New Urbanism in Auckland

Master Thesis Explanatory Document

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ABSTRACT

New Urbanism in Auckland
‘Designing a pedestrian-friendly community connecting the CBD and Parnell’

This research project focuses on creating a transit-orientated pedestrian-friendly urban development to serve as a pedestrian linkage between the two different urban cultures of the Auckland CBD and Parnell. This project will investigate and propose an architectural solution to ease the urban problems derived from the current modernist planning approach adopted by Auckland planners.

The site is situated at the intermediate land on the fringe of both Parnell and the city, on the reclaimed land of the former Mechanics Bay. The project aimed to improve the urban environment of both the site and its surrounding area by urban infill that would develop this under-developed site.

Transit-orientated development (TOD) is a development designed to maximise access to public transport, with the transport station being the prominent feature of the centre of this development. It is a walkable development with the pedestrian as the highest priority, developed within the area of a 10-minute walk catchment circle surrounding the station.

The transit-orientated development includes a detailed analysis of the site area with regard to its transportation functions and activities issues. It involves the detailed urban design and planning, and allocation of functions for the new buildings and public spaces developed at the completion of this project.
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1 INTRODUCTION

1.1 Background Information

Throughout history, Auckland city has been developed as the centre of growth in New Zealand and, due to the influence of the European culture, has adopted the modernist approach to planning. As a result, the city is planned as a Central Business District (CBD) where the majority of the buildings are commercial offices, whilst suburbs of residential development are situated around and beyond the fringe of the city. In both of these environments, the primary mode of mobility is private automobiles for getting to particular destinations, regardless of the distances, in place of the traditional modes of walking, cycling or public transport.

One of the main consequences of this type of planning is the increasing over-reliance on the automobile, causing the roads and streets, and to a larger extent, the city, to be planned to be primarily used by these mechanical devices rather than to be used by people. This will, and has, effectively reduced the urban quality of streetscape where cars are being prompted as the dominant figure, rather than people. Many have suggested that Auckland is one of the most ‘car-biased’ cities in the world because of its under-developed public transport system.¹ This form of planning has also created a new social class of commuters, people who have to travel long distances daily to their workplaces from their own homes, rather than living in close proximity from their work as was the case prior to the 20th century.² Reports have shown that there is a significant increase in the commuting time in comparison to the past year as there is an increased usage of automobiles.³ Within this planning system, the centres of different activity sectors are positioned away from the main routes and highways, separated from each other by the dominating factor of motor vehicles, and are deprived of urban life, where the traffic serves as boundaries and obstacles from accessing into these centres.⁴ The roads are only used for

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vehicle circulation, and not as walkways and a place for pedestrians to circulate, inhabit and interact. This is demonstrated by the roading network grids within the CBD, and the system of highways surrounding at its perimeter. The CBD is therefore, in effect, virtually separated from the surrounding suburbs. This leaves little or no pedestrian connection into the city from the surrounding, demonstrated by the minimal tolerance and allowance for pedestrian flow through un-friendly pedestrian-access organisations around the city.

1.2 Research Question

This architectural thesis aims to propose a newly designed urban development consisting of a different mix of functions situated within the fringe of the city. It is intended to propose a pedestrian connection between the CBD and the bordering suburb of Parnell. The creation of a mixed use, transit-oriented development would seek to ease problems deriving from modern urban planning, sprawls and traffic congestion. The planning is intended to reduce the reliance on private automobiles and enhance the quality of life within and around this walkable community.

This research thesis will investigate and research how the application of traditional urban design techniques, such as New Urbanism, can contribute to improving the urban environment of a city. Urban design is about making the connections between people and places, and expresses a concern with human quality within a public space and building. The research aims to identify and resolve the problems of the current planning approach, including environmental and transportation issues and will investigate the benefits of the urban design principles on the planning of Auckland city and its wider context. This research problem will identify specific issues that will be resolved through my design:

- Identifying the problems in cities caused by a modernist planning approach which can be successfully treated with a traditional urban design approach.
- How the urban quality of the city and Parnell can be improved by this urban development.
- What is the appropriate architectural approach in terms of function and planning to achieve this integration of the different urban cultures of the city and Parnell.
- What facilities and spaces can the new proposed community provide to the city and Parnell.
1.3 Aims and Objectives

The purpose of the project is to research a suitable approach to overcome the problems derived from the modernist approach in planning.

Parnell is the oldest suburb of Auckland, and it is separated from the city by the Grafton Gully. It is currently connected with the CBD through its north-eastern route of Parnell Rise through to Beach Road across a busy cross-intersection. The other roads at the intersection are Stanley Street and The Strand. Together they served as a major route for shipment vehicles to and from the city’s main port. This intersection is a typical situation of the highway system in Auckland, in which the roading separates the suburb from the CBD, with the automobiles the only mode of mobility to travel between the two urban environments.

This research project proposes a newly developed urban community within this area in an attempt to solve this separation, and creates a pedestrian-friendly linkage between the city and Parnell through this currently pedestrian-unfriendly environment.

The diffusing of traffic across the busy cross-intersection would be critical in achieving a pedestrianised route between the city and Parnell, and encourage the mode of mobility between the two places to be walking and cycling, instead of private automobiles.
1.4 Methodology

*Research for Design*

The literature research has developed an understanding of the problems derived from the current planning approach and the relevant urban design techniques and methods which can contribute to solving these problems and developing a successful urban design project. The literature research was used to generate the design strategy, which was worked into supporting the architectural proposal.

Research into built urban development schemes have demonstrated the application of particular strategies and methods and demonstrate why they were successful.

*Research into Design*

The detailed site investigation and its surrounding context was crucial to this project as the formation of the design brief and programmes were solely dependent on this research. The analysis identified the areas of concern within the site that required solving throughout the design process, such as the roading and traffic problems. At the same time, it presents potential which was explored in the design, such as the potential of a train station and the mix of activities around the site.

*Research by Design*

The design itself is the most important part of the project. It involves translating the theories and knowledge gained from the literature research and site analysis into an architectural solution. A combination of drawings and physical and digital mass modeling of appropriate scales was used throughout the exploration process. Design issues such as the space planning, creating positive outdoor spaces, axes and vistas were resolved to produce the architectural outcome to be presented in the final examination.
2 DEFINITION OF THE PROJECT

2.1 Brief

The aim of the project was to provide an architectural solution to develop a transit-orientated community serving as the link between the closest suburb of Parnell and the city. The intention of the development is not only to create a more direct urban pedestrian-friendly passage from these two places, but also to provide public spaces and appropriate functions and interventions required and currently lacking in the area. The development aims to contribute to the improvement of the overall urban environment of the city and Parnell.

As Auckland city continues to expand by growing in suburbs, it results in more population living further away from the city centre, this will result in the creation of more low-density suburbs and increase the number of commuters and reliance on private automobiles. Rather than expanding outwards, this area represents one of the closest opportunities for an urban infill to increase the urban density of the city. The railway track crossing the site presents the opportunity of a railway station within the area that will encourage residents to use public transport for travel ahead of their vehicles. An urban development of this type is considered as an urban infill or extension project, and is ranked second in the growth priorities suggested by *The Smart Growth Manual*.5

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Site

The site selected for this project is located on the fringe of both the Auckland CBD and Parnell, on the reclaimed land at the end of Grafton Gully. The location is part of the motorway ring that separates the traditionally defined CBD from the outer fringe, this urban void, described as ‘The Ring’ by Landscape Architecture New Zealand Journal, is suggested to be a major catalyst for urban renewal for Auckland city.6

This location illustrates the typical planning problems in Auckland: the construction of highways as the city is planned to be used by automobiles, producing poor and under-developed pedestrian connection as it does not offer pedestrian-friendly routes and spaces. Studying and producing an architectural solution within this heavily traffic-bounded location would achieve the primary intention of this design project of overcoming the problems deriving from the modernism planning approach.

The selected site area is bounded by Beach Road, Ronayne Street, Constitution Hill, Alten Road, Stanley Street, The Strand and Parnell Rise. The area is currently an un-defined quarter, serving as the transition space between the city centre and Parnell, separated by the automobile-dominated highways of Stanley St and The Strand.

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Figure 2.4 – Aerial view of the selected site.
3 LITERATURE REVIEW OF THE CURRENT STATE OF KNOWLEDGE

3.1 Critique of Auckland City’s Modernist Planning Approach

Auckland city’s regional planning, like many other main cities in the world, is based on modernist planning approaches exemplified by the two most significant urban prototypes of Le Corbusier’s, *Villa Radieuse*, and Frank Lloyd Wright’s *Broadacre City*. These were then developed into the urban planning schemes seen today by their contemporaries. Both prototypes have mainly focused on the use of private motor vehicles to replace the mode of pedestrian movement and public transport for mobility. This approach promotes the notion of zoning a city into areas of different usage with the network of motorways and highways, predominantly used by private motor vehicles, used to connect each separate activity district zones.

Modernist planning approaches have been widely criticised by many, commonly stating that this mono-functional zoning system has created automobile-oriented development and suburbs, which in turn had generated many different urban and social problems today, such as urban sprawl, diminishing of urban life through the destruction of pedestrian-friendly streets and squares, and the reliance on motor vehicles and its environmental consequences.

Leon Krier argued in his book, *Architecture – Choice or Fate*, that the mass application of modernist planning has only led to “an impoverishment of architecture and urban planning”\(^7\). Through separation of different activities into zones, they divided the integrated functions of a city into fragments, creating non-urban and anti-ecological environments, making modern life extremely complex and wasteful in terms of transportation time due to the distances between the programmes and places that are required for daily needs – this includes the places to work, eat and live.\(^9\)

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\(^8\) Leon Krier, *Architecture: Choice or Fate*. Windsor: Andres Papadakis, 1998, pp. 64.

\(^9\) ibid., pp. 66.
The problems of Auckland’s urban planning are caused by what is described by Krier as mono-functional overexpansion, where the city centre is over-expanding vertically and suburbs are over-expanding horizontally, causing “serious imbalances between the centre and suburban periphery.”

Auckland’s CBD is excessively dense with single-use activities and functions, in particular, the commercial and educational sectors with offices and universities. Parnell is over-expanding horizontally, with low density buildings, the majority being residential, and a considerable amount of offices and retails. The differences between these two urban environments introduces the need to travel from one to another for the specific needs which can only be predominantly found in either one of these urban contexts. For example, one must travel to their workplace or offices in the city from their home in the suburb, with the primary mode of travelling between these two environments being by private automobile, and not by walking, cycling or any other form of public transport.

### 3.2 The Problem of Zoning

Christopher Alexander stated in his book, *A Pattern Language*, “continuous sprawling urbanisation destroys life, and make cities unbearable.” His view is that cities and communities are only good for life if they contain the interaction among people of different backgrounds and ways of life.

Alexander criticised the zoning of different activity nodes into separate areas of the city. In Auckland, this is demonstrated by the business zone and the residential sprawl of suburbs which have created “intolerable rifts in people’s inner lives.” As one’s workplace is separate from their homes because of zoning, they are forced to emotionally and psychologically accept that they spend the greater part of their working life at work, and away from their families, due to the distance required to travel to work. This degree of separation “reinforces the idea that work is a toil, while only family life is ‘living’.” Alexander called for the need to re-establish the connection between living and work, in which workplaces need to be distributed throughout the area where people live (with

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10 ibid., pp. 89.
12 ibid., pp. 23.
13 ibid., pp. 52.
14 ibid., pp. 53.
the exceptions of workplaces that are noisy and hazardous to the community and need to be protected from the community) to enable a mixture of different activities within the same community. This allows the option for family members to arrange workplaces close to each other and their friends, giving them the opportunity for interactions during breaks. This also raised the opportunity for one’s workplace to be within walking distance of one’s home, reducing the need to spend long hours commuting to and from work. Alexander argued that with such strong connections between work and life, the workplaces themselves will “inevitably become nicer places, more like homes, where life is carried on, [and] not banished for eight hours,”15 and therefore creates a better and happier community.

Peter Blake, in his book, *Form follows fiasco*, accuses the decentralisation of activity zones, the approach of urban communities shifting further away from downtown to suburbs through zoning, of having led to the reliance of automobiles and the construction of highways to accommodate this way of life. Blake has described: “modern dogma has one built-in constant, decentralisation [of functions], which inevitably leads to hundreds of million wheels, millions of miles of highways and the wholesale destruction of the natural environment that goes with this.”16

### 3.3 The Problem of Automobiles

Blake also outlined that the failure of modern planning is due to the fact that it provides a design for the efficient usage of the automobile, rather than to the scale and needs of man, where cities and streets have been designed to restrict pedestrian movement. He describes that while the modernist approach of planning eliminates the streets due to health reasoning caused by the industrial revolution in the 1800s, planners have also removed the “most vibrant, exciting, irritating and yet most stimulating of all outdoor spaces.”17 He states that modernist planning lacks man’s primary yearning of small, crowded, dense spaces in which people could rub shoulders and interact, therefore isolating people from interaction from which only pedestrian streets and spaces can provide.

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15 ibid., pp. 54.
16 Blake, *Form follows Fiasco*, pp. 100.
17 ibid., pp. 88.
Blake suggests the ideal planning of the city would instead be a pedestrian-orientated city, with streets and places for concentrations of people, rather than a network of highways which further decentralised cities and enhanced the problem of suburban sprawl.\textsuperscript{18}

Alexander further suggested that these outdoor spaces are missing because so much of the actual process of movement is now taking place in indoor corridors and lobbies, while the automobiles have taken over the streets, and as a result, the street and outdoor spaces are made uninhabitable.\textsuperscript{19}

Alexander also shared his view of automobiles by claiming that cars are only good for long trips while they perform their greatest damage if relied on for short trips inside a community. He proposed a solution to this problem, by suggesting that if communities and towns are divided up into areas about one mile across (approx 1.61km), whereas cars may be used for trips which leave this loci area, while slower forms of transportation such as walking and cycling, will be used within this area.\textsuperscript{20} He described “all it needs, physically, is a street pattern that discourages people from using private cars for trips within these areas, and encourages the use of walking and bikes instead – but allows the use of cars for trips which leave the area.”\textsuperscript{21}

Andres Duany, in his book, *Smart Growth*, also recommends that streets within a community should be narrow and short, and are designed to reduce local traffic to slower speed for pedestrian and cyclist safety. Once these streets become a safe and pleasant place, people are more likely to leave their private vehicles at home, and travel by walking and cycling.\textsuperscript{22}

\textsuperscript{18} ibid., pp.103, 154.
\textsuperscript{19} Alexander, *A Pattern Language*, pp. 489.
\textsuperscript{20} ibid., pp. 64.
\textsuperscript{21} ibid.
\textsuperscript{22} Duany, *Smart Growth*, pp. 7.1, 8.1.
3.4 New Urbanism

New Urbanism is an urban design movement which seeks to solve problems caused by the modernist approach to planning. It is strongly influenced by traditional urban design standards that preceded the rise of modernist planning and the automobile. It relies on researching and studying traditional urban cities to generate various ways and solutions to solve current urban issues. It is based on principles of planning and architecture that work together to create human-scale, walkable communities. The New Urbanist movement believes in the power and ability of traditional neighborhoods to restore functional and sustainable communities.\(^\text{23}\)

New Urbanism is “concerned with both the piece and whole,”\(^\text{24}\) with principles that can be applied at all levels of development ranging from single buildings and groups of buildings to cities and regions. The Charter of the New Urbanism describe that “communities should be designed for the pedestrian and transit as well as the car, and cities and towns should be shaped by physically defined and universally accessible public spaces and community institutions.”\(^\text{25}\)

3.5 Principles of New Urbanism\(^\text{26}\)

These principles provided the criteria which has been considered for this urban development project in order to improve the standard of living and quality of urban life. They are: walkability, connectivity, mixed-use & diversity, quality architecture & urban design, traditional neighbourhood structure, increased density and smart transportation.

Walkability

New Urbanism is focused on creating a walkable community by describing the distance between locations that provide the daily needs for people or public transport stations should not exceed a 10-minute walking distance. Pedestrian-friendly street design (building close to street, narrow, slow speed streets, etc) would encourage movement.

Connectivity

A community with an interconnected street grid network disperses traffic and encourages walking to encourage pedestrian movement. The street is described as ‘a communal room and passage and not just dividing lines within the city’\(^{27}\) and that the continuity of pedestrian movement is dependent on the quality demonstrated by the pattern (alternative paths connecting various destinations), hierarchy and figure (architectural character, such as building height proportions) of the street.

Mixed-Use & Diversity

Providing a mixture of different uses (residential, retail, office, transportation etc) for different segments of the community (ages, income levels, cultures etc) in close proximity is a critical element in creating the walkable community that New Urbanism promotes. This coincides with the walkability of the community where a person is able to reduce the time and distance of travel to places for daily needs because they are close to each other. This also reduces the reliance on automobiles. Single-use function buildings and zones, such as office parks and shopping centres, are considered as the “ingredients of suburban sprawl and the antithesis of smart growth.”\(^{28}\)

\(^{27}\) Elizabeth Moule and Stefanos Polyzoides, “The Street, the Block ad the Building”, in Peter Katz (ed.), *The New Urbanism*, pp. xxii.

\(^{28}\) Duany, *Smart Growth*, pp. 5.1.
**Quality Architecture & Urban Design**

Human scale sets the standard for proportions in buildings, where architectural and urban designs are designed for people, not cars. Architecture is not just the design of the building itself, but also creates spaces (public or private) around with an emphasis on beauty, aesthetics and human comfort.

**Traditional Neighbourhood Structure**

The neighbourhood is seen as the fundamental increment for designing and understanding a community in towns and cities. The structure places the majority of households within a short walking distance to the mixed-use centre.\(^{29}\) Andres Duany described the principles of an ideal neighborhood design as having:\(^{30}\)

- The neighbourhood has a centre and an edge – the centre is always a public space, which may be a square, green or important street intersection, and the edge, in high-density urban areas, is often defined as infrastructure, such as a rail line and high traffic thoroughfares
- The optimal size of a neighbourhood is a quarter mile (402m) from centre to edge – this distance is the equivalent of a five-minute walk at an easy pace
- The neighbourhood has a balanced mix of activities
- The neighbourhood structures building sites and traffic on a fine network of interconnecting streets
- The neighbourhood gives priority to public space and to the appropriate location of civic buildings

Transect planning is used for New Urbanist planning, where the neighbourhood is categorised into each transect area, with the highest density of buildings in the town centre and becoming progressively less dense towards the edge. It is used to create a hierarchy within the neighbourhood which determines the suitable building size and type in each transect area.

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\(^{29}\) Duany, *Smart Growth*, pp. 6.1.

Increased Density

Increasing densities within the community by providing more buildings, residences, shops and services close together enables a more efficient use of services and resources, and also creates a more convenient and enjoyable place to live because of the ability to walk to places comfortably. Higher density places are also essential for creating lively, popular places, and it also makes the urban environment safer because of pedestrian surveillance.

Smart Transportation

The community is to offer alternatives to mobility by creating a network of quality public transportation systems and services which will connect cities with suburbs and towns. Pedestrian-friendly design encourages a greater use of bicycles and walking for daily transportation. Reducing reliance on the automobile is also critical.
3.6 Benefit of Transit-orientated Development

In the United States and Europe, there has been a renewed interest in pedestrian-friendly, transit orientated mixed-use development in recent years, because of the benefits they bring to the residents and businesses within the community, as well as the overall urban environment of the city. The increase in urban density and function has resulted in a better quality of life for residents by providing an improved urban environment to live, work and play. The close proximity of different activities has reduced traffic congestion and reliance on private automobiles.

It has also brought a healthier lifestyle to the residents with more exercise because of the natural increase in walking or cycling, and also mentally healthier as there is less stress because of the reduced need for commuting and travelling.\(^{31}\) Pedestrian-friendly communities offer more opportunities for unintentional interaction between neighbours and others, while contributing to making the streets and square more vibrant and populated, serving as pedestrian surveillance for the area.

As the area becomes more populated due to the increasing willingness to walk and cycle around streets, sales from shops have increased because of the amount of pedestrian flow around the shops. People are more willing to spend as they are spending less on cars and gas, creating a cycle of benefits for residents and businesses.\(^{32}\)

4 PRECEDENT SURVEY OF URBAN DEVELOPMENTS

The following precedents are examples of pedestrian-friendly developments of urban infill and extension, serving to heal the city’s overall urban environment, as they are located on the fringe of their respective cities. The intention of these developments was to re-create the dense, mixed use city of the past by repairing and inserting new urban fabric into the existing city environment. Although the sizes of these examples are significantly larger than my selected site, they provided valuable strategies to how a development can be successful.


The Potsdamer Platz was a revitalised public space and traffic intersection in the centre of Berlin, Germany, after the poor state it has been left after the bombing in World War II. The reconstruction of the area was seen as a critical step to the reunification of Germany after the demolition of the Berlin wall. Master architect Renzo Piano revised the previous masterplan, to propose a dense and visually varied urban quarter which aimed to balance public and private spaces.

Based on the traditional city block in response to the guideline laid down by the city, Piano’s masterplan consisted of a mix of different functions, combining large areas of office spaces with residential, retail and leisure uses. A key element to his design were the open and covered public spaces, with outdoor space, weather-proof atriums and arcades used for circulations, exhibitions and other events with retail spaces along these spaces.33

A new underground railway station has also been designed and constructed, in addition to many bus routes and underground parking spaces, combined to allow for a constant pedestrian flow into the entire development.

The rebuilt Potsdamer Platz has become a popular attraction in Berlin and attracts around 70,000 visitors daily, rising to 100,000 at weekends. The success of this new quarter has surprised many critics who had previously feared that the streets would be dead at night.34

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4.2 Victory District (or Victory Park), Dallas, United States (1999-)

Dallas has been described as an over-developed skyscraper-based central business district (CBD) while scattered with housing for the poor around the city, forming a barrier between the city and the suburbs beyond.

The central area of the city consists of a series of distinct quarters - the CBD, the market centre, West End (a Historic District) and an Arts District, separated by a series of rail track networks and freight yards and by urban freeways.\textsuperscript{35}

Victory District, surrounded by freeways, is proposed to link together these core districts and give central Dallas more of unity. Master architect, Koetter Kim, claimed that “Victory represents one of the last great opportunities to shape the life and landscape of a great American city.”\textsuperscript{36}

The masterplan proposed a mixed-use, street-oriented, largely pedestrian environment with a pattern of open spaces threading through this proposed area, connected to a mass transit railway station serving both this proposed district and the northern area of Dallas. Density and heights of building increases towards the northern end of the site, with medium rise blocks to the south, integrating with the character of the old historic district of West End.

\textsuperscript{35} Powell, \textit{City Transformed}, pp. 26.
\textsuperscript{36} Ibid.

The Temple Bar is a district area on the southern bank of the river Liffey in central Dublin, Ireland. The master project was developed by Ground 91 Architects to restore the image of the city and was seen as the first major step towards bring back the city centre’s residential population who had gradually moved away to the suburbs due to the development policy of the last 25 years.

The aim of the project was to retain and refurbish the surviving historical buildings and infill a number of cleared sites with appropriate new structures to create a mixed-use neighbourhood community.

The project has revitalised the mixed-use area with more shops and restaurants catering for tourists and the local population, and an improved population of around 3,000 people – a ten-fold increase. The masterplan has enhanced the integration of the city by creating new pedestrianised routes and urban squares and space.\(^{37}\)

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\(^{37}\) ibid., pp. 59-63.
5 PROJECT DEVELOPMENT

5.1 Site Analysis

5.1.1 Activity Sectors and Urban Activity

The selected site location is located on the fringe of Auckland CBD, with several activity and function sectors surrounding the area. The following are the particular activity sectors:

- Residential sectors – high-rise residential apartments, hostels and accommodation to the north-west of the site, and medium-density housing developments towards the north. This sector would be one of the primary sources of pedestrian input to the proposed area as they are the residents who live in close proximity. The designed development can provide them with alternative options for their daily needs and transportation.

- Educational sector – Auckland University to the west. A significant amount of students on school days gives the potential to bring in a constant pedestrian flow to the site for the service of the proposed railway station.

- Commercial sector – Business park and buildings are located towards the north of the site. They process similar pedestrian potential to the university with the amount of workers.

- Public sectors – Constitution Hill located beside the selected site and Albert Park further west.

- Entertainment sector – Vector Arena to the north of the site. The proposed railway station would provide an alternative transportation option for the visitors.

- Residential and office sectors of Parnell are situated towards the south-east of the site. The potential of the railway station will provide a transportation option to the residents and workers. A developed community can also convince people to travel between the city to Parnell with the mode of walking and cycling.
Currently this mix of activity is scattered around the site without any sense of access or connection between each other, apart from the pedestrian-unfriendly highway-like roads. Christopher Alexander has described: “community facilities scattered individually through the city do nothing for the life of the city.”\textsuperscript{38} The current urban design does not enable public life to occupy each space as they are all separated and not connected with each other to allow pedestrian access. The intention of the proposed development is to ease the isolation between the activities on either side of the site.

The ‘accessible green space’ of Constitution Hill is not easily accessed without the use of automobiles, or through undesirable pedestrian pathways. This green space provided a rare, but yet undeveloped opportunity to access an urban green space within the city centre (with the exception of Albert Park, which is in close proximately of the hill). Green space was considered as one of the reasons for the rise of sprawl as the urban life crave the need of natural green in a compact environment, the availability and accessibility of green space in an urban environment is considered as a basic right for smart growth. Alexander has also commented: “people need green open places to go to, when they are close they use them. But if the greens are more than three minutes away, the distance overwhelms the need.”\textsuperscript{39}

There is currently a lack of retail space in this area, where the closest would be shops further west into the CBD or south-east towards Parnell. The introduction of retail space into this particular site area could serve the potential customers identified.
Figure 5.5 – Programme and functional diagram of the selected area.
5.1.2 Existing Axis

An axis is the main line of direction organised by the planning and placement of buildings, they provide the viewers, pedestrians or car drivers with a directional element and vista in which they travel along. The street space is no longer considered as being left-over between buildings, but as a spatial element with its own integrity.40

The existing axis on the site consists of the dominating traffic from Stanley Street to The Strand, where freight trucks are accessing from and to the port through the cross-intersection. It is followed by the traffic axis from Beach Road to Parnell Rise. Despite the fact they are dominated by traffic, they can still provide strong axis and vista presenting potential location for landmark intervention terminating at the end of each axis.

Although axis normally refers to paths for pedestrians, this existing street network is made clear and obvious that the dominating factors are the streets crossing through the site. The axis crossing Beach Road and Parnell Rise is seen as a critical axis for this project as it leads to the access to Constitution Hill and is a connection with the city.

Figure 5.6 – Existing axes with potential location of a landmark intervention.

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5.1.3 Traffic and Pedestrian Flow

According to data from the Auckland Transport department, traffic travelling from Stanley St across The Strand accounts for a daily rate of more than 15,000 vehicles in both directions. The daily rate record for crossing Beach Road and Parnell Rise is 10,000 both ways. And the turning vehicles at the cross-intersection record 12,000 vehicles daily at all directions.\(^{41}\)

Despite the fact that the dominating factor is traffic flow between the cross-intersection, statistics from the Auckland Transport department actually show that there is a decent amount of pedestrian flow crossing this junction to access between the city and Parnell. Numbers ranging between 500 pedestrians flow recorded during the morning shift, and up to 700 during night shift, accounted for the daily pedestrian rate of approximately over 2000 through this particular pedestrian-unfriendly junction.\(^{42}\)

With the high-speed Stanley Street – The Strand intersection dominating the site, the urban design solution would be required to be made to reduce the impact this highway has on the site. Alexander has said: “high speed roads do enormous damage when they are badly placed. They slice communities in half, and create enormous noise.”\(^{43}\) The suitable solution to be considered would be to shield the road, both visually and acoustically, by sinking the road as a tunnel or modify the traffic pattern; therefore it is isolated from the urban life occupying the area.\(^{44}\)

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\(^{44}\) ibid., pp. 98.
5.1.4 Notable Buildings and Space

Kevin Lynch identified in his book, *The Image of the City*, nodes and landmarks as two of the physical elements which present to the public an image they will remember as the area and the city. Both nodes and landmarks are points of reference in a community and city where the observers identified their location within the area. Nodes are strategic spots in a city which an observer can enter, and which are the intensive foci to and from which they are travelling, they may primarily be junctions and crossings. Landmarks are similar but are physical places that observers cannot necessarily enter, in the form of buildings, monuments or mountains.  

The existing nodes and landmarks within the area included:

- The tall apartment and accommodation buildings along Beach Road.
- The hotel and student accommodation buildings along Anzac Avenue which can be seen from the selected site.
- Constitution Hill.
- The former Parnell Hotel building, at the corner of Parnell Rise and Stanley St.
- The office building at the corner of Parnell Rise and Shipwright Lane.
- The railway track over-bridge.

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5.1.5 Site Photos

Figure 5.13 – Streetscape Elevations.
Figure 5.14 – Streetscape Elevations.
5.1.6 Parnell Train Station

In early 2011, Auckland Transport confirmed that they are considering the construction of a niche station for Parnell to be situated at the foot of the Domain near the Steam Train Depot, with the intention of providing train servicing for both Parnell and the Auckland War Memorial Museum. The proposed planning of the station re-ignites previous discussions regarding whether or not the proposed location is appropriate and can effectively fulfill its intention. The question regarding the proposed location limiting its potential to be used as a university station, as the distance required to travel to this proposed location is equivalent to the distance of travelling to the Britomart station near the city’s waterfront. Many suggested that it should be situated further north of Parnell, so it could serve both the university and the growing employment node in northern Parnell, and around the nearby recently-developed Carlaw Park.

My proposed train station is located at the north of Parnell. It is recommended by Smart Growth that all neighbourhoods are to be designed with the ability to plan and support transit services when available. Every transit trip begins and ends with walking, the popularity of each particular ride will increase with a more pleasant urban environment around the station. The improvement of the urban environment is the basis of this research project. Studies also show that residents will readily walk 10 minutes to a rail stop for mobility, which is equivalent to an estimated pedestrian catchment of approximately 1km.

Both the Auckland Transport proposed southern site and my proposed northern site location can service Parnell. The southern site will provide a shorter but steeper and more convoluted route, while the northern site provides a longer, but less steep and more legible route from the Parnell centre.

By comparing the pedestrian catchment area of the two proposed areas (the council proposal and my proposal) with a 750m radius circle loci, representing as a 5-10-minute walking distance. The southern site at the valley accounts for an estimated catchment of 1,780 people and 730 households, and the northern site records 3,600

\[\text{Figure 5.15} – \text{Location of the proposed train station in Parnell.}\]

\[\text{Figure 5.16} – \text{Location of the proposed southern location and my proposed northern location.}\]


people and 1,600 households. This analysis, however, is only a rough estimation, as it did not take into account the factors affecting the usage of a station in this location, including the difficulty to access the place and the alternative transport options offered. Nonetheless, the numbers show there is a higher potential of users in the northern site than the southern site, without accounting for the workers, university students and visitors in the area.

With the increase in density generated by this research project’s urban development, along with the ability to service as a university station, Vector Arena and business developments identified around the site, the northern site can be considered as a more suitable place to locate a new railway station.

Figure 3.17 – Catchment area of both locations.

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5.2 Programme Brief

Through analysis of the function and activities of the buildings within the site, each building is identified as to whether they are sufficiently or insufficiently developed and contribute to providing node and density within the area. The appearance, shape and size of these buildings has also been analysed as to whether they contain the potential for being a significant building within the area, and serve as a landmark building for people to identify their location within the community.

Underused buildings and land which is not used efficiently and effectively are the particular areas of the site this project is focusing on developing. The analysis also presented the functions of existing buildings within the community, and identified the specific functions and activities that are currently not seen in the area, as well functions that will assist in creating a series of lively and vibrant urban spaces.

**Total Site Area:**

<table>
<thead>
<tr>
<th>Without road:</th>
<th>36,200 m²</th>
</tr>
</thead>
<tbody>
<tr>
<td>With road:</td>
<td>53,200 m²</td>
</tr>
</tbody>
</table>

Proosed building massing footprint: 15,200 m²

Proposed public space - square, plaza, passages and paths: 21,000 m²

**Project form**

- Residential
  - Total approximate residential area: 28,000 m²
  - (8,000 m² footprint, 1st floor upwards, 3-4 floors)
  - Apartment Units: Studio 30m² x 80 units
  - 1 Bedroom 50-60m² x 80 units
  - 2 Bedroom 70-80m² x 90 units
  - 3 Bedroom 90-100m² x 85 units
  - Circulation and service space 10-15% of total area

- Retail
  - 12,000 m²  
  - *ground and 1st floor retail*

- Office
  - 10,000 m²  
  - *office building and spaces*
• Train Station 4,500 m² ground and 1st floor rail terminals and bus stop
• Others Art, cultural and entertainment facilities – Galleries, Theatre

A range of dwelling types, from single unit studios to three-bedroom suites, has been proposed because an authentic community social network depends on the presence of diversity of ages and incomes, and with this availability of affordable housing, it will provide a healthier social environment. ⁵⁰ High density housing is often recommended within a community, as it places more people on less land and helps to preserve open space. In effect, as density supports public transportation systems, it reduces the dependence on the automobile. ⁵¹

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⁵⁰ Duany, *Smart Growth*, pp 5.3.
5.3 Design Strategy

For a successful urban development, several urban design strategies and factors need to be considered throughout the design. The traffic problem identified in the analysis is required to be solved for a more pedestrian-friendly environment, while the space of the entire site needs to be planned and shaped to support this intention. It is the combination of effective traffic management and quality urban design that will make this project successful.

Christopher Alexander states that although cars are dangerous to pedestrians, activities are most likely to occur where cars and pedestrians meet, because of the fact that they need each other in order to see and to be seen. He suggests that planning-wise, two networks are required, one for cars and one for pedestrians, and to intersect them perpendicular to, not parallel to the road, these intersections will serve as the entrances towards the public pedestrian spaces.

Andres Duany writes that each pedestrian-friendly community should provide a variety of public places, with a well-defined plaza or square, marked as its social centre. Alexander commented that these outdoor spaces shall not be ‘left-over’ spaces after buildings are placed, which are shapeless and negatively defined. Rather these should be positive spaces, in which they have a distinct and definite shape, and are considered equally as important as the shape of the buildings which surround it. The planning of the building masses and the outdoor spaces are to be done simultaneously as they are dependent on each other.

Alexander further suggested these outdoor spaces typically work best when they have a diameter of about 18m to 21m, before they begin to look oversize and feel deserted. He describes that as a person’s face is just recognisable at about 20m, and a loud voice, under typical urban noise conditions, can just barely be heard across 20m, suggesting that people feel “consciously tied together in plazas that have a diameter of 70 feet or less [21m of less] – where they can make out the faces and half-hear the talk of people around them.”

Streets and paths connecting these spaces are also required to be designed for people to stay in, not just for

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52 Alexander, A Pattern Language, pp. 272-274.
53 Duany, Smart Growth, pp. 5.9.
54 Alexander, A Pattern Language, pp. 518.
55 ibid., pp. 312-313.
circulation. The shape of the path is one critical factor to achieve this, by creating the ends narrower, the paths form an enclosure which attracts people in.56

The depth of the building masses also have an impact in creating quality urban environments in both indoor and outdoor spaces. The optimum building depth is recommended to be 9-13m, which will provide naturally lit and ventilated space from the façades of the building.57 Many modern buildings have been designed with overly large floor plates and permanently sealed windows; this approach has generated greater long-term costs although it has reduced the initial cost. Deep buildings lack sufficient natural illumination, which would require more artificial lighting, as well as air-conditioning devices for adjusting the ventilation and environment of these spaces.

In regard to building heights, Duany recommended that high-rises and skyscrapers should be limited only to urban areas which are well-served by transit. High-rises bring a high demand for parking that cannot be satisfied in a pedestrian-friendly manner if not support by an efficient public transportation system.58 Tall buildings have many disadvantages as they generate an urban canyon effect, which will over-enclose the street and urban spaces to a degree that does not allow a satisfactory level of sunlight and wind to enter, affecting the temperature, air quality and level of comfort of the space for people to occupy within.

Alexander suggested in his book, *A Pattern Language*, the psychological disadvantage of high-rise buildings. “There is abundant evidence to show that high buildings make people crazy.”59 Alexander presented evidence and findings from research conducted by D.M. Fanning, showing that there is a direct relationship between the incidence of mental disorder and the height of people’s apartments, with the conclusion drawn by Fanning suggesting that “the higher people live off the ground, the more likely are they to suffer mental illness.”60

Alexander further suggested that a possibility of this observation is that high-rise living takes people away from the ground, and away from the casual, everyday society that occurs on the sidewalks and streets. “The decision to go out for some public life becomes formal and awkward; and unless there is some specific task which brings people out in the world, the tendency is to stay home, alone. The forced isolation then causes individual

56 ibid., pp. 591.
57 Davis, *Urban Design Compendium*, pp. 94.
58 Duany, *Smart Growth*, pp. 10.5.
60 ibid., pp. 116.
breakdowns." He recommended that residential housing should be kept at mid-rises, where the connection with the street is still maintained, by the mean of the visual connection one can still experience the life of the street and space, and that they can still walk comfortably down to the space. 

The ratio of width of space to height of enclosing buildings is also critical for good urban design. Ralf Weber suggested that generally “the more enclosed the shape, the stronger the figural quality.” The degree of enclosure is important in designing urban spaces as they do not have a top boundary (roof or ceiling), and boundary-defining elements like roof overhangs and eaves are used to enhance closure. It is suggested a height-width ratio of 1:7 is the maximum in which the sense of enclosure may still be maintained.

The design project starts on the basis of these initial urban design principles and guidance.

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61 ibid.
62 ibid., pp. 118.
64 ibid., pp. 150-151.
6 DESIGN SOLUTION

Figure 6.1 – Proposed development masterplan
Figure 6.2 – Proposed development masterplan, showing the axes, spaces and important buildings.
Figure 6.3 – Proposed development axonometric.
Figure 6.4 – Traffic flow analysis of the existing planning, showing the dense traffic at the cross-intersection.

Figure 6.5 – Traffic flow analysis of the proposed planning, showing the traffic being defuse around and under the site. The two T-junctions and the underground tunnel combined to create an improved pedestrian environment.
6.1 Roading System

As discussed in the site analysis, the traffic flow around the busy cross-intersection is a major issue to solve in order to create a livable environment within the site. The new roading system proposed an underground tunnel passage connecting Stanley Street and The Strand, with the access for the Stanley Street end prior to the Beach Road intersection, and the entrances for The Strand’s end is proposed to be situated prior to the Ronayne Street junction. The tunnel will serve to deviate the density of traffic travelling between State Highway 16 and the ports away from the cross-intersection by creating a specific direct passage.

The selected part of The Strand, between the Beach Road intersection and Ronayne Street junction, is now re-structured as built land. Vehicles turning from Parnell Rise to The Strand will now use the Shipwright Lane, while vehicles turning from and to Beach Road will now use Ronayne Street. A new roundabout is placed at the junction of Ronayne Street, The Strand and Shipwright Lane for directing the traffic flow accordingly.

This new roading scheme converts the existing cross-intersection into two separate T-junctions. Analysis of the geometrical arrangement of a cross-intersection shows it consisted of 16 major collision points, as compared to three for each T-junction, drawing the conclusion that traffic accidents are far more frequent at a four-way intersection than at a T-junction. Influential urban designer Carmillo Sitte argues that to bring each street singly into another produces the minimum number of collision points, and is therefore the best for traffic, and that the junction of more than four streets at one point must necessarily be very dangerous and undesirable. These T-junctions also secure close street vistas to further improve the pedestrian environment of the area, presenting the opportunity for a memorable landmark. This is also because the vistas that run straight and far into the distance have a tendency to cause drivers to speed.

The existing Churchill Street is now connected and modified as a single-way route for the turning vehicles from Stanley Street to Beach Road. This new slow-speed lane has allowed for more pedestrian movement across the T-junctions, as the majority of the vehicles are travelling between Beach Road and Parnell Rise, in parallel to the

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65 Alexander, A Pattern Language, pp. 264.
67 Duany, Smart Growth, pp. 7.6.
public travelling along the sidewalk.

Within this new roading system, the traffic density has been significantly scattered around the site. The original concentrated cross-intersection (currently presented as a T-junction), is now primarily used for traffic along Beach Road and Parnell Rise, with turning vehicles on and from Stanley Street and Shipwright Lane. Subsequently, the amount of traffic flowing through the former cross-intersection has been conservatively estimated to be at least halved.

Pedestrians tend to feel unsafe and unsettled when crossing at intersections when there are moving vehicles within their sight. This is due to the fact that the cars still possess the power to frighten and subdue the people from walking across, even when the people walking have the legal right-of-way.\textsuperscript{68} As a result of the diffused traffic flow, the junction becomes a more pedestrianised place and serves to improve pedestrian movement by providing them with the necessary comfort to encourage them to cross the intersection.

In addition, Alexander also commented that the pedestrian will have more comfort if the crossing paths are raised and sloped from the roadway by 15-30cm, and marked with a form of a canopy or shelter, to ensure cars are crossing the pathway slowly.\textsuperscript{69} The sidewalk would need to be wide enough to keep people away from the moving vehicles and high enough so that it is difficult for vehicles to drive onto them by accident. He suggested that the sidewalk should be more than 3.5m wide and 45cm high.\textsuperscript{70}

6.2 Space Planning Arrangement

Within the urban masterplan, a range of spaces and passages of different hierarchies of enclosure, shape and size has been proposed. These are the squares and plazas for the public to occupy and access where unintentional interactions can occur, an important element the current planning approach lacks.

There are four urban spaces which are considered to be the nodes or focal points of the entire development. They include: the two spaces on the western and eastern side of the railway station, the Constitution Hill entry space and the urban space between Churchill Street and Stanley Street in the northern perimeter of the related site block.

\textsuperscript{68} Alexander, \textit{A Pattern Language}, pp. 281.
\textsuperscript{69} ibid., pp. 283.
\textsuperscript{70} ibid., pp. 287.
These are the spaces where the main pedestrian axes run through perpendicularly and are the likely locations to be crowded by the public.

There are several vistas and axes that can be considered to be important in connecting and integrating this area, and the surrounding context. They provide a network of alternative pedestrian pathways for the public to get to their intended destination through these pedestrian-friendly routes away from the roadways. This includes the following:

- An axis extending eastward from the Constitution Hill entry space, across Beach Road, through the railway station and its adjacent public square spaces, and towards the entry space at the eastern perimeter, with the vista terminating at the tower or fountain at the roundabout (this axis is now conveniently referred to as the Constitution-train station axis).
- An axis extending from the north-western junction of Beach Road and Ronayne Street, to the railway station’s western square space, with the vista terminating at a landmark building beside the square, and the view towards the city centre at the other end (this axis is now conveniently referred to as the inner street axis).
- An axis extending northwards from the junction of Alten Road and Stanley Street to an iconic building on the northern perimeter of the same block.
- An axis extending south-eastward from Constitution Hill entry space, towards the former Parnell Hotel building.
- Two axes from Constitution Hill, extending northward to the existing student accommodation building on Beach Road, another extends southwards and occupies the sidewalk of Churchill Street.

The irregular pentagonal (or truncated triangular) planned building mass at the southern end of the inner street axis, beside the eastern station square and the T-junction (formally the cross-intersection), is proposed as a building that would become iconic to the area due to the degree of public exposure drawn from its location, as it is placed along and at the end of several axes and served as a nodal place-marker for the square. The bus station has also been re-located beside this building because of the exposure and the ability to interconnect with the railway station.

The access pathway through Constitution Hill to its entry space serves as an important connection between the city and university with the development. Alternatively, they may access through Alten Road along the western perimeter of the hill. The connectivity and walkability of the development with the city and Parnell has been further
enhanced by the design of two alternative pedestrian routes from Anzac Avenue and Augustus Terrace.

The pedestrian route connecting with Anzac Avenue is located beside the notable student accommodation building uphill and creates a focal and nodal point at this end of the development. A new staircase and access space is proposed between Shipwright Lane and Augustus Terrace on the currently under-developed site of a parking structure, with a pedestrian bridge crossing the road to present a more convenient access between the development and the commercial offices at the northern end of Parnell, and serves as an alternative route for the pedestrian movement from Parnell.

6.3 Allocation of Functions

Allocations of the functions for the new buildings within the area of development have been developed simultaneously with the process of developing the urban proposal. It is proposed to be mixed-use buildings where the ground floor is allocated for mainly retail shops, with offices situated at quiet locations. Residential units are situated on the floor above, with the exception of underneath the railway bridge and designated railway station and office blocks. The mixture of these functions is a key component to achieving the objectives to creating a dense and mixed-use community.
7 DESIGN PROCESS

7.1 Preliminary Proposal – Urban Design

The initial layouts explored the arrangements and possibilities in which the selected area could be designed and shaped to create different urban spaces and passages for safer pedestrian access between the CBD and Parnell.

7.1.1 Roading System Change One

The three preliminary concepts incorporate the use of an underground tunnel passage connecting Stanley Street with The Strand. As a result, the traffic lights at the intersections will only apply for traffic turning onto, and from, Beach Road and Parnell Rise.

The third urban design concept utilised an advanced version of an underground tunnel system, replacing the existing Beach Road to give an un-interrupted connection between the two adjacent site blocks previously separated by the road. However, the benefit of this tunnel is far more inferior than the proposed sunken highway, as the tunnel has little or no effect in reducing traffic flow through the site, as it only serves to separate the street from the pedestrian paths and does not divert vehicles by comparison to the previous scheme.

Another scheme attempted was two separate underground tunnels at the intersection where the cross-intersection on ground level is left solely for the turning vehicles. This scheme, however, was far-fetched as the contours restrict the probability of this system, along with the difference in height between the lower tunnel and ground intersection.

7.1.2 Space Arrangement

Each concept shows a proposed open entry space serving as the access at the bottom of Constitution Hill beside Beach Road. A range of spaces and passages of different hierarchies of enclosure, shape and size are explored throughout these developments. The first proposal also has a pedestrian route connecting the development and Anzac Avenue, located beside the notable student accommodation building uphill.
The first urban proposal was chosen as the basis for further development, while incorporating other ideas demonstrated in the other two preliminary proposals.
Figure 7.5 – Urban planning layout proposal two.
Figure 7.6 – Urban planning layout proposal three.
7.2 Development Stage One – Urban Design

7.2.1 Roading System Change Two

The previous roading change separated the direct route of Stanley Street to The Strand from the original cross-intersection. Traffic flowing from The Strand to Parnell Rise is also excluded from the intersection with vehicles turning on Shipwright Lane.

The existing Churchill Street is now connected and modified as a single-way route for the turning vehicles from Stanley Street to Beach Road. This new slow-speed lane will further reduce the turning traffic at the cross-intersection as the traffic has been spread to this route. Along with Shipwright Lane and the proposed tunnel, it has allowed for more pedestrian movement across this junction, as the majority of the vehicles are travelling between Beach Road and Parnell Rise, in parallel to the public travelling along the sidewalk.

7.2.2 Exploration of Space Arrangement and Axis

The three developments explore how large public spaces can be formed and connect with several new axes, extended from different locations and nodes of the site to create vistas and movement patterns. From these explorations, there are several vistas and axes that can be considered to be important in connecting and integrating this area, and the surrounding context, which are used for further development and enhancement in latter development schemes.

7.2.3 Compositional Problem of Train Station with the Development

The location of the train station in these developed schemes has been laid alongside the existing railway track, above ground and crossing over The Strand. Compositional problems arise with integration of the station with the proposed development and the respective context, due to the angular nature of the tracks entering the site, virtually dissecting the area and creating uninhabitable and undesirable angled building masses and spaces.
The railway line also isolates the north-western corner building of the Beach Road-The Strand block from the rest of the site, and the island block adjacent to Shipwright Lane, with the latter block further isolated by the roadways around. This isolation has no benefit in creating a pedestrian linkage between Parnell and this proposed development as they are not united in composition.

One of the solutions explored was to close off the existing Shipwright Lane, enabling the integration of an inhabitable Parnell Rise corner block with the existing building block along the road. However, by eliminating this roadway, it increases the traffic flowing through the cross-intersection, while the other corner block remains isolated.
7.3 Development Stage Two – Urban Design

7.3.1 Roading System Change Three

Through explorations for the solution for solving the problem of isolation created by the railway track, it has led to revisiting an idea explored from the preliminary layout scheme. The roading change applied to the selected part of The Strand, the section between Beach Road intersection and Ronayne Street junction, is now re-structured as built land. The proposed underground tunnel route of Stanley Street and The Strand is extended further beneath the site with the entrance for The Strand’s end now proposed to be situated prior to the Ronayne Street junction. A new roundabout is placed at the junction of Ronayne Street, The Strand and Shipwright Lane for directing the traffic flow accordingly. The new roading scheme converts the existing cross-intersection into two separate T-junctions.

This roading scheme enables the integration of the two isolated blocks with the removal of the road, allocating extra space for the railway station to be located, and enabling an improved integration of the isolated blocks with the rest of the site.

This new roading system has significantly scattered the traffic density around the site. As a result of the diffused traffic flow, the junction becomes a more pedestrianised place and serves to improve pedestrian movement.

7.3.2 Exploration of Axis and Spaces

The previously mentioned axes are maintained and modified within these schemes. The first priority of this stage was to form the building mass for the train station, in the centre of the large integrated block along Beach Road and Shipwright Lane. A new open space is formed at the north-eastern end of the block due to the extension of land gained from the roading change, and is linked and connected to the Constitution-train station axis. An iconic building is situated at the end of this axis to terminate the vista with a memorable view, or alternatively left open to an extended vista.
viewing a nodal point at the roundabout, in the form of a tower or fountain to mark its position.

The former Churchill Street is shifted eastward to enable building masses to be formed on either side of the roadway, shaped to create spaces of different hierarchy of enclosure, size and function. This will establish a different sense of urban experiences for the by-passing traffic and public upon entering these spaces through the street and adjacent walkways. The partial closing-off of the vista also enables the drivers to slow down through this urbanised street.

The second development modified and positioned a large gathering square space in front of the train station on its western side entry, while maintaining the previously mentioned Constitution – train station axis. A secondary space is formed in front of the eastern entry of the station, serving mainly for the building masses on the eastern part of this particular site block and provides the public with an alternative access space from and to Parnell. An emergency and service lane, which is used primarily at night, or early morning, when it is not used by the occupants and general public, are placed along both sides of the station, accessing between Beach Road at the T-junction and Ronayne Street.
7.4 Development Stage Three – Space Planning of the Block

The progression of these developments has led to further focusing on the site block between Beach Road and The Strand where the train station is situated. The angular compositional arrangement of the station has created differences in the composition layout on either side of the site, affecting the unity of the block, of which Cliff Moughtin has described as one important aspect in design.\(^71\)

Several factors have caused this problem in composition: the angular nature of the perimeter of this site block as building masses has been placed along the perimeter of the site, the angular nature of the railway station which is aligned with the existing tracks, the angular nature of the Constitution-train station axis and the inner street axis.

The following schemes illustrated the explorations of how the layout of the entire block can be altered and composed in an integrated fashion. Currently the western side of this particular block is planned with a relatively informal approach, due to the presence of the inner-street axis, while the eastern side appeared to be relatively formal.

Throughout these developed schemes, the building mass of the railway station has been shaped and modified and angled to create a unity with the inner street axis. The shape and size of the two square spaces and its pathways on either side of the station are also modified for this purpose.

The progression of these developments led to the final planning scheme. It has been selected due to the way the building masses are layout in an integrated composition. In additional to the axes and building masses described previously, it featured a setback of the building masses along the eastern Ronayne Street perimeter of the block. The north-facing setback provided sunny spaces to this relatively quiet end of the block to increase the likelihood that people will use this space.

Figure 7.19 – Space planning development two.

Figure 7.18 – Space planning development three.

Figure 7.21 – Space planning development four.

Figure 7.20 – Space planning development five.
Figure 7.22 – Proposed development axonometric.

Figure 7.23 – Masterplan showing the axes (Red), main spaces (orange) and iconic buildings (blue).
8 DEVELOPED DESIGN

8.1 Developed Design – Residential Units

The apartment units are planned with the intent to create quality indoor space for the occupants. The modern planning of residential units is often observed with just one opening, regardless of it being a studio or one-bedroom unit. Alexander criticised this approach as he described: “rooms without a view are prisons for the people who have to stay in them,” and claimed it is essential to have a window opening for each bedroom and living room to allow for the entrance of daylight into the space, as well as the ability to ventilate the space. The opening served to establish the connection between the occupants and the outer world with the ability to refresh themselves by looking out into the open.

The living room is considered as the first and main space to be planned and shaped, as this is where the resident will likely occupy the most during the day, as opposed to modern apartment planning, where they tend to be the shapeless, left-over space which is planned last. Due to humans’ phototropic nature, where they tend to move towards and occupy spaces that are defined by light, this space is mainly placed orientated north and east if able to in this project, the exception of the placement being the living area facing the outdoor public realm which is to form a visual connection with the outer environment, rather than to the inner courtyards. Balcony and verandah space are placed to further enhance this connection.

The spaces in each building are arranged in a sequence of ‘intimacy gradient’ which corresponds to their degrees of privacy. Transition from the outdoor public spaces begins from the entrance, towards the entry hall space, which leads to circulation components in the form of elevator and staircase, onto the partially enclosed semi-private corridor space and eventually leads to the private realm of the apartment units. Each transition has been carefully designed by the layout arrangement

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73 ibid., pp. 645.
74 ibid., pp. 611.
and different components, such as the enclosing of the hall spaces by extending the walls and set-backs of the entrance for each apartment unit.

Transitions occur within an apartment unit as well. The entry space serves as the transitional space between the private and public space, this is also the location where the occupants or visitors can remove their gear, such as boots and coats, and enter into the realm of the living room, away from the personal realm of the bedrooms.

Figure 8.3 – Typical floor layout plans, showing the transition between each space.
8.2 Developed Design – Building Façade

As this is a large scale urban design project, the primary focus was to create quality pedestrianised outdoor spaces and to develop a traffic network and planning which separates the vehicles from the pedestrian. They combine to form the basis for a successful urban development, and are not on the basis of an architectural style, in which the architecture design of the building masses can be of any particular style.

In a large scale urban design project, as seen in the examples in the precedents research, it is very likely to have several architects who would work on planning and elevation solutions on selected building blocks according to their own preference and beliefs. The purpose of the urban design is to offer the condition of which these building can be formed, such as level of stories, building height and width, and the relationship of the building with its context.

For this research project, the planning of the buildings and the façades are intended to be individually contracted to different architects to incorporate their individual preference of character and style. The following façade treatment appears to be of a traditional style and many architects may not choose this approach, however it is done based on my own personal preference to provide a possible appearance and strategy.

The proposed façade is a combination of different traditional architecture designs, with a variety of different proportions, sizes, shapes, building fabrics and materials along a streetscape. The two façades developed are the elevations along both sides of the inner street axis.

The building façade portrayed a single building block to a building complex with different variation of appearances, diversities and social characters. It gives the occupants the ability to differentiate their own apartment units from others even by the smallest of differences such as size and amount of window opening.

It gives a different sense of character and appearance as the public move and circulates along and through the adjacent outdoor passages and spaces. They can also give the public different nodal points

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75 ibid., pp 469-470.
in which they may identify as one of intermediate destinations, or temporary goals, to guide them to flow towards their desired locations. For example, if one is walking along Beach Road from Vector Arena with the intended destination being the train station, they might identify one or several of these façades as a reference point for the correct direction to reach the station, because they are each different to one another. Monolithic appearance buildings on the other hand, which look identical in their façades, are difficult to serve this purpose.

Figure 8.7 – Elevation exploration two.

Figure 8.8 – Elevation exploration three.

ibid., pp. 586-587.
Developed Design – Outdoor Space

A clear balance of connections between the open spaces is composed on the ground floor of this urban development. This includes the accessible semi-public spaces and courtyards in the centre of the building blocks, which are primarily used for social functions including activities such as play and recreation. These open spaces are the common land used by children with playgrounds and green area, and are separated from the general public streets for safety as these spaces are accessible but are enclosed by the building. Passages and arcades on the building’s ground floor serve as transitions between the public and semi-public realm.

Within the open public spaces and passages, different elements and components are used to mark and define their boundary and functions. The use of level changes, street pavings, trees, lightings, fountains, seating and other street furniture enable these open spaces to be worth occupying and not just simply as a circulation pathway. There are several public outdoor rooms located along the axes within the urban development in the form of an enclosed hut-like structure, with roof but without walls. These are spots along the pedestrian streets which people will use for different functions, from hanging out comfortably for hours observing pedestrian movement, to waiting spaces for friends and interactions.\(^77\)

Each public space consists of a component situated in the middle (or slightly in the middle) in the form of a tree, fountain, statue or clock-tower. This will help to draw people in towards the square as they are seen as nodal points.

This variety of open spaces of different hierarchy generates interest for the public; as Alexander suggested, it is human nature that when they are within a particular space, they will tend to seek and look out beyond the space immediately in front of them, and flow through around the other spaces.\(^78\)

Arcades and overhangs are used between the interface of the buildings and outdoor door spaces. These covered walkways at the edge of the buildings, which are partly inside and partly outside, serve

\(^77\) ibid., pp. 350.
\(^78\) ibid., pp. 558.
a transition and territory between the public and the semi-public, in the form of shops, or a private realm, in the entrance to the apartment or office units.\textsuperscript{79}

An arcade is also proposed in the ground floor of the train station to provide a covered pathway connecting the station’s eastern and western public square spaces, and accessing the railway tracks above.

\textsuperscript{79} ibid., pp. 581.
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9 CONCLUSION

9.1 Summary

The selected site illustrated the typical problems caused by the modernist planning approach, situated on the fringe of the two very different building and planning cultures of the city and Parnell. The final design proposal presented an architectural solution for this under-developed intermediate area, creating a pedestrianised link between the two subcultures by the reduction and spreading of the traffic flow system around and offering urbanised passages and spaces away from the vehicles.

The urban proposal promotes walkability by proposing a development with mixed use, medium to high-density housing, commercial offices and community-based retail.

The connectivity of the site has been improved by the diffusing of traffic flow within the site, which enables the junctions to be more pedestrian friendly to allow for the connection with the city centre and Parnell. The addition of the staircases and pedestrian bridges from Anzac Avenue and Augustus Terrace has enhanced the connectivity of the development with the surrounding context.

9.2 Critical Appraisal

In regard to the urban design, success can be judged by creating a pedestrian-friendly environment at a challenging location dominated by the highways and railway track. The proposed roading schemes have successfully treated the traffic problem by sinking and diverting the traffic flow below and around the site, rather than being concentrated at the cross-intersection. The initially disturbing element of the railway tracks has become a key component of this development with the proposal of a railway station to connect with the public transportation system. The area has become more urbanised and livable, setting the foundation for the development to become a success.

By designing a mixed-use community within this area, it has offered retail spaces and quality urban spaces which were previously unseen. As the pathways have been more pedestrianised, the likelihood of the local residents
walking and cycling in this area for daily needs will increase and will serve to reduce the reliance on private automobiles.

With the increase of density within the area by the influx of the residential and retail buildings, this site will be a more feasible option for the railway station than the Auckland Transport proposed location, as it will service the wider context of Parnell and the university.
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