should be integrated across all types of architectural responses.

The detailed comparative analysis within the research process is limited to the Eastern region of New Zealand. It is acknowledged that this possibly makes the generalisation concluded from the detail comparative analysis more geographically specific. Although, as New Zealand is a relatively small mass it is likely that other areas of New Zealand have similar SLSC building characteristics.

The ground in the Design Case Study has been less developed in an attempt to appear untouched and natural, however it is important that the area is claimed as a landscape entity. Within this research the landscape has been considered in a somewhat simplified approach because it falls outside the researchers discipline. A parallel landscape architecture design research project might be undertaken to provide further insight into the treatment of spaces around SLSC building.

The outcome of the Design Case Study is a modest building. However, the cost effectiveness of the design is uncertain due to the complex joins and multiple building envelopes. Cost effectiveness was not a primary objective within the research and therefore was not explored in detail. However it is acknowledged that it is an important subject and was considered in a tertiary manner during the design process.

There is also uncertainty whether the toilets in the 'inhabitation' volume are adequate for the space to be used as a venue for assembly. This could be resolved with further adjustments to the functional

layout. Furthermore, the size of the other program elements, such as the equipment storage space, could be increased with program adjustments if Pukehina SLSC saw fit.

7.6 USING THE DESIGN GUIDELINES

The Design Guidelines are presented at the end of each Chapter, with a succession of amendments included at each junction. The final 'Design Guidelines' are presented as a stand-alone document that future professional designer can use as a tool to help inform the development of New Zealand Surf Life Saving Club buildings. This will encourage professional designers to produce contemporary NZ SLSC architecture with a greater knowledge of the vernacular traditions and the sensitive coastal locations. This is deemed a useful outcome for professional designers and has the potential to contribute to improving/continuing the characteristic identity of NZ SLSC buildings. The research also has possible useful application in response to current and forth coming SLSC design proposals, and thus could be used as an evaluative tool.

7.7 CONCLUSION

The significance of New Zealand Surf Life Saving Club buildings within the coastal margin has been somewhat overlooked from an architectural perspective. The buildings are inevitable overlooking the beachfront edge and have assumed a certain characteristic charm over the past 100 years. The background research also found that it is likely possible that the buildings will become increasingly complex and that contemporary designs will be the work professional designers. There is a threat that the undeveloped understanding of this building type will result in poor design decisions in contemporary 'considered' works of architecture.

This Design Case Study shows that the design of a contemporary SLSC can be responsive to the vernacular traditions and the sensitive coastal environment. Contemporary SLSC architecture can better serve the local communities by combining the benefits of vernacular qualities and sensitive environmental design through the articulation/transformation of traditional patterns. The Design Case Study was a site-specific response to the significant findings from the analysis in Chapter 2, 3, 4, and 5. The key findings from the analysis reveal imperatives related to the site layout and orientation, the form size, scale and shape, the functional and spatial organisation, the construction arrangement and the material composition. Given the representative patterns of the Design Case Study it is fair to conclude that the findings from the Pukehina SLSC Design Case study are applicable to other New Zealand Surf Life Saving Clubs.

7.8 DESIGN GUIDELINES

Primary Objective

Contemporary surf life saving club designs should respond to the vernacular traditions and the sensitive coastal locations while also integrating modern building practice to generate architecture that fosters a strong sense of place and meaning.

High-level Design Strategies

-Integrate-

New Surf Life Saving Club building developments must take due care to acknowledge the characteristics and qualities of existing Surf Life Saving Club building vernacular traditions.

-Restore-

New Surf Life Saving Club building developments should enhance/respond to the cultural and ecological characteristics of the adjacent sensitive coastal environment.

DESIGN PRINCIPLES

SITE

[A1] *Beach Connectivity.* Create strong visual and physical connections to the beachfront that provide natural surveillance, beachfront user orientation, and clear access routes.

[A1a] *Beach Access Ways.* Provide clearly marked and well-defined beach access ways that complement the natural character of the site. Typical methods to achieve this include; timber posts and railing, timber bollard and rope, and timber boardwalks.

[A2] *Vehicle Routes.* Provide clear access route to the surrounding development.

[A3] *Intergrate Open Space.* Integrate new development with local public recreational areas to provide enhanced open space amenity.

[A4] *Parking Composition.* Parking should be articulated as to not dominate the site or appearance of the development. This can utilize variations in natural landscaping, materials and paving to give visual aesthetic that is similar to the natural landscape.

[A5] *Environmental Systems.* New development should take care to not cause any undue harm to the coastal environment systems including; vegetation, dunes, and natural features and reserves

[A5a] *Natural Character.* Complement the natural character of the site. Including the visual appearance of the landscape and the natural formation of the landscape outline/silhouette.

FORM

[B1] *Vernacular Forms.* New developments must acknowledge the nearby residential vernacular. Generally the buildings are simple geometric forms. This allows for the possibility of incremental form development.

[B1a] *Rearticulate Form.* Consider the use of form characteristics of nearby residential vernacular in new and slightly unfamiliar ways.

[B2] *Dual Orientation.* Provide dual building orientation that addresses the beachfront and the surrounding development

[B3] *Building Dimensions.* Design building height, scale and size in response to local residential buildings. Forms are typically one or two storeys high with a slight larger building footprint.

[B4] *Simple Forms.* Design simple roof forms. Typically gabled or hipped roof forms that are not conspicuous or intrusive to the beachscape.

[B4a] *Building Outline.* Consider/reference the conventional SLSC simple building outline as a way to capture the traditional SLSC character.

[B5] *Future Proofing.* Provide building adaptability.

PROGRAM

[C1] *Simple Program + Amenity.* Provide a simple resolution to the building program and integrate public amenity

[C1a] *Functional Separation.* Create functional separation between SLSC operations and additional site-specific program functions (café or restaurant).

[C2] *Inhabitation Program.* Group program elements that associate to inhabitation or 'people'. For example; Multi-purpose space, kitchen, and deck.

Equipment Program. Group program elements that associate to services or 'Equipment'. For example; equipment storage, toilets/change rooms, and first aid area.

[C3] *Planning Character.* The planning of SLSCs contains the following spaces. Consider the typical character of these spaces when designing new developments. The character of each space is discussed at the end of the design guides.

[C4] *Amentiy Routes.* Ensure access routes to public amenity are clear and legible. This can be achieved by placing amenity in clear public view by access route and beach access ways.

[C5] *SLSC Assembly.* Provide a paved outdoor area for the SLSC members to manoeuvre equipment or assemble groups, which should be adjacent to the equipment storage space

STRUCTURE

[D1] *Commonplace Construction.* The use of commonplace construction methods is encouraged.

[D1a] *Vernacular Construction.* Provide variation in construction techniques to provide visual connection with residential and SLSC vernacular.

[D2] *Heavy Base.* Construction techniques used for 'equipment' areas must be strong and robust to withstand harsh weathering and high levels of activity. Typically a heavy base.

[D3] *Light Top.* Construction techniques used for 'people' areas must contribute to the warm and soft character. This also contributes to the buildings adaptability and links with the local residential vernacular character. Typically a light top.

[D4] *Facade Permeability.* Provide façade openings for visual and physical permeability from inhabitation areas to the external environment.

[D6] *Inate Ornament.* Construction methods should be used to intergrate inate ornament. Deny superficial ornament.

[D7] *Transform Components.* Consider the retention/translation of conventional building components as a way to reference local vernacular traditions.

MATERIALS

[E1] *Typical Materials.* Integrate typical SLSC materials into new development with reference to site-specific historical responses. Commonly the materials are soft and colours are dull to negate excessive interruption of coastal landscape. Typical materials include, painted weatherboards, corrugated iron, unfinished timber.

[E1a] *Material Innovation.* Consider using typical materials in new innovative and slightly unfamiliar ways

[E2] *Surface Materials.* Consider and/or reference the existing patterns of surface material. This pertains to both the pre-existing SLSC and to the local residential vernacular.

[E3] *Elevation Texture.* Utilise material variation to create texture depth and richness in elevations.

[E3a] *Material Mixture.* Consider the mixture of modern and traditional building materials.

[E4] *Material Strength.* Materials need to be strong and durable to withstand the harsh coastal environment.

[E5] *Material Efficiency.* Materials should be used efficiently.

SPATIAL CHARACTERISTICS

Kitchen - The SLSC kitchens are mostly very modest in scale with a strong connection to the hall space. Often there is a bar associated with the kitchen. The kitchens are often in upper levels.

Multi-purpose space - The multi-purpose spaces of SLSCs are typically a single large volume that's closely associated with the private deck. Often the hall space is the primary hub that other elements of the program are based around. The hall space is often in the upper levels and takes advantage of beach view.

Storage - The storage areas of surf clubs are often in lower levels of the building with easy access to the beachfront and driveways that connect to the urban grid. The storage space is typically large and very secure with low visual permeability when enclosed.

Toilet/change - The toilets and changing facilities are often in the lower levels. They usually relate strongly to the equipment storage area as a combined 'wet' area.

Deck - The deck space is predominantly to a sunward facing elevation. Occasionally there is multiply deck to ensure a space takes advantage of beachfront views. The deck space is commonly in the upper floors and connected off the hall space.

Lookout- The lookout provides clear visual surveillance for lifeguard duty and takes advantage of building height to achieve this when necessary. It is characteristically included as part of the building form when appropriate to the site attributes. When necessary a lookout is constructed as a separate volume at a location that has strong visual surveillance over the beachfront.

BIBLIOGRAPHY

- Austin, M. (1997). *Encyclopedia of vernacular architecture of the world, Volume 2*. (P. Oliver, Ed.) Cambridge: Cambridge University Press.
- Bejamin, A. (2004). The Appearance of Modern Architecture. *Architectural Theory Review*, 9 (1), 36-44.
- Booth, D. (1991). War Off Water: The Australian Surf Life Saving Association and the Beach. *Sporting Traditions*, 135-162.
- Canizaro, V. (Ed.). (2003). *Architectural Regionalism: Collected Writings on Place, Identity, Modernity, and Tradition*. San Francisco: Chronicle Books.
- Coney, S. (2009). *Piha: Guardians of the Iron Sands*. Auckland: Piha Surf Life Saving Club Incorporated.
- Department of Conservation. (2010). *New Zealand Coastal Policy Statement (2010)*. Wellington: Department of Conservation.
- Devonport City Council. (2010). *Mersey Bluff Precinct Project: Expressions of interest*. Retrieved 11 August, 2013, from Devonport City Council: http://www.devonport.tas.gov.au/upload/documents/yourcity/planning_and_development/cityprojects/eoi_032010.pdf
- Easton, P. (2010 08-April). Locals Alarmed at 'Seriously Ugly' Surf Club. Retrieved 10 August, 2013, From The Dominion Post: <http://www.stuff.co.nz/dominion-post/news/3556211/Locals-alarmed-at-seriously-ugly-surf-club-plans>
- Eggenger, K. (2002). Placing Resistance: A Critique of Critical Regionalism. *Journal of Architectural Education* 55 (4), 228-237.
- Frampton, K. (1980). *Modern architecture: A critical history*. New York: Oxford University Press.
- Frampton, K. (1983). Prospects for a Critical Regionalism. *Perspecta*, 20, 147-162.
- Gillespie, K. (2011). *Couple's death shock Pukehina community*. Retrieved 14 August, 2013, from Bay of Plenty Times: <http://www.bayofplentytimes.co.nz/news/dead-couple-had-drug-past/1093187/>
- Groth, P. (1999). Making New Connections in Vernacular Architecture. *Journal of the Society of Architectural Historians*, 58 (3), 444-451.
- Hartoonian. (2006). Critical Regionalism Reloaded. *Fabrications*, 16 (2), 122-139.
- Harvey, B. (Ed.). (2010). *Between The Flags: 100 years of surf life saving in New Zealand*. Wellington: Surf Life Saving New Zealand.
- Jackson, I. (2006). *Sand Between My Toes; The Story of Surf Lifesaving in New Zealand*. North Shore: Penguin Group NZ.
- Lefavre, L., & Tzonis, A. (2012). *Architecture of Regionalism in the Age of Globalisation: peaks and valley in the flat world*. Oxon: Routledge.
- Lefavre, L., & Tzonis, A. (2003). *Critical Regionalism: Architecture in a globalized world*. Munich: Prestel Publishing Ltd.

May, J. (2010). *Buildings With Architects: A Global Guide to Everyday Architecture*. New York: Rizzoli.

Oliver, P. (1987). *Dwellings: The house across the world*. Texas: University of Texas Press.

Pearson, K. (1982). Surfies and Clubbies in Australia and New Zealand. *Journal of Sociology* 18 (1), 5-15.

Peart, R. (2009). *Castles in the Sand*. Nelson: Craig Potton Publishing.

Rudofsky, B. (1964). *Architecture Without Architects: A Short Introduction to Non-pedigreed Architecture*. Albuquerque: UNM Press.

Simeoni, R. (2010). *Images Observed Moments Buildings*, (Master's thesis, Royal Melbourne Institute of Technology (RMIT), Melbourne, Australia) Retrieved 10 August, 2013, from RMIT: <http://researchbank.rmit.edu.au/eserv/rmit:11159/Simeoni.pdf>

SLSNZ. (2011, September). *Annual Report 2011*. Retrieved July 14, 2013, from issuu: http://issuu.com/slsnz/docs/2011_slsnz_annualreport?e=3571351/2991032

SLSNZ. (2012, September). *Annual Report 2012*. Retrieved July 14, 2013, from issuu: http://issuu.com/slsnz/docs/sls_annual_report_2012_full?e=3571351/2634488

SLSNZ. (2010, September). *Annual Report Section 5*. Retrieved July 14, 2013, from Surf Lifesaving New Zealand: http://www.surflifesaving.org.nz/media/147899/2010slanzannualreport_05_stats.pdf

SLSNZ. (2008, September). *Annual Report Section 6*. Retrieved July 14, 2013, from Surf Lifesaving New Zealand: http://www.surflifesaving.org.nz/media/147916/2008_slsnzannualreport_full.pdf

SLSNZ. (2009, September). *Annual Report Section 6*. Retrieved July 14, 2013, from Surf Lifesaving New Zealand: http://www.surflifesaving.org.nz/media/147907/2009_slsnzannualreport_6_stats.pdf

Statistics New Zealand. (2011). *Local Population Trends*. Retrieved November 16, 2012, from Statistics New Zealand: http://www.stats.govt.nz/browse_for_stats/people_and_communities/geographic-areas/local-population-trends.aspx

Wellington City Council. (2000). *Shelly Bay Design Guide*. Retrieved 18 June, 2013, from Wellington City Council: <http://wellington.govt.nz/-/media/your-council/plans-policies-and-bylaws/district-plan/volume02/files/v2shellybay.pdf>

Western Bay of Plenty District Council. (2007). *Maketu Ward Reserves Specific Policy*. Retrieved 10 December, 2012, from Western Bay of Plenty District Council: <http://www.westernbay.govt.nz/Documents/PolicyDocuments/AK.pdf>

Ministry for the Environment. (1991). *Resource Management Act 1991 (RMA)*. Retrieved 4 December, 2012, from New Zealand Legislation: <http://www.legislation.govt.nz/act/public/1991/0069/latest/DLM230265.html>