

# **Te Raranga Tamaki a Te Manawa**

Weaving Auckland & Westgate

James Kane Robertson  
20112865

A Master thesis submitted to Auckland University Of Technology in partial fulfillment of  
the requirements for the degree of Master of Architecture (Professional)

Future Neighbourhoods  
School of Future Environments  
2025



*The Harakeke is a symbol of growth through the Thesis,  
Showcasing readers new breath of knowledge being learned,  
developed, integrated and established within the contents of  
these pages*

Figure 1: Planting the Harakeke (2025), Authors Artwork

*This page has been deliberately left blank*

## **Abstract**

Weaving Tamaki & Te Manawa is a design-led research inquiry into Tamaki Makaurau's dynamic rhythms in the city. It shows how rhythmanalysis investigation can be a critical tool for remediating our arrhythmic urban fabrics. Through this Lens and crucial engagement with Transit-Oriented Development (TOD), the intended research aims to understand the outcomes of Te Manawa's conflicting rhythms and how TOD can serve as a stakeholder for transforming its synergy into a cohesive, eurythmic urban environment. By taking the research application into a dominant car-dependent setting, we can better understand its conflicts and how Rhythm transformation is applied through design.

Through the examination of historical, current, and future planning ideologies, the design project critiques the fragmented urbanism that has shaped Tamaki Makaurau and proposes an alternative planning trajectory that addresses the arrhythmia of sprawl, ecological degradation, and social disconnection. The design process employs adaptive planning-scenario strategies and interventions to explore how the rhythms of the urban fabric in Te Manawa could be altered through TOD implementation.

Through this design speculation, the study will help argue whether coordinated and interdisciplinary approaches, such as those from rhythmanalysis through the vessel of TOD in Te Manawa and Tamaki Makaurau, are appropriate substitutes for fostering ecological and social regeneration (Eurythmia). Instead of proposing an alternative strategic master plan for site intervention, the final output will demonstrate how rhythmanalysis can be combined with Transit-Oriented Development (TOD) principles to interpret and reshape the temporal and spatial rhythms of urban life. This approach illustrates that a coordinated design framework for combating arrhythmia in Tamaki Makaurau can be both effective locally and serve as a model for broader applications across Aotearoa.

## **Pepeha**

I tipu ake ahu tata ki tokatoka te maunga

Ko Wairoa te awa

I tipu ake au ki Takiwira

No Kotarana oku tipuna

Ko Kane toku ingoa

Ko tenei taku mihi ki nga tangata whenua o te rohe nei

Ka mihi hoki au ki nga tohu o te rohe nei

No reira, tena koutou katoa

The Mountain I grew up near is Tokatoka

Wairoa is the river

I Grew up in Dargaville

My ancestors are from Scotland

My Name is Kane

I acknowledge the indigenous people of this area

I acknowledge the important landmarks of this area

Thus, my acknowledgement to you all

# Acknowledgements

**Priscilla Bensen**- For critical insight into the world of a future environment, and for being an engaging supervisor throughout each step of the way

**Andrew Burgess**- For amazing co-supervision and critical understanding of each project step

**Stacy Vallis**- For excellent supporting analysis and feedback in various sessions

**To Gemma**, my partner, for your continuous support and love alongside countless hours of study time.

**To Callum, Evangaline, Matt, Malachy, Julien, Jordan, Thomas, Taimana, Taisei, and Yannis**  
- Thank you for being an amazing research lab to work alongside of and to those who I have stayed close with thank you even more for sticking through to the very end.

**To Mum and Dad**- For believing in me from the very beginning, and for your endless support throughout my years of study. This would not have been possible without you

**To friends and family**- It takes a village to raise a child, and you have done just that. From the bottom of my heart, thank you to everyone who has supported me from day dot

# Contents

Abstract	4
Pepeha	5
Acknowledgments	6
Attestation of Authorship	9
<b>Chapter 1: Introduction</b>	<b>13</b>
1.1 Problem Statement: Encouraging Tamaki to Change in a Challenging World	13
1.2 Problem Position: Less Transit, More Cars	14
1.3 Research Question	14
1.4 Research Justification: Is Transit-Oriented Development logical for Tamaki?	14
1.5 Research Methodology	15
1.6 Tamaki Makaurau: Over the Years	17
<b>Chapter 2: Literature Review</b>	<b>22</b>
Introduction	22
2.1 Urbanism History	24
2.2 Zoning	26
2.3 Sprawling Congestion	28
2.4 Decentralisation	29
2.5 Deforestation	30
2.6 Urban Design Methodologies to Combat Urban Arrhythmia	32
2.6.1 Rhythmanalysis	32
2.6.2 Transit-Oriented Design Development Strategy (TOD)	33
TOD Evaluation Scope	33
a) Transit Ridership	35
b) Walkability	35
c) Accessibility	37
d) User Friendliness	37
e) Density	38
f) Parking	40
g) Land Use Diversity	40
h) Economic Development	41
i) Visual Proximity	41
2.6.3 The 15 Minute City	42
Conclusion	43
2.7 Precedent Review	45
2.7.1 New Lynn Train Station	45
2.7.2 Hillsboro's Orenco Station (Portland)	48
2.7.3 Assen Station (Portland)	51
Conclusion	54

<b>Chapter 3: Theoretical Framework</b>	56
3.1 Objective & Outline	56
3.2 Design Methodology	58
3.3 Key Concepts and Definitions	59
3.4 Relationships	60
3.5 Scope and Limitations	60
<b>Chapter 4: Site Context</b>	66
4.1 Te Manawa Background	66
4.1 Te Manawa	68
4.3 Te Manawa Development Today	72
4.4 Te Manawa Shopping Centre	82
<b>Chapter 5: Conceptual Design</b>	86
5.1 First Draft Design Ideology	86
5.2 Conceptual Development: TOD Integration	106
5.3 Rhythmanalysis Measurement Application	130
<b>Chapter 6: Developed Design</b>	134
6.1 Final Design Intervention	134
6.2 Re-weaving Te Manawa	139
6.3 Temporal Market Spaces	141
6.4 Playful Urbanism	149
6.5 Ecological Rhythm Regeneration	157
6.6 Transit Rhythmic Transformation	165
<b>Chapter 7: The Conclusion</b>	170
List of Figures	173
References	176

## **Attestation of Authorship**

I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person (except where explicitly defined in the acknowledgements), nor material which to a substantial extent has been submitted for the award of any other degree or diploma of a university or other institution of higher learning.

*This page has been deliberately left blank*

# MAURI ORA HOUSING DEVELOPMENT WELLBEING COMPASS

TRANSITIONS TOWARDS:  
RENEWABLE ZERO-CARBON ENERGY  
REGENERATIVE ECOLOGICAL SYSTEMS  
CIRCULAR ECO-ECONOMIES  
COMMUNITY WELLBEING

## WHAKA-ORA: HOLISTIC WELLBEING ACTIONS

### KĀINGA-ORA: REGENERATIVE LIVING BUILDINGS & NEIGHBOURHOODS

- Local zero-carbon energy generation & storage, home &/or neighbourhood systems
- Living net zero or carbon-storing buildings with low embodied carbon materials
- Mana whenua & wai: local living green & blue building systems (living roofs, rain gardens, composting toilets, rain water storage, grey & black water treatment)
- Energy efficiency
- Quality building envelopes & indoor moisture control
- Papakāinga, multi-generational living & co-housing
- Compact development
- Biophilic design
- Māra kai & rongoā, food commons, urban orchards
- Cultural landscape markers & signage
- Development protections (unique ecological sites, flood zones, or Class 1 & 2 agricultural soils)

### WHENUA-ORA | WAI-ORA: GREEN & BLUE ECOSYSTEMS

- Mana whenua, mana wai – enhancing the agency of land and waters, cultural landscape restoration
- Ngahere, greens & community infrastructure (hāngi pits, barbecues)
- Ecological regeneration – whenua & wai (plants, microorganisms, insects, animal species)
- Carbon-sink infrastructures (carbon storage in living soil/plant system, wetlands)
- Māra kai & rongoā, food commons (gardens & orchards)
- Blue-green infrastructure (cool infrastructure (shade & trees, green roofs & walls, mist systems, public drinking fountains & pools), 'sponge' infrastructure (rain gardens, permeable pavements, wetlands))
- Regenerative agriculture

### PANEKE-ORA: ACTIVE & ZERO-CARBON MOBILITY

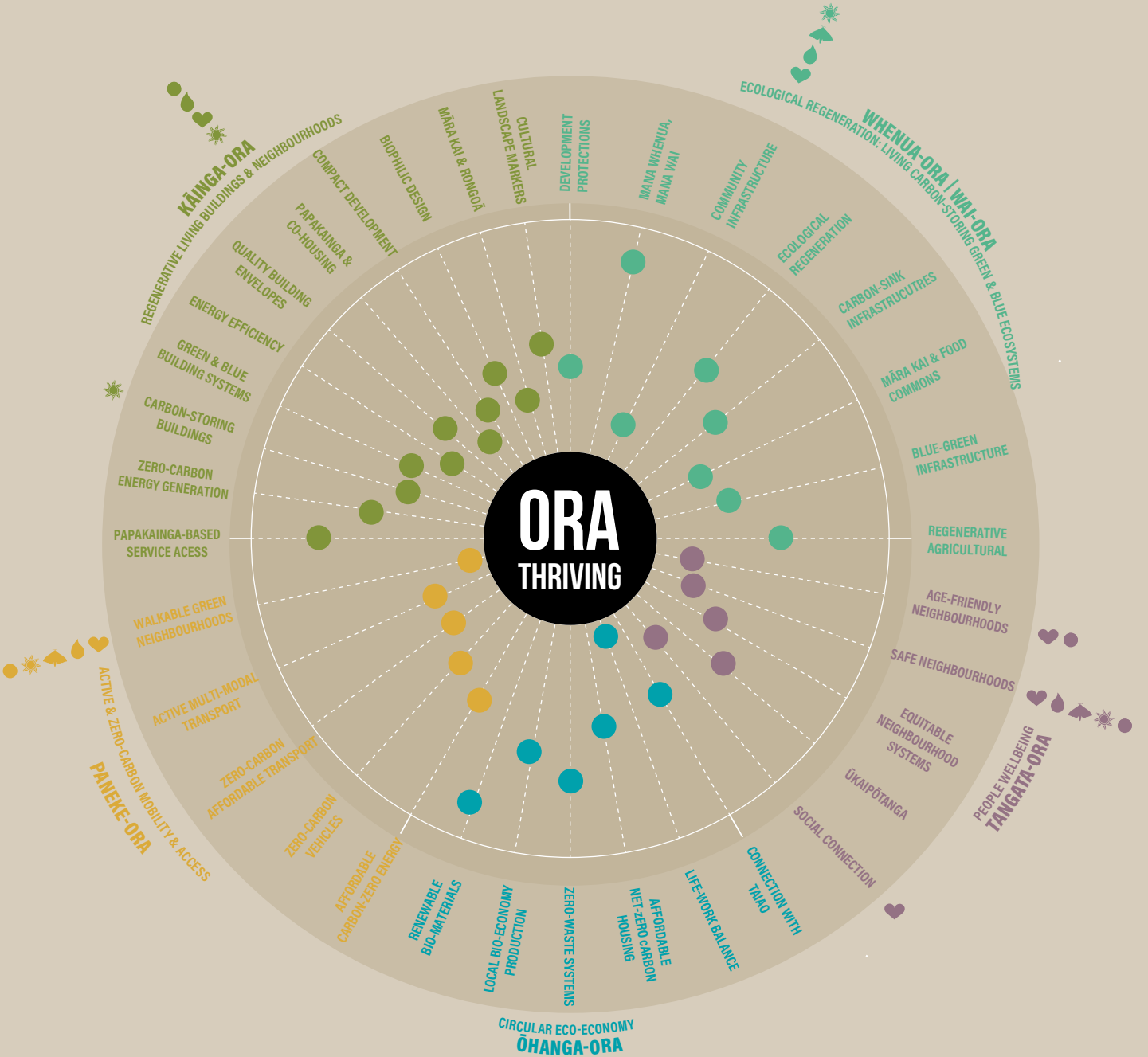
- Access to some papakāinga-based services
- Walkable, green neighbourhoods
- Active multi-modal transport
- Zero-carbon affordable public transport
- Zero-carbon vehicles

### ŌHANGA-ORA: CIRCULAR BIO-ECONOMY

- Affordable zero-carbon energy
- Renewable bio-materials, low-toxin & low-carbon materials
- Local bio-economy production
- Zero-waste systems (cradle-to-cradle design, design for disassembly, composting, upcycling, recycling)
- Affordable: net zero-carbon regenerative housing, energy, water, food
- Living wage & life-work balance (whānau-friendly workplaces)

### TANGATA-ORA: PEOPLE WELLBEING

- Biophilia & connection with taiao
- Social connection (papakāinga, marae, libraries, community gardens)
- Ūkaipōtanga – culture & cultural landscape connection
- Accessible, equitable neighbourhood systems: health, education, justice
- Neighbourhoods designed for safety
- Child-centred & age-friendly neighbourhoods



# MAURI, WHAKAPAPA, WHANAUNGATANGA, MANAAKITANGA

## MAURI-ORA: PLANETARY WELLBEING

**PAPA-ORA | ECO-DIVERSITY**  
Ecological diversity is the life-support system of this living planet. Living ecosystems have intrinsic value as ancestral cultural landscapes. Our homes, papakāinga and neighbourhoods can contribute to regenerative eco-diversity through green roofs, urban ngahere, local wetlands, and shared green spaces.

**MATA-ORA | ECO-INTEGRITY**  
We can choose to develop and use materials and systems that are non-toxic, biodegradable and whakapapa to and regenerate local ecosystems. Our homes, papakāinga and neighbourhoods can be healthier for whenua, wai and whānau if we transition to ecologically regenerative circular bio-economies.

**RANGI-ORA | BALANCED TEMPERATURE**  
Our homes, papakāinga and neighbourhoods can help to reduce current raised global temperature and CO2 levels in our atmosphere. Using renewable energy, changing the way we move through our neighbourhoods, and increasing the amount of 'local carbon sinks' such as urban ngahere in the places where we live can help support rangi-ora.

**WAI-ORA | BALANCED WATER CYCLE**  
Recognising te mauri o te wai we can design regenerative living ecosystems into our neighbourhoods to help store carbon and manage climate disruption: sponge city strategies can manage floodwaters and store rainwater for later use; cool city approaches can lessen drought effects, and wetlands can store carbon and are sites of ecological diversity.

**HAPORI-ORA | COMMUNITY WELLBEING**  
Designing our homes, papakāinga and neighbourhoods for community and ecological connection helps to address climate change, eco-diversity imperatives as well as core human needs – ā-wairua, ā-hinana, ā-āhuru hāhi. Emphasising housing and neighbourhood models with communal spaces and outdoor areas like community gardens, ngahere, papa tākara and walkways can support hapori-ora.

*This page has been deliberately left blank*

# Chapter 1: Introduction

## 1.1 Problem Statement: Encouraging Tamaki to Change in a Challenging World

By the year 2050, it is projected that 68% of the global population will reside in urban areas (Satvu, 2024). In Auckland, the population is anticipated to reach 2.4 million, a figure that is fueling economic demand for an additional 313,000 dwellings and 263,000 jobs (Auckland Council, 2018). This is despite the city's current housing shortage and household prices that are uneven relative to average household income (Ministry of Housing and Urban Development, 2024). As a result, the concept of alternative urban development has become increasingly essential for architects, designers, planners, and developers who strive to address the challenges of our contemporary world.

Since the signing of the Treaty of Waitangi and the political powers shaped by colonialism, Aotearoa New Zealand has endured a stop-start environment, characterised by the political governance that has dominated for almost two centuries. One of these challenges within this environment, and also represented in urban form, is the nature of urban sprawl, which stems from historical urban planning intricacies ingrained in the capabilities of vehicle mobility. Since its invention in the late 19th century, it has had a profound impact on the world, particularly in New Zealand and its urban lifestyles, undergoing significant changes (McLintock, 1966). As seen in Figure 8, the transformation of New Zealand city society under the car-centric planning motive from rural to urban over seven decades marked a rapid shift that had been previously driven by earlier settler movements and motivations to create a new urban society that reflected and improved upon the land they had previously left behind (Schrader, 2016). As a result, rhythms that once reflected Māori rhythms were transformed by the British crown, and their everyday rhythms, which shaped their own country, were now present in Aotearoa.

While the colonial integration of the car brought exposure to economic opportunities through global convenience, trade, and mobility, our historical urban planning has now resulted in high carbon emissions, poor air quality, biodiversity fragmentation, and additional time and economic losses (Moreno et al, 2021). Spanning the intricacies of time, the urban foundations laid in the early 19th and late 20th centuries have developed into the 21st-century landscape we see today. It is for this reason that focusing on urban alternatives that move away from the traditional urban planning motive is the priority of this thesis research.

## **1.2 Problem Position: Less Transit, More Cars**

Welch (2021) argues that Parking can kill business, yet while central Auckland roads occupy 18% of the land and 25% for car parking (Kingham & Amati, 2024), the car-centric model continues to grow in the city. This societal decision has been ingrained in our country for generations, thus making it hard for Kiwis to imagine a lifestyle without this use of movement (Uniservices, 2022). All the while, global issues continue to hinder our progress, and car ownership is on the rise; our policies enable car ownership in New Zealand to reach 900 vehicles per 1,000 people, the highest in the world (Uniservices, 2022). Furthermore, the continued expansion of big-box retail outlets, road lanes, and parking lots hinders our sustainability efforts and adversely affects the health and well-being of our residents (Wang et al., 2024). If Tamaki Makaurau wants to sustain its cities future, it needs to shift to pedestrian/transit-oriented rhythms of life. New Zealand could learn lessons from other countries to steer away from our car-dependent culture. By exploring alternative mobility approaches, we can refine our infrastructure decisions and cultivate a culture that values a range of transportation options. This transition aims to facilitate more straightforward navigation in individuals' environments by reducing reliance on private automobile transportation.

## **1.3 Research Question**

How can we implement practical Transit-Oriented Design to alleviate urban sprawl in Tamaki Makaurau while re-establishing our ecological and social fabric to improve quality of life?

## **1.4 Research Justification: Is Transit-Oriented Development logical for Tamaki?**

Transit-oriented developments offer opportunities to build on the nuances of unsustainable car-centric development and can lead us towards a better future, away from it. Implementing this change within our car-centric policies essentially asks us to alter our urban behaviours, which could disrupt the dynamics that have allowed our city to function effectively.

## 1.5 Research Methodology

The research question is addressed through a Rhythmanalysis investigation, in which research into the rhythms of urban life serves as the investigative method, and the design application is utilised for adaptive Rhythmic transformation and the restoration of urban arrhythmia. By exploring the environmental and social issues caused by arrhythmic planning strategies and the design solutions offered by Transit-Oriented Development, we can demonstrate an adaptive strategy as an alternative to conventional top-down planning. By investigating earlier and contemporary urban design thinkers, including modernist planning by Le Corbusier, whose rigid design offered fixed singular rhythms, and progressive designers like Carlos Moreno, whose 15-minute city model advocates for rhythmic proximity in walkable neighbourhoods, we can understand the lineage of urban design application and how it has shaped our own Rhythmic actions in these designed cites we live in every day. In this design project, Westgate, Auckland, has been chosen for the design intervention for rhythmic transformation and how adopting unconventional urban planning methodology showcases a critical way for making adaptive decisions in our contemporary urban environments.

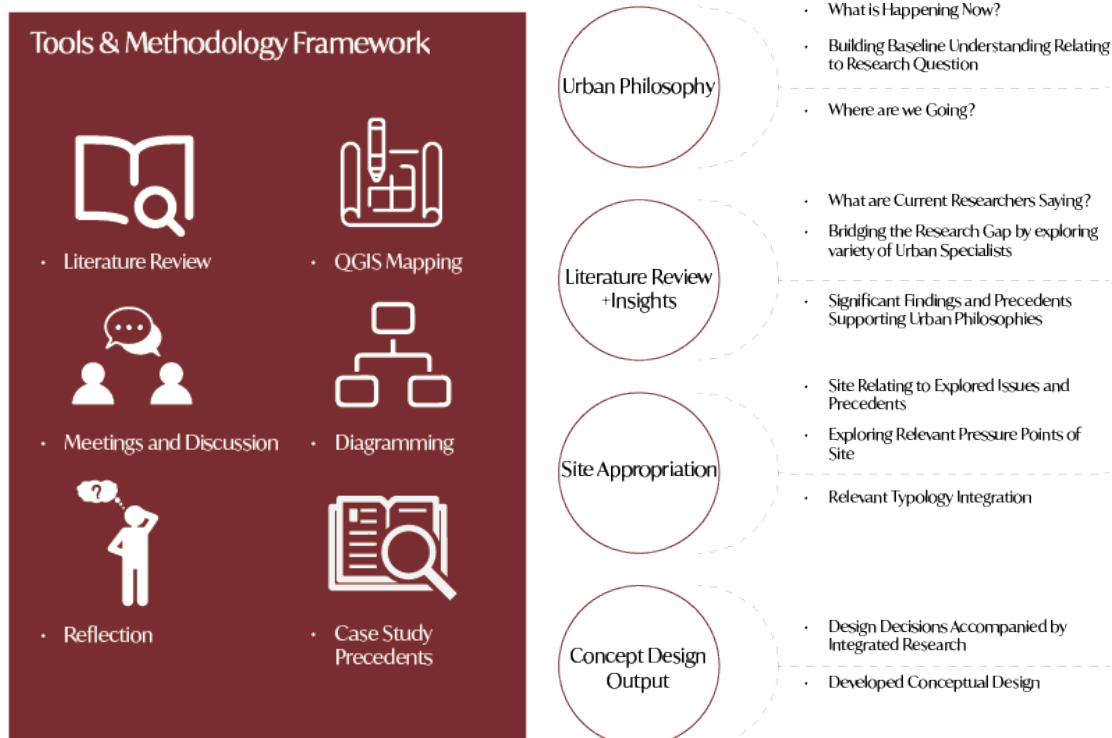


Figure 3: Tools and Methodology Framework (2025), Authors Artwork

### Key Words

Te Manawa (Westgate), Tamaki Makaurau (Auckland), Sprawl (Urban Sprawl), Rhythmanalysis, Rhythm, Arrhythmia, arrhythmic, Eurhythmic, Transit-Oriented Development (TOD), Urban Planning, Regenerative Urban Design. Car-Centric Development.

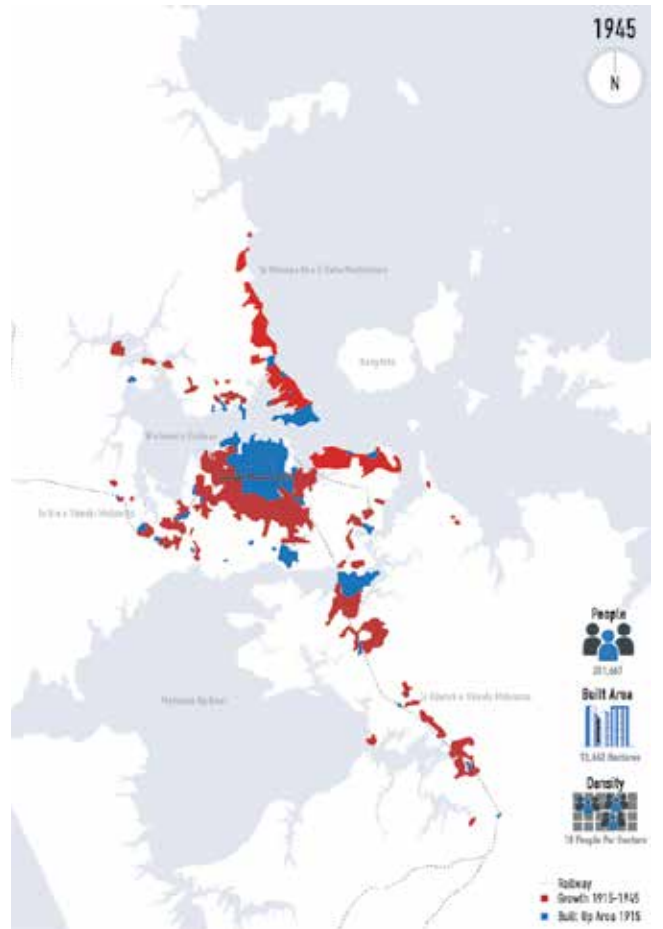
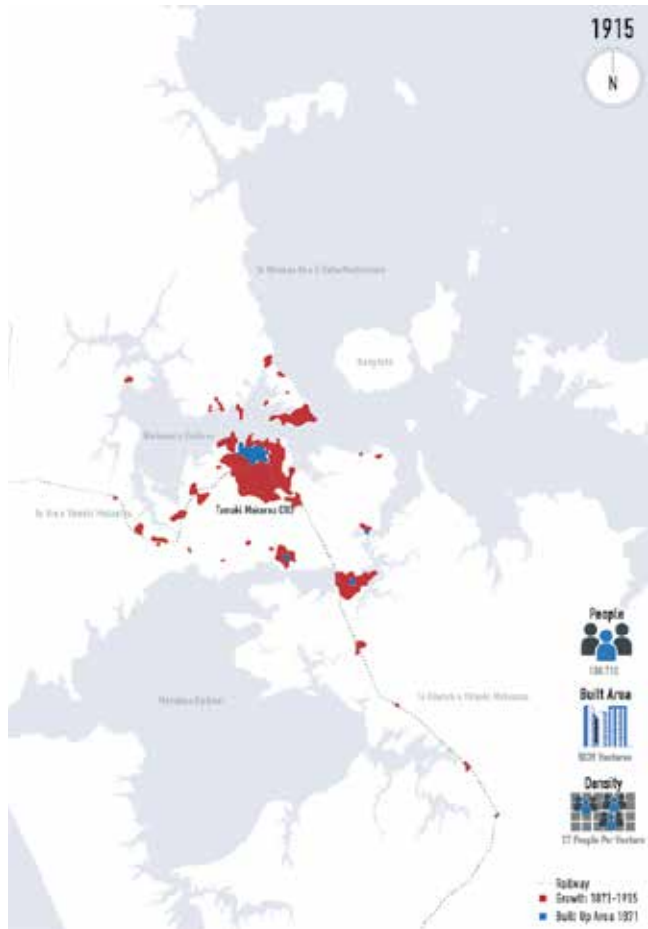
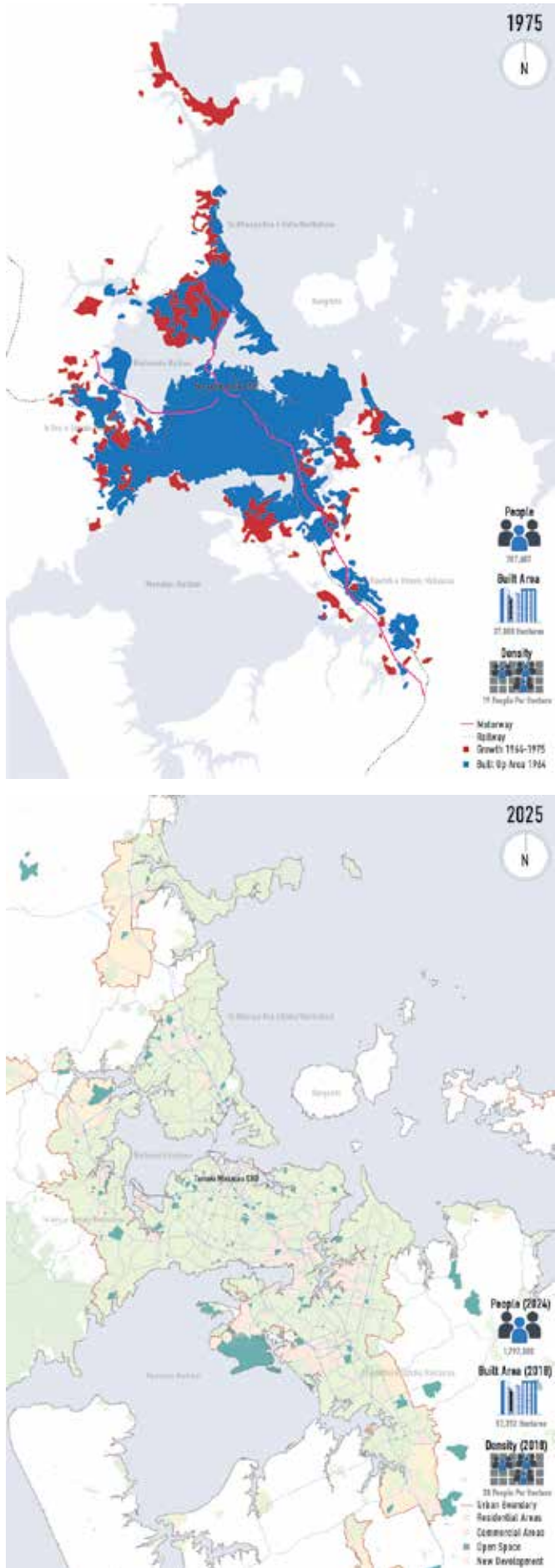


Figure 4: Tamaki Makaurau Growth from 1845-1925 (2025), Authors Artwork



## 1.6 Tamaki Makaurau: Over the Years

**1842:** On 20 October 1840, the first sale of land at Tāmaki (Auckland) took place. This deed, made between Ngāti Whātua and the Crown, records that sale. The iwi received £50 and an assortment of goods, including blankets, clothing, tobacco, hatchets and foodstuffs, in exchange for 3,000 acres of land, which became the new city of Auckland. Auckland swiftly became a breeding ground for capital investment and attracted investors to the urban sector, as it was more valuable than rural land due to its density (More People, More Money). Thus, the British were quick to buy cheap land from Māori and to pump the accelerator, inflating property prices to increase investment value. This, in turn, increased the settlement rate and began the early expansion for what would become the City of Auckland.

**1945:** Auckland's Population Growth steadied during the Great Depression and the end of World War 2. Soldiers returning from the war settled back into the urban fabric, leading to a growing demand for labour in the city. While this occurred, the construction of new roads, tram lines, and infrastructure, along with the provision of housing, led to an increase in suburbanisation across much of Auckland. Soldiers who returned needed affordable housing, which was expected to be available in the outskirts of Auckland's suburbs. This led to urban drift in Auckland as individuals from Rural areas pursued economic opportunities and jobs available to them in the city, thereby increasing demand for housing in the suburbs.

**2025:** Auckland's Population has now surpassed an estimated total of 1,711,000 (2025), with an increase of 1 million citizens to the urban fabric since 1975. Today we face an accumulation of housing issues, especially in affordability, accessibility, and built quality. It is not as though these issues happened by accident or were foreseen by individuals looking past the social benefits; instead, they filled the pockets of the capital market and satisfied the economy. These struggles are deeply rooted in the way our housing and urban planning policies have been initiated in Auckland for the past 75+ years. Despite this, the planning is still following the traditional 'First home buyers' philosophy, with single-unit dwellings still favoured amongst suburbs. As a result of this single-minded approach (Even with some of the Auckland 2050 plan), we are burning multiple bridges, which is damaging the way people live and congregate through our urban fabric.

Figure 5: Urban Planning Axis Trajectory Diagram (2025), Authors Artwork

## Maori Living

Precolonial Maori Activity- Settlement Patterns focused on ecological and Seasonal Patterns. Villages (Pa and Kainga) were sited for defensibility, proximity to freshwater and access to Kai Moana.

Philosophy: Relational, Value-based living rooted in Whakapapa and Mauri.



## Colonial Intervention

British Settlers Imposed Grid Planning Similar to that of Home. Towns developed into cities for expansion, capital development and authorial control, with no emphasis on ecology. Maori were indefinitely pushed outward from the expansions and thus the beginnings of 'Sprawl' began.

Philosophy: British Initiative Control, Functional Separation, Capital Investments.

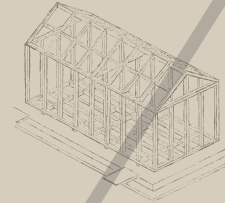


1840

## The Social and Built Environment

Cottages built for the Auckland Environment were cold and flimsy and developed without the sole purpose of forming social relationships. This included with the zoning regulations, residents often felt alone and resorted to the pub culture to socialise.

Philosophy: Built to live and Work, Unsocial Lifestyles, No interactions



## Detached Suburb Expansion

Emphasis on Detached Housing, Local Shops and Station Nodes. Railway connected to the CBD, however it reinforced class and racial separation.

Philosophy: Domestic idealism, Euro-centric Spatial Order



## Automobile Dependability

Car Orientated Zoning protocols Invested into motorways and low-density subdivisions. As important ecological land separated, from its origins, big box peripheral centers began to replace for human desires and consumption.

Philosophy: Modernist Planning, Mobility over place, Efficiency over connection



1940

## Postmodern & Neoliberal Urbanism

Further rise of private-led developments. Council amalgamation in 2010 centralised governance but often led to generic, market-driven urban form. Zoning still dominant; Sprawl intensified

Philosophy: Profit driven-Image-based Development



## Land Hierarchy & Zoning Laws

## Sustainable And Compact City Agenda

Introduction of Auckland Unitary Plan, Intensification goals, and public Transport Investment. Further emergence on Urban Regeneration and Implementation of Maori Design Frameworks

Philosophy: Sustainability, Resilience, biculturalism, Proximity Urbanism



2025



Conversion of land throughout the years has contributed to urban Sprawl in Tamaki Makarau. Where land once flourished with Exquisite Hilltops and Luscious ecosystems forming as a living system, now perished with Polyester Grid units. Important ecosystems that have been cultivated for human use are now required to reinstall important ecosystem characteristics to reinforce the commitment to climate change aspirations.

Land Separation between Subjective spaces influenced/forced people to live far from where they work or shop from. As Traditional low-density housing took place, housing shortages began due to its low-density sprawl. This therefore influenced the need for cars as isolated suburbs could not be accessed within a considerable walking distance.

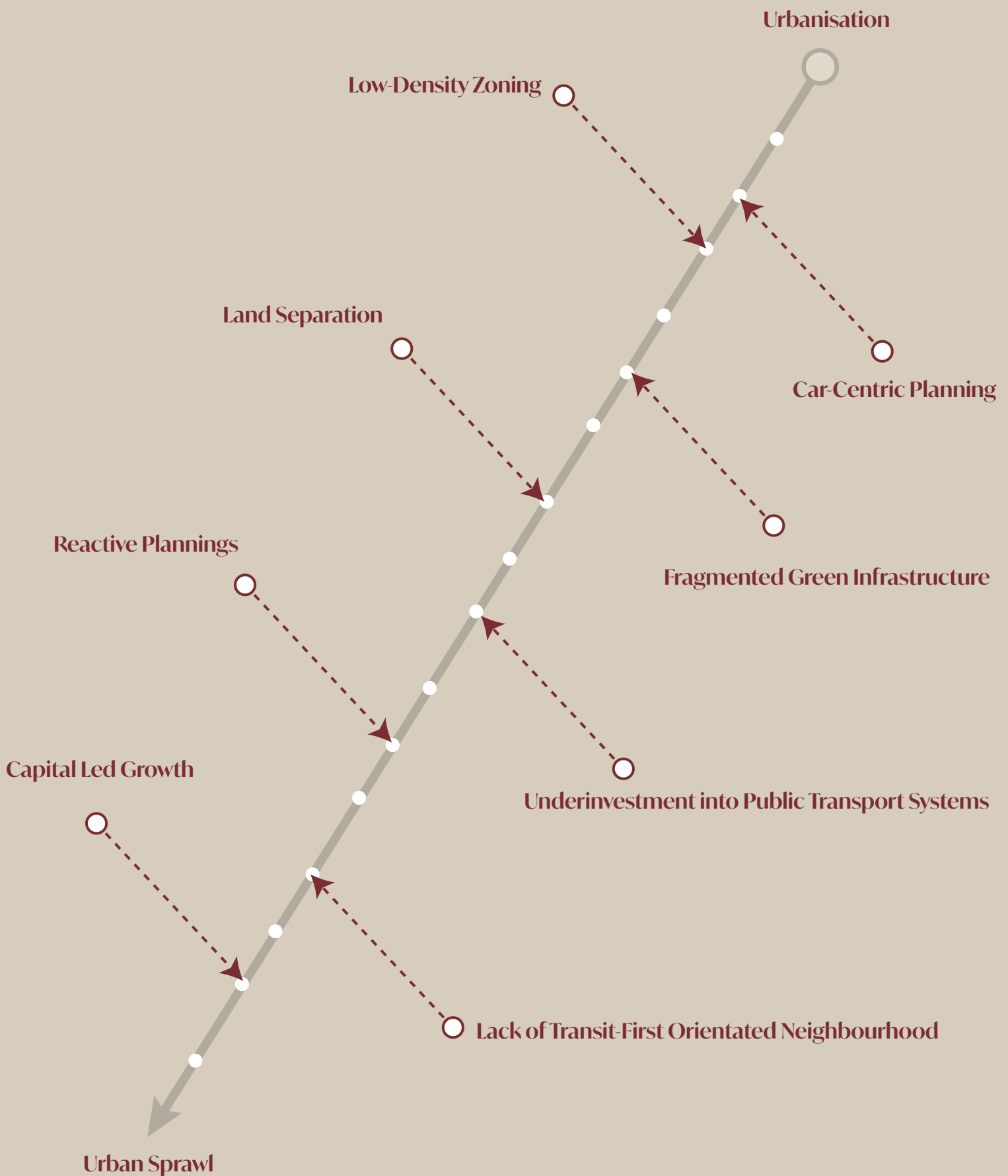


Figure 7: Urban Planning Axis Trajectory Diagram (2025), Authors Artwork

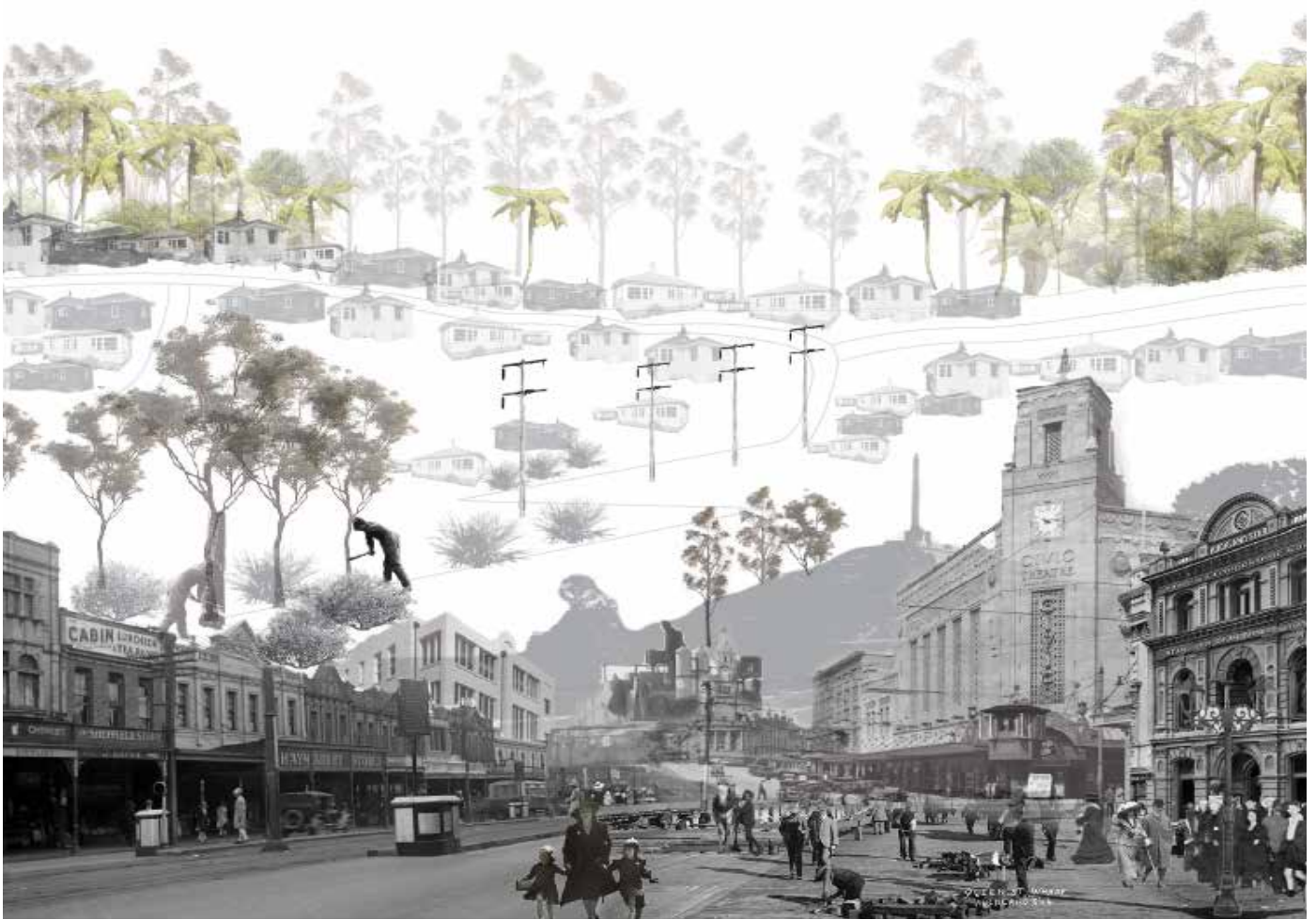


Figure 8: Tamaki Makaurau Decentralisation Collage (2025), Authors Artwork



Figure 9: Colonial Intervention Collage (2025), Authors Artwork

# Chapter 2: Literature Review

## Introduction

For many years, our urban environments have been the catalyst for rapid development that has shaped how we behave in our everyday lives. These behaviours have pushed us into a desperate emergency in our modern world, controlling what we have, which our actions inevitably make uncontrollable over time. We have transcended from an existence that once flourished with life and coherence to a life that is fabricated in an illogical, frantic, and rushed form of living. This refers to the development of urban form and its rhythmic quantities, which have shaped how we inhabit it through space and time. To build a strong foundation for my research area, I am examining the dilemmas of urban sprawl within the context of Tamaki Makaurau and its associated issues, including arrhythmia produced by sprawl in the city, such as traffic congestion, loss of productive land, increased air pollution, and spiralling infrastructure costs. In this writing, we will focus closely on relevant topics that contribute to the city's arrhythmic patterns, such as car dependency, congestion, deforestation, zoning issues, and the prevalent urban design theories proposed by previous designers. The primary aim of this literature review is to integrate relevant, grounded knowledge into other literature while maintaining transparent empirical processes to help bridge the gap between our lack of diverse urban design integration and the current state of urban sprawl. By filling this gap with knowledge about holistic urban strategies, we can generate a Lens for adaptive design thinking for our future cities. More specifically, adaptive strategies for our biggest city, Tamaki Makaurau.

Examining the theoretical realm of Urbanism, ideas derived from historical instances, such as the Athens Charter, have shaped the way we act through our built environments today. Reflecting on the decisions that paved the way for urbanisation, it is essential to acknowledge these past ideologies and their design requisitions. This acknowledgment lays the groundwork for uncovering new and existing theories and models that challenge our rhythm of urban living and help reduce the fundamental problem of urban sprawl.

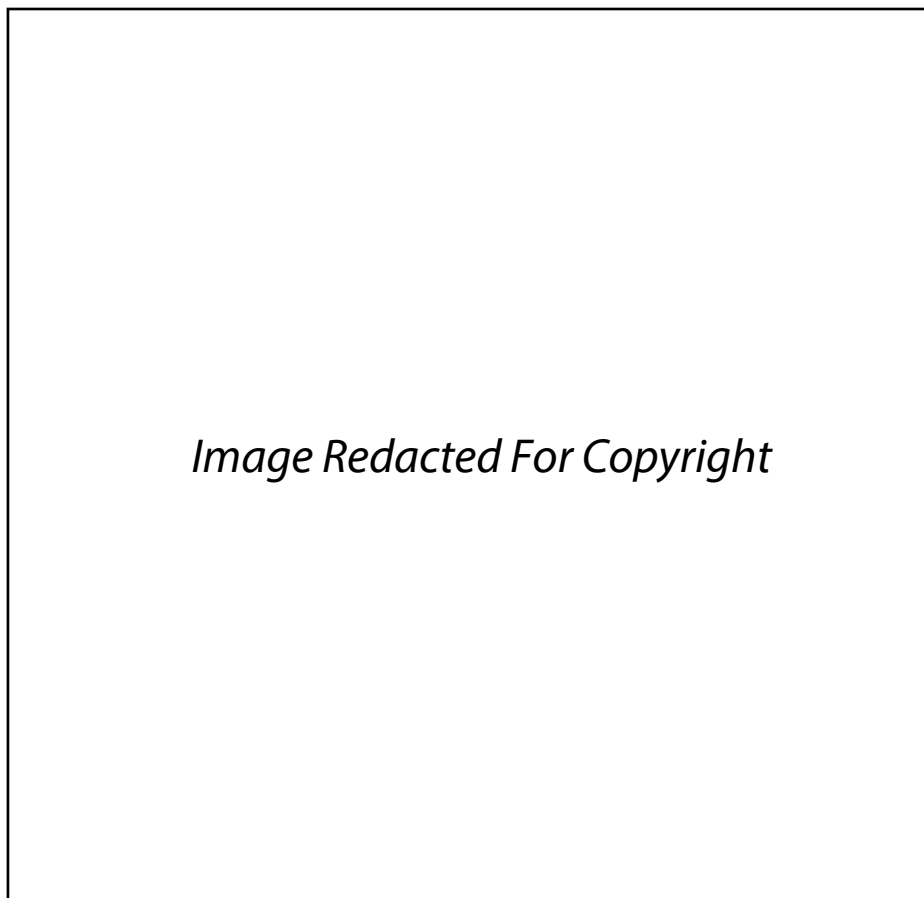
The theories I will discuss in this review include 2.6.1 Rhythmanalysis, an urban analytical tool that focuses on rhythm through movement, repetition, space, and time. 2.6.2 Transit-Oriented Design Development Strategy (TOD), a framework for cities to adapt to a more pedestrian and cyclist-friendly environment through transit-oriented design. 2.6.3 15 Minute City, a framework strategy that prioritises proximity and walkability against the ever-present dominance of car-centric design. While exploring these areas of literature, case studies such as New Lynn Train Station, Orenco Max Station, and Assen Station are investigated to understand how certain urban design decisions, as outlined in previous theories, can displace arrhythmic tones caused

by urban sprawl and transform them into eurythmic spaces. While critical investigation into the micro scale of urban design to help challenge urban sprawl has been considered, such as Net positive energy systems, modular construction, and materiality of our structures, they are not discussed here in the literature review, for this writing contributes to the fundamentals that have led and currently respond to urban arrhythmia at a macro scale. While the micro scale will provide an accumulation of detailed nuances that critically respond to urban sprawl methodologies, that investigation alone would require excessive documentation. While critical investigation into the micro scale of urban design has been considered, such as Net positive energy systems, modular construction, and materiality of our structures, they are not discussed here in the literature review, for this writing contributes to the fundamentals that have led and currently respond to urban Sprawl at a macro scale.

This first segment of my body paragraphs will provide a theoretical overview of urbanism and how its characterisation, driven by economic and political factors, mimics urban sprawl. Next, it will examine the ideologies that continue to escalate urban sprawl and its consequences on humanity, particularly in Tamaki Makaurau. Furthermore, an investigation into existing urban design methodologies will be conducted to identify countermeasures to sprawl and other issues arising from this phenomenon. Finally, I will provide a general discussion on conclusions drawn from this area of research and their relevance to my central research gap. Each synopsis will help draw the reader's attention to think differently about our city's designed rhythms, pace, and everyday functions.

## 2.1 Urbanism History

The emergence of ancient cities marked humanity's first integration into urban living, a development dating back well over a thousand years. Jacobs (1969) notes that cities historically emerged where agricultural surplus could be extracted, as illustrated in Figure 18. Moreover, where neighbouring countryside could generate excess production beyond subsistence needs, a consensus among non-agricultural cohorts could be maintained (Scott & Storper, 2014). While this prehistoric urban ideology of food production was the top priority for ancient urban dwellers, it helped establish a geographical relationship that was respectful and appreciative of human life. Similar to the ingrained Te Reo Māori principle 'Papatuanuku', where Mother Earth (the land) gives birth to all things, nourishing all people, birds, and trees (Royal, n.d), this urban form transcends cyclical synergies devoted to cultural practice. Helping sustain both human and environmental forms, society could live in an urban ecosystem free of climate issues and sustainability concerns, thereby negating the depletion of vital resources. Although simple in its time, it is hard to argue how an existence like this could be reestablished into our existing urban complexities.



Contrasting today's existence sees humanity transfixed around the idea of gasoline-powered modern mobilisation, which, since the early invention of the Benz "Vehicle powered by a gas engine" in 1886 (Mercedes-Benz Group, n.d.), has been the catalyst for exponential city growth and fixation for long-distance travel against an efficient use of time. We are to believe that without industrialisation, there would be no urbanisation, at least, not in the form we see it today. Driven by various social policies and movements, including capitalism, functionalism, and modernism, urban environments in the 20th century underwent drastic changes in their rhythms of time, reflected in their lived spaces. These revelations encapsulated the ties of industrialisation and urbanisation of geographical landscapes as selected cities in the developed world expanded under the auspices of government-sponsored industrialisation programs (Allen & Storper, 2014). To bring us back to the idea of time in these urbanised environments, Mereno (2024) argues that our modern cities have been designed to save time. However, time is lost to commuting, and urban residents have inevitably found themselves in a bubble of illusory acceleration. Not only do these 'commutes' fragment our relationship with time and geographical space, but they also contribute to the imperative of CO<sub>2</sub> emissions, a science still foreign to grasp in the early 20th century. As depicted by Pedersen-Zari (2018) and shown in Figure 19, car commutes were a significant driver of fossil fuel combustion and have now led to a 30% increase in carbon dioxide emissions, further depleting precious atmospheric concentrations.

While this is our reality, historically, the cities we have designed were conceived based on our fundamentals of societal movements, while being oblivious to the degradation of our natural resources. As unpacked by Mereno (2024), the bases of Fordist movements prioritised efficiency and productivity and reduced the time required for production, while functionalist movements emphasised function over form. Wolman (1965) argues that this agglomeration of mass production operates by extracting natural resources at a rate far beyond the environment's capacity to renew them. As a result, cities quickly became unparalleled in the basic human life form by diminishing social and environmental relationships through holistic urban planning. As Saunders (1981) argues, "the city is not itself a meaningful object of analysis, but only an arbitrary geographic container of diverse economic, social and political phenomena." Humans have allowed their environments to deteriorate into dysfunctional metropolitan areas, and in turn, we suffer the consequences. As a result of poor urban design choices made in isolation, we are now faced with an interconnected network of problems that our predecessors have inherited in our urban fabric.

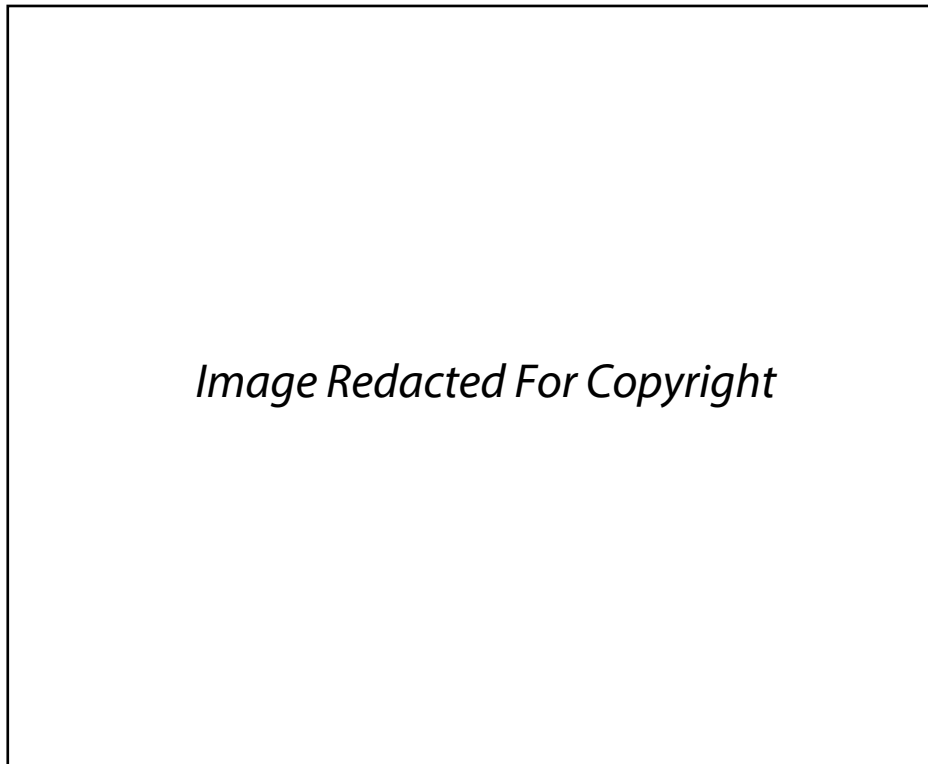


Figure 11: New Zealand Annual Fuel Combustion Emissions, (Planetary Ecology)

## 2.2 Zoning

Holistic design movements that gave rein to divisions between the mantra of everyday work-life balance, both at a social and environmental level, are the dysfunctional realities of our urban zoning design. Deciphered legacies, such as Swiss French Designer Le Corbusier, who emphasised rationalism in his work, helped shed light on high-rise residential complexes that housed urban workers; however, they stripped away their proximity and induced an oppressive architectural form (Moreno, 2024). Designer Le Corbusier believed that these inhabitants within a city required rational, organised urban space to improve the quality of life. With the rise in automobility, Arbury (2005) argues that this rational city structure, attached to low-density housing, became feasible as people no longer had to live near their place of work. City functions could also be separated into exclusive zoning patterns, as seen in the Auckland Unitary Plan in Figure 20, allowing residents to escape the city's pollution and frantic pace associated with industrial areas. Furthermore, Le Corbusier's design influence sparked numerous urban evolutions that continue to shape how our urban structures perform, even in the 21st century. Parliamentary Commissioner for the Environment (2023) also recognises that the stringency of rules applied in these areas strongly dictates the built form of cities and distribution of green spaces. One of the key ideas Le Corbusier promoted was the separation of work from living spaces, with distinct zones serving specific purposes (Moreno, 2024).

*Image Redacted For Copyright*

Figure 12: Auckland Zoning Areas, (Auckland Council)

*Image Redacted For Copyright*

Figure 13: NZ Index of Deprivation Statistical Area 2023 (ehinz)

*Image Redacted For Copyright*

Figure 14: Le Corbusier's functionalist plan for Utopian "Radiant city" (Ville Radieuse)

Adding to the car's long-distance capabilities, the pursuit of functional efficiency through this zoning strategy has led to the fragmentation of urban landscapes and disrupted the social fabric of community life within them (Frampton, 1980). This is evident in Figure 21, which shows the deprivation index for Auckland, with many instances of fragmentation leading to further loss of socioeconomic opportunities (Ehinz, 2023). In many cases, city planners, such as those in Auckland, organise land not only for residential and commercial development, as shown in Figure 20, but also indirectly influence a cultural landscape that is becoming increasingly monotonous. This fragmented planning poses a threat of monocultural urbanisation, fostering intolerance and the dehumanisation of perceived outsiders. Given its formidable nature, Uitermark (2011) reaffirms that rigid zoning reinforces the idea of uniformity over diversity, thereby diminishing vibrancy and fostering a monoculture environment. This leads us to the current situation in which, despite established frameworks across different districts, local governance policies are unwilling to assume the financial risks necessary to sustain our urban fabric. Current policies continue to dictate how we inhabit space, prioritising profits over people's health and their relationships with time and space. If we are to change the attitude toward buildings and their full potential, we must first change the attitude toward the car-centric developmental culture.

## 2.3 Sprawling Congestion

As we have previously stated, with the approach of urban development around the car, which inherited the fast and efficient approach, to the delight of Le Corbusier, urban formalities evolved into giant networks of infrastructure dedicated to managing sprawling congestion. Sprawling congestion is a critical issue affecting urban areas, significantly impacting mobility and quality of life. Sprawling Congestion is broken down into two increments. However, it is important to know that they are interconnected. Sprawling refers to the effects of low-density housing spread across a metropolis's landscape, weaving a story of environmental degradation, social fracturing, and loss of community (Short, 2008). Congestion is the capacity to break the proximity cycles of time and space and replace them with artificial rhythms of intensified mobility. As we have previously investigated, historic urban planning has emulated long-distance travel. This instinct in everyday life has given rise to congestion challenges, as vehicle numbers have increased exponentially due to urban sprawl to accommodate population density (Mereno, 2024). In turn, Sprawl has been the echo of congestion, with the widespread use of temporary infrastructure that temporarily supports the everyday functions of urban commuters for short spans of time. The temporary connotation emulates our short-term approaches in urban design. Short (2008) highlighted that “the wake of the road will come more sprawl”, while also claiming that “existing solutions to sprawl often create the conditions for greater sprawl.” The quote from Short (2008) emphasises a critical paradox in urban development: our efforts to remedy sprawl often lead to more of it. This perspective aligns with the current reality of urban planning, where temporary solutions often fail to address the root causes of sprawling congestion.

In the face of the challenges posed by urban sprawl, it is essential to recognise that adaptive urban design strategies can play a pivotal role in mitigating these issues. The previous New Zealand Urban Design protocol outlines this perspective, establishing that quality urban design can help us avoid problems, such as traffic congestion, caused by poor urban design (Ministry for the Environment, 2005). However, the current perspectives that inform our urban design approach say otherwise. In the new Auckland cost of Congestion Paper, it was recognised that Aucklanders spend 29 million hours a year sitting in traffic, and this is projected to cost Auckland \$2.6 billion due to high levels of congestion (Auckland Council, 2025). Considering these numbers, Mayor Brown claimed, “we will also need more dynamic lanes and smart traffic signals - along with a stronger, more reliable roading and public transport network” (Ponsonby News, n.d.). This need for enhanced infrastructure is rooted in Short's (2008) synopsis, which suggests that more sprawl will result from the construction of additional roads. While we are investing billions of dollars in improving road infrastructure, we are prioritising this over significant investments in sustainable urban design. If Auckland wants to resolve everyday congestion, we must reconfigure our attitude toward urban planning.

## 2.4 Decentralisation

Throughout this writing, we have discussed the effects of urban planning and its essential pull towards paradoxes of 'fast cities'. Adding to these dilemmas is the challenge of decentralisation in our cities' most bustling urban fabrics. While we can argue that decentralising residential areas away from the frantic paces of commercial work environments results in more private living and economic turnover control, as affirmed by Reid (2015), highlighting that it "leads to better social and economic outcomes for communities," the dispersible nature in which decentralisation acts is unsustainable. Alzaidi (2024) argues that previous philosophies gave the impression that separating industrial areas from residential zones was the most effective way to reduce conflicts over congestion, noise, and pollution. However, much to Short's argument that "the wake of the road will cause more sprawl" (Short, 2008), the separation resulted in underutilised land, increased traffic, and sprawling suburban areas (Alzaidi, 2024). Cities worldwide, including Tamaki Makaurau, have inherited poor integration of urban design, often in tandem with zoning laws, in which land has been allocated solely to separate humans from living and working. This has led to a decline in proximity to nature and has had a significant impact on our food production. Pedersen-Zari (2018) further argues that our bio-capacity (measured in hectares per person) has decreased from approximately 3.7 to 1.7 since the 1960s (WWF, 2016). Thus, as we dissociate our buildings from the metropolitan core, we continue to evolve ways to mitigate the stresses of traditional agricultural and environmental uses, keeping humanity in equilibrium. Therefore, we must strive to shift our approach to urban design, helping to steer humans and non-human agencies toward a future of self-sufficiency and collaboration. Ultimately, our goal should be to reimagine our urban landscape as a space for coexistence, where social and environmental infrastructures can thrive in harmony.

*Image Redacted For Copyright*

## 2.5 Deforestation

As we shift away from the city centre, driven by decentralisation, we threaten wildlife and significant agricultural areas through deforestation. Deforestation addresses the urgency of environmental degradation, exacerbated by our built environment continuing to overtake natural resources and land. Consequently, we have separated the urban from ecology, focusing primarily on social spaces rather than the natural processes that comprise the ecology of our geographical context (Short, 2008). While we can argue that urban areas can foster innovation, economic growth, and improved access to services and resources, we rupture our human connection and need for the natural environment. From our separation, closely tied to Le Corbusier's legacy of urban planning, has been the driver for rapid urbanisation while depleting ecosystems around the world and in New Zealand (Brown et al., 2015). Urbanisation is the leading cause of agglomeration, including vegetation removal, species homogenisation, and loss of ecological integrity, natural character, and function (Marco Moretti et al., 2015). Eastwind (2023) affirms that while urbanisation is the primary driver of deforestation, tree clearing has become increasingly prevalent due to rising atmospheric temperatures. The practice of taking down trees reduces heat absorption and, consequently, increases the temperatures we build in.

As we encroach upon natural landscapes through urban development, the consequences become increasingly irreversible, as the proliferation of impermeable surfaces takes precedence (Brown et al., 2015). This transition signifies biodiversity loss and integrates urban challenges, such as stormwater runoff and management, due to the rapid increase in impervious surfaces. These impermeable infrastructures, such as buildings, signify much more than the object's individuality. Pedersen-Zari (2018) argues that buildings form a more extensive system and are considered living organisms, thereby exhibiting the characteristics of an ecology. While reducing external development, we must recognise the importance of integrating ecological considerations into urban planning. By reimagining urban landscapes and ecosystems as interconnected, living organisms, we can create spaces that enhance biodiversity and foster a healthier relationship between social and environmental infrastructures.

*Image Redacted For Copyright*

## 2.6 Urban Design Methodologies to Combat Urban Arrhythmia

### 2.6.1 Rhythmanalysis

Rhythmanalysis is an analytical approach to help philosophers and planners alike understand the rhythms of our everyday lives, where 'things' conceal the processes of repetition and production that shape daily existence. Author Henri Lefebvre (1992) reveals these expressions in his book 'Rhythmanalysis' by exploring how rhythms produce difference, how natural cycles and social routines interweave, and how everyday life under capitalism is organised through temporal and spatial repetitions. This analysis encompasses various forms of rhythm, where different energies coexist to produce polyrhythmia or clash to produce arrhythmia, which transform preceding rhythms in everyday life. Lefebvre (1992) proposes rhythmanalysis to understand the interplay between space, time, and energy.

Using Rhythmanalysis as a methodological lens seeks to uncover the hidden dynamics between space and time, rather than viewing static, linear spaces as mere physical displays. For instance, Lefebvre (1992) argues that rhythm is a fundamental part of understanding the lived experiences embedded in our everyday realities and shows that objects, whether stationary or moving, produce different levels of embodied rhythm. Chen (2016) utilises Lefebvre's literature as an empirical and philosophical methodology, not just to think with rhythms in mind, but also to interrogate cultural-historical changes and the shifts in rhythms resulting from these processes. In a related line of inquiry, Chan (2024) extends Lefebvre's work by applying rhythmanalysis as a design and analytical tool in urban street environments to interpret their experiments as rhythmic systems. Much like these examinations through the lens of rhythmanalysis, the methodology can also be applied to examine and redesign the arrhythmias of Tamaki Makaraus' dynamics, most notably their transformations from the prehistoric planning ideologies set out by rigid planners like Le Corbusier.

While conventional planning employs top-down strategies that respond directly to the design space, Lefebvre (1992) suggests that the planner instead acts as a 'rhythmanalyst', who listens to and interprets embodied rhythms to further transform society, not through ideology alone but through heightened awareness of the present rhythms.

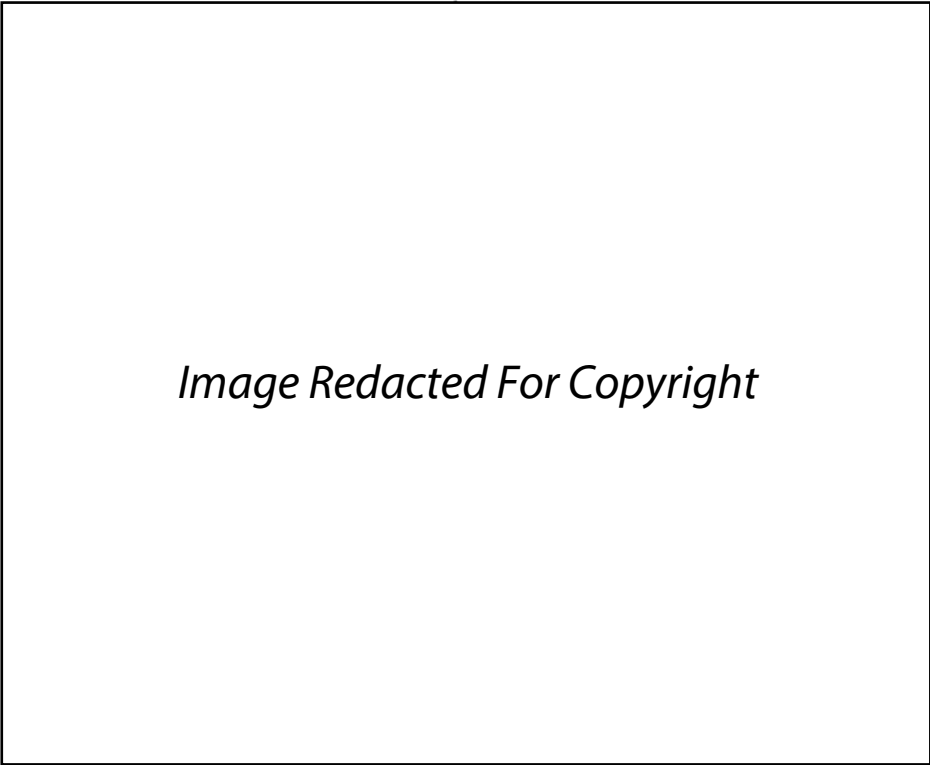
## **2.6.2 Transit-Oriented Design Development Strategy (TOD)**

Transit-oriented development (TOD) is an adaptive urban design methodology used to achieve pedestrian-friendly, mixed-use, mixed-income, high-density, and location-efficient communities at public transport nodes (Calthorpe, 1993; Slepian et al, 2005). The strategies associated with TOD developments employ a multi-scalar coordination approach that is shaped by the existing urban environments in which they are situated. Each neighbourhood is vastly different and unique, with varying streets and dynamic built environments. Therefore, the imposition of a TOD setting may vary depending on the specific needs of the neighbourhood. This is a critical matter in the context of Tamaki's urban sprawl, as a significant number of arrhythmias can be addressed through the integration of the TOD Principle. TOD addresses sprawl by diminishing the singular-use zoning approach, which is often promoted by the economic commodification of time and by society's power operating through the organisation of rhythms (Lefebvre, 1992). It integrates additional mixed-use zoning, enabling planners and other key stakeholders to collaborate and develop effective procedures for the neighbourhood's benefit.

While other countries have adopted this feature, most notably the United States, with over 100 joint transit-oriented developments across the country (Cervero et al, 2004), the TOD policy (1993) is a change for neighbourhoods and their inhabitants, which may inherently affect people's everyday lifestyles. As previously discussed, if the mindset of our urban environments needs to change, we must change the mentality of the car-centric developmental culture. TOD represents this change through the investigation of arrhythmic transformation towards eurhythmic balance; however, it encompasses vastly different rhythms to the attention we have given to automobility and living lifestyles here in Tamaki Makarau.

### **TOD Evaluation Scope**

For this research area, we will refine the analytical elements to these evaluation principles to gain a deeper understanding of the basic needs of TOD and how they can be addressed in the context of urban environments. This evaluation scope will cover the precedents in this research to understand how the larger built elements function at a street and neighbourhood level, rather than focusing on the building level itself.



a) **Transit Ridership**

The existence of effective Transit-Oriented Development (TOD) relies on a reliable and comfortable transit system, as noted by Auckland Council (2008) and ITDP (2017). Optimal transit services should provide 15-minute or less frequencies, connecting neighbourhoods and serving as civic hubs. Lukman (2014) suggests that high ridership and loading capacity necessitate greater TOD development, emphasising the importance of public transport. Conversely, low passenger loads indicate underutilisation and resource waste, while overcrowding can deter people from using transit. Maintaining efficient transit services is crucial for enhancing public transportation use and encouraging TOD.

Tied closely to transit ridership service is the user-friendliness and attractiveness of the Transit station, which are crucial in encouraging the use of public transit. While this can be represented in the architectural form, with appropriateness to the site's context, the subjectiveness of passenger safety, circulation, and amenities is a key indicator for an easier TOD plan (Lukman, 2014).

b) **Walkability**

Walkable urban environments achieve more than any ordinary street footpath adjacent to a typical road. They provide a universally accessible infrastructure for all age ranges, economic statuses, and physical abilities, enabling individuals to walk (ITDP, 2017). A successful walkable environment, as described by Jeff Speck (2012), includes the necessary safety precautions and functional street features that enhance the likelihood that pedestrians will use it. Furthermore, adapting the friendliness of walkways to their availability is often neglected, resulting in an isolated urban fragment that disassociates from the landscape and its built environment. Often, the journey of the walk is neglected in favour of its destination, a dangerous planning mentality that overlooks the increased risk of criminal activity and barbarism. However, designing for the friendliness of the street can be accomplished. As Jacobs (1961) explains, the methodology of "Eyes on the street," which embodies the concept of natural surveillance, is achieved through the street and buildings ability to monitor their strangers and residents through, ensuring that their safety is oriented to the street, rather than in isolation. Lukman (2014) reinforces this idea in the context of TOD, hypothesising that "A pedestrian-friendly environment will provide better access to various attractions within the TOD area and will encourage people to move around the TOD area on foot." With plenty of opportunities for creative involvement, the community can thrive around its safer walkways, crosswalks, and public realms that are inevitably important to ground when connected to transitable neighbourhoods.

*Image Redacted For Copyright*

### c) Accessibility

Accessibility is closely tied to the intricacy of mobility; however, the two are distinct, as mobility refers to getting to a particular place through various modes of transport, while accessibility, in the context of this urban design research and TOD, refers to how accessible spatial amenities are within the grasp of a walkable, cyclable, or bus-able distance. Mobility is an important indicator of accessibility, as Lukman (2014) notes, and efficient 'location-accessibility provided by the station' can benefit the surrounding TOD area. Moreover, offering various options for walkers, bussers, and cyclists to choose their preferred mode of transportation indicates a healthy range of transportation modes (Lukman, 2014). Creating more accessible pathways also means new links of proximity are available within adequate reach, through closer services, jobs, schools, public facilities, and green spaces. Moreno (2024) highlights this proximity as meaningful for the concentration of not only physical abilities in the area but also the opportunities for cultural, cognitive, and creative learning experiences generated by this network of accessibility. TOD relies heavily on accessibility (Calthorpe, 1993), and much of the present infrastructure surrounding this urban relationship is not yet established or fails due to its integration. Design needs to generate our neighbourhoods under the scope of various mobility modes, rather than fixate on the private vehicle rhythms.

### d) User Friendliness

While we have identified what makes a place pedestrian-friendly, Transit friendliness is another vital factor to consider when implementing TOD (Lukman, 2014). Transport is often an unpopular mode. For instance, Auckland's travel consensus results show that over 65% of Auckland residents prefer to use a privately owned vehicle, while only 3.2% catch the train (AT, 2018). Convincing individuals to use the public transit system boils down to its design and whether they feel safe travelling alongside strangers. ETOD (2020) evaluates that "an active and welcoming transit plaza for gathering and accessing public transportation can increase the desirability of Transit." NJTOD (2018) further emphasises that both transit and public spaces serve as effective community incubators when integrated, helping to generate a sense of place and, more importantly, individual safety. Diverse social uses among buildings in proximity, such as mixed-use spaces, cafes, and restaurants that spill out onto the footpath, are practical design catalysts for keeping the street animated and safe (ITDP, 2017). This philosophy should also be applied in conjunction with the transit station, as commuting alone can be daunting for some, especially in the early and late hours of the night.

e) **Density**

Low-density sprawl is a virus to our urban fabrics through the relationship of motorised vehicle dependency and low-density housing. Although we can argue that low-density communities offer sufficient privacy levels and lower crime rates (Hallmark Builders, 2023), as well as the benefits of accessible outdoor space, achieving higher density is crucial to conserve land and reduce the likelihood of losing open farmland.

To achieve this feature, concentrated densities are a crucial aspect of TOD, which must be considered in conjunction with transit capacity (ETOD, 2020). Typically, density refers to the number of people per square meter of built-up land; however, densification should be seen as a means of concentrating people, opportunities, sunlight, air circulation, and sufficient, accessible housing near transit (ITDP, 2017). ITDP (2017) also highlights this critical aspect as a means of activating public space and ensuring security within the neighbourhood, thereby providing better safety for people of all ages to engage with the goods and services the neighbourhood offers within a walkable distance. As Lukman (2014) emphasises, achieving density balance is crucial in urban fabrics, as excessive density often leads to traffic congestion, overcrowding, and a decline in living quality. Peter Calthorpe further affirms this statement in an interview with Elboghady (2016) by mentioning that “the DNA of a city is set by the scale of its streets and its public spaces—the places between buildings more than the buildings themselves.” While we can argue that the buildings are an important yield for residents to acquire, not to mention the levels of safety and security they provide, the spaces within and around the building can also be safe and secure, helping to boost the vitality of the neighbourhood.

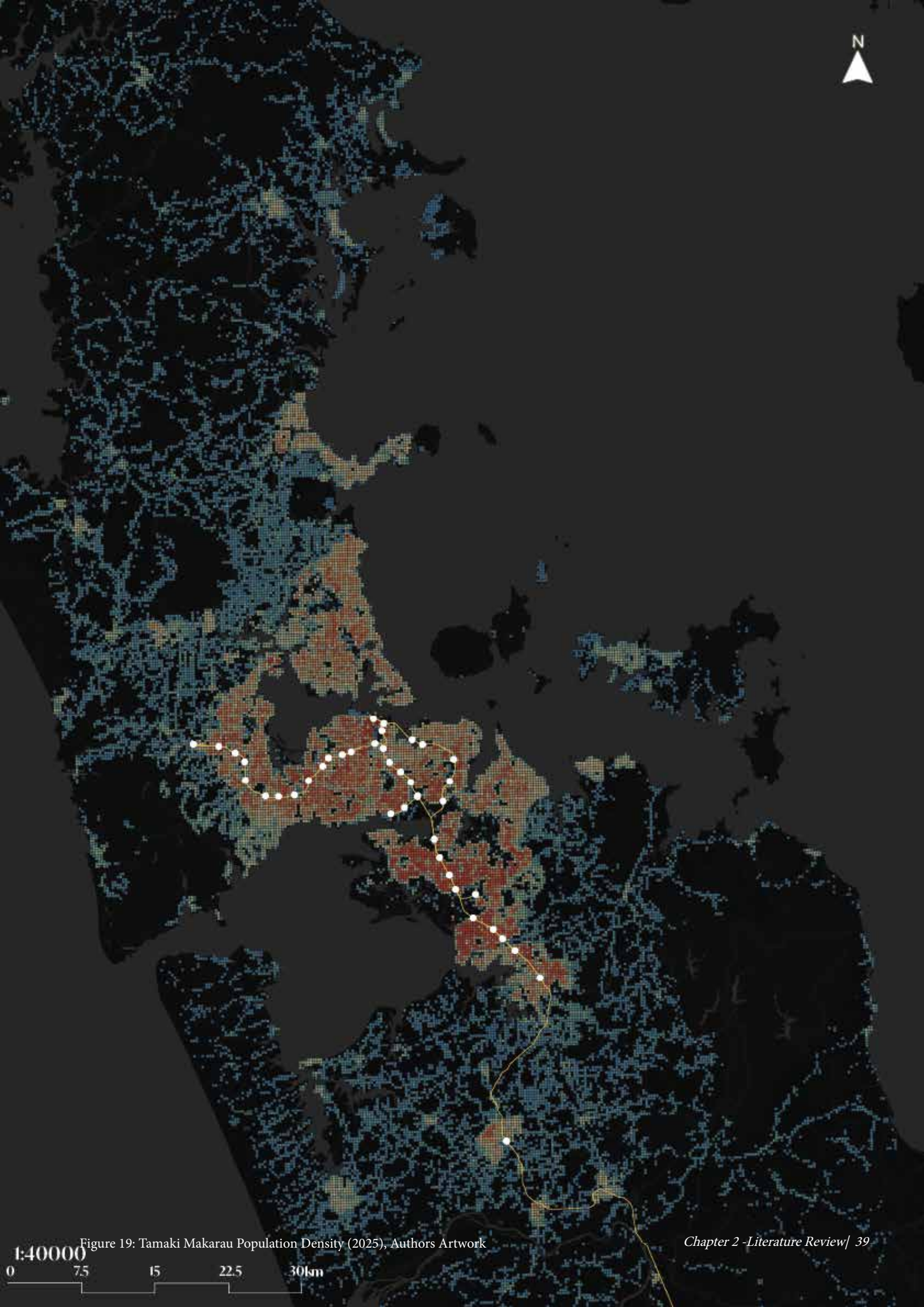


Figure 19: Tamaki Makarau Population Density (2025), Authors Artwork

## f) **Parking**

Much of our urban environment today is dominated by parking lots and has been since the advent of the motorised vehicle. Notably, in a New Zealand context, private parking is considerably expensive in areas such as the Auckland CBD, where the average daily fee is \$39.53 (Edmunds, 2025). To put it in perspective, if you parked at the CBD daily throughout the whole working year, this would amount to \$10,000, almost a quarter of the average salary in New Zealand (Salary After Tax, n.d.).

Managing effective parking strategies through the lens of TOD can help improve the overall transit system and TOD, and also significantly shift community behaviour toward public transport (ETOD, 2020). Research by Leadbetter et al. (2024) reveals that parking lots significantly reduce pedestrian walkability, particularly in facilities that lack features such as tree canopy cover, enclosure, and traffic control technology. Lukman (2014) reinforces this by arguing that parking should be focused on other modes of mobility as well to strengthen the area's TOD potential and encourage greater use of public Transit systems. While business owners may be concerned about the potential loss of on-street vehicle parking due to the increase in alternative mobility options, patronage can still be maintained through bus and bike lanes. Welch (2021) reinforces this, expressing that "Bikes and buses do not kill businesses – parking does."

## g) **Land Use Diversity**

Mixed-use spaces designed around transit-oriented developments are pivotal in increasing the vitality of the neighbourhood, as they create convenient access to goods and services within short walking or biking distances (ETOD, 2020). To further instate Jacobs' (1961) Eyes on the Street philosophy, land diversity increases opportunities to experience various spatial typologies at closer proximity with higher density. Ultimately, increasing neighbourhood foot traffic and making streets feel animated and safe throughout the day and night (ITDP, 2017). ITDP (2017) also indicates that diverse land use is associated with greater local employment diversity. In support of this statement, Lukam (2014) analyses that mixed-use strategies can yield significant returns on investment, both publicly and privately. With close transit accessibility, this enhances the neighbourhood's mobility and safety, given the diverse range of services. Calthorpe & Fulton (2001) strengthen the argument, suggesting that services located near housing, healthcare, food shops, parks, and offices reduce private vehicle dependence and foster more vibrant and lively communities that create opportunities for social interaction, chance encounters, and relationship building. Research conducted by Appleyard (1978) finds that reducing vehicle traffic on walkable streets also increases the likelihood of friendship retention by a factor of three, with streets experiencing heavy traffic resulting in approximately 0.9 friends per person. Mixed-use transit spaces are an ideal outcome for transforming environments. Whether we accept them or not, they are important for delivering a better quality of urban living.

## **h) Economic Development**

We can argue that our model of single-use zones, featuring large-format retail stores such as big-box outlets, offers substantial job opportunities. However, these zones, designed around car access, are limited in terms of diversity, offering a low-income return to the local economy and benefiting the external economy. The presence of big-box retail, which emphasises the use of private vehicles, contributes to urban sprawl, further fragmenting the diverse amenities of our urban fabrics (Calthorpe & Fulton, 2001).

While we have introduced mixed-use as a strategy to promote job diversity, the economic development opportunities arising from this complex network of TOD principles are highly advantageous to local business areas. Calthorpe & Fulton (2001) discuss how TOD, when designed in proximity to mixed-use spaces and high density, creates conditions for strong local economic growth. Implementation of residential housing near transit lines also fosters a 'demand for business' attitude by providing goods and services for incoming city visitors, Kulpa & Zamorano (2014).

With increased walkability, local businesses become more attractive and thrive with the support of the local community. Further investigations by Kulpa & Zamorano (2014) also found that increased foot traffic led to 60% higher spending at local businesses than among car travellers. Additional spending at local stores increases income and creates new employment opportunities in the area, as money circulates within the local economy (Living Economies, n.d.). As demand for jobs increases, shifting to this paradigm for our urban fabrics, through the lens of TOD, can help transform our everyday economic rhythms.

## **i) Visual Proximity**

Lastly, although excluded from Lukman's (2014) criteria and hypothesis, promoting visual proximity in TOD is a valuable research tool for understanding urban streetscapes and their role in supporting walkability and TOD. Visual proximity refers to the ability to see and be seen in public spaces, buildings, storefronts, and sidewalks within visual range of a transit stop, helping generate the most activity" (Stojanovskis, 2019). The research conducted by Stojanovskis (2019) builds on morphological research and urban planning theory derived from previous urban design studies, such as those by Jacobs (1961) and Cullen (1961), to understand how commercialisation and public space patterns unfold in viewsheds around transit stops. Stojanovski (2020) also notes that the account for measuring walkability through the TOD lens should not only consider the 15-minute walking distance (Moreno, 2024), but also visual openness and line-of-sight accessibility.

### 2.6.3 The 15 Minute City

The 15-minute city concept is a radical and complex approach that aims to transform urban design and help reduce dilemmas in urban environments. It evolves around human needs and combines multidisciplinary approaches that inaugurate a transition of spaces within a short walking or cycling distance, which is essential to a TOD space. It helps us reimagine the natural rhythms of space and time, while giving back to humanity whose time has been lost to the everyday formalities that tick our urban fabric. Combining different urban systems challenges zoning laws and policies, resulting in a practical yet low use of environmental space. While higher population density may result in lower land use, these sacrifices contribute to greater prosperity in urban environments. Mereno (2024) argues that while each square metre should serve multiple purposes, we should design neighbourhoods so we can live, work, and thrive without commuting long distances. Emulating proximity with this strategy reduces dependency on automobility and strengthens our awareness of social spaces and natural resources. Voula (2010) also depicts that the passionate involvement of citizens can compensate for scarce resources.” Mereno (2024) affirms that the ideology of social circularity can foster positive collaboration among individuals, communities, institutions, and systems to support resource optimisation through reduction, recycling, and regeneration. The plan presents opportunities for closer connections to be made to that of Urban greenery and citizens living in various neighbourhoods, as it reintroduces nature-based solutions capable of biophysical services such as sequestering carbon, regulating temperature, managing stormwater overflow, controlling air filtration, and providing habitat provision (Parliament Commissioner for the Environment, 2023). In Summary, the 15-minute city concept aims to reduce urban arrhythmia with approaches closely linked to compact, accessible, and sustainable urban environments. It provides several solutions to our complex, interconnected problems in city landscapes while navigating the current flows of everyday urbanism. This form of design thinking is crucial in the relationship of transit-oriented development as they both collectively reverberate off each other.

## Conclusion

This literature review has revealed the compound interrelationship of urban sprawl, which has been subsequently designed through our spatial governance, further weighing down our socio-ecological rhythms, inextricably tied through the exposure of modernist planning ideology. Through this literature examination, we have come to understand how this planning, rooted in rationalism and car-centric development, has fragmented our relationship with time and space, and how the legacies carried within the modernist planning ideology are fracturing the arrhythmic compositions of that connection. Here, the literature has come to recognise the plateau effect of urban design limitations and the need for design thinking beyond this threshold of rules, regulations, and our current urban design ethics.

On the contrary, this literature investigation has helped reveal theories that challenge our current understanding of urban design legacy, where adaptive forms of Rhythmanalysis application, TOD, and the 15-minute city propose ideologies for reweaving our cities' inner rhythms. Together, they propose that urban design should not only be organised around space but also around time as a scale through which our environments can breathe, adapt, and evolve. Rhythm is expressed as the listening tool for our everyday patterns, TODs as the structure to transform synergies through inner-connected mobility and the 15-minute city strategy that restores proximity and brings daily life within walkable reach. Together, they can help re-orchestrate our perception of time and space within Tamaki as a responsive, cyclical pulse, shifting from the static function of design form to evolving, adaptable infrastructures.

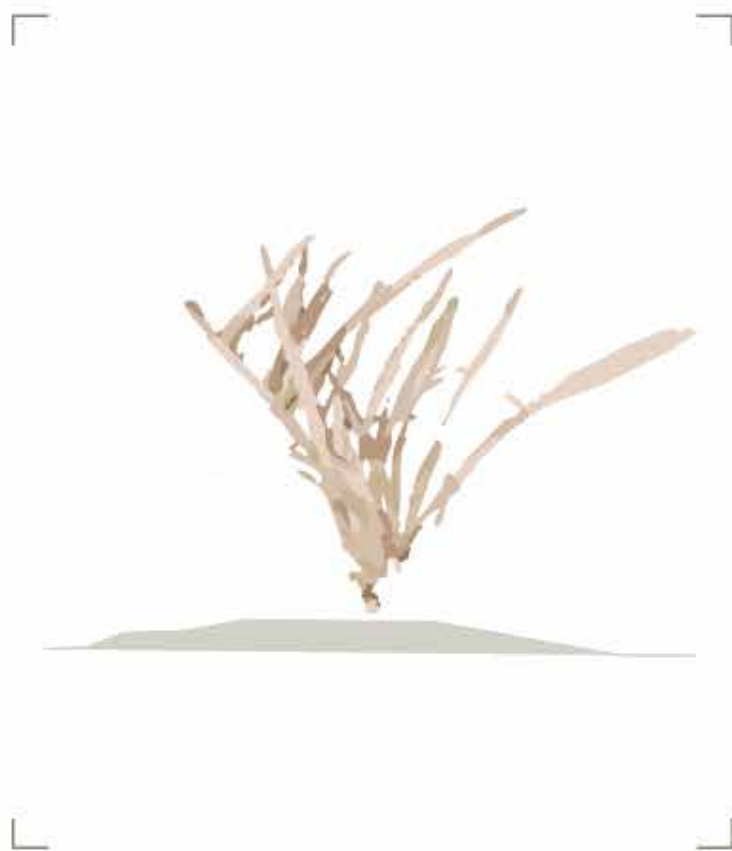


Figure 20: Harakeke Growth (2025), Authors Artwork

## 2.7 Precedent Review

Literature on TOD, with supporting philosophies in the 15-minute city principles and regenerative design aspects, is integral to this precedent research review. By examining three existing studies, 2.7.1 New Lynn Train Station, 2.7.2 Hillsboro's Orenco Station (Portland), and 2.7.3 Assen Station, we can examine the principles of TOD and their architectural integration and whether these are present in their environments. These examinations will assist the ongoing site investigations in this writing.

### 2.7.1 New Lynn Train Station



Figure 21: Photo of New Lynn Train Station(Architectus)

The New Lynn Train Station, designed in partnership by Brewer Davidson Architects for the Waitakere Council and Auckland Transport with a \$30 million project (Architectus, n.d.), was designed to improve the Transport and service infrastructure in connection with the town centre that links with the rail station (Dempsey Wood, n.d.). Transit-oriented development was introduced alongside its completion in 2010, with Dempsey Wood (n.d.) providing high levels of traffic and pedestrian control to its urban fabric, helping to keep its surrounding business premises and residential areas within its project route. The station is a prime transport hub for West Auckland, serving 20,000 residents (Auckland Council, 2008), and is well served by shopping areas and services within walking distance.

Currently, New Lynn is in phase 3 of the 2030 urban plan, a strategy introduced in early 2008 to develop an underperforming suburb into a highly vibrant urban area. This stage of the design sets objectives such as achieving an 11-minute train journey to Auckland CBD and introducing 4,000 jobs within a 10-minute walk of the train station (Auckland Council, 2008). However, a Train ride from New Lynn to the CBD takes 48 minutes (AT, n.d.), which completely undermines the phase goals set for 2008.

a) **Transit Ridership**

New Lynn Station's Transit experience has been an impactful integration since its construction in 2010, with its proximity to storefronts and an extensive shopping mall centre, which has been pivoted to a more traditional car-centric design, dominated by car parks. For instance, the Introduction of a four-lane road-over-rail bridge, supported with platform upgrades, integrated bus lanes, cycle parking, and plaza areas. While the objective of car-centric design continues to dominate the area, comments by travellers noted that the New Lynn Transport Centre was more useful to them, with gratitude expressed for how bus lanes were handled (Greater Auckland, 2017).

b) **Walkability**

Walkability within New Lynn has mainly been addressed in the urban design plan through the employment of large, impermeable street blocks (300x300m), introducing finer-grain street grids, barrier-free crossings every 100-150m, and Widened footpaths (Auckland Council, 2008). Green infrastructure also incorporates tree lines, pedestrian, and cycling corridors to alleviate the stresses of safety concerns, and generate eyes on the street (Jacobs, 1961).

c) **Accessibility**

New Lynn's accessibility through the Train station and its proximity to storefronts exemplify a modest version of what accessibility should be. New Lynn aligns closely with Moreno's (2024) embodiment of diverse physical access, achieved through ramps and protected walkways. However, despite achieving mode diversity, the inconsistent spatial coverage weakens its TOD capability, as car-centric infrastructure remains through the New Lynn malls car park. For New Lynn to overcome this, de-prioritising privatised vehicle usage, along with further transport activation, could help benefit the urban vitality across the site.

d) **User friendliness**

The New Lynn Train Station is an excellent motivator for transit users, with a welcoming civic hub surrounded by vibrant community incubators, which is an important aspect of TOD (NJTOD, 2018). While this is the case, New Lynn falls short of creating an animated street presence throughout all hours, as the amenities around the station do not effectively integrate vibrant pedestrian activity and mixed-use spatial integration within its walkable distance from the station.

e) **Density**

As new developments for high-rise apartments in New Lynn are implemented, the area is shifting towards a more compact form. However, it still retains low-rise, car-dependent housing with limited mixed-use typologies, which limits the variety and purity of public spaces that Jacobs (1961) and Calthorpe (1993) advocate for. The area now benefits from a high-capacity rail trench, with trains running every 10 minutes at peak, and service is planned to increase alongside densification. This confirms the ETOD (2020) principle that higher densities improve the viability of frequent public transit.

f) **Parking**

Front-facing car parking is a characteristic often found alongside big-box retail outlets in Auckland's urban environments, and it considerably diminishes our experience of tree canopies and pedestrian-friendly settings. Parking near the Lynn Mall highlights this urban hostility, reflected in the excess impermeability, lack of enclosure, and vegetation canopy, which Leadbetter et al. (2024) identify as an essential element for maintaining pedestrian walkability.

**g) Land Use Diversity**

Single-use land development has been a design frontier for Auckland zoning principles since the integration of the urban planning scheme. While the influence has been to separate ‘work’ and ‘home’ to help control factors such as population density and local infrastructure planning, the scheme has led to most land development sprawling and has generated temporary dead zones. This is particularly relevant for New Lynn, as it has a good grasp of foot traffic and diverse employment and social activities throughout the day; however, all significantly drop in the late evening.

**h) Economic Development**

The integration of retail, residential apartments, civic spaces, and shared street proximity near Totara Avenue fosters economic vibrancy without relying solely on vehicular access or parking. This reinforces Zamorano’s (2014) and Calthorpe & Fulton’s (2001) statements, indicating that placing business and residential units near transit lines fosters demand for local businesses and significantly reduces vehicle dependence.

**i) Visual Proximity**

The New Lynn Transport Interchange is well integrated into the urban fabric, with sightlines from points on Totara Avenue, The Plaza, and adjoining streets clearly defined. A visual connection to the station from these points helps people orient more easily and generates a sense of security when passing through the area. This reinforces Stojanovski’s (2020) notion that visual accessibility around transit hubs increased activity and influences transport usage.

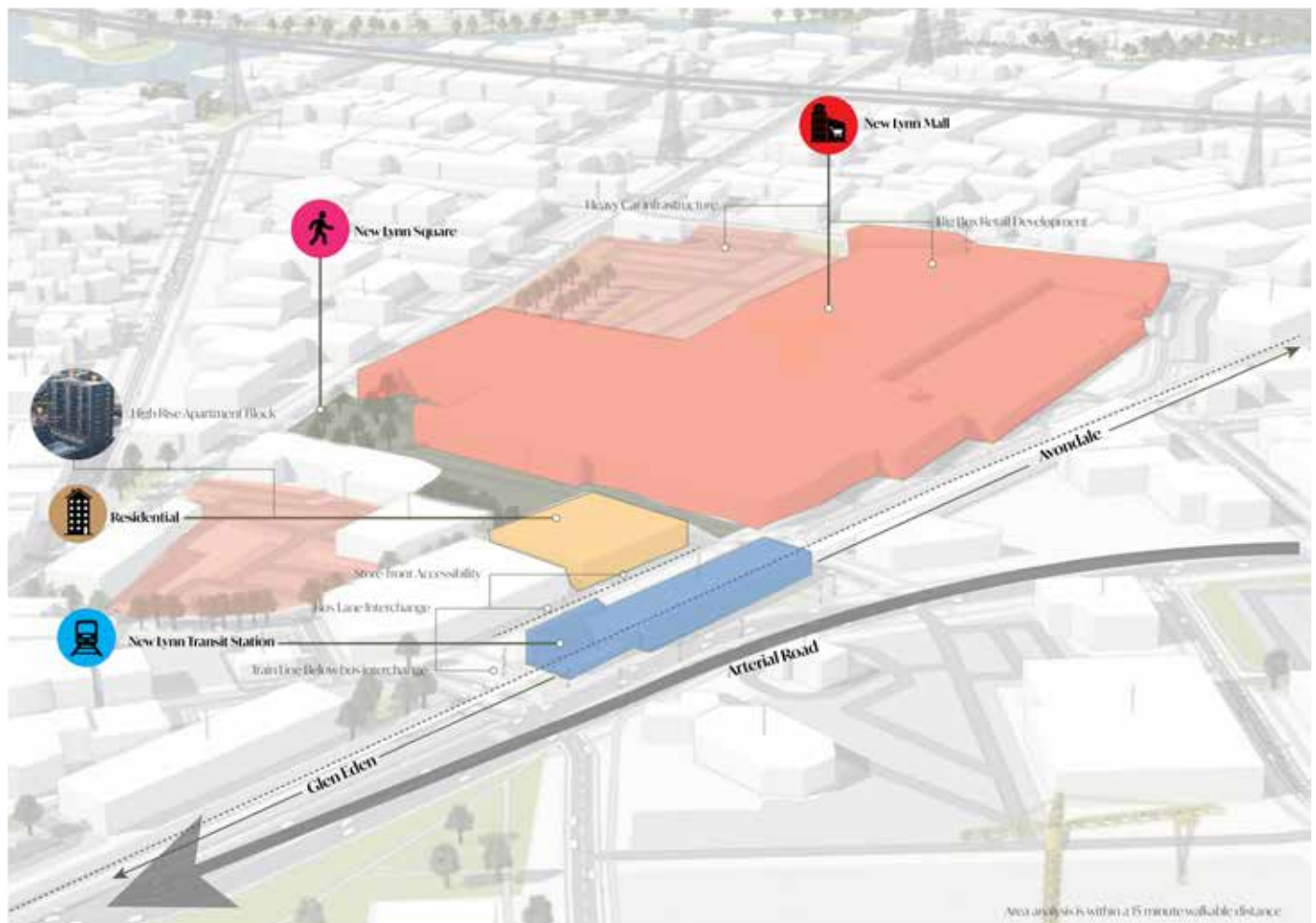


Figure 22: New Lynn Station Analysis with F4 Demo Map Underlay (2025), Authors Artwork

### 2.7.2 Hillsboro's Orenco Station (Portland)



Figure 23: Photo of Hillsboros Orenco Station (Hillsboro Orenco)

The Orenco Station Line builds on the foundation of what makes transit-oriented development principles successful and establishes this in its urban presence. Historically, the Orenco area was incorporated in 1913, with a relatively small population of 500, mainly employees of the Oregon Nursery Co. (Trimet, n.d.). Before its incorporation, the Oregon Electric Railway Station opened from Portland to Forest Grove, experiencing a drastic increase in ridership over time. By 1913, the Oregon Electric Railway Station's average ridership capacity had doubled its incorporated population (Trimet, n.d.).

In 1938, the township disbanded on the idea of dealing with the complexities of running a town, and soon afterwards, the Orenco Township became a part of Hillsboro (Trimet, n.d.). While the bureaucracy of running the town had disbanded, the historic buildings that housed these employees remain a vital part of the urban fabric today. According to Hillsboro Oregon (n.d.) the land today boasts a friendly mixed-use setting with relatively dominant park and green space presence closely supported by significant increases to housing typology in the area.

Today, the Orenco area sits within a transit-oriented network expanding along the MAX Light Rail line, making mobility a significant focus toward more pedestrian-friendly, walkable environments.

**a) Transit Ridership**

Orenco Station's transit frequency has helped to establish a thriving transit-oriented core for the area to develop alongside the MAX railway line. During peak hours, Trimet (n.d.) reports that trains operating along the MAX Railway line arrive every 10-15 minutes, helping to make 8 am departures and the 5 pm return to home feel less daunting. Senville (2013) also reports that an average of 67% of residents used mass transit service at least once per week, while also finding that 65% of residents who moved to the Orenco area preferred to use transit, thus generating one third fewer vehicle trips than a typical suburban area. These findings from Senvilles Survey indicate a genuine shift in travel modes after moving in, further demonstrating efficiency gains from well-structured TOD.

**b) Walkability**

Creating pedestrian-friendly environments means careful consideration of all ages who can move and engage with the different elements of their urban settings, as ITDP (2017) highlights as an important design direction in TOD. Orenco reflects this in its urban fabric, with consideration of narrow pedestrian- and bike-friendly streets that help maintain a universally accessible environment. With Orenco's encouragement of walkability and cycling, occasional vehicle trips become less frequent, further highlighting Lukman's hypothesis that pedestrian-friendly environments facilitate TOD circulation and reduce car dependence.

**c) Accessibility**

Frequent MAX light-rail service, local bus connections, and direct connections to the station on foot and by bike ensure residents have multiple options. Through this, transit service and mobility-supporting amenities, such as grocery stores and cafes, are well established along street fronts in the Orenco area, further promoting Jacobs' (1961) eyes on the street' philosophy and creating walkable proximity (Mereno, 2024).

**d) User Friendliness**

Spatially oriented architectural experiences are essential for creating safe environments for everyone. The Orenco Station Loop achieves this through its design of an inviting entrance to a transit area plaza, featuring seating, tree canopies, and playful water features. Between these elements are active storefronts that serve as eyes on the street and act as social connectors within Orenco's urban fabric. This design embodies NJTOD's (2018) idea of transit and public spaces working together to foster civic vibrancy.

**e) Density**

Orenco establishes a solid foundation for optimal density by emphasising transit-oriented, compact development, offering diverse housing options, and supporting economic growth. In the late 90s, planning strategies aligned with Transit-oriented development aimed for a dense layout of 34.5 residents per acre. This included mixed-use residential areas and various housing types, such as granny flats, 3-4-story apartments, retail stores, and offices, achieving a density of 9.7 units per acre (Fentress, 1998).

**f) Parking**

While American cities often prioritise traditional front-facing street parking, the Orenco area challenges this through transit-oriented development. Notably, their infrastructure emphasises reducing parking visibility from street frontages. This approach enhances pedestrian mobility and aligns with Leadbetter et al. (2024), who argue that reducing parking can foster pedestrian-friendly design elements such as tree canopies, enclosures, and efficient traffic control technologies. In the Orenco area, this is evident through the proximity of housing, streets, and dense tree canopies, further helping to make our urban streets less car-dependent.

### g) Land Use Diversity

As we have established, Orenco has achieved relatively dense land-use diversity, with proximity supported by walkable, serviceable areas for the community. While featuring a blend of housing typologies, such as single-family homes, townhouses, lofts, and apartments, the interspersal of ground-floor services like cafes, office parks, and civic spaces is arranged in a pedestrian and transit-oriented manner to help solidify the safety of the neighbourhood. This argument further enforces the recommendations from ETOD (2020) that services within a shorter distance reduce car dependency and serve as a role model for Jacobs' (1961) philosophy of 'eyes on the street.'

### h) Economic Development

The development of mixed-use areas brought significant economic benefits, driven by the increased activity that transit and nearby walkable environments encourage within the urban fabric. Frequent farmers' markets, events, and pop-up community festivals help support these walkable environments and encourage people to buy on foot rather than by automobile. Through this, as indicated by Kulpa & Zamorano (2014), local businesses will also strengthen the local economy, further supporting the area's inhabitants.

### i) Visual Proximity

Orenco's urban street layout, in relation to the surrounding built environment, fosters successful street frontage activation, with ground-floor activities such as cafes and businesses adding depth to visual layering and street presence. As Jacobs (1961) argues, the most successful streets are those with human presence, which Orenco street edges provide through transparent shopfronts, outdoor seating, and ground-floor residential porches and stoops. The combination of these urban design elements not only supports visual surveillance but also ensures that the transit station maintains consistent observation, the essence of Jacobs' "eyes on the street" philosophy.

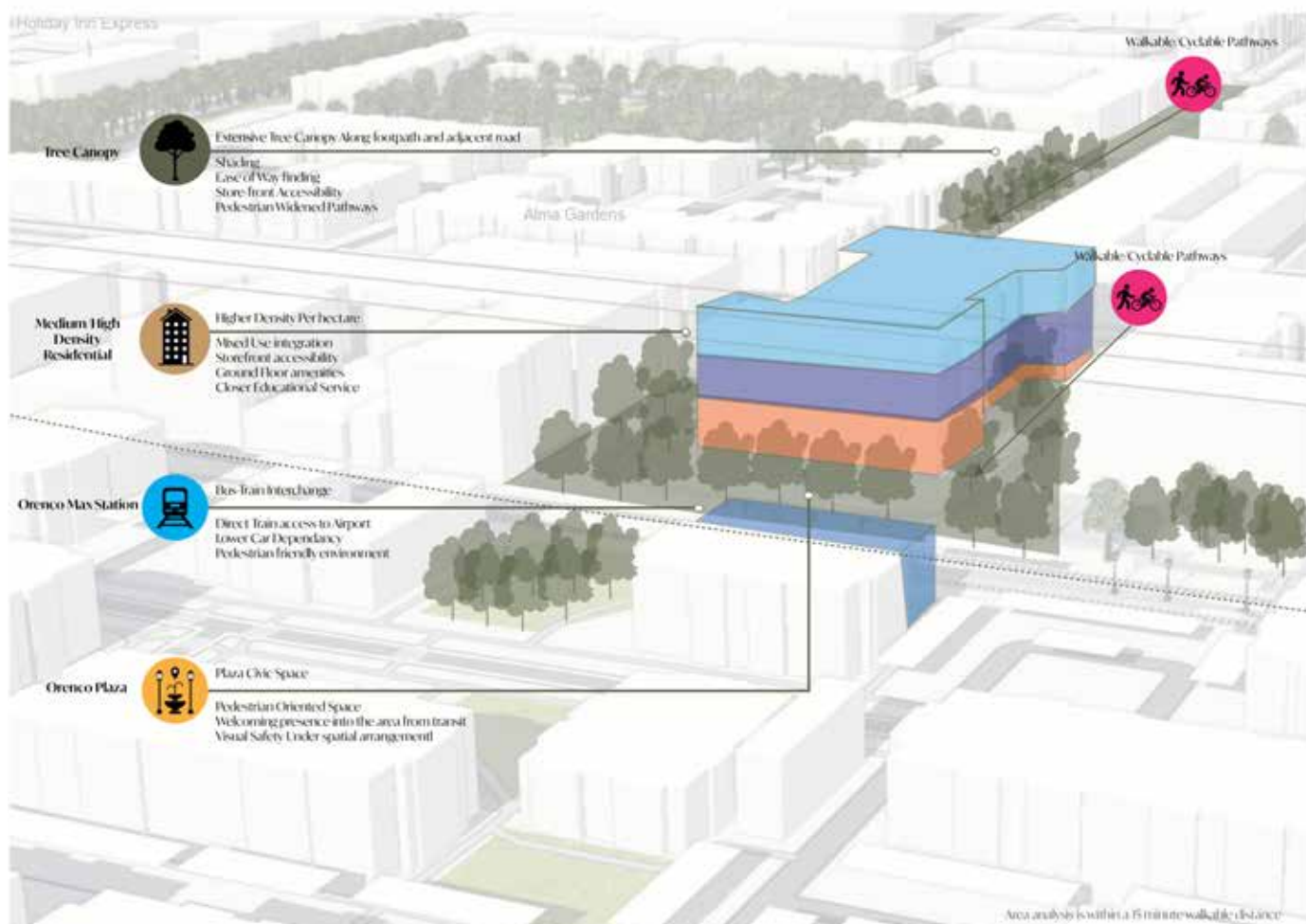


Figure 24: Hillsboro's Orenco Station Analysis with F4 Demo Map Underlay (2025), Authors Artwork Chapter 2 -Precedent Review| 50

### 2.7.3 Assen Station (Portland)



Figure 25: Photo of Assen Train Station (Powerhouse Company)

The Assen Station, located in the heart of Assen, Netherlands, is a design that has transformed from an invisible transit city into a distinctive, inviting transit space for travellers to embark from. Through its architectural presence, which essentially emulates an arrowhead-like roof, it reflects the nature of a strong social civic anchor, interweaving the once fragmented east-west city axis and replenished through a sustainable and flexible design gesture. Through this, the roof's striking triangular geometry gives the area a more compelling identity in the urban context (Powerhouse company, n.d.). Although TOD is not evident in its design process, the architectural connotations still capture compelling elements from transit-oriented development.

#### a) Transit Ridership

Assen's transit frequency is lower than that of Orenco Station, with average intervals of 30 minutes (NL Times, 2019). This is less frequent than the recommended 15-minute train arrivals advised by ITDP (2017) for optimal TOD. Lukman (2014) believes that strong ridership and capacity are key to justifying its actual scale in the urban context, which Assen's moderate passenger numbers of 7,548 boardings reflect (NL Times, 2019). These indications suggest that TOD has not played an active role in transforming its transit capacity; however, the design still meets the quality standards of a TOD Design.

Through its architectural aesthetic, as identified with its triangular roof geometry (Powerhouse Company, n.d.), the station shows a high quality of public circulation with its underground passages, helping make the urban space feel interconnected through its strong program organisation, thus showing advocacy for an easier TOD Plan (Lukman, 2014).

#### b) Walkability

Assens Station's walkability aligns closely with the principles outlined in the TOD literature.

vehicles, and maintaining pedestrian-friendly circulation on the ground floor and through the underground passage. Architecturally, it features intuitive connections between train platforms, the station plaza, and nearby cycle paths, ensuring that walkable environments are not hindered by car infrastructure. Assens station demonstrates an apparent effort to design for an engaging experience rather than a typical A-to-B journey, which aligns with Lukman's (2014) hypothesis that TOD encourages people to walk. Although not directly incorporated with TOD, the design still encourages this factor.

c) **Accessibility**

Accessibility in a TOD design reflects how healthy mobility is designed and implemented, as Assen Station demonstrates. As expressed by powerhouse (n.d.) "A logical organisation of the functions results in an open and accessible station." Diversity in mobility through healthy ecosystems of transportation options, as Lukman (2014) hypothesises, generates not only transportation throughput but also a portal to city-wide accessibility to surrounding amenities. With a country renowned for its biking culture, this creates a mix of mass transport options away from the typical private vehicle. This factor is evident in the design of Assen station, which prioritises integrating an underground bike storage garage, bike share systems, and a bike shop, thereby making cycling a more direct option for travellers. Although Mereno's (2024) fully realised '15-minute city' model, which promotes higher density in creativity, education, and economic activities, is still developing around Assen station, successful mobility within the core design highlights the crucial role of connecting the area's amenities through this architectural revival.

d) **User Friendliness**

Architecturally, Assen station achieves an inviting transit plaza through its soft blends of design materials and positioning, alongside the potential for mixed-use space integration. Marking the beginning of the main transport route to the city centre (Powerhouse, n.d.), the combination of transparent, light wooden structures provides space for both commercial and social activities, making the concept of transportation safer in line with Jacobs' (1961) street philosophy. The vast, open layout, supported by reduced visual obstructions, further strengthens Jacobs' ideology while also echoing NJTOD's (2018) idea that public transit service can serve as community incubators, thereby further reducing the potential for criminal activity.

e) **Density**

Although traditional TOD relies on particularly strategic density planning at medium to high levels, the Assen station sits within a relatively low-density area, surrounded by well-distributed housing. However, the redesign around the station's tracks avoids the pitfall of further motorised urban sprawl, as evidenced by the prioritisation of sustainable mobility. Even without the higher density, Assen station promotes this mobility use in conjunction with land-use efficiency, as TOD frameworks like ITDP (2017) demand, further opposing ecological and social fragmentation within the urban fabric. Its density success lies in its concentration of urban movements and helps to activate the area despite its moderate population.

f) **Parking**

As previously explored, cycling is a significant aspect of this design, including the incorporation of an underground garage bike storage facility and considerations for shared bike systems. This avoids allocating prime real estate to cars, as in New Zealand. Instead, pedestrians in Assen have immediate and convenient access through these transit options, reinforcing Lukman's (2014) emphasis on alternative mobility. Although vehicular access has been considered, Assen Station reduces its need for vehicle presence by locating it underground, thereby helping to reclaim the landscape for the community above. While ETOD (2020) and Leadbetter et al. (2024) argue that parking disrupts pedestrian environments, Assen Station embodies a vibrant public realm and supports healthy cycling

### g) Land Use Diversity

While Assen Station has a strong foundation for mobility and transit access, land use remains limited in diversity and intensity, especially compared to other higher-performing TODs such as Orenco Station. Despite its transition to low-moderate diversity, the station plaza offers a critical benefit for social bump-ins, fostering more interactions and generating vibrancy, as advocated by Appleyard (1978). However, without adjacent denser housing, market space or destined business potential, sustained social activity remains low in the area, further exploiting its underutilisation throughout the day and night. Although surveillance is present, without an increase in mixed-use intensity, Jacobs-style eyes-on-the-street animation may be particularly subdued.

### h) Economic Development

Assens station offers substantial potential for future local economic growth; however, the level of integration with nearby residential housing and the supporting businesses, as suggested by Zamorano (2014), remains relatively low. On the other hand, Assen Station's transit focus shifts from the potential of big box retail development alongside the traditional car-centric economic model that is prominent in Auckland's adjacent mall car parks. Thus, the Assen form leans towards a more local economic platform to retain its significant urban fabric form, with biking more prevalent than private vehicle usage. For Assen stations, the urban context requires a direct economic feedback loop, which traditional TODs offer. To realise its potential, developmental infill and policy support are needed.

### i) Visual Proximity

Assen station's architectural design ensures safety through the effective integration of visual proximity, maintaining consistent transparency in public spaces. This safety is further strengthened by the design organisation (Powerhouse, n.d.), safeguarding lone commuters, including minorities, the elderly, and vulnerable individuals, even during quieter times, which are often more intimidating than busier periods. Visual openness, which offers shelter without enclosing views, aligns with Mereno's (2024) emphasis on the 15-minute city's proximity and visual connectivity within the urban fabric, underscoring the importance of visual proximity in transit-oriented developments.

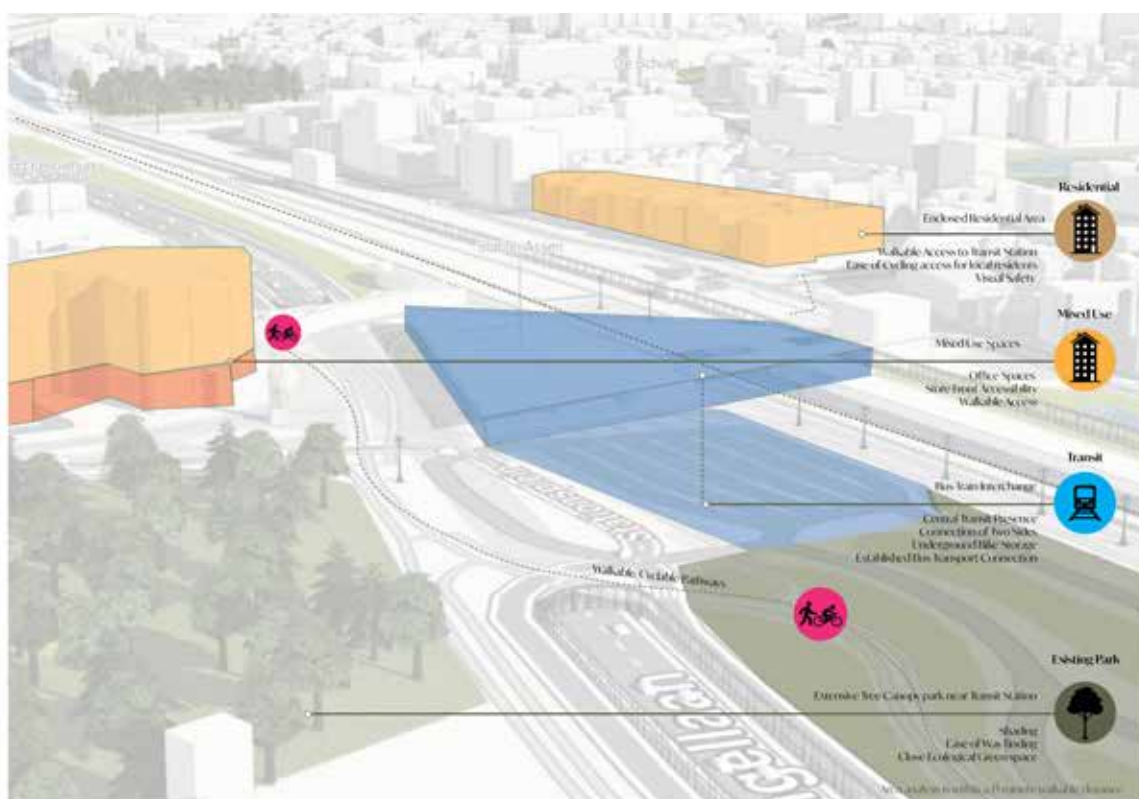


Figure 26: Hillsboro Orenco Station Analysis (2025), Authors Artwork

## Conclusion

The notion of this precedent review has helped reveal different exponents of TOD across these collective settings. Each location has distinct embodied responses within its setting, with moments of design integrated to address specific challenges. Tamaki's New Lynn Station revealed a transit ambition that actively challenges the persistent car-centric culture. Orenco Station highlights a more rigorous transit hub model where transport, walkability, and mixed-use density synchronise to create a socially resilient community —one that does not rely solely on the car to get around. Lastly, Assen Station, although less dense than Orenco, reveals an architectural expression of regenerative and connective force within a fragmented setting.

Collectively, these precedents embody a critical understanding of our space's current rhythms, and that we need to look towards public experiences in place, space and time like these. A city like Tamaki, even with its own urban design challenge at New Lynn station, could help guide the city's urban fabric toward more pedestrian-oriented futures, rather than the unsustainable attitudes toward private vehicles.

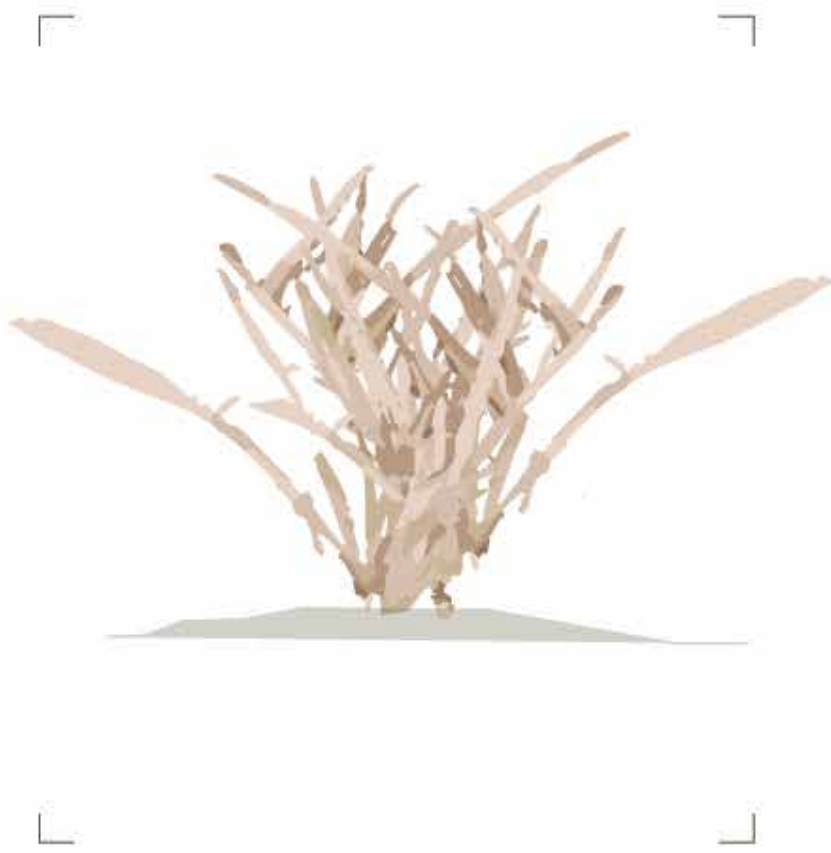


Figure 27: Harakeke Growth (2025), Authors Artwork

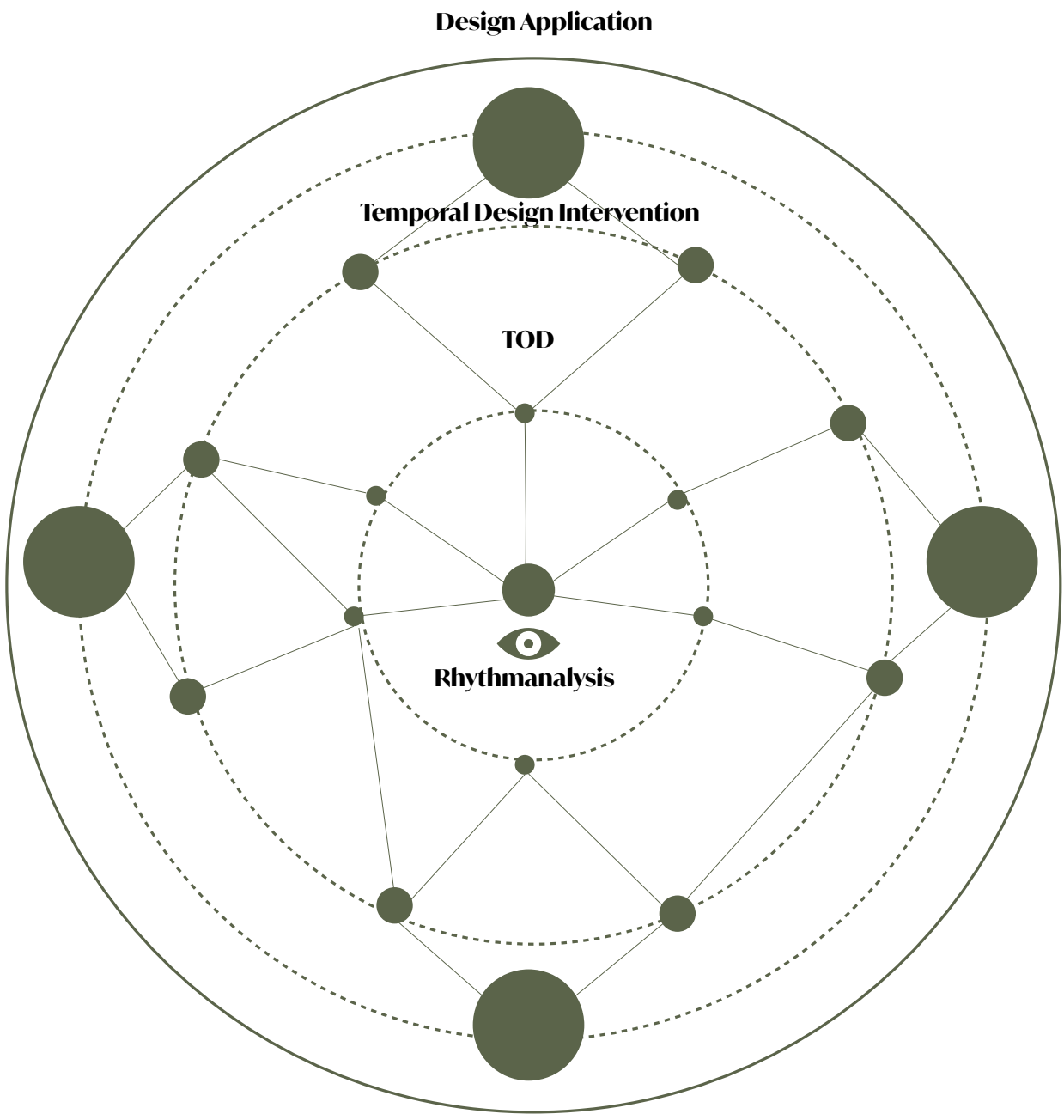
# Chapter 3: Theoretical Framework

## 3.1 Objective & Outline

The relentless expansion of cities, driven by car-centric infrastructure, fundamentally reshapes urban life by disrupting commute rhythms, spatial coherence, and our collective experience of time. In this context, my work delves into understanding the city's rhythms in Te Manawa (Westgate) and how its urban rhythm, disrupted by car-centric incoherence, can be reconfigured through a Transit- and pedestrian-oriented ideology.

This theoretical framework provides a critical lens through which the thesis examines how Tamaki Makaurau's current urban planning culture can be opposed by rethinking our urban fabrics. Thus, Te Manawa, through a rhythmic transformation, is undergoing TOD intervention alongside adaptable infrastructures. By weaving together strands of urban philosophy, contemporary theories, and strategic design considerations, the aim is to restore a difference in urban design—one that is set out for the designer who becomes the Rythmanalyst, interpreting the movements of bodily responses acting through space and time over the conventions of car-centric movements.

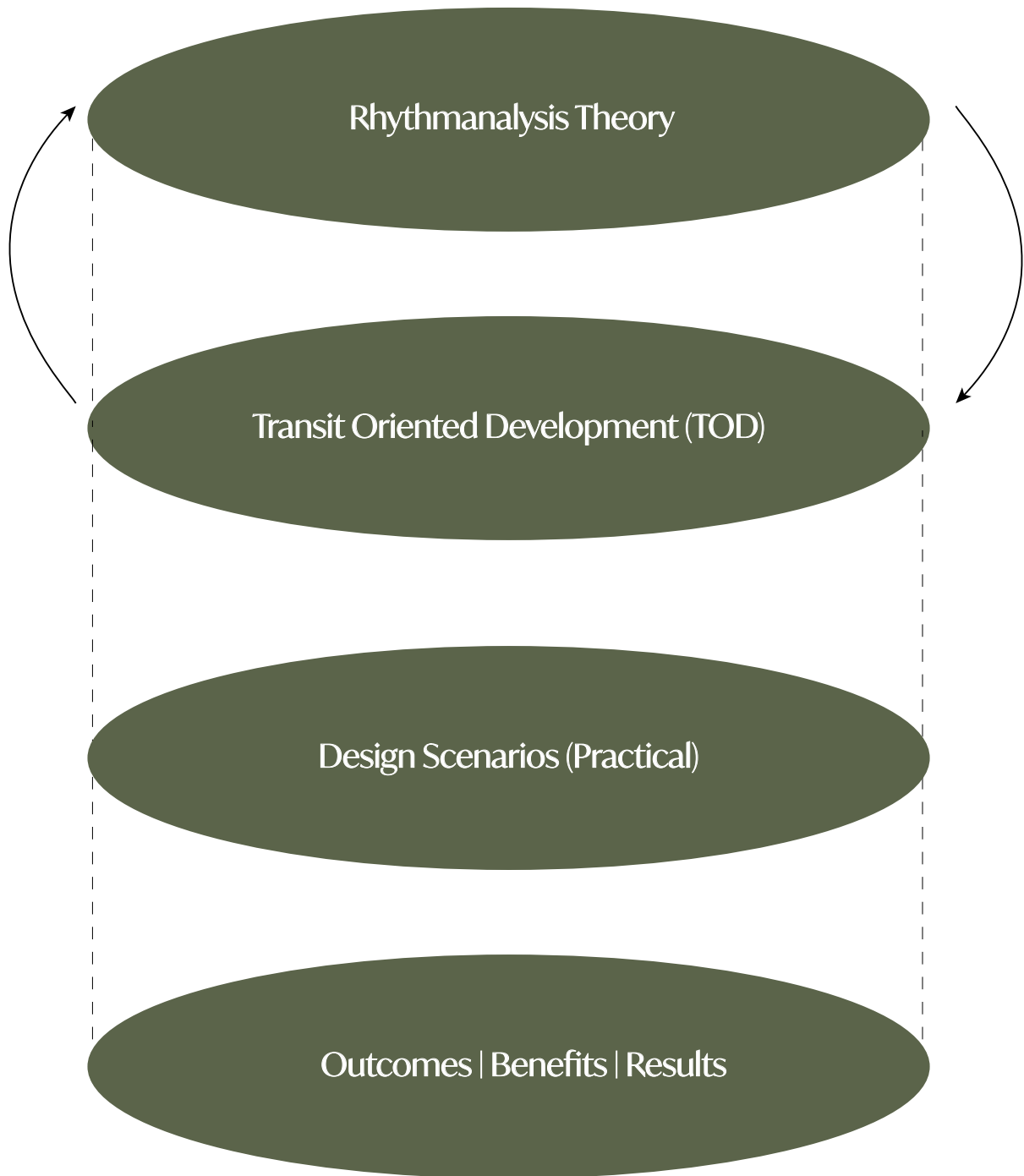
As a design retrofit, this philosophy looks to sit outside the jurisdictional policies that govern urban design in Tamaki within reason. The framework is tailored for those who find solutions that would not typically meet these conventional restrictions. By removing them, we can identify opportunities for design interventions that can transform the very rhythms that shape our movements in Tamaki's outdated design development.



-  Theoretical Lens
-  Urban Rhythms
-  Transit Oriented Development (TOD) Principles
-  Temporal Design Interventions

Figure 28: Theoretical Framework (2025), Authors Artwork

### 3.2 Design Methodology



### 3.3 Key Concepts and Definitions

**Rhythmic Transformation:** Re-coursing Te Manawa's (Westgate) current urban dynamic involves providing a transit-oriented architectural anchor to the area. This anchor catalyses typologies to grow within proximity, fostering a vibrant and dynamic urban environment.

**Multi-Functional Typology integration:** An amalgamation of urban architectural typologies influencing the enhancement of residents' wellbeing and economic vitality.

**Urban Sprawl:** In this research, the main relational issue in the impacts of urban design is the relativity of urban sprawl—from the low-density, car-dependent expansion of urban areas to the outward expansion of detached single-unit housing—each of which causes various forms of fragmentation in ecological and social dynamics. Through this research, it has been recognised that current approaches to counteract sprawl in urban design still operate frequently within a linear logic of containment and efficiency, viewing sprawl as a spatial and quantitative issue. This relevant mindset, often produced by previous modernist planners, seeks to deliver more sprawl before it is resolved. Thus, drawing research away from these formalities and into multi-layered design systems, we can then challenge the renowned issue of urban sprawl.

## 1. Radial Sprawl

■ Low Density Sprawl

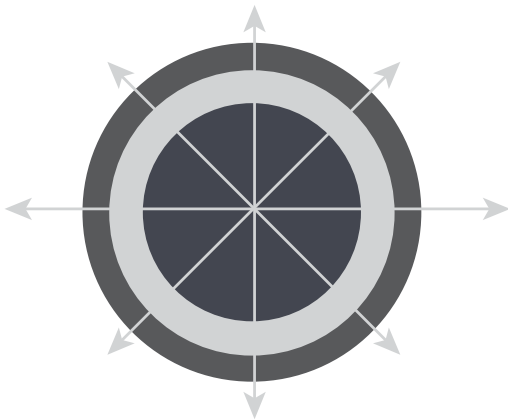


Figure 1 (Radial Urban Sprawl Diagram)

## 2. Ribbon Sprawl

■ Medium Density Sprawl

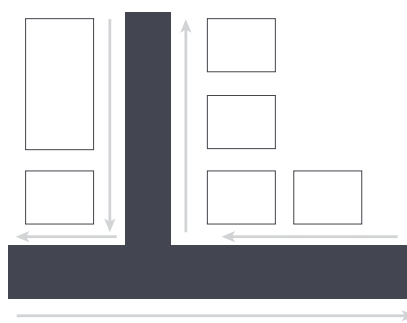


Figure 2 (Ribbon Urban Sprawl Diagram)

## 3. Leapfrog Sprawl

■ High Density Sprawl



Figure 3 (Leapfrog Urban Sprawl Diagram)

■ Low density sprawl= fewer people, more buildings  
■ Medium density sprawl= more people, fewer buildings  
■ High density sprawl= more people, less buildings

**Transit-Oriented Development:** This is a transport-first approach that seeks to reduce the need for private vehicle mobility and increase the need for public Transport Networks.

**Cultural Regeneration:** This is a re-establishment approach to the revitalisation of segregated community activities and lifestyles within Tamaki Makaurau, which is dominated by Western activities.

**Streetscaping Integration:** This method analyses the coordination of visible elements along a street to create a passive and aesthetically unified public realm.

**Walkability and Safety:** Walkability and Safety: Effective streetscaping creates eyes on the street (Jacobs, 1961) and provides a sense of purpose for safe passage through various aspects of an urban environment.

**Densification:** Intensifying low-density land plots into mixed-use, high-density living capability territories with higher social and ecological outcomes.

**Placemaking Intervention:** Transformation of consumerist urban spaces to community-based environments that thrive on social activity based on pedestrian interaction.

**Way Finding Integration:** Distinctive architectural design presence that reflects Te Manawa through transit and pedestrian access. Moments where the space becomes memorable by its unique integrations.

**Temporal Design Integration:** Temporal iterations of design help to evolve space and time rather than stagnate it. Space and time become co-occupied and present an adaptable infrastructure as an evolving system.

### **3.3 Relationships**

The thesis explores how these interventions can help restructure the arrhythmic patterns of urban space and time and create a more socially, economically, and ecologically cohesive environment.

### **3.4 Scope and Limitations**

**Scope:** Engagement with Macro and Micro-scale Urban transformation to alter a poorly structured and underutilised Urban environment.

**Limitations:** Data and urban-driven design may not be entirely supported by governing officials in the area, who may lack the will to embrace regenerative urban strategies and have lagging design ambitions

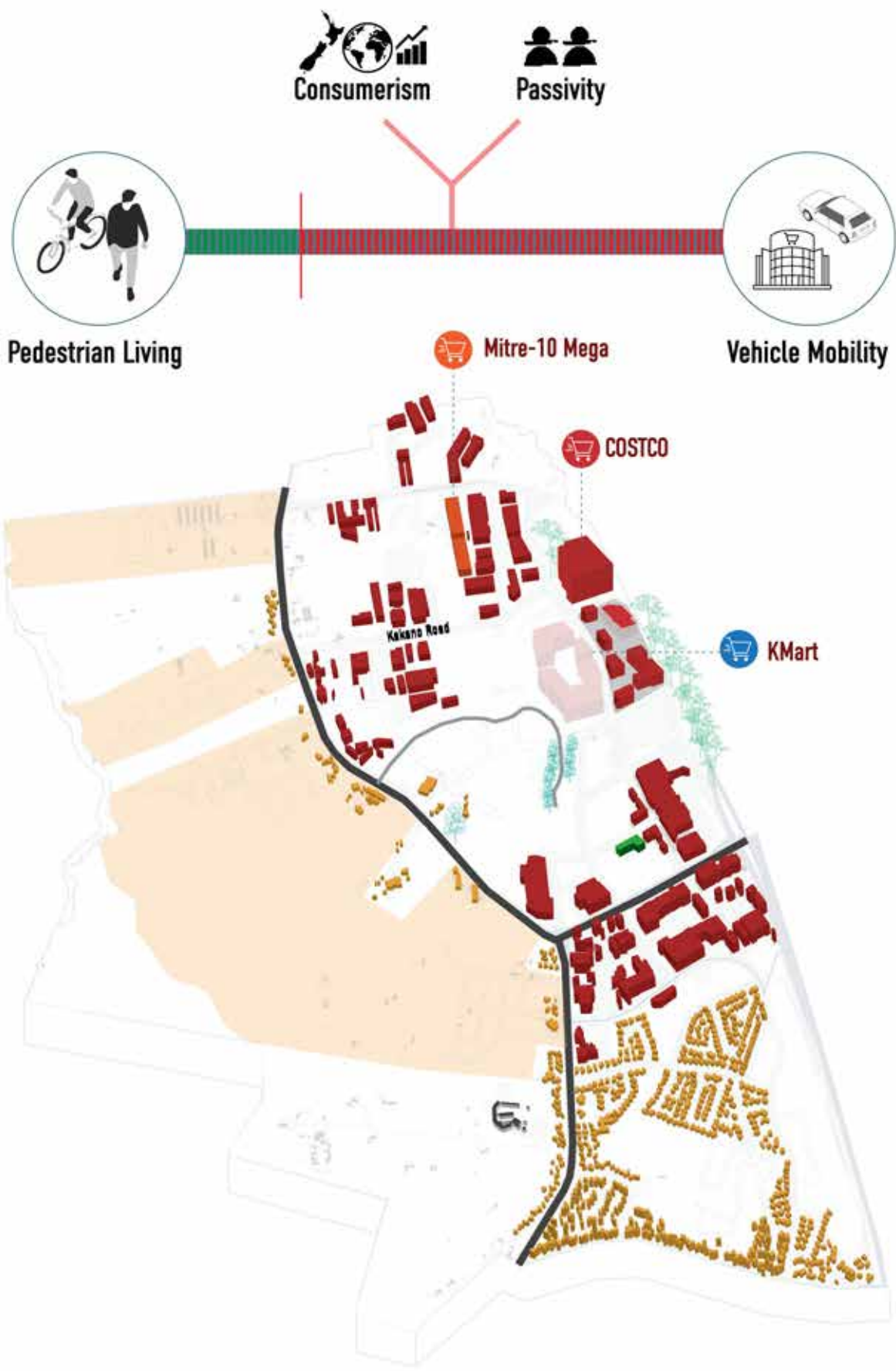


Figure 31: Consumerism Mapping (2025), Authors Artwork

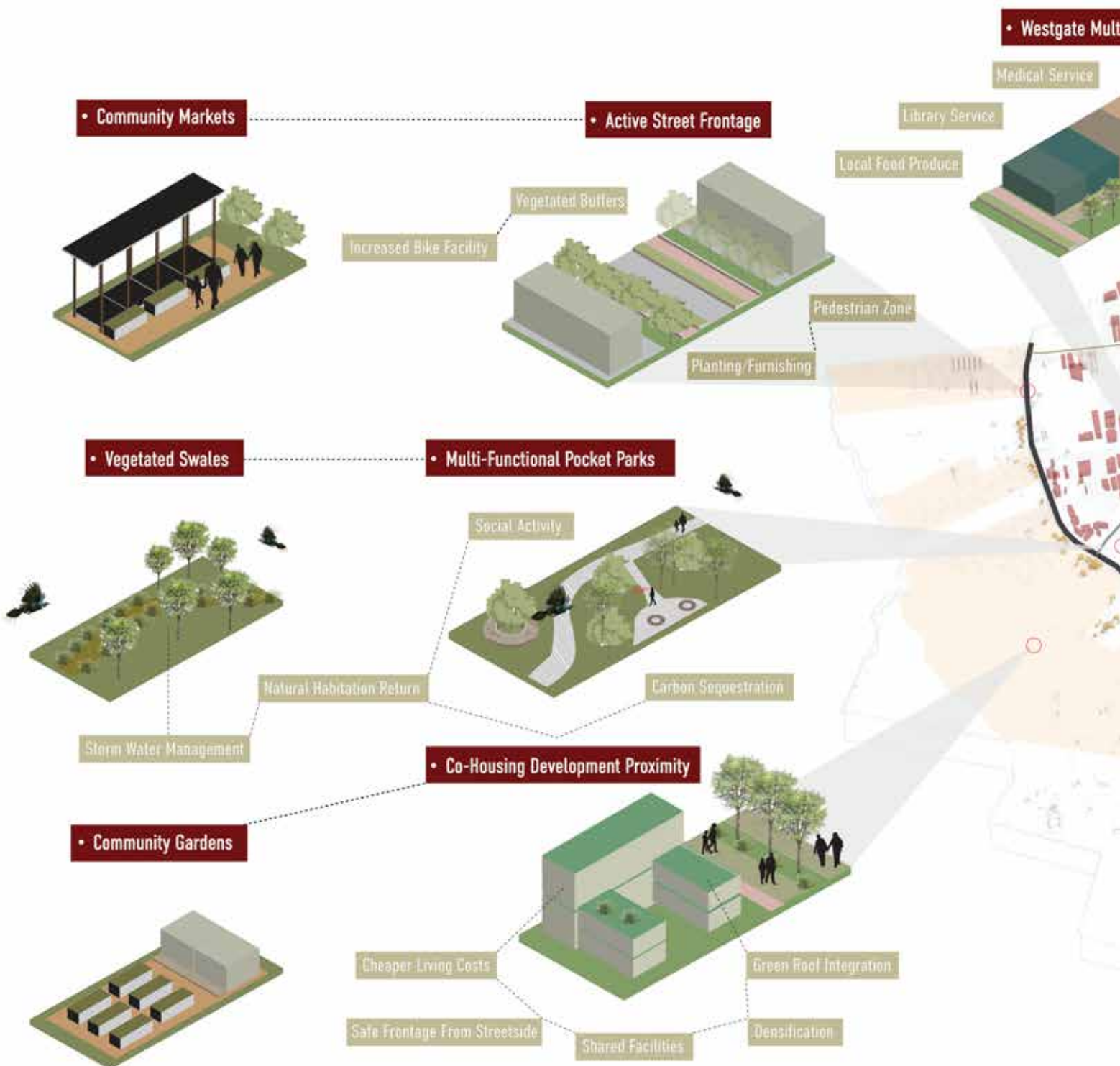
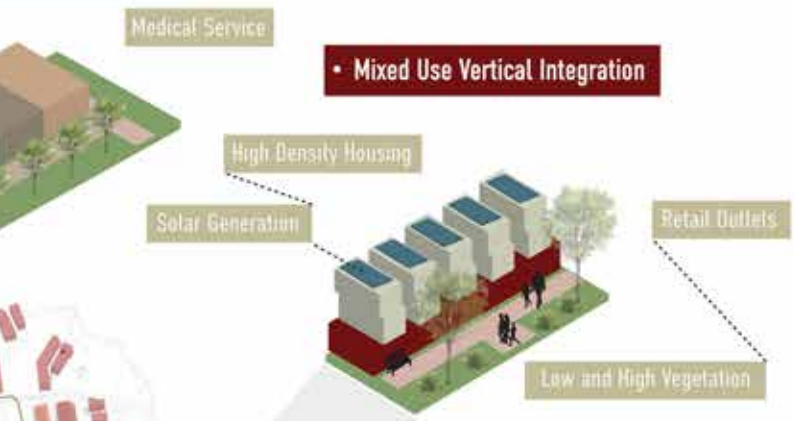
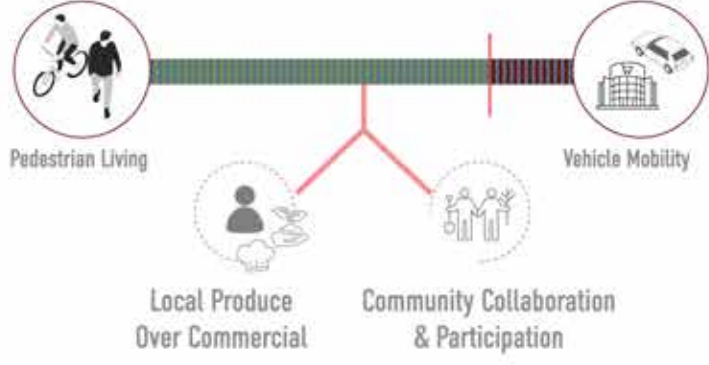


Figure 32: Conceptual Design ideology (2025), Authors Artwork

**i-Disiplinary Hub**



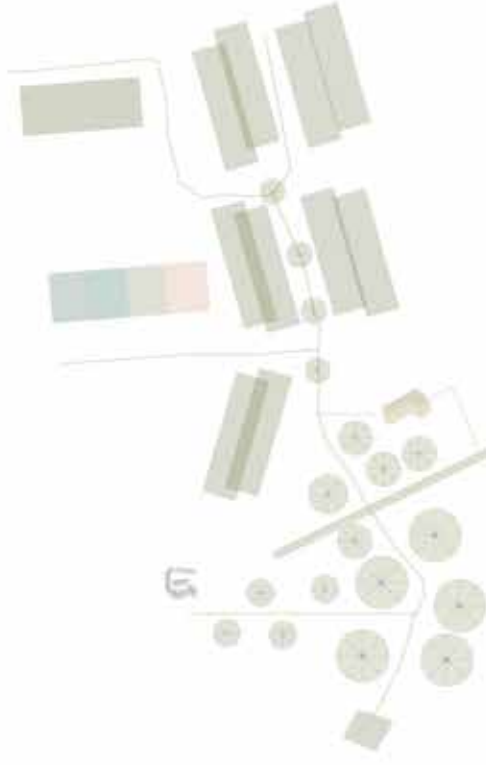
**• Mixed Use Vertical Integration**



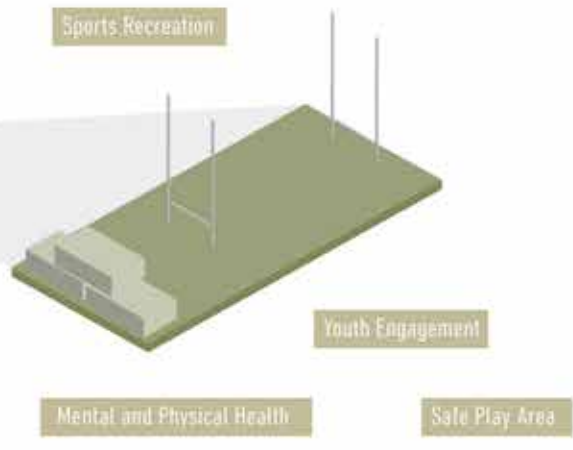
**• Street Scaping Intensification**



**• Green Corridor Network**



**• Community/Sports Hub**



*This page has been deliberately left blank*

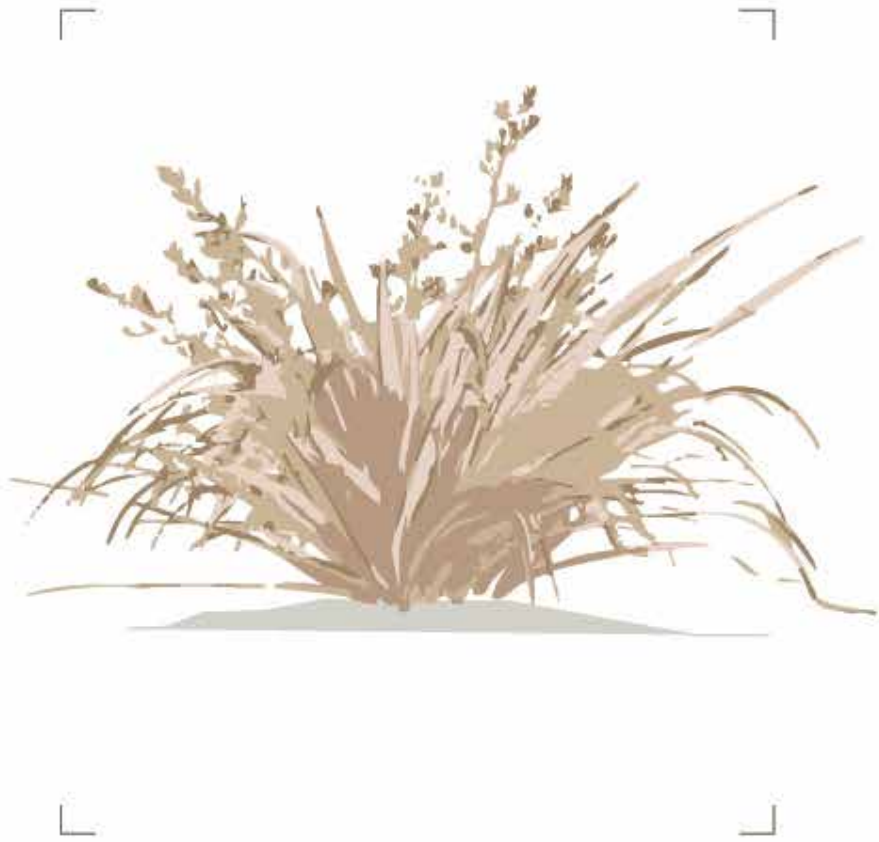


Figure 33: Harakeke Growth (2025), Authors Artwork

## Chapter 4: Site Context

### 4.1 Te Manawa Background

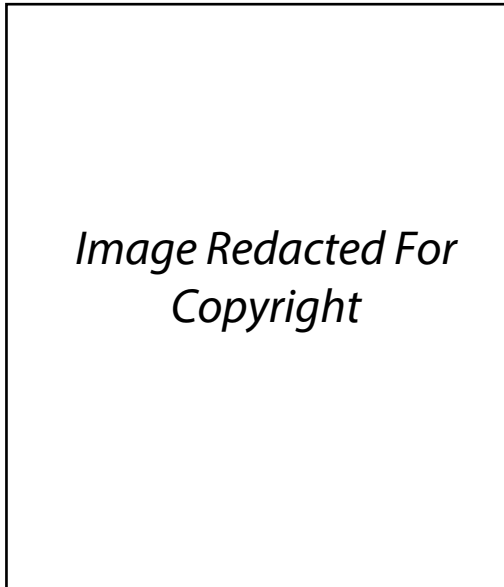


Figure 34: Te Manawa 1950 (NZ Satellite)

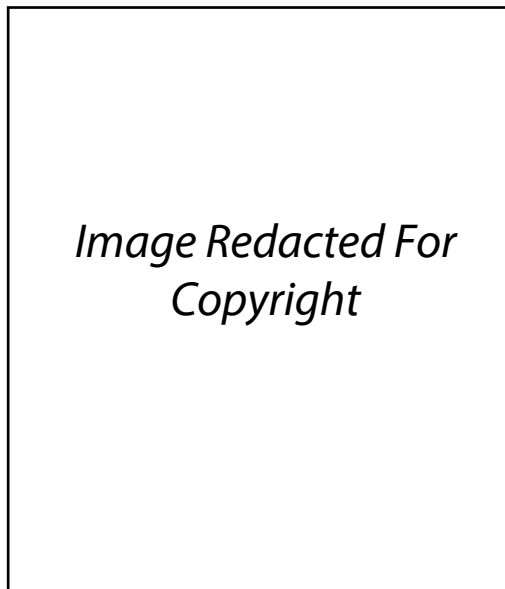


Figure 35: Te Manawa 1990 (NZ Satellite)

Te Wao Nui o Tiriwa (The Great Forest of Tiriwa), or commonly known as the Waitakere Ranges, was formed from the large Waitakere Volcano embedded deep within the Waitemata Basin and is approximately three times the size of Ruapehu, Ngauruhoe, and Tongariro combined (Waitakere Ranges Protection Society, n.d.). Around 16 million years ago, the extreme forces protruding from the earth pushed the giant Waitakere Volcano upwards and raised it above sea level, causing parts of its geological landscape to subside in the process. Further erosion from the Tasman Sea, followed by strong earth movements, formed the summit ridges we see today along the Waitakere Ranges coastline (Waitakere Ranges Protection Society, n.d.). Te Kawerau-a-Maki trace their origins to the Tainui, Te Wakatūwhenua, and Te Moekākara canoes. Tiriwa is revered as one of Tamaki's ancestors, known for the upheaval of the Waitakere Volcano at Karekare Beach and its subsequent movement to its current position along the Hauraki Gulf (Taonui, 2012).



Figure 36: Te Manawa 2010 (NZ Satellite)

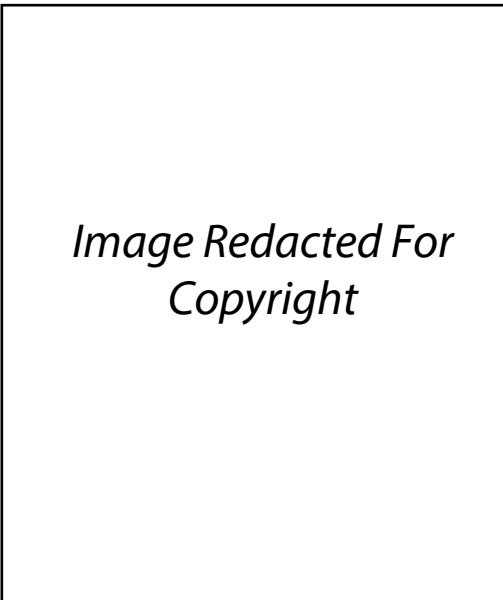


Figure 37: Te Manawa 2025 (NZ Satellite)

Following extensive British Crown movements into Tamaki Makaurau in the 19th century, timber milling was introduced, establishing firms such as the Mander & Bradley mill at Nihotupu in 1895 (Wells, 2022). The Mill became an incremental part of the Manukau Harbour Edge, dominating Kauri Land in the Waitākere Ranges (Wells, 2021). These movements swiftly put into place further detriment to Maori Land and resources in the North-western territory, except two native reserves at Waitakere Valley and Piha (Tekawerau, n.d.).

## 4.2 Te Manawa

Te Manawa (Westgate), named initially Massey North, has today become a significant urban development catchment in the northwestern Tamaki Makaurau region, facing the challenge of supporting urban population growth while providing equitable employment opportunities within the community. Over time, Te Manawa has undergone significant development since its agricultural roots, catalysed by the construction of the Northwestern Motorway connecting to Hobsonville Road in 1961 (Auckland Council, 2018), and once flourished amid abundant agrarian resources. One of these resources was the Gareja Family Strawberry farm, a 66-year-old family farm that had to close due to industrial development proposed by the Waitakere Council (Garelja Bros Strawberries, 2019). Today, the exact location is situated next to a Mitre 10 Mega store, further enclosed by a front-facing impermeable car parking space. This industrial developmental shift in the consensus of North-western Auckland is rooted in the ideology that North-western Aucklanders must travel extensive distances to the city centre for employment opportunities, a situation exacerbated by the lack of opportunities within the Westgate precinct. Therefore, the opening of Westgate Shopping Centre in 1990 and the development of the Auckland 2050 plan by the Auckland Council (2018), which designates Westgate as an Urban Node within the multi-nodal system, were proposed to accommodate anticipated household, population, and employment growth in the north-western area. As explained by the Auckland Council (2018), the area anticipates an 81,760 residential growth between 2018 and 2048, with a further requirement of 33,190 new households and 20,260 jobs during the same period.

However, while ongoing commercial and residential growth in the Te Manawa precinct is taking place, the area anticipates future growth, with the exclusion of an effective transit infrastructure anchor closely aligned with commercial and mixed-use activity. Although Auckland Council (2018) identified the importance of major transport infrastructure in the Northwestern region, the planned station, marked by the Westgate Bus Station, is isolated, much like the Albany Bus interchange. This shows no progression in planning, as the walking catchment surrounding the station is away from commercial activity. Ignoring potential mixed-use integration and the lack of transit quality leaves open the possibility that opportunities will be vacated as part of their current growth strategy.

# Multi-Nodal System (Auckland 2050)

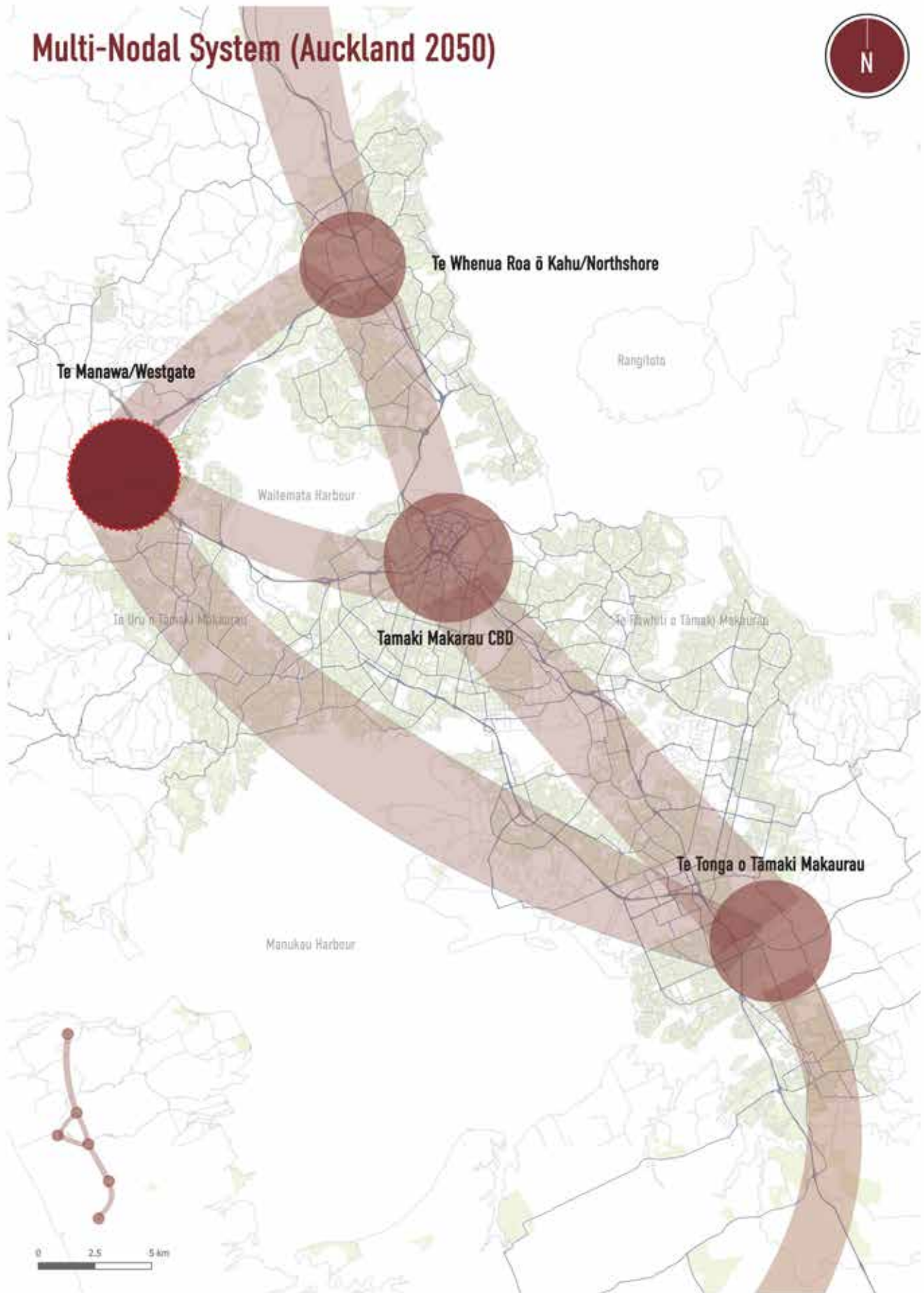


Figure 38: Multi-Nodal System (2025), Authors Artwork





Figure 40: Te Manawa Site Location (2025), Authors Artwork

### **4.3 Te Manawa Development Today**

Today, the Te Manawa Precinct reflects the urban form that has become accustomed to planning decisions based on car-centric infrastructure, and is another essential residential area, boasting extensive retail, commercial and industrial zones that structure our daily movements through high consumerism.

Given the ongoing urban development, the current development still showcases a conventional planning approach focused on consumerism, with retail shops such as Mitre 10, Bunnings Warehouse, and Woolworths dominant, as in adjacent urban areas in Tamaki Makaurau. While these shops have been characterised as providing everyday necessities, the journey to them is highly car-dependent.

As a result, we get a transactional urban activity that is dominant in the Westgate precinct, which further undermines employment opportunities in favour of a cyclical formality.

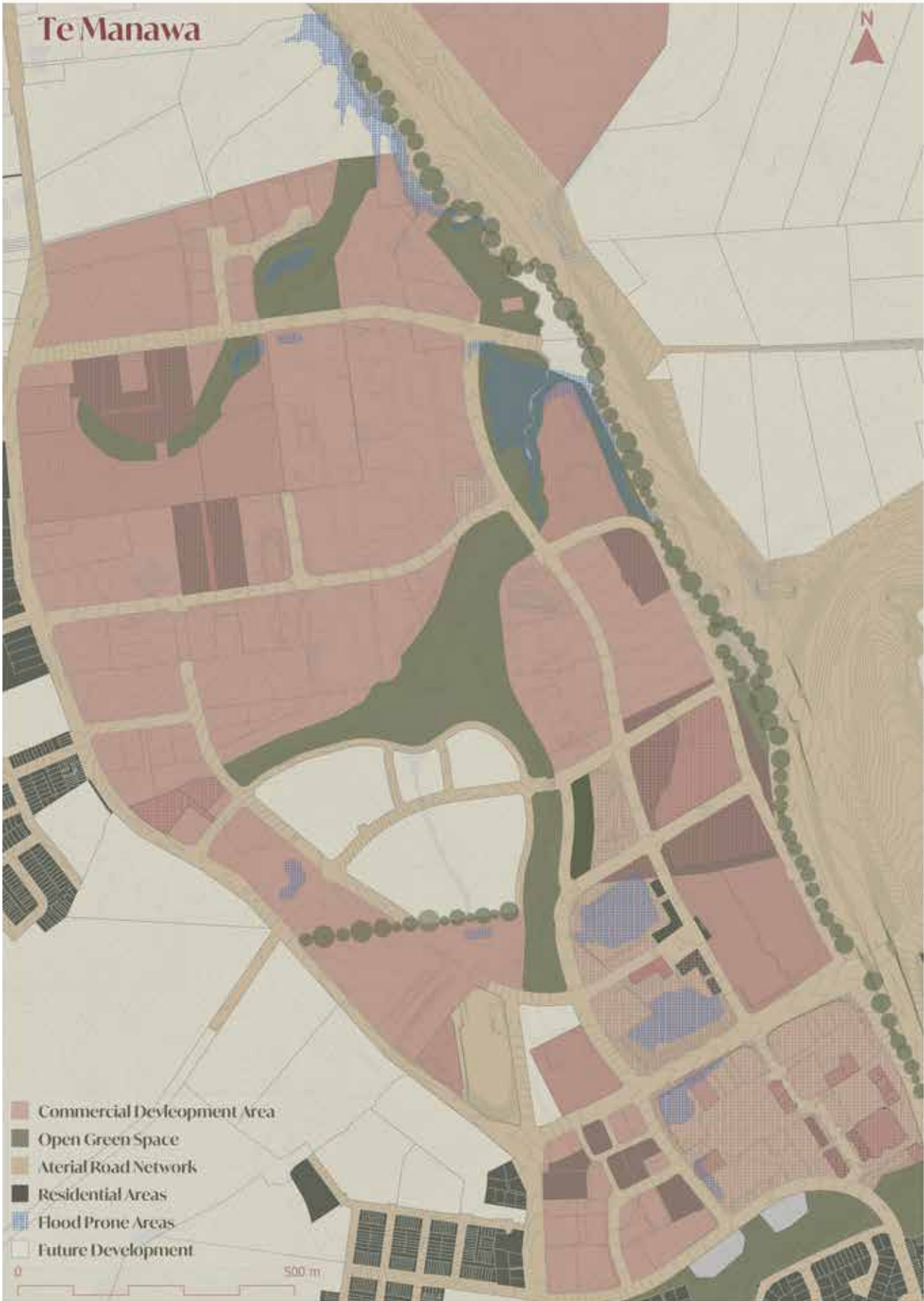


Figure 41: Te Manawa Zoning areas (2025), Authors Artwork

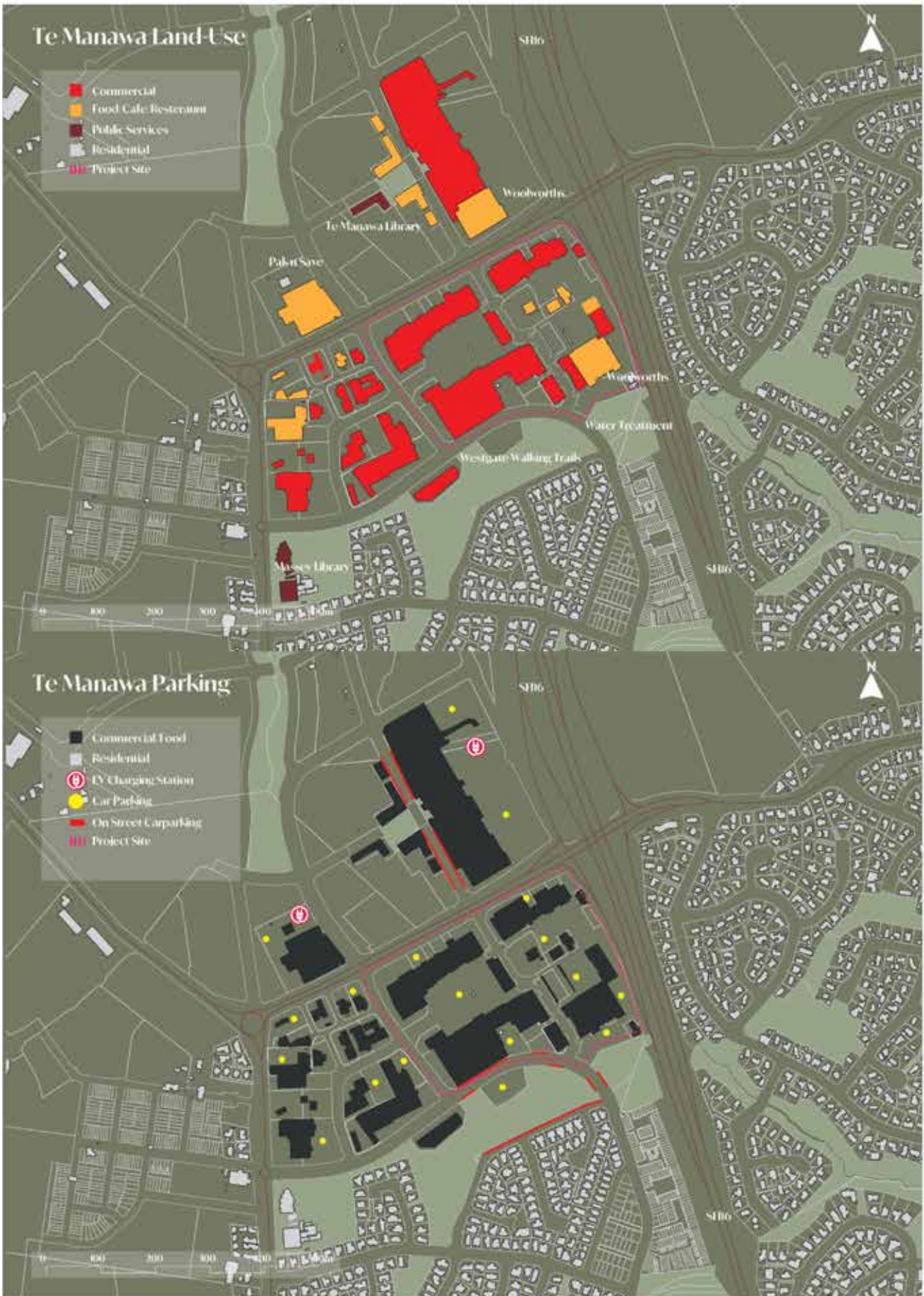


Figure 42: Te Manawa Land-Use and Parking (2025), Authors Artwork

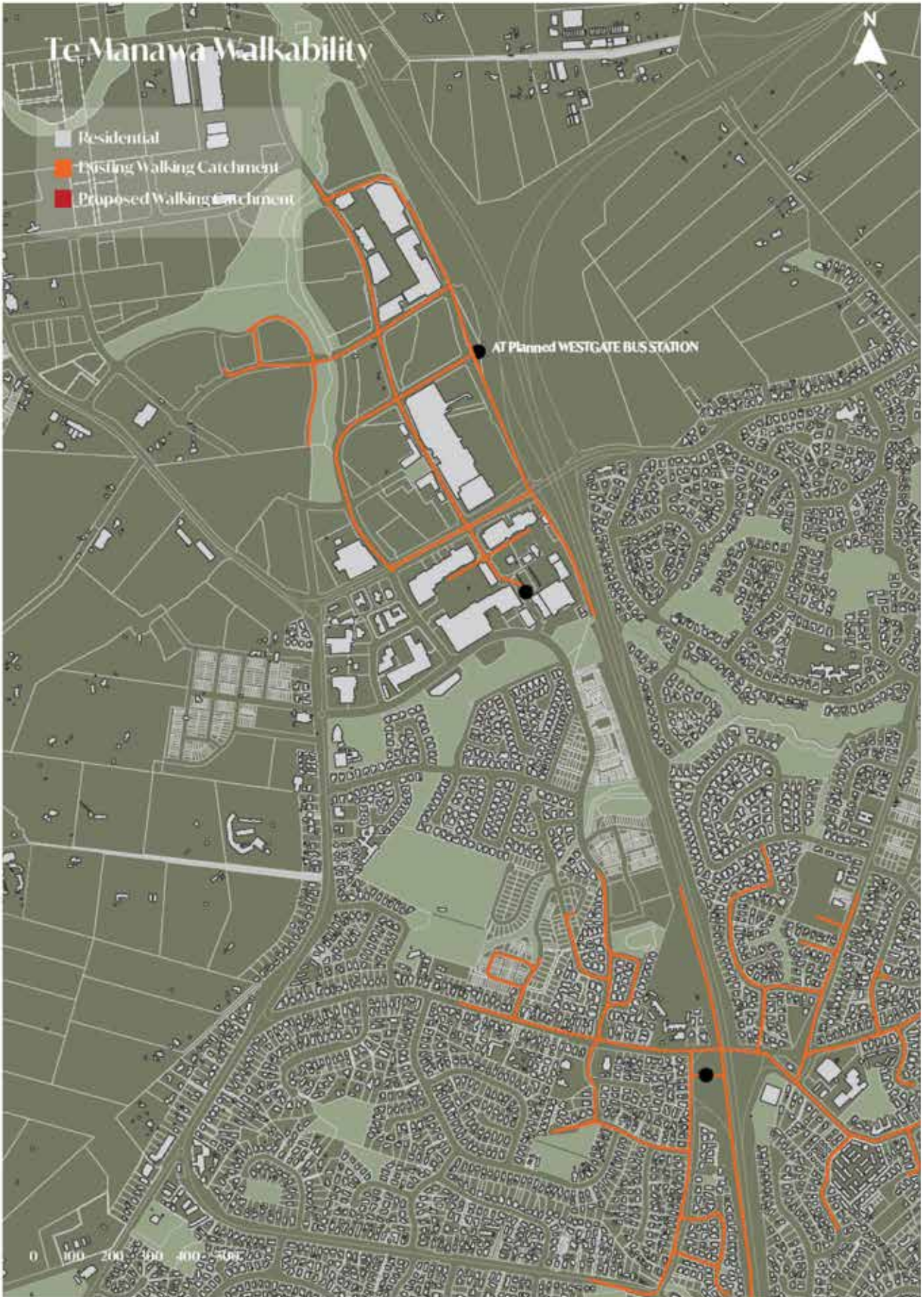


Figure 43: Te Manawa 15 Minute Walkability Across Site (2025), Authors Artwork

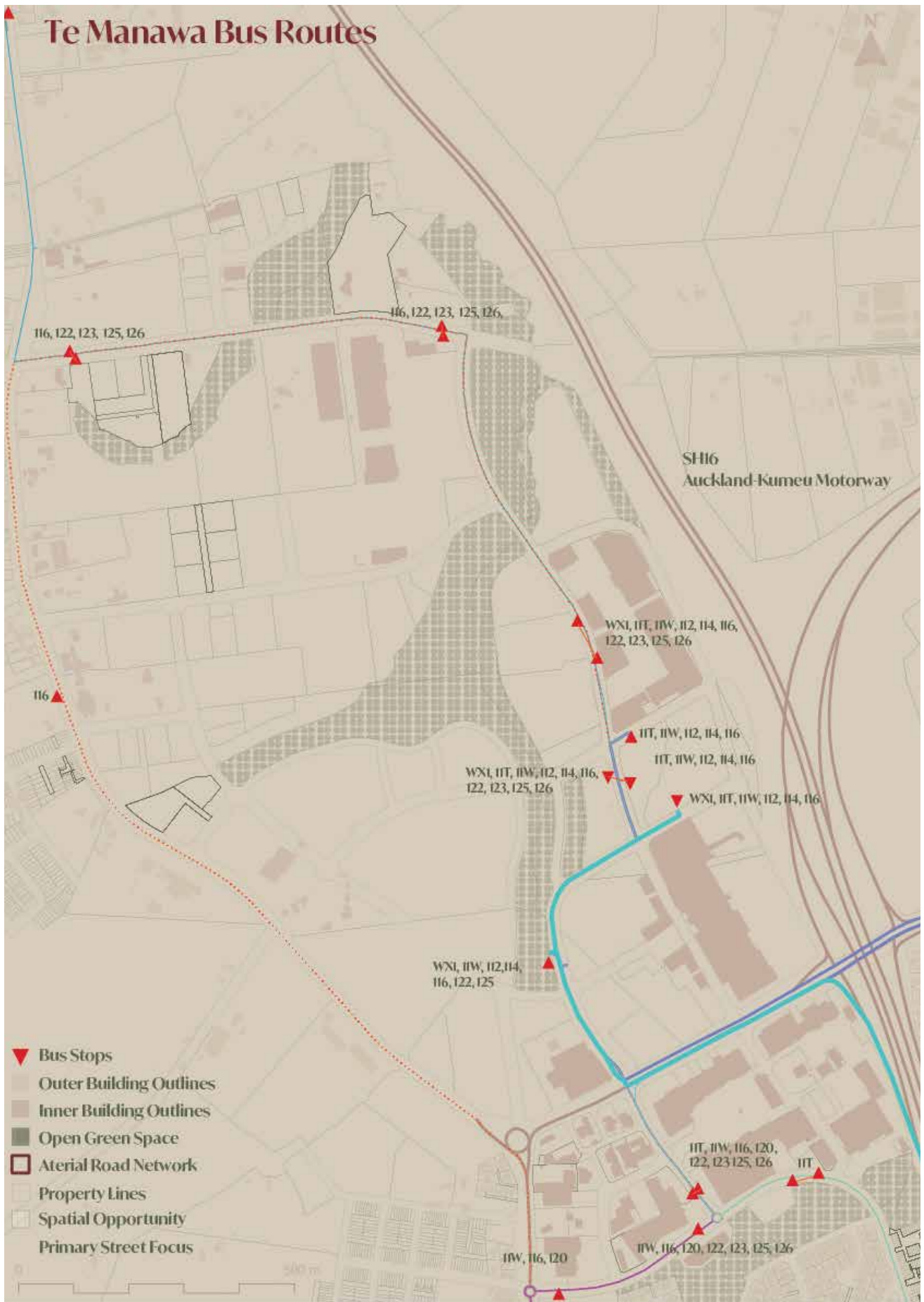


Figure 44: Te Manawa Bus Transport Routes (2025), Authors Artwork

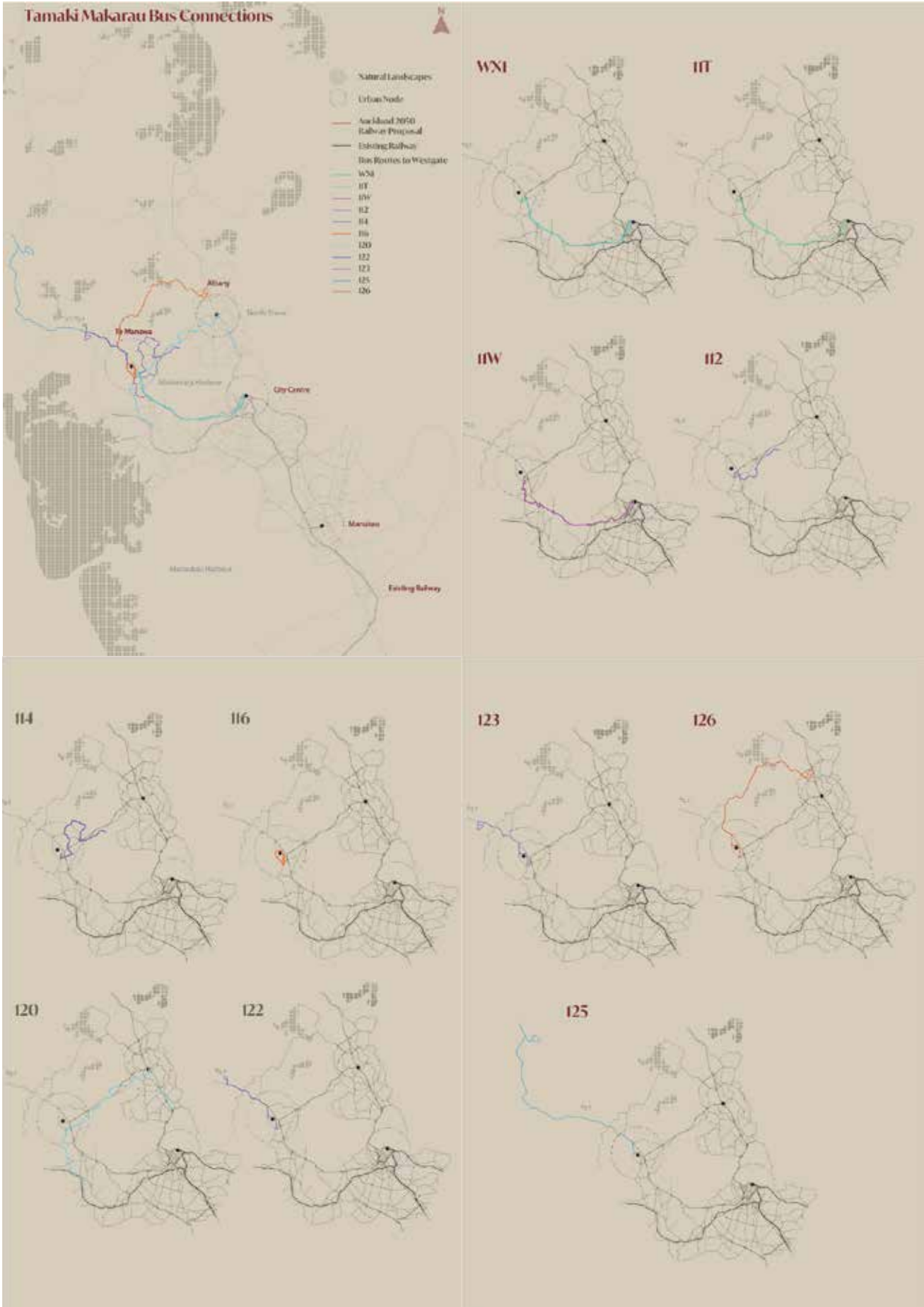
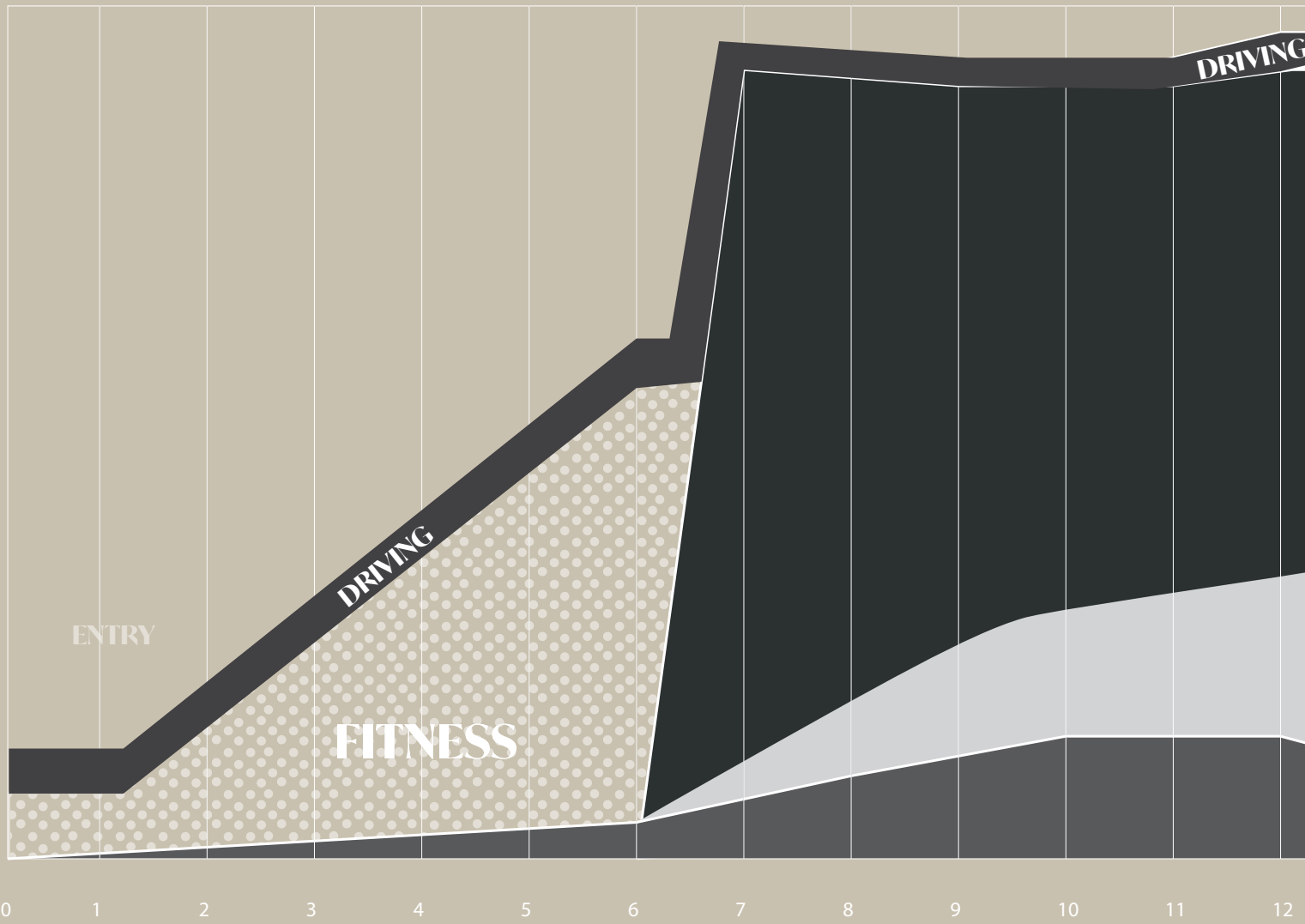


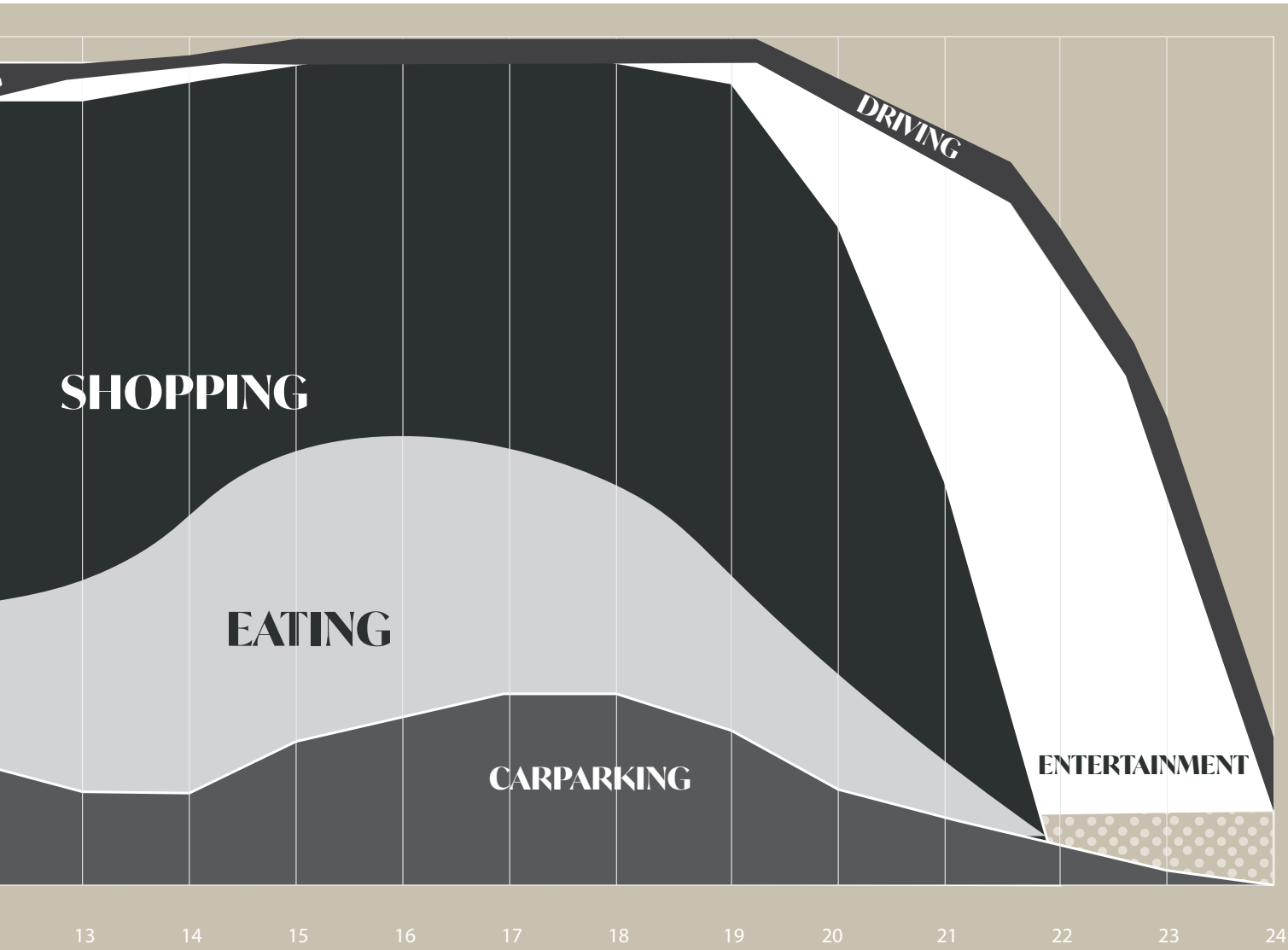
Figure 45: Te Manawa Bus Transport Routes across Tamaki Makaurau (2025), Authors Artwork



Assemblage of Programs- Te Manawa) Shopping Centre (Present Day)

A TYPICAL WEEKEND 24 HOUR PERIOD

*Here we examine the typical programme/activity present in the shopping centre and what infrastructure is utilised in the typical 24 hour time period and what infrastructure*



Use the space of Te Manawa through this Japanese Visionary study of urban function distribution across time. This way we understand how every hour of the day is maximised more at certain times. Recordings here are estimates formed from online Time Stats from Westgate.



**Urban Neighbourhood behaviour (Te Manawa)**

Figure 47: Te Manawa Shopping Centre Embodied Behaviour (2025), Authors Artwork



**Urban Neighbourhood behaviour (Te Manawa)**

Figure 48: Te Manawa Shopping Centre Embodied Behaviour (2025), Authors Artwork

#### 4.4 Te Manawa Shopping Centre



Figure 49: Te Manawa Shopping Centre (2025) Authors Photography



Figure 50: Te Manawa Shopping Centre (2025) Authors Photography



Figure 51: Te Manawa Shopping Centre (2025) Authors Photography



Figure 52: Te Manawa Shopping Centre (2025) Authors Photography



Figure 53: Te Manawa Shopping Centre Site (2025), Authors Artwork

Approaching the Te Mana centre from a transit-focused perspective made me realise the infidelities this big-box retail-carpark environment represents. The layout favours vehicle life over human life, which, in the context of Tamaki, is a common thread among our spaces; only at Te Manawa is it represented at a larger scale. Westgate is highly focused on its economic pull and how overseas commercial infrastructure is developing at an unsustainable rate. Thus, no local community life can be presented in its most efficient form, leaving Westgate as a very antisocial urban space. Through the following stages of design, the study will help to investigate how this relationship can be transformed.

*This page has been deliberately left blank*

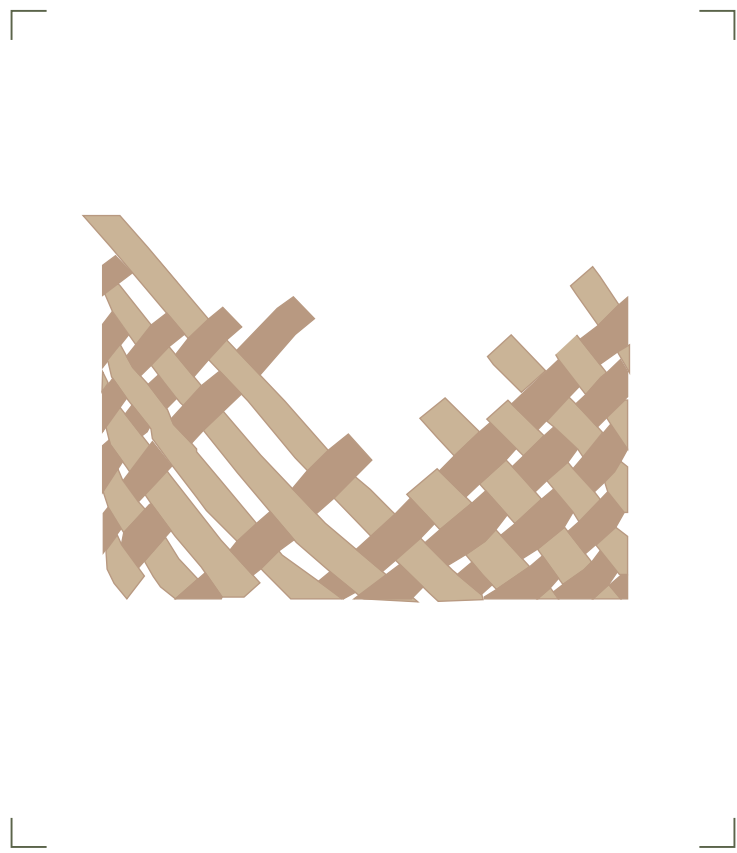


Figure 54: Harakeke Weaving Basket (2025), Authors Artwork

# Chapter 5: Conceptual Design

## 5.1 First Draft Design Ideology

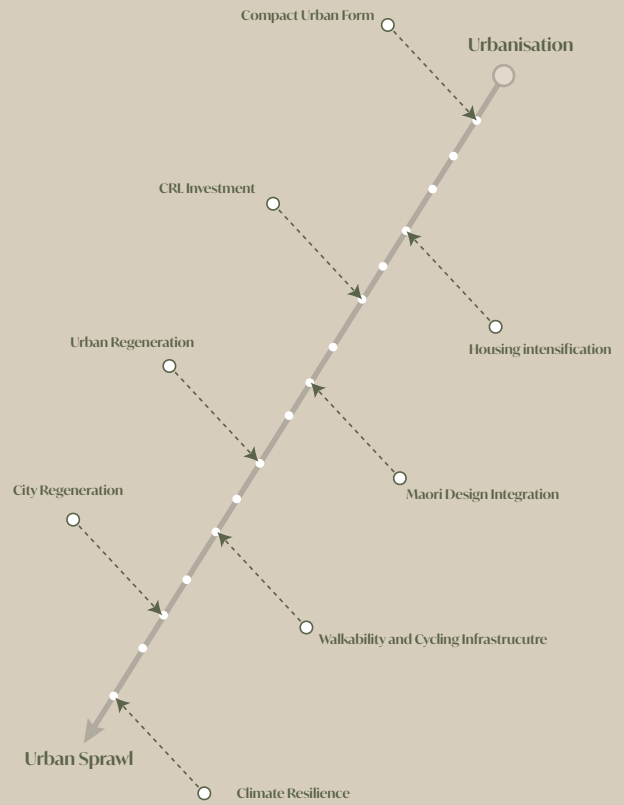
The idea of weaving Tamaki into a design framework recognises the need for an alternative approach that explores the possibility of coherent urban dynamics harmonising into a cohesive axis formation, while also considering the current urban dynamics subject to the fragmented axis.

As sprawl in this research has led to development towards the outer fringes of urban boundaries, technologies are proposed to, in part, reverse-engineer external functions and return them to the internal nodes of Tamaki Makaurau. In this instance, applying this to Te Manawa involves bringing the core amenities that were once defined or are absent from the fabric to the fore.

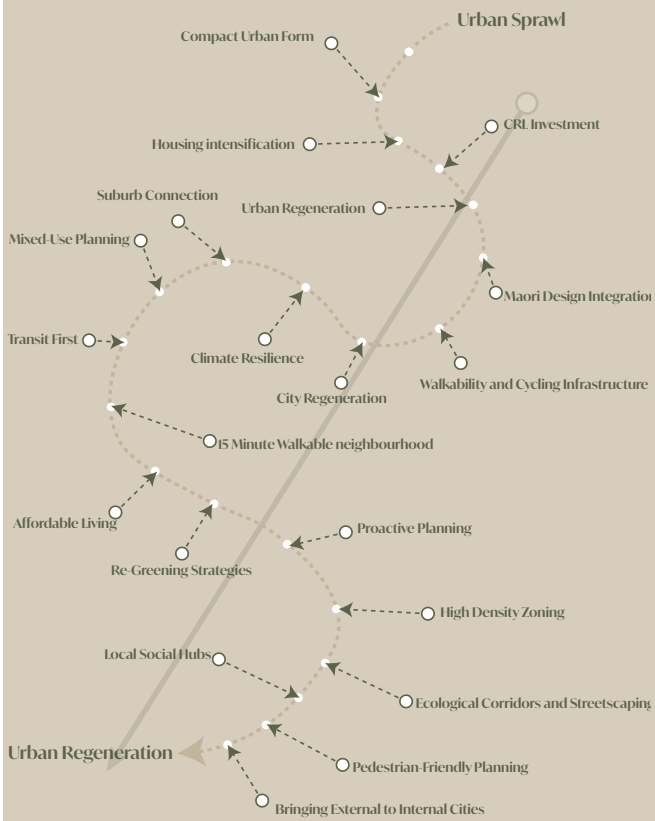
### The Fragmented Axis



### Alternatives Along the Fragmented Axis



### Axis Intervention



### External To Internal

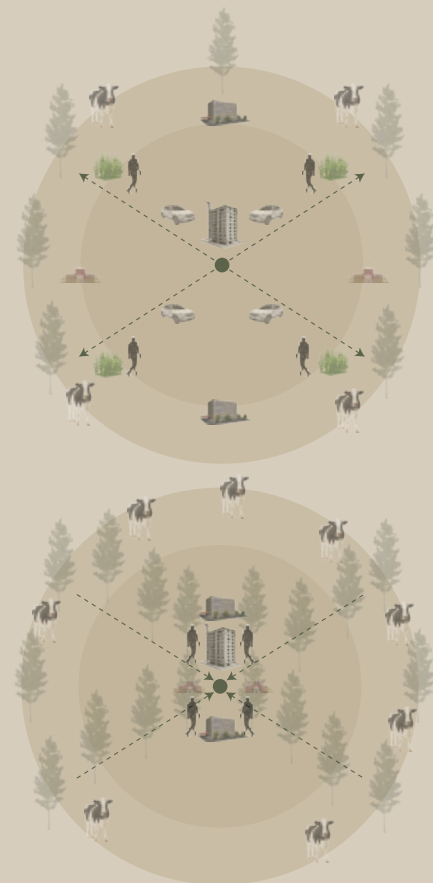


Figure 55: Urban Planning Paradigms (2025), Authors Artwork

An urban node is essential for supporting a growing population and economic demands. However, the current proposal of the train line network, as outlined in the Auckland 2050 plans, completely bypasses the urban node itself. This raises concerns about significant opportunities that may be missed under this planning approach. The focus on economic investments, influenced by increasingly stringent zoning regulations, often overlooks long-term planning and human needs. Instead, we continue to prioritise a global market that designs housing for only a limited growth capacity over a few short years for a return investment. While housing in Tamaki is cited as a significant shortage, we can argue that our transit infrastructure is also in relative shortage alongside it.

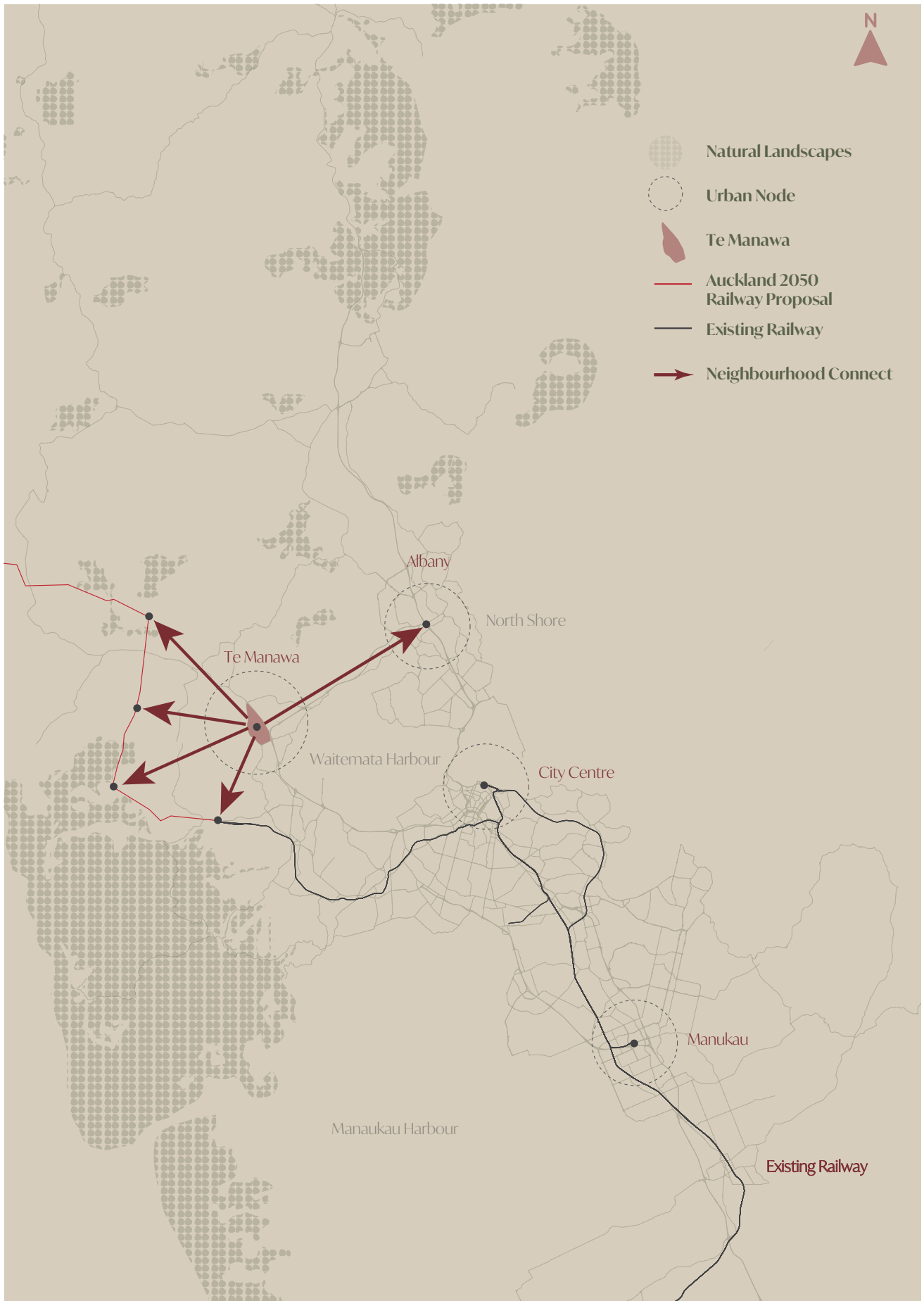


Figure 56: Urban Nodes in Tamaki Makaurau (2025), Authors Artwork

As housing and other employment opportunities arise, we need to consider how we move between them over time and across space. As this study has discussed, movement through space and time is often neglected in favour of its destination due to its peripheral status and dependence on car-centric infrastructure. The proposal for a train line reweaves Westgate's car-centric conditions into a multimodal transit system that supports compact, mixed-use development.

This infrastructural shift looks to transform Westgate from a peripheral retail destination into a dynamic urban centre capable of generating its own social and economic rhythms. Intervention becomes more of a function of mobility and also a spatial instrument for configuring everyday temporality through flows of people, goods, and activities that build stronger urban communities.

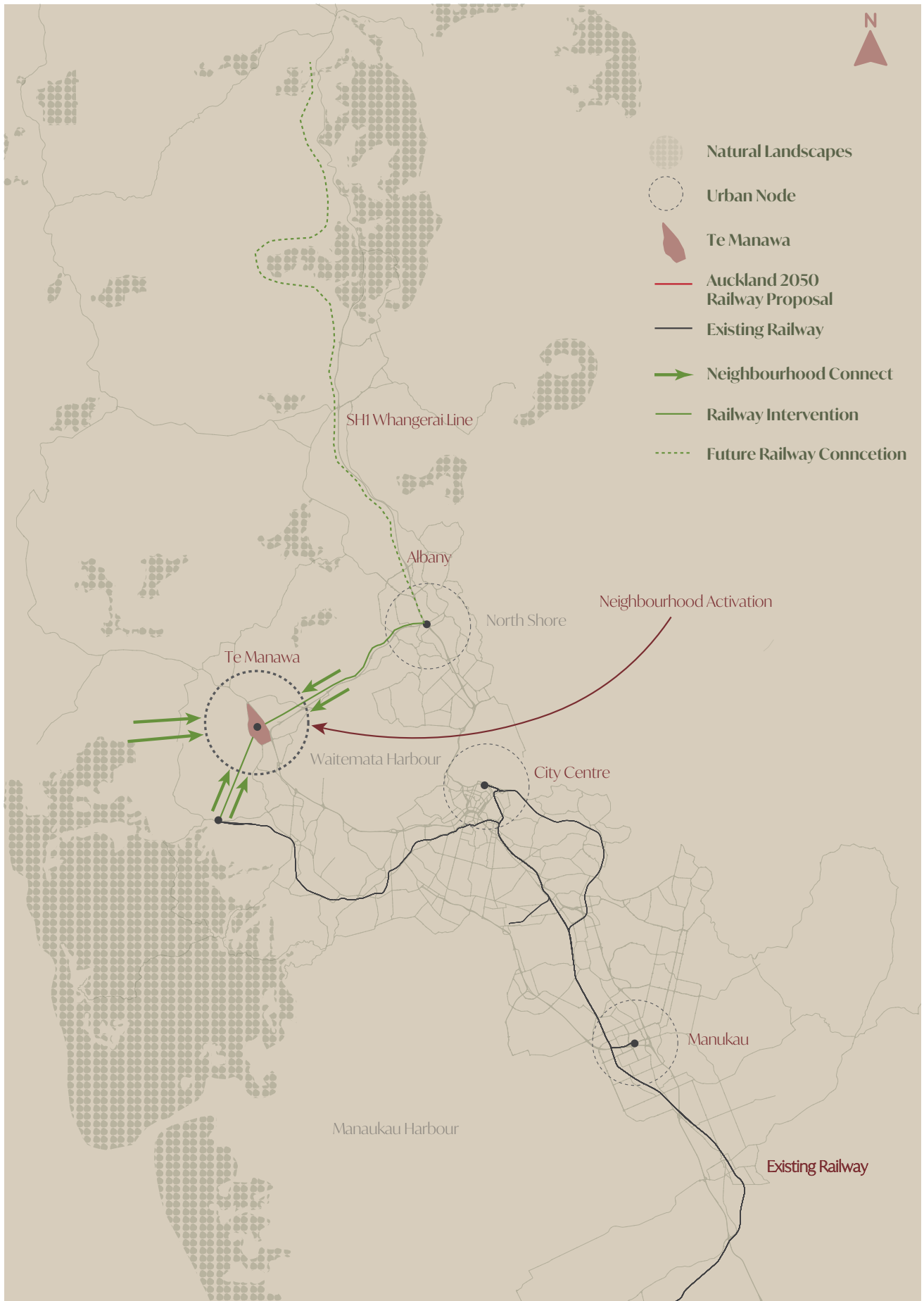


Figure 57: Railway Intervention in Tamaki Makaurau (2025), Authors Artwork

**Here, Transit is used as a threshold to turn Westgate's current arhythmic interfaces into more dynamic urban formations that move away from the conventions of car-centric planning toward a multi-faceted transit ecosystem.**

**Stage One:** The space is reimagined through an Interchangeable Train-Tram infrastructure, posing a cyclical route for its characters to utilise across the urban fabric. The development suggests the need for both a closed-loop and an open transit system within the site to make mobility a predominant feature for its inhabitants, helping to achieve city-wide accessibility to surrounding amenities (Lukman, 2014).

**Stage Two:** Supporting amenities across the site with a developed transit infrastructure helps generate safer, walkable catchments. Here, the conceptualisation of spaces within these areas is proposed to create connectivity, making the site more dynamic and prosperous through pedestrian-oriented areas.

**Stage Three:** Developing safe pedestrian areas often relies on the quality of street interfaces that produce productive street accessibility. Streets here have been identified for the main source of safety, a visual catchment area that feels safe and genuine to the inhabitants everyday use.



Figure 58: Te Manawa Conceptual Design Stage Zero (2025), Authors Artwork

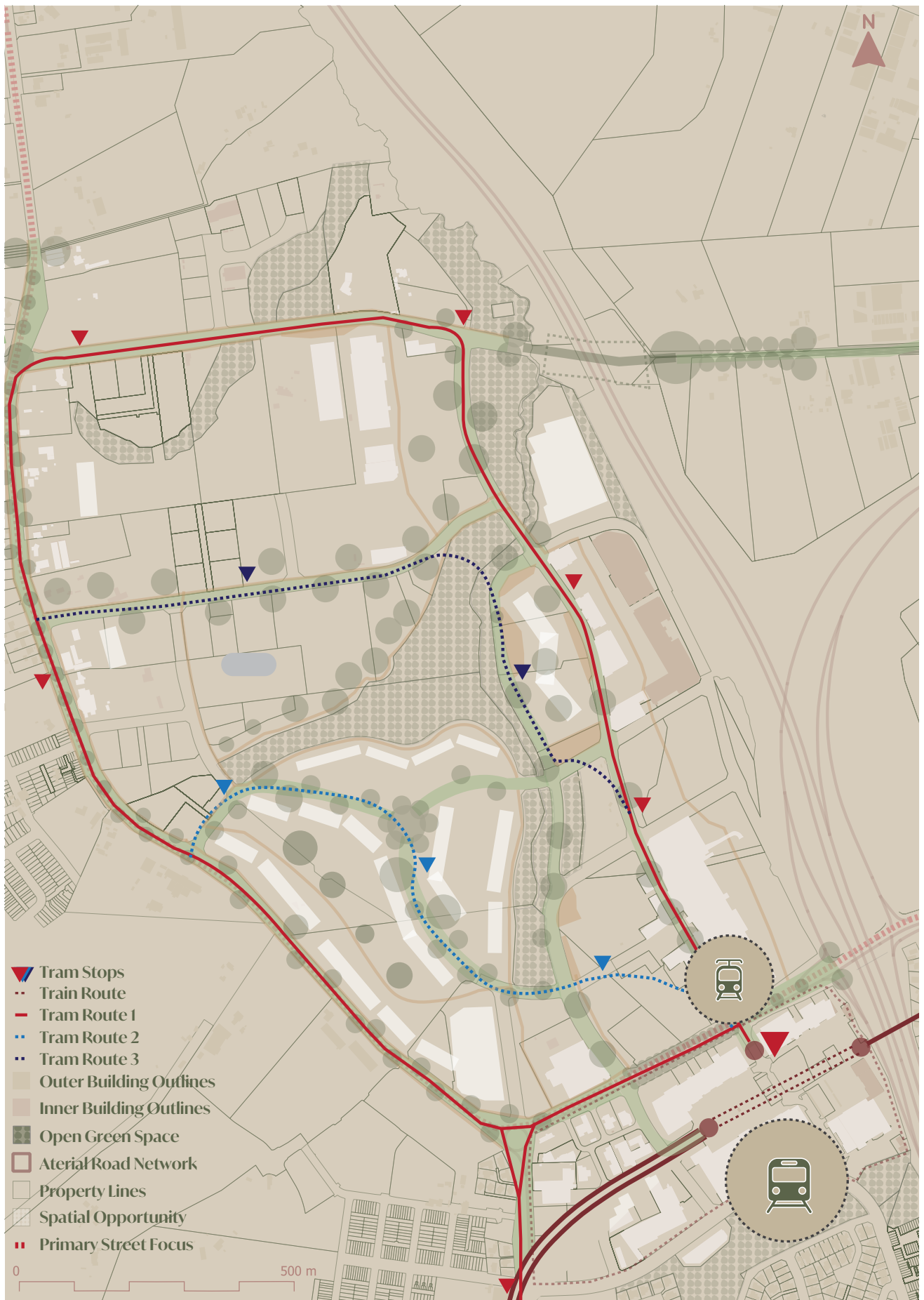


Figure 59: Te Manawa Conceptual Design Stage One (2025), Authors Artwork

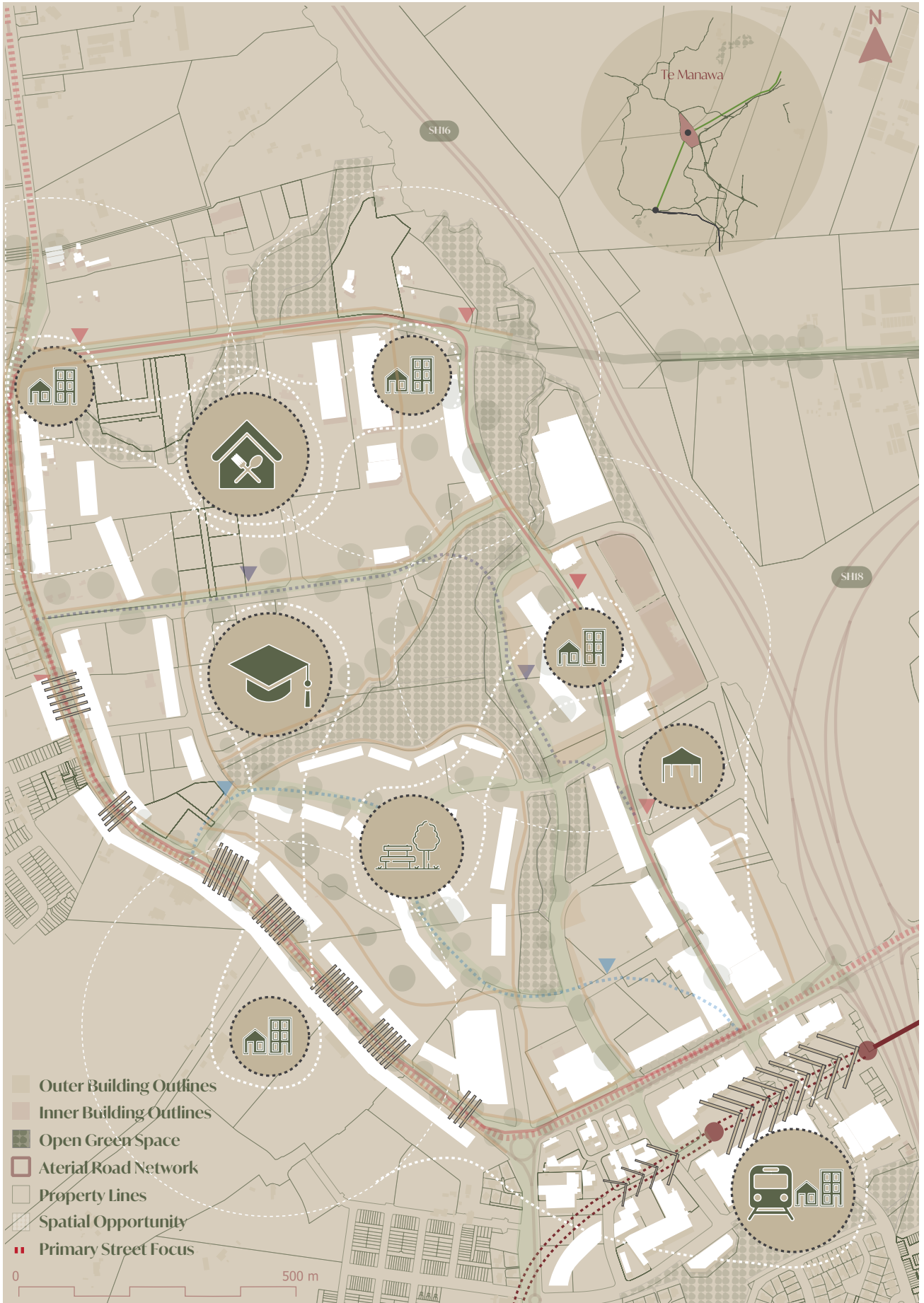


Figure 60: Te Manawa Conceptual Design Stage Two (2025), Authors Artwork

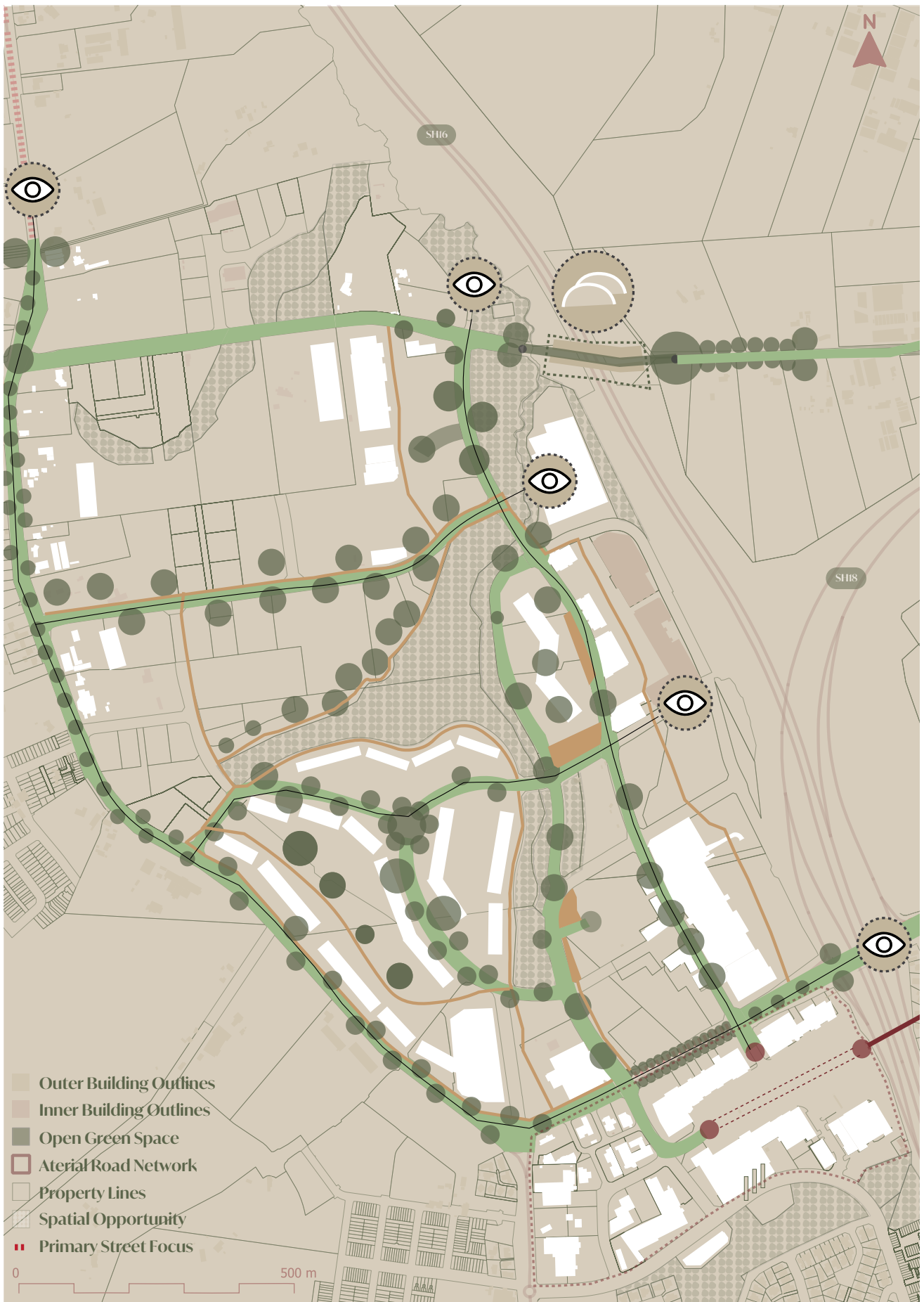


Figure 61: e Manawa Conceptual Design Stage Four (2025), Authors Artwork

While this design ultimately seeks a transit anchor, these changes in the initial conditions of a complex system are recognised as leading to significant and unpredictable outcomes later on. Here, it is conceptualised through a speculative trajectory for future development in Te Manawa. It should be essential that we design for the opportunities offered by multifaceted amenities. However, reactive, policy-bound urbanism often neglects this and instead responds to isolated issues with singular, short-term interventions. In contrast, the diagram below recognises urban design as rhythmic iterative compositions, where spatial change evolves from interlinked dependencies rather than in fixed parameters that anchor urban design today.

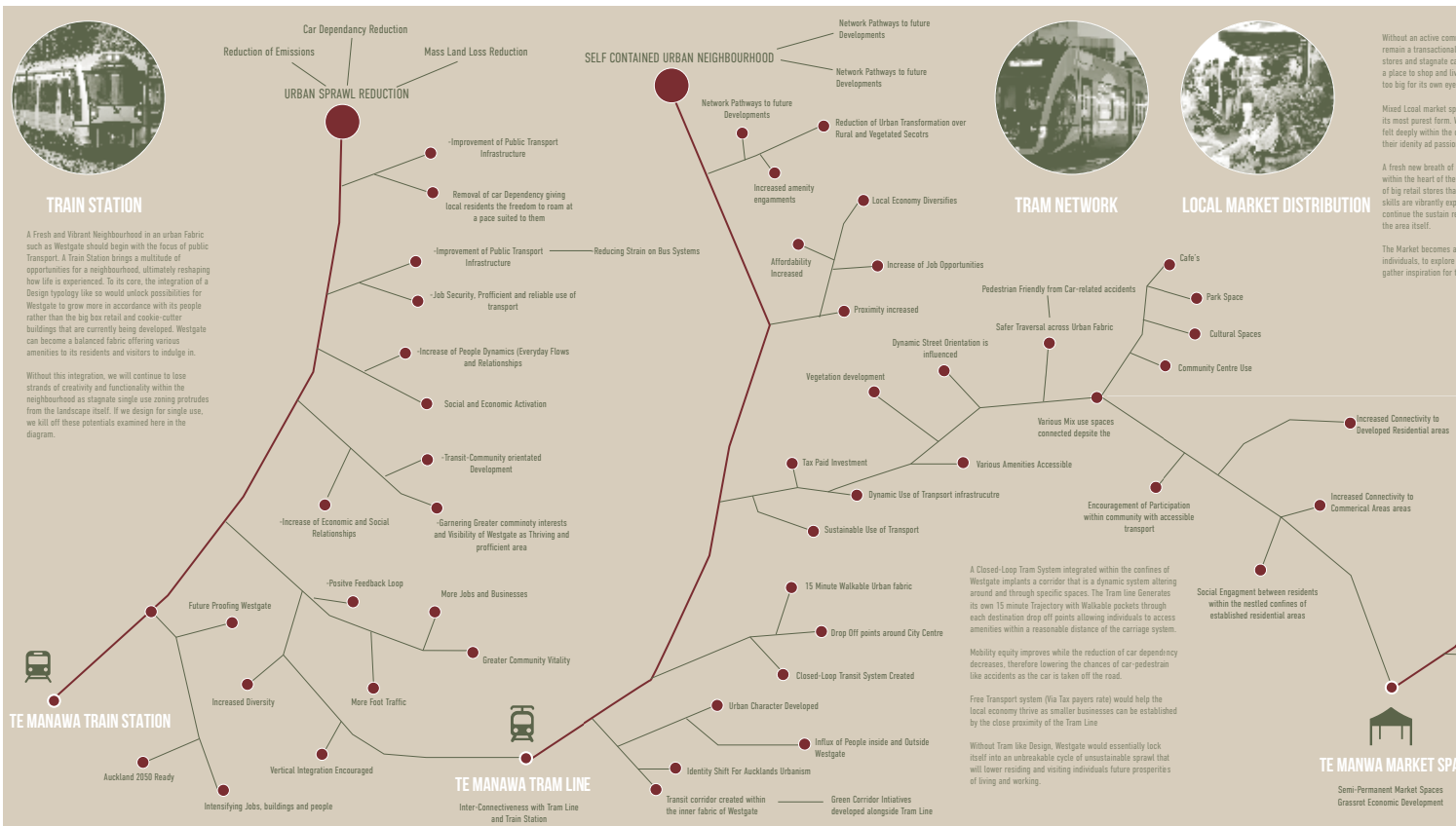
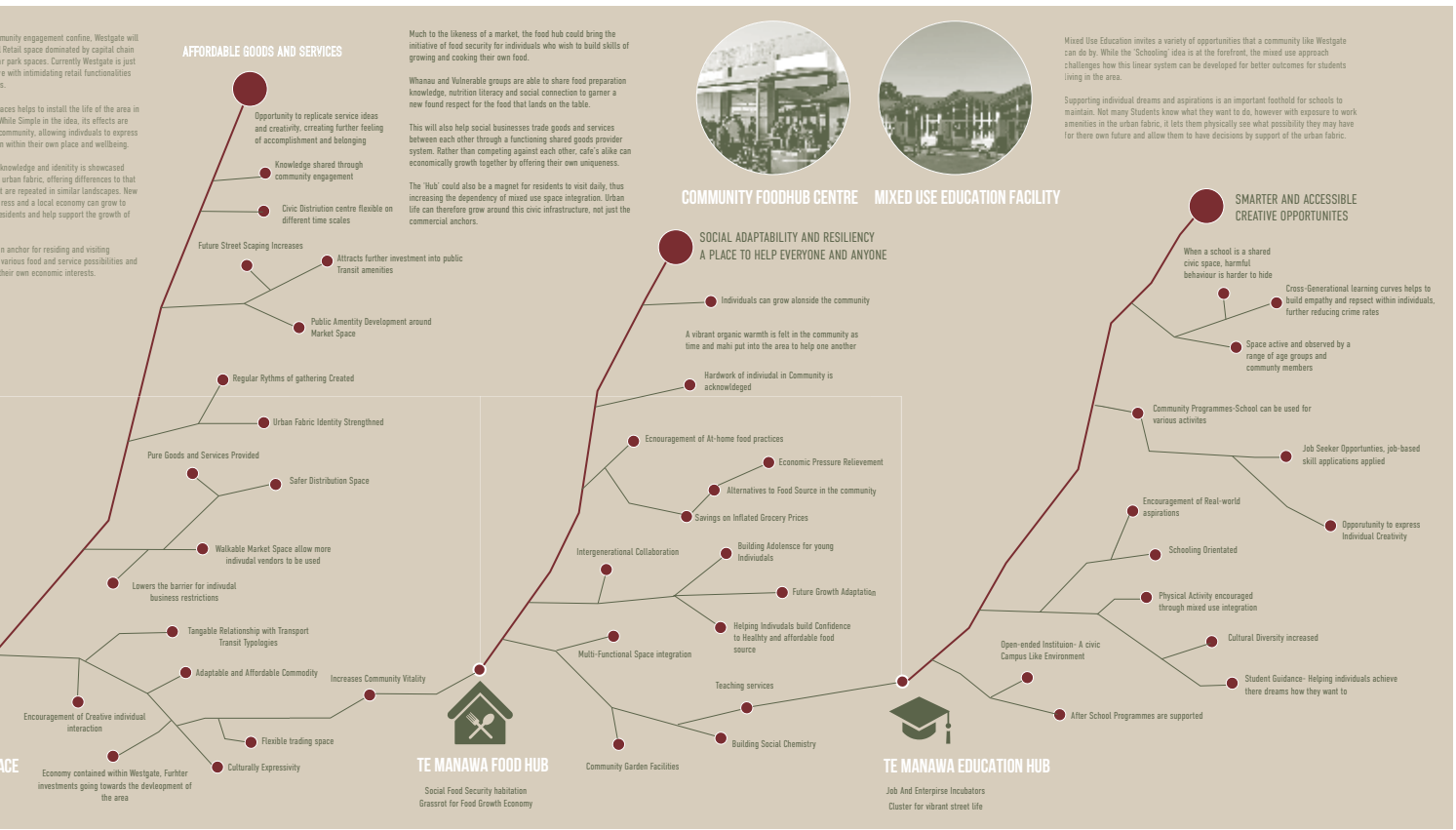


Figure 62: Path Dependency Design Strands (2025), Authors Artwork

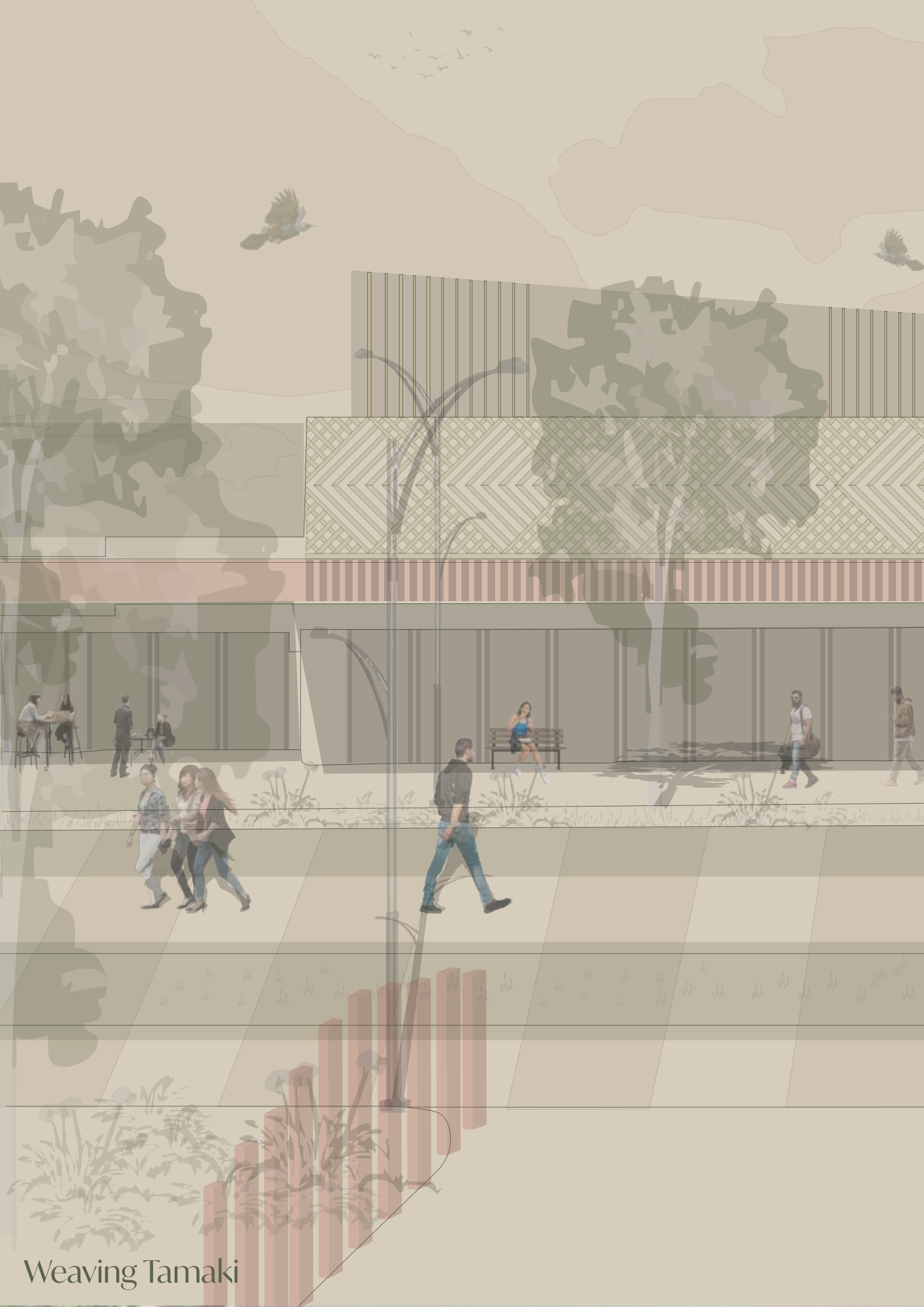


*“Land diversity increases opportunities to experience various spatial typologies at closer proximity with higher density. Ultimately, increasing the foot traffic of the neighbourhood and making the streets feel animated and safe throughout the day and night (ITDP, 2017)”*



Figure 63: Te Manawa Conceptual Visualisation One (2025), Authors Artwork





Weaving Tamaki





Figure 65: Te Manawa Conceptual Visualisation Three (2025), Authors Artwork

*“Optimal transit services should provide frequencies of 15 minutes or less, connecting neighbourhoods and serving as civic hubs to help keep surrounding business premises and residential areas within projected routes...”*

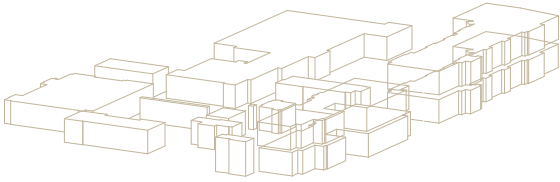
## 5.2 Conceptual Development: TOD Integration

Although more rigid in its approach, the structured framework of Transit-Oriented Development (TOD) effectively highlights the importance of movement patterns, providing spatial order to complex design iterations during the conceptual phase. This framework extends beyond traditional top-down strategies and flexible methods that may misguide the design's original intention. By approaching design in this way, it demonstrates a clear organisation of spatial order, enabling the translation of complex ideas—such as multi-modal accessibility, economic vitality, and land-use diversity—through a unified framework.

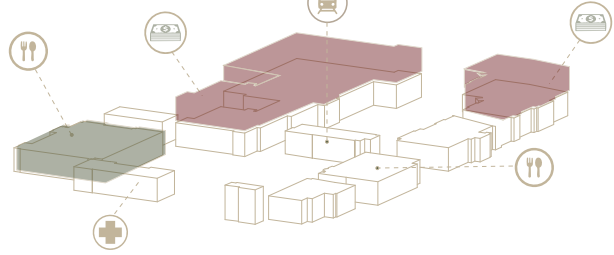
Here, the design encapsulates the framework's intentions in Te Manawa, reflecting the structured logic of TOD. The linear infrastructural gesture through a transit corridor captures the arrhythmic composition of Te Manawa's current precinct. It transforms it into a sequence of connected spaces that allow for thresholds of accessibility and cross-mobility.

The design centres Te Manawa as a Transit Hub that binds regional and local movements of residents and visitors across Tamaki to inhabit a space of urban occupation. Te Manawa becomes the essential heart of urban interaction, one that does not rely solely on transactional relationships but solidifies space as a vibrant ecosystem of social and ecological synergy.

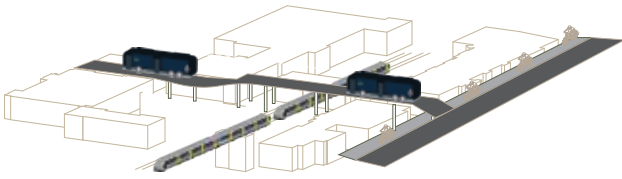
Increasing Verticality



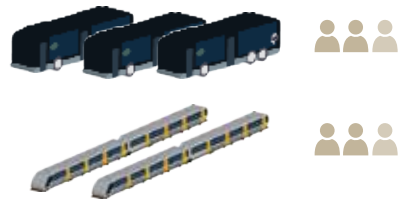
Accessibility



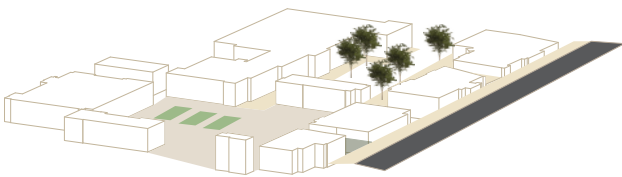
Multi-Transport Accessibility



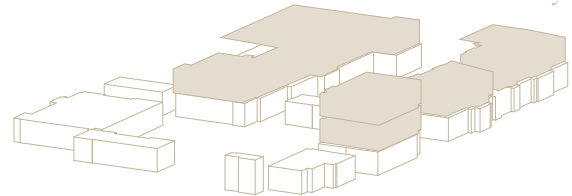
Transit Ridership



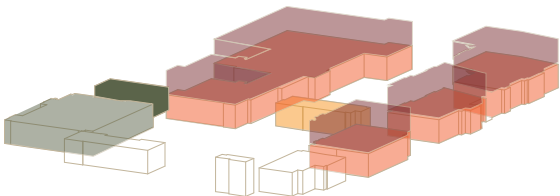
Increasing Walkability



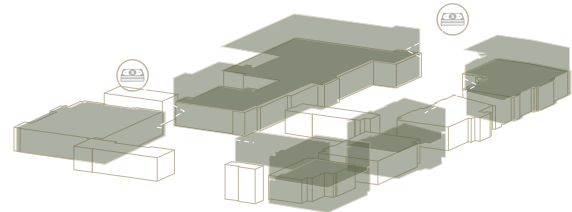
Density



Land Use Diversity



Economic Development



User Friendliness

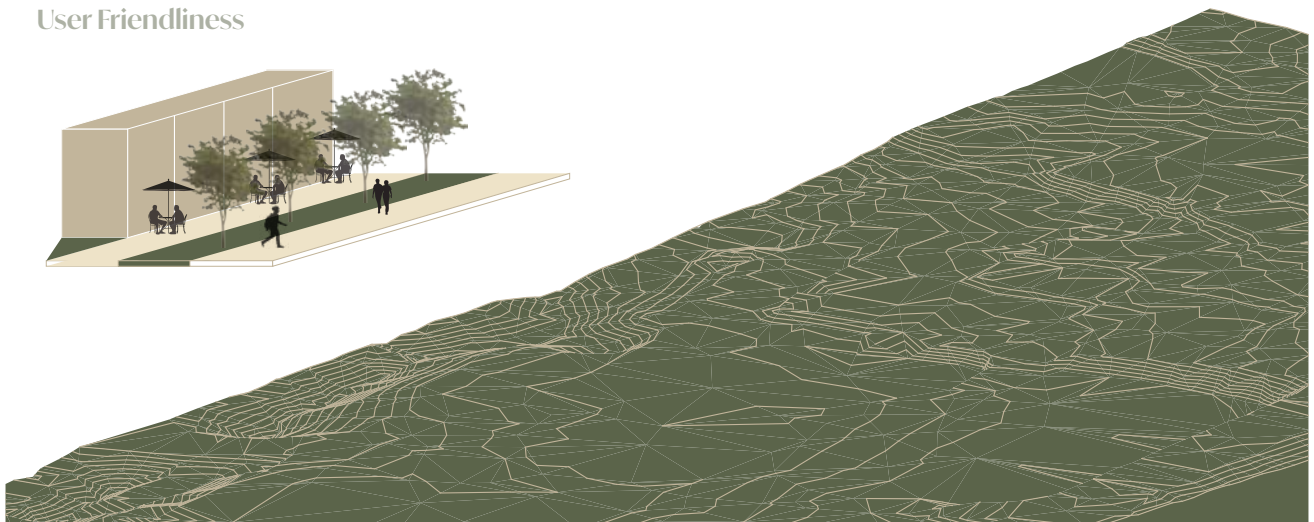
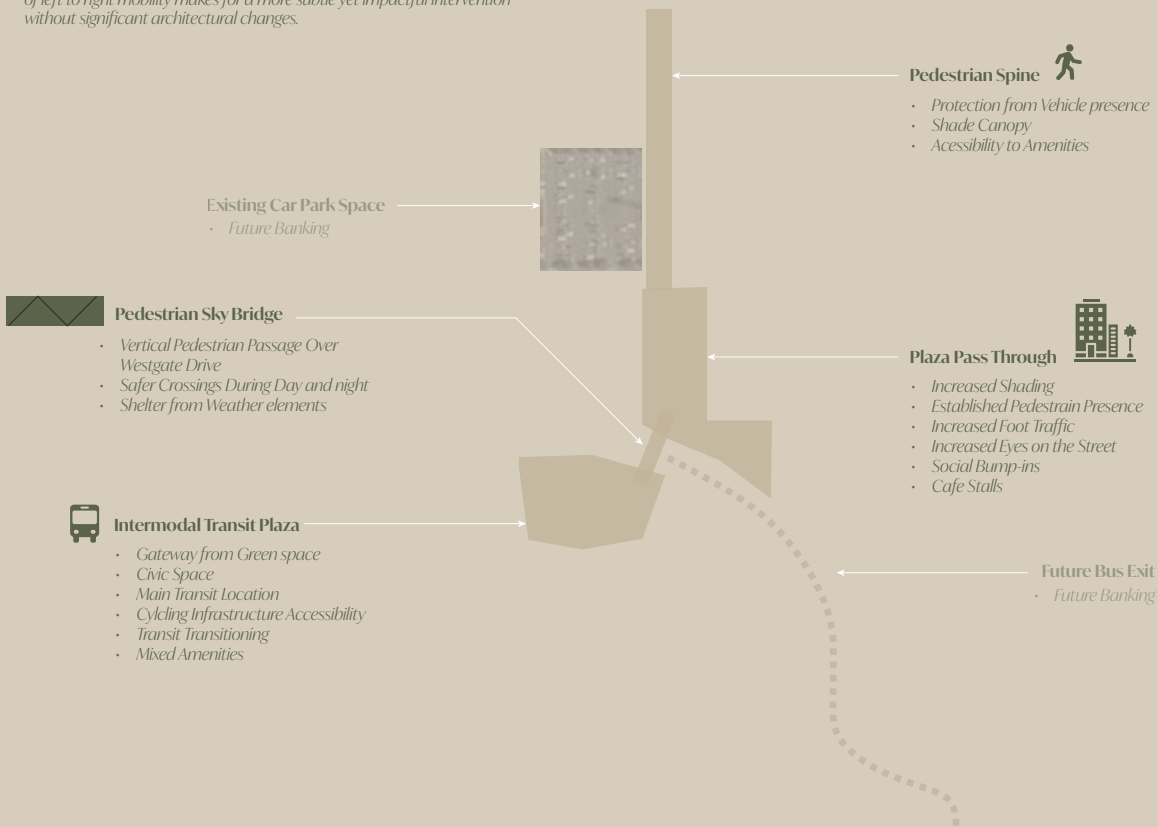


Figure 66: Transit Oriented Development Principles (2025), Authors Artwork

## Phase One: Developing the Transit Oriented Gateway Without the Train

Flipping Car Centric Development to Public Transit systems, encouraged with the Main Public Transit Hub centred to the south of the Westgate Shopping Centre, integrates a soft wayfinding positioning for site. Focusing on the pedestrian movement from top to bottom rather than the previous iteration of left to right mobility makes for a more subtle yet impactful intervention without significant architectural changes.



## Phase Two: Expanding Transit Service

Creating a central transit service, pedestrian activity will be more active with increases to retail outlets and small business units. The objective of this is to generate a more central activity point for bus service while eliminating bus stops on the outer fringes of roads. This way transit ridership becomes more friendly as opposed to the current car centric development.

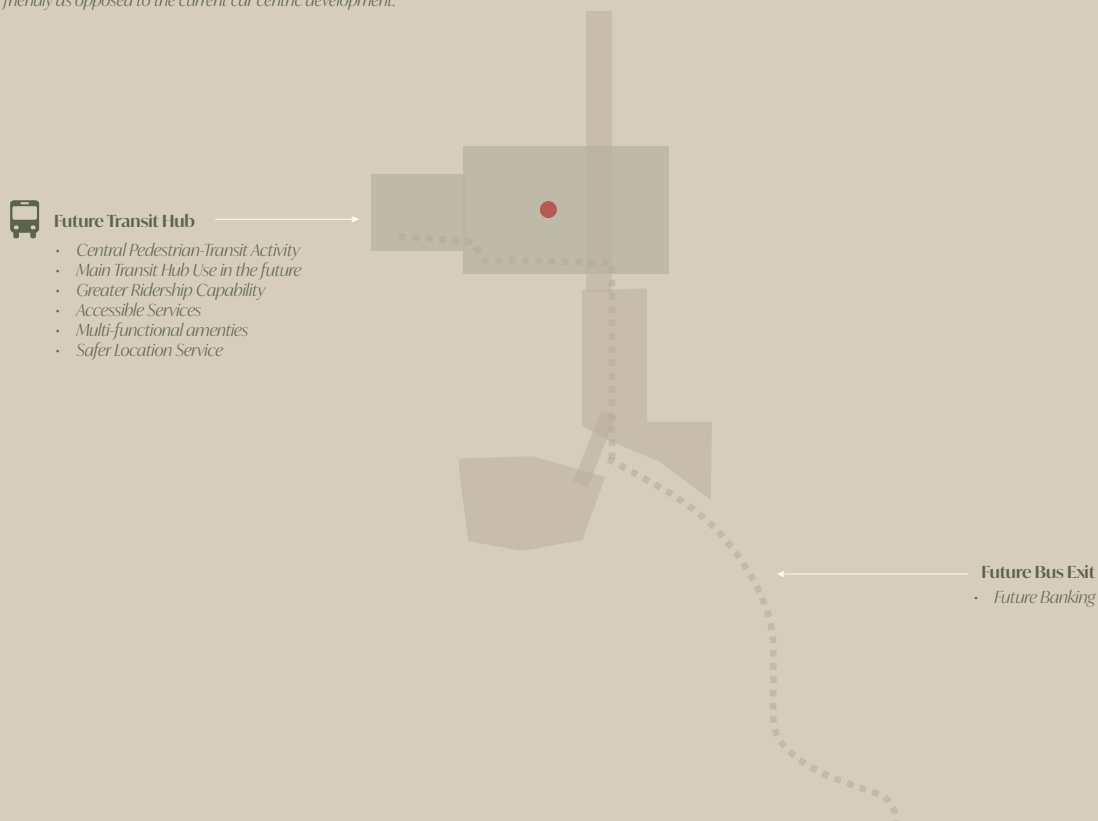
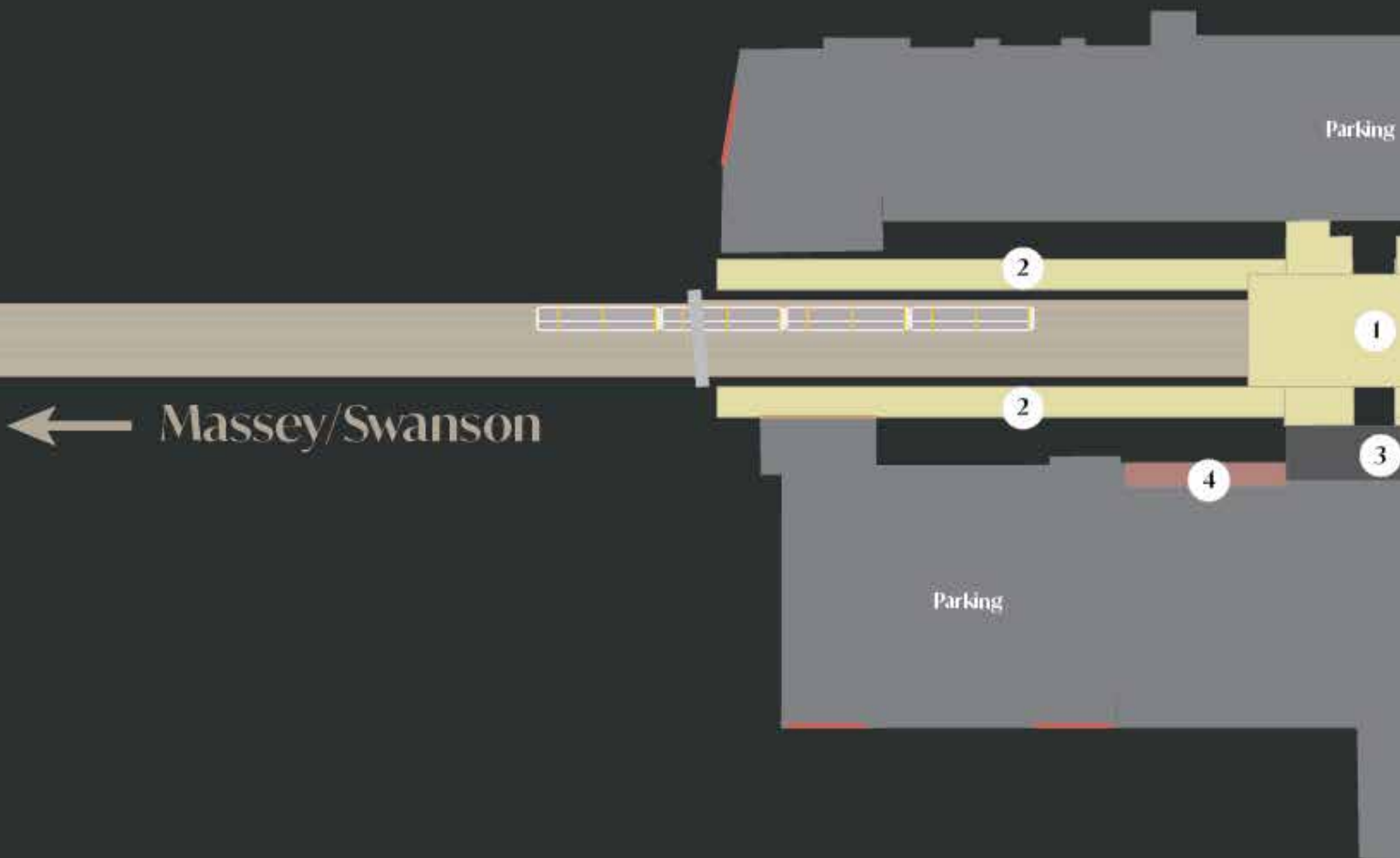


Figure 67: Te Manawa Phase Planning (2025), Authors Artwork

Although more rigid in its approach, the structured framework of Transit-Oriented Development (TOD) effectively highlights the importance of movement patterns, providing spatial order to complex design iterations during the conceptual phase. This framework extends beyond traditional top-down strategies and flexible methods that may misguide the design's original intention. By approaching design in this way, it demonstrates a clear organisation of spatial order, enabling the translation of complex ideas—such as multi-modal accessibility, economic vitality, and land-use diversity—through a unified framework.

# Legend

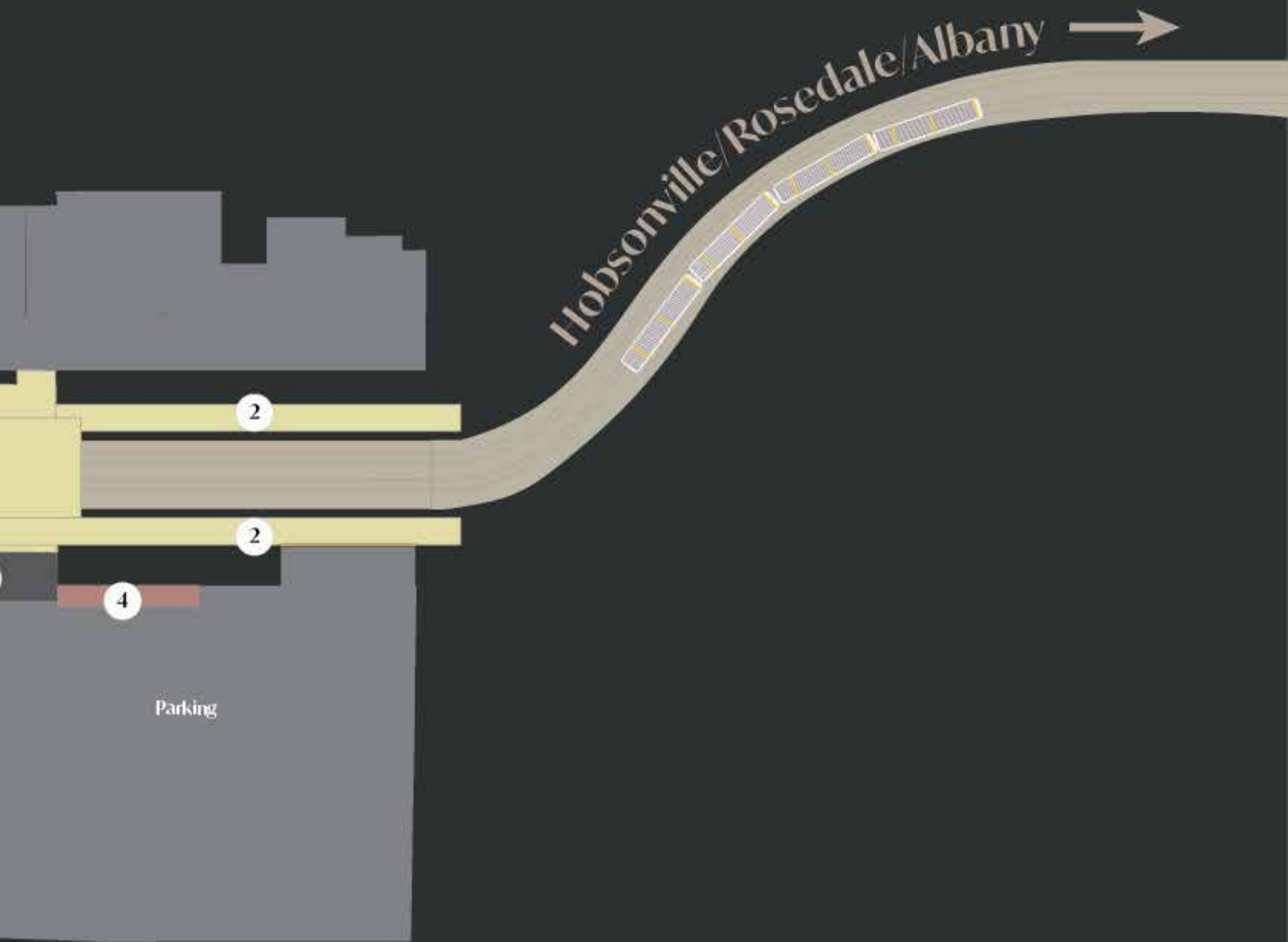
1. Te Manawa Transit Station
2. Train Platforms
3. Service Room
4. Emergency Exits



1:2000

Figure 68: Te Manawa Shopping Centre Site Plan Basement Plan (2025), Authors Artwork

0 75 150 225 300m



# Legend

- 1. Te Manawa Transit Station
- 2. Te Manawa Transit Square
- 3. Walkable Bridges
- 4. North-Western Train Line
- 5. North-Western Tunnel
- 6. Mixed Use Spaces
- 7. Open Space Shopping area
- 8. South Entrance
- 9. Westgate Walking Bridge



Figure 69: Te Manawa Shopping Centre Site Plan Ground Level (2025), Authors Artwork



Event Cinema

Greenfields

3

6

6

2

Pharmacy

WooWorths

Parking

9

4

# Legend

- 1. Te Manawa Transit Station
- 2. Mixed-Use Office Units
- 3. Residential Apartments
- 4. Transit Bridge

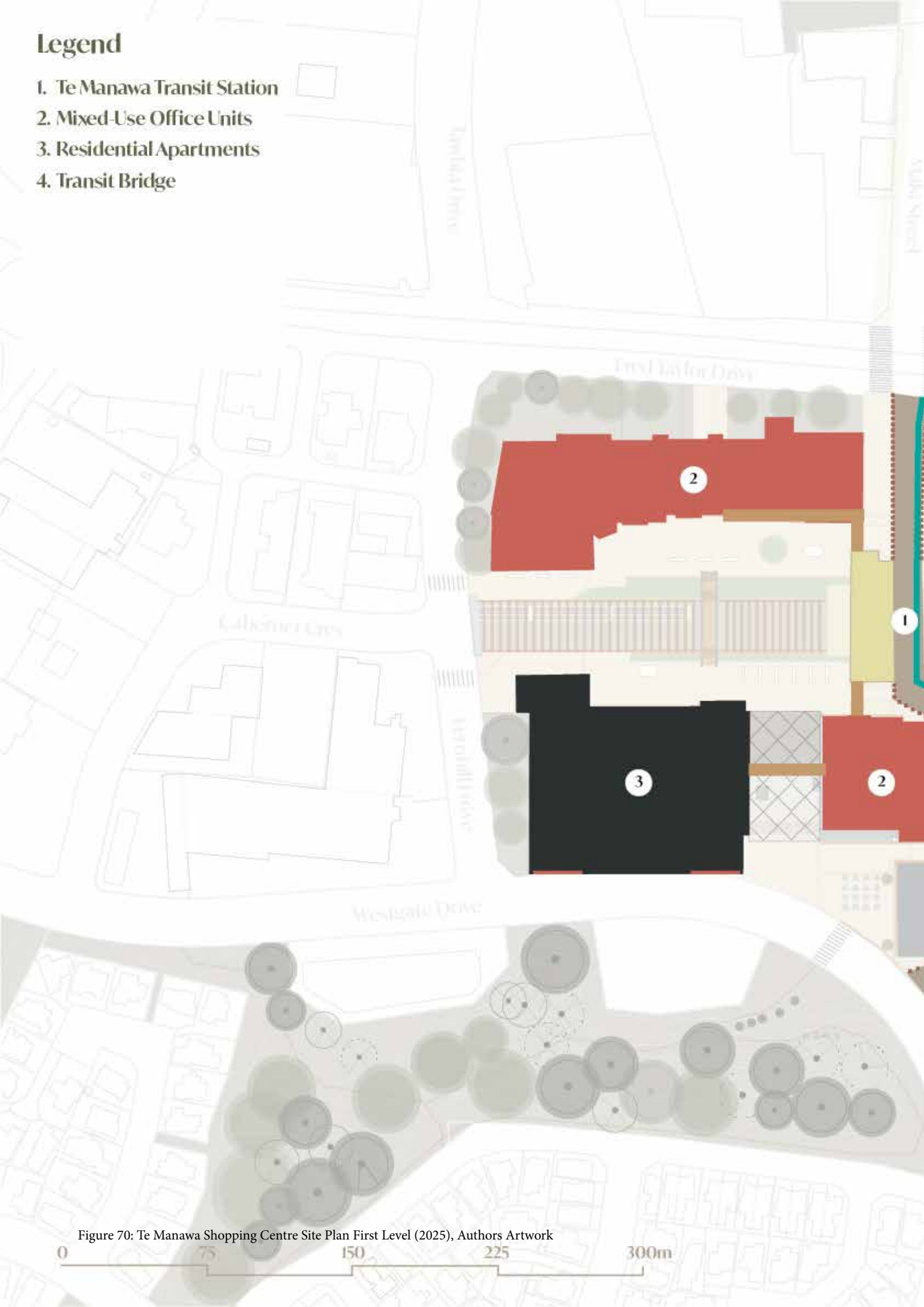
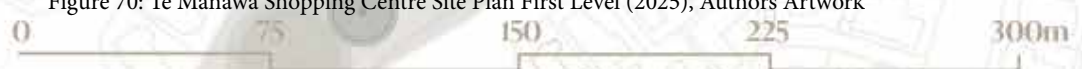


Figure 70: Te Manawa Shopping Centre Site Plan First Level (2025), Authors Artwork





2

4

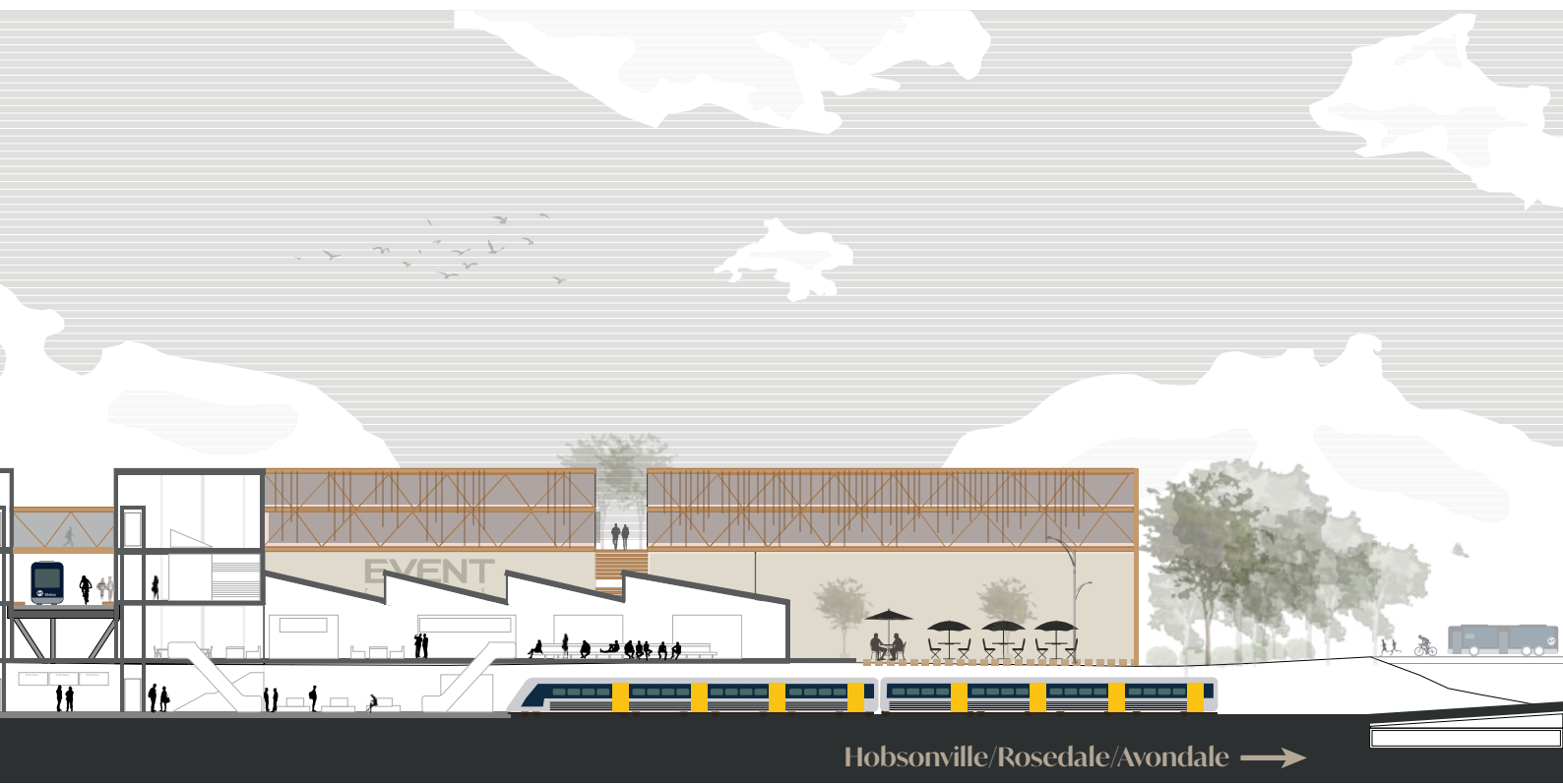
2

1

2



Figure 71: Te Manawa Shopping Centre Site Section (2025), Authors Artwork



As the Design Process became increasingly tied to the principles of Transit-Oriented Development, it became apparent that a tendency toward conventional top-down planning emerged in the design work. While the design evolved from a loose fixation on transit orientation that centred on transforming the dynamics of space within Te Manawa away from car-centric development that drives urban sprawl, the intervention risked reinstating the same hierarchies and rigidities it sought to overcome from the beginning. It was recognised that, to avoid the isolation of design intervention that forms a conclusion-based ideology, we require a methodology capable of evolving alongside shifting patterns of occupation, mobility and ecology.

*This page has been deliberately left blank*

# CLIENT & STAKEHOLDERS

- Auckland Council: Main Funding Group/Client associated with the proposed Urban Design.
- NZ Retail Property Group (NZRPG): Secondary Funding Group/Client, providing financial assistance and major communication line to implement proposed design intervention. NZRPG will also provide design coordination with the existing master plan and will provide design assistance with the ongoing planning. This will be tasked with other major stakeholders in a monthly progress meeting.
- Auckland Transport (AT): Transit Associate providing main transport infrastructure assistance in the proposed design and communication line to the city Railway link development progress across Tamaki Makarau. AT will also contribute to frequent transit access across site, with consistent access to bus services, Cycle Lane and pedestrian networks and Potential Train line integration.
- Transit Users (Local Community): Transit requires people, and the people need consistent access to services to rely on everyday. Transit users are central to the success of the proposed urban design, and is highly dependant on how their movement patterns are influenced through transit infrastructure, hence the importance of other non-mortorised corridors such as pedestrian and cycling networks. Transit users are the key to activating mixed-use spaces, which generate the vibrancy, economic diversity and stronger sense of community and identity around the proposed design.
- Schools: Surrounding schools to be strengthened with education-focused routes and enabling equitable access for families to rely on across diverse socio-economic backgrounds. In doing so- the design helps to not only link students to education but also reinforces the role of schools as vibrant community hubs.
- Urban Users
- Main Occupants: Westgate Residents, Tamaki Travelers, Shoppers, Mixed Ages
- Natural Ecology: Mauri Life Force and enhancing natural ecologies.

## SITE: WESTGATE SHOPPING CENTRE

- Proposed Area of Development Potential: 55,000m<sup>2</sup>
- Transit Oriented Development was a key aspect to consider on site in a heavy car centric development area across Westgate Shopping Centre. A consequences of this car centric development has led to heavy traffic congestion in the big box retail setting with lack of planning for pedestrian, cycling and transit Planning. One of the centric problems of the site is the overpopulated space for car movements, further catalyzing congestion rates, increasing road infrastructure pressure and loss of natural ecological space. The scale of movement has been heavily favoured for private vehicle usage, and the absence of plans around a core transit anchor, followed with various mixed use spaces, diminish our chances for a sustainable and resilient community future.
- Using Transit Oriented development (TOD) principles to interrogate the scale of movement across the urban fabric will decipher areas of inundation and uplift potential core qualities of the shopping center. Through TOD, we can analyse its integration and realise whether a TOD Development is helpful to restitch the urban fabric quality in Tamaki Makarau, or if we are too far ahead with the privatised vehicle lifestyle that does not appeal to the average Kiwi.

## DEFINITION OF DESIGN

- Use and Activity: the Proposed Design will prioritise pedestrian-Transit movements and the activity in between that generates a vibrant community atmosphere..These mixed spaces will cater to the everyday needs of the community and individuals who are either: Going to School/University, Work, Shopping, Sports Events, Train station, Airport, or Home. The Proposed layout will be capable of providing safer movement across site and interactions to localised diverse commercial activity, helping to bring an increase of economic equity to the surrounding area, further benefiting the community and socially deprived individuals.
- Outcomes linked to Proposed Design: Improved quality of life within the Westgate Shopping Centre Precinct with safer Transit and pedestrian connections in a mixed-use environment. The building and surrounding area will function 24/7 with stronger street night life activity with late-night store fronts.
- Who is Going to be utilising the space and how: Commuters, Cyclists, Local Residents, Students, Business Owners and Employees, Visitors, Shoppers, elderly, mobility-impaired users, and Family and Children. The area will remain flexible to the everyday user, ensuring that everyd iindividualfeels welcomed and protected through the resolved design.
- How is the Design going to relate to the surrounding context: Interconnectivity across mixed use spaces are to be incorporated and stregthend through the ties of Ecological and Social amenities.

## DESIGN PRINCIPLES

Te Aranga Maori Design Principles Aligned with the proposal:

- Mana: The Mana of Iwi and Hapu as Mana Whenua is recognised and respected
- Mauri Tu: Environmental Health is Protected, Maintained and/or enhanced
- Whakapapa: Maori Names are celebrated, both traditional and new

Core Maori Values Aligned with proposal:

- Manaakitanga: The ethic of holistic hospitality whereby Mana Whenua have inherited obligations to be the best hosts they can be.
- Kotahitanga: unity, cohesion and collaboration
- Whanaungatanga: a relationship through shared experiences and working together which provides people with a sense of belonging

## BUDGET AND PROGRAMME

While this is a large transit mixed use design that focuses not only on a singular building space, but the external pedestrian pockets, a large budget profile is likely required amongst the design process. Between 5-10 years for project completion will be given, allowing for appropriate ground work to commence and site changed to come into effect. Across this time, the design process will be critically investigated through the weeks at different stages of the design to help tackle economic issues while also allowing for adaptation to external changes such as inflation, material cost and wage increases.

Sustainable material choices in design are often the most expensive ones in construction, which this will be reviewed throughout alongside the design stages.

Community and local iwi inclusion in the design process is also mandatory for all stages.

# CLIENT REVERSE BRIEF WESTGATE SHOPPING CENTRE



AUCKLAND COUNCIL



NZRP



AUCKLAND TRANSPORT



COMMUTERS



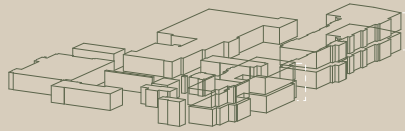
COMMUNITY



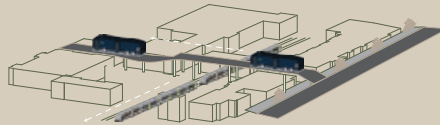
## MOVEMENT SCALES



## Increasing Verticality



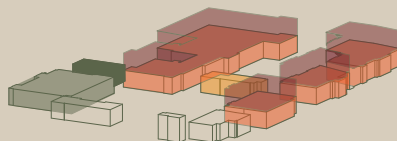
## Multi-Transport Accessibility



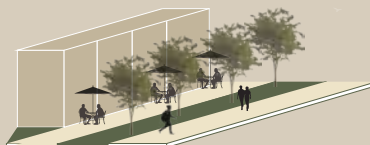
## Increasing Walkability



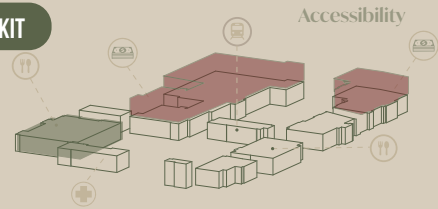
## Land Use Diversity



## User Friendliness



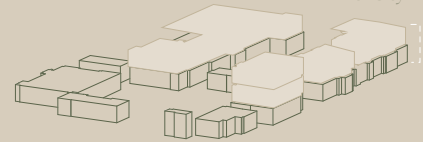
## TOD TOOL KIT



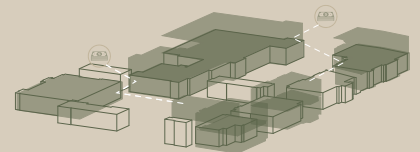
## Transit Ridership



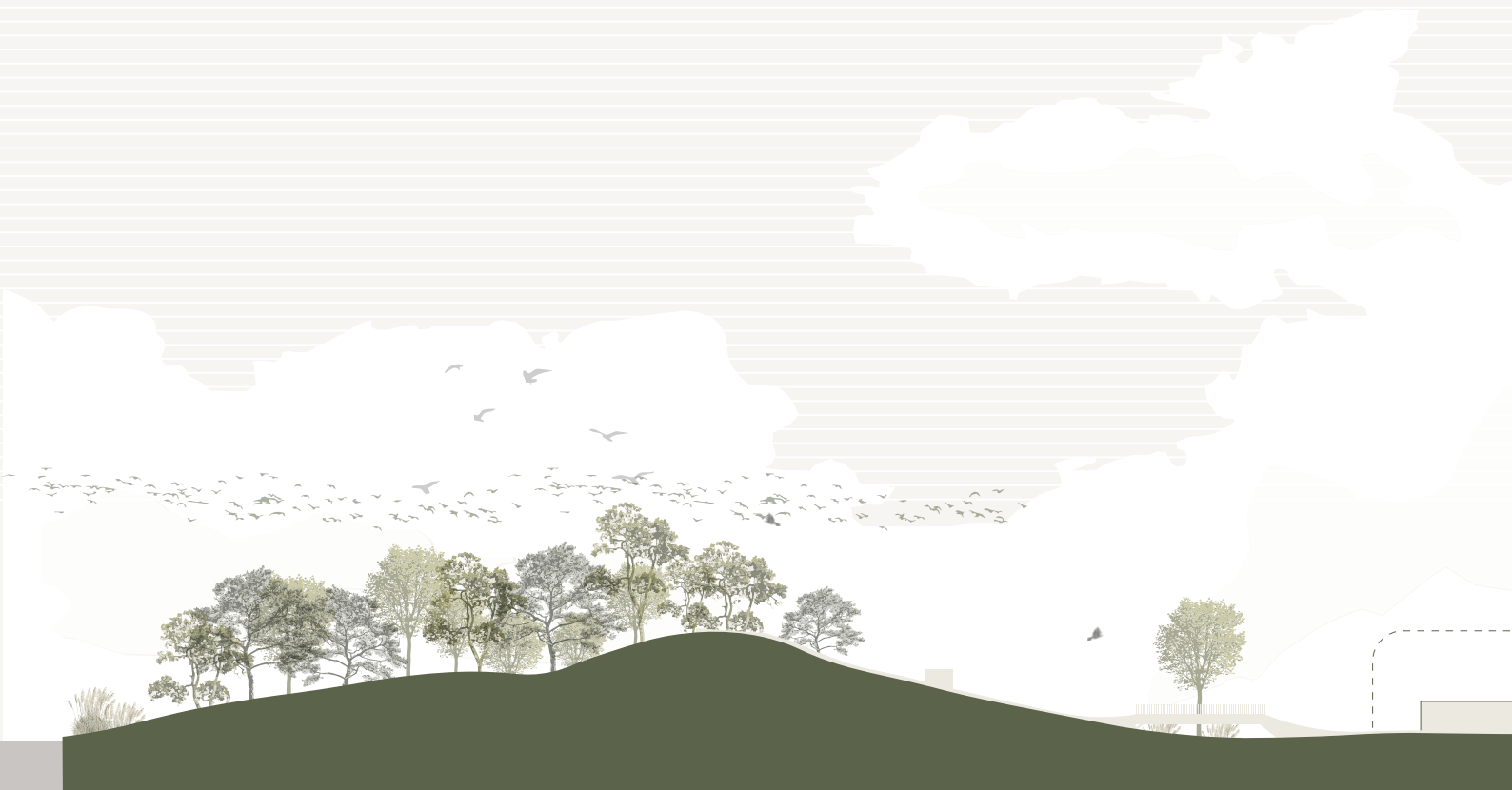
## Density



## Economic Development



# Wider Te Manawa & Tamaki



Coastline

Waitakere Ranges

Waitakere Hills

Westgate (

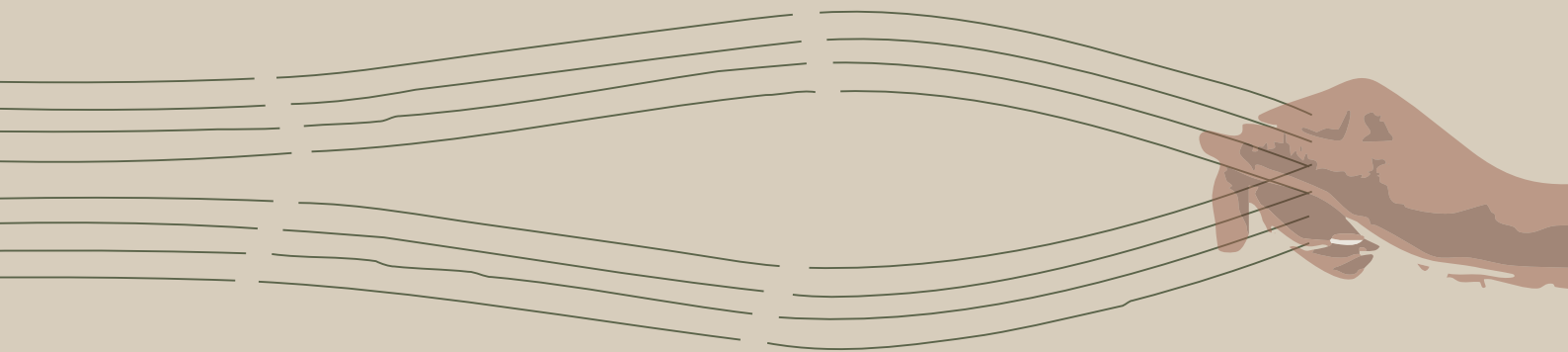




Tamaki Makarau (Auckland CBD)

Auckland Airport

Te Manawa)



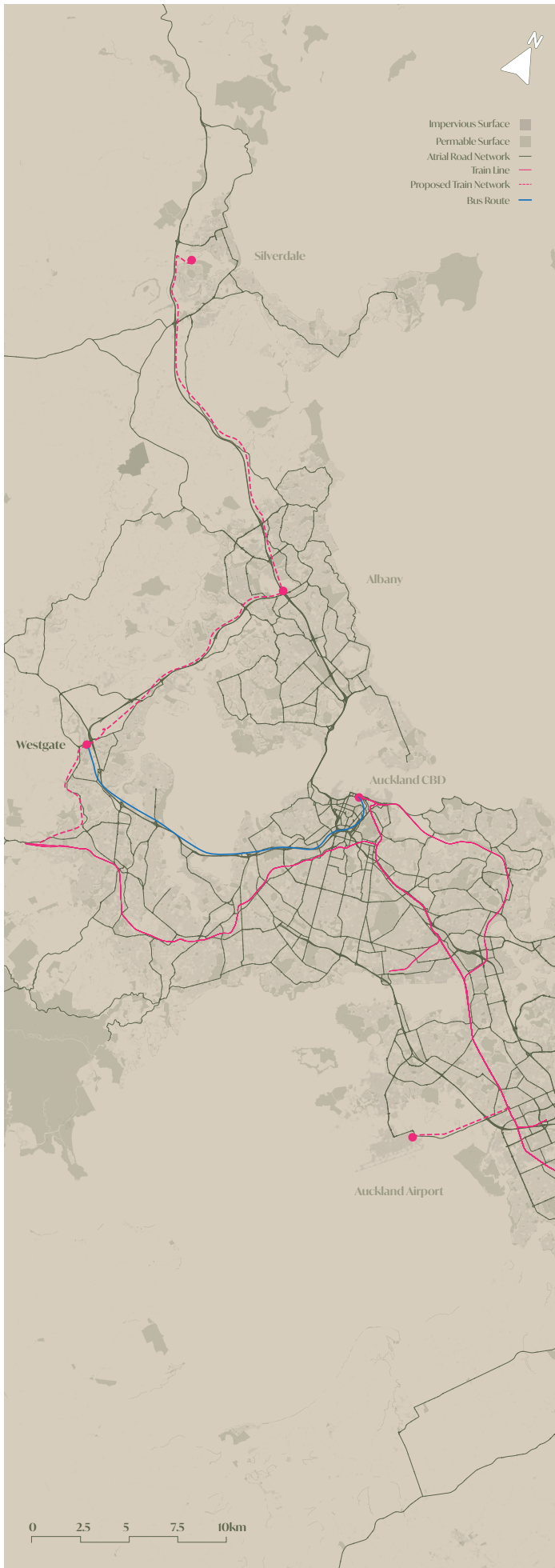


Figure 74: Proposed Transit Connection Link Across Tamaki (2025), Authors Artwork

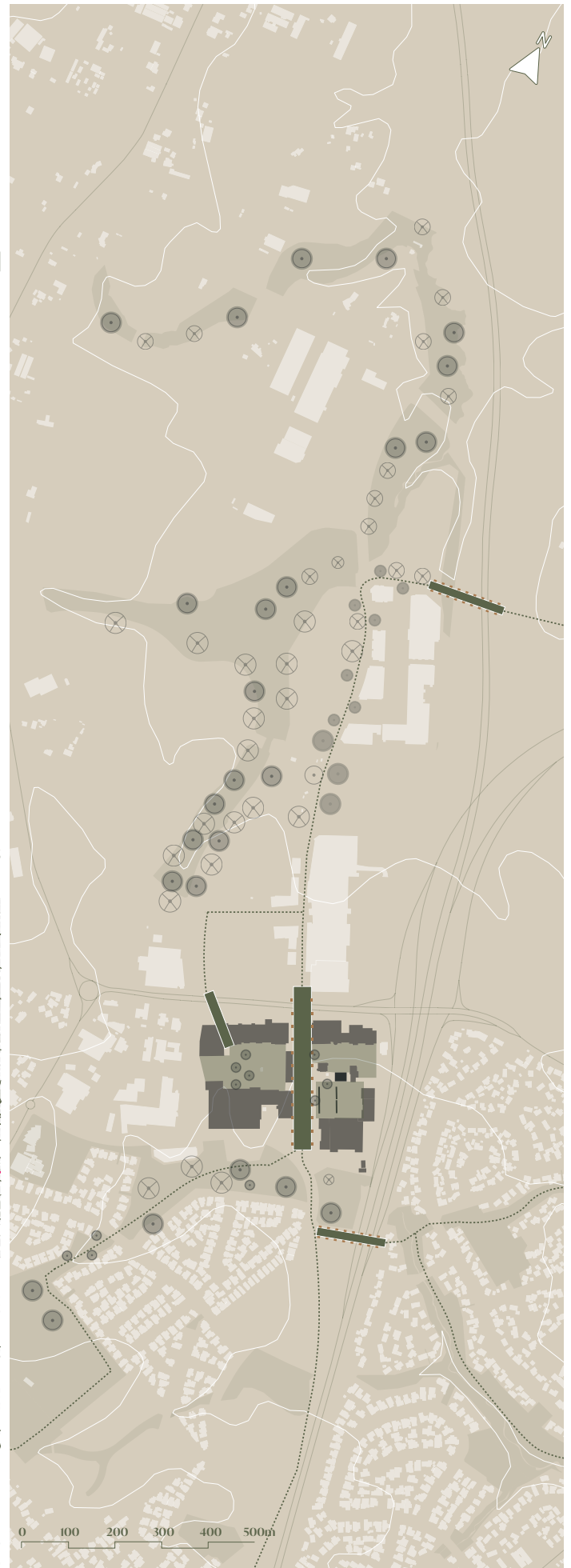
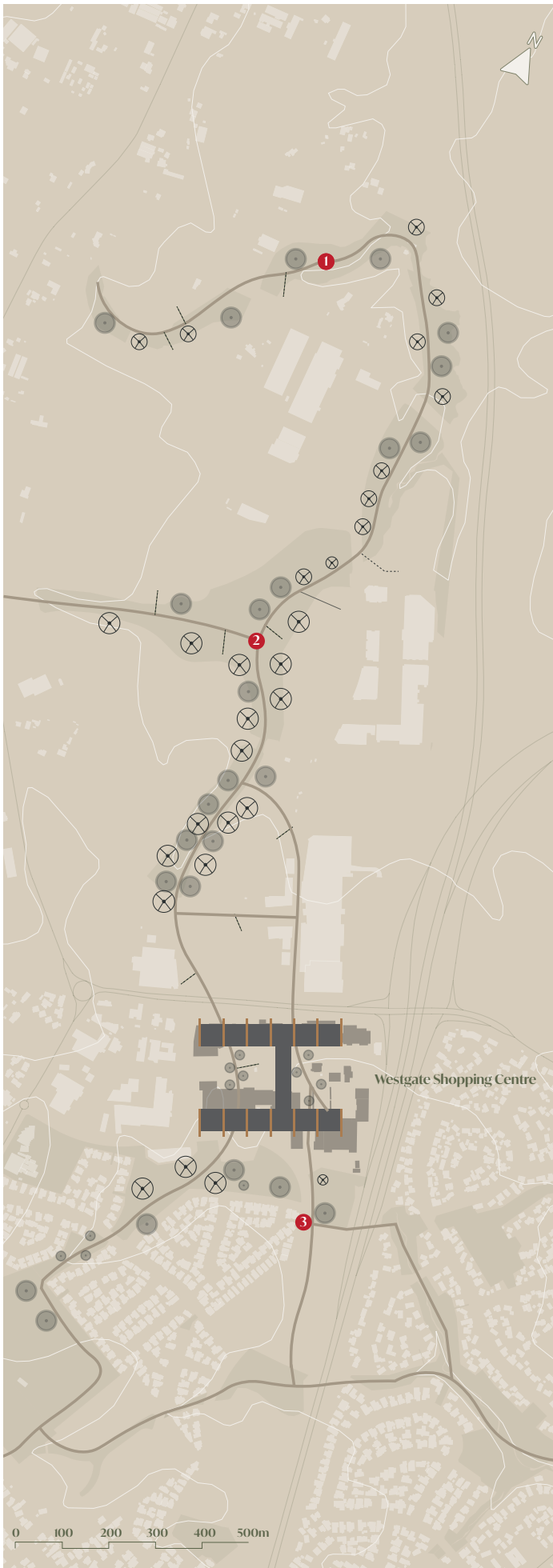


Figure 75: Proposed Ecological Connection Across Te Manawa (2025), Authors Artwork

While the design process still flirted with the idea of Train implementation, it was realised that design should become accustomed to the scale of movements and how thinking through these mediums helps us transform connections not just from a transit capability, but to other dynamic forms we have scraped across. By moving away from a problem-resolution-based design approach, we introduce other urban architectural possibilities for the space rather than being subject to a single master plan. Design iteration becomes a speculative tool for these possibilities and is highlighted through scenario-based design.

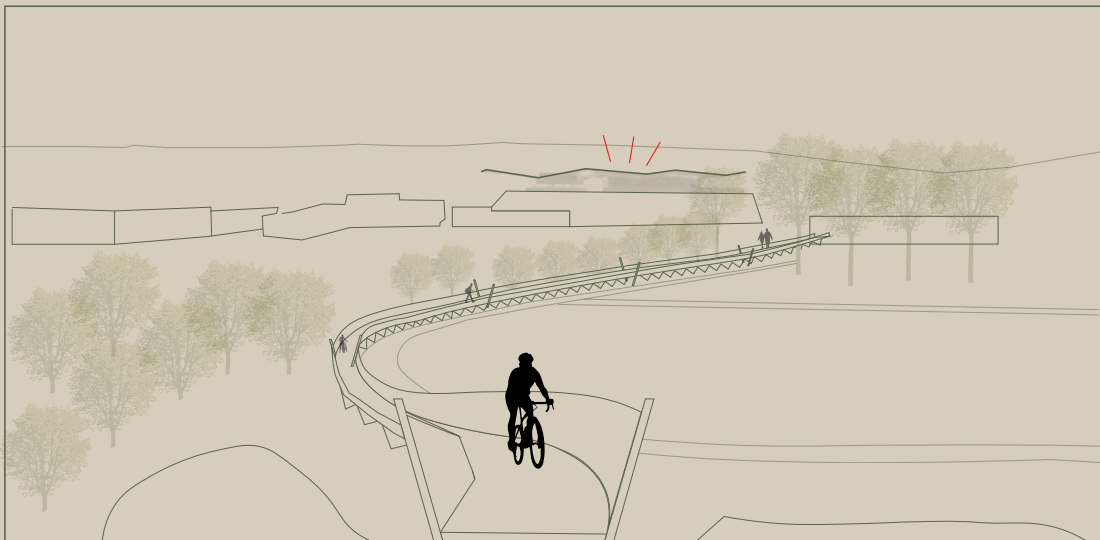


View Shafts provide visual proximity to the site and help guide its inhabitants in navigating the site. The idea here is to have a consistent viewpoint of the Transit space, allowing residents, visitors, and tourists to navigate across Te Manawa easily. This way, it also helps to view time and space together, with consistent site visuals; the pedestrian can make their own judgments based on their perceptual distance and its relation to time.

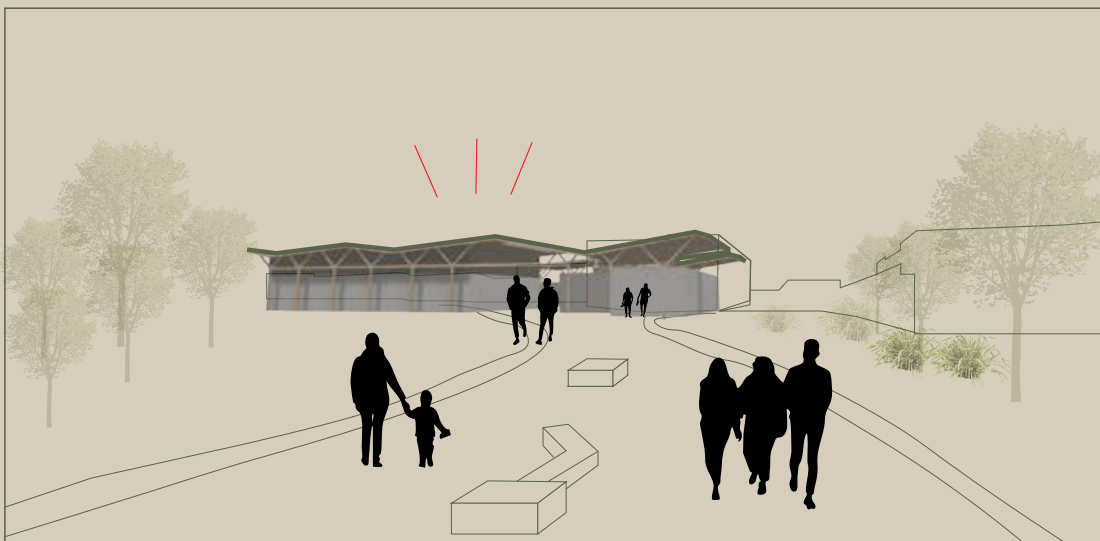
Figure 76: Te Manawa Planning Scenario (2025), Authors Artwork



**1** View Shaft From the Northern Side Of Site



**2** View Shaft From Kopupaka Reserve



**3** View Shaft From West gate Drive

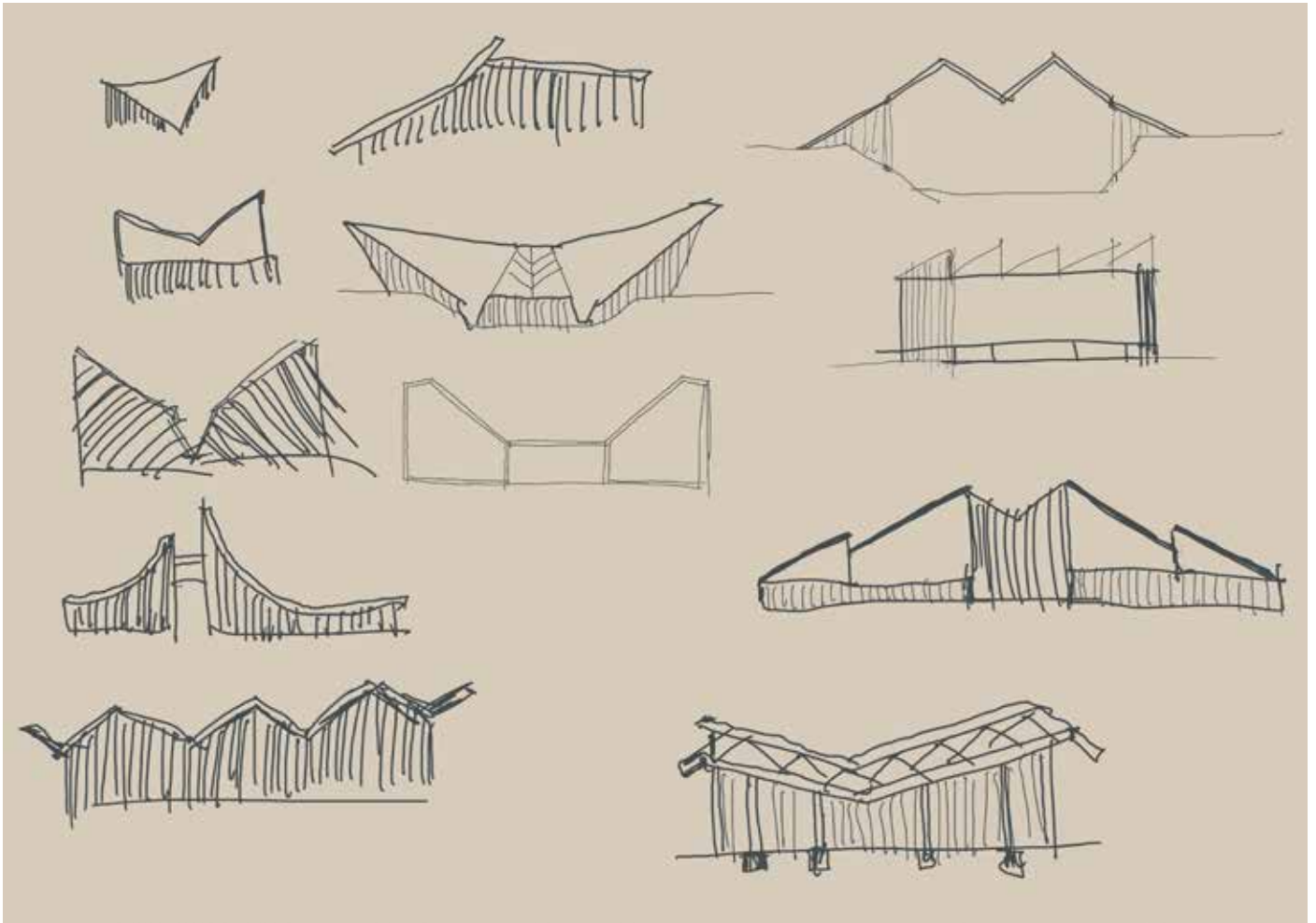


Figure 78: Digital Sketches (2025), Authors Artwork

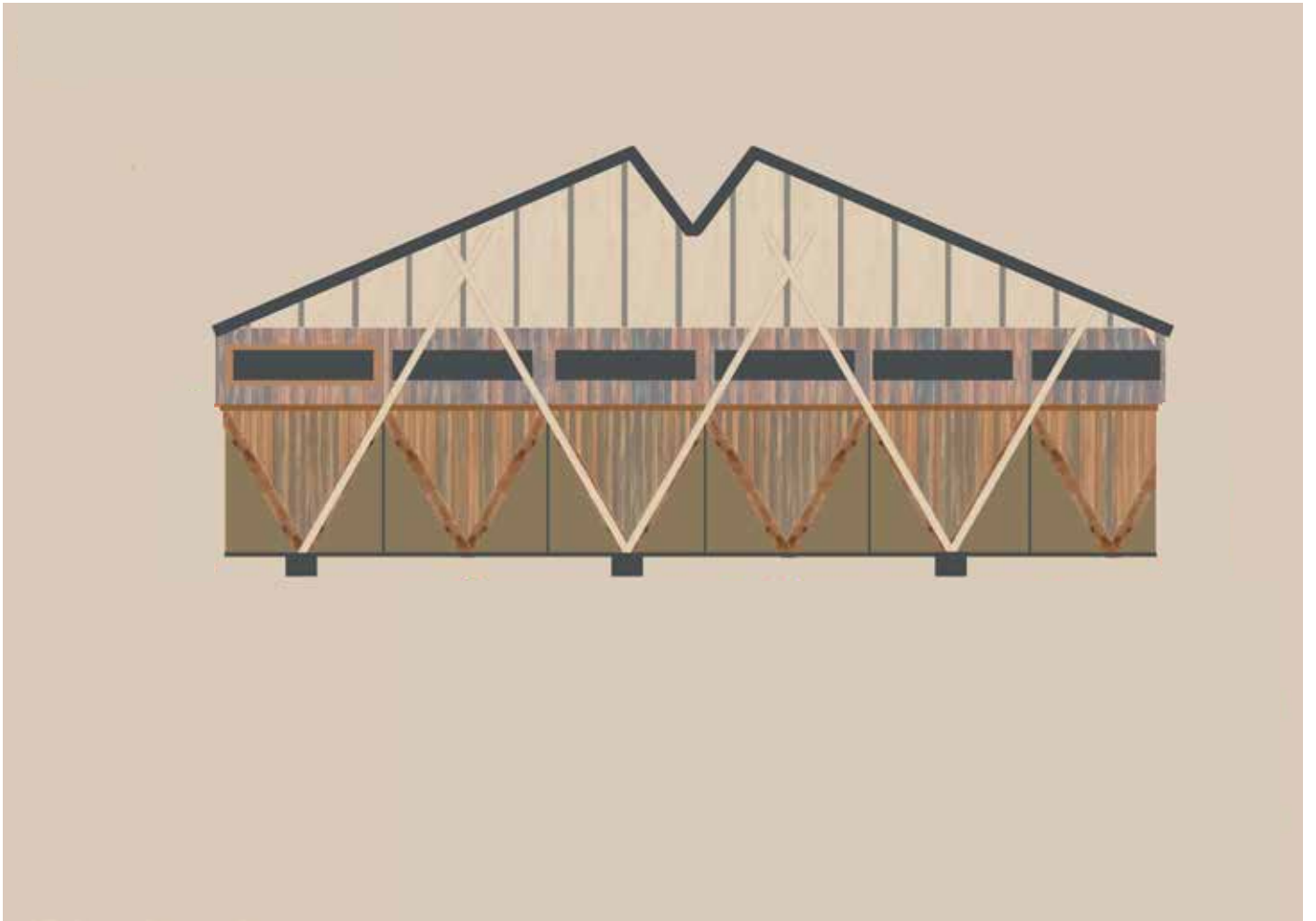
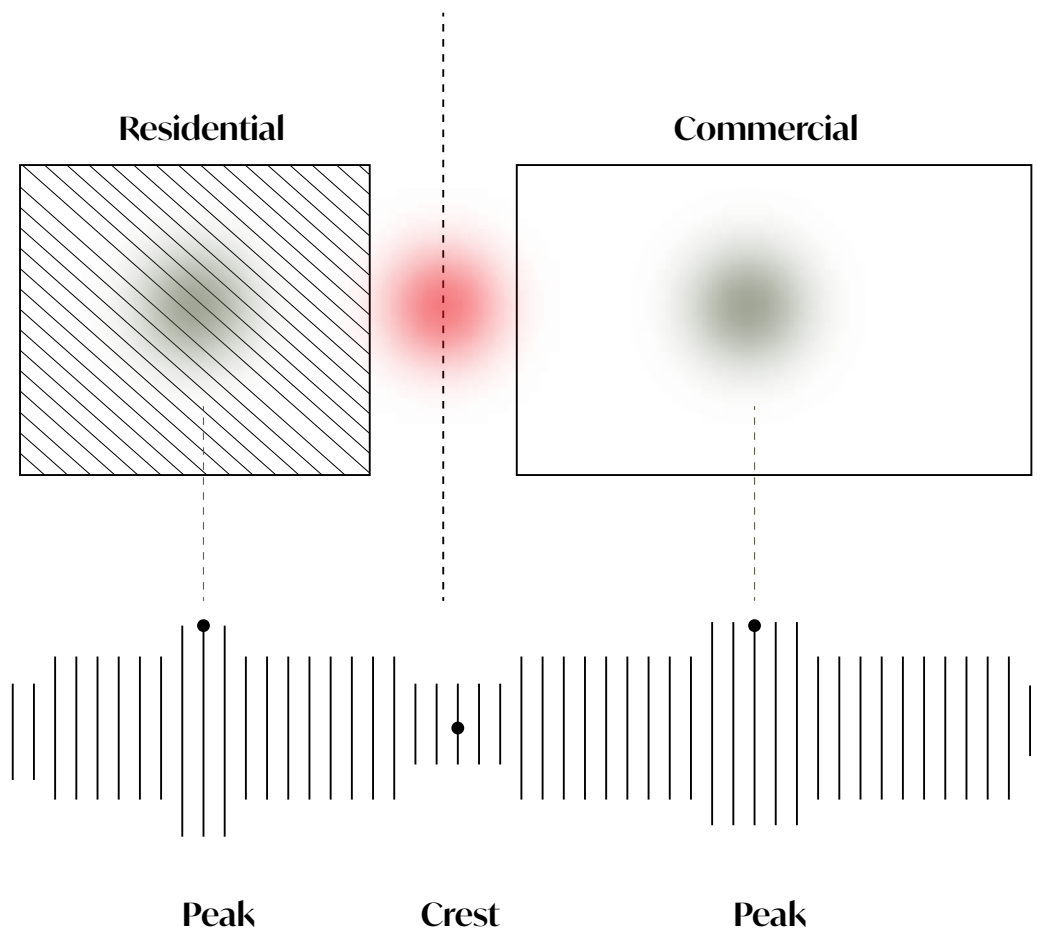
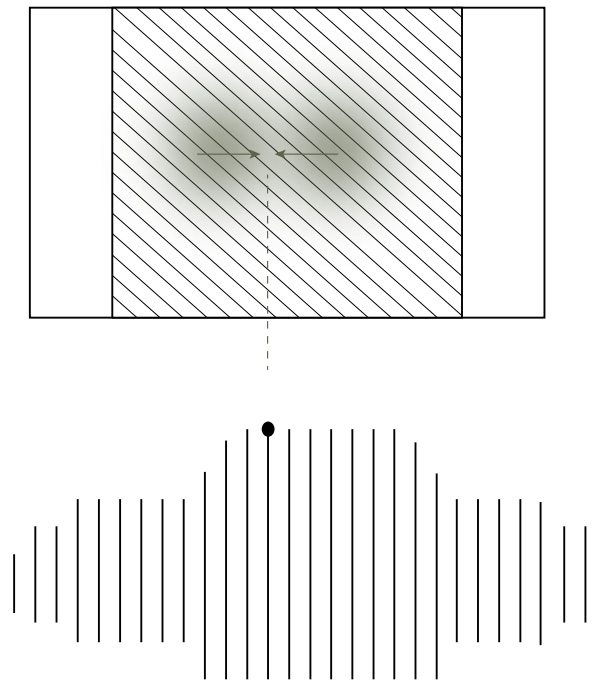


Figure 79: Design Materiality (2025), Authors Artwork

### 5.3 Rhythmanalysis Measurement Application



### Mixed Use- Residential Commercial



*This page has been deliberately left blank*

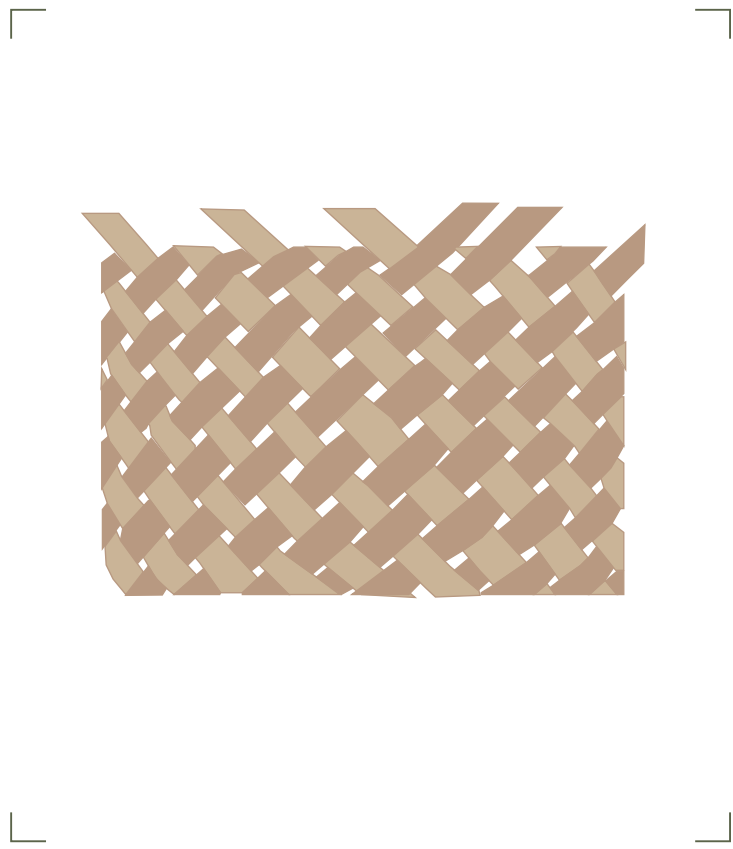


Figure 82: Harakeke Weaving Basket (2025), Authors Artwork

# Chapter 6: Developed Design

## 6.1 Final Design Intervention

The final Design does not complement a 'master plan' but instead adopts an 'urban adaptation' framework that attempts to re-rhythm Te Manawa through TOD and supporting regenerative urban initiatives. The approach has become more of a temporal process than a design-based conclusion. While the attempts in this study have been to find ways to fix fragmented urban elements that constitute urban sprawl through TOD, designing for solutional permanence has been understood as part of the overall issue.

Urban design is portrayed in this manner, and often designing to evolve or recycle is neglected through our linear societal rhythms, as explored in previous literature. Te Raranga Tamaki a Te Manawa is an alternative design mentality that treats temporality as a cyclical process and a way for our urban dynamics to integrate evolving elements into the fabric.

Design in this study has evolved from the linear nuances that often lead to predictable outcomes. Here, it is used as a diagnostic tool for the region's rhythms, whereby designing for rhythms to transform and evolve is dictated by the actual embodied environment rather than the fixation on the car.

# Te Manawa

# Puhinui

9am- 5:30pm Shopping Times

### Transit Stops focused on the Exterior

Focus on the outside shows the exclusiveness of Transit Principles that are missing from Te Manawa's Suburb. Indistinguishable architecture form- no place making insensitive in the shopping centre forms the franticness of site.

### Heavy Car-Centric Patterns

Heavy Car Flows through State Highway 16 exit  
 Busy periods through the weekend, higher traffic intensity- more congestion

### Car Centric Environment

Heavy Car park Infrastructure fixation  
 Stationary Flows into site, fixated to private vehicles  
 Empty Void spaces after 5:30 Closing Times  
 No Temporal Flows through Site

Westgate Walking Trails

SH16

Tamaki Makaurua (CBD)

Murdoch Park

Papatoetoe South School

### Distinctive Architectural Form (Wayfinding)

Central Neighbourhood Presence  
 Distinguishable for Transport Users  
 15 Minute Walkability  
 Close to Urban Amenities (Schools, Park, Housing)  
 Eyes on the Street Design

### Pedestrian Friendly Environment

Social Event Opportunities  
 Ecological Activity

### Transit User-Friendly Fabric

Bus Transitioning  
 Cycling Accessibility

Te Kohanga Reo ki Puhinui

5am- Midnight Times

Figure 83: Te Manawa & Puhinui Rhythmic Comparison (2025), Authors Artwork

Manukau

# Te Manawa's Arrhythmic Timeology

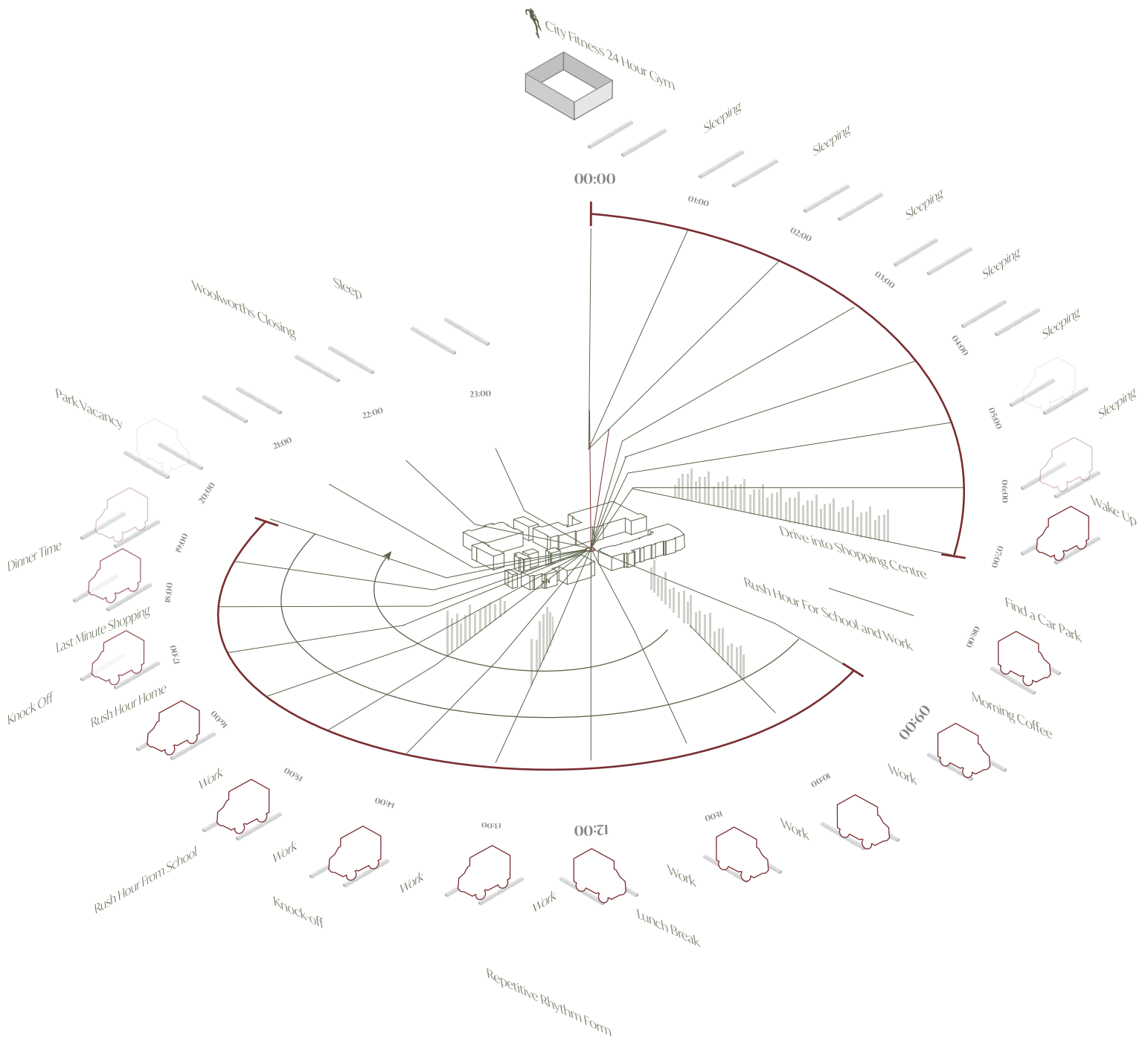


Figure 84: Te Manawa Shopping centre Arrhythmic Timeology (2025), Authors Artwork

Overlapping Rhythms

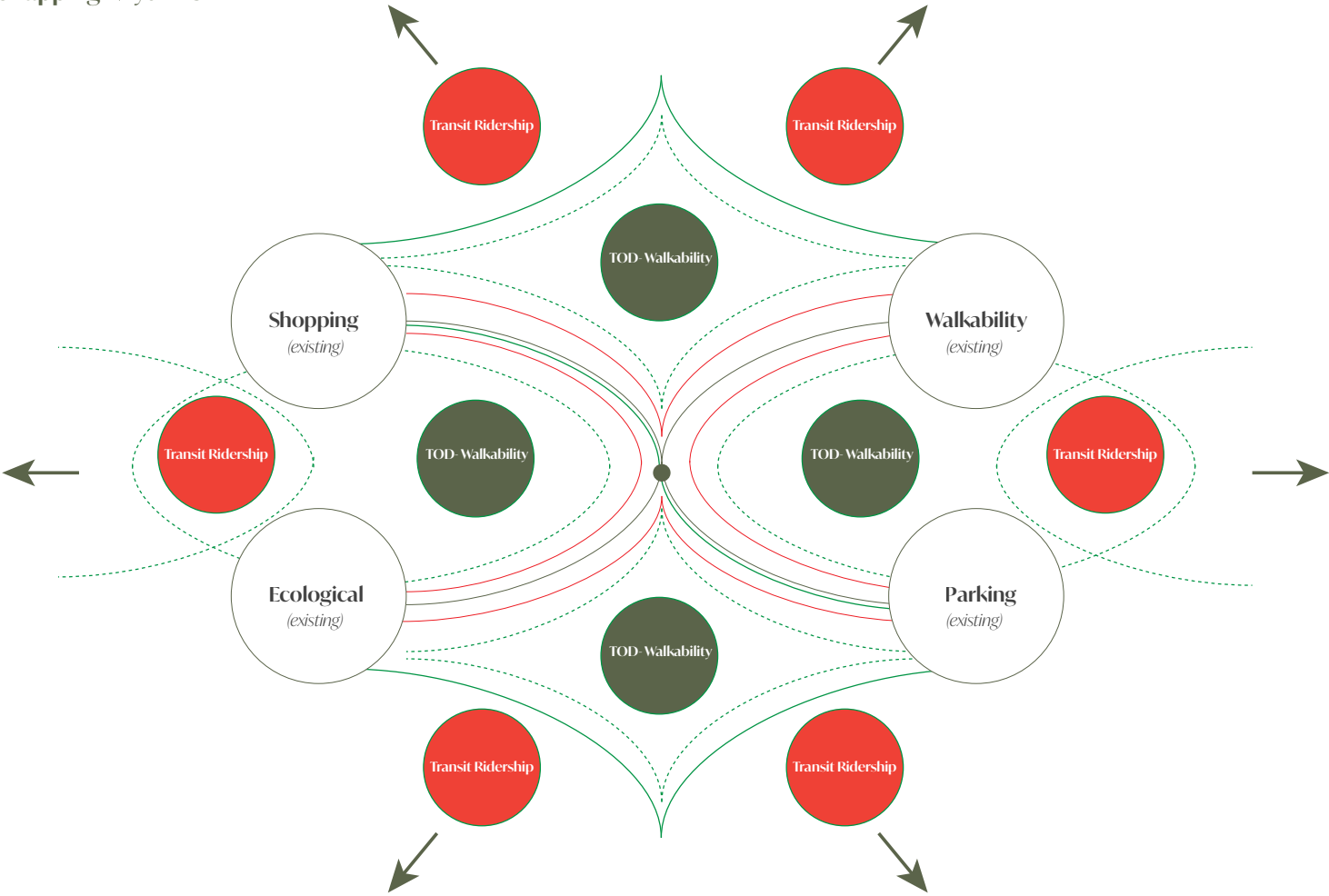


Figure 85: Designing for with Rhythm and TOD Diagram (2025), Authors Artwork

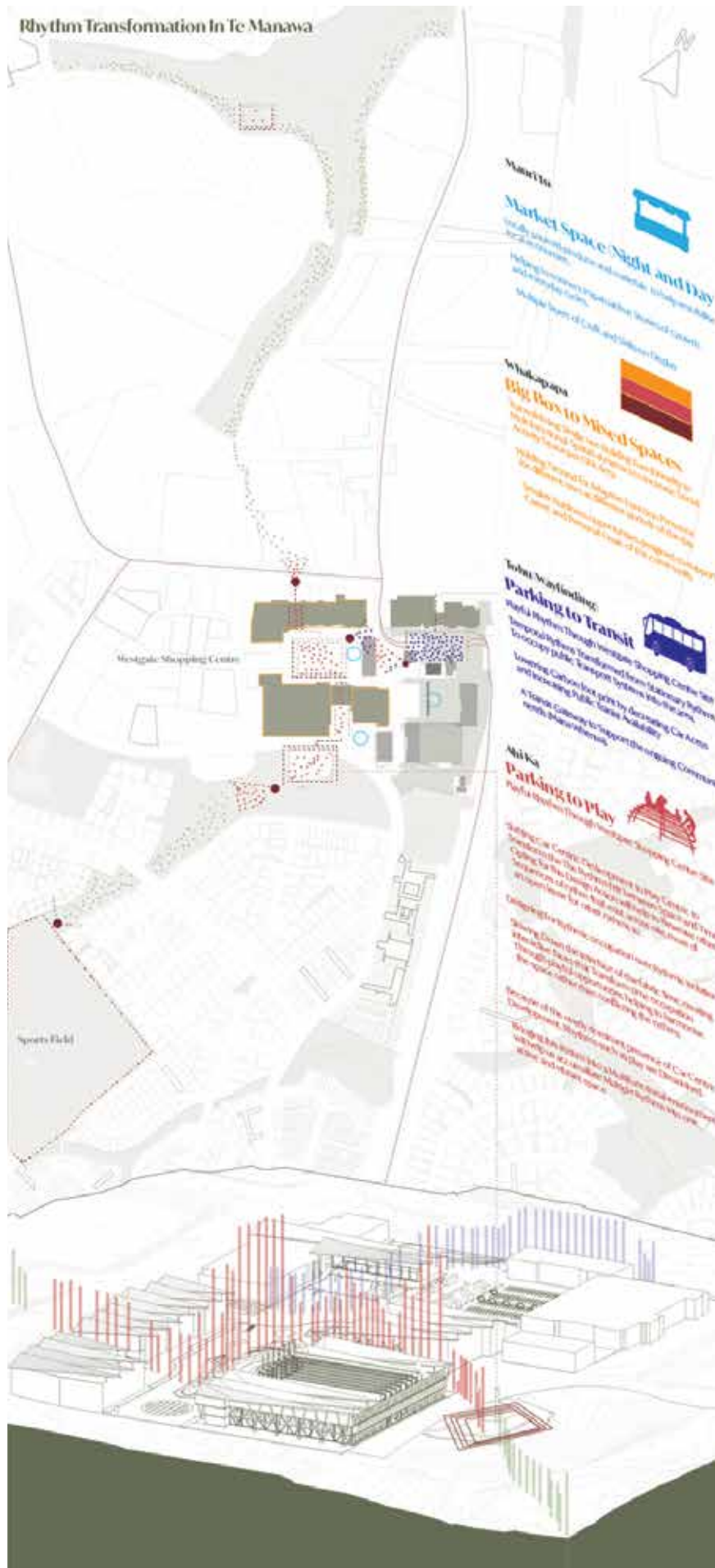


Figure 86: Te Manawa Shopping Centre Rhythmic Transformation Site Plan (2025), Authors Artwork

## 6.2 Re-weaving Te Manawa

Te Raranga Tamaki a Te Manawa attempts to transform the rigidity and disconnection of Rhythms between space and time in Te Manawa, opting for Transit-Oriented Design Development and regenerative urban design to become a vessel for rhythmic transformation rather than pre-conditioned planning frameworks.

Comprised of these forms, diverse needs are driven away from the environment and encapsulated through the centre of our human desires. The Westgate shopping centre serves as a model for this functionality, where the overall environment comprises linear transactions much like other organised spaces within the Tamaki region.

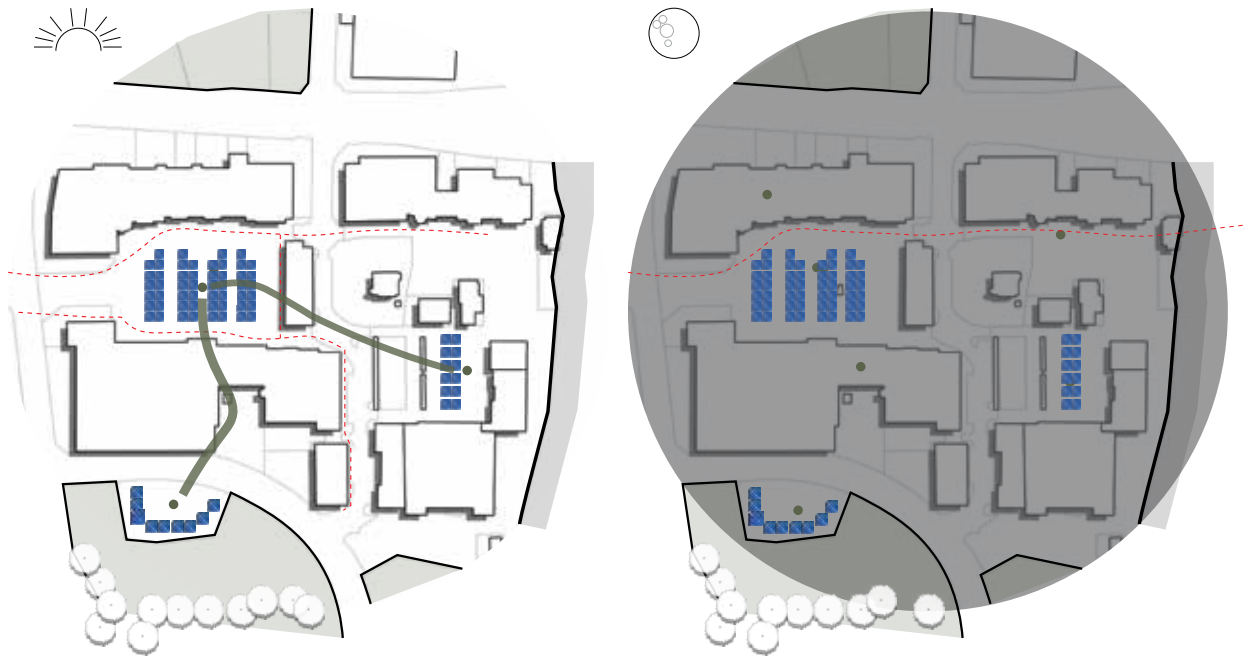
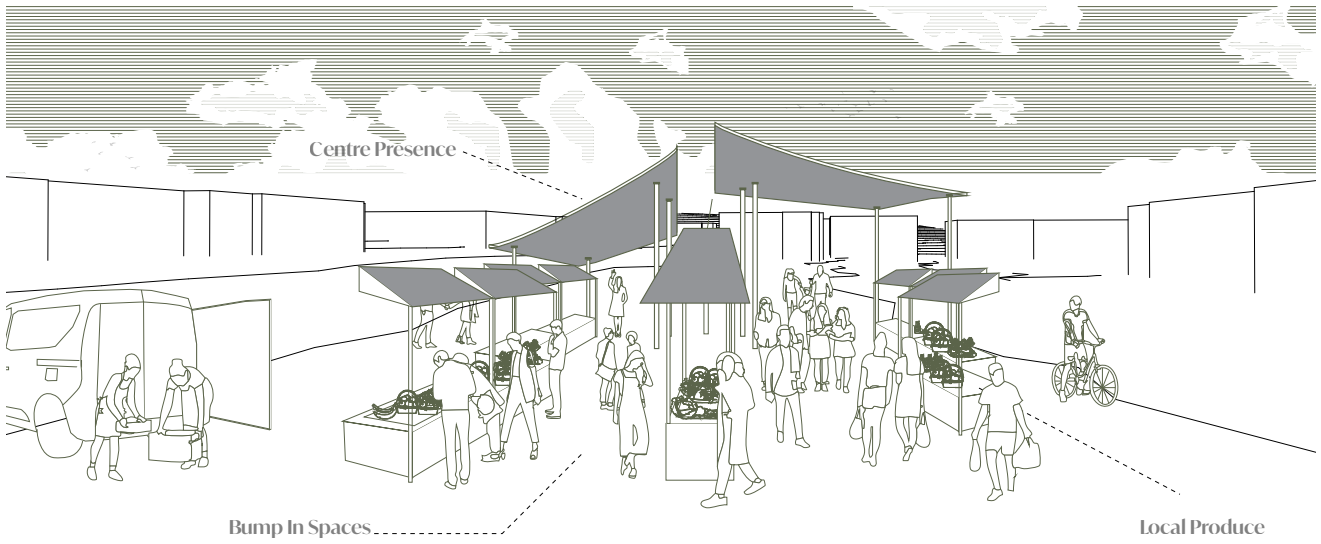
The synopsis of this design aims to tackle intervention by understanding beyond the mere forms we establish. Society dictates that humans adapt to our artificial environments, where we build more roads to fit more cars and more land to build more houses; the cycle is never-ending. Urban Architecture has become a tool of constraint upon ourselves; on this occasion, temporality in these design speculations becomes a tool for architecture to adapt to the more-than-human rhythms.



Figure 87: Gathering Sketch (2025), Authors Artwork

## 6.3 Temporal Market Spaces

The starting point in the attempt to re-weave Te Manawas Rhythms into the site is the intervention of temporal market spaces. Here, the temporality of its architecture provides adaptable infrastructure that can be situated around the community user, transforming stagnant car park spaces into pedestrian access. Here, it creates a starting point for a career business association built from the ground up. By being built around the community, Transactions become more intertwined with the surrounding space through the selling and distributing of produce and services. These spaces become cognitive learning spaces for all ages, and they understand that its customer-based service is somewhat more knowledgeable than consumer-friendly technologies. Here it relies on the old function of transaction, where it is slowed and more methodical with moment and service.



Sunday Market Spaces

Rotation

Thursday Night Market Space

Market Tents- Home Grown Food Produce

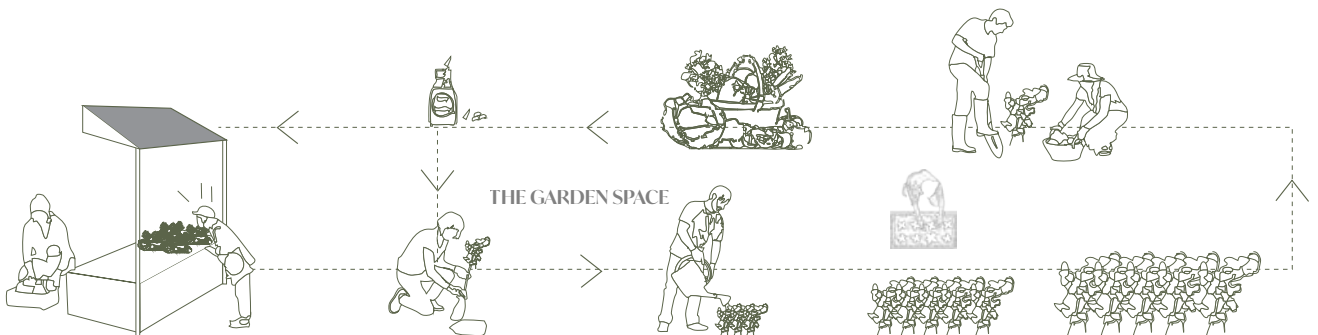


Figure 88: Temporal Market Planning (2025), Authors Artwork



Figure 89: Temporal Market Site Plan & Section (2025), Authors Artwork

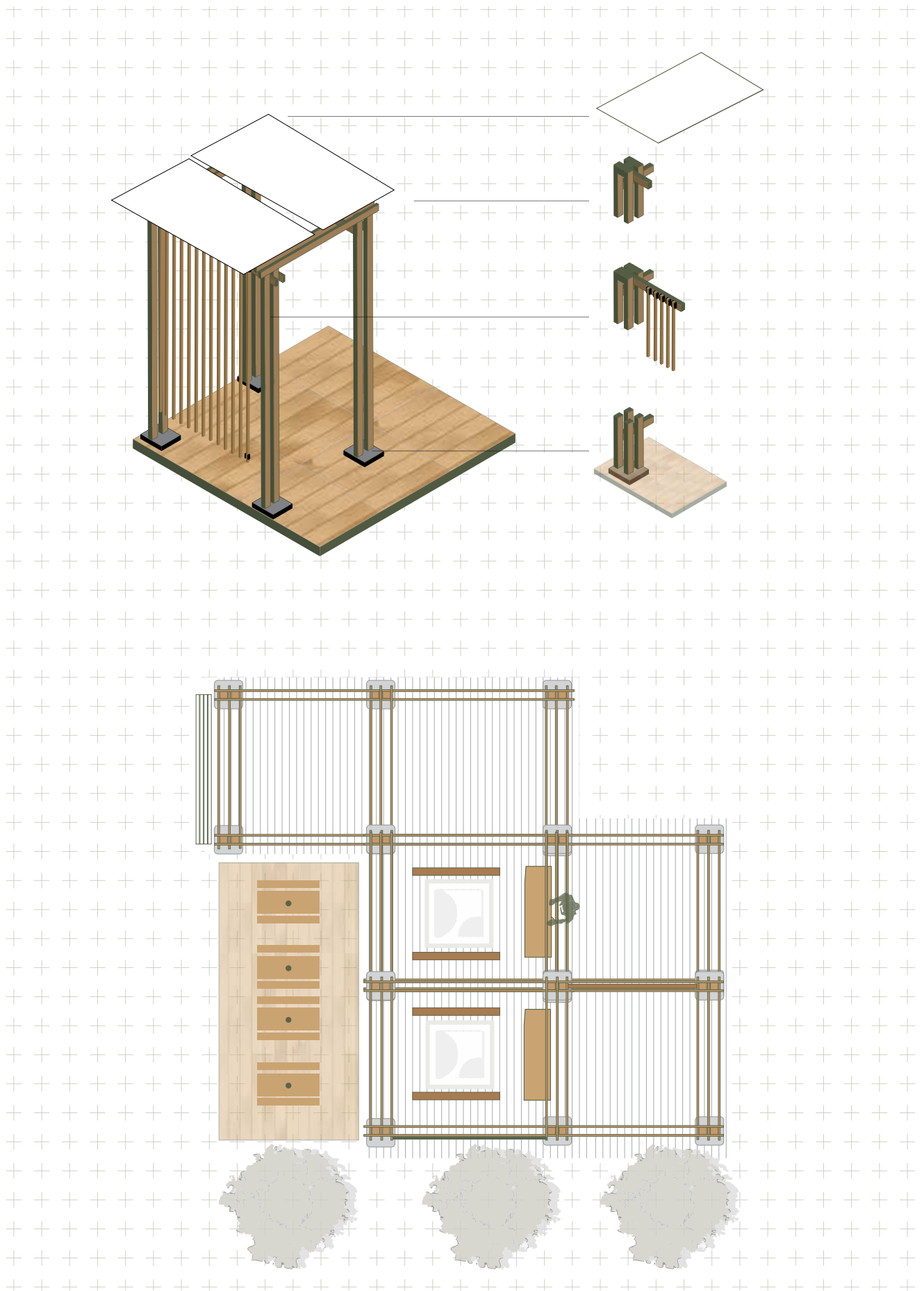


Figure 90: Temporal Market Design (2025), Authors Artwork

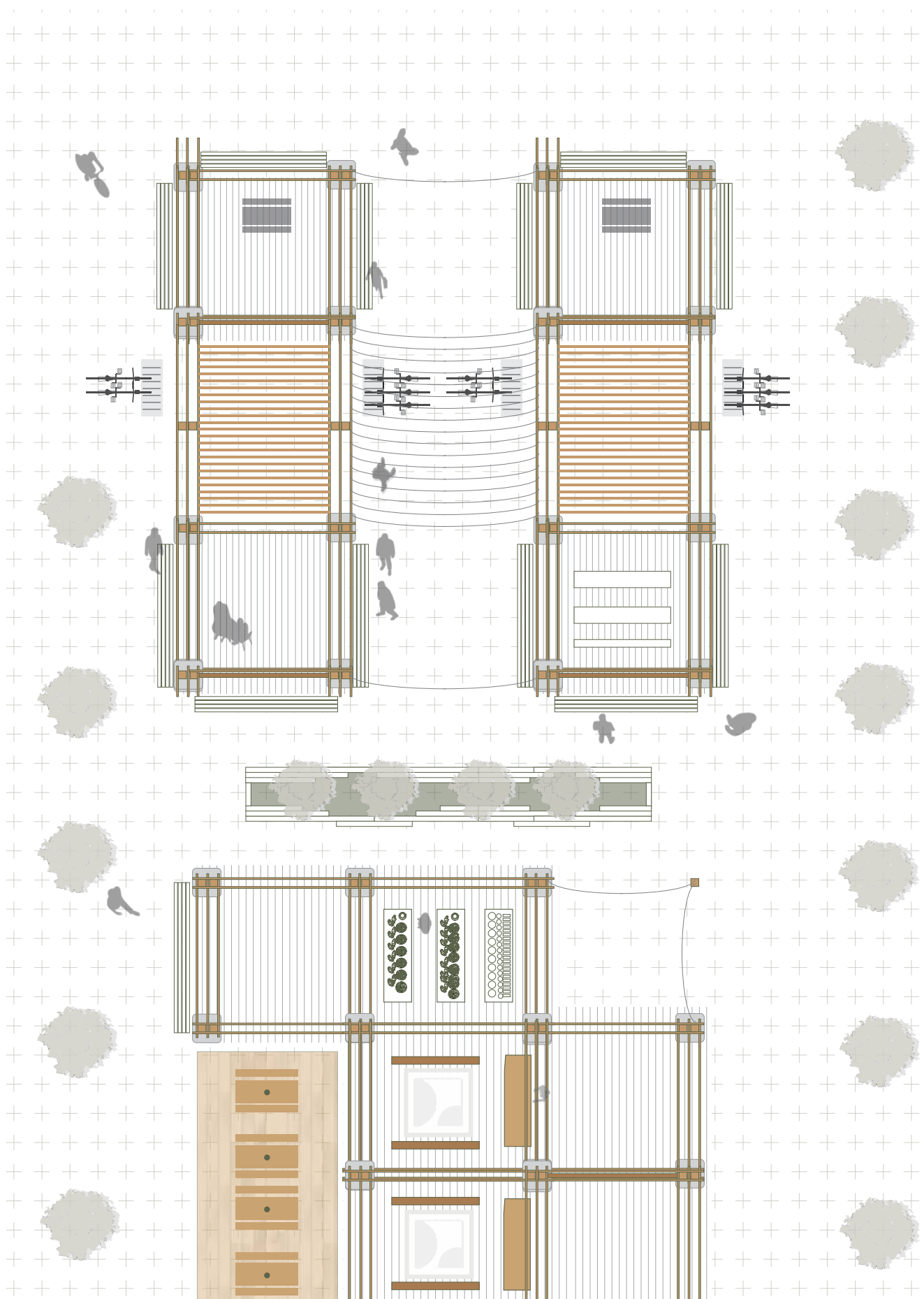


Figure 91: Temporal Market Design (2025), Authors Artwork



# Temporal Market Spaces

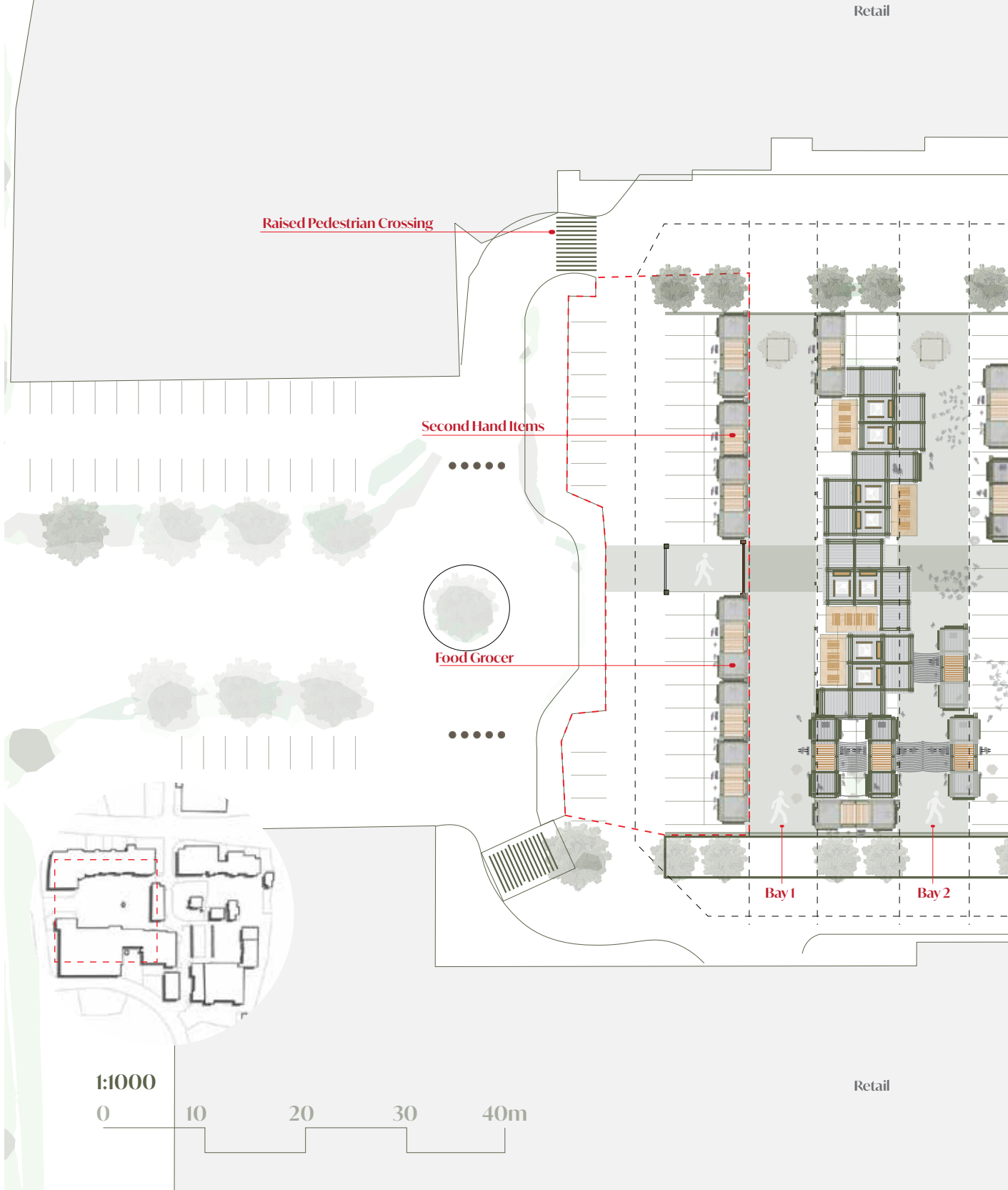
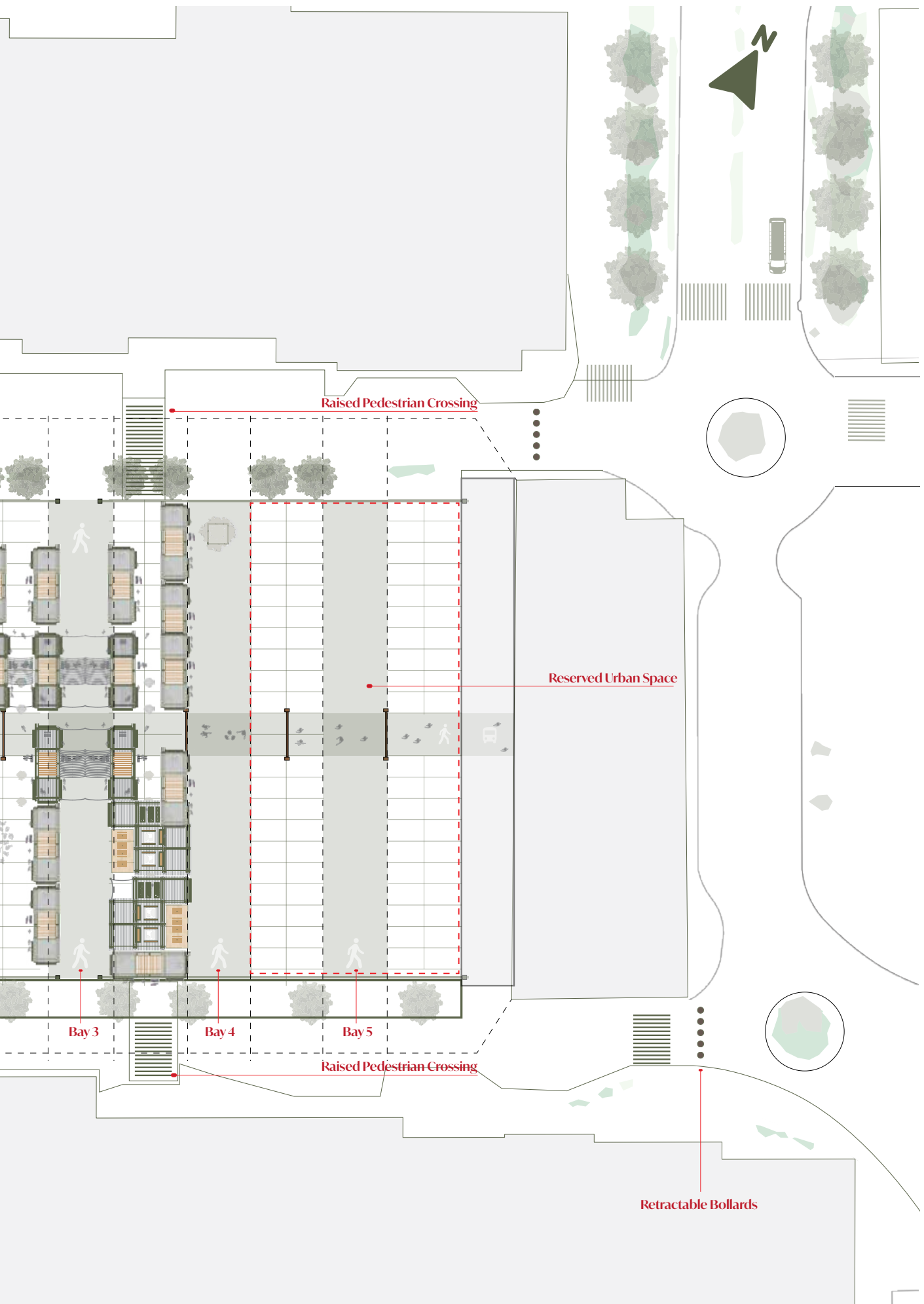
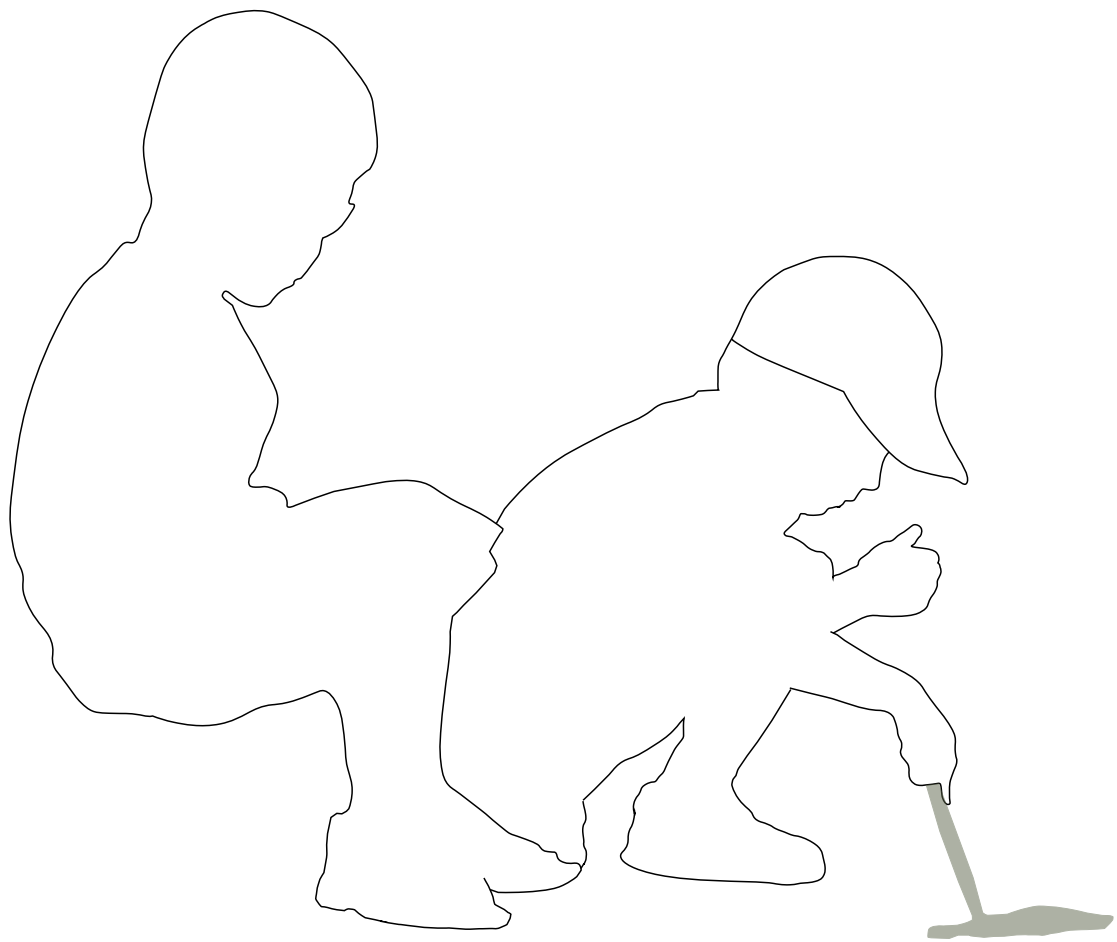


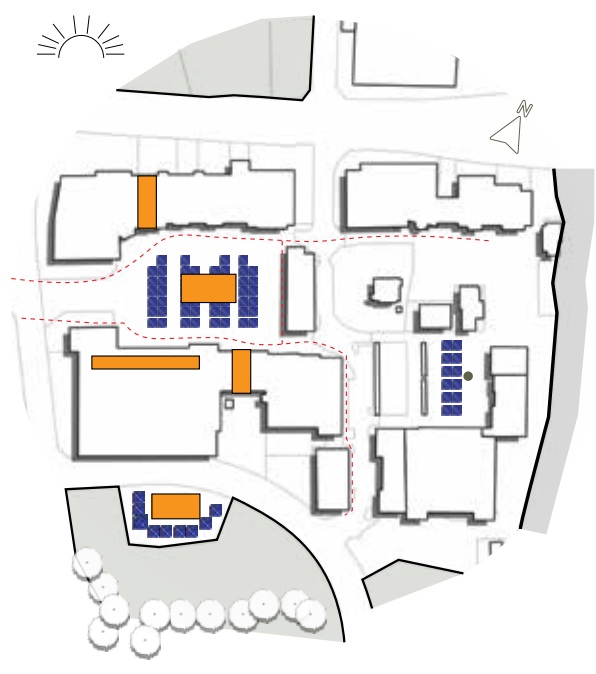
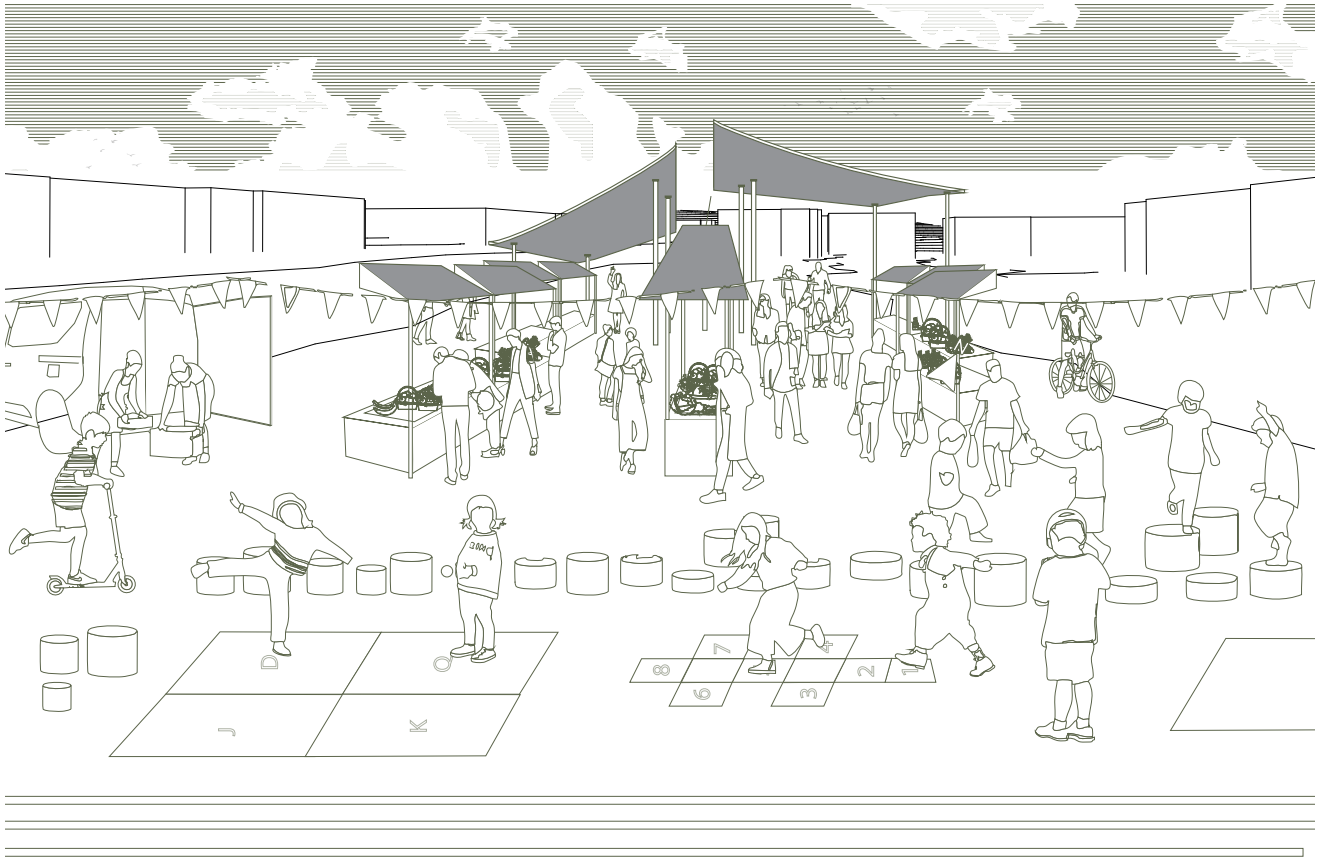
Figure 92: Temporal Market Space Site Plan (2025), Authors Artwork





## 6.4 Playful Urbanism

Designing through play is an opportunity for the Westgate Shopping Centre to approach urban design through the eyes of diverse ages. In this case, transforming urban space due to big-box retail creates a psychological disadvantage for youth in adapting to it. The vastness of the area can be daunting, and car traffic undermines any chance for playful activity; thus, reorienting to meet the needs of youth better is the approach to address the loss of physical, social, cognitive, creative, and emotional skills through play. Navigation through play opts for creative and memorable experiences, helping to build adolescence across the site.



■ Areas of Play



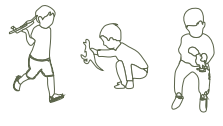
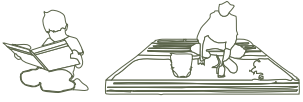

- **Physical**  

- **Social**  

- **Creative**  

- **Cognitive**  

- **Emotional**  


Figure 94: Playful Urbanism Planning (2025), Authors Artwork



Figure 95: Playful Urbanism Site & Section Plan (2025), Authors Artwork

# Playful Pockets and Pathways

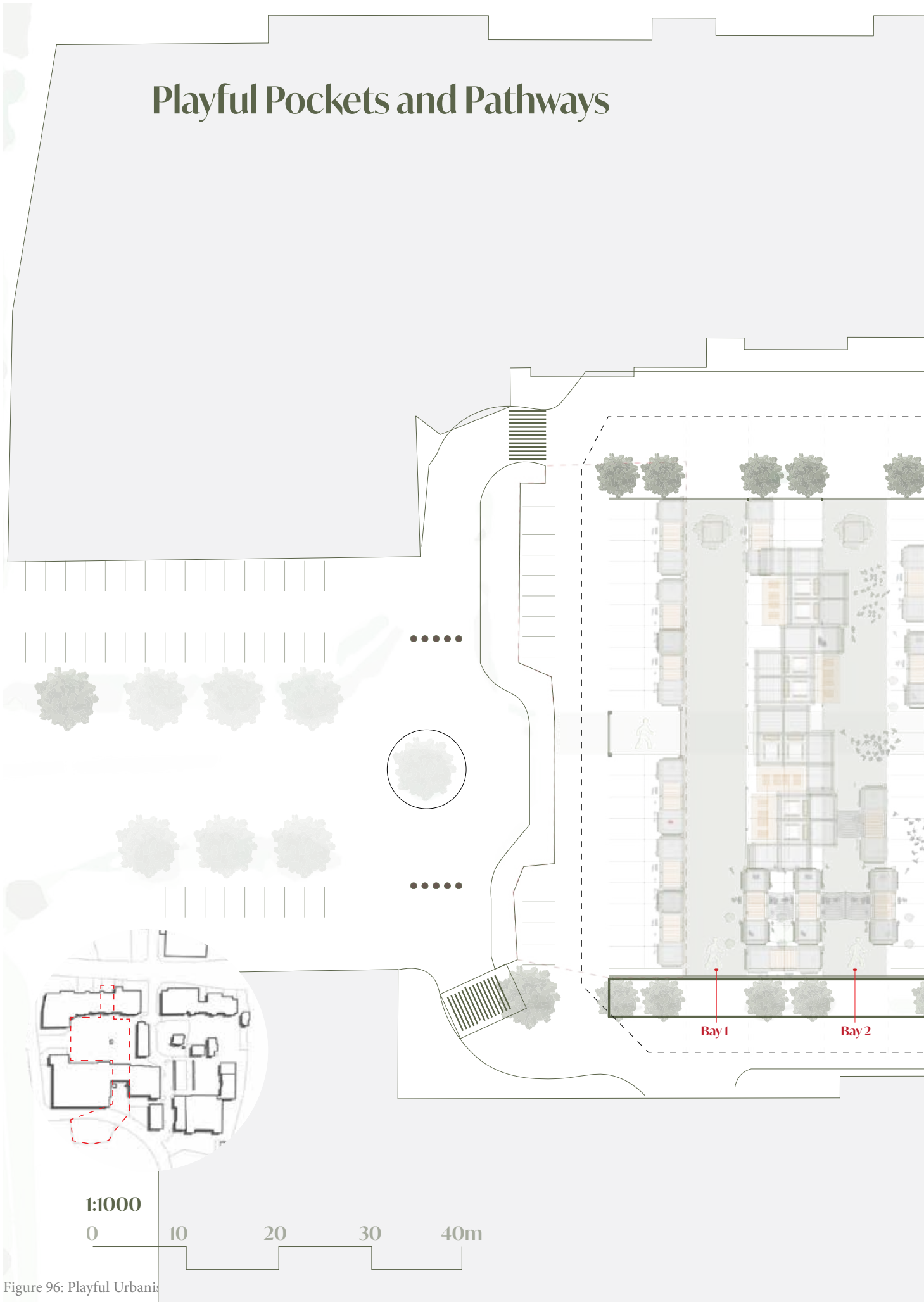
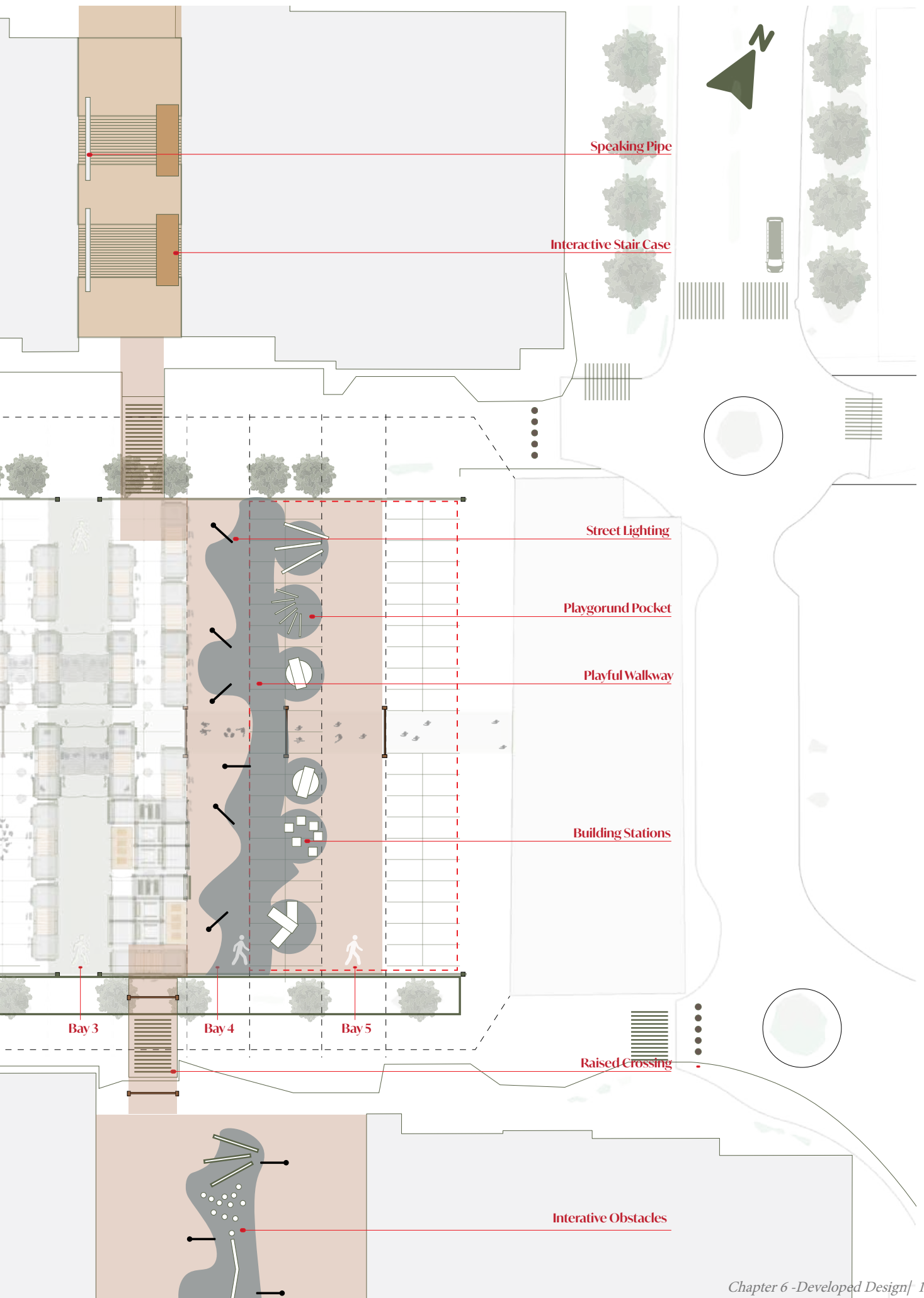


Figure 96: Playful Urban



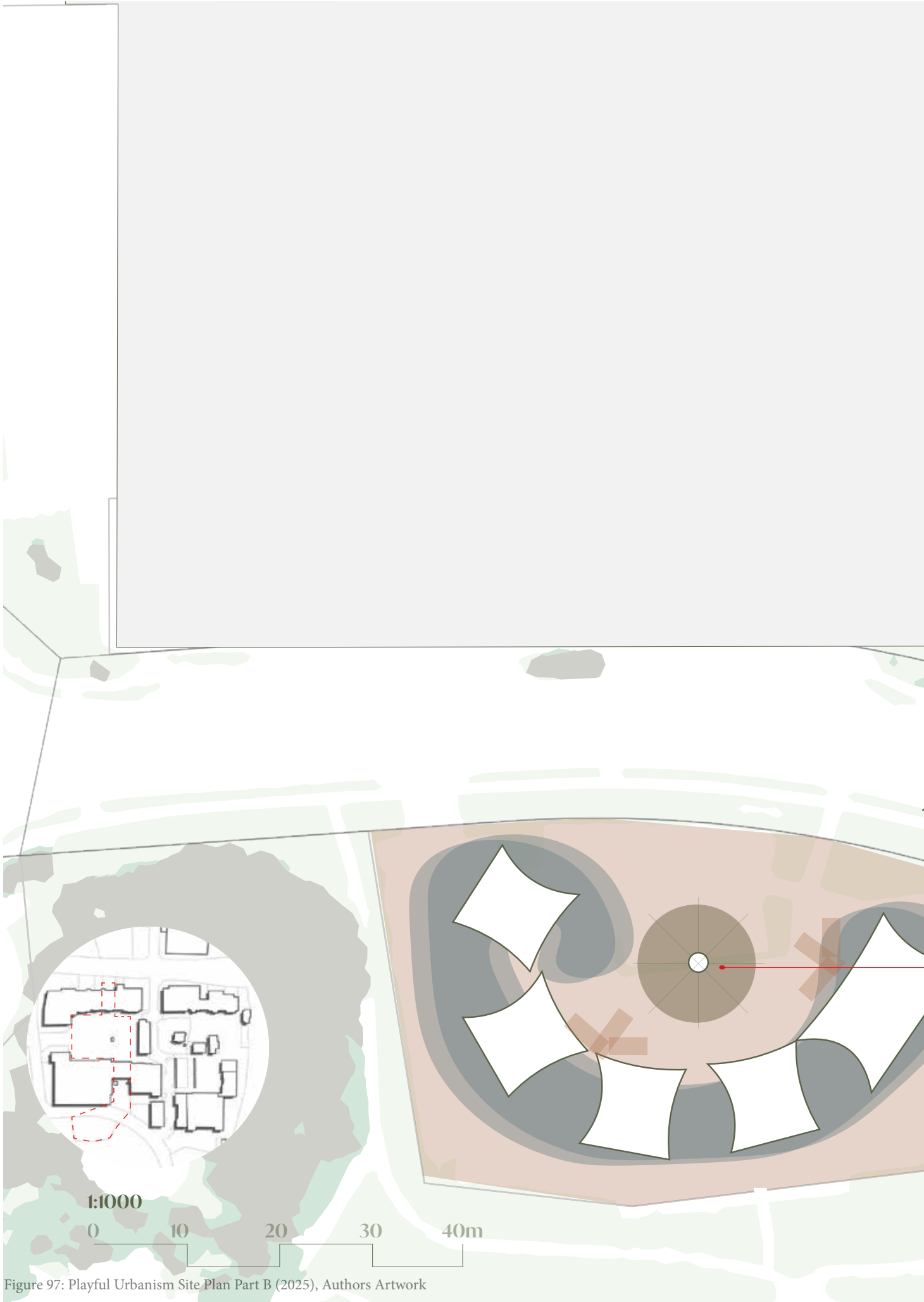
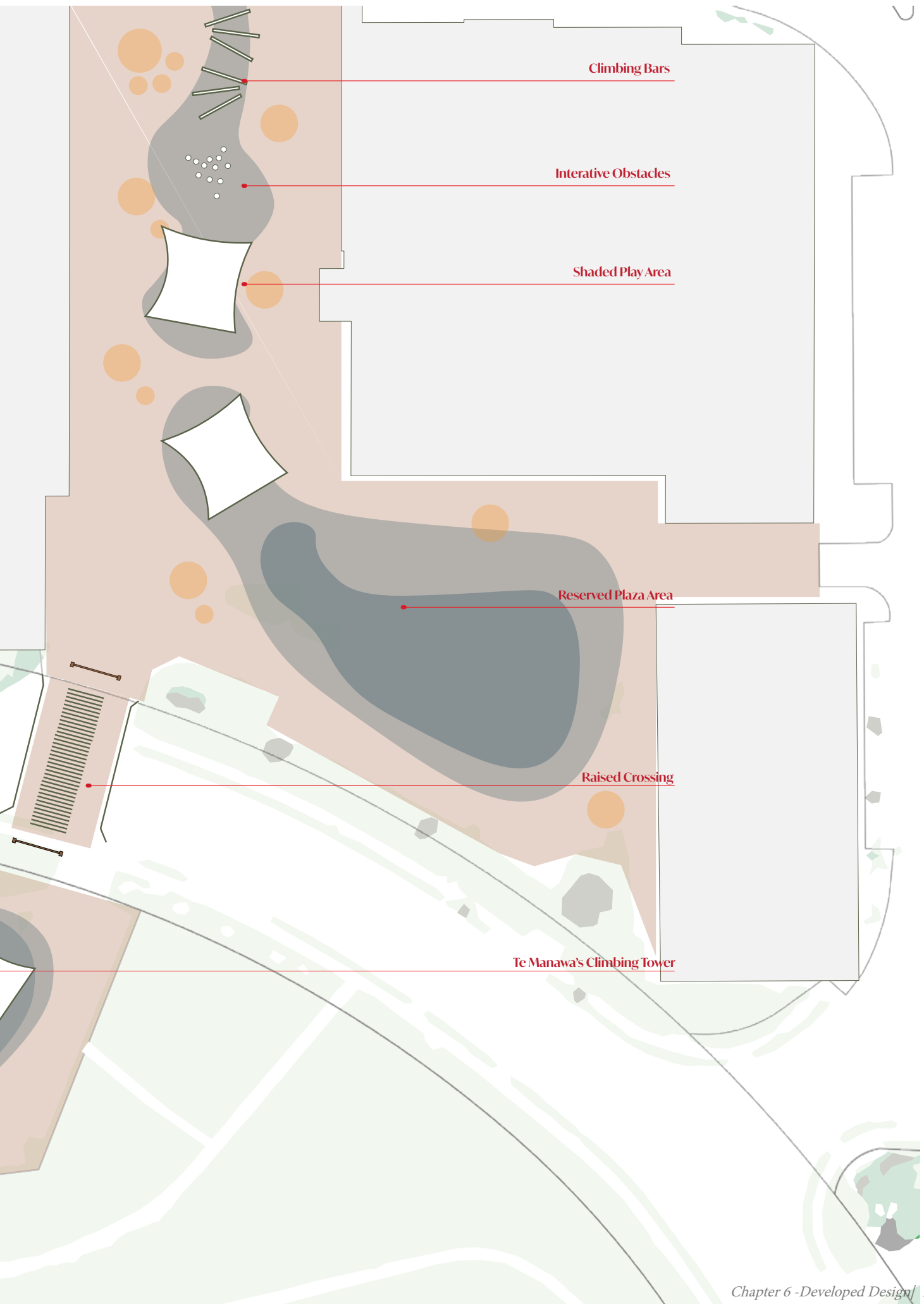


Figure 97: Playful Urbanism Site Plan Part B (2025), Authors Artwork



Climbing Bars

Interative Obstacles

Shaded Play Area

Reserved Plaza Area

Raised Crossing

Te Manawa's Climbing Tower



Figure 98: Tui Bird Sketch (2025), Authors Artwork

## 6.5 Ecological Rhythm Regeneration

Ecology-based architectural transformation acts as a tool for reweaving the fragmented relationship between Te Manawa's social and ecological rhythms. Here, Ecology is positioned to restore bio capacity within Te Manawa's shopping Centre, aiming to provide aesthetic stress relief, reorient pedestrian ecological movements, and cater for transit-oriented development. Ecology-based infrastructure is also used as a tool for community engagement, helping ground individuals in their relationship with Papatuanku and providing mana to the land, which in turn gives back to its inhabitants.

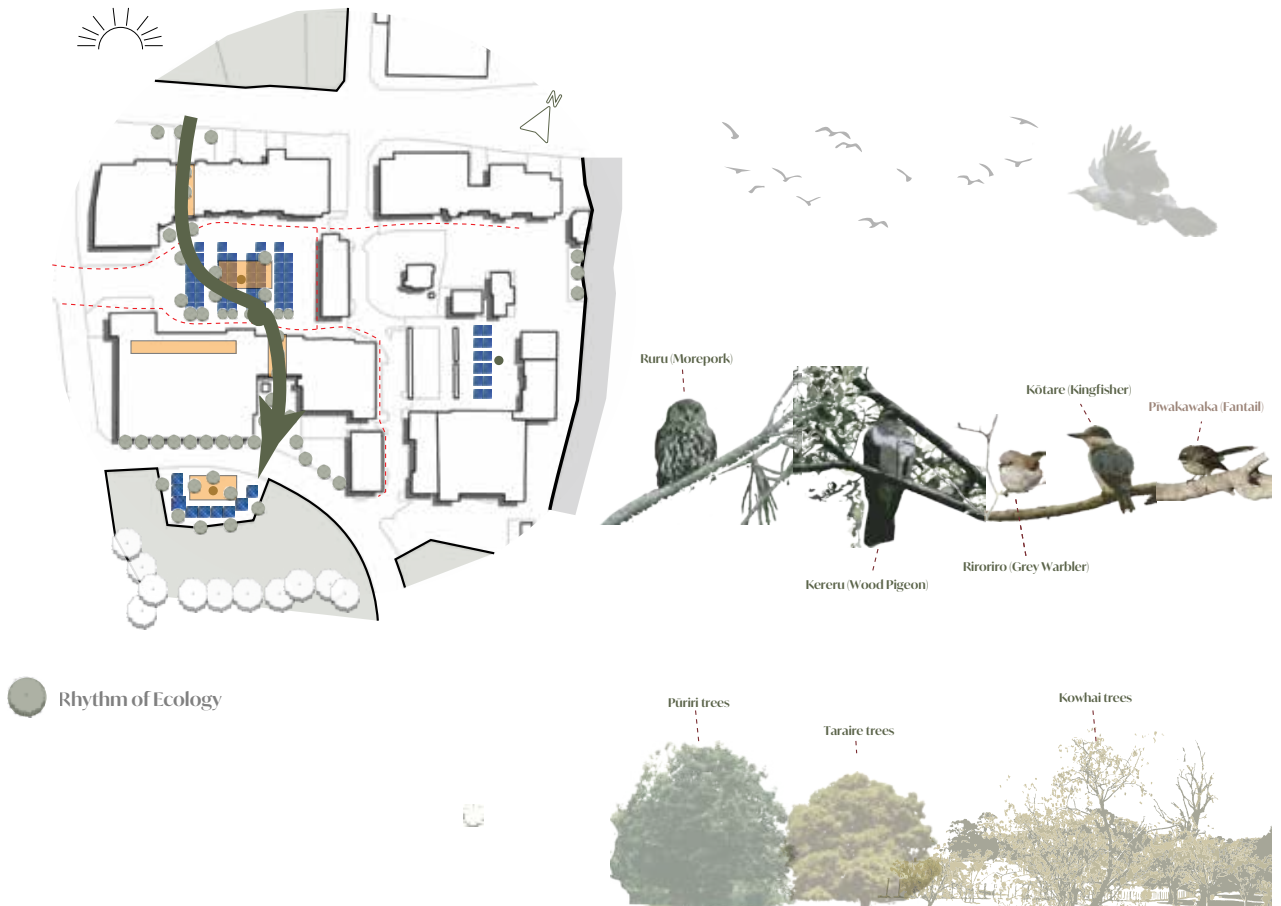
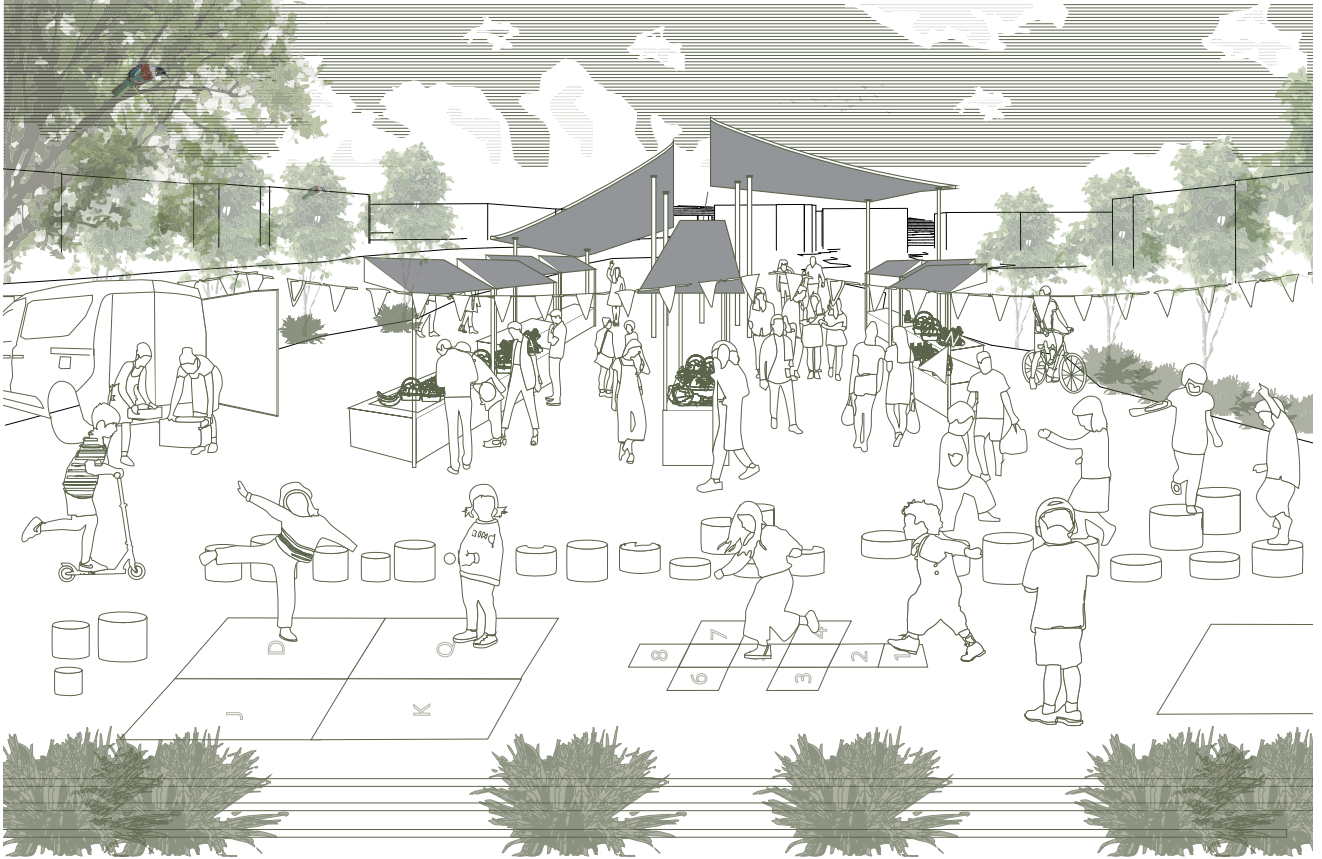


Figure 99: Ecological Restoration Planning (2025), Authors Artwork



Figure 100: Ecological Site & Section Plan (2025), Authors Artwork

# Ecological Restoration



Figure 101: Ecological Rest



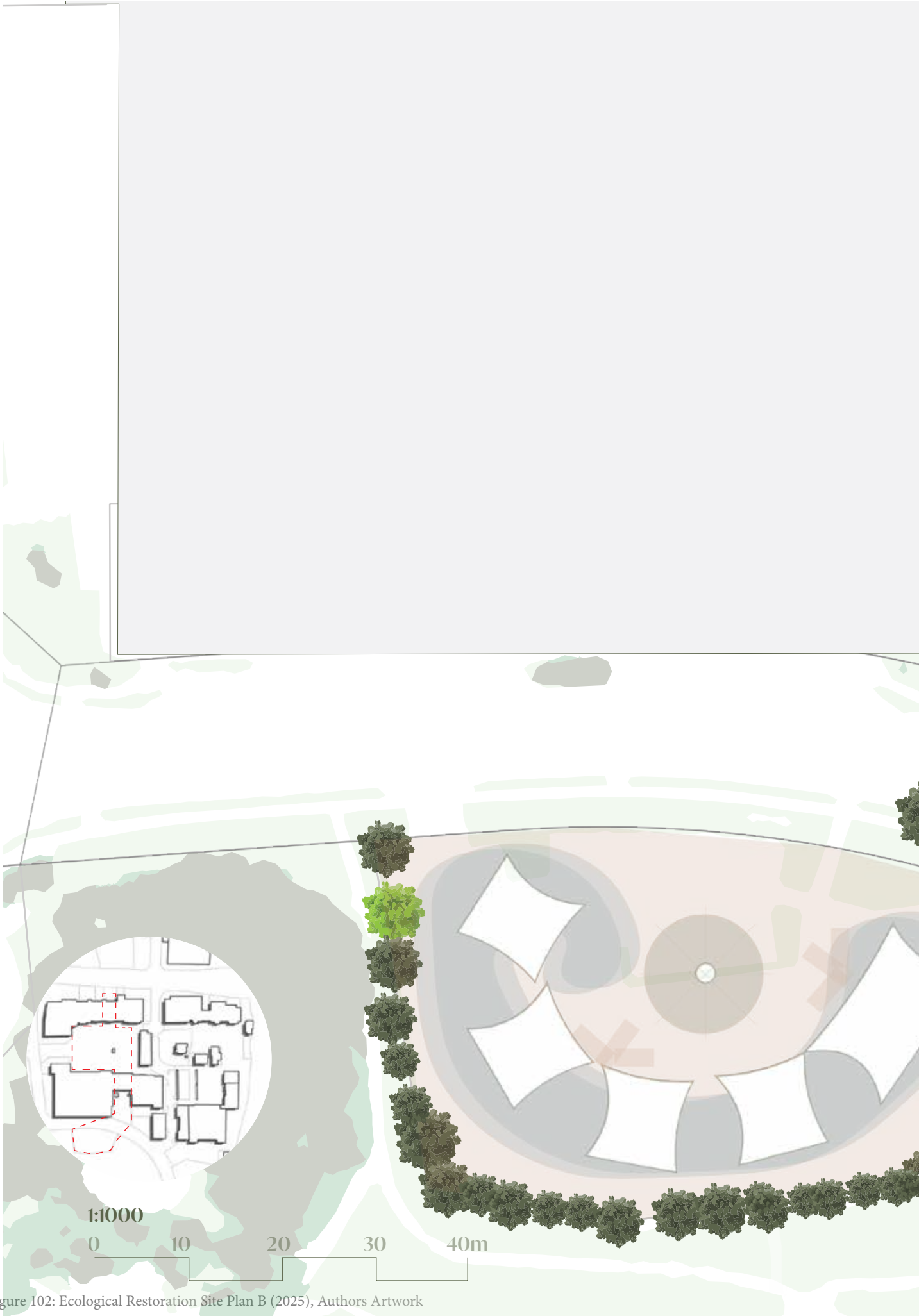
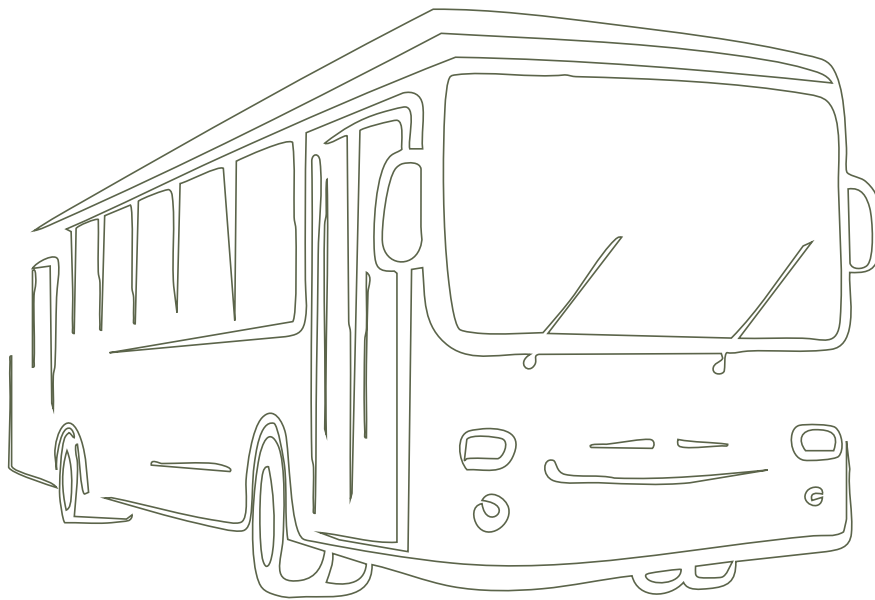


Figure 102: Ecological Restoration Site Plan B (2025), Authors Artwork





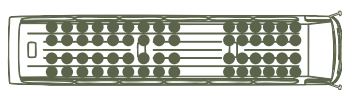
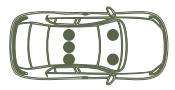
## **6.6 Transit Rhythmic Transformation**

Deploying transit infrastructure in Te Manawa by prioritising mobility variations helps transform the existing mono-cultural pathways into cohesive, engaging corridors of movement. Transit is essential to link habitats across space and time, and it becomes the new spatial armature for social engagement, hence its integration in Westgate shopping centre. Transit becomes the dampener for car-centric infrastructure and emitters for public transportation to be a more viable option.

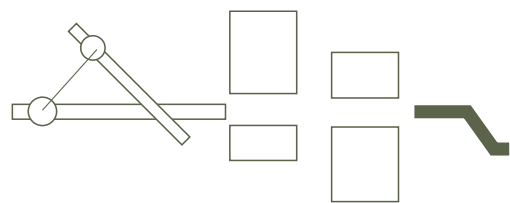


■ Rhythm of Transit

Higher Rhythm of Transit  
Ridership per Capita  
(Minimising Private Car Usage)



Greater Accessibility and  
Functionality for Tourists and  
Citizens.



Unique Arrival Destination and  
Safety by on street visibility

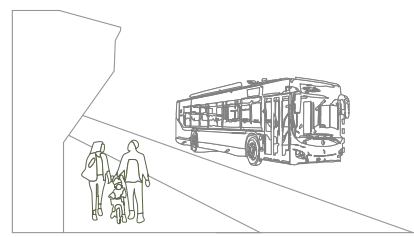


Figure 104: Transit-Oriented Planning (2025), Authors Artwork



Figure 105: Transit Site & Section Plan (2025), Authors Artwork

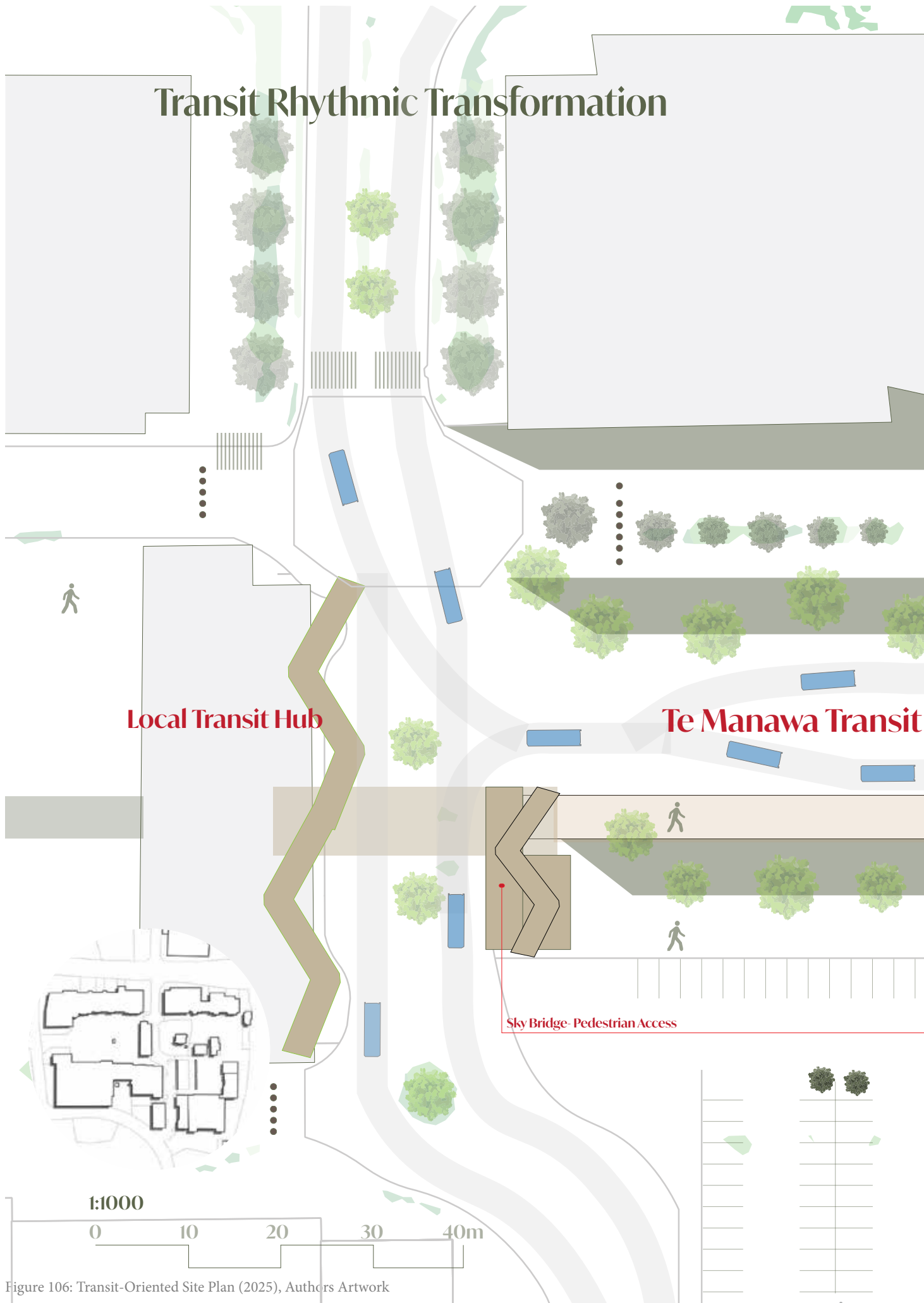
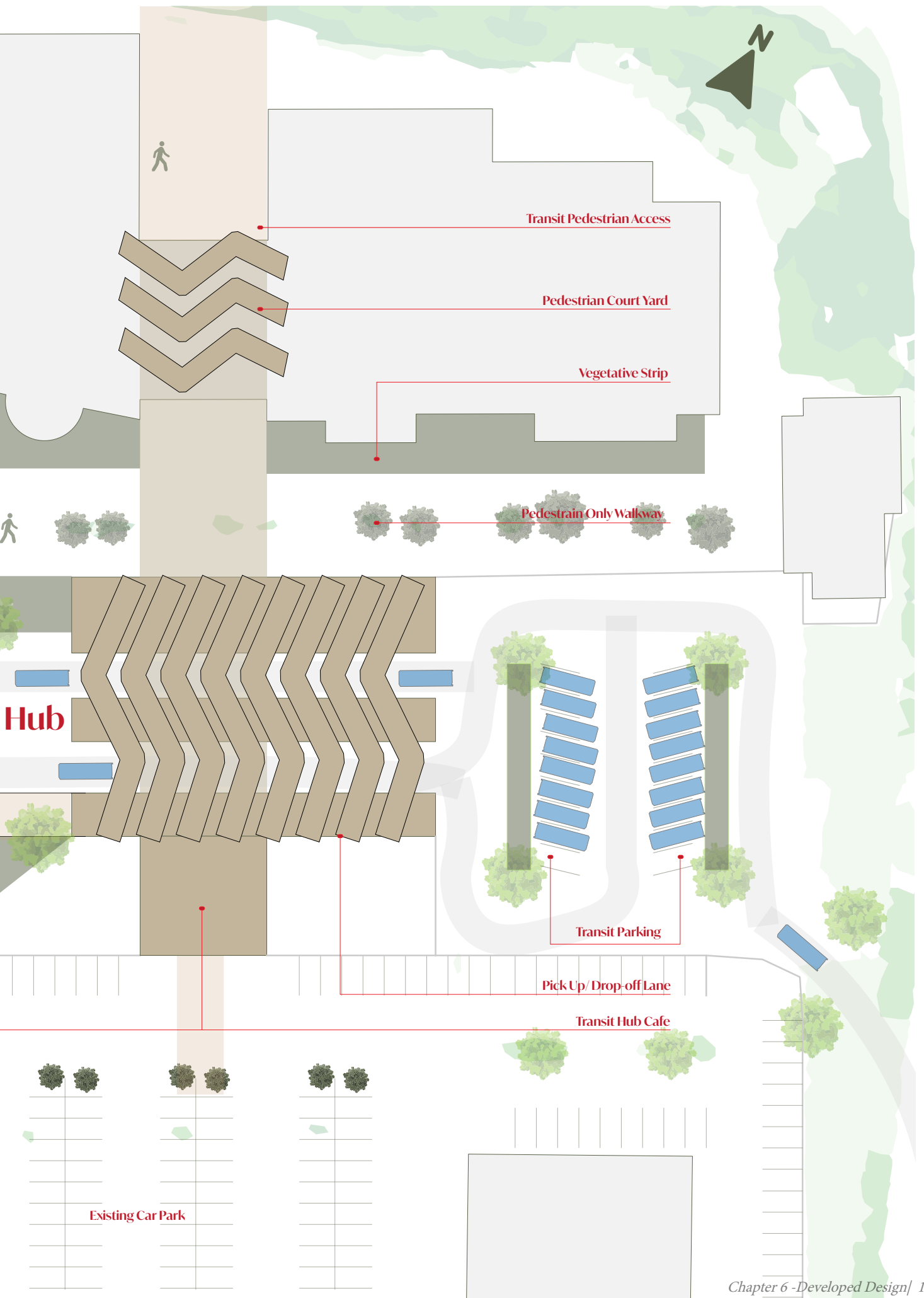


Figure 106: Transit-Oriented Site Plan (2025), Authors Artwork



## Chapter 7: The Conclusion

Te Raranga Tamaki a Te Manawa positions the role of urban design within the fractured landscape of Tamaki Makaurau's suburban expansion, where sprawl, car dependence and disconnection have fragmented both social and ecological rhythms. The study presents an alternative way of perceiving our inhabitancy in Tamaki Makaurau with its fast, frantic rhythms interwoven into its fabric. Te Raranga Tamaki a Te Manawa positions Rhythmanalysis as a philosophical and design-based framework for rediscovering lost rhythms and restoring them through Transit-Oriented Development, with further regenerative urban design in mind. This project asks not only how we can design for denser, more efficient neighbourhoods, but how we can imagine them as living, breathing compositions of time, movement and social reciprocity.

With the primary focus of the thesis being the unveiling of our urban rigidity in design, it was the composition of rhythmic pattern listening that helped shift from conventional problem-solving to 'choreograph' rather than organise. Although the process has not directly responded to sprawl as a definitive answer to our organised unorganisation of time and movement in Tamaki, the design process has allowed it to evolve from observed monotonous behaviours and environmental rhythms, revealing where disconnections occurred and how new forms of play, community interaction and ecological continuity could emerge from temporal interventions.

Te Manawa's Shopping Centre revamp serves as one of many potential outcomes of applying Lebreve's (1992) rhythmanalysis, rather than a static by-product of zoning and infrastructural organisation ingrained since the events of Tiriti o Waitangi. The research offers a way to uncover the invisible dilemma between time and space, which gives life to our urban environments and our behaviours within them. This uncovering of knowledge is crucial for our understanding of designing with time, not just space.

Te Raranga Tamaki a Te Manawa presents an alternative and catalytic approach to observing our cities' rhythms and the functions of urban design that shape our social and ecological constructs. The methodology in this thesis breathes new life into the field of future-thinking urban planning, allowing it to assert an unconventional planning ideology, moving away from the top-down convention toward a more adaptive and responsive architectural approach. Te Raranga Tamaki a Te Manawa brings a pulse to urban design, a precedent for how a planner becomes a listener for our neighbourhood's heartbeat and its rhythms that solidify our everyday behaviours.

*This page has been deliberately left blank*

## List of Figures

Figure 1: Planting the Harakeke (2025), Authors Artwork	2
Figure 2: Mauri Ora Compass (Tetatau NZ)	10
Figure 3: Tools and Methodology Framework (2025), Authors Artwork	15
Figure 4: Tamaki Makaurau Growth from 1845-1925 (2025), Authors Artwork	16
Figure 5: Urban Planning Axis Trajectory Diagram (2025), Authors Artwork	17
Figure 6: Tamaki Makaurau Timeline Diagram (2025), Authors Artwork	18
Figure 7: Urban Planning Axis Trajectory Diagram (2025), Authors Artwork	19
Figure 8: Tamaki Makaurau Decentralisation Collage (2025), Authors Artwork	20
Figure 9: Colonial Intervention Collage (2025), Authors Artwork	21
Figure 10: Urban Town Design Principles In Ancient India, (Archi- Monarch)	24
Figure 11: New Zealand Annual Fuel Combustion Emissions, (Planetary Ecology)	26
Figure 12: Auckland Zoning Areas, (Auckland Council)	27
Figure 13: NZ Index of Deprivation Statistical Area 2023 (ehinz)	27
Figure 14: Le Corbusier's functionalist plan for Utopian "Radiant city" (Ville Radieuse)	27
Figure 15: Diagram of Spatial Typologies showcasing Urban decentralisation (Science Direct)	29
Figure 16: New Zealand Deforestation from Settlements (Ecoclimax)	31
Figure 17: Planning Diagram of Transit Oriented Development (Town and Country and Planning)	34
Figure 18: 15 Minute City Diagram (UBE)	36
Figure 19: Tamaki Makarau Population Density (2025), Authors Artwork	39
Figure 20: Harakeke Growth (2025), Authors Artwork	44
Figure 21: Photo of New Lynn Train Station(Architectus)	45
Figure 22: New Lynn Station Analysis with F4 Demo Map Underlay (2025), Authors Artwork	47
Figure 23: Photo of Hillsboros Orenco Station (Hillsboro Orenco)	48
Figure 24: Hillsboro's Orenco Station Analysis with F4 Demo Map Underlay (2025), Authors Artwork	50
Figure 25: Photo of Assen Train Station (Powerhouse Company)	51
Figure 26: Hillsboro Orenco Station Analysis (2025), Authors Artwork	53
Figure 27: Harakeke Growth (2025), Authors Artwork	55
Figure 28: Theoretical Framework (2025), Authors Artwork	57
Figure 29: Design Methodology (2025), Authors Artwork	58
Figure 30: Theoretical Framework (2025), Authors Artwork	59
Figure 31: Consumerism Mapping (2025), Authors Artwork	61
Figure 32: Conceptual Design ideology (2025), Authors Artwork	62
Figure 33: Harakeke Growth (2025), Authors Artwork	65
Figure 34: Te Manawa 1950 (NZ Satellite)	66
Figure 35: Te Manawa 1990 (NZ Satellite)	66
Figure 36: Te Manawa 2010 (NZ Satellite)	67
Figure 37: Te Manawa 2025 (NZ Satellite)	67

Figure 38: Multi-Nodal System (2025), Authors Artwork	69
Figure 39: Te Manawa Site Investigation (2025), Authors Artwork	70
Figure 40: Te Manawa Site Location (2025), Authors Artwork	71
Figure 41: Te Manawa Zoning areas (2025), Authors Artwork	73
Figure 42: Te Manawa Land-Use and Parking (2025), Authors Artwork	74
Figure 43: Te Manawa 15 Minute Walkability Across Site (2025), Authors Artwork	75
Figure 44: Te Manawa Bus Transport Routes (2025), Authors Artwork	76
Figure 45: Te Manawa Bus Transport Routes across Tamaki Makaurau (2025), Authors Artwork	77
Figure 46: Te Manawa Shopping Centre Program Assemblage (2025), Authors Artwork	78
Figure 47: Te Manawa Shopping Centre Embodied Behaviour (2025), Authors Artwork	80
Figure 48: Te Manawa Shopping Centre Embodied Behaviour (2025), Authors Artwork	81
Figure 49: Te Manawa Shopping Centre (2025) Authors Photography	82
Figure 53: Te Manawa Shopping Centre Site (2025), Authors Artwork	82
Figure 50: Te Manawa Shopping Centre (2025) Authors Photography	82
Figure 51: Te Manawa Shopping Centre (2025) Authors Photography	82
Figure 52: Te Manawa Shopping Centre (2025) Authors Photography	82
Figure 54: Harakeke Weaving Basket (2025), Authors Artwork	85
Figure 55: Urban Planning Paradigms (2025), Authors Artwork	87
Figure 56: Urban Nodes in Tamaki Makaurau (2025), Authors Artwork	89
Figure 57: Railway Intervention in Tamaki Makaurau (2025), Authors Artwork	91
Figure 58: Te Manawa Conceptual Design Stage Zero (2025), Authors Artwork	93
Figure 59: Te Manawa Conceptual Design Stage One (2025), Authors Artwork	94
Figure 60: Te Manawa Conceptual Design Stage Two (2025), Authors Artwork	95
Figure 61: Te Manawa Conceptual Design Stage Four (2025), Authors Artwork	96
Figure 62: Path Dependency Design Strands (2025), Authors Artwork	98
Figure 63: Te Manawa Conceptual Visualisation One (2025), Authors Artwork	101
Figure 64: Te Manawa Conceptual Visualisation 2 (2025), Authors Artwork	102
Figure 65: Te Manawa Conceptual Visualisation Three (2025), Authors Artwork	104
Figure 66: Transit Oriented Development Principles (2025), Authors Artwork	107
Figure 67: Te Manawa Phase Planning (2025), Authors Artwork	108
Figure 68: Te Manawa Shopping Centre Site Plan Basement Plan (2025), Authors Artwork	110
Figure 69: Te Manawa Shopping Centre Site Plan Ground Level (2025), Authors Artwork	112
Figure 70: Te Manawa Shopping Centre Site Plan First Level (2025), Authors Artwork	114
Figure 71: Te Manawa Shopping Centre Site Section (2025), Authors Artwork	116
Figure 72: Client Reverse Brief (2025), Authors Artwork	120
Figure 73: Wider Te Manawa & Tamaki Section (2025), Authors Artwork	122
Figure 74: Proposed Transit Connection Link Across Tamaki (2025), Authors Artwork	124

Figure 75: Proposed Ecological Connection Across Te Manawa (2025), Authors Artwork	124
Figure 76: Te Manawa Planning Scenario (2025), Authors Artwork	126
Figure 77: Te Manawa View Shafts (2025), Authors Artwork	127
Figure 78: Digital Sketches (2025), Authors Artwork	128
Figure 79: Design Materiality (2025), Authors Artwork	129
Figure 80: Rhythmanalysis Measurement Application (2025), Authors Artwork	130
Figure 81: Rhythmanalysis Transformation (2025), Authors Artwork	131
Figure 82: Harakeke Weaving Basket (2025), Authors Artwork	133
Figure 83: Te Manawa & Puhinui Rhythmic Comparison (2025), Authors Artwork	135
Figure 84: Te Manawa Shopping centre Arrhythmic Timeology (2025), Authors Artwork	136
Figure 85: Designing for with Rhythm and TOD Diagram (2025), Authors Artwork	137
Figure 86: Te Manawa Shopping Centre Rhythmic Transformation Site Plan (2025), Authors Artwork	138
Figure 87: Gathering Sketch (2025), Authors Artwork	140
Figure 88: Temporal Market Planning (2025), Authors Artwork	142
Figure 89: Temporal Market Site Plan & Section (2025), Authors Artwork	143
Figure 90: Temporal Market Design (2025), Authors Artwork	144
Figure 91: Temporal Market Design (2025), Authors Artwork	145
Figure 92: Temporal Market Space Site Plan (2025), Authors Artwork	146
Figure 93: Playful Urbanism Sketch (2025), Authors Artwork	148
Figure 94: Playful Urbanism Planning (2025), Authors Artwork	150
Figure 95: Playful Urbanism Site & Section Plan (2025), Authors Artwork	151
Figure 96: Playful Urbanism Site Plan Part A (2025), Authors Artwork	152
Figure 97: Playful Urbanism Site Plan Part B (2025), Authors Artwork	154
Figure 98: Tui Bird Sketch (2025), Authors Artwork	156
Figure 99: Ecological Restoration Planning (2025), Authors Artwork	158
Figure 100: Ecological Site & Section Plan (2025), Authors Artwork	159
Figure 101: Ecological Restoration Site Plan A (2025), Authors Artwork	160
Figure 102: Ecological Restoration Site Plan B (2025), Authors Artwork	162
Figure 103: Bus Sketch (2025), Authors Artwork	164
Figure 104: Transit-Oriented Planning (2025), Authors Artwork	166
Figure 105: Transit Site & Section Plan (2025), Authors Artwork	167
Figure 106: Transit-Oriented Site Plan (2025), Authors Artwork	168

## References

AT. (2018). 2018 Census. A key way Auckland Transport (AT) can understand how Aucklanders travel is through the census. <https://at.govt.nz/about-us/reports-publications/2018-census>

Altermatt, F., Moretti, M., Nobis, M., & Obrist, M. (2015). Impacts of urbanisation on biodiversity: The role of species mobility, degree of specialisation and spatial scale. <https://doi.org/10.1111/oik.02166>

Allen, J. S., & Storper, M. (2014). The Nature of Cities: The Scope and Limits of Urban Theory. *International Journal of Urban and Regional Research*.

Alzaidi, L. (2024). The future of urban living: Why mixing residential and light industrial spaces is key to sustainable cities. <https://group-cc.com/the-future-of-urban-living-why-mixing-residential-and-light-industrial-spaces-is-key-to-sustainable-cities/>

Appleyard, D. (1978). Liveable Streets: Protected Neighbourhoods. <https://www.jstor.org/stable/43623623>.

Arbury, J. (2005). From Urban Sprawl to Compact City- An Analysis of urban growth management in Auckland.

ArchDaily. (2013). Qunli Stormwater Wetland Park. Turenscape. <https://www.archdaily.com/446025/qunli-stormwater-wetland-park-turenscape>

Architectus. (n.d.). New Lynn TOD Transit Oriented Development. <https://architectus.co.nz/work/new-lynn-tod-transit-oriented-development/>

Auckland Council. (2025). Buildings + Sites Housing Case Study: Cohaus Apartment and Terrace housing.

Auckland Council. (2018). Auckland Plan 2050 Evidence Report: Development Strategy.

Auckland Council. (2008). New Lynn Urban Plan 2010-2030 Part 1. [new.aucklandcouncil.govt.nz](http://new.aucklandcouncil.govt.nz)

Auckland Council. (2025, March 4). Mayor calls for practical solutions to congestion. OurAuckland. <https://ourauckland.aucklandcouncil.govt.nz/news/2025/03/mayor-calls-for-practical-solutions->

Auckland Design Manual. (2024). Building + Sites, Housing case study: Cohaus Apartment and Terrace Housing.

Brown, M., Greenhalgh, S., & Simmock, R. (2015).

Cervero, R., Murphy S., Ferrell C., Goguts N., Tsai, Y. (2004). Transit-Oriented Development in America: Experiences, Challenges, and Prospects. TCRP Report 102, Transportation Research Board.

Calthorpe, P. (1993). The Next American Metropolis. The Sustainable Urban Development Reader. <https://doi.org/10.4324/9780203501627>

Calthorpe, P., & Fulton, W. (2001). The Regional City: Planning For the End of Sprawl.

Chan, T. (2024). Rethinking Urban Street Experiments through Lefebvre's rhythmanalysis: From Vehicles and Vibrancy to Virtuosos. <https://doi.org/10.1016/j.cities.2024.105175>

Chen, Y. (2016). Practicing Rhythmanalysis: Theories and Methodologies. [https://books.google.co.nz/books?hl=en&lr=&id=r-LaDwAAQBAJ&oi=fnd&pg=PR5&dq=rhythmanalysis&ots=M4Cv0dePrk&sig=KsKnvizaQK4KHHlf6onR8yMkeBg&redir\\_esc=y#v=onepage&q=rhythmanalysis&f=false](https://books.google.co.nz/books?hl=en&lr=&id=r-LaDwAAQBAJ&oi=fnd&pg=PR5&dq=rhythmanalysis&ots=M4Cv0dePrk&sig=KsKnvizaQK4KHHlf6onR8yMkeBg&redir_esc=y#v=onepage&q=rhythmanalysis&f=false)

Cohaus. (n.d.). An Urban Cohousing Development. Surrey Crescent, Grey Lynn, Auckland. <https://cohaus.nz/>

Dempsey Wood. (n.d.). Improving New Lynn's transport and services infrastructure. Case studies. <https://www.dempseywood.co.nz/case-studies/new-lynn-tod>

Eastwind made it. (2023). Deforestation for urbanisation [Video]. YouTube. <https://www.youtube.com/watch?v=uZZntALZMBg&list=LL&index=1>

Edmunds, S. (2025). Are you paying too much for parking in NZ's big centres? RNZ. [https://www.rnz.co.nz/news/national/564806/are-you-paying-too-much-for-parking?utm\\_source](https://www.rnz.co.nz/news/national/564806/are-you-paying-too-much-for-parking?utm_source)

Ehinz,(2023). Socioeconomic deprivation profile. Environmental Health Intelligence New Zealand. <https://www.ehinz.ac.nz/indicators/population-vulnerability/socioeconomic-deprivation-profile/#nzdep-for-2023-nzdep2023>

Elboghady, D. (2016). UL Interview: Peter Calthorpe. Urban Land Magazine. [https://urbanland.uli.org/planning-design/ul-interview-peter-calthorpe?utm\\_source](https://urbanland.uli.org/planning-design/ul-interview-peter-calthorpe?utm_source)

ETOD. (2020). Equitable Transit-Oriented Development Guidebook. City of Raleigh. EDATGuidebook.

Frampton, K. (1980). Modern architecture: A critical history. Oxford University Press. <https://archive.org/details/modernarchitectu0000kenn/page/n5/mode/2up>

Fentress, A. (1998). Planners get Orenco's town center. The Oregonian.

Garelja Bros Strawberries. (2019, November 3). After 66 years the Garelja family is no longer growing strawberries ... [Facebook post]. Facebook. <https://www.facebook.com/gareljabrosstrawberries/posts/2206816282944738/>

Gibson, T. (2023). How a 23-year-old solved urban sprawl. <https://www.theb1m.com/video/epic-games-safdie-architects-project-hillside-habitat-67>

Gill, T., & Westergaard, H. (2022). Cohaus residents hold their ground. Architecturenow. <https://architecturenow.co.nz/articles/letter-to-the-editor/>

Greater Auckland. (2017). Improving Stations- Part 2: Layout. Greater Auckland. <https://www.greaterauckland.org.nz/2017/06/29/improving-stations-part-1-layout>

Hallmark Builders. (2023). Low-Density Community: Why it's Worth the move. Hallmark Building moments. [https://www.hallmarkbuilders.in/low-density-community-why-its-worth-the-move?utm\\_source](https://www.hallmarkbuilders.in/low-density-community-why-its-worth-the-move?utm_source)

Hillsboro Oregon. (n.d.). Orenco. Hillsboro's Orenco Station. <https://www.hillsboro-oregon.gov/our-city/departments/economic-development/development-areas/orenco>

ITDP. (2017). TOD Standard. Institute For Transportation And Development Policy. <https://tod.itdp.org/tod-standard.html>

Jacobs, J. (1961). The Death and Life of Great American Cities. Random House.

Jacobs, J. (1969). The economy of cities. New York: Vintage.

Kingham, S., & Amati, M. (2024). Rethinking roads as public spaces- what NZ ciites can learn from Barcelona's 'Superblock' urban design. The Conversation. <https://theconversation.com/rethinking-roads-as-public-spaces-what-nz-cities-can-learn-from-barcelonas-superblock-urban-design-226601>

Kulpa, E. & Zamorano, L. (2014). People-Oriented Cities: Mixed-Use Development Creates Social and Economic Benefits. World Resources Institute. <https://www.wri.org/insights/people-oriented-cities-mixed-use-development-creates-social-and-economic-benefits>

land Economic Benefits. World Resources Institute. <https://www.wri.org/insights/people-oriented-cities-mixed-use-development-creates-social-and-economic-benefits>

Leadbetter, I., Cruz, A., Ravensbergen, L., Soukhov, A. (2024). The Negative Impact of Parking Lots on Walkability.

Lefebvre, H. (1992) Rhythmanalysis: Space, Time and Everyday Life. Continuum.

Lewis, M., James, J., Shaver, E., Blackbourn, S., Leahy, A., Seyb, R., Wihongi, P., Simcock, R., Sides, E. S., & Coste, C. (2015). Water sensitive design for stormwater. Auckland Council.

Living Economies. (n.d.). Local First (New Zealand). [https://livingeconomies.nz/go-local/local-first?utm\\_source](https://livingeconomies.nz/go-local/local-first?utm_source)

Lukman, A. (2014). Development And Implementation Of a Transit Oriented Development (TOD) Index around the current Transit Nodes.

Moretti, M., Concepcion, E.D., Altermatt, F., Nobis, M.P., & Obrist, M.K. (2015). Impacts of Urbanisation on biodiversity: the role of species mobility, degree of specilisation and spatial scale. <https://doi.org/10.1111/oik.02166>

McLintock, A. (1966). An Encyclopedia of New Zealand, 1966. <https://teara.govt.nz/en/1966>

Mercedes-Benz Group. (n.d.). The first automobile. <https://group.mercedes-benz.com/company/tradition/company-history/1885-1886.html#:~:text=On%20January%2029%2C%201886%2C%20Carl,1.>

Merin, G. (2023). Architecture classic: Habitat 67/ Safdie Architects. ArchDaily. <https://www.archdaily.com/404803/ad-classics-habitat-67-moshe-safdie>

Ministry for the Environment. (2005). New Zealand urban design protocol. <https://environment.govt.nz/publications/new-zealand-urban-design-protocol/>

Ministry for the Environment. (2011). Urban design protocol (2nd ed.). New Zealand Government. <https://environment.govt.nz/publications/urban-design-protocol/>

Ministry of Housing and Urban Development. (2024). Change in Housing Affordability Indicators. [https://www.hud.govt.nz/stats-and-insights/change-in-housing-affordability-indicators/affordability-indicators?utm\\_source](https://www.hud.govt.nz/stats-and-insights/change-in-housing-affordability-indicators/affordability-indicators?utm_source)

Moreno, C. (2024). *The 15-minute city: A solution to saving our time and our planet*. John Wiley & Sons, Incorporated.

Moreno, C., Allam, Z., Chadbaud, D., Gall, C., Pralong, F. (2021). Introducing the “15-Minute City”: Sustainability, Resilience and Place Identity in Future Post-Pandemic Cities. *Smart Cities* 2021, Vol. 4, 93-111.

National Academies & Transportation Research Board. (2007). *Traveller Response to Transportation System Changes Handbook, Third Edition: Chapter 17, Transit Oriented Development*. <https://doi.org/10.17226/14077>

NJTOD. (2018). *Public Spaces Add Vitality to Transit-Oriented Communities*. [https://www.njtod.org/public-spaces-add-vitality-transit-oriented-communities/?utm\\_source](https://www.njtod.org/public-spaces-add-vitality-transit-oriented-communities/?utm_source)

NL Times. (2019). Dutch Railway handles 1.3 million travelers per working day. *NL Times*. [https://nltimes.nl/2019/07/04/dutch-railway-handles-13-million-travelers-per-working-day?utm\\_source](https://nltimes.nl/2019/07/04/dutch-railway-handles-13-million-travelers-per-working-day?utm_source)

Parliamentary Commissioner for the Environment. (2023). *Are we building harder, hotter cities? The vital importance of Urban green spaces*.

Pedersen, Z. M. (2018). *Regenerative urban design and ecosystem biomimicry*. Taylor & Francis Group.

Ponsonby News. (n.d.). *Mayor Calls for Practical Solutions to Congestion*. <https://ponsonbynews.co.nz/blogs/news/mayor-calls-for-practical-solutions-to-congestion>

Powerhouse company, n.d.). *Assen Station: Gateway to the city*. <https://www.powerhouse-company.com/assen-station>

Reid, M. (2015). *Decentralisation: Does the New Zealand local government system measure up?* *Policy Quarterly*, 11(2), 45–53.

Royal, C. A. T. (n.d.). *Papatūānuku – the land*. *Te Ara – The Encyclopedia of New Zealand*. <http://www.TeAra.govt.nz/en/papatuanuku-the-land>

Satvu. (2024). Empowers Urban planning and climate resilience efforts with high-resolution thermal satellite Imagery. <https://www.satellitevu.com/news/satvu-empowers-urban-planning-and-climate-resilience-efforts-with-high-resolution-thermal-satellite-imagery>.

Saunders, P. (1981). *Social theory and the urban question*. London: Hutchinson.

Schrader. B. (2016). *The big Smoke: New Zealand cities, 1840-1920*. Bridget Williams Books.

Scott, A., & Storper, M. (2014). *The nature of cities: The scope and limits of urban theory*.

Short, J., & Short, L. (2008). *Cities and nature*. Routledge Critical Introductions to Urbanism and the City.

Slepian, J., Hollings, B., Stephenson, J. (2005). *Moving forwards with Transit-Oriented Development in NZ*. Department of Geography, University of Otago.

Speck, J. (2012). *Walkable City: How Downtown can save America One Step at a time*. North point Press.

Stojanovskis, T. (2019). *Urban design and public transportation- Public spaces, visual proximity and Transit-Oriented Development (TOD)*. <https://doi.org/10.1080/13574809.2019.1592665>

Taonui, R. (2012). *Tribal Organisation. The history of Māori social organisation*. Te Ara- The encyclopedia of New Zealand. <https://teara.govt.nz/en/tribal-organisation/page-6>

Tekawerau. (n.d.). *Mo Tatou (About us). Tekawerau a maki*. <https://tekawerau.iwi.nz/about-us/>

Trimet. (n.d.). *Rail Transit in the Portland Area*. Trimet. <https://trimet.org/history/rail/index.htm>

Turenscape. (2011). *The transformed stormwater park: Qunli National Urban Wetland*. <https://www.chinese-architects.com/en/turenscape-haidian-district-beijing/project/the-transformed-stormwater-park-qunli-national-urban-wetland>

Uitermark, J. (2011). *Journal of Housing and the Built Environment*. S. Fainstein: *The Just City*. <https://doi.org/10.1007/s10901-011-9243-8>

Uniservices (2022). *Building People- and climate-friendly cities*. <https://www.uniservices.co.nz/news/building-people-and-climate-friendly-cities>

Upton, S. (2023). Are we building harder, hotter cities? The vital importance of green space. Parliamentary Commissioner for the Environment.

Voula, P. (2010). Sustainable cities for the third millennium: The odyssey of urban excellence. Springer.

Waitakere Ranges Protection Society. (n.d.). About the Ranges. <https://waitakereranges.org.nz/about-the-ranges/>

Wang, X., Zhang, Y., Sun, J., Liu, E. (2024). Interactive Effects of built environment and parking policy on car use: Examining the differences between work and non-work trips. <https://doi.org/10.3390/buildings14113457>

Wells, C. (2021). The Nihotupu Timber Mill. Our History. <https://waiatarua.org.nz/the-nihotupu-timber-mill/>

Wells, C. (2022). Mander & Bradley's Timber Mill at Nihotupu. Our history. <https://waiatarua.org.nz/mander-bradleys-timber-mill-at-nihotupu/>

Welch, T. (2021). Parking kills businesses, not bikes or buses. Auckland University. [https://www.auckland.ac.nz/en/news/2021/11/05/parking-kills-businesses-not-bikes-or-buses.html?utm\\_source](https://www.auckland.ac.nz/en/news/2021/11/05/parking-kills-businesses-not-bikes-or-buses.html?utm_source)

Wolman, A. (1965). The metabolism of cities. Scientific American.

World Health Organization. (2017). Urban green space interventions and health: A review of impacts and effectiveness. Copenhagen: WHO.

WWF. (2016). Living Planet Report 2016: Risk and resilience in a new era. Gland, Switzerland: WWF International.

Pedersen-Zari, M. (2018) Regenerative Urban Design and Ecosystem Biomimicry. <https://doi.org/10.4324/9781315114330>

