Unlocking the Potential of Neglected Urban Spaces
Mangere Bridge West: Community connection to the natural landscape

Explanatory Document

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Throughout my past years at Unitec, it has been nothing but a very long and challenging journey to reach this position. It has been an overwhelming year preparing for this thesis.

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Abstract

Urban green spaces play a vital role in the well-being of neighbourhoods and in building a closer relationship with nature. Yet, urban design has tended to treat green spaces as periphery amenities or as casual after-thoughts in the development of urban living spaces. In the context of Auckland, with a fast-growing population, a prioritising of motor vehicles infrastructure in outlying suburbs, and an underappreciation of the city’s unique natural landscapes, the urban environment is often defined by vacancy and neglect.

This project develops an architectural intervention that aims to capture the value of urban green spaces as assets for creating a liveable neighbourhood, which also will become a catalyst for the revitalisation of the Mangere Town Centre by reconnecting people to the natural landscapes of their community. This is achieved by creating a community-oriented architecture to support local and regional transport and to connect local and civic spaces. The outcome is an architecture that establishes a strong connection from regional transportation to the Mangere Town Centre. From this point, the transit link threads through to Puketutu Regional park and shapes a series of ‘backyard’ spaces for the Mangere community.
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1.0 Introduction

The inevitable growth of the population and on-going urban developments in Auckland is putting pressure on both the environment and urban structures. The current Auckland Unitary Plan is focusing on establishing Auckland as one of the most liveable city in Australia. Areas within Auckland will continue to grow and expand, even if the Auckland Unitary Plan expires. As a consequence, this puts more pressure on the existing green spaces, which may mean they become under threat. Mangere is an area within Auckland that has experienced significant urban growth in recent times. It is now known as the second most populous community suburb within Auckland. There are plans for the expansion of Auckland Airport near Mangere, which will further threaten the green spaces within the suburb.

This research project focuses on public green spaces such as parks, reserves and a regional park, which are an essential part of the Mangere community. They provide places where people can come to play in a safe environment and to take part in sports and leisure activities. With the on-going growth of population and urban developments and the underappreciation of green spaces, it is important to protect the interest of future generations. Due to these negative impacts on the landscape, this has developed a feeling of isolation within the community. As a result, this has led to a low attachment of the place, social exclusion and high levels of transiency within Mangere. The community needs to actively engage and feel connected to their neighbourhood to create a sense of belonging and well-being.

This was the starting point for the research project of how can architecture reconnect its community to its natural landscape so that they utilize and value the green spaces. Green spaces are the lungs of the community and play an important role in creating a vibrant, healthy community. A range of literature was drawn upon to inform the design, which was divided into three groups: the architecture of landscape, the landscape of architecture and transport-orientated design. The literature discusses the importance of neglected and vacant green spaces and, how key architectural values and transport-orientated design could enhance and provide access to the natural landscapes. Finally, inspiration has been taken from architectural precedents within the context they reside in will be analysed to see what makes them successful.

The new architecture responds to the needs of the Mangere community and its environment: socially, culturally, and physically. It is important to take into account all these aspects into the new architectural design to reconnect its community and add value to its natural landscape. This is how Mangere will uncover the potential of unlocking the neglected urban green spaces.

3. Ibid.
1.2 Research Question

Is there an urban architecture that can connect a light rail transport hub with the local landscape to unlock a sense of community within the Mangere Town Centre?
1.3 Project Outline

This research project explores how urban green spaces contribute to the vitality of local communities, with focus on green space utilization in Mangere, Auckland. Green spaces are known to promote human health and the health of communities and are a recognized and valued characteristic of New Zealand. However, with the increasing numbers of motor vehicles on Auckland roads and the push towards greenfield development to accommodate growing urban populations, the perceived value of green spaces has significantly reduced in relation to the need to build efficient cities. To counter separation of local communities from the unique local landscape this project engages an architecture to reconnect the community and to create a sense of place.

The proposed architecture links the local community at Mangere Town Centre to a regional light rail station, and then connects the local and non-local communities to Puketutu Island, a planned regional park. The architecture will become a local-regional gateway to South Auckland and the surrounding space will be activated through a development of series of urban buildings and green spaces that provide a people-oriented environment to support vibrant and healthy communities. Both the architecture and the programme will play an active role in the regeneration of Mangere. The project showcases the importance of underutilized and neglected green spaces within our local communities and aims to create an active and engaging space that will celebrate Mangere as a destination for visitors and a vibrant community for families.

1.4 Aims and Objectives

Architecture has the potential to build and enhance urban community values through the shaping of urban green spaces and as Costa and Soares point out, urban green spaces open up a new range of possibilities in connecting biodiversity, cultural and natural values. From this position, and with community and connectivity as key values underpinning the work, this project aims to:

- Re-establish the relationship between the local community in Mangere and the local natural landscape by giving focus to high-quality public spaces.
- Weave together urban and natural functions to support local community amenities and resilient natural landscapes, providing social, cultural and recreational programmes, and better access to natural areas and reserves.
- Reconnect community and place through an architecture that reimagines the vitality of neglected green spaces.
- Unify the site with a coherent sequence of green spaces through engaging a closer relationship between people and the environment.
- Improve connectivity and efficiency of access through an improved transport network hub.
- Incorporating the ‘greenways concept’ to encourage walking and cycling to support the active lifestyle of local residents.

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1. Scope and Limitations

With broader goals to achieve a stronger connection between Mangere Town Centre and Puketutu Island, this project focuses on bringing Mangere and Puketutu Island closer together. This light rail station is a civic center park establishing a connection to its surrounding environment. ‘Node three’ is a light rail station, which addresses current plans to develop a transport hub near the Mangere Town Centre.

The project sets out six key nodes for this project, which focuses on node two and three. ‘Node two’ is a civic center park establishing a connection to its surrounding environment. ‘Node three’ is a light rail station, which addresses current plans to develop a transport hub near the Mangere Town Centre.

The design research does not focus on the development of the end-points of the link, either at Mangere Town Centre, or at Puketutu Island. There are current and existing plans that address these spaces. While these plans were used to support my design work, they are considered outside the scope of the present study.

1.6 Methodology

The design process helps to evaluate the project’s research problem through an iterative process of design and research until the solution of the design is fully resolved. This process comprises three parts: ‘research for design’, ‘field studies’ and ‘research by design’.

1.6.1 Research for Design

The ‘research for design’ component encompasses a critical analysis of various literatures to explore and broaden the understanding of conceptual urban connectivity and spatial strategies. It also examines architectural issues, architectural and urban techniques and, future developments within Auckland, that can be applied to the site and the architectural design.

A range of design precedents were investigated, reviewed and analysed to see what architectural strategies or techniques were used to help solve the architectural issue of utilizing current neglected and vacant spaces within Mangere. Solutions were achieved by employing a range of architectural strategies and techniques that focus on ‘reconnecting’, ‘unifying’ and ‘readdressing the relationship between nature, the community and architecture’.

Critical analyses have been undertaken of the site, and a series of analytical mapping diagrams produced to identify key attributes and constraints of the site to develop programmes and architectural interventions. Strategies, methods, tactics and architectural techniques were investigated in relation to the site.


1.6.2 Field Studies

Further information on the site from the following sources were considered in the formation of the brief and programmes: Auckland Council GEO Maps data; Auckland Council planning documents and urban design reports, and public and commercial plans/designs for future development within the Mangere area from architectural firms. During visits to the site, photos were taken and sketches were made to get a better understanding of how the spaces were being used in the existing context; the relationship between structures and the environment. The site sketches helped to identify the physical features of the site and get a feel for the site.

The initial site analysis included:

- Site investigation and field studies (e.g. observations, photos, sketches)
- Community demographics
- Local and regional site history
- Cultural and heritage values
- Social and economic contextual review
- Site analysis (e.g. mapping diagramming)
- Needs assessment (based on public reports)
- Future development plans (based on Auckland Council or architectural firms’ assessments)
The information collected from the initial site analysis and future development plans from architectural firms or Auckland Council contributed to the development of various conceptual ideas central to this research project.

1.6.3 Research by Design

‘Research by design’ is the process of designing while constantly reflecting back on the findings from the literature and other sources of information. This process uses iterative design as a way to refine the design intention to achieve a final goal. The analysis of the site developed an understanding of how people will interact and enabling the identification of current issues within the chosen site. This contributed to the development of conceptual drawings of public spaces which promote physical activity and engagement with nature, and community interaction for well-being.

Using the design strategies from the literature review and analysing the architectural techniques from the design precedents were applied to the design process within a chosen site, Mangere. The design process looked at ways of dealing with functional, social and ecological conditions using a range of different drawings including sketches, spatial diagrams, perspective drawings and technical drawings to explore and resolve the architectural issues.

The developed conceptual ideas was critiqued through formal presentations, feedback from supervisors and peers. This feedback helped to identify design strengths and weaknesses to shape the development of the research design project. Also, to see and summarise the progression of the work and quality of work, a personal reflection helped to ensure the research project was fully resolved.

This chapter reviews a range of literature relevant to this research project drawn from different areas of architectural scholarships to broaden the understanding and discussion of key issues to inform the design development.

The literature review is organised into three sections; the first section focuses on ‘The Architecture of Landscape’, which addresses the importance of good open design, the value of neglected and vacant green spaces and, the space between landscape and architecture. The second section, ‘The Landscape of Architecture’ examines key architectural values such as transparency and openness, transitional spaces, and materiality in architecture. The final part of this review focuses on literature about ‘Transport-Oriented Design’ to investigate ways of dealing with the issue of getting people to access green spaces through transit-oriented development and, the proposed light rail system for Auckland in 2024. Also, it will outline guidelines that will help to design an effective railway station.

**2.0 Literature Review**
2.1 The Architecture of Landscape
2.1.1 The Importance of Good Open Space Design

Good open space design provides a vibrant place to live, high-quality environments, accessible transport options, and clear recreational choices. One of the key aims of open space design is to encourage more walkable communities, where people are more likely to walk, cycle and use public transport systems. This makes access to commercial and green spaces more interesting and, improves the quality of leisure activities, where people are most likely to meet and engage with one another. Creating environments that people want to use, supports the natural environment and, cultural heritage, and strengthens the community's identity.

Green spaces are important as they help build vibrant, cohesive communities. However, in general, designers in the past did not put much thought into designing green spaces with towns and cities. Green spaces were largely treated as peripheral amenities or as casual after-thoughts in urban structures. In Mangere, Auckland, green spaces have fallen into neglect and are becoming threatened due to population growth and on-going development. It's important to provide connections between people, places, and the natural environment to add value to the environment. Improving open space design will help to create better access to green spaces and for people to get around easily to places, resulting in a healthy community.

New Zealand Ministry for the Environment provides design guidelines for good open space design, some of the key principles are:

- **Consolidation and Dispersal**: Creating a liveable city and a better quality of life for the community by providing vibrant public spaces for people to enjoy, and where they can socialise and relax. This creating a greater density to help add life in an area.
- **Integration and Connectivity**: A place should be connected through a web of spaces and streets to help people to get around places and are more enjoyable walking or cycling. It should help to facilitate movement and exchange.
- **Diversity and Adaptability**: Providing a diversity of activities that bring people together and offers a range of amenities through mixed-use buildings that can adapt to future changing needs.
- **Legibility and Identity**: Provide a way for people to orientate and navigate themselves around by marking key points, framing frames and vistas, a place where people celebrate in their landscape, and reflecting local characteristics.
- **Environmental Responsiveness**: To reduce the environmental footprint of the city by providing local and recreational activities, also, to reduce the carbon footprint on Earth by using less water, energy, reducing waste and protecting urban biodiversity.

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2.1.2 The Value of Neglected and Vacant Green Spaces

Both J.B. Jackson and Jane Jacobs state on the importance of green spaces within a regional area in providing healthy, cohesive communities. They both discuss how urban green spaces are an asset as they provide many benefits to the community’s well-being and health. The natural environment is a home to wildlife, provide biodiverse urban environments, have positive economic impacts and boosts the vitality of a neighbourhood.

Furthermore, New Zealand is known for their natural landscape as it is recognised as a valued characteristic within the country.

Landscapes provide the basic community needs for social interaction and recreation. As J.B Jackson states, the landscapes should be thought about as “not merely how they, how it conforms to an aesthetic ideal, but how they satisfy elementary needs; the need for sharing those sensory experiences in a familiar place: popular songs, popular dishes, a special kind of sport or game, played only here in this spot.”

Moreover, landscape helps to establish a bond between people, where the landscape is a space that brings people together, to celebrate, spaces for solitude and where memory is depicted in them.

Jane Jacobs underlines discusses how in cities that are deprived of growing populations, green spaces are considered as boons as they provide economic, social and cultural values. However, people seem to ignore the potential value of what green spaces can offer: “this is more nearly in accord with reality for people do confine use on parks and make them successes- or else withhold use and doom parks to rejection and failure. Parks are volatile places. They can be delightful features of city districts, and economic assets to their surroundings as well, but pitifully few are.”

Urban green spaces are falling into neglect and decline particularly in the context of a growing city. There are four major factors that has contributed to this, which are:

• Auckland’s growth of population

Around 1.5 million people are living in Auckland, covering about 80% of land mass within the area, including green spaces and rural towns. Over the next 30 years, Auckland will experience substantial population growth pressures. This is where the population of Auckland is about to increase by another one million people. As a result, Auckland will face the challenge of how to accommodate the projected population growth projection.


26 J.B Jackson, The Necessity for Ruins and Other Topics (USA: University of Massachusetts Press, 1960), 16.

27 Ibid, 16.


30 Ibid.

31 Ibid.
Auckland’s Unitary Plan focuses on a long-term strategy to create Auckland as one of the most sustainable city for the next 30 years. The Unitary Plan aims to intensify and create a compact city in response to the rapid population growth within Auckland. Around 60-70% of new housing developments and transport infrastructures are to be built within Auckland’s existing urban footprint. The selected site for this research project, Mangere, is close to the Auckland Airport, where in the future, there are new development plans that focus on expanding the airport. This puts more pressure on both the environment and urban structures. In this context, the green spaces within Mangere may be threatened as land will be needed to accommodate the population growth.

People’s dependency on cars has resulted in an urban environment, in which highways, roads and parking spaces are dominant types of open spaces. About 45% of people living in Auckland use cars. With increasing population and increasing number of cars, more lanes are added to roads and motorways to deal with the issue of congestion and to get people around places. Therefore, there is a demand in the use of more land to accommodate the urban road infrastructure putting more stress on the existing environment.

Underappreciation of green spaces
With the need to build a more urbanized Auckland city, the connection with nature tends to weaken. With the rapid increase in car usage, motorway lanes and urban sprawl has resulted in people feeling in isolation within a community. The urban environment has significance in providing social interaction between people, yet green spaces are often or at times not cared about despite the role they play in shaping the local community. Green spaces are an asset to communities as they provide health and environmental benefits. Also, contribute to providing a vital, healthy community.

This research project aims to preserve Mangere’s green spaces due to the future population growth and on-going developments. Green spaces provide many opportunities for an area, yet people neglect them. In order to protect the natural environment, it’s important to create vibrant, inclusive places and enhance resilience to threatening changes. This will be achieved through architecture, which will aim to reconnect the community with its natural landscape.

33 Ibid. 
34 Ibid. 
2.1.3 The Space between Landscape and Architecture

There is a critical need for designers to pursue a cross-disciplinary design approach that breaks the problematic division of architecture and landscape into separate disciplines. Architects and landscape designers should operate as linked interactive systems that heal the environment. New developments within regional areas and cities are often not built with the environment in mind. This has resulted in the built environment not responding to the natural landscape.

Frank Lloyd Wright's architectural work gives insight into how landscape and architecture can be brought together. His architectural philosophy was to create a relationship with nature. He achieved this by seeking to unify the interior and exterior spaces to create a harmonic, built environment. For him, the built environment should not be separated from its natural environment, where “a building should grow naturally from its environment.” There should be a fluid connection between natural landscape and the built, which inspires designers to think of form and materials in different ways.
2.2 The Landscape of Architecture
2.2.1 Transparency and Openness

Transparency provides visual connectedness and facilitates perception, where it invites the world in or projects the program out. People like to observe what others are doing. As Jane Jacobs suggests, “sight of people attracts still other people.”

A building should be connected to other spaces through visual means to allow for intimate meetings and for a variety of different engagements. This is so people can share the sheer delight of the outside world: the social play and light, the feel of nature and wind, sound, colours and forms. This provision of a visual link between the building space and natural environment is achieved through transparency, including the choice of materials, particularly glass through clear connections with open space.

However, transparency does not only exist in the choice of materials, it implies a broader spatial order. According to Colin Rowe and Slutzky, “transparency means a simultaneous perception of different spatial locations. Space not only recedes but also fluctuates in a continuous activity.” Transparency allows visual and spatial connection within a building, which is achieved through layered plane spaces or wide openings. Views are always framed, which encourages people to engage with the surrounding environment. A careful ordering of space through the use of layering, framing, and, the inclusion of openings allows for interpenetration and transparency into a building structure.

Within an architectural space, openness is the feeling of being exposed, free or unobstructed. This means there is no defined boundary or anything that disrupts a space like columns. Openness in architecture is often achieved by having a large room, which contains few or no internal dividing walls. This produces a fluid type of living, working and leisure environment and, encouraging communication. Open space provides visual and infrastructural focal points that ensures accessibility and direct views to different parts of the building and, the surrounding environment.

The new library for Caen, France, designed by OMA Architects illustrates the effective use of openness and transparency in its design. City views are maximised within the building by using floor-to-ceiling glass panels to enhance the openness and transparency of the library space. Visitors can easily flow through the library as the space creates a column-free area. Therefore, the building’s appeal as a new social space maximises interaction between the inside and outside of the building by offering a full transparent space and panoramic views out to the city.

Fig 2.4- Transparency is achieved through visual and spatial connections within a building.

Fig 2.5- Open space within the library for Caen in France.
2.2.2 Transitional Spaces

Space is a key value in architecture. Kevin Lynch underlined how individuals inhabit and navigate through space, which is not a static experience. According to Francis Ching, space needs to be thought about in terms of how people move through it, “the path of our movement can be conceived as the perceptual thread that links the spaces of a building, or any series of interior or exterior spaces, together.” Transitional spaces bridge the gap between the exterior and interior environments through the overlap of nature and a building, usually by providing openings and visual connections.

Transitional flow is the movement of people through spaces. It is important people flow through spaces to help to orientate themselves through a place. Kevin Lynch discusses “legibility” in his book, The Image of the City. He explains how people are dependent on visual perception to help them navigate and to encourage movement. Whenever people enter a new place, they draw a mental image of their surrounding context, which allows them to orientate themselves by taking out the irrelevant environment and structures. This is what Lynch refers to as “legibility.” As he also explains, “in the process of way-finding, the strategic link is the environmental image, the generalized mental picture of the exterior physical world that is held by an individual. This image is the product both of immediate sensation and of the memory of past experience, and it used to interpret information and to guide action.”

People have an important ability of structuring and identifying the environment when orientating themselves within a place. There are many cases that contribute to this structuring of space such as the visual sensations of colour, shape, motion, or the polarization of light. This helps people to flow from one place to another giving them a sense of directional movement. People can feel a sense of security, which is enhanced through the legibility of a space or place. A building that illustrates effective transitional space design and legibility is the German Pavilion at the Barcelona International Exhibition (1929) by Mies Van Der Rohe. The German Pavilion is an open area, giving a feeling of freedom of an individual moving within the space, due to the compartmentalization of space. Mies uses offset walls within the building, in conjunction with the low plane roof to encourage movement. This helps people to orientate themselves within the building and to the outside of the building as well. Mies uses free-flowing space within the building, where the transition is cohesive and seamless between the indoor and outdoor space.

Mies focuses on connectivity and the links between indoor and outdoor spaces.

Materiality in architecture goes beyond structural properties to being an integral part of a building as the architectural and material could be considered inseparable. Materiality in architecture informs an individual’s ‘experience of a building through its aesthetic, visual and haptic qualities as well as its social, cultural and historical meaning’ through the use of materials in architectural forms and space the public realm of a building comes to life. The textures used in floors, walls, roofs are noticeable features of the urban scene that create a character and evoke a feeling within a place. Therefore, the choice of material should be influenced by the context, which will contribute to the identity of a building. Moreover, materials can also provide a place where people can enjoy and connect to a building and its surrounding context.

One of Frank Lloyd Wright’s key principles for organic architecture is that there needs to be an honest expression of material. The way that materials are used to enhance and complement the innate aspects of those materials are through their individual colour, texture and strength. Aspects of the surroundings are through the use of materials in architectural forms and space the public realm of a building comes to life. The textures used in floors, walls, roofs are noticeable features of the urban scene that create a character and evoke a feeling within a place. Therefore, the choice of material should be influenced by the context, which will contribute to the identity of a building. Moreover, materials can also provide a place where people can enjoy and connect to a building and its surrounding context.

2.2.3 Materiality in Architecture

Materiality in architecture is an expression of the surroundings. The choice of materials can either neutralise or dramatize a space which, ultimately can have a direct effect on the emotional character of its space. For example, the use of glass creates transparency in a building into the surrounding environment, creating a visual connection to the outside world for people to see and enjoy. Moreover, Kevin Lynch suggests, in relation to city design that the “city floor is important, as one touches it as well as sees it. This is true for building design also.” The use of level change and textual patterns can be used as an office planning tool for urban design. People want to get around safely and to linger in a place, where they can enjoy. They want to feel a sense of belonging within a space or building. It is important that the building type and building choice of materials is selected in relation to the nature of the surroundings. The choice of materials can either neutralise or dramatise a space which, ultimately can have a direct effect on the emotional character of its space. Moreover, Kevin Lynch suggests, in relation to city design that the “city floor is important, as one touches it as well as sees it. This is true for building design also.” The use of level change and textual patterns can be used as an office planning tool for urban design. People want to get around safely and to linger in a place, where they can enjoy. They want to feel a sense of belonging within a space or building. It is important that the building type and building choice of materials is selected in relation to the nature of the surroundings. The choice of materials can either neutralise or dramatise a space which, ultimately can have a direct effect on the emotional character of its space. For example, the use of glass creates transparency in a building into the surrounding environment, creating a visual connection to the outside world for people to see and enjoy. The use of level change and textual patterns can be used as an office planning tool for urban design. People want to get around safely and to linger in a place, where they can enjoy. They want to feel a sense of belonging within a space or building. It is important that the building type and building choice of materials is selected in relation to the nature of the surroundings. The choice of materials can either neutralise or dramatise a space which, ultimately can have a direct effect on the emotional character of its space. For example, the use of glass creates transparency in a building into the surrounding environment, creating a visual connection to the outside world for people to see and enjoy.

Materiality in architecture goes beyond structural properties to being an integral part of a building as the architectural and material could be considered inseparable. Materiality in architecture informs an individual’s ‘experience of a building through its aesthetic, visual and haptic qualities as well as its social, cultural and historical meaning’ through the use of materials in architectural forms and space the public realm of a building comes to life. The textures used in floors, walls, roofs are noticeable features of the urban scene that create a character and evoke a feeling within a place. Therefore, the choice of material should be influenced by the context, which will contribute to the identity of a building. Moreover, materials can also provide a place where people can enjoy and connect to a building and its surrounding context.

One of Frank Lloyd Wright’s key principles for organic architecture is that there needs to be an honest expression of material. The way that materials are used to enhance and complement the innate aspects of those materials are through their individual colour, texture and strength. Aspects of the surroundings are through the use of materials in architectural forms and space the public realm of a building comes to life. The textures used in floors, walls, roofs are noticeable features of the urban scene that create a character and evoke a feeling within a place. Therefore, the choice of material should be influenced by the context, which will contribute to the identity of a building. Moreover, materials can also provide a place where people can enjoy and connect to a building and its surrounding context.

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New Zealand is predominantly known for its unique landscapes, rather than its urban character. Therefore, most local buildings within Auckland are known for their connection to the natural environment. An example of an architectural building is the Auckland Art Gallery, designed by FJMT Architects. The Auckland Art Gallery speaks its material expressionism and experience, while it emphasises its relationship to the surrounding landscape. The Auckland Art Gallery uses Kauri wood to create a strong identity in its landscape. This is used in the roof design of the art gallery as it is one of the most distinctive features of the building. The canopy tree-like structure uses Kauri wood where the unique Maori and Pacific cultures influence is embedded in its form and form. Also, the roof canopy reflects the surrounding environment, the trees within Albert Park, to create a connection to the existing character. Glass is also used to have a visual connection to the surrounding context. Albert Park, where the building’s openness to its natural and urban environment, invites visitors to come and enjoy the experience inside.


Fig 2.9- Kauri wood and glass are used to create a relationship to the surrounding park.

Fig 2.8- Kauri wood and glass are used to create a relationship to the surrounding park.
2.3 Transport - Oriented Design
2.3.1 Transportation Hubs and Transit-Oriented Development (TOD)

Growth is inevitable within Auckland, but the associated demolition of community attributes and the environment should not be. The number of private motor vehicles and urbanisation, in general, growing at an unprecedented speed currently every week about 800 vehicles are registered in Auckland, which significantly challenges the streetscape of Auckland. A lack of investment in efficient public transport systems has meant catering to private vehicles has been a priority. Therefore, planning is heavily directed towards accommodating the increasing number of motor vehicles and allowing cars to get in places easily as land is prioritised for motor lanes to help ease traffic congestion and to improve flow. As a consequence, pockets of green spaces are diminishing as no use is made to support urban sprawl and road infrastructures. Whereas, green spaces help to enrich communities, build social engagements and to breathe life into urban areas.

The Auckland Regional and City Councils envisage Transit-Oriented Development as an urban planning strategy for managing Auckland’s urban growth. The Transit-Oriented Development (TOD) focuses on creating pedestrian-oriented and mixed-use communities that are enclosed around a train station to facilitate the needs of people and encourage them to use the public transport systems. The rationale for TOD goes beyond numbers and statistics; it is about sustainable place-making to attract people, and to energise the culture and identity of the local community. Falconer and Richardson established ten key principles for planning and designing TOD. These include:

- Plan a walking scale town: Clear priority should be given to pedestrians.
- A TOD should have a centre: Mixed-use buildings should encircle the transit station.
- Quality streets and public places: Streets should be safe, attractive and connected for pedestrians to use.
- A diverse mix and a sufficient size: TOD should encompass a range of mixed-uses and achieve a significant density, which allows residents to live, work and play.
- A public transport hub: The hub should encourage people to use the public transport as well as to travel by foot and to cycle, therefore, reducing the dependency on cars as a way of getting around places.
- Low-speed car access: Access for cars should be provided. However, pedestrian-friendly routes should be a priority within a TOD location.
- An appropriate level of car parking: Car parking should be minimal compared to more traditional developments.
- Location of public off-street carparks: Limited car street parking to keep motor vehicles out of pedestrian areas. This is so, foot traffic is increased to animate the streetscapes.

42.

43.

• An appropriate level of bicycle parking: Optimise the use of cycling by providing bicycle lanes or parking between locations.

• Limit barriers to accessibility: Prioritise the safety of people, so they can easily pass through areas.

There are many benefits to be gained from transit-oriented communities, such as the residents not being dependent on cars for mobility, allowing the community to live, work and play in close proximity, thereby reducing the carbon footprint on the Earth, better access and connected routes, economic growth, better transport access between urban and suburban places, regenerating urban areas and building vibrant, healthy communities.

The Transit-Oriented Development principles will contribute to bringing Auckland a step closer to becoming the world’s most liveable city. Also, the key principles will be used as a guideline in this research project. TOD will help to reconnect Mangere’s residents to their green ‘backyard’ as it will focus on the well-being of people by providing vibrant green spaces for them to appreciate the environment.

Fig 2.11- A person riding the Onzo yellow bike.

Another way to get people around places is through cycling. However, people do not cycle as the conditions are unsafe, especially in urban areas. About 38% of greenhouse gas emissions come from the use of private cars, which has resulted in a negative impact on the environment. It is important to provide a safe, well connected environment to encourage people to cycle. Bicycle lanes take up less space for lanes, whereas, private cars take up more space, which puts pressure on the environment. Auckland has a new bike sharing scheme called Onzo bikes, which is available to the public by downloading the application and signing up. It is a cheap and an effective way of getting around in the yellow Onzo bikes can be collected and returned to any of the designated stands. This will be another mode of transport to reconnect the community with its natural landscape and to access the green spaces within Mangere.

82 AECOM, Parsons Brinckerhoff & Beca, Future Growth Opportunities - Urban Design Report; Appendix H; Auckland CBD Rail Link Business Case (Auckland, NZ: AECOM, 2010), 11-12.


85 Ibid.

86 Simon Wilson, “What are all these black and yellow bikes doing in Auckland’s bike racks,” last modified October 31, 2017, https://thespinoff.co.nz/auckland/31-10-2017/what-are-all-these-black-and-yellow-bikes-doing-on-aucklands-bike-racks/

87 Ibid.

Bicycle Sharing Scheme
2.3.2 Auckland’s Light Rail Station Plans

Auckland’s under-investment in public transport has resulted in roads and motorways heavily congested with traffic. About 45% of people living within Auckland use the public transport system and the rest rely on their own cars. Around 85,000 vehicles a day enter or exit the Airport district, using the State Highway 20A. By 2044, the number of cars are expected to be doubled to 174,000 vehicles. The existing rail and road capacity would not be able to accommodate the demands created by the city’s growth. It is expected that Auckland’s population will grow by over 1 million people by 2046.

Improved access to the Auckland Airport and the city will be achieved by 2024 with an integrated transport scheme for State Highway 20A. A light rail system has been recognised as the best long-term strategy for improving public transport as a more reliable journey for travellers to get around places within Auckland. Improvements to the bus system are also being considered to address these issues.

Benefits of the light rail system are:

- Increased service frequency
- Uses electricity so less impact on the environment
- Permanent infrastructure – increased economic, social and environmental well-being
- Improved routes to the Auckland Airport and city
- Fast, safe, reliable
- Addresses bus congestion
- Improved urban environment

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- Uses electricity so less impact on the environment
- Permanent infrastructure – increased economic, social and environmental well-being
- Improved routes to the Auckland Airport and city
- Fast, safe, reliable
- Addresses bus congestion
- Improved urban environment

Around 33,000 jobs are in Mangere, which makes it one of Auckland’s biggest employment areas. The number of jobs is expected to rise to about 90,000 by 2044, and the number of people living in Mangere is also expected to increase from the current figure of 71,000. An average of 90% of people living in Mangere are reliant on cars compared to the Auckland regional average of 82%. The inability of the existing transport system to serve the public within Auckland has left people to rely on cars. Especially within Mangere, as there are only two bus services that facilitate the employment area and Airports. As the population of Auckland increases, there will be a need to accommodate more lanes to the road infrastructure to support future population growth and new developments.

To increase the use of public transport use, an attractive transport option should be provided as a way for people to get through places and to access green spaces to promote a healthy, well-connected environment within Mangere. Also, the public transport system has a smaller carbon footprint, putting less stress on the urban environment. The proposed rail link for 2024 will, therefore, act as a central hub within Mangere’s Town Centre. This is likely to increase the economic and social growth and, to promote the opportunity to breathe life into the underutilised green spaces within Mangere.

Fig 2.12- Map of the light rail system routes within Auckland.
2.3.3 Railway Station Design

Railway stations should be user-friendly and designed to reflect the commuter's lifestyles and their needs while travelling and, to fulfil the traveller's need to get to places of interest. Well-designed train stations should also be designed to connect seamlessly to other modes of transportation and suit the needs of people who use, live and work in the environment of the station and, to include walking and cycling paths.

In the Australian state of Victoria, the following set of seven principles helps to inform the planning, design and reflection of the expectations of users within the local context:

- **Accessibility:** Easy access for users and well-connected to different modes of transport with links to the surrounding local context.

- **Ease of Navigation:** A good movement of flow and instinctual direct route of the railway station design should be able to accommodate people through space. This is to ensure the users of the station are not disorientated.

- **Comfort and Amenity:** The design of the station must be aesthetically appealing and accommodate its users’ needs by providing comfort and a range of local amenities.

- **Information:** Clear and easy ways for people to navigate through the station and information systems should be established. Signage and periodic information displays should be provided for passengers travelling to know when to catch the train.

- **Safety:** Provide a safe environment for people using the station, so that the users feel a sense of protection.

- **Local Area Integration:** A station should reflect the character of the area as part of the local community. Also, the transit-link should be integrated with its surrounding environment.

- **Community Ownership and Activity:** Community engagements, environment and interaction will help to attract and, to generate a diverse, vibrant neighbourhood.

The design of railway stations should be universal, meaning it should cater for a wide range of cultures, people from different ages and all levels of mobility.

Railway stations provide a place for people from all walks of life to gather to pursue recreational, business or social goals and, usually arrive on foot, by bike, or bus. Train stations are a complex interchange and place of socialisation, acting as both a gateway and a social hub, as well as having a wide range of other functions. Stations play an important role in adding to the economic prosperity and social well-being of the community. By concentrating a range of activities in the station area, more people will use the public space and create a sense of vibrancy.

In this research project, the design guidelines for an effective railway design will be incorporated in the design process to help achieve a good architectural solution. The proposed light rail system in 2024 will benefit Mangere as the area has no rail station. Therefore, the transit-link will provide access into the green spaces. By providing social, cultural and recreational activities in and around the station area, it will draw people in to utilise the surrounding public spaces. Therefore, this adds significance and can be a measure of success to the transit-link.
### 2.4 Summary

The importance of good open space design helps to provide an efficient urban environment within Mangere that works for people. Good open space design and, focusing on designing the landscape and architecture as linked interactive systems will help to address the issues associated with the neglected natural environments. This is important because green spaces are an asset, which enhances vibrant, healthy communities for people to enjoy.

The key architectural values include: transparency and openness, transitional spaces and materiality in architecture, will help to create a closer relationship between natural landscapes, architecture and the community. Thus, adding value to undervalued green spaces.

Transport-oriented design deals with the issue of accessibility into green spaces and getting people through, in this case, Mangere. This will be achieved through transit-orientated development, the proposed Auckland light rail system and through drawing on guidelines for an effective railway station design.
Five different architectural precedents were collated, analysed and synthesised to present a clear context in which this research project is positioned for. Also, to learn about the key values of what makes each of the precedent studies so successful.

- **Ede Wageningen Train Station in the Netherlands** focuses on providing access for the residents and visitors into the valued National Park. Through the use of openness, form and material, this precedent illustrates how architecture can create a connection to the landscape.

- **FAB Civic Center Park in Los Angeles (USA)** adds value to the vacant land through the use of good open space design. This precedent provides a new type of park space that celebrates the community’s diversity through urban activities such as food and art experience in a unique urban setting.

- **The High Line in New York (USA)** demonstrates a different approach in reconnecting people with nature. The infrastructure uses an old railway line to transition from the busy, congested streets to a serene elevated green space, which provides opportunities for new activities and engagement. This precedent study examines how transitional spaces, form and openness of the infrastructure encourages the flow of people and connects to its surrounding context.

- **Seoul Station Skypass in Korea** analyses how an architectural intervention, transitional flow and colour contribute as a way of getting people through the city, with the focus on reconnecting the disparate neighbourhoods that have been detached. With a focus on the community, the architecture provides outdoor activities, which contributes to creating a more cohesive, vibrant community area.

- **Rolka Studio in Israel** uses transitional spaces and transparency to provide a visual and physical link to the natural environment. Also, the building invites nature into the spaces breaking the barrier of architecture and landscape as separate entities.

### 3.0 Design Precedents
3.1 Ede Wageningen Train Station

Architect: Mecanoo.
Location: Ede, Netherlands.

Ede Wageningen Train Station responds to the growth of the population in the city of Ede. As the population in Ede city grows, there is a need to protect Veluwe National Park. The new train station provides a gateway for people into the National Park, so it can be maintained and conserved. The station focuses on the commuters providing a comfortable and safe way to access the National Park.

This precedent study is directly related to this project through the way it utilizes natural materials like wood, stone, glass, and steel to reflect the natural landscape of Veluwe. The materials enhance and complement the landscape in its fabric and form especially, the striking wooden roof structure, where the roof expresses the wooden materiality through its colour and texture. Also, the roof canopy of leaves imitates a tree, providing shelter and allowing light to diffuse into the station for passengers. The design of the station is inspired by the characteristics of the landscape through its typography, landscape types, existing buildings and monuments.

Also, Ede Wageningen Station’s roof helps to link people to different quadrants of the transport hub and to the natural landscape in a uniform manner. The form, texture of the material and the way the roof is stacked allowing light to pass through, helps to support the sightlines of a person and give a directional motion for people to flow into one place to another.

Furthermore, the roof structure physically and visually connects people to the visible retail units down in the pedestrian tunnel below the elevated station. The retail units use glass to provide transparency and visibility, which allows people to see what’s happening inside. People like seeing what other people do and they enjoy the beauty of the outside world, where the openness of the train station allows people to be visually and physically connected to the natural environment. There are no defined boundaries of the enclosure, which provides fluid movement throughout the architectural intervention space and into the natural environment.

This precedent study is a good example of how a public transport system provides access to the natural landscape, within this research project. Through the architectural key values of the transit-link such as material, openness, form and circulation they will help to connect people to its surrounding environment and complement the natural landscape as it is known as a unique feature of New Zealand. Therefore, creating a strong identity.
Fig 3.2- Ede Wageningen Train Station.

Fig 3.3- Ede Wageningen Train Station’s roof helps to guide people through the space.

Fig 3.4- The train station uses wood to connect to the surrounding environment.

Fig 3.5- Train station tunnel.
3.2 FAB Civic Center

Architect: OMA Architects.
Location: Los Angeles, USA.
Year: 2015–Ongoing.

Located within Los Angeles city downtown core, OMA Architects designed a "new type of park space" that occupies a vacant plot situated at First and Broadway. This is where the vacant space is turned into one of the most important civic spaces within the city.

The FAB Center Park illustrates the use of open space design:

- **Consolidation and Dispersal:** This urban public space is located within the city that attracts a wide range of people from different ages, cultures and diversities to enjoy this space.
- **Integration and Connectivity:** The FAB Center Park aims to visually and physically connect people to the surrounding context, such as the grand park adjacent to the site, the corners of First and Broadway streets and, the front steps of the city hall. This providing a fluid movement throughout the site.
- **Diversity and Adaptability:** A range of outdoor activities such as spaces for intimate gatherings, art and cultural programmes are provided for people to enjoy. A café and restaurant building provides an integrated amphitheater, where from below of the building is cut away, which provides seating for people watching performances in the central plaza. The park’s landscape is arranged in a playful way through the use of outdoor activities, food areas and an edible roof garden.
- **Legibility and Identity:** There are a number of entry points at the corners of the site, where people can easily enter and to celebrate the outdoor activities within the landscape, reflecting the city’s diversity. Also, sculpted canopies are used to represent the Oak and Sycamore trees of Southern California’s natural landscape, creating a sense of identity within the city area.
- **Environmental Responsiveness:** The new park space celebrates the diversity of people through themes of food, the experience of art and the natural environment setting.

The Civic Center Park illustrates a good use of open space design that gives importance to the park within the city. This is by turning a vacant lot into a new type of park that celebrates the city’s diversity of people through social and cultural activities within a natural landscape setting. Therefore, adding value to the park.
3.3 High Line

Architects: James Corner Field Operations Landscape Architects and Diller Scofidio + Renfro
Location: New York, USA
Year: 2004–2009
Length: 1.5 miles

The High Line in New York was inspired by the melancholic unruly beauty of the rail line, and nature has been brought to life on this old infrastructure. Fig 3.10 This structure is a raised pedestrian walkway that is nine meters above the ground level. The High Line provides a natural urban environment, which responds and adapts to the needs of the context, culture and people. The park has multiple access points, which increases the convenience and usability of the park.

The linear form of the architectural infrastructure with the landscaping helps to define paths and pockets of green spaces for people to linger and, to provide a linear directional motion. This is where the undulating linear form of the High Line weaves into and through the city to capture people in this experience. The High Line's stairs provide a transition of spaces, where the peaceful space of the elevated railway sits in contrast to the bustle and the loud noise of the streets below the structure. The openness of the High Line provides a way for the pedestrian to visually be connected to the surrounding urban environment. Also, the balustrades provide transparency, which is attached to the perimeter of the structure, provide views out to the city through the wire mesh and for safety purposes.

In addition, the High Line accommodates gathering spaces for the city people to foster social cohesion, by providing opportunities for performances and entertainments, including the Chelsea Market and interactive art spaces that complement the community's culture.

The context this precedent resides in is relevant to the site at node three (a light rail station) within this research project. Creating a transitional space from the busy, congested motorway to a tranquil urban space above attracts people to use this area, rather than being stuck in traffic. Also, the form of the structure provides a way to facilitate movement of people.
Fig 3.12 - The form of the High Line helps to accommodate movement along the structure.

Fig 3.13 - View from the busy streets below to the serene green space above.

Fig 3.14 - The Highline provides openness to the surrounding context and green spaces for people to enjoy.
3.4 Seoul Station Skypass

Location: Seoul, Korea.
Year: International Invited Competition 2015.

Located in Korea, the Seoul Station Skypass responds to the values and needs of the neighbourhood. The architectural infrastructure focuses on revitalising and reconnecting the disparate areas within the neighbourhood by bridging across the busy motorway to provide access. This is related to this research project by linking the disconnected green spaces of the chosen site, physically and visually. The architectural infrastructure provides a platform for a range of urban activities, social and cultural programs that weaves the community together. Also, the linear form provides a sense of motion to help people navigate on the skyway station.

The Seoul Station terrace provides a hierarchy of movement using levels. On the Station Skypay, the path splits into two levels. This where the upper deck provides a heightened visual connection to experience the outer boundaries of the city. Whereas, the lower deck provides shelter for intimate gatherings and, the hustle and bustle of the city people moving through space. There are spaces on the architectural infrastructure, where the seats are sunken to provide a place for people to gather and relax. Beside the sunken seats, paths provide a zone for people walking or cycling past. Yehre Suh creates different levels of spaces to separate the fast and slow zone or relax and walking zone. Also, the amphitheater stairs from the Station Skypass provides a transition from the elevated space to the ground level, providing a vibrant place for people to enjoy cultural and social activities.

Transparency is achieved through the use of yellow louvers, where the louvers are used to outline the space of the structure and to provide safety. Also, the view is heightened through the openings or gaps of the louvers. Yehre Suh has used yellow, a highly distinctive colour, to provide legibility and to attract the attention of people to use the structure. The colour is used in a playful, striped pattern-like way, which weaves along the streets. This is an exciting way to encourage people to get around on foot. Also, the flowing ribbon of sunshine is striking against the greys, browns and blacks of the Seoul city and, gives a new vibrancy and dynamism to the streets of the neighbourhood.

Hierarchy of levels, transparency/openness and colour are the key aspects of this architectural precedent. The strategies presented help to accommodate people to flow through spaces with respect to its surrounding environment, which will be used within this research project.
Fig 3.16- The views are heightened through the gaps between the louvers.

Fig 3.17- Linear structure and colour help to facilitate movement along the Skypass.

Fig 3.18- The Seoul Station Skypass connects two disparate neighborhoods, where the structure acts as a 'bridging mechanism'.

Fig 3.19- The structure brings people down to an active plaza area.
Rolka Studio is a winning proposal for the Mevaseret Zion Conservatory in Israel. The competition’s objective was to integrate the urban and natural borders of the site with the architecture that contains musical programs. The building creates “a dialogue between the built environment and the natural environment.” This is through the placement of the architectural building, which is staggered on the site as if it’s growing out of it. Rolka Studio spaces open up to nature, bringing the landscape into the building, which blurs the boundary between the indoor and outdoor environment.

Transparency is achieved in Rolka Studio as the learning spaces and common practice rooms are organised in a way that provides simultaneous perceptions of different areas within the building and to the landscape. This is achieved through the use of glasses, openings and framings. Each of the learning rooms is placed adjacent to the centralised green patio space that provides visual perception and connections to the urban environment. Even if it’s just people walking through the corridors of the building, they are still connected visually to the surrounding context. Each of the spaces of the room is revealed, which presents a place where the studio thrives in visible activities to cater for social engagement and musical programmes. Transitional spaces and transparency are illustrated in this precedent study to provide a way for people and the architecture to connect with the natural landscape, which will be used in this research project.
3.6 Summary of Precedents

Through the use of architectural key values such as transparency and openness, transitional spaces and materiality in architecture, explored in the precedent studies, has presented ways to help to reconnect the community to the natural environment through architecture. Therefore, the architectural key values will help to inform the proposal architectural buildings during the design process for this research project.
4.1 Site—Mangere

Mangere is one of the largest suburbs in Auckland. Its name, Mangere, comes from ‘Ma Mainges’, meaning lazy winds as the nearby Mangere Mountain shields the place from the prevailing westerly wind. The suburb has an estimated population of 71,000 people and accommodates around 33,000 jobs. Mangere is known for its multi-cultural society as it is the second most populous community within Auckland. Also, Mangere is known for its market garden and farming area during the mid-1940s.

Located in the heart of Mangere, the selected sites DB Grounds and adjacent to this area, State Highway 20A, will focus on providing a strong connection to the Mangere Town Centre and to its natural landscape. In the heart of Mangere Town, State Highway 20A bisects through Mangere, where residential houses are located near the highway. The two sites are located 300m away from the Mangere Town Centre. The site, Mangere, was selected for these reasons:

• The number of people living in Mangere is expected to rise from 71,000 and the employment number is expected to increase to 90,000 by 2044. The investment in infrastructure is not matched with residential growth.

Therefore, the growth and the urban infrastructure will put more pressure on the natural environment. There is a need to balance industry and residential growth. Therefore, it’s important to protect the interests of the future generation, so that the community can live in an area where they can have access to green spaces.

• Adding value to the unappreciated green spaces within Mangere by reconnecting the community to its ‘backyard’. As new developments will be built in the future, there will be a need to protect the natural landscapes before they are gone.

• The need to focus on the community by providing facilities to support social enterprises, mentoring talent and skills (eg. arts, cultures, sports and the environment).

• To propose an architectural design that puts Mangere as a destination place as they are not in their own right.

• To regenerate Mangere Town Centre.


Ibid.

Figure 4.2: Map of Mangere, showing the location of the site.
Fig 4.3 - Map of Mangere showing the neglected and vacant green spaces within the area.
4.2 Green Spaces

Before focusing on the selected sites, a wider map of Mangere was analysed to examine the green spaces within the area. Within Mangere, there are a lot of undeveloped green spaces that have been left vacant or neglected. Green spaces are an asset within a community as it helps to keep a healthy, vital community. It is important that these green spaces are protected and valued for the community to use as Auckland city continues to grow. Mangere's ‘backyard’ includes parks, reserves and a major regional park. The focus of this research project is at node two (DB grounds) and, at node three (State Highway 20A, adjacent to DB Grounds). From here it threads to the Regional Park on Puketutu Island. At node two, it will focus on adding value to the green space by providing a civic center park. Where at node 3 it will focus on designing a light rail station that will provide access to Mangere's 'backyard'.

DB Grounds and other connections to other parks (David Lange Park, Williams Park and Moyle Park)

DB Grounds is a park for recreational sports such as soccer and rugby. Not much people utilise the site and also, the site is disconnected from the other fragmented surrounding parks as priority is given to build road infrastructures and new developments. The need to reconnect the community back to its natural landscape is important to show its value.

Vacant green space

Located next to Mangere’s wastewater treatment plant, a vacant green space has been neglected and is not utilised by the local community.

Regional Park 2025 and Puketutu Island

Puketutu Island is connected to the mainland at Mangere by a causeway, next to the wastewater treatment plant. The island is owned by Watercare, where the wastewater treatment plant biosolids are disposed of to rehabilitate the land. 115 It is a significant historical site that is important to the Mangere community. 116 Therefore, it’s important to protect and conserve this site for future developments happening within the area.

Open space 2025

In 2025, this space will be a green open area for the local community to enjoy and to reconnect with the natural landscape.

4.3 Site Analysis

4.3.1 Site Location Map

Fig 4.9 - Location of both sites: DB Grounds (node two) and State Highway 20A (node three).
4.3.2 Site Context

The selected sites are close to the Mangere Town Centre (300m away). The architectural design focuses on connecting the community to its natural landscape and to Mangere Town Centre.

DB Grounds (node 2): a civic center park will be provided for the community that reconnects people to its landscape. It also enhances the green space through social, cultural and recreational activities.

State Highway 20A (node 3): a new light rail system, by the Auckland Council, will be proposed in the middle of the highway. Therefore, a new transit station will be provided for the community as a way of getting around places and to access the green spaces.

Fig 4.10- Location of both sites: DB Grounds (node two) and State Highway 20A (node three).

Fig 4.11- View looking above State Highway 20A.

Fig 4.12: Bader Drive and DB Grounds.

Fig 4.13: The selected site for node two, DB Grounds.

Fig 4.14: Fire station on Bader Drive adjacent to the site, DB Grounds.

Fig 4.15: Police station on Bader Drive adjacent to the site, DB Grounds.

Fig 4.16: Location of both sites: DB Grounds (node two) and State Highway 20A (node three).

Fig 4.17: Carl’s Junior on Bader Drive adjacent to the site, DB Grounds.

Fig 4.18: Cosmopolitan Club on Bader Drive adjacent to Pak n Save.

Fig 4.19: Pak n Save on Bader Drive, beside DB Grounds.
Fig 4.20: Sketch of DB Grounds at node two.

Fig 4.21: Sketch of State Highway 20A at node three.
4.3.3 Mangere Town Centre Character

To get a feel of the character of the place, some original buildings forms, elements and features were analysed which make Mangere unique. This helped drive the design and to create a dialog between the old and new. The following important buildings within Mangere Town Centre has been identified:

A Mangere Town Centre
In the Mangere Shopping Centre, it contains many shops under a tree canopy-like structure. The columns represent the Nikau trees within Mangere Town Centre, which is an icon within the suburb. The canopy structure shelters the shopping centre and allows light to pass through into the area.

B Mangere Arts Centre
The Mangere Arts Centre presents a diversity of arts, crafts and cultural activities of the unique local community. The form of the Mangere Arts Centre is inspired by the landscape, the Mangere Mountain, which is an important feature within the suburb. Also, a rhythmic pattern is created through the use of wood in relation to Mangere’s Pacific culture.

C Samoan Consulate connected to the commercial office building
The Samoan Consulate is defined by both traditional and contemporary building aesthetics, which is a landmark in Mangere Town. The traditional Fale is connected to a commercial building that contains two levels of retail and office spaces. The pattern and wooden textural cues were inspired by the Samoan tapa cloth adding character to the building. 117

Lessons Learnt- Site Analysis
The new architectural structure should connect to the surrounding environment and the Mangere Town Centre. The facade, form, features and elements of the buildings within Mangere Town Centre should take design cues or inspiration from the existing character of Mangere Town Centre to ensure the new architecture fits within the context.

Within the Town Centre currently, the height of the buildings are typically between 1-3 storeys high. There is a frequent use of rhythmic wooden patterns, which relates to Mangere’s Pacific culture. Wooden patterns on the buildings possess a strong horizontal rhythm.

4.3.4 Natural and Cultural Environment

Including the site, about four parks are located within or close to the 600m diameter (300m radius). Located outside of the 600m diameter within Mangere, there will be a future regional park on Puketutu Island (2025). Also, including an open green space (2025) nearby the regional park.

Node Three: The motorway, State Highway 20A, serves as a barrier for the community to access each of the green spaces surrounding the selected site for this research project. David Lange Park, Moyle Park and Williams Park each facilitate the school for children to use and play.

Node Two: The selected site DB Grounds is used for sports such as soccer and rugby. However, the site is currently vacant and not utilised by the public. Opposite the site, DB Grounds, alongside Bader Drive are community service buildings such as a Fire Station, a Police Station, a Church and a Cosmopolitan Club. Also, located south-west of the site is a Marae.

Located within the Mangere Town Centre is a Shopping Centre, Library, Performing Arts Centre, Leisure Centre and Farmer’s Market. Mangere is rich in their culture, where the community comes together to celebrate a range of different cultures.

Use/Activity

Both sites are close to Mangere Town Centre where Mangere is all about their community and culture. It is important that the architecture facilitates the community’s needs.

Activities or places close vicinity of the sites includes:
- Four parks including the site itself
- Pak n Save, a supermarket, located south of the site
- Community service buildings: Fire Station, Church, Marae, Cosmopolitan Club and Samoan Consulate
- Three schools: two primary schools and one intermediate school
- A Shopping Centre: clothing, fabric, food, groceries, gifts and Farmer’s Market that happens in the carpark during the weekends
- Performing Arts Centre: a space for art, crafts and cultural activities
- A Library
- Leisure Centre: provides pools and recreational activities.
4.3.5 Movement Frameworks

DB Grounds is located on a regional arterial road, Bader Drive, it sits next to State Highway 20A with Bader Drive bridging above State Highway 20A. Bader Drive is a wide road and carries two lanes of traffic with bicycle lanes. As it’s a key commuter route, Bader Drive gets often busy at peak times and also the route is close to one of the motorways off ramps. Located on Bader Drive are both sites for node two and three, which is a 3-minutes’ walk (0.3km) from the Mangere Town Centre.

Also, State Highway 20A is often busy and congested at peak traffic times, where cars release pollution into the air and create a lot of noises. The highway acts as a barrier, where the surrounding green spaces around DB Grounds are disconnected. This making it difficult for the public to access the surrounding green spaces. The connection between the green spaces area is crucial.

Parking is not often an issue within the Mangere Town Centre as there are plenty of parking spaces available for people to park their cars. This is one of the reasons why people prioritise their cars over walking and taking public transport systems to Mangere Town Centre. Also, there is a bus stop located near the Shopping Centre. However, the bus transport system inability to serve the public in an efficient way has also resulted in the prioritisation of cars.
4.3.6 Urban Structure

The building footprints within Mangere Town Centre vary in size and shape, where the Mangere Town Shopping Centre has the largest footprint. As mentioned earlier, the buildings heights vary from 1-3 storeys with the Samoan Consulate Office building being the tallest in the Town Centre at 3 storeys. Residential buildings are usually 1-2 storeys high and located on the outskirts of the Mangere Town Centre area.

On Bader Drive, the surrounding buildings have been setback and isolated from the neighbouring buildings. This provides an opportunity to activate the streetscape by proposing an architectural design that accommodates a variety of local amenities and retail stores. The sites should both focus on prioritising pedestrians first, not cars. Pak n Save is located next to DB Grounds at node two, where the carpark of Pak n Save may be used to accommodate cars. Surrounding DB Grounds site, there are other parks, which are disconnected from each other.
4.3.7 Building Typologies

Analysing the map, there are more light industry buildings within Mangere that facilitate the Auckland Airport. Since the Auckland Airport will be upgraded in the near future, there will be an implementation of substantial employment growth, which will put more pressure on Mangere to accommodate new housing and commercial developments. The need to protect the green spaces to show their value is important to have a vital, healthy community before they diminish in size and are gone.

People living within Mangere is bounded by the motorway and roads, which is not a healthy environment as cars release pollution into the air. In order to provide a healthy, sustainable area, it’s important to reconnect the community with its ‘backyard’ as it is an asset.

Clustered around the Mangere Town Centre are mixed-housing and residential houses, where in the future, there will be more mixed-housing for people to live in.
4.3.8 Future Developments

Mangere is the second most populous suburb in South Auckland, with the population growth increasing and more new developments are occurring in the future. This will effect the natural landscape within Mangere. This map shows future developments happening in and around Mangere.

Revitalise Town Centre

The Mangere Town Centre will be upgraded in the future as it is old and rundown. Therefore, there is a need to revitalise the Mangere Town Centre. The place has its own way of growing, which provides opportunities to its community. Also, it reflects the community’s character and attributes.

Green Spaces

Mangere’s backyard has potential to provide active, recreational green spaces that the community can utilise. However, the green spaces within Mangere are disconnected, vacant and access to some are difficult. More pressure could be placed on the green spaces due to the future developments and population growth within Mangere, which may result in green spaces under threat. It is important to enhance and utilise green spaces to show their value within the community.

Light Rail System to Airport

A light rail system is proposed through Mangere and to the Airport. Due to the rapid public access between the Airport and other places within Auckland, the rail network would vitalise land use change and provide opportunities. Since Mangere has no rail station, it would be a big benefit to the community. The light rail system would help the community. Also, it reflects the community’s character and attributes.

To improve the water quality and ecology, and access to and around the rail infrastructure.

Connections need to be considered and improved, which is interlinked with Other forms of transport such as bus routes, pedestrian walking and cycling. Since Mangere has no rail station, it would be a big benefit to the community. Other forms of transport such as bus routes, pedestrian walking and cycling connections need to be considered and improved, which is interlinked with the rail infrastructure.

Improve water quality and access

Mangere’s ‘backyard’ has potential to provide active, recreational green spaces that the community can utilise. However, the green spaces within Mangere are disconnected, vacant and access to some are difficult. More pressure could be placed on the green spaces due to the future developments and population growth within Mangere, which may result in green spaces under threat. It is important to enhance and utilise green spaces to show their value within the community.

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Improve water quality and access

Mangere Residential

New and improved redevelopments will be provided in Mangere’s residential areas. Within Mangere there will be new houses built for people. A more redeveloped residential area would give the residents’ a choice. However, this puts pressure on the environment as new houses will be built in the ‘backyard’ of Mangere and around the Town Centre. For example, the Market Cove, which will build over 1,200 homes along the edge of the Manukau Harbour, which will result in putting the green spaces under threat. Therefore, it’s important to protect and conserve them.

Airport and Mangere Gateway

The Airport and Mangere gateway can be promoted as local and regional employment, tourism and recreation destination. The surrounding environment offers a range of benefits such as job opportunities and ongoing economic growth in the local area. In the future, the Auckland Airport will expand and be even bigger. Therefore, this puts more demand on the urban structure and environment. As there will be a need to provide more facilities for the Airport to Mangere, efficient access to and from the Airport and more houses for people to live in.

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4.3.9 Opportunities and Constraints

From analysing the site, listed below are the opportunities (1-7) and constraints (8-10) of each of the sites:

Opportunities

For node two and three, the architectural design should be influenced by the existing character of Mangere Town Centre, addressing the form and features of the existing buildings. This is so, it has some relation to the Mangere Town Centre and fits within its urban context.

Node Two- Civic Center Park (DB Grounds)

1. The facade should take advantage of the good sun exposure.
2. Retail stores should activate the edge of the street along Bader Drive.
3. Recreational, cultural and social activities encourage people to utilise and enhance the green spaces.
4. Company incubators could help the community by providing them with a space to work with views out to the natural landscape.

Node Three- Light Rail Station (State Highway 20A)

5. The proposed transit link should improve access and connections to the green spaces within Mangere.
6. The proposed train station will provide views of the Mangere area.
7. Provide social and cultural activities that encourage people to come and use the station.

Constraints

8. The heights of the neighbouring buildings range between 1-3 storeys high. This puts a height restriction on the proposed architectural design to ensure it does not create a negative shadowing or dominate other surrounding buildings.
9. At node two, the public open green space should be respected by not taking too much of its value if proposing a new architectural building.
10. At node three, the maximum height clearance on State Highway 20A is 4.5m.
4.4 Conclusions Drawn from the Site Analysis

There are some provided opportunities for each of the sites in reconnecting the local community to the neglected and vacant green spaces through architecture. At node two, DB Grounds, an architectural design should enhance the natural landscape by providing social, cultural and recreational programmes to activate the street and Mangere Town Centre. It is important that the architecture does not take away too much of the site’s value. Therefore, only a strip of the DB Grounds site, along Bader Drive, will be utilised. At node three, State Highway 20A, the site provides an opportunity of a transit link that allows access into the ‘backyard’ of the green spaces within Mangere. Also, to encourage the community to use the public transport systems such as trains and buses and, to encourage them to walk and cycle. Both nodes, two and three, should provide a strong connection to the Mangere Town Centre and its sense of place.
5.0 Design Process

5.1 Adoption of Site Analysis

In addition to the site analysis in chapter four, this section, further explores the site Mangere at a macro-scale to identify and investigate the issues. Connectivity is a crucial factor in re-establishing the relationship between the community, architecture and neglected green spaces within Mangere.

This section will explore each of the nodes from one to six. However, for this research project, nodes two and three will be examined in depth, whereas, at the end-points of those links are outside of the scope of work.
Fig 5.0 - Map of Mangere showing the nodes.

**Residential Area**
The community is bound by roads and motorways. It's important to provide access to green spaces to promote a healthier neighbourhood.

**Commercial Area**
This area accommodates facilities for the Auckland Airport. As the Airport will expand, more facilities will be provided to support growth.

**Key**
- Red: Developments
- Yellow: Access
- Orange: Bus Stops
- Green: Green Spaces
- Brown: Nodes
- Purple: Commercial
- Blue: Residential

Fig 5b - Map of Mangere showing the nodes.
5.1.1 Design Issues

Before focusing on the selected sites at node two and three, Mangere will be examined at a macro-scale to identify and investigate the current issues of Auckland’s urban planning. The issues identified are:

Accessibility: Mangere is quite a large suburb within Auckland, where the growth of the area is constantly growing. Due to this, the current urban structure is unable to support the population growth and the community needs. People are dependent on cars to get around places and most of Auckland’s roads and motorways are heavily congested. This is the result of under-investment in public transport systems. There is a need to accommodate people through transport-oriented design. This could be through providing other modes of transport such as cycling routes, buses and trains, to improve access within Mangere.

Disconnected: Mangere is divided into discrete areas. The residential houses are clustered and bounded by the motorway, commercial activity is concentrated in one area and the ecological areas are clustered near the coastline of the Manukau Harbour. To promote a healthier and more liveable neighbourhood, the community needs to reconnect to their green ‘backyard’.

Developments: The Auckland Unitary Plan will be the key tool for implementing the Auckland future developments. This Unitary Plan will manage and develop the natural and built environment. Due to the close proximity of Auckland Airport, which will expand in the future, more land will be needed in order to accommodate the access to the Airport and surrounding employment area in Mangere. Also, more new developments will be needed to support the population growth.

5.2 Masterplan

This section explores what kind of functions each node can provide, through the use of graphical sketches. This is to address the spatial relationships between the architecture, community and natural landscape.

5.2.1 Overall Site Strategy Plan

This section examines Mangere’s community issues and how each node can accommodate the needs of the local area. The area was investigated to highlight what makes Mangere unique, what does Mangere need and what strong factors draw people in?

Issues within Mangere are:

- The area is not a destination.
- There are limited local resources and a demand on the local spaces for art experiences, cultural, sport and leisure activities.
- Maintaining and upgrading the Town Centre and facilities.
- Caring for the environment and preserving heritage.

What makes Mangere unique is their multi-cultural society. This is shown in the architectural buildings within the Town Centre and the lively Farmer’s Market as they are what draws people into the area. By providing social, cultural and recreational needs of the community that is celebrated in the natural environment through architecture, this will help to create a salubrious, cohesive community. The following diagram will explore different spatial relationships to show what’s happening at each node.

Fig 5.1 - Programmes happening at each node.
Node 6 - Regional Park (2025)
Puketutu Island, in the future, will be a regional park that will provide cycling routes, recreational activities and green spaces for the local community.

Node 5 - Relax/Play
This open space (2025) will provide lookout towers, which provides views out to the Manukau Harbour, cycle routes, cafes and playgrounds. An area for recreational and social activities.

Node 4 - Community Sports Events Centre
A community sports events centre will provide areas for different sports such as netball, basketball, badminton that is celebrated in the open green space for people to enjoy.

Node 3 - Public Transport
A light rail station provides access into the green ‘backyard’ within Mangere.

Node 2 - Civic Center Park
A civic center park will provide recreational and local amenities to add value to the natural landscape, eg. restaurants, cafe, Farmer’s Market, company incubators, sports, rock climbing, walkways.

Node 1 - Mangere Town Shopping Centre
Mangere Town Centre provides a shopping mall for the local community. It will be upgraded in the future to support the growth and regeneration in the area.

Fig 5.2 - Overall site strategy showing the nodes. The focus will be on the connection between node two and three.

Fig 5.3 - Node one: Mangere Town Shopping Centre may be upgraded in the near future.

Fig 5.4 - Node two: A civic center park will connect the community to its landscape through architecture.

Fig 5.5 - Node three: Light rail station.

Fig 5.6 - Node four: Community Sports Events Centre.

Fig 5.7 - Node five: Open space in 2025.

Fig 5.8 - Node six: Future regional park on Puketutu Island in 2025.
5.3 Design Brief

5.3.1 Design Objective

Through the research of literature review and site analysis, the issues of urban sprawl, new urban developments, reliance on motor vehicles and undervalued green spaces are defined by neglect and vacant. This has created a gap, where the community is disconnected from the green spaces within Mangere. However, it is possible to ignore green spaces that contribute to creating vibrant, healthy communities to accommodate future developments and population growth. This research project will attempt to create a possible architectural design that could reconnect the community to the natural landscape.

The instigator of this research project has been through the Auckland Unitary Plan and, also through the research and literature review. As mentioned before, this research project will respond to these issues:

Green Spaces
Population growth and urban developments put more pressure on the natural environment. There is a need to build Auckland as a sustainable city, therefore, it's vital to protect and value the green spaces for people to enjoy. As Jane Jacobs underlined, green spaces are considered as boons. Green spaces are volatile places that provide economic, social and cultural values. Yet, the community chooses to ignore this asset.

The Community’s Culture
Mangere is rich in its multi-cultural society and it's what makes the area unique. The community’s culture is inspired by their diversity, architecture, art and music. Ideally, the community’s culture should be celebrated through the proposed architecture and the natural landscape in a way that inspires the people to value the surrounding environment. The proposed architectural designs should celebrate the community’s diversity as one of its greatest assets. Therefore, this enhances identity, belonging and the character within the Mangere Town Centre.

Accessibility
The Mangere neighbourhood is not adequately served by pathways and other connections to the transport corridor. This is because the area has been underserved by the Auckland transport system. Therefore, there is a need to provide efficient public transport within Mangere that is accessible and, offers other choices for people to get around. This is to encourage people to use the public transport through TOD, rather than being dependent on cars. It will also provide access to the undervalued green spaces for people to utilise.
5.4 Design Response to the Site
This section explores approaches and issues of each of the site at node two and three. The diagram will focus on connecting people to different areas within the Mangere Town Centre.

Node Two - Civic Center Park
Site: DB Grounds
A proposed civic center park will be designed to add value to the neglected and vacant site. However, a decision emerged that concerned about maintaining and not taking too much of the site’s value away. Only a strip of land of DB Grounds, alongside Bader Drive, will be utilised. This would activate the streetscape and, also add value to the green space through architecture. Along the edges of DB Grounds, recreational, cultural and social programmes will be provided to support the elementary needs of the community such as walking, eating, etc. The central area of the DB Grounds will be remained untouched for sports activities. Increased use of the site adds value and significance to the green space. Also, the civic center park will be connected to the Mangere Town Centre and the light rail station.

Node Three - Light Rail Station
Site: State Highway 20A
The proposed rail station location for Mangere shown in the diagram was derived from the Auckland Transport light rail plans. This would be a good location for the transit-link as it is located in the heart of Mangere Town Centre, which should support in the regeneration of the area. The light rail station is located on State Highway 20A in the middle of the motorway lanes. There is an issue of getting people up from State Highway 20A via to Bader Drive bridging above. This needs to be addressed by providing a way up, such as stairs and a lift, to access Bader Drive.
5.5 Civic Center Park at node 2
5.5.1 Design Principles for Good Open Space Design

Listed below are the design principles, outlined by the Ministry for the Environment, which will help to achieve good open space design for the civic center park at node two:

- Integration and Connectivity
- Diversity and Adaptability
- Legibility and Identity
- Environmental Responsiveness

Integration and connectivity would be crucial aspects of the design. As the architectural design should focus on connecting the community to its natural landscape. Therefore, the architectural design should consider the following factors: the landscape, orientation, size, shape and good open space design. Also, the design should reflect the characteristics of the Mangere Town Centre to create a sense of belonging and identity.
5.5.2 Exploration of Form

This section explores various forms that consider the factors of the site, surrounding context and to take advantage of the natural sunlight.

Exploration One
A rectangular mass is placed east of DB Grounds, the site, which is along Bader Drive. The form demonstrates a clearer relationship to the street and blocks out the view of the green space. The form should accommodate both sides of the site, the streetscape and the landscape. It does not add any value to the green space as it is hidden by the building form. This form does not offer any solutions. Therefore, further investigation is required.

Exploration Two
Cutting through the rectangular mass, this provides openings and views to the green space. By opening up the spaces between the masses, the boundaries between exterior and interior have become blurred. This provides an opportunity for social interaction between the street pedestrian, in the spaces between the building masses and in the green space. However, there is an issue of negative overshadowing of the spaces between the building masses. Also, the buildings are isolated from each other, when they should be connected.

Exploration Three
The building forms are angled. This is to allow natural sunlight into the spaces between the building forms. The staggered forms allow the buildings to grow out of the site and providing views out to the natural landscape. There is a 2-meter drop, where seating steps will be placed in the spaces between the building forms, which allows people to watch the sports games and cultural activities happening on the site. The sky bridges are connected to each of the buildings so that people can access each building space easily.

Exploration Four
This exploration shows the mass building near Pak n Save has been setback more. This allows for more natural light into the plaza space, where cultural events and the Farmer's Market will happen. This will activate the streetscape and draw people into the green space to utilise. Also, the ramp draws people from the street into the building spaces. A covered canopy promenade will be connected to the Mangere Town Centre from the civic center park and light rail station. This will help guide people through the place.
Exploration Five
A sectional perspective of the site helps to show the integration of the building with the site and its relationship to its surrounding environment. The butterfly roof allows natural light into the building space and the form allows views out to the green space, thus providing a visual connection to the surrounding context.
5.5.3 Circulation

It is important that the building spaces help to connect people to the natural landscape. The circulation will follow the knowledge gained from the literature review and key architectural values from the design precedents to accommodate the movement of people throughout the building spaces and the site.

At the beginning of the design process, different conceptual programme layouts were explored. The programmes focused on providing social, cultural and recreational activities that reflect the community’s needs and, to celebrate Mangere’s diversity as its greatest asset within the landscape.

The building will illustrate the use of transparency and openness as it will be an open floor plan. This will allow users to easily flow through space and to create a flexible environment, where people can socially interact. The building spaces are arranged in a way, where each space has views out to the surrounding context. This providing visual connection to the outside world. The design precedent, Rolta Studio, illustrates this use of visual transparency through the spatial order. This is where every space of the building is visually connected to the natural landscape, establishing a strong bond between people and the surrounding environment.
Fig 5.19- Site plan of Civic Center Park (node two).

Fig 5.20- Basement floor plan of Civic Center Park (node two).
Fig 5.21- Ground floor plan of Civic Center Park (node two).

Fig 5.22- Axonometric of the Civic Center Park’s circulation.
5.5.4 Materiality

Visual connection is significant in the identity of a building or place. As mentioned before, Kevin Lynch underlined his idea of ‘legibility’ that people are dependent on visual perception to help to navigate themselves around or to identify a space or place. Cues such as the material’s colour, texture and form are what people notice before anything else. People notice materials on a building from up close or at a distance.

Influenced by the context, the materials will contribute to the identity of the building. Natural materials such as glulam wood and glass will be used to enhance and complement the surrounding environment. To emphasize its relation to the natural landscape and its influence from the Nikau tree, which is a prominent feature within Mangere, glulam wood is used. In relation to the Samsom Consulate connected to the office building, it uses wood in a pattern-like way to express its culture and reflect the Samsom tapa cloth. Whereas, the façade of the civic center park uses wood being influenced by and to reflect the Nikau Trees within Mangere Town Centre. The louvre pattern-like façade is inspired by the Nikau trees. This is where the façade gives an impression of a row of trees, where the criss-crossed pattern of the wooden façade reinterprets the silhouettes of the trees. The innate aspects of the glulam wood express its material through its texture and colour, which creates a link to the surrounding context. Also, glass will be used to allow natural light to filter into the civic center building spaces and to create a visual connection to the natural landscape. The façade plays with natural light allowing some light to pass through the use of glass and, by blocking some natural light out. Also, the views are heightened through the gaps of wooden louvers of the building's façade.
5.5.5 Critical Appraisal of the Final Design for Node Two

Transparency and Openness

The architectural building provides transparency through the use of spatial order. Each of the spaces in the building provides simultaneous perceptions of different areas of the surrounding environment. Therefore, people are always engaged with the outside world. Also, views are maximised through floor-to-ceiling glass panels revealing the indoor spaces of a building. The civic center park provides an open plan, where there are only a few walls. This providing a flexible, free flowing plan, allowing people to easily move around the spaces and to encourage social interaction. Also, the site itself, DB Grounds, provides no sense of enclosure inviting people to come and use the park.

Transitional Spaces

When designing, the first consideration was not to take away too much of the site with respect to its environment. Even though the intention of this research project was to enhance and add value to the disused green space, only a strip of land was used and the remaining site was left untouched. Recreational, social and cultural activities were arranged on the outer edges of the DB Grounds site as little pocket of spaces to attract people and to add value to the neglected site. The central space of DB Grounds is left open for any field sports games. Transitional spaces were achieved by bringing people from Bader Drive and into the civic center park. Also, the architecture is integrated with the site, which performs as a linked system. The boundary between the inside and outside is blurred, similar to the precedent study, Rolka Studio, where nature is invited all around and into the building spaces. Furthermore, from node three, the canopy structure of the light rail station interlinks to the civic center park. From here, a canopy promenade connects to the Mangere Town Centre as a guiding tool to help people to navigate through the place and, to provide a fluid flow of movement of people from node one to node three.

Materiality in Architecture

Materials such as glulam wood and glass were used to complement and, to create a link to the natural environment. Wood was used to reflect the Nikau trees and to create a strong identity within its place. Also, glass was used to create a visual-spatial connection to the landscape. This is so that people can enjoy the delight of the outside world and to allow the natural light into the building spaces.
5.6 Light Rail Station- Node 3

5.6.1 Design Principles for Railway Station Design

Adopted by the Victorian Government (Australia), the station user panel outlines the Railway Station Usability Principles, through seven key contributors to an effective railway station design:

- Accessibility
- Ease of Navigation
- Comfort and Amenity
- Information
- Safety
- Local Area Integration
- Community Ownership and Activity

Due to the location of the site, accessibility and ease of navigation are the main key factors in the station's design. Therefore, the architectural design must consider the following factors: easy access for people, the location of the station must be convenient and close to the local town, simple station layout that allows easy flow of movement and, connections to the surrounding environment.
5.6.2 Exploration of Form

The form of the architectural design should be influenced by the research of the site, the character of the Mangere Town Centre and through the precedent studies analysed in chapter three. The main objective of the architectural design is to provide access to the surrounding green spaces and into the ‘backyard’ of Mangere.

From the section, design response to the site, access points were made in relation to how people will move and connect to different areas within the Mangere Town Centre. Once the links were made, the access points fell into place. The light rail station will serve as a ‘bridging’ platform as a way to access the surrounding green spaces and to connect people to the Mangere Town Centre. The linear form of the train station was inspired by the precedent study, the High Line, to help facilitate the transitional flow of people along the architectural structure.

Different conceptual forms were explored at the beginning of the process to create an iconic piece of architecture that reflects the character of the Mangere area (Fig 5.28). The selected conceptual idea was inspired by the Nikau tree, which is an iconic feature within Mangere (Fig 5.29). Historically, the leaves of the Nikau trees were used by Māori people to thatch houses and, used for cooking and weaving. Also, the Nikau tree represents Mangere’s multi-cultural community and is used as a logo to represent the Mangere Town Centre. This prominent feature, the Nikau tree, within the area can be used as a source of inspiration in the architectural design to help create an iconic gateway for Mangere. Also, to create a link to the Town Centre.

The final design of the light rail station shows how the structure connects in Fig 5.35 and Fig 5.36. Also, the light rail station shows the transition of spaces from busy roads below to a serene, calm environment above. This provided an open space for people to connect to the surrounding environment and provided shelter to the users of the station.
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5.6.3 Circulation

Connection is vital in linking people to different spaces or places. As explored in the section, the design response to the site, it shows how the light rail station acts as a 'bridging' mechanism in connecting people to the green spaces and to the Mangere Town Centre. As a designer, it's important that the area should be perceived as inhabitants. How people should navigate themselves effortlessly throughout the site and yet be physically connected to the surrounding environment.

Different conceptual layouts were explored at the beginning of the process to deal with the issue of getting people from State Highway 20A via to Bader Drive and programme layout. By providing stairs and a lift up to Bader Drive, the transitional space is experienced through height differentiation. People getting off the train in Mangere will enter a busy area at ground level. However, as people climb up the stairs, they experience a new space as they enter upon a bright atrium space surrounded by nature and providing views out to the Mangere area. The train station is also connected to the civic center park and the Mangere Town Centre.

Fig 5.37- Conceptual layout one.

Fig 5.38- Conceptual layout two.
In relation to the design principles for an effective railway station design, accessibility and navigation are crucial factors within this architectural design. It’s important that the users of the station can easily orientate themselves throughout the space. By providing a simple, linear station layout (fig 5.40 and fig 5.41), this allows to facilitate the flow of people movement, similar to the precedent studies, the High Line and Seoul Skypass Station. As underlined by Kevin Lynch, people are dependent on visual perception as a way to guide themselves through spaces. This was achieved through the curved form and material of the canopy and colour. Also, by having a flowing ribbon of colour creates synergy between various areas. Colour would be used to open spaces of creativity and playfulness that fluctuates in solid and striped patterns within the station. Therefore, this draws people in.

In fig 5.42, the drawing shows the circulation of people, motor vehicles and the light rail. The hierarchy of levels was used to separate busy areas from leisure and calm areas. People transition from the busy environment below to the tranquil space above (motorway via to Rudor Drive). Also, the hierarchy of levels was achieved to separate areas of walking and relaxing as shown in fig 5.43. This helps to create a division within the open space, without using any walls.
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5.6.4 Materiality

In addition to section 5.5.4, materiality in architecture for node two, this section further adds on from it.

The materials that would be used for node three are glulam wood, concrete, ETFE (Ethylene Tetra Fluoro Ethylene) and steel. Glulam wood would be used to support the canopy structure of the light rail station and to complement the natural landscape. Wood would be used to create visual or haptic qualities in relation to nature. The material, wood, expresses its innate aspects through texture, colour and imitating the form of a Nikau tree. Whereas, concrete and steel will be used to support the architectural structure as both materials provide high relative strength to brace lateral loads and, to hold up the structure. ETFE (Ethylene Tetra Fluoro Ethylene) is a lightweight material that can be used on long-span structures. In some areas of the ETFE material, it will be patterned, this allows only some natural daylight to enter through the train station space. Also, ETFE is a transparent material, which provides visual connections to the surrounding environment.
5.6.5 Critical Appraisal of the Final Design for Node Three

Initially, the focus of the architectural design investigation dealt with the undervalued green spaces far from the Town Centre, located in the “backyard” of Mangere. This was by providing an architecture that adds value to each of the green spaces at node four, five and six, to attract the local community to utilise them. Before, the research project focused on node three, a light rail station and node four, a community events centre. However, during the exploration process, the design did not effectively resolve the issues of accessibility and for attracting the local community to utilise the green spaces. This was because the site at node four was too far in distance. Trying to figure out ways of getting people from node three to node four became an issue in the design. Whereas, the design now focuses on the connection between the Mangere Town Centre (node one) to the light rail station (node three).

Transparency and Openness

Crucial to the key design, it’s important that the intention of creating a light rail station should be people focused. A railway station acts as a gateway, a place destination, between communities and the public transport system. People use rail stations as a place to meet, for social interaction or as a way to access local amenities. To support this and to facilitate the flow of people through the station, it’s vital to provide an efficient functional layout for people to orientate themselves to wherever they are going. The relationship between the existing green spaces and the proposed architectural intervention was determined through openness and transparency and, materiality. Due to the openness of the transit link, this provides physical and visual connections to the surrounding urban environment. The train station serves as a platform to accommodate a fluid movement throughout the site and to the Mangere Town Centre. Therefore, the station would be a dictating aspect in pursuing to attract and draw people in to utilise the architectural intervention.

Transitional Spaces

The establishment of a new transportation system faces many complexities and challenges. Often the plans for the new architectural infrastructure work conflicts with the existing city texture and characteristics. When I was designing, the first consideration was to preserve the environment of the green spaces near the proposed location of the light rail station within Mangere. In consideration of the nearby parks, the station was lifted to provide the necessary circulation from bringing people from State Highway 20A up to Bader Drive and, dispersing into the green spaces. The light rail station provides users with a transition of space from the busy, congested lanes of the motorway up into a serene, elevated architectural infrastructure. Therefore, the transit link allows people to experience the elongated structure as it had been intended, before spilling into other areas within Mangere. Also, the linear form of the rail station helps to facilitate the flow of movement. This is where, the curved canopy form of the station contributes to the movement of people allowing them to orientate themselves along the structure.

Materiality in Architecture

In consideration of the surrounding parks, the surface of the architectural intervention reflects the local context and, merges with the surrounding and following characteristics of Mangere. The station invites and incorporates nature like a park that provides local amenities for people to enjoy. Also, to create a relationship with the surrounding parks, natural materials such as wood and ETFE were used to create a connection to the parks around the rail station. In addition, concrete and steel were used to support the architectural structure.

5.7 Overall Summary

The purpose of this research project was to investigate how architecture can reconnect the local community to the natural landscape and creating a sense of place. This was achieved through key architectural values influenced by the research from the literature review and design precedents. At node two, a civic center park adds value to the neglected and disused green space for the community to utilise. Whereas, at node three, a light rail station acts as a gateway for people to access and connect to the green spaces. Both architectural designs add significance to the undervalued green spaces within Mangere, where people can come to enjoy them.
As Auckland grows and expands the once important and a prized possession of New Zealand, green spaces are becoming increasingly threatened and undervalued. Green spaces are an asset, which provides livable neighbourhoods that fulfill the elementary needs of a community. In the light of this issue, well-considered architecture can be employed to unlock the potential of green spaces. This project sets out to investigate how architectural design can contribute to the urban fabric within Mangere, Auckland while reconnecting the community to the natural landscape and its sense of place.

Through the research analysis and exploration within the context of Mangere, this study has determined the number of issues facing the area. Critical analysis of the site and the potential prospects of it helped to inform the design decisions. Moreover, theorists were reviewed to gain insight into issues and lessons were learnt from the precedent studies to illustrate the different techniques that can be used to bring value to the neglected and vacant green spaces for people to enjoy.

Reviewing the Auckland Unitary Plan helped to identify the city’s future planning needs. This review provided an overview of future developments happening within Auckland and to consider the location of the planned light rail link at node two within Mangere. From here, it threads through the series of green ‘backyard’ spaces within Mangere. Whereas, at node two, the disused green space provided an opportunity to add value through architecture and local amenities by not taking too much away from the site. Throughout the project, the focus of the design has been motivated by the intention to re-establish the connection between architecture, landscape and the community. Not only the urban fabric of the area is benefitted through revitalisation and local amenities but provides a healthy, sustainable neighbourhood for people to utilise.

The research processes undertaken led to the development of a series of masterplans, for Mangere and a design plan for the two ‘backyard’ sites: DB Grounds at node two and State Highway 20A at node three. Overall, this research project has demonstrated how architectural design can address the importance and use of neglected green spaces. A project such as this is not defined by only the architecture but its relationship to the natural landscape and the community. This research project has demonstrated the importance of the relationship between the landscape and the architecture. Where both entwined landscape and architecture, should perform as connected interactive systems to cure the urban environment, creating a great livable space for people. It is imperative if the architecture ignores its natural environment as it sustains our way of life and contributes to the well-being of humans. Adding value to the natural environment through well-considered architecture can unlock the potential of green spaces within growing urban areas.

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Lloyd-wright-principles/


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Final Presentation Drawings
Unlocking the potential of Urban Neglected Spaces

How can architecture be employed as an urban solution to connect a light rail station in the Mangere Green Triangle, while providing a green connection between the natural landscape and creating a sense of local community?
Declaration

Name of candidate: Raina Singh

This Thesis/Dissertation/Research Project entitled: Unlocking the Potential
of Neglected Urban Spaces

is submitted in partial fulfillment for the requirements for the Unitec degree of
Masters in Architecture (Professional)

Principal Supervisor: Daniel Irving

Associate Supervisor/s: Renata Jakesin Milic

CANDIDATE’S DECLARATION

I confirm that:

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- The contribution of supervisors and others to this work was consistent with the
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- Research for this work has been conducted in accordance with the Unitec
  Research Ethics Committee Policy and Procedures, and has fulfilled any
  requirements set for this project by the Unitec Research Ethics Committee.

Research Ethics Committee Approval Number: N/A

Candidate Signature:..........................Date: 24 May 2018

Student number: 1402221
Full name of author: Raina Singh

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Full title of thesis/dissertation/research project ('the work'):
Unlocking the Potential of Neglected Urban Spaces -
Wangere Bridge West: Community Connection to the Natural
landscape.

Practice Pathway: Architecture
Degree: Masters in Architecture (Professional)
Year of presentation: 2018

Principal Supervisor: Daniel Irving
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