Karangahape Road Train Station

An urban catalyst for revitalisation

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Masters Thesis explanatory document as discussed with: Annabel Pretty and David Turner

Nina Tyrrell
1382412
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Abstract

The general focus of this research project is to explore how a train station in a rich and diverse up and coming neighbourhood can act as a catalyst for architectural exploration. This exploration is how architecture facilitates and enriches the connections of place and site and perhaps enables Auckland to become a step closer to reaching the desired title of “world’s most liveable city”. It is clear that in terms of transportation and movement patterns “Auckland is lagging behind even cities with significantly lower populations”. 1

The general ideas are that urban regeneration around transit centres is growing. Transit buildings themselves need to facilitate connectivity, be innovative and act as the connective tissue between the urban public spaces and the functional spaces. The context of this research pertains directly to Auckland city. Progressively more people are starting to live in urban environments. Therefore, there is a gradient of interaction, which adds value, authenticity fluidity and identity to the city.

The project focuses on urban connections within the context of Karangahape Road precinct and investigates current knowledge including current station design, transport-oriented development and the concept of urban space. The project also analyses and understands design strategies gathered from precedents around the globe. The intention of the design is to discover and explore strategies of connections through movement and architectural activation. The research will also look at streetscapes, celebrate the grain and history of the site, and find how best to stitch together the heritage of the site and the function of the train station. The discovery and exploration of connections and hybrid activities are to develop an environment that facilitates and encourages activity and intensification around the created station, existing connections and future nodes and networks.

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1.0 Introduction

1.1 Problem Statement

Auckland needs to regenerate the way it deals with public buildings, especially public transportation buildings, to become successful in accommodating the desire to become livable. Currently, there is no architectural model which facilitates the ideals of a hybrid model of urban connectivity. The challenge is to transform these places of travel, stations, into places that are not only “functional” but are also authentic public spaces.

1.2 Research Question

In what form can an underground train station act as a catalyst for revitalization of a city fringe area?

1.3 Outline of Project

Connected cities are ones that are thriving, that have a plethora of pedestrian networks, transportation infrastructure, and vibrant, active streetscapes. “Without places for active and passive socialisation, with no opportunity for casual and formal interactions, our cities and towns would be no more than agglomerations of privatised spaces and buildings, devoid of the space for the individual to be a complete citizen.”

2The future development of Auckland and its urban identity is a facilitating factor that provides an opportunity for explorations through architecture to provide meaningful connections to our city. This project architecturally explores how a train station provides the opportunity for this to be achieved. The project deals in combination with the concept of connectivity in both the sense of urban connective spaces and connectivity from spaces to spaces and places to places. The intention of the proposed architectural response is to explore and develop a train station, which is coherent within the chosen site, but does not dominate the existing fabric, and instead subtly celebrates the existing grain and character.

1.4 Aims and objectives

The aim of the design and research on this topic is to create, explore and examine an urban structure, where diverse infrastructural and public urban elements merge to form one cohesive, connective building. Another aim is to provide an alternative solution to the current Auckland Unitary Plan, and act as a suggestion for what is possible for Auckland in terms of architectural solutions regarding public transportation buildings.

1.5 Scope and limitations

The focus of this research project is to explore how a train station in a rich, diverse, up and coming precinct can act as a catalyst for architectural exploration, where architecture facilitates and enriches the connections of place and site. The intention of the proposed architectural response is to explore and develop a train station, which is coherent within the chosen location, however does not dominate the existing fabric of the site, instead subtly celebrates the existing grain and character. A limitation of this is that the proposed design is intended for the specific site and does not address other stations, where locations may require different strategies. The program aims to regenerate the existing urban fabric, therefore, the transportation building needs to address utilizing a different spatial layout and the centre should portray a strong message that the design should work to preserve the final site's existing street network and enrich it by introducing new pedestrian routes.

1.6 Methodology

Research for Design

The first stage was research for the design, reviewing and analysing theories and knowledge within the field (literature and precedents) as well as gathering site-specific information. The review of current knowledge in the field enabled the development of an understanding of the problems derived from current planning approaches and the relevant urban design techniques and methods, which are fundamental contributors to solving problems and developing a successful design. Precedent analysis into design and functional requirements of transportation interchanges enabled an exploration of developed architectural approaches and languages. The literature research was then used to generate the design strategy, which helped to work as a tool to evaluate and examine the architectural design proposal.

Research into Design

The detailed site investigation and its surrounding context is crucial to this project as the formation of the design brief and programs are dependent on this research. The analysis will identify the areas of concern within the chosen site that require solving throughout the design process. The site was also researched and analyzed in terms of the current context, as well as the planned Auckland City Master Plan, sketching and digitally exploring the site by mass modeling and differing scale allowed the exploration of opportunities, characteristics and constraints at an urban planning level as well as a singular building level. This then helped in understanding and developing the connections between the two levels.

Research by Design

Explored the project's potential by design. The design of the proposal itself was explored through a range of different mediums. From a selection of precedent case studies this knowledge, in application explores its potential through design, which involved translating the theories and knowledge gained from the literature research and site analysis into an architectural solution. A combination of drawings and physical and digital mass modeling of appropriate scale was being used throughout the exploration process.
1.7 Definitions

**Connection:**
“something that joins or connects two or more things.”

**Connectivity:**
“The quality, state, or capability of being connective or connected.”

**Encourage:**
“To make (something) more appealing or more likely to happen
To make (someone) more likely to do something.”

**Facilitate:**
“To make (something) easier: to help cause (something)”

**Hybrid:**
An object of mixed character composed through the fusion of two or more different elements.

**Livability:**
“An assessment of what a place is like to live in, using particular criteria. For example, environmental quality, crime and safety, education and health provision, access to shops and services, recreational facilities and cultural activities.”

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4 Merriam-Webster, s.v. connectivity, accessed September 1, 2015 http://www.merriam-webster.com/dictionary/connectivity
Like many cities in the world, Auckland city’s planning is based on a modernist planning approach. This approach is primarily focused on private vehicles replacing pedestrian movement and public transport for mobility in and around cities. This approach promoted the concept of zoning a city into areas of different use with a network of motorways and roads, used to connect each district zone. This is exemplified by two of the most significant urban prototypes of urban design and city planning: Le Corbusier’s Ville Radieuse (the radiant city) and Frank Lloyd Wright’s Broadacre City. Both prototypes have mainly focused on the use of private vehicles to replace pedestrian movement and public transport for mobility.

Broadacre City can only be described as the contrary of a modern city. Concurrently a planning statement and a socio-political scheme that would see each family granted one acre of land by the government. “In a sense, it was the exact opposite of transit-oriented development.” Le Corbusier’s Ville Radieuse on the other hand stood for the elimination of disorder, congestion and the small scale. At the centre of Le Corbusier’s plan was the notion of zoning. This zone was made up of several mega skyscrapers that could accommodate from five to eight hundred people each. Below that was a transportation deck, which consisted of large transportation infrastructures ranging from trains to cars and buses that would transport people from their place of work to the surrounding zones.

Modernist planning, approaches have been extensively criticised, commonly because monofunctional zoning systems have generated automobile-oriented development and suburbs, which in turn have generated many different urban and social problems today. These problems include urban sprawl and a diminishing quality of urban life through the destruction of pedestrian-friendly streets and squares, as well as the dependence on vehicles to provide most transportation needs.
2.2 The Autocentric city

In Architecture: Choice or Fate, Leon Krier argues that the mass application of modernist planning has only led to "an impoverishment of architecture and urban planning."11 Basically, through separation of different activities into zones, the integrated functions of a city have been divided into fragments, creating non-urban and anti-ecological environments, making modern life extremely complex and wasteful in terms of transportation time. This is due to the distances between the programs and places that are required for daily needs, including places to work, eat and live. Krier also says, "twentieth-century cities suffer from various forms of mono-functional overexpansion, which creates chaos in terms of their structure, use and appearance."12 Krier advocates polycentric zoning of functions; he simply states, "The foundational building block of the polycentric city is the autonomous urban quarter, a true city within a city."13

11 Leon Krier, Architecture: Choice or Fate (Windsor, Berks.: Andres Papadakis, 1998), 64.
12 Ibid., 32.
13 Ibid.

Figure 4. Leon Krier's zoning illustration

Figure 5. Auckland Traffic congestion on the motorway

Mono-functional overexpansion such as Krier describes is the problem facing Auckland's city urban environment. The city centre expands vertically and the peripheral suburbs expand horizontally. Auckland's Central Business District (CBD) is dense with single use activities and functions (Non-Hybrid), particularly concerning business, commercial and educational sectors. The differences between all three introduce the need to travel from one to the other, for example from the workplace in the inner city to home in the suburbs or University in the city to home in the suburbs. All this travel is occurring with the primary mode of transport being that of a private vehicle, with little regard to any other form of transportation.

In A Pattern Language, Christopher Alexander states, "continuous, sprawling urbanisation destroys life and make cities unbearable."14 Alexander criticises the notion of zoning different activities into separate and isolated areas of the city. In Auckland, the central business district and the residential sprawl of peripheral suburbs, due to a lack of transportation infrastructure, and partly a density issue, demonstrate this.

This project concentrates on the city model of polycentrism. As research has led us to believe that to become a polycentric city and more liveable, the central system of connectivity and movement should be a model that is established first around which the peripheral suburbs and town centres can base their transportation infrastructure. In Form Follows Fiasco by Peter Blake, he draws a conclusion that accuses the decentralisation of activity zones, one of the major reasons for the reliance on private vehicles and the construction of motorways to accommodate this way of life. He states, "Modern dogma has one built-in constant, decentralisation of functions, which inevitably leads to hundreds of millions of wheels, millions of miles of highways and the wholesale destruction of the natural environment that goes with this."15 Also outlined by Blake is that one major central business district and the residential sprawl of peripheral suburbs, due to a lack of transportation infrastructure, and partly a density issue, demonstrate this.

15 Blake, Form Follows Fiasco, 100.
The failure of modernist planning is the fact that it provided and prioritised a design for the car, rather than for the scale and needs of people, therefore making cities and streets restrictive for pedestrian movement. He argues a view that looks at the faults of modernist planning and the re-patterning of the CBD into mega blocks. "The streets that remained were converted into wide thoroughfares to accommodate the efficient flow of the now ubiquitous automobile, with little or no concern for the person on the street."  

Blake suggests the ideal planning of the city would instead be a pedestrian-oriented city, with streets and places for concentrations of people, rather than a network of motorways which further decentralises cities and enhances the problem of the reliance on the car.  

In his Auckland public life survey, Jan Gehl suggests that Auckland planners have over the past 50 years focused on “increasing capacity for motor vehicles to make traffic move smoothly through the city.”  

The result of this is that Auckland has become a car-dominated city, where space is prioritised towards adding extra lanes of traffic. A suggestion made in this report was that if Auckland was to become one of the world’s most liveable cities, it needs to change its priority from focusing on road capacity and large traffic volumes and rather concentrate on a higher quality of urban streetscapes and spaces which prioritise pedestrians and cyclists. Alexander proposed a solution to this problem, by suggesting that cities and peripheral towns just need a strategic pattern. He said “all it needs, physically, is a street pattern that discourages people from using private cars for trips within these areas, and encourages the use of walking, using public transport and bikes instead – but allows the use of cars for trips which leave the area.”
Auckland City’s future planning framework, states that transit-oriented development (TODS) is “an appropriate approach to achieving the urban growth outcomes envisaged by Auckland”. According to the transit-oriented communities design guidelines set out by Vancouver’s Metro transit planning authorities,

Transit-oriented communities are places that, by their design, allow people to drive less and walk, cycle, and take public transport more. In practice, this means they concentrate higher density, mixed-use, human-scale development around frequent transit stops and stations. They also provide well-connected and well-designed networks of streets, creating walking- and cycling-friendly communities.

Figure 6: Leon Krier’s Poly Centric city illustration

2.3 Transport oriented development

Extensive research and experience have shown that transit-oriented communities can promote livability; environmental, social, and economic sustainability; and resiliency in the face of change. Transit-oriented communities support better transit service, make places more conducive to walking and cycling, and provide many essential benefits to communities. Transport-oriented development principles and guidelines will be imperative within this project in terms of generating, or providing an opportunity for, urban connectivity, one that enables a more fluid connection between civic spaces. This may also provide a platform for interaction between people, which may develop a sense of invigoration and community.

These are:
- A walking scale
- A community centre
- High-quality streets and public spaces
- A diverse mix and sufficient size of mixed uses
- A transport hub or interchange
- Low-speed car access
- An appropriate level of car parking
- Location of public off-street car parking
- An appropriate standard of bicycle parking
- Pedestrian hierarchy

22 Ibid.

Today train stations and interchanges are usually designed around a city, with infrastructure readily available to enable growing urban populations and traffic volumes. Innovations in station design evolved to a high level of sophistication in the first 60 years of rail travel. By 1890, many of the conventions of railway architecture had been established, in particular the plans and the iconography, once the fundamental problems created by the new technology were addressed, station design began to focus on increased luxury, safety, speed, and size. The conceptual image of the traditional station typology changed. Once primarily built out of functional requirement to serve movement of large volumes of people around cities, modern railways, and light rail systems, are more often than not intended to regenerate areas as well as processing high movement demand. Station planning and design take into consideration a multitude of different architectural elements today. Stations are the connective tissue of the rail transit system and the rest of the city. According to the Transit-Oriented Development Institute, stations represent the facilities where patrons encounter the transit system and experience its image, service, and convenience. Propriety and design can elevate stations to become important civic icons of a city. There are many things to consider when designing and planning modern rail stations. The hierarchy of scale the station is designed and planned to, the urban context and design with various elements that are appropriate for different system types and locations. As stated by the TOD Institute ‘Stations are also connecting points to other forms of transit and mobility including, light rail, buses, taxis, automobiles, bicycles, and walking. Station design, location, and operations strongly affect passenger convenience, comfort, and safety, as well as ridership levels and frequency.’

2.4 Current Station Design

Figure 7: Auckland line extension diagram

Australian state Victoria, there are seven key design elements to factor into a successful station. These are:

Accessibility:
A station which is well connected and easy to use differing modes of transport. It should integrate the ideas of universal design and should be a station that everyone can use.

Ease of navigation:
As soon as entering the building it should be navigable. A good movement flow and instinctual direct route or pathways should be established. There should also be an efficient way finding system in place, that is clear and accurate.

Comfort and amenity:
A well designed station should aim for passenger comfort and provide many different amenities. It should be clean, safe and well maintained.

Information:
A clear and accurate way finding and information systems should be established. As well as signage and periodic information displays, sometimes a tactile information strategy is best. Staffing the facility provides face to face communication and enables comfort and safety to be achieved.

Safety:
Is paramount in stations. A well used station makes people feel safe at all times and provides an assured sense of protection.

Station integration:
A station is part of the community. It should reflect this and the surrounding character and context in some way. The station serves the community and is not just a place that people travel through; so the station should contribute to and enhance the local area.

Community ownership and activity: By actively involving the local community in the design and development of the station, the station likely to be maintained and attract diverse activity that, in turn, helps generate a more vibrant area.

The idea of universal design: Universal design suggests that anyone can use a facility. This should be reflected in the station design so that it can cater for many users promoting inclusion and reducing segregation. Station design caters for all levels of mobility, demographics and cultures. An ideal station should offer an enjoyable experience that promotes interaction.

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between everyone and provides an efficient and effective way of experiencing the function of the station.29

Stations as an urban catalyst:

Railway stations are important public spaces that are a gateway between diverse communities. Stations are also meeting places and civic place marking nodes. Passengers also use stations as meeting places, somewhere to socialize or as a way to access local activities.

“All railway stations exist in a broader social, economic and environmental context. In established areas, railway stations may already have housing, retail, offices, recreation and other types of land uses and services around them. In growth zones, the land may be relatively undeveloped and will take shape over some years. As a relatively permanent and key transport point, stations provide a focus for development and have the potential to become a community hub where people shop, work, meet, relax and live.”

The resulting factors of this are that stations add to the economic, sociability and diverse vibrancy of communities. By designing for a broad range of activities in the station catchment area, more people will use the public space, this increasingly adds to the importance and can often be a measure of success to the station.

29 bid., 14-20

Figure 8. Railway station catchment area diagram
2.5 The concept of urban space

Urban space is both physical and spatial aspects of the built urban environment, the spaces they inform, and how they are perceived and experienced to create a sense of place. Urban space deals with a multitude of differing factors and architectural elements that have been the subject of theories and debate for years. Urban design theorists have identified characteristics and aims of successful urban design from the perspective of how people respond to urban spaces and environments. Kevin Lynch suggested that good urban design should achieve vitality, be clearly perceived, match activities and be controlled and accessed by a range of people within the community.

Integration of well connected and accessible activities, energy centres, and transport networks to create a sense of wholeness of the street, precinct, neighbourhood, and city. This project deals with the implementation of a new urban form in an existing heritage rich fabric, as a facilitator in the revitalization of a somewhat neglected part of the city. Using these guidelines as a tool in the design process will enable a successful design outcome. As Jane Jacobs suggests, "the streets of a city are the barometres for the quality of public space of the city".

Connections: Enhancing diversity and choice for people

Choice: Ensuring diversity and choice for people

Creativity: Encouraging innovative and imaginative solutions

Custodianship: Ensuring design is community oriented, safe and healthy

Collaboration: Communicating and sharing knowledge across cultures

However, when streets are planned as part of the network of public space, neighbourhood and commercial streets also become the spaces of the city where we encounter urbanity, where we meet new people and acquire new experiences. The Auckland Plan is not the only guiding document that promotes transformative shifts. The New Zealand Urban Design Protocol provides a platform to allow New Zealand towns and cities to become more successful through quality urban design. It identifies the seven C’s of essential design qualities that create a high-quality urban space. These are:

- Identity – established by landscape, heritage, built forms and community resulting in a ‘unique sense of place.’
- Diversity in uses and urban form that supports variety, vibrancy, chance interactions, safety, and choice.
- Integration of well connected and accessible activities, energy centres, and transport networks to create a sense of wholeness of the street, precinct, neighbourhood, and city. This project deals with the implementation of a new urban form in an existing heritage rich fabric, as a facilitator in the revitalization of a somewhat neglected part of the city. Using these guidelines as a tool in the design process will enable a successful design outcome. As Jane Jacobs suggests, "the streets of a city are the barometres for the quality of public space of the city".

When designed and managed well, sociable neighbourhoods and commercial streets contribute to making the neighbourhood more liveable and create a sense of community- two significant goals of urban design and planning.

- Choice: Ensuring diversity and choice for people
- Connections: Enhancing how different networks link together
- Creativity: Encouraging innovative and imaginative solutions
- Custodianship: Ensuring design is community oriented, safe and healthy
- Collaboration: Communicating and sharing knowledge across cultures

Again, applying these guidelines as a tool in the design process will enable a successful design outcome, moreover one which is aligned with the vision of Auckland becoming the world’s most liveable city.
Britomart Transportation Centre is Auckland's largest intermodal transportation hub and "the only underground diesel station in the world"39 (recently electrified). Situated at 8-10 Quay Street, it is considered to be central downtown. Therefore, it also serves as a CBD precinct and houses a variety of urban public space above the station itself. It offers a combination of transportation modes and suggests ease of intermodal travel between bus and train (with a ferry terminal in proximity). Britomart was completed in 2003 and is considered relatively 'new' in terms of Auckland's transportation infrastructure. Prior to its conception, the Edwardian building was formerly the Chief Post Office building. It was redeveloped and refurbished as a transportation centre due to the growing demands being placed on public transport. Initially, the station was considered underutilised and too costly. This was at a time when Auckland's transportation climate was focused on the private car. However, now it is seen as successful and is headed towards reaching its capacity in terms of infrastructure limitations. Patronage increased from 2.5 million journeys in 2003 to just over 11 million in January 2014. Within recent years, this has led to concerns that the station will soon reach maximum capacity.40 "During the peak, only 18 trains per hour can enter and exit."39 However, plans have been made to increase Britomart's infrastructure capacity, as the City Rail Link (CRL) proposal will mean that Britomart becomes a through station with more lines, thus enabling Aucklanders to access more parts of the city via train and light rail.

Currently, the station houses 236m² of retail space (excluding ticketing kiosks) on the entrance level and four train lines on the lower level.42 Above the station is a small precinct of retail and public open space. A design limitation of this station is that buses depart from the opposite side of the train station; making it less integrated in terms of public social space. Although largely successful as a transportation centre, the precinct itself has become a greatly successful area over the last ten years. Revitalizing a transit zone, preserving a large collection of heritage buildings, with a few sympathetic additions and trying to mix building uses within a constrained urban typology has been a direct result of this success. "Externally, Te Ara Ta Huhu [translated as] 'Walking Street,' links future development sites to the station environment.43 Of the developed sites, Takutai Square forms the precinct's social heart. The surrounding developed sites, mostly eateries and retail, were "scaled to replicate the intimacy and vitality of Vulcan Lane or Melbourne's laneways."44 According to the architects at Jasmax, "The architectural design of the station incorporates elements of Auckland's natural history. Light floods into the underground concourse through eleven skylights which visually represent Auckland's many volcanoes and offer visitors underground sky views."45

3.1 Britomart Transport Center, Auckland, New Zealand

3.0 Precedent Review

Figure 9 Britomart, view from platform

Figure 10 Britomart background, view towards southern entrance from tukutai square towards the glass box structure

Figure 11 Exterior front of Britomart transportation center

Figure 12 Britomart bus station view

Figure 13 Exterior view of “glassbox” back of Britomart

41 Jasmax, “Britomart Transport Centre,”
42 Jasmax, “Britomart Transport Centre,”
43 Ibid.
44 Ibid.
45 Ibid.
Figure 14 Britomart spatial planning diagram

Figure 15 Inside Britomart platform 2 view

Figure 16 Inside Britomart

Figure 17 Inside Britomart view transverse platforms
This proposal by Eduardo Velasquez, Manuel Pineda, and Santiago Medina was entered into a design competition for the revitalisation of Flinders Street station in Melbourne, Australia. It was awarded the people’s choice, however, it did not win the competition. Their initial concept was based on the idea of a courtyard within a station. “A courtyard within a station is an urban vision that respectfully embraces the site heritage while meeting the demands of a modern train station. It is a project for the people where a new urban forest will become the true heart of Melbourne.”

The group focused on improving the connections to Federation Square, the eastern concourse and to activate the north bank of the Yarra River. Regarding the functional aspects, “the idea was to not only make the station a significant transportation node within Melbourne but a new social and cultural center for the city.”

The design incorporates a new western concourse and a broad deck that covers all platforms; the deck is dispersed with voids allowing light, air and viewpoints to the railway platforms below. One of the key components of the design was the connections that were able to occur. “It is important that we are able to activate the Western precinct of the site to draw people into the development from across Queens Bridge and all along Flinders Street, and to create a link to Esplanade Park and Batman Park from the station.”

The development of the western concourse is a successful amalgamation of public and private. The end vision was to “transformFlinders Street Station into an existing destination rather than just a transitory transport hub as it is at present.”

The proposal utilizes the rooftop of the station as an urban public space. It allows the hybrid linking of two spaces to combine and generate a third, which "transforms the station into a highly accessible and usable public space that enhances both the everyday commuter and the visitor’s experience of Melbourne, and contributes to its status as one of the world’s most liveable cities.”

The entire design approach to the site and key design components allows for an assortment of uses and activities that a modern city like Melbourne should expect from its public spaces. The transformation of the railway roof into a vibrant Urban Park serves as a key design driver and utilises successful connections between the surrounding context to draw pedestrian links to the station and activate the public space within. It serves as a vital piece of architecture to Melbourne’s urban fabric and allows the existing heritage station to be celebrated along with stitching together the grain and shape of Melbourne’s existing pedestrian links and green spaces.
3.3 Interface Flon M2 metro station, Lausanne, Switzerland

Located in the Flon Valley at the Place de l’Europe, this station was the foundation of a new infrastructure network of transportation systems linking Lausanne’s centre to its suburban peripheries. “Four different lines of commuter service coverage on the group of rectilinear steel-framed structures, sheathed in red-print glass. The first phase began service during 2001 and was made up of train and bus lines, elevators, a glass-enclosed bridge, and a new traffic circle.”1 Phase two included a subway station, escalators with a glass envelope and an oblique plaza.2 The design of the station was derived from the city’s radical building typologies. According to the architect, the designers “took advantage of Lausanne’s existing bridge Typologies”3 and by radically extending them into the project area, were able to produce a lucid and coherent design. “With its bridge, elevators, and escalators, the first interface functioned as a new transportation interchange for the city.”4 Located at the western end of the Flon Valley, it combines separate terrain and three subway lines on one level and two bus lines on another, with pedestrian traffic coming from four different directions. Functioning not as an end point, but rather as a momentary pause along multiple routes, the Interface also generates new events for this part of the city.

Part of a master plan won in a competition in 1988; the project develops from the distinctive sloping topography of Lausanne. “Streets appear as if suspended, buildings seem either buried in the ground or like vertical passageways, and bridges serve as multi-story crossings.”5 Tschumi says, “The new transit hub appropriates the resulting multiple levels of traffic as if a cubist diagram of the city, in which bridges, houses, streets and alpine horizons fit together naturally.”6

The program above ground was resolved by using the strategy of the fold. The main structural gesture is made out of concrete, as though a piece of the plaza had been carved away and raised back on itself, with the sides of the ‘slice’ materialised in the glass.7 The building is clad with robust industrial materials that are well suited to the heavy traffic of an important transit center. As the main ticket office for Transit Lausanne, the building had to express a public image for the transit authority and the city at large. The project required that new rail lines be constructed above the subterranean river that gives the valley its name.8

Below Ground: Underground the M2 intersects with an earlier commuter rail and the adjoining M1 subway. Regional rail lines and buses are located at adjoining facilities. “In essence, the interface Flon station is about recreating and re-routing urban flows above the ancient river so as to better accommodate traffic at every level of the city.”9 Given that the first and second phase were to be completed almost ten years apart, the orchestration of these movements required an architectural perspective of the city that would account for its evolution over time. The site itself makes use of a somewhat obsolete space in the city. Therefore, it not only provides a transportation link to its peripheral suburbs and arterial roads, but also allows the city to have a public domain, in which choice is given as to what mode of transport can be taken. Once more, according to the architect, “The different parts of the station are considered as movement vectors in a dynamic circulation system that carries Lausanne’s citizens through a complex of transportation, commerce, and civic enlightenment.”10

2 Ibid.
4 Ibid.
6 Ibid.
8 Ibid.
10 Ibid.
Figure 30: Vertical circulation cores connecting to the above bridge structure

Figure 31: Concept one perspective

Figure 32: Concept two perspective

Figure 33: Vertical circulation concept perspective

Figure 34: Vertical circulation concept perspective

Figure 35: Visible subterranean platform
3.4 West Kowloon Station, Kowloon, Hong Kong

Designed by Andrew Bromberg, West Kowloon station is a high-speed rail terminal station located in Hong Kong. The station will be the world’s largest underground rail network used to connect West Kowloon and other peripheral regions to mainland China. The station is located in Hong Kong’s metropolis and is built with fifteen tracks.

“The site’s vicinity to the future West Kowloon Cultural District and Victoria Harbor required a design, which was highly influenced by civic demand.”61 The station building not only has 294,000 m² of commercial development but also is intended to become the “gateway” to Hong Kong.

The design intent was to become a vital public building in the civic realm. It is hoped that it will act as the urban connection to different parts of the city, and to re-connect with the surrounding urban context. Therefore, a key feature was to make sure that whether arriving or departing, the passenger would have a sense of the city’s character.

The design condensed all of the supporting space to allow for a large void down into the departure hall with added apertures going down to the track platforms. These were to enable yet another visual connection.62 “The project expresses local movements both internally and externally. The conceptual form is sculpted out of the energy of these movement patterns and strongly defines the design’s focus toward Victoria Harbor and the Hong Kong skyline.”63

West Kowloon Terminus features an extensive green belt rooftop. The terminus will also have a large assortment of civic, cultural elements, and entertainment spaces. A large “civic plaza” opens up towards the cultural district and is defined on the other side of the terminus by an outdoor performance Amphitheatre will mark the perimetre. The green rooftop park allows the pedestrian flow to continue up and along the green belt. “The green space provides links flowing through the site to a public transport interchange to the North, one to the East and a new development and shopping mall to the West.”64 The culmination of these ideas is an observation deck on top of the entrance building’s peak. “At the top, the perfect view acts as an extension of the journey into Hong Kong – into and beyond the West Kowloon Cultural District.”65

62 Ibid.
63 Ibid.
64 Ibid.
65 Ibid.
Figure 41: Departure flow axonometric
Figure 42: Arrival flow axonometric
Figure 43: Concourse level/ground floor
Figure 44: Platform and track level
Figure 45: Proposed site model
Transbay Transit Center, located in the heart of downtown San Francisco, is a multimodal transportation center that links 11 transit systems to the program. A hybrid model, the building also includes a 2.2-hectare rooftop park that will anchor the growth of a new mixed-use neighborhood. The center will accommodate more than 100,000 passengers each weekday and up to 45 million people per year, making public transportation a convenient and accessible option for everyone who lives, works and visits the San Francisco Bay Area.

At street and ground level, retail shops and cafes will draw visitors and local pedestrian flows while regenerating and serving surrounding neighborhoods. The rooftop parkland is "an essential element in the growth of the new neighborhood and provides high-quality open space in an area that lacks significant land for park development." The hybrid nature of the building transforms the transit center paradigm from a commuter hub to an urban destination within itself. The rooftop park will have over twelve different entry points, including bridges to surrounding buildings. Dynamic and passive functions have been designed into the landscaped rooftop, including a 1,000-person amphitheater, cafes, and children's playground, as well as quiet areas for reading, picnicking or simply taking a break.

In the renders provided by Pelli Clarke Pelli, the center is seen as having an "undulating, translucent facade that creates airy, light-filled spaces within the plazas below. The interior will cater to a variety of users." Such spaces will include commercial zones, providing both retail and hospitality. These will serve not only the travelers but also ensure use of the complex by residents and those passing through. According to the architects, within the transit center "space is open and light-filled. Tall, structurally expressive skylights – Light Columns - bring the sunshine deep into the building, creating a vibrant, inviting atmosphere." The structure was an important element to express in this project, and it successfully demands attention by having more than one responsibility. Not only does it adhere to its structural form but it is used as an important architectural element by bringing light deep into the building. The largest Light Column forms the central element of the 36-meter tall primary internal public space... Reaching from the park, down through the bus deck and Grand Hall, and all the way to the train platforms two stories below. This dramatic structure will provide light and long views to all areas of the Transit Center.

67 Ibid.
71 Ibid.
Bus Deck:
The bus level of the Center is two levels above the ground. The bus deck level will connect to the bus ramp at the western end of the Transit Center.71

Train station below ground:
The second floor below ground will provide not only a rail system but passenger and visitor circulation as well as administrative offices, space for support services, and retail services and amenities.72

Ground level:
The ground level will serve as the primary circulation hub of the Transit Center. According to the architects, "The ground level will feature a Grand Hall and the sunlight bearing light columns."73


72 Ibid.

73 Pelli Clarke Pelli, “Transportation.”
The High Line, also known as the High Line Park, is located in Manhattan, New York. Today it is a thriving elevated urban park raised 9 metres above ground and spans 2.33 kilometres through the dense city of New York. However, it was not always a public urban park, originally an elevated railway track, the High Line allowed for the delivery of goods to and from the factories and warehouses that ran beside. The architecture and city planning of the early twentieth century reflected an imaginative futurism dedicated to solving the problems of traffic congestion. “The ‘city of tomorrow’ movement which often proposed separating transportation forms onto different levels, influenced the later designers of the mid to late twentieth century.”

The beginning of the highway system and the transformation of freight transportation in the latter half of the 20th century made this piece of infrastructure obsolete. It sat idle for 25 years, surviving occasional attempts to tear it down. In 1999, the Friends of the High Line was formed by Joshua David and Robert Hammond. They advocated for the preservation and reuse of the line as a public open space. They also initiated a design competition, which intended to provoke a dialog about the High Line’s future. The open call resulted in 720 design entries from thirty-six different countries.

The park was eventually designed by James Corner’s New York-based landscape architecture firm Field Operations and architects Diller Scofidio + Renfro. They kept the structure’s history by integrating the old rail lines as a key gesture of the design allowing people to be able to connect the lines of the movement to the previous function of the rail tracks visually. This also helps the flow and natural linear circulation through the park. The designers also exposed the site’s history on the west thirty-sixth street cutout and viewing platform. The structure was stripped back to reveal the structural grid below. This reveal is also integrated with a stairway access point. Access points create a sense of visual destination. Moreover, that seems to be a key design driver within the design of the High Line as an urban park. The stairs are designed to provide a natural gradient of transition from the streets to the serene parklands above. This design feature draws people from their everyday natural movements up into a natural parkland in the heart of a dense metropolitan city. The park’s programmatic and unique spatial qualities have triggered an increase in value in the surrounding neighbourhood, showing that the park has not only reclaimed an obsolete structure but has generated an urban renewal in areas around it.

76     David and Hammond; High Line, 163.
77     Ibid.
78     Ibid.
79     Ibid.
Figure 58  The High Line seated viewing platform area

Figure 59  Street condition to elevated park perspective

Figure 60  IBoarwalk perspective

Figure 61  The High Line Ganservoot entrance

Figure 62  Plan view of the High Line seated platform area

Figure 63  Activation pocket space online the High Line
Vinge, a new city to be developed north of Copenhagen, Denmark, will cover 350 hectares. It will be the largest urban development project in Denmark. In the middle of the new town, master planned by Henning Larsen, a circular station form adapts organically to its surroundings by gracefully and subtly allowing the buildings around it to have a greater hierarchy. The station’s surrounding public space and the landscape stretch and undulate a canopy to span over the rails, safeguarding that the railway does not divide the town into two parts. “The Green Heart is a new type of urban space that unites the city’s pedestrian circulation and public transport with urban functions to create a unique base for city life.”

Vinge Train Station has been designed to function as the heart of the development, and to unify the movements of landscape and city. “The basic idea of Vinge is to create a city where nature is not an addition to the town, but an integrated part of the city. The station in Vinge is a great example of this.”

The station’s undulating topography is intended to create a calm centre. Instead of merely functioning as a bridge, the structure itself adapts to its hybrid civic needs. One of the major challenges was to design a station that creates connections in the city instead of dividing the city into two parts. Having the green heart placed at the same level as the rails, visually and physically connecting the two levels resolves this. The main aspect of the station will be its circular design. This will undulate to provide the necessary thoroughfares. It will appear almost as though a ring has been laid across the top of the station, touching down on either side of the tracks and merging into the ground to create open spaces for movement between the platform edges and the rest of the city. The ring will then rise as it swings around and above the train line, ensuring there is clearance for trains and that people can move freely across the tracks.

Materials:

The station is planned to be constructed of in-situ concrete. Light coloured concrete will reflect the rays of the sun and create a calm, symbolic landscape in the city.

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Figure 64: Perspective render of proposed Vinge rail station

Figure 65: Vinge station perspective looking south

Figure 66: Plan of Vinge Railway station

Figure 67: Perspective of Vinge train station looking north
3.8 Derived Design Strategies

From analysis of the precedent studies, some design strategies have been developed to act as tools for application in the design process. Britomart has been able to preserve a large collection of heritage buildings with a few sympathetic additions, and managed to mix building uses within a constrained urban typology. The subtle stitching together of various programs to create an intersection of cross paths or networks is a design strategy that will enable the design of the station to resonate with the surrounding context, and provide more pedestrian links to the existing urban fabric of the site. Interface Flon M2 also does this by suppressing the station and making use of an obsolete site within the city, allowing the surrounding buildings to have a greater hierarchy.

Visual connectivity is also a design strategy that will be utilised, best shown in the Flinders Street and High Line precedents. Where voids were dispersed along the rooftop, there is a choice of pathways or routes that view other pathways. This type of design element helps facilitate movement as it triggers a person’s perception to move and engage in activities observed from a different vantage point. As well as encouraging movement, visual connections also allow the seven key design elements of a successful train station to unfold naturally: Creating ‘Accessibility’, ‘Ease of navigation’, ‘Comfort and amenity’, ‘Information and wayfinding’, a sense of ‘Safety’, while allowing ‘Local area integration’ and ‘Community ownership and activity’ to occur.

Allowing natural daylight into the station informs the spaces in terms of way finding and movement systems have been successful in the analysed precedents. By applying this into the project this will also inform the spatial hierarchy of the proposed station and its facilities along with its hierarchy at an urban space level. This hierarchy will help develop ease of navigation and help more pedestrian links and thoroughfares to be discovered.

Community integration: From analysis of the precedents, all had community integration or a public interface to the scheme. The need for public transport within the wider context for the Karangahape road precinct is clear and the need for community integration can be established based on this. In order to create a successful station and bring life into the streets, there will always be a need for a public interface within the development of a train station. A mixed use development could possibly create stronger pedestrian links and connections through out the existing urban fabric. This kind of development can often lead to convivial streets and a successful revitalization of a neglected city area.
4.0 Site

4.1 Site Location

The chosen site sits between the corners of Hopetoun Street, Pitt Street and Beresford Square. The site is located in Auckland’s CBD and is considered to be within the “city centre” zoning framework.

Beresford Square

This area is well located adjacent to Karangahape Road and still on the ridgeline. Beresford Square has been identified as an appropriate location for the proposed station and offers excellent opportunities for the development of high-quality public space, integrated with the surrounding built fabric and existing and future land uses.

4.2 Site Selection Criteria

As this project seeks to act as a catalyst for urban regeneration through TOD and other design and planning principles, the site location is important. This particular site provides an area that has been identified as an area ready for revitalisation according to Auckland Plan. The Karangahape Road precinct is a popular destination for shoppers during the day and offers a range of pubs, cafes and nightclubs for evening goers. Auckland Hospital, the School of Medicine and southern parts of AUT and University of Auckland are located to the East and Northeast. While these areas are not within the immediate vicinity, they are within a 10-15 minute walking distance over relatively flat topography. The site is also well located near Myers Park, which is to the North of Karangahape Road and accessible via St Kevin’s Arcade. The park provides a significant amenity for residents and employees in the area. As well as containing a playground and kindergarten, the park provides a ‘backyard’ for residents living in nearby apartments and offers a green pocket in an otherwise urbanised area.
Karangahape is one of a few original Māori names to have survived European settlement. According to Te Wai o Hua, when the Tanui waka set out for Aotearoa from Hawaiiki, an ancestor, Hape, was left behind due to his disability, a 'club foot'. Some say he made the journey to New Zealand on the back of a stingray, preceding the arrival of his clansmen by several weeks. On their arrival, they saw him standing on a hill, (now known as Karangahape Road), and he welcomed them with a greeting call, and the event became known as Te Karanga a Hape. (The call of Hape)

After Auckland was established in 1840, it grew rapidly through an influx of immigration, although Karangahape Road remained a 'rural' area outside the main commercial area, which focused on Queen Street. Karangahape Road is perched on a ridgeline, overlooking the Queen Street valley and modest houses and shops were built along this ridgeline. Small businesses sprang up, drawing workers from nearby Newton, Grafton, and Myers Park areas. Electric trams, most of which ran along Karangahape Road, were introduced at the turn of the century. By 1908, almost the entire length of Karangahape Road from Symonds Street to Ponsonby Road was fully occupied by shops. The interwar period saw steady building activity in the core around St. Kevin's Arcade. The street's second department store and George Court's was rebuilt as a five-storey building. After this time, only a few new buildings were constructed along Karangahape Road until the 1960s. Retailing and shopping behaviours changed after WWII with increasing suburban development and shopping malls.

In 1897, when the stock market crashed, developments across the city ceased, which inadvertently protected heritage buildings in the Karangahape Road area. Some significant shops with offices and/or apartments above were constructed in the 1990s and 2000s. These, combined with newly-built apartment blocks nearby, have drawn residents into the area and to some degree revitalised Karangahape Road into a vibrant area providing a diverse shopping experience matching its rich architectural heritage representing every period from the 1860s onwards.

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References:
86 Ibid.
Auckland has the vision of becoming “the world’s most liveable city.” A liveable Auckland will be a place with cohesive, resilient communities; a productive high-value economy; quality urban, rural and natural environments; and, a comprehensive and integrated transport system. The City Centre Masterplan stems from the Auckland Plan and provides a 20-year vision that sets the direction for the city centre. Within Auckland’s future planning framework, it provides a city-wide spatial framework with key medium and long-term outcomes for the Auckland isthmus at a city-wide scale. As part of a long-term outcome, the City Masterplan identifies the current City Rail Link project as vital to the transformation of the city centre with increased growth and development within 800 metres of the new stations. The Master Plan further identifies the Karangahape Road as a quarter, recommending that a detailed quarter plan is needed to ensure the area accommodates high-quality growth, while protecting the heritage and keeping the edge and “grit” for which the area is known. The Karangahape Road Plan was developed in response to the City Centre Masterplan and the local opportunities it identifies. The Karangahape Road Plan specifically provides a unique opportunity to transform Karangahape Road and maximise the opportunities available for development by the city centre land use zone in the Proposed Auckland Unitary Plan surrounding the proposed train station.

4.4 The envisaged Auckland city

The currently proposed City Rail Link project wishes to establish a new train station at the top of Beresford Square, near the Pitt Street and Karangahape Road junction. This is in alignment within the site chosen for this research. However, this research project seeks to demonstrate that a train station, and the space in and around it, can offer more to the community than just another train station. This study is intended to be used as an alternative view/approach to exploring Auckland’s future hybrid space functions. The Council proposed station would be just that, a station, nothing more and nothing less. However, it does offer the chance to implement TOD principles and to have a progressive “impact on the future development and growth of the Karangahape Road area.” Returning to the site proposed for this project, provides an alternate view on how to improve the Karangahape Road area, not just for residents but visitors and others traveling around the city. This will mean protecting and enhancing the things that people value, including:

- The character and heritage of the area
- High quality public infrastructure and private development within the area,
- A more pedestrian and cycle friendly, accessible and vibrant place that “cater to the needs of the community and is a prosperous part of the city.”

91 Ibid.
4.6 Vehicular use

Figure 78 illustrates the current vehicular use. The Motorway takes up a large portion of this diagram, but does not affect the amount of traffic flow around the triangle perimeter. Pitt Street is an arterial route to connect up to Karangahape and subsequently is approximately eighteen metres wide. This will be taken into consideration when designing, as it is assumed that in the future Auckland will be more pedestrian-focused, and the streets around transportation hubs will accommodate and reflect this.

4.7 Pedestrian Use

The blue walkways (highlighted) in the vicinity and immediate context of the site show how little access is given to pedestrians. However, the triangular perimeter that surrounds the site is largely pedestrianised. Moving forward into the design process making Beresford Square a pedestrian only street would be a beneficial move towards the overall aims and objectives of this project. Further consideration and explorations will be used to determine possible implications for this move.
4.8 Existing Heritage

The current proposed site and train station aims to have a positive impact on the future development and growth of the Karangahape Road area. It will allow the opportunity to improve the Karangahape Road precinct for all people living, working and investing in the area, as well as visitors to the area. This will mean protecting and enhancing the things that people value, including the unique character and heritage of the area, which is prevalent within the immediate context of the site as shown in Fig.80.

4.9 Site Photos

The current proposed site and train station aims to have a positive impact on the future development and growth of the Karangahape Road area. It will allow the opportunity to improve the Karangahape Road precinct for all people living, working and investing in the area, as well as visitors to the area. This will mean protecting and enhancing the things that people value, including the unique character and heritage of the area, which is prevalent within the immediate context of the site as shown in Fig.80.

Figure 80: Existing heritage and planning areas directly relating to the site and surrounding context

Figure 81: Corner of Beresford Square

Figure 82: Beresford Square tram stop facing towards Pitt Street

Figure 83: Beresford Square heritage building housing offices and residential requirements

Figure 84: Mixed use development site showing steep gradient in the contours of the existing land

Figure 85: Hopetoun Alpha next to mixed use development site

Figure 86: Beresford Square Hopetoun Alpha church and contrast of brick heritage building
4.9.1 Climate and contours

Sun study

It is important to know the change of climate in terms of daylight hours around the site as this knowledge can then be used to determine suitable design elements within the project scheme. Figure 93 shows the differences in sun patterns and natural daylighting over four different periods in the year, as well as during peak daytime hours. The times recorded are in the middle of the afternoon time and the beginning of the evening time. These times are important as this is when commuter levels are high so relating the conditions of the site back into the design is an important aspect of this sun study, as it will inform how the site can be best utilized to gain maximum free daylighting hours.
The site is important to look at in section as it shows the natural ridgeline topography which is part of the Karangahape road precinct. The topography slopes down to the south western end of the site near the Hupontown street before dropping off to accommodate the motorway. Figure 95 shows Section A-A which is a section directly through the centre of the site. In this the ridgeline is very apparent, with Myers park to the right and the central motorway junction to the left. Figure 96 shows a section of street elevation through Beresford Square where the south western slope is more apparent. Figure 97 shows the sites relationship in section to Karangahape road.
The current site sits vacant and open to a host of development opportunities. It has views out towards the Waitematā Harbour and visual prominence along a key route from the city center and the Karangahape Road area. A few suggested guiding principles have been set out by the Karangahape Road Plan to ensure that the site is well developed for future land uses and is well integrated into the proposed city rail link. According to the Plan, anything to be conceptualised, or built on the site shall adhere to:

1) Architecture to exhibit sensitivity to the adjoining heritage building (Hopetoun Alpha)
2) Build to the street edge along Beresford Square with active uses at ground floor
3) Consider the potential for new publicly accessible open space to take advantage of West facing views of the Waitematā Harbour
4) Built form to reflect the topography of the site, stepping down the hill towards Hopetoun Street and reflecting the scale of the adjoining heritage building
5) A wide range of land uses appropriate on the site, active uses are encouraged on the ground floor fronting Beresford Square and the corner of Hopetoun Street.*

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* Auckland City Council, The Karangahape Plan 2014-2044, 46.
The main objectives and design drivers for this investigation are:

1) To create a station that provides the opportunity, and has the ability, to establish a sense of community within the chosen area. In doing so, this will result in convivial streetscapes.

2) The spatial requirements of this station and public spaces need to integrate new urbanism planning techniques to enable the regeneration of the existing urban fabric. In order to achieve this, the design will need to incorporate a dynamic use of spaces that blend a combination of commercial, cultural, institutional, or industrial uses, where those functions are physically and functionally integrated, and also provide pedestrian connections.

3) The design needs activated public space integration with the buildings, transforming the station and catchment area into a highly accessible and usable public space that enhances both the everyday commuter and the visitor's experience of Auckland and contributes to the status of the world's most liveable city. The program explores two different scales of design:
   - Public space
   - Transportation centre

The placement and integration of existing buildings on the site can actively form public spaces such as urban squares and plazas. Therefore, the relationship between the chosen site and the existing context and axial relationships must be planned to allow movement of pedestrian foot traffic through the site. The design needs to prioritise the pedestrian. To successfully meet the design objectives, the program of this project needs to address key issues such as:
   - The transport centre itself needs to incorporate the character of the existing site into the design.
   - The design must have a strong connection with the urban space, and immediate precinct. It must work to provide a functional and authentic public space(s)

### Building Function and Area Requirement

**Train station below ground:**
- Station control office: 50m²
- Plant rooms: 500m²
- Toilets: 100m²
- Security kiosk: 50m²
- Cleaner's storage: 50m²
- Concourse transition areas: 200m²
- Circulation cores: 300m²
- Seating/waiting areas: 400m²
- Station staff workers room: 150m²

**Train Terminal Sizes:**
- Greatest density possible: 6 persons per m²
- A people standing in line roughly take up 1875mm
- A people standing side by side take up 2250mm
- Bike approx. 1400mm length x 1000mm height
- Train platform length: at least 80m (for locomotive and 3 cars), 8m minimum wide (doubles), 5m minimum wide (single)

**Bus/Tram Terminal Sizes:**
- Bus/ tram Curbside Parking Space 12 - 18m long by 2.5m wide
- Bus/ tram allowance of 15-30m tapered lengths of approach and departure.
5.2 Station classification

Regarding station planning and design, it is important to classify what exact type of station is being designed. The classification then determines the programmatic outcomes and outputs for the station itself. Since New Zealand has little regulatory guidelines on station planning and design, through research, guidelines will be based on the Railway Station Usability Principles (adopted by the Victorian government in Australia) and Amtrak’s Station Program and Planning Guidelines.94

According to the Railway Station Usability Principles, there are seven key components to effective station design:

- Accessibility
- Ease of navigation
- Comfort and amenity
- Information
- Safety
- Local area integration
- Community ownership and activity

Due to the central theme of this project being usable public spaces the design will need to be a simple station layout. The station must be instinctual and promote ease of movement, connection with the surrounding local area, as well as contributing to the sense of place, which in the long term will improve the liveability of the local area. Using Amtrak’s Guidelines the classification of the type of station can be seen in the diagrammatical illustration (Fig. 82). The matrix for choosing a type of station is based on annual passenger volume. There are four station categories as follows:

- Category one: Large
- Category two: Medium
- Category three: Caretaker
- Category four: Shelter

Station categories are important in terms of deciding the sizes of amenities in the station. Station categorisations are an important tool for use in planning and programming, in terms of meeting local need, and in understanding the underlying factors that determine the station's role in the transportation system and wider city framework. Through this framework, the station on the proposed site will be a category two (medium) station. This is defined further as being a station that is staffed and has significant variability in rail service, type and program function. Category two stations are primarily oriented to a corridor service, or major destinations along long distance services, and have ticket offices and minimal staff.
The initial concept explorations were trying to explore how the station could become this hybrid mix of activity where public engagement and community integration were exaggerated by the use of an elevated public rooftop park. The Station would therefore become a large stand out piece of architecture. The entry ideas are also similar explorations and in hindsight seemed very bold and loud. This became an immediate design issue, as it did not seem to resemble anything you would find around Karangahape road precinct and was not meeting the sites conditions in a way which was subtle and gave hierarchy to the existing heritage buildings. It became apparent that in order to successfully achieve the desired outcome, the site needed to be reimagined and defined by what was appropriate, and gave an authentic sense of what Karangahape road is, has to offer today and what it will have to offer in the future. This led to a master plan of the site and the functions and future land uses that could be integrated into the design.
5.4 Entry points and decision points

Station entrances are important and often play a crucial role in the success of the scheme. By having the entrances located in or along a main arterial is fundamental in way-finding and accessibility. Not only this but it draws on the curious nature of pedestrians and street level foot traffic. The typical station planning diagram in figure 104 illustrates the importance and hierarchy of the entrance point and location. This is because it has a knock on effect. Through sketching out axial relationships through the site and around it. Figure 105 shows the overlay effect of where possible entry points can occur. It is easy to see the stronger axial relationships as the colour darkens the more times axis cross or intersect each other.
5.5 The personification of the stingray

Drawing upon local mana whenua and incorporating history and site context of culture into the project, the personification of the stingray was architecturally explored and conceptualised in the form of a station entrance. The Maori myth about Hape arriving at his destination in Aotearoa on the back of a giant stingray was influential in terms of the form and structure of the entrance. Also as an arrival and departure point the undulating form references this myth which helps incorporate a meaningful connection to the site.

The undulating glass is hoped to reflect and refract light into the entrance way shaft and provide natural daylight when available. The entrance shaft and journey down to platform level will be 20 meters long at the proposed Pitt street entrance. This is so that the proposed station is aligned with the future CRL rail tracks. The tracks will be almost 30 metres below ground at the highest point of the Karangahape road ridgeline. Therefore, natural daylighting techniques should be used wherever possible to ensure the entrance void is efficient in both placemarking and function.

Figure 106 Stingrays undulating form sketches

Figure 107 Conceptual station entrance structure articulated through the idea of the stingray in the mythical 'Tea-ta story about Hape’s arrival to NZ'
5.6 Development exploration

For the initial concept of the layout of the station, circulation from the entry point down to platform level was firstly explored. This was done so on the assumption that the station entrances were located in position seen in Figure 105. From there, connecting the platforms to vertical circulation was explored in its simplest form in order to achieve ease of navigation and accessibility. Figure 98 also explores a light well structural system that tries to get natural daylight in from the street above. By engaging the below ground station with the street level, the idea of visual connectivity is reinforced, enabling the curious nature of people to engage with station which also helps to facilitate movement. Figure 109 is a cross section diagram trying to highlight how the vertical circulation could work.
5.7 Entrance Location revised

From further development into entrances, the station entrances were revised in terms of locality and one location was changed. I am now looking at keeping the main Pitt street entrance but changing the smaller one seen in figure 95 to being across the street next to the Pitt Street Methodist church. The reasoning behind this is to create better connections with the pedestrian links already existing around the site. If the station is to act as a catalyst it should do so in such a way that promotes pedestrianism through the site and the existing local area. As one of the main objectives of the scheme is to create convivial streetscapes and public spaces, local connections, as well as new ones, need to be able to connect the public spaces to the proposed station.

Myers park is on the eastern end of my site and currently has no connection to Pitt Street. The connection from Myers park to St. Kevin’s Arcade is strong in an axial relationship but lacks the ‘surprise’ that Karangahape Road so often exudes. The potential to create a pedestrian link via the newly located Entrance/exit, will help stitch together the urban fabric and link Myers Park as a new connection to the site. Another station entrance at a later phase could reuse the current tram café providing that extra link into Beresford Square. This move would allow people to ‘pop’ up to the surface as there is retail which lines the street, allowing for a break in their Journey and becomes a transitory usable public space. Beresford Square would become a shared space with cars, much like Darby street and Fort Lane.
5.8 Vertical circulation

The vertical circulation is an important aspect of the design as entry to platform level the vertical circulation required is 20 metres to align with the current proposed City Rail Link lines. The circulation within the station is dealt with in the horizontal and vertical and the connection spaces between these are a transitory space. This space is important because it allows the user to stop and make decision points. Transitory spaces also offer an opportunity to play on the incidental meetings and interactions that occur through the journey to the platform level. The creation of transitory gateways and focal points can help passengers recognize these transitory spaces allowing them to slow down and make decisions. This type of design element helps facilitate movement as it triggers a person’s perception to move and engage in activities observed from a different vantage point. Aforementioned in a previous section visual connections also allow the seven key design elements of a successful train station to unfold naturally.

Figure 111: Exploration of depth of entrance shaft and how vertical circulation may occur from entrance to platform. Also showing how daylighting can occur and what can be explored through the transitory space. (either resting places or incidental interactions between journey from surface to platform and vice versa.)

Figure 112: Exploration diagram of how to deal with the vertical transitory spaces.
Figure 113 - 115 are an exploration showing how the connection to the surface or entry level of the station could enhance the users experience. By architecturalizing the journey and making subtle visual connections, this can promote the natural flow of movement and increase accessibility. These figures are all exploring the articulation of light as an architectural feature. By creating these points of interest with light, this allows a sense of comfort to be achieved. By playing with the perception of light in a sub terrain structure allows people to make a visual connection to the surface. If not a direct visual it becomes a recognizable feature of something that occurs above ground, therefore instilling a sense of place or being able to mark a certain point within the journey as being one to remember as a point of interest. This may be one way to achieve the intersect between horizontal and vertical circulation.
Figure 116 is a diagramatic design exploration where the structure of the tunnels and transitory spaces are the navigable wayfinding systems of the station. These need to be structurally legible in guiding people from surface to platform. The vertical circulation is the most challenging part of the design as it has to integrate into multiple cluster points of transitory spaces. The blue in the diagram indicates the natural flow path of a regular everyday route used to reach platform level. The orange shows a more direct route used for special requirements and disability use as well as a more direct way to reach both platform level and entry. The challenging part of this project is the connection which happens underground. This challenge presents itself in the vertical form and the horizontal form and how the two interact when they intersect becomes an important architectural point of interest and exploration.

The next exploration that occurred was how to achieve the vertical and horizontal connection at platform level. Since the proposed CRL line is a two way rail line, the station should implement a design element that utilises the efficiency of these double lines. Connecting passengers to trains can be achieved with a bridge element. Therefore figure 117 illustrates how one iteration of this may occur.
5.9 Platform types and layout

Platform arrangement and layout is a crucial element determining the efficiency of a station. Track and platform arrangement include determining the number and lengths required for each platform. Track layouts are often predetermined by existing conditions. In this case the platforms have to align with the current proposed City rail link lines. Design considerations for platform types and the arrangement of them include:

- Travel distance to exit or vertical circulation
- Platform width for station capacity
- Seating and waiting areas
- Signage and information systems

Side platform:

This platform configuration consists of one platform alongside a single track or two separate platforms with tracks running between them. The basic station design used for a two track railway line has two side platforms, one for each direction. An advantage of utilizing the side platform is that tracks can run straight and don’t have to diverge to a centre platform. There is also a vertical and horizontal connection between platforms to assist travelers change of direction or transfer of routes.

![Side Platform Diagram](image)

Island Platform:

The island platform consists of a platform located between two tracks passing on either side. This is often used to save space and cater for large volumes of passengers such as a category 1 station mentioned in an above previous section. The Island platform is utilized in Britomart Station. An advantage of utilizing the island platform is that it requires less overall area than two side platforms. The island platform reduces the overall number of required escalators and elevators required for vertical circulation.

![Island Platform Diagram](image)

For this project the most appropriate platform configuration would be that of the side platform. This is because the station it is only a through station and will not be dealing with large volumes of passengers such as the new Aotea station. The side platform will take advantage of allowing both directional tracks to operate. By having a bridge over the platforms a visual connection is able to be made showing and highlighting this directional change. This will help facilitate constant movement and increase efficient way finding and circulation routes.
5.9.1 Other Amenities

Other station amenities that need to be considered in the design are:

- Ticketing office/ info centre
- Security kiosk
- Communications and station control
- Toilets
- Plant room areas
- Seating/ waiting areas
- Station staff workers room

Ticketing:
A kiosk or ticketing office/ info centre is required to enable comfort and amenity within the station. An information desk or ticketing kiosk is a design element that provides travelers and passengers with directional information about way finding within the station, local area information and other transit service.

Security:
A security kiosk or office or kiosk should be integrated into the station to provide a sense of safety and comfort for all users. Security should be visible and easily located with clear signage.

Communications and station Control:
A communications office or station control room is vital for maintaining the services the station has to offer. This would control the information systems.

Toilets:
These should be located in the transitory spaces, near waiting areas or main public circulation areas, with visible entries. For safety restrooms should be visible from a security kiosk or operations area so that user safety and comfort is achieved at all times.

Plant room and services rooms/ area:
Since the station is underground there needs to be a space for services to supply the necessary requirements for environmental systems and services.

Seating/ waiting areas:
A range of waiting environments should be considered for the transitory waiting areas within the station, including general waiting areas, standing room areas for commuter activity, and possible use of tables and chairs with access to power and wireless for laptops and mobile devices. All waiting areas should have convenient access to restrooms, adjacency to ticketing, access to train (arrival and departure) information, close access to platforms, and where possible, a view of the trains/platforms.

Figure 521: Island platform diagram
As mentioned above, the connection between horizontal and vertical circulation is a key design challenge. The planning and programming of spaces required and needed to connect people to platform and entry can be seen in figure 122-124. Figure 122 shows the exploration of how to connect two entries together using a network of tunnels and transitory spaces, and how efficient this is in terms of the function of the station. Trying to make a greater connection with Myers park is still a design goal that can be achieved through this type of exploration. Figures 123 and 124 are spatial diagrams illustrating how the functional requirements of a train station may flow.
6.0 Urban planning

6.1 The surprise of Karangahape Road

Karangahape road is rather different to any other quarter or precinct. It is known for its distinct edginess, creativeness and grit, which the waterfront and Queen Street shopping district lacks. The Karangahape road precinct offers an alternative retailers, one off retailers not chains, it has a large cultural and creative arts market which appeals to many different audiences. It lacks the glitz and glam of the High-end designer stores located on Queen Street such as Gucci and others. However it does have a huge role to play in the entertainment side of things. The precinct is well known for its nightlife and bars. By concentrating on the existing, deciding the functions of the buildings above ground on the site should reflect the ambiance for what Karangahape road is and what it will have to offer.

A few additions to the site will enable public integration and establish new pedestrian connections. Possible future functions onsite could include:

1) A small limited-lines delicatessen/grocery store, about 400-500m2 which would also serve an increasingly large residential population.
2) A boutique hotel west of the Hoptoun Alpha chapel, this could provide the site with active users on a regular basis and enable a small provision for car parking.
3) A small music school
4) Architects offices
5) Marketplace for pop up shops
6) Art shop
7) Bookshop and café
8) Photography studio/ gallery
9) Performance plaza

The thinking behind these unique functions is that it they already draw on Karangahape Road's character and will attract people from the area. However, by introducing new things such as a specialized delicatessen and music school, even spaces for creative industries such as graphic designers and architects studios, these will bring people in from outside the local area. A performance plaza for cultural and civic celebrations will also enable the site to have a convivial street life. The train station will provide access to all of these and having a boutique hotel for travellers and tourist will ensure the pedestrian volume. The aim is to entice people into somewhat of a forgotten and obsolete part of the city. They will be able to rediscover the surprise of what Karangahape road has to offer through the regeneration and revitalization of the sites.

Creating new pedestrian access through the site will elevate current connections to Myers Park, St Kevin's Arcade and the entertainment areas of Karangahape road. This will also enhance and promote the current pedestrian networks. The initial response to conceptualizing a new pedestrian link through the site was to draw on the existing urban fabric and pedestrian networks around the Karangahape road. Overlying the existing patterns onto the site enabled iterations of possible laneway system to be developed.
6.2 Stitching the urban fabric

As previously mentioned, the initial response to conceptualizing new pedestrian links around and through the site was to draw on the existing urban fabric and pedestrian networks around the Karangahape Road area. Overlaying the existing site conditions and street patterns, as well as using the material within the existing site, to explore how possible connections could be overlaid, led to iterations of how movement could occur through the mixed-use development proposed on the site. Figures 124 to figure 129 show this.
Circulation is a key aspect to revitalization and creating welcoming easy navigable public spaces. It is important in this project to address the interface of the site. Interface is defined as "a point where two systems, subjects, organizations meet and interact". Therefore, interface is specific in this scheme as it brings together a new urban development and weaves it in with the existing character of the site. The circulatory space within the above ground development will try to seek the same incidental interactions that Karangahape road shopping area is well known for.

Creating social lively spaces that cater to the wider community such as the performance plaza will not only help to attract people into the space, but reclaim a sense of civic community and engage public integration. As mentioned previously public integration is one tool that can enable transit oriented developments to become successful. By overlaying the existing urban fabric to create pedestrian links and circulation routes thorough the site, this will help to create casual encounters through laneway systems and allow people to have a choice of path, creating their own incidental encounters and interactions.
As stated in section 4.9 the adjoining new land uses within the site should be sensitive to the existing heritage and so forth. Considerations of height and hierarchy can be seen in figure 137. By placing the small boutique hotel at the corner of the site this allows it to fit in within the range whilst allowing views to still be seen from the corner.
After developing iterations of different forms that could possibly be applied to the site seen in figures 129 to 136, the next step was to see how functional arrangements could work to further promote the pedestrian links through site. By strategically placing functions in certain areas, this will make people walk through the site to reach their required destination, on their way weaving through the link they may find something else of interest. This relates back to allowing the incidental bumps and interactions to naturally occur and therefore gaining a sense of satisfaction of a surprise on their journey. Figures 138 - 140 are a more developed iterations of previous concepts explored in figures 131 - 136. Figure 141 is a detailed site area plan showing the buildings and area that the project will be using.
6.5 Urban form exploration 1

Figure 142 Iteration 6

Figure 143 Iteration 6

6.6 Urban form exploration 2

Figure 144 Iteration 6

Figure 145 Iteration 6
In exploration explores having the plaza on the activated street front by the station entrance on Pitt street to enable people to visually connect with both station entry and the mixed use development beyond that. Having a large open space outside the station is a strategic move in terms of planning as people will linger outside the entry and draw other pedestrian movement into public spaces created by it. Centralising the specialty delicatessen will mean that people who want to use it will have to walk through the site to reach it. This is great for activating the laneways and paths as it will draw people in to use them. Having the hotel on the south western corner of the site allows it to make use of the steep contours which enable it to give hierarchy to Hopetoun Alpha while still making the most of the views out to the Waikare ranges. By activating the Beresford Square street front with a market place will increase the level of pedestrians that venture through the site, thus adding more activated courtyards and public spaces between the buildings.

Exploration two was another iteration where the hotel is located in the south western corner, the market is located in the same area as in iteration one and there is a larger courtyard formed from the hotel and market place. This exploration plays with levels in the centre of the scheme. The bookshop, photography studio and architecture office show this. The specialized delicatessen is located closer to the Pitt Street entrance and the plaza is located behind the entrance. This scheme creates decent sized courtyards between buildings allowing public activation of the spaces to occur.

Exploration three utilizes a different form in the market place and centrally locates it behind the station entrance. The delicatessen is still centrally located but more so toward the Beresford Square frontages. All the retail are located in the south Western end of the site with the hotel located directly above it. This creates an activated street frontage on Hopetoun Street as well as a large courtyard area between the delicatessen and the retailers.
7.0 Concluding statement

The documented process demonstrates how architectural design can facilitate the revitalization of a city fringe area through the implementation of a train station into a somewhat forgotten and underutilized site. A train station as a catalyst for this change enabled an exploration into creating new pedestrian links around the site to integrate a mixed use development above the train station.

A design issue faced was how to insert a train station and mixed use development into an existing street and public place with an appropriate sense of hierarchy given to the existing buildings. An initial concept design explored a bold architectural intervention with the architecture being a statement piece. However, this direction, after further consideration, was inappropriate in scale and hierarchy. The existing streetscapes offered character and active building frontages: it became unnecessary to insert a large scale statement piece into a quite subdued site. The design philosophy adopted an understated approach, where the existing fabric of the site could remain and be celebrated, but enable new pedestrian links and connections to be established.

The subtle surprise of a train station added greater challenges to the thinking behind how the revitalization of this site could work and become successful. Much like the Bilbao Metro designed by Norman Foster, the design philosophy was to prioritise the existing buildings but create a well connected network that was architecturally legible in structure and provided an architectural journey below ground level, to match that of the street life and character above.

The planning of the new land use above ground resulted in a mixed use development scheme. This mixed use development applied the lessons learnt from the patterns and pedestrian links of the existing urban fabric to overlay and stitch together the new land use functions into the existing streetscapes and public space. Creating new pedestrian routes through the site will elevate current connections to Myers Park, St Kevin’s Arcade and the entertainment areas of Karangahape Road. This will also enhance and promote the current pedestrian networks.

Traffic, heritage buildings and connections to existing functions had to be explored. The urban design outcomes of improved streetscapes and convivial pedestrian connections through the site and to Myers Park aligns with the vision of Auckland set out by the Auckland Plan and the desire for Auckland to become the world’s most livable city. The intention of the design was to discover and explore strategies of connections through movement and architectural activation of new public spaces created by the train station.

Traffic, heritage buildings and connections to existing functions had to be explored. The urban design outcomes of improved streetscapes and convivial pedestrian connections through the site and to Myers Park aligns with the vision of Auckland set out by the Auckland Plan and the desire for Auckland to become the world’s most livable city. The intention of the design was to discover and explore strategies of connections through movement and architectural activation of new public spaces created by the train station.

This design philosophy or approach could be applied to other stations along the proposed City Rail Link Line. However, a limitation within this approach is that this was a highly site dependent project. The site was already expressive of a unique experience and rich in heritage character. The distinctive edginess grid and charm that the area exudes cannot be something that is easily replicated elsewhere. The applications of lessons learnt from the design explorations are specific to this site and local context, and therefore reflect and respond to the distinctive character of the area.


Architecture Lab. “A Station Like No Other: The Vinge Train Station in Denmark.” Last modified October 14, 2014. http://architecturelab.net/a-station-like-no-other-the-vinge-train-station/


Bibliography


Figure 1: Broadacre city sketch by Frank Lloyd Wright, accessed May 15, 2015, http://www.mydstudio.com/blog/frank-lloyd-wrights-broadacre-city.html
Figure 2: Le Corbusier’s Ville Radieuse (The Radiant City) 1925, http://thisisbloodcore.blogspot.co.nz/2011/01/radiant-city.html
Figure 3: Leon Krier’s pedestrian city vs commuting, http://www.architectural-review.com/essays/leon-krier-on-sustainable-urbanism-and-the-legible-city/8689343.article
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