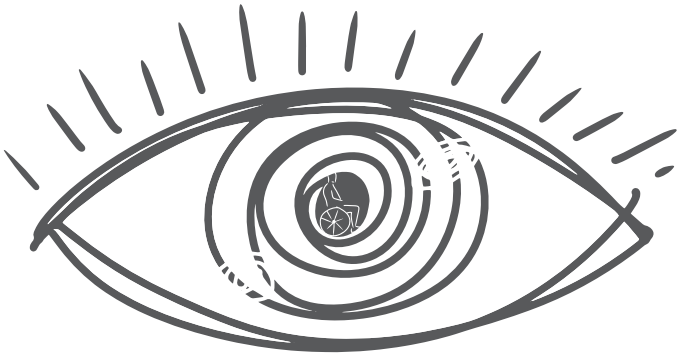

Through the Eyes of the UNSEEN

Towards inclusive, walkable neighbourhoods
through distributed recreational architecture.

Through the Eyes of the Unseen: Towards inclusive, walkable neighbourhoods through distributed recreational architecture.

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A thesis submitted to Auckland University of Technology in partial fulfilment of the requirements for the degree of Master of Architecture (Professional), 2025

2025

School of Future Environments

Abstract

Opportunity. Equity. Community. Two legs, two arms, eyes that see, ears that hear. How long would you last if you closed your eyes and tried to navigate your local supermarket, your local gym, or even your home? I managed ten steps before stubbing my toe on the corner of the dining table. Blindness is just one of the different disabilities many New Zealanders face. Navigating an urban environment catered to people without disabilities leaves many restricted in their lives. One in four New Zealanders deals with a physical, sensory, learning, or mental health disability (Office for Disability Issues, 2023).

Nevertheless, meeting the needs of people with impairments in architecture has often become just a check box to tick; the New Zealand building code, in isolation, is insufficient in providing equitable space for New Zealanders of varying abilities to move freely through the urban environment. As a result, many people who deal with a disability are at higher risk of secondary illness, shorter life (World Health Organisation, 2023), and suicide (Ministry of Health, 2021). As a society, we should constantly seek to improve the inclusivity and walkability of our neighbourhoods. That begins when we centre design around human movement.

Through design-led research, this project explores the potential of distributing recreation interventions within a neighbourhood to improve the accessibility of recreation facilities and social infrastructure integral to a healthy, connected community.

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 used artificial intelligence tools or generative artificial intelligence tools (unless it is clearly stated, and referenced, along with the purpose of use), 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.

Acknowledgments

Before delving into disability and recreational architecture, I sincerely thank the following for their contribution.

Firstly, my tutors, Dr Andrew Burgess and Dr Priscila Besen, thank you for your inspiration, guidance, and support throughout this research. I want to thank my peers and tutors of the Living Neighbourhoods lab, Dr Stacy Vallis, Prof. Stefan Marks, Abby, Devarsh, Jyllian, Kyle and Riana. Te Pou for their Disability 101 workshop, giving me the confidence to approach disability respectfully. Sara Antonievich, thank you for your mentorship and encouragement. My mum, Lisa, dad, David, and sisters, Hannah and Sarah, thank you for being a sounding board of ideas and a steady rock of support.

Finally, with all my heart, I thank my wonderful wife, Olivia, for supporting me through my decision to undertake a Master of Architecture, reviewing my work, listening to my ideas, motivating me, and keeping my coffee cup filled to the brim and my belly full of food.

> This thesis would not have been possible without the help of my friends and family.

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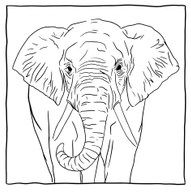


Preface

The Elephant In The Room

I am *non-disabled*. There have been times in my life when I have experienced moments of barriers. For instance, I have had my fair share of broken bones. I suffer from hearing loss to different extents in both ears, but this does not cause me too much grief until I sit down in a café with noisy neighbours or my wife asks me to do the dishes. Perhaps more notably, I went through hip surgery during my early 20s due to tearing off the cartilage in my right hip socket. This injury caused me pain, physically and mentally. I found it challenging to sit on the sidelines, missing out on the sports I loved; even simple tasks like putting on socks sometimes felt impossible. However, for the most part, I live and have lived a barrier-free life.

What authority do I have to design for someone with a disability? What credentials do I hold to advocate for those with impairments? None. Some suggest I have no right to design for those different from me. Only people in wheelchairs can design for those who roll on wheels. Only blind people can create for blind people. Only the impaired can understand the impaired. It is not that simple, and I reject that thinking. If that were the case, my client could only be a 27-year-old white male, 110kg, who thinks like me, lives like me, and likes

what I like—is me! I would be stuck designing for myself. Not only would that get quickly boring, but that would make me a pretty useless architect, in my opinion, of course.

Do not get me wrong. Involving different perspectives and engaging people with varying life experiences and physical abilities is imperative to good design. However, I will only succeed as a designer if I can see life from different points of view and through multiple lenses. If I do not cater to people whose lives are different from my own, I have failed.

> A conductor waves his baton, watchman of time, flow, dynamics and rhythm. Eager ears measure their success. The conductor is not a master of all instruments but nonetheless a maestro, a composer of musical tools, and a craftsman in coordination.

Designers are not experts in every field or understand all. Are they not coordinators of space, form, and matter? Are they not composers of ideas? Designers make intercession between the not-so-tangible things and reality. Do not worry; I am not so grandiose in my thinking to believe designers are always in control, leading every step of time; there are moments in an effective team where people take turns being the visionary, conductor, listener, or implementor. The important thing is that we can learn, expand our thinking, and open ourselves up to new ideas, perspectives, and challenges. We can try. An idiom comes to mind: Think outside the box. It is not good enough to design for the majority, "the norm" (whatever that means), myself; we must think beyond our bubble, whether we are disabled or not. Only then will we see the big picture and realise our visions effectively.

To create architectural space that benefits society and the community, we must think about others and act in their interest. First, we must try to understand who those *individuals* are.

Figure 1 - Conductor leads the Orchestra - Artwork by Author, Based on Photograph by Pariser (2020)

Chapter One

The Path to Success is Always Under Construction

1.0 Humankind, the Inventor

Since the dawn of time, an instinctual characteristic of humankind has been to create and explore ideas. This trait has been more prevalent and influential in some. Human creativity has manifested in many different ways, and through time, trial and error, and much tinkering, inventions and the built world have become increasingly refined—a cyclic process of analysis, ideation, prototyping, and evaluation. The wheel invented all those thousands of years ago in Mesopotamia has spawned bikes, buses, trains, and even the computer chair I'm sitting on has five wheels. I would have loved to have seen Leonardo Divinci's face had he been alive when the Wright Brothers successfully launched the first powered "flying machine" more than 400 years after he conceptualised that man one day might fly.

In parallel, this research follows a design-led (research through design) methodology (DLM). A DLM uses the relationship between analysis, ideation, prototyping, and evaluation to help make more refined, robust, well-informed design decisions. Design-led research applies design practices, processes, and tools to explore knowledge gained through action

rather than observation alone, offering a strategic approach to achieving innovative solutions (Coyne, 2010) (Groat & Wang, 2013). The design process is not linear but an ebb and flow between analysis, synthesis, and evaluation. Each stage acts as a feedback loop to refine the design strategy and decision-making (Groat & Wang, 2013) (Martin & Hanington, 2012).

> *Research through design is constituted by the design process itself, including materials, research, development work, and the critical act of recording and communicating steps, experiments, and interactions of design.*
>
> *(Martin & Hanington, 2012, p. 146)*

This methodology enables an iterative, experiential investigation of spatial accessibility as I aim to explore outcomes for achieving more walkable, inclusive neighbourhoods through recreational architecture.

1.1 Key Methods

The design outcome has been influenced by several key methods. These are;

Literature Reviews and Case Studies

Literature reviews and case studies help to place the design strategy in context. Converging existing information and research together to develop a backdrop for design exploration. Specifically, I have used literature reviews in this project to frame a base understanding of disability and its relation to the built environment and designers. I have explored single or related instances through case studies to develop detailed knowledge in these areas (Martin & Hanington, 2012).

Roleplaying

Roleplaying is where a designer takes on a user's role to develop a deeper sense of empathy and understanding to initiate design solutions (Martin & Hanington, 2012).

Transect walks and photography

Gaining intimate knowledge of specific sites and neighbouring areas where interventions will be implemented is crucial to making more informed design decisions. Transect walks are an excellent tool for mapping key features of geographic areas (R, 2021). The transect walks have been documented with photography, capturing key scenes of the existing urban landscape.

Prototyping: Physical and Building Information Modelling (BIM) and Drawing

Translating ideas into tangible or digital formats to test, explore and tinker. In today's technological world, BIM has advanced the design process. BIM allows a designer to map existing topographies and buildings to map site context accurately. BIM provides an efficient tool to explore the physical form of architectural concepts.

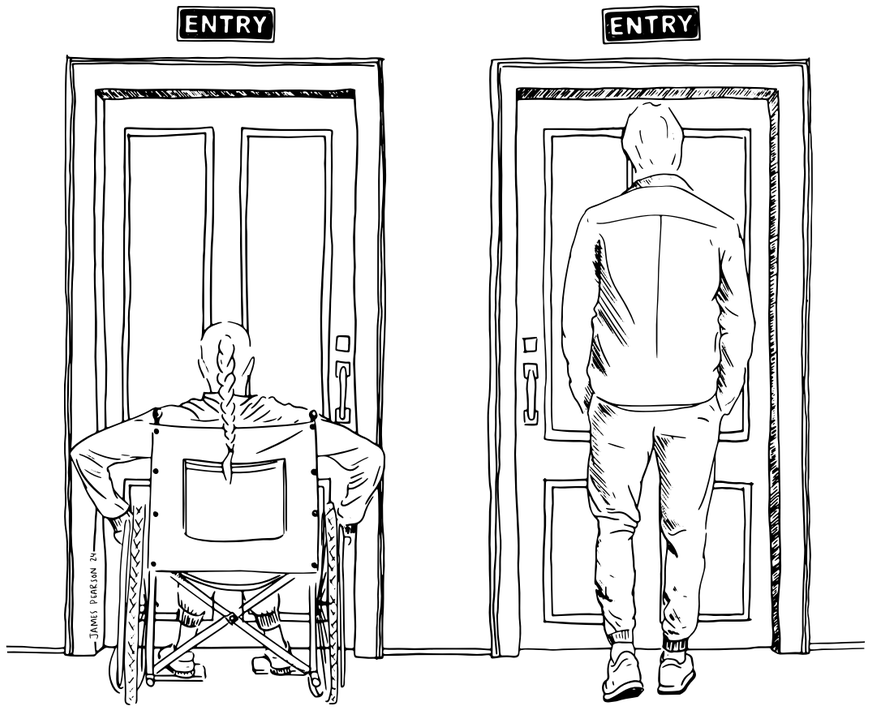


Figure 2 - Modular Man - Artwork by Author

Chapter Two

Disability 101

What is disability, why is it important, and what does it have to do with architecture? Well, there is an innate gene that most, if not all, designers carry. Fundamentally, designers are problem solvers—good designers, at least. To resolve the discrimination many people with disabilities face when navigating the built environment, we must understand what disability means and the relationship it has with architecture.

Whilst not every aspect, view, or theory relating to disability will be discussed in the following chapter, I aim to introduce a base understanding of the history of disability, key phenomena, and significant current views of disability to provide a platform from which to leap. Key ideas will be explored throughout this chapter and those following, but there are many avenues yet to be ventured.

Most of us will be familiar with the term disability, and chances are most will have some experience with disability, whether personally, with family members, or friends. At times, my investigations into the literature surrounding disabilities have felt like navigating a minefield— the fear of marginalising, misrepresenting, or unintentionally disrespecting persons with disabilities can feel like walking on eggshells. So, it is no surprise that advocates in the

community, government and medical professionals widely dispute definitions of disability.

So, where to start?

2.1.0 Disability Throughout History

2.1.1 Etymology of Disable

Etymology refers to the origin of a word, where it comes from, and its evolution through languages, cultures, and time. For example, etymology traces back to two Greek words, etymos and logia. These words translate to "true" and "study of", forming the word etymologia, "the study of the true sense of a word" (Harper, n.d.).

Douglas Harper (n.d.) traced the origin of the word, disable, back to the late 15th century as a derivative of the word, able. Able, meaning "having sufficient power or means". The prefix, dis, "lack of, not".

Early use of the word disabled referred to someone or something being "legally disqualified". Towards the middle of the 17th century, its meaning evolved to "incapacitated."

2.1.2 A Brief History of Disability

People with disabilities or impairments are not something specific to our time or even the last couple of centuries; through genetic testing of bones, scientists were able to confirm a case of Down syndrome in an infant buried in a Neolithic tomb between 3629 and 3371 BCE (Rohrlach et al., 2024).

Although disabilities are nothing new, the language used to describe people with disabilities has progressed throughout history. Language development and shifts in societal views are primarily responsible.

The Bible's King James Version (KJV), generally accepted as the standard English translation, was curated under the rule of King James I in 1611 (Britannica, 2024). The language, a reflection of the period, used throughout this translation of The Bible KJV Strong's (2023, Exo. 4:11, Lev. 21:18) refers to those with disabilities either by their physical traits such as "the blind", "the deaf" and "the lame or terms such as "dumb". In Luke 8:26-40, the verses tell of a man named Legion.

> *And when he went forth to land, there met him out of the city a certain man, which had devils long time, and ware no clothes, neither abode in any house, but in tombs... And Jesus asked him, saying What is thy name? And he said, Legion: because many devils were entered into him.*

In scripture, Legion lived separately and in isolation from his village. He was shunned by society, likely due to his condition. The following verses depict Jesus healing this man. In verses 34-36, we read,

> *When they that fed them (the swine) saw what was done, they fled, and went and told it in the city and in the country. Then they went out to see what was done; and came to Jesus, and found the man, out of whom the devils were departed, sitting at the feet of Jesus, clothed, and in his right mind; and they were afraid.*

Due to a lack of understanding of mental and intellectual disabilities at the time, we see Legion, who may have had a chronic brain disorder such as Schizophrenia or Bipolar, described as having devils. As scientists and medical professionals have learnt more about the human body and the brain in turn, society's understanding has shifted from the view that people, such as Legion, are filled with devils, cursed by God, or influenced by other spiritual forces into having an impairment of the brain and neurological network.

Medical advancement did not always translate to better treatment for people with disabilities. Like many cultures, genders, and races, people with disabilities have faced extreme persecution by those in the pursuit of power. There are many historical examples of these injustices; however, an example most people from this time will be familiar with is the First and Second World Wars.

There were many contributing factors, political views, and moral beliefs that led to the deaths of approximately 16.5 million people during World War I and an estimated 60 to 80 million people during World War II, the deadliest conflict in human history (History.com Editors, 2009; Kiger, 2023).

> *The stronger must dominate and not mate with the weaker, which would signify the sacrifice of its own higher nature. Only the born weakling can look upon this principle as cruel, and if he does so it is merely because he is of a feebler nature and narrower mind; for if such a law did not direct the process of evolution then the higher development of organic life would not be conceivable at all.*
>
> *Adolf Hitler*

Among the far-right groups, alongside antisemitic views, was an extreme interpretation of Eugenics. Charles

Figure 3 - Misguided Pawns - Artwork by Author, Based on Photograph of Hitler by Associated Press (1939)

Darwin explored theories of natural selection and the idea that removing undesirable traits, deformities, and mutations could improve populations (Wilson, 2018). Ideas such as "survival of the fittest" have prevailed since then. The Nazis used these views as a basis for the extermination of many groups, including those with disabilities, as they attempted to achieve their version of a better world.

> *Hitler lied shamelessly about himself and about his enemies. He convinced millions of men and women that he cared for them deeply when, in fact, he would have willingly sacrificed them all. His murderous ambition, avowed racism, and utter immorality were given the thinnest mask, and yet millions of Germans were drawn to Hitler precisely because he seemed authentic. They screamed, "Sieg Heil" with happiness in their hearts, because they thought they were creating a better world.*
>
> *(Albright, 2018)*

Although the severity of World War I, and II, is unlike anything seen before or after, these horrendous views of Disability were not unique to Nazi or eugenic thinking. There are examples of devasting proportions in many cultures throughout the world. Beatrice Wright (1983) curates some these examples.

> *Among the Jukun, a Sudanese Kingdom, children with deformities are not allowed to live, but are left to perish in the bush or in a cave, for it is believed that such children are begotten by an evil spirit.*
>
> *Among the Witoto Indians of the North West Amazons, the newborn infant is submerged in the nearest stream, for "if the child was not strong enough to survive it had better die."*
>
> *Among the Maasai, "misshapen and especially weakly children." are killed immediately after birth.*
>
> *Among the Wogeo, a New Guinea tribe, children with obvious deformities are buried alive at birth, but children crippled in later life are looked after with loving care.*

In contrast to these heinous examples, there is evidence that some cultures have had somewhat positive perceptions of people with disabilities. In Benin, some children with disabilities are seen by the community as "protected by supernatural forces... and bring good luck." In Accra, Ghana, they believed the "retarded were the reincarnation of a deity", as the community treated such with kindness and gentleness (Munyi, 2012).

While there has been growth in understanding and broader acceptance of people with disabilities in many countries across the world, it is clear that people with disabilities have suffered persecution in nearly every corner of the world since the dawn of man. I hope the

Figure 4 "You Are Sharing the Load! A Hereditarily Ill Person Costs 50,000 Reichsmarks on Average up to the Age of Sixty." The image illustrates Nazi propaganda on the need to prevent births of the "unfit." From *Biologie fur hoehere Schulen* (p. 160), by G. Jakob, 1943, J. F. Lehmanns Verlag. Copyright by United States Holocaust Memorial Museum.

sun has set on this part of history.

2.1.3 Pejoration of Words and the Euphemism Treadmill

Religion, moral beliefs, and the development of science have significantly impacted how individuals, families, and societies perceive people with disabilities. However, there are other contributions. One phenomenon is the pejoration of words over time and the euphemism treadmill.

Pejoration refers to the gradual deterioration or "worsing" of a word's meaning over time. In some cases, this means words beginning with a positive sense become hostile, or words that may have a negative sense become increasingly negative. A typical example of this is the word silly. Around the 1200s, silly referred to something as being 'happy, blessed or fortunate.' Towards the 1500s, a progression of these meanings was 'holy, good,' and even 'innocent.' By the 1500s, the word began developing negative connotations such as 'weak, feeble, and insignificant.' Finally today, silly is degraded to mean foolishness or lack of good sense, a stark difference from its origins (Nordquist 2020).

It is common for words relating to sensitive topics such as gender, race, and disability to experience pejoration. Negative views and stigma get attached and associated with words, and they phase out of language as they become increasingly offensive, unfavourable or taboo. Although words may phase out, the issue or topic usually will not. Hence, a new word with more positive associations will take over from its now-despised predecessor. Linguists often describe this phenomenon as the euphemism treadmill.

Andreas Johansson (2022) studied the semantic change through pejoration in describing disability over the 20th century and the beginning of the 21st century. The study focused on four key terms, lame, crippled, handicapped, and disabled, frequently used in the corpus of historical American English to describe people with disabilities. Andreas found that these terms, in reference to human disability, follow a euphemism treadmill trend.

> *lames descent co-occurs with crippled's ascent, which is also true for crippled and handicapped, and handicapped and disabled.*
>
> *(Johansson, 2022, p. 2)*

There is usually overlap as terms phase in and out; refer to Figure 5. Figure 5 shows the frequency of the core words used in all instances, whereas Figure 6 shows this frequency specifically when referring to human disability. There is not much difference between the graphs for the words crippled, handicapped, and disabled; however, interestingly a substantial difference in the word lame. Most of this discrepancy is related to the increase of the word lame's use as an abstract noun reference; for example, *The party was so lame, we left after only an hour*.

In both figures 5 and 6, the word disabled had a spike in frequency during the 1920s. During The Great War, although not commonly used in any other setting, the word disabled

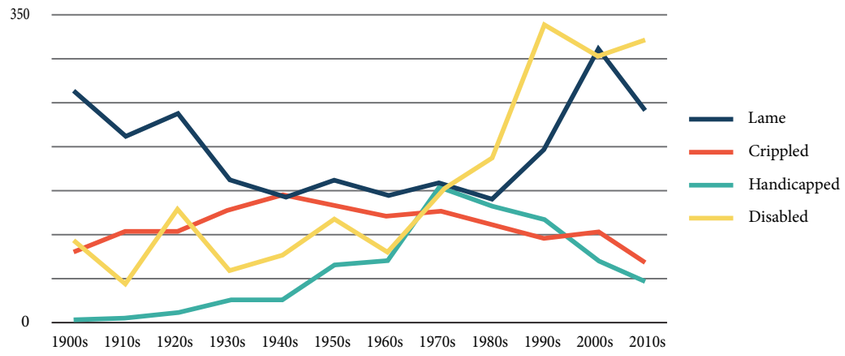


Figure 5 - Graph showing Total frequency development of the core disability adjectives, all types of usage. Base on graph by Andreas Johansson (2022)

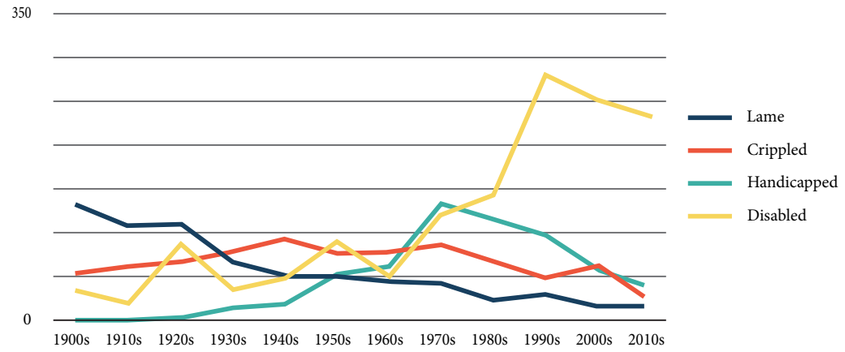


Figure 6 - Graph Graph showing Total frequency development of the core disability adjectives, in refrence to human disability. Base on graph by Andreas Johansson (2022)

was used nearly exclusively when referring to a veteran with a disability. The rise in the use of the word disabled from the 1960s onwards coincides with the protest and advocacy of the rights of people with disabilities for independent living and autonomy as opposed to institutionalisation (Rosenthal, n.d.).

Other terms used by medical professionals and scientists, such as 'insane, idiot, imbecile' have also become pejorative and have been replaced by terms such as intellectual or psychiatric disabilities (Stollznow, 2020).

Due to the nature of the topic, disability, and the sensitivity surrounding individuals with disabilities, language likely used today deemed appropriate will eventually experience

pejoration. A new word will take over, continuing the cycle. In Figure 4, we may already see this turn in the word disabled as it began to decline in the 1990s. This decrease in frequency is likely due to the more favourable 'person-first' language, such as a person with a disability, as opposed to an identity-first language, such as a disabled person. Currently, both person-first and identity-first language is preferred (People with Disability Australia, 2021) (Whaikaha, 2016). The Convention on the Rights of Persons with Disabilities (2006) use's person first language and therefore this document will continue to use person-first language.

2.2.0 Models of Disability

The previous section established a relationship between the pejoration of words when referring to people with disabilities. Words commonly used in daily vocabulary can become so offensive and taboo that society phases them out and replaces them with something viewed as less offensive. Over time, this cycle repeats itself, leading to the euphemism treadmill. The sensitive nature of disability has played its part in this cycle; however, other factors lead to shifts in societal views and definitions.

At the beginning of this chapter, I expressed my concerns about navigating the political mind field of disability. Through my research and attempt to understand what it means to be disabled, I have come to find that there is no simple or single answer.

Models describe the various definitions of disability in the human context. In this case, Models do not refer to a three-dimensional person or object but rather a theoretical description of a framework or system. Models highlight different aspects and perspectives of disability; these can be driven by cultural and religious values, personal experience, or even profession. Some models of disability are more common and favourable to others, reflecting general views and perspectives of society. However, there will likely never be a unified view of disability in a community for several reasons, the main one being that everyone is entitled to their own opinion, and with that comes diversity.

The religious or Moral Model of Disability was introduced in section 1.1.2. In the Western World, in times past, we have had the understanding that an individual with an impairment has been cursed by God, gods, or other spiritual forces. For the most part, the Western world has moved on from these views with an increased understanding of the human body and widespread access to higher education. It is likely that this view of disability still exists in communities heavily influenced by religious thinking. In the developing world, a moral view is still common among communities, strongly influenced by cultural beliefs. For example, in rural Botswana, some communities view a child with a congenital disorder as "evidence of godlike retribution." (Bogart, 2021).

Likewise, Charles Darwin and the Nazi regime introduced us to the Eugenic Model of Disability. For their greater good, extremists believed individuals with disabilities should be eradicated from the population to preserve and maintain a clean genetic bloodline and

Figure 7 - What is Disability? - Artwork by Author

human race (NIH, 2022).

These are just some examples of the many models of disability that have existed and currently exist worldwide. In the current setting, the Medical and Social model of disability has been more prevalent in the Western world than any other model in the last fifty years (Retief & Letšosa, 2018). These models are currently the most widely used interpretations of Disability in New Zealand (Office for Disability Issues, 2020) (Whaikaha, 2016).

2.2.1 Medical Model of Disability

The Medical Model of Disability, or Individual Model, has a self-explanatory name. It is the view of disability from the medical perspective. The medical model developed with the advancement of modern medicine. A fundamental desire by medical professionals to treat, cure, remove, or reduce a disability—the end goal is to bring a patient presenting with a disability closer to normality.

The medical model recognises that a person is disabled due to disease, illness, or impairment (Marks, 1997) (Retief & Letšosa, 2018). As such, a diagnostic approach and treatment plan are put in place to fix an individual's disability as far as current medical technology allows.

Often, professionals categorise disabilities into different types. Not every list of disabilities will be the same across various professions, countries, and organisations (Australian National University, 2015) (Yale, n.d.). However, at a broad level, most disabilities are categorised under the following:

Sensory Disability

> Disabilities relating to the function of the senses. Such as hearing loss or visual impairment (Health Direct, 2022).

Intellectural Disability

> Impairment of a person's social, conceptual, and practical skills (Intellectual Disability (Compulsory Care and Rehabilitation) Act 2003, s. 7). Disabilities such as autism and Tourettes are two examples (Shree & Shukla, 2016).

Neurological Disability

> Dysfunction of the brain and nervous system. For example, Parkinson's disease (Cure Kids, n.d.).

Psychiatric Disability

> Illness that typically affects thinking, mood, and behaviour. For example, these could include bipolar, dementia, and schizophrenia (World Health Organization, 2022).

Physical Disability

> Impairment of the physical body. For example, individuals with amputated limbs, frailty, or paralysis (Better Health Channel, 2012).

It is important to note that these categories are a broad interpretation, and some medical professions may break these down into subcategories. While some disabilities may only be associated with one category, there is often overlap. For instance, medical personnel would diagnose an amputee as being physically impaired; however, they may have issues with phantom pain, which can be associated with the neuropathic pathways or may present with secondary disabilities such as mental illness. Another example could be an individual with Parkinson's. Parkinson's is a neurological disability thought to be associated with the loss of neurons that produce dopamine, creating a chemical imbalance in the brain. Although Parkinson's is neurological, many of the symptoms appear physical—for example, balance

Figure 8 - *I will dedicate my life to the service of humanity* (University of Otago - Ōtākou Whakaihu Waka, 2024) - Artwork by Author, Base on Adobe stock image #596398152

issues, tremors, paralysis and sensory disorders (NIH, 2024).

The advancement of medical technology and procedures has significantly reduced the number/severity of disabilities globally. For instance, the invention of wearable spectacles can be traced back as far as the late 13th century. Over time, these were refined with the success of concave and convex glass. Paired with the developed understanding of eye anatomy, people with access to optometrists can now have prescription glasses. In 1995, Lasik eye surgery became commercially available, eliminating the need for some individuals with myopia, hyperopia and astigmatism to wear glasses completely. Over 50 % of New Zealand's population is estimated to have prescription glasses. Of course, not all visual impairments can be treated with surgery or prescription glasses. However, the ingenuity of some has dramatically improved many people's lives.

You, reading this, may at some point have had a medical intervention that has removed disability in your own life. For myself, I was diagnosed with asthma at six months old, and on many occasions woke up in a panic, unable to breathe. Preventative medication has not only allowed me to reduce most of my symptoms but also allowed me the opportunity to play many sports in my life that, at some points, were unattainable. I mentioned early on the hip surgery operation I went through in my early twenties. If not for the skill of my surgeon and their incredible ability to somehow reattach cartilage to my hip socket through keyhole surgery, I would still be in debilitating pain.

2.2.2 Social Model of Disability

The social model of disability flips the medical model on its head. The foundation of the social perspective comes from the belief that a person is not disabled because of their impairment but rather from societal oppression (Marks, 1997) (Oliver, 1990) (Retief & Letšosa, 2018). If, like me, your exposure to disability has been influenced more from a medical perspective, the social model can leave you scratching your head. "It's society's fault?"

Where the medical model of disability defines disability in relation to impairment, disease, or illness, the Social Model distinguishes between impairment and disability in a two-fold classification (Oliver, 1990, p. 11).

> **Impairment**: *Lacking part or all of a limb or having a defective limb, organism or mechanism of the body.*

> **Disability:** *the disadvantage or restriction of activity caused by a contemporary social organisation that takes no or little account of people with physical impairments and thus excludes them from mainstream social activities.*

The Social Model recognises that there are people with impairments; however, they believe that disability only occurs when a person with an impairment can not interact with

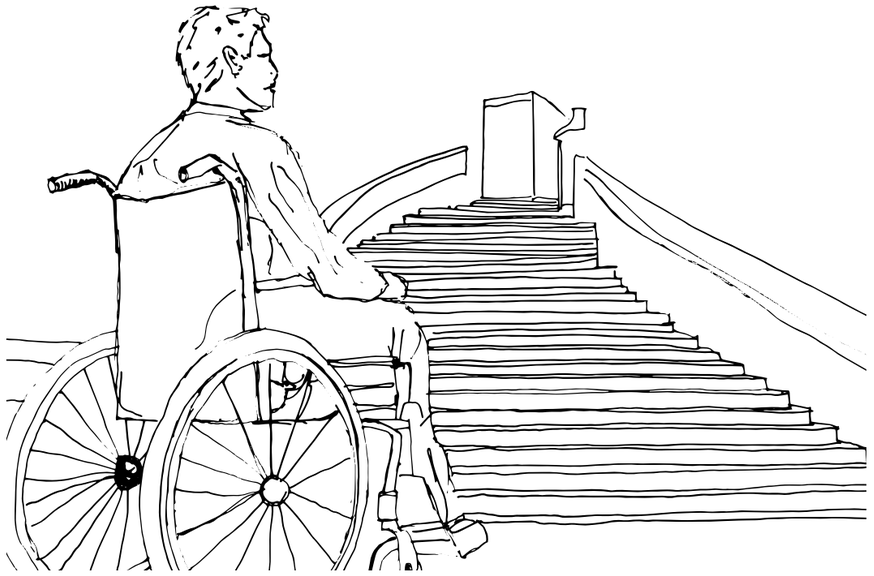


Figure 9 - Mount Everest - Artwork by Author

the world at the same level as someone without that impairment.

Consider a wheelchair user. If an individual has reduced or limited function of their lower body, a wheelchair may be a tool to make accessibility easier. Under the medical model, this individual would be labelled as disabled because they cannot walk. On the contrary, the social model would recognise that although the individual has an impairment, they are only disabled when their access to space is prevented or limited because society has not allowed for a wheelchair user. A barrier could be the exclusion of a ramp to access changes in level. Stairs are not so helpful when you are rolling on wheels.

Similarly, reflect on someone with a hearing impairment who communicates in sign language. Does disability come from their inability to hear? Or could their communication be disabled when others can not communicate back in sign? Anyone who has travelled abroad may know the difficulties of trying to communicate with someone who speaks an entirely different language than yourself— a Tower of Babel situation, chaos, confusion, and many-body gestures in a struggle to communicate.

The Convention on the Rights of Persons with Disabilities (CRPD) uses an interpretation of this definition. CRPD states (2008, art. 1):

> *Persons with disabilities include those who have long-term physical, mental, intellectual or sensory impairments which in interaction with various barriers*

may hinder their full and effective participation in society on an equal basis with others.

(CRPD, 2008)

New Zealand signed and agreed to the CRPD and optional protocol in 2008. The CRPD aims to ensure that people with disabilities have the same rights and freedoms as non-disabled people (Te Kāhui Tika Tangata Human Rights Commission, n.d.). To ensure a successful integration of the CRPD into New Zealand, the NZ Disability Strategy was developed to ensure that all government agencies consider people with disabilities in decision-making and policy.

The inherent dignity and worth and the equal and inalienable rights of all members of the human family as the foundation of free, justice, and peace in the world.

(CRPD, 2008)

The CRPD was made to ensure that countries worldwide allow people with disabilities to live with autonomy and equal opportunity. With a social model stance on disability, the CRPD recognises the discrimination people with disabilities face due to society's shortfalls.

The general principles of the CRPD are:

(a) Respect for inherent dignity, individual autonomy including the freedom to make one's own choices, and independence of persons;

(b) Non-discrimination;

(c) Full and effective participation and inclusion in society;

(d) Respect for difference and acceptance of persons with disabilities as part of human diversity and humanity;

(e) Equality of opportunity;

(f) Accessibility;

(g) Equality between men and women;

(h) Respect for the evolving capacities of children with disabilities and respect for the right of children with disabilities to preserve their identities.

The critical point of the social model is that society bears the onus rather than the individual. The conversation becomes how society can change to allow equitable participation

despite an impairment versus how an individual should be fixed to suit society.

The social model also illuminates social and political factors' influence on disability. For example, wealth and poverty can influence the type of disabilities individuals experience pretty differently. A wealthier population tends to live longer and consequently will experience more age-related impairments such as frailty, cancer, or dementia. On the flip side, poorer countries, especially those stricken by war, will statistically have increased physical impairments related to war injuries.

Below is a comparison between New Zealand, a developed nation, and a poorer country like Liberia. How do they stack up against each other?

Both countries have a population of just over five million.

The median age in New Zealand is approximately 38, compared to 18 in Liberia. Less than half of New Zealanders are this age.

The average life expectancy in New Zealand is approximately 82 years old, 21 years less in Liberia, at just under 61 years old.

In 2022, the GDP purchasing power parity (taking into account relative living costs) in New Zealand ranked 28th out of 176 countries, with an annual GDP per capita of $52,000. Liberia was ranked 170, with a yearly GDP (PPP) per capita of $1750, making it one of the world's poorest countries.

Around 24% of New Zealand's population identifies as having a disability, compared with approximately 14% in Liberia.

Although New Zealand and Liberia have similar populations, they have stark differences in social and political environments. Liberia suffered a civil war during the late 1980's and early 1990's. Liberia was left in devastation as war rampaged through the country. In developing countries, 90% of children with impairments will not attend school (United Nations, 2010). When we compare the total percentage of people with disabilities, are Liberia's statistics skewed by a lack of resources and access to identify or diagnose impairments? It is common in low-income countries that work-related injuries are magnified (Gosselin et al., 2009). In New Zealand, with better access to medical personnel such as physios, rehabilitation is possible for many injuries compared with Liberia, where that access is limited and may see those injuries become worse and more debilitating over time.

The Social Model highlights society's impact on people with impairments. The discussion is no longer about what an individual may need to gain to fit in but rather about identifying society's shortfalls in allowing equity and autonomy in a diverse population.

Fundamentally, the socio-political model implies that disability stems from the failure of a structured social environment to adjust to the needs and aspirations of citizens with disabilities rather than from the inability of a disabled individual

to adapt to the demands of society.

(Hahn, 1986, p. 132)

2.2.3 Medical vs Social Model

Critiques often made about the medical model usually stem from the view that because the focus is on what is wrong with a patient, a negative outlook on their disability is established. They become victims (Oliver, 1990).

On the flip side, the Social Model potentially undermines the severity of some impairments. In a perfect world, there would be no such thing as a disability, impairment, disease or illness, but unfortunately, that is not our reality. Parts of life are unfair, and there are many people in this world who have been dealt a poor hand. To imply an individual with a disability is the issue is grotesquely ignorant, but I fear to imply all disabilities are a result of society is naive. The answer is just simply not black and white. That may seem like a whimsical end to this discussion, but it is essential to realise. The Social Model served to shed light on the oppression and discrimination people with disabilities faced when the Medical/Individual Model took precedence in societal thinking. In isolation, the Medical/Individual Model causes harm. Likewise, in isolation, the Social Model oversimplifies the issues people with disabilities/impairments face.

2.2.4 Disability in Context

Like all philosophical views, arguments, and discussions, the context in which they sit is essential to understanding. Particular views may be more or less relevant depending on the realm in which they exist. For instance, in medicine, care, and rehabilitation, a medical view of disability is perhaps more appropriate than the Social Model approach. Medicine is founded upon the desire to heal and remedy issues people face concerning health. That is not to say that the Social Model of disability could not benefit medical professionals. However, instead, the medical model aligns more with the goals and outcomes of the medical profession.

In the realm of architecture and the urban fabric, the context changes. The Social Model of disability is far more relevant than the medical model. Fundamentally, designers, architects, and engineers serve through design and ultimately shape the way people interact with the world and each other through architecture. The Social Model encourages discussion about the barriers that members of the public face when navigating the built world due to the shortfalls of designers, architects and engineers. A small population operates on behalf of neighbourhoods, cities, and populations. The Social Models highlight how, in the past, people with disabilities have been disregarded in the planning and design of our cities, leading to barriers and increased disability.

Disability is an evolving topic; definitions will and should evolve with it. We, the human race, must look to support each other. Drawing a hard line in the sand with two camps on

Figure 10 - Bridging the gap between the built world and humanity - Artwork by Author

either side does not serve meaningful and beneficial conversations. Views and definitions can be held differently by societies, regions, generations, and individuals despite living in the same place. If you ask someone born in the last couple of decades what the thumbs-up emoji means in an exchange of texts, chances are they will see this as a sarcastic remark. In contrast, if you ask someone from an older generation, they may see this as a positive reply in a show of support or gratitude. Although they have used the same symbol, they have created two entirely different interpretations: a seed for discourse and confusion.

Why is this important to understanding disability? If we aim to help people see disability from a different or even new perspective, we must be aware that not everyone thinks the same. Our understanding is shaped dramatically through our experiences, the people we are surrounded by, and our goals and ambitions. In all our motivation, frustration, and passion, we must also be patient, gentle, and thoughtful in challenging ideas; only through *unity* can we see effective change.

> *We discover our own humanity when we help others. I believe that the basic attribute of mankind is to look after one another.*
>
> *(Hollows, 2018)*

If we act in the interest of others, we can *facilitate* life rather than *disable* it.

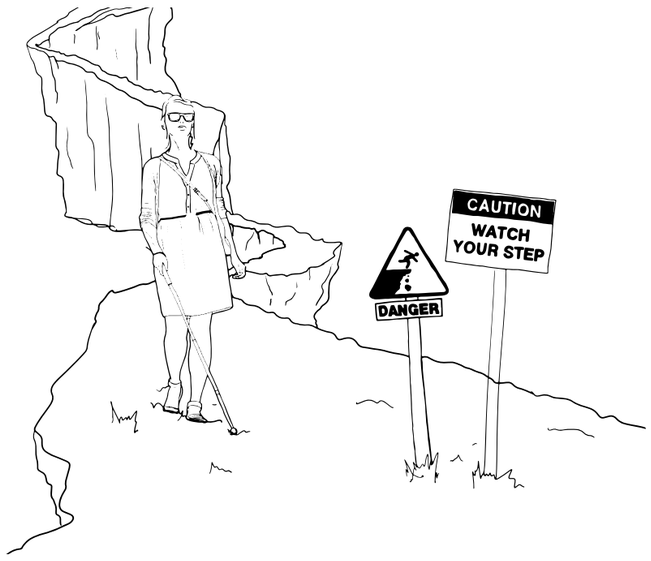


Figure 11 - Walk the Plank - Artwork by Author

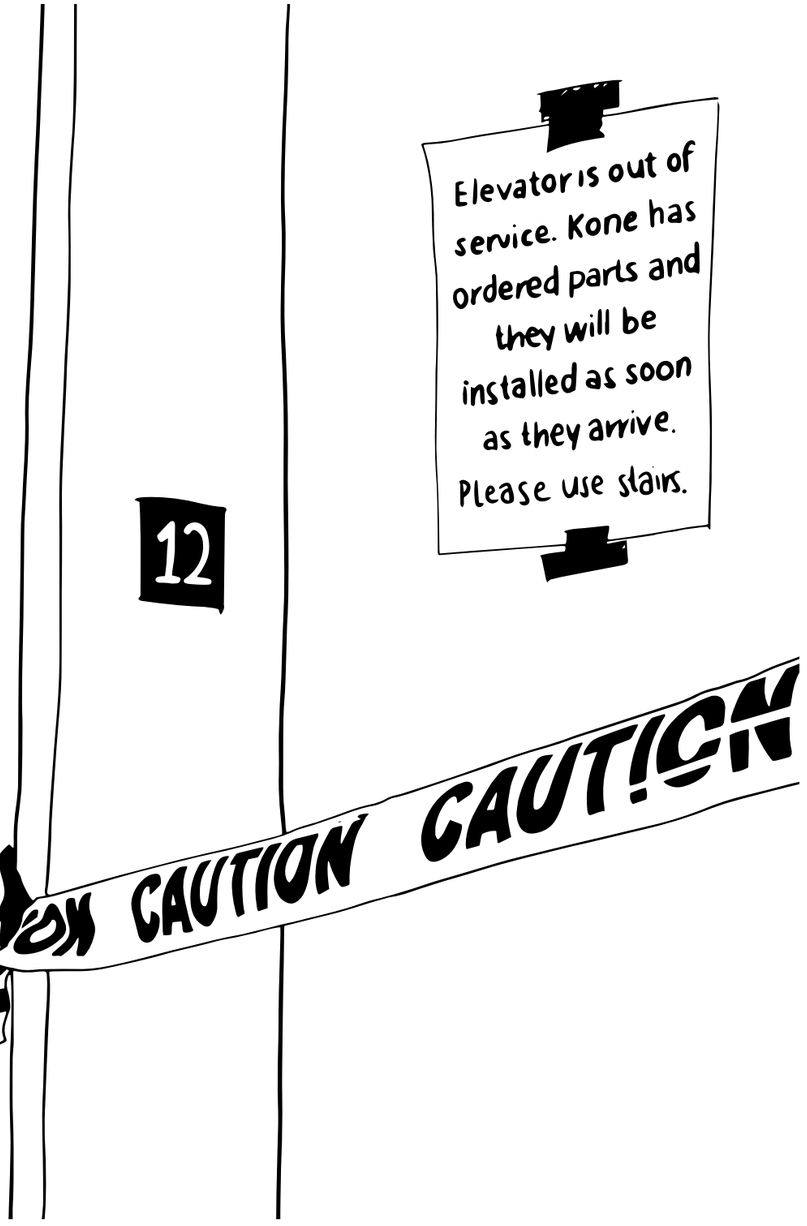


Figure 12 - Just take the stairs - Artwork by Author

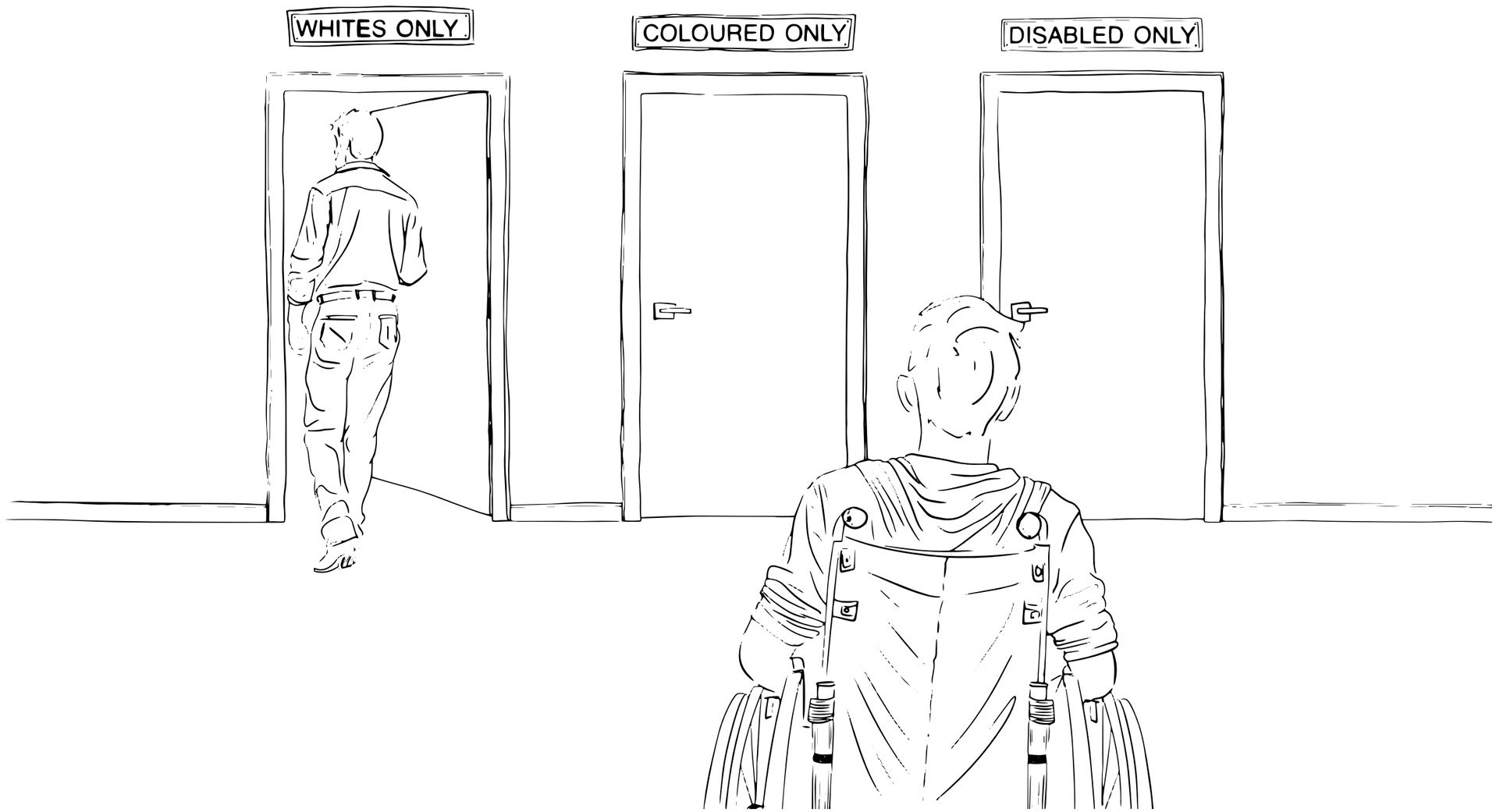


Figure 13 - Unitentional Segregation - Artwork by Author

Figure 14 - On the same team - Artwork by Author

Chapter Three

Just Good Design

As American soldiers returned home from the Second World War and the Vietnam War, many returned with souvenirs of war with physical and emotional impairments; there was an increased need for more accessible buildings (Catanese, 2012) (Mitrasinovic, 2008) (Persson et al., 2014). The US Presidents Committee on Employment of the Handicapped and other organisations worked to change policies and design practices in a "barrier-free buildings" movement (Persson et al., 2014). In the following years after the war, in 1961, the American National Standard Insitute published its first accessibility design standards in "ANSI A117.1-Making Buildings Accessible to and Usable by the Physically Handicapped". The Barrier-free movement kick-started developing a new design process for people with disabilities.

3.0 Universal Design

One Architect at the forefront of Design for people with disabilities was Ronald L. Mace (Ron). In 1950, at the age of nine, Ron contracted polio and, as a result of the illness, was left with impairments that required the aid of a wheelchair for the rest of his life. Following his studies in Architecture at North Carolina State University, Ron focuses on improving the accessibility of the built world through architecture (Tauke, 2019).

Most notably, Ron conceived the idea of Universal Design in 1985 (Mitrasinovic, 2008). Through his career and advocacy for people with disabilities, Ron had a vital influence on the Americans with Disabilities Act of 1990 ADA.

> *The ADA has also inspired the world to see disability issues through the lens of equality and opportunity, and influenced actions by international organisations, such as the Organization of American States and the European Union, to address discrimination faced by persons with disabilities*
>
> *(Sides, 2020)*

On home soil, Aotearoa, the 1993 Human Rights Act made it illegal to discriminate on the basis of disability. In 2001, the New Zealand Disability Strategy was introduced based on a social model of disability (Whaikaha, n.d.).

3.1 Principles of Universal Design

Continuing from Ron's introduction to Universal Design in 1985, a team of like-minded architects, product designers, engineers, researchers, and educators developed the 7 Principles of Universal Design.

Ron recognised that the earlier movement of Barrier-free Design does not address the complexity of disability. Barrier-free for one individual may be a barrier for another. Ron's concept of Universal Design and its seven principles are founded on:

> *The design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaption or specialised design*
>
> *Ron Mace (The Universal Design Project, n.d.)*

Ron's 7 Principles of Universal Design are (Mitrasinovic, 2008) (Tauke, 2019) :

Equitable Use

The Design is useful and marketable to people with disabilities.

Flexibility in Use

The Design accommodates a wide range of individual preferences and abilities.

Simple and Intuitive Use

The use of Design is easy to understand, regardless of the user's experience, knowledge, language skills, or concentration level.

Perceptible Information

The Design communicates necessary information effectively to the user, regardless of ambient conditions or the user's sensory abilities.

Tolerance for Error

The Design minimises hazards and adverse consequences of accidental or unintended actions.

Low Physical Effort

The Design can be used efficiently and comfortably and with a minimum of fatigue.

Size and Space for Approach and Use

Appropriate size and space are provided for approach, reach, manipulation and use regardless of the user's body size, posture or mobility.

Over the years, Universal Design has been adapted and intertwined with new design processes and ethos, resulting in the emergence of concepts like *design for all*, *inclusive design*, and *universal access* (Catanese, 2012). Despite the variety of titles and slight differences, most of these concepts "focus on increasing the accessibility of the interactive system for the widest possible range of use" (Persson et al., 2014).

Some adaptations of the original Universal Design (UD) concept take an idealistic approach to dealing with design barriers. Ron's definition had a vital phrase: "to the greatest extent possible." Much like the risk of a total social model of disability that undermines the extreme variety of disability, an approach to universal design must recognise that while one answer may benefit the majority, it may not be suitable for everyone.

The New Zealand Ministry of Business, Innovation, and Employment (MBIE) takes an idealistic approach and lacks the nuance of the original UD concept. MBIE states, *A universal design perspective can help provide a better and more usable environment for everyone using a public building* (MBIE, n.d.). The word "everyone" could be damaging to the success of universal design implementation; it implies that there is an answer that caters for every

Figure 15 - One size doesn't fit all - Artwork by Author

possible problem regarding disability, and unfortunately, that is just not possible. As designers, we should desire and strive to serve to the best of our ability. However, we must be aware that it is not a one-size-fits-all situation, especially when looking at the built environment of our neighbourhoods and cities.

3.2 One Size Does Not Fit All

Previously, I concluded that when referring to the models of disability, the context in which disability sits is essential Likewise, the context in which universal design and other associated accessible ethos is critical. At a neighbourhood level, universal design principles and consideration of the variety of human capacity and mobility are essential for safe, walkable communities. However, specificity may change in different environments. For instance, design considerations at a primary school will likely differ from those at a university or college campus despite people with disabilities interacting in both settings. Consider also a person with little stature. Their home interior will likely be scaled to suit their physical proportions; this may present as barriers to people without little stature when interacting within the same space.

Ron Mace and other advocates for the rights of people with disabilities have helped create more inclusive cities. Accessibility and barrier-free movements are moving us closer to reducing the discrimination people with disabilities face when navigating the built environment. It is vital to consider varying human capacities, but designers must also recognise that not all barriers can be removed entirely. In the context of public space, in the same

way that designing only for the average non-disabled person could present issues for people with disabilities, designing only for people with disabilities or particular disability could present issues for non-disabled or other disabilities.

I can not speak of the motivation or intentions behind the original concepts of universal design. However, I recognise the desire and need for change in urban and architectural design practices in the past, present, and future. Universal Design and other accessibility guides and standards are like weights on the other side of the scale, bringing equilibrium to the vast variety of people who live in our world. It is about balance.

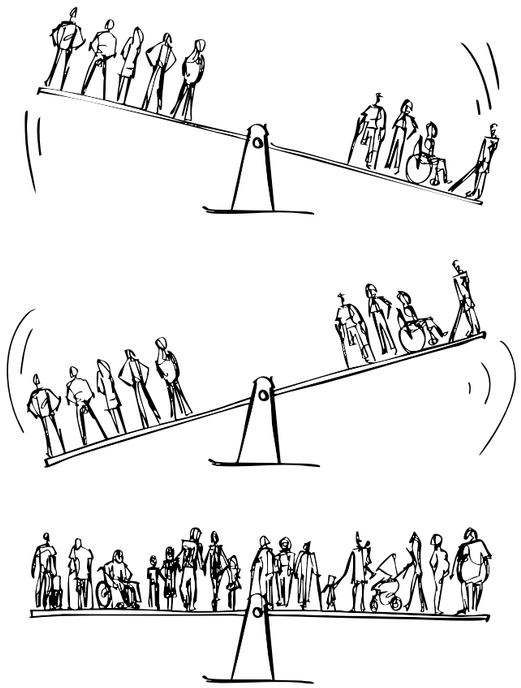


Figure 16 - Bringing balance - Artwork by Author

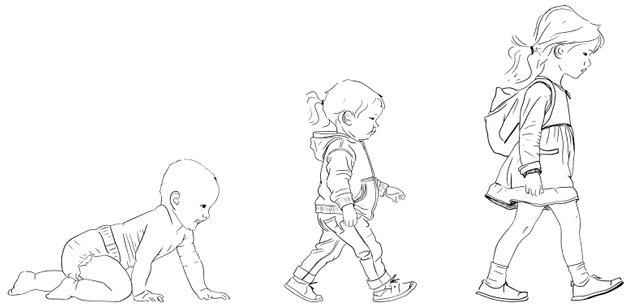
3.3 Universal Design Beyond Disability

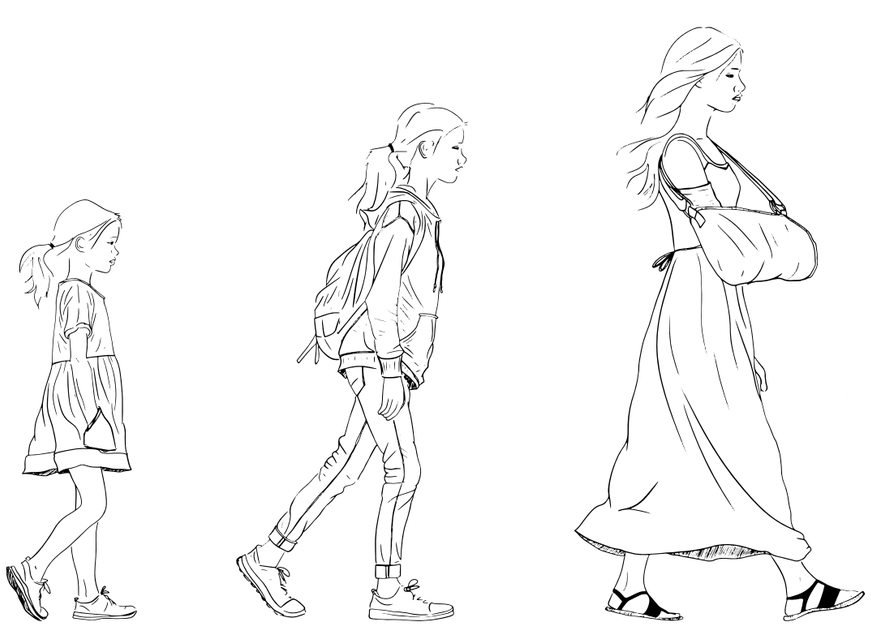
Beyond people with disabilities, universal and accessible design principles benefit people without disabilities. Considerations for a wheelchair user will help the mother push a pram

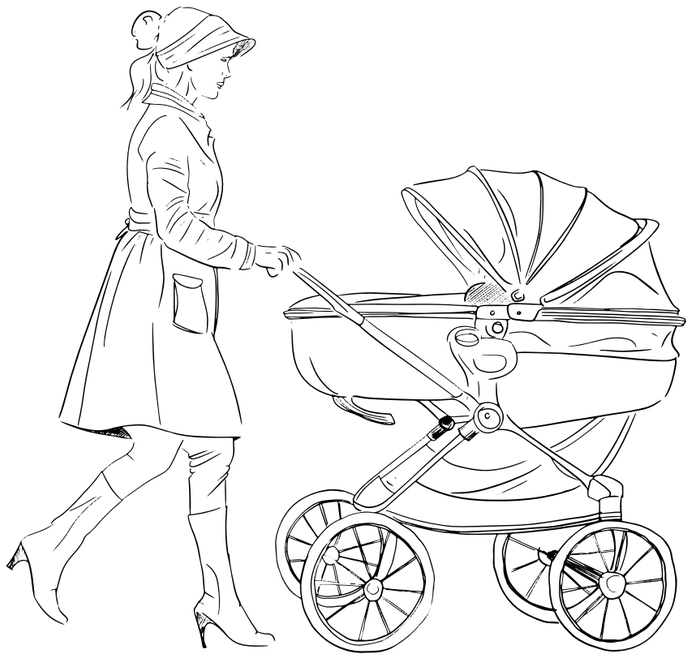
or the child riding their scooter down the street.

> *In time, all users will experience natural changes in ability that come with aging or with illness or accidents temporarily or permanently affecting how they function.*
>
> *(Catanese, 2012)*

> *Contrary to the assumption that attention to the needs of diverse people limits good design, the results of imaginative designers around the world reveal a wide range of apllications that delight the senses and lift the human spirit when "universal design" is integral.*
>
> *Elaine Ostroff (Ostroff, 2011)*







Life is not a constant state. As infants, we start life in a vulnerable place, reliant on family to keep us safe. As we age, we learn to move in new ways, exploring and experiencing life. If we get through life without significant impairments, unfortunately, we all still experience a decline in movement and ability as we reach our twilight years. If, on the flip, we experience impairment unrelated to age, we may experience decline and restriction in movement earlier in life.

About 5% of infants in New Zealand are born with a birth difference (Healthify, 2024). In comparison, around 60% of people over the age of 65 identify as persons with disabilities (Whaikaha, 2024). Other than the odd broken bone, hip surgery, asthma, and partial deafness, I do not find myself disabled by the built environment, but that may not always be the case. Universal and accessible design principles may not seem beneficial at certain stages of your life, but chances are you will be thankful for them somewhere along the line. If my wife and I are lucky enough to bring new life into this world, I want to ensure that they can explore this world safely regardless of any impairment they may or may not have. Like any human, a person with disabilities will have obstacles to overcome in their life, perhaps some greater than others, but they are no less deserving of a fulfilled purposeful life.

So much of how humans interact with the world and each other is determined by the people who design and build it. As designers, accessibility design considerations should

extend beyond code compliance and our ability.

One day, we may reach the point where universal design, inclusive design, or design for all are redundant. After all, if the design parameters only extend to the non-disabled "normal" man, then all remaining individuals are excluded from the design process, and their needs will not be met. Designing for all human movement, to the greatest extent possible, is just good design.

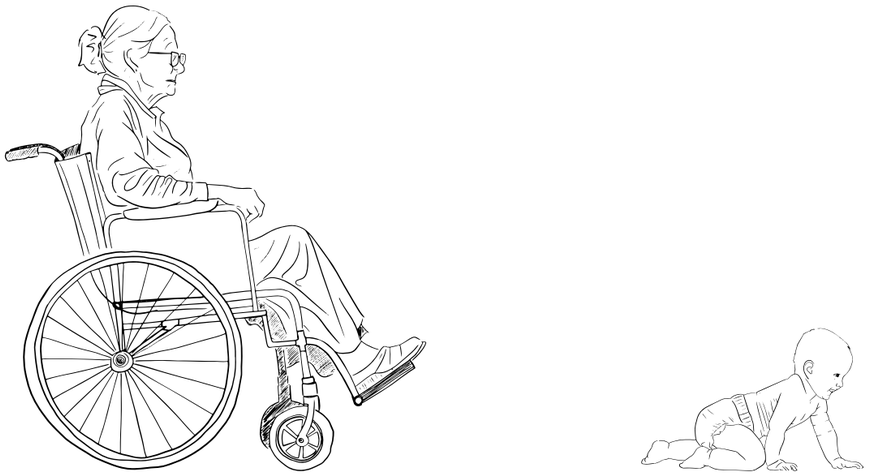


Figure 17 - Life Cycle - Artwork by Author

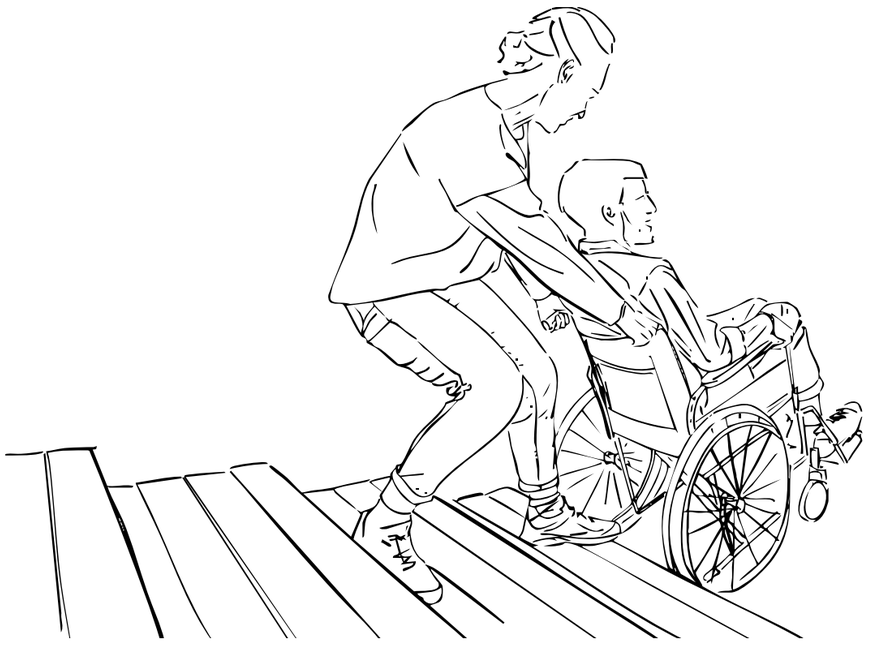


Figure 18 - Wheelchairs and stairs don't mix well - Artwork by Author

Figure 19 - Wonder Woman - Artwork by Author, Based on Photographg by Marian Carrasquero for The New York Times (2019)

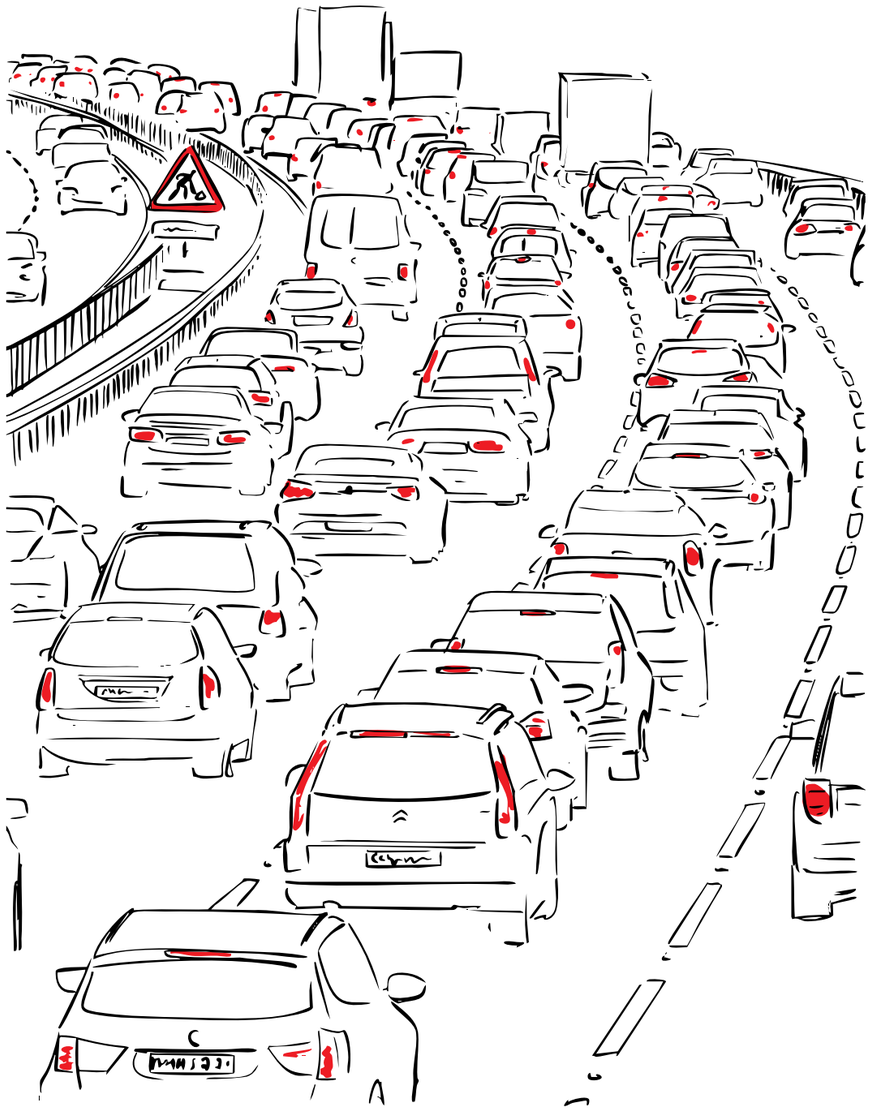


Figure 20 - Rise of the planet of the cars - Artwork by Author, Based on Photograph by the BBC (2018)

Chapter Four

Rise of the Planet of the Cars

Wake up, stretch your legs, drink coffee, and eat grub. Ready, set, go. For most travel begins and ends with the walk (8 80 Cities, 2015). Whilst morning routines may look different for some, perhaps a green juice to get you going or aided by a wheelchair, most of us, in some capacity, move our bodies from one space to another. Over the last two hundred years, transportation has radically changed. The Industrial Revolution catapulted humankind into the modern world; from horses and carriages to trains and planes, from 5km/h to 1000km/h (Ausubel & Marchetti, 2001). You can fly across the globe and back again in less than two days—the world at our doorstep. Invention, innovation, and ingenuity have redefined how we travel and explore past the confines of our homes.

Although our predecessors' leaps are remarkable, and many of us reap the benefits in our daily lives, our modern world has come at a cost—rise of the planet of the cars. We stare

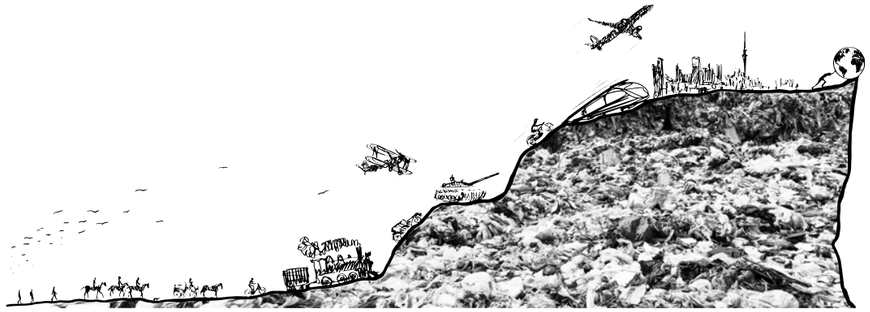


Figure 21 - Pending Doom - Artwork by Author

down the barrel of a gun, global warming, waste, and an increasingly less accessible world.

4.1.1 Road to Knowhere

Since Henry Ford introduced the first mass-produced Model-T car in 1908, our world has increasingly relied on motor vehicle transportation. As a result, our cities and communities have become car-centric. Auckland, New Zealand's most prominent and populated city at over 1,657,000 million people, has over 8,000 km of roads. New Zealanders have become car-crazy, with nearly 3.5 vehicles per 4 people, putting NZ ahead of every other country (Wade, 2024).

The more cities are planned around cars, the less they serve people and the harder it is to intervene—8 80 cities concept, orginiating in Canada by Gil Penalosa, looks to flip the

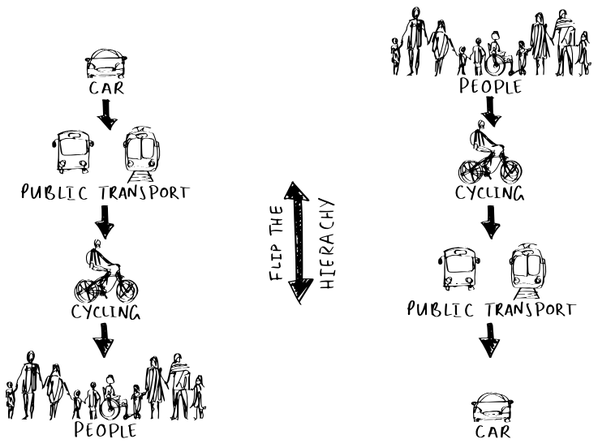


Figure 22 - Flip the hierachy - Artwork by Author

script.

In many car-centric places like New Zealand, precedence in the street is given to cars and other large vehicles; see Figure 21. On the human scale, pedestrians cannot compete with large vehicles. Instead, pedestrians should take precedence, followed by bikes, public transport, and cars (Auckland Conversations, 2016).

An analysis of the Auckland 2018 Census (Auckland Transport, 2018) revealed that when travelling to work or education, 51.6% opt to drive, 14.6% use public transport, 9.2% walk/jog, and only 1.2% of people ride a bike. Compared with Copenhagen, 64% of citizens commute to work via bicycle (Suryadharma, 2024).

Figure 23 shows a snapshot of an urban street in New Lynn, West Auckland, less than 100m from the New Lynn train station. Cars have taken over. With vehicles parked over the curb, the pedestrian, at the bottom of the food chain, is left navigating metal shells.

Figures 24, 25, and 26 show a street in New Lynn that has been made into a shared zone between pedestrians, bikes, and cars. Although the space is shared, the car takes precedence. Cars are parked along the side of the shared road and the local library, making it hard for individuals to navigate the street safely.

Figure 23 - Bottom of the food chain - Photo by Author

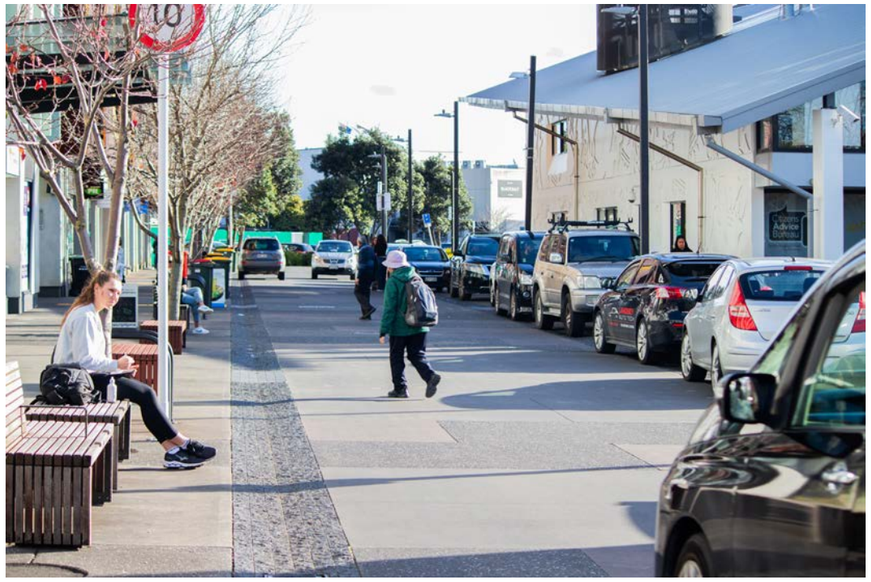


Figure 24 - Enjoing the view - Photo by Author

Figure 25 - Hurry up, I don't have all day - Photo by Author

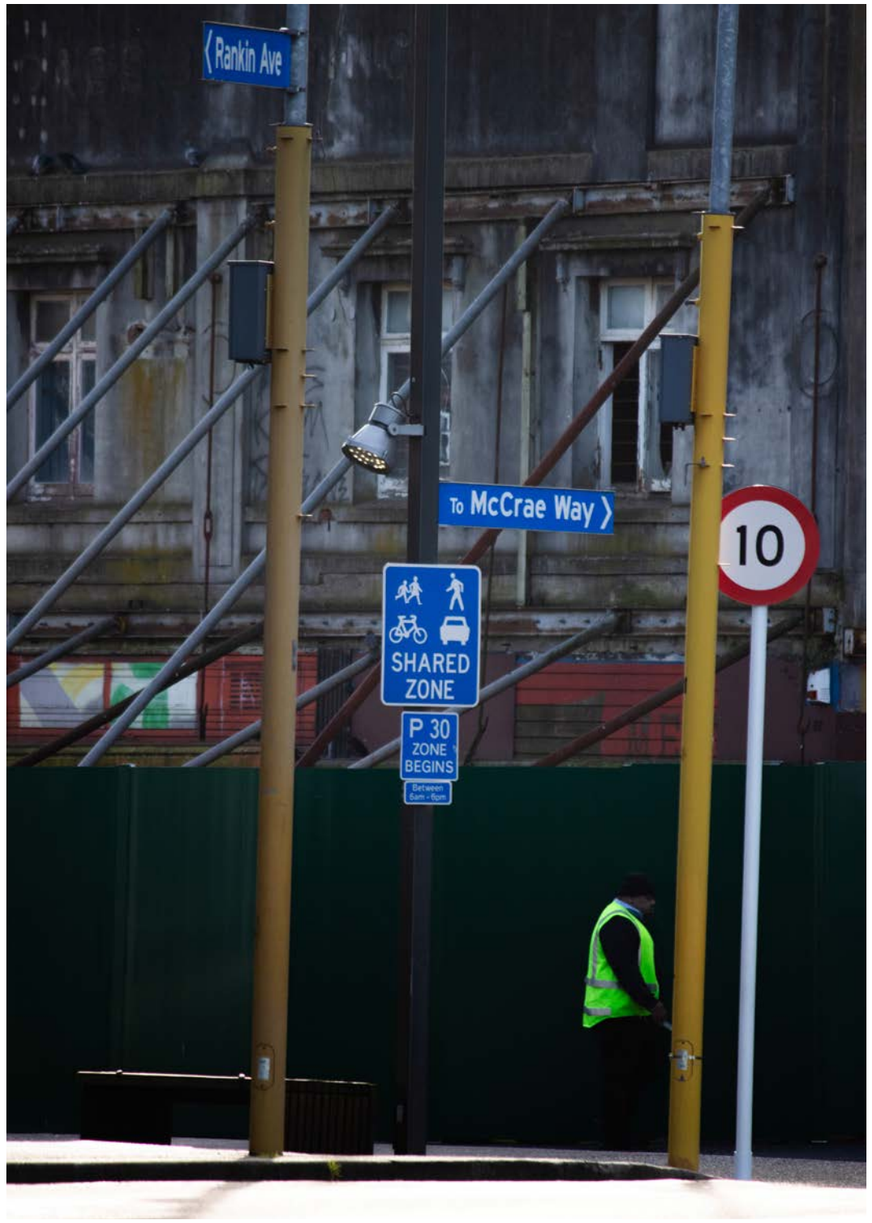


Figure 26 - Everyone is welcome - Photo by Author

4.1.2 Road to Somehwere Better

One organisation advocating for more walkable neighbourhoods is 8 80 Cities, established in Canada. This non-profit was founded in 2007 by Gil Penalosa (Cities for Everone, 2022). Its mission is to "ignite action and challenge the status quo to create healthier, more equitable, and sustainable cities for all people." (8 80 Cities, 2016).

The design maxim and driving ethos of 8 80 is that if a space, building, street, or park is good for the 8-year-old and the 80-year-old, it will be great for everyone. 8 80 use these two age groups as indicator species (Auckland Conversations, 2016). Indicator species are used in ecology to measure the conditions of an environment. As their name implies, they indicate changes and reactions in an environment, representing a population or ecosystem. For example, mayflies, a macroinvertebrate insect, are sensitive to water pollution. Declines in their population can warn researchers of a decrease in water quality and an increase in pollution (Rhode, 2022). 8 80 regenerative theory is that the 8 and 80-year-olds are indicator species and represent safety, happiness, mobility and usability across the wider population. Gil developed a simple question and 3-step rule of thumb that designers, politicians, and community advocates can use when developing a city and the urban landscape (Auckland Conversations, 2016).

4.2.1 8 80 Rule of Thumb: Common Sense

> *What if everything we did in Auckland—the crosswalk, the street, the school, the hospital—had to be fantastic for 8- and 80-year-olds? If it is good for the 8 and is it good for the 80 year old, it is going to be good for everybody.*
>
> *(Auckland Conversations, 2016)*

Figure 27 - Steps to an 8 80 City - Artwork by Author

Step One

Think of a child around 8 years old that you love, and remember them.

Step Two

Think of an 80-year-old that you love, and keep them in mind.

Step Three

Ask yourself these questions:

Would you send them walking or on a bike to the park? Can they cross the intersection? Would they feel safe?

If you would, it is safe enough

If you would not, it is not safe enough

The 8 80 rule of thumb aims to achieve more walkable and accessible neighbourhoods through two age groups: 8- and 80-year-olds. Translating this into a bell curve, refer to figure 27. If thought is given to the 8- and 80-year-old age brackets, then the design will account for ages in between. If the design is centred around the medium, then the outliers may be excluded from the design process. Similar to Universal Design conventions, where the 8 80 concept has a broader approach through age as an indicator species, Universal Design principles identify variety in physical and mental capacity to ensure a larger population is accounted for in the design process.

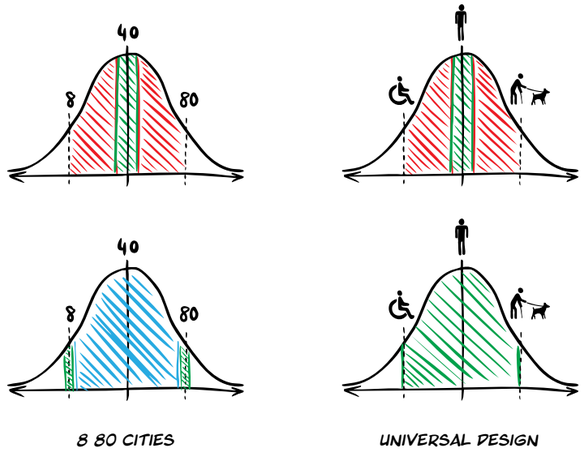


Figure 28 - 8 80 and universal design bell curves - Artwork by Author

4.2.2 The Connective Tissue of Space

Three simple steps: look through the lens of our more vulnerable citizens. At an elemental level, our cities have become increasingly reliant on vehicles, and the urban environment in many parts of the world has centred around cars rather than the person. Streets have been built for cars as opposed to people. As a result, streets have become unsafe and uninviting, discouraging community, exploration and mobility (Auckland Conversations, 2016). The street environment connects all the critical parts of a community, like the connective tissue in the human body, binding the body's structure together into one cohesive living machine. Streets connect people to the world.

Our urban planning needs change. 8 80 Cities advocates prioritising the pedestrian over the vehicle. In a webinar that Gil Penelosa presented, he asked, "What place do we want to live in?".

Now, by no means do I think that cars are the enemy. Cars have provided us access to the world our ancestors could not fathom. In fact, I am a proud owner of a 2001 Toyota Prado. My beast travels 0-100km/h in an astonishing 19 seconds, about as fast as a fully loaded family van towing 10 tonnes of bricks. Cars are not evil but tools, yet we place them at the centre of our urban world. We must create and design for the living.

> Look through the lens of people, the 8—and 80-year-olds, not through the windscreen of a machine.

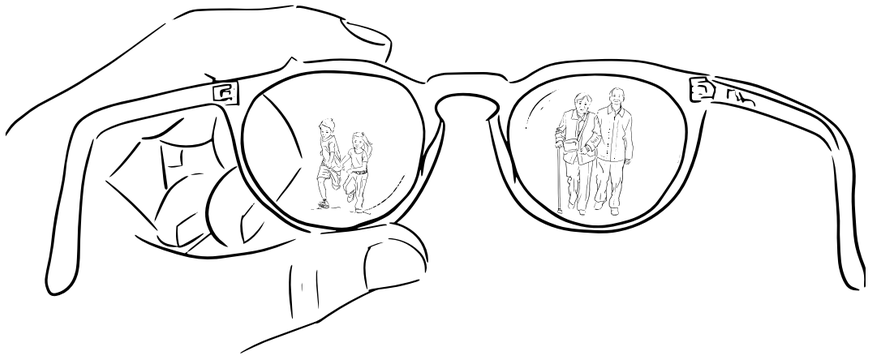
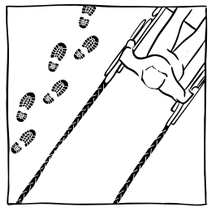


Figure 29 - New Lense - Artwork by Author

Figure 30 - Patiently Waiting - Photograph by Author



Chapter Five

Walk a Mile in his shoes ... or Wheels

Just walk a mile in his moccasins
Before you abuse, criticise and accuse.
If just for one hour, you could find a way
To see through his eyes, instead of your own muse.

Mary T. Lathrap (Lathrap, 1895)

I am unsure where I first heard this quote, likely from my parents teaching me a lesson on empathy. Regardless, I find great encouragement and resolution in those simple words. They serve as a reminder to think with sensitivity rather than judgment and to consider a person's circumstance before criticising. There would be far fewer problems if people

thought to walk a mile in someone else's shoes before casting judgment.

Designers, architects, urban planners, or whatever their title, all must prioritise the user in design.

Personal experience is part of the formulation for good design, and many great ideas have resulted from one's desire or necessity to resolve one's own problem. In 1821, a young Louis Braille, blinded from an eye infection, formulated the Braille system at the age of twelve whilst attending the National Institute for Blind Youth in Paris, France. Charles Barbier, an army officer, introduced Louis and his peers to a 12-dot cryptography system that allowed soldiers to communicate during night-time battles. Inspired, Louis developed a similar system of six-dot code so that people who were blind could use a single index finger to feel and read. This system replaced an inefficient system of large raised letters previously used, providing greater access to literature and higher education for people with visual impairments. Louis published his first book on Braille at just 20 years old in 1829 (ICOE, 2021). Braille is now universal and used by more than six million people worldwide (Musee Louise Braille, n.d.).

Not all inventions are born from personal experience. In 1931, Dr Earle Cleveland Haas, a man, patented the invention of the modern tampon (Weissfeld, 2010). Dr Haas recognised his wife's monthly struggle dealing with her menstrual blood with cloth fabric and a belt, commonly used by women worldwide at the time. Inspired by compressed cotton used in a surgery called 'tamponades', Dr Haas dedicated his time to creating a menstrual tampon and applicator system. This invention gave women a more sanitary, comfortable, and convenient method for dealing with menstrual blood (Victoria, 2016). Although my knowledge of biology is limited to what I learnt in school, I can confidently assume Dr Hass, being a man, never had personal experience with a menstrual cycle, yet through his empathy towards another, Dr Haas was able to contribute to the improvement of life for many women across the world.

The more I learn about disability through my research, literature review, and courses, the greater my determination has become to present a solution to the discrimination many people experience from poorly designed neighbourhoods and cities. My understanding has grown 10-fold since setting out on this journey. However, my personal experience is limites, as it is for all of us. To combat this and further expand my understanding of the barriers faced by people with disabilities, I have engaged in Roleplaying exercises as a research method to develop problem-solving skills.

5.1 Role Playing as a Research Method

As mentioned in Chapter One, section 1.2, Key Methods, role-playing is where the designer acts out a scenario to understand different perspectives (Martin & Hanington, 2012).

For this role-playing exercise, I will use a wheelchair as my primary means of movement. The role-playing scenario aims to gain insight into the realities of using a mobility device in the urban environment. As established in Chapter 2, disability is a sensitive topic, and an exercise like this must be approached respectfully.

Disclaimer: Let me be clear.

Before moving on, I want to be clear about the intention of this experiment. This role-playing exercise is not about understanding what it is like to be a person with a disability but about identifying movement barriers in the urban fabric. I can sympathise and observe another circumstance; however, except for switching bodies with someone else in a Freaky Friday-type event, personal experiences are reserved for the individual.

Jumping to conclusions about the psychological and physical effects, good or bad, of being a person with a disability from a roleplaying exercise could lead to biased and unfounded claims. I could never assume to know what it may feel like to grow up as a person with paraplegia or understand how it feels to live with Parkinson's disease. However, I can relate, through doing, to what it is like to navigate a footpath, move through thresholds, open doors, etc, whilst in a wheelchair.

Additionally, this is not about understanding the barriers faced by every disability. To accomplish that, I would need a few lifetimes, and then some, to cover all bases.

There are some arguments that role-playing exercises like these are outdated and inaccurately portray the barriers people with disabilities might face. Depending on the context of the role-playing exercise, these concerns are likely justified. In the context of architecture and design-led research, designers act on behalf of the many, and with that, the designer must be able to think about how multiple users might interact with a space. The goal of this exercise is to understand better how movement can be restricted by the urban environment when using a mobility device.

At some point, to move forward, we have to be comfortable with making assumptions to make progress. Through additional research and increased specificity, assumptions can be reduced, leading to more refined and robust design solutions.

> *The designer places him/herself in the role of the future dweller and tests the validity of the ideas through this imaginative exchange of roles and personalities.*
>
> *Juhani Pallasmaa (Pallasmaa et al., 2015, p.12)*

5.2 Roleplaying Parameters

Goal:

To identify barriers to using a wheelchair in my everyday routine.

Time-Frame:

The more time spent in the wheelchair and varied environments, the more insight. My typical weekly routine involves working part-time for an architectural office at the Highbrook Business Park and studying at the Auckland University of Technology (AUT). For this reason, I have chosen a 2-day time frame to allow exposure in both these settings. One day will be in the office, the other at the University.

Rules of engagement:

To carry out my typical daily activities

Travel to the office. I typically drive to the office and park approximately 500 metres from work. For this experiment, I will not include travel time in the car to and from the office.

Travel to University. I typically walk to the New Lynn public interchange from my apartment and travel via the bus or train. I will catch the bus to and from the AUT city campus for this exercise.

I will not pretend to have a particular disability.

I will remain seated in the wheelchair during the 2-day time frame. (Excluding travel via car and whilst in the confines of my living quarters).

If asked why I am in a wheelchair, I will explain the experiment.

If, at any time during the experiment, my own or any other person's life is in danger/harm due to the experiment, the exercise is immediately terminated.

Note:

Before the experiment, I informed my employer, co-workers, peers, and tutors of the experiment and the dates selected. No other parties were made aware.

My faithful Stead:

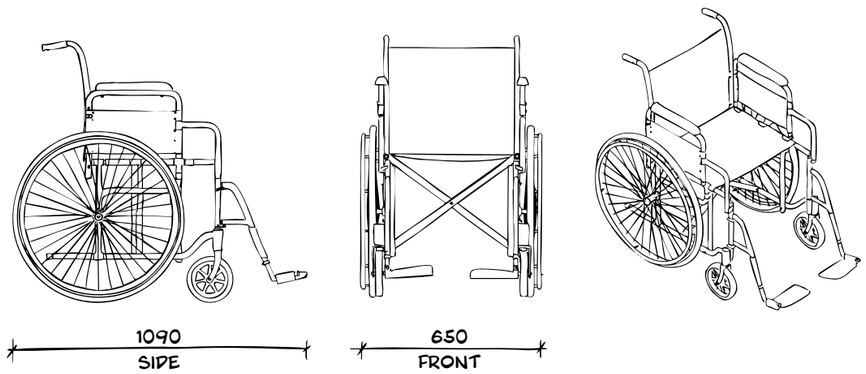


Figure 31 -My Faithful Steed - Artwork by Author

Mobility Comparison:

In addition to the roleplaying exercise along two typical routes from my daily routine, I will compare the effort required to move between two points in both walking and wheelchair. Using a Garmin sports watch and heart rate monitor, I will record an average pace (min/km) and heart rate (beats per minute or BPM). The Garmin watch will also track total distance and elevation gain.

GPS device: Garmin Fenix 7 Solar

Heart Rate Monitor: Garmin Heart Rate Monitor Dual

Leica Disto d510 to measure gradient.

This additional experiment compares the effort required to move through the same environment but with different mobility restrictions. Heart rate is not a useful metric when comparing multiple individuals together; however, it can indicate increased or decreased effort in one individual. When measured in the same environment, an increased heart rate indicates increased exertion, whilst a reduced heart rate indicates decreased exertion.

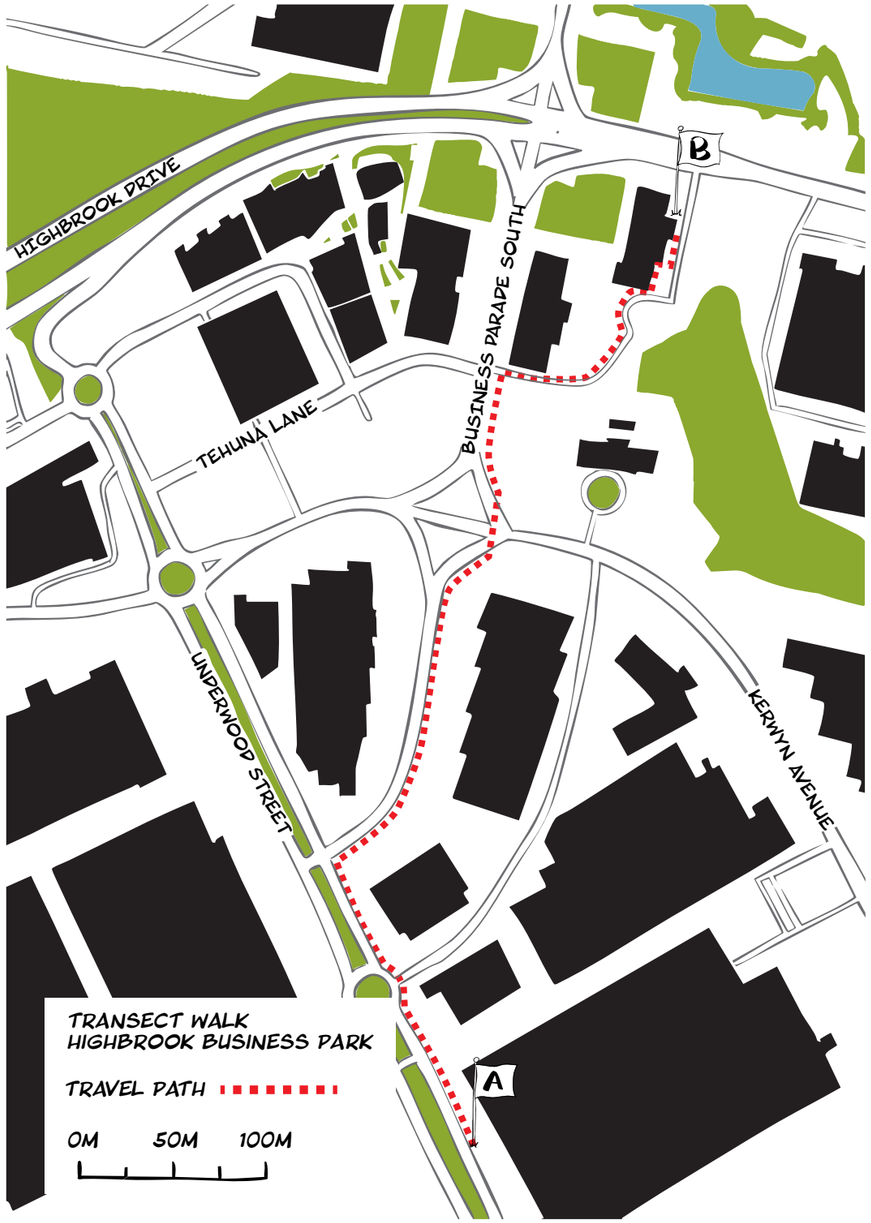


Figure 32 -Transect walk Highbrook Business Park - Map by Author

5.3.0 Roleplaying Diary Log

5.3.1 Day One

The sun was shining, my belly was full of hot coffee and a bowl full of enthusiasm. I strapped myself in and began. No more than two metres in the wheelchair, and I was met with my first obstacle: the door. Our entry door, like most, opens inwards; pulling a door open whilst on a chair with wheels does not work very well. Made worse by the fact our front door is a heavy fire door, pulling harder just brought me close to the door. Somewhat challenged, I squeeze myself and my chair through the door. Only to realise, I left the keys on the bench.

This issue came up multiple times during the experiment. Maneuvering through swing doors proved difficult, made worse by some thresholds barely wide enough to slip through.

One of the worst instances of egress was our apartment entry/exit door, a light-framed aluminium door with glazed panels, not overly heavy, with a clear width exceeding 760mm (as per NZS 4121:2001). The sill profile meant the door required two threshold ramps on either side to reduce the threshold step to no greater than 20mm as per NZ accessibility standards. Although the door met the compliance threshold, opening a door and keeping it open whilst trying to propel yourself forward over a step at the same time was incredibly difficult and time-consuming.

As mentioned, once I reached my vehicle, I exited the wheelchair and drove to work as usual. The office building where I work has two accessible carpark spaces directly in front of the entrance. Both carparks are NZS 4121:2001 compliant. With a disability parking permit, this would be a viable option. However, the purpose of this experiment is to note barriers faced during my usual everyday routine. Figure 32 shows my typical parking spot, point A, and the office building entry point B.

5.3.2 Mobility from Parking Spot to the Office

The distance between points A and B is approximately 550m. The average walking pace between points A and B was 11:28 m/km, with an average heart rate of 107.5 bpm (Table 1). In comparison, using the wheelchair along the same route, the average pace was 16:53 m/km with an average heart rate of 109.5 bpm. The average heart rate using the wheelchair increased < 2% compared with walking. Unsurprisingly, the average pace whilst using the wheelchair was 5 minutes and 25 seconds slower, or 47% slower than walking. Although the average heart rates for both forms of mobility are close, the time required to cover the same distance was much different. Wheelchair mobility required 47% longer sustained effort compared with walking.

Part of this reduction in pace can be attributed to the less efficient movement pattern of using your arms to propel you forward compared with your legs. However, there are other variables like the weather conditions, gradient, rolling resistance of the tyres/wheels, and the surface on which you are moving that impact pace and perceived effort. Along Business Parade South (refer to figure), there is an approximately 200m section of paved

LOCATION:	HIGHBROOKE BUSINESS PARK		
DATE:	15/05/2024		
WEATHER:	DRY, NO CLOUDS		
METHOD OF MOBILITY		**WALKING**	**WHEELCHAIR**
AVERAGE PACE - MIN/KM		11:28	16:53
AVERAGE HEART RATE - BPM		107.5	109.5

Table 1 - Comparison of Mobility, Wheelchair and walking - Highbrook Business Park - By author

footpath, compared with concrete. There was a noticeable increase in rolling resistance as the cracks between the pavers slowed down the tyres. There was also more significant undulation along the footpath's paved sections than the concrete sections, reducing speed.

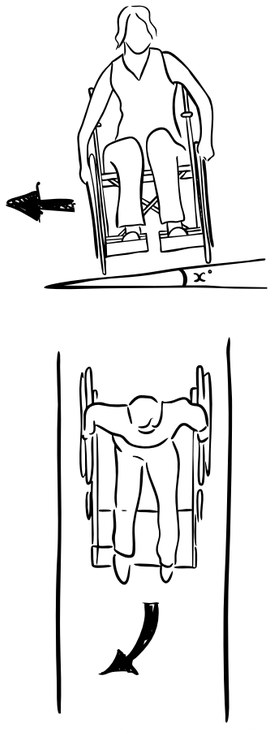


Figure 33 -Footpath camber - Artwork by Author

Another noticeable difficulty along the footpath was the camber/cross slope (refer to Figure 33). This camber likely ensures adequate surface water drainage; however, with equal pressure on both wheels, the wheelchair would turn towards the road (down the cross slope). I had to apply much greater force on one side than the other to counteract the camber, significantly increasing the required effort as compared with low or nill camber in the footpath. This issue was made worse by the narrow footpath. As the wheelchair would turn towards the road, the wheel would hit the grass berm and drop down the edge of the concrete. Excessive camber significantly reduced movement efficiency and increased perceived effort compared with walking. A wider footpath would increase tolerance for error, a tenant of the seven Universal Design principles.

The architectural offices are located on the second floor of the building. Access to the part of the building in a wheelchair is only achievable through the elevator. Once again, squeezing through a tight, although compliant, threshold, I was finally at my destination. There were not too many barriers once inside the office due to a spacious open floor plan. With the addition of a new adjustable standing desk, I was able to raise the desktop to a suitable height to allow the wheelchair to slide into place. This benefit was not

something I had considered before using a wheelchair. A good example of modern technology is adding benefits.

5.3.3 Pit Stop

There comes a point in everyone's day when they need to make a pit stop. There are two accessible toilets located in the office building, one on each floor. The second-floor accessible toilet was occupied, so I rolled into the elevator and took a quick trip down to the ground-floor bathroom. The foyer floor of the office building is polished concrete. However, the accessible bathrooms and other toilets have a tiled finish. The tiles create an approximately 15mm step between the foyer ground floor and the accessible bathroom. The building code, New Zealand Standards (NZS) 4121 (2001) section 7.1.4.1, states, "when a stepped threshold is required and the change in level is 20mm or less, no ramp is required." In this instance the change in level was less than 20mm. In practise this accessible threshold is complient with the building code and accessibility standards. In reality, this step proved too much to overcome. I could not open the swing door and generate enough force to wheel the front tyres over the step. Instead, I had to stand up and pick up the wheelchair to enter the ACCESSIBLE bathroom. Now, I am no genius, but if I had a spinal cord injury or other physical disability preventing me from standing, this would not have been an option. In isolation, a swing door and stepped threshold do not prevent wheelchair access; however, in combination, access via wheelchair was unachievable. A sliding door or some form of hold open would allow an occupant to use both arms to propel over a steeped threshold.

5.3.4 Stroll Around the Block

During the morning break, we usually make our way around the corner to the gas station for a hot pie. This route involves crossing at an intersection with lights. The NZS 4121 (2001) standard outlines that kerb ramps are installed at pedestrian crossings to provide a smooth transition between the footpath and the road. The standard states a kerb ramp should not have a gradient exceeding 1 in 8 with nill cambre (cross fall) perpendicular to the direction of travel. The kerb ramps along this route meet the requirements of the NZS 4121 (2001). Travelling up a kerb ramp was noticeably more difficult than level travel or travel down a kerb ramp. I needed to shift my weight forward to keep balance and forward momentum to prevent tipping backward. Like the issues with paved footpaths earlier, the tactile ground surface indicators made rolling more difficult. Transition down a kerb ramp was more leisurely, with gravity working in favour. One lesson, which came at a high price, was that speed was not the answer to travelling up a kerb ramp more easily. As I accelerated towards the kerb ramp, the wheelchair came to an abrupt stop when the front wheels hit the start of the ramp, causing the wheelchair to tip forward. The hot steak and cheese pie on my lap flew forward for a closer inspection of the concrete. Heartbreak.

Despite my difficulties with the kerb ramps, this solution was far greater than dealing with a 100mm step. Trying to get a manually operated wheelchair up a 100mm high kerb is nothing short of trying to scale Mount Everest. No kerb ramps were located along a section

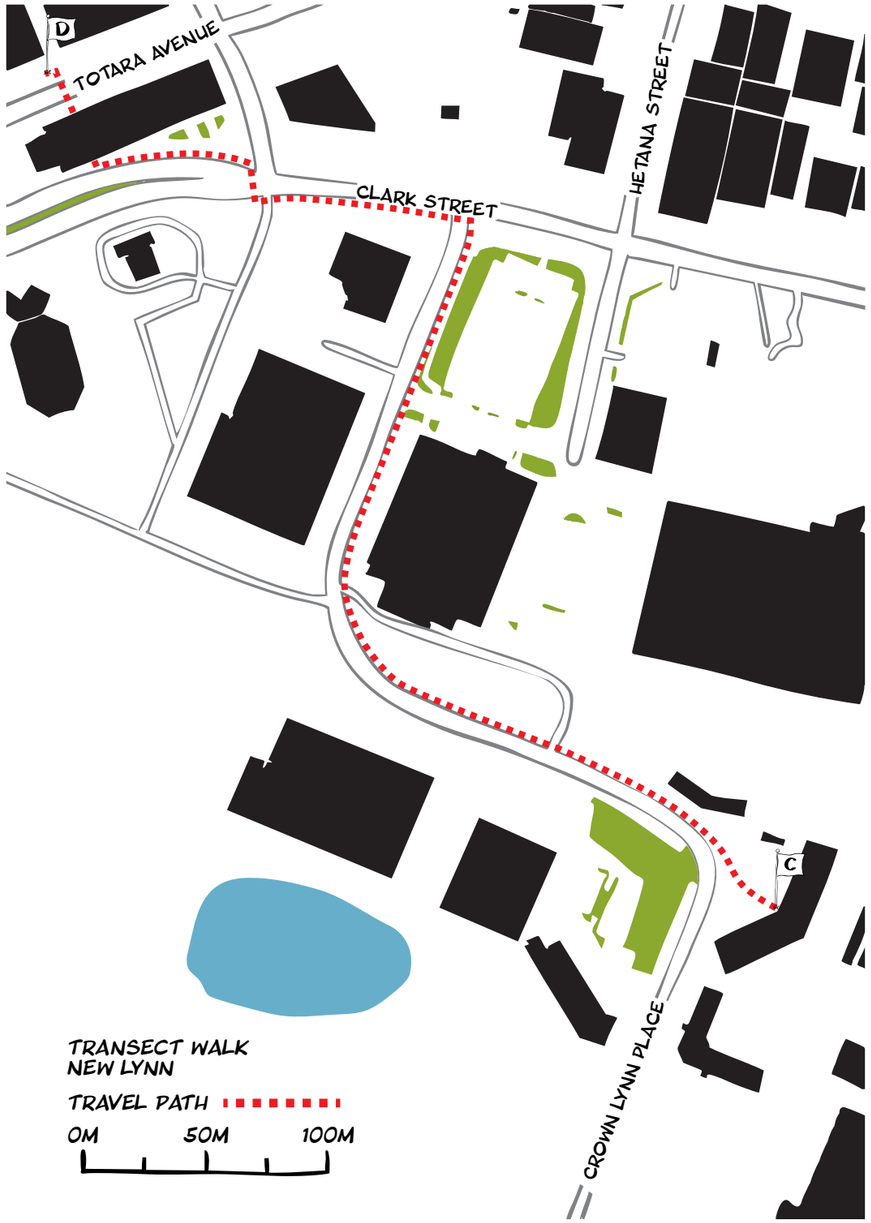


Figure 34 -Transect walk New Lynn - Map by Author

of the route where one would typically walk. This meant I had to travel along the road. With a car behind me, I realised I needed to get up on the footpath. Remaining in the wheelchair, my colleague attempted to lift the front of the wheelchair onto the kerb. By this time, three more cars had stopped to look at a clumsy fool trying to scale the kerb, one of which was a police officer who rolled down their window to ask if we were doing all right. We responded, "all good," unconfidently. At that moment, my two colleagues and I looked at each other and shared a telepathic thought... "Don't get out of the chair!".

An observation is worth mentioning along the routes where the footpath was less than 1500mm wide, unless walking in the garden or on grass, my colleagues could not walk alongside me. I would either travel ahead or behind them; this made it more difficult to connect to the conversation. This was not an issue when the footpath was greater than 2000mm.

5.3.5 Day Two

Unlike the morning before, today was raining. This dramatically decreased enthusiasm, and in the back of my mind, I thought, "Maybe I should do it another day no one would know". I quickly threw that thought out of my mind. After all, people with disabilities do not have the luxury to "postpone" their disability to another day.

So I toughened up and headed on my way. Getting through my apartment door, no easier than the day before, I made my way to the New Lynn interchange station (NLIS). The distance from my apartment building to the NLIS is approximately 550m with an elevation gain of 1m, refer to Figure 34. Similarly to the day before, my average walking pace between Point C and D, Table 2, was 11:40 min/km with an average heart rate of 100 bpm (Table 2). My average pace while using the wheelchair was 17:01 min/km with an average heart rate of 100 bpm (Table 2). Much like the route between points A and B, there was no substantial difference in heart rate between the two mobility methods; however, the pace while in a wheelchair was 45.86% slower than walking for the same perceived effort.

Out of curiosity, using the Garmin sports watch as a gauge, I travelled between points C and D in the wheelchair and at the same pace as recorded while walking. At an average pace of 11:38 min/km in the wheelchair, my average heart rate was 132 bpm, and my max heart

LOCATION:	NEW LYNN	
DATE:	16/05/2024	
WEATHER:	WET, CLOUDS	
METHOD OF MOBILITY	**WALKING**	**WHEELCHAIR**
AVERAGE PACE - MIN/KM	11:40	17:01
AVERAGE HEART RATE - BPM	100	100

Table 2 - Comparison of Mobility, Wheelchair and walking - New Lynn - By Author

rate was 143 bpm. My average heart rate had increased by 32 bpm or 32% compared with walking at the same pace.

5.3.6 Side Quest

To further compare the perceived effort of walking and wheelchair mobility, I recorded my heart rate and average pace travelling up a ramp at Remuera Train Station (RTS). The RTS pedestrian ramp is approximately 45m long and has an average slope of 6.2 degrees or a ratio of 1:9.2. The steepest section of the ramp read 7.3 degrees (1:7.9), and the lowest reading was 4.9 degrees (1:11.6).

This ramp does not meet the building code NZS 4121:2001. A compliant ramp should not exceed a ratio of 1:12 or 4.8 degrees (NZS, 2001). Additionally, a run should not exceed 12m in length. Level landings should be provided at intervals to ensure that a run does not exceed 12m.

As a baseline, I recorded travel up the ramp via walking. My average walking pace was 13:59 min/km with an average heart rate of 107 bpm (Table 3). Note that this is a 21% slower pace and 7% higher bpm than walking along level terrain in the Highbrooke Business Park and the New Lynn transect walk.

In comparison, the average pace when using the wheelchair up the ramp was 31:06 min/km (Table 3), a staggering 122% slower than walking up the ramp and 169% slower than walking on level terrain. Furthermore, my heart rate averaged 141 bpm, 32% higher than

LOCATION:	REMUERA TRAIN STATION	
DATE:	30/06/2024	
WEATHER:	DRY, PARTLY CLOUDY	
METHOD OF MOBILITY	**WALKING**	**WHEELCHAIR**
AVERAGE PACE - MIN/KM	13:59	31:06
AVERAGE HEART RATE - BPM	107	141

Table 3 - Comparison of Mobility, Wheelchair and walking - Remuera Train Station - By Author

walking. Perceived and recorded effort was much higher when travelling up the ramp with a wheelchair. There were moments along the ramp I thought the wheelchair would tip backwards. This was made even more challenging due to the fact that there was nowhere to rest along the ramp as it was an unbroken ramp. If I had stopped, I would have rolled backward.

I knew going into this exercise was not going to be easy. However, it puts into perspective how much harder some simple tasks are when mobility is restricted. Depending on why

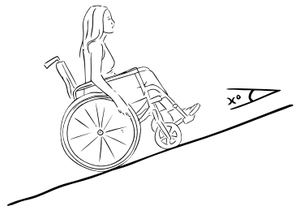


Figure 35 - Up Hill Battle - Artwork by Author

someone may use a wheelchair, this ramp could present further issues. If an individual using a wheelchair can not lean forward and use their core muscles, they would be unable to counterweight their body, and the wheelchair would likely tip back along a steeper gradient. On top of that, despite sitting in the chair, I could leverage off my legs (as I have full leg function) despite sitting down. Someone with an amputation or paralysis may not be able to do that.

Despite Google Maps advertising RTS as a wheelchair-friendly stop, the RTS ramp does not come close to the NZ building code for accessible access. It is worth mentioning that the closest NZ 4121:2001 compliant train station is in New Market, approximately 1.6km north (via walking) or Ellerslie Train station, 2.8km south (via walking). This highlights how an essential piece of public infrastructure can become a barrier for people with mobility aids and likely other public members, such as parents with prams.

5.3.7 The Great Divide

Besides checking that the coast is clear, I have never considered crossing at traffic lights particularly difficult. Patiently wait for the signal and cross when it turns green. When moving slowly in a wheelchair, the intersection crossing seemed 10 times longer. With a lower body position and reduced travelling speed, I felt exposed and vulnerable. The little red man started flashing before I reached halfway across the road. The car waiting at the lights had a green signal before I reached the other side.

5.3.8 Travel by Bus

Much like the issue with the kerb ramps of maintaining balance, this barrier was presented again when entering the bus. The bus has a fold-out platform to create a ramp between the footpath level and the bed of the bus. The bus driver had to assist me with getting up the ramp to prevent me from falling backwards. When I did get onto the bus, I was met with a narrow passageway I had to navigate before getting to the priority seating area. While in the allocated seating area, I found that when the bus was on a steep gradient, the wheelchair would skid across the bus floor. This was likely made worse by the wet weather conditions.

Once on the bus, there is a short distance between the bus stop and the AUT campus. Following the typical route, there is a section of road before the building entry with a gradient between 8.4-11.15 degrees (1:5.1 - 1:6.8). While travelling down this section of the footpath, the wheelchair could not come to a complete stop; even with the brakes on, the wheelchair skidded down until the slope was less steep.

Much like the office building, except for those infuriating swing doors, once in the University building, I could move around the space freely. Large open floor plans and wide

corridors made movement easier.

5.4 Reflection

How have we, the creators of the built world, become so;

blind to the barriers we create?
deaf to the voices of those persecuted?
dumb to speak up
lame to take action

Perhaps it is our thinking that is actually disabled...

Figure 36 - Little Red Man - Artwork by Author

Chapter Six

The Power of Active Recreation

Figure 37 - Chris Nikic and guide Daniel Grieb competing in the Florida Ironman. Chris went on to cross the line becoming the first person with down sysdrome to complete an Ironman. From *Getty Images*, by M. Reaves, 2020 (https://www.gettyimages.co.nz/detail/news-photo/chris-nikic-competes-in-the-bike-portion-with-his-guide-news-photo/1284439212?adppopup=true). Copyright 2020 by Michael Reaves

Definitions of recreation are quite broad and include a wide range of activities, such as hiking, shopping, running, arts and crafts, music, and reading. The Cambridge Dictionary (n.d.) defines recreation as "a way of enjoying yourself when you are not working." Whilst arts and crafts, music, reading and other forms of passive leisure are enjoyable ways to spend time and undoubtedly improve health and well-being, this thesis's central concern is active recreation.

Active recreation refers to activities undertaken for relaxation, health, well-being, or enjoyment, where the main action involves physical exertion and is centred on human engagement (DLGSCI, 2016).

In the context of this thesis, Recreational Architecture refers to areas of the built world that provide facilities for active recreation.

Sport has been an integral part of my life for as long as I can remember. My interests and goals have changed, from swimming and sailing to boxing and baseball, and the list goes on. My career in some sports has been cut short at times. I remember joining my college

baseball team, hoping to become the next Babe Ruth. Standing over the home plate for the first time, anticipating the pitcher's throw, I swung with all the strength I could muster. Hit! Full speed ahead, somewhere between home and first base, I pulled my quad muscle; for the rest of my life, I will wonder If I could have played for the Yankees had my sprint ended differently. Probably not.

At other times, I have had to adapt my interests to suit my current life circumstances. In my younger years, I took up swimming to decrease my symptoms from asthma; however, at around 12, I had to give it up along with rugby due to ear issues. Stuck in limbo between the two sports I loved, I adapted and took up tennis lessons. I went a couple of years before the next interest took over. That is one of the things I love about recreation; you can adapt and scale to suit your needs, goals and interests. Exploring new hobbies through recreation has given me loads of fulfilment and joy over my lifetime, all while gaining all the health benefits of movement and exercise.

> *The function of play is to balance life in relation to work, to afford a refreshing contrast to responsibility and routine, to keep alive the spirit of adventure and that sense of proportion which prevents taking oneself and one's job too seriously and thus to prevent the death of youth, and not infrequently the premature death of the man himself."*
>
> *Dr. Austin Fox Riggs (Gulam, 2016, p. 158)*

It should come as no surprise that active recreation improves health, well-being, and longevity (Blair & Morris, 2009) (Marquez et al., 2020) (Sport New Zealand, n.d.). For instance, higher levels of upper and lower body muscular strength correlate inversely with the risk of all-cause mortality (García-Hermoso et al., 2018). Studies have also shown that physical activity reduces the risk of developing neurological impairments and the symptoms of impairments altogether (Laurin et al., 2001)(Martin, 2013). Additionally, physical activity is effective in alleviating or preventing depression and anxiety (Singh et al., 2023). It is worth mentioning that depression is the most common mental health issue in New Zealand, and nearly 66% of people with disabilities experience mental distress or illness (Community and Public Health, 2016) (Health New Zealand, 2024). Furthermore, in the OECD, New Zealand ranked the highest for adolescent (15-19) suicide rates.

In short, Physical activity benefits everyone, especially people with disabilities (Martin, 2013, p. 2035). As the name implies, recreational architecture facilitates physical activity. Movement is essential to the vitality of life. Recreational architecture must not be an afterthought but should take precedence and be accessible to all. Active recreation is like a vending machine; not everyone shares the same taste buds, but there is something for everyone. Pick what you love and move.

> *Take care of your body. It's the only place you have to live.*
>
> *Jim Rohn*

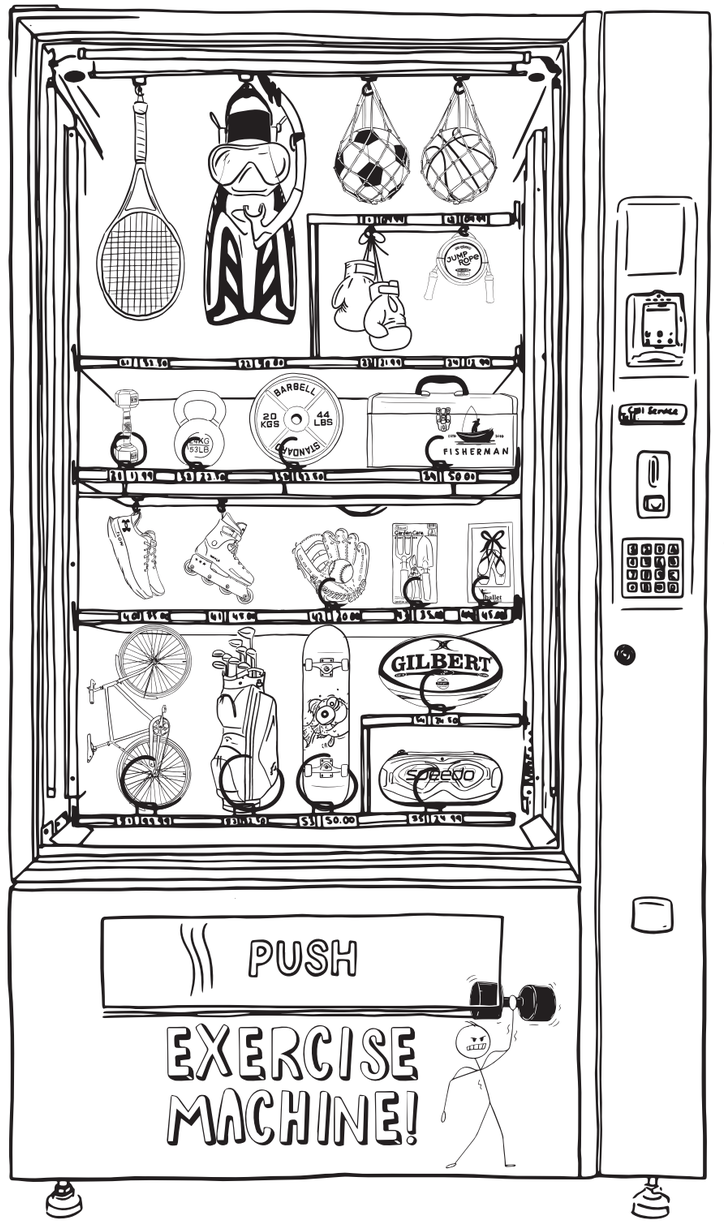
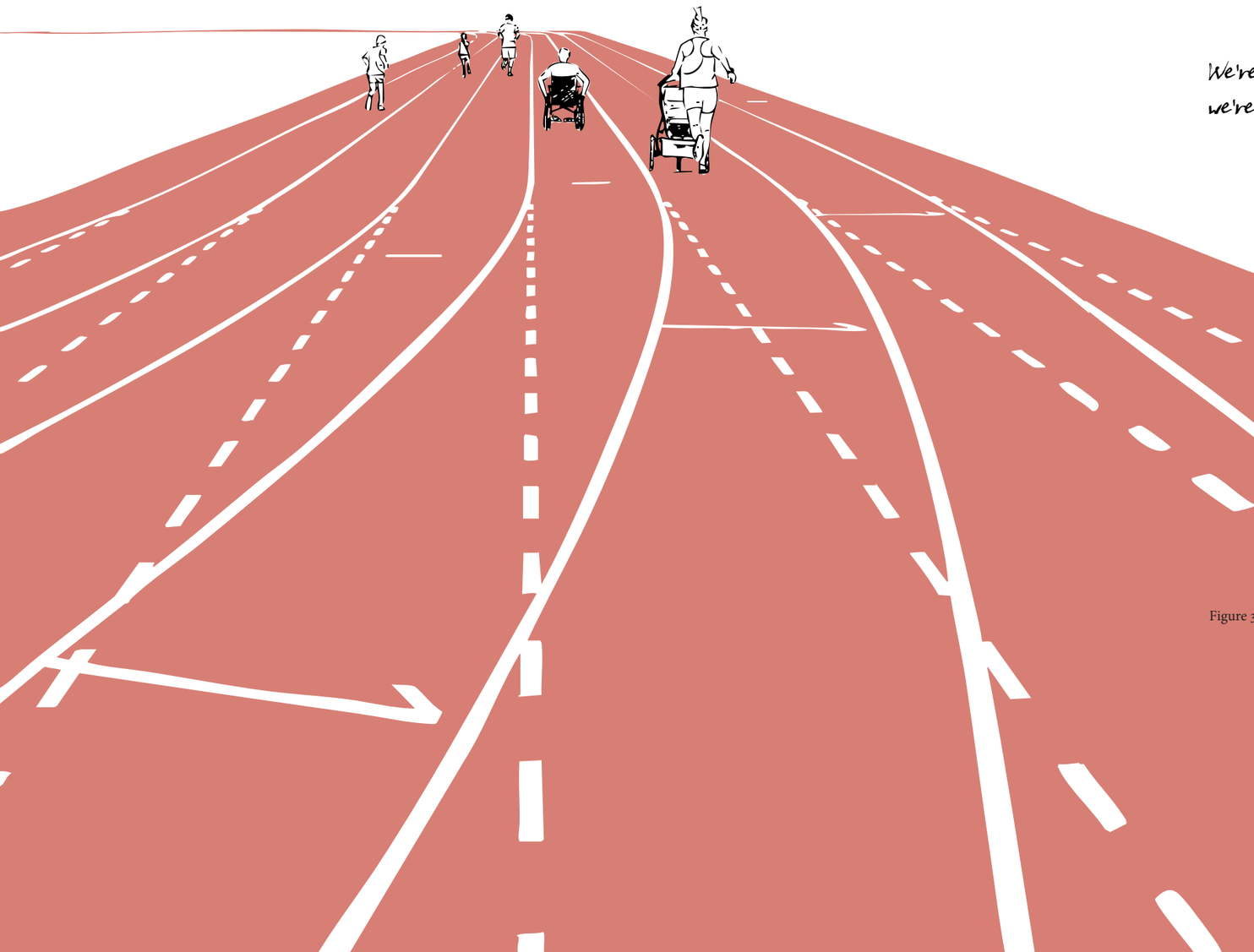


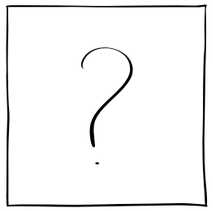
Figure 38 - All You Can Have Fitness - Artwork by Author



We're all in the race of life;
we're just moving at different paces.

Figure 39 - Race of life - Artwork by Author

Figure 40 - Basemap - By Author



Chapter Seven

Not a Blank Canvas

Isolation, time and time again, this word has been bouncing around the space between my ears. In the beginning chapters, I highlighted how many people with disabilities have been persecuted throughout history and treated unequally by their fellow 'normal' man. Men have waged war to eliminate what they perceive to be unfit—a form of isolation through the segregation between the abled and disabled. This discrimination has become more subtle as time has passed. Barriers in the built world make it more difficult for people with impairments to move, isolating them from aspects of our society we all should freely use. Rise of the planet of the cars and love for the steering wheel divides our neighbourhoods like a moat around a castle. As Chapter 5, section 5.3.3 mentioned, the accessible toilet complied with building regulations in isolation. Yet, I could not access this simple room because the building regulations were not enough in context. We do not exist in isolation; we can not teleport from place to place as we wish. If we continue to isolate people with disabilities and design in isolation, we can not move forward towards walkable, inclusive neighbourhoods. As facilitators of the built world, we must think beyond, through the eyes of the unseen. How do people transition from space to space? How do we safely connect all the

good aspects of society through architecture? We exist in three dimensions: living creatures. We must consider all aspects of human movement in design to enable the freedom for individuals to explore, play, and enjoy life.

An artist might walk down to the shop and pick up a blank white canvas; other than the dimensions of the blank and their medium, their creativity has no restrictions—one artist may choose to paint a real-life subject, and another may invent a whole new universe. Architecture would be far easier if you started with a blank canvas, but that is not reality.

Suppose you are lucky, to begin with an undeveloped site in the middle of the sticks. In that case, even then, you will have multiple site considerations to ensure your building integrates with its surroundings. Terrain, sunlight, vegetation, soil and foundation quality, material access—the list could go on and on. Most architectural interventions will occur in the hustle and bustle of the urban landscape. Redeveloping sites or slotting new architecture between existing, whatever the situation, new architecture must integrate rather than isolate from the existing canvas.

To help frame where this design strategy sits within the existing urban fabric, through the process of this thesis, I have come to two realisations.

1. Architecture should serve to the greatest extent possible.

2. New Architecture should connect and support the existing built environment.

Not all architecture will serve in the same way. A power station and a local playground serve different aspects of life. A power station allows us to live with the luxuries of the modern world, while a playground provides the space for youth to play. These are two examples on different ends of the spectrum, but they are equally important. Design considerations will be different depending on the context of the architecture needed. A power station plonked in the centre of a neighbourhood or town will likely not serve people well. Likewise, a playground 5 km from the nearest home does not lend to accessibility. Architecture must serve humans regardless of its context or glamour..

On a broad level, for recreational architecture to serve, it must;

- Account for the variety of human movement
- Be accessible at a human scale - non-reliant on personal vehicle travel

Additionally, new architecture should support existing infrastructure. Consideration needs to be given beyond the property line. How can recreational architecture serve the community beyond its initial health and fitness function instigating more inclusive, human-centred nieghbourhoods?

7.0 Centralised vs Distributed Recreational Architecture

Have you ever noticed that when you buy a new car or wear a new clothing brand, you see it everywhere? All other Toyota Prados stick out like a sore thumb when driving along in my own Prado. I find myself nodding in appreciation for their exquisite taste in automobiles. It is no surprise that since the beginning of this design research, disability, recreation, and architecture have occupied the majority of my brain space. I pay closer attention to how people move through architecture. I notice the person roll past in their fancy wheelchair. I assess the possible design barriers and positive design considerations in every space I interact with. Driving past a park or other recreation facilities, I deliberate how they could be improved. I find myself noticing things that previously would not have caught my attention. A common trend I have discovered with existing recreational architecture, specifically in Auckland, is that they are all centralised to one site, often isolated from the surrounding neighbourhood. Even parks I have observed as more impairment-friendly, with wide footpaths, smooth transitions, separated cycleways, and accessible playground equipment, were poorly integrated with the built environment beyond the site boundary. Although the parks in isolation are *good* and serve the community, they do not serve beyond the initial intended use and do not support the existing built environment.

When considering how to improve the inclusivity and walkability of our neighbourhoods, recreational architecture could be a good place to start. Recreational architecture already focuses on human movement and facilitating exploration and play. The issue is

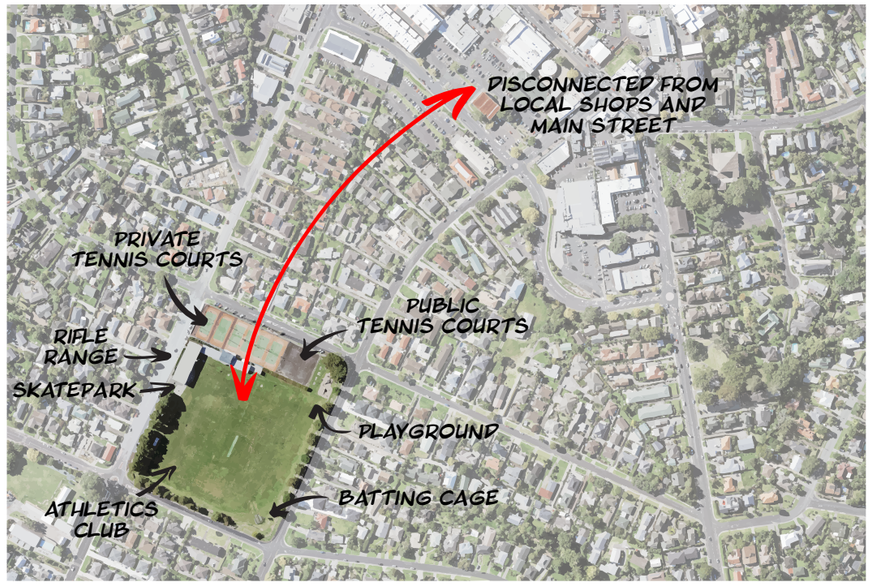


Figure 41 - Aerial view of Howick Dominion, Auckland - Map by Author

that they currently do not serve beyond their initial use because of their centralisation. Distributing recreational architecture through the neighbourhood along a route, like waypoints, and connecting them through human-focused streets could improve the walkability of other aspects of the built environment, such as the doctor's office, local mall, or community library. Ultimately leading to more inclusive neighbourhoods. I proposed that designers could explore active recreation in two main typologies: centralised recreational architecture and distributed recreational architecture.

7.1.0 Centralised Recreational Architecture

Centralised Recreational architecture (CRA) is recreation activity(s) confined to an individual site or area. Figures 41, 42 and 43 are examples of centralised recreational architecture.

In the sense of recreation, a designed CRA can serve the community, but not beyond the initial purpose of the activity. CRA lacks integration with other facets of the neighbourhood.

Figure 42 - Aerial view of Red Beach Park, Auckland - Map by Author

Figure 43 - Aerial view of Lloyd Elsmore Park, Auckland - Map by Author

7.1.1 The Magical Bridge Playground

At the end of 2023, in Hamilton, New Zealand, the local council opened the City's first *fully accessible playoground* (Hamilton City Council, 2023). The playground is situated in the middle of Claudelands Park; refer to Figure 44. The "Magical Bridge Playground" was designed specifically with children's disabilities in mind. The playground incorporates custom playground equipment suited for users with mobility aids (Hamilton City Council, 2023). The playground offers easy circulation with wide, smooth footpaths and relatively flat terrain.

Some observations I made during my visit in early 2024 were;

- No accessible toilets. The Hamilton Council website indicates that fundraising is underway to add accessible toilets and other recreation features. Although there was a temporary female ablution, no facilities were provided for men.

- The playground is built in isolation from its surrounding environment. A boundary fence with a singular swing fence entry separates the Park from the remainder of Claudelands Park and the wider area.

Despite the Park itself providing accessible recreation to people with disabilities, it does not provide additional support to the surrounding area or improve the accessibility of space beyond the fence line. Little thought has been given to how the playground interacts with the adjacent streets, and it is reliant on a car park for easy access. The Magical Bridge Playground is poorly integrated with other parts of Claudelands Park, such as the event centre, oval, sports field, and farmers market.

7.1.2 Aut Millennium Training Centre

In April 2002, the AUT Millennium Institute of Sport & Health opened in Rosedale, Auckland. A mecca of athletics and sports, the AUT Millenium offers various recreational facilities, including Olympic swimming pools, an indoor training sports hall, a track and field stadium, a gymnasium, accommodation and conference facilities, refer to Figure 45 (AUT Millennium, 2024). Although the AUT Millenium was not designed specifically for people with disabilities, it integrates universal and accessible design principles, providing facilities that people with or without disabilities can enjoy. Unlike the Magical Bridge Playground (MBP), the AUT Millenium complex integrates various buildings, connecting multiple recreational activities. Similarly to the MBP, the AUT Millenium is still centralised to one area and does not integrate with surrounding aspects of the neighbourhood.

In isolation, the Magical Bridge Playground and the AUT Millenium provide excellent examples of recreation architecture. However, they lack integration with the rest of the surrounding neighbourhood. Hearkening back to the realisation that *architecture should serve to the greatest extent possible*, these two examples certainly serve people in isolation.

Figure 44 - Aerial view of Claudlands Park, Hamilton - Map by Author

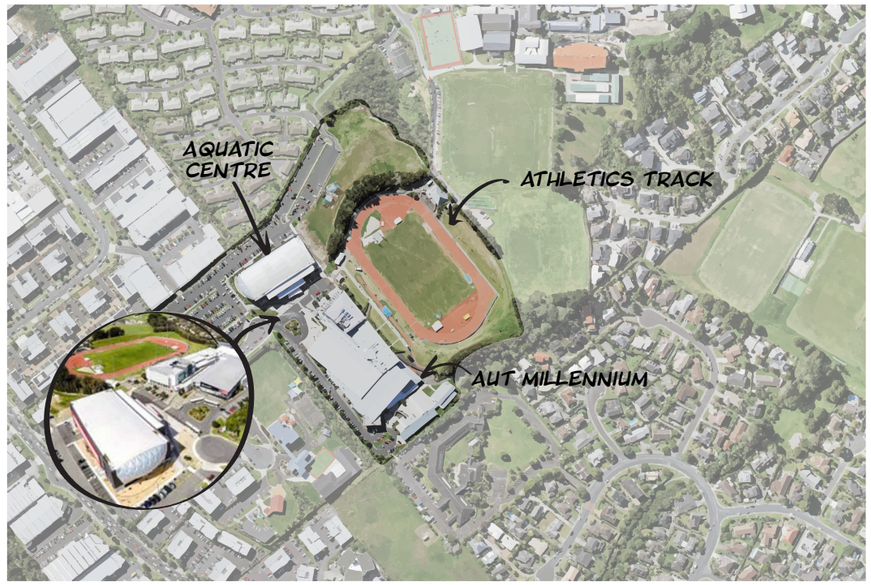


Figure 45 - Aerial view of AUT Millennium, Hamilton - Map by Author

However, they do not support existing architecture and thus do not serve to the greatest extent possible.

7.2 Distributed Recreational Architecture (DRA)

As the name implies, a distributed approach to active recreation involves spreading facilities and open areas throughout a neighbourhood, connecting them through a pedestrian-focused accessible route. This approach to recreation would allow for improved integration with other aspects of a neighbourhood, such as existing recreation areas, community buildings, libraries, health centres, and retail/commercial buildings.

Whilst the pattern that emerged in my observations of existing recreation facilities was that they were centralised, there were outliers to the typical trend. Most notably, Orewa Beach, one of Auckland's most northern suburbs, provides an example of what distributed recreational architecture might be.

Orewa is situated along the Hauraki Gulf, which is perhaps Auckland's greatest recreational facility. As such, the township is spread out along the coast, with the main strip of Orewa less than a hundred metres back from the high tide line. Along Orewa Beach are a series of recreation facilities (refer to Figure 46), including playgrounds, camping grounds, a surf club, basketball and volleyball court, plenty of open fields, and the wild blue that brings in the occasional wave. These facilities are all joined together by a wide footpath that follows the beachfront. At one end of the footpath is 7.6km estuary loop walk, cafe, and art gallery, the other end leads to the main shops towards the northern end of Orewa. Along the footpath, pedestrian-priority crossings connect the seaside path to residents and shops. Whether intentional or not, Orewa has a strong focus on recreational activity. Orewa's recreational activities are connected throughout the township rather than isolated. Naturally, this promotes a walkable lifestyle, and you'll be hard-pressed to find days when people are not enjoying what the neighbourhood offers.

Paired with the conventions of universal design and accessibility, DRA could improve the accessibility of the neighbourhood as a whole for people with disabilities. Because DRA is not confined to one site, it can serve the community beyond the initial purpose of health and fitness, like connective tissue, linking all vital components of a community.

This design strategy is not about redeveloping the entirety of a neighbourhood but instead focuses on specific points in a neighbourhood to implement change. The motivation is that positive change might be catalysed through recreational activity, leading to more inclusive, walkable communities.

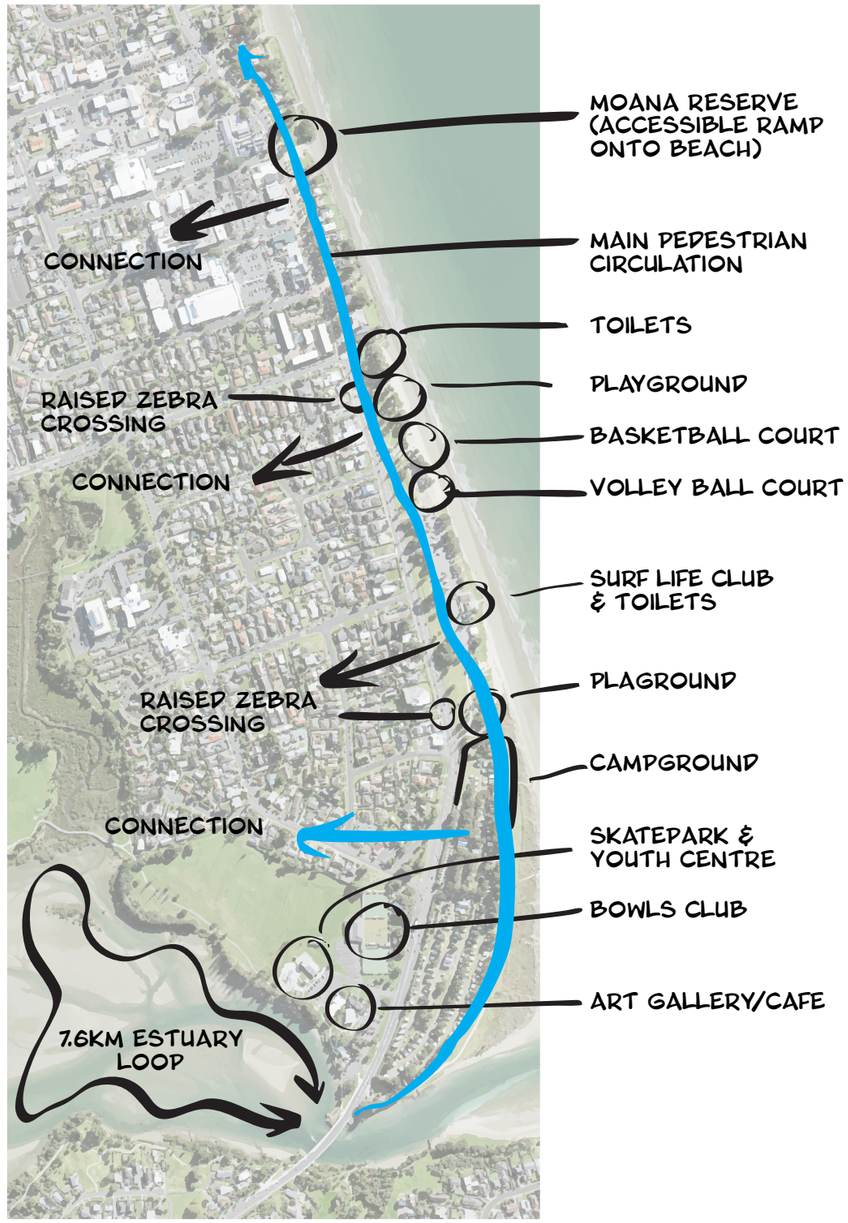


Figure 46 - Orewa Beach points of active recreation - Map by Author

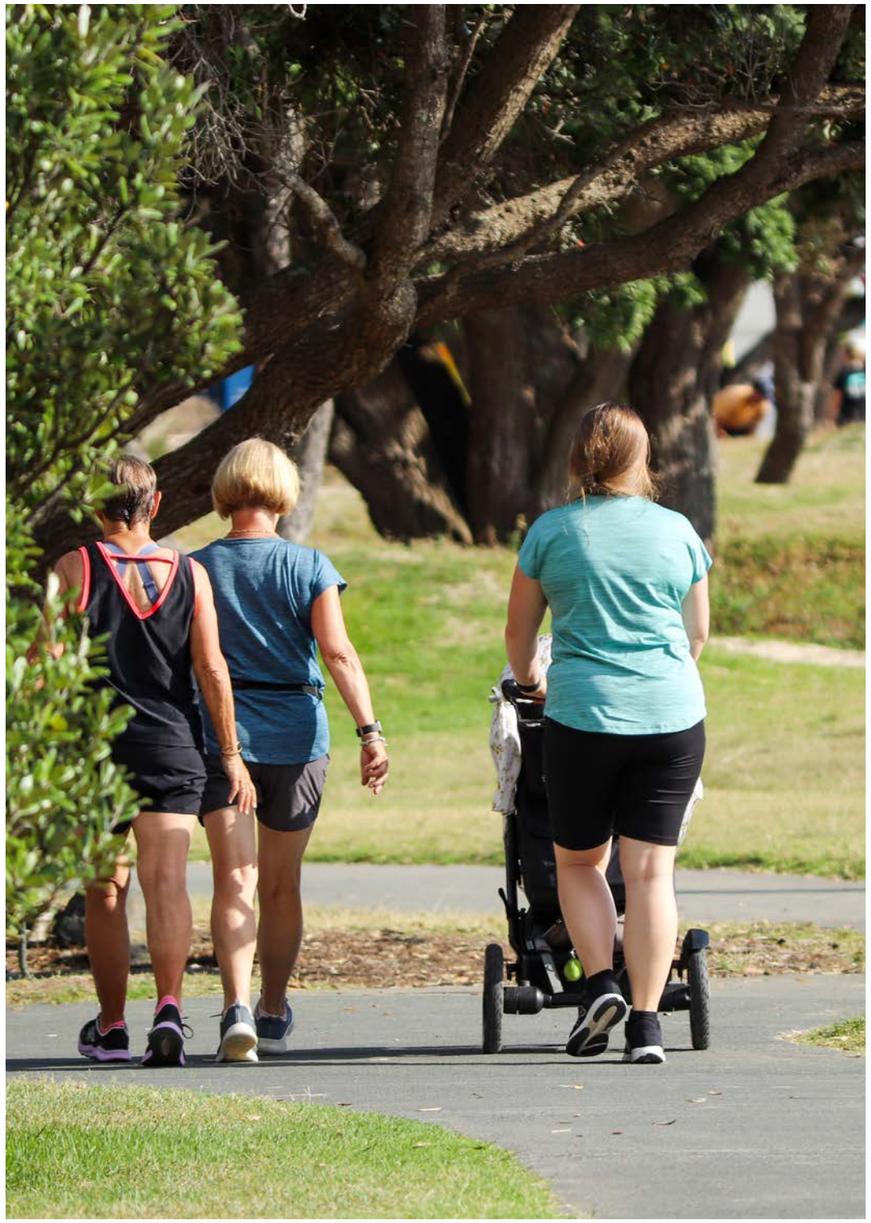


Figure 47 - Catching up, Orewa Beach - Photograph by Author

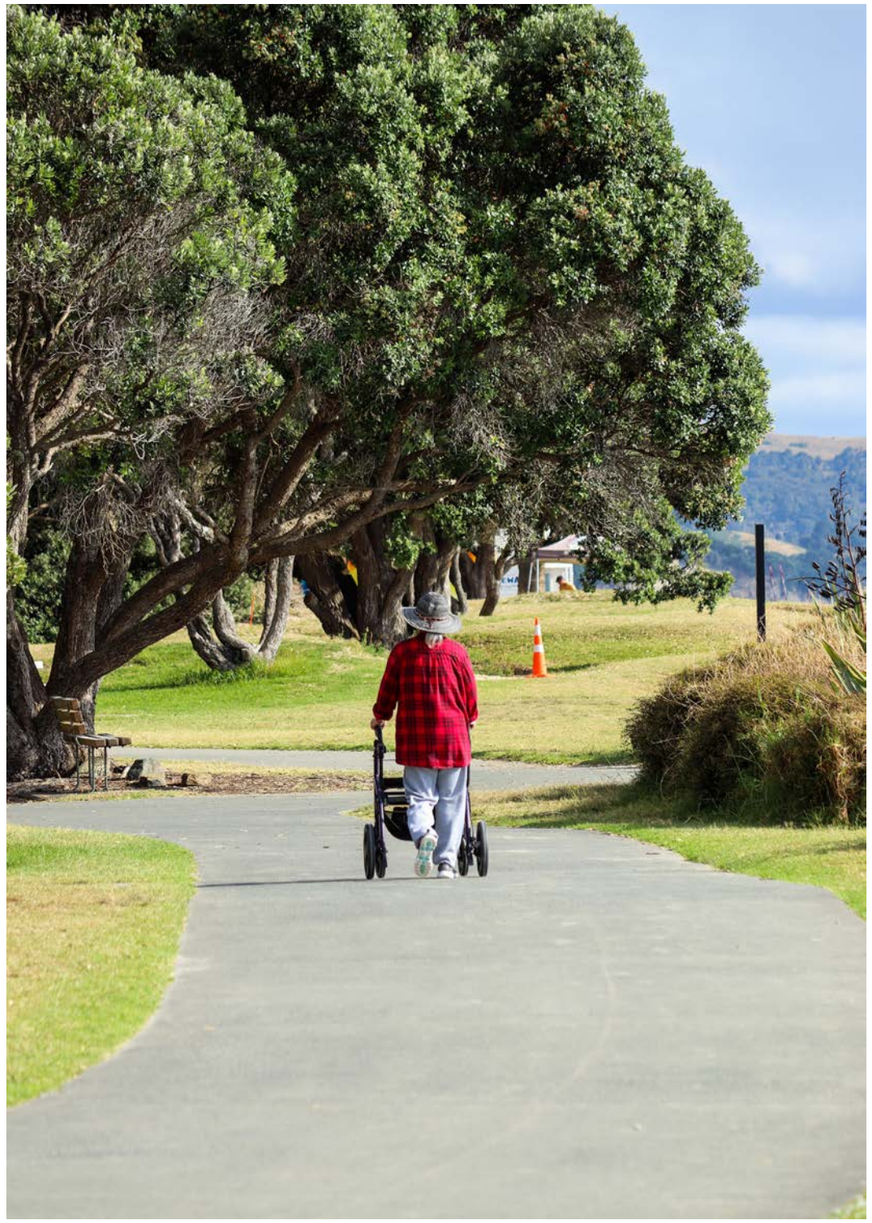


Figure 48 - Stay active stay healthy, Orewa Beach - Photograph by Author

Figure 49 - The sandy lifestyle doesn't come with out it's downsides, Orewa Beach - Photograph by Author

Figure 50 - Connection, support. Orewa Beach - Photograph by Author

Figure 51 - 1 v 1, Orewa Beach - Photograph by Author

Figure 52 - Bonding, Orewa Beach - Photograph by Author

Figure 53 - Natures Recreational Architecture, Orewa Beach - Photograph by Author

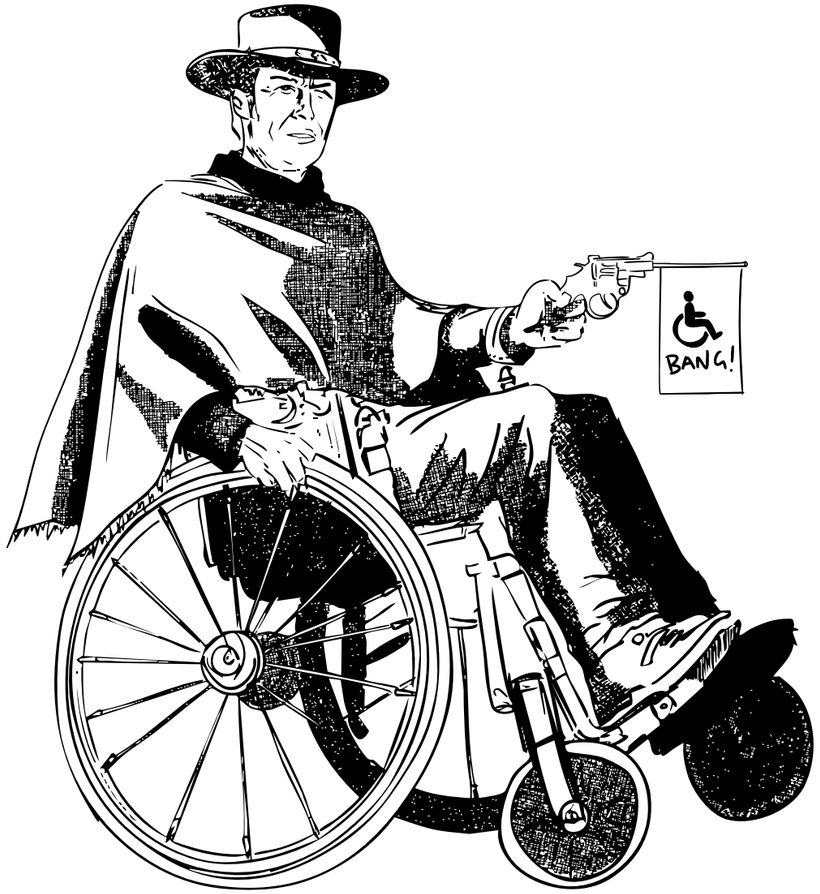


Figure 54 - The Good, the Bad, and the Ugly - Artwork by Author

Chapter Eight

The Good, the Bad, and the Ugly

Where to begin? If the goal is to utilise recreational architecture as a tool for better connecting neighbourhoods, the first step would be identifying the sites to connect. Secondly, determine how these areas are poorly linked. Third, identify where specific recreation interventions could fill in the blanks.

Whether my deep longing to be a cowboy or my love for Western movies, this makes me think of the Good, the Bad, and the Ugly.

8.1 The Good

Identify the existing good/essential parts of the neighbourhood.
These could be;

Recreation facilities (e.g. Public gyms, yoga studios)

Parks

Community Buildings (e.g. libraries, community centre, event centre)

Transport Hubs

Retail Malls

Health centres (eg. doctors office, family services, dentist)

Religious Buildings (e.g. churches)

Non-profit Organisations

8.2 The Bad

Identifying why these areas/places are inaccessible.
For Example;

Busy Streets

Poor Footpaths

Steep terrain

Lack of bicycle lanes

Lack of amenities (accessible toilets)

8.3 The Ugly

Identifying specific sites to implement recreation activity.
These may include;

Properties for sale

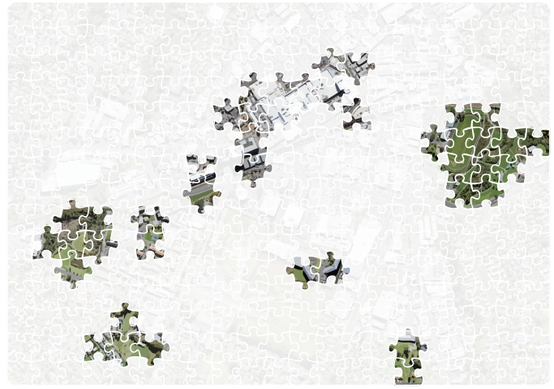
Buildings at the end of their lifespan

Redevelopment of roads and footpaths

Like pieces to a puzzle, piece by piece, moving towards a more united, barrier-free environment.

Phase One

Start with the Positive. Identify the good parts of a neighbourhood that promote community, vibrance, and movement.



Phase Two

Identify the gaps disconnecting the good. Where can interventions have the most significant impact on catalysing positive change?

Phase Three

Over time, the neighbourhood will become more connected. Piece by piece, a clearer picture.

Figure 55 - Piece by Piece - Artwork by Author

Figure 56 - New Lynn Train Station East Entry, Puriri Street - Photograph by Author

Chapter Nine

New Lynn, a Canvas in Need of Repair

If you hop on a train in the centre of Auckland city at The Britomart station and head west, in approximately 38 minutes, you will find yourself in the heart of New Lynn Township. New Lynn is one of Auckland's oldest suburbs. Before European settlers landed on the shores of Aotearoa, the land now known as New Lynn was occupied by Maori Iwi Te Kawerau a Maki and Ngati Whatua o Orakei. Over a thousand years later, the Crown purchased the land. The township, now known as New Lynn, was named after his home in England by surveyor Frederick James Utting in 1865. As the years passed, New Lynn developed through the trade of clay and the rail system. By the 1930s, local schools and the township were well established. Clay product production continued into the late 1980s until the famous Crown Lynn factory was closed (New Lynn Business Association & Truttman, n.d.). New Lynn is now the home of more than 20,000 residents and has become a key waypoint between Central and West Auckland.

AUCKLAND CITY

NORTH SHORE

HAURAKI GULF

CENTRAL AUCKLAND

WAITAKERE CITY

NEW LYNN

MANAKAU HARBOUR

MANAKAU CITY

Auckland Airport

1
1 NEW LYNN - LOCALITY PLAN - EXISTING

0KM 2KM 4KM

9.1.0 Why New Lynn

The selection process for choosing New Lynn as a neighbourhood to explore design interventions was as follows.

9.1.1 Public Transport Infrastructure.

Public transport has increased the connectivity of neighbourhoods and is, as such, an integral part of a well-developed, accessible city. Beyond the environmental benefits of an efficient public transport network, it also improves the accessibility of neighbourhoods for people who cannot drive for various reasons, such as disability, age, and economics.

The public transport system in Auckland, New Zealand, has been making great strides towards faster, more efficient routes. However, the Auckland Public Transport system has been playing catch-up to the rapidly expanding population. As a result, many public transport stations, especially the train network, are not accessible and friendly to people with disabilities. In section 4.3.6, Side Quest, I highlighted the difficulty of exiting the Remuera train Station via Wheelchair.

The New Lynn Transport Interchange (NLTI) opened in 2010, one of New Zealand's most extensive public infrastructure investments (Auckland Council, n.d.). Built in the heart of New Lynn within 100m of Lynn Mall, New Lynn Library and New Lynn Community Centre, the NLTI is an integral part of the neighbourhood. The Train Station incorporates

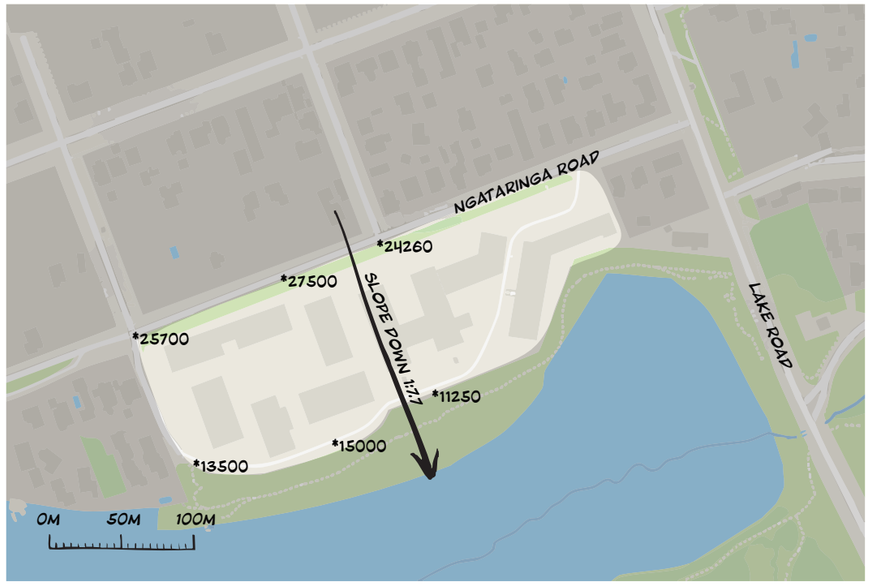


Figure 57 - Aerial view of William Sanders Retirement Village - Map by Author

large open platforms with lifts for people with mobility aids, mobility restrictions and parents with prams. The NLTI is also one of 4 primary transport hubs along the western line. Alongside the train network, NLTI offers various bus options to connect with greater Auckland.

9.1.2 Topography

Topography refers to "the physical appearance of the natural features of an area of land, especially the shape of its surface" (Cambridge Dictionary, 2024). Auckland is positioned among 53 volcanic centres (Geo Net, n.d.), the Waitakere Ranges, Hunua Ranges and Bombay Hills, so it is no surprise that much of the City has an undulating hilly landscape. As I learnt in my time in a wheelchair, hills are not easy to navigate when your mobility is restricted. Just as you need the right tool for the job, you need the right site for the right building. Whilst it would be impossible only to develop flat land areas in a city like Auckland, thought should be given to the use of land and the accessibility it may provide or restrict due to its topography.

In 2019, Ryman Health Care opened the William Sanders retirement village in North Shore, Devenport. The village has fantastic views of the Hauraki Gulf and harbour bridge and is less than 2km from Devenport Town Centre. However, the development sits on an extremely steep site, with one border of the site along an estuary. The rectangular site falls nearly 13m over less than 100m, refer to Figure 57, a fall of 1:7.7 or 7.4 degrees. As per the building code, an accessible ramp must not exceed a slope of 1:12 or a length of 12m without a level rest stop. The fall across this site is substantially greater than the NZS 4121 compliant ramp, which is not particularly easy to use. There are obvious benefits to a site situated so close to one of Auckland's most desirable suburbs; however, it is questionable whether a retirement village is suitable for such a steep site. The steepness does not promote accessibility and walkability, especially considering the age bracket of most residents.

9.1.3 In Need of Revitalisation

New Lynn has become overrun with vehicles and the automotive industry. It seems that every aspiring mechanic has decided to open up shop there. Mapping the building typologies in New Lynn, within approximately 750m of the New Lynn Transport interchange, approximately 23% of all non-residential buildings are related to the Automotive industry. This includes repair shops, car retailers, and fuel stations. More Automotive-related shops are located within the area mapped than any other building typology, excluding residential. Commercial and industrial buildings follow this. Although there are many good aspects of New Lynn, the space between them is dedicated to the vehicle, like one big parking lot.

> *Don't it always seem to go that you don't know what you got 'til it's gone?*
>
> *Joni Mitchell (Joni et al., 1970)*

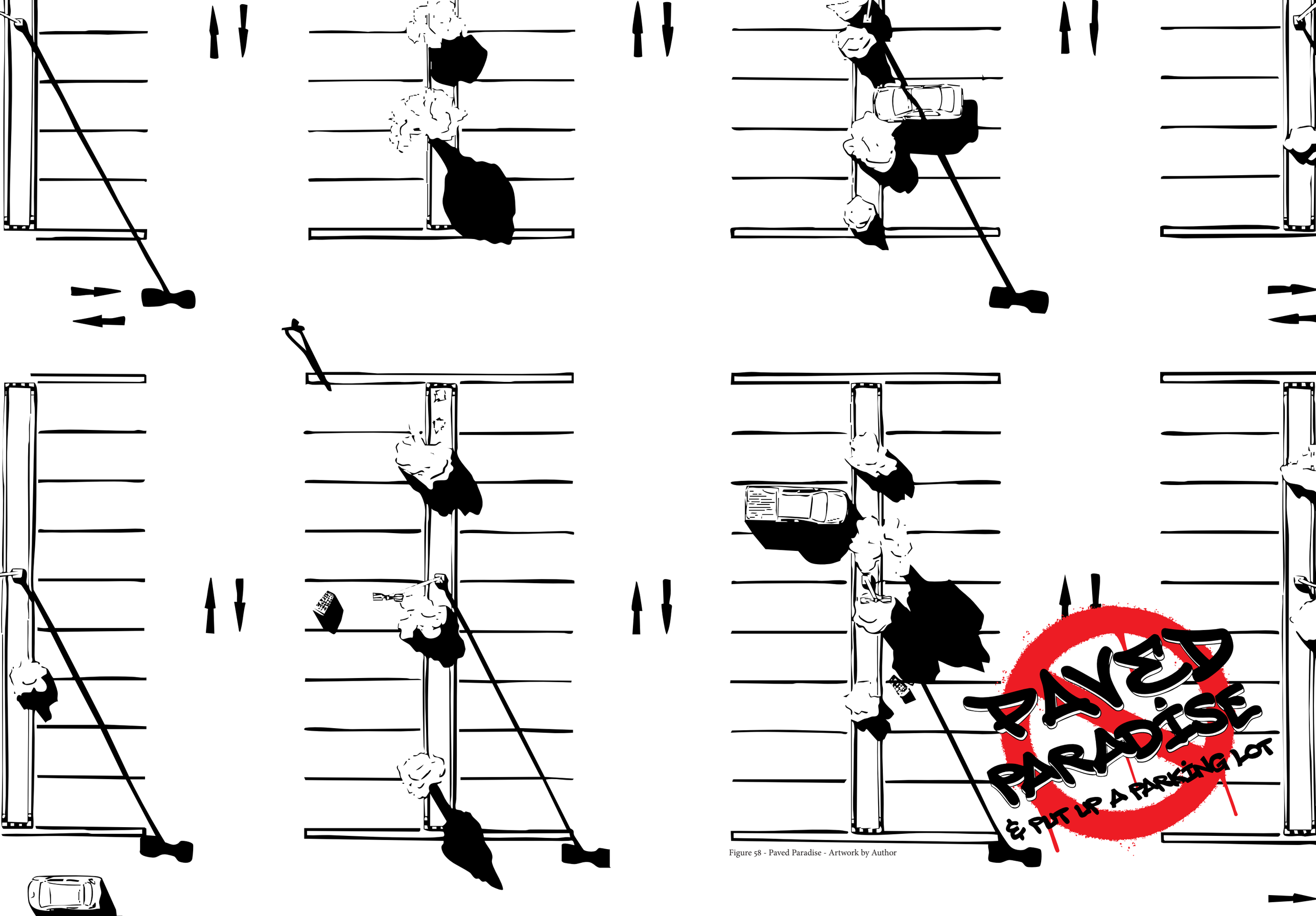


Figure 58 - Paved Paradise - Artwork by Author

9.2New Lynn: Building Typologies

Building typologies give a snapshot of the characteristics of a building. The building typologies within approximately 750m of New Lynn Interchange have been mapped through Google Maps and transect walks. Through BIM Modelling, buildings can be grouped into types to visualise distribution and observe overlaps and oversaturation within the existing landscape of New Lynn. This form of mapping helps identify the existing “good” parts of Lynn, such as social infrastructure, retail malls, and recreation centres. Additionally, the mapping has been used to help identify where recreation interventions can make the best impact, for example, where automotive, manufacturing, and trade buildings are oversaturated.

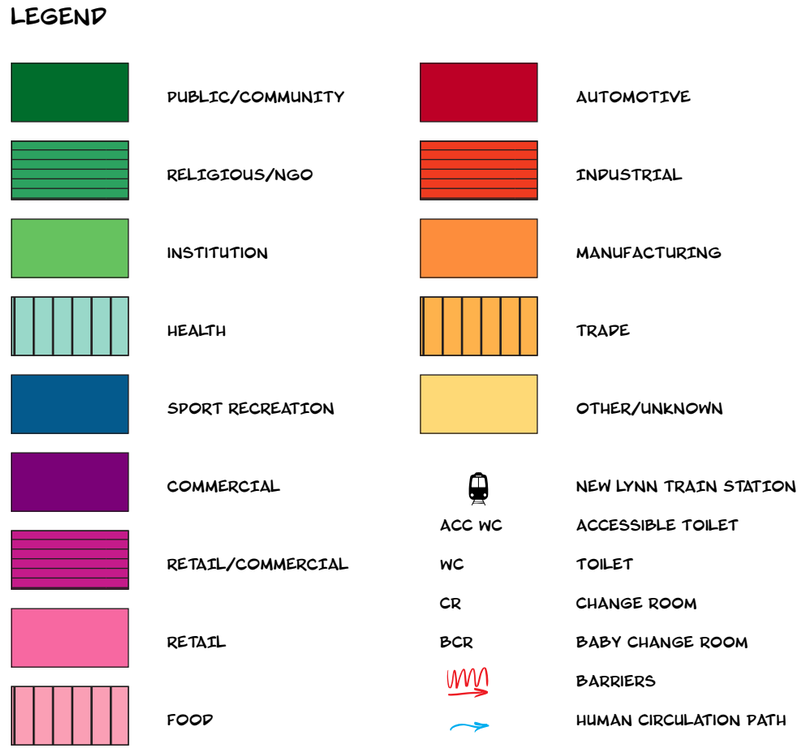


Figure 59 - Legend for Builing typologies - By Author

NIKAU STREET
RIMU STREET
RATA STREET
PINE STREET
REID ROAD
DELTA AVENUE
HUGH BROWN DRIVE
GREAT NORTH ROAD
VERONICA STREET
MEMORIAL DRIVE
MCCRAE WAY
TOTARA AVENUE
PURIRI STREET
HETANA STREET
WARD STREET
PORTAGE ROAD
CLARK STREET
CROWN LYNN PLACE
WOLVERTON STREET
CROWTHER STREET
ULSTER ROAD
BUSBY STREET
AMBRICO PLACE
RANKIN AVENUE
MARGAN AVENUE
ATLEY AVENUE

1 NEW LYNN - BUILDING TYPOLOGIES - EXISTING
1 SCALE 1:2000 @ A1 | 1:4000 @ A3

9.3New Lynn: The Good

From Olympic Park to Manawa Reserve, Lynn Mall, community library, martial arts studios and more, New Lynn is filled with pockets of vibrant areas that humans can enjoy. A series of transect walks over the past year have allowed me, the designer, to develop an intimate relationship with the current landscape of New Lynn. To make more informed design decisions, intimate knowledge of the area where you wish to explore design is vital. Photography has been used to document the Good, the Bad, and the Ugly parts of New Lynn.

Figure 60 - Running Errands, Lynn Mall - Photograph by Author

MANAWA
WETLAND RESERVE

GARDNER
RESERVE

TRAIN STATION

OLYMPIC PARK

AMBRICO
RESERVE/PLAYGROUND

NEW LYNN
KINDERGARTEN

BOB HILL
RESERVE

1
1
MASTER PLAN - EXISTING HABITAT - EXISTING

SCALE 1:2000 @ A1 | 1:4000 @ A3

OLIVER MMA
BOWLING CLUB
CHURCH
NZ SKILLS AND EDUCATION COLLEGE
EXCEL SCHOOL OF PERFORMING ARTS
CHURCH
GKR KARATE
GYM
SALVATION ARMY
MINISTRY OF SOCIAL DEVELOPMENT
CHURCH
FRIENDSHIP CLUB
LITERACY WAITAKERE
ADULT EDUCATION CENTRE
RSA
WAITAKERE BRASS BAND
CHURCH
LIBRARY
BAY OLYMPIC
CHURCH
CHURCH
FAMILY HEALTH CENTRE
FAMILY SERVICES
EDUCATUM
GYM
BADMINGTON CLUB
WAITAKERE GYMNASTICS
GYM
GYM
WAITAKERE GYMNASTICS
COMMUNITY CENTRE
JEWELLERS COLLECTIVE
ECO MATTERS
GYM
CROWN LYNN MUSEUM
KINDERGARTEN
SYNERGY SPORTS
CHURCH
CHURCH
NEW LYNN SCHOOL
MOSQUE
AUCKLAND ACADEMY OF DANCE
SPORT THERAPEUTIC MASSAGE
NEW LYNN SEA SCOUTS
CHURCH
NATUROPATH
CHURCH
CHURCH
EARLY LEARNING CENTRE

1
1
NEW LYNN - THE GOOD - EXISTING
SCALE 1:2000 @ A1 | 1:4000 @ A3

Figure 61 - Map of Olympic Park, Olympic Park - Photograph by Author

Figure 62 - Nice place for a rest, Olympic Park - Photograph by Author

Figure 63 - Lights. Camera. Action. Olympic Park. From Olympic Park by Auckland Council, n.d (https://www.auckland-council.govt.nz/parks-recreation/Pages/park-details.aspx?Location=681).

Figure 64 - Avondale Stream, Olympic Park - Photograph by Author

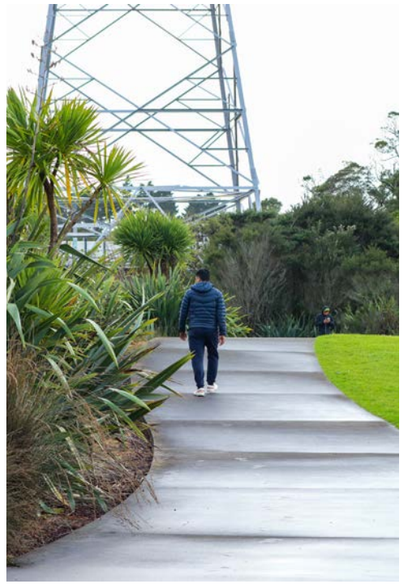


Figure 65 - Olympic Park - Photograph by Author

Figure 66 - Smoko, Olympic Park - Photograph by Author

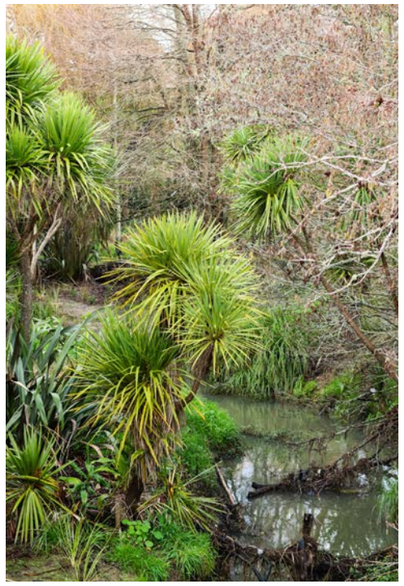


Figure 67 - Avondale Stream - Photograph by Author

Figure 68 - Man Best Friend, Olympic Park - Photograph by Author

Figure 69 - Walking Buddy, Olympic Park - Photograph by Author

Figure 70 - Winding track, Olympic Park - Photograph by Author

Figure 71 - Bird on a Perch, Olympic Park - Photograph by Author

Figure 72 - Eels by Whare Thompson, Olympic Park - Photograph by Author

Figure 73 - Pou Sculpture by John Collins and Sunna Thompson, Olympic Park - Photograph by Author

Figure 74 - Afternoon Stroll, Olympic Park - Photograph by Author

Figure 75 - Olympic Park - Photograph by Author

Figure 76 - Olympic Park - Photograph by Author

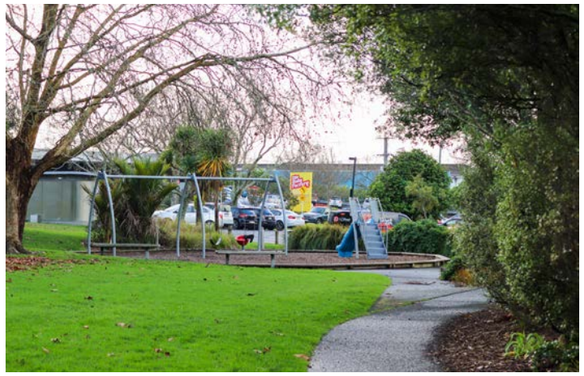


Figure 77 - Olympic Park - Photograph by Author

Figure 78 - Olympic Park - Photograph by Author

Figure 79 - Round and Round, Olympic Park Veledrome - Photograph by Author

Figure 80 - Olympic Park Veledrome - Photograph by Author

Figure 81 - Olympic Park - Photograph by Author

Figure 82 - Bush Chicken, Olympic Park - Photograph by Author

Figure 83 - Eco Matters Store, Olympic Park - Photograph by Author

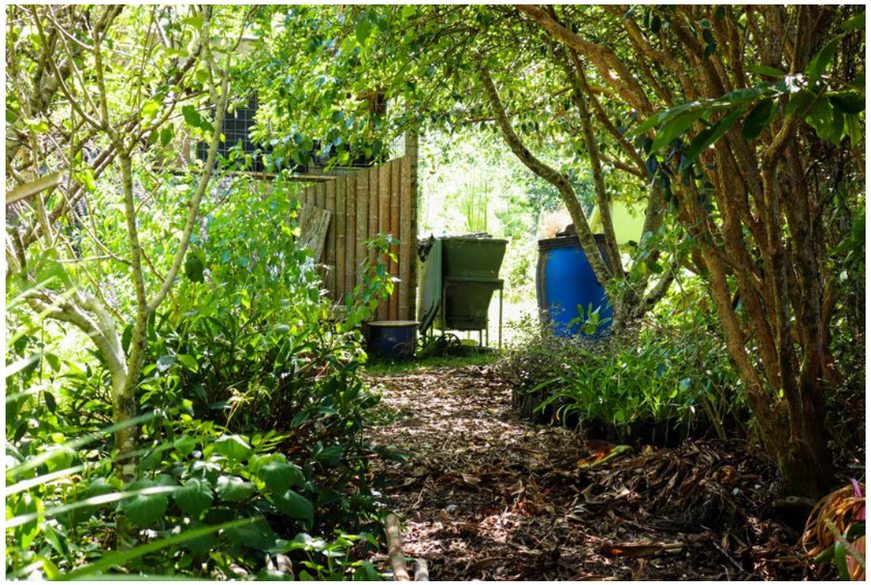


Figure 84 - Eco Matters Compost Hub, Olympic Park - Photograph by Author

Figure 85 - Community Composting, Olympic Park - Photograph by Author

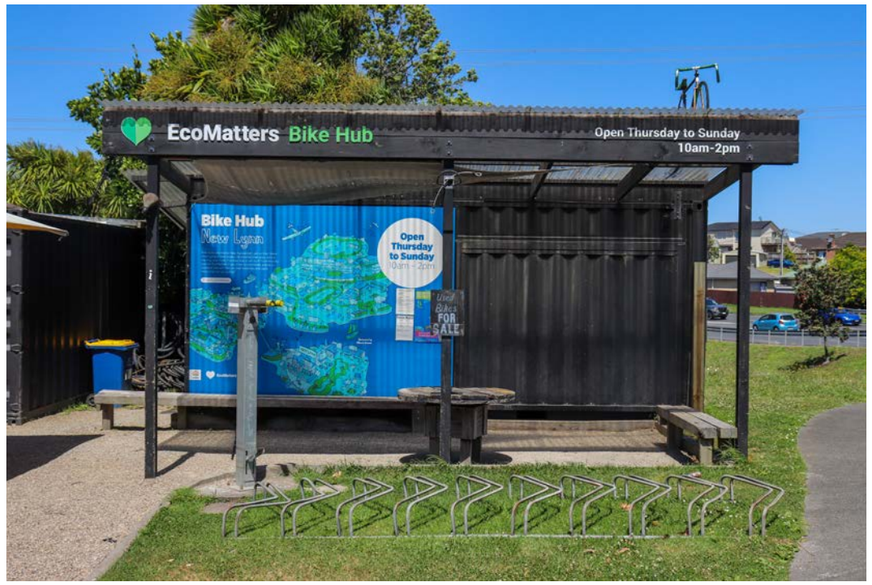


Figure 86 - Eco Matters Bike Hub, Olympic Park - Photograph by Author

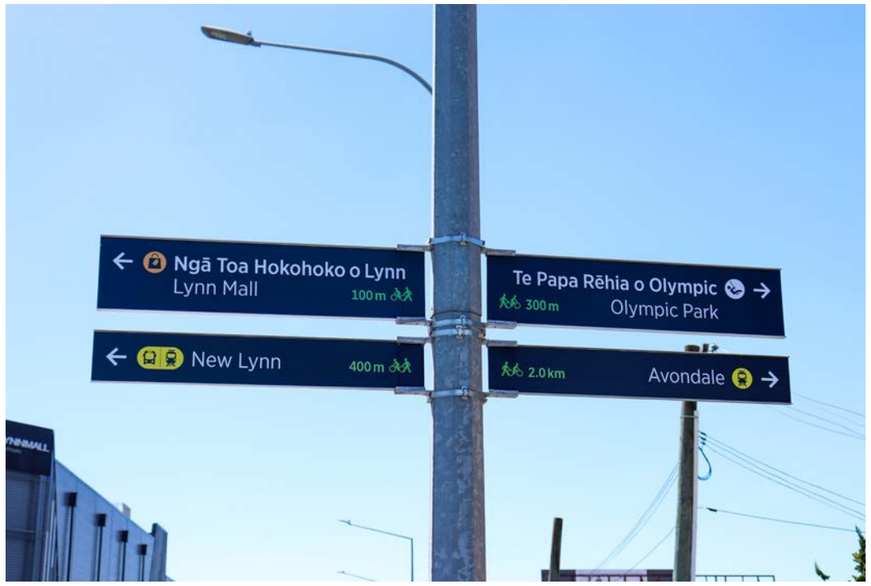


Figure 87 - New Lynn to Avondale Shared Path, Veronica Street - Photograph by Author

Figure 88 - New Lynn to Avondale Shared Path, Veronica Street - Photograph by Author

Figure 89 - New Lynn to Avondale Shared Path, Hetana Street - Photograph by Author

Figure 90 - New Lynn Memorial RSA, Veronica Street- Photograph by Author

Figure 91 - Family Services, Puriri Street - Photograph by Author

Figure 92 - Shotokan Karate-Do, Puriri Street - Photograph by Author

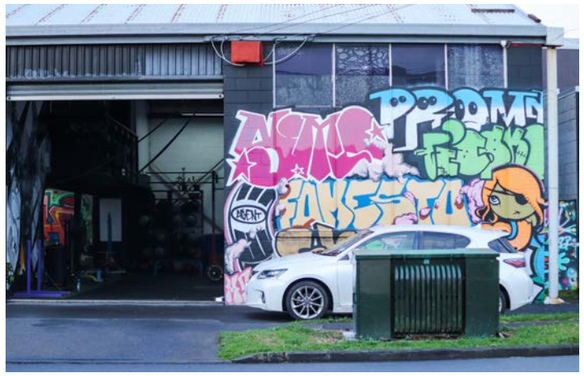


Figure 93 - Antics Health & Fitness, Ward Street - Photograph by Author

Figure 94 - Jewellers Collective, Ward Street - Photograph by Author

Figure 95 - Lynn Mall, Memorial Square - Photograph by Author

Figure 96 - The Performer, Memorial Square - Photograph by Author

Figure 97 - To do list, Memorial Square - Photograph by Author

Figure 98 - 5 letter word for... Memorial Square - Photograph by Author

Figure 99 - Lest We Forget, Memorial Square. From *New Lynn Memorial Square, 2014* by B. Ringer, 2014, Auckland Council Libraries (https://kura.aucklandlibraries.govt.nz/digital/collection/photos/id/129044). CC BY 4.0

Figure 100 - New Lynn Transport Interchange, Totara Avenue - Photograph by Author

Figure 101 - New Lynn Train Station East Entry, Cnr Hetana Street and Totara Avenue - Photograph by Author

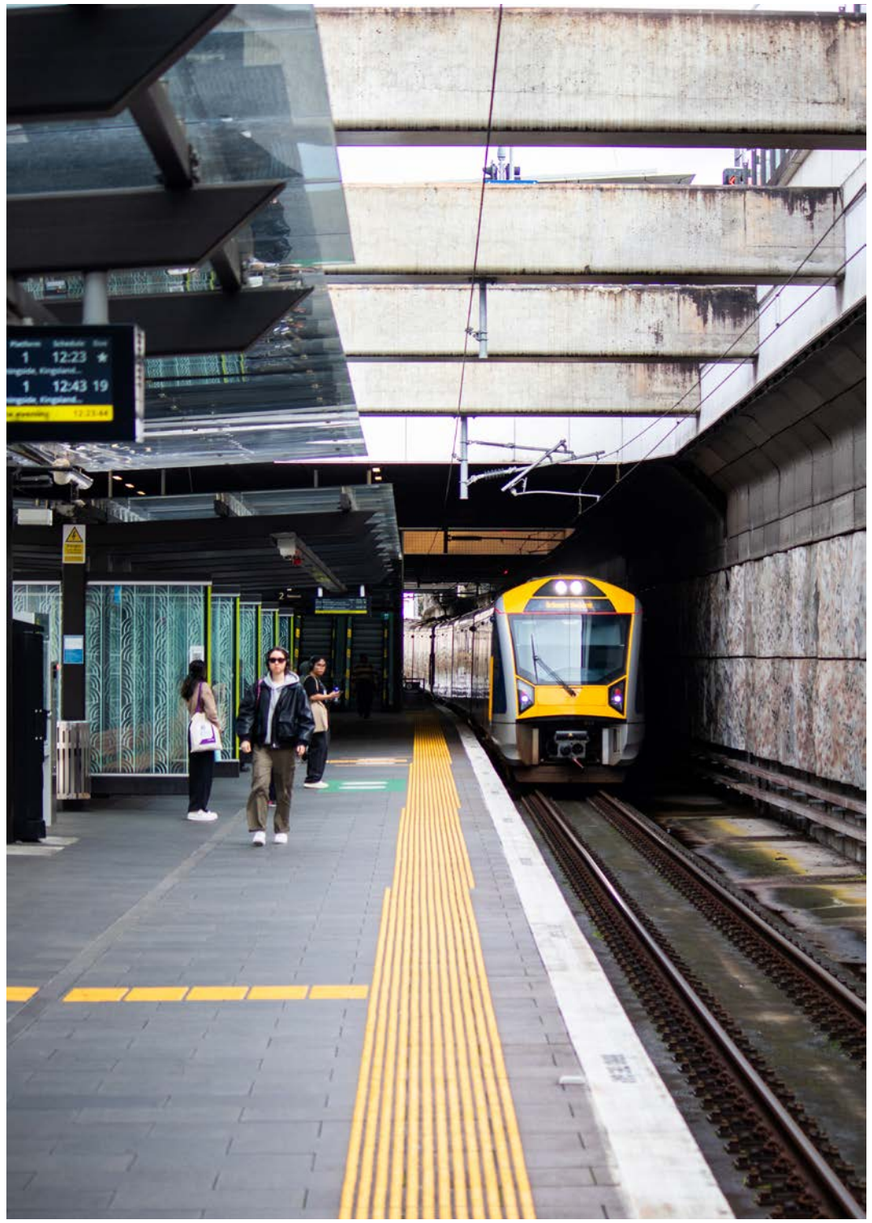


Figure 102 - Eastbound, New Lynn Train Platform - Photograph by Author

Figure 103 - Kicking back with the Mates, Gardener Reserve - Photograph by Author

Figure 104 - Gardener Reserve - Photograph by Author

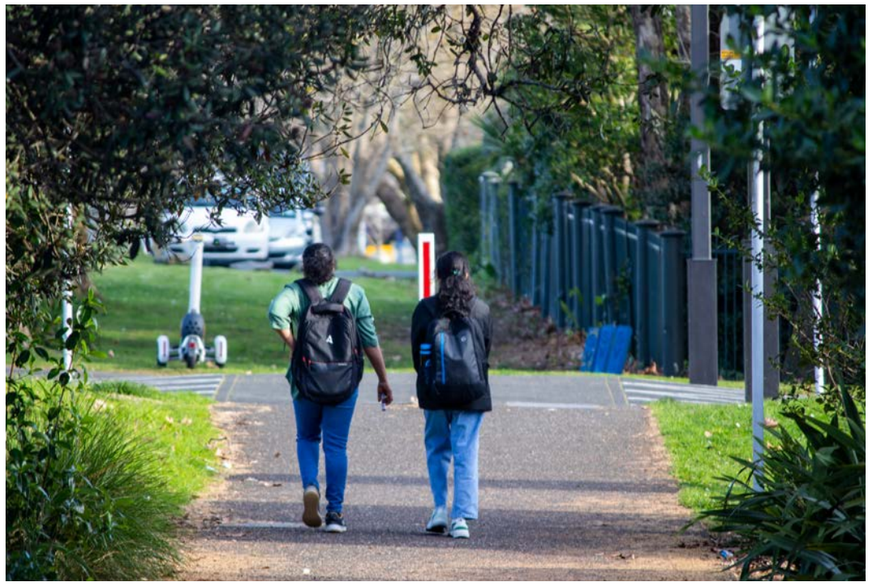


Figure 105 - Side by Side, Rankin Avenue - Photograph by Author

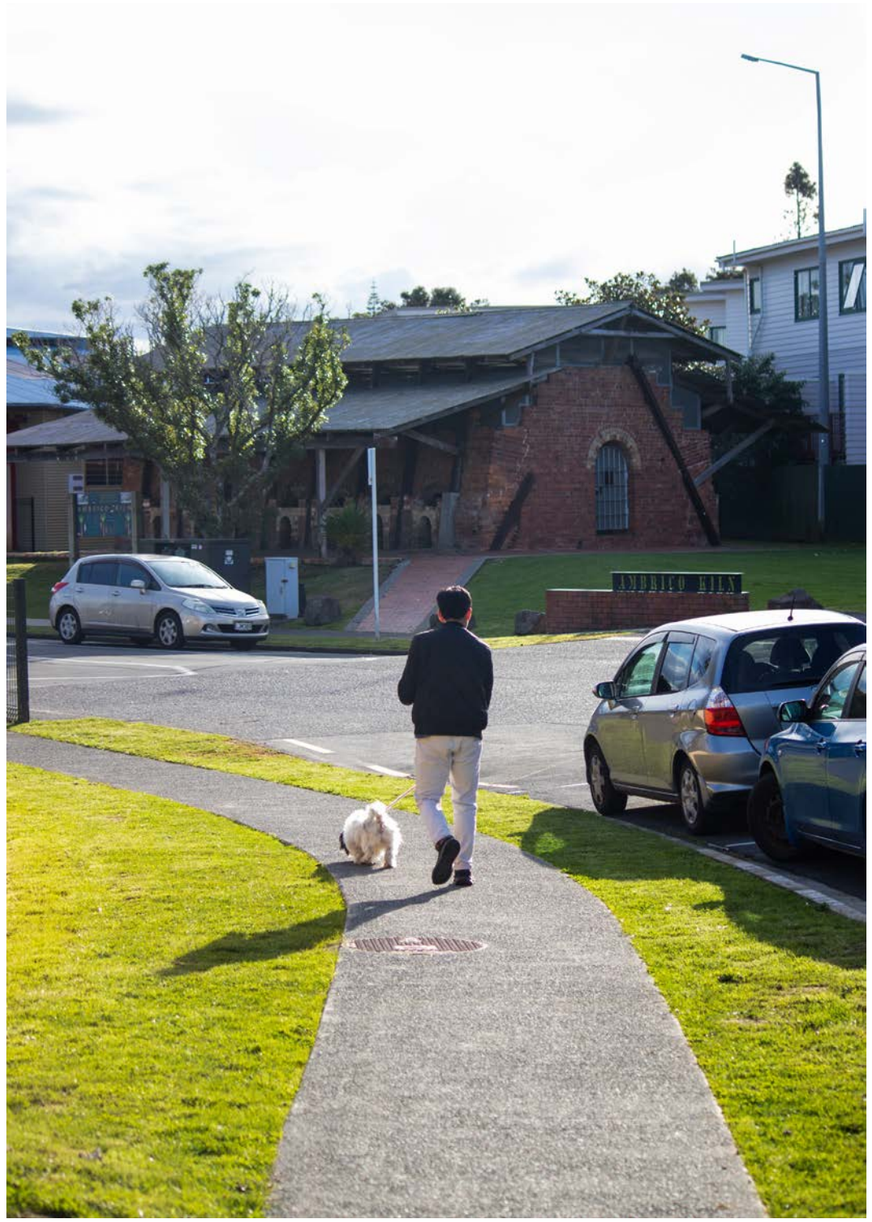


Figure 106 - Ambrico Kiln, Ambrico Place - Photograph by Author

Figure 107 - Ambrico Kiln, Ambrico Place - Photograph by Author

Figure 108 - Ambrico Kiln, Ambrico Place - Photograph by Author

Figure 109 - Ambrico Reserve Playground, Ambrico Place - Photograph by Author

Figure 110 - Manawa Wetland Reserve - Photograph by Author

Figure 111 - Feeding Frenzy, Manawa Wetland Reserve - Photograph by Author

9.4New Lynn: The Bad

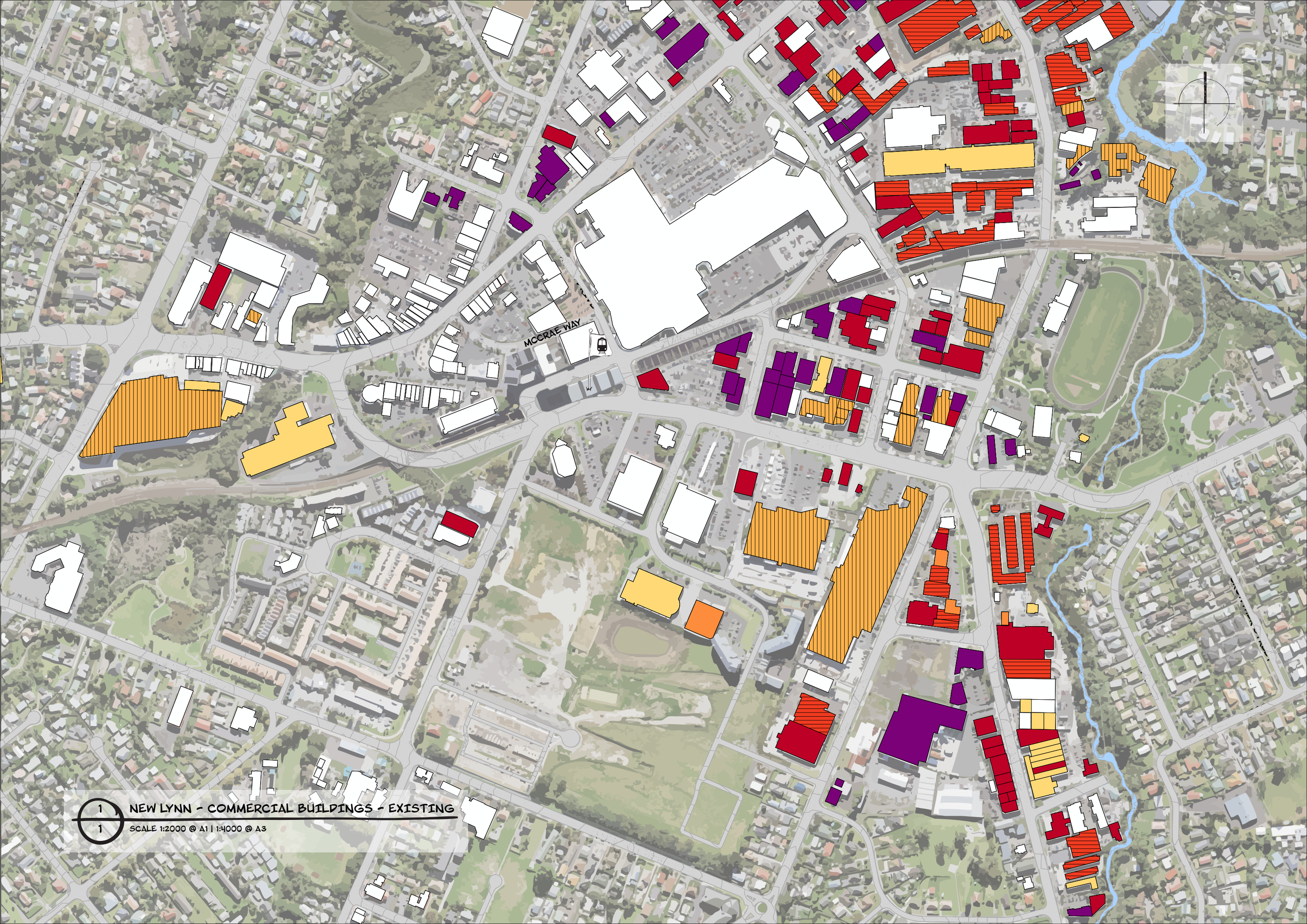
What takes away from the Good?

Figure 112 - Car beats wheelchair, Memorial Square - Photograph by Author

NIKAU STREET
RIMU STREET
RATA STREET
PINE STREET
REID ROAD
DELTA AVENUE
HUGH BROWN DRIVE
GREAT NORTH ROAD
VERONICA STREET
MEMORIAL DRIVE
MCCRAE WAY
TOTARA AVENUE
PURIRI STREET
HETANA STREET
WARD STREET
PORTAGE ROAD
CLARK STREET
CROWN LYNN PLACE
WOLVERTON STREET
AMBRICO PLACE
RANKIN AVENUE
ATLEY AVENUE
CROWTHER STREET
ULSTER ROAD
BUSBY STREET
MARGAN AVENUE

1 / 1 NEW LYNN - AUTOMOTIVE BUILDINGS - EXISTING

SCALE 1:2000 @ A1 | 1:4000 @ A3



1
1 NEW LYNN - COMMERCIAL BUILDINGS - EXISTING

SCALE 1:2000 @ A1 | 1:4000 @ A3

LEGEND

AVERAGE DAILY TRAFFIC COUNT

- 15,000 +
- 10,000 - 15,000
- 5,000 - 10,000
- 0 - 15,000

NIKAU STREET
RIMU STREET
PINE STREET
RATA STREET
REID ROAD
PELTA AVENUE
HUGH BROWN DRIVE
GREAT NORTH ROAD
MEMORIAL DRIVE
MCCRAE WAY
TOTARA AVENUE
VERONICA STREET
PURIRI STREET
HETANA STREET
WARD STREET
PORTAGE ROAD
CLARK STREET
WOLVERTON STREET
CROWN LYNN PLACE
AMBRICO PLACE
RANKIN AVENUE
MARGAN AVENUE
ATLEY AVENUE
ULSTER ROAD
CROWTHER STREET
BUSBY STREET

1/1 MASTER PLAN - VEHICLE CIRCULATION - EXISTING

SCALE 1:2000 @ A1 | 1:4000 @ A3

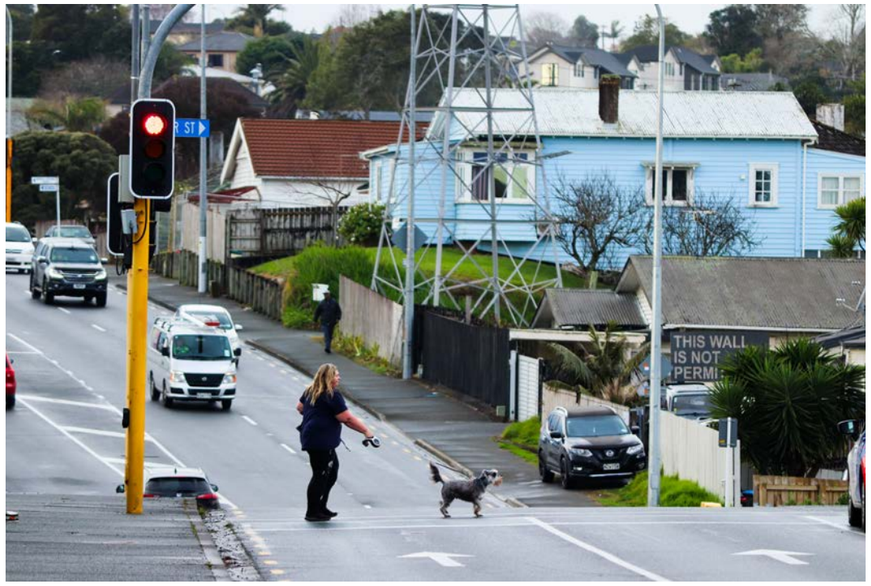


Figure 113 - Walking the Plank, Wolverton Street - Photograph by Author

Figure 114 - Park entry, Olympic Park - Photograph by Author

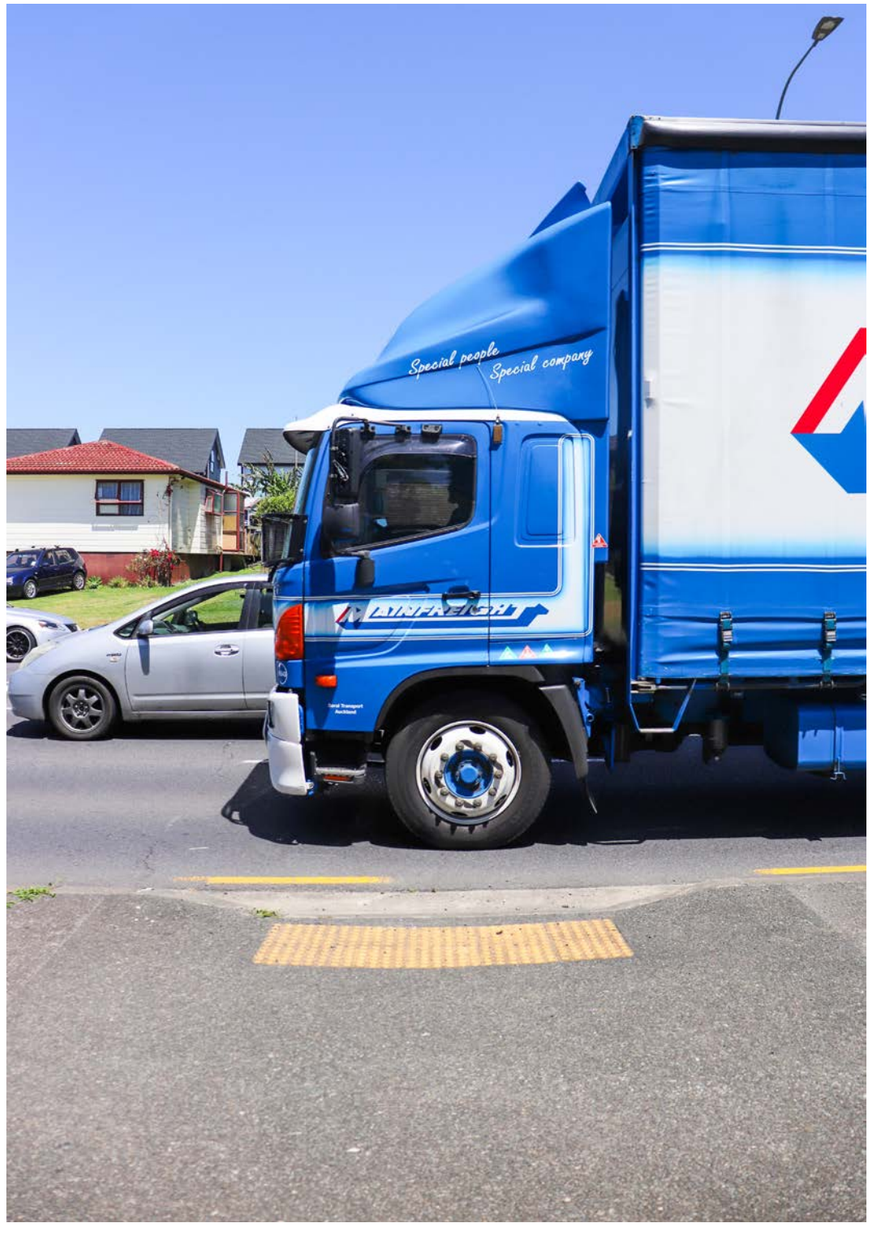


Figure 115 - Park crossing, Olympic Park - Photograph by Author

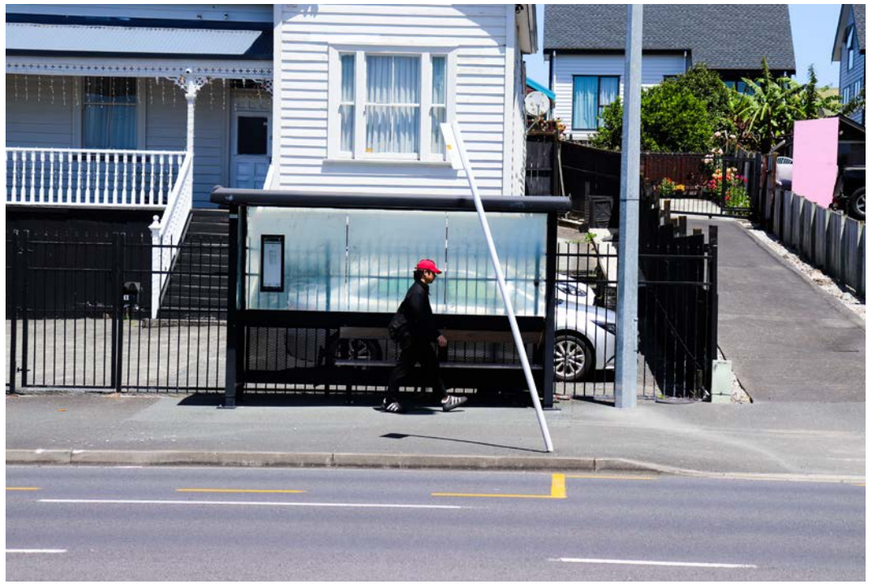


Figure 116 - Bus Stop, Olympic Park - Photograph by Author

Figure 117 - Closed until we decide what to do... Olympic Park - Photograph by Author

Figure 118 - Toilet Alternative, Olympic Park - Photograph by Author

Figure 119 - Enjoy the view, Cnr Clark Street and Portage Road - Photograph by Author

Figure 120 - Slip ‘n’ slide, Olympic Park - Photograph by Author

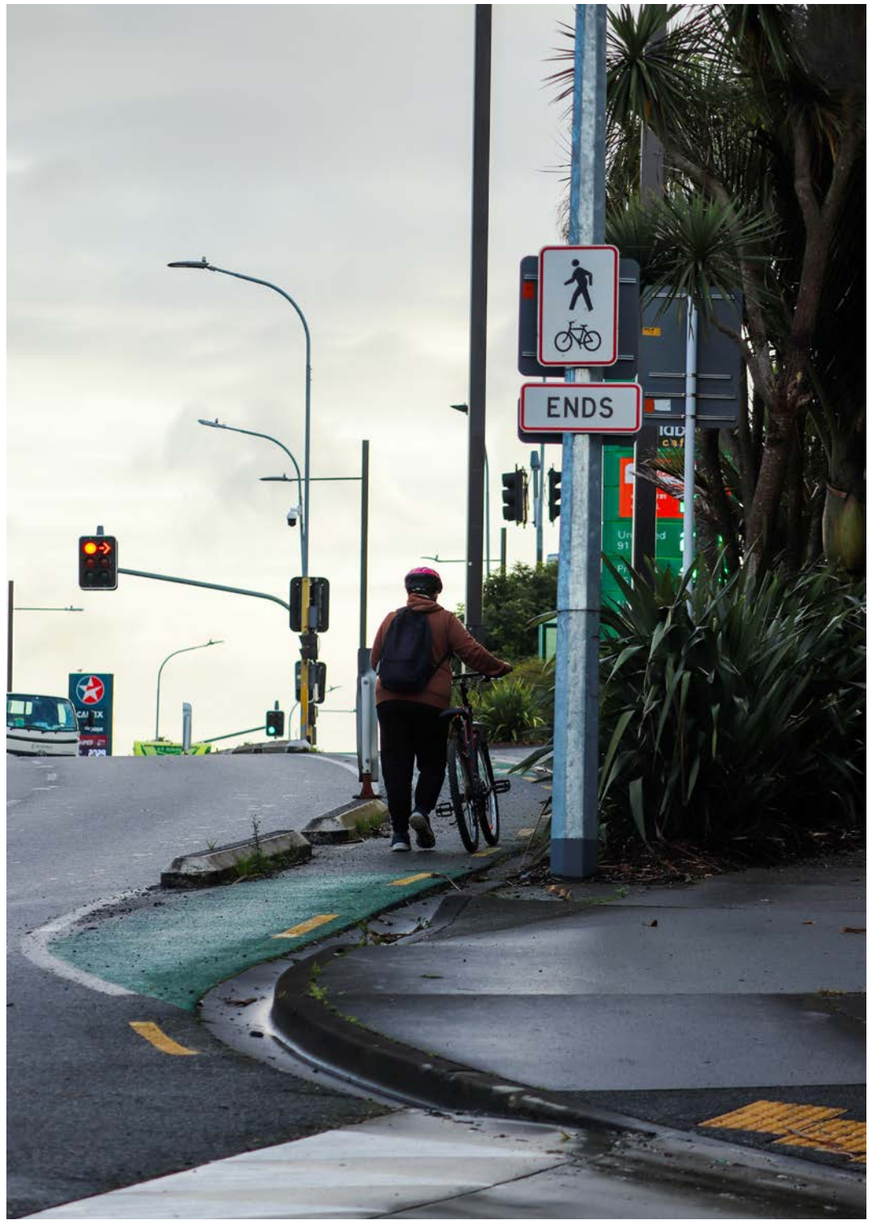


Figure 121 - End of the Road, Olympic Place - Photograph by Author

Figure 122 - Give Way, Clark Street - Photograph by Author

Figure 123 - Car Pandemic, Puriri Street - Photograph by Author

Figure 124 - Binpath, Puriri Street - Photograph by Author

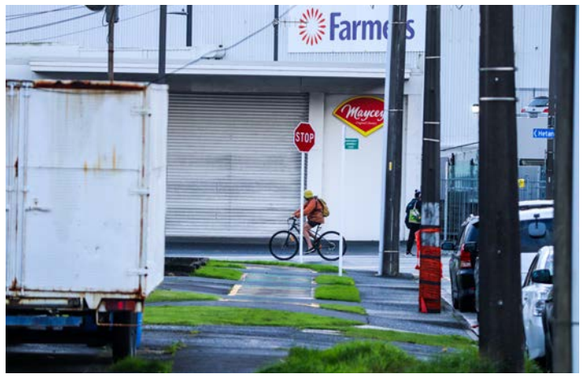


Figure 125 - Industrial Zone, Puriri Street - Photograph by Author

Figure 126 - Crossing the Tarmac to Olympic Park, Cnr Puriri Street - Photograph by Author

Figure 127 - Red shack, Puriri Street - Photograph by Author

Figure 128 - Site seeing, Puriri Street - Photograph by Author

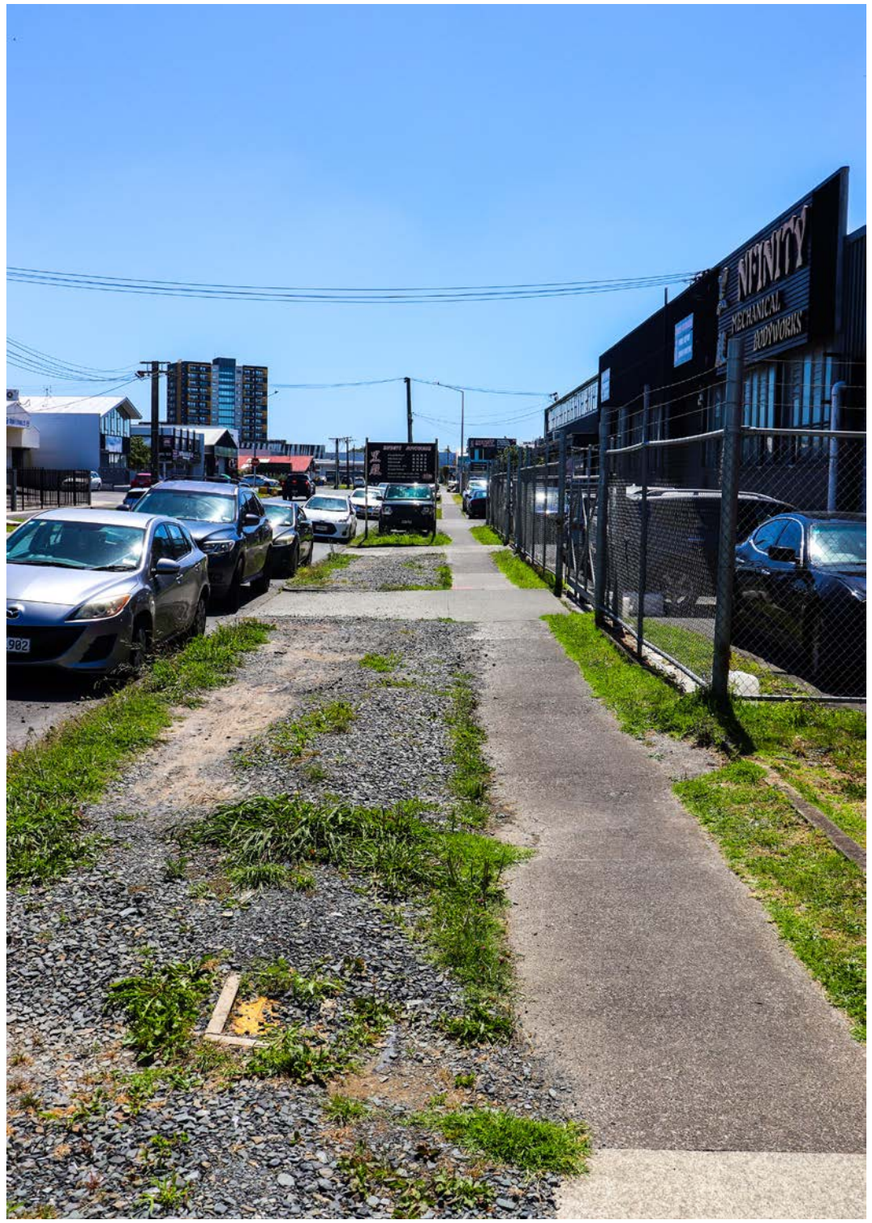


Figure 129 - Gravel track, Puriri Street - Photograph by Author

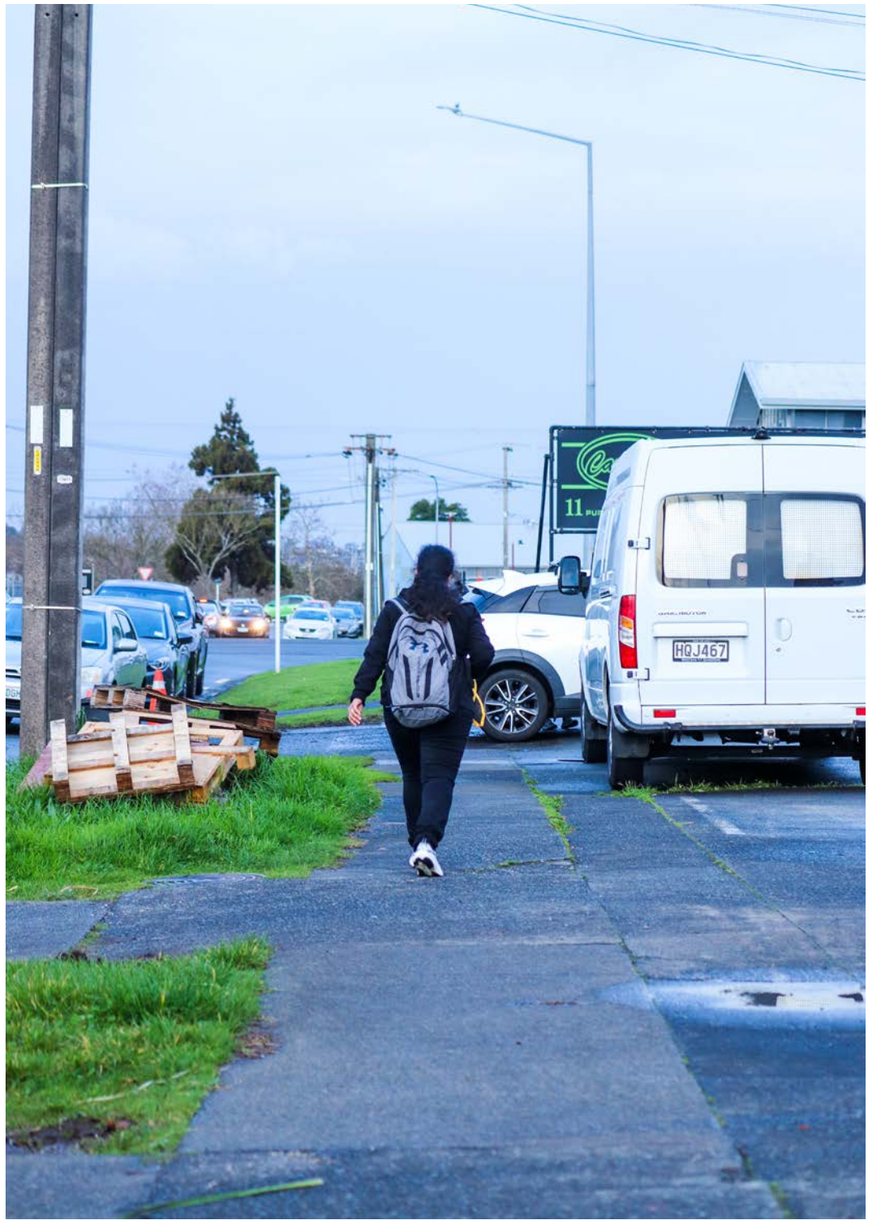


Figure 130 - Dumping Ground, Puriri Street - Photograph by Author

Figure 131 - Hetana Street - Photograph by Author

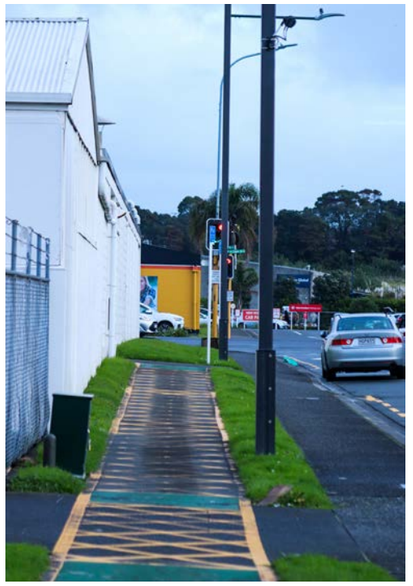


Figure 133 - Hazards - Photograph by Author

Figure 132 - Hetana Street - Photograph by Author

Figure 134 - Landfil, Memorial Drive - Photograph by Author

Figure 135 - Car Friendly, Memorial Drive - Photograph by Author

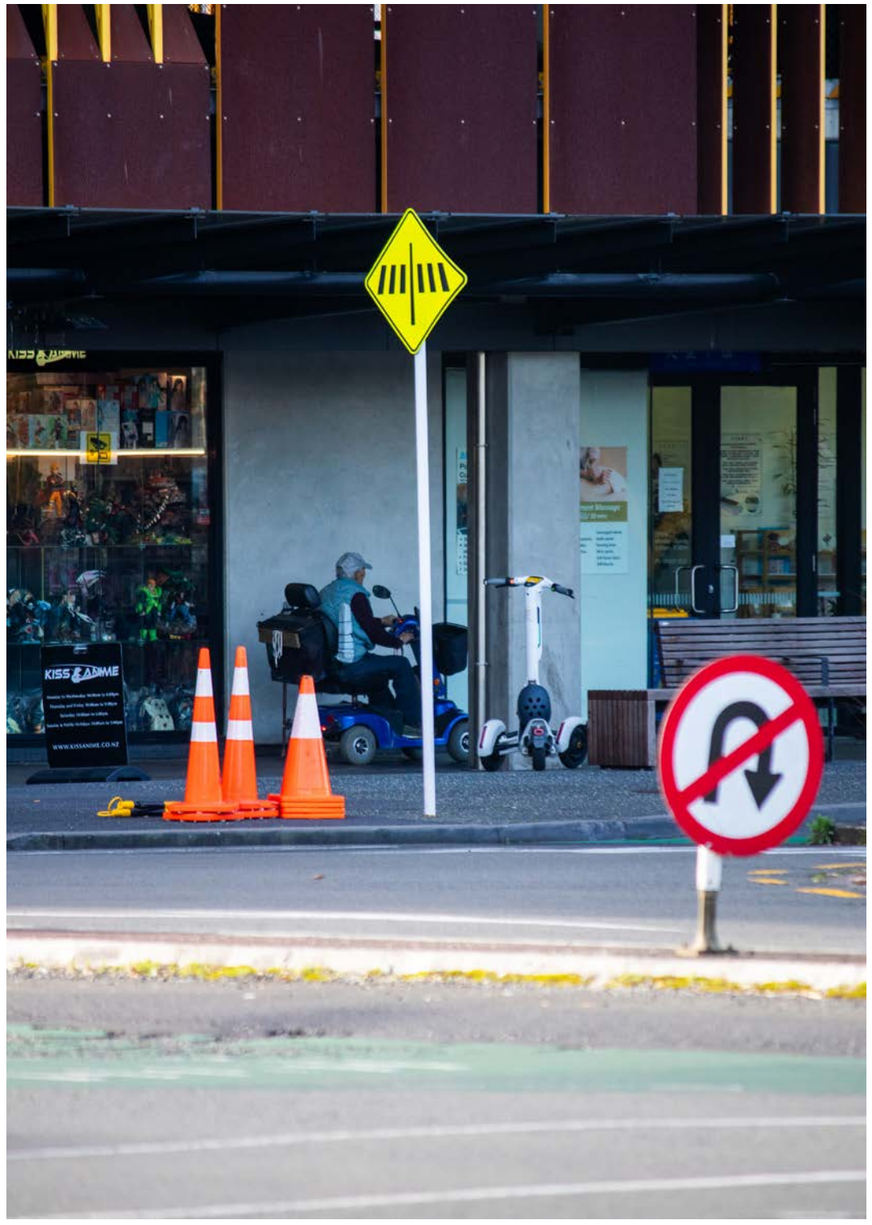


Figure 136 - Cone Zone, Totora Avenue - Photograph by Author

Figure 137 - Shared Zone, McCrae Way - Photograph by Author

Figure 138 - Everyone's Welcome, McCrae Way - Photograph by Author8

Figure 139 - McCrae Way - Photograph by Author

Figure 140 - Context, McCrae Way - Photograph by Author

Figure 141 - Do your Business later, Gardener Reserve - Photograph by Author

Figure 142 - Bin Dodgems, Ambrico Place - Photograph by Author

Figure 143 - Sturdy Seat, Briar Way - Photograph by Author

Figure 144 - Poop Decor, Rankin Avenue - Photograph by Author

Chapter Ten

Broad Strokes

All design starts with broad strokes, like wet clay on a potter's wheel, moulding the overarching form before adding the finer details.

PROS

- A LARGE SITE HAS FEWER SITE RESTRICTIONS.
- DIRECT CONNECTION TO BORDERING PROPERTIES
- PROXIMITY TO THE TRAIN STATION
- DIRECT CONNECTION WITH GARDNER RESERVE AND AMBRICO PLACE.

CONS

- DOES NOT IMPROVE ACCESS TO OTHER PUBLIC ASPECTS OF THE COMMUNITY.
- LACK OF CONNECTION TO OLYMPIC PARK.

DISCONNECTED

OUTDOOR POOL

PLAYGROUND

AQUATIC CENTRE

SKATEPARK

BASKETBALL COURTS

TENNIS COURTS

1/1 MASTER PLAN - CENTRALISED RECREATION - CONCEPT

SCALE 1:2000 @ A1 | 1:4000 @ A3

PROS

- CONNECTS EXISTING TO NEW. OLYMPIC PARK THROUGH TO MANAWA WETLANDS.
- PEDESTRIAN-FOCUSED ROAD REDEVELOPMENT.

CONS

- LACK OF NEW RECREATION INTERVENTIONS
- THERE IS LESS OPPORTUNITY TO CONNECT TO OTHER PARTS OF THE NEIGHBOURHOOD WITH ONE NEW RECREATION INTERVENTION.

PEDESTRIAN ONLY

LIBRARY

LYNN MALL

CONNECT TO EX. OLYMPIC PARK

ONE WAY

ONE WAY

BUS ONLY

EX. COMMUNITY CENTRE

RAISED INTERSECTION

RECREATION CENTRE & INTEGRATED PLAYGROUND

EXISTING PLAYGROUND

PARK/SKATEPARK

WETLAND

LINK WITH EX. SHOPS

PROPOSED FUTURE RESIDENTIAL DEVELOPMENTS (NEW LYNN UNITARY PLAN)

1
1 MASTER PLAN - DISTRIBUTED RECREATION - CONCEPT 1

SCALE 1:2000 @ A1 | 1:4000 @ A3

PROS

- TAKES ADVANTAGE OF UNUSED SPACE
- DIRECT CONNECTION BETWEEN PARK AND TRAIN STATION

CONS

- CONFINED TO 15.5M WIDTH
- LACK OF CONNECTION TO OTHER PARTS OF THE NEIGHBOURHOOD.

ESTABLISH A CONNECTION BETWEEN THE TRAIN STATION AND OLYMPIC PARK.

UTILISE THE SPACE ABOVE THE TRAIN TUNNEL—A CORRIDOR OF RECREATION.

1/1 MASTER PLAN - DISTRIBUTED RECREATION - CONCEPT 2

SCALE 1:2000 @ A1 | 1:4000 @ A3

PROS

- MULTIPLE POINTS OF CONNECTION TO OTHER PARTS OF THE NIEGHBOURHOOD.
- SUPPORTS EXISTING INFRASTRUCTURE.

CONS

- REQUIRES MANY INTERVENTIONS

PEDESTRIAN ONLY

LIBRARY

LYNN MALL

TRAIN STATION EAST ENTRY

ONE WAY

RECREATION INTERVENTION 1

RECREATION INTERVENTION 6

CONNECT TO EX. PARK

EX. COMMUNITY CENTRE

RECREATION INTERVENTION 3

RECREATION INTERVENTION 2

EX. GYM

RECREATION INTERVENTION 4

EXISTING PLAYGROUND

STRENGTHEN RELATIONSHIP BETWEEN PARK AND RESIDENTS

RECREATION INTERVENTION 5

1/1 MASTER PLAN - DISTRIBUTED RECREATION - CONCEPT 3

SCALE 1:2000 @ A1 | 1:4000 @ A3

PROS

- BALANCE BETWEEN CONCEPTS 1 AND 3.
- MULTIPLE POINTS OF CONNECTION TO OTHER PARTS OF THE NEIGHBOURHOOD.
- SUPPORTS EXISTING ARCHITECTURE
- OPPORTUNITY TO SERVE THE COMMUNITY BEYOND RECREATION.
- STRONG CONNECTION BETWEEN CENTRE OF NEW LYNN AND OLYMPIC PARK

CONS

- THERE IS LESS CONNECTION TO MANAWA WETLAND AND BOB HILL RESERVE.

TRAIN STATION EAST ENTRY

RECREATION INTERVENTION 2

RSA

MOSQUE

RECREATION INTERVENTION 1

PEDESTRIAN ONLY

LIBRARY

EXISTING COMMUNITY CENTRE

TRAIN STATION

RECREATION INTERVENTION 3

FAMILY SERVICES

JEWELLERS COLLECTIVE

RECREATION INTERVENTION 4

CROWN LYNN MUSEUM

PROPOSED FUTURE RESIDENTIAL DEVELOPMENTS (NEW LYNN UNITARY PLAN)

PROPOSED PARK (NEW LYNN UNITARY PLAN)

1/1 MASTER PLAN - DISTRIBUTED RECREATION - CONCEPT 4

SCALE 1:2000 @ A1 | 1:4000 @ A3

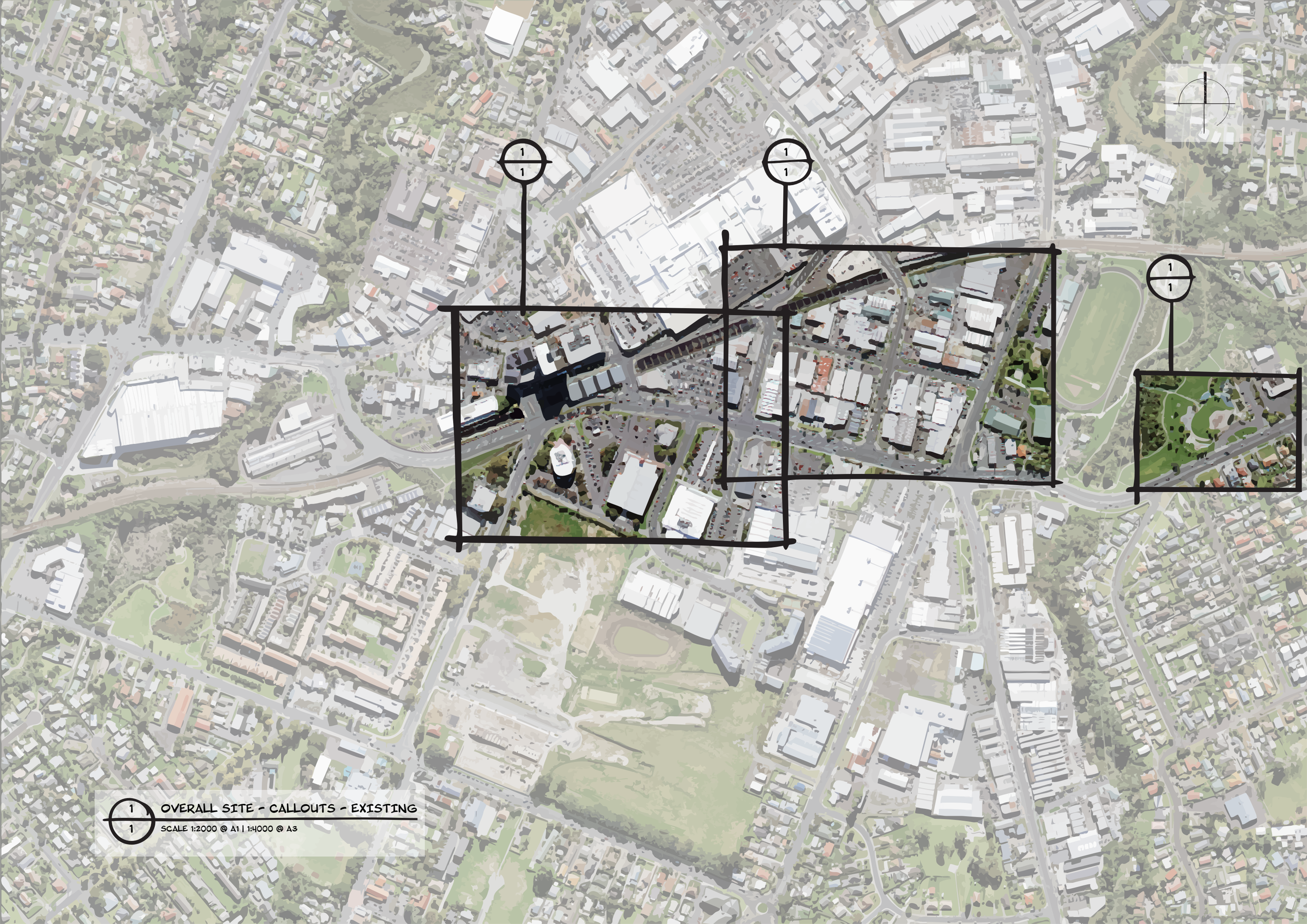
NIKAU STREET
RIMU STREET
RATA STREET
PINE STREET
REID ROAD
DELTA AVENUE
GREAT NORTH ROAD
HUGH BROWN DRIVE
VERONICA STREET
MEMORIAL DRIVE
MCCRAE WAY
TOTARA AVENUE
PURIRI STREET
HETANA STREET
WARD STREET
PORTAGE ROAD
CLARK STREET
CROWN LYNN PLACE
WOLVERTON STREET
AMBRICO PLACE
RANKIN AVENUE
MARGAN AVENUE
ATLEY AVENUE
ULSTER ROAD
CROWTHER STREET
BUSBY STREET

1
1
NEW LYNN - POTENTIAL SITES AND THE GOOD - EXISTING
SCALE 1:2000 @ A1 | 1:4000 @ A3

10.0 New Lynn: The ugly

By identifying the *good* areas of New Lynn, like existing places of active recreation, the next step was to identify barriers to the access of these spaces. The final step is to pinpoint areas to implement specific change. Not all design interventions focused on improving human experience need to be complex. Sometimes, all that is required is a safer crossing or wider footpath. This section explores various design interventions, from pedestrian-focused crossings to road redevelopment to new buildings. To steer clear of isolated design, thought needs to be given across multiple scales, paying attention to how different neighbourhood spaces, old and new, can best be integrated.

Figure 145 - Out with the old, 7 Puriri Street - Photograph by Author



1 / 1 OVERALL SITE - CALLOUTS - EXISTING

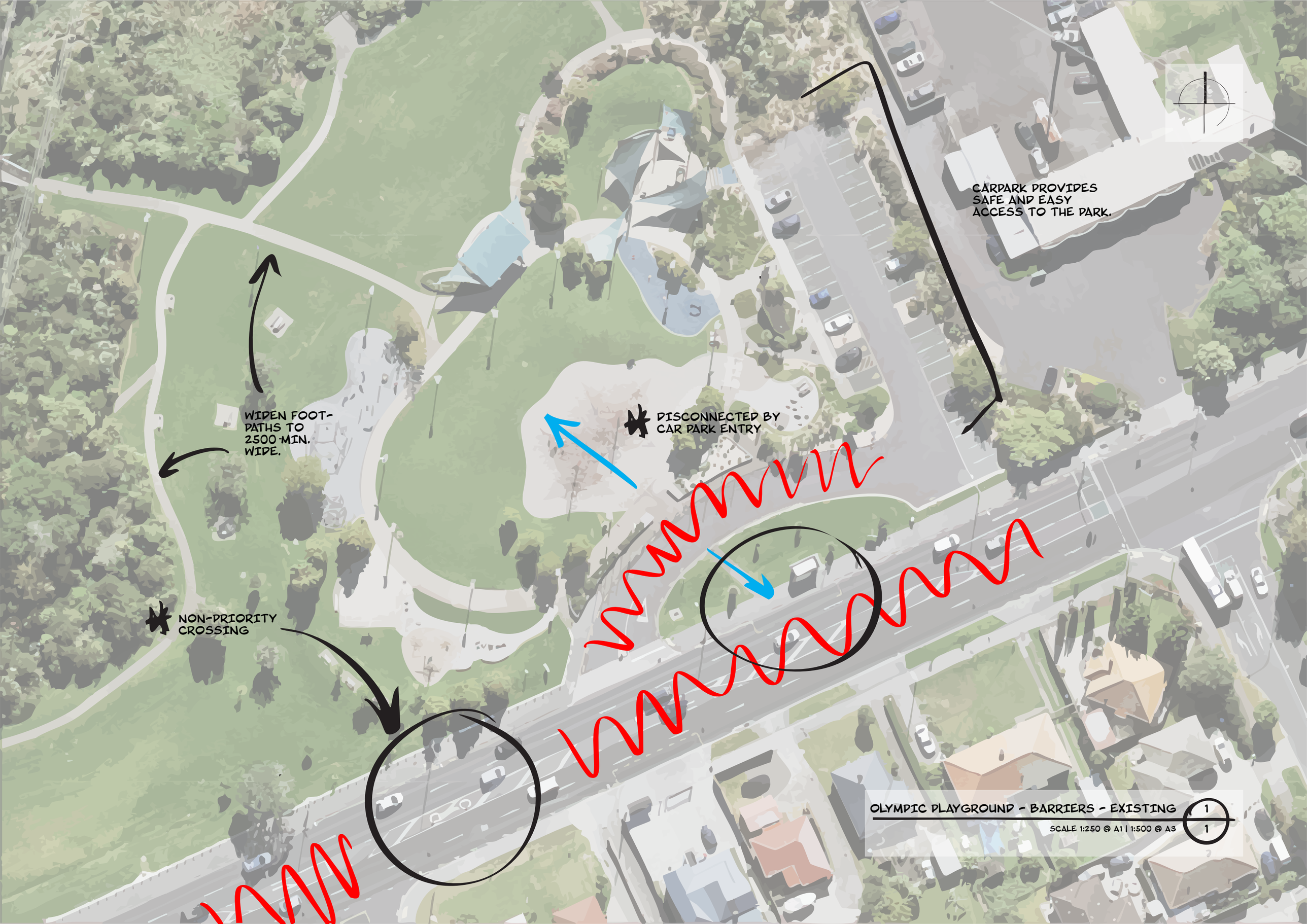
SCALE 1:2000 @ A1 | 1:4000 @ A3

10.1 Olympic Park Playground

OLYMPIC PLAYGROUND - SITE PLAN - EXISTING

SCALE 1:250 @ A1 | 1:500 @ A3

1/1



OLYMPIC PLAYGROUND - BARRIERS - EXISTING

SCALE 1:250 @ A1 | 1:500 @ A3

1/1

Figure 146 - Low Priority Pedestrian Crossing, Olympic Park - Photograph by Author

Figure 147 - In lane bus bay and Bus Stop, Olympic Park - Photograph by Author

Figure 148 - Main Entry to Playground, Olympic Park - Photograph by Author

Figure 149 - Playground Carpark, Olympic Park - Photograph by Author

CREATE BUFFER ZONE BETWEEN ROAD AND PLAYGROUND WITH LANDSCAPING. RELOCATE CARPARK ENTRY.

RELOCATE CAR PARK ENTRY AWAY FROM PLAYGROUND MAIN ENTRY AND CIRCULATION PATH.

INDENTED BUS STOP

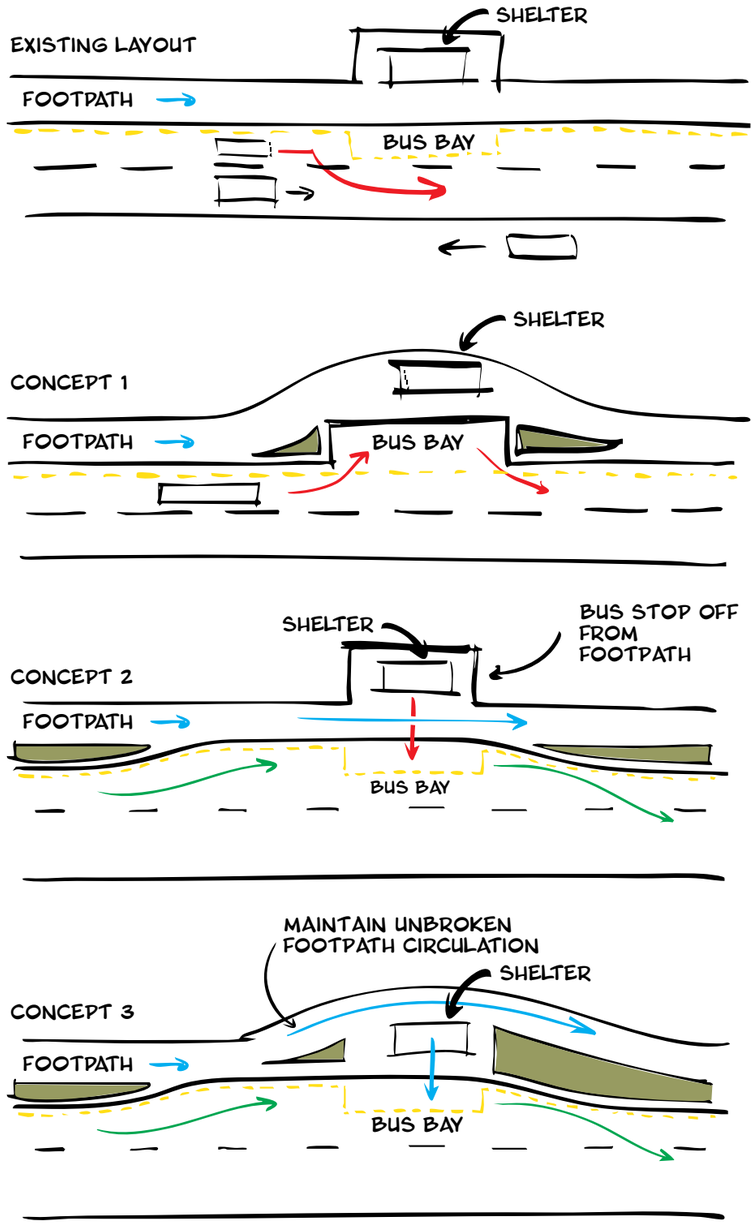
PEDESTRIAN FOCUSED PRIORITY ZEBRA CROSSING WITH RIASED TABLE TO CALM TRAFFIC

MOVE BUS STOP UP FROM ROAD AFTER PEDESTRIAN CROSSING TO ENSURE VISABILITY IS NOT OBSTRUCTED BY BUS.

OLYMPIC PLAYGROUND - SITE PLAN - CONCEPT

SCALE 1:250 @ A1 | 1:500 @ A3

1/1



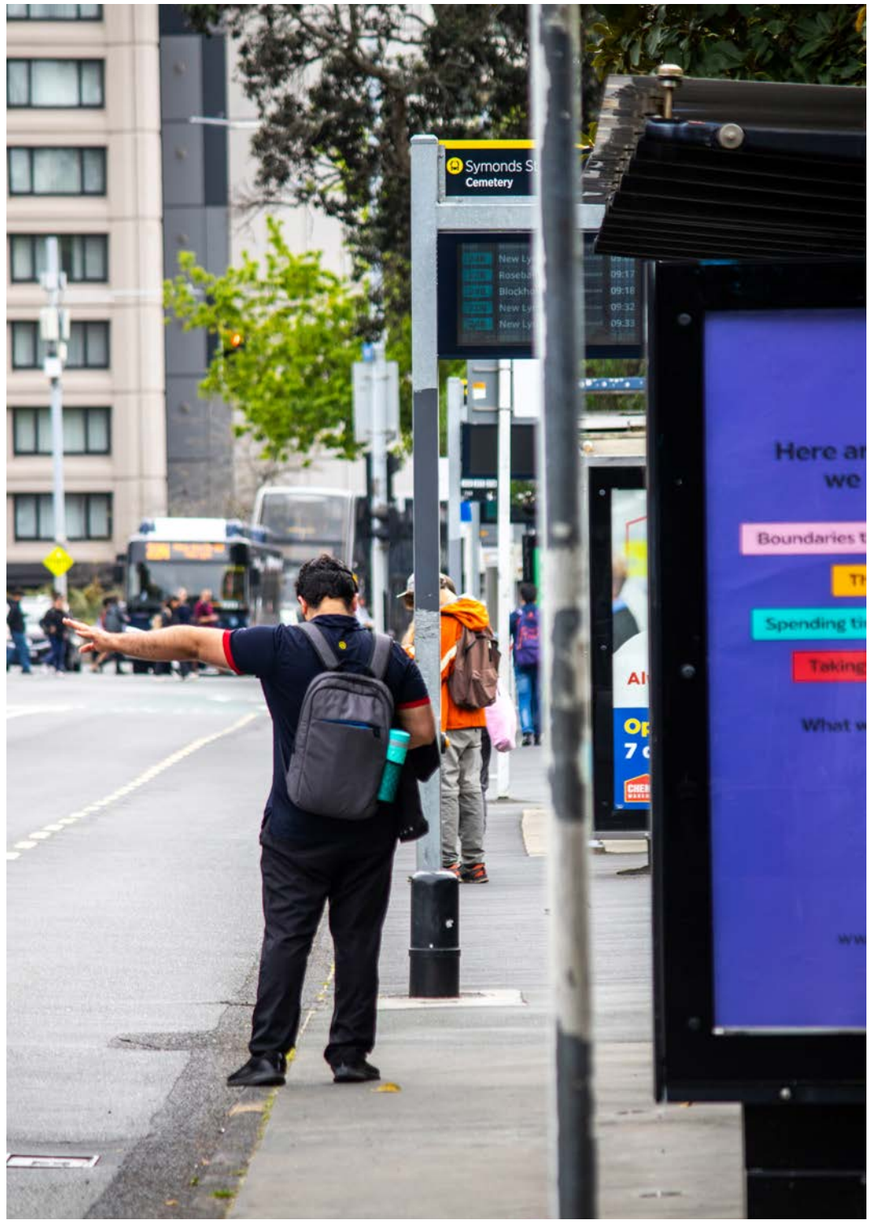
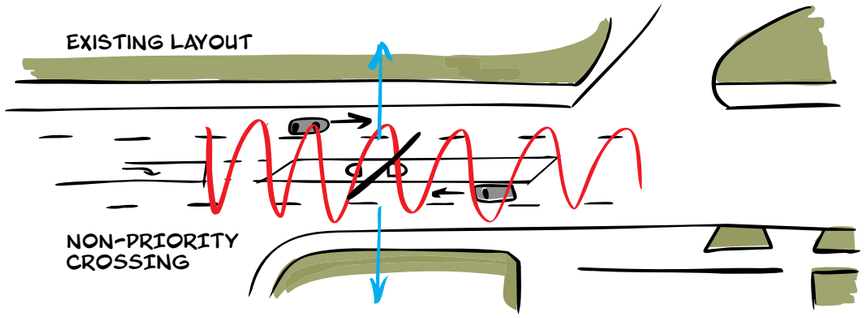
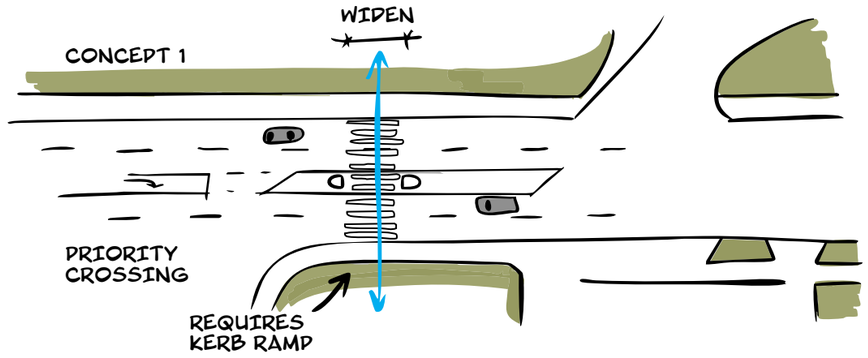


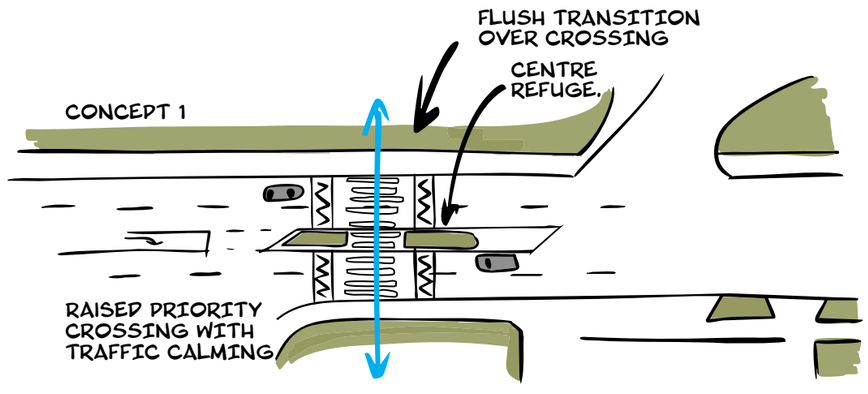
Figure 150 - Footpath Obstacle Course, Symonds Street Auckland City. - Photograph by Author

Figure 151 - non-priority crossing, how can the human compete with the car? Olympic Park. - Photograph by Author

Figure 152 - Pedestrian priority crossing installation across 4-lane road in Porirua. From *Titahi Bay Road pedestrian crossing* by Waka Kotahi, 2022 (https://www.nzta.govt.nz/safety/partners/road-safety-resources/safe-system-case-studies/titahi-bay-road-pedestrian-crossing/).







10.2 Puriri Street

TOTARA AVENUE

HETANA STREET

WARD STREET

PURIRI STREET

PORTAGE ROAD

CLARK STREET

1
1 PURIRI STREET - SITE PLAN - EXISTING

SCALE 1:500 @ A1 | 1:1000 @ A3

TOTARA AVENUE

HETANA STREET

WARD STREET

PURIRI STREET

PORTAGE ROAD

CLARK STREET

WAYPOINT - EXISTING
TRAIN STATION EAST ENTRY

WAYPOINT - RECREATION INTERVENTION 1
51 PORTAGE ROAD.
- REPURPOSE FROM AUTOMOTIVE TO RECREATION.
- CORNER SITES HAS GREATER VISIBILITY FROM TWO ROADS.
- PROVIDES DIRECT LINK BETWEEN OLYMPIC PARK AND PURIRI STREET.
- ENABLES GREATER ACCESSSIBILITY TO TRAIN STATION, LYNN MALL AND OTHER KEY SITES THROUGH OLYMPIC PARK.

WAYPOINT - RECREATION INTERVENTION 2
7 PURIRI STREET.
- FOR SALE
- BUILDING IS AT THE END OF ITS SERVICABLE LIFE.
- HALF WAY BETWEEN RECREATION INTERVENTION 1 AND THE TRAIN STATION EAST ENTRY

1
1 PURIRI STREET - WAY POINTS - PROPOSED
SCALE 1:500 @ A1 | 1:1000 @ A3

TOTARA AVENUE

WARD STREET

HETANA STREET

PURIRI STREET

PORTAGE ROAD

CLARK STREET

- ROADS ACTS AS BARRIER TO PEDESTRIANS AND HUMAN MOVEMENT, DISCONNECTING THE SITES.
- IMPLIMENT HIGH PRIORITY PEDESTRIAN CROSSINGS

1
1 PURIRI STREET - BARRIERS - EXISTING

SCALE 1:500 @ A1 | 1:1000 @ A3

Figure 153 - View of 51 Portage road from Olympic Park. - Photograph by Author

Figure 154 - View of 51 Portage road, looking North up Portage road. - Photograph by Author

Figure 155 - Young Kids crossing the road from Puriri Street to Olympic Park. - Photograph by Author

Figure 156 - 51 Portage Road, view from Cnr Puriri Street and Portage Road. - Photograph by Author

Figure 157 - Fix me, 7 Puriri Street - Photograph by Author

Figure 158 - View Looking west along Puriri Street towards East entry train station - Photograph by Author

Figure 159 - View Looking west along Puriri Street towards East entry train station - Photograph by Author

Figure 160 - Footpath trash - Photograph by Author

Figure 162 - Walking home - Photograph by Author

Figure 161 - View looking East along Puriri Street towards Olympic Park - Photograph by Author

TOTARA AVENUE

EXISTING BIKE PATH

EXISTING BIKE PATH

HIGH PRIORITY PEDESTRIAN & CYCLE CROSSING
- TRAFFIC CALMING RAISED TABLE

REMOVE ROAD ACCESS AND INFIL WITH PEDESTRIAN ZONE.

BIKE STATION AND REPAIR STATION

- REDUCE WIDTH OF ROADS TO ALLOW FOR WIDER FOOT-PATH AND BERM.

NEW BIKE PATH

SEPERATE BIKE PATH FROM PEDESTRIAN ZONE AND ROAD

BASKETBALL COURT

- LANDSCAPING
- PLAYGROUND?
- OUTDOOR GYM?

NEW BIKE PATH

HETANA STREET

DANCE AND YOGA STUDIO

NEW BIKE PATH

PURIRI STREET

PROVIDE LEVEL ACCESS FOR PEDESTRIANS WITH 4-WAY RAISED TABLE CROSSING

WARD STREET

PORTAGE ROAD

SEPERATE BIKE AND PEDESTRIAN PATH THROUGH OLYMPIC PARK

CLARK STREET

1/1 PURIRI STREET - SITE PLAN - CONCEPT

SCALE 1:500 @ A1 | 1:1000 @ A3

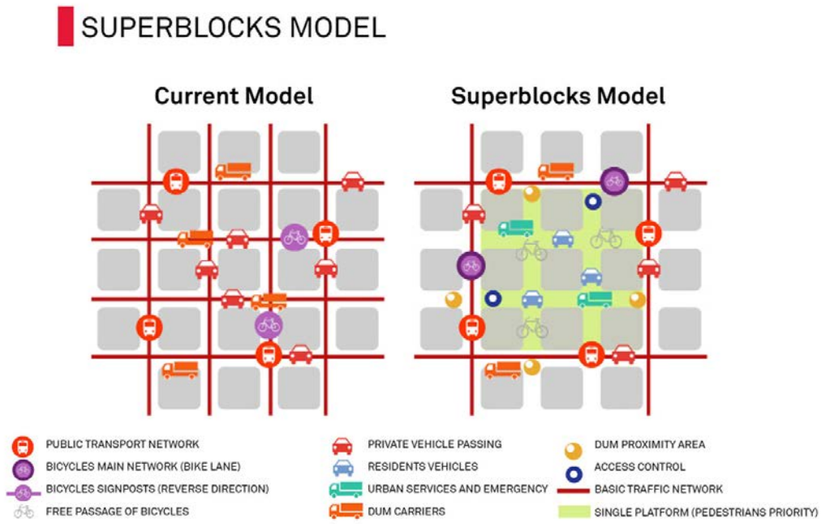


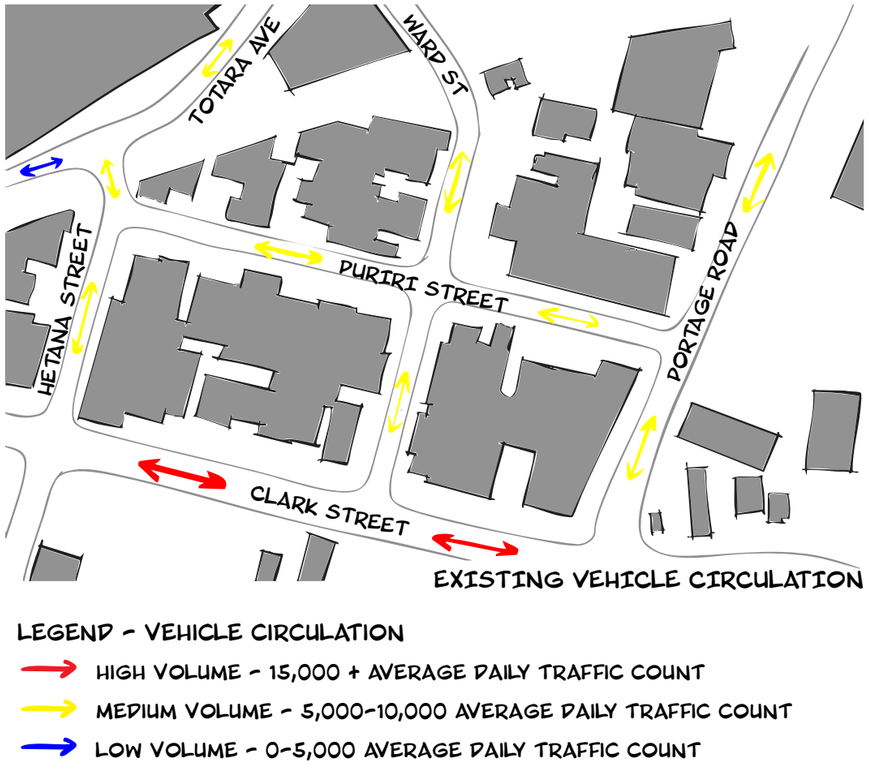
Figure 163 - Barcelona Superblocks strategy. From Urban Mobility Plan of Barcelona PMU 2013-2018 by Ajuntament de Barcelona, 2014 (chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://prod-mobilitat.s3.amazonaws.com/PMU_Sintesi_Angles.pdf)

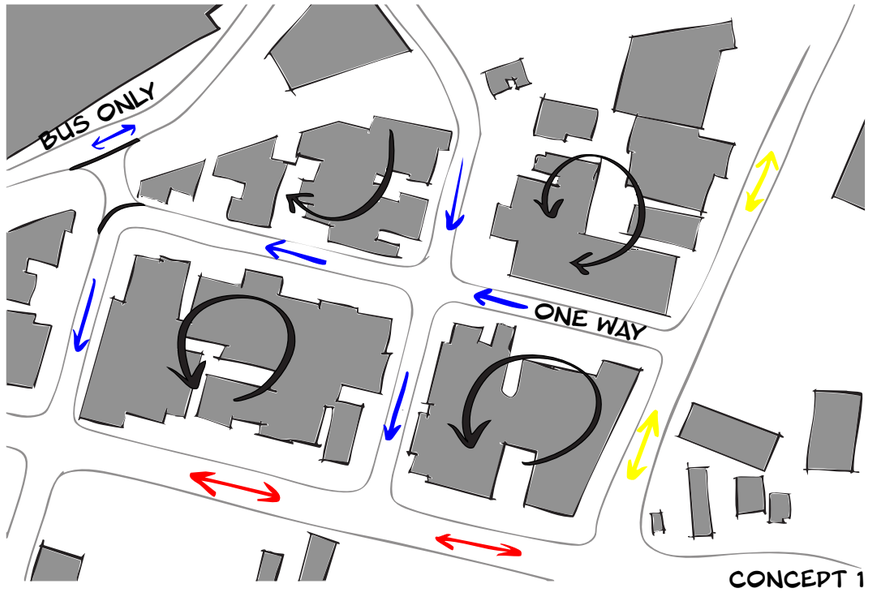
Figure 164 - barcelon Super Block. From *Barcelona's Superblocks: Putting Peaople at the Centre - Literally* by M. Castrezzati, 2023, City Changers (https://citychangers.org/barcelona-superblocks/)

10.2.1 Barcelona Super Blocks

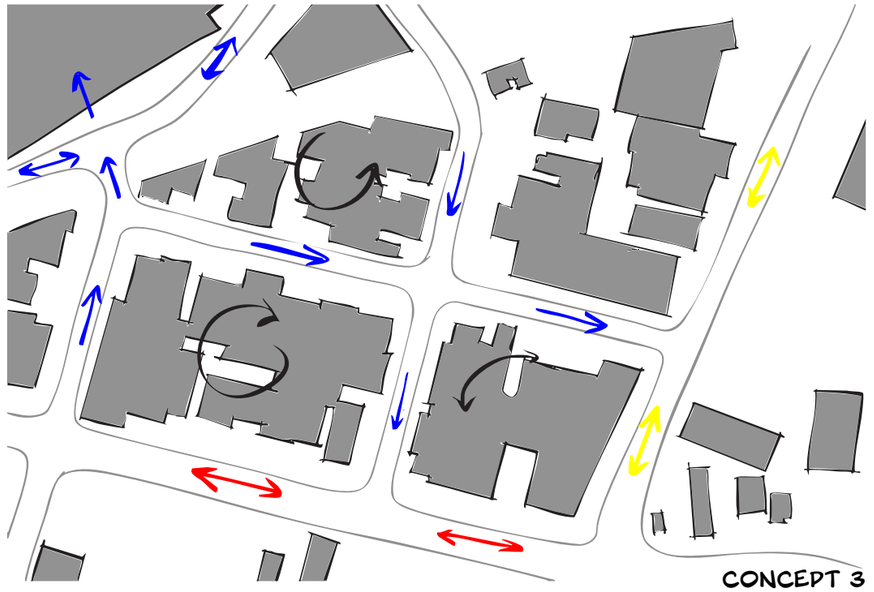
Barcelona has implemented a regenerative model called the Superblock to combat the increasing dominance of motor vehicles. The Superblock aims to transform car-centred into pedestrian-friendly zones, promoting open space and safe streets (Nieuwenhuijsen et al., 2024)(Postaria, 2021). Essentially, the parts of the City are divided into 400m2 Blocks. Each block has the main vehicle circulation around the edge of the block, and the roads within are redeveloped to centre around pedestrians (Nieuwenhuijsen et al., 2024) (Postaria, 2021). Figure 163 compares the existing model with the Superblock Model. Barcelona's urban layout is relatively different from Auckland's, with grid-like zones that allow a model such as the Superblock to be more easily implemented.

Regarding suburbs in Auckland, such as New Lynn, they resemble spaghetti more than a grid pattern; the Superblock models would not cross over the same way. However, there is an opportunity to implement a variation of Superblocks. Puriri Street has a direct connection between the New Lynn East train station entry and Olympic Park, with Ward Street running perpendicular across the middle. These streets run parallel to the main arterial roads, Portage Road and Clark Street. Portage Road and Clark could remain the main points of vehicle circulation, and like the Superblocks, the streets between could be redeveloped to centre around pedestrians. This could involve the implementation of one-way streets to reclaim land for pedestrians or including dedicated two-way cycle lanes. The following section is an interrogation of the existing road layout to identify areas where streets can become more pedestrian-friendly, increasing accessibility.



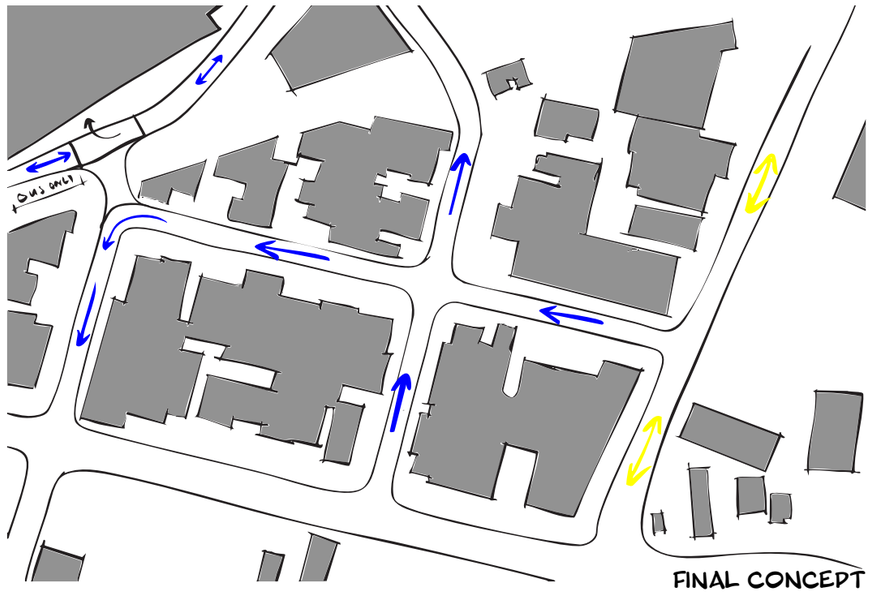


CONCEPT 1



CONCEPT 3

CONCEPT 2

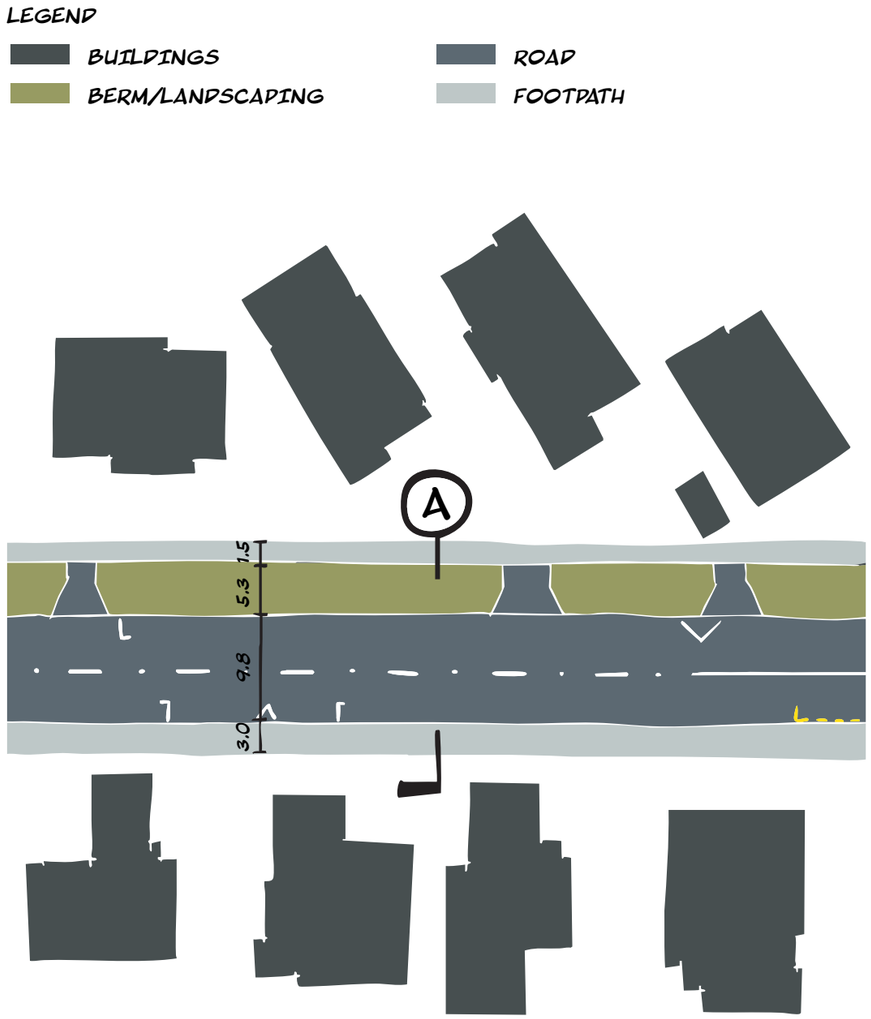


FINAL CONCEPT

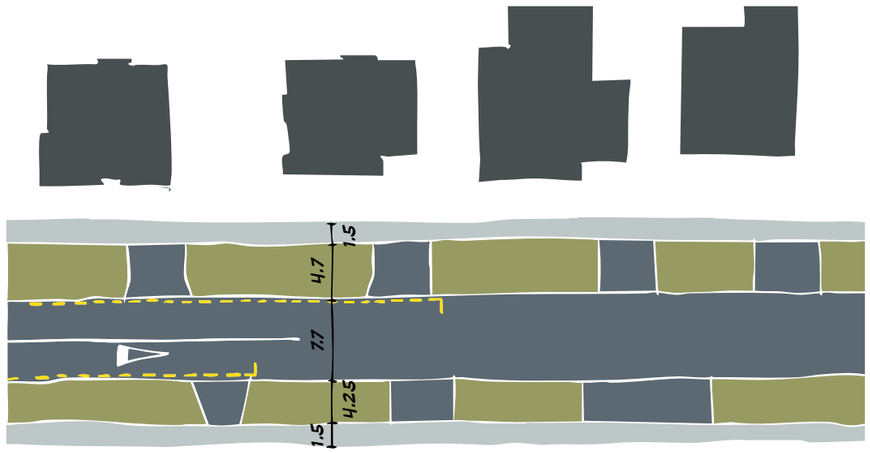
10.2.2 Footpaths, the Ultimate Connector

As roads have become wider to accommodate vehicles, the dominating machines have impeded the pedestrian zone. The footpath connects all architectural space at the human level, yet often, the footpath is given the least priority in the streetscape. Increasing the size of the footpath strengthens the relationship between spaces at the human scale. The berm (the zone between the footpath and road, often landscaping or grass) is equally as crucial as the footpath, acting as a buffer zone and creating space between the pedestrian and the vehicle. The following is an example of a typical road layout in Auckland suburbs.

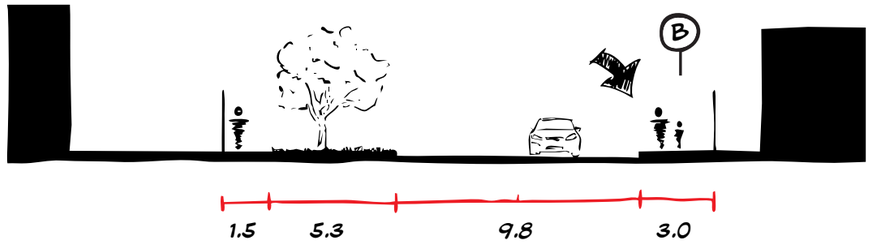
Location: Epsom, Central Auckland.



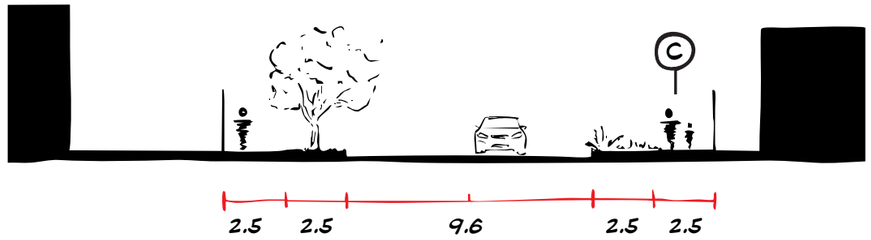
LOCATION - MARKET ROAD



LOCATION - DUNKERRON AVENUE



A - MARKET ROAD - EXISTING



A - MARKET ROAD - POTENTIAL

B - MARKET ROAD - EXISTING

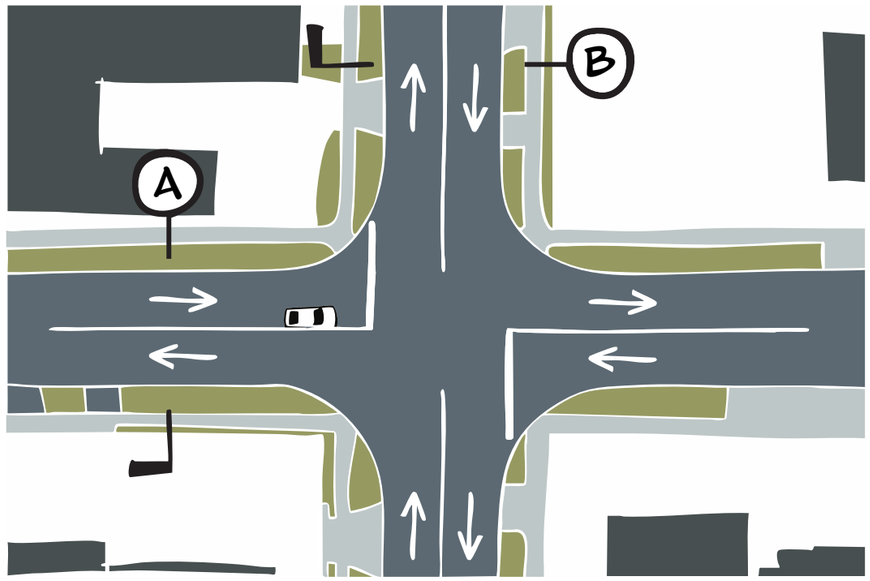
B - MARKET ROAD - EXISTING

C - MARKET ROAD - POTENTIAL

C - MARKET ROAD - POTENTIAL

IMPORTANCE OF THE BERM/LANDSCAPING

- IT CREATES A CLEAR SEPARATION BETWEEN THE FOOTPATH AND THE ROAD, ACTING AS A BUFFER ZONE.
- WHERE THERE IS NO BERM, THE VEHICLE CROSSING CUTS INTO THE FOOTPATH. THIS CREATES UNDULATION ALONG THE FOOTPATH (SECTION B). WHERE THERE IS A WIDE ENOUGH BERM, THE VEHICLE CROSSING REACHES THE HEIGHT OF THE FOOTPATH BEFORE CUTTING INTO THE PATH OF TRAVEL.

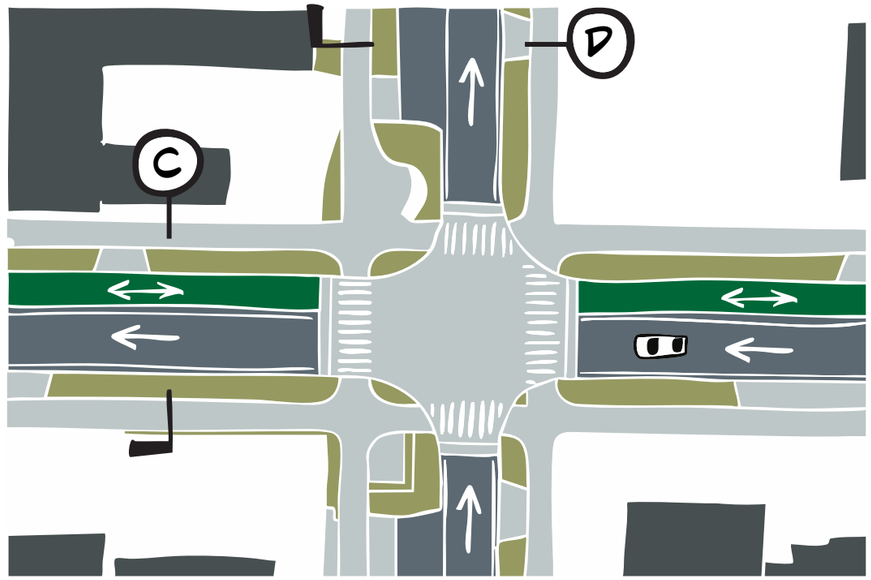


LOCATION - PURIRI STREET & WARD STREET - EXISTING LAYOUT

- TWO-LANE CARRIAGEWAY (ROAD)
- INSUFFICIENT FOOTPATH 1500 (MM) WIDE
- GOOD BERM/LANDSCAPING
- NON-PRIORITY CROSSINGS

LEGEND

- BUILDINGS
- BERM/LANDSCAPING
- TWO-WAY CYCLE PATH
- ROAD
- FOOTPATH

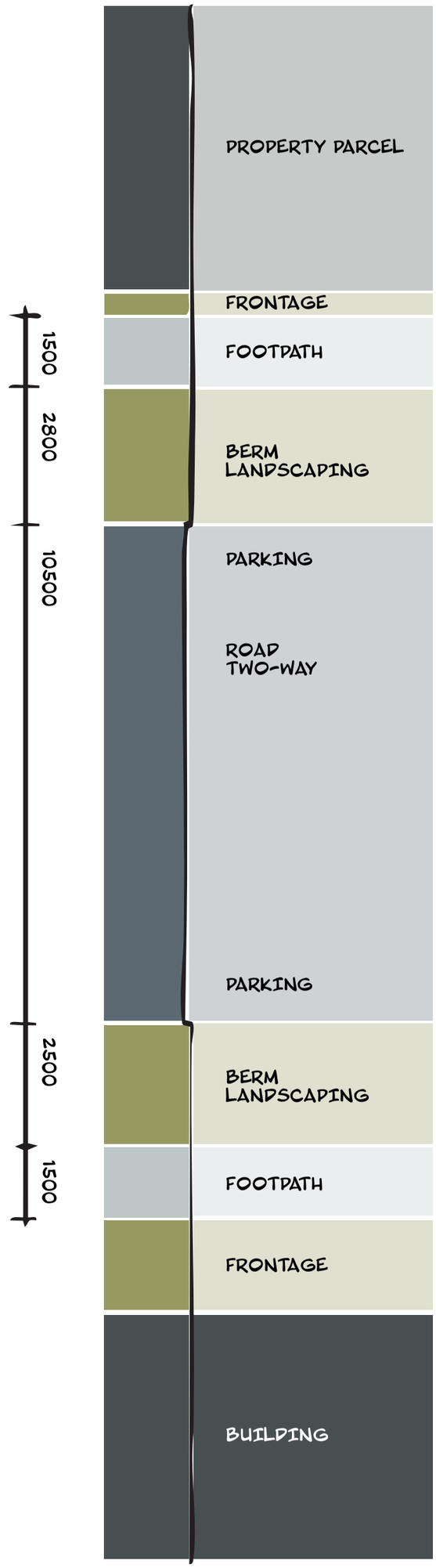


LOCATION - PURIRI STREET & WARD STREET - PROPOSED LAYOUT

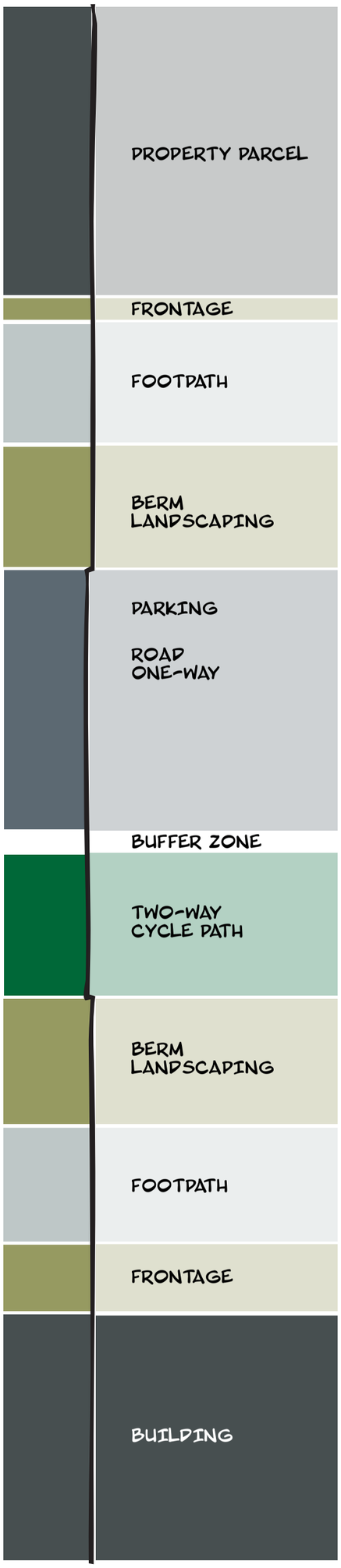
- REDUCE CARRIAGEWAY (ROAD) TO SINGLE LANE
- WIDEN FOOT PATH TO 2500 (MM) WIDE
- MAINTAIN BERM/LANDSCAPING MIN. 2650 (MM) WIDE
- 4-WAY PRIORITY CROSSING - RAISED ZEBRA CROSSING
- TWO-WAY CYCLE PATH ALONG PURIRI STREET
- SHIFT HIERARCHY OF ROADS TO FAVOUR PEDESTRIAN MOVEMENT
- MAINTAIN SPACE FOR ON-STREET PARKING

PROPOSED LAYOUT BASED ON CONSIDERATIONS AND GUIDANCE FROM AUCKLAND TRANSPORT MANUALS (AUCKLAND TRANSPORT, 2024);

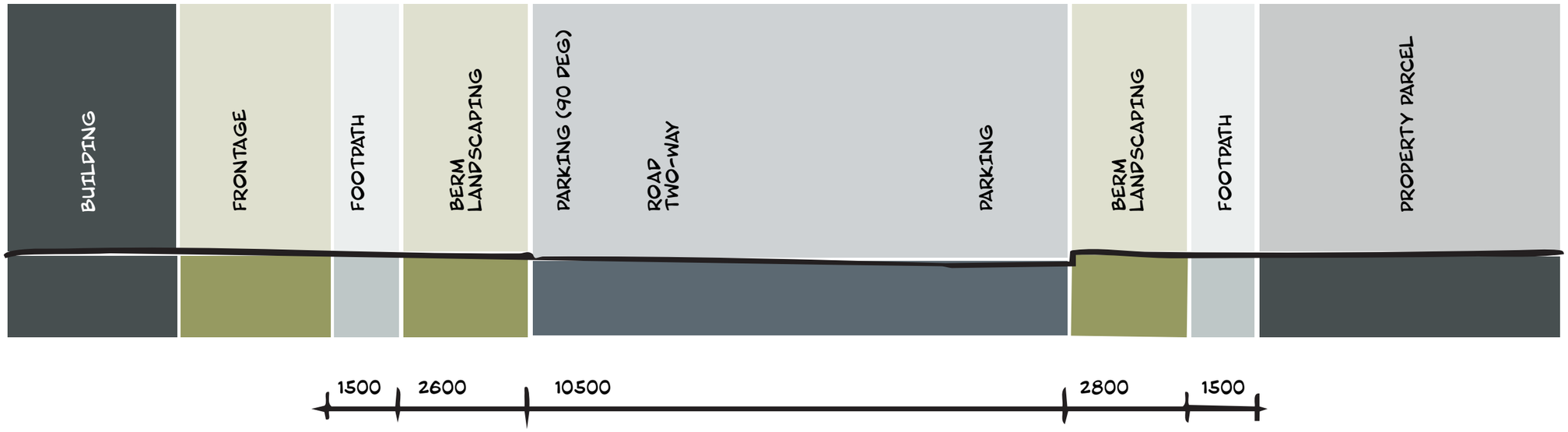
- URBAN AND RURAL ROADWAY DESIGN - VERSION 2
- FOOTPATHS AND THE PUBLIC REALM - VERSION 2
- CYCLING INFRASTRUCTURE - VERSION 1
- TRAFFIC CALMING - VERSION 1



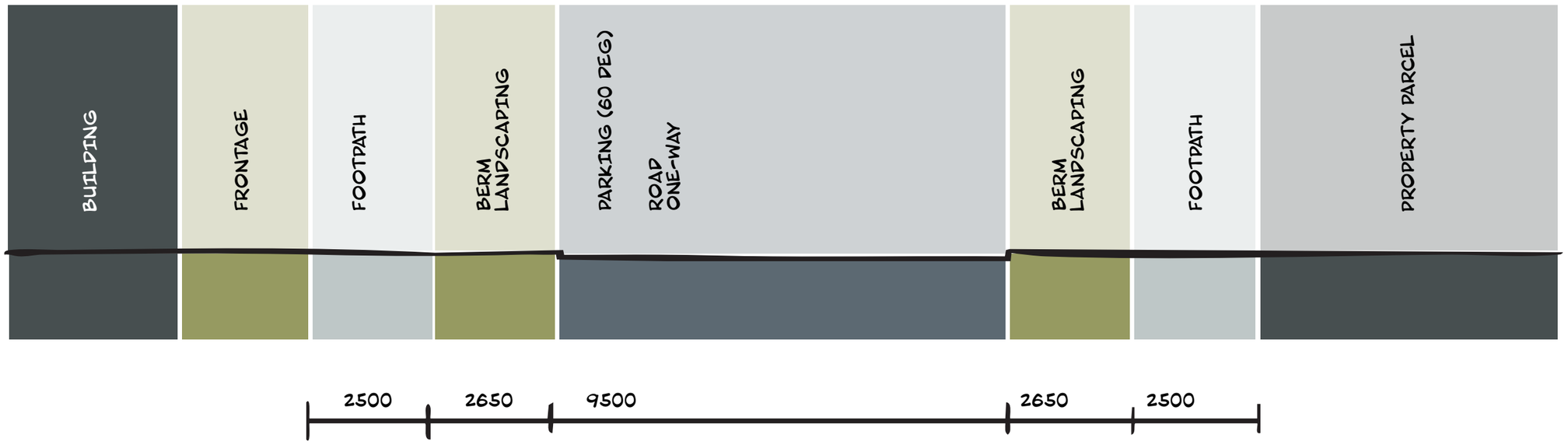
SECTION A - PURIRI STREET - ROAD LAYOUT - EXISTING



SECTION B - PURIRI STREET - ROAD LAYOUT - PROPOSED



SECTION C - WARD STREET - ROAD LAYOUT - EXISTING



SECTION D - WARD STREET - ROAD LAYOUT - PROPOSED

TOTARA AVENUE

BUS ONLY

ONE WAY ROAD

TWO-WAY CYCLE PATH

ONE WAY ROAD

TWO-WAY CYCLE PATH

ONE WAY ROAD

RECREATION
INTERVENTION 1
PURIRI EAST

TWO-WAY CYCLE PATH

ONE WAY ROAD

HETANA STREET

RECREATION
INTERVENTION 2
PURIRI STUDIO

WARD STREET

ONE WAY ROAD

ONE WAY ROAD

PURIRI STREET

PORTAGE ROAD

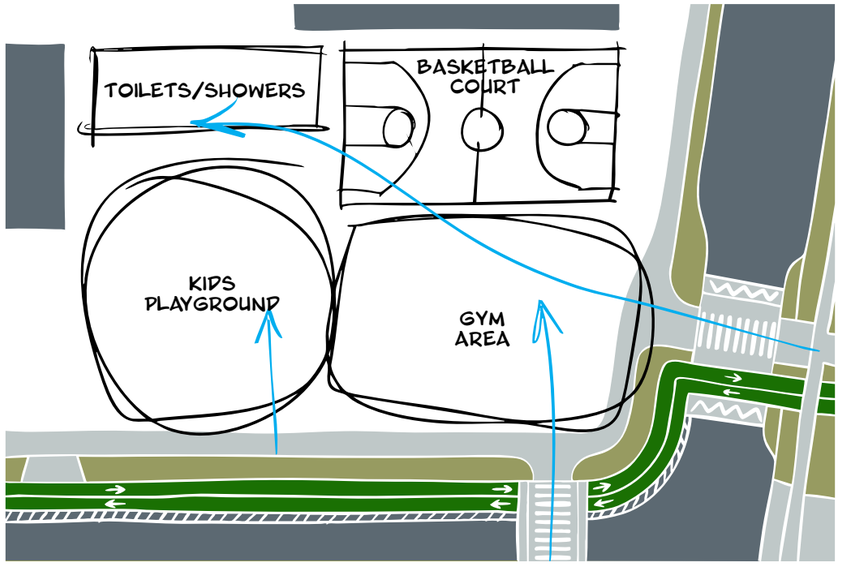
CLARK STREET

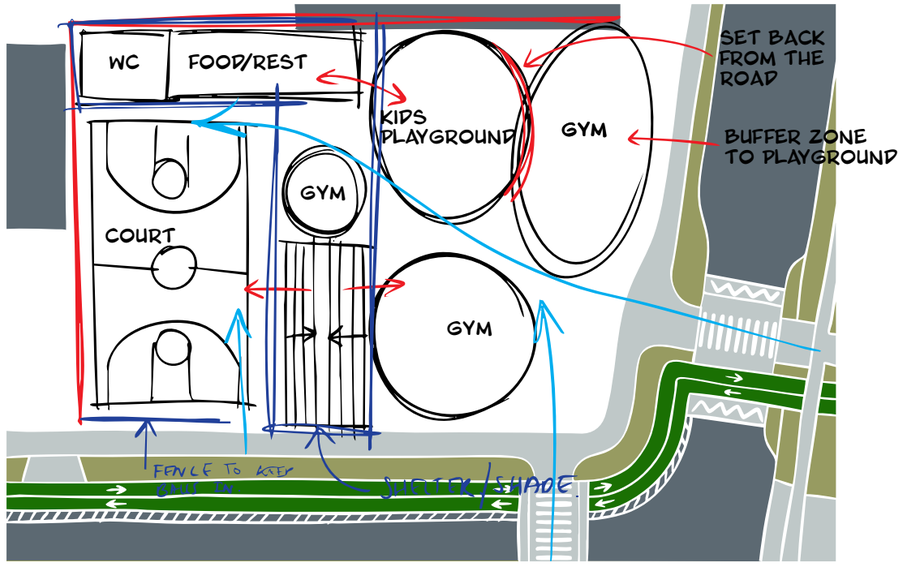
1
1 PURIRI STREET - SITE PLAN - PROPOSED

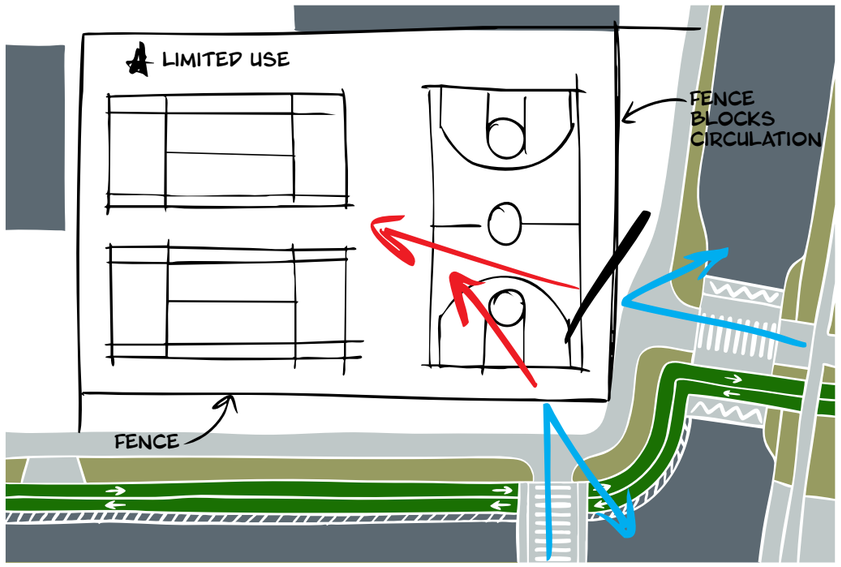
SCALE 1:500 @ A1 | 1:1000 @ A3

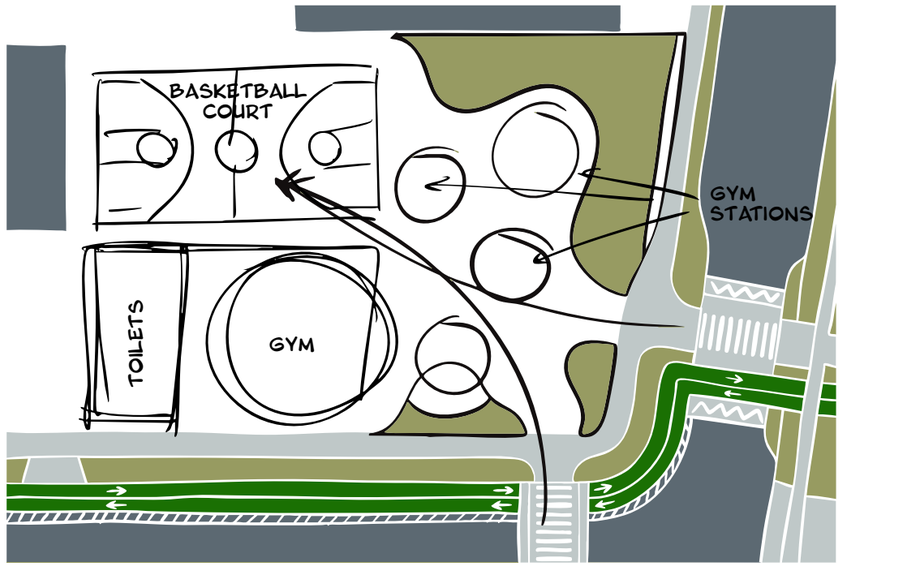
1/1 PURIRI EAST - SITE PLAN - EXISTING

SCALE 1:100 @ A1 | 1:200 @ A3


TOILETS/SHOWERS
BASKETBALL COURT
KIDS PLAYGROUND
GYM AREA


WC
FOOD/REST
KIDS PLAYGROUND
GYM
SET BACK FROM THE ROAD
BUFFER ZONE TO PLAYGROUND
COURT
GYM
GYM
FENCE TO KEEP
SHELTER/SHADE


LIMITED USE
FENCE BLOCKS CIRCULATION
FENCE


BASKETBALL COURT
GYM STATIONS
TOILETS
GYM

TOILETS

ACC WC

BBQ AREA

SITTING AREA

PLAYGROUND CHILD FOCUSED

OUTDOOR GYM KOMPAN - EQUIPMENT

COVERED CALISTHENICS GYM AREA

FULL SIZE BASKETBALL COURT

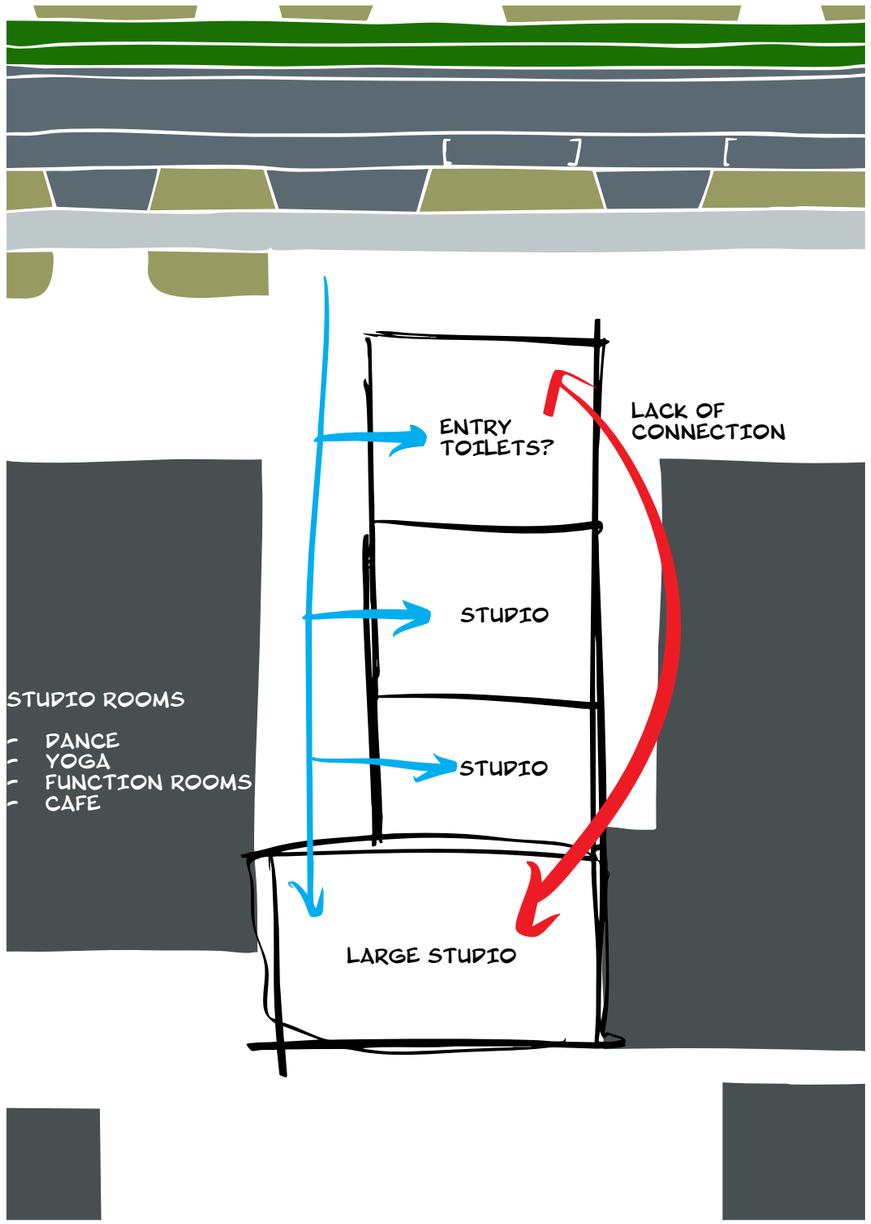
CALISTHENICS OUTDOOR AREA KOMAPN - EQUIPMENT

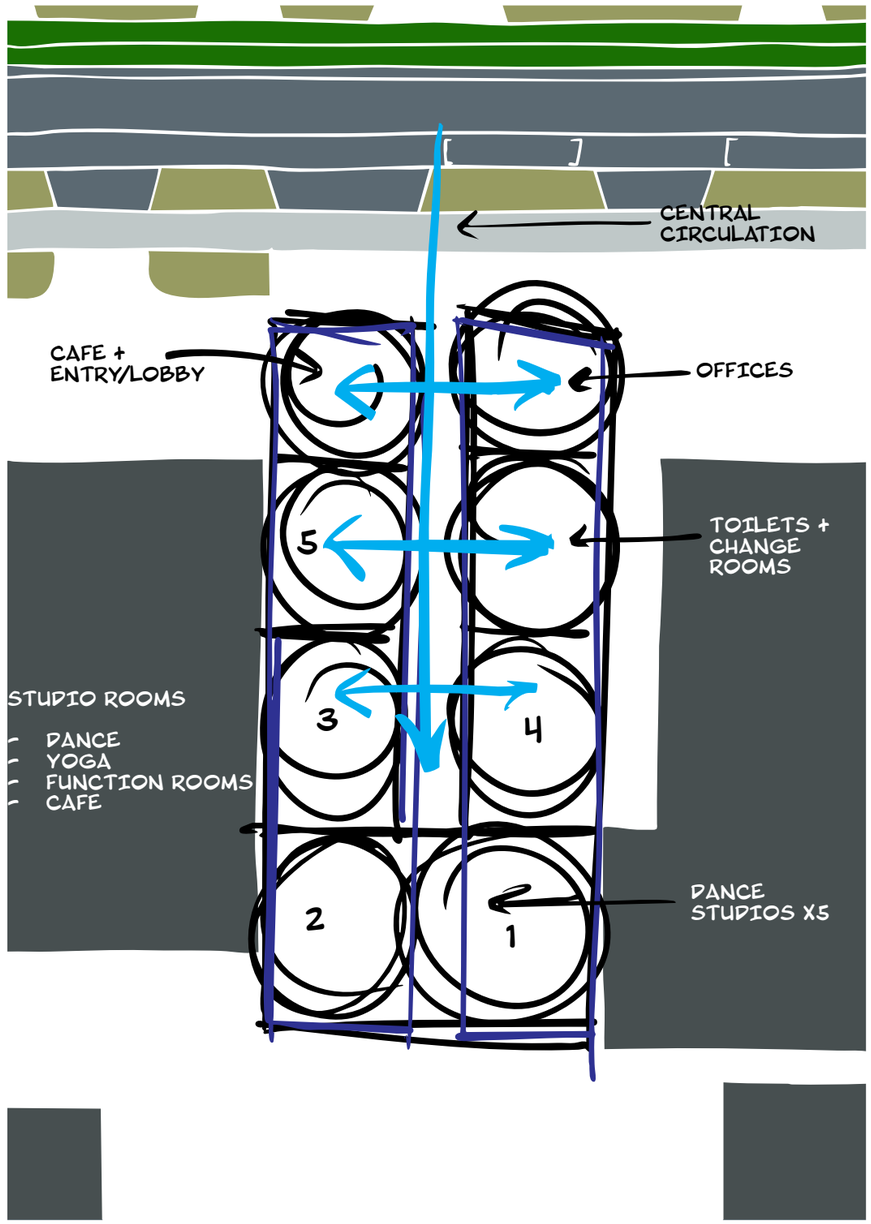
1 PURIRI EAST - SITE PLAN - FINAL CONCEPT

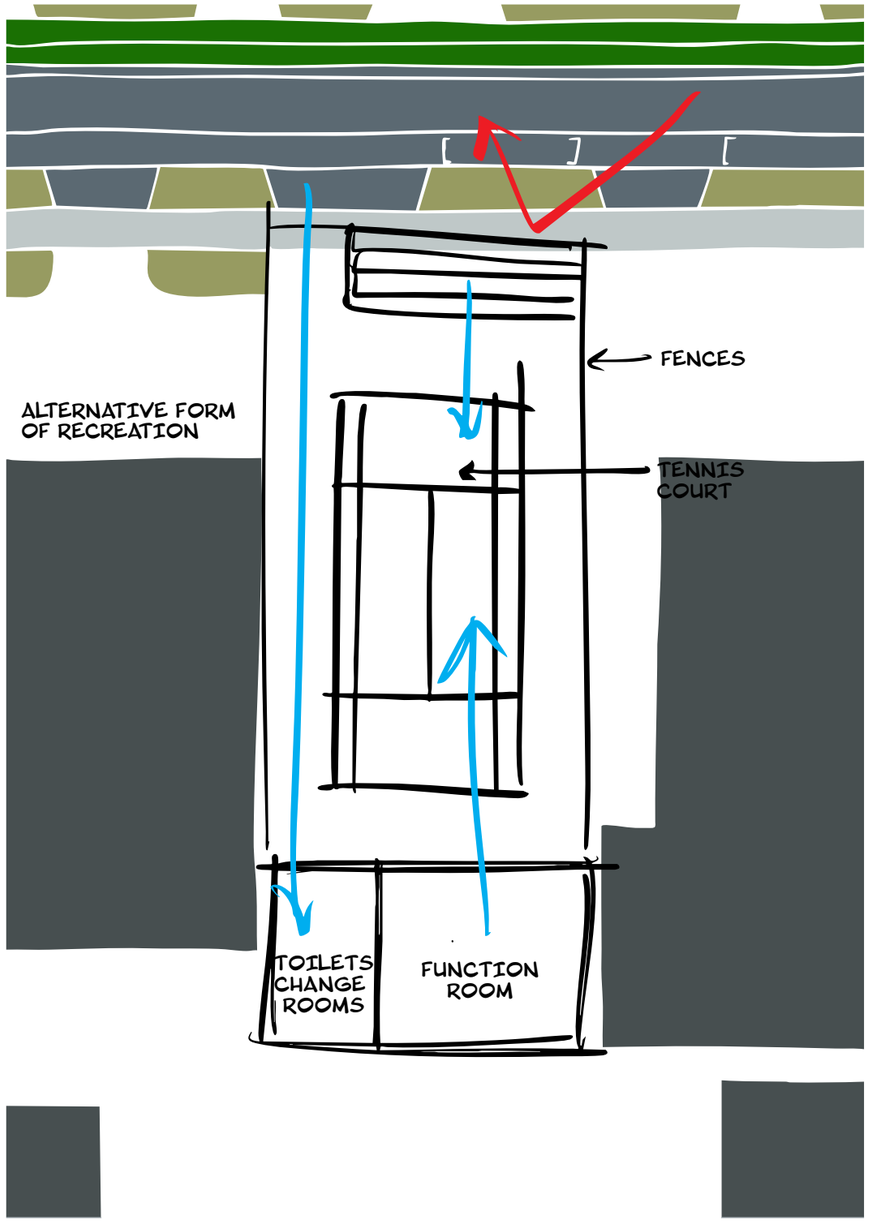
1 SCALE 1:100 @ A1 | 1:200 @ A3

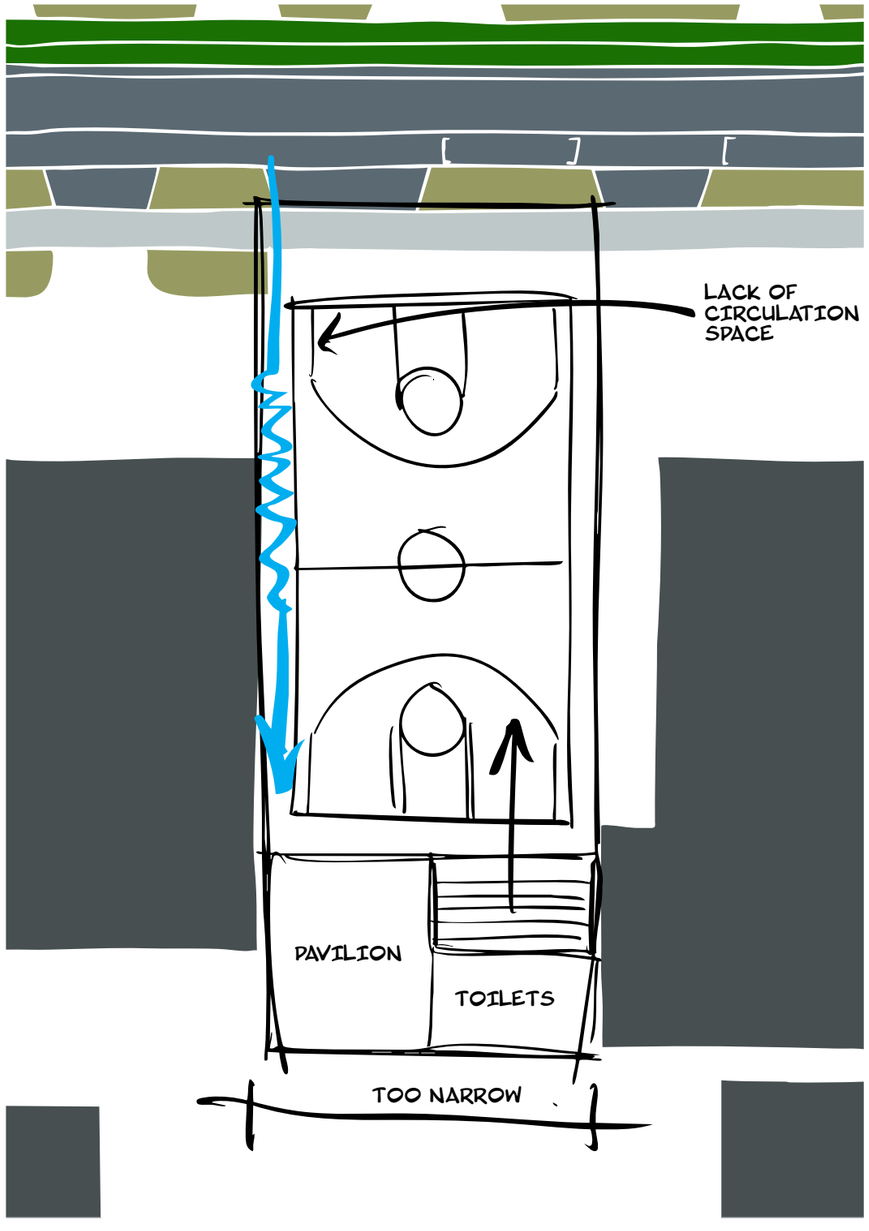
10.4 Puriri Studio

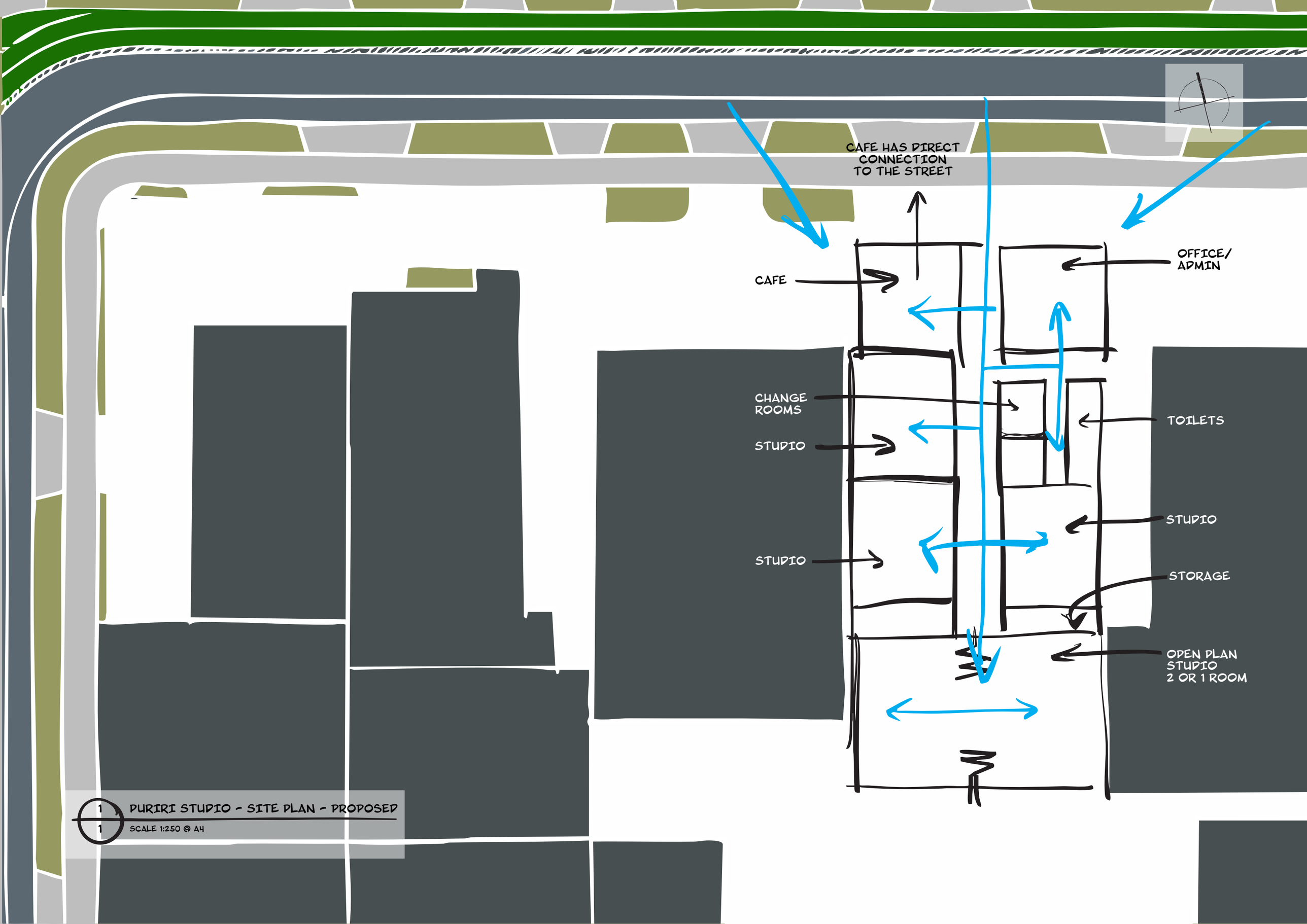
1
1 PURIRI STUDIO - SITE PLAN - EXISTING
SCALE 1:250 @ A4


ENTRY
TOILETS?
LACK OF
CONNECTION
STUDIO
STUDIO
LARGE STUDIO
STUDIO ROOMS
- DANCE
- YOGA
- FUNCTION ROOMS
- CAFE


CENTRAL
CIRCULATION
CAFE +
ENTRY/LOBBY
OFFICES
TOILETS +
CHANGE
ROOMS
5
3
4
2
1
DANCE
STUDIOS X5
STUDIO ROOMS
- DANCE
- YOGA
- FUNCTION ROOMS
- CAFE


ALTERNATIVE FORM OF RECREATION
FENCES
TENNIS COURT
TOILETS CHANGE ROOMS
FUNCTION ROOM


LACK OF CIRCULATION SPACE
PAVILION
TOILETS
TOO NARROW



1 PURIRI STUDIO - SITE PLAN - PROPOSED
1 SCALE 1:250 @ A4

MEMORIAL DRIVE

TOTARA AVENUE

HETANA STREET

CLARK STREET

CROWN LYNN PLACE

RANKIN AVENUE

MEMORIAL DRIVE - SITE PLAN - EXISTING

SCALE 1:500 @ A1 | 1:1000 @ A3

1
1

MEMORIAL DRIVE

TOTARA AVENUE

WAYPOINT - EXISTING
NEW LYNN INTERCHANGE STATION

WAYPOINT - EXISTING
TRAIN STATION EAST ENTRY

WAYPOINT INTERVENTION 3
4 CLARK STREET
- REPURPOSE FROM AUTOMOTIVE TO RECREATION.
- THE CORNER SITE PROVIDES GREATER VISIBILITY FROM TWO ROADS.
- THE SITE PROVIDES A DIRECT LINK TO THE NEW LYNN TRAIN STATION.
- RECLAIM THE ROAD TO SERVE THE PEDESTRIANS. REDUCE THE BARRIERS SURROUNDING THE HEART OF NEW LYNN.

HETANA STREET

CLARK STREET

WAYPOINT - EXISTING
GARDNER RESERVE

WAYPOINT - INTERVENTION 4
3 CROWN LYNN PLACE
- REPURPOSE TRADE BUILDING
- VISIABILITY FROM 4 ROADS, POTENTIAL TO BECOME A CENTRAL FOCUS POINT OF NEW LYNN TOWNSHIP
- A LARGER SITE PROVIDES A BETTER OPPORTUNITY FOR LARGER RECREATION ACTIVITIES, SUCH AS AN AQUATIC CENTRE.
- LINKING CONNECTION BETWEEN THE TRAIN STATION, 4 CLARK STREET AND GARDNER RESERVE.
- CONNECTING TO GARDNER RESERVE STRENGTHENS THE RELATIONSHIP BETWEEN THE TRAIN STATION, MANAWA RESERVE WETLAND AND AMBRICO PLACE.

RANKIN AVENUE

CROWN LYNN PLACE

MEMORIAL DRIVE - WAY POINTS - PROPOSED

SCALE 1:500 @ A1 | 1:1000 @ A3

1/1

MEMORIAL DRIVE

TOTARA AVENUE

CLARK STREET

HETANA STREET

RANKIN AVENUE

CROWN LYNN PLACE

BARRIERS

- CLARK STREET, MEMORIAL DRIVE, AND TOTARA AVENUE CUT OFF NEW LYNN TRAIN STATION.
- THE CENTRE OF NEW LYNN IS INUNDATED WITH CAR PARKS. THE EXISTING CROWN LYNN CARPARK, HIGHLIGHTED IN RED, COULD BE REDUCED AND RECLAIMED FOR AN AREA OF NEW RECREATION TO SUPPORT THE EXISTING TRAIN STATION AND LOCAL SHOPS.
- AT THE SOUTH END OF THE CARPAPRK, A ROAD CONNECTS CROWN LYNN PLACE WITH RANKIN AVENUE. RECLAIMING THIS ZONE FOR PEDESTRIAN-ONLY ACCESS WOULD SAFELY CONNECT GARDNER RESERVE, AMBRICO PLAYGROUND, MANAWA RESERVE AND RESIDENTS TO THE CENTRE OF NEW LYNN.

MEMORIAL DRIVE - WAY POINTS - PROPOSED

SCALE 1:500 @ A1 | 1:1000 @ A3

1
1

Figure 165 - Brain Park? New Lynn Train Station, Clark Street - Photograph by Author

Figure 166 - Memorial Drive - Photograph by Author

Figure 167 - Mother and baby, Memorial Drive - Photograph by Author

Figure 168 - Heart of New Lynn, Where Everyone Gets There Tyres, Clark Street - Photograph by Author

Figure 169 - Train station and the Tyre Shop, Clark Street - Photograph by Author

Figure 170 - Come to New Lynn, Home of the Big Red Box, Clark Street - Photograph by Author

Figure 171 - New Lynn Heritage, Clinker Place - Photograph by Author

Figure 172 - Come to New Lynn, where everyone gets a carpark, Ranking Avenue - Photograph by Author

MAINTAIN VEHICLE ACCES TO APARTMENT BUILDING

END ROAD PEDESTRIAN ONLY ZONE STARTS

MEMORIAL LANE

PEDESTRIAN ONLY ZONE
OPEN SQUARE.
FLEXIBLE SPACE
- ART INSTALLATIONS
- MARKETS
- COMMUNITY EVENTS

BUS ONLY

TOTARA AVENUE

SKATEPARK
REBEL IN THE CENTRE!

HETANA STREET

RAISED TABLE AT INTERSECTION

CLARK STREET

ENTRY

GRASS AREA
MINI PLAYGROUND

PRIORITY PARKING

ENTRY

REDUCE SIZE OF CARPARK

RAISED PEDESTRIAN CROSSING

ENTRY

AQUATIC CENTRE

CROWN LYNN PLACE

RANKIN AVENUE

MEMORIAL DRIVE - SITE PLAN - CONCEPT

SCALE 1:500 @ A1 | 1:1000 @ A3

1
1

NEW LYNN LIBRARY

LYNN MALL

MEMORIAL LANE
PEDESTRIAN
ZONE
OPEN SPACE

MEMORIAL
SKATEPARK

TRAIN STATION

CAFE

COMMUNITY
CENTRE

CLARK STREET

RESTAURANT

CAFE

LES MILLS

CROWN LYNN
POOLS

CROWN LYNN PLACE

NEW WORLD

RANKIN AVENUE

MEMORIAL DRIVE - SITE PLAN - PROPOSED

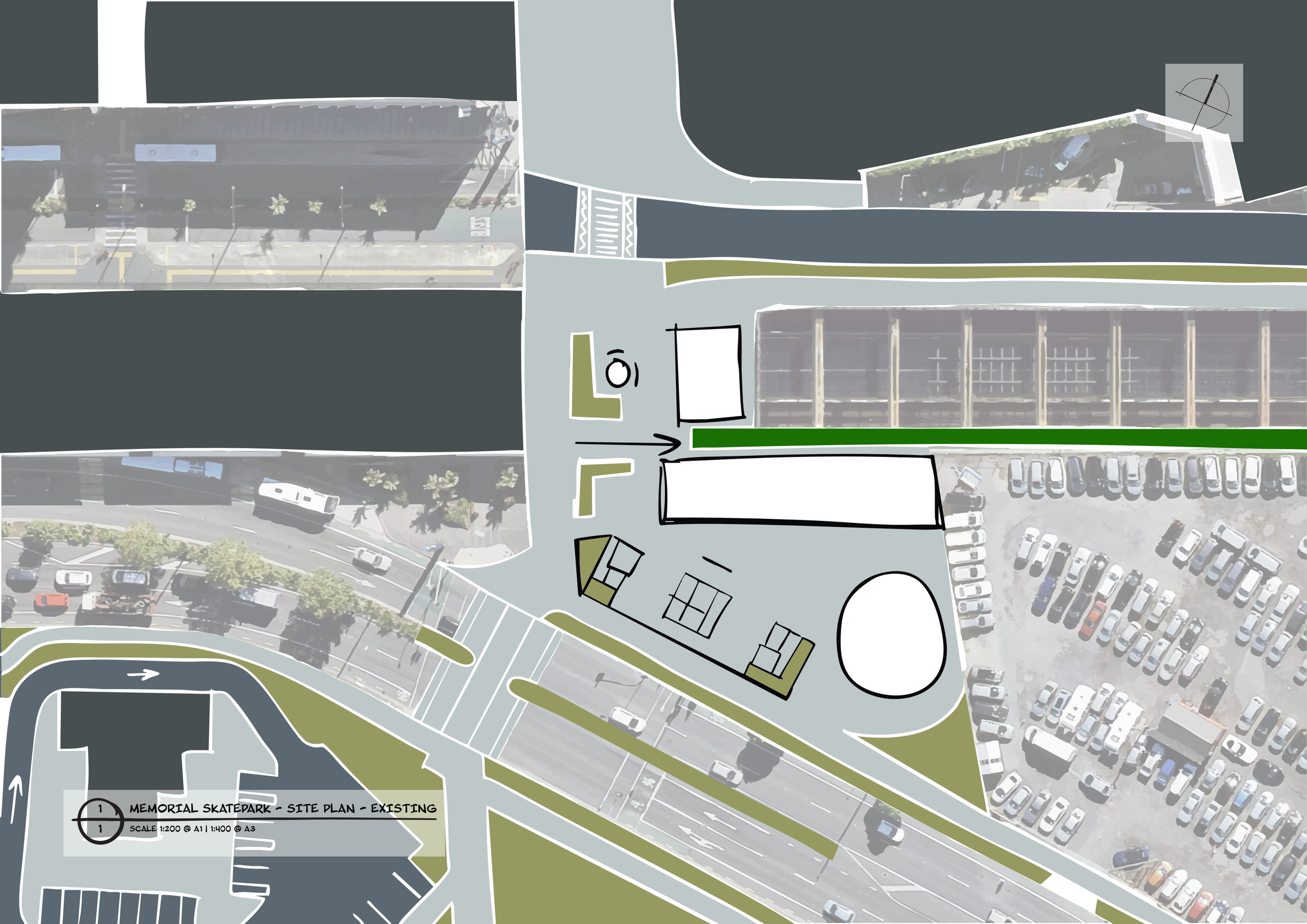
SCALE 1:500 @ A1 | 1:1000 @ A3

1
1

10.6 Memorial Skatepark

1/1 MEMORIAL SKATEPARK - SITE PLAN - EXISTING

SCALE 1:200 @ A1 | 1:400 @ A3



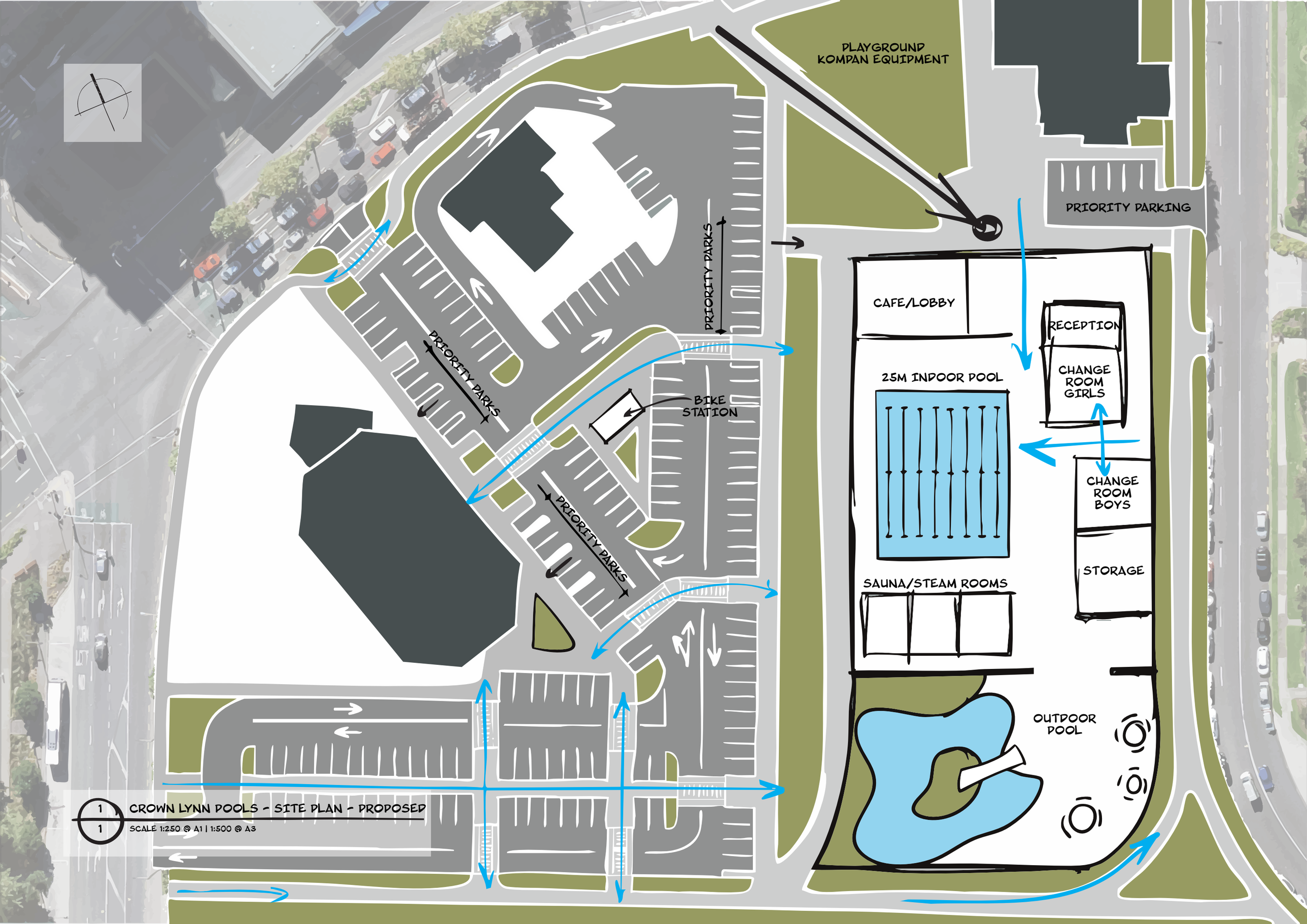
1 MEMORIAL SKATEPARK - SITE PLAN - EXISTING

1 SCALE 1:200 @ A1 | 1:400 @ A3

10.7 Crown Lynn Pools

1/1 CROWN LYNN POOLS - SITE PLAN - EXISTING

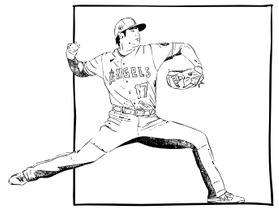
SCALE 1:250 @ A1 | 1:500 @ A3



1
1 CROWN LYNN POOLS - SITE PLAN - PROPOSED

SCALE 1:250 @ A1 | 1:500 @ A3

Figure 173 - Fighting the resistance - Artwork by Author, Based on Photograph by the Maltese Olympic Committee (n.d.).



Chapter Eleven

The Beauty of Movement

> *Movement is a medicine for creating change in a person's physical, emotional, and mental states*
>
> *Carol Welch*

Towards the beginning of this project, I felt pressure to succeed and do justice to people with disabilities in my design strategy. Swamped with tonnes of online research, opinions, and philosophies, I took a break from my screen and sought out a training course in disability to refresh my mind. Te Pou, a New Zealand-based organisation, works to increase understanding of disability in the workforce. I decided to participate in their Disability 101 course. Towards the end of the seminar, the presenters shared a video of New Zealand Dancer Rodney Bell. Strapped to his wheelchair and suspended from the ceiling, Rodney does an interpretive dance to Māori Waiata, "Ororuarangi remix". Captivated by the music and Rodney's presence, I was reminded that although the etymology of disabled means to "lack", people with disabilities can express themselves through movement no different to any other living thing. Yes, movement may not look the same from person to person, but we are all performers, disabled or not. People with disabilities do not lack at all. Given the

right opportunity and environment, people of all abilities can succeed.

> All living things move; only the inanimate remains still. In movement, the beauty of life is revealed.

Inspired by Rodney's performance, I have explored the movement of three athletes:

Rodney Bell - Dancer

Dan Mancina - Skateboarder

Sophie Pascoe - Swimmer

Architectural space should serve for the beauty of human movement in function. However, there is an opportunity to explore the playfulness of the human spirit in the form of architecture. How can the inanimate capture and reflect movement? Celebrating the diversity of human life.

The following videos were used to explore the above athletes;

Wheelchair Suspension, performed by Rodney Bell (Sins Invalid, 2008).

Dan Mancina's "Keep Rolling" Part by Thrasher Magazine (2022).

Meet Our Paralympians: Sophie Pascoe by (Attitude, 2016)

I have taken a snippet of a video to capture their movement and divided them into single frames to explore how the body moves as they perform their act.

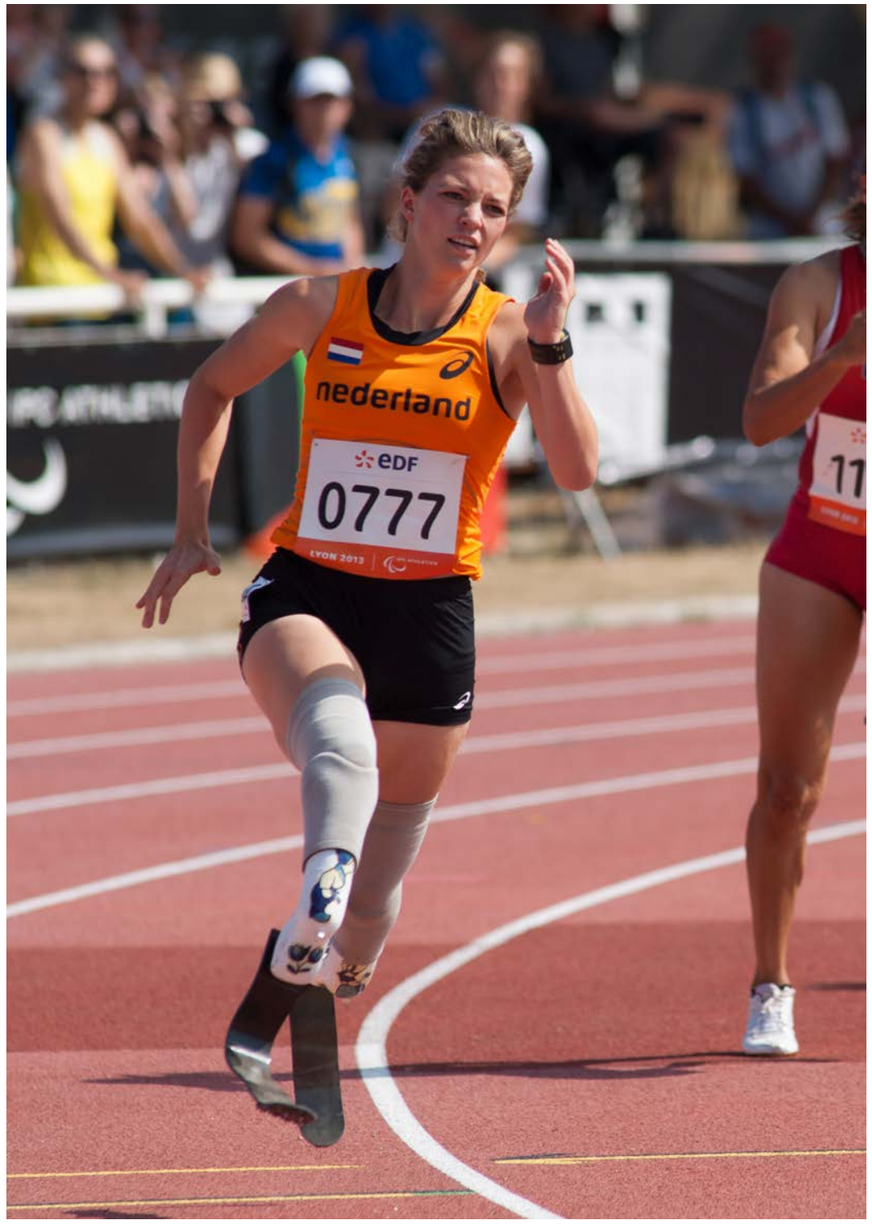


Figure 174 - Marlou van Rhijn competing for the Nederlands in sprinting at the IPC Athletics World Championships in 2013. From *Marlou van Rhijn* by F. Schertzer, 2013, Wikipedia (https://en.wikipedia.org/wiki/Marlou_van_Rhijn). CC BY-SA 3.0.

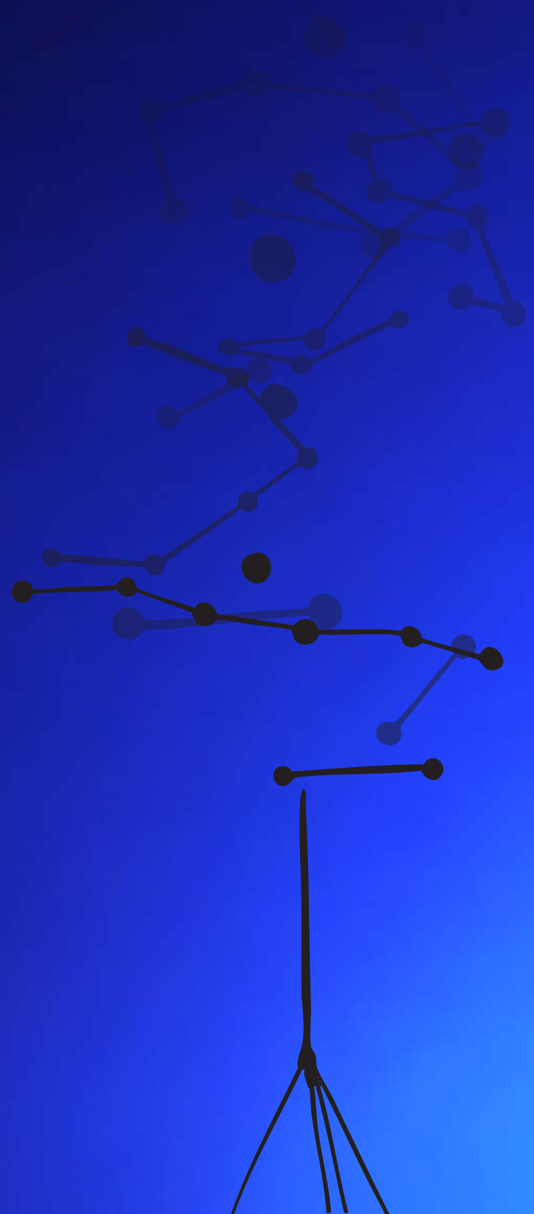
11.1 Rodney Bell

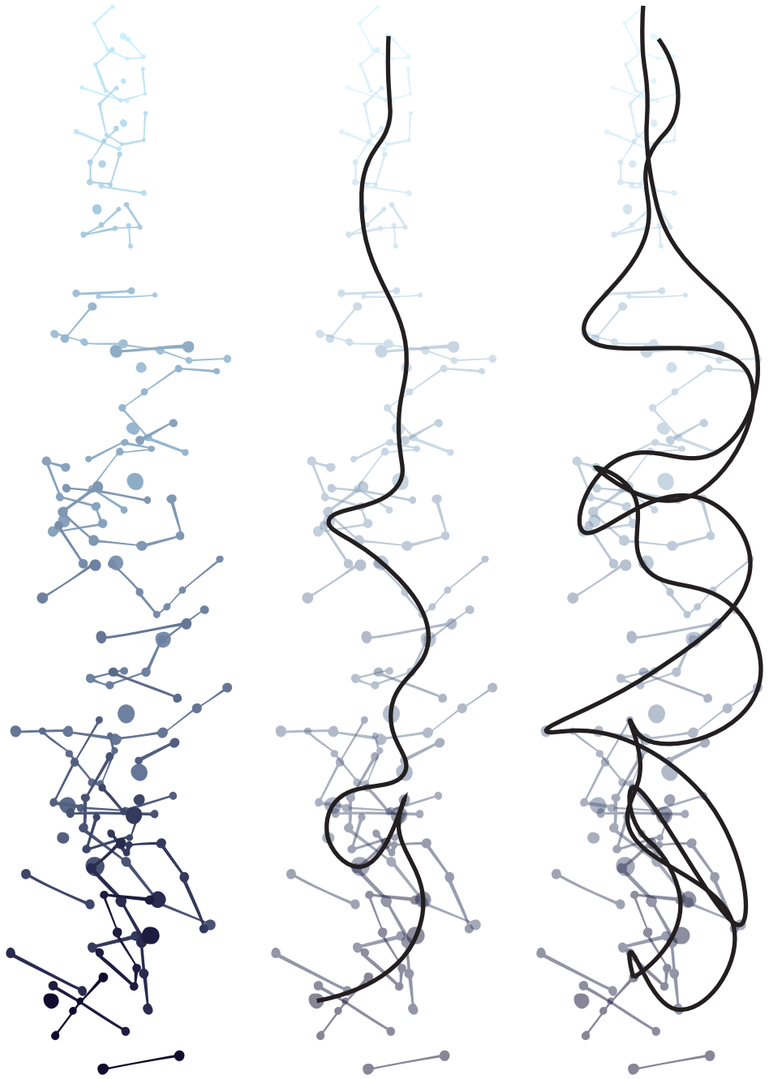
Dance is mauri (life force) for me, you know, it's just part of my breath and I felt like especially now - looking back at my dance journey - it's helped me out in lots of ways

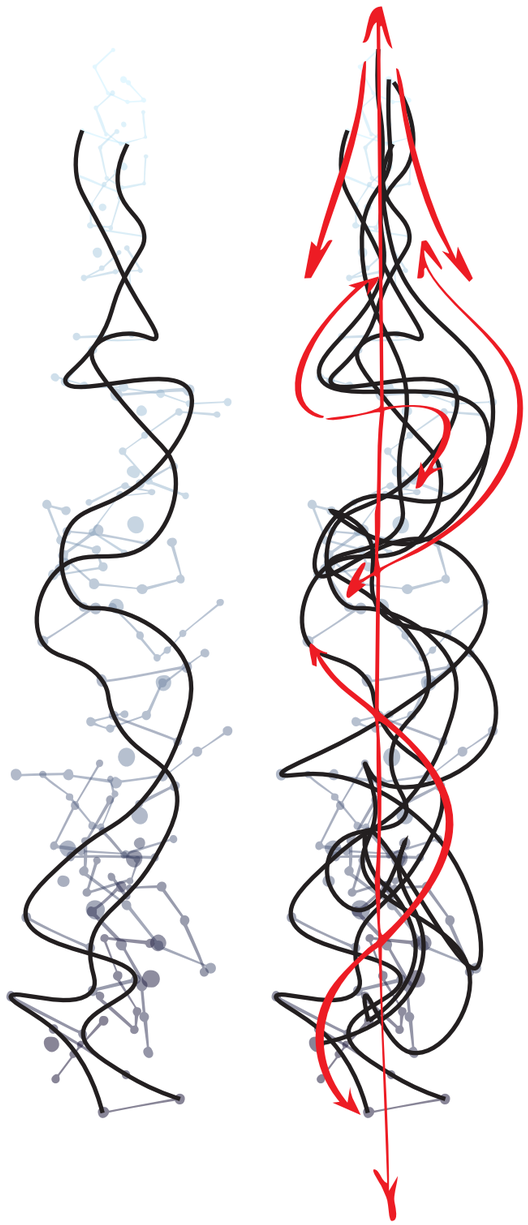
Rodney Bell (Radio New Zealand, 2018)

Hailing from a small town in King County, Te Kuiti, Rodney Bell is now an internationally renowned award-winning dancer and choreographer. At age 15, Rodney pursued a career in butchery. At age 20, his life took on a new trajectory as he was left paralyzed from the chest down following a motorcycle incident (Dow, 2022). A few years later, Rodney was introduced to dance, allowing him to express his life through a new medium (Good Magazine, 2019).

Figure 175 - Rodney Bell performing at Auckland Live class on movement. From *Movement Class with Rodney Bell*, by Auckland Live, 2019. (https://www.aucklandlive.co.nz/show/movement-class-with-rodney-bell)







Movement requires space. Rodney's body moves in three dimensions, rotating in sweeping curves as he is suspended from the ceiling.

Spreading out frames of his dance, I drew splines connecting the movement of the body parts from frame to frame. Independently tracking head, arm, and wheelchair movement, I overlaid the splines to explore their relationship.

I remember how I enjoyed the freedom of being able to express myself through movement, drawing from lived experiences and my body telling stories rather than words.

Rodney Bell (Good Magazine, 2019)

Figure 176 - Rodney Bell speaking at Movement of the Human. From *Rodney Bell and Guest*, by Movement of the Human, 2024. (https://www.movementofthehuman.com/rodney-bell-and-guests)

Figure 177 - Suspension, Rodney Bell - Photograph and Model by Author

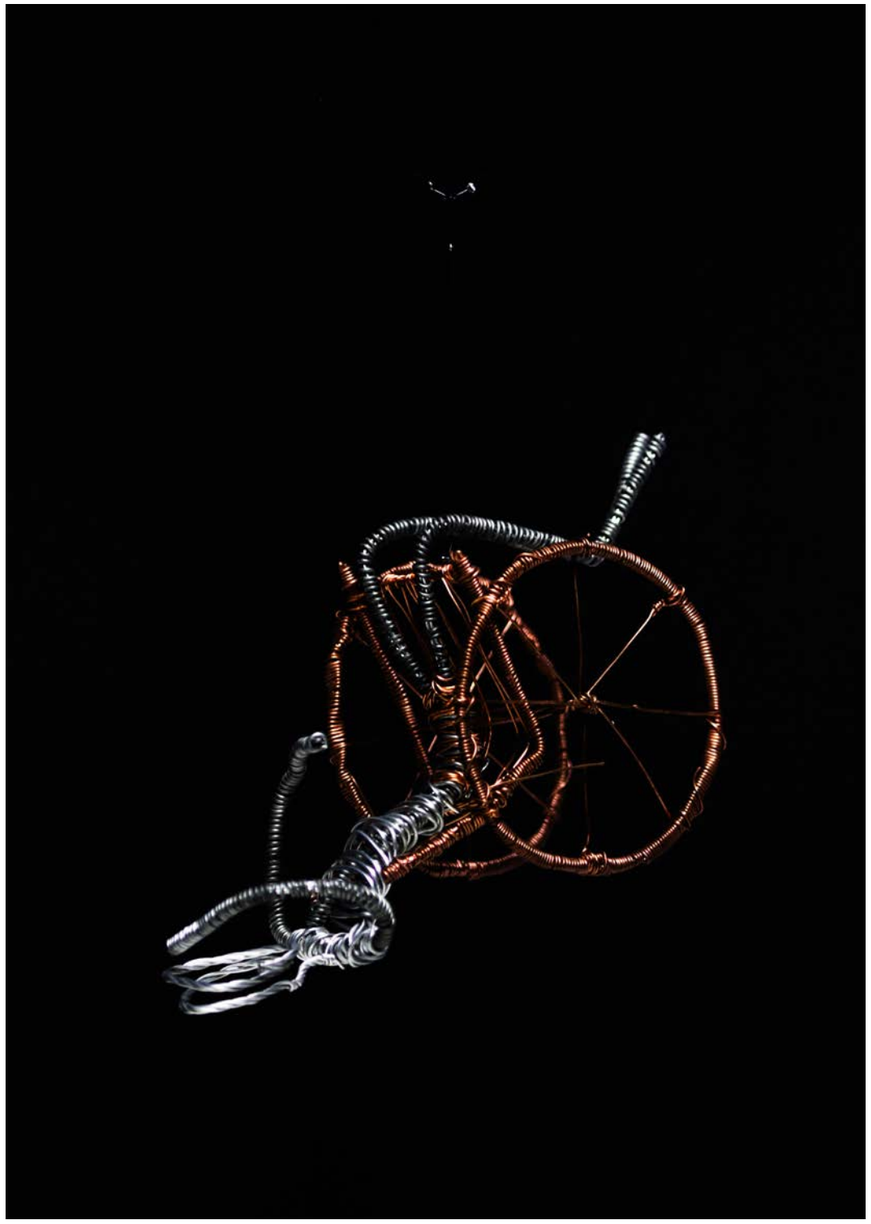


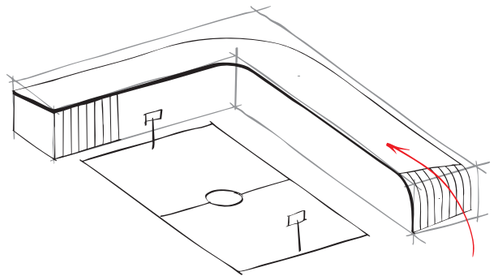
Figure 178 - Suspension, Rodney Bell - Photograph and Model by Author

Figure 179 - Suspension, Rodney Bell - Photograph and Model by Author

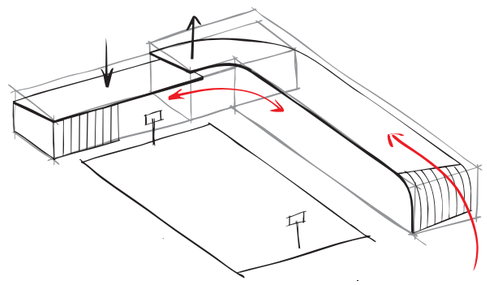
My performance is the accumulation of many layers: my disability, my Māori heritage, my experience on the streets, and my passion for movement and connection.

Rodney Bell (Arts Access Aotearoa, 2017)

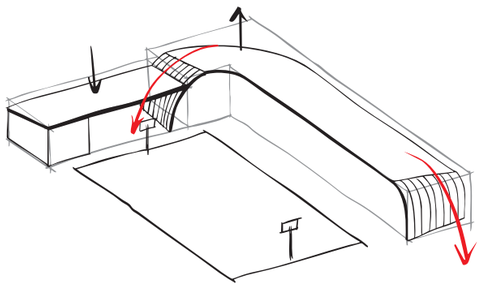
PURIRI EAST - CONCEPT 1



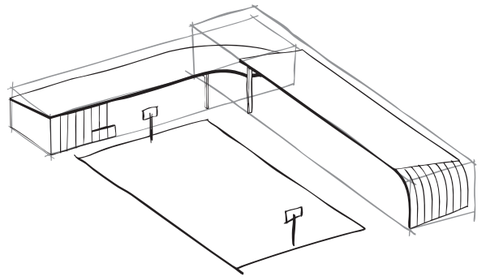
PURIRI EAST - CONCEPT 2

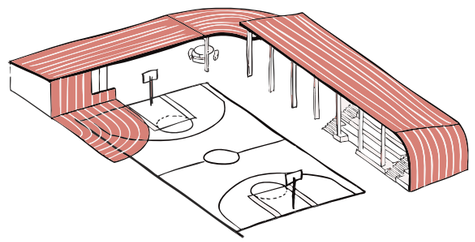


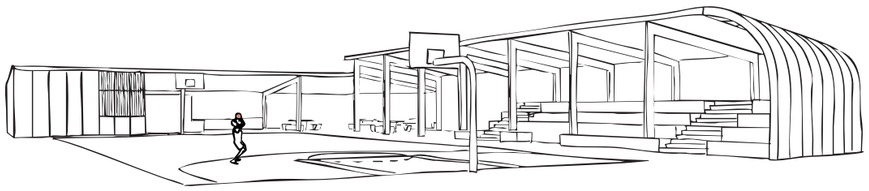
PURIRI EAST - CONCEPT 3

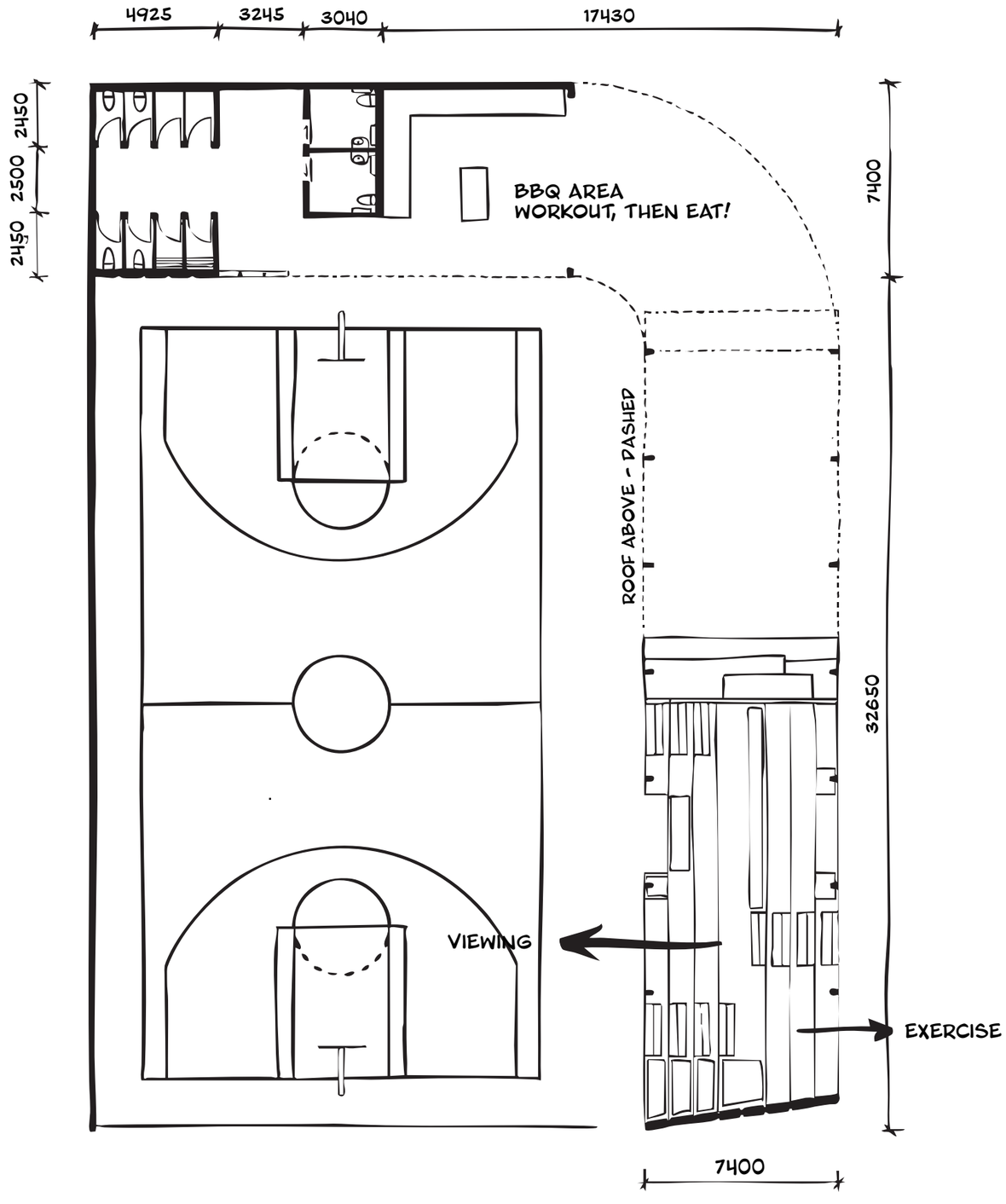


PURIRI EAST - FINAL CONCEPT







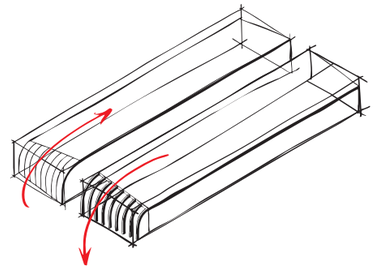


PURIRI EAST

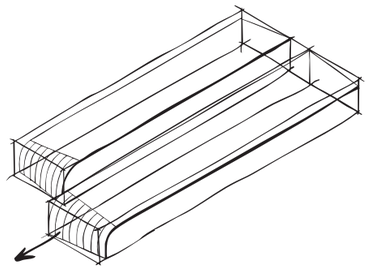
GROUND FLOOR PLAN
PROPOSED CONCEPT (NTS)

- SEPERATE TOILETS AND CHANGE ROOMS 2 EACH
- 2 X ACCESSIBLE TOILETS
- BBQ AREA WITH SEATING
- GRAND STAND
- FULL BASKETBALL COURT

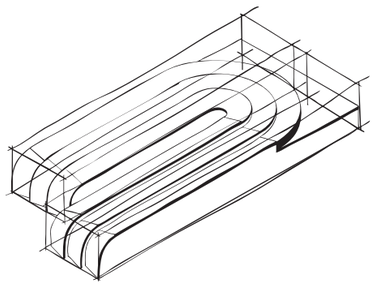
PURIRI STUDIO - CONCEPT 1



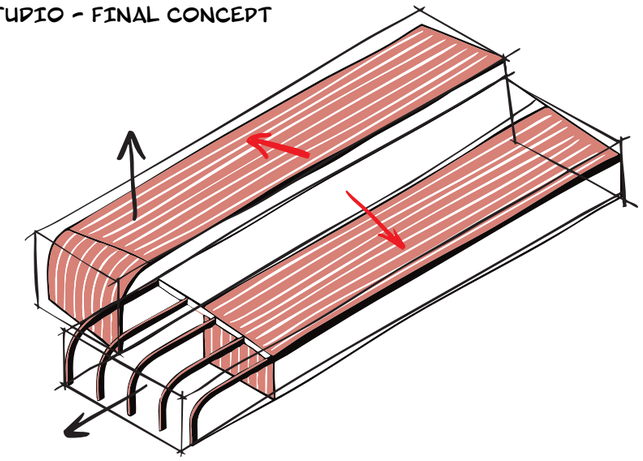
PURIRI STUDIO - CONCEPT 2



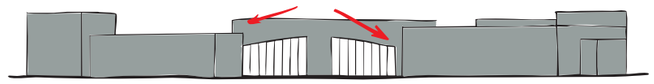
PURIRI STUDIO - CONCEPT 3



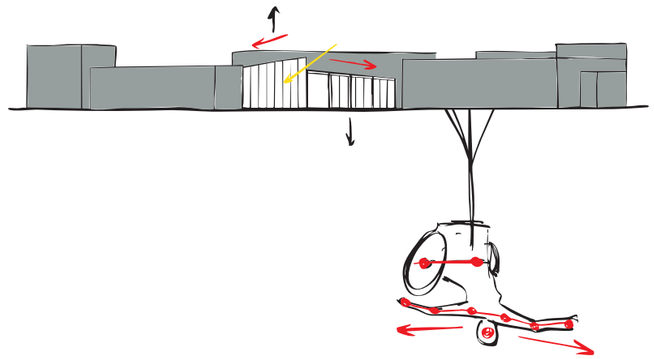
PURIRI STUDIO - FINAL CONCEPT



PURIRI STUDIO - CONCEPT 3
NORTH ELEVATION



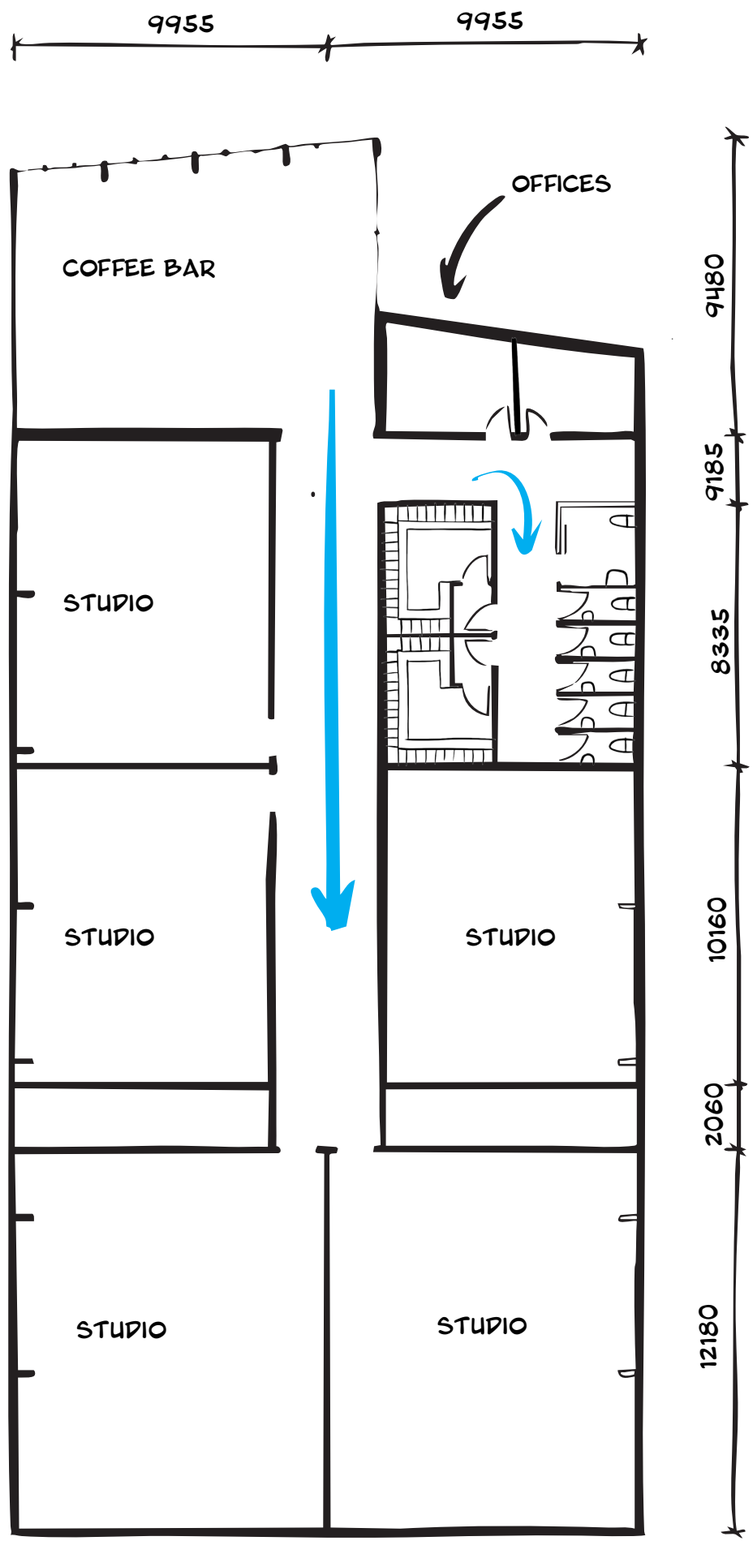
PURIRI STUDIO - FINAL CONCEPT
NORTH ELEVATION



PURIRI STUDIO

GROUND FLOOR PLAN
PROPOSED CONCEPT (NTS)

- 5 X STUDIOS
- SEPERATE TOILETS
- 1 X ACC TOILET
- PRIVACY SCREENS INTO
- CHANGE ROOMS
- 2 X OFFICES

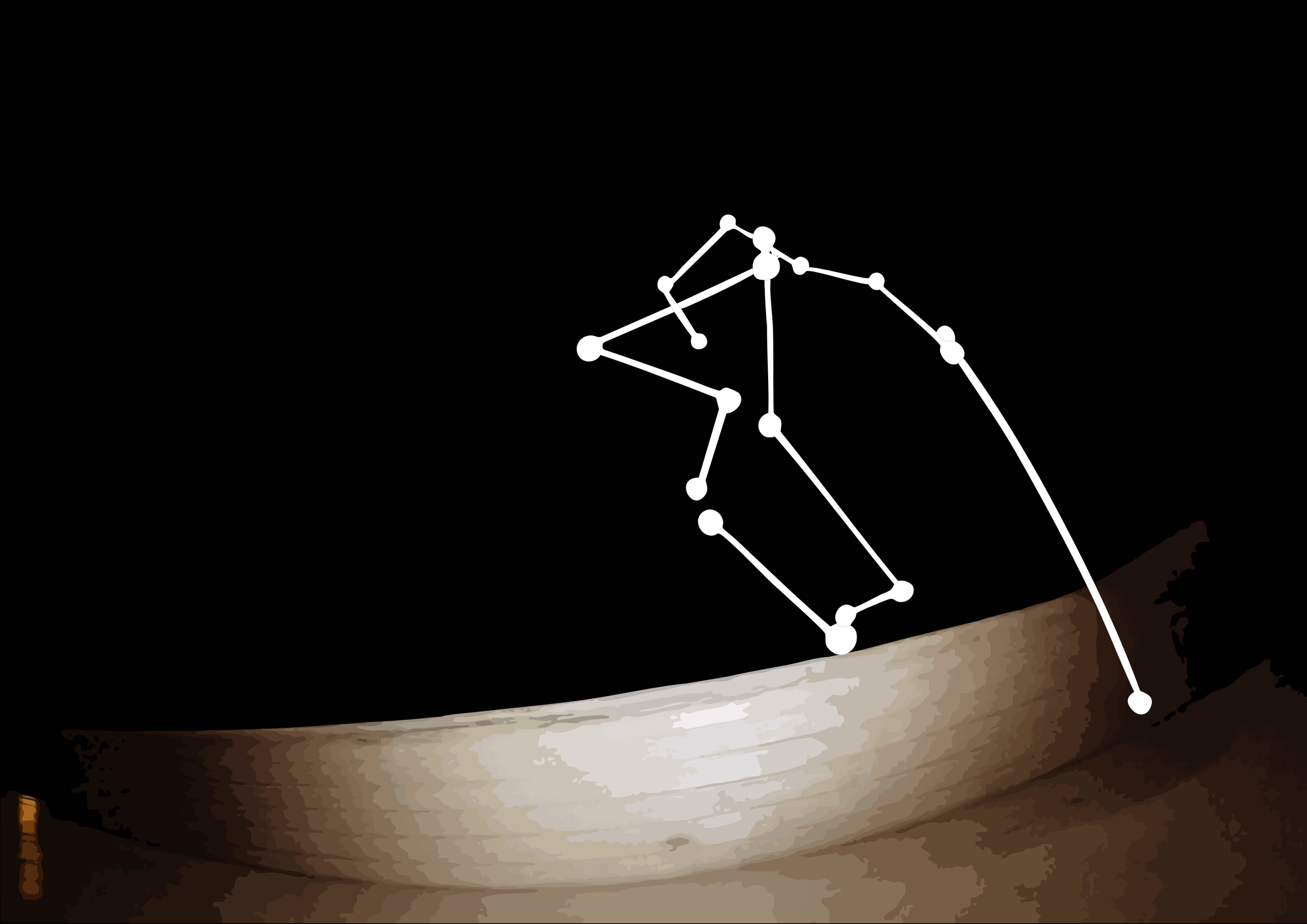


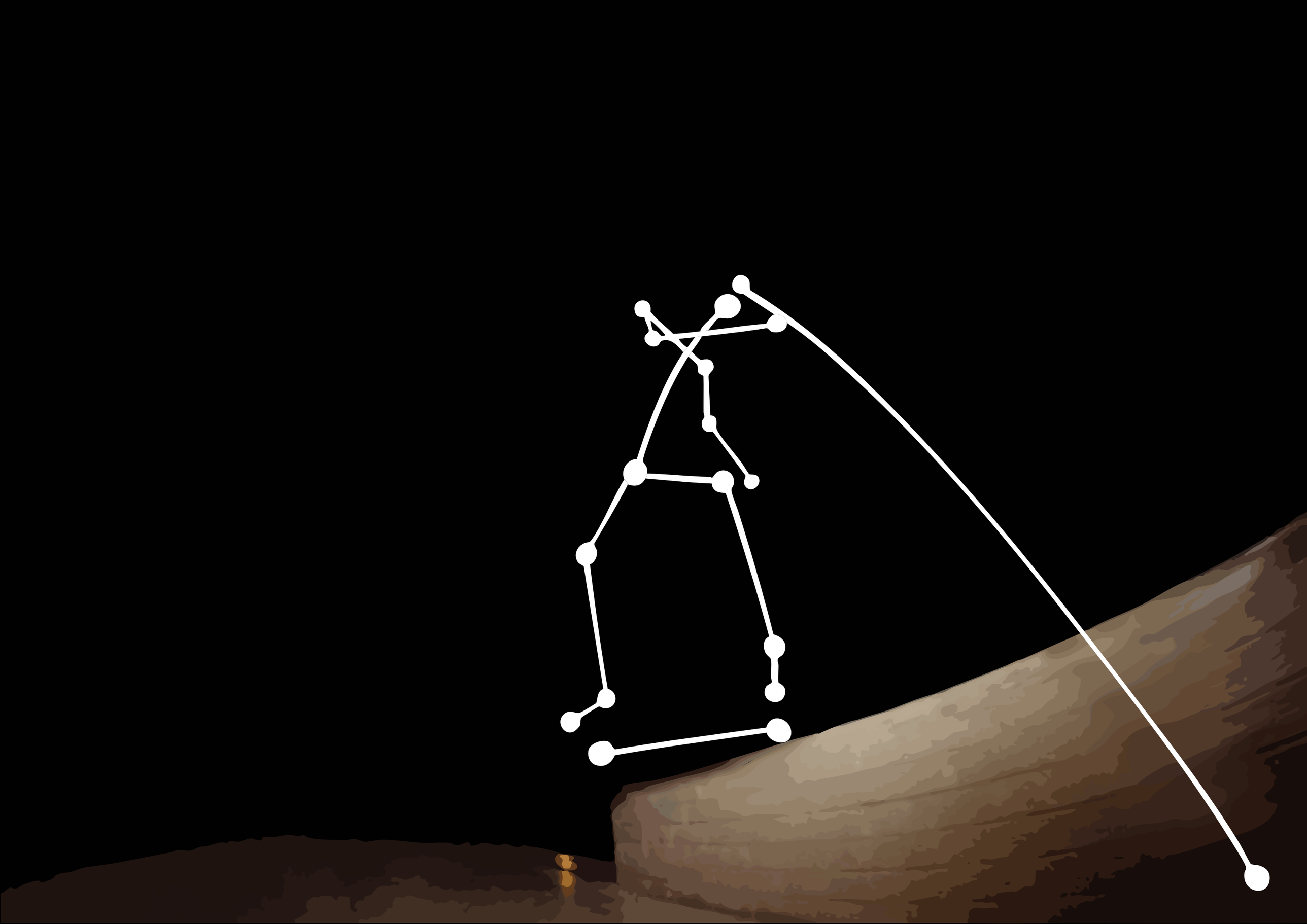
11.2 Dan Mancina

Dan Macina is a skateboarder who has lost his ability to see. I am not sure if you have ever ridden a skateboard, but let me tell you, it is no easy skill when you can see, let alone be blind! At age 13, Dan was diagnosed with degenerative eye disease, retinitis pigmentosa, which eventually led to 90% vision loss. However, that does not stop Dan; I am not sure anything can.

> *I may have lost my sight, but through skateboarding, I've gained a vision and want to share that with the world.*
>
> *Dan Mancina (Real Leaders, 2018)*

Figure 180 - Dan Mancina is performing a skateboard trick. From *Daniel Mancina is Taking Skateboarding Back*, By J. Lewkow, 2019, Skateism (https://www.skateism.com/daniel-mancina-is-taking-skateboarding-back)





Using the cane along the base of the concrete upstand to direct his motion, Dan effortlessly compresses his body like a spring, and he ollies up to the concrete ledge, all while rotating.

> The frames visualise Dan's compression and extension, with the cane acting as support and guidance.

> *Seeing the way people view my skating has changed my perspective of skating a lot. It kind of feels bigger than me now—it has more meaning, more power. It allows me to show others who I am in the way I want to be seen: as a skateboarder*
>
> *Dan Mancina (Daniel Mancna, 2019)*

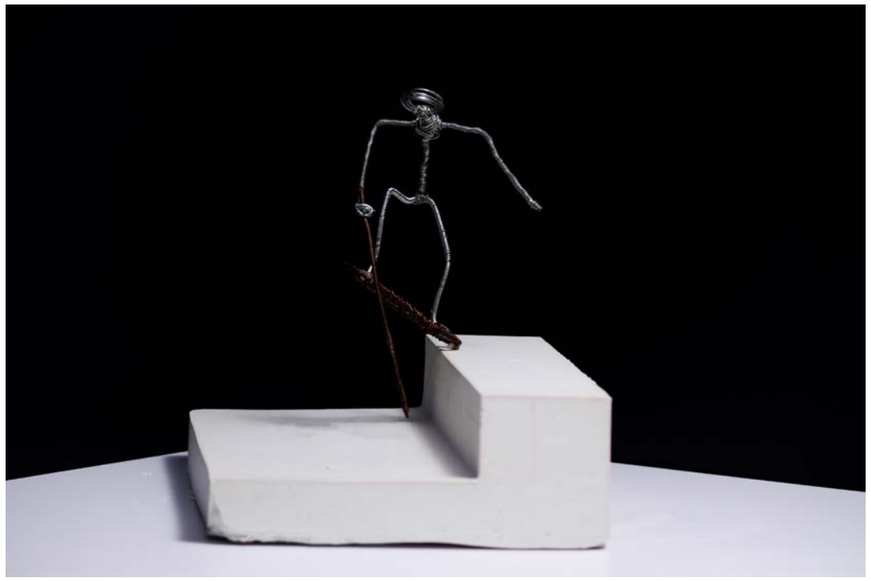
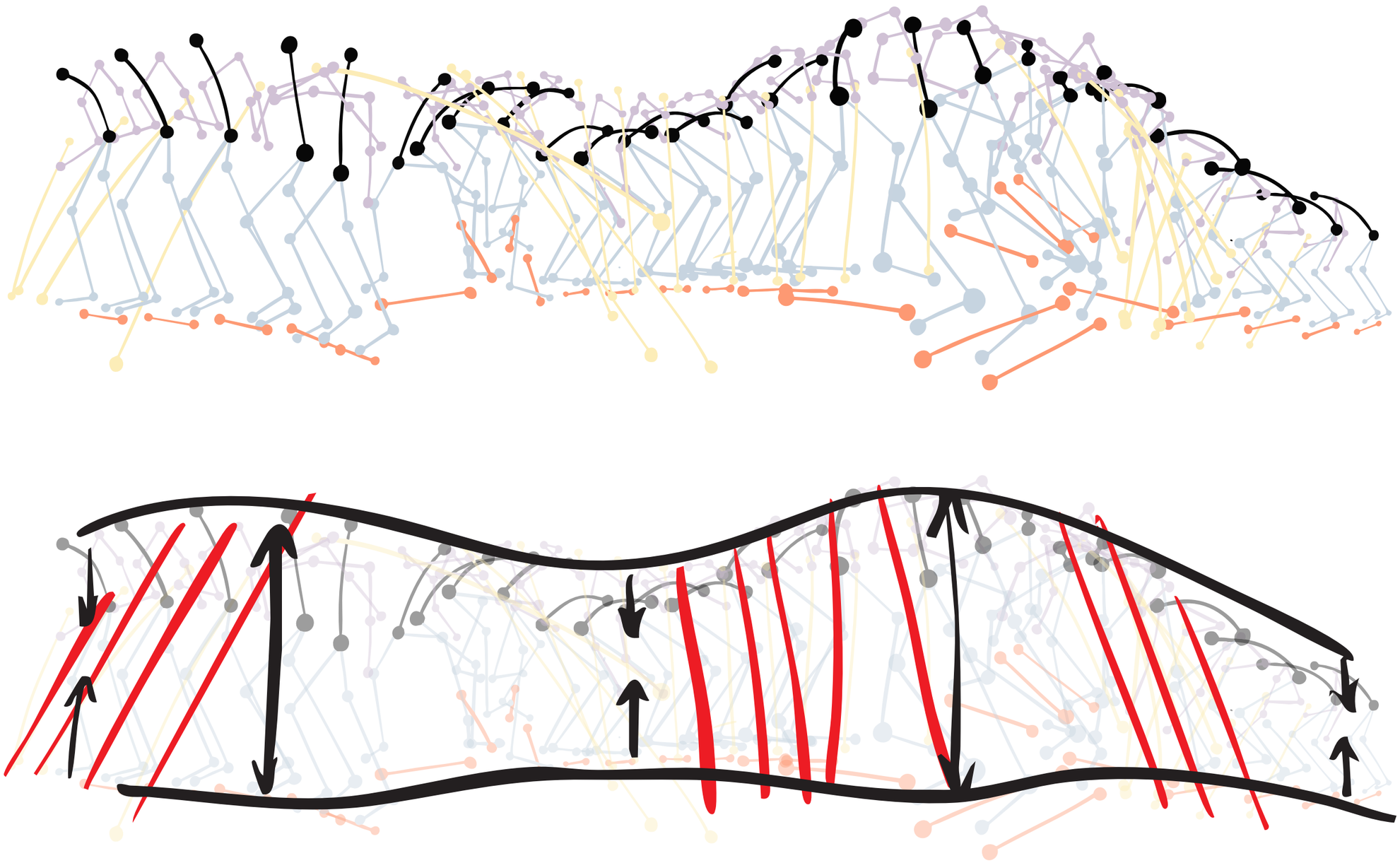
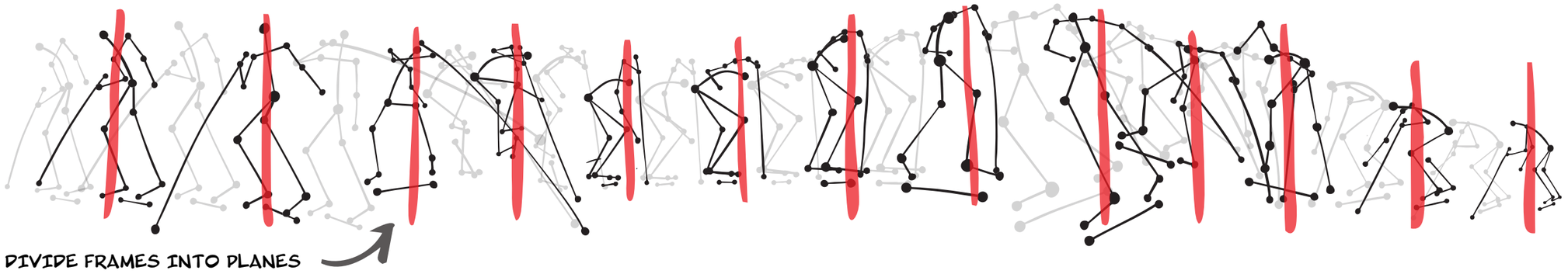
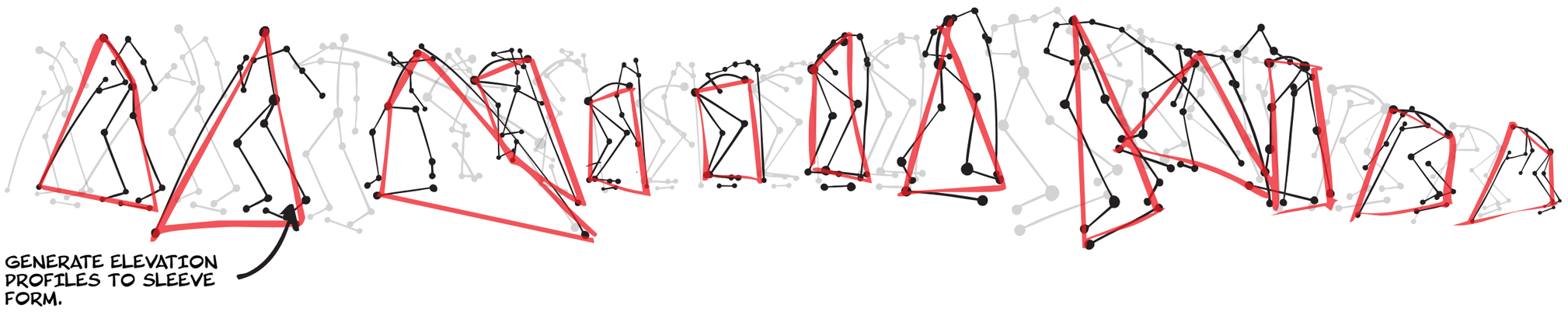
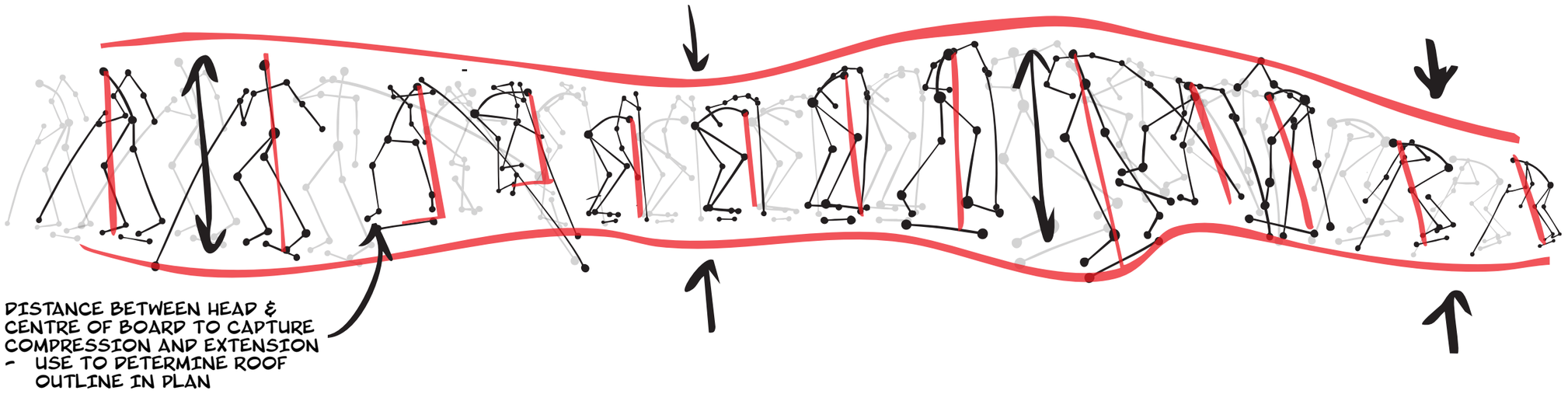


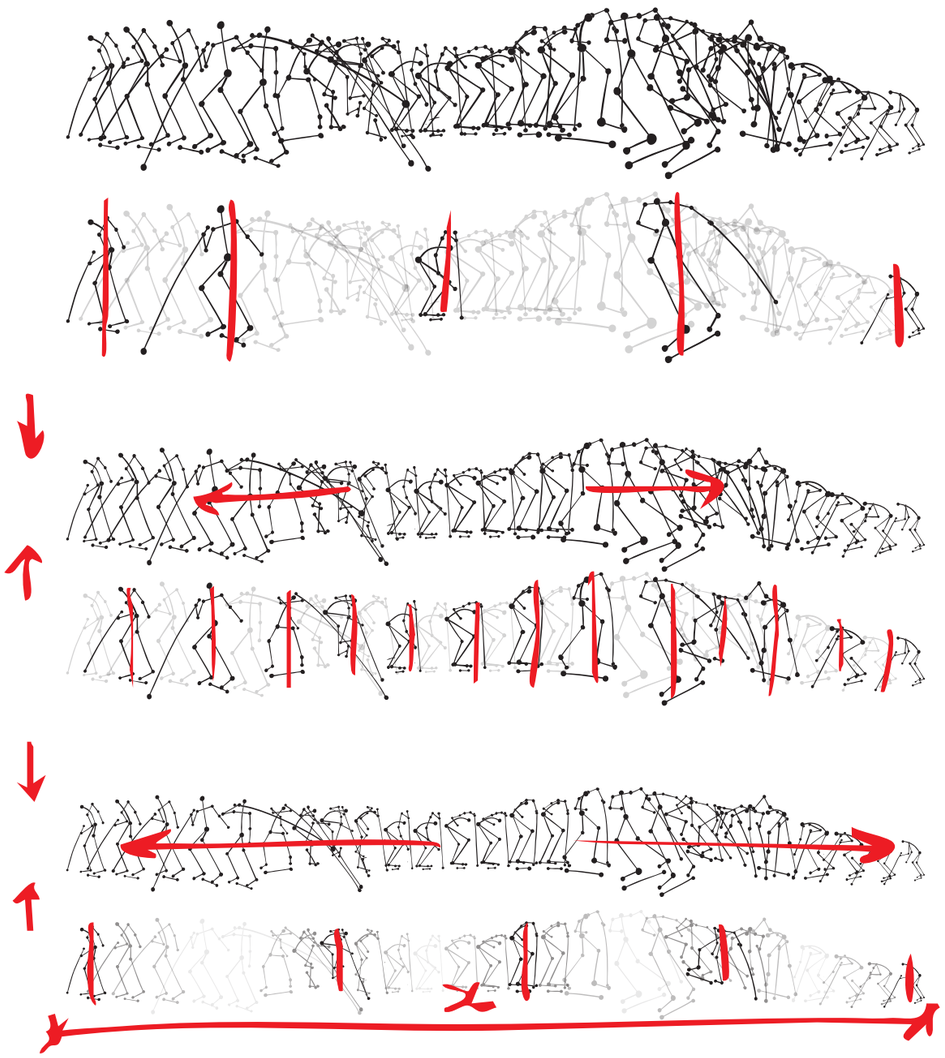
Figure 181, 182, & 183 - Guided Flight, Dan Mancina- Photograph and Model by Author




DIVIDE FRAMES INTO PLANES


GENERATE ELEVATION PROFILES TO SLEEVE FORM.


DISTANCE BETWEEN HEAD & CENTRE OF BOARD TO CAPTURE COMPRESSION AND EXTENSION
- USE TO DETERMINE ROOF OUTLINE IN PLAN



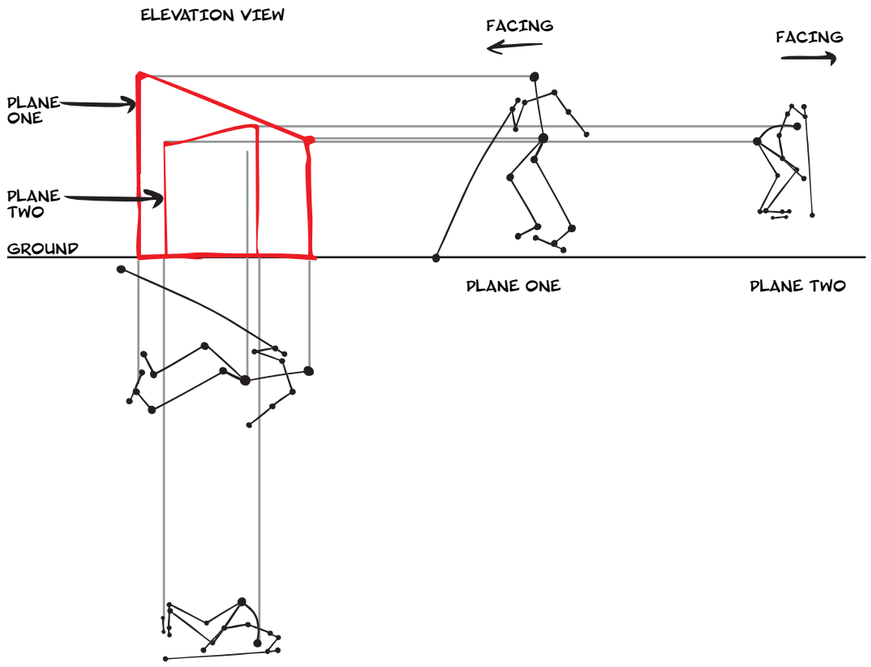
NOTE:

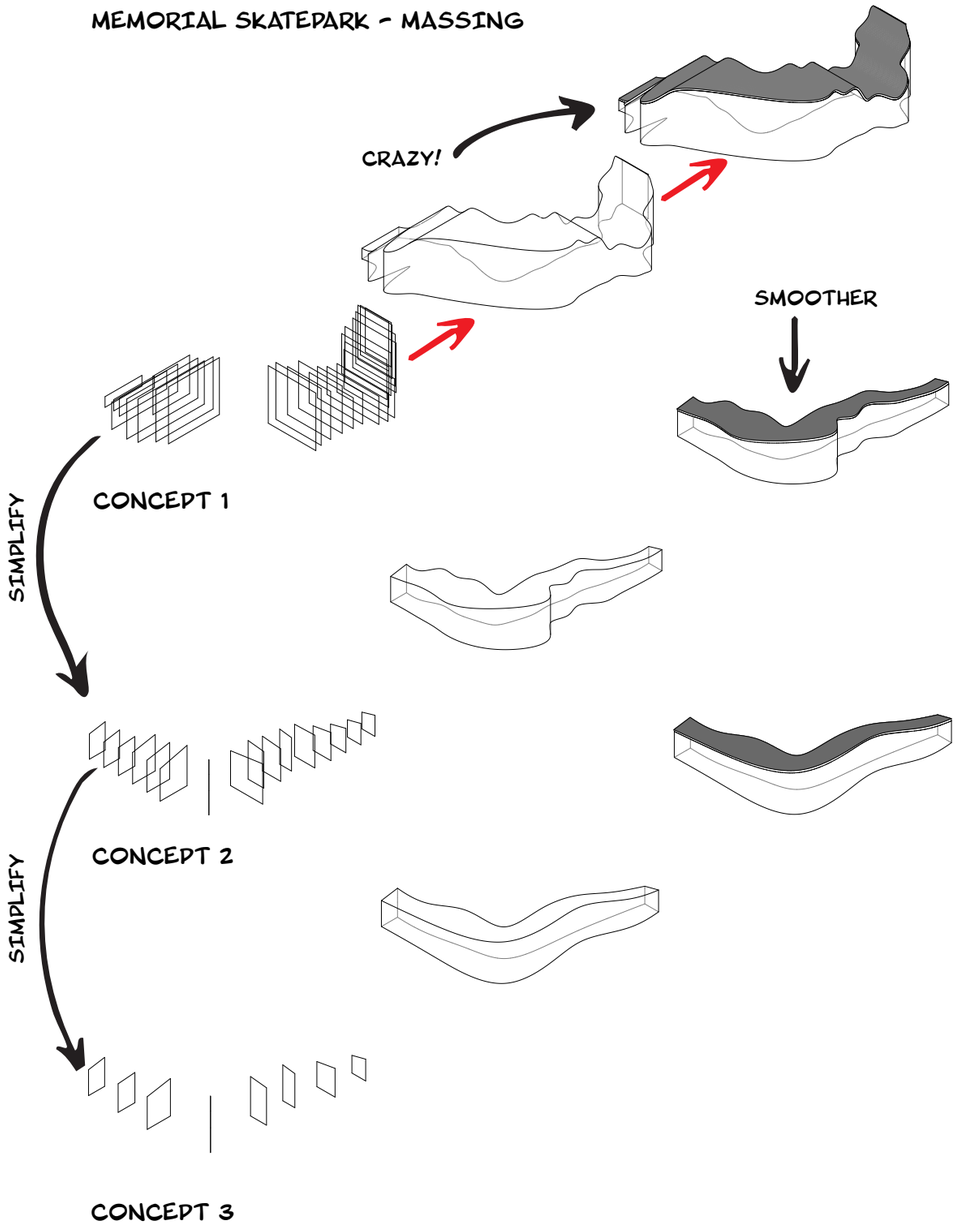
THE INTENSITY OF THE SKATEBOARDER'S COMPRESSION AND EXTENSION CAN BE MANIPULATED BY CHANGING THE DISTANCE BETWEEN EACH FRAME WHILST KEEPING THE OVERALL WIDTH (X) EQUAL. A LARGER GAP BETWEEN EACH FRAME INCREASES THE DISTANCE BETWEEN EACH PEAK, VERSUS A SMALLER GAP, WHICH REDUCES THE DISTANCE BETWEEN EACH PEAK, AFFECTING THE INTENSITY OF THE RISE AND FALL.

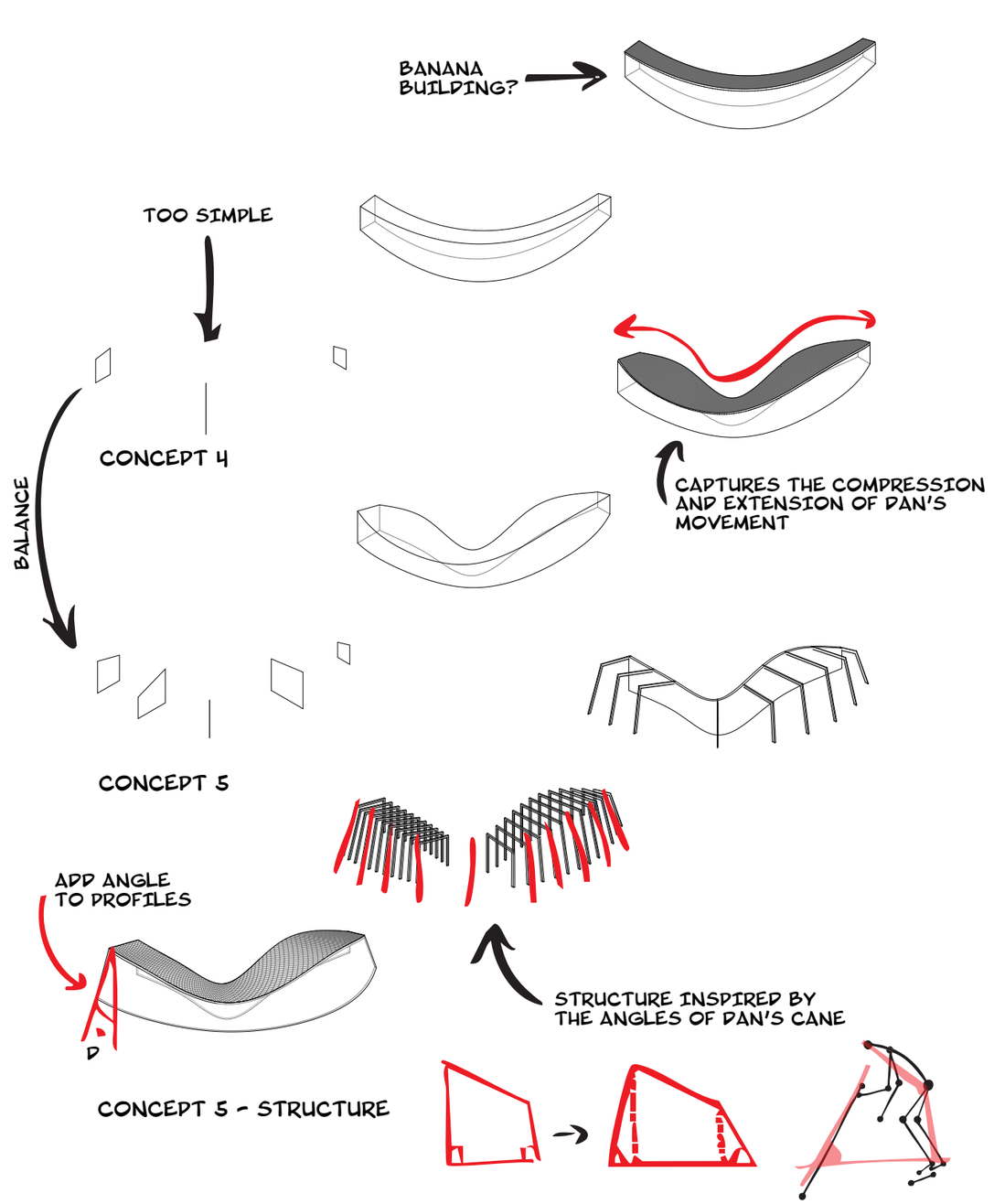
AN INCREASE OR REDUCTION IN THE TOTAL NUMBER OF PLANES AFFECTS THE COMPLEXITY OF THE SLEEVED FORM. MORE PLANES INCREASE THE VARIATION. FEWER PLANES OVER THE SAME DISTANCE CREATE A SOFTER, SMOOTHER BLEND.

PLANE PARAMETERS

- THE PLAN WIDTH OF THE FORM IS DETERMINED BY THE DISTANCE BETWEEN THE HEAD AND THE SKATEBOARD'S CENTRE OF MASS.
- THE DISTANCE BETWEEN THE HEAD AND THE PELVIS CONTROLS THE ROOF PITCH (ELEVATION VIEW).




MEMORIAL SKATEPARK - MASSING
CRAZY!
SMOOTHER
CONCEPT 1
SIMPLIFY
CONCEPT 2
SIMPLIFY
CONCEPT 3


BANANA BUILDING?
TOO SIMPLE
CONCEPT 4
BALANCE
CAPTURES THE COMPRESSION AND EXTENSION OF DAN'S MOVEMENT
CONCEPT 5
ADD ANGLE TO PROFILES
D
STRUCTURE INSPIRED BY THE ANGLES OF DAN'S CANE
CONCEPT 5 - STRUCTURE

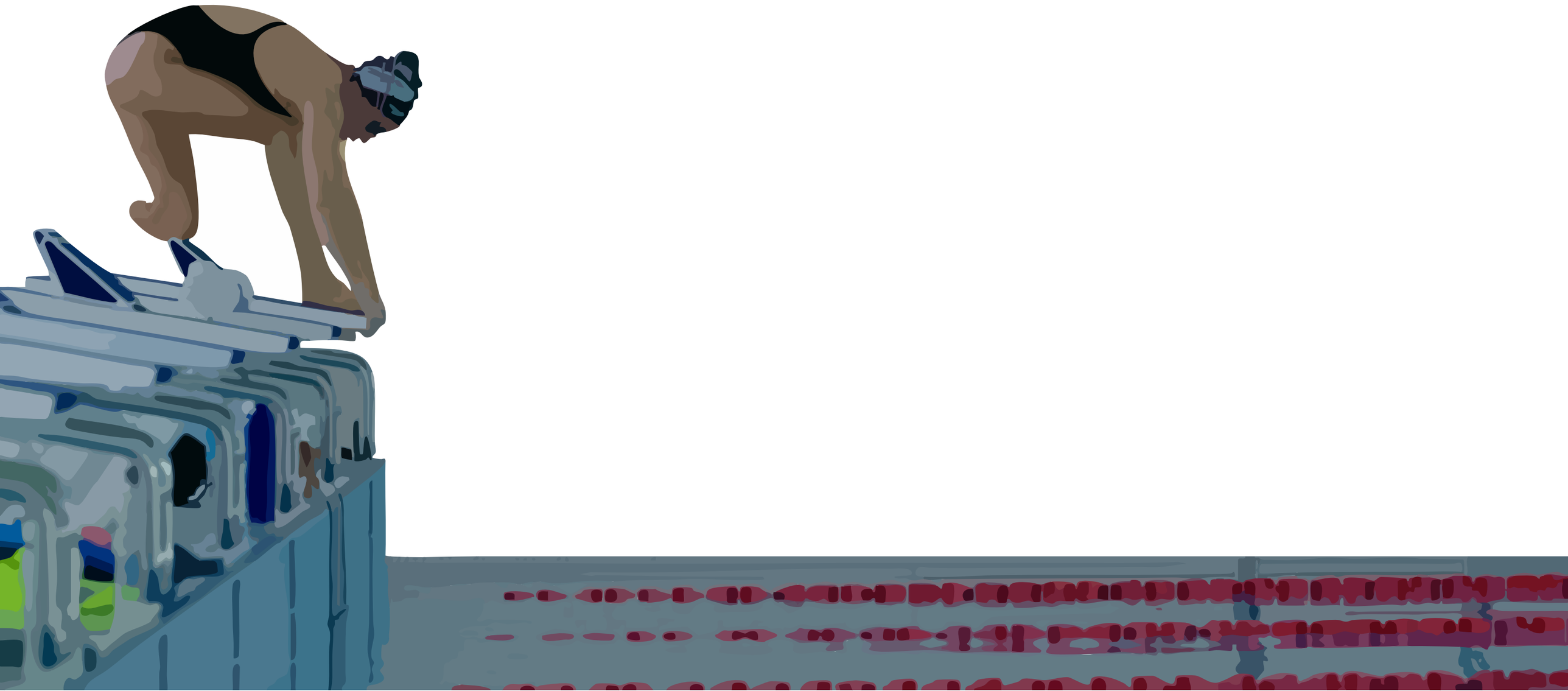
11.3 Dame Sophie Pascoe

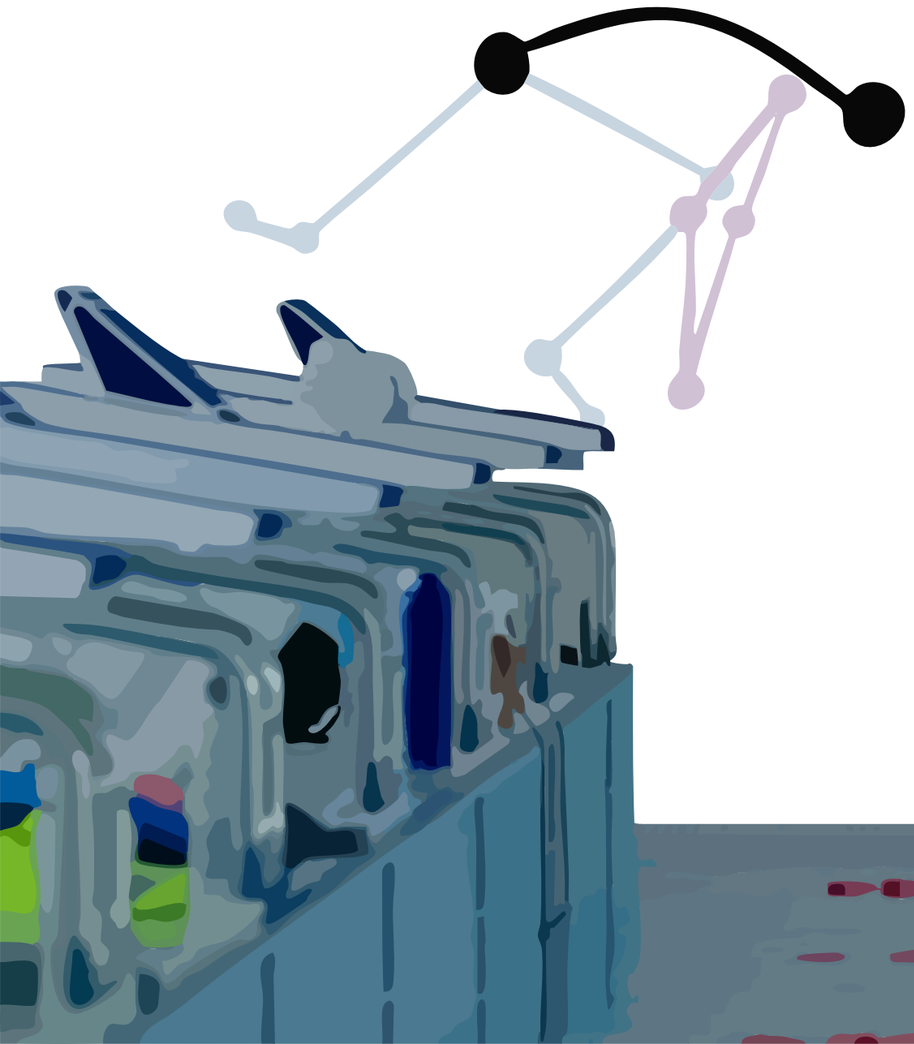
I want our Paralympic athletes to be an inspiration for who they are. I want them to gain the same recognition because they have worked just as hard, if not harder, than their Olympic peers.

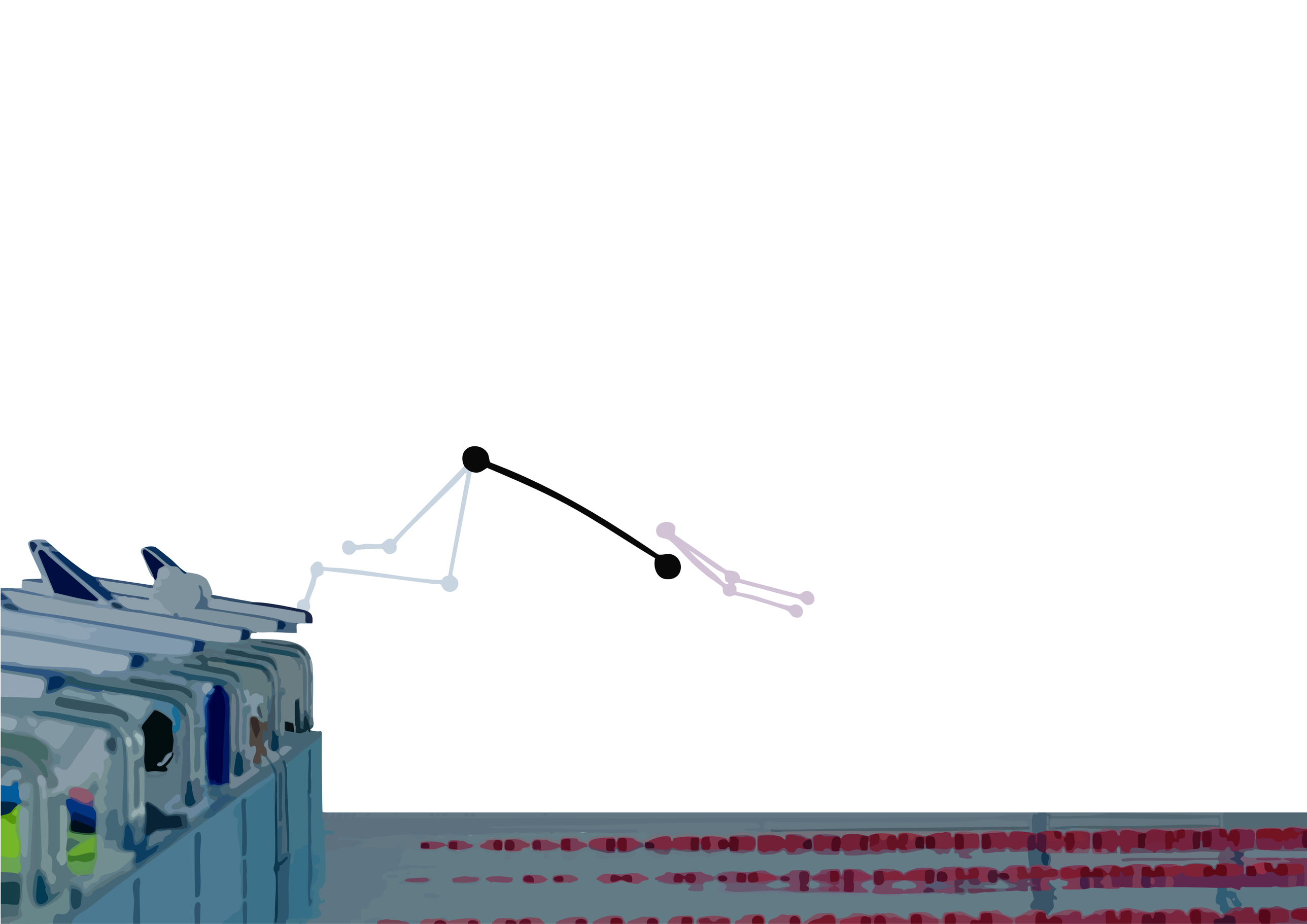
Sophie Pascoe (1News, 2024)

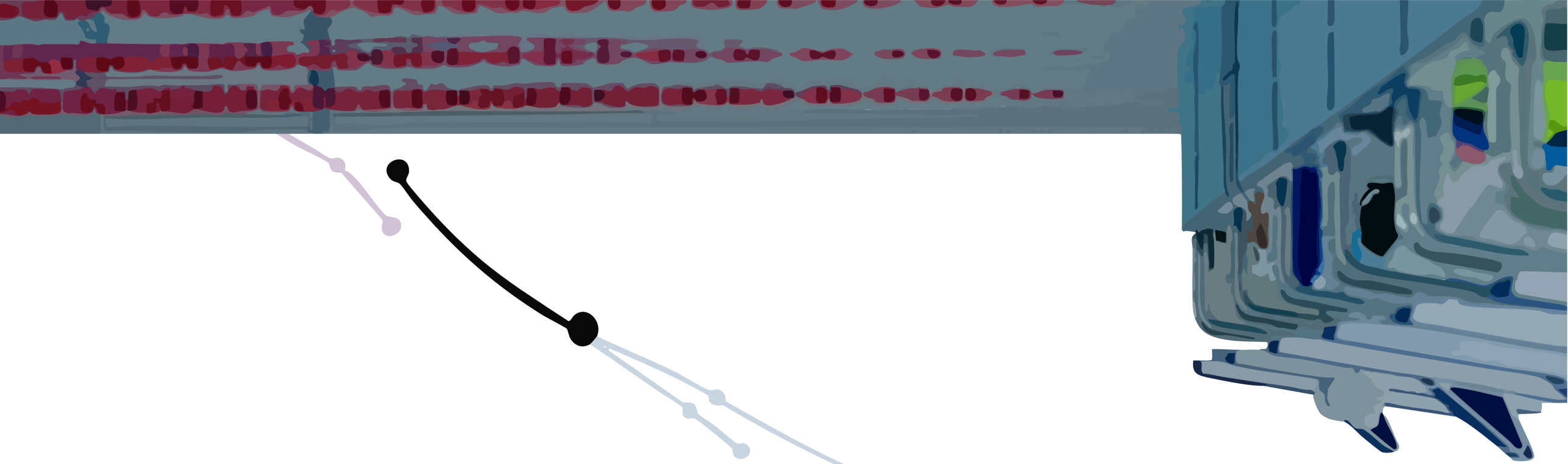
Dame Sophie Pascoe is New Zealand's most decorated Paralympian and one of the most successful Paralympians in the world. Sophie suffered the amputation of her left leg following an incident involving a lawn mower at just two years old. Despite a horrific incident, Sophie won a staggering eleven Gold, seven Silver, and one bronze medal across the 4 Paralympics from 2008 to 2020 in freestyle, backstroke, breaststroke, butterfly and the individual medley. I'm sure the doctors snuck in a jet engine in her left leg. It reminds me of when I won first place in my age group in an ocean swim a couple of years ago. I had a rush of adrenaline and joy, although the hype wore off quickly when I found out no one else competed in my age group. Sophie is definitely on a whole other level.

Figure 184 - Sophie Pascoe motoring along in the pool at the Rio Olympics. From *Athlete in numbers: Sophie Pascoe*, By World Para Swimming, 2016 (https://www.paralympic.org/news/athlete-numbers-sophie-pascoe). Copyright 2016 by Simon Lodge.





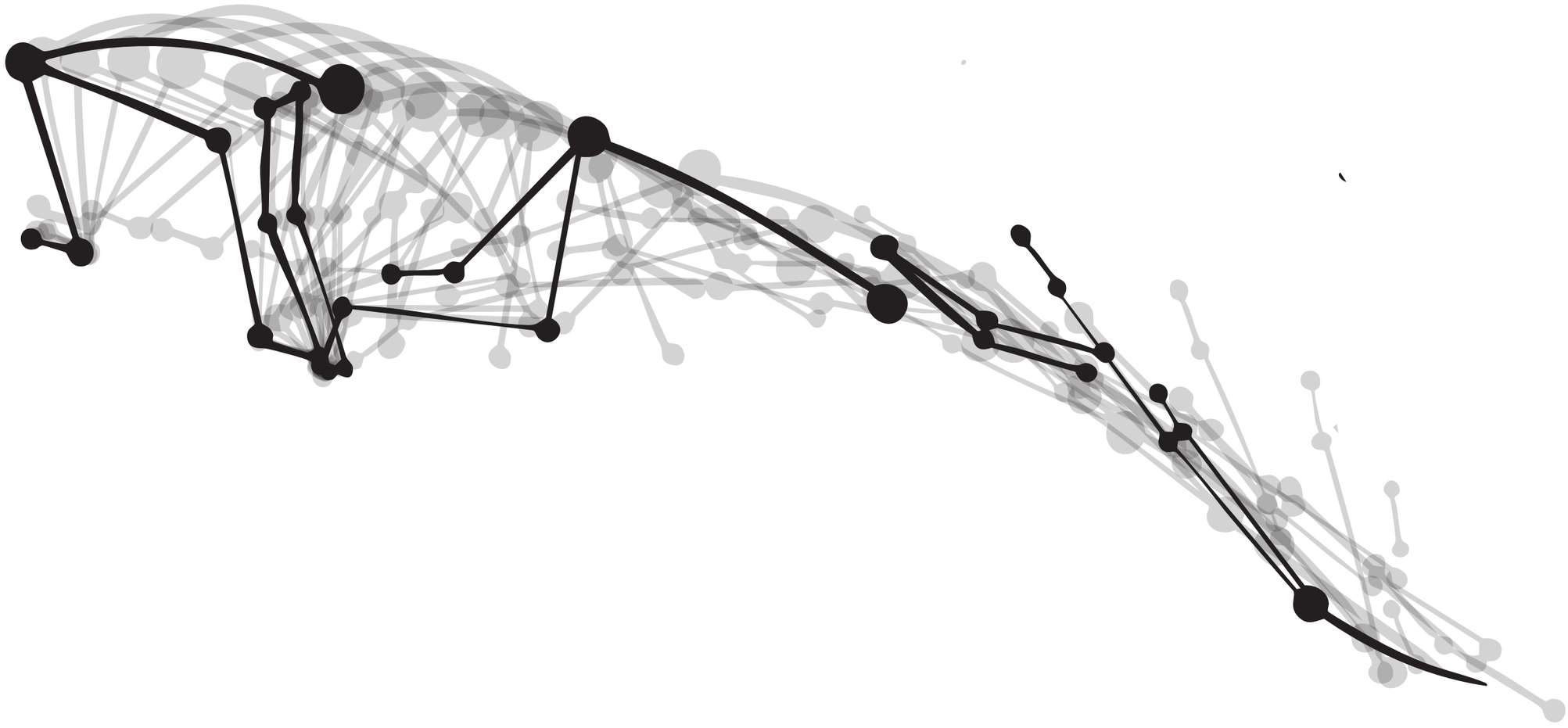


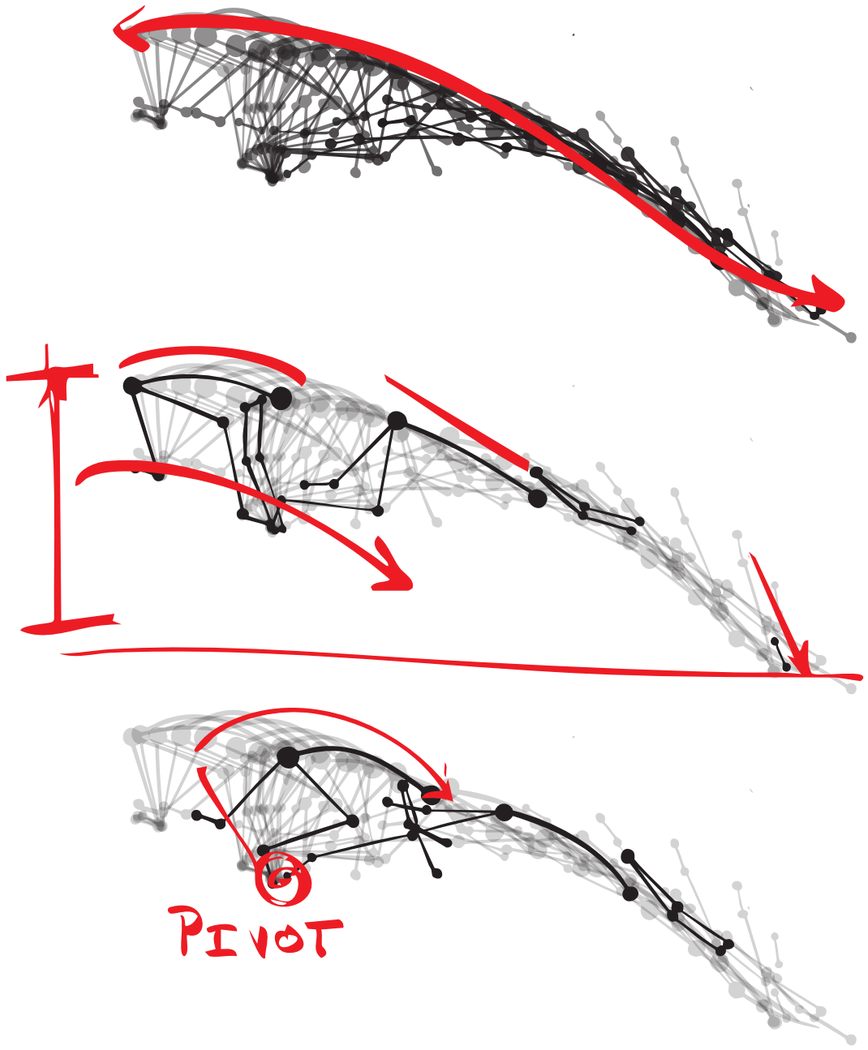


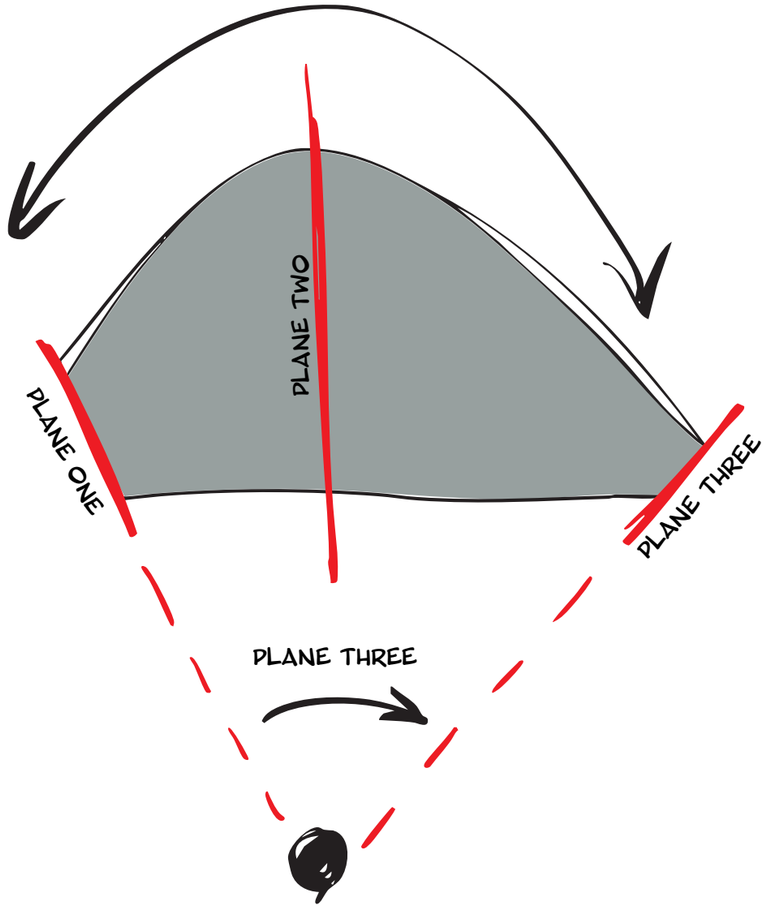
Losing my leg at such a young age meant I became a minority in a majority society, so I've learned to adapt. Being strong and resilient has enabled me to challenge myself to the max and accept pain, struggle, and all the things that lead you to go outside of your comfort zone, because that's what it takes to be a champion

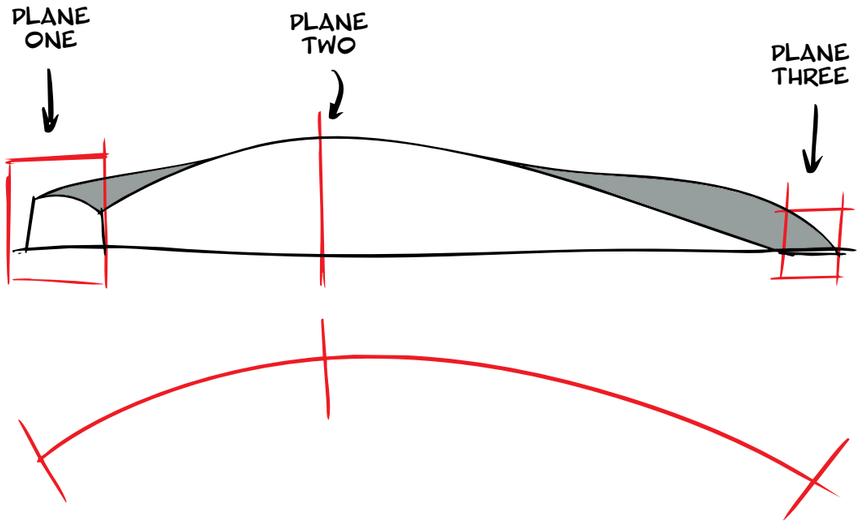
Sophie Pascoe (Pascoe, 2021)

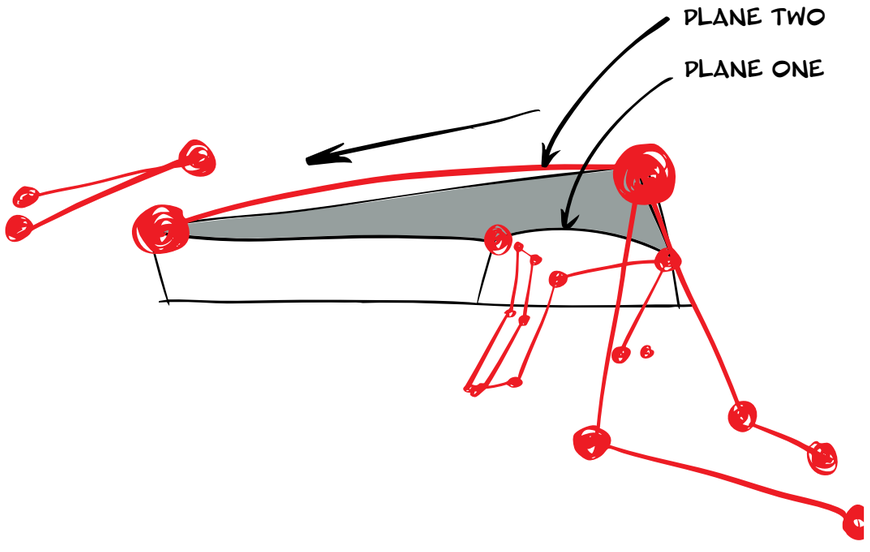
Figure 185, 186, & 187 - Disappearing Act, Sophie Pascoe - Photograph and Model by Author

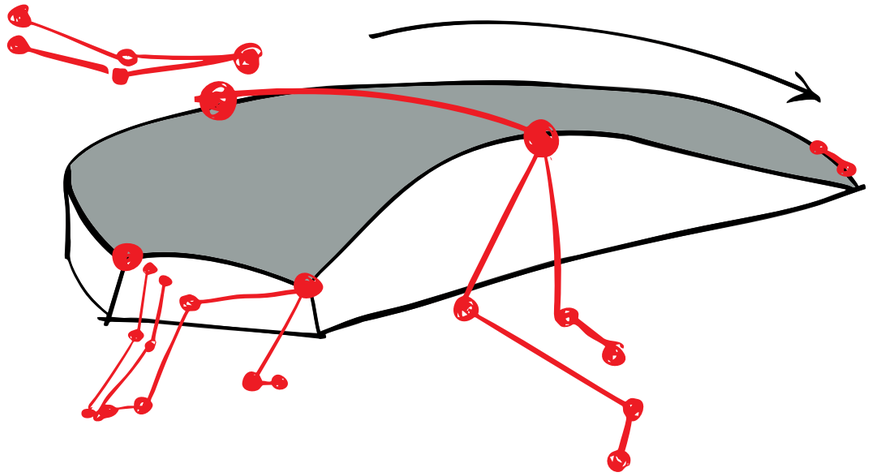


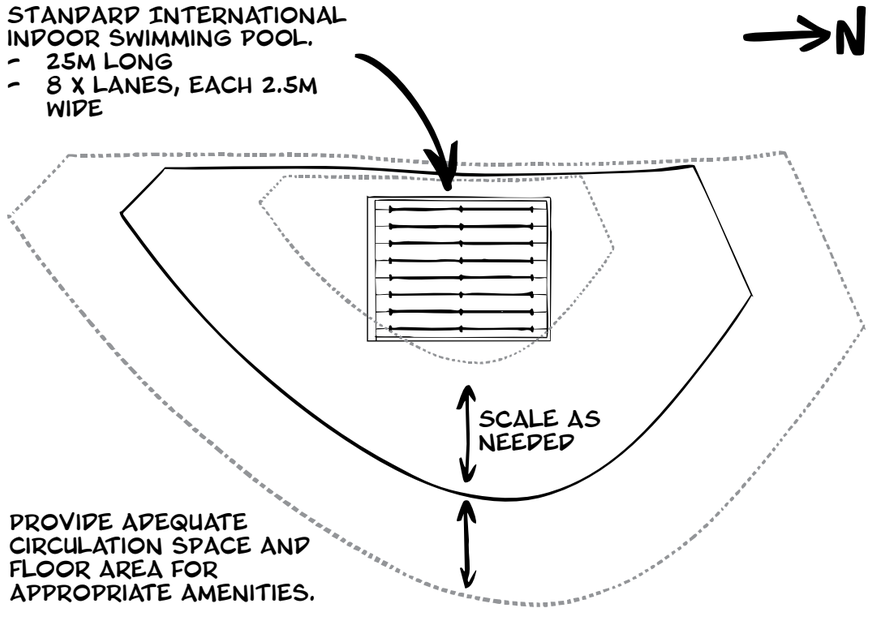

PIVOT


PLANE ONE
PLANE TWO
PLANE THREE
PLANE THREE


PLANE ONE
PLANE TWO
PLANE THREE

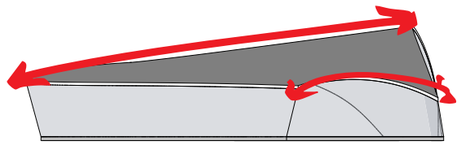

PLANE TWO
PLANE ONE



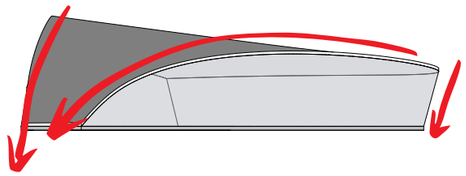

STANDARD INTERNATIONAL INDOOR SWIMMING POOL.
- 25M LONG
- 8 X LANES, EACH 2.5M WIDE
N
SCALE AS NEEDED
PROVIDE ADEQUATE CIRCULATION SPACE AND FLOOR AREA FOR APPROPRIATE AMENITIES.

SCALE 1:750

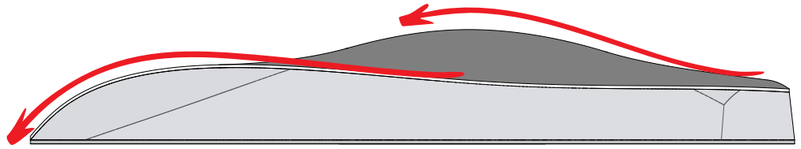
NORTH ELEVATION



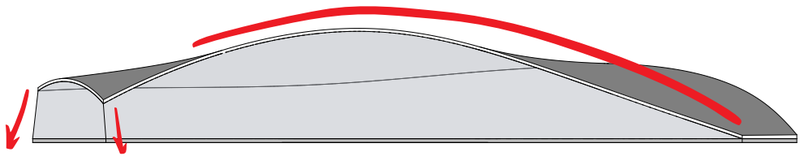
SOUTH ELEVATION



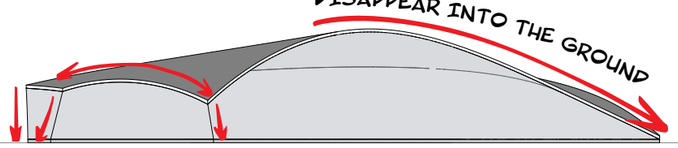
EAST ELEVATION



WEST ELEVATION

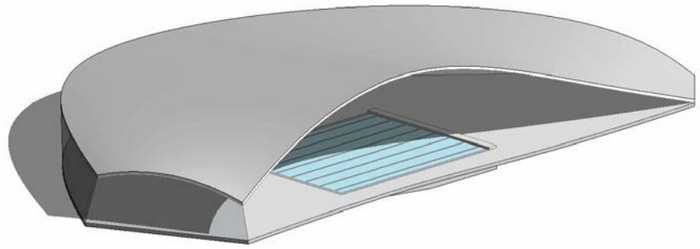


NORTH WEST ELEVATION

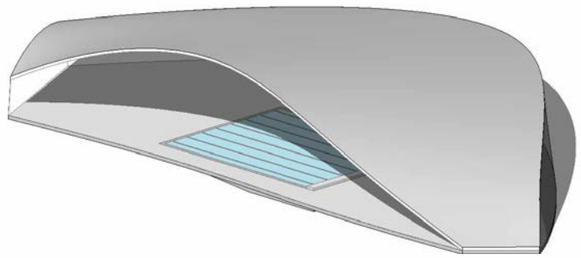


SCALE 1:750

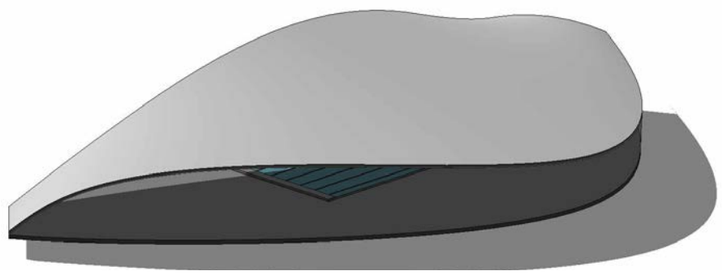
NORTH WEST ISOMETRIC

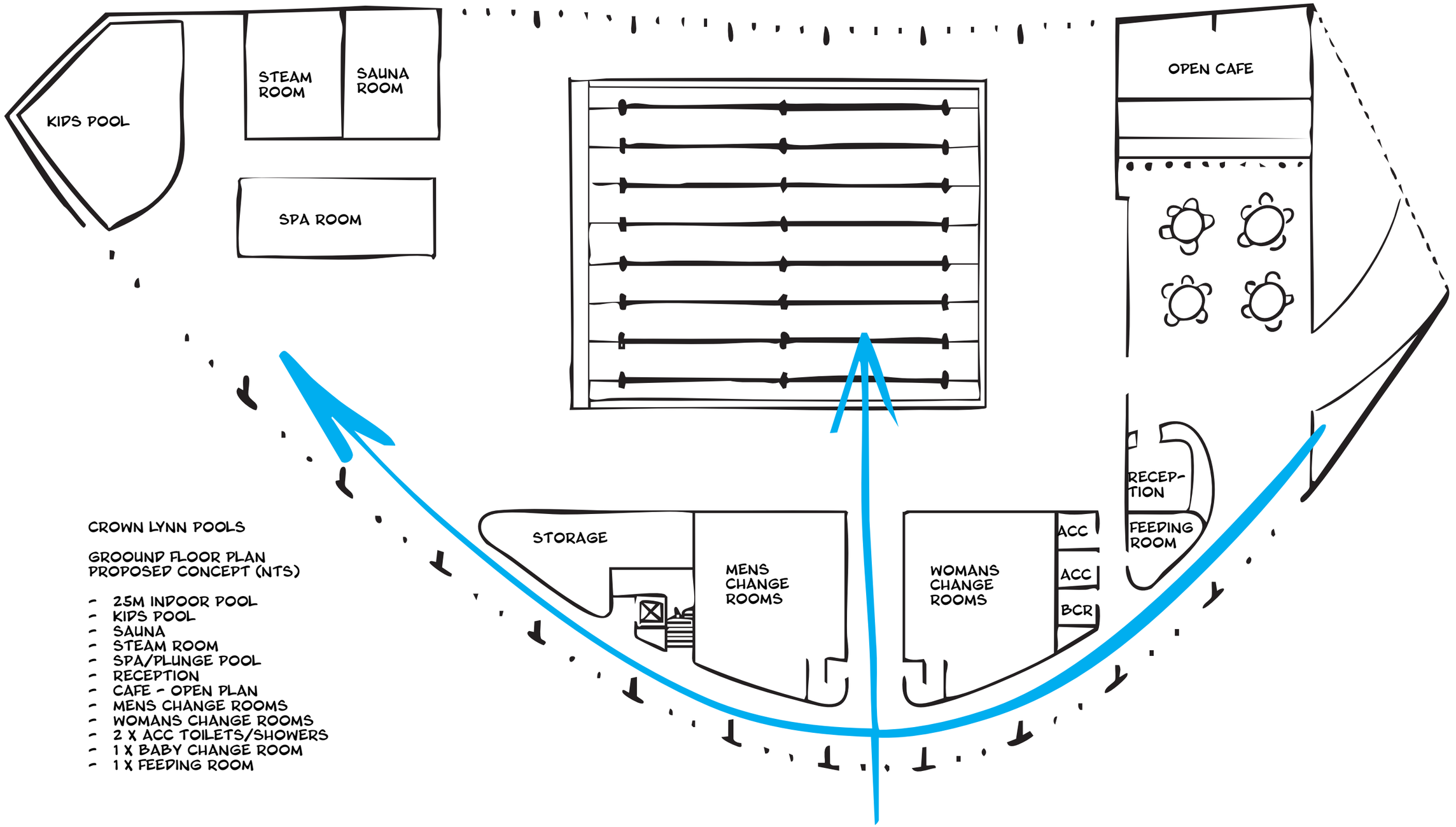


SOUTH WEST ISOMETRIC



SOUTH EAST ISOMETRIC

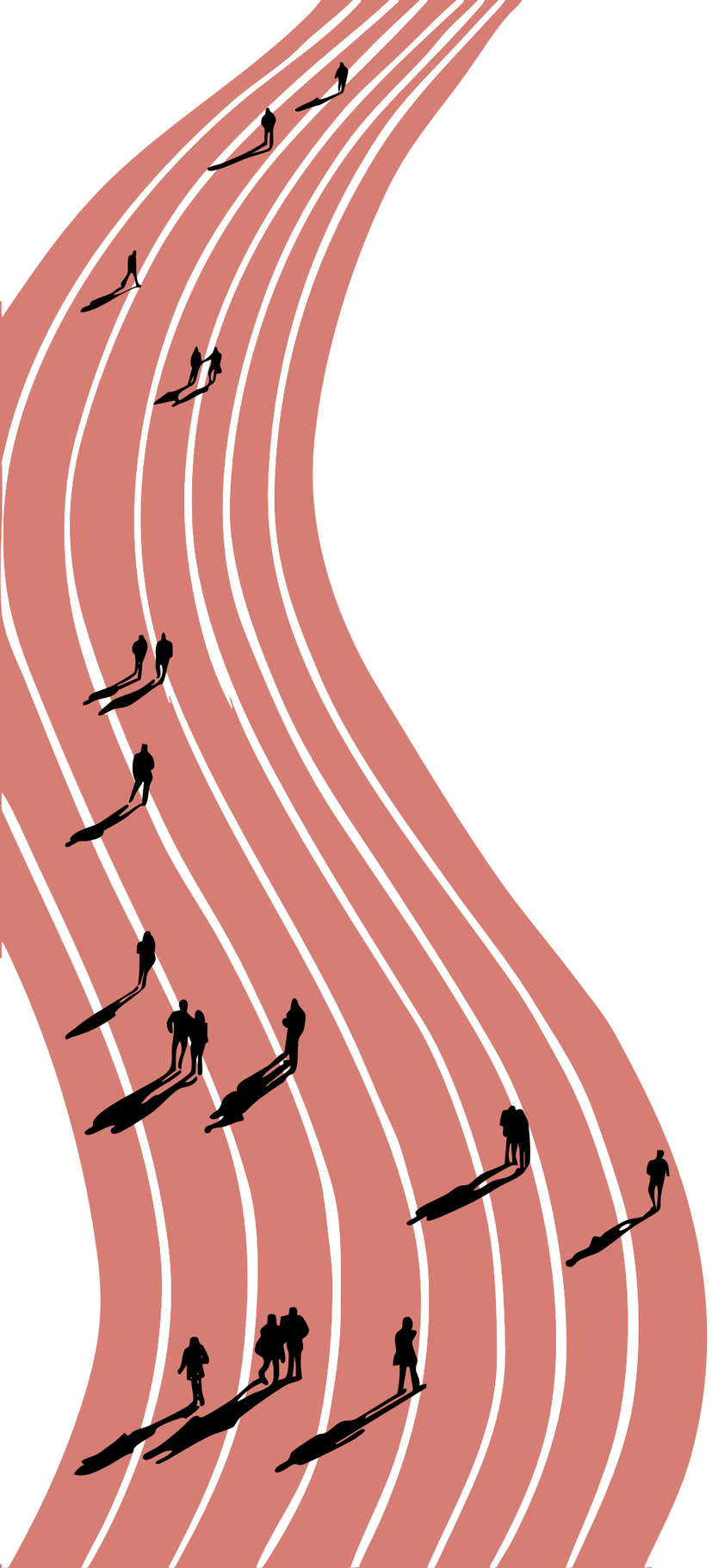




CROWN LYNN POOLS

GROOUND FLOOR PLAN
PROPOSED CONCEPT (NTS)

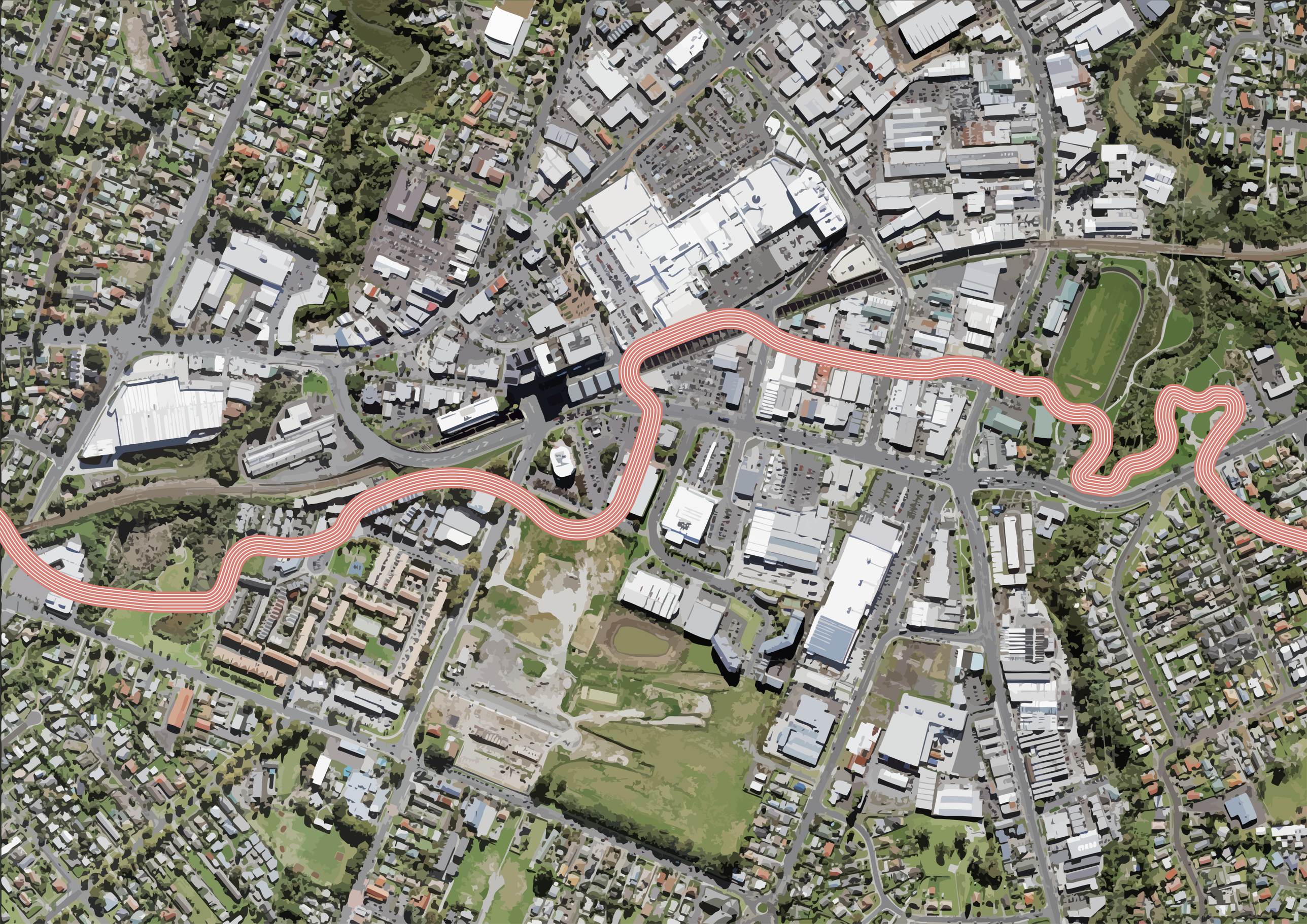
- 25M INDOOR POOL
- KIDS POOL
- SAUNA
- STEAM ROOM
- SPA/PLUNGE POOL
- RECEPTION
- CAFE - OPEN PLAN
- MENS CHANGE ROOMS
- WOMANS CHANGE ROOMS
- 2 X ACC TOILETS/SHOWERS
- 1 X BABY CHANGE ROOM
- 1 X FEEDING ROOM



Chapter Twelve

Finer Lines

What could our neighbourhoods look like?



1
1 NEW LYNN - SITE PLAN - PROPOSED ONLY

SCALE 1:2000 @ A1 | 1:4000 @ A3

1
1

NEW LYNN - SITE PLAN - PROPOSED AND THE GOOD

SCALE 1:2000 @ A1 | 1:4000 @ A3

OLYMPIC PLAYGROUND - SITE PLAN - PROPOSED

SCALE 1:250 @ A1 | 1:500 @ A3

1/1

TOTARA AVENUE

WARD STREET

HETANA STREET

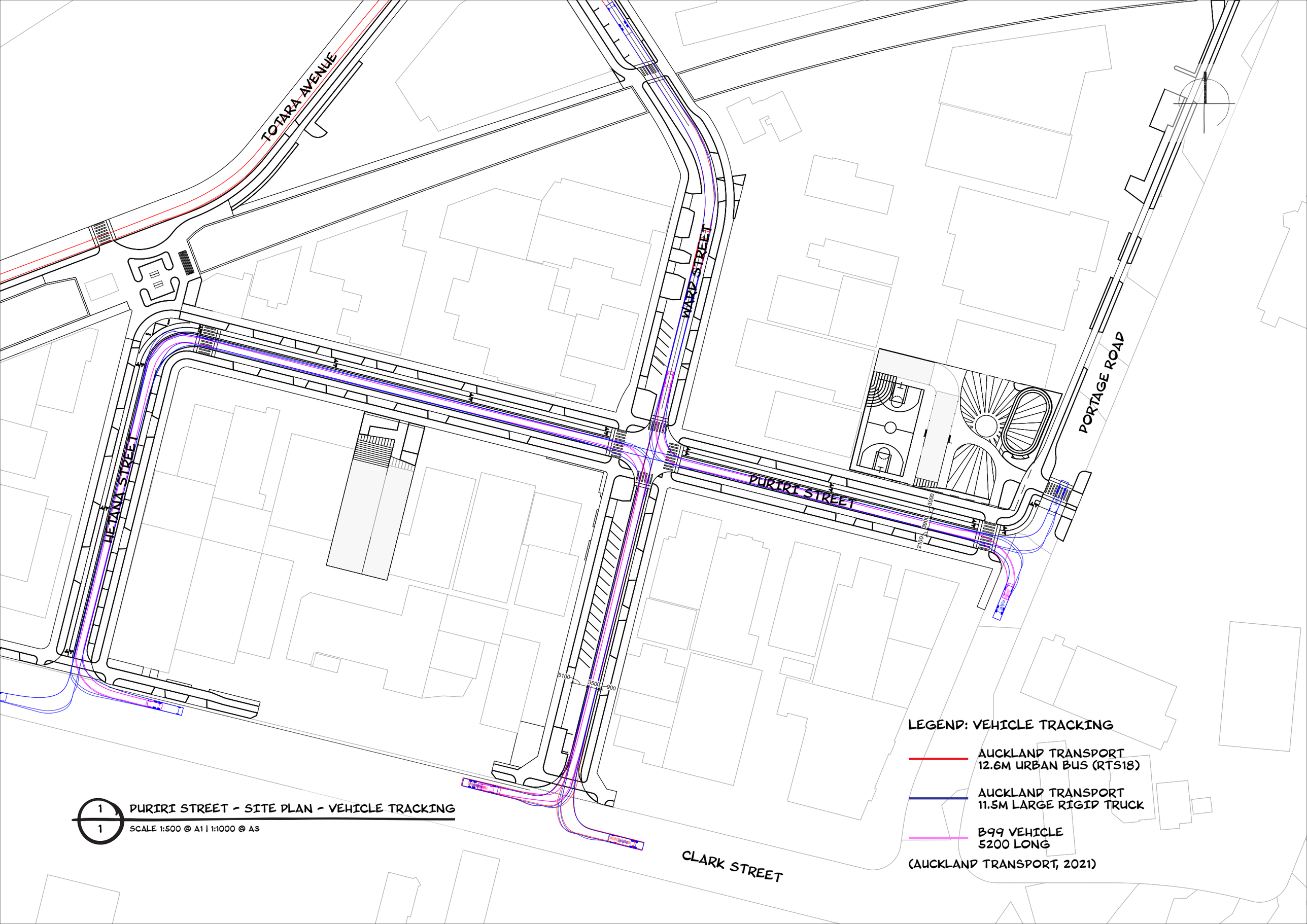
PURIRI STREET

PORTAGE ROAD

CLARK STREET

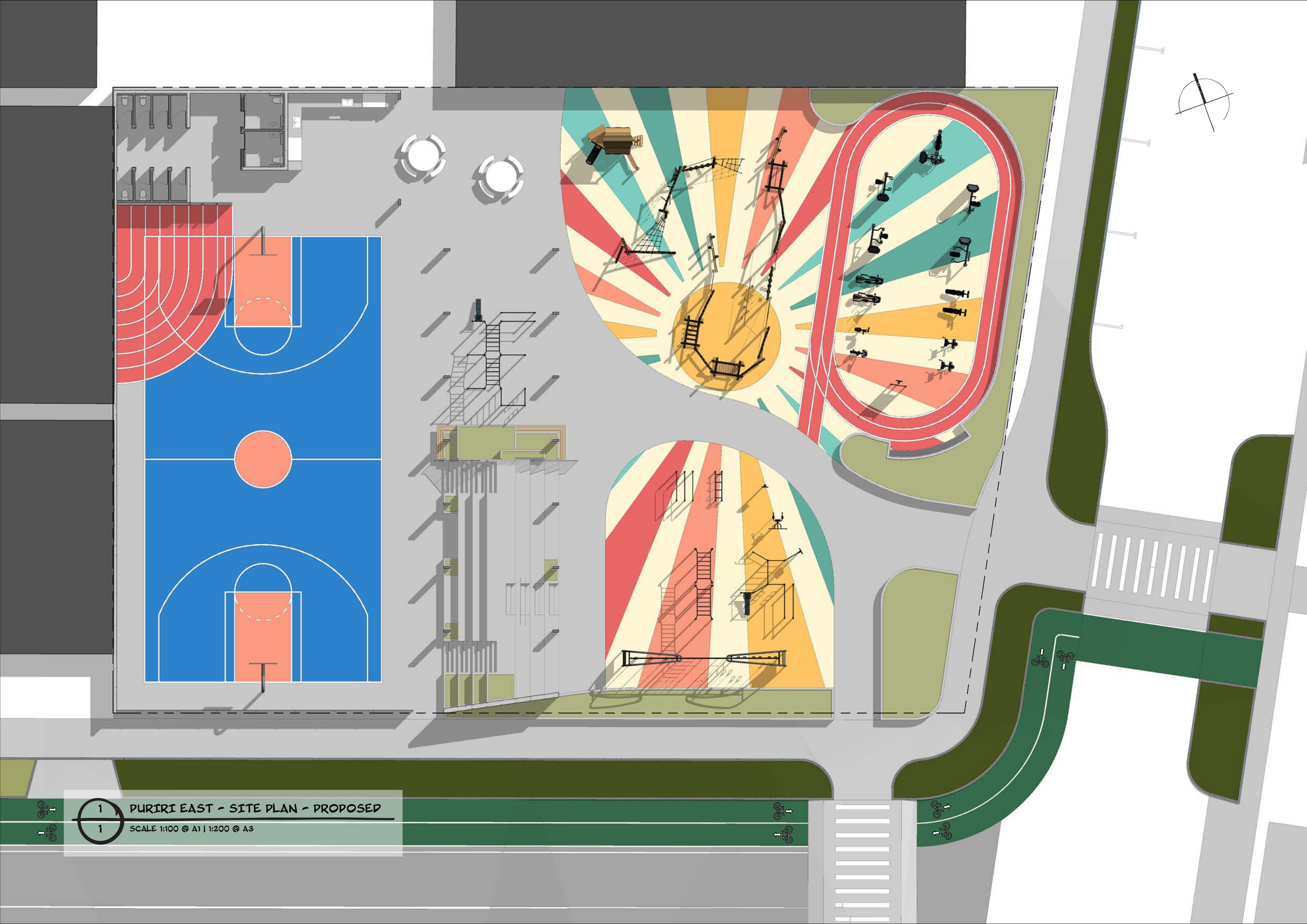
1
1 PURIRI STREET - SITE PLAN - PROPOSED AND THE GOOD

SCALE 1:500 @ A1 | 1:1000 @ A3

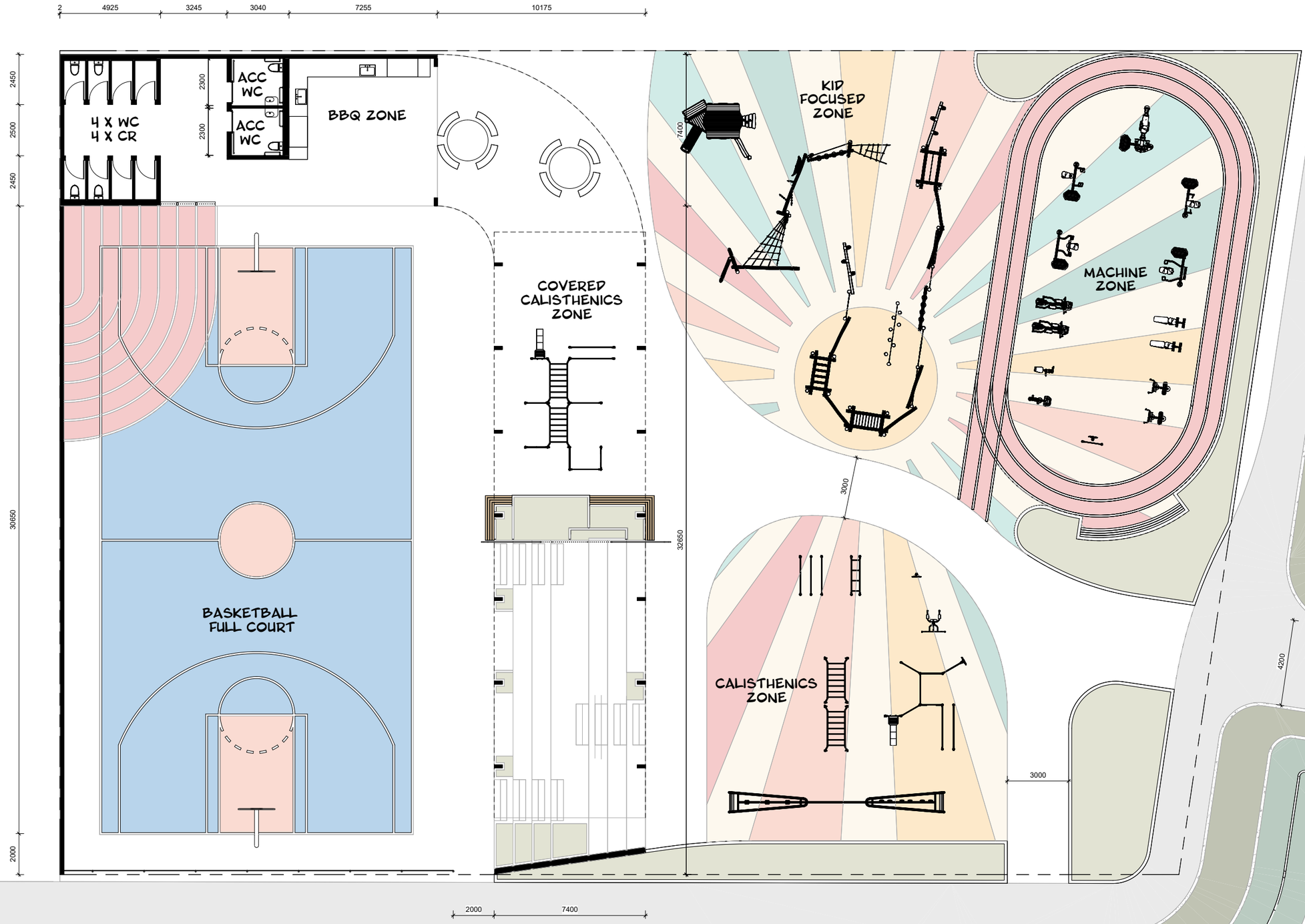


1
1 PURIRI STREET - SITE PLAN - VEHICLE TRACKING

SCALE 1:500 @ A1 | 1:1000 @ A3



1 PURIRI EAST - SITE PLAN - PROPOSED
1 SCALE 1:100 @ A1 | 1:200 @ A3

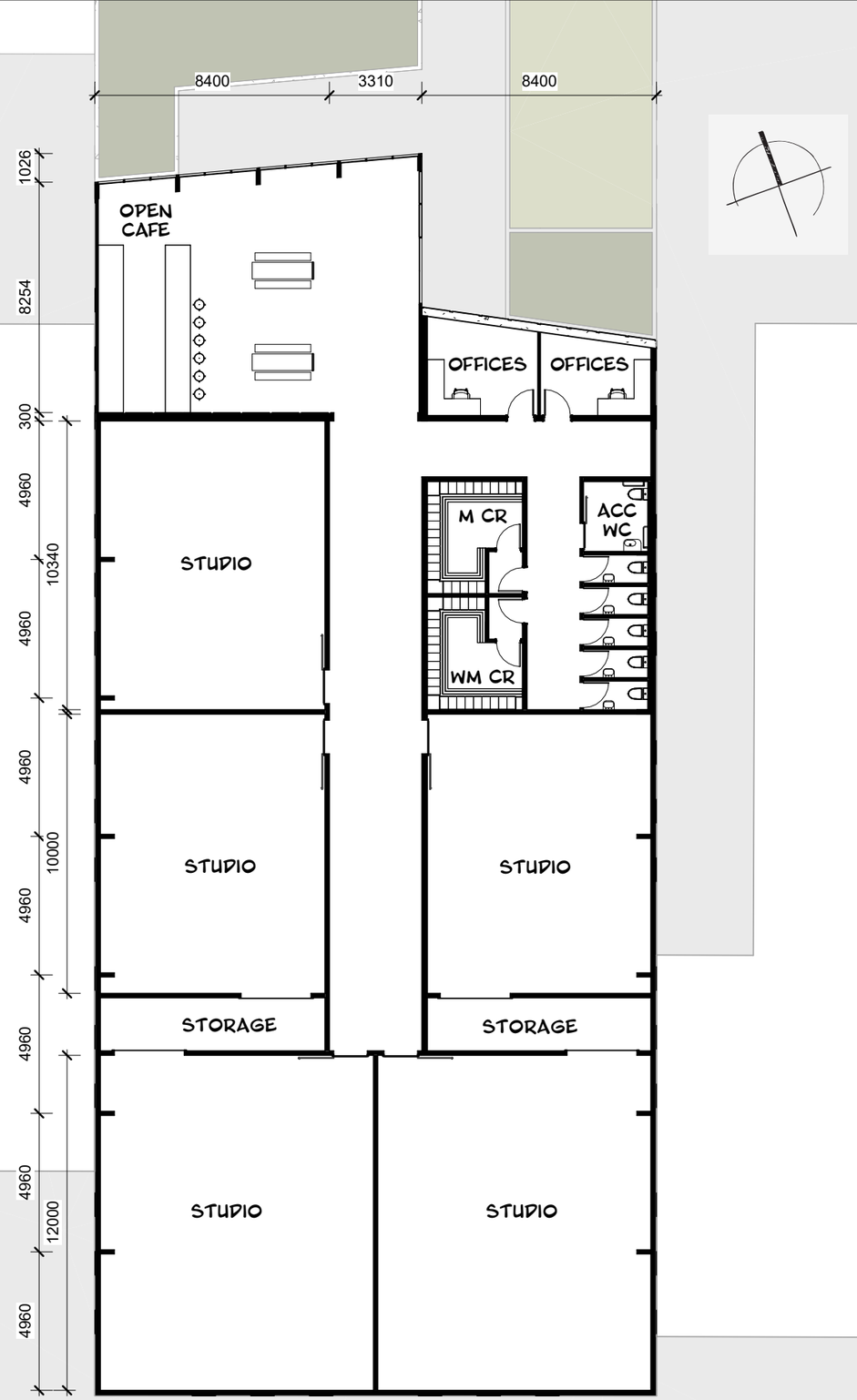


1 / 1 PURIRI EAST - GROUND FLOOR PLAN - PROPOSED

SCALE 1:100 @ A1 | 1:200 @ A3

1 PURIRI STUDIO - SITE PLAN - PROPOSED

1 SCALE 1:250 @ A4



1
1 PURIRI STUDIO - GROUND FLOOR - PROPOSED

SCALE 1:250 @ A4

MEMORIAL LANE

TOTARA AVENUE

HETANA STREET

CLARK STREET

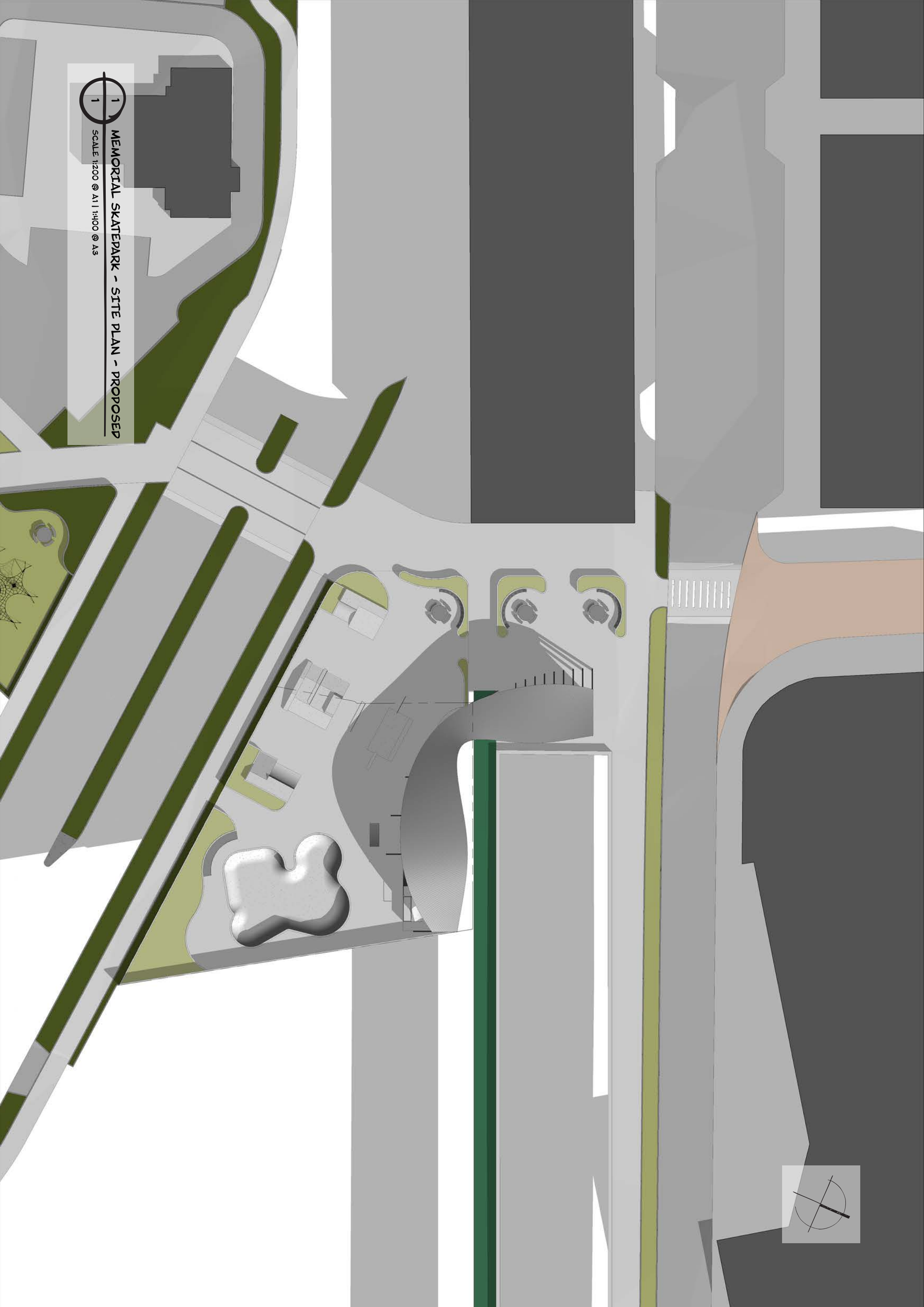
RANKIN AVENUE

CROWN LYNN PLACE

MEMORIAL DRIVE - SITE PLAN - PROPOSED AND THE GOOD

SCALE 1:500 @ A1 | 1:1000 @ A3

1
1



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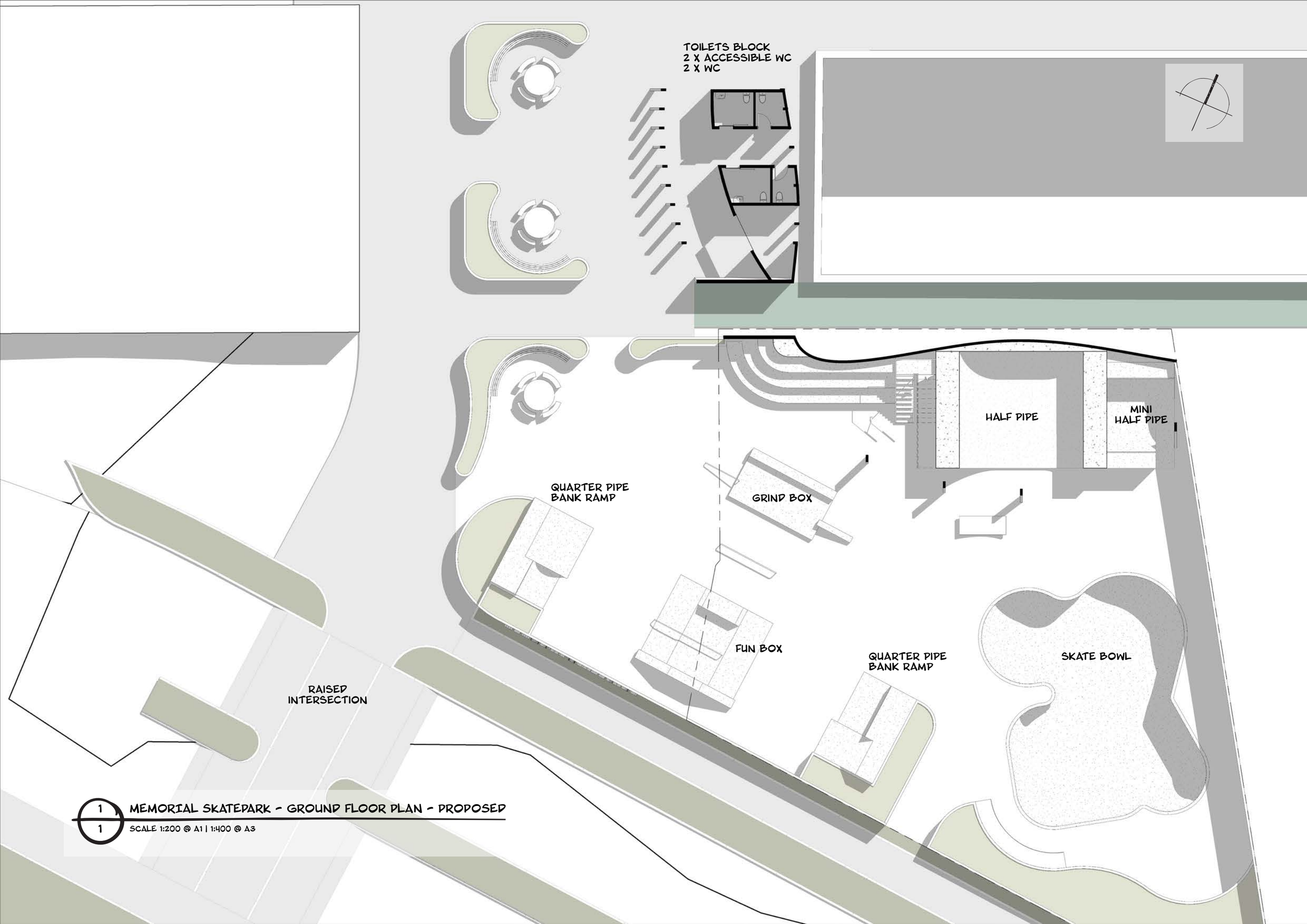
1

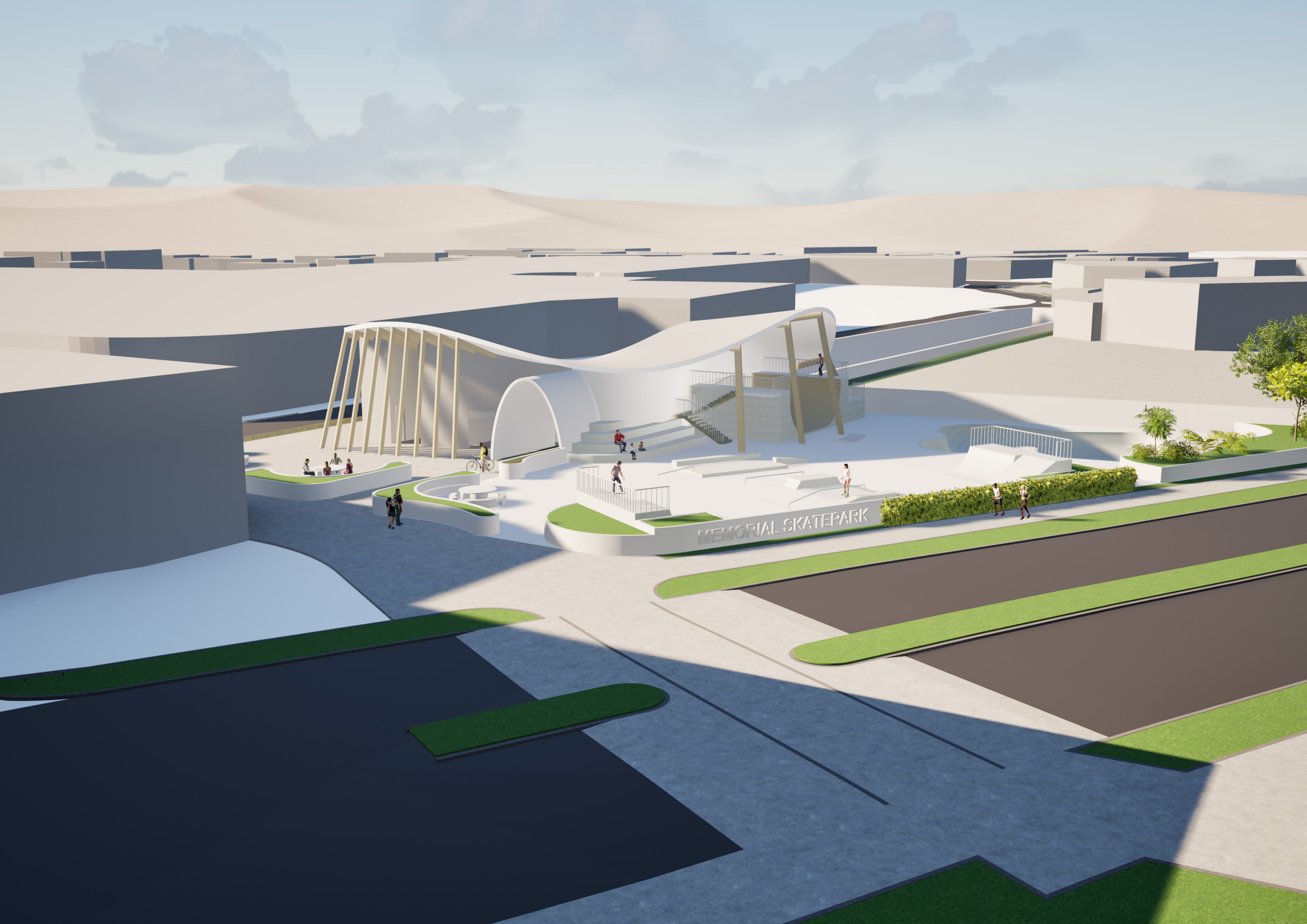
MEMORIAL SKATEPARK - SITE PLAN - PROPOSED

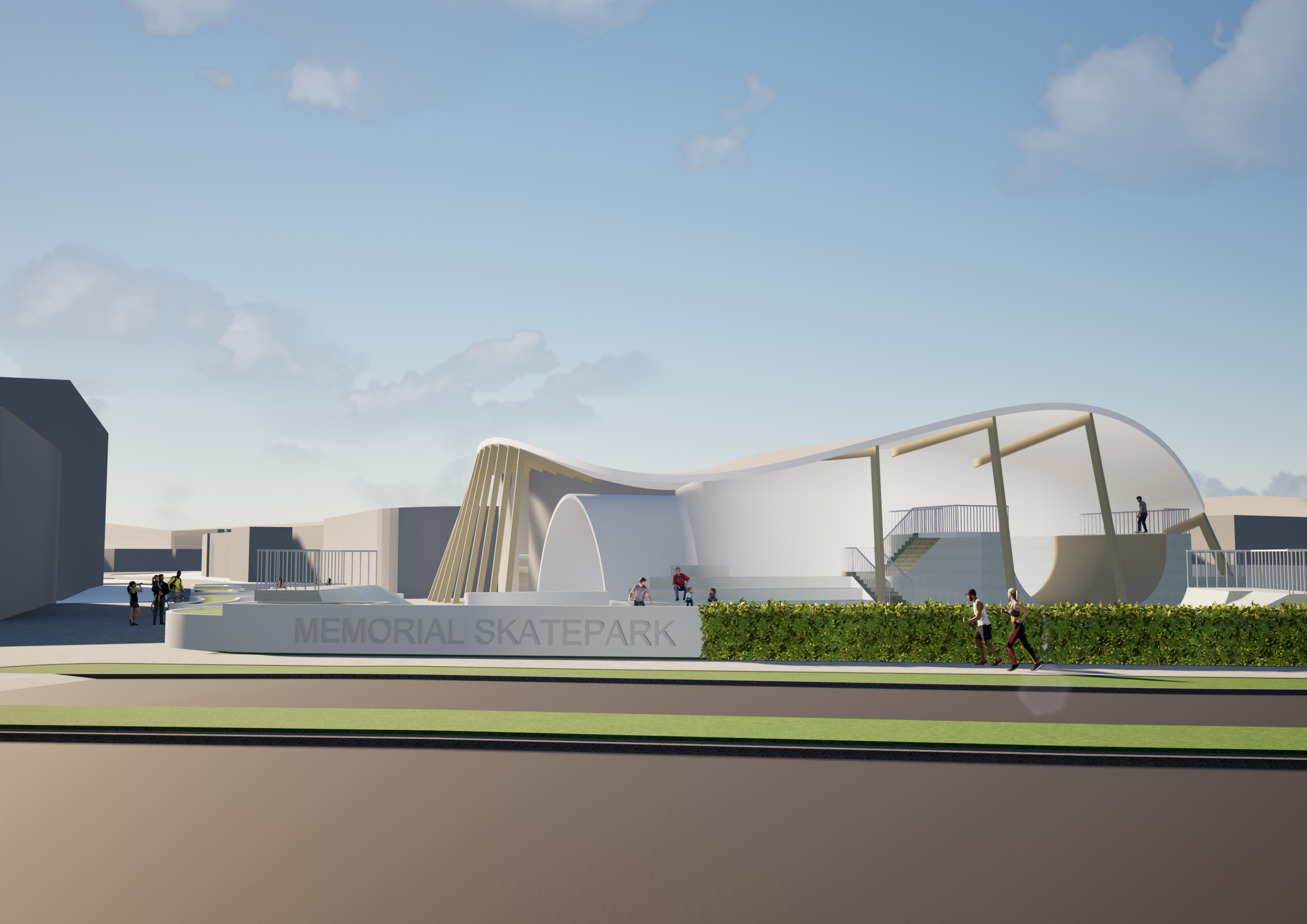
SCALE 1:200 @ A1 | 1:400 @ A3

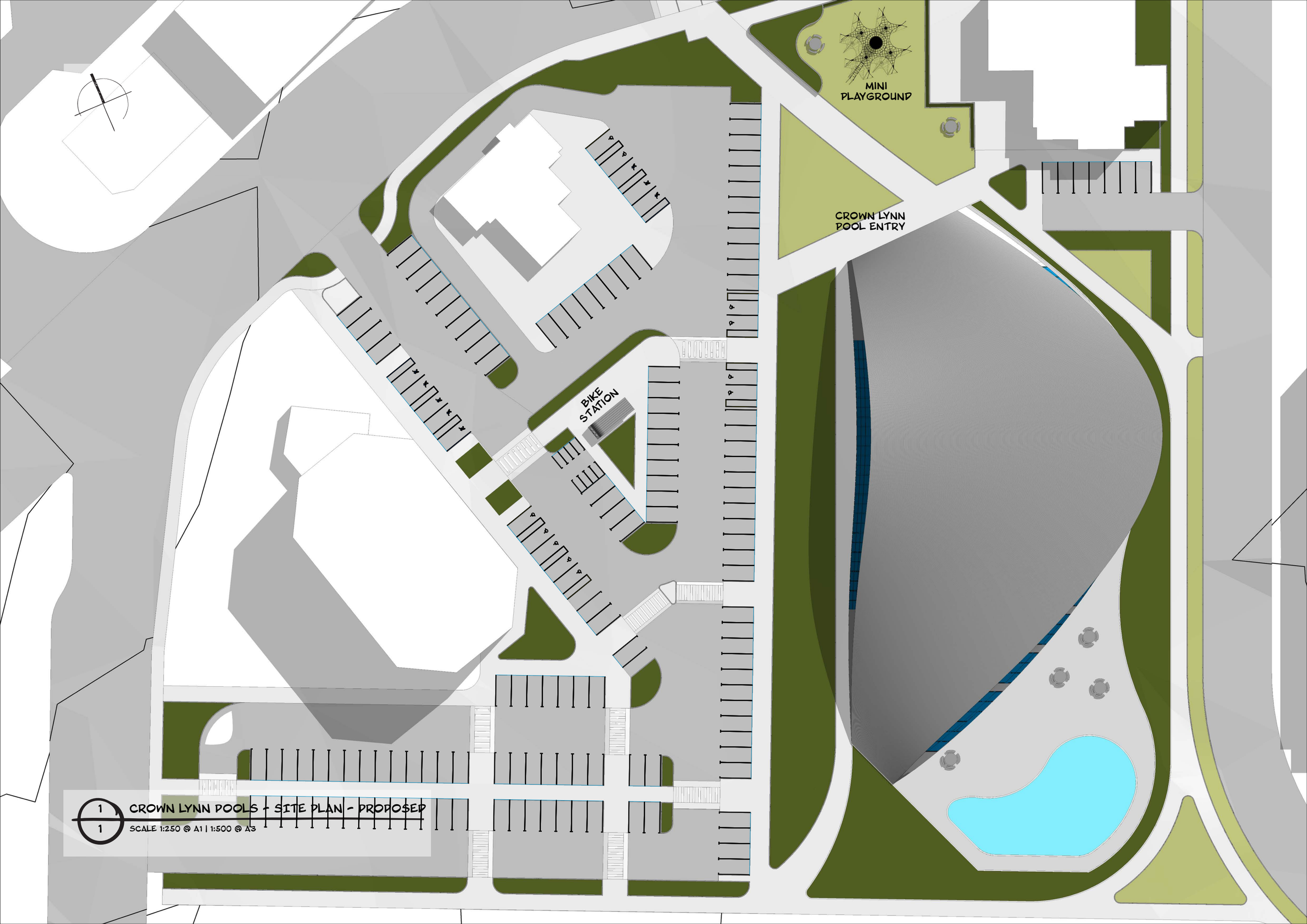


1
1 MEMORIAL SKATEPARK - GROUND FLOOR PLAN - PROPOSED

SCALE 1:200 @ A1 | 1:400 @ A3


MEMORIAL SKATEPARK


MEMORIAL SKATEPARK



1
1 CROWN LYNN POOLS - SITE PLAN - PROPOSED

SCALE 1:250 @ A1 | 1:500 @ A3

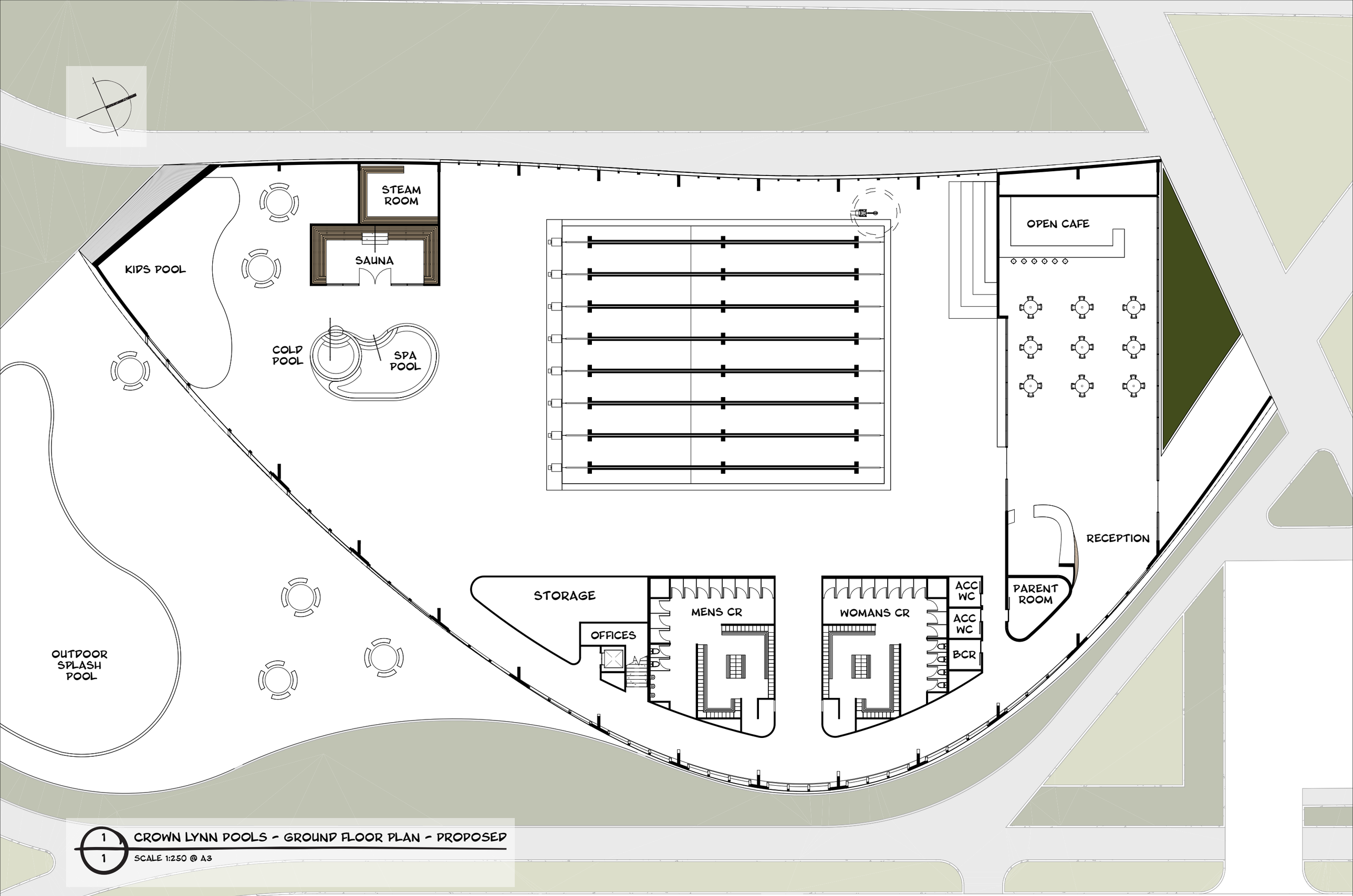
LEGEND: VEHICLE TRACKING

B99 VEHICLE
5200 LONG

CROWN LYNN POOLS - SITE PLAN - VEHICLE TRACKING

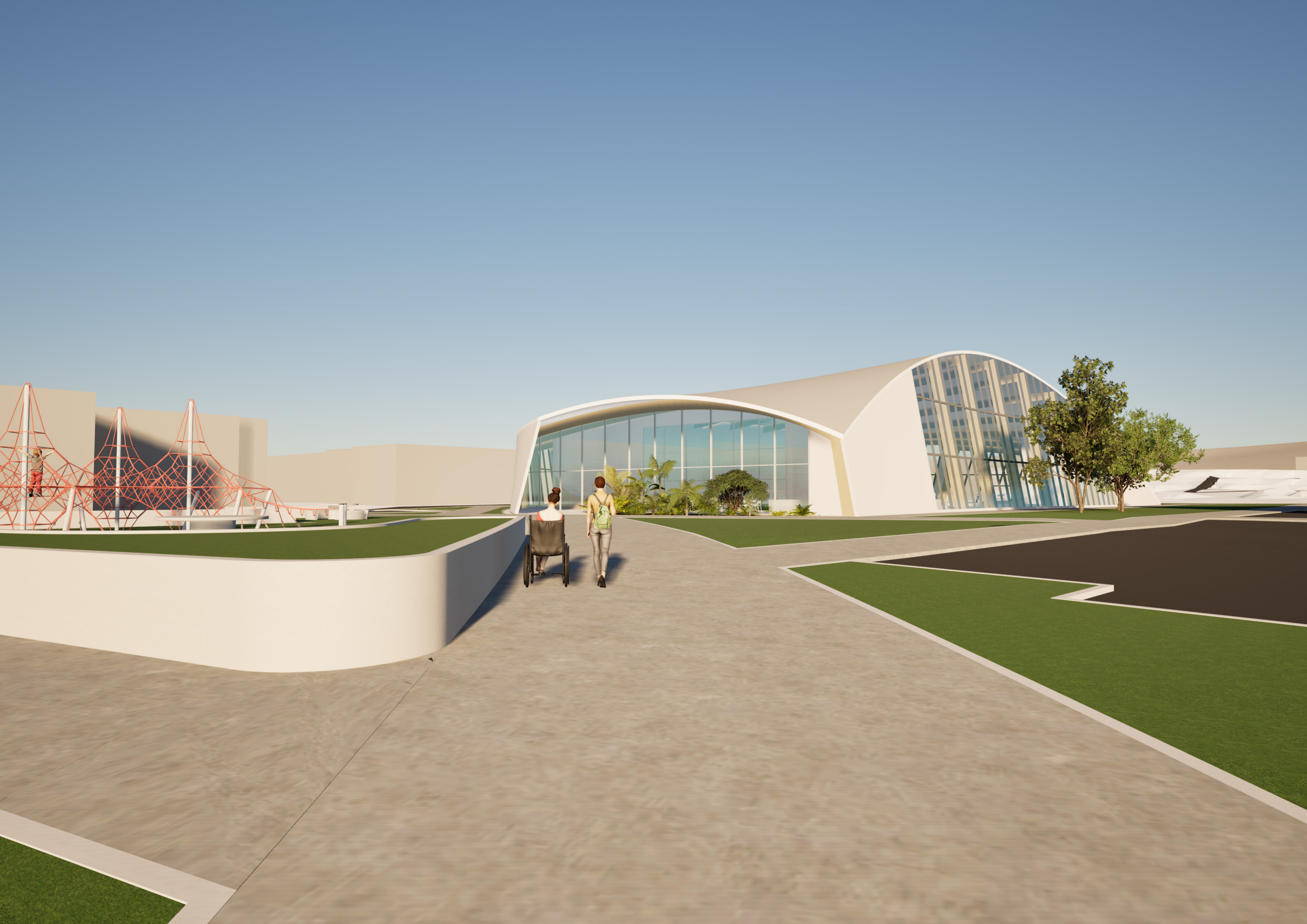
SCALE 1:250 @ A1 | 1:500 @ A3

1
1



1
1 CROWN LYNN POOLS - GROUND FLOOR PLAN - PROPOSED

SCALE 1:250 @ A3



Chapter Thirteen

Limitations and Moving Forward

In the realm of imagination, anything goes, and anything is possible. As designers, we must eventually translate our imagination into reality. With reality come limitations, both good and bad.

In the chapter *Walk a mile in his shoes... or wheels*, 'I mentioned that, to move forward, we must be comfortable making assumptions at some point. Otherwise, we might find ourselves just spinning our wheels. Flashing back a year ago, before starting this thesis, I had my ideas about what disability was and its relationship with the built environment. I had theories about architects, engineers, and other designers' roles in disability. Other than the realisation that the built world falls short of serving people with disabilities and the cardinal belief that architects, engineers, and designers play a pivotal role in rectifying these barriers, I left all my ideas on page 1 and opened myself up to new knowledge and understanding.

Through research on the meaning and history behind disability and the exploration of disability models, my understanding grew. The study of Universal Design, accessibility, and design ethos, like 8 80 cities, highlighted how architects, engineers, and designers shape

how all human life interacts with each other and the built world.

Through roleplaying, I could move through space differently, opening my eyes to the movement of human life beyond walking with two feet. All this helped to develop a platform and basis to attempt to resolve barriers in urban development through design.

Whilst I still had to make assumptions and was confined by my own bias and life experience, I explored design strategies for more inclusive walkable neighbourhoods by implementing recreational architecture interventions along a route in New Lynn.

Through drawing, sculptures, physical and digital modelling, flythroughs and writing, I refined my ideas to reduce assumptions and present better design solutions. However, this is only the beginning.

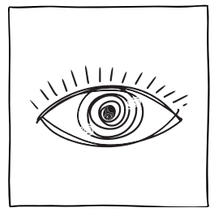
The next step is to collaborate with various people with and without disabilities in participatory action research methodology to further reduce assumptions and refine this design strategy. Input from a team of like-minded and opposed people would allow the integration of ideas to improve the rigidity of this design strategy. Modern technology software, such as virtual reality, could enable people to interact with the design and offer valuable feedback.

The next step would be physical design implementations.

Throughout history, understanding of the complexity of human life and disability has improved. Learning has not stopped, and ideas are still being challenged and new strategies presented to improve life. This design is no different. It's a start.

This journey has been incredible so far, and I know it is only the beginning. I look forward to challenging the status quo and advocating for people of all abilities as my career progresses. If architects, designers, engineers, you and I aim to serve all human life through the built environment, we will achieve a more inclusive, walkable world.

> A little imagination can go a long way if we decide to think outside the box and see things *through the eyes of the unseen.*



Afterword

If I had a Crystal Ball

> *Every touching experience of architecture is multi-sensory; qualities of space, matter and scale are measured equally by the eye, ear, nose, skin, tongue, skeleton and muscle. Archiutecture strengthens the existeial experience, one's sense of being in the world, and this is essentially a strengthened experience of self.*
>
> *Junhani Pallasmaa (1996)*

The concept of thinking about the human body's experience through space and the composition of architectural elements to excite exploration, emotion, and the senses is not new. The impact designers have on the experience of the human individual as they move through

the built environment should not be difficult to recognise.

> *Man looks at the creation of architecture with his eyes, which are 5 feet 6 inches from the ground*
>
> *Le Corbusier (1931/1986, p. 177)*

> *The most important scale is the people scale. The City at eye level and at 5km/hour. This knowledge (about human scale) has been lost by planners and architects.*
>
> *Jan Gehl*

What if you do not see the world with eyes that are 5 feet 6 inches from the ground? What if you see with eyes 3 feet 11 inches seated in a wheelchair moving at 3km/hour? With what eyes does a young child or person of short stature see the world? What if you can not see with your eyes at all? What if you can not measure the experience of architectural qualities by the ear or touch? Our physical abilities are not all equal; there is diversity in human movement, and subsequently, there is diversity in our experience through space. I can not stress enough that we equally deserve the freedom and autonomy to move about the built environment easily, experiencing space and form from our unique perspective. An individual without impairment can negotiate barriers and deal with the imperfections of the built world far more easily than someone with an impairment—this shortfall to consider the variety of human movement in design burdens people with impairments with disability.

We must not allow ourselves to be illusioned by our own ability to move, regardless of whether we are a person with a disability or not. After all, we do not design for ourselves but on society's behalf. We must consider the user and walk a mile in their shoes. How do people move through space differently? How can we support diversity in movement? The choices we make in design implicate the experience of life. If we centre design on the car, we will get an urban environment that serves the car. If we centre design on the normal, average man, we will get an urban environment that serves the normal, average man. If we centre design on the entirety of human diversity, we will create an urban environment that serves all to the greatest extent possible.

We have no shortage of well-researched design guides and Universal Design building regulations that outline how better to serve people with impairments in the built world. Many examples of well-thought-out spaces, like The Magical Bridge Playground or Aut Millenium, serve in isolation. However, they could serve the community better if they were more integrated with the surrounding world. As designers, we must pull from design guides and building regulations and think about how our design interventions interact holistically with the existing world. Recreational architecture facilitates the expression of human movement, whether running, flying a kite, skateboarding, dancing, or whatever you fancy. Prioritising the construction of distributed recreational architecture across our

neighbourhoods, connecting them through well-established, accessible routes, we can improve the accessibility of recreation facilities and other integral architectural spaces. Distributed recreational architecture offers an opportunity to better connect and remove barriers to existing infrastructure. Architecture should embody human movement in form and function. Dan Mancina does not let his lack of vision deprive him of the expression of skateboarding. Despite enormous odds, Dan coils his body like a spring on a piece of ply with four wheels and explodes into the air in extension. His body is moving through space in all dimensions. Human movement should be celebrated and represented in our architecture—compositions of dynamic inanimate form to articulate animated human playfulness.

Our bodies and movements are in constant interaction with the environment.

Junahi Pallamsaa (1996)

The urgency for a barrier-free world may be greater for some than for others. If you have an impairment, you likely better empathise with others through your difficulties. If you have not experienced impairment and the disability that often follows, this issue may feel more distant and less significant. If only I had a crystal ball. Would you prepare if you knew that in 6 months, 5 or 10 years, you would lose your ability to see or hear? Would you plan and change your lifestyle if tomorrow your ability changed because of an impairment? Would you not seek to provide the best chance of a fulfilled, purposeful life if your child was born with Down syndrome or muscular dystrophy? Are you aware none of us can escape the grips of aging? For nearly 25% of New Zealand's population, disability is a reality now. If our goal as designers is to create *good* architecture, I am sure it is; we must consider who our community is home for and design in their best interest. If we continue to design in isolation, we will continue to disabled people with impairments. If we design across scales, across the property parcel, across our streets, connecting the neighbourhood through active recreation and human movement, we can move towards a more inclusive neighbourhood, *enabling all* to the greatest extent possible.

Architecture is only as good as our ability to access, move through, and utilise it.

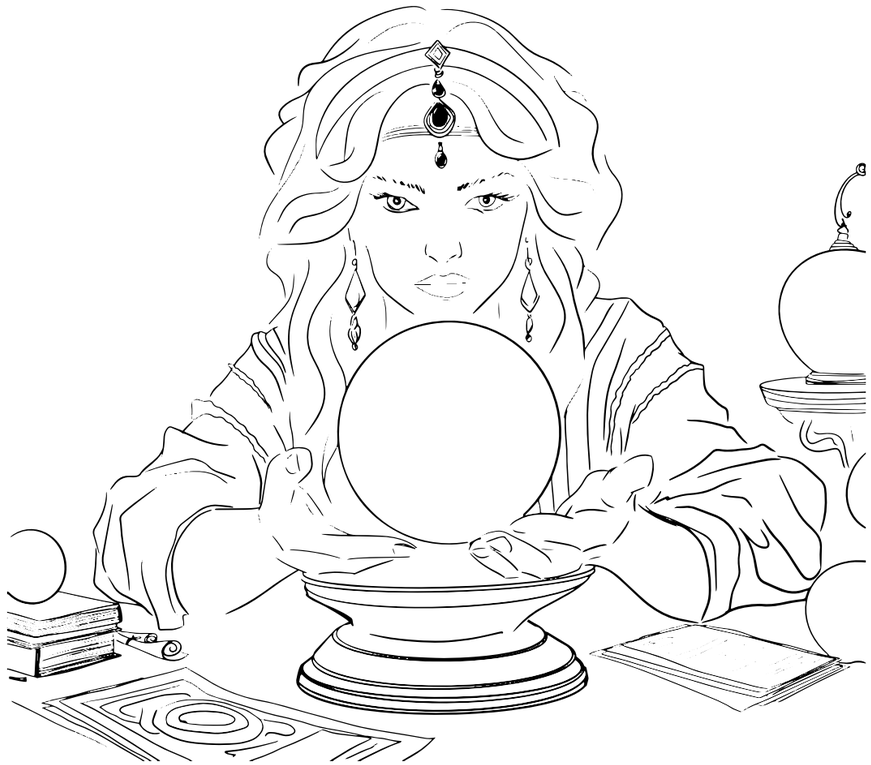


Figure 188 - Only time will tell - Artwork by Author, Base on AI generated image.

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