A study into how architecture can repair damaged urban fabric to create a vibrant urban environment.

Master Thesis Explanatory Document

Jonathan Jordan
1361176

ABSTRACT

This research project looks at the possible ways of creating well-connected and desirable urban environments. Many cities suffer from a poorly connected urban environment and are deprived of good quality public spaces. Auckland, New Zealand has been identified as an example of a 'severed city' and the location to test this research project. A problematic site was explored and chosen along the moat of motorways defining Auckland’s city centre. The built and natural context of the area has been analysed and crucial connections to be made were identified. Specific spaces for public activity at this node of intersecting links were developed to support their wider connections. These connections include new public transport and integrate a significant bicycle route. This project became part of an important green link between two parks. Within these parks lie two of Auckland’s most noteworthy cultural buildings; the Auckland Museum and the Auckland Art Gallery. These two buildings incorporate cultural amenities and enforce a strong cultural link. A mixed-use development has merged from the neighbouring education, commercial and recreational typologies to create a vibrant new node in the city. The morphology of the project relates to the surrounding built and natural context. This built form has been integrated into the site and respects the topography of the gully below and views to natural landmarks. The architecture has been articulated to enforce the connections created, while giving it a local but unique identity. Fabricating this architectural stitch will repair the separation existing in the urban fabric. This project aimed to produce a world-class urban renewal example for cities that suffer from severance.
ACKNOWLEDGEMENTS

I would like to thank the following people for their support during this project and the production of this document:

David Turner, for being my primary supervisor and taking the time to meet with me week after week. Your sound advice and encouragement kept me on track and helped me push this project as far as I could.

David Chaplin, for being a great go-to adviser and organiser for the year. Your readily available advice and wealth of knowledge was very helpful.

My parents Fred and Christine Jordan and the rest of my family for your on-going support.

Siobhan Enright, for your incredible support and assistance in editing the document.

Patrick Reynolds, for taking the time to meet with me at an early stage. Your essay on ‘severance’ helped me define this thesis and give me a firm starting point.

And thank you to the many other people who have been willing to take the time to listen to me, offer advice and ask questions: I am very grateful.
## CONTENTS

**1.0 Introduction** 1
1.1 Introduction
1.2 Severance Concept
1.3 Auckland - A Severed City
1.4 Experience of Severance

**2.0 Site** 11
2.1 Chosen Site
2.2 Site Exploration
2.3 Natural Landscape
2.4 Contextual Environment
2.5 History of Site

**3.0 Knowledge** 37
3.1 Federation Square as a Precedent
3.2 Granite Web as a Precedent
3.3 Transport
3.4 Public Space
3.5 Materials + Identity
<table>
<thead>
<tr>
<th></th>
<th>Design Process</th>
<th></th>
<th>Conclusion</th>
<th></th>
<th>Appendix</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.0</td>
<td>Brief One</td>
<td>5.0</td>
<td>Design Solution</td>
<td>6.0</td>
<td>Appendix 1: Figure List</td>
</tr>
<tr>
<td>4.1</td>
<td>Design Methodology</td>
<td>5.1</td>
<td>Conclusion</td>
<td>6.1</td>
<td>Appendix 2: Final Presentation</td>
</tr>
<tr>
<td>4.2</td>
<td>Masterplan Framework</td>
<td>5.2</td>
<td>Bibliography</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.3</td>
<td>Masterplan Stage One</td>
<td>5.3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.4</td>
<td>Brief Two</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.5</td>
<td>Masterplan Stage Two</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.6</td>
<td>Mid Year Concept</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.7</td>
<td>Masterplan Stage Three</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.8</td>
<td>Brief Three</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.9</td>
<td>Specific Design</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
1.0 Introduction
1.1 INTRODUCTION

A city is a place for people, a place where they can live, where they can work; it is a place to discover and should be a place to be enjoyed. The city has a public realm with spaces that connect its various parts and which dictate much of what we experience the city to be - pleasant or not. This thesis will explore how to fabricate an environment that creates a positive existence for humans in their urban context.

A compact city is a model of how cities can function sustainably today. This model is focused around walking, cycling and public transport as the primary forms of circulation and transportation. These modes of transport allow for higher density living and provides opportunity for a more effective public realm: people are better connected to each other and to their environment. In this city model, people can enjoy a people-oriented lifestyle, live safely, healthier, livelier and more comfortably. Many cities around the world do not function sustainably: many urban environments suffer from congestion, urban sprawl, lack of public amenities and a poorly defined and disorganised public realm.

When we think of urban environments which are pleasant to immerse ourselves in and provide us with places to rest and enjoy, for many of us Paris or Barcelona will spring to mind; we think of their old European streets, squares and boulevards. Prior to 1960, the design strategies for cities were primarily based on cultural knowledge developed over centuries. However, as modern theories of spatial order and efficiency brought about a new era of city planning, many of these timeless ideals where a city functioned around its people were neglected. Rapid urban growth, technological advances and the opportunity for modern theories to be tested brought about the modern movement in planning and architecture. These new ideologies began to replace tradition and city planners were given the responsibility of shaping the city, its built environment and its public spaces. Modernism saw ‘the city’ as functioning like a machine, with all its parts separated and ordered. Given the rise of the motor vehicle, traffic planners and the design of road systems were given priority and this changed the form of cities and the spaces within. The quality of the public realm and other forms of transportation were given little attention and, as a result, suffered immensely.

This detrimental effect on the city was not recognised until many years later. In the past fifty years architects, city planners, urban designs and researchers have acquired knowledge and solutions to repair these problems. Jane Jacobs was one of the first influential voices to identify major problems with city planning in her book, *The Death and Life of Great American Cities*. Jan Gehl also recognises this and suggests how we can successfully shape the public domain and our cities through his observations in *Cities for People*.

Cities are now transforming their urban environments to create well-connected, successful spaces. This thesis seeks to build on this knowledge and explore these ideas in an architectural project applied to a particular problem. We now have a greater understanding of the strong connection between the built environment and

---

human sociology as the quality of our built environment and the experiences it provides shapes our impressions of a city. In recent years many cities have improved their quality of life through creating well-connected and pleasant public spaces. Cities that have initiated people-oriented design approaches are now thriving more than ever.

New York City is a prime example of a city that has improved its urban environment as it provides a range of accessible, friendly spaces for people. Broadway was transformed into a pedestrian friendly thoroughfare; spaces such as Times Square removed car lanes and introduced seating. People are attracted to unique projects like the High Line development, a 1.6 kilometre linear park built atop a redundant railroad line. This project has been carefully considered, with high quality materials, easy access and a diverse range of experiences to be appreciated.

Copenhagen is another example: residents have taken to the streets on their bikes as a more sustainable and efficient means of transport. The city has now closed many of its roads to make way for the increasing amount of bikers and pedestrians, improving the aural environment and reducing atmospheric pollution. Many new, attractive public spaces have resulted from this and have revitalised the city. Prioritizing people and what is best for them is the key factor that brings about many of these global transformations.

It is now widely accepted that cities need to be designed around people, and the necessary provisions to create a pleasant experience. Urban design is the process of designing cities through the shaping of masses and spaces to make urban areas functional, attractive, and sustainable. Urban design theory primarily deals with the public realm and the way people use spaces and what they experience there. This thesis is focused on urban design and the fundamental role architecture has in creating successful urban environments. For the city to successfully function as a whole, the various parts that contribute need to connect: people and place, movement and form, the natural and the built environment.
1.2 SEVERANCE CONCEPT

Severance is an urban design concept that looks at the effect a barrier has when it causes separation within a particular place. This theory analyses how cities are formed and affected by elements, both natural and man-made, and gives light to problematic areas of cities and the reasons for their being that way. Patrick Reynold’s article titled *Severance City, August 6, 2012,* is a great source of information on this concept. This theory serves as a starting point in understanding how cities are formed and why certain areas may be problematic to a well-functioning, enjoyable city.

Historically, many settlements were located due to natural boundaries and cities were formed and developed in ways that reflected this. Wellington is an example: due to its mountain ranges and ocean border, the city has been developed in a compact manner. This has resulted in a walkable city and it is regarded as one of the more pleasant urban environments in New Zealand. The city of Christchurch, unlike Wellington, was developed on plains that allowed it to spread, resulting in a car-driven, sprawling city. This has the reverse effect on its urban environment with poor spatial definition and containment.

New York City is a compact city contained by its harbour. Manhattan Island has been densely built up over time and has the added opportunity for pleasant places that connect city and sea. The effect of this natural severance on city form is demonstrated by figure 1.2. Los Angeles is at the other end of this spectrum and suffers from urban sprawl and a poor, almost non-existent public environment.

Rivers are another form of natural severance that can have a positive effect on cities and their public realm. The Seine, which runs through the centre of Paris, provides the opportunity for pleasant spaces at its edge, and bridges have been built across the river in a positive response to this separation. One of the best ways to see Paris and many of its iconic buildings is by boat, passing under bridges that are designed to be both beautiful and functional connections between the riverbanks.

Artificial barriers also cause severance, affecting city form and the public realm. Historically this often occurred for defensive or political reasons. During the Middle Ages, cities were designed to resist attacks and buildings were contained within the city walls. Although dense, they were designed around people to accommodate their needs. In Europe there are many towns that exist with this type of city form and incorporate contemporary living. These still function effectively today, due to their well-connected streets that revolve around public squares. One of the most dramatic political barriers ever built was the Berlin Wall. Sadly there are still barriers that exist like this today and modern design has little control over these. In modern society man-made severance mainly exists due to the priority of transport infrastructure. During the 20th century, in line with Modernist principles, roads were widened to make way for more cars and motorways erected to allow uninterrupted traffic flow. There was little or no thought given to people and their relationship to the concrete and asphalt barriers. These forms of severance had a detrimental effect on cities.

---

4 Ibid.
worldwide and our experience of the urban environment. The technological advance of the car was a great development for society - cars have made independent travel easier and more efficient than in the past. Blinded by an obsession with the ‘car’, little thought was put into their integration into cities. Many cities have now gone to great lengths to remove these barriers to reconnect and revitalize public life. One of the most extreme examples is ‘The Big Dig’ in Boston. This project rerouted and buried major highways that ran through the city centre. It took twenty years and many billions of dollars to complete; however it has resulted in a more fluid and vibrant public realm. New Zealand’s Auckland city is an example of a car-oriented, severed city.

Figure 1.1 - Auckland motorways

Figure 1.2 - Manhattan Island, New York
1.3 AUCKLAND - A SEVERED CITY

Auckland is regarded in the Mercer 2011 Quality of Life Survey as the third most liveable city in the world. It boasts a beautiful landscape, diverse culture and an interesting built environment. The city has given itself the bold goal of becoming the most liveable city in the world. There are many areas where the city can improve itself, and if it does so, has the potential to fulfil this goal. A great start would be repairing the problematic areas caused by severance to help create a better-connected, flourishing public realm.

Auckland is an example of how damaging severance caused by roads and motorways can be to a city. Wide roads that run parallel to the waterfront and motorways define the city centre. These separate the city from the waterfront and neighbouring centres; Ponsonby, Newton, Grafton and Parnell. All of these parts are important and need strong relationships to allow the city to function as a whole. It can be argued that this containment is good for the city centre, but the city edge and adjacent areas suffer. It is hard to find pleasant spaces on this edge and as a result, undesirable spaces with lower economic value have been created. Severance has resulted in poor containment when compared to the naturally driven and compact Manhattan Island. This thesis takes the position that connections between the centre of Auckland City and the surrounding areas require attention.

Auckland City Council has identified that these disconnections are problematic to the city in *City Centre Masterplan 2012*. This masterplan is broken into eight transformative moves to see their goals reached. Two of these strategic moves are titled *Harbour Edge Stitch* and *City to the Villages*. Both of these moves address the issue of severance in Auckland. This document gives a good overview of the current situation and the thoughts Auckland City Council has to improve the city. Transformations have already taken place on the waterfront and the city is seeing successful results from developments like North Wharf and Silo Park. Initiatives to connect the city to the harbour will allow for more people-oriented spaces and create a vibrant waters edge. However, the severity of the barriers caused by motorways make the process of connecting the city to the villages a more challenging task. Exploring this issue lead to the selection of a site with particular conditions where a solution has been developed.

Transformation Seven, *City to the Villages - connecting the city and the fringe*, outlined in the City Centre Masterplan 2012, is most relevant to this issue. There are other important moves that the council seeks to make such as connecting the city’s parks; this move has relevance to this thesis project and will be looked at further in the coming pages. Figure 1.3 highlights the city fringe and the ways that the city can be accessed. These points are circled as gateways to the city and can be thought of as thresholds whether they are articulated or not. Bridges are opportunities to celebrate the motorways and the gullies they cross. The council proposes beautifying the bridges as one strategy to solve the issue of disconnection.

The *Putting a lid on it strategy* sounds more convincing in theory - this is essentially a motorway capping method that would provide better cross-city movement. Figure 1.4 depicts a land bridge covering the lower section of Grafton Gully topped with recreational fields and courts. This would create a stronger connect from the city to Auckland Domain, Parnell Village and the proposed train station there. However, the cost of this land bridge would be considerable and to cover it in open fields like those in the neighbouring park would not be feasible. A development that could generate revenue and provide desirable space for more people would better support the connections a land bridge would make.

---

7. Ibid., p. 166-179
8. Ibid., p. 170
1.4 EXPERIENCE OF SEVERANCE

To understand this concept of severance and how it affects Auckland city, one must experience it. The research methodology for this thesis included much time spent exploring Auckland’s central motorways, the connections across them, and the conditions of the surrounding context. The four primary areas explored are highlighted in figure 1.5, all with potential for a connection project. In each of the identified areas, the following aspects were considered: topography, scale of gullies, distance from one side to the other, and pedestrian activity. The number of people circulating, where they were going and what they were doing was noted and functions of the surrounding buildings were considered. The images to the right match the order in which the investigation was conducted. The severing motorways are highlighted.

Karangahape Road (left, figure 1.6) is the thinnest area of the Central Motorway Junction (CMJ). Although the gully here is deep, it would be one of the easier areas to develop across the motorway barrier. This bridge has recently undergone an upgrade with new, more attractive bus shelters and protective barriers installed. Karangahape Road is, however, the red light district of Auckland and because of its reputation many of the area’s surrounding buildings and spaces have been left to deteriorate. It is hard to see how this area could flourish and create connections and spaces comfortable for the general public given its current demographic, particularly in the evenings.

Motorway capping has been proposed in the area between Upper Queen Street and Symonds Street. This is a vast gap and any project crossing this area would be considerable in both size and scale, but not impossible. The existing bridges could host an intervention of some description. Problematic to any project incorporating the Symonds Street bridge is the cemetery on the city side. Queen Street bridge has undergone positive transformations with unnecessary car parks transformed into a cycleway connection. This vicinity suffers from severance, creating a poor urban environment, and would be difficult to rejuvenate.

Grafton Bridge is of significant historical importance: it is the first of the gully crossing bridges and built before the motorways below. The bridge is located on the largest section of natural separation and has historically created significant connections between Grafton and the city. Today both buses and pedestrians use it, those on foot have a tough time as buses drive by. This connection is important as...
it allows people to move from the top of the city to the hospital, university facilities and Auckland Domain. Occupying the bridge with functions that could support this thoroughfare was considered but it is hard to visualize how the bridge would not be compromised. Proposals for capping or bridging and connecting dead ends further down the gully were envisioned, but the feasibility of connecting such a large divide with a new structure in the proximity of Grafton Bridge was hard to justify.

Each explored area offered more potential than the last. The lower section of Grafton Gully was then explored. This area has one of the highest densities of pedestrian traffic; it is located between the education quarter and Auckland Domain and en route to Parnell and Grafton. However, it is least accommodating to pedestrians with minimal routes to use and large roads to cross. It looked feasible that a capping or bridging connection project could exist and be justified by a variety of activity. From this explorative study the Wellesley Street and Grafton Road gateway was chosen as the site for the project.
2.0 SITE
2.1 CHOSEN SITE

The site chosen is located toward the bottom of Grafton Gully on the eastern edge of Auckland’s city centre (in red). It includes two bridges where Wellesley Street and Grafton Road cross the motorway. This motorway is a major separating element and the adjacent Grafton Road creates a large severance problem. The site lies between Auckland University buildings and the Auckland Domain. Figure 2.2 shows the site and its relation to Auckland Domain in the foreground and the city beyond.

Choosing an appropriate site was crucial to forming a base for this research project. Researching the concept of severance informed an understanding of how cities are shaped and how to identify problematic areas. Auckland is a city where man-made severance is a common occurrence and is often detrimental to the urban environment.

This was explored on the ground to gain a more in-depth understanding. Several sites were analysed for the potential of a reparation project, prior to the site’s selection. A greater understanding of this site and context then needed to be gained to inform relevant research and theories.

This site spanning the motorway, looked to be a feasible and necessary connecting opportunity. It provides the best potential for strong urban links given the activities that take place in this area. It also required the most attention of the areas investigated, as it was the most disconnected and hazardous for pedestrians.
Figure 2.3 is a section taken along Grafton Gully. The city centre is seen in elevation beyond the section line, illustrating the scale of its built form in the city. The Sky Tower and Auckland Harbour Bridge are visible.
2.2 SITE EXPLORATION

An extensive site visit helped to clearly understand the current situation. Figure 2.4 highlights places on the site where photos were taken, a small collection of these photos follow to illustrate important observations made. Many places were difficult to access due to a poor pedestrian network. The only place to cross the motorway is across Grafton Road Bridge; additional crossings can be found at the top of the gully across Grafton Bridge and at the bottom across Stanley Street. Wellesley Street has a particularly poor urban environment, with no pedestrian space. Figure 2.5 illustrates the route walked to each spot, starting from Auckland Domain in red arrows and walking around the area, then returning back to the Domain - fading to orange arrows. This process was far from fluid, and the many backtracking arrows illustrate this. A number of these places were dangerous with traffic passing by at high speeds and little thought given to the pedestrians.

A recently completed major bike route provides for a more pleasant and inviting area to walk or cycle with many people using it already. There is more work to be done on what is projected to be a popular bicycle thoroughfare. There are two major University of Auckland buildings that border this site, the Owen G. Glenn Building, more commonly known as the business building, and the architecture building. These give a strong presence to this edge of the city. The older architecture building turns its back on the site, while the recent business building reaches over this site towards Auckland Domain. Also bordering this site, but set further back from the motorway, is the university’s engineering building.
2.2 SITE EXPLORATION

Wellesley Street is a ‘vehicles only’ connection giving no space to pedestrians. This affects the porosity of the University of Auckland in this area; there are only a couple of ways in and out of the architecture building. Saint Paul’s Church on the opposite side of the street faces a similar issue: it is only accessible from Symonds Street. Having clear access from the front is important, however, these types of buildings are more integrated with the city when they are readily accessible. The business building is designed to be open and transparent. Views to Auckland Domain and Auckland Harbour are framed by extruding glass panels, encouraging a connection to the natural environment. Students comment that they enjoy using this building due to these design features.

Two iconic Auckland landmarks are visible from this site: the Sky Tower and Rangitoto Island. There is opportunity to frame a vista toward the Sky Tower; this would help one orientate within Auckland City. In figure 2.13 the volcanic cone of Rangitoto Island is seen beyond the port. Grafton Gully is on axis to Rangitoto Island - better seen from Grafton Bridge. The gully forms an important view shaft, one which is not obstructed by any development. Figure 2.15 is a 180-degree panoramic view from Grafton Road towards the city and emphasises the vast unusable green space surrounded by large roads. The area provides an opportunity for development that can support a connection project.
Figure 2.13 - View towards Rangitoto Island

Figure 2.14 - View up Wellesley Street towards Sky Tower

Figure 2.15 - Panorama across unused green area
2.2 SITE EXPLORATION

Auckland Domain is a large park on the eastern fringe of the city centre. It is a great asset and in close proximity to the city. It is home to cultural amenities; Auckland War Memorial Museum and Wintergardens, and includes sports fields, walkways, trees and generous open spaces. Figure 2.18 shows one of the beautiful walkways that can be taken through the park. This particular track leads to the foot of the site. It is difficult to continue to the city from this path, as the way is blocked by a confusion of roads and pedestrian islands. In this hostile environment, pedestrians will experience a noisy, polluted wait at several pedestrian lights.

Figures 2.19 and 2.20 are panoramic views taken from the centre of Grafton Road Bridge looking up, then down the motorway and gully. These images prove an undeniably negative severance exists between city and fringe. A once-beautiful natural gully has become a dividing moat, given the wide roads and motorway constructed. This area does not serve as a gateway to the city and does not allow people to easily access Auckland Domain or other amenities on the eastern fringe. Even the area’s priority, the motor vehicle, cannot travel smoothly through the unclear road network.
2.3 NATURAL LANDSCAPE

Auckland is located on a diverse and dynamic land formation. It is the narrowest section of land in the North Island with the city touching both the east and west coasts. The city is built on more than fifty volcanic mountains and there are many rolling hills, valleys, streams and bays. There is a sixteen kilometre coast-to-coast hike that links the Waitemata to the Manukau Harbour, with several key volcanic cones along the route. This walking route crosses Grafton Road and the site (Figure 2.22).

A contour model was built to better understand the topographic condition of this site. Several stages of construction are shown in figure 2.21. The area constructed includes much of Auckland Domain, almost reaching Auckland War Memorial Museum and part of Albert Park (other relevant park). Included is the Stanley Street intersection to the northeast where the motorway ends and, to the southwest where Grafton Gully is deeper. The contours grow and change from one iteration to the next, imprinting a dynamic effect on the site in red.

Figure 2.23 has an overlay of the road network, building footprints and park areas to illustrate how these align with the topographic surface. A contour through the site at twenty metres above sea level is shown in red, highlighting the undulating typography. A small road through Auckland Domain is noticeably sensitive to the contours, while many of the large roads are not. Wellesley Street had been cut deep into the gully bank allowing the road to run under Symonds Street. Also noticeable are large volumes of earth shifted to meet bridges and on-ramps to the motorway. The monstrous hole that was dug for the Owen G. Glenn Building is visible at the top of this figure.
Figure 2.22 - Coast to coast hike

Figure 2.23 - Illustration of contours and context


2.4 CONTEXTUAL ENVIRONMENT

This research explored how to repair a disconnected, unpleasant environment. A sound understanding of surrounding functions and activity relevant to the site was gained. This informed an effective strategy to unite various functions and activities. Within the surrounding built environment there are a range of distinct building types which were broken into sections and discussed in-depth. The buildings that remain black in the figure ground analogy are regular residential and commercial typologies. Small to medium sized commercial buildings exist through the neighbouring Grafton, Newmarket and Parnell centres, with smaller residential footprints throughout. The adjacent light commercial buildings that line Grafton Road are of interest to the site.

Site Context

Built Context

Green Link

Cultural Link

Figure 2.24 - Illustrations of contextual environment
2.4 CONTEXTUAL ENVIRONMENT

Green Link

A major connection to link Albert Park and Auckland Domain is necessary as they are two of the most frequently used parks in Auckland. This connection is part of a wider green link that Auckland Council is aiming to develop and can be seen in figure 2.26. Victoria Park at the western edge of the city and public space on the waterfront are also part of this link. There are plans to remove most of the traffic from targeted roads along this link, making way for landscaped and people-friendly streets. The University of Auckland and other organisations have shown interest in creating an extensive connection in the form of a land bridge over this site. The green link forms a strong argument for a substantial project and has been important in driving the design process.

Figure 2.25 outlines the nature paths that wind through the most untouched and densely planted area of Auckland Domain. The main path leads from the site to the large open areas and cultural buildings within the park. There is a path leading to Parnell that could be reinforced to better connect Parnell to the city. These walkways are beautiful with flowing streams and an assortment of vegetation, serving as a sanctuary within the built environment. The streams are home to glow worms, a unique native species to New Zealand, visible by night. This area should remain largely untouched, however, access to these walks requires particular attention.
Two relevant cultural buildings are Auckland Art Gallery in Albert Park and the Auckland War Memorial Museum in Auckland Domain. These are almost one kilometre apart, a comfortable walking distance for visitors. This distance should take 15 minutes for the average person, though it may take twice as long given the severance issue. The chosen site is located halfway between these two cultural centres, and has the potential to unite them. Creating a convincing journey between these complexes would help invigorate this area of the city. To further strengthen this cultural link, incorporating cultural amenities into this project was proposed.

Auckland Art Gallery is of significant architectural importance, as it was named a world architectural building of the year in 2013. Its recent upgrade by architecture firm Francis-Jones Morehen Thorp (FJMT), is a thoughtful blend of historic restoration and contemporary additions. There are architectural elements and materials that are evocative of New Zealand culture, while the gallery itself is home to local painting, sculptors and exhibitions. Auckland War Memorial Museum in its magnificent neoclassical style has become an icon to the city. This building has a large collection of New Zealand, natural and military history. Auckland Domain’s Wintergarden is another part of this cultural link. Located in this complex are two beautiful glasshouses full of exotic plants and a formal courtyard. All of these buildings are cherished heritage buildings that need to be made more accessible to the public.
2.4 CONTEXTUAL ENVIRONMENT

Education Link

The project site is located on the edge of Auckland’s learning quarter. University of Auckland buildings are signalled in light blue and Auckland University of Technology in dark blue. This is the most densely clustered area for student education in New Zealand. The University of Auckland has over 40,000 students and almost 5,000 staff. Students influence, and will continue to influence the future of the city; they will embrace change and support sustainable development. This project has been designed to cater for students in a shifting society. Students will be one of the primary groups to pass through the site. This number is set to grow as the Newmarket campus continues through development. Figure 2.29 highlights the new campus’ relationship to the site. Auckland Domain acts as an important bond for students between education and recreation.

The University of Auckland itself lacks a pleasant urban environment with minimal spaces to relax or retreat, having been referred to as a concrete jungle. Students and their wellbeing would benefit from having new, attractive public spaces. A more successful building within the compass is the Owen G. Glenn Building designed by FJMT. It has a dynamic curving glass form that visually connects the inside with the outside, while shaping a courtyard space. The space would function better if it was contained, with defined edges and had more life to it. The section to the left illustrates the scale of this building, with lecture theatres, parking and servicing all submerged in the hillside.
Two additional building typologies with unique functions influenced the connections in this project. Firstly, the recreational buildings in green, the most significant being the ASB Tennis Centre. This complex recently underwent a major upgrade to host bigger events and there are plans for further expansion. This is New Zealand’s national tennis arena with a capacity to host 3,200 people for major tennis tournaments such as the New Zealand Open. Next Generation and Boxing Alley gyms are located here, forming a popular recreation hub in close proximity to parks, universities and the city. These facilities suffer from a lack of accessibility, forcing many users to, somewhat ironically, drive. This project has aimed to link this recreation precinct by incorporating space for viewing sports on big screens. Incorporating retail into this project would provide places to eat and relax during sporting tournaments.

Auckland’s major hospital precinct shown in purple is located nearby, and is a short walk from the site. The precinct includes Auckland City Hospital and a purpose built children’s hospital, Starship Children’s Health. These hospitals are the largest in New Zealand with a great number of patients and visitors passing through and many staff to accommodate them. This project has intended to create an accessible, interesting place for those who want to retreat from the difficulties of visiting or working in a hospital. Having pleasant spaces and suitable functions a short walk from this precinct would prove beneficial to visitors and staff. These health and recreational links are another important aspect to the project.
2.4 CONTEXTUAL ENVIRONMENT

Civic Link

As this project aims to connect a variety of people and functions, it has encompassed civic qualities. With this focus on civic repair, it is imperative to understand how it relates to the city’s existing civic functions. The assortment of buildings left in the figure-ground diagram is the civic centre of Auckland. Situated here are the Auckland Town Hall, Aotea Centre, Civic Theatre and Metro Entertainment Centre. These buildings surround Aotea Square, Auckland’s largest paved public space that can cater for crowds of up to 20,000 people, and is half a kilometre from the site. Although having undergone a major upgrade, Aotea Square lacks a sense of containment and clarity. Nearby is the Central City Library, a public amenity that needs to be well integrated into the city fabric. An additional civic amenity in close proximity to the site is Vector Arena, the city’s (and country’s) prime enclosed entertainment venue. The 12,000-seat arena hosts many of the foremost performers that visit the country. All of these civic facilities and their supporting urban spaces need to consider how they function as part of the city as a whole. The project solution will attempt to construct positive civic space and qualities that function as part of a greater whole.

Wellington, as previously described, is one of New Zealand’s better-connected cities with successful public spaces. The main square, Civic Square, is an example of this and an appropriate local precedent to observe. Figure 2.34 is a photo taken from one end of Civic Square looking towards the City to Sea Bridge. Crossing one of the city’s busiest roads, this bridge provides pedestrians with a safe and user-friendly access way to the waterfront. The square adheres to urban design principles, helping make it a pleasant public space. It is well contained, with an appropriate height to
width ratio and clear access ways. The space is dynamic with level changes and a mixture of interesting textures and façades. A floating ball marks the centricity of the space and creates a point of interest. All elements that create this space are well considered, with a hierarchical relationship to each other.

Public and sustainable transport is a crucial factor to improving and creating welcoming cities. Auckland city has taken an initiative by constructing the Grafton Gully Cycleway. It has connected two major cycle routes - from the waterfront heading east and out to western Auckland. The project proposes a bicycle hub to support this new cycleway helping connect its users to the city, and providing bicycle storage and servicing facilities. This link would allow easy access for people in eastern and western suburbs to the site, the city and other places nearby. It offers a great opportunity for the project, promoting sustainable transport providing it is integrated effectively.
2.4 CONTEXTUAL ENVIRONMENT

Wider Links

The proposal has been integrated with the fabric of the city and benefits the city as a whole. Figure 2.37 illustrates wider connections and relationships that were considered. The three parks and waterfront as part of the green link are visible. Existing public spaces in the city are indicated in blue and shown to be too few and far between. Vulcan Lane and Durham Lane are regarded as some of the more successful spaces in the city and their qualities have influenced the project. New spaces designed for this project have considered their hierarchical position and relationship to these existing spaces. The Grafton Gully Cycleway is shown running through the site in green, before dispersing east and west. The Auckland Art Gallery and Auckland War Memorial Museum in red highlights their close proximity to the site. All new projects in the city need to be aware of their relation to the City Rail Link and the proposed train stations (in yellow, existing in grey). The introduction of a new tramline is proposed through the site (in red) as part of the Auckland City Council’s plan to reinstate trams to the city (see section 3.3). This would introduce public transport to the site and re-connect the city to Parnell.

Major natural heritage features and important visual connections are illustrated in Figure 2.38. Grafton Gully and the project site are on axis to Rangitoto Island, visible beyond North Head, Devonport and the waterfront. This is an important view shaft that needs to be respected and one that has informed the design process. Left is the Sky Tower, an important visual marker that helps people orientate themselves in the city. Bottom right is Auckland War Memorial Museum elevated at the top of Auckland Domain.
2.5 HISTORY OF SITE

It is interesting to see how the project site and surrounding area appeared before Auckland was developed. In 1863 this site was covered in native forest, typical of a New Zealand rural landscape today. Figure 2.39 is a photo taken, looking down Grafton Gully, with views of North Head and Rangitoto Island’s iconic cone beyond. Early post-contact settlements are scattered through the area. It is a picturesque scene showing the beautiful natural habitat of Auckland.

Before the arrival of Europeans the site was in an area known to Māori as Te Taongaroa - 'the long pulling or dragging [of canoes]'. The area was then re-named Mechanics Bay by early settlers. Before the bay was reclaimed after 1931 the water’s edge came near the end of Grafton Gully. Two streams feed into this bay, one called the Waipapa Stream, which ran down Grafton Gully and through the centre of the site. At this point on the bay was a traditional canoe-landing place for the Waipapa Marae, located up Parnell Rise. Today, amongst vegetation between the motorways, three sculptures symbolise the swampy stream that once ran down the gully. These sculptures are barely visible to those driving by on the motorway. This project has aimed to make historic and cultural references to offer people the opportunity to learn about the history of this area.

The construction of Grafton Bridge in 1910 is an important event in the history of the area. This beautiful arching bridge, built to replace an earlier structure, celebrates
the natural severance of the gully. It created an important connection which then influenced the development in this region of the city. Figure 2.40 shows the bridge covered with scaffolding whilst under construction. This is a historic bridge that should be cherished and not compromised by any development.

Until 1956 there was an extensive tram network in Auckland that served as the main form of public transport around the city. Figure 2.41 shows a map of this system that connected the city centre to eastern and western suburbs and stretched south as far as Manukau Harbour at Onehunga. Trams and cars shared these routes, offering both convenient and efficient transport. As the preference for motor vehicles grew, the tramlines were removed and people-friendly connections were replaced with car-oriented roads. The image of this tram is near Stanley Street and shows that the lower end of this site used to be friendlier to pedestrians. It, too, gave them the opportunity to make local connections via the tram.

Historic artefacts were uncovered and preserved when Grafton Gully’s motorways were built from 2001 to 2003. In 2004 a report on the history of this area and these findings was compiled in a document - *Industrial Auckland: An Archaeological Investigation of Grafton Gully*.10 This document gives an insight into the history and development of the area, and an account of its rich history. Examples of these artefacts are depicted in figures 2.42 and 2.43 - shovel heads, one of Welsh origin and the larger for a furnace, and fragments of bottles that belonged to a mineral water

---

10 Ibid.
company. There were other interesting artefacts discovered and noteworthy locations recorded including several old wells. This project will record this rich history and provide space for people to view artefacts found during these excavations.

Left are aerial photographs of the site and its surrounding area showing developments since 1940. Visible is a progressive advance from residential units to industrial functions to the post-industrial form we see today. Also evident is the expansion of the road network. The gully is transformed from bush and vegetation, to housing and parks, then to large roads and even larger motorways.

The two images in figure 2.45 illustrate the major changes that have occurred to the site over this 70-year period. The space given to traffic (in red) has increased dramatically, from simple roads to a complex arrangement of motorways, on ramps and off ramps. What was once a park and recreation field is now unusable green space surrounded by fast flowing traffic. The parts that have remained (in orange) are Saint Paul’s Church and Auckland Bowling Club, which was established in 1861. The Club’s bowling greens are believed to be the oldest in the Southern Hemisphere.
Figure 2.45 - Illustration of changes over a 70 year period
3.0 KNOWLEDGE
3.1 FEDERATION SQUARE AS A PRECEDENT

Melbourne, Australia is one of the more relevant and comparable cities in the world to Auckland. The cities are similar in age, and are both growing rapidly. Auckland and Melbourne experience similar severance issues due to their post-industrial condition. Melbourne, too, has suffered from a separated urban environment, as transport infrastructure disconnects parts of the city. However, Melbourne City Council has been proactive in implementing a design-led city to solve these issues. Melbourne is known for its laneways that continue to undergo regeneration. The transformation of these spaces has created a strongly connected urban environment, with many pleasant places for the public to enjoy. The improvements haven’t stopped there - major developments like Federation Square have been designed to repair large severance problems.

Federation Square, an urban renewal project which has become one of the most popular tourist attractions in Australia, is an applicable precedent to this thesis project. This development was designed as a stitch in the urban fabric of Melbourne, and it has set the benchmark for place making in a modern context. Jan Gehl has studied Melbourne and its changes since the urban renewal plan was implemented in 1985. His data reinforces the benefits of urban renewal and shows how this brought life to the city, increasing human activity. Gehl identifies Federation Square as pivotal in encouraging people to walk, to stay and to enjoy the city.11

Federation Square is located at the intersection of Flinders Street and Swanston Street in the Central Business District of Melbourne. It lines the edge of the Yarra River and is adjacent to Flinders Street train station. This mixed-use development revolves around two major public spaces: The Square, external and The Atrium, internal. Built atop a large platform covering busy railway lines, trains unobtrusively pass below. This large railway system severed the city from one of its foremost natural features, the Yarra River. Figure 3.1 highlights in red the large expanse of railway lines that cut the city from the river’s edge. Federation Square has effectively connected the city to the river’s edge through lanes, public spaces and built form thus creating and encouraging a vibrant urban environment.

The majority of the buildings form a U shape around The Square, which is open to the north-west, towards Flinders Street Station. Adjacent to The Square is a glass wall (which forms part of The Atrium) and a plaza - home to a permanent large screen. Crowds gather to enjoy the spectacles that are regularly put on display, including sports games and other popular cultural events. The edge of the Yarra River has been transformed into an accessible and attractive promenade lined with trees and seating. All public spaces are adaptable and capable of hosting a wide range of urban activities. Figure 3.4 shows crowds gathered for an outdoor concert in The Square.

Federation Square is home to a range of restaurants, cafés, bars, shops and cultural facilities. The Edge Theatre faces south towards the river and has the same fractured glass quality as The Atrium. The theatre can seat 450 people and allows spectacular views over the river. Other cultural facilities include a visitor’s centre, function and events centre, hotel and the National Gallery of Victoria. There is also rentable space available for commercial tenants. The cultural functions and how they are seamlessly integrated were of particular interest to this thesis project, as discussed in section 2.4. The Square is the pivot of this precinct and its design ideology crucial. As a civic space it seamlessly connects the surrounding group together with a hierarchy of access ways and level changes. The space is flexible, allowing for large public crowds of 15,000 people, while also satisfying those simply going for a leisurely walk. The proximity of The Square is distinguished through the material used;
3.1 FEDERATION SQUARE AS A PRECEDENT

the surface is made up of 500,000 cobblestones in local Kimberley sandstone. The textured ground plane resembles the iconic Australian desert and makes for a memorable experience.12

The fractal façade is a cleverly designed system, and gives the precinct a coherent identity. A triangular pinwheel grid, as depicted in figure 3.6, reveals this geometric pattern. Glass, sandstone, zinc and perforated zinc are the materials used and can be ordered in numerous arrangements. These unique material combinations are arranged to suit internal functions and the orientation of façades.13

Federation Square has a unique environmental system known as the Labyrinth. This is a large passive system that delivers cool air in the summer and warm air in the winter, as required, to public spaces. The Labyrinth consists of a large collection of corrugated concrete walls hidden below The Square, above the platform over the railway (under construction in figure 3.6). Air is gently pumped through the system by night, allowing the concrete mass to modify the temperature, and is then dispersed where needed. This is a highly sustainable design feature that uses one tenth of the energy of a conventional system.14 Sustainable design on this scale is only feasible when integrating into a new project like this.

13 Ibid., p. 2.
14 Ibid., p. 5.
Federation Square has led to plans for the continual development over these railway lines. This ‘knock-on effect’ is testament to the positive repercussions of serious and thoughtful severance-solving architecture. Reconnecting this area of Melbourne has not only resulted in an improved urban environment but it has encouraged additional urban renewal.

The effect and influence of Federation Square East is a 3.3 hectare area covering more of the railroad lines adjacent to the Yarra River. A mixed-use development here could be designed to enhance connection from the central business district to Melbourne’s cultural, sporting and entertainment precincts. Figure 3.9 depicts a proposal designed by LAB architecture.

A million dollar international design competition to restore and rejuvenate Flinders Street station and its surrounding area was launched in 2011. The competition was won by HASSELL + Herzog & De Meuron with a scheme fit for the 21st century, while also respecting the city’s cultural heritage. The proposal stitches more of the city together with an iconic design; including a public art gallery, plaza, amphitheatre and marketplace.15

---

3.2 GRANITE WEB AS A PRECEDENT

Granite Web was a competition winning proposal by Diller Scofidio + Renfro for The City Garden Project in Aberdeen, Scotland. Like Auckland, this is a post-industrial city that suffers from severance caused by transport infrastructure. The site for this project is in the heart of the city where a motorway and adjacent railway line affect the urban condition. Granite Web was the most convincing of the entries, chosen over other proposals from Foster + Partners and other highly regarded firms. Although not yet built, Granite Web serves as a precedent for an urban reparation concept.

The brief requested a six hectare, safe, year-round, civic garden reflective of Aberdeen’s identity. It should integrate the surrounding retail and cultural attractions whilst providing a new contemporary arts centre. It needs to create a new dynamic and revitalised region in the city. The project’s key themes include: place-making, connectivity, landscaping, culture, historic consideration and sustainability. 17

The Granite Web proposal went over and above this brief delivering a dynamically connected and integrated vision. Visible in the site plan are web-like forms, reaching out to encourage pedestrian movement. The line between gardens and formal spaces are blurred, enabling the amphitheatre and gardens to merge as one, creating a lively, flexible response to the brief. These flowing forms continue through to internal spaces that are submerged below green rooftops. Structural and environmental strategies are designed to deliver a feasible and sustainable architectural solution.

Figure 3.12 - Proposal drawings including: exploded axonometric, structural diagram, environmental diagram, multi-use spaces and aerial views
Transport infrastructure, and the way it has been integrated into Auckland city, is the leading contributor to the problem this thesis is seeking to solve. Transport systems heavily influence how well a city functions; planning strategies need to be rethought and revolve around effective public transport. Most cities of Auckland’s scale have a combination of heavy rail (trains, monorails) and light rail (trams, metros) to make public transport efficient. These need to work in conjunction with buses, bike lanes and pedestrian paths. Auckland is planning to construct an inner-city train line to better connect the city and its outlying suburbs. This *City Rail Link* (CRL) is discussed and depicted in section 2.4. Another effective form of transport is light rail trains, or modern trams; these are slower than trains, run along streets and are able to stop more frequently like a bus. There are many examples of light rail trains around the world which work in conjunction with heavy rail trains. Auckland was once home to a tram network, however this was removed in the 1950s (see section 2.5). After many years, the Auckland City Council is looking into reintroducing a light rail network.

This thesis proposes that a light rail train line (red, figure 3.25) be introduced to connect the proposed Aotea and Parnell train stations. The line proposed would work in conjunction with the proposed CRL (yellow) and light rail lines on Queen Street and Quay Street (orange). Parnell and the proposed Parnell Station are particularly isolated; this area of city fringe would flourish from a strong connection like this. This line would enforce the green link between the city’s three key parks and provide easy access to them. Proposed light rail stops (red dots) include: the parks, the civic precinct, the recreation/tennis precinct, Parnell village and the thesis
site. Incorporating a light rail line through the project is a viable and interesting proposition - it creates strong urban connections that are in sync with future city plans and the aim of this thesis.

Technology is constantly improving public transport. Auckland is experiencing positive public transport improvements; one example are the electric trains replacing old, diesel-hungry trains. These new, clean and quiet trains are more pleasant for both passengers and the environment. Changes like this, along with a more efficient and comprehensive system, will encourage the public to use public transport and, in effect, take better care of the environment. A concept for a light rail train is shown in figure 3.16, this is the type of modern tram that will be integrated in this project. These trams could run on a magnetized system, hovering above the ground with no overhead cables, a system that would enable continuous, people-friendly surfaces. The location of the station and the light rail line will need to be considered and carefully integrated into the project. The Christchurch tram stop by Rendezvous Hotel is a great example of a well-integrated tram stop (figure 3.18). The tram stops amongst retail and café spaces within the Hotel’s enclosed atrium. Year round this stop is a pleasant place for visitors to hop on/off as it is protected from the weather yet open to the sun.

Auckland needs to continue improving its public transport system to help change a car-oriented attitude, helping to minimise congestion and pollution. In the future, cars will be electric and it is unlikely we will need to use them as often. Research shows that world oil production peaked in 2006, and car usage and oil consumption has since been on the decline worldwide.\textsuperscript{18} Today, more than ever before, the world’s urban dwelling population continues to rise, therefore it is imperative that cities function more efficiently and sustainably to accommodate this population influx.

With this knowledge, this project has aimed to design a proposal that considers its projected future setting. The motorway through the project site is a major link to the port; as the port continues to grow, so will the number of trucks that supply it. However, given the global car trends we can expect the roads through this area to become less busy. With fewer cars, the road network can be simplified and the severance impact reduced. Electric cars will improve the urban environment, reducing noise and pollution.

3.4 PUBLIC SPACE

Understanding urban design theory and how to design public space is essential to this thesis. A well-connected city relies on the articulation of spaces and masses to create a positive relationship between people and place. Enjoyable public space and how you feel within a particular space, depends on a number of components. These include the scale, containment, access, movement and the treatment of edges and components. These elements aid each other in creating unique spaces. If a space relates well to people and is of high quality, a desirable and attractive destination is created.

To the right are aerial images of public spaces at the same scale, allowing their merits to be compared. The site has overlaid in red, Federation Square, and in white, Granite Web. This illustrates precedents that are of comparable scale to the thesis site. The main public squares of Auckland and Wellington are included plus a small selection of noteworthy public spaces which have a variety of spatial qualities. Included are classical piazzas of Rome, Venice and Siena, a Parisian square and Times Square in New York. Each is unique with appropriate spatial qualities and connections to their context.

Public spaces, whichever form they take, need to be relevant in scale for their context to satisfy potential users, just as a supermarket outlet is strategically placed to maximize catchment and therefore profit. Piazza Del Campo is a very large, open public square in the centre of Siena, Italy. A densely built context enables a large catchment of potential occupiers to maintain a lively atmosphere in the space. Christopher Alexander offers theory on how to scale squares appropriately based on patterns in his book *A Pattern Language*.\(^{19}\) Rule 106, *Positive outdoor space*, states positive spaces are contained, not too complex in shape, have a relationship to interior spaces and consider orientation and relation to context.\(^{20}\) Rule 61, *Small public squares*, gives quantifiable guidelines for public squares. They should be no wider than approximately 22 metres as this is the furthest two people can be apart and hold a conversation. A place begins to feel deserted when there are more than 28 square metres per person.\(^{21}\) Rule 160, *Building edge*, discusses how people like to use the edge of spaces. This edge dictates the relationship between inside and outside; it should be a lively bond, encouraging a range of activity.\(^{22}\)

Gordon Cullen’s major contribution to the field of urban design is his book *The Concise Townscape*.\(^{23}\) This book deals with the relationships between components of the urban environment, demonstrating how to weave the built environment together to release drama. His most noted concept is *serial vision*, which can be applied to both design and analysis:

> “if [...] we design our towns from the point of view of the moving person (pedestrian or car-borne) it is easy to see how the whole city becomes a plastic

\(^{20}\) Ibid., p. 471.
\(^{21}\) Ibid., p. 325.
\(^{22}\) Ibid., p. 632.
Figure 3.17 - Urban space and scale analysis
3.4 PUBLIC SPACE

experience, a journey through pressures and vacuums, a sequence of exposures and enclosures, of constraint and relief.” 24

The above theory was used to test and analyse the experience to and through spaces in this thesis project. The grand steps to Piazza Del Campidoglio (Capitoline Hill) create a distinct, memorable journey. Accessing the space from the rear is as equally dramatic, as the space is suddenly revealed, rather than a linear journey. The Spanish Steps, Federation Square and Civic Square have all used level change to create a dramatic experience.

Kevin Lynch highlights space as the core importance of urban design and how one may experience the city. As man is a mobile animal, voids in the urban landscape allow him to move and be connected to his surroundings. These voids can be parks, squares, streets but also internal; lobbies, tunnels and arcades. Spatial quality is dictated by scale, proportion and the size of parts in relation to each other and its context. There is a rich assortment of spatial types: the vista, the slot, the canopy and the bowl and so on, which can be arranged to make a dynamic public realm. Lynch recognises there are particular complex types, such as the Italian piazza or the formal French place. 25 One challenge of this thesis was to determine what a unique, yet truly New Zealand urban space is like. Other theories are discussed, such as the impact of landmarks on the urban landscape. Piazza San Marco in Venice and Piazza Del Campo are examples where a vertical bell tower marks a dominant focal point of each square. Saint Mark’s Campanile and Torre del Mangia (bell towers) are tall enough to mark the location of the spaces below. Visual elements and how they affect a space was also explored in this project.

Jan Gehl’s writings are current and the most influential and relevant to this thesis. Gehl proves a straightforward, sensible approach to improving urban form by analysing urban spaces, suggesting improvements, then repeating and documenting the process. Although many of his observations seem obvious, they are often overlooked and neglected in reality. A toolbox of design principals is given, based on observations, which can provide a starting point for designing good public space. Design to assemble rather than disperse, to integrate rather than segregate, to invite rather than repel, and to open up rather than close in. Spaces should be inviting and encourage ‘seeing and hearing’ interactions through fewer walls, shorter walking distances, low traffic speeds, one-level surfaces, and face-to-face orientation. Twelve criteria are given to ensure a high quality of protection, comfort and delight. 26 Gehl is an advocate for cycling in the city 27, something currently lacking in Auckland.

To the right are four existing public spaces in Auckland. The main civic space in the city is Aotea Square, discussed as part of the civic link in section 2.4. Queen Elizabeth II Square near the waterfront is another major public space, yet is of a poor standard. An office tower to the north puts the space in shadow for most of the day.

24 Ibid., p. 10.
27 Ibid., p. 182-91.
It feels desolate with no activity designed to activate the edges. In a prime location, with direct access to buses and the main train station, this should be a desirable space to support the transport system and city. Freyberg Square is a smaller square and visibly more pleasant in articulation. There is a water feature, vegetation and places to sit in the sun. Although three sides are lined with roads, they are narrow with slow traffic, and have visual barriers that help provide protection. One of Auckland’s more vibrant spaces is Vulcan Lane. It is a pedestrian street, lined with café seating, retail and interesting design elements. The scale is an appropriate width to height ratio of 1:2, enables sun to enter and feel contained. The space is welcoming, with places to sit, and on occasions enjoy a street performer. These special design qualities have helped form a cultural language which extends into this project.
3.5 MATERIALS + IDENTITY

Thoughtful articulation of space and built form brings the public realm to life. The texture of floors, walls and ceilings produce a distinct character, conjuring certain feelings towards that place. Materials come in all shapes, sizes and colours, and are used for various purposes. When carefully composed, these elements harmoniously unite to create beautiful architecture. If the composition is relevant to context, but is unique, the place will build and maintain its own identity. When this is achieved, people feel safe and comfortable and enjoy the space.

Kevin Lynch discusses surfaces, stating the city floor as the most important, as one touches it as well as sees it. Level change and textural patterns can be used as an effective guiding tool. Choice of material and texture can dramatize or neutralize a space, while a variety of uses should lead to a variety of materials. Lynch comments that a clear perceptual identity should belong to a particular place. A strong identity will be vivid, memorable, unique and distinct from other places. This creates a sense of belonging for those that use the space, and encourages them to linger or return. Identity lies in the individual’s perception of the place; if a place is able to adapt to its occupants’ desires, over time, the identity will be strengthened.

Jan Gehl states, beautiful cities enable a good experience. Activity stems from masses and spaces and these activities are made pleasant through their articulation. Successful spaces adhere to both a highly functional and aesthetic standard. It is the careful blend of all design aspects which creates a remarkable place. Gehl provides the example of Piazza del Campo (see section 3.4) as a unified blend of these qualities. The Piazza convincingly fulfils all functional requirements, while all architectural elements merge to create a beautiful whole. The proportion, materials, colours and detail enrich the areas to walk, sit and interact.

New Zealand is a young country and does not have the timeless historic character of many cities in Europe like Venice or Paris. Character in Auckland exists and is developing in village centres like Ponsonby and Kingsland. Wynard Quarter has created an identity by retaining silos and inserting new functions. There are emerging spaces reflective of their industrial origin, but carefully blended with contemporary high quality materials. Other examples of adopting a local identity in New Zealand can be seen through the café culture in Wellington and the shipping container mall in Christchurch. New Zealand is better known for its natural landscape rather than its urban character, therefore many notable local buildings are renowned for their connection to the natural environment. These are commonly made of light materials that blend with the outdoors - the Auckland Art Gallery and Owen G. Glenn buildings do this (see section 2.4).

To the right are three projects by FJMT, the Auckland Art Gallery, Owen G. Glenn Building and Darling Quarter in Sydney. Darling Quarter provides a great example of urban design and architecture. This mixed-use development prioritises lovely

---

29 Ibid., p. 517.
places to sit, walk, relax, eat and work. There is an energetic display of high quality materials that support these functions and create a strong identity. FJMT has created an architectural language through the way they articulate their projects, comprised of simple materials: steel, glass and wood. They effectively articulate masses and spaces to merge and reflect the context of each individual project.

Figure 3.27 shows three high quality Auckland buildings, all with different functions. Each has various features reflective of New Zealand’s culture. The Eastern Building in Britomart has a public walkway, featuring a native green wall. The Viaduct Events Centre is transparent and elegantly sits at the water’s edge, lightly touching the ground plan. The apartments at 85 Halsey Street feature large timber uprights, similar to those seen at the Auckland Art Gallery and resembling a native forest. This project builds on rich local materials that can help to establish identity for a public space in Auckland.
4.0 DESIGN PROCESS
4.1 BRIEF ONE

Project Time Frame
- Considers future generations as Auckland grows and needs to become more compact
- Works in conjunction with other important urban renewal projects like the waterfront
- Considers future conditions: CRL stations, light rail line, motorway/road usage, university expansion, cycleway network

Connections
- Green link: Albert Park and Auckland Domain
- Cultural link: Auckland War Memorial Museum and Auckland Art Gallery
- Village link: city centre, Parnell and Newmarket
- Education link: University of Auckland
- Health and recreation link
- Cycleway link
- Light rail link
- Built and natural environments

Clients
A collaborative multi-use development between:
- Auckland Council
- Auckland Transport
- Retail and Commercial Investors
- Auckland University
- Tennis New Zealand

Functions
- Public square
- Multi-purpose spaces
- Cultural amenities: gallery, theatre, function space
- Accommodation to support cultural link
- Dining and shopping retail
- Commercial offices
- University buildings
Destination
- Create a place people will enjoy and look forward to using
- Incorporates interesting and attractive public space
- Has a unique identity that encompasses Auckland, New Zealand
- Is adaptable for various activities and seasons
- Architectural articulation enforces connections

Sustainability
- Passive design: cooling and heating, natural light and ventilation
- Rainwater collection from new surface area
- Incorporates solar collection
- Kinetic energy from high traffic volume

Scale
- Relevant to context
- Enables strong connections and a desirable destination
4.2 DESIGN METHODOLOGY

Stage One

Stage Two

*Figures are labelled as they appear in this section
This project was developed through an iterative design process, moving from an initial response, through to a carefully resolved design solution. Masterplanning was executed in three stages, followed by specific design focusing on key parts. Ideas were generated and tested through sketching and physical modeling. The undulating topographic nature of this site required sections to be drawn and physical models made to investigate lateral and vertical spatial arrangements. All iterations have been examined against a framework generated to analyse design decision. Knowledge gained from theories and precedents has been implemented throughout the design process. Alternative approaches were explored to justify design decisions and this design process.

A considered selection of plans has been chronologically ordered to represent the extensive iterations of the design process. These iterations will be further explained and recount the journey towards a refined design solution. In the later stages, three-dimensional computer modeling was introduced to manage the large scale of the project, enabling the masterplan to be articulated in greater detail.
4.3 MASTERPLAN FRAMEWORK

Brief was developed in response to the contextual information gained in section two and the knowledge gained in section three. This framework was fabricated to ensure the requirements of this brief were met. It also helped to form an analysis of design concepts and guided the masterplanning process.

The severance-causing motorway and roads need to be covered or bridged to allow urban links to cross. Simplifying the road network and access to the motorway will immediately create a better environment for pedestrians and cyclists. The cycleway and light rail line need to be integrated in a way that makes them accessible, attractive and user-friendly. Destination spaces need to be flexible, relevant to contextual functions and attributes, and accessible. Carefully arranged built forms have shaped these spaces and supported the reconnection process. It was necessary these buildings and public spaces developed a hierarchical order to function successfully.

*Figure 4.2 - Developing a masterplan framework*
SIMPLIFIED ROAD NETWORK

TRAMLINE - Incorporate new stop

CYCLEWAY LINK - Incorporate bicycle amenities

PUBLIC SPACE - Consider spatial qualities and relationships

NEW PEDESTRIAN ROUTES - Walkable contextual connections

UNIVERSITY EXTENSION - Buildings and spaces

BUILDING MASS - Defining public space and accesses

FEATURE BUILDINGS - Incorporate cultural amenities

MARK DESTINATION - Consider architectural articulation

VISUAL CONNECTIONS - Natural and man-made landmarks
4.4 MASTERPLAN STAGE ONE
Creating Connections and Spaces

The route of the cycleway and tramline adhere to the wider connections established in section 2.4. The tramline turns off Wellesley Street and passes through the project, before continuing though Auckland Domain to the proposed Parnell station. This tramline needed to pass through the site on a sloping surface that drops twenty metres from one side to the other. A variety of masses and spaces were formed to try best integrate the cycleway and tramline.

This figure-ground technique explored basic planning concepts, however did not consider all aspects required of the framework. These ideas needed to be advanced and tested three-dimensionally to explore the vertical implications.
Alternative Design Approaches

An aesthetic approach was explored building on the undulating topographic nature of this site. Auckland is known for its many volcanic cones and rolling hills, which could provide this project with an identity. However, this aesthetic approach does not help in establishing strong connections or functional space at this early stage.

Additionally, a bridge and damming design approach was explored and challenged the necessity of a platform over the motorway. These concepts produce direct linear connections, however significant place making to support these connections is not achieved. Adding mass and a vertical element improved the destination aspect but the spatial qualities desired, as researched in section 3.4, were not resolved.

A concept focusing on the green link, envisioned a large connecting boulevard. This type of public space is not suitable for the scale of the site as it is over-powering. This concept has a singular aspect, whereas the brief demands multi-dimensional characteristics.
4.4 MASTERPLAN STAGE ONE

Initial Concept

This concept took the platform approach, covering the motorway and Grafton Road, and allowing the existing road network to pass underneath. This enabled the investigation of unimpeded connections and spaces over a relatively level surface. The tramline curves from the city towards Parnell with a stop located near a central square. The plan revolves around this pivotal public space, supported by pedestrian links and subsidiary spaces. Seven arms reach out to connect to the urban context and draw people into key spaces. There are four subsidiary spaces: one for the university, one with views out to Rangitoto Island, one for the tennis precinct and one for the tram stop. A green thoroughfare links to Auckland Domain and Auckland Museum, with grass-roofed buildings either side merging into the park. All buildings on the site frame and contain the external spaces and accesses. The main square is of regular shape and its scale in sync with the rules Christopher Alexander encourages (see section 3.4).
One mass given particular attention slopes up from the main square, promoting a view of the Auckland Harbour. A theatre would be housed within this mass and frame a vista of Rangitoto Island. The adjacent form is angled the opposite way and would be more transparent in creating a strong relationship between the two adjacent spaces. Building forms are indicative, some too large for the functions they are likely to contain. Masses have been separated with laneways where necessary, and more of these would be introduced. The cycleway passes below the platform; inserting penetrations in certain locations would create a connection for cyclists.

This concept was the first carefully thought-out response to the brief and considers most of the requirements. When measuring this against the framework it proves to be a strong proposal, with room for improvement. This concept reflects traditional European planning, as found in many of the examples in section 3.4
4.4 MASTERPLAN STAGE ONE

Additional Concepts

Additional concepts were investigated with varying spatial qualities, as well as alternative connection and space-making methods.

Figure 4.10 depicts a mass and spatial arrangement broken into thirds around a central pivot. Contextual links intersect to create three junctions with partially defined spaces in between. These revolve around a core that could be a sunk-in amphitheatre space, covered by a canopy. The next concept has a singular large space with direct and grand avenues. It becomes obvious that this scale of space with grand entranceways is too large for this project and its context.

Figure 4.11 is an alternative process of ramping connections and intersecting masses over a tunnelled motorway. A web of connections and forms orientated on axes create interesting gaps that could form public spaces. This concept pays closer attention to the vertical level changes across the site, but lacks a rational plan.
Producing physical models allowed the numerous iterations to be compared and analysed for their connectivity, scale and spatial qualities. The richness of the spaces and masses in the initial concept is immediately evident. The other concepts lack clear connections, containment and a relevant scale. The initial concept best fulfils the framework and aligns with the research conducted in the knowledge section.
Proceeding from this initial concept further iterations were developed, each aiming to improve on the last and variations of spaces, masses and access paths were planned. Throughout this process, it became clear that the integration of the tramline into spaces and masses was very important. The scale and proportion of the main space and properties of supporting spaces was carefully considered. Developing a hierarchy of entranceways was essential; this gave certain links priority and ordered the space accordingly.

The first development positioned the tramline though the southeast side of the main space, then took a sharp, impractical turn for Parnell. Therefore, placing the tramline laterally looked to be a more viable solution. Development three located the tramline on the northern side of the space and created an active edge while allowing the sunny southern edge to be unimpeded. Development one intended to better contain the main space but also open it up to the northeast sun and views to Rangitoto Island. Gordon Cullen would argue that a journey is richer when spaces are revealed, and views take you by surprise.
This space lacked closure, as it was too open to the motorway and resulted in a weakened destination. The main space in development two and three are similar in scale, with a hierarchy of accessways considered. Moving this main space south improved the organisation of the plan and secondary spaces. The spaces, masses and accessways in development three have developed positively from the initial concept. All elements were starting to gel resulting from well-considered hierarchical relationships. These relationships and their three-dimensional implications are best understood in a massing model. Figure 4.19 depicts the slanted morphology of forms as they relate to their context, allowing the development to sit harmoniously while also creating strong connections and desirable spaces.

Emerging from this development, and satisfying the masterplan framework, came the location’s feature building. The red mass (right) is central to the project and connects the main space to two subsidiary spaces. The framework also calls for a destination marker: a possible tower mass is highlighted in figure 4.21 however, it did not harmonize with this iteration.
4.5 BRIEF TWO

The first stage of this design process explored a range of approaches and informed an initial concept and was then developed further. These early explorations were drawn and modeled at a scale of 1:2000. Working at this small scale is an efficient way to test many ideas. To advance this design in more detail, a larger context model at 1:1000 scale was built. This more clearly demonstrated the scale of the gully, motorway, roads, bridges and neighbouring buildings.

In stage one, masses and spaces evolved to create connections, and frame public spaces. Some of these masses would have been too large to satisfy common functions such as commercial or retail spaces. Design parameters were introduced to dictate and resolve these buildings. Restricting building widths to 18 metres enabled them to be passively designed for natural lighting and ventilation. Where the buffer of mass needed was larger than 18 metres, an adjacent building needed to be placed and separated by a minimum of 7 metres, thus creating a usable laneway or atrium.

Brief two introduced new design parameters to further guide the next stage of design: defining particular public spaces, requirements for central buildings and rules for all buildings. A focus on hierarchical order and relational connections was also implemented. In addition to the original brief, introducing these design parameters ensured a more attentive exploration in the next phase.
Public Spaces
- Main Square: primary catchment, porous, flexible, active edges, interesting, includes light rail stop
- University Space: incorporates cycleway link, level change and multi-use amphitheatre
- Outlook Space: slow pass, restful qualities, embraces vista opportunities

Central Buildings
- Connects three public spaces
- Incorporates cultural amenities: gallery, theatre and function spaces
- Develops a local and unique identity

Sustainable Design
- Buildings are no wider than 18 metres for natural light and ventilation where needed
- Buildings have a minimum separation of 7 metres to incorporate suitable laneways or atrium spaces

Hierarchy
To effectively function as a whole, all elements adhere to a hierarchical order, including:
- public spaces
- laneways + Atrium spaces
- entrances and thresholds
- internal functions

Relationships
All elements carefully consider how they relate to, and support each other, including:
- project qualities and existing context
- built and natural environment
- public space and building interior
- private, semi-private and public spaces
- horizontal and vertical aspects
4.6 MASTERPLAN STAGE TWO
New Scale + New Parameters

This first iteration of masterplan stage two took the design from the previous development and applied new parameters. A consistent scale of built form is visible, while a series of parallel buildings and laneways were introduced. The masses became usable forms that would house sustainable office and retail space. However, the public spaces lost many of their proportions and qualities in comparison to the previous design. Working at this larger scale, and with these new parameters, demonstrates the vast area of the site. More building mass was needed to buffer and create contained, usable space.

Figure 4.24 demonstrates how the three designated public spaces would be connected via a transparent central building. This building would have been unique in appearance and used to house cultural functions as public activity would spill into the public spaces. This would help establish and encourage a dynamic relationship between the two destinations.
Addressing Level Change

The vertical relationship of forms and spaces was carefully considered to ensure this project functioned effectively. The topography of this site demanded several levels of platform and created opportunity for an interesting architectural response. Varying level planes, steps and ramps are a valuable tool in urban design as they help create dynamic urban landscapes (see section 3.4, 3.5). Thus far, the platform had been considered as a singular sloping plane; vertical stepping needed to be considered in conjunction to lateral spatial arrangements.

The second iteration is planned with three main levels, separated by four vertical metres. The central and main level (number two on plan) flows from the main square through the feature building and into the other two public spaces. The additional levels rise and fall, following the contours below. A major planning development with these new levels is dropping the tramline below the main level, as figure 4.27 depicts. This would allow the main square and the feature building to connect seamlessly, while the tram passes below. This platform would also have penetrations to form a dynamic relationship between the light rail
4.6 MASTERPLAN STAGE TWO

Destination Marker

stop and main square. In this iteration the main square has been better defined with greater building mass towards the southern edge, improving the space’s proportions. Level changes improved subsidiary spaces, creating an amphitheatre space and providing stepped seating oriented towards the harbour aspect.

Marking the destination and creating a focal point needed to be further explored as part of the framework. The idea that a vertical element (tower) could rise from the central buildings seemed a viable option and was further investigated. Located as the pivot of the development, the proposed tower gave each of the public spaces a focal point; as seen with the bell towers of Piazza San Marco and Piazza Del Campo (see section 3.4). The tower would be on axis to the museum and gully line towards Rangitoto Island. Depending on its height in this location, it could be visible from many locations in the surrounding context.

The shape and appearance of such a prominent marker is very important and should relate to the built context, being sympathetic to towers nearby. This tower needed to sit harmoniously within its context, while also forming a unique identity. To the left are two tower forms that were modelled, one circular and the other morphing into a square top. The circular aesthetic is better suited to the built context as there are a number of curved towers nearby. The morphing square form is interesting, however it is less sympathetic to the development and its context.

The two images to the right give an impression of this iteration and the additional tower in its context. From Grafton Bridge the tower strikingly marks the centre of the gully as the motorway passes below. Although not directly obstructing a natural landmark, this tower does block much of the view shaft towards Rangitoto Island, which is not desirable. The masses in the lower impression are starting to fit the grain of the context either side. The tower was aligned to the height of the apartment towers further up the gully however, standing alone, it is not a harmonious fit. A soft or transparent façade, in addition to a small diameter, would help the tower to blend in.
Figure 4.31 - View of tower concept from Grafton Bridge

Figure 4.32 - Tower concept relation to context
These sketches explored how the central building and the surrounding spaces could have been treated. Here, the central buildings blend into neighbouring masses to tie the development together. A large cover could have spanned part of the main square, sheltering it from the elements. This was a plausible option making the space more flexible and usable in most conditions. A grand stepped entrance to the main square is visible in figure 4.34; this threshold is first in the hierarchical order of accesses, connecting city and park. The sketch outlines how the scale of the square is proportional to building mass and would have the ability to hold large crowds. However, it also felt bare and the space needed to be broken up to allow a range of informal uses, similar to Federation Square. The public space featuring an amphitheatre was oriented towards the core building where a stage would be. The combined steps and seating of the amphitheatre track the topography of the sloping site. Students would have the ability to use this space formally and informally. Hidden beneath would be bicycle storage adjacent to the cycleway and could be accessed via a tunnel.
Massing Adjustments

Small, more intimate spaces have been shaped in the Outlook Space to direct views towards the Auckland Harbour and Rangitoto Island. This would be a great, sunny place for café seating to encourage relaxation and enjoy the view. The scale, steps and level changes would make for a more leisurely pass in this area of the project.

Further iterations proceeded, aiming to improve the public space, the central buildings and the focal tower. The entranceway and journey from Grafton Road in the southwest corner was simplified to allow clear access. Aligning the centre of the tower on four converging axes reinforced its pivotal focus. This tower was centred on the gully line and motorway below, in line with a promenade to the museum and adjacent to the tramline and Grafton Road, city entrance. Small adjustments can make big improvements to the overall quality and clarity of space and form. The blackened buildings show subtle realignments which inform a refined proposal. Figure 4.38 is the final iteration that was produced in preparation for a midway proposal and formal design critique.
Figure 4.39 - Context and site plan
4.7 MIDWAY PROPOSAL

Figure 4.40: Proposal with major contextual links
The midway proposal was a result of the research and design process up until this point. Contextual information and relevant knowledge informed an iterative design process. This was not a complete resolution, however the presentation and discussion of this proposal was an integral part to the research project.

The aerial view right and contextual plan (figure 4.39) gives an overview of this midway proposal. The green link that also connects the Auckland Art Gallery and Auckland Museum is emphasized. This cultural link supports an additional cultural centre and tower, marking a new destination. Also highlighted is the tramline that will reconnect Parnell to the city centre. The converging light rail, cycleway and pedestrian networks will stitch together this break in the urban fabric.

To the left are views of the central tower that forms a destination marker. This vertical marker aligns on four axes that are depicted here: towards the museum and the primary entrance to the main square, on the tramline, on the motorway and gully line, and
Form and Space Relationship

following Grafton Road to the city. The height and form of the tower is sympathetic to contextual buildings. The top has been truncated towards Auckland Domain; this slant reflects the topography of the site and blend of city to park.

The tower base connects to regular masses and flows into the public spaces below. Three spaces revolve around this central pivot: a main square, an amphitheatre space connecting to the university, and a space to linger and enjoy landscape views. The form of the tower flows into these spaces with seamless connection, creating active edges. This would form a stage for the amphitheatre and sculptured seating and grand entranceways to the cultural centre and hotel.
4.7 MIDWAY PROPOSAL

Proposal Functions

Functions for the building in this proposal have been chosen based on contextual research. The central mass is a cultural centre containing a gallery, theatre, exhibition space and function space. Rising above this is a luxury hotel with panoramic views, an observation deck and a sky restaurant. A hostel will further support this cultural link (along with tourism amenities) and provide affordable accommodation for the area. Buildings designated for the expanding university are shown in blue. Office spaces provide an extension of the light commercial zone down Grafton Road. Most buildings would have an active retail ground floor with functions above, as seen in the Darling Quarter example in section 3.4. Most of the ground floor areas are given to retail with café seating spilling into public spaces. A modern tram stop is incorporated along the light rail line and a bicycle hub along the cycleway.

This mixed-use development will encourage a mixture of activity within the proposal. The assorted functions will draw in many people, encouraging intermingling to create a vibrant atmosphere. These masses and spaces will be articulated to match the diversity of the
4.7 MIDWAY PROPOSAL

Serial Vision from Wellesley Street and from Grafton

Figure 4.49 - Journey from the city following new light rail line

Figure 4.50 - Journey from Grafton through to the main square
city’s people groups. The proposal would gain a distinct identity and establish City Stitch as an exciting new node in the city.

The five main journeys to the proposed site have been depicted as a serial vision experience. Access routes were designed to fit a hierarchical order of importance based on their relationship to context. The Auckland Domain pathway is the most important, as it is part of the green link and connects to Auckland War Memorial Museum. Of similar importance is where the light rail line enters and exits the site as it creates a city-to-village connection. Next comes the Grafton Road connection to the city and to the hospital. A smaller connection is a new route through the university to the amphitheatre space. The scale, proportion and shape of these thresholds are designed to satisfy this order.

These serial vision sketches and the sketch of the amphitheatre space have been articulated with possible materials. Light materials such as wood, glass and steel which can sit atop the heavy, grounding platform were chosen. This grounding platform invites strong urban connections, while the architecture itself has a distinct local language. Timber elements tie the proposal together and lively glass façades emphasize the central and most prominent building. People populate each sketch to give a sense of scale and show how spaces would be used.
Serial Vision from Parnell and from Grafton Road

Figure 4.52 - Journey following the new light rail connection from Parnell

Figure 4.53 - Journey down Grafton Road towards the feature building
4.7 MIDWAY PROPOSAL

Public Space with Amphitheatre

Figure 4.54 - Impression of amphitheatre space
Criticism + Conclusion

Drawing conclusions from constructive feedback of this midway proposal was a valuable exercise. A variety of expert opinions revealed certain weaknesses in the project. Addressing each of these as the project moved forward helped inform a superior resolution. This criticism was broken into three focal points: connections, scale and articulation.

The location of the project, the contextual connections and the spatial connections made were well justified. The weakness lay in physical connections as the project itself was not relating well to the ground plan. The platform technique caused the project to be elevated, essentially ‘floating’ and ignoring the road network below. The vastness of this large platform and the necessary supports reduced the feasibility of this proposal. The project needed to consider how to better connect to the existing ground plan and not become an excessive concrete platform.

The motorway will now instead be tunnelled between Wellesley Street and Grafton Road Bridge, rather than the capping method. This is a much more feasible option and enables the project to nestle into the site, rather than hover above. The Grafton Road, city route to the main square was weaker than the other entranceways as a building crossed its path (see figure 4.53). This threshold in particular needed to be addressed, exploring a different approach with visual connections.

The scale of this proposal was too large for this area of Auckland; masses and spaces needed to relate to the grain of its context. More intimate spaces were needed which demonstrate qualities found in pleasant spaces seen in areas such as Vulcan Lane (see section 3.4). Many of the project’s buildings were too long in length and needed to be broken up, giving a coherent rhythm and relationship to context.

More elegantly articulated architecture is required to satisfy the brief. A New Zealand language needed work to create a strong but unique identity. Visual markers and urban connections can be subtle in their appearance. Detail in façades and the ground surface can mark connections as opposed to a large tower. The tower as a vertical element is weaker than the lateral connecting masses and spaces. This tower disrupts the horizontality of the project and impedes important view shafts. The aim shifted to instead enforce lateral connections via articulation and develop a harmonious association to the natural gully topography.
4.8 MASTERPLAN STAGE THREE

Scale Reduced

Stage three explored further iterations of the masterplan in response to feedback from the midway proposal. Values and requirements of brief one and two were honed and components of the framework advanced. Reducing the scale of the project by embedding buildings into the site pushed built form west of Grafton Road. Bridging Grafton Road created a strong connection from the project to Auckland Domain; a model similar to the ‘City to Sea’ bridge that connects Civic Square to the waterfront in Wellington. The project’s masses and spaces were reconfigured over the tunnelled motorway and vacant land either side. The main square, along with the university and outlook spaces were repositioned accordingly and their qualities enhanced. Links to the project and all connections within were realigned to support the masterplan modifications.

Buildings were reconfigured to create a clear path from Grafton Road (city side) to the main square. The hierarchical relationship of accesses to the main square was improved, including: Auckland Domain/Parnell, Wellesley Street, Grafton Road (city side) and Grafton Road (Grafton side). Amended routes altered both the form and the arrangement of buildings. The university space was developed to be symmetrical and the amphitheatre centred. A group of three central buildings developed between the three public spaces where cultural functions were distributed, thus forming a pivotal, yet porous, cluster. Figure 4.60 is a model iteration removing some of the out-stretched, arm-like qualities of the midway proposal. The shape and proportions of the main square lacked clarity and required further resolution.
Refined Spaces and Connections

Figure 4.58 - Further iterations of masterplan

Figure 4.59 - Further development of masterplan

Figure 4.60 - Development model overview

Figure 4.61 - Development model showing rearranged spaces
Both visual and physical natural connections play an important role in this project, as has been previously discussed. To the left is a historic photograph taken towards Rangitoto Island, framed by Grafton Gully. A photograph taken from a similar vantage point during a site visit depicts the built environment that has since evolved. Following this, iterations of the project are inserted to assess visual and physical relationships. The concept containing a large focal tower impedes views to the harbour and the city’s natural landmarks; it sits heavily on the site and ignores the topographic nature of the gully. The following is an improved concept where the intrusive tower is removed and grass roofs introduced. These sloping green forms improve the motorway setting and maintain views to the harbour. Proceeding is the final development of the masterplan where the sloping forms have been refined: encasing green forms now have an intimate connection to the site. Green masses slope down to resemble the topography of the gully and wrap around to merge with the park.

Architectural detail will enrich the development and give it character. Further thought was given to the articulation of mass and spaces as the concept to the right shows. The encasing, sloping forms with green roofs ground the project. For the remaining buildings an elegant aesthetic was proposed, with light, native materials as seen at Auckland Art Gallery. Overhanging roofs supported by upright timber populate the project, tying together the cultural, accommodation, commercial and educational buildings. Framing the elevated theatre box is a unique, lively aesthetic to mark this key area and cultural amenity. The surface of the main square is distinctive, using the Paua shell to create a swirling pattern of native colours. This concept supports the unique, local identity required by the brief.
Articulation Concept

Figure 4.64: Articulation of mass and space concept
4.8 MASTERPLAN STAGE THREE

Final Developments

Figure 4.69 is the final masterplan resulting from numerous iterative developments, each improving on the previous to fulfil the brief. To the left are figures highlighting several newly introduced and refined ideas to reach a highly resolved solution.

An organisational axis was implemented for a number of reasons, seen in figure 4.68. Aligned to Rangitoto Island and following the gully, this axis identifies the project’s connection from the city to the park. Situated on this axis is the elevated theatre with a framed vista of Rangitoto Island, along with a wedge in the hotel mass which formed a void lobby space and is to be a detailed focal element like the theatre box. The Waipapa Stream originally ran on this axis (as discussed in section 2.5) and a historic parallel is made here as water runs through the main square. This stream breaks up the large square, and the crossing bridges add a dynamic aspect. The new Waipapa Stream also becomes a sustainable feature directing surface water to a water reticulation system.

In addition to the water stream, improvements were
made to the design of the main square, as it was previously too large, having grown beyond the desired proportions (see section 3.4). Adding building mass to the southern corner allowed the space to be well contained. The space became no wider than approximately 22 metres as suggested by Christopher Alexander\textsuperscript{31}; making it feel personal and intimate, yet large enough to host a range of events. A notch into the building mass has been proposed on the eastern side to create a designated covered dining area. Restaurants can spill into this space creating a year-round active edge which is open to the sun, yet sheltered when necessary. This resulted in a new lane leading towards Grafton, increasing the laneway network.

The light rail stop maintained its location adjacent to the cultural centre. This creates consistent activity on the square’s edge by providing readily available public transport. It was decided that this should not be submerged as in previous iterations. Rather the light rail line should be an unimpeded, gradual-sloping progression through the site. A seamless (possibly magnetized) track system would allow for a usable surface for strollers, wheelchairs, walkers and modern trams alike.

Platforms and levels are considered as they were before. The project directs all routes to the main level containing the cultural centre, hotel and most of the retail and commercial areas. Two grand steps and a ramp lead down to the park where the path splits to lead to Auckland Domain or to Parnell, steps lead up to Grafton Road and the city link is incorporated in the outlook space. The amphitheatre makes use of the topographic level change and connects to the University of Auckland. Below the main level is a service deck which can be accessed via the existing Grafton Road Bridge. Contained here is the servicing for the amenities above, car parking for VIPs and hotel guests as well as bicycle storage off the cycleway.

4.9 BRIEF THREE

Brief three is the final brief resulting from the resolved masterplan and design process thus far. This project aims to design a sustainable, urban renewal scheme with clear urban connections and delightful public spaces. Requirements from previous briefs are summarized in the three categories: urban connections, public realm and sustainable design.

A mixed-use program has been designed to populate this masterplan. Various functions and spaces are arranged to enrich the project; these are listed to the right to correspond to figures 4.70 and 4.71. The incorporated functions support the contextual links established and are placed around public spaces. Commercial and university spaces are suggested but are flexible and interchangeable to suit demand. The cultural centre and hotel are permanent fixtures and exist to support the cultural link. These buildings have been considered in more detail and are further developed and explained in the following section. Public spaces are a fundamental aspect to this project and they are considered in greater detail and developed in the following section.

The project focuses on key buildings and spaces that demonstrate how the remaining, complementary parts would be detailed. Access, circulation, internal functions, volumes and material are designed for the cultural centre and hotel. Access, edge treatment, surfaces and components are developed in three key spaces: Waipapa Square, University Place and Edge View.
LIGHT RAIL STOP - centrally located, seamlessly integrated

BICYCLE HUB - connects cycleway to surface, has bicycle storage and shop

5-STAR HOTEL - incorporates prime rooms with square and harbour views, secondary rooms with laneway and gully aspect, lobby and circulation void, roof top pool, gym

CULTURAL CENTRE - incorporates suspended theatre, function space, gallery and exhibition spaces with entrance foyer, gallery café and store

RETAIL SPACES - designated restaurant and café clusters, adaptable small/large retail units, all access a ground level from laneways and public spaces

EXTENSION OF UNIVERSITY - flexible spaces accessed via laneways, interchangeable with commercial space

OFFICE SPACES - flexible open spaces accessed via laneways, interchangeable with university space

SERVICE DECK - truck and car access via Grafton Road Bridge, services buildings above, hides car parking and bicycle storage

1. WAIPAPA SQUARE - pivotal, porous, accessible, flexible; incorporates dynamic textured surface, light rail stop, permanent screen, visual connection to motorway (glass surface panels); historic reference to Waipapa Stream provides water feature, water collection and name of square

2. UNIVERSITY PLACE - connects university to other public spaces; incorporates amphitheatre and covered stage, bicycle hub

3. EDGE VIEW - open to sun and light with views to the harbour and Rangitoto Island, provides a variety of seating and places to relax
4.10 SPECIFIC DESIGN

Cultural Centre Design

Two buildings form the cultural centre, located between three key public spaces. Sketches to the left, show the development of these buildings and where different spatial relationships were explored. The major amendment was raising the gallery foyer and exhibition area above the ground floor, creating a new, covered space below. Previously, the scheme lacked sheltered public space for use in all conditions. With modifications, the project provides a flexible space where markets could entertain the public on a rainy day, creating a permeable and dynamic aspect to this pivotal zone, later discussed in figure 4.92.

The cultural buildings have been reduced to two floor levels to house the required functions. Larger internal volumes make them similar in height to neighbouring three story buildings. Subtle differences in roof levels reflect the sloping morphology of the project. Curving walls in these buildings create fluent internal and external spaces, while making them distinct and a focal point of the project. All forms are tied together with a rhythm of timber columns and are visually connected by extending timber eaves.

Perspectives to the right outline the internal volume and detail of the theatre, exhibition and foyer spaces. The unique, glazed façade of the elevated theatre box is supported by a diamond grid structure. Significant amounts of glass encourage the strong connection to the natural environment and frames Rangitoto Island. Other than glass and steel, native timber will line most of the project’s finished surfaces, including floors, ceilings, wall panels and seats. All vertical circulation, access, storage and fire stairs have been resolved as shown in the floor plan.
Figure 4.75 - Level 1 floor plan of cultural centre

Figure 4.76 - Perspective of raised gallery

Figure 4.77 - Perspective from inside elevated theatre

Figure 4.78 - Perspective inside exhibition and foyer space
4.10 SPECIFIC DESIGN

Hotel Design

The L shaped building at the southern edge of Waipapa Square has been designated as the hotel to create an active backdrop to the square. The foot of the L drops to three stories rather than four, flowing with the morphology of the scheme and creating a rooftop and pool space for guests. Where this building crosses the gully axis, a unique wedge-like element has been located containing a void lobby, entrance and vertical circulation. The lobby is double loaded and accessible from the square and rear lane. Adjacent is a public walkway also connecting Waipapa Square to the rear laneway and without disrupting hotel guests. Lifts and fire stairs are visible in the floor plans; these take guests to secure car parking and hotel rooms. Connected to the roof space is a recreation centre with gym, sauna and a children’s play space. Executive double rooms are located on the north side where balconies are visible as seen in perspectives. Balconies are arranged between timber columns and fins to create an articulated façade, in tune with the identity of the scheme. The rear side is predominately single rooms that have laneway aspects and views towards Grafton Gully and Auckland Domain. 43 double rooms, 43 single rooms and 9 suites roughly follow the unit plans (left).

An early concept sketch had the core located in the corner of the L shape. The developed design improves on this, both functionally and aesthetically. The void space has become grand, opening to the main square and making a statement. Four trees are set back from the main façade, creating a buffer between the hotel rooms and the main square. These trees help fashion a rich, multi-layered edge to the square, while providing shade to planter box seating. This hotel is intended to form an iconic backdrop to Waipapa Square and become a high-value asset to Auckland.
Figure 4.81 - Level 1+2 floor plan of hotel
Figure 4.82 - Level 3 floor plan of hotel
Figure 4.83 - Perspective of hotel from Waipapa Square
Figure 4.84 - Perspective of hotel lobby and central void
4.10 SPECIFIC DESIGN

Waipapa Square Design

Named Waipapa Square after the Waipapa Stream that historically ran below, this space is the largest and most important in the project. It is the beating heart; all contextual links lead to this destination where a diverse collection of people and activity creates life and energy. People are not only directed here when making local connections, but are drawn here to delight in public activities and events.

A protected and accessible modern tram stop is integrated at the foot of the cultural centre. Both tram stop and dining area are covered by light timber and glass structures, and retail awnings are detailed in the same manner to complement the project’s identity. A rhythmic array of timber columns line façades while solid and transparent screens are arranged behind. Each building reflects its internal function and blends with the unified aesthetic. Breaking up the square is a linear water sump on the gully axis, creating more flexible, intimate spaces with the large space. The stream water and timber bridges are a point of interest and aide in conveying the area’s history and unique story. Pitched ground planes direct rainwater towards this catchment, water is stored in tanks in the service deck, then pumped to bathrooms and toilets throughout the site. This initiative, in effect, heavily reduces the site’s water consumption. Integrated into the square are two penetrations covered in thick glass, either side of the stream, these create visual connections and an awareness of the traffic below. A large screen is set into the rear of the theatre box and perfect for public screenings of outdoor movies and sports games.

The surface finish of the Square is crucial to this project and is further developed; Kevin Lynn defines the surface as the most important part of the city as we both
touch and see it (see section 3.5). Inset from the edges of the square is a zone where a unique surface has been located as seen in the perspectives. This zone is split into three sections that step the project and support its lateral connections. The concept, left, shows a Paua shell pattern of swirling colours overlaid. Figure 4.86 is a piece of mosaic artwork called Depthfinder by Sonia King,\textsuperscript{32} which shows how materials and colour can create an interesting, even beautiful surface; this helped to inspire the unique surface for the Square. Regular pavers will frame the square edges and cover most of the project, while an assortment of stonework in native sea and earth tones will be placed in the unique zone. This vibrant surface will help conduce a lively atmosphere and create a memorable experience and identity for the project.

4.10 SPECIFIC DESIGN
Subsidiary Public Spaces

Laneways, lobbies, sheltered spaces and subsidiary spaces all extend from Waipapa Square to create a rich pedestrian network. All these connecting and supporting spaces work together to enhance the public realm. Figure 4.93 demonstrates the ground floor planes with internal and external spaces at this level. Highlighted in orange are the areas which will be permanently accessible to the public. Lobbies to the hotel, gallery and theatre are shown in blue: these are semi-public spaces where access can be controlled as required. Much of the internal space on the ground floor is given to retail and managed by tenants. It is possible for laneway access to be controlled if the university or other bodies find it necessary to impose restrictions, but the aim for the project is to feel open, safe and secure at all times of the day.

The entrance from Grafton Road leads to a long laneway that steps up to cross the light rail line, and then continues before terminating. At this point a second laneway leads to the amphitheatre and a connection to Wellesley Street is provided. In previous iterations the lane continued through to the architecture building and a dead end. This is an example of a design improvement that helped to create a better-connected urban environment. There are many public spaces that have been developed to fulfil the brief, including several covered areas providing shelter from the elements. These include the space below the raised gallery, the tram stop, particular laneways and designated dining in Waipapa Square and the Edge View. Left is a concept sketch emphasizing the covered space beneath the gallery, when this was envisioned. As seen from these perspectives and a previous render of the raised gallery (figure 4.76), this is unique space that brings an added dimension to the public environment.
University Place features a symmetrical amphitheatre and is calculated to create a proportional and contained space. The figure to the left is from the perspective of someone seated in the amphitheatre looking at the framed stage and passages to other spaces. The enclosing forms should also provide good acoustics for events and performances.

Edge View is the name given to the open area on the northern edge of the project facing the harbour. Spectacular views are exploited in this scheme, particularly in the framed view of Rangitoto Island from the elevated theatre. Function spaces, office decks, café seating and grassy mounds on this northern edge also maximize the views. Structural elements have been added to support the area extending over Grafton Road Bridge and are visible in figure 4.92 (these are better seen in section 5). Previously this area was floating, possibly rather precariously, but new concrete supports visually connect this edge to the ground and extend up to direct the outlook aspect. The concrete elements also frame an edge pathway, creating the opportunity for a lively experience in Edge View.
5.0 CONCLUSION
5.1 DESIGN SOLUTION

Figure 5.1 - Evening rugby match shown in Waipapa Square

Figure 5.2 - Waipapa Square hotel

Figure 5.3 - Overview of City Stitch
Figure 5.4 - Gallery foyer and exhibition space

Figure 5.5 - Framed view of Rangitoto Island from elevated theatre

Figure 5.6 - Raised gallery with covered public space

Figure 5.7 - Edge View seating and walkway
5.2 CONCLUSION

This research project looked at possible ways of creating a well-connected and desirable urban environment. Severance as an urban design concept was defined as a wide spread issue that causes wounds in the urban fabric of many cities. Auckland, New Zealand was identified as an example of a ‘severed city’ and the location to test an architectural project. A site requiring attention was revealed through a thorough investigation into the motorways lining the city centre of Auckland.

An analysis of the built and natural context identified crucial connections that can be created. The area is isolated due to the environment of the motorway. Research showed that public activity was needed at this junction of intersecting links to support the city’s wider connections. Several important links were established including: a green link between Auckland Domain and Albert Park, a cultural link between Auckland War Memorial Museum and Auckland Art Gallery, an educational link to Auckland’s learning quarter, a health link to the Auckland Hospital, a recreational link to the National Tennis Centre and a bicycle link to the newly constructed Grafton Gully Cycleway. All of these new connections approximately follow a contour that locates Aotea Square at the west end and the Auckland Museum at the east. Also discussed was the proximity of civic buildings, historical relevance and the immediate built and natural environments. It is anticipated that trams will be reintroduced to Auckland and the idea that a new rail connection could be integrated through the site was developed. This would provide public transport in conjunction with the proposed Parnell and civic centre train stations.

A mixed-use development emerged to justify a programme to support the connections created. Central to the project is a pivot cultural centre, containing a gallery, a theatre and function spaces that are supplementary to the nearby museum and gallery. To further support these cultural amenities is a hotel providing the backdrop to Waipapa Square. Other building masses include retail to activate ground floors with education and commercial spaces above, extending from the immediate context. The design process focused on shaping these masses to form strong urban connections and to enrich the city’s public spaces. The project revolves around a main square supported by subsidiary spaces that draw in all routes. Waipapa Square, named after a historic stream, was developed in greater detail alongside two other spaces; one containing a flexible amphitheatre, the other providing views towards the harbour and major landmarks.

Many design iterations were developed and parameters introduced to direct the design process. The morphology of the project relates to the surrounding built and natural context. Tapering forms from the city to the park are emphasized by green roofs which encase the project before reaching into Auckland Domain. Built forms have been integrated into the site respecting views to significant natural landmarks and the topography of the gully below. Joining the city to the park and bridging the gully is reflected by components arranged on an axis through the project. A stream is featured in the main square along this axis, with a theatre oriented towards Rangitoto Island and an entrance and lobby void for the hotel. The architecture has been articulated to strengthen all connections created, while aiming to create an inviting place. Native timber provides a rhythmic order through the project, and a distinctive coloured stone pattern to the main square helps give the project an identity.
It is hoped that fabricating this architectural stitch would repair the separation currently found here. The project aimed to produce a world-class urban renewal example for cities affected by severance.

Several assumptions were made and these impacted the outcome of this project. It is noted that this is a forward-thinking project and there are other developments that would take priority over this. The light rail line is proposed based on potential future endeavours of the Auckland City Council. It is not certain what will happen to the automobile and their motorways in the future. Based on current data and theories it is assumed vehicles will become cleaner, quieter and used less frequently, reducing their impact on the site.

This research project does not quantify the large financial cost of such a development, but it does acknowledge there are international examples where similar projects are undertaken with large and rewarding investment. This thesis seeks to be realistic and gives thorough consideration to Auckland City Council’s aspirations with a real scenario applied. Costs of a bridging stitch such as that proposed in this study are off-set by the very high cost of land in Auckland’s CBD, and follow the principle of similar investments in cities elsewhere.

Only one solution is provided to the particular problem on the chosen site. There are other solutions that could have emerged, dependant on research techniques, assumptions made and accuracy of the work. There are many problematic sites around Auckland and Auckland is only one of many cities around the world blighted by severance. The project developed here is one solution to a global problem, and one that builds on existing knowledge of the subject.

In conclusion, this subject has addressed an on-going problem that needs to be further examined in Auckland and many cities around the world. Additional research is required to examine and ultimately resolve urban issues of severance.
5.3 BIBLIOGRAPHY

BOOKS


ARTICLES


WEBSITES


6.1 APPENDIX A: Figure List
6.1 LIST OF FIGURES

5 Figure 1.1 - Auckland motorways
Reproduced from: http://www.reddit.com/r/Seattle/related/2is6e6/lit_tracks_for_running/
5 Figure 1.2 - Manhattan Island, New York
Reproduced from: http://turismo.culturamix.com/ecoturismo/natureza/ilha-de-manhattan
5 Figure 1.3 - Gateways, City Centre Master Plan 2012
6 Figure 1.4 - Gateway vision, City Centre Master Plan 2012
7 Figure 1.5 - Areas explored
8 Figure 1.6 - Karangahape Road area
9 Figure 1.7 - Upper Queen Street and Symonds Street area
9 Figure 1.8 - Grafton Bridge and Grafton Gully area
9 Figure 1.9 - Wellesley Street and Grafton Road area
12 Figure 2.1 - Site location
12 Figure 2.2 - Site context
13 Figure 2.3 - Grafton Gully section
14 Figure 2.4 - Places explored
14 Figure 2.5 - Exploration route
15 Figure 2.6 - View from the tennis centre
15 Figure 2.7 - View up cycleway
15 Figure 2.8 - View from cycleway
15 Figure 2.9 - View below architecture building
15 Figure 2.10 - View from inside architecture building
16 Figure 2.11 - View down Wellesley Street from Symonds Street
16 Figure 2.12 - View from Owen G. Glenn Building
17 Figure 2.13 - View towards Rangitoto Island
17 Figure 2.14 - View up Wellesley Street towards Sky Tower
17 Figure 2.15 - Panorama across unused green area
18 Figure 2.16 - Pedestrian environment
18 Figure 2.17 - Pedestrian zone on eastern side
18 Figure 2.18 - Path to Auckland Domain
19 Figure 2.19 - Panorama from Grafton Road Bridge up gully
19 Figure 2.20 - Panorama from Grafton Road Bridge down gully
20 Figure 2.21 - Construction of contour model
21 Figure 2.22 - Coast to coast hike
21 Figure 2.23 - Illustration of contours and context
22 Figure 2.24 - Illustrations of contextual environment
24 Figure 2.25 - Paths to Auckland Domain and Parnell
24 Figure 2.26 - Green Link, City Centre Masterplan 2012
25 Figure 2.27 - Auckland War Memorial Museum
Reproduced from: http://www.aucklandnz.com/conventions/auckland-museum
25 Figure 2.28 - Auckland Art Gallery
Reproduced from: http://www.localist.co.nz/henderson-te-atata/community/pictures
26 Figure 2.29 - Auckland University Newmarket campus
26 Figure 2.30 - Cross-section through the Owen G. Glenn Building
fjmt-archimedia/
27 Figure 2.31 - ASB Tennis Arena
Reproduced from: http://legendsclub.co.nz/sites/legendsclub.co.nz/files/image027.jpg
27 Figure 2.32 - Auckland City Hospital
28 Figure 2.33 - Aotea Square, Auckland
28 Figure 2.34 - Civic Square, Wellington
Reproduced from: http://www.fourcorners.co.nz/new-zealand/central-wellington/
29 Figure 2.35 - Cycleway connection diagram
29 Figure 2.36 - Artists impression down Grafton Gully Cycleway
Reproduced from: http://transportblog.co.nz/tag/grafton-bridge/
30 Figure 2.37 - Wider context connections
31 Figure 2.38 - Visual connections
32 Figure 2.39 - Grafton Gully in 1863
Reproduced from: http://commons.wikimedia.org/wiki/File/Grafton_Gully_In_1863.jpg
### 6.1 LIST OF FIGURES

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.22</td>
<td>Eastern Building, Britomart - Viaduct Events Centre - 85 Halsey Street Apartments</td>
</tr>
<tr>
<td>3.23</td>
<td>Auckland Art Gallery, FJMT</td>
</tr>
<tr>
<td>3.24</td>
<td>Owen G. Glenn Building, FJMT</td>
</tr>
<tr>
<td>3.25</td>
<td>Darling Quarter, Sydney, FJMT</td>
</tr>
<tr>
<td>4.1</td>
<td>City Stitch and existing nodes diagram</td>
</tr>
<tr>
<td>4.2</td>
<td>Developing a masterplan framework</td>
</tr>
<tr>
<td>4.3</td>
<td>Masterplan framework</td>
</tr>
<tr>
<td>4.4</td>
<td>Exploring how to create connections and spaces</td>
</tr>
<tr>
<td>4.5</td>
<td>Aesthetic planning approach</td>
</tr>
<tr>
<td>4.6</td>
<td>Exploring bridge and dam design approach</td>
</tr>
<tr>
<td>4.7</td>
<td>Green link boulevard approach</td>
</tr>
<tr>
<td>4.8</td>
<td>Forming an initial concept</td>
</tr>
<tr>
<td>4.9</td>
<td>Initial massing concept</td>
</tr>
<tr>
<td>4.10</td>
<td>Breaking space into thirds concept</td>
</tr>
<tr>
<td>4.11</td>
<td>Large space concept</td>
</tr>
<tr>
<td>4.12</td>
<td>Connections then form concept</td>
</tr>
<tr>
<td>4.13</td>
<td>Comparison of concepts</td>
</tr>
<tr>
<td>4.14</td>
<td>Initial concept</td>
</tr>
<tr>
<td>4.15</td>
<td>Initial concept development one</td>
</tr>
<tr>
<td>4.16</td>
<td>Initial concept development two</td>
</tr>
<tr>
<td>4.17</td>
<td>Initial concept development three</td>
</tr>
<tr>
<td>4.18</td>
<td>Masses at generic heights</td>
</tr>
<tr>
<td>4.19</td>
<td>Masses scaled to relate to context</td>
</tr>
<tr>
<td>4.20</td>
<td>Central building connecting public spaces</td>
</tr>
<tr>
<td>4.21</td>
<td>Possible destination marking tower</td>
</tr>
<tr>
<td>4.22</td>
<td>Contextual models at 1:2000 and 1:1000</td>
</tr>
<tr>
<td>4.23</td>
<td>Model of iteration one, stage two</td>
</tr>
<tr>
<td>4.24</td>
<td>Porous central building</td>
</tr>
<tr>
<td>4.25</td>
<td>Plan of stage two, iteration one</td>
</tr>
<tr>
<td>4.26</td>
<td>Plan of stage two, iteration two</td>
</tr>
<tr>
<td>4.27</td>
<td>Main square covering light rail line</td>
</tr>
<tr>
<td>4.28</td>
<td>Possible location for pivotal tower</td>
</tr>
<tr>
<td>4.29</td>
<td>Circular tower form</td>
</tr>
<tr>
<td>4.30</td>
<td>Square tower form</td>
</tr>
<tr>
<td>4.31</td>
<td>View of tower concept from Grafton Bridge</td>
</tr>
<tr>
<td>4.32</td>
<td>Tower concept relation to context</td>
</tr>
<tr>
<td>4.33</td>
<td>Sketch of tower merging into regular forms</td>
</tr>
<tr>
<td>4.34</td>
<td>Sketch of the main square</td>
</tr>
<tr>
<td>4.35</td>
<td>Sketch of amphitheatre and central tower</td>
</tr>
<tr>
<td>4.36</td>
<td>Sketch of the outlook area</td>
</tr>
<tr>
<td>4.37</td>
<td>Plan of stage two, iteration three</td>
</tr>
<tr>
<td>4.38</td>
<td>Plan of stage two, iteration four</td>
</tr>
<tr>
<td>4.39</td>
<td>Context and site plan</td>
</tr>
<tr>
<td>4.40</td>
<td>Proposal with major contextual links</td>
</tr>
<tr>
<td>4.41</td>
<td>View on axis to museum</td>
</tr>
<tr>
<td>4.42</td>
<td>View on motorway axis</td>
</tr>
<tr>
<td>4.43</td>
<td>View from Grafton Road city connection</td>
</tr>
<tr>
<td>4.44</td>
<td>View from Grafton Road city connection</td>
</tr>
<tr>
<td>4.45</td>
<td>Tower base sitting on ground plane</td>
</tr>
<tr>
<td>4.46</td>
<td>Towers base merging with ground plane</td>
</tr>
<tr>
<td>4.47</td>
<td>View of midway proposal from plane window</td>
</tr>
<tr>
<td>4.48</td>
<td>Function with in midway proposal</td>
</tr>
<tr>
<td>4.49</td>
<td>Journey from the city following new light rail line</td>
</tr>
<tr>
<td>4.50</td>
<td>Journey from Grafton through to the main square</td>
</tr>
<tr>
<td>4.51</td>
<td>Journey from possible Auckland Domain boulevard to tram station</td>
</tr>
<tr>
<td>4.52</td>
<td>Journey following the new light rail connection from Parnell</td>
</tr>
<tr>
<td>4.53</td>
<td>Journey down Grafton Road towards the feature building</td>
</tr>
<tr>
<td>4.54</td>
<td>Impression of amphitheatre space</td>
</tr>
<tr>
<td>4.55</td>
<td>Sketch rethinking masterplan</td>
</tr>
<tr>
<td>4.56</td>
<td>Sketch of new masterplan idea</td>
</tr>
<tr>
<td>4.57</td>
<td>New masterplan development</td>
</tr>
<tr>
<td>4.58</td>
<td>Further iterations of masterplan</td>
</tr>
</tbody>
</table>
Figure 4.60 - Development model overview
Figure 4.61 - Development model showing rearranged spaces
Figure 4.59 - Further development of masterplan
Figure 4.62 - Views of site and previous proposals in Grafton Gully
Figure 4.63 - View looking down Grafton Gully with developed project
Figure 4.64 - Articulation of mass and space concept
Figure 4.65 - Introduction of gully axis arrangement
Figure 4.66 - Green roof form and park merging
Figure 4.67 - Final development model site plan
Figure 4.68 - Elements on gully axis
Figure 4.69 - Plan sketch of final masterplan
Figure 4.70 - Functions of final scheme
Figure 4.71 - Key public spaces within final scheme
Figure 4.72 - Development sketch of cultural centre
Figure 4.73 - Level 1 floor plan of cultural centre
Figure 4.74 - Perspective of hotel lobby and central void
Figure 4.75 - Plan floor plan concept
Figure 4.76 - Level 1 floor plan of hotel
Figure 4.77 - Perspective of hotel from Waipapa Square
Figure 4.78 - Perspective of hotel lobby and central void
Figure 4.79 - Concept of main square and surface
Figure 4.80 - Perspective of light rail stop in Waipapa Square
Figure 4.81 - Perspective of Waipapa Square from laneway
Figure 4.82 - Perspective of large screen from hotel room
Figure 4.83 - Covered space concept sketch
Figure 4.84 - Perspective of Edge View space
Figure 4.85 - Perspectives of subsidiary spaces
Figure 4.86 - Axonometric of developing ground plane and spatial relationships
Figure 5.1 - Evening rugby match shown in Waipapa Square
Figure 5.2 - Waipapa Square hotel
Figure 5.3 - Overview of City Stitch
Figure 5.4 - Gallery foyer and exhibition space
Figure 5.5 - Framed view of Rangitoto Island from elevated theatre
Figure 5.6 - Raised gallery with covered public space
Figure 5.7 - Edge View seating and walkway
6.2 APPENDIX B: Final Presentation
Photograph of final presentation
Development sketches
Right - Context plan
Above - Context model with major links
Grafton Gully section
Figure 5.1 - City Stitch in Grafton Gully with harbour beyond
Right - Waipapa Square + cultural centre
Above - Cultural centre + covered space
Right - Waipapa Square + hotel
Above - Gallery foyer + exhibition space
Exploded axonometric
Jonathan Jordan
Jonathan Jordan
