Roll On Roll Off

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Roll On - Roll Off

An exploration and critique of the passenger terminal, its effective integration into the Lake Grassmere area, and its role in the journey of the traveller.

Abstract

During the final months of 2011 the New Zealand government revisited a 50 year old proposal to move the inter-island ferry terminal, currently located in Picton, to a site bordering on both Lake Grassmere and the Clifford Bay coastline. This thesis is based around the design of the new terminal facilities. The primary goal of this research is to develop a model for a new inter-island ferry terminal that responds to its surroundings and explores Norberg-Schulz theory of genius loci. This thesis is born from the work of a number of theorists whose arguments surrounding the concept of place have strong relation to passenger terminal architecture.

Through the combination of Lynch's theory of concretised *space* and Norberg-Schulz's theory of *genius loci* the design case study proposes a new passenger terminal that has been designed to express the dynamic nature of travel and critique the notion of the terminal as a "waiting room" while still maintaining required terminal function. Internal terminal functions such as shops or staff areas are localised to nodal structures that sit within broader space. This allows for the expression of the locality while still providing a level of internal flexibility for the user. Therefore the terminal becomes a space of endless possibility and enjoyment rather than a soulless and leftover space as many terminals are perceived to be. The site for this design is of upmost importance to the project. This means that the outcomes discussed are directly relevant to this site alone, no other location could yield identical results.

This project is not undertaken as a feasibility study but as an architectural study exploring a concept through design. Therefore the outcome is not a technocratic one but an exploratory one.

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Cook Straight

Current Inter-island route   - - - - - -

Proposed Inter-island route   _____

Wellington   1.

Picton   2.

Lake Grassmere   3.

22,000m

2   Fig 1.: Current and proposed inter-island ferry routes

Introduction

Research Problem

The terminal, whether it is used for sea or air travel, has been a source of on-going architectural exploration since the early 1800's with the construction of a number of early train stations. With the founding of the first inter-island passenger service in August 1962 the two islands of New Zealand were finally connected with a serviceable passenger route. This route provided both passengers and freight a consistent crossing point for Cook Straight. Furthermore it removed the need to sail from Lyttleton to Wellington which operated from 1895 to 1976 (Ministry for Culture and Heritage, 2012). As with this original move in 1962, the current owners and operators are once again looking to shift the terminal and its port facilities down the coast. This time the proposed site sits on the north-eastern coast of the South Island in Clifford Bay on the banks of Lake Grassmere, a much more direct crossing from the Wellington harbour mouth. It is proposed that the new location will increase efficiencies and reduce environmental damage on the Marlborough Sounds. While these features are important advantages for the move it will be the passenger terminals integration into its site and place that will provide the catalyst for this thesis. The following place based investigation arises out of the vast increase in "soulless, leftover spaces in contemporary society" (Leach, 2006) of which the passenger terminal is a primary example. Therefore the following question will be the backbone of the investigation;

How can a new inter-island ferry terminal successfully integrate into Lake Grassmere, as both a site and place, and its role in the journey of the traveller?

Importance of Issue for Architecture

Butler, (1993) Tschumi, (2001) Leach, (2006) and Kasarda, (2011) argue that the perception of the passenger terminal in both literature and architecture is skewed. Marc Augé argues that "the overabundance of events, spatial overabundance and the individualization of references" (Augé, 1995, p. 109) leads to architecture that is devoid of a local *identity* and is heavily focussed around efficiency reducing

SOLAR SALT WORKS

LAKE GRASSMERE

Scale in chains

Fig 2. Lake Grassmere Design, 1947
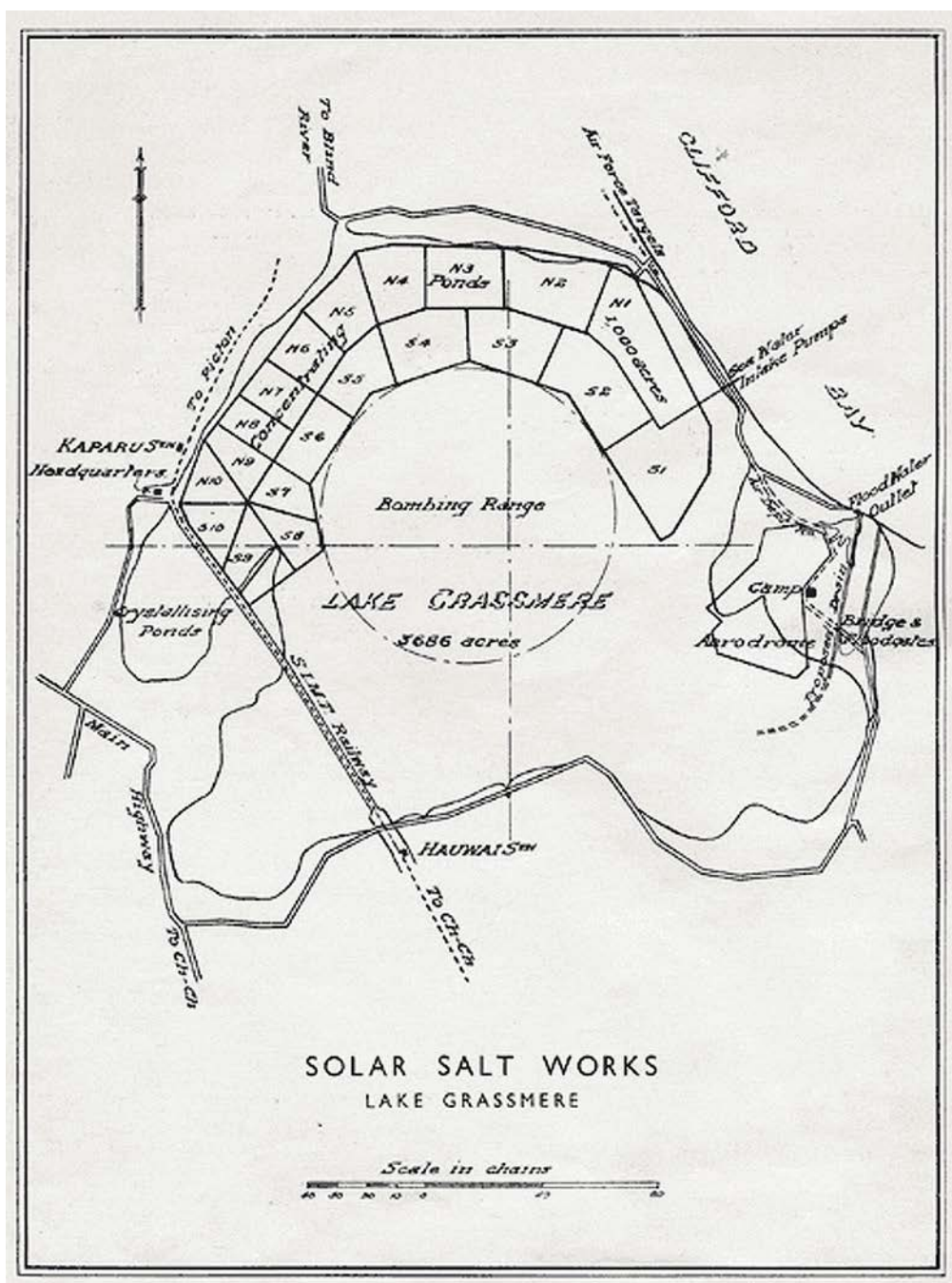
the passenger to just another entry on a list. This provides opportunity to explore the passenger terminal from a local perspective to determine what architecture can do to create a more engaging and exciting experience for both the passenger and the staff. This case study attempts to explore the requirements of the passenger terminal by defining a new layout and spatial arrangement that provides a greater degree of continuity between land and, in this case, sea. The ultimate goal is to express how the passenger terminal as a piece of architecture can become an exciting and unique part of the journey reflective of the one of a kind place in which it sits.

Method

As is the requirement of the project brief, research on the specified problem will be undertaken through the medium of design. Therefore each element of the process will need to be undertaken using design as the primary medium of investigation. The following are a series of steps that the design process will pursue.

1. Case study research on existing successful national ports and terminals both in urban and landscape based settings
2. Explore the theory of 'sense of place' in relation to the design of a new inter-island ferry terminal.
3. Research the site at Clifford Bay to determine; a: if it is a suitable site for a ferry terminal, and b: how the implementation and placement of various terminal facilities will influence the design of the terminal
4. Establish a program based on the requirements of both the site and terminal users.
5. Continuously critique, design and redesign. Refer each design decision back to original brief and document outcome

The design will follow on iterative process of continuous critique, design and redesign. Each design iteration will refer back to the original brief and the outcome will be documented, summarised and expressed.

Thesis Limitations

Due to the nature of the project this thesis comes with a series of limitations.

The first limitation is that the project will only relate to the one site, the one 'place', therefore will not be directly applicable to any other site. In saying this though, the principles explored will be able to be used in other projects regarding ways in which 'place' can be perceived and used to influence design. The second lim-

How can a new inter-island ferry terminal successfully integrate into Lake Grassmere, as both a site and place, and its role in the journey of the traveller?

Fig 3.: Lake Grassmere Salt Piles, April 2012

itation is the scale of the project. This size of project would often be undertaken by a large team of architects and engineers. This thesis merely attempts to encompass an idea in a grand scheme, expressed at a number of scales. The third limitation is the origin of the project. I began this project based on a proposal that was introduced early in 2012. As of the continuation of the project some of the facts originally put forward may have changed. For example in early 2012 there was no specified site within the Lake Grassmere area so initial explorations for the design case study are around the location of the terminal. The forth limitation is the word limit applied to the written component of the design. Due to the topic only a small sample of possible information has been used here as opposed to the vast amount available in the academic world.

Thesis Outline

The thesis is split into seven chapters. Following this introductory chapter there are five chapters dealing with the design case study. At the culmination of thesis, following the design case study, there will be a conclusion chapter summarising the problem followed by a summary of the design case study. The following is a short description of the five design case study chapters.

1. Chapter two of the thesis, titled *Port N.Z.,* will revolve around the expression and formation of the problem. It will cite grounds for the research problem, in relation to this project, and explore a number of national examples of port facilities that demonstrate, to a greater or lesser degree, this specified problem.

2. Chapter three, titled *"Non-Lieux"*, will involve exploring the issue from a literary point of view. It will cite a number of examples of written material on the topics of place, sense of place, non-place, place-identity and genius loci and explore a method in which to create a strong architecture of the place.

3. Chapter four, titled *Architectural Context*, will explore the grounds and origin of the project and describe the proposed site for the piece of architecture. This part will take place in relation to the previous two parts but with particular attention paid to the exact chosen site in relation to the proposed passenger terminal building and surrounding port facilities.

4. Chapter five is the brief. It will include the key constituents of the brief and the defined requirements for the design.

5. Chapter six, titled *41°43'2.58"S 174°11'11.12"E*, is focused on the outcome of the design case study. This part will express how the issues raised in previous chapters are addressed through the medium of design and the means in which the final outcome is attained.

Port N.Z.

First Phase:
Scattered Ports
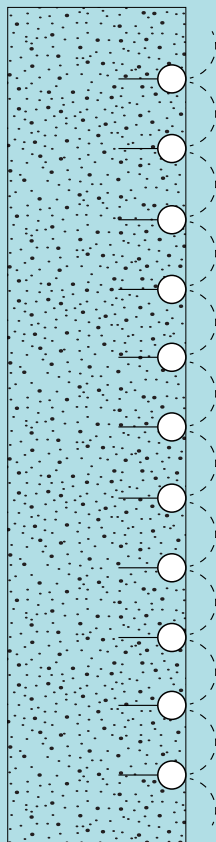
Second Phase:
Penetration Lines
and Port Piracy
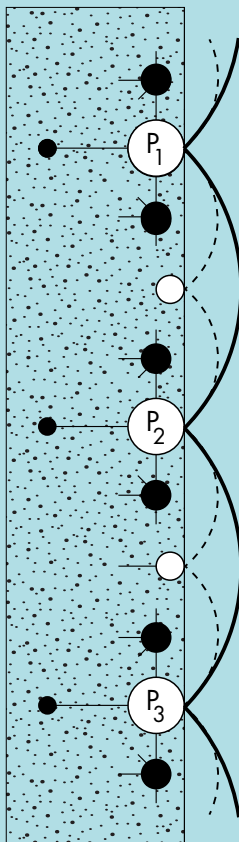
Third Phase:
Interconnection
and Concentration

Forth Phase:
Centralisation

Ports

Interior Centre

Inland Route

Regular Shipping Services

Irregular Shipping Services

Fig 4.: Four phases of New Zealand port growth
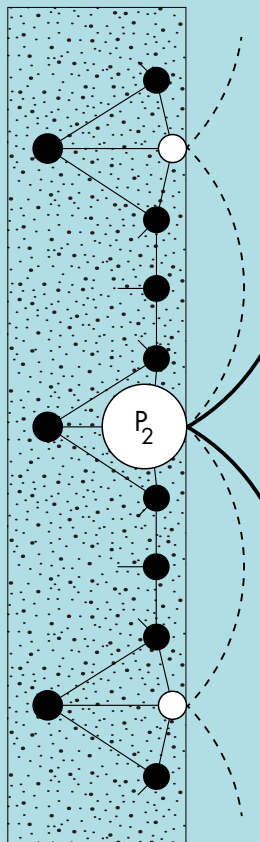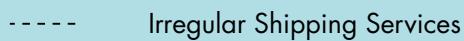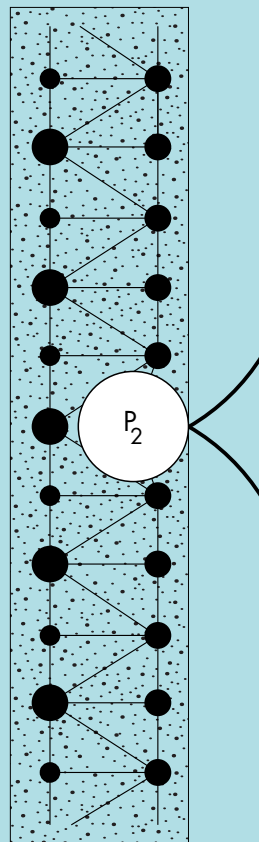
The Growth and Decay of Great New Zealand Seaports

New Zealand was born of the sea. Both the indigenous Maori and European settlers arrived on New Zealand's shores via boat and ever since the economic growth of the nation has coincided with the evolution of the many seaports located throughout the country. While contemporary ports regularly display minimal relation to their surroundings and rely on standardised global languages to maintain efficiency, early seaports in contrast were an expression of their geographical location and cultural backgrounds. This shift is seen as a loss of a *sense of place* in favour of a built anonymity based on efficiency. Since the initial days of New Zealand colonisation Peter J. Rimmer has identified four phases of New Zealand seaport growth and decay (Rimmer, 1967). The following is a summary of these phases.

First Phase: Scattered Ports

Development from isolated nodes as opposed to development from a single centre led to 11 small, scattered ports and coastal settlements being established as early as 1853. Establishment of settlements was primarily situated around low lying fertile land with easy access to the ocean for primary trading routes. These trading routes served as the main means of communication between the isolated settlements due to limited inland penetration caused by rugged mountains, dense bush and rivers (Rimmer, 1967).

Second Phase: Penetration Lines and Port Piracy

Despite the dispersed pattern of settlement, by 1867 concentrated activity was occurring at a number of seaports. Seven seaports enjoyed monopoly over the reaming New Zealand ports due to their access to mineral and agricultural areas, providing access to other New Zealand ports as well as ports in the United Kingdom and Australia. One of the primary reasons for certain ports beginning to dominate the industry was the construction of train lines between ports. The reduced the need for ports to be accessible over short distances (Rimmer, 1967).

Third Phase: Interconnection and Concentration

Through the expansion of the railways in the late 1800's many of the smaller coastal ports fell victim to the expansion of the larger neighbouring seaports with routes to the U.K. Smaller ports were able to survive due to the trade available in refrigerated and frozen produce while the larger ports maintained their monopoly over the higher value, non-perishable goods (Rimmer, 1967).

Forth Phase: Centralisation

An increase in population and the growth in certain industry sectors in the larger centres led to the centralisation of function to the larger seaports, primarily in Auckland, Wellington, Lyttelton and Port Chalmers in Dunedin. With the introduction of the GMV *Aramoana* in 1962, the inter-island service between Wellington and Picton was born and the North and South Islands were finally linked. This finally led to an uninterrupted nationwide transport network (Rimmer, 1967).

These phases represent a movement from the local port, one found in each burgeoning town, to the regional port, 3-4 large ports in total found throughout all of New Zealand. This change in ideology is characteristic of a growing shipping infrastructure, and also a growing nation, supplemented by the expansion of the nationwide rail networks. While the resulting increase in efficiency does have great benefits to the economic wellbeing of some of New Zealand's largest towns it has led to the standardisation of many of these larger port facilities. This has resulted in an overall loss of a distinctive *sense of place* within these ports leaving no discernible visual features evident beyond what is absolutely necessary for maximum profitability of the port. There are 13 primary seaports used for imports and exports in New Zealand. They are, in descending order of economic position (Statistics New Zealand, 2013);

1. Auckland
2. Tauranga
3. Lyttleton Port (Christchurch)
4. Whangarei
5. Port Chalmers (Dunedin)
6. Napier
7. Wellington
8. New Plymouth
9. Bluff (Invercargill)
10. Timaru

11. Nelson
12. Gisborne
13. Picton

With the growth of the larger ports and the strong shift towards mass efficiency through global trading routes many of the smaller seaports were put out of business leaving their surrounding towns with large quantities of derelict buildings and infrastructure. While this is unfortunate from an economic perspective, from an architectural perspective these disused buildings often represent the *identity* and culture of many of their towns. Strong evidence of this can be found in the South Island town of Oamaru. While the loss of function from many of these ports is a large blow to the local economies it has allowed for the preservation of many of the historic features found in these towns. While this preservation of history and town identity is evident in a number of smaller towns it is being somewhat lost in the larger seaports, such as those in Auckland that are rapidly expanding, and is being localised only to buildings deemed worthy of the Historic Places register such as Auckland Harbour Board Workshops (Former) and the original Auckland Ferry terminal. The following images show the transformation of many ports over time and provide a visual argument and description of both the loss and preservation of history and identity in New Zealand seaports.

To conclude, the loss of harbour function from many of the seaports around New Zealand can primarily be seen as a result of both the economic and physical expansion in the nation's maritime trade. While each of the larger port towns, such as Auckland and Wellington, still maintain a sliver of their heritage and *identity* it is a selection of the smaller towns that encompass a much stronger *sense of place* through the concentration of their culture and *identity,* evidence of which can be seen in smaller port towns such as Lyttelton and Oamaru.

Fig 5. Port of Auckland, 29 Jan 1962

Fig 6. Port of Auckland, February 3, 2012

Fig 7. Port of Auckland, 29 Jan 1962

Fig 8. Port of Auckland, March 20, 2003

Auckland: The Port of Auckland has emerged over the last 60 years as the largest seaport in New Zealand. While this is necessary for the continued expansion of an ever developing country it has come at a price. Due to the vast expansion required of the port only select historic buildings remain in the area in a vast sea of modern architecture and infrastructure. These buildings include the Auckland Ferry Building, the Northern Steamship Company Building and the Union Fish Company Building. Although these buildings are still in existence and are now protected, they are an example of history relegated to that of spectacle.

Fig 9. Wellington Harbour, 1951

Fig 10. Wellington Harbour, February 29, 2012

Fig 11. Customhouse Quay, Shed 13, early 1930s

Fig 12. Shed 13, March 18, 2009

Wellington: The Wellington port and harbour area has a strong architectural heritage much of which has been maintained and preserved. Buildings such as Wellington Harbour Board Sheds 7, 13 and 21 provide a fantastic historic backdrop to Wellington's rejuvenated water front. With the on-going upgrade of the water front area, both Wellington's history and identity are becoming integrated to create a fantastic place based experience for the local and international community.

Fig 13. Lyttelton Harbour, 1863

Fig 14. Lyttelton Harbour

Fig 15. Lyttelton Harbour, late 1860's

Fig 16. Lyttelton Harbour, July 30, 2010

Lyttelton Harbour (Christchurch): "The Gateway to Canterbury" (Dyne, 1939)Lyttelton harbour was one of the earliest ports settled during the European colonisation of New Zealand. It provides a strong example of early New Zealand architecture expressive of the English settlers that landed there. Geographically the historic harbour is bound by a surrounding hill line that has limited its potential growth. As a result a large majority of Lyttelton Township has been registered by the Historic Places Trust as an historic area to preserve its historic integrity (New Zealand Historic Places Trust, 2009). This preservation also leads to the preservation of the history and identity of the area and makes the area a strong example of functional primary New Zealand seaport with an historic background.

Fig 17. Oamaru Harbour, 1885

Fig 18. Oamaru from South Hill, 2012

Fig 19. Oamaru Harbour, 1889

Fig 20. Oamaru, Harbour St., 2012

Oamaru: The harbour and surrounding breakwater port served as a gateway to the burgeoning town. "The town of Oamaru is distinguished by its large contingent of historic buildings, built in the heady days of the Otago gold rush (in the 1860's to 1890's)." (Glucksman & Boussy, 2013). Many of the buildings surrounding the harbour and the docks themselves reflect this original use. The old Freezer building still stands and, among many of the other early Oamaru stone buildings, has gained historic places status (New Zealand Historic Places Trust , 1994). The port officially closed to shipping in 1975, when it ceased to provide shipping services (Waitaki District Council, 2012).The primary building material is a limestone locally known as "Oamaru Stone". Oamaru provides a strong example of a town that has reinvented itself around its history and identity. With the loss of its primary source of income Oamaru is still able to thrive as both a town and destination due to its deep seeded 'sense of place' established due to its history as a port town.

"Non-Lieux"

Fig 21. FOA, Yokohama Ferry Passenger Terminal, Yokohama, Japan 2002

Architecture and Place

Notwithstanding the presence of first-class lounges, airports are pretty egalitarian places, much more so than the outside world. We passengers are all reduced to the same class of obedient toddlers. Don't go there. Don't tell jokes. Take off your shoes. Take off your belt. Walk through the scanner. Hold out your arms. Ever mindful of the threat of terrorism, we understand, in a vague way, that this is all For Our Own Good. Hence the oddly bland, bovine expressions on travellers' faces (Newman, 2004)

The problem defined in this thesis is that passenger terminals are seen as tedious, neutral environments. Designed to placate and pacify the traveller, the terminal is organised to slowly herd the traveller from one room to another, removing the traveller from their *place* of origin. These terminals are devoid of any form of *place-identity*. Many elements of their organisation, from the long benches of individualised seating to the neutral paint tones, are organised around the need to appease all travellers and offend none.

While this description applies to many terminals, it is not a one size fits all portrayal. For example the Yokohama International Ferry Passenger Terminal designed by Foreign Office Architects represents a unique piece of terminal architecture that expresses its core function as a wave of constructed topography.

This chapter of the thesis deals with the multiple concepts of *place* and their relation to architecture. To provide an understanding of the ideas associated with *place* this chapter will provide an outline of the terms through an exploration of key *place* theorists. Theorists from a number of academic disciplines, including architecture, urban planning, geography, sociology and anthropology have been consulted in this work. Firstly, the separate concepts of *place* and *sense of place* are explored followed by a theoretical discussion of the concept of *non-place*, as employed by Marc Augé, and an explanation of how this may manifest in architecture. The concept of *place-identity* is then explained in relation to *non-place* exploring how personal *identity* plays a strong role in the creation of *place*. This conclusion of this chapter is an argument about how consulting the *genius loci*, or spirit of the place, will help to manifest *place* in architectural form, in this case the form of a passenger terminal.

Fig 22. Marfells Beach, Marlborough, April 2012

Place = Space + Individual Identity

People often consider the concept of *place* in terms of a location or a physical construction. While this is not entirely incorrect it only encompasses a limited view of the word's meaning. When we inhabit *space* we bring to it a vast range of emotional, psychological and experiential associations that act as a lens through which we perceive the *place*. Urban Planner Kevin Lynch explores the concretisation of *space* through his introduction of the elements of "path, landmark, edge, node and district" (Lynch, 1960, p. 8) which he argues denote those elements which form the basis for man's orientation in *space*. Geographer Yi-Fu Tuan offers a perspective on this. He states "when space feels thoroughly familiar to us, it has become place. Place is something known to us, somewhere that belongs to us in a spiritual, if not possessive sense and to which we belong" (Tuan, 1977, p. 73). Therefore it is argued here, and in the following design case study, that human inhabitation of path, landmark, edge, node and district becomes the basis for the inception of *place*.

Agnew (2011) argues that *place* works in two senses. He describes the first as "Definable entirely in relation to a single spatial metric (latitude and longitude, elevation, etc.) or other spatial grid defined by putatively non-spatial processes (core-periphery, city-hinterland, administrative regions, etc.)". The second "is constituted by the impact that being somewhere has on the constitution of the processes in question." (Agnew, 2011, p. 317). Here, Agnew shares a similar description of *place* to Tuan, yet Agnew's thoughts are based around a combination of both the tangible and intangible features of a specific location. For example, using the Lake Grassmere site, defining place, to Agnew, would be based around exploring its purely tangible qualities such as its proximity to the surrounding Marlborough hills and the Lake Grassmere Saltworks. The intangible qualities would include the local climate, colours, landforms and quality of light. Regardless of their tangibility all these variables rely solely on their specific physical location in the world. No other location could yield identical results.

Both Tuan and Agnew refer to the user as the catalyst for this *space* to *place* transformation, the relationship we have with a *space* can result in varying perception of the *place*. A study conducted by Bixler, Floyd and Hammit suggested that "childhood play influences later interest in wildlands, environmental preferences, outdoor recreation activities, and occupations in outdoor environments." (Bixler, Floyd, & Hammitt, 2002, p. 813). This suggests that if, as a child, we spend the majority of our time in the countryside we gain a much stronger appreciation for these specific surroundings and as a result prefer them over living in a built up area such as a city or suburb. This argument also works well in reverse suggesting that growing up in an urban environments lead to a stronger appreciation for them in later life. Therefore it is argued that place is to be considered at an individual level. We will

Fig 23. Bruno Gorostiaga, Heart of the City. Church Square is transformed into a vibrant market rich in community *identity*

each have a differing opinion of what constitutes *place* and we will each have a differing opinion of the *places* we prefer to inhabit.

Sense of Place = Place + Community Identity

As a passenger terminal is rarely occupied by a single person it is important to explore *place* from a community perspective. While *place,* as previously explored, was defined to be specific to each individual, a *sense of place* can be seen as a community based dynamic. Sociologist David Hummon argues "By sense of place, I mean people's subjective perceptions of their environment and their more or less conscious feelings about those environments" (Hummon, 1992, p. 164). Therefore the greater number of people involved with one specific geographic *place*, the larger number of perceptions brought to its *sense of place*.

Sense of place exists separately from any one person's perception or experiences yet relies on human engagement for its existence. Rose (1995) argues that;

although senses of place may be very personal, they are not entirely the result of one's individual feelings and meanings; rather, such feelings and meanings are shaped in large part by the social, cultural and economic circumstances in which individuals find themselves (Rose, 1995, p. 89)

Rose argues that a *sense of place* can be born from five different scales, the local, regional, national, supranational and global scale (Rose, 1995). Each of these scales relies on the participation of multiple people for the creation of *senses of place*. Fritz Steele shares a similar thought by stating that "The environment is made up of a combination of physical and social features; the sense of place is an experience created by the setting combined with what a person brings to it" (Steele, 1981, p. 11). Hummon agrees by stating "Sense of place is inevitably dual in nature, involving both an interpretative perspective on the environment and the emotional reaction to the environment" (Hummon, 1992, p. 164). These scales do not have to exist on an individual level. For example Rose argues that using images of the American Midwest expresses not only a regional *sense of place* but also a national one (Rose, 1995).

The above theorists argue that to create a strong *sense of place* one must have an attitude towards the *place* and an emotional connection to the *place* being inhabited. Rose refers to "'a sense of place' as a way of indicating that places are infused with meaning and feeling" (Rose, 1995, p. 88). It can be noted here that a *sense of place* does not necessarily have to relate to a positive experience of perception of place. *Sense of place* can relate to both pleasant and unpleasant situations. An event such as a flood can destroy, for example, a neighbourhood and effectively wipe it out, yet through the rebuilding of the homes and other buildings in the area the town

Fig 24. AQT Solar Factory, South Carolina. Example of spatial homogenisation

can gain a new *sense of place* through the engagement of the community working together to rebuild (Landscape Institute, 2008).

While *sense of place* is an important concept to consult in an investigation surrounding *place*, providing great insight into the formation of a community identity, for the purposes of this design-based case study the concept is too broad to be considered a viable design driver.

Non-place = Place without Identity

Change can also lead to an alienation from *place*. This alienation can be seen as the result of a personal move, such as moving to a new house, or as a result of a change in the *space* around you, for example a new house being built next door. While these changes may initially cause discomfort we are still able to hold onto *place* through the deep bonds we share with it. The place is part of our personal *identity* but we are also part of the *identity* of the place. Relph (1976) provides an insight into this change. He states;

The changing character of place through time is of course related to modifications of buildings and landscapes as well as to changes in our attitudes and is likely to seem quite dramatic after a prolonged absence. On the other hand the persistence of the character of places is apparently related to a continuity both in our experience of change and in the very nature of change that serves to reinforce a sense of association and attachment to those places (Relph, 1976, p. 31)

Relph is expressing that if we are able to witness the change happening around us then we are able relate to it and understand it whereas if we are unable to experience the change then, on return, the *place* may have reverted back to a *space* with no significant meaning.

Relph (1976) and Augé (1995) offer a counterpoint to *place*. Relph provides the first perspective on the matter. He uses the term placelessness; "the casual eradication of distinctive places and the making of standardized landscapes that results from an insensitivity to the significance of place" (Relph, 1976, p. Preface) to describe a scenario in which many of the worlds unique locations are being removed in favour of standardised forms and programmes based heavily around efficiency. A similar vein of thought is shared by anthropologist Augé. He champions a term that he calls *non-place*. To elaborate, Augé states that "If a place can be defined as relational, historical and concerned with identity, then a space that cannot be defined as relational, or historical, or concerned with identity will be a non-place" (Augé, 1995, pp. 77-78). This term encompasses the *places* in our society that have stemmed simultaneously from three figures of excess; "overabundance of events, spatial over-

Fig 25. Chennai Airport, International Departure Lounge One

abundance and the individualization of references" (Augé, 1995, p. 109). *Non-places* can include motorways, casinos, strip malls and passenger terminals. Augé discounts the implementation of modern intercity motorways and domestic air travel claiming the average traveller is being further removed from the local *identity* and culture. Rather than experiencing a town itself, by driving through it or spending time in it, the traveller is forced to experience the town from a motorway removed from its surrounding context. The town is thus reduced to a name on a map and stripped of any form of individual *identity* (Augé, 1995).

This differs from the earlier point made by Relph regarding our personal observations of change in our surroundings and their relation to our continued connection to place. Before, the connection was made with a *place* that had been occupied for an extended time and had thus become part of who we are. Whereas, *non-places* are *spaces* that you occupy for a shorter amount of time with no intention of staying longer than you must. The points made by both Relph and Augé refer to the withdrawal of both our *identity* and emotion from our immediate surroundings when inhabiting these *non-places*. They argue that through the increased efficiency, spatial homogenisation and mass customisation of the modern world we are being removed from an 'authentic' version of our society. Relph describes an 'authentic' *place* as;

a direct and genuine experience of the entire complex of the identity of places— not mediated and distorted through a series of quite arbitrary social and intellectual fashions about how that experience should be, nor following stereotyped conventions (Relph, 1976, p. 64)

Both Augé and Relph's observations pose a strong case for the supposed placeless attitudes invading society. While they provide strong opinions it is important to note that these observations are quite bleak. A number of authors have provided positive connotations centred on *non-place*. Tschumi (2001) argues that the vast opportunities opened up by passing time in space permit recreational and cultural activities of all kinds, from movies to exhibitions. The airport, in Tshcumi's argument, "provides a captive audience ready to be edified, illuminated, or exploited." (Tschumi, 2001, p. 23). Kasarda comments that the "combination of money + boredom + dwell time + sheer numbers = Alice's Wonderland: a through the looking glass world." (Kasarda, 2011, p. 97). These authors express an alternate outlook for the supposed *non-places* and instead argue that the terminal is a *space* of endless possibilities and function. Butler (1993) argues that "spaces are given meaning by the practices that have taken place within them" (Butler, Bodies that Matte: On the Discursive Limits of "Sex", 1993, p. 12). She suggests certain *identities* are 'projected' on to *spaces* – associations defined not by the material properties of the space, but by the activities that take place there (Butler, Bodies that Matte: On the Discursive

Fig 26. Grand Central Station, A rich hive of activity and expression of local *place-identity*

Limits of "Sex", 1993). Butler is arguing here that it is not the physical makeup of the *space*, in this case a passenger terminal, but the personal experience of the user that gives a space its *identity*. Leach (2006) furthers this proposition by arguing that the terminal as a "space used for particular activities will accrue a certain character over time, but as new activities take over – and as memories of the former activities fade – the space will take on a different character" (Leach, 2006, p. 4). Therefore, as passengers arrive and depart, the resulting space is a passenger terminal in a constant state of flux reflecting the forever evolving nature of the terminals unique *identity*.

Place-Identity

"Aspects of identity linked to place can be described as "place-identity"" (Hauge, 2007, p. 47). A *place* is created by the individual from *space*. A *sense of place* is formed via the collective emotive and experiential backgrounds of a group of people. Therefore *place-identity* becomes;

those dimensions of self that defines the individuals personal identity in relation to the physical environment by means of a complex pattern of conscious and unconscious ideas, feelings, values, goals, preferences, skills, and behavioural tendencies relevant to a specific environment (Proshansky, 1987, p. Abstract)

Place-identity is seen as the piece of our personal *identity* that deals with our individual relationship to the *places* around us. Rutherford argues, "identity marks the conjuncture of our past with the social, cultural and economic relations we live within" (Rutherford, 1990, p. 19). Relph approaches *place-identity* by stating it is the "persistent sameness and unity which allows that [place] to be differentiated from others" (Relph, 1976, p. 45).

The lack of any form of *place-identity* in passenger terminals expressed by Augé suggests that we as individuals are unable to associate with these *places* on an emotional level. We are unable to convey our past experiences of the *place* to a degree to which we can identify personally with the *space*. As a result passenger terminals have become a *non-place* in Augé's eyes due to their nature as a structure built heavily around function and efficiency. A cure to this issue, and the basis upon which the new inter-island passenger terminal is designed, exists in the form of the concept of the *genius loci*.

Fig 27. Zvi Hecker, The Palmach Museum of History, Tel-Aviv, Israel, 2000

Genius loci

Genius loci, or "spirit of place" (Norberg-Schulz, 1991, p. 5), refers to the inherent attributes or character of a *place*. The early users of the concept, such as Alexander Pope, used the term to develop a new aesthetic appreciation for the natural landscape and in particular explored the shaping of the landscape by the human hand (Jiven & Larkham, Sense of Place, Authenticity and Character: A Commentary, 2003). Norberg-Schulz provides one of the strongest explanations of *genius loci* in his book *Genius Loci, Towards a Phenomenology of Architecture*. Norberg-Schulz describes architecture as a "means to visualise the genius loci". He claims that people's experience of the natural environment is in part achieved through the expression of the atmosphere, light conditions and sense-related experiences found in the *genius loci* (Jiven & Larkham, Sense of Place, Authenticity and Character: A Commentary, 2003, p. 71). He argues that;

The architecture of early civilizations may therefore be interpreted as the concretization of the understanding of nature, described above in terms of things, order, character, light and time. The process involves translating these meanings into man-made forms have already been defined as "visualisation", "complementation", and "symbolization" (Norberg-Schulz, 1991, pp. 50-51)

Furthermore he states "Through building, man-made places are created that possess their own genius loci" (Norberg-Schulz, 1991, p. 58). These quotes are particularly important as Norberg-Schulz confirms that through the manipulation of "things, order, character, light and time" it is in fact possible to build a concretised *genius loci*.

Jakle (1987), in his interpretation of the *genius loci*, emphasises the individual, subjective nature of *place*. In particular he emphasises the importance of the visual for although we also perceive places with other senses, he feels that there is an innate conflict between verbal and visual thinking. For Jakle, the best person to experience and express the *genius loci* is not the resident but the tourist, for tourism "involves the deliberate searching out of place experience" (Jakle, 1987, p. 8).

Jiven and Larkham (2003) contend that Norberg-Schulz describes the *genius loci* as "representing the sense people have of a place, understood as the sum of all physical as well as symbolic values in nature and the human environment." (Jiven & Larkham, Sense of Place, Authenticity and Character: A Commentary, 2003). It is asserted that from his work "four thematic levels can be recognized" (Jiven & Larkham, Sense of Place, Authenticity and Character: A Commentary, 2003)

1. The topography of the earth's surface

District
Landmark
Edge
Path
Node

Space + Individual Identity
=
Place ————————————→ Place + Community Identity
                                      =
                                 Sense of Place

Non-Place = Place without Identity

Place-Identity

Things
Order
Character
Light
Time

Space + Genius Loci
=
Architecture *of* Place

Fig 28. Place Theory Diagram

2. The cosmological light conditions and the sky as natural conditions
3. Buildings
4. Symbolic and existential meanings in the cultural landscape

As discussed before, *place* and *sense of place* are emotional and experiential concepts that are cultivated by a lifetime of individual experiences and personal *identity*. These experiences and identities cannot be measured or quantified but do rely on a concretised *space* for their manifestation. The concept of *non-place* acts as the counterpoint to *place* in the sense that it too relies on concretised *space*, but does not promote any form of individual experience or *place-identity*. As it is impossible to use the travellers personal life history to create *place-identity* we turn to the site and the *genius loci* to define the *place-identity* of the terminal.

Architectural Context

Fig 29.: Diagram showing
advantage of train over truck

1 Train = 100 Trucks off NZ Roads
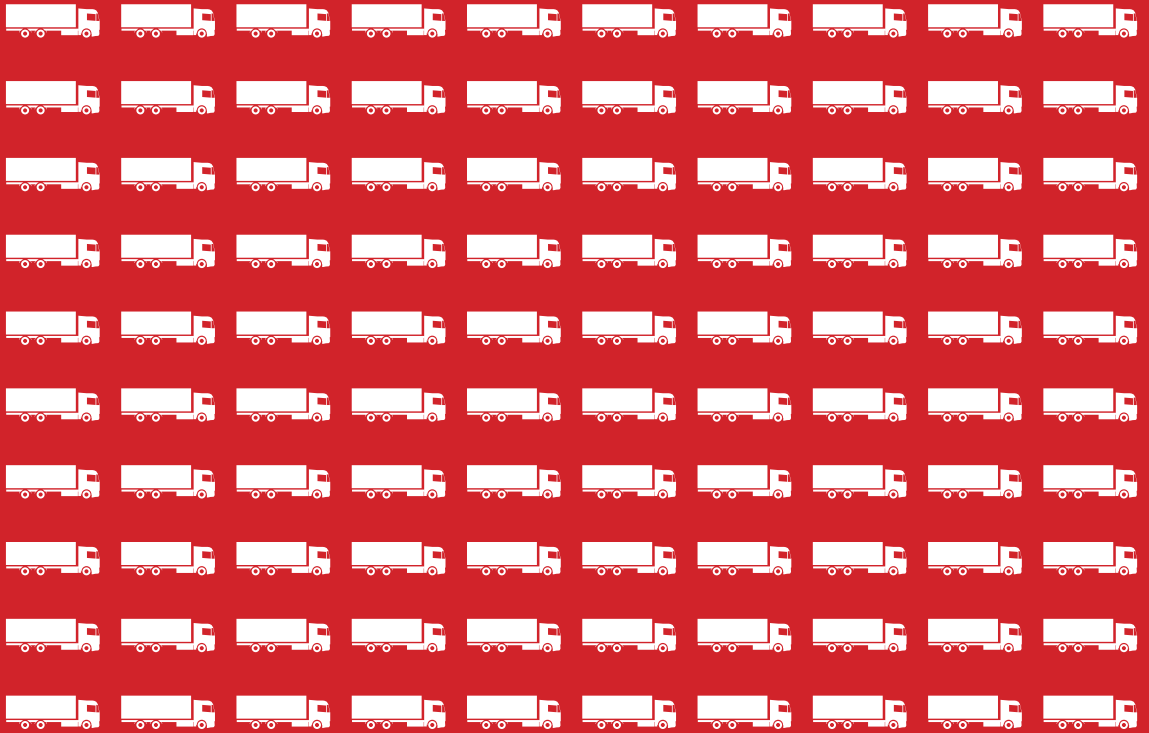
Project Origin

The Proposal

A proposal that stretches back over 50 years has recently returned to the fore. The proposal plans to move New Zealand's inter-island ferry service from its current location in Picton to Clifford Bay, an area south of Blenheim (Hartevelt, 2011). The inter-island roll-on roll-off service dates back to the early 1960's and has a strong historical tradition within New Zealand (KiwiRail, 2012). This new service provided a much needed rail link between the two islands and it is this rail link that continues to drive the evolution of the ferry service. Due to the nature of freight and the increase in daily haulage the current terminal in Picton will not remain a viable option for continued inter-island use. Furthermore, both Interislander and Straight Shipping will need to renew their resource consents to run in both the Tory Channel and Queen Charlotte Sound in 2015 (Marlborough Express, 2012).

The planned shift will have with both positive and negative outcomes on both the public and the private sides of the terminal. (NZPA, 2011). These include:

Positive:

- Cutting the time taken for the ferry to cross Cook Straight by 30 minutes (see fig: 30)
- Traffic will be able to bypass Seddon, Blenheim and Picton cutting 50 minutes off the road trip to Christchurch and 80 minutes off the rail trip (see fig: 31)
- There will be a reduction in environmental damage to the areas of the Queen Charlotte Sounds used by the ferry service (see fig: 32)
- Train access to the terminal would be vastly improved as some trains are unable to reach Picton due to the hills the train must traverse
- In the future if Interislander or Bluebridge wish to upgrade their vessels to larger ships this will mean sailing even slower through the Marlborough Sounds and possibly losing the ability to do the required 12 sailings a day.

1.

2.

Clifford Bay

Fig 30.: Comparison of distances between Wellington and prospective sites

Wellington to Picton: 100Km - 3.5 hours

Wellington to Lake Grassmere: 80Km - 3 hours

1. Picton to Wellington, 100Km's in 3 hours 30 minutes
2. Lake Grassmere to Wellington, 80Km's in 3 hours

See fig. 32

Fig 31.: Towns removed from the current journey

Car journey to
Christchurch:
50 minutes shorter

Train journey to
Christchurch:
80 minutes shorter

1. Picton
2. Blenheim
3. Seddon
4. Port Grassmere
5. Christchurch, 277Km south

1.

Fig 32.: Coastline directly affected by ferry wake

Length of coastline currently affected by the wake of the five inter-island ferries: 70Km

Length of coastline affected after the terminal relocation: 0Km

1. Affected Coastline

Negative:

- The loss of the majority of the visitors to Picton will hamper the financial state of a number of local business' who rely on tourists for their primary trade

From these points a number of conclusions on the terminal requirements are made;

- The primary reason for this shift is the desired increase in efficiency. Therefore the design case study is designed to create the most direct route possible for passenger, transport and freight
- The minimum possible damage must be done to the Lake Grassmere ecosystem
- As there will no longer be a large number of travels through Picton, space is to be provided within the terminal for possible shops or cafes to provide a place for many business owners to move work to
- As this move will come at great cost to both public and private investors every effort is made to future proof the terminal for larger ships

This project has been given a tentative completion date of 2022 but none the less will still serve as a strong vessel for a design based investigation of contemporary terminal design in a distinct New Zealand context.

The Clients

The proposed terminal will provide space for both of the current inter-island services within the one port facility. The required programme and spatial allowances reflect this fact.

The Programme: Infrastructure

Due to the nature of the project there are a large number of infrastructural requirements that need to be accounted for. Of the four current terminals, two used by Interislander and two by Bluebridge, the Interislander terminal in Picton is the largest and the only one to feature two stories. Between the three ferries run by Interislander, the service "makes around 4500 crossings a year, carrying some 785,000 passengers, 52,000 rail wagons, 72,000 trucks and 210,000 cars" (Davies, 2012). Based on these annual numbers the Interislander service on average makes 12 crossings a day carrying 2150 passengers, 140 rail wagons, 200 trucks and 575 cars.

Port/Dock Facilities: The new terminal will have to be capable of providing births to three ships at any single time within a sheltered breakwater protected harbour. This is in part to future proof the proposed dock facility. Given the cost of such a build it would be foolish to design a similar facility only to have to expand it a few years later. Each birth is served by its own terminal and dock.

Train: One of the primary reasons to move the terminal is to provide easier access for trains to the terminal. In this vein Kiwirail have released a new DL locomotive which based on towing weight is capable of hauling 2000 tonnes with a single locomotive (KiwiRail, 2012). To transport this much freight via road would require 100 trucks. Due to this increase in train usage the new terminal will provide 4500m of usable train track all with direct access into internal works shop facilities.

Trucks and Cars: A further important issue with the current terminals is the disconnection between terminal facilities and the marshalling area for cars and trucks. These vehicular passengers often pay more but do not have the same ease of access to the amenities and facilities that passengers walking onto the ferries do. The new terminal will serve to provide similar experiences and comfort for both walk on and drive on passengers.

Pedestrians: As with any transport terminals, its legibility to its user is integral to all layout and orientation decisions. Travelling is often a stressful time and getting lost at the terminal is the last thing on anyone's wish list. The user must be able to make their way around the building quickly and easily even though they have never been there before. With this in mind building circulation is made to be as simple and direct as possible with stable terminal function acting as way points and direction guides.

Staff: While many terminals are often oriented around the passenger it is important not to forget the staff that must work there day in and day out. Providing adequate facilities for staff to use is not be a secondary concern but one undertaken alongside passenger based decisions.

The Programme: Terminal

The AMC Passenger Terminal Guide provides a guide for the required programmatic functions of the new terminal. It states "Terminals are composed of five major areas" (Air Mobility Command, 2011, p. 15);

- Departing Passenger Areas

- Arriving Passenger Areas
- Administrative Areas
- Aircraft Support Areas
- Building Support Areas

It is important to note that in this case "Aircraft Support Areas" will be replaced by "Dock Support Areas". The guide, which is written for airport terminals, is still used in this situation as many of the concepts used in the document are related to spatial organisation principles and passenger requirements and therefore are not solely related to air travel. According to the guide the proposed ferry terminal will count as a Category III terminal due to a "Design Peak 3-Hour Passenger Load" of between 500 and 1000 passengers (Air Mobility Command, 2011, p. 5). This means that the building floor area will lie between 4,371m2 and 7,430m2 in total area. Therefore the percentage and area of space allocated to each of the five terminal functions will be as follows (Air Mobility Command, 2011, p. 5);

- Departing Passenger Areas: 41% - 3046.3m2
- Arriving Passenger Areas: 21% - 1560.3m2
- Administrative Areas: 13% - 965.9m2
- Dock Support Areas: 13% - 965.9m2
- Building Support Areas: 12% - 891.6m2

Site Analysis

Location and Suitability for a New Terminal

There are six important elements to consider in the design of a port (Thoresen, 2003, pp. 14 -15). They are;

- Wind
- Tide
- Current
- Waves
- Topography
- Hydrography

Wind: The primary concern for vessels when defining port location and orientation is the direction of the wind. As stated by Liu and Burcharth "the berth line should be arranged as parallel as possible to the prevailing wind direction" (Liu & Burchart, 1999, p. 13). In the case of the site at Lake Grassmere, the coastline runs roughly at a 45 degree angle and therefore parallel with the prevailing north-westerly wind. This matchup between the coast line and prevailing wind is exploited in the design and provides key formal qualities to the building.

Tide and Current: Due to the nature of Cook Straight and its location at roughly the centre point of both the North and South Islands the tide that revolves anticlockwise around the country can oppose at each end of the straight. This means that it is high tide at one end of the straight and low tide at the other. The result of this is minimal tidal height difference but very strong currents that can affect the safe berthing of the ferries.

Waves: Throughout time wave action in the Cook Straight has sculpted the coastline into a long sweeping arc. These waves will be prevented from entering the harbour and affecting the calm sailing of the inter-island ferries. On the coast of Lake Grassmere there are very few natural shelters for the berthing of a ship so the introduction of both a sea wall and a dredged harbour is necessary for the safety and operability of the both the ferries and ferry terminal.

Fig 33. Eight Defined Worldwide
Port Typologies

Topography and Hydrography: The site topography and hydrography must be carefully considered to define which type of layout is used for the port facility. Based on data by Dr. Jean-Paul Rodrigue there are eight different types of ports found throughout the world (see fig. 33) (Rodrigue, 2010). Of the Eight types five are unsuitable due to geographical features, and coastal tide gates are unsuitable due to a lack of necessity. This leaves two options, a coastal breakwater and link to a canal or lake. As Lake Grassmere is very close to the coast it has the opportunity to be the new harbour. The reason this is not the possible is the seemingly unused part of lake is actually part of the salt process. Therefore the one option that is left is the coastal breakwater.

1. Wellington, New Zealand. Coastal Natural

Represents a sheltered site the outcome of a natural profile of the coast, creating a natural barrier such as a cape, a reef or an island. About 2,100 (46.0%) ports are in this category, underlining that the selection of a port site is dominantly influenced by the quality of the harbour.

2. Mumbai, India. Coastal Tide Gates

An harbour behind a set of locks or other mechanical devices built to insure sufficient water levels in the harbour for all tide levels. In many cases ships can enter or exit the port only at certain times of the day when water levels are adequate. Only 39 (0.8%) such ports exist.

3. Bremen, Germany. River Basins

A river harbour where basins have been excavated to accommodate ships, often parallel to the flow of the river. This confers the advantage of additional berth space without impeding fluvial navigation. 77 (1.6%) such ports exist.

4. Jacksonville Florida. River Natural

An harbour located along a river where water is not retained in any artificial means. The harbour often consists of quays or wharves parallel to the river banks. Piers may also extend into the river. About 850 (18.5%) such ports exist.

5. Brugge, Belgium. Canal or Lake

A harbour located along an artificial canal or by a river accessible through a navigable waterway. 67 (1.4%) such ports exist.

6. Bremerhaven, Germany. River Tide Gates

A river harbour behind a set of locks or other mechanical devices built to insure sufficient water levels in the harbour for all tide levels. Such harbours tend to be located close to the ocean, such as in a river delta or estuary. Only 47 (1.0%) such ports exist.

7. Cherbourg, France. Coastal Breakwater

An harbour lying behind an artificial breakwater construction, built from scratch or built to add to an existing natural shelter. It is particularly the case for harbours exposed to dominant winds, waves or the sea currents. About 810 ports (17.6%) are in this category.

8. Tannurah, Saudi Arabia. Open Roadstead

An harbour with no natural or artificial protection. They are often built to accommodate very large ships (such as oil tankers) or are in a setting where there are limited tides, implying that sheltering infrastructure are much less required (Persian Gulf, Red Sea, Gulf of Mexico). 580 (12.5%) ports are in this category.

Rodrigue, 2010

Lake Grassmere
State Highway 1
Kaparu Road
Marfells Beach Road
Main North Line (SIMT)
Proposed Inter-islander route

N

Clifford Bay

See fig. 35

Fig 34.: Lake Grassmere including proposed site

Local Infrastructure and Environmental Conditions

Lake Grassmere, situated in Clifford Bay on the north coast of the South Island, is the chosen site for the new Inter-island ferry terminal. Lake Grassmere is currently known for being the home of the Lake Grassmere Saltworks. Situated in the Marlborough region, Lake Grassmere provides ideal conditions for the production of salt due to high sunshine hours and strong, dry north-westerly winds and low summer rainfall (Dominion Salt, 2012). The saltworks provide on annual output of between 60,000 to 70,000 tonnes of salt through a six month long process, over the summer months (between October and March), that includes evaporation, collection and washing (Walrond, 2009). Carl Walrond offers a description of the area;

At the end of summer Lake Grassmere's gleaming white salt piles are easily seen from State Highway 1. This seasonal landmark forms a vivid contrast to the burnt brown Marlborough hills. And from overhead, air passengers can gaze down at the series of pink-coloured ponds where drying winds help produce half of the country's salt. (Walrond, 2009)

A number of features evident in the location and appearance of the infrastructure of Lake Grassmere are important to the design of the new ferry terminal. The strong, dry north-westerly winds are important in defining the orientation of the docks and, as a resultant, the building and surrounding facilities also. Furthermore, the white and pink colours found throughout the salt process, described as a "vivid contrasting to the burnt brown Marlborough hills" (Walrond, 2009) are a key driver for the formal qualities of the terminal.

Site Access: Access to the site is from state highway 1 located to the west of Lake Grassmere. There are two roads currently leading out to the coast, one to the north and one to the south of the lake. The northern road, Kaparu road, runs past a large majority of the salt production process including the primary salt buildings and, in summer, the large mounds of salt. This road is the one used for primary access to the new terminal and provides early insight into the area for the traveller. An important feature of the terminal is its interaction with its site and surrounding landscape therefore this interaction with the saltworks are key drivers for the design.

5

2

1

3

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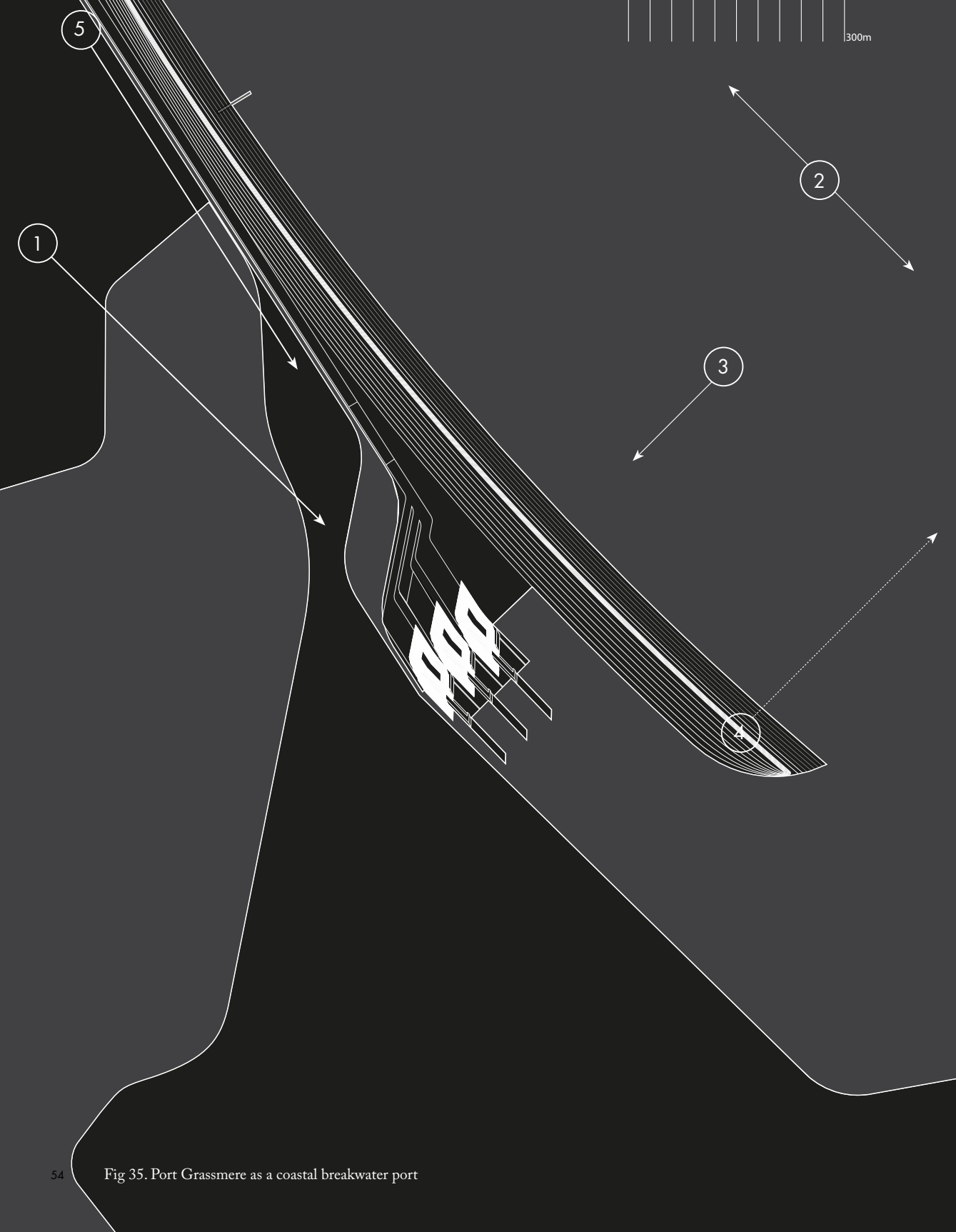
Fig 35. Port Grassmere as a coastal breakwater port

300m

1. Wind: The prevailing wind from the northwest

2. Tide and Current: Due to Cook Straights central location in New Zealand the tidal height fluctuation is minimal but the current is quite strong. It runs around Clifford Bay from the northwest to the south east.

3. Waves: Wave action runs directly towards the coastline. The current berm will be transformed into a breakwater to shelter the new port from waves.

4. Topography and Hydrography: The ground level drops steadily away from the coastline. Therefore a channel will need to be dredged to provide safe passage for the ferries.

5. Site Access: Access to the site is from the north west. The road runs parallel to a outflow channel for the Lake Grassmere salt works which will flow out and around the new terminal.

The Brief

Element of Space
└─▶ Genius Loci

District

Things
Order
Character
Light
Time

Landmark

Things
Order
Character
Light
Time

Edge

Things
Order
Character
Light
Time

Path

Things
Order
Character
Light
Time

Node

Things
Order
Character
Light
Time

Infrastructural Programme

+

Terminal Programme

Port Grassmere

Ferry Terminal

Fig 36. Design Case Study Brief Diagram
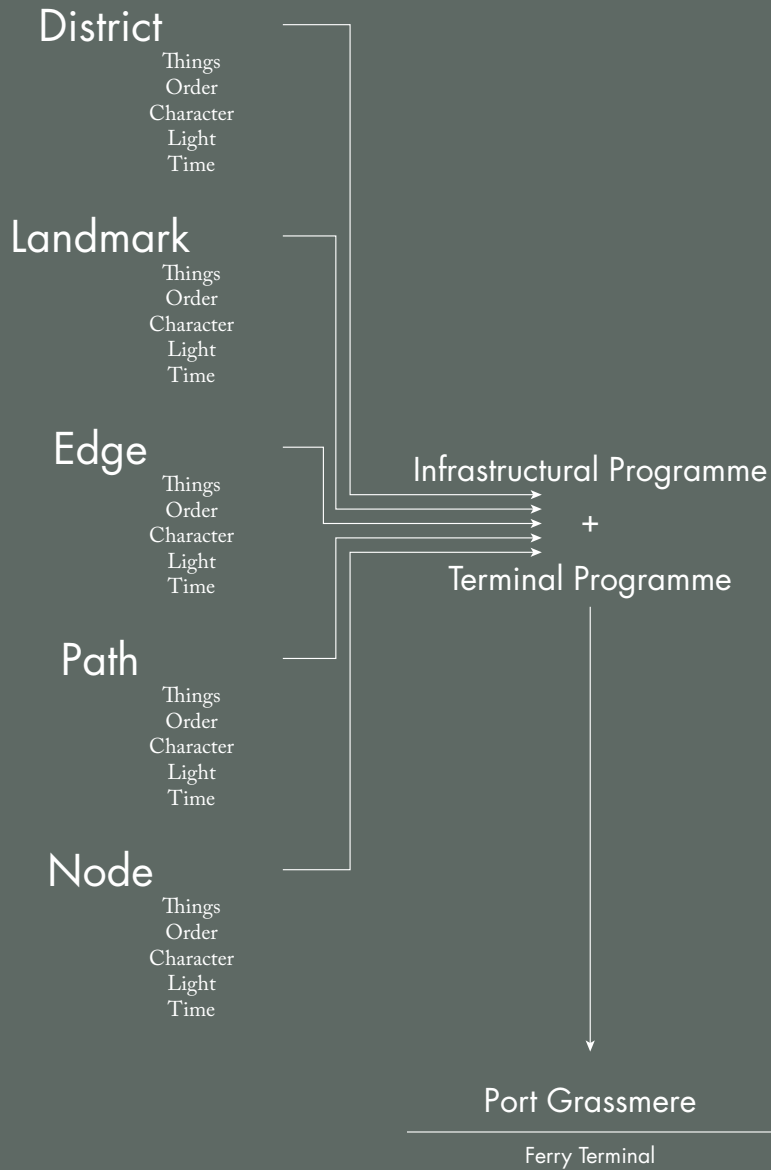
Architectural Brief

Norberg-Schulz's argument about architecture being the concretisation of nature is combined here with the previously discussed concretisation of *space* outlined by Lynch (1960). Lynch's outlined five elements, representing the manifestation of space, will be used as a framework around which the new terminal is designed. This framework is combined with the qualities of Lake Grassmere's *genius loci* to create a site-specific architectural outcome reflecting the terminals geographic and environmental position in the world. Through the combination of the following points a physical manifestation of genius loci in concretised space is achieved.

The five qualities of *space* outlined by Lynch are now stated and given a definition. This is followed by a description of Norberg-Schulz's five constituents of the *genius loci*. A summary and recap of both the infrastructural and terminal programme requirements follows this.

Space

The following is a list of the five qualities of defined *space* as specified by Lynch accompanied with a description of each quality. These five qualities will also serve as the five headings under which the design case study is presented.

District - Lake Grassmere, Marlborough Hills area

- Districts are medium to large elements, conceived of as having two dimensional extent, which the observer mentally enters "inside of", and which are recognisable as having some common, identifying character. Always identifiable from the inside they are also used for exterior reference if visible from the outside.

Landmark - Building as an identity marker in the landscape

- Landmarks are a point of reference. They are a simply defined physical object: building, sign, store, or mountain. Some landmarks are distant ones, typically seen from many angles and distances, over the tops

of smaller elements, and used as radial references. They are frequently used cues of identity and even structure, and seem to be increasingly relied upon as a journey becomes more and more familiar.

Edge - The façade, mediator between interior and exterior

- Edges are the linear elements not used or considered as paths by the observer. They are the boundary between two phases, linear breaks in continuity: shores, railroad cuts, edges of development, walls. These edge elements, although probably not as dominant as paths, are for many people important organizing features.

Path - Path linking land and sea

- Paths are channels along which the observer customarily, occasionally, or potentially moves.

Node - Internal focal core of the terminal

- Nodes are points which are the intensive foci to and from which he is travelling. They may be primarily junctions, places of a break in transportation, a crossing of convergence paths, moments of shift from one structure to another. Some of these concentration nodes are the focus and epitome of a district, over which their influence radiates and of which they stand as a symbol. They may be called cores. Many nodes, of course, partake of the nature of both junctions and concentrations. The concept of node is related to the concept of path, since junctions are typically the convergence of paths, event on the journey.

Genius Loci

The qualities of the site described as the "concretisation of the understanding of nature "in the form of the *genius loci* as originally specified by Christian Norberg-Schulz.

Things - dimension of the earth (in a concrete qualitative sense)

- Surface, relief, vegetation, and water (Norberg-Schulz, 1991, p. 37)
- Classical landscape (p. 45)
- Mountains and lakes (Norberg-Schulz, 1991, p. 27)

Order - determined by the sky (in a concrete qualitative sense)

- Such orders are usually based on the course of the sun, as in the most invariant and grandiose natural phenomenon (Norberg-Schulz, 1991, p. 28)
- The cardinal points (Norberg-Schulz, 1991, p. 28)

Character - dimension of the earth (refers to the general atmosphere of a place)
- The anthropomorphised terrain of the local area. The relation of the local topographies to qualities of human personality. (Norberg-Schulz, 1991, p. 28)

Light - determined by the sky (refers to the general atmosphere of a place)

- The cosmological light and the sky as natural conditions. Expression of the temporal light conditions of each day/night and season (Norberg-Schulz, 1991, p. 31)

Time - the dimension of constancy and change which makes space and character parts of living reality which at any moment is given as a particular place, as a genius loci (Norberg-Schulz, 1991, p. 32)

Infrastructural Programme

The current uses and users of the four currently operating inter-island ferry terminals provide the infrastructural requirements for the new ferry terminal design

Ferry

- Three ferry berths allowing all three ferries to be loading and unloading at the same time

Train

- 4500m of usable rain track split into 30 individual lanes. Three lanes will serve the three ferry berths, one lane per berth. The remaining 27 lanes will all align with the terminals, nine lanes per terminal

Trucks and Cars

- 3400m^2 of marshalling area per terminal for cars, trucks, buses and other vehicles to
- Marshalling space for vehicular ferry boarding,
- Pick up and drop off space for pedestrian passengers

Terminal Programme

As specified by the AMC Passenger Terminal Guide; the five primary terminal areas are;

Departing Passenger Areas: 41% - 3046.3m^2

- Check in and bag drop facilities including information kiosk
- Seating
- Cafe and shops
- Toilets; male, female and infant change facilities
- ATM

Arriving Passenger Areas: 21% - 1560.3m^2

- Car rental kiosk

- Baggage claim
- Toilets; male, female and infant change facilities

Administrative Areas: 13% - 965.9m^2

- Terminal management
- Staff room
- Staff storage

Dock Support Areas: 13% - 965.9m^2

- Baggage storage and build-up
- Storage for expendable in service supplies such as food and drink and non expendable supplies such as blankets and pillows for the private cabins

Building Support Areas: 12% - 891.6m^2

- Toilets; male, female and infant change facilities
- Storage for terminal maintenance supplies such as cleaning supplies
- Mechanical room
- Electrical room
- Communications room

41°43'2.58"S
174°11'11.12"E

The Comprehension of the genius loci of the *Lake Grassmere*

District → Things
Order
Character
Light
Time

Leads to the creation of an Architecture *of* the *Place* in the form of a

Landmark → Things
Order
Character
Light
Time

Constructued through the Combination of

Edge → Things
Order
Character
Light
Time

Path → Things
Order
Character
Light
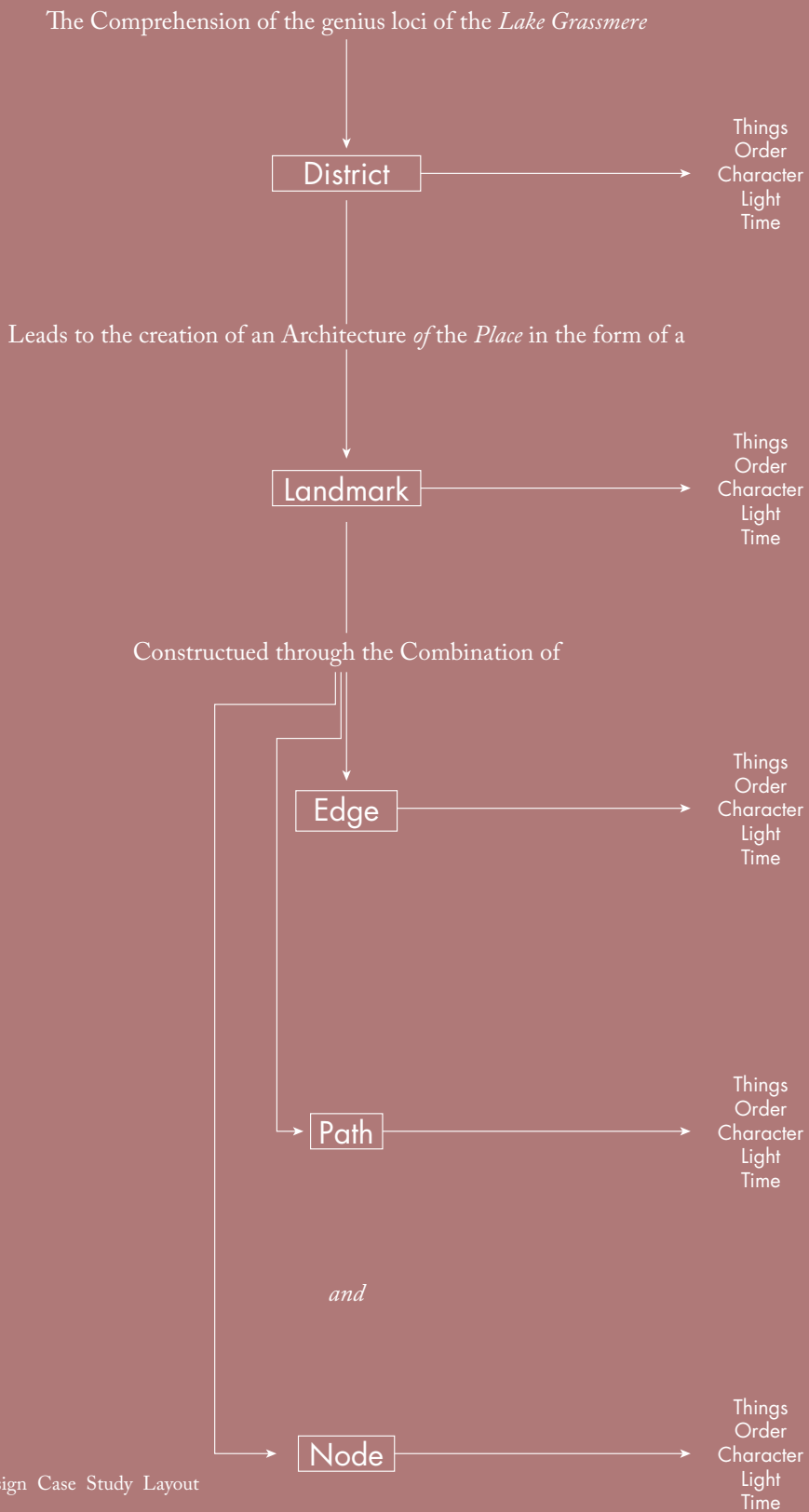Time

and

Node → Things
Order
Character
Light
Time

Fig 37. Design Case Study Layout Diagram

Port Grassmere

The final chapter of the thesis relates to the outcome of the design based investigation. It will explore the thesis' solution to the previously explored problem. The first part of this section includes five design iterations that demonstrate early avenues of investigation undertaken. Each of these iterations include a summary of both the pros and cons to the particular iteration and a description of what is required of the following exploration.

Following this, the final design outcome is presented under the headings;

1. District + Genius Loci
   - Expression and explanation of site characteristics: *things, order, character, light and time*

2. Landmark + Genius Loci
   - Movement path diagram and explanation of paths of travel
   - Explanation of how the site topography has become a formal driver
   - Explanation of how the site based environmental conditions have become a formal driver

3. Edge + Genius Loci
   - Explanation of façades
   - Explanation of boundaries of the walkways and driving paths

4. Path + Genius Loci
   - Sweeping white lines on the ground
   - Explanation of clear sight lines for users thus removing the requirement for signs and arrows and other non-place based symbols

5. Node + Genius Loci
   - Creation of a socially multi-use space
   - Creation of a physically multi-use space

Fig 38. Design case study iteration one
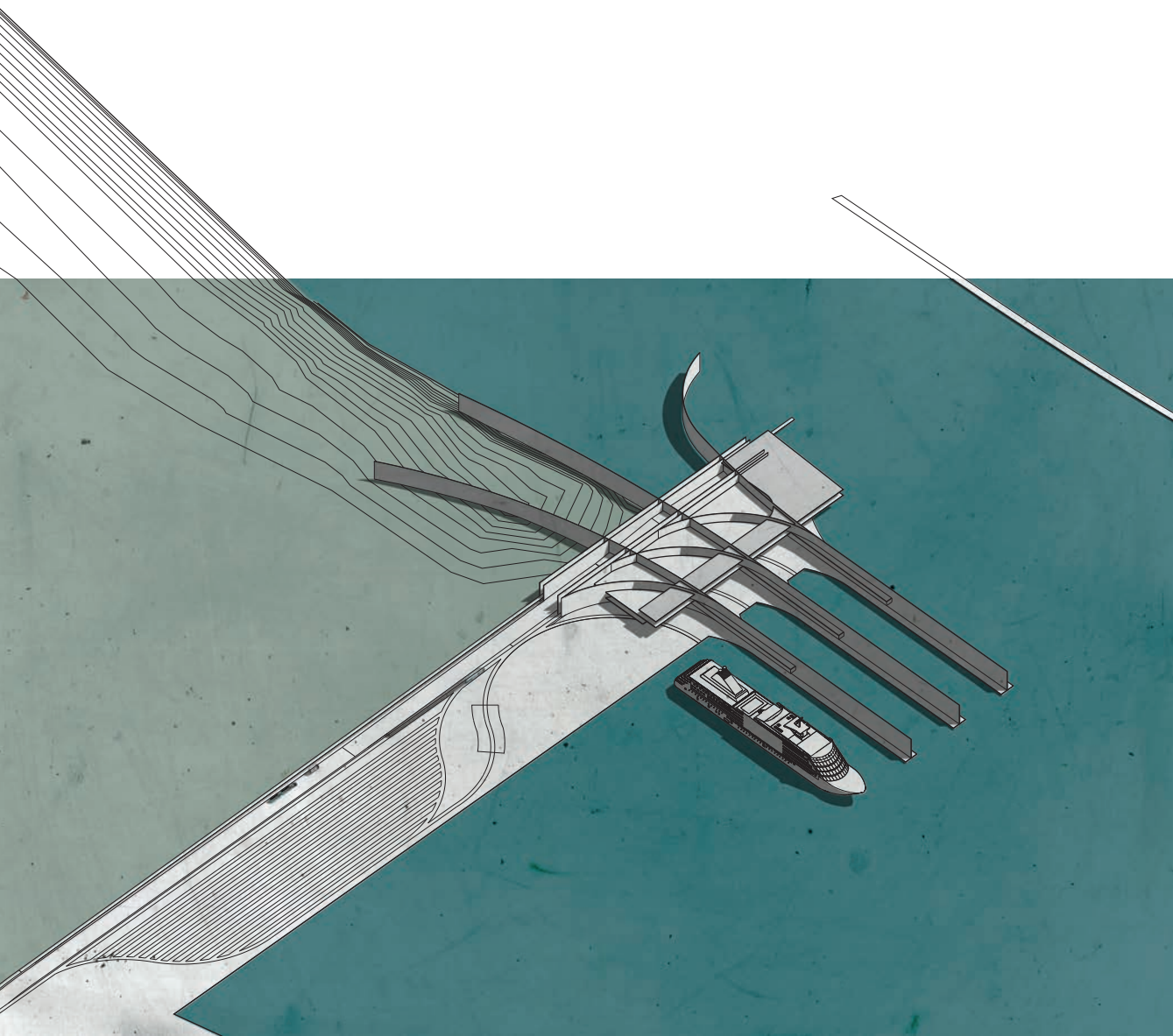
Iteration One

The first iteration was centres around the creation of space through the manifestation of physical form defined by the various paths of movement of the three primary modes of transportation associated with the terminal; train, truck and car, and pedestrian. Each of these paths were intersected with a deferent floor creating nodes and edges. Each of these floors related to the level in which each of the different forms of ferry access took place. Therefore the pedestrian area of the terminal resides on the upper floor of this terminal iteration. Train access is limited to the ground floor due to major manoeuvrability constraints and truck and car access has been confined to the middle floor.

Pros:

- All functions encompassed within a single building
- Minor use of *edge, path and node*

Cons:

- No relation to the Lake Grassmere *district*
- *Landmark* is not created that is indicative of Genius Loci
- Not architecturally expressive of the sites environmental conditions
- Unnecessarily expensive
- Tight turning radius for each of the vehicle types accounted for
- Generic internal spaces
- Car and truck still segregated from pedestrian terminal facilities

Fig 39. Design case study iteration two
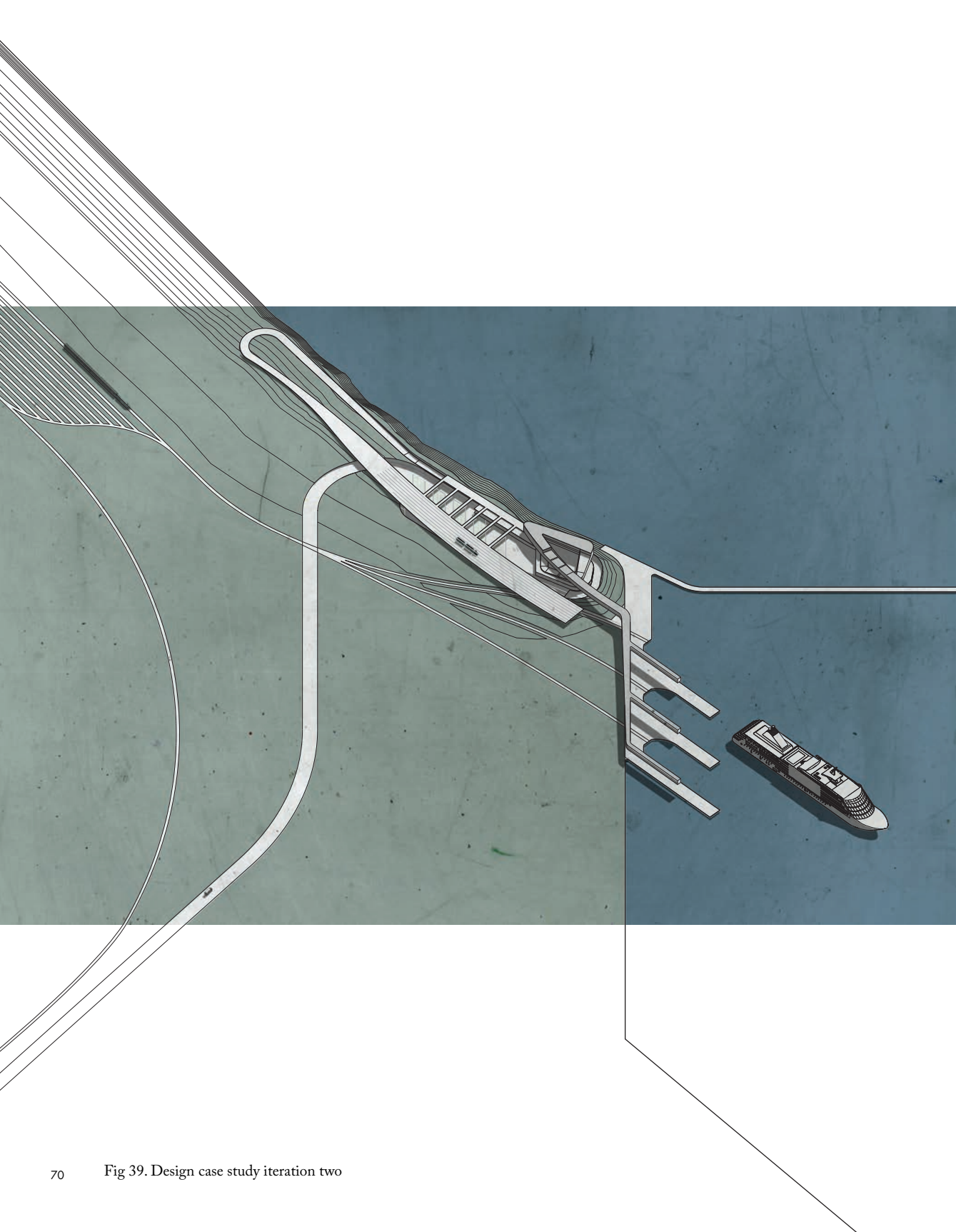
Iteration Two

The second iteration explores how to encompass each of the buildings infrastructural functions into a single path around a central nodal point while expressing the surrounding landscape and environment (district). One of the major critiques of the previous iteration was that both car and truck drivers were still segregated from the facilities available to pedestrian passengers. This has been rectified here by providing vehicle users with direct access to both the main terminal and beach front. This layout has come at a cost train facilities. While they are now aligned on a more practical layout they are now located far from the terminal.

Pros:

- Allows easy views to surrounding *district* by locating terminal function in a central *nodal* position with lounge space at the perimeter
- Terminal building is a single *path*
- Direct terminal access for vehicular passengers

Cons:

- Minor *landmark* created yet it has no relation to the site Genius Loci
- Train facilities are far from the terminal
- Still a large number of tight turns required of cars and trucks (unnecessarily complex)
- Destruction of one of the only geographic site features (the coastline berm)

Fig 40. Design case study iteration three
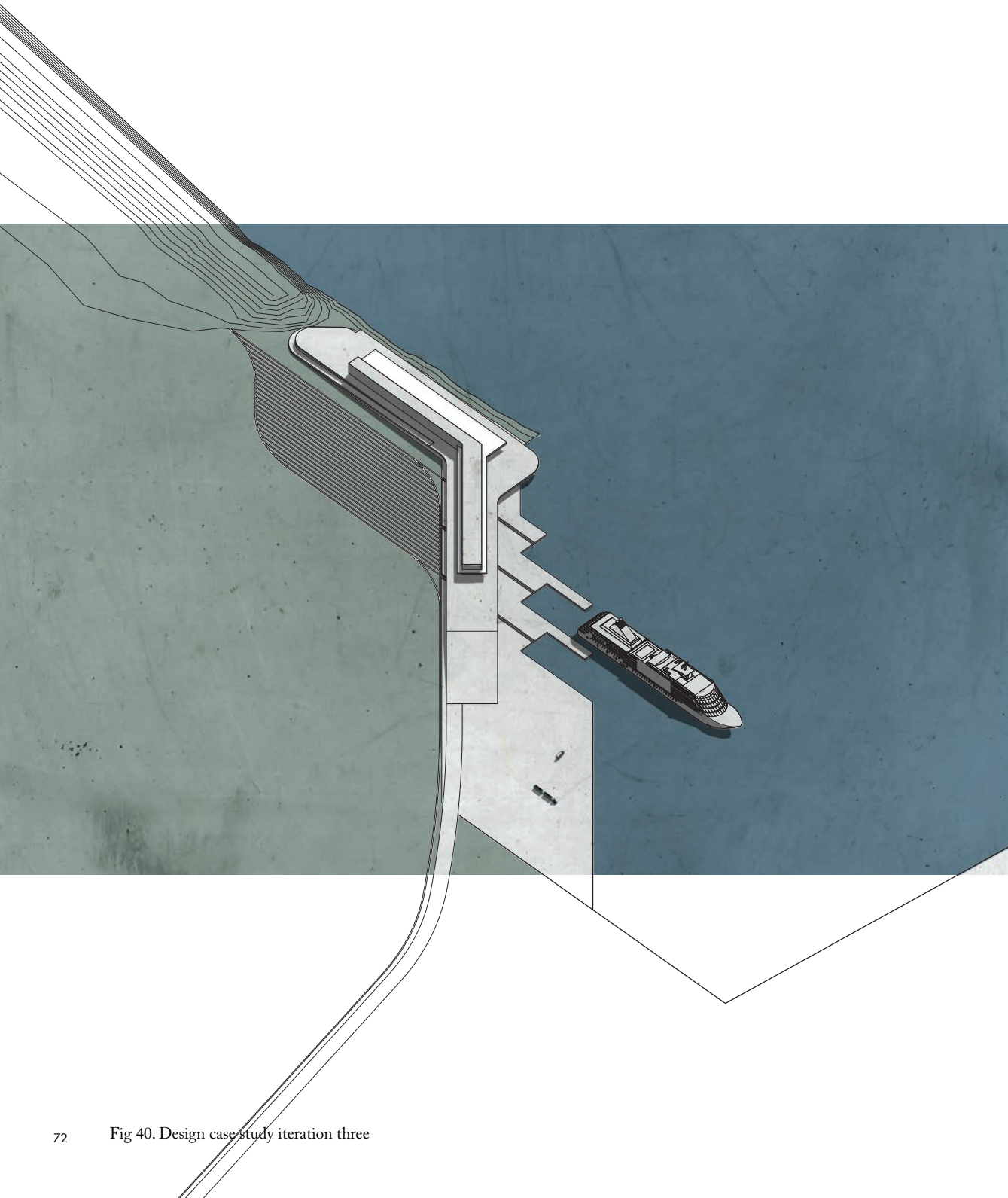
Iteration Three

The third iteration attempts to bring the train facilities back into the design and encompasses them within a similar architectural gesture to the previous iteration. One of the main issues with the previous iteration was the destruction of the berm that runs along the coastline. This iteration attempts to align terminal with the berm so it acts as a built extension to the berm.

Pros:

- Integration with *district*
- Integration of each terminal function into the one architectural *path*
- Terminal function at central *nodal* position of the building
- Terminal access for vehicular passengers

Cons:

- The terminal acts a *landmark* but only due to the fact it stands out, not due to its expression of the Genius Loci
- Still a large number of tight turns required of cars and trucks
- Terminal does not relate to previously specified site based integration requirements
- Terminal does not incorporate local materials
- Terminal has no relation to sites topography

Fig 41. Design case study iteration four
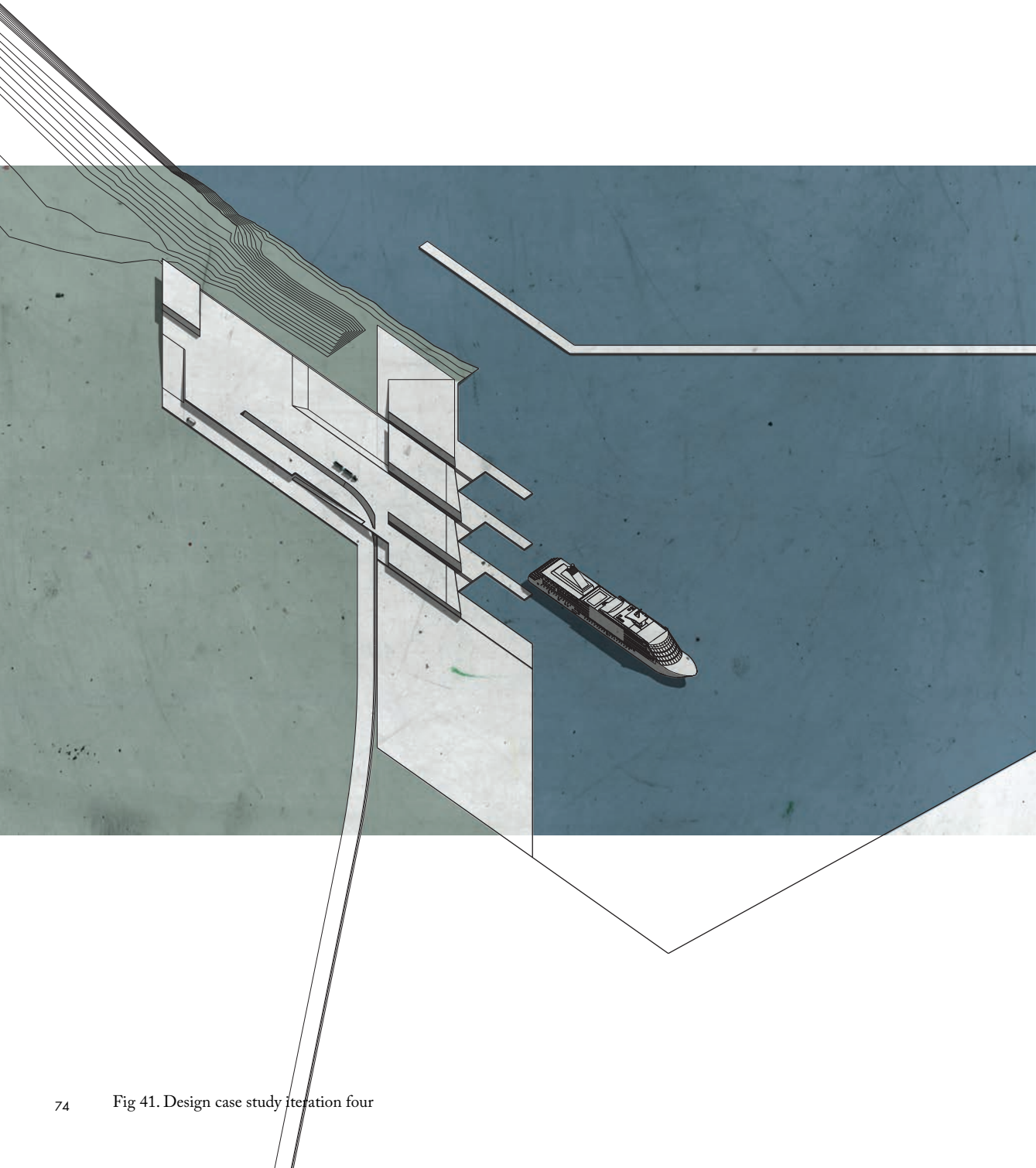
Iteration Four

The fourth iteration is built around creating an artificial topography that acts to guide the path of passengers through the terminal. It encompasses each of the terminal functions into a multilayered structure that wraps and folds over itself to create a single undulating topography that blurs the edge between natural and artificial topography. This double layered construction allows for vehicles to move freely around the space as opposed to the previous tight roadways.

Pros:

- Integration with geographic landscape to create a blurred *edge*
- Integration of each terminal function into the one architectural *path*
- Terminal access for vehicular passengers
- Relationship with site topography

Cons:

- The passenger is lost within the building and does not get exposed to the surrounding *district*
- As the terminal is so low it does not act as a visible *landmark* within the site
- The terminal lacks any form of defined *nodal* point
- The approach to the terminal is from the south and therefore does not align with the coast as is a requirement
- Terminal does not incorporate local materials

Fig 42. Design case study iteration five
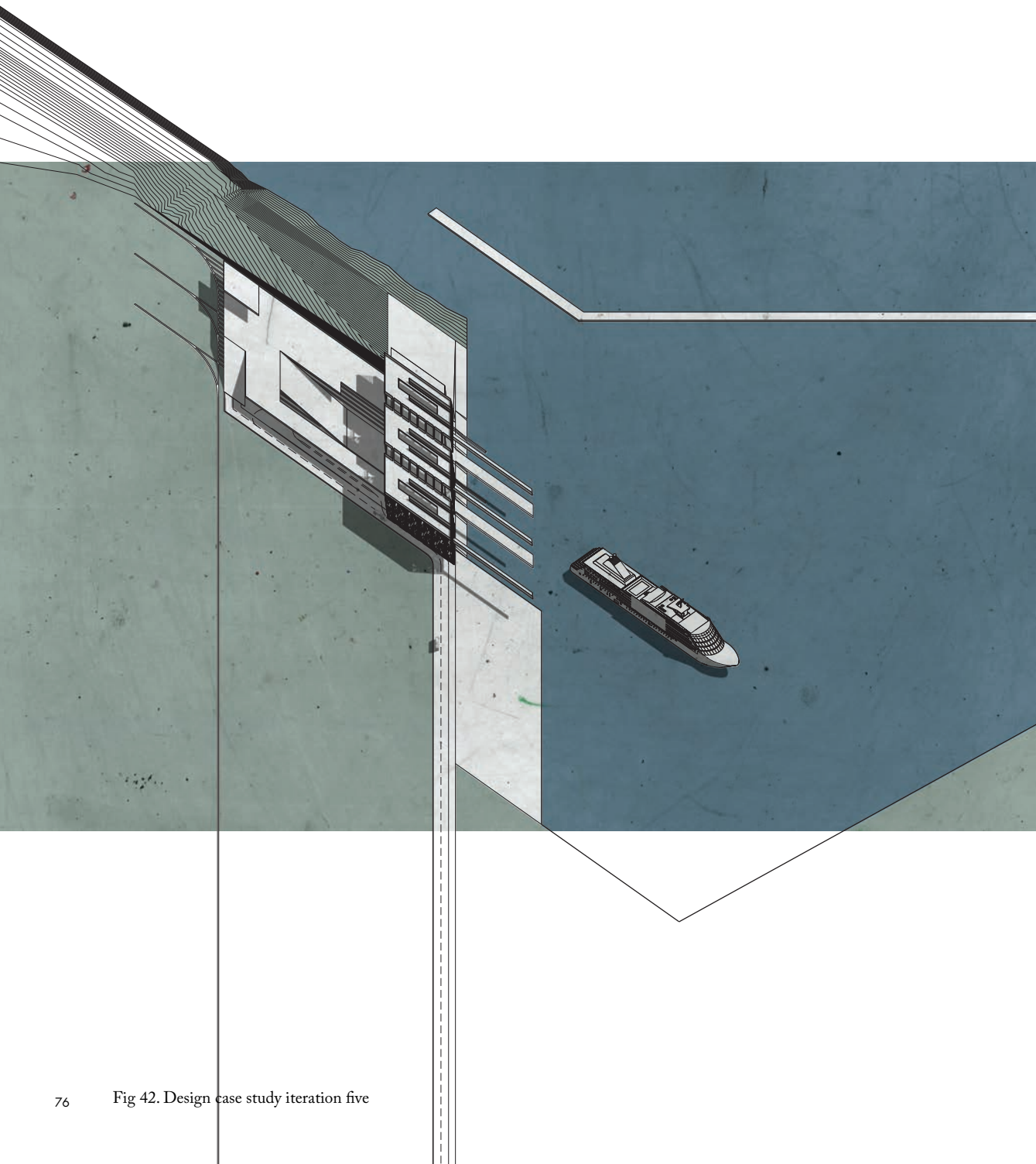
Iteration Five

The fifth iteration builds upon the previous by using the morphed topography created and then adding more floors to the terminal. This allows each of the passenger types to have simultaneous access to the ferries. This means that each of the three ferry berths can be loading or unloading pedestrians, cars, trucks and trains all at the same time without interrupting each other. This also allows unimpeded views of the surrounding district and clear views of Cook Straight. The internal layout of this iteration centres around the creation of three nodal cores each one in the centre of the three individual terminals. This allows for a strongly defined point of orientation within the building but also allows for free space surrounding each of these nodes in which a multitude of different activities can take place

Pros:

- Allows easy views to surrounding *district* by locating terminal function in central *nodal* cores and lounge space at the perimeter
- Building is a *landmark* within the landscape and expresses links to the crystalline forms of salt that the site is known for
- Integration with geographic landscape creating a blurred *edge* between building and landscape
- Integration of each terminal function into the one architectural *path*
- Terminal access for vehicular passengers
- Relation to sites topography

Cons:

- The approach to the terminal is still from the south and therefore does not align with the coast as required
- Improper use of local materials
- Building visually looks like a wall as opposed to an easily traversable transitory node

Fig 43. Design case study iteration six. Final iteration
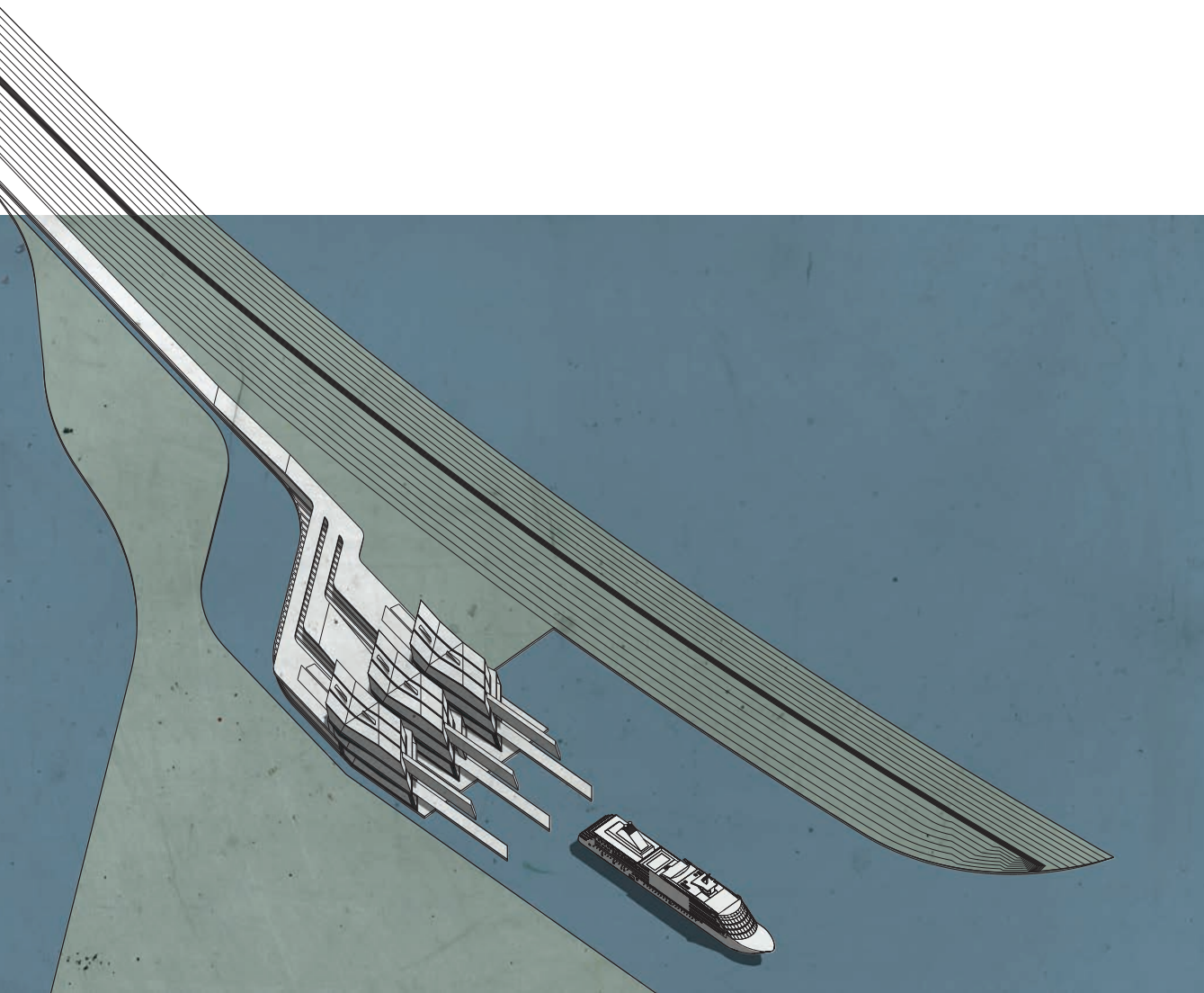
Iterations Six: Final Iteration

This iteration, the final iteration of the thesis, looks to rectify many of the issues found in previous iterations. It follows on from the previous iteration through its use of a multi-level layout system. Access to the terminal is now from the northwest thus aligning with the coastline and prevailing wind. This terminal access direction means that passenger arriving or departing from the terminal all travel in the one direction along a single path as opposed to having to double back on themselves like in previous iterations. Each of the three terminals are now their own building meaning each terminal can now be run as a single entity. The buildings formal appearance now relates strongly to its surrounding site with the buildings vertical form being derived from a salt crystal and each floor plate appearing like a levitated piece of topography. The buildings form now does not appear as a large wall but as a form to be travelled through. Local materials such as Marlborough schist are used in the construction of the terminal linking it to its specific place in the world.

Pros:

- Allows easy views to surrounding *district* by locating terminal function in central *nodal* cores and lounge space at the perimeter
- Building is a *landmark* within the landscape and expresses links to the crystalline forms of salt that the site is known for
- Integration with geographic landscape creating a blurred *edge* between building and landscape
- Integration of each terminal function into the one architectural *path*
- Terminal access for vehicular passengers
- Relation to sites topography
- The approach to the terminal is from the northwest and therefore aligns with the coast as is required
- Use of local materials
- Building visually looks like an easily traversable transitory node

The following is a detailed analysis of this final iteration.

Fig 44. District: Marlborough Vineyard towards Wither Hills

The Lake Grassmere
DISTRICT
encompasses a large area
of the picturesque Marl-
borough area, known for
its climate, terrain, geolo-
gy, and vegetation, which
serves as the place for the
new inter-island ferry ter-
minal.

Fig 45. Marfells Beach

District + Genius Loci

Lake Grassmere district sits within the greater Marlborough district. Distinguished by its mountain ranges, tussock covered plains, intricate waterways and nation leading sunshine hours the area provides a beautiful backdrop for the construction of an iconic new inter-island ferry terminal.

The following is an analysis of the Lake Grassmere district in relation to Norberg-Schulz's qualities of the genius loci.

Things - dimension of the earth (in a concrete qualitative sense)
- Surface, relief, vegetation, and water (Norberg-Schulz, 1991, p. 37)
- Classical landscape (p. 45)
- Mountains and lakes (Norberg-Schulz, 1991, p. 27)

Lake Grassmere exists as a classical landscape, in Norberg-Schulz's eyes, containing a lake strongly defined on three sides by a ring of hills and separated from the sea by a thin strip of land on the forth.

Lake Grassmere   Marlborough Hills   Cook Straight
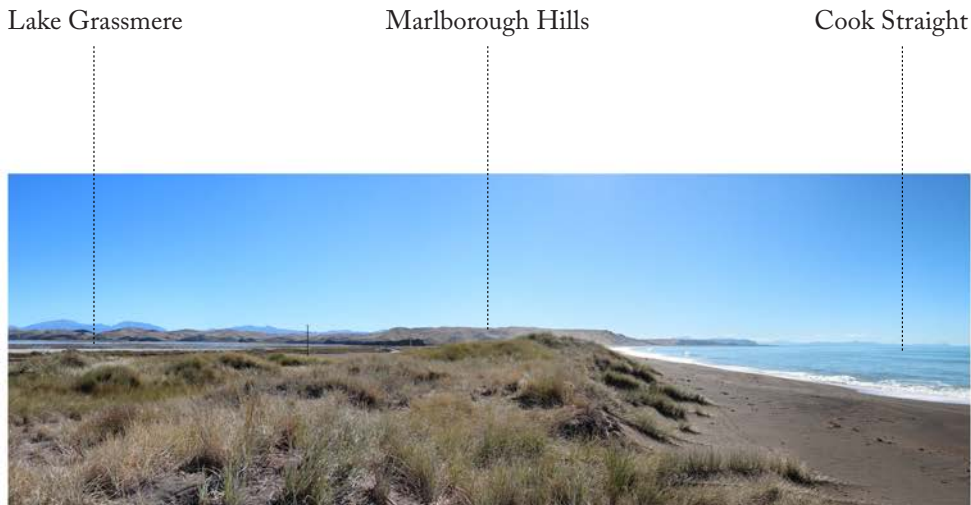
Fig 46. Marfells Beach panorama showing short distance between Lake Grassmere and Cook Straight

Order: *Such orders are usually based on the course of the sun, as in the most invariant and grandiose natural phenomenon and the cardinal points (Norberg–Schulz, 1991, p. 28)*

The location of the Salt works coincides with the consistent North-westerly prevailing wind. The wind is very important for the evaporation of excess water during the slat harvesting process. This North-westerly wind provides Lake Grassmere with a strong sense of order, in Norberg-Schulz's terms, and serves as an important design driver in the new ferry terminal.

The arrows in the image below show the direction of the prevailing north westerly wind and its alignment with the proposed passenger terminal.

Fig 47. Lake Grassmere order dictated by wind direction

Character: *The anthropomorphised terrain of the local area. The relation of the local topographies to qualities of human personality. (Norberg-Schulz, 1991, p. 28)*

Lake Grassmere's "personality" is an intangible quality that relies on the individual perception of each individual on their surroundings and experiences while in the district. The individual perceptions and experiences brought to the site by any visitor are intangible but provide each person with a different experience. What is understandable are the tangible characteristics of the area. They include the way the district isolates each individual through the vastness of the flat lake landscape yet encloses the individual with the surrounding hills. This vast area created by the lake also allows for expression of the sky and its constantly evolving character unto which the traveller is exposed.

Fig 48. Lake Grassmere from the north east

Light: *The cosmological light and the sky as natural conditions. Expression of the temporal light conditions of each day/night and season (Norberg-Schulz, 1991, p. 31)*

The Marlborough district has one of the highest sunshine hour totals in New Zealand. This makes for long dry summers and clear cold winters. This constantly evolving weather spectrum creates a unique climatic experience specific to only this geographical location.

Fig 49. Lake Grassmere turbulent weather; both sunny and raining

Time: *the dimension of constancy and change which makes space and character parts of living reality which at any moment is given as a particular place, as a genius loci (Norberg-Schulz, 1991, p. 32)*

Each season in Marlborough has its distinct appeal: summer brings long warm days and stunning evenings; autumn promises clear, still days, a blaze of vineyard colour, and is one of the best times to explore; winter is short and may bring a spectacular rim of snow on the distant high country mountains; spring arrives with a sudden burst of cherry blossom and leaf, and the opening of gardens to view.

The temperature fluctuations brought on by the seasonal change of the area has a strong impact on the Lake Grassmere salt works. The end of summer heralds the completion of the six month salt making process. Mounds of salt become visible from both road and air and act as a seasonal landmark for the area. During the winter months the weather has a strong impact on the ability to harvest salt and the area becomes lacking of its crystalline charm. This opens up opportunity for a year "salt crystal" in the form of the new terminal that will act as a continuous land mark for the Lake Grassmere district.

Fig 50. Lake Grassmere Salt Works (Owned by Dominion Salt)

Fig 51. Landmark: The new terminal sits on the edge of Lake Grassmere

The new terminal rises out of the lake as a gleaming salt crystal, a LANDMARK in the district, simultaneously reflecting and expressing its surroundings, drawing the visitor, traveller or adventurer closer.
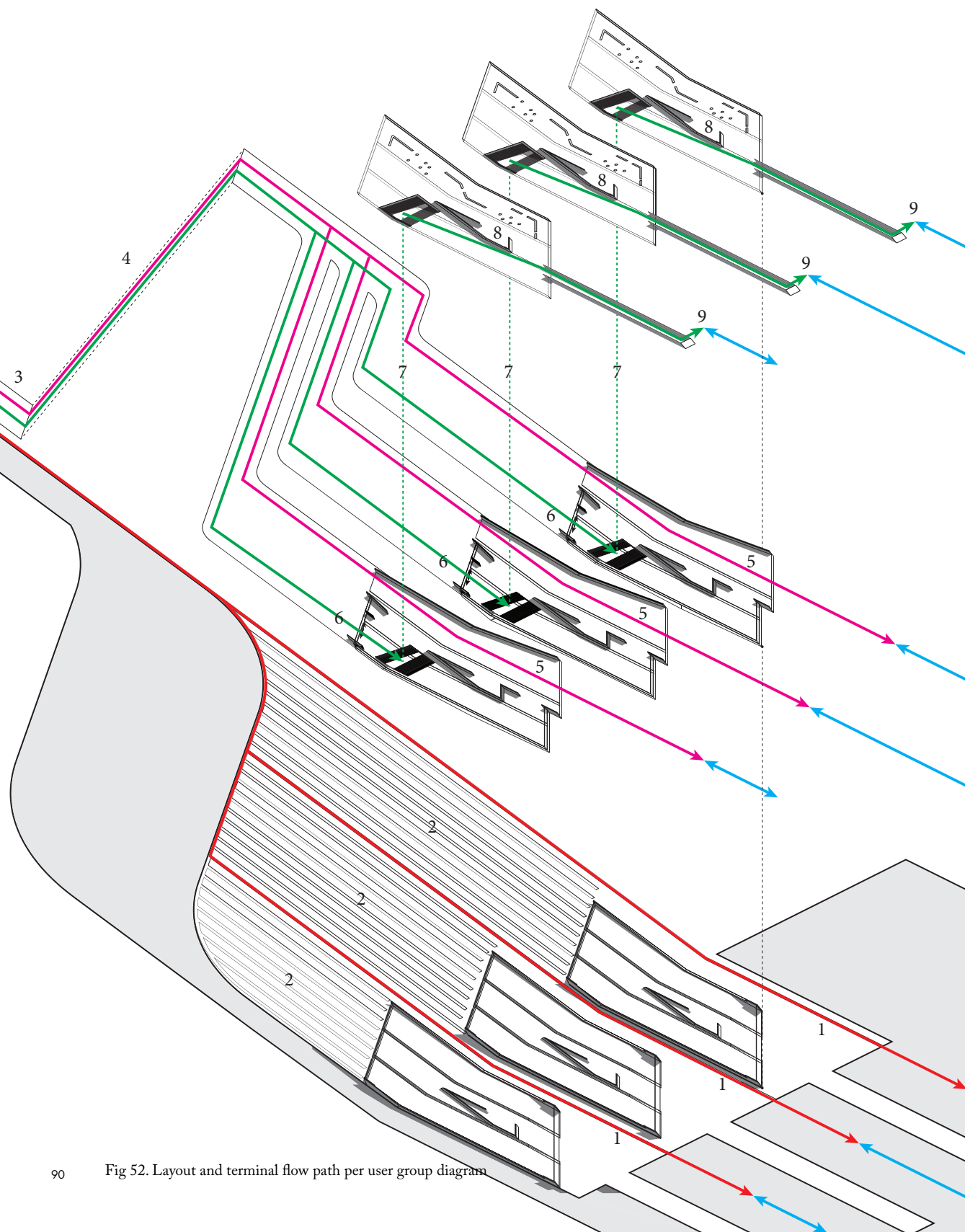
Fig 52. Layout and terminal flow path per user group diagram

Landmark + Genius Loci

This diagram serves to depict the paths travelled by the four users of the ferry terminal. It shows the paths of travel for ferry, train, trucks and cars, and pedestrians as individual colours. It is also accompanied by a description of the path taken by each user group across the ground, first and second floors.

Inter-island Ferry: The inter-island ferries are depicted leaving from each floor as trains, trucks and cars, and passengers all board at different levels

Train: The train only operates on the ground floor due to manoeuvrability issues. Three tracks travel past the terminal at ground floor (1). These are the tracks that enter the ferry. The remainder of tracks are used for storage and maintenance (2).

Trucks and Cars: Both trucks and cars arrive at ground level (3) and then are risen up to the first floor (4) where they are marshalled for boarding the ferry (5). From here drivers and passengers of the vehicles have easy access to terminal facilities.

Pedestrians: Travellers travelling on foot arrive at ground level (3) from the landward side of the terminal and then proceed up to the first floor. (4) They then select the terminal they must use and proceed to enter the terminal (6). They then immediately climb the stairs (7) to the second floor where the ticket desk, bag drop and departures and arrivals lounge is found (8) before entering the ferry (9).

Fig 53. Port Grassmere site plan

To design the new ferry terminal as a site *landmark* within the Lake Grassmere site the five intangible qualities of the genius loci as outlined by Norberg-Schulz (1991) are consulted. To become a landmark visible from a distance that responds to the genius loci of the Lake Grassmere district the terminal sits as one with area and is visually indicative of this assimilation.

The large scale terminal design is undertaken in relation to the six previously stated requirements for the design of a new port as defined by Thoresen (2003). These features of the geographic location align with Norberg-Schulz's five features of the genius loci and play a vital role in the terminals inception.

As previously specified the port is designed as a coastal breakwater port. The following is a summary of how the genius loci has been explored and accounted for at the *landmark* scale;

Things and Character

Topography and Hydrography: Lake Grassmere sits surrounded on three quarters of its perimeter by the Marlborough hills. The remainder of the lakes perimeter is a 250m wide strip of land separating the lake from Cook Straight. As this strip of land borders the sea, it is the only suitable area of land for the terminal that has direct and unimpeded access to the open water. The underwater topography extending out from Marfells Beach increases in depth at a relatively shallow rate and as a such dredging of a channel will need to take place and be constantly maintained.

Site Access: Due to the lay of the land the primary access route to the terminal will arrive from the northwest. It will align with the coastline, prevailing wind direction and will also follow a primary outflow for the Lake Grassmere saltworks. This outflow then joins into the newly created Port Grassmere harbour, wrapping around the terminal so it is always visible to the user.

Order

Wind: The coastline runs at a 45 degree angle from the Northwest to the Southeast. The prevailing wind occurs from the northwest. This parallel overlap is exploited and provides one of the clearest expressions of the genius loci in the terminal design.

Fig 54. Port Grassmere terminal from ground floor

Light

Sun: The winter solstice is 21 June. During the winter solstice the sun reaches 26 degrees above the horizon just after midday. The summer solstice is 22 December. During the summer solstice the sun reaches 72 degrees above the horizon just after midday. (Victoria University of Wellington, 2007). To provide passive shading the new passenger terminals form sits at a 50 degrees from the ground line to shade itself from the high angle summer sun.

Time

Tide and Current: The tidal height difference in the Clifford Bay is minimal with tidal height changes of only one meter a common occurrence (MetService, 2013). This being said, the currents within the straight are much more variable but the strongest currents only occur at the throat of the straight (NIWA, 2010). "This tidal current does not cause strong currents in Wellington Harbour, Queen Charlotte Sound or Clifford Bay" (NIWA, 2010). This means the new port at Lake Grassmere is an ideal location for the safe berthing of the inter-island ferries.

Waves: Wave action in the newly formed harbour is kept to an absolute minimum as the safe loading and unloading of cars, trucks and trains relies heavily on the craft being stable at all times. Due to this the harbour is designed to encompass a breakwater to shelter the boats from the waves. Marfells beach encompasses a 6 meter high berm that runs the majority of the length of the beach. This berm flattens out as it reaches the southern end of the beach. The new harbour will be created around the end of the berm and the berm will be used as a portion of the required breakwater.

Each of these floors is oriented parallel with the prevailing wind, as is the building in general, as previously mentioned. This provides a clearly legible direction of travel for the arriving passenger who may be new to the building. Each floor is designed around a central node structure which houses the fundamental terminal functions such as reception, pedestrian check-in and bag drop facilities on the upper floor, truck and car check-in on the middle floor and dock facilities and support structures on the ground floor. A detailed explanation follows;

Fig 55. Ground Floor Plan
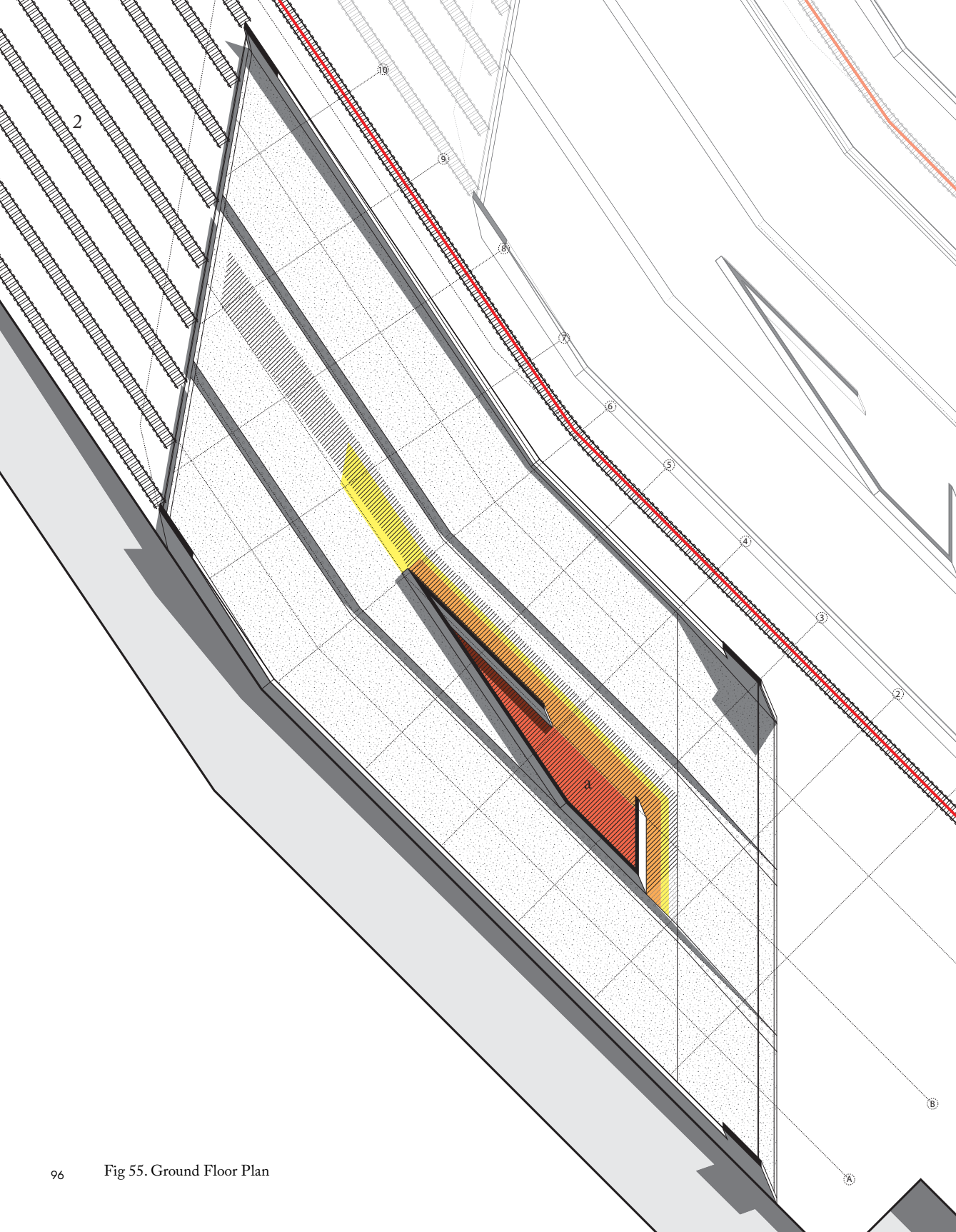
Ground Floor

The ground floor has direct access both towards the port and train yards. These train yards are used for freight drop off from trains and for wagon storage as it becomes a northern terminus for the Coastal Pacific railway. Passenger train drop off will also occur from this level. The ground floor also holds the major dock and building support areas. This includes storage areas for dock vehicles, areas for vehicle and train maintenance and sufficient space for the building management systems (a).

Inter-island Ferry: The inter-island ferries are depicted leaving from each floor as trains, trucks and cars, and passengers all board at different levels

Train: The train only operates on the ground floor due to manoeuvrability issues. Three tracks travel past the terminal at ground floor (1). These are the tracks that enter the ferry. The remainder of tracks are used for storage and maintenance (2).

1

N

Ground Floor Plan
Scale 1:500

20m

Fig 56. First Floor Plan
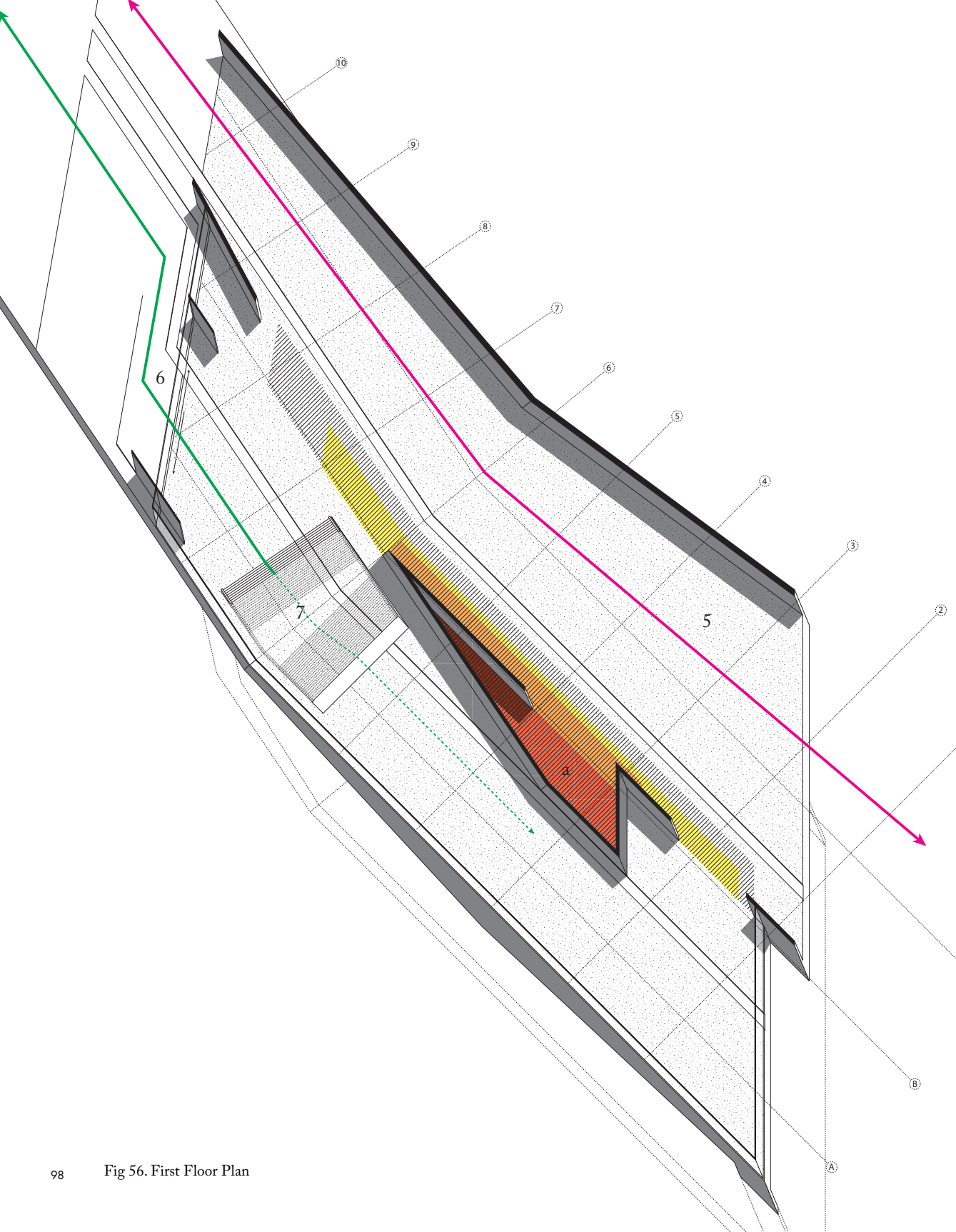
First Floor

The first floor provides the primary area for passenger to be dropped off and picked up at the terminal whether it be by bus or car. It is also where all cars and trucks driving onto the ferries will be marshalled. The central node structure acts here as the ticketing desk and restrooms for those driving onto the ferry (a). This floor gives those passengers driving onto the ferry equal access to the terminal's second floor facilities, such as cafes and shops, which was determined to be lacking in some of the current inter-island terminal designs.

Trucks and Cars: Both trucks and cars arrive at ground level (3) and then are risen up to the first floor (4) where they are marshalled for boarding the ferry (5). From here drivers and passengers of the vehicles have easy access to terminal facilities.

Pedestrians: Travellers travelling on foot arrive at ground level (3) from the landward side of the terminal and then proceed up to the first floor. (4) They then select the terminal they must use and proceed to enter the terminal (6). They then immediately climb the stairs (7) to the second floor where the ticket desk, bag drop and departures and arrivals lounge is found (8) before entering the ferry (9).
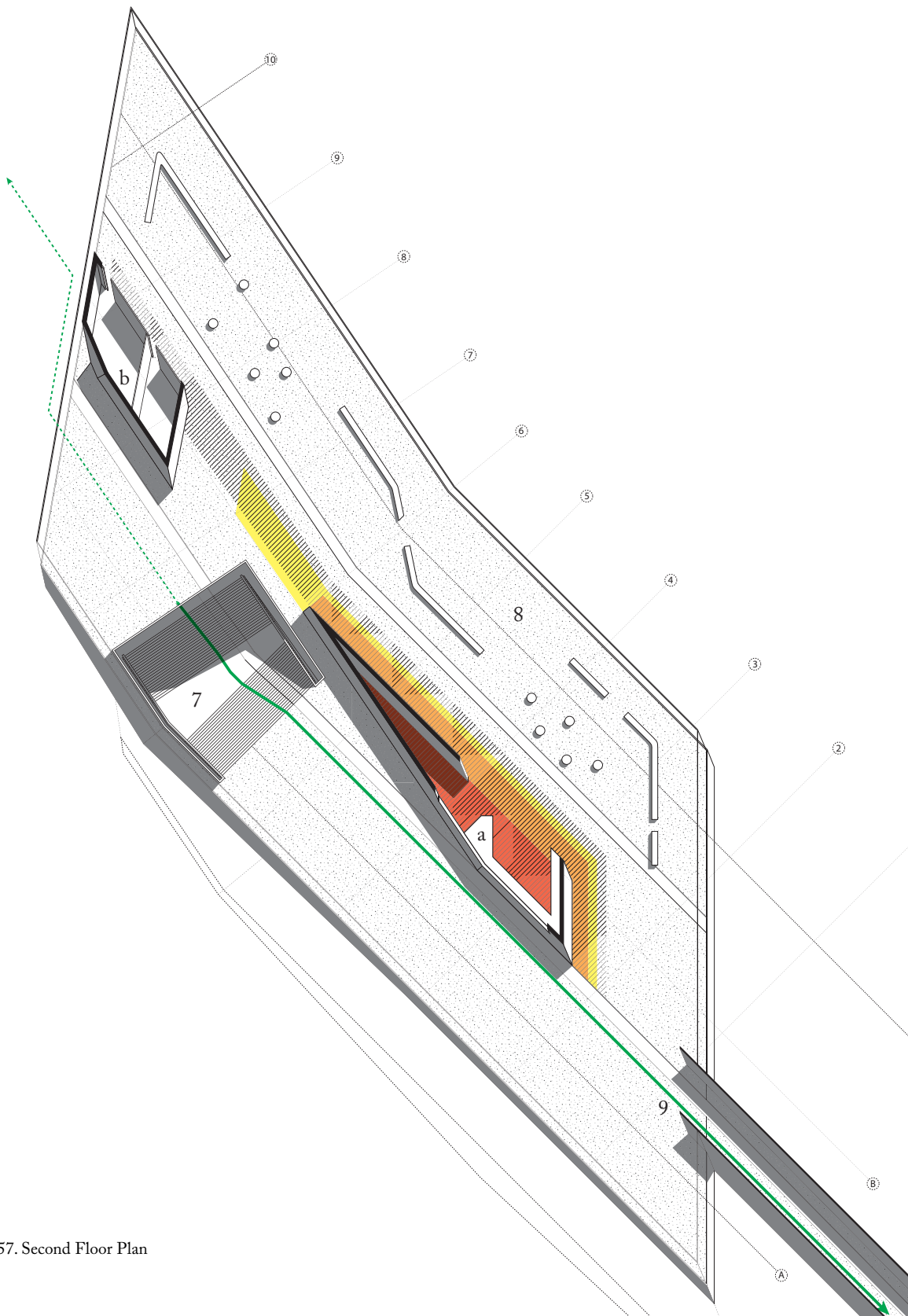
N

First Floor Plan
Scale 1:500

20m

Fig 57. Second Floor Plan

Second Floor

The second floor contains the main arrivals and departures lounge. This is where all passengers are able to await departure while taking in the one of a kind views of the district when they arrive at the terminal, before they board the ferry. Throughout this floor operate two central node structures. The first contains vendors such as cafes and shops (a) and the second contains restrooms (b)

Pedestrians: Travellers travelling on foot arrive at ground level (3) from the landward side of the terminal and then proceed up to the first floor. (4) They then select the terminal they must use and proceed to enter the terminal (6). They then immediately climb the stairs (7) to the second floor where the ticket desk, bag drop and departures and arrivals lounge is found (8) before entering the ferry (9).

N

Second Floor Plan
Scale 1:500

20m

RL: + 20,900

L2: + 14,900

L1: + 7,900

GL: + 900

1

Fig 58. North East Elevation
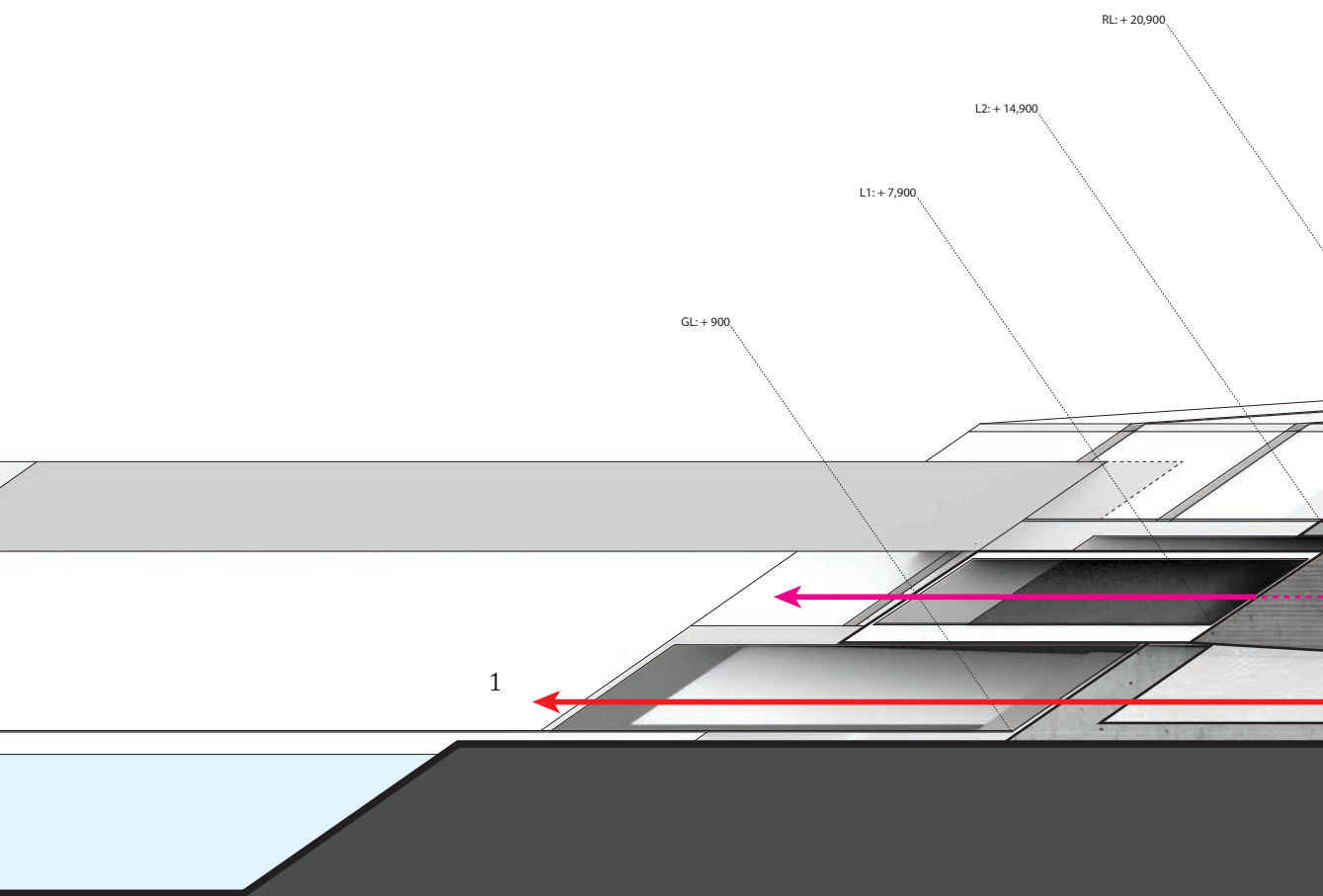
The new ferry terminals form serves to express the layered topography of the surrounding schist filled Marlborough Hills. The stratified, angular form is made up of two primary constituents; namely reinforced concrete and glass. The main area where trucks and cars travel through the terminal is constructed from reinforced concrete. This area also does not feature any views outwards except when looking along the length of the building. This is to encourage vehicular passengers to stretch their legs and walk upstairs to the second floor from which the entirety of the surrounding landscape can be viewed.

Train: The train only operates on the ground floor due to manoeuvrability issues. Three tracks travel past the terminal at ground floor (1). These are the tracks that enter the ferry. The remainder of tracks are used for storage and maintenance (2).

Trucks and Cars: Both trucks and cars arrive at ground level (3) and then are risen up to the first floor (4) where they are marshalled for boarding the ferry (5). From here drivers and passengers of the vehicles have easy access to terminal facilities.

North East Elevation
Scale 1:500

20m

RL: + 20,900

L2: + 14,900

L1: + 7,900

GL: + 900
SL: + 0

1

5

6

7
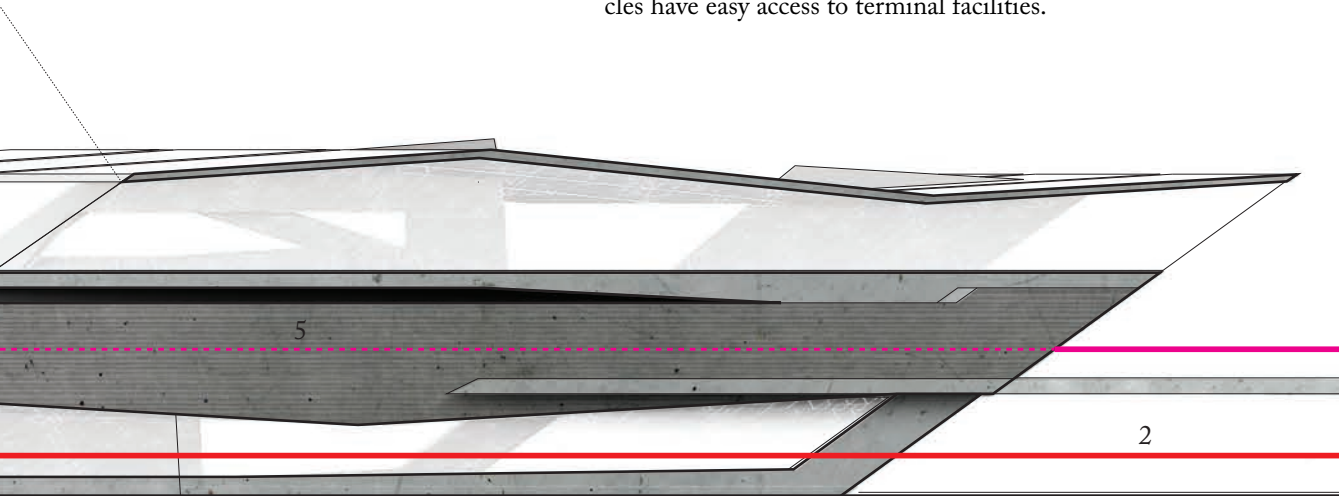
Fig 59. North West Elevation
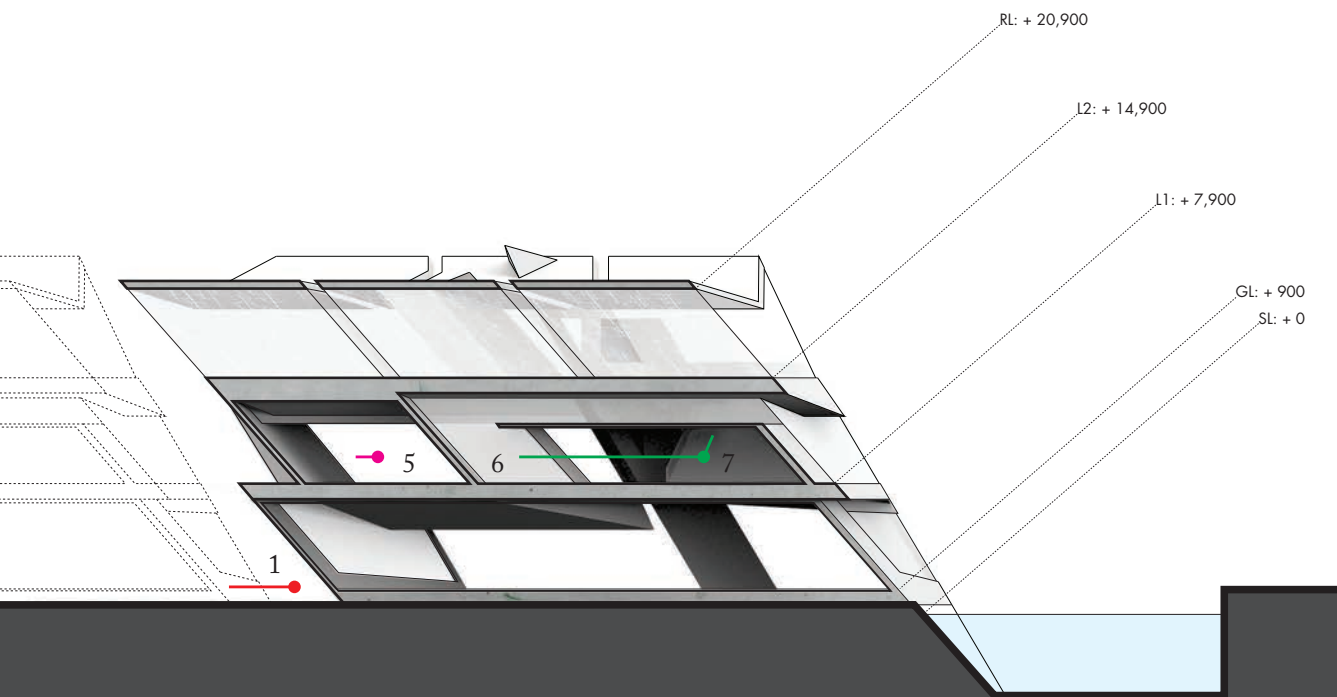
From the North West, the direction of departure, the building appears porous and easily traversable. This is intentional as it provides passengers with a clearly legible path of travel. This is important as new comers to the terminal need to be able to easily figure out where they are going. This reduces stress levels and in turn makes the journey easier for all travellers.

Train: The train only operates on the ground floor due to manoeuvrability issues. Three tracks travel past the terminal at ground floor (1). These are the tracks that enter the ferry. The remainder of tracks are used for storage and maintenance (2).
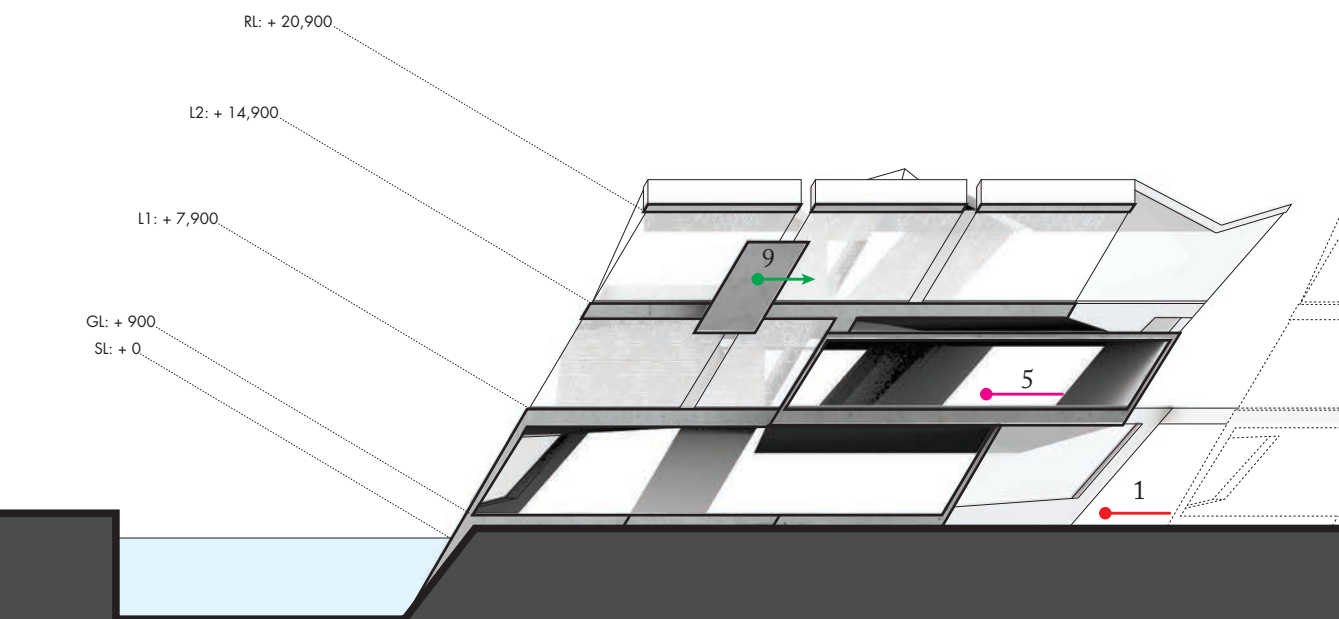
Trucks and Cars: Both trucks and cars arrive at ground level (3) and then are risen up to the first floor (4) where they are marshalled for boarding the ferry (5). From here drivers and passengers of the vehicles have easy access to terminal facilities.

Pedestrians: Travellers travelling on foot arrive at ground level (3) from the landward side of the terminal and then proceed up to the first floor. (4) They then select the terminal they must use and proceed to enter the terminal (6). They then immediately climb the stairs (7) to the second floor where the ticket desk, bag drop and departures and arrivals lounge is found (8) before entering the ferry (9).

North West Elevation
Scale 1:500

20m

RL: + 20,900

L2: + 14,900

L1: + 7,900

GL: + 900
SL: + 0

9

5

1

Fig 60. South East Elevation

From the south east, the direction of arrival, the terminal also appears porous with easily visible access through the building. Trucks and cars debark onto the same wide area of terminal where they are marshalled to when departing. This also allows the ferry a large area of manoeuvrability when docking.
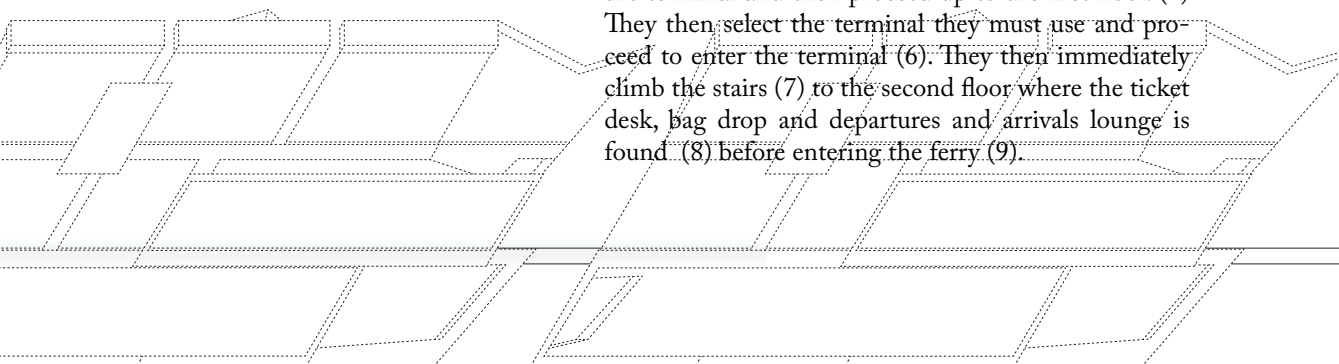
Train: The train only operates on the ground floor due to manoeuvrability issues. Three tracks travel past the terminal at ground floor (1). These are the tracks that enter the ferry. The remainder of tracks are used for storage and maintenance (2).

Trucks and Cars: Both trucks and cars arrive at ground level (3) and then are risen up to the first floor (4) where they are marshalled for boarding the ferry (5). From here drivers and passengers of the vehicles have easy access to terminal facilities.

Pedestrians: Travellers travelling on foot arrive at ground level (3) from the landward side of the terminal and then proceed up to the first floor. (4) They then select the terminal they must use and proceed to enter the terminal (6). They then immediately climb the stairs (7) to the second floor where the ticket desk, bag drop and departures and arrivals lounge is found (8) before entering the ferry (9).

South East Elevation
Scale 1:500

20m

From the south west the layered topography of the new ferry terminal is again apparent. Each floor looks to be suspended above each other supported by the white crystalline glazing. Passengers will enter the building and traverse through the thick floor slab all while the surrounding landscape is layer out beyond.

Pedestrians: Travellers travelling on foot arrive at ground level (3) from the landward side of the terminal and then proceed up to the first floor. (4) They then select the terminal they must use and proceed to enter the terminal (6). They then immediately climb the stairs (7) to the second floor where the ticket desk, bag drop and departures and arrivals lounge is found (8) before entering the ferry (9).
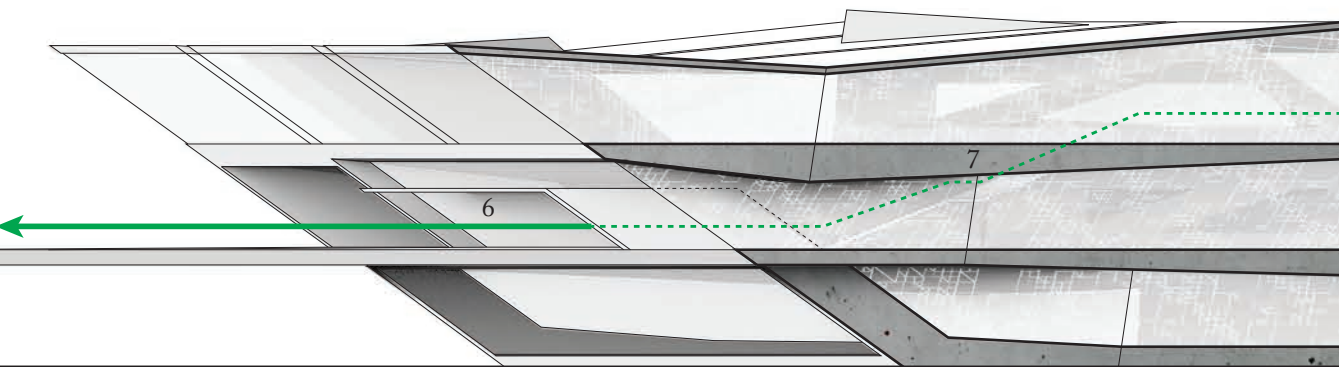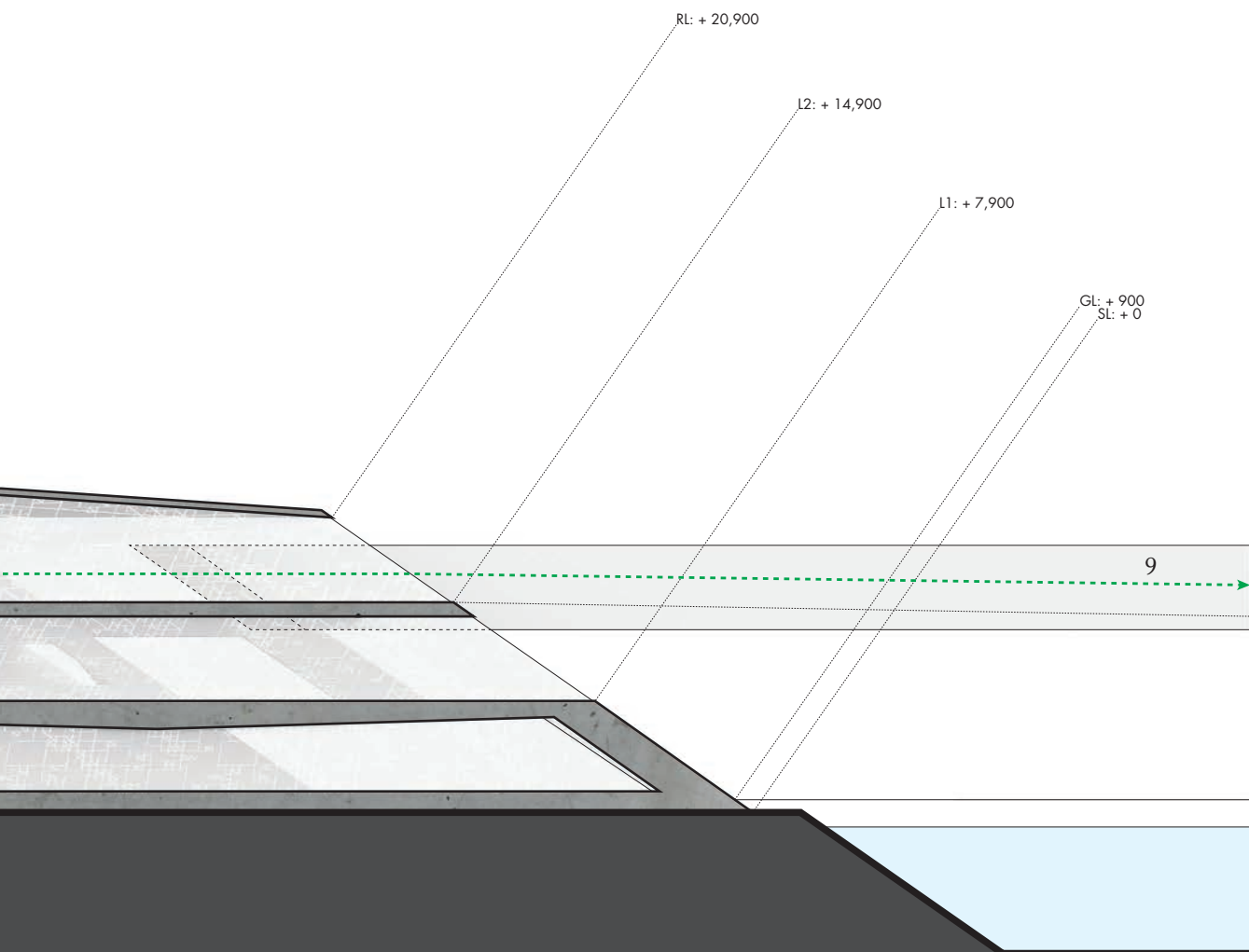
6

7

Fig 61. South West Elevation

RL: + 20,900

L2: + 14,900

L1: + 7,900

GL: + 900
SL: + 0

9

South West Elevation
Scale 1:500

20m

The EDGE created between land and sea by the new terminal is porous. Edges act as a guide and express the boundary between the various phases of terminal use.
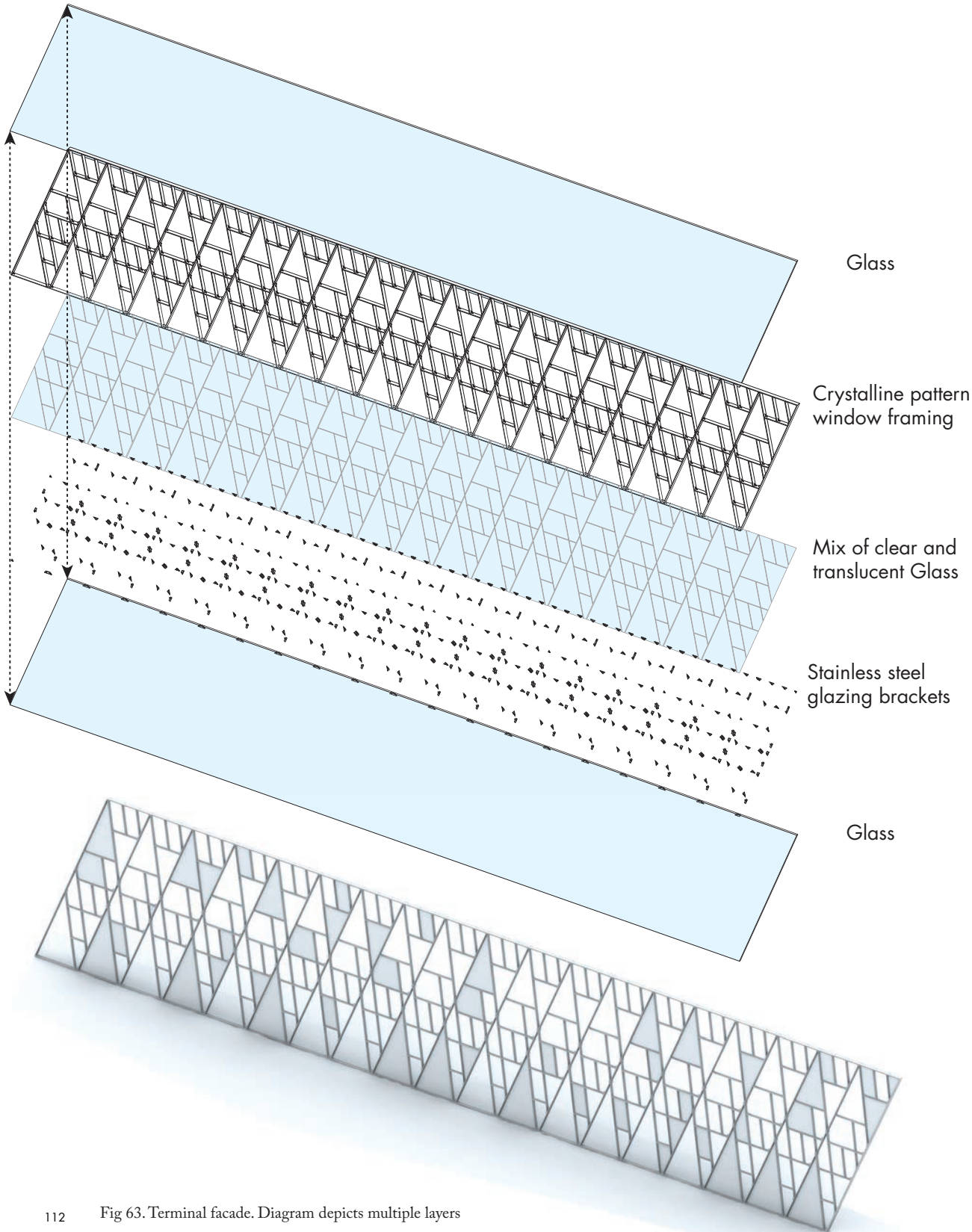
Glass

Crystalline pattern
window framing

Mix of clear and
translucent Glass

Stainless steel
glazing brackets

Glass

Fig 63. Terminal facade. Diagram depicts multiple layers

Edge + Genius Loci

Five layers are used in the construction of the glazed perimeter edge of the ferry terminal.

The glazed facade works as an expression of the surrounding landscapes *things* in two ways. Firstly the pattern is an expression of the crystalline salt forms found at the nearby Salt works. A combination of clear and semi translucent panels are combined to creates a visual effect similar reminiscent of the brilliant white salt piles visible from far and wide during summer.

The second expression of the surrounding landscape is found in the reflective quality of the glazing used. While still translucent, the glazing also acts to reflect the surrounding landscapes *character* and *light* outwards for all travellers to experience. The intention of this is to increase the travellers level of immersion into the landscape.

The *order* of the site, created by the strong north-westerly presence felt in the immediate area, is further reiterated by the sharp edges of the new ferry terminal. These strongly defined edges are also used to define the pathways through the terminal.

As an expression of *time* all of the terminals facades are angled towards the north at an angle of 50 degrees. This is to reduce the direct solar gain from the hot summer sun while still allowing the remaining sun to be transmitted into the terminal.

Fig 64. Path: a continuation of the journey

The new terminal acts as
a continuation of the
PATH
ahead. It blends with the
landscape and flows in
harmony with the lay of the
land. It guides the passen-
ger through the terminal,
without compromising the
journey.

Fig 65. Points of view for the following 3D Path perspective images
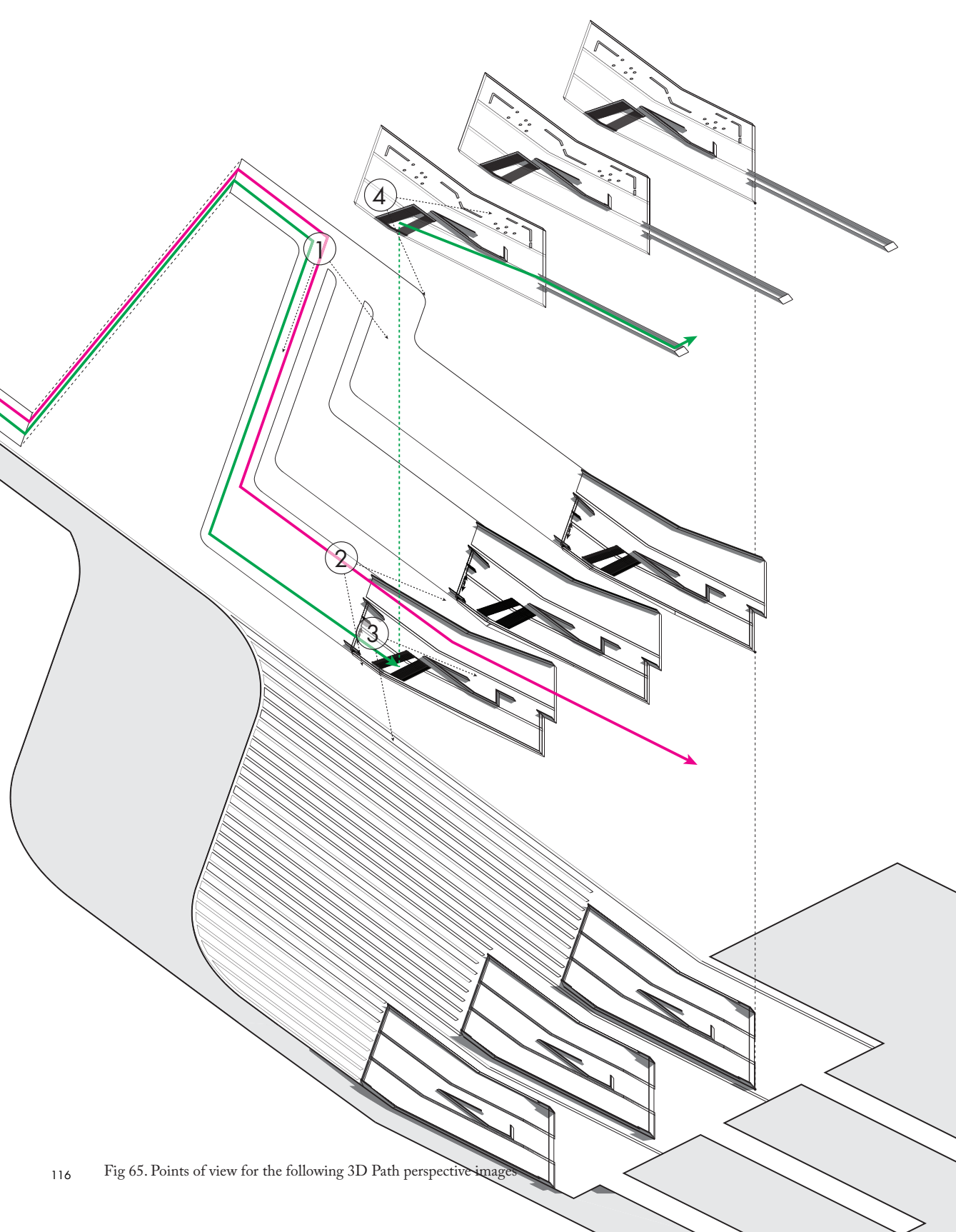
Path + Genius Loci

1. Arriving at the top of the ramp. View across each of the three terminals and the three paths of travel. This position allows views to the entire district with specific focus provided to the path in each direction.

2. Arriving at the terminal either as a vehicular passenger or a pedestrian passenger.

3. Entering into the terminal as a pedestrian. A clear path of travel is provided.

4. Pedestrian arrives at the top of the stairs either to board the ferry directly down the gangway or rest in the lounge.

Fig 66. Position one: View from the top of the ramp arriving at the first floor

One decision to make;
which terminal is used?
The hardest decision to
make during the entire
journey.
Path orientation defined
by the site *order* created
by the prevailing wind

Fig 67. Position two: View while arriving at the terminal on first floor

Simple continuation of the path defined by the *order* created by the prevailing wind and coastline lying 45° to north.
Clear view of both surrounding Lake Grassmere *character* and expression of *things* through terminal form

Fig 68. Position three: View from front door up main stair on first floor

Path continues inside the terminal still oriented with the north-westerly prevailing wind.
The light strips in the floor act to provide a simple path for visitors to follow creating an easily legible building form.

Fig 69. Position four: View from second floor towards boarding ramp across stairs

The path and light strip continue directly down the gangway and continues the *order* of the site. From this second floor path an unparalleled view to the surrounding landscape is created expressing the *character* and *light* qualities of Lake Grassmere at different *times* of the year.

Fig 70. Node: terminal focal point

At the heart of each terminal is a centralised NODE. Each of these nodes acts as a focal hub for each terminal from which

core terminal function originates and around which all travellers pass.

Fig 71. Points of view for the following 3D Node perspective images
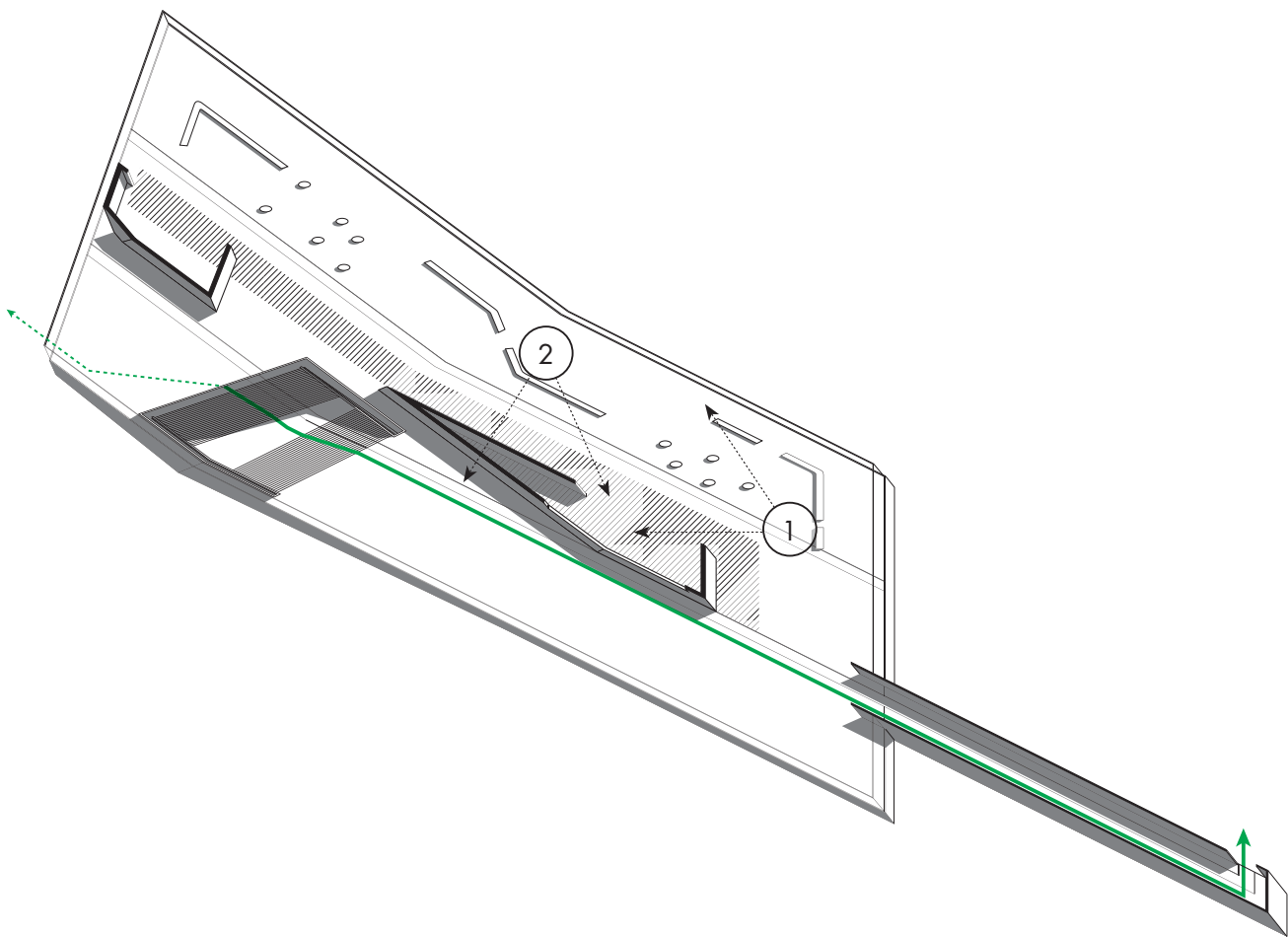
Node + Genius Loci

Nodes are points which are the intensive foci to and from which he is travelling (Lynch, 1960, p. 8).

Each nodal structure is found at the centre of each terminal floor. They contain the consistent core functions of the terminal. The purpose of these nodes is to provide the terminal and the travellers with a focal way point within the terminal around which the path of travel is located. They act as both a junction for the terminal path and a concentration point for terminal function and users. From these nodes all primary terminal business is conducted. These functions include ticketing facilities, bag drop facilities, staff areas, cafes, shops and rest rooms. These nodes symbolise the shift from land to sea when both arriving and departing.

Further reason to locate these functions in a central position is to provide an unobstructed view to the surround landscape to all terminal users, thus allowing traveller and staff alike to experience the districts *things, character* and *light* qualities during different *times* of the year.

The *things* of the district are expressed through the shard like form of the node itself. This is representative of the schist filled hill sides surrounding the lake that act to encompass and enclose the area. The overall form of the node is related to the *character* of the area also. Enclosed around three sides and open to the north and Cook Straight much like the district itself.

Each node aligns with the orientation of the terminal building, further reinforcing the *order* of the Lake Grassmere district within the terminal itself.

Fig 72. Position One: View across the terminal lounge towards the north west

If the passenger does not wish to board the ferry immediately they are able to relax in the second floor lounge area. From here they may experience the *things*, *character* and *light* qualities of the surrounding Lake Grassmere district

Fig 73. Position two: View across the terminal lounge showing the terminal node

The central nodal structure is expressive of the *things* and *character* of the district.
It acts as the primary way finding point within the building from which the terminal functions

Conclusion

Summary

The primary goal of this research is to develop a scheme for a new inter-island ferry terminal that is responsive to its Lake Grassmere site. The scope of this project originates from a proposal presented to the New Zealand government about the possibility of moving the inter-island ferry terminal from its current location in Picton to a site further down the South Island coastline located between Lake Grassmere and the Clifford Bay coast. Many people see passenger terminals as large waiting rooms lacking in emotion, a heavily homogenised space that one must spend far too much time in before they are allowed to continue travelling. This research defines a *place* specific method in which to alleviate the loss of *place-identity* from terminal architecture. Specifically the case study explores the combination of Lynch's definition of *space* and Norberg-Schulz's definition of *genius loci* in the formation of the architectural solution.

Potential Architectural Problems

When designing passenger terminals it is important to provide the travellers with an easily legible route through the building. As the traveller has possibly never used the terminal it is important to create a stress free journey by making the terminal as simple to pass through as possible. Furthermore providing waypoints within the building will help new visitors to quickly orientate themselves to the unfamiliar *place* around them. The nodes within the terminal act as these way points and provide the traveller with an anchor point with the building.

Another architectural problem arises in the form of how to contain the passengers and not allow them to wander away from the terminal once checked in but at the same time allow each traveller to experience the surrounding landscape. This is achieved by through the spatial organisation of each of the terminals functions. For example all terminal primary function such as a ticketing and bag drop areas are located at the centre of the building and do not obstruct views to the landscape for the traveller.

A further issue that could be perceived by some as a problem is that some user experiences of the space may not be positive. While this sounds like a failed outcome, it is not. This just expresses the vast range of human emotion and the unpredictable nature of each individual human.

Architectural Solution

Non-places are *places* without *identity* (see figure 28). This in turn means

that *non-places* lack *place-identity* meaning that the occupant, in this case a traveller, is unable to relate to their location, or *place*, due to the expressionless homogenised architecture surrounding them. Therefore this thesis explores the option of combining the *genius loci* of Lake Grassmere with Lynch's definition of *space* in an attempt to create a *sense of place* in the *non-place* that is a passenger terminal. This consequently allows for the formation of a *place-identity* between the traveller and the *place*.

The design of the new ferry terminal revolves around the combination of two theories. Firstly Lynch's theory of *space* is used as the framework around which the new design takes place. His definitions of the terms *district, landmark, edge, path*, and *node* are central to the final architectural outcome. Each of these five terms were explored from the point of view of the *genius loci*, a term, defined by Norberg-Schulz, to be formed from what he calls *things, order, character, light*, and *time*. Each of Lynch's five terms are used as headings in the design case study and then are explored using Norberg-Schulz's terms. The combination of *genius loci* and *space* with the infrastructural programme and the terminal programme forms the architectural brief for the Lake Grassmere terminal (see figure 36).

It is argued here that comprehension of the Lake Grassmere *district* leads to the creation of an architecture *of* the *place* in the form of a *landmark* that is constructed through the combination of *paths*, *edges* and *nodes* (see figure 37). This leads to the design of a uniquely one of a kind piece of architecture reflective of both its geographic *place* and its purpose. This use of local qualities allows the traveller to relate to the terminal thus creating a *place-identity* between terminal and traveller. As a result of the identification with the *place* a *sense of place* is formed which is felt between each of the terminal users thus alleviating the feeling of alienation indicative of a *non-place*.

Future Research

As this project does have a tangible background born out of a real proposal it would be useful to carry out a feasibility study of the proposed design to explore the realistic possibility of this case study going ahead. As every human is different additional research could also be conducted into the specific types of activates people would like to be able to do in terminals given that they had the chance.

Following more research and design based experimentation it is hoped that in the near future domestic passenger terminals could become increasingly unique and expressive of their locale, providing their user base with a truly one of a kind travel experience. The terminal should again become an integral part of the journey, once more imbuing a sense of excitement and joy in the heart of the traveller.

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