Housing in Aotearoa:

Creating regenerative environments to support Māori and their whenua.

Holly Anaru

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

Signed:

Holly Anaru

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A 90 point thesis submitted in partial fulfillment of the requirements
for the degree of Master of Architecture (Professional).

Auckland University of Technology
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Lastly, thank you to my whānau, I couldn't have gotten here without your constant support and encouragement.

Abstract

Centred around a co-design approach with the Hawke whānau of Ngāti Whātua Ōrākei, this research project explored the influence of te ao Māori on medium-density housing design. As a collective, we worked to co-develop a design response to replace the whānau's current home on Kitemoana Street, Ōrākei, with one that meets their needs - housing for whānau and renters, space to support the Hawkes work with Oranga Tamariki, and communal amenities - creating a space embedded in te ao Māori. Exploration of te ao Māori concepts, housing in Aotearoa and its socio-ecological impact, and design precedents were utilised to influence the architectural outcome of the complex. The project provides a solution that accommodates Ngāti Whātua values and responds to Aotearoa's current climate and housing crises.

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Pepeha

Ko Te Arawa te waka

Ko Tamatekapua te tupuna

Ko Utuhina te awa

Ko Ngongotaha te maunga

Ko Te Arawa te iwi

Ko Ngāti Whakaue te hapū

Ko Tunohopu te marae

Ko Anaru te whānau

Ko Holly Ahorangi Anaru toku ingoa

1. Preface

1.1 Introduction

This research project is sited on the last 700 acres of land that remained under Ngāti Whātua ownership through colonisation. This thesis begins with the pepeha belonging to the people of Ngāti Whātua.

Ko Māhuhu ki te rangi te waka
Ko Maungakiekie te maunga
Ko Waitematā te moana
Ko Ngā Oho, Te Taoū, Ko Te Uringutu ngā hapū
Ko Ngāti Whātua te iwi

Māhuhu ki te rangi is the waka
Maungakiekie is the mountain
Waitematā is the ocean
Ngā Oho, Te Taoū, Te Uringutu are the sub-tribes
Ngāti Whātua is the tribe
(Our Story, 2022)

This project aims to address the current housing needs and climate crises faced in Aotearoa, New Zealand. Architecture plays a crucial role in social and environmental outcomes, and there is always the opportunity to better communities and environments. Acknowledging the harsh history of Aotearoa New Zealand is a starting point to achieve this. This thesis opens the door to hugely complex topics. It provides a general overview and introduction of te ao Māori concepts and problems communities and environments face because of the housing and climate crisis. Collaborative design with students and the Hawke whānau created a project that is stepping architecture in a regenerative direction, helping ensure sustainable environments for the future.

Figure 1: *31 Kitemoana Street, Hawke whānau letterbox (31 Kitemoana Street Ōrākei Feasibility Study, 2021)*

Figure 2: *Tunohopu Marae*

1.2 Positionality

As a Māori wāhine, growing up in both te ao Māori and te ao Pākehā, I have learnt to navigate through both worlds. Educated through mainstream schooling and living closer to my English side of the family, I felt versed in the ways of Pākehā and disconnected from my Māori roots. However, I am fortunate to have always understood its importance in my life. It has been embedded into my way of life. I have fond memories and moments of when I was able to connect to my Māori culture, and this research project has enabled me to deepen my connection with te ao Māori.

I believe indigenous knowledge deserves more acknowledgement and should be incorporated alongside Western science. Māori have lived in Aotearoa for many years before European contact and had these years to gather knowledge and become experts of our land, seas and sky. Why disregard that as invaluable? How can Aotearoa move forward to learn from and value indigenous knowledge? We must listen to and incorporate indigenous practices in the contemporary world.

Identifying as a Te Arawa and Ngāti Whakaue descendant, this thesis is my exploration and understanding of te ao Māori and how this knowledge might be used in the predominantly Western world of architecture in Aotearoa. Recognising how something seen as the norm is continuing to negatively impact our indigenous communities and posing potential solutions through this architecture project in collaboration with Ngāti Whātua Ōrākei.

1.3 Why?

Only in the past few years have I learned of the hugely disadvantaged position Māori are put in. Many people living in New Zealand are unaware, ignorant or dismissive of how and why colonisation happened and continues to happen and its effects on society today (Ross, 2020). It saddens me to see how often Aotearoa's history gets overlooked and how late in my life I learned about it.

Hoping to bring light to these issues that so often get overlooked or avoided, this thesis acts as a path to educate myself, readers of this thesis, and those around me. The built environment is a contributing factor to these systematic issues. Therefore, designing to benefit our most vulnerable people can help everyone. Creating architecture grounded in mātauranga Māori gives space for iwi, hapū and whānau to restore their connections with te ao Māori.

1.4 Overview of thesis

Te ao Māori is an overarching lens through which this research project looks. There is a lack of research available surrounding te ao Māori. Accordingly, utilising contemporary sources in the form of theses, research articles and contemporary design precedents was necessary to help develop this project to synthesise research across a broad spectrum of topics. This way, our design outcomes will be more successful.

Through analysis of te ao Māori concepts, housing in Aotearoa and its social and ecological impacts, and insight into Ngāti Whātua Ōrākei and the Hawke Whānau, this research has heavily influenced the design output. Design precedents informed materiality, sustainability, landscaping and building processes. We met regularly with the Hawke Whānau in co-design sessions to discuss how the project might develop to achieve their wants and needs.

1.5 Scope of thesis

This topic is hugely broad, with definitions and values of te ao Māori differing from iwi to iwi. Because of this, a full exploration of all iwi beliefs is beyond the scope of this thesis. However, the scope of this thesis includes a general overview and introduction of te ao Māori that relates to the author and Ngāti Whātua Ōrākei, such as narrative, knowledge systems and values. The research scope of housing in Aotearoa is a general overview and introduction relevant to Ngāti Whātua and the Tāmaki region.

1.6 The Hawke whānau

The Hawke Whānau of Ngāti Whātua Ōrākei moved into 31 Kitemoana street in Ōrākei, Auckland, after living away from their rohe for a number of years. The death of their young child brought them back, a place where they were able to watch over and be with him. Bob Hawke (papa and husband) was a master builder who renovated and extended their current house from three bedrooms, to home upwards of 10 people at a time. The Hawkes are always welcoming new people into their home, often looking after children and whānau in need. It is something that they have always done and will continue to do.

The whānau approached Auckland University of Technology's (AUT), School of Future Environments in 2021. After having previously worked with Fleur Palmer, our supervisor and associate professor at AUT, the whanau had hopes of collaborating with Master of Architecture (Professional) students to help in the redesign of their whare. From July to October of 2021, we met with the Hawke family periodically to move this project forward. As a group, we produced a feasibility study and began the initial concept design. Through a co-design process, a collective of five Master's students, including me, were lucky to continue working with the Hawkes in this thesis project to create a design outcome that is a physical manifestation and representation of the whānau and iwi. The whānau had many ideas and goals when undertaking this project and chose Rory Norton's (a member of the collective) initial scheme for us to refine and develop going forward in this project. Co-design sessions were an integral part of the design process, and we aimed to meet weekly with the Hawkes over the duration of this project. Typically, we would listen to their needs, present our ideas and plans, receive feedback, and make relevant changes.

Bob unfortunately passed in September 2021 after overseeing the initial steps of this new housing development. Arohanui, Bob's wife and his children have worked closely with us, the collective, for the past 18 months to ensure we bring Bob's vision to life and honour him through the process. The whānau and iwi have gone through many hardships and are continuously extending their kindness to those around them as prominent members of the iwi and community. This whare is evidently deserved.

1.7 Working as a collective

This thesis is one of five theses that come together to cover a broad scope of research areas and design outcomes for the Hawke whānau housing development. Working as a collective, we each have roles that come together in this vibrant project.

The Collective:

Holly Anaru

Title: Housing in Aotearoa: Creating regenerative environments to support Māori and their whenua.

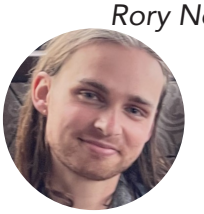
Research Question: How can an exploration of te ao Māori influence the development of the Hawke Whānau Whare to create sustainable housing on iwi land that supports Māori and whenua?

Rana Fatoohi

Title: Whakahoi – Weaving culture through architecture

Research Question: How can we bring culture into the built environment through sustainable and eco-friendly building materials to improve the mental health and well-being for the occupants and surrounding communities?

Rory Norton



Title: He Korowai Aroha Kai Maumahara: Mana motuhake in practice

Research Question: In the context on a national housing crisis; how can Mana Motuhake - self determination – be used to combat issues rooted in colonialism?

Allan Phan

Title: Whanaungatanga – an approach in co-living housing toward sustainable living for Maori

Research Question: How can Whanaungatanga – a Maori core value be embedded in a co-living approach to form a medium-density housing for Māori that promote a sustainable lifestyle?

Lana Webster

Title: Towards Mauri-Ora in medium-density architecture

Research Question: How can mauri-ora be protected, enriched and enhanced in medium-density residential architecture while maintaining high building performance?

Figure 3: *Photographs of the collective*

2. Introduction

2.1 Research question

How can an exploration of te ao Māori influence the development of the Hawke whānau whare to create sustainable housing on iwi land that supports Māori and whenua?

2.2 Project aims

The response to this research question was broken down into four separate areas to assist the research and design process.

1. *What is te ao Māori in relation to Ngāti Whātua?*

2. *How has housing changed in Aotearoa and what socio-ecological impact has this had?*

3. *How might te ao Māori be used in a design process? What precedents already exist?*

4. *What does a te ao Māori approach look like for the Hawke Whānau development?*

2.3 Hawke whānau aims

Co-designing with and identifying the whānau aims is essential to ensure we have design outcomes that achieve the whānau goals for this project, defining what success means for them. The Hawke whānau identified four key goals for the design project.

1. *Support immediate and extended whānau/Iwi members.*

2. *Create income by having apartments for renters.*

3. *Multi-generation living. Kaumatua don't move away from the whānau.*

4. *Support the whānau's work with Oranga Tamariki.*

Top: ***Figure 4:*** *Hawke Whānau Whare (31 Kitemoana Street Ōrākei Feasibility Study, 2021)*

Bottom: ***Figure 5:*** *Overlooking Auckland, Ōrākei (31 Kitemoana Street Ōrākei Feasibility Study, 2021)*

3. Co-design

Co-design as providing a means to enact Te Tiriti o Waitangi or be understood as related to practice already existing within te ao Māori rather than being an imported process that perpetuates colonial and Eurocentric mindsets and values (Dr Simon Mark, 2020).

3.1 Collective positionality

Our position as Masters students in the School of Future Environments at Auckland University of Technology is one of learning, knowledge-sharing and exploring how we can improve the future of Aotearoa's built environments. We brought our skills and knowledge in architecture, together with the Hawke whānau's life experience, to this co-design project to create medium-density housing that caters to their needs and lifestyle.

As a collective of five people, we have a wide range of knowledge and skill sets that are valuable contributions to the co-design process. Members of the collective designing from a Pākehā perspective acknowledge their awareness of not having an entire understanding of te ao Māori. Because of those limitations, we have taken the time to grow our knowledge of te ao Māori to build a positive relationship with the Hawke whānau, to embed tikanga and mātauranga into the design process, by understanding the importance of listening and acting on the Hawkes' opinions, wants and needs through the process.

As students, we valued this experience and reflected on the co-design process throughout the project, looking at what went well and what areas could be improved. It is a process which we must constantly be reflecting upon to ensure we work towards approaching co-design as providing a means to enact Te Tiriti o Waitangi, or to be understood as related to practice already existing within te ao Māori, rather than being an imported process that perpetuates colonial and Eurocentric mindsets and values (Dr Simon Mark, 2020).

This collective holds the belief that Aotearoa has an opportunity to significantly improve its inclusion of indigenous knowledge and values in our housing. We are acutely aware of the privilege to work on this project that holds such potential for the future of Māori housing and a decolonial Aotearoa. We present this project to show the benefits and successes of a co-designed housing development made with Māori for Māori to create a built environment embedded in te ao Māori.

Figure 6: *Co-design session with the Hawke Whānau.*

3.2 Defining co-design

Co-design has most commonly been incorporated into healthcare industries and is a relatively new practice in architecture in Aotearoa. Co-design is used Interchangeably with a set of other terms - participatory design, co-production, experience-based design, human-centred design, and others (Mark, 2020), each with slight variation in meaning.

Our collective define co-design as putting emphasis on designing from the user's perspective (Mark, 2020). Rather than the collective being the leaders, we look to the Hawke whānau to lead this project as active contributors and experts in the design process. We are designing for Māori, and part of the co-design process is building a relationship with the Hawke whānau, to form trust on both sides. This relationship was essential for the collective to understand the whānaus ways of life and how they define success in the project's outcomes, and for the whānau to give us the privilege of co-developing this project.

Working collaboratively with the Hawke whānau to embed mātauranga Māori and tikanga in the design process, we regularly reviewed floor plans and discussed materiality, function, aesthetics, needs, wants and desired outcomes, through meetings and design sessions. We shared kōrero and kai, became knowledgeable on the Hawke whānau's history and values, and deepened our understanding of each other. The co-design process gave us the knowledge and confidence to design successful spaces led by the whānau.

3.3 Risks and benefits

Although co-design has many benefits, it poses a significant risk when done poorly. For the 'co' in co-design to be honoured, more than design skills and methods needs to be involved. Reciprocity and shared decision-making need to be in place (Mark, 2020). There is also risk in Māori associating the term co-design as an imported Eurocentric process, which conflicts the collective's definition of co-design.

Co-design in Aotearoa has strong potential to change the state of the nation's social and iwi housing. When practised well, it offers the potential for improved community well-being and allows tangata whenua to lead changes in their own lives and communities (Mark, 2020). Creating changes through a te ao Māori lens is likely to impact all community members positively.

As co-design is an emerging practice, this research could be used to explore the potential of kaupapa Māori-based approaches in social housing projects, ensuring a mindful approach to reflect on the process to create successful outcomes for Māori.

3.4 Influence of co-design on the design process

Going into this project, the whānau recognised their need for new housing and their need to be involved in the design process. They didn't want to hand over the project and lose control, but rather, to dictate what would happen on their land. As a collective, we understand the need for co-design, especially on iwi land and when working with tangata whenua. As thesis students, we are in an ideal position to work with the whānau for this project.

We know co-design isn't the typical approach when working with an architecture client, nor is this a usual model of a thesis project. This research project has influenced our design process and created a new approach to architecture in our education systems. Allowing us to work on a live project with an actual client is an invaluable experience for students and pivotal in gaining insight into architect/client processes and relationships within the industry.

Each member of the collective focused on different research areas to contribute to the final design outcomes and each made compromises as part of doing so. Working as a collective, we were able to produce a large amount of work in detail to create a rich project, which wouldn't have been achievable for one person working alone.

We talked through this project with many different experts, giving us new perspectives as we worked through the project. We met with Ahi Komau, an organisation that works with tangata whenua to clarify housing and property needs. We involved Ngāti Whātua carvers, weavers and artists and, of course, met with many members of the Hawke whānau in our regular meetings.

Co-design allowed this project to be embedded in te ao Māori from the beginning. Having a deep understanding of the Hawke's lifestyle and their wants and needs allowed the collective to make informed design decisions. Co-design was a contributing factor to the success of this project. As a collective, we believe, when done well, co-design can and should be used in future to move away from typical architect-led Western design practices.

3.5 Reflection of co-design

In a year-long design project, we could only do so much, and we recognised that co-design is a time-consuming and intensive process where more time would be needed to develop the project further. We have been working and getting to know the family for 18 months, and in a short time, we have gained significant depth and insight and provided a strong base for this project to continue developing past this thesis.

Our collective uses this project to explore co-design processes in architecture. We used it as a valuable learning experience and believe we would not have had the same outcomes if we hadn't worked with the whānau in a co-design process. As a collective, we worked well together, and as we each individually developed our thesis, our roles in the project naturally fell into place. This is a process that each of us would happily participate in again and would like to see increasingly incorporated into architecture in the future.

Co-design gives the power to Ngāti Whātua Ōrākei to have ownership over their land and allows us as designers to create a physical manifestation of te ao Māori and uphold iwi values. Co-design empowers participants to make changes in their lives and allows them to develop new skills. This project follows a traditional indigenous approach where people are valued equally, and everyone is involved in decision-making.

4. Research

Responding to project aims 1 and 2.

4.1 Te Ao Māori

What is te ao Māori, in relation to Ngāti Whātua?

Te Ao Māori refers to the Māori world view, it is the lens through which Māori view the world. It includes ideas of the self, the world, te reo, origin stories and narratives, beliefs, and knowledge systems. It is a multifaceted concept that is central and philosophical to the Māori way of life. This chapter explores concepts involved in ideas of the self and the world and reflects on Māori in contemporary settings, where many are forced to navigate between the two worlds of Māori and Pākehā.

Te ao Māori concepts differ across iwi, and kaupapa Māori has promoted a reified view of Māori culture as more homogeneous and less fragmentary than it really is (Stewart, 2021). It is with this in mind that this chapter focuses on what Te Ao Māori means to me, the Hawke whānau and Ngāti Whātua Ōrākei. Te reo Māori and Māori philosophy comprise a distinct form of knowledge with its own epistemological framework, which relies on Māori language, culture and experience to be fully comprehended (Mathieson, 2021). Te reo is central to understanding te ao Māori, this thesis acknowledges that many concepts are inadequately described when translated into English. This chapter draws heavily on the writing of Georgina Stewart, who eloquently describes Te Ao Māori in her book, Māori philosophy: indigenous thinking from Aotearoa (Stewart, 2021).

Takarangi is a double spiral often seen in carving that signifies human origin at the beginning of the universe (Te Takarangi, 2018). While the spiral has endless interpretations, a common belief is that each spiral is symbolic of Papatūānuku and Ranginui, the white space symbolises te ao marama, which allows us to see each of the spirals and the links between represent their many children and descendants.

Figure 7: *Takarangi drawing by the author.*

Ideas of the self

Māori have a holistic view of the world; they see themselves as part of the ecosystem rather than separate from it (Harmsworth, 2013). Stewart (2021) compares this connection to our ecosystems to a flax plant, symbolic of the way Māori think about the self as an inseparable expression of the land from which we originate (Mathieson, 2021).

The belief is that we are made up of two parts, waitahi or tinana (physical body) and Wairua (spirit, soul) (Stewart, 2021).

Waitahi or tinana refers to the physical body. Tinana means real, actual, the trunk of a tree, the main part, or the centre of things, as well as self, person, or reality (Gillon, 2022). The idea of a body refers not only to humans but to atua, whenua, moana, and other entities.

Wairua refers to the spirit or soul. The term consists of two words, where 'wai' means water and 'rua' means two, implying the existence of two entities (Valentine, 2017). Wairua is unique to each being through lived experience and has many meanings and applications. Human connection to the spiritual realm is seen through concepts of whakapapa, whakatauki and storytelling of atua and tupuna that guided Māori. Notions of spirituality for Māori are deeply rooted in rich cosmological narratives that are embedded in the notion of whakapapa (Lindsay, 2022).

Whakapapa is a central concept relating to the self, translating most closely into English as genealogy or lineage (Te Aka, n.d.). However, it also has a much more complex meaning. Whakapapa is a web woven through time and space to connect us to our past tupuna and future descendants. Whakapapa forms the theoretical framework of knowledge to which all other Māori concepts are attached (Stewart, 2021).

Stewart explains the concept of whakapapa as the key point of difference between Māori philosophy and Western philosophy. Whakapapa both explains the world and guides human behaviour in it, connecting us to all other living things. It is the ethical basis of the celebrated Māori respect and love for nature (Stewart, 2021). Connection to the natural environment creates a sense of belonging and is central to one's identity. Knowing the land you come from offers a sense of power, confidence and responsibility. Origin stories

and myths have been passed down through generations and are the basis on which Māori have developed their intertwined connection with nature (Harmsworth, 2013).

Hauora, as health and well-being, refers to not just the self as an isolated individual but encompasses physical, spiritual and mental aspects, in hand with whenua and whānau. Te Whare Tapa Whā model (fig.7) created by Sir Mason Durie (1984) shows a te ao Māori approach to well-being. There are four key aspects of hauora that sit in equilibrium, together, so that when one aspect is impacted, that impact creates upset and unbalances all other areas. Maintaining balance not only means looking after the physical self, but also looking after the wairua and whenua, thus acknowledging the interconnectedness of humans and the environment.

Nature and people are entwined through whakapapa, te reo, tikanga, art, food, rongoā, and spirituality. This relationship flows both ways; people are the kaitiaki of the natural world, and the natural world is the kaitiaki of people. In contrast to some Western mindsets, which continually separate humans from animals and the natural environment, it is clear there are important differences between te ao Māori and te ao Pākehā. These differences can create misinformation and misunderstanding between Māori and non-Māori in the social and political landscape of present day Aotearoa New Zealand (Mathieson, 2021). The loss of biodiversity and the growing distance between whānau, hapū, iwi, Māori communities and treaty partners and what remains is making it harder to sustain these relationships, responsibilities, and practices (New Zealand Government, 2020).

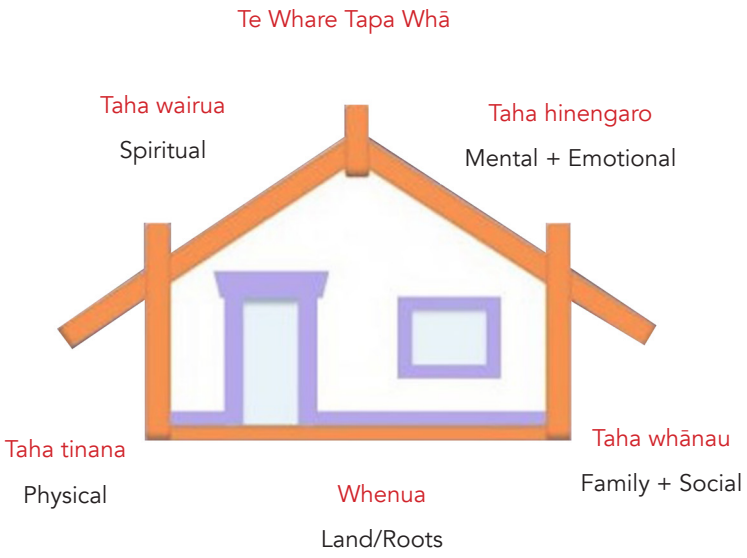


Figure 8: *Te Whare Tapa Whā Model, Sir Mason Durie.*

Ideas of the world

Ideas of the world in te ao Māori stem from the concept of whakapapa. Utu, mana, tapu and mauri are four key concepts that branch from whakapapa and extend this view of the world.

Utu is often translated to as revenge, to be viewed in a violent or negative sense. This interpretation is not utu in its entirety, as it has a broader, more holistic meaning. Translating more closely as balance, its meaning is somewhat like the Chinese philosophical concept of yin and yang (Stewart, 2021). Imbalances were sought to be restored within all areas of life.

Tapu is sacred, there are certain tikanga that must be followed in tapu spaces (such as whare whakairo) or around objects (such as taonga). Tapu refers to the prohibitions, rules or restrictions that are placed on certain objects, people or places believed to be of importance, typically as a means of protection and sanctification (Lindsay, 2022). It is an important concept within te ao Māori that influences tikanga, beliefs and practices.

Mana relates most closely to prestige, authority and power. It is something that can change in circumstance, and a person or object can gain or lose mana. Mana has become adopted and used in everyday conversation in Aotearoa, although it is nearly impossible to understand fully, so it often has been given distorted meanings. While mana and tapu seem quite distinct concepts, both relate to the 'power of the gods' and how this power influences the lives of people (Stewart, 2021).

Mauri is the life force or essence and can be associated with people, places or things. Mauri in relation to people can be thought of as spiritual/psycho-emotional health that needs to be cared for and can be affected by whatever bothers or pleases a person. It can also be used in relation to features of the natural environment which are seen as living in Māori conceptual frameworks since they support life. Māori environmental concerns are therefore often expressed in terms of enhancing or healing the mauri of a particular place (Stewart, 2021).

Māori culture and language evolved in the ecosystems and landscapes of Aotearoa. Generations of Māori lived as an integral part of the natural world, forming an interwoven relationship with nature. The collective understanding and ways of knowing of those generations are preserved through **mātauranga Māori.** Mātauranga is a complete indigenous scientific knowledge system drawn from the relationship Māori have with all natural environments (New Zealand Government, 2020. These natural systems had been living in harmony for thousands of years before human presence and therefore would be much more knowledgeable than us in living in balance and co-existence. Māori looked to the environment as a teacher, respecting its power and greatness and accepting humans as a small part of the world. Living in balance differs from those Westernised views where humans see themselves as superior to other entities, viewing the world as a resource to benefit from and exhaust, rapidly destroying our ecosystems.

Te ao Māori is also a world of **polarities**, a balance between light and dark, male and female, tapu and noa, and life and death. It is understandable and admirable why Māori have such an intertwined relationship with the natural environment. The need for balance and harmony is encapsulated within Māori views of the world. In the consumerist and economically driven world we live in today, it proves hard to maintain these lifestyles that Māori continuously seek out. We are now dealing with climate change and the consequences of exhausting the earth's natural resources. Returning to indigenous practice and knowledge is necessary to regenerate our communities, cities and environments.

Living in two worlds

Māori have long had to navigate their way through both te ao Māori and te ao Pākehā, as common for all indigenous groups living in colonised places. Māori people often say they live in 'two worlds', a sense that arises from the fact that Māori live with a cultural binary. The point is that however a Māori person chooses to navigate this cultural binary, navigate it they must (Stewart, 2021). Cultural binary refers to the contrast between te ao Māori and te ao Pākehā and the fact that Māori must exist within the two.

Colonisation is a process of dispossession and control rather than an historical artefact. Now it presents itself in different forms that still deny indigenous people their rights (Jackson, 2020). Adapting to live in predominantly Western culture alongside urban intensification has affected relationships Māori have with whenua and resources (Māori perceptions of 'home', 2022). Creating a disconnect between Māori and whakapapa and leaving many Māori people feeling lost, disconnected, and unsure of themselves and their identity. This situation has created generational and ongoing trauma that comes with living in a society made to privilege Pākehā, and which continues to impact Māori people negatively. We have built a society with racist and discriminatory foundations that continue to exist. In Stewarts view, the ability to ignore racism is widespread as we continue to live in societies in Aotearoa, New Zealand that privilege Pākehā. (Stewart, 2021).

Changing the narrative for Māori in a developing world, we might aim to come into a 'third space'. Stewart discusses this idea of a third space, seeing it as positive growth and a combination of Pākehā and Māori culture. Decolonisation is not about a return to life as it was before European contact, but rather the positive change and combination of world views to create a society and culture that acknowledges tangata whenua and benefits all. Recognising the importance of this project being situated on Māori land still occupied by mana whenua, this thesis celebrates the potential equity and vitality of a built environment that harnesses Western and indigenous knowledge.

However a Māori person chooses to navigate this cultural binary, navigate it they must (Stewart, 2021).

4.2 Ngāti Whātua

History of the Ngāti Whātua iwi.

Ngāti Whātua Ōrākei descend from Ngāti Whātua Nui Tonu, who travelled to Aotearoa on the Māhuhu ki te Rangi waka under the leadership of Rangatira Rongomai. These people first arrived in Muriwhenua (in the far north) and eventually made their way south to settle in Tāmaki Makaurau in the 1600s under the leadership of Rangatira Tuperiri (Ōrākei, 2021).

Ngāti Whātua is made up of four tribes now living between Hokianga and Tāmaki (Taonui, 2017). All people of these tribes are descendants of Tuputupuwhenua (or Tumutumuwhenua), who was believed to have emerged from the earth and living in Aotearoa long before the arrival of Kupe (the first Polynesian to come to Aotearoa).

Born around 1780, Apihai Te Kawau, was a paramount Rangatira of Ngāti Whātua and grandchild of Tuperiri. He fought in many wars while chief and led his people through many difficulties, including their defeat by Ngāpuhi iwi in the battle of Te Ika-ā-ranganui in 1825. This defeat caused Ngāti Whātua members on the Tāmaki isthmus to leave their rohe and scatter. Only after the death of Ngāpuhi leader Hongi Hika in 1828 were Ngāti Whātua able to return to Tāmaki, where they resumed their cultivations at Māngere, Onehunga, Horotiu, and their land at Ōrākei (Ani Pihema, 1990).

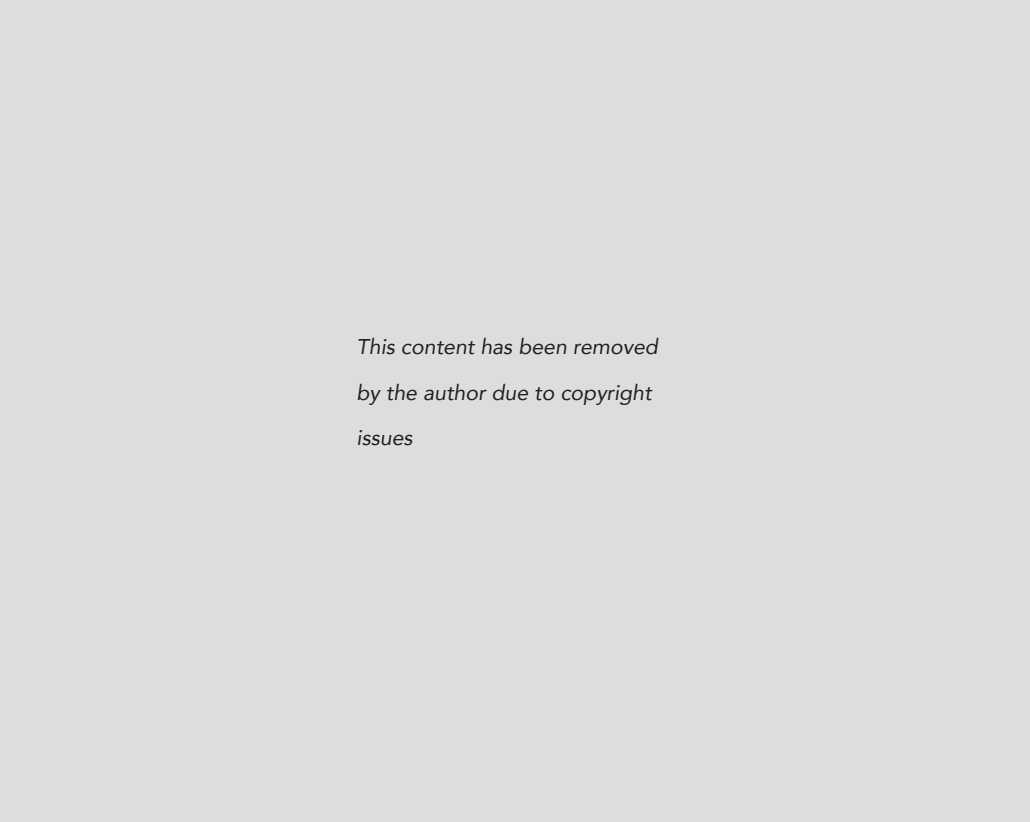
Figure 9: *Map of Māhuhu ki te Rangi waka (31 Kitemoana Street Ōrākei Feasibility Study, 2021)*

Te Tiriti o Waitangi

Before the signing of Te Tiriti o Waitangi, Apihai Te Kawau, invited William Hobson (Governor) to move his trading from Kororareka (Russell) to Tāmaki (Taonui, 2017), with hopes to protect Ngāti Whātua lands (after battling with Ngāpuhi) and grow their trades. Gifting Hobson land and the promise of a safer place to live, the invitation was accepted. Apihai signed Te Tiriti o Waitangi on the 20th of March 1840 at the Manukau Harbour, and all trading and commerce moved to Tāmaki. Hobson renamed the city Auckland and made it the new capital of New Zealand in September 1840.

The move of the capital to Auckland put extra pressure on the government for land access and ownership, resulting in a mass land loss for the iwi. Ngāti Whātua first sold 3,000 acres between Hobson Bay, Mount Eden and Cox Creek to the Crown for 215 euros. Then a further 29,200 acres were sold over the North Shore and Manukau regions (Palmer, 2016). By 1845 Ngāti Whātua land ownership went down to 3,000 acres, and by 1850, only 10 years since the signing of the treaty, most of Ngāti Whātua's accessible land in Tāmaki was sold. The land was bought at a low cost and on-sold by the Crown for much larger profits, and the positive relationship the iwi thought to have formed with the Crown had been shattered. Ngāti Whātua land ownership slowly reduced to a 700-acre block in Ōrākei (New Zealand Government, 2020) which remains iwi land today. The remaining 700-acre block is where this design project is sited, highlighting the significance of this section of land to the iwi and the importance of this project to create positive outcomes for the iwi.

The land loss was a clear breach of Te Tiriti o Waitangi which had promised them protection, participation, and partnership. Ngāti Whātua assumed there would be a mutually beneficial relationship. This has been unreciprocated time and time again, creating a history where Ngāti Whātua Ōrākei has been detrimentally compromised by the Crown (Ōrākei, 2021). The Crown has failed to act in the best interests of the iwi, leading them to virtual landlessness and diminishing their ability to exercise mana whenua (New Zealand Government, 2020).



Bastion Point

Bastion Point, otherwise known as Takaparawhā, was home to the Bastion Point occupation starting on the 5th of January 1977. It was led by Joe Hawke, who was the voice for Ngāti Whātua and peacefully protested for their land back after learning of the government's plans to sell the land for housing development. The Ōrākei Māori Action Committee occupied the site for 506 days, refusing to leave their land. On 25th May 1978, more than 800 police and soldiers forcefully attempted to end the occupation of Takaparawhā, arresting 222 people, and demolishing buildings and gardens (On this day in 1978, 2022).

Ten years later, in 1987, Hawke took the iwi's claim to the Waitangi Tribunal, which ruled in favour of returning the land to Ngāti Whātua Ōrākei. The government accepted the decision and returned the land, paying $3 million dollars in reparations (On this day in 1978, 2022). The occupation became a powerful symbol for Māori and was the first historical claim to be heard. It remains one of the most famous protest actions in Aotearoa's history.

Figure 10: *Ngāti Whātua protesters, Bastion Point, March 1977*

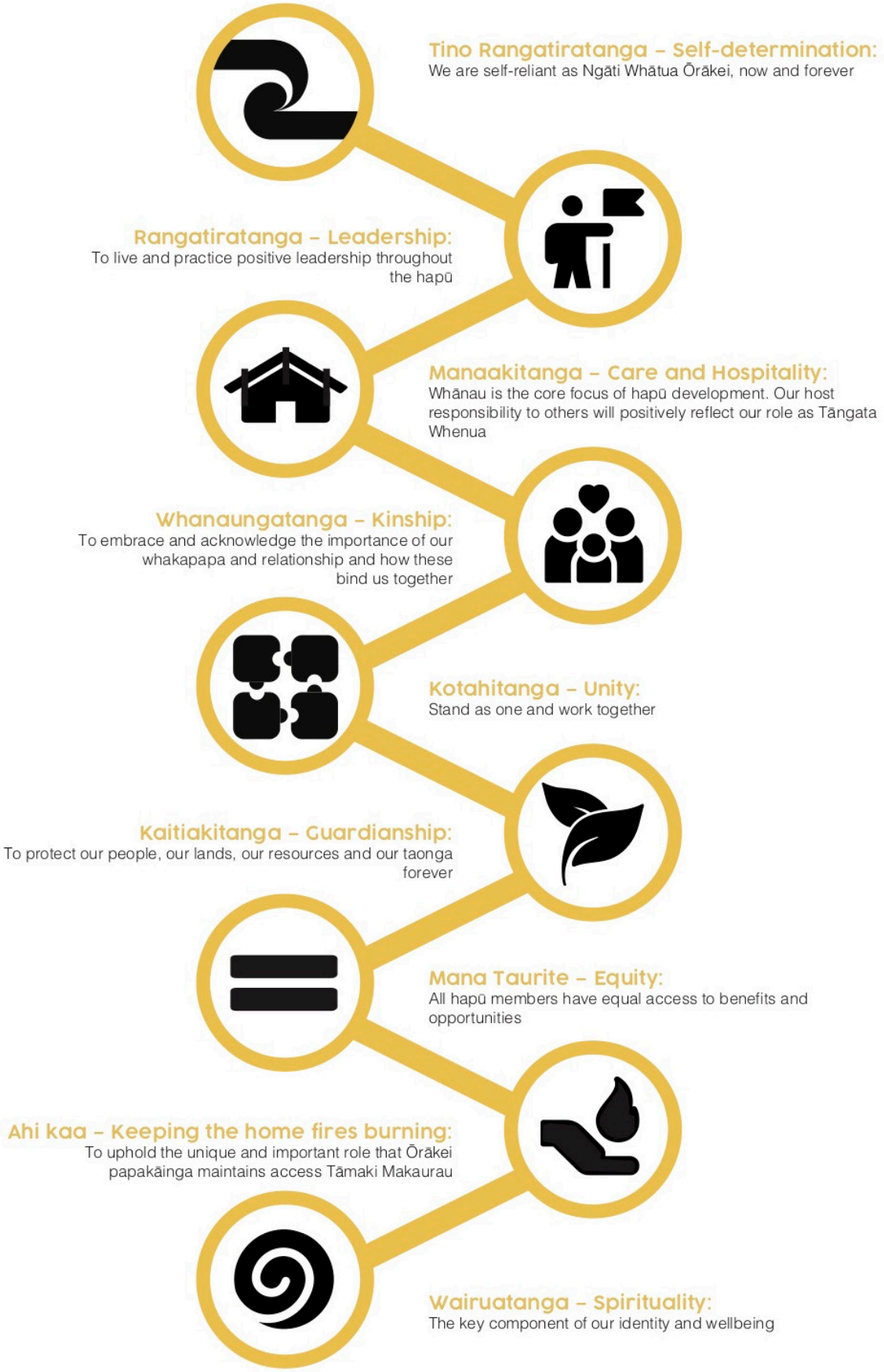
Treaty Settlements

In 2011 Ngāti Whātua Ōrākei signed a deed of settlement with the Crown, recognising Ngāti Whātua Ōrākei's mana whenua of Tāmaki (Ōrākei, 2021). The settlement consisted of an agreed historical account and Crown acknowledgements, which formed the basis for a formal Crown apology to Ngāti Whātua Ōrākei, together with cultural, financial and commercial redress (New Zealand Government, 2020). Iwi and hapū groups occupying different areas of the Tāmaki region were grouped into one and labelled as mana whenua of the whole region, with the Crown saying they had a collective voice and entitlement of the entire region, no matter what part they came from (Pihema, 2021, p. xxx). Māori do not share the same view. This disagreement led to the dispute involving the Marutūāhu collective, which could not be resolved out of court. In 2014 the Crown intended to gift two areas of land to the Marutūāhu collective despite Ngāti Whātua already claiming whakapapa to those lands. Both the Marutūāhu collective and Ngāti Whātua placed claims over these lands, resulting in a cross-claim; in 2018 the Supreme Court granted Ngāti Whātua access to the High Court to recognise the overlapping Treaty claims.

On the 9th of February 2021, Ngāti Whātua took a hikoi to the High Court in Auckland to challenge the Crown's approach to the rights of mana whenua. The hikoi hoped to bring to attention the agreement between Ngāti Whātua and the Crown formed upon the signing of te Tiriti and the disrespect towards Ngāti Whātua Ōrākei through their attempt to gift land to non-mana whenua.

Iwi Values

Ngāti Whātua has several central values that underpin and guide the iwi.



These values also underpinned our design approach and define the success of this project. By upholding the iwi values in our design, we created housing embedded in te ao Māori to ensure the best outcomes for the whānau and iwi.

Figure 11: *Iwi values (31 Kitemoana Street Ōrākei Feasibility Study, 2021)*

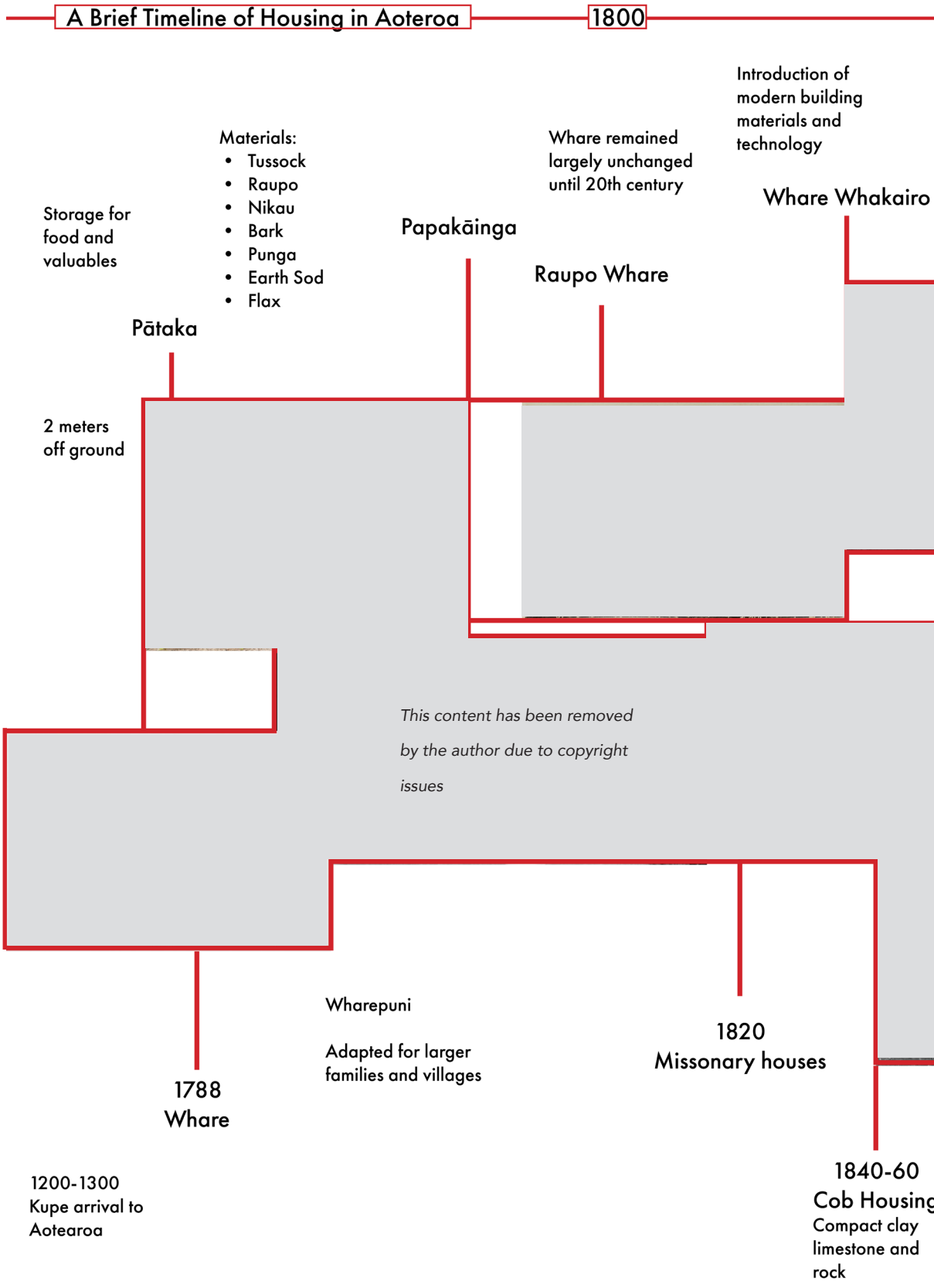
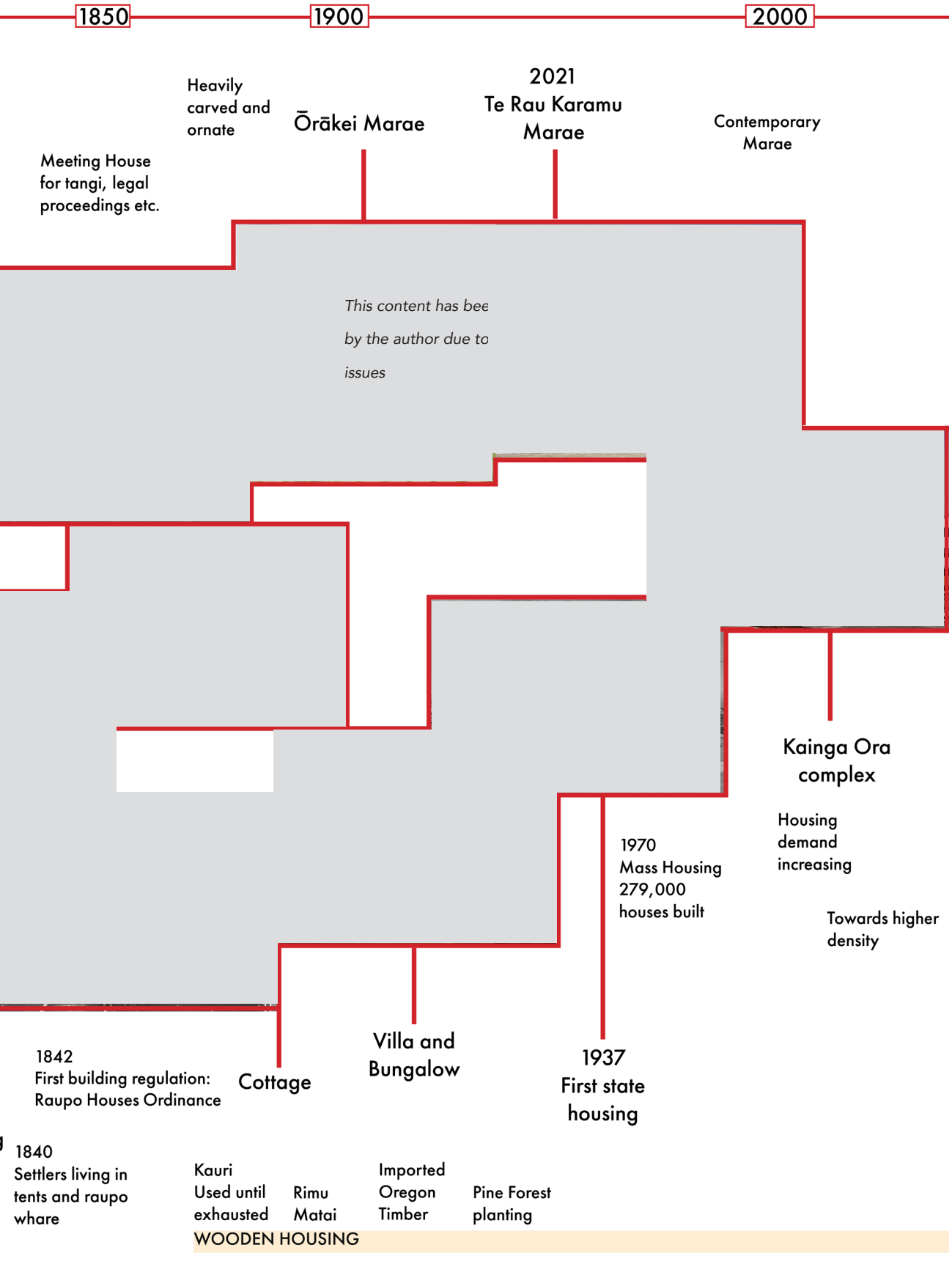


Figure 12: *Housing in Aotearoa over time.*


1850
1900
2000
Heavily carved and ornate
Ōrākei Marae
2021
Te Rau Karamu Marae
Contemporary Marae
Meeting House for tangi, legal proceedings etc.
This content has bee
by the author due to
issues
Kainga Ora complex
Housing demand increasing
Towards higher density
1970
Mass Housing
279,000
houses built
1842
First building regulation:
Raupo Houses Ordinance
Cottage
Villa and Bungalow
1937
First state housing
1840
Settlers living in tents and raupo whare
Kauri
Used until exhausted
Rimu
Matai
Imported
Oregon
Timber
Pine Forest
planting
WOODEN HOUSING

4.3 Housing in Aotearoa

How has housing changed in Aotearoa and what socio-ecological impact has this had?

Polynesian Contact

Māori first made contact with a new land they called Aotearoa in 1250-1300CE when they journeyed from Hawaiki, bringing with them a Polynesian vernacular. They had to adapt to the colder climate in Aotearoa, and over time developed their own style of art and architecture that would become unique to Māori and Aotearoa.

Whare were the first kinds of houses seen in Aotearoa and were adaptions of the homes the new arrivals had had in Polynesia. The dwellings were semi-permanent, due to occupants frequently moving in search of food and supplies, and were often built in clusters of 10 or more, where each house was occupied by a family (Brown, 2014). As the population grew they created the wharepuni, consisting of more settled and sophisticated buildings. Wharepuni, meaning sleeping house, could sleep multiple families and were generally unadorned (Brown, 2014). These structures included a porch, which was a new adaption by Māori as they adjusted to the climate of Aotearoa.

Eventually, the settlements evolved into papakāinga, large villages that were home to a community living on their ancestral land, a traditional housing model which is becoming popular again in the 21st century for iwi wanting to develop and live on their rohe.

Pātaka, a building to store food and other valuables, often represented the wealth and prestige of the tribe (Brown, 2014). They are typically heavily carved and built roughly two metres above the ground with an entrance through the middle of the structure.

Whare whakairo, large meeting houses, were usually ornate and carved inside and out, depicting images of ancestors and gods. They were first built in the mid-1800s, in response to social and political changes during a time of land sales, the signing of the Treaty and the introduction of Christianity (Brown, 2014). These spaces are commonly known as marae, which includes the whare whakairo and the surrounding spaces or buildings.

The building of whare was simple and typically began by securing four posts, called pou (meaning to fix, establish, erect) into the ground at each corner, with two larger pou at the centre front (pou tahuhu) and centre back (pou tuarongo). In the third stage, the tahuhu or backbone is laid between the front and back pou, and maihi (eaves) which were usually decorated were placed. Lastly, the side walls are built, with pou matua (support posts) being placed along the walls (Bennett, 2007).

Māori tribes, although sharing similar views and practices, regarded themselves as independent political bodies which co-existed with neighbouring tribes (Ross, 2020). Within tribes, Māori lived communally, with concepts of time relating to what activity would be carried out in that period of the year. Everyone worked, including children and elders helping where they could. In the 13th century, daily life centred around hunting, gathering and growing food. Early settlements were located around harbours or rivers for easy access to kaimoana. Over time settlements moved inland as horticulture developed and they began farming kumara and other plants (Derby, 2013). These communal ways of life are embedded in Māori culture and have created a set of values that defined and guided Māori communities. The eventual enforcement of Western housing and cultural practices created a disconnect of individuals from their whānau and whenua. We see this disconnect still negatively impacting Māori in contemporary housing and society.

European Contact

Europeans began to settle in Aotearoa in the 1820s. Missionaries, whalers and sealers were the first settlers, building wooden homes from kauri trees, as it was seen as high-quality timber. Mass settlement started in the 1840s. Initially, people lived in tents and raupo houses built for them by Māori while their permanent houses were being constructed. Cob houses in the 1840s were typically built by compacting clay, limestone and rock. Wooden housing quickly became the most common housing type. By the early 1900s most kauri forests had been logged, and although there was a concern for kauri's continued survival, its high value meant that exploitation continued, reducing it to the few patches that survive today (Orwin, 2007). After this, rimu and matai became the most common timber material to build houses with. However, as housing demand grew, these timber resources also declined and in the 1920s pine forest planting began.

Mike Ross in *Imagining Decolonisation* (2020) states that the establishment of Pākehā housing settlements changed the indigenous neighbourhood. Pākehā settlers regarded themselves as superior and their society as better than that of their Māori neighbours (Ross, 2020). Māori saw the mutual benefits of Pākehā settlers, advancing their trades and introducing new technology into their communities, and believed that their settlements could co-exist, in the way that neighbouring tribes had co-existed for centuries (Ross, 2020). However, Pākehā were insistent on sharing their 'superior' culture and at times enforced changes in violent ways. Pākehā equated the unfamiliarity of Māori custom with inadequacy. Many viewed Western civilisation as 'normal' and Māori as 'abnormal', when of course both were, more than likely, reasonable ways of living.

After the signing of Te Tiriti o Waitangi in 1840, the European population quickly outnumbered Māori and as Māori lost power over their resources, the Pākehā economy and communities were correspondingly strengthened (Ross, 2020). Increasing Pākehā power allowed them to confiscate land to accommodate for more settlers, enforce Western education and health systems, and discriminate and commit violent acts in response to Māori resistance. Most Māori continued to live in wharepuni up until the 1870s when the government encouraged Māori communities to build wooden houses in European style as these were seen as more civilised and healthier (Schrader, 2013). Pushed into a corner, Māori had to adopt a Pākehā lifestyle to survive. The consequent degradation of Māori language and customs was inevitable (Ross, 2020).

Colonisation enabled violent, discriminatory and unjust behaviour towards Māori to become normalised and laid the foundation on which a system to privilege Pākehā was made.

With this control Māori have been coerced into building, living in and supporting the colonised forms of their new home (Ross, 2020).

Figure 13: *Drawings of houses in Aotearoa over time.*

Now

Colonisation is still present today. Māori have come to accept many Pākehā customs (Ross, 2020) and the loss of land in the 19th and 20th centuries was identified as an initial catalyst of the cascading and compounding housing insecurity experienced by Māori (Rout, 2019). Māori will always have a strong connection to place, and for many their ideas of home differ significantly from Westernised views. For Māori, a home relates to a feeling of comfort, belonging and safety. In comparison, Pākehā tend to see the idea of home as a physical house with economic value (Māori perceptions of 'home', 2022). These differences in perceptions have led to Māori being misrepresented and misunderstood when it comes to housing due to a Pākehā lifestyle being prioritised and 'normalised' through the process of colonisation.

Government policy in Aotearoa has consistently missed the mark regarding housing design, with little consideration beyond the idea of 'shelter' to including features like whanaungatanga and kotahitanga (Māori perceptions of 'home', 2022). Māori are also underrepresented in all key institutions and roles in the housing sector. This lack of representation means that Māori values and practices often do not fit within the housing sector, which translates into disadvantage in terms of state assistance and suitable housing that represents Māori ways of living (Matthew Rout, 2019). We see lack of the inclusion of Māori values present in the apparent inadequacy of social housing schemes that Māori are the most in need of (Māori perceptions of 'home', 2022). Those schemes have provided short-term solutions to an increasing problem and failed to cater to Māori and vulnerable communities.

Rau Hoskins is an architect who has been on the front line of kaupapa Māori design. He was involved with various land marches with his family while growing up and saw how they can impact the government and society. However, he found that these institutions could not make the changes he wished to see, so he took them on himself (Hoskins, 2022).

The houses we live in are essential to our well-being. Housing is the foundation on which everything from education and employment to health and aspirations can develop (Hoskins, 2022). Māori have come from a place where they were able to create and be part of a community without the need for a bank or money or mortgage. The sudden discontinuation of this lifestyle, and the demand to adjust to a new lifestyle, has created a society that negatively affects indigenous communities. From colonisation to the present day, the style and planning of houses have been dictated to us. These homes are not culturally appropriate for Māori and Pasifika peoples and have created a struggle for power over housing design which is not accommodating to family environments (Hoskins, 2022). Consequent overcrowding, unaffordability and unhealthy homes put the most vulnerable in difficult positions and increase the demand for social housing along with the shift towards higher density housing.

While the volume of state-owned rental housing has increased, that change has merely provided short-term solutions to addressing housing demand and access to healthy homes. According to Hoskins, medium-density housing has not been truly agreed to by Māori or Pasifika people as appropriate to accommodate their needs, but instead has been introduced by the Ministry (Hoskins, 2022). Hoskins states that we need to look at and solve further issues such as quality, accessibility and cultural appropriateness, and assume that it will be Māori and Pasifika who are occupying these houses. Many things can be addressed to normalise the design of state housing so they are at least neutral and ideally positive for Māori and Pasifika whānau (Hoskins, 2022), moving towards more intergenerational living and accommodating for more people to live in one whare.

Because Māori don't generally have control or access to urban land, they can't have input towards the design outcomes. In 2040 will be 200 years since the signing of Te Tiriti o Waitangi. How can we see Māori representation continuing to increase and show cultural depth in our built environments to deepen appreciation of place and tangata whenua (Hoskins, 2022)?

Social Impact

Removing Māori from their culture has had long-term impacts and has created a vicious cycle of housing insecurity and poverty for our indigenous people. From healthcare to education, employment, housing and politics, Māori are put in a position that disadvantages them. Colonisation systems have been put in place that have dismissed Māori.

"Current social indicators for Māori show a community under compounding pressure. Māori experience lower educational expectations and achievement, die on average ten years before Pākehā New Zealanders, receive less effective medical care for treatable illnesses (and therefore have a lower survival rate) and are four to five times more likely than Pākehā to be sent to jail when appearing in the courts. This pressure on fragile families and communities pushes them into cycles of poverty and self-harm that are difficult to break." (Ross, 2020)

Due to the typical communal and family-orientated lifestyles of Māori, current housing hardly accommodates these values of whanaungatanga and kotahitanga. Te Whare Tapa Whā (fig.7) nicely encompasses what needs to be considered when designing successful housing for Māori. Good design requires more than shelter; it is about spirituality, connection to the land and the ability to interact with whānau. Eurocentric consumerism has altered housing in Aotearoa to become driven by economic gain, which greatly contrasts with a Māori outlook that sets its focus on social and ecological outcomes. This has set Māori back in many instances and is a continuing contributing factor to the cycle of poverty and housing insecurity.

Ecological impact

Before human contact, more than 80% of Aotearoa New Zealand was covered in dense forest (Wilmshurs, 2007). The oceans surrounding Aotearoa New Zealand kept out predatory mammals that were common everywhere else. Aside from 3 species of bats, Aotearoa New Zealand was a land of birds, ancient reptiles and areas covered by forests and tussock (New Zealand Government, 2020).

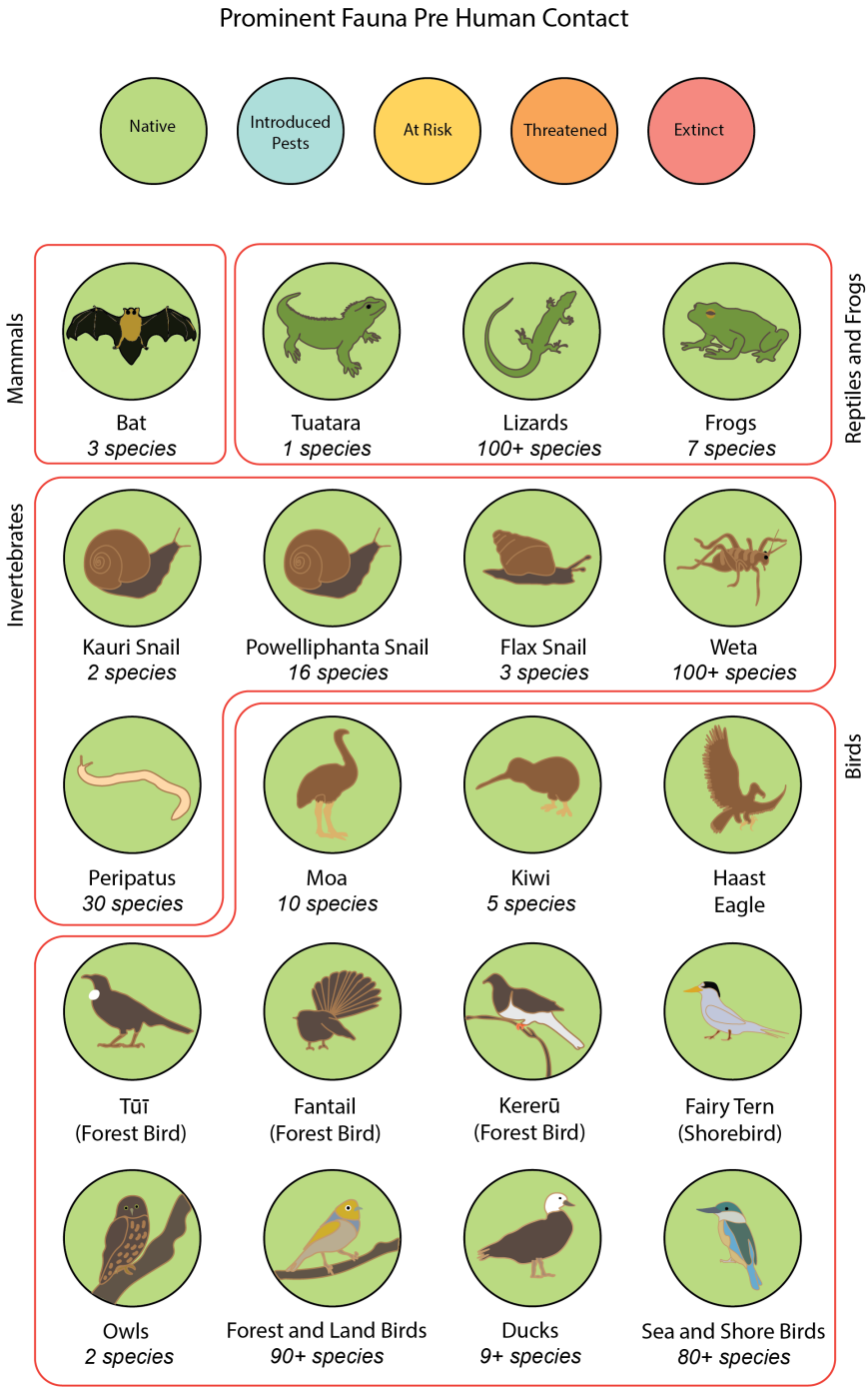


Figure 14: *Prominent fauna, Pre human contact*

The arrival of Māori saw the first wave of extinction and deforestation in Aotearoa with up to 40% of forests burnt down within 200 years of Māori settlement (Wilmshurs, 2007) to make way for housing and horticulture. Māori also brought with them the kiore rat and kuri dog that hunted and killed lizards and smaller birds. Initially, moa were a main food source for Māori and all 10 species were hunted to extinction. The extinction and decline of many species meant a loss of food sources for others and put many native species into declining populations.

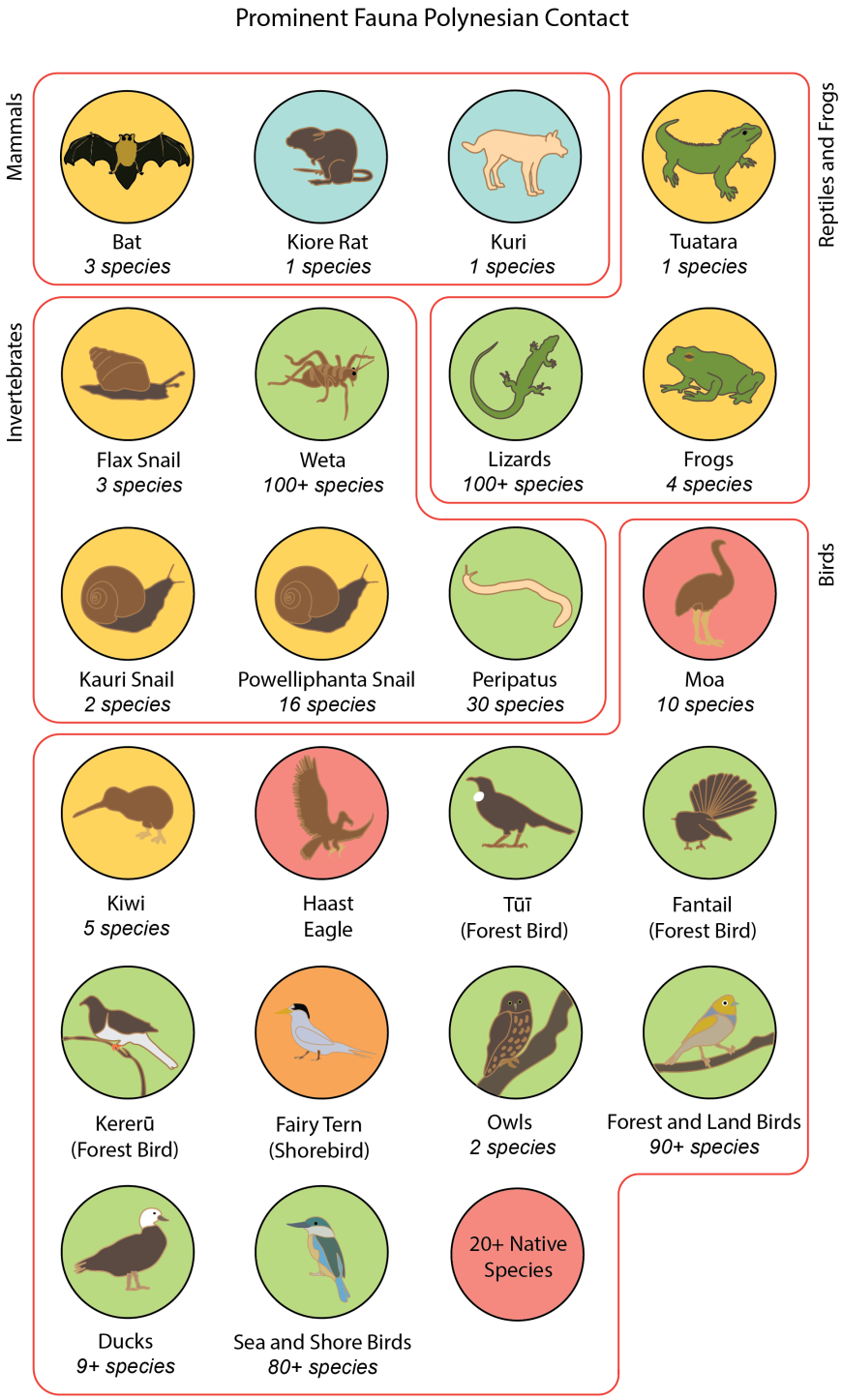


Figure 15: *Prominent fauna, Polynesian contact*

European settlement saw the second wave of mass deforestation and extinction. Settlers exhausted resources to build homes and grow trading. With the eventual removal of native forests, pine forest planting began in the 1920-30s as the need for housing rapidly increased. By 2005 only 24.8% of the total land area was left in forest cover (Wilmshurs, 2007). Europeans brought many introduced species that further threatened native flora and fauna, especially bird life. Loss of native fauna was not just due to introduced pests but also loss of habitat through deforestation and hunting for food and trade.

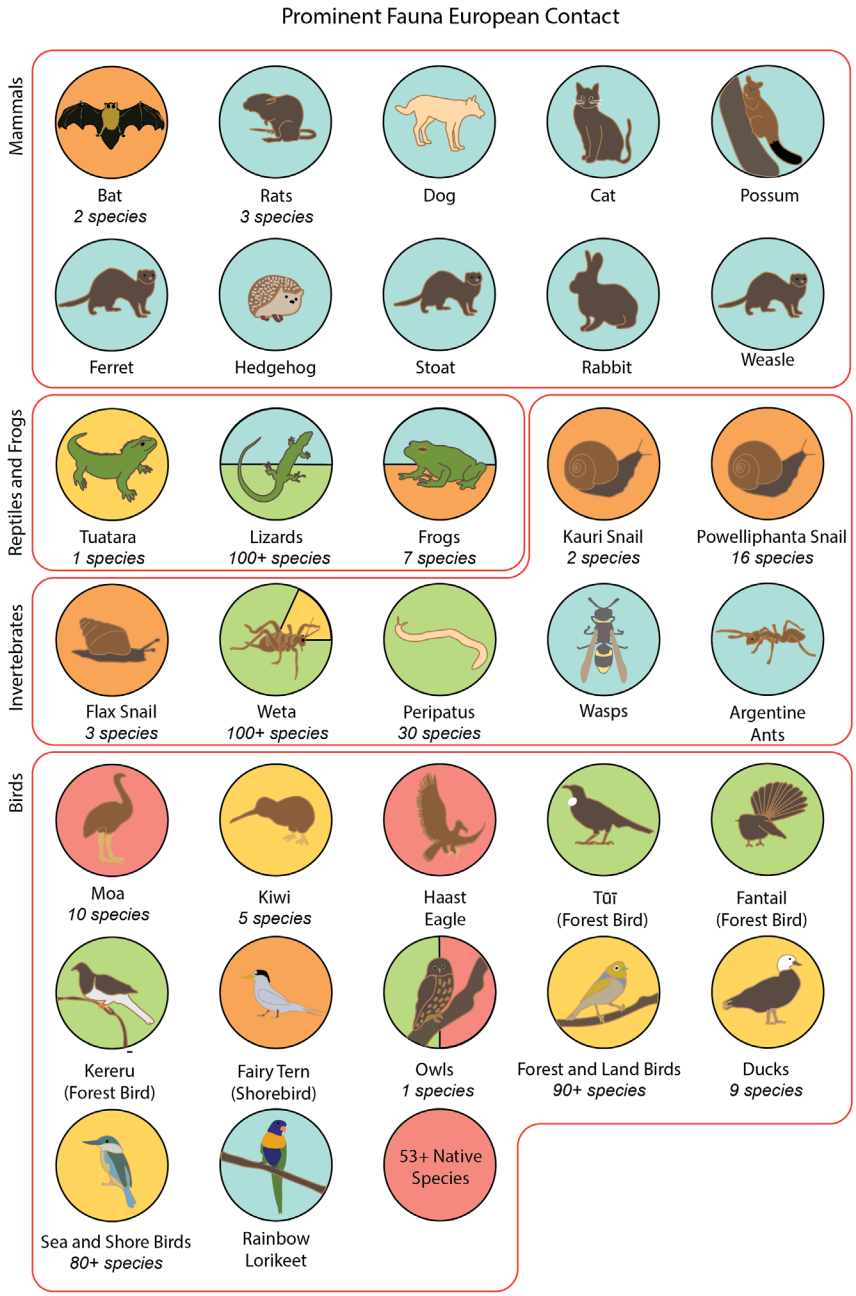


Figure 16: *Prominent fauna, European contact*

How Aotearoa's landscape has changed through settlement

Figure 17: *Map documenting changes in Aotearoa's green cover.*

Since the arrival of humans, 79 animal species have been recorded as lost to extinction as a result of changes to the landscape and the introduction of predatory mammals (New Zealand Government, 2020) Although the picture is incomplete, it is clear that our native biodiversity is still declining overall. Between 1996-2018 around 40,800 hectares of indigenous forest, scrub and shrubland were converted to non-indigenous land cover (New Zealand Government, 2020), used for housing, construction, farming and allowing the land to be lived on. Colonisation and its resulting environmental impacts and biodiversity loss has had wide-ranging effects on the relationship that whānau, hapū and iwi have with local ecosystems (New Zealand Government, 2020).

Now we are seeing the consequences of the neglect of our natural environment. Forests, streams and rivers, wetlands, indigenous grasslands and shrublands continue to be reduced in extent, often as a result of land use intensification and urban development (New Zealand Government, 2020). Government decision-making and economic systems often fail to account for the value of nature, both in economic terms and benefits such as the physical, cultural, or social well-being of people. If the full value of biodiversity and mātauranga Māori are not recognised or reflected in decisions about resource use, biodiversity is more likely to be negatively impacted (New Zealand Government, 2020). For te ao Maori to become embedded in our societies, our built environments need to prioritise the natural environment's protection, restoration, and maintenance.

The restoration and consideration of our natural environments enable positive socio-ecological and cultural impacts. In our built environments, we can address many things such as material choice, waste, energy, land use, access to and amount of green cover to help Papatūānuku rather than exploit and exhaust the land.

5. Design Precedents

Responding to project aim 3.

5.1 Te Kura Whare, Living building challenge

Founded by Jason McLennan in 2006, The Living Building Challenge is currently the highest green building standard worldwide (Mclennan, 2015). The Living Building Challenge is a performance-based standard that must meet several measured standards. These standards are measured through seven 'petals' covering place, water, energy, health and happiness, equity, and beauty. Each aspect works to create a building that is good for all aspects of the environment, working with it rather than against it.

Te Kura Whare in Taneatua for Tūhoe iwi is one of 15 'living' buildings in the world. It is the first building in Aotearoa New Zealand to leave no footprint and is now globally recognised as actually replenishing its environment and community (ArchitectureNow Editorial Desk, 2017). Designed by Jasmax and completed in 2014, the 2,000 square metre building is a physical manifestation and representation of the iwi. Tūhoe wanted to reflect their respect and connection to the national park, Te Urewera, in Te Whare Kura. It seemed that the living building challenge was the obvious decision to reflect their values and beliefs of living with the land. The living building standard requires the building to positively impact the land and community surrounding it. The Te Kura Whare building is multi-purpose, including a hall, office and administration, a café and a library.

Figure 18: *Exterior of Te Kura Whare*

Te Kura Whare utilises earth brick in the office, meeting rooms and Te Whare Puri spaces. Using extracted clay from Ruatāhuna, Ōwhakatoro, Taneatua and Awakeri, over 6,000 earth bricks were made by over 100 people from the community (Ngai Tūhoe, n.d.). The earth brick-making process consists of a dry clay mix, often stabilised with up to 10% cement, where the mix is then compacted and pressed either manually or by a machine to create a dense brick (EBANZ, n.d.). Earth brick creates a beautifully unique aesthetic, grounding the building to Papatūānuku. It is a non-toxic, naturally occurring material, making it the perfect incorporation into a te ao Māori space.

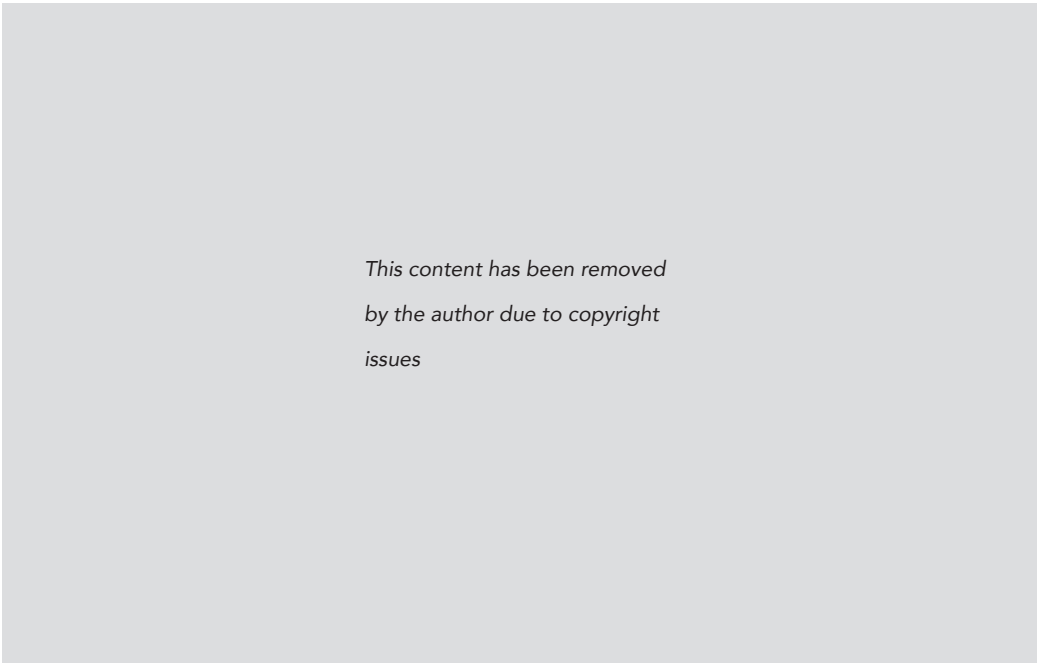


Figure 19: *Hall/multi-purpose space.* ***Figure 20:*** *Administration and office areas*

Because of the importance of the holistic and intertwined relationship Māori have with the natural environments, it is clear to see how the living building challenge aligns strongly with te ao Māori and Māori values. In relation to the Hawke whānau development, this design precedent is influential to systems and material use in creating a sustainable and considerate building. While not being able to undertake the living building challenge for the present project, it is possible to consider some if not all seven petals and how they could influence the project. For example, earth building is viable to incorporate, as excavation is needed for the car park, and recycles the soil. Likewise, energy and water systems that may have higher initial costs will largely benefit the family and site for years to come by lessening waste, energy consumption and cost.

5.2 Te Rau Karamu Marae, Massey University

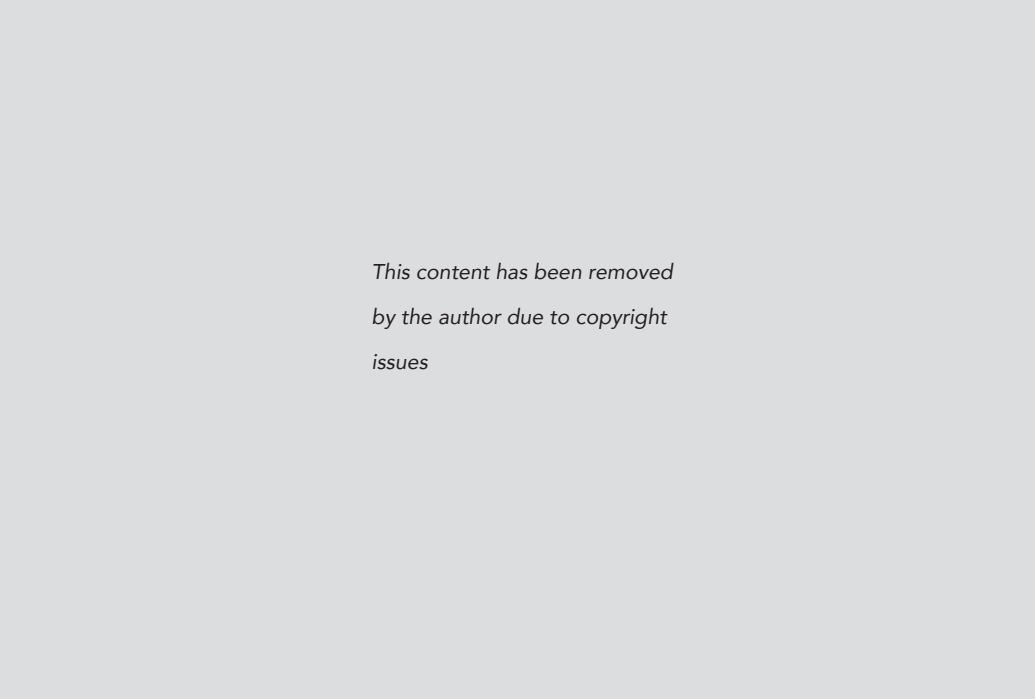


Figure 21: *Front of the marae, blending seamlessly with the surrounding environment.*

Designed by Te Kahui Toi in collaboration with many artists and designers, Te Rau Karamu Marae was opened in 2021 at the Massey University campus in Wellington. This building embodies the potential for the combination of indigenous knowledge and Western technology practices. Māori design principles supported the intention and definition of success for this project, resulting in a building that is a physical manifestation of te ao Māori. Particular attention was given to manaakitanga, resulting in high-quality finishes, details, materials, pathfinding, and ambience (Te Kāhui Toi, 2021)

The marae, which can host guests overnight, will be predominately used for teaching and learning with kaupapa Māori to the fore. Even the landscaping has been specifically designed with native species as part of the outdoor learning space (Massey University, n.d.). This contemporary marae designed for the future shows us the potential of physically incorporating te ao Māori, and a commitment to kaupapa, mātauranga Māori and te Tiriti. Incredibly detailed, the design was based on Te Rākau te Pua, cosmic tree, with visual motifs of the trunk and branches, roots, canopy, insects, earth to sky, covering every surface of the design. A fully immersive interior environment that facilitates its many uses.

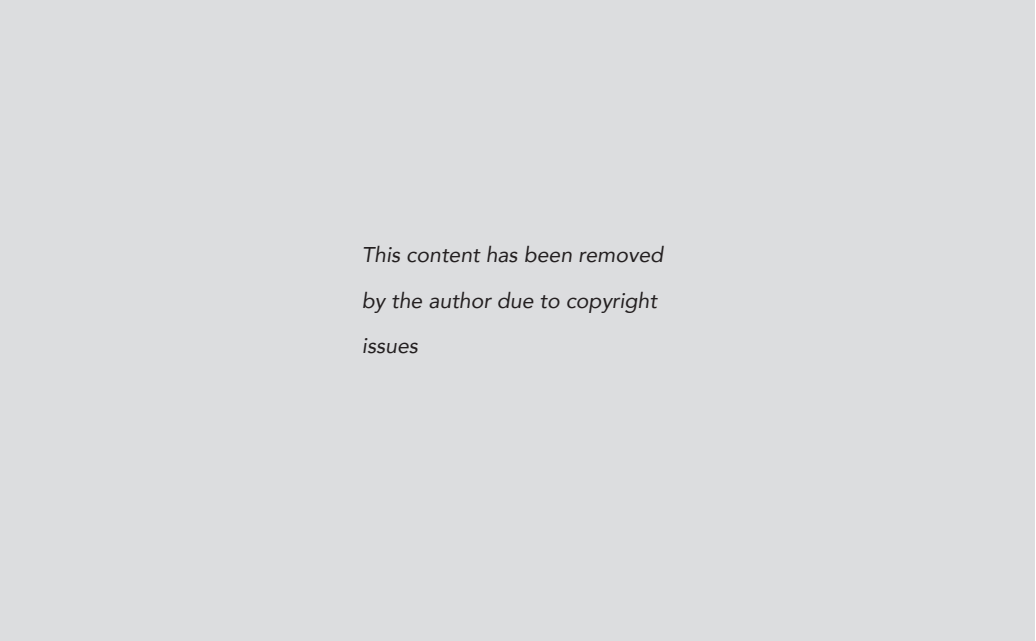


Figure 22: *Interior of marae, heavily ornate and colourful.*

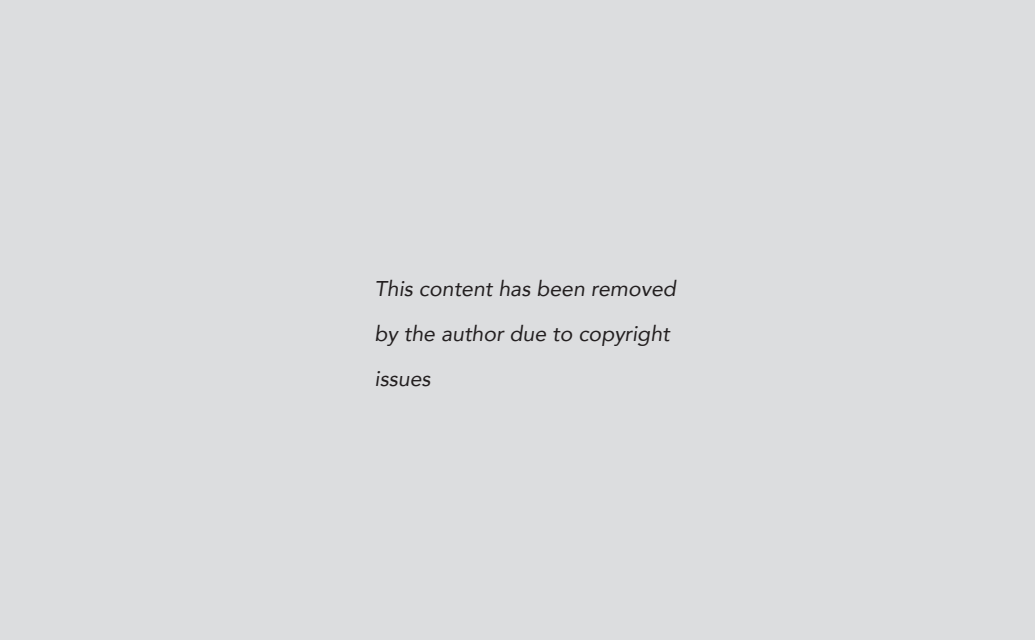


Figure 23: *Laser cut panels*

Figure 24: *Poutama patterned wall.*

Although it is a stand-alone building in an educational environment, aspects of design detail and art can be used as inspiration to explore te ao Māori in higher-density spaces and housing. Much like Te Rau Karamu Marae, The Hawke whānau residents will use their whare hui as a space of gathering, learning, talking, ceremony and sleeping. This design precedent works to improve social outcomes of kotahitanga, whanaungatanga, safety and education through the celebration of te ao Māori.

5.3 Kāinga Ora

Formed in late 2019, Kāinga Ora, Homes and Communities, is a Crown agency to support the government's priorities of housing and urban development throughout Aotearoa. It is focused on providing public housing for those most in need. Analysing its current work is valuable for the success of the present project, as social housing often fails to accommodate Māori and Pasifika lifestyles.

Most Kāinga Ora developments throughout Tāmaki have consisted of 1-3 bedroom apartments, fulfilling the basic human need and right to shelter. Māori tend to have larger families and traditionally would live in multi-generational communal environments. Kāinga Ora does not accommodate this lifestyle nor does it tend to include communal spaces that foster community or allow for gathering. That approach is not suitable for Māori and Pasifika ways of life, who are the majority group occupying these homes.

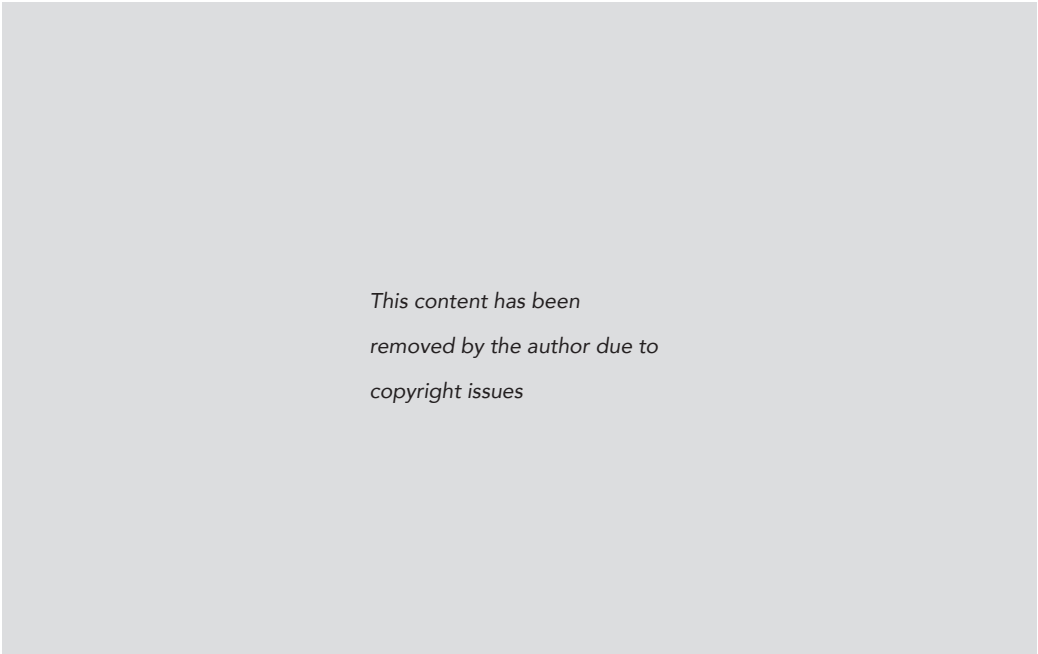


Figure 25: *Great North Road Development, Housing 40 people.*

Figure 26: *Edmonton Ave Development, Housing 24 People.*

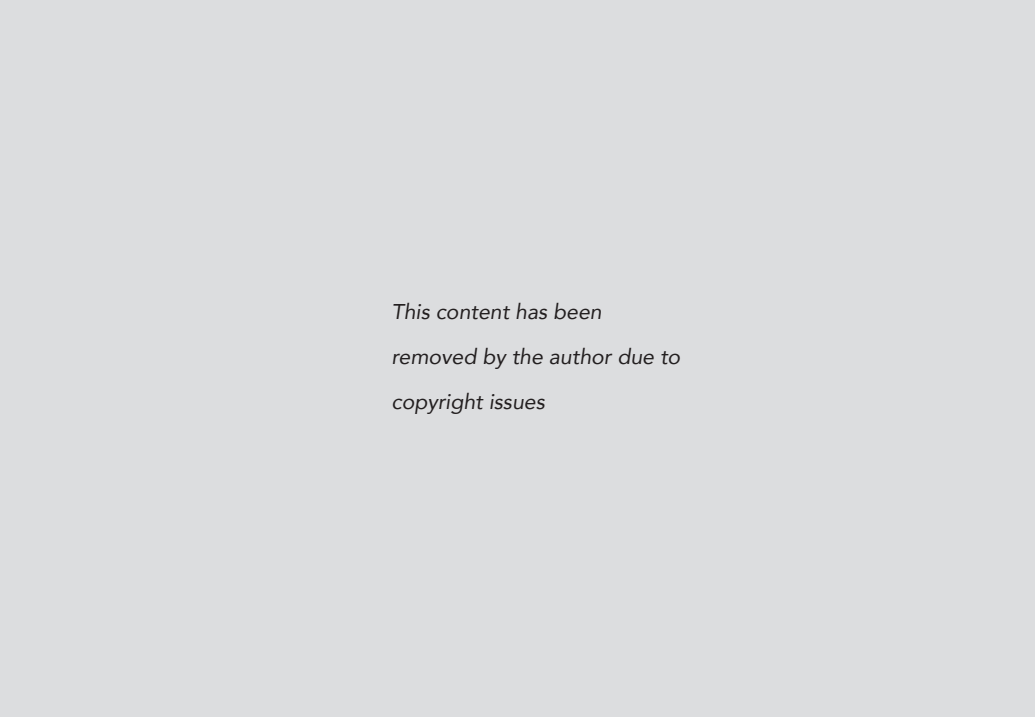


Figure 27: *Hendon Ave Development, Housing 36 people.*

Kāinga Ora has built many medium- to high-density developments throughout the whole country and has provided many people with healthy and safe homes. However, they are constantly failing to meet social and cultural needs and are creating only short-term solutions to the housing crisis. It is a tough situation to be in when the housing demand is high, which makes the need for building housing quickly the priority over the quality of the design.

Kāinga Ora allows us to rethink our approach to social housing in this project to consider the longevity of the project and whom we are designing for, ensuring that the design supports current and future generations and upholds Māori values and lifestyle. Co-design enriches our understanding of the spaces we need to include to provide safe and healthy homes and communal spaces that have a positive social and cultural impact.

5.4 Native Courtyard Garden, Grey Lynn

Designed by Xanthe White and completed in 2016, the native courthouse garden based in Grey Lynn, Auckland shows the potential of dense plantings and green cover in urban environments. Designed with a combination of more than 15 native plant and tree species, including nikau, tī kouka and whakariki, this garden increases biodiversity in urban environments and attracts native wildlife by providing a food source and habitat, alongside being aesthetically pleasing, and providing privacy.

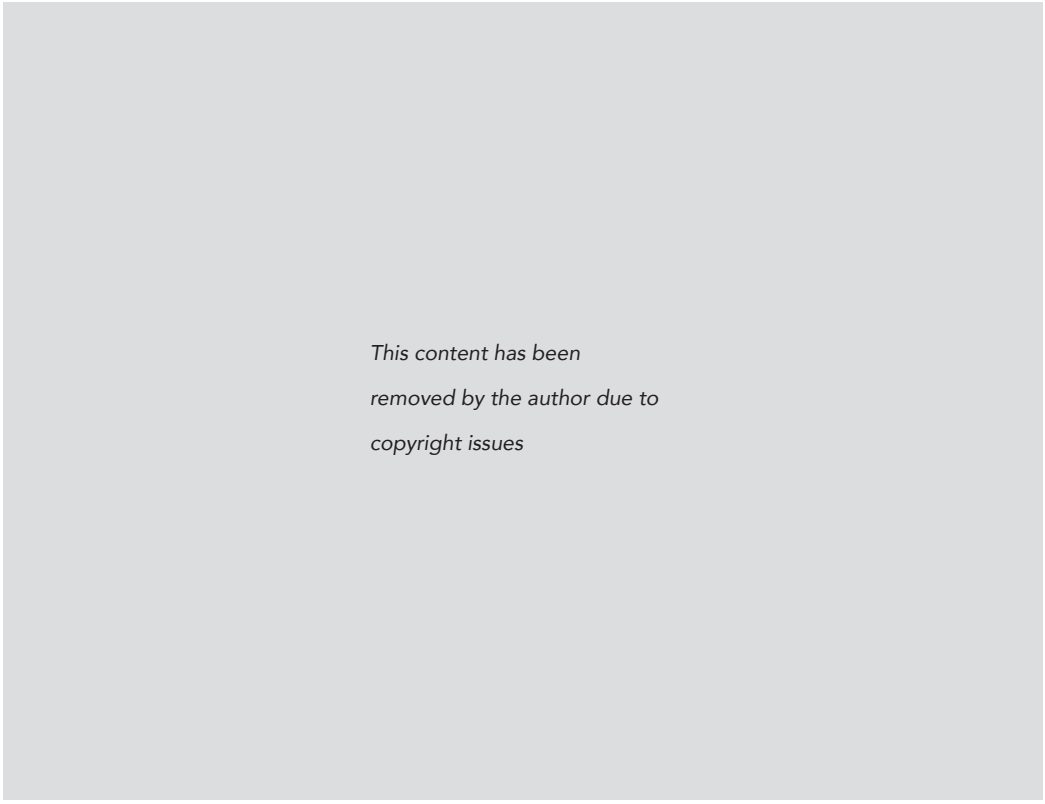


Figure 28: *Native gardens textured ground cover.*

Figure 29: *Plantings creating privacy.*

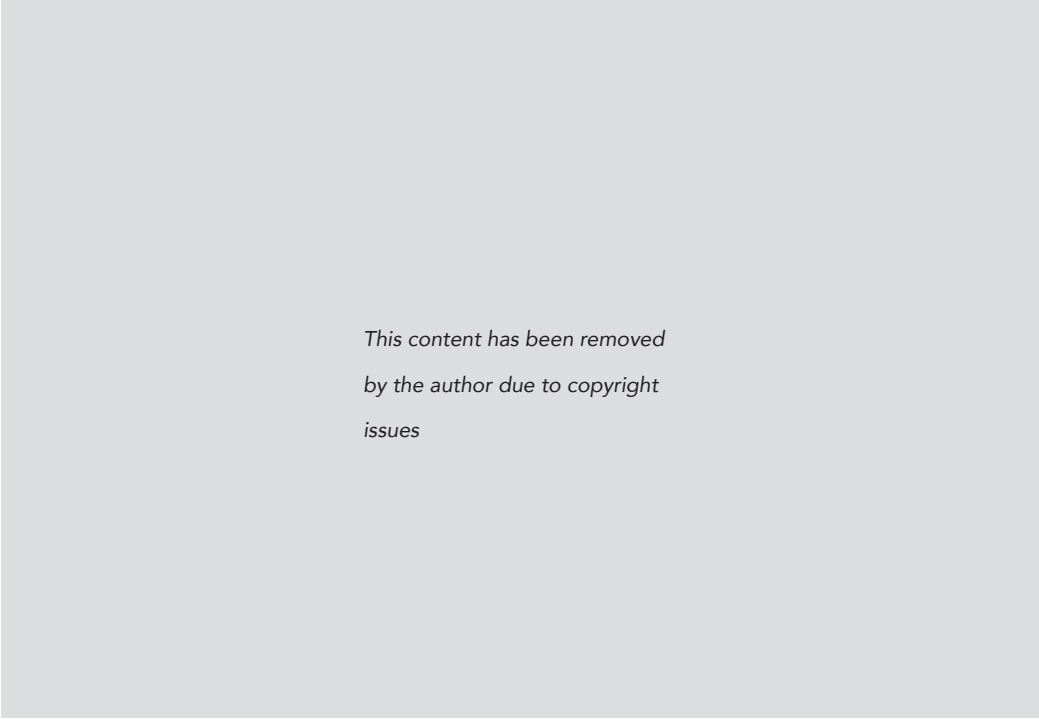


Figure 30: *Street view of section with dense planting surrounding the house.*

As our cities densify there is a resulting loss of green cover which makes Tāmaki increasingly vulnerable to the adverse effects of climate change. The average tree cover throughout Tāmaki sits at 18%, where over the past 10 years 35% of the urban forest has been lost (Stanley, 2022). Using native plantings to restore urban ngahere and increase plantings in private homes and new developments ultimately restores a connection to Papatuanuku, strengthens connection to te ao Māori and benefits the most vulnerable communities.

This design precedent shows that a dense garden in urban Tāmaki is achievable and beautiful. It allows us to become more connected to the natural environment while providing many benefits for human and environmental well-being. Increasing biodiversity and green cover aligns strongly with te ao Māori concepts and values and equally benefits both people and land. Native flora represent Aotearoa, and the inclusion of native and dense planting in the Hawke whānau development is prioritised to ensure that a connection with papa is maintained and enhances the building and its outdoor spaces.

5.5 26 Aroha Avenue Apartments

Figure 31: *Street view of section.*

Completed in 2020 by Jasmax, the 26 Aroha Avenue apartments are a socially and ecologically driven medium-density housing complex in Tāmaki. It was the second building in Aotearoa that was rated at a Homestar 10. Homestar is a green building standard, a holistic tool used to rate a home's performance and environmental impact. It is a points-based rating where Homestar 10 sits at 100+ points and recognises world-leading standards for design, construction and efficiency. Built with low emission and sustainably sourced materials, the inclusion of solar power electricity and hot water, it is a low-waste building, and carbon lifecycle assessments have shown the design to have reduced carbon by 73% which has halved the costs of utilities for residents compared to the Auckland average (Jasmax, 2020).

With four storeys and consisting of 13 dwellings, the building provides a communal garden, a communal rooftop with a kitchen, deck, and shared laundry to encourage interaction among the residents. The Aroha Avenue apartments promote communal and sustainable living and encourage the rest of the country to follow in their footsteps as a successful option to shifting towards higher density and secure renting.

The Hawke Whānau development uses this project as inspiration, as it works to be a socially driven building that focuses on its community. Aligning with whānau values and creating a representation of te ao Māori through sustainable systems that reduce the building's waste and utility costs.

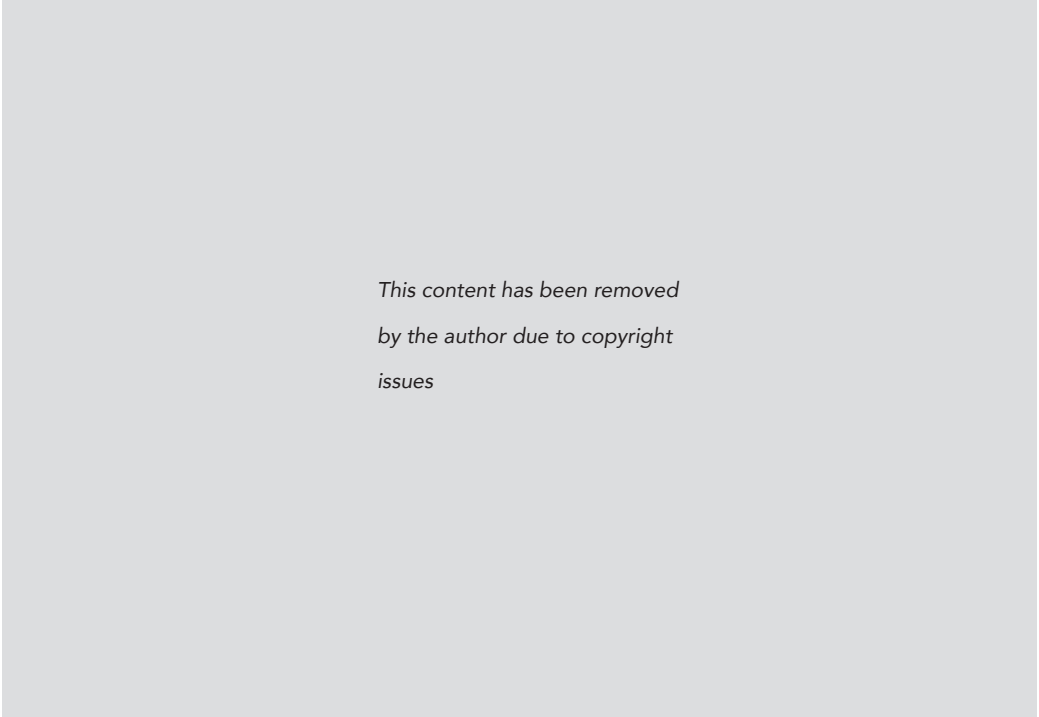


Figure 32: *Aerial view of the section. Medium-density apartments within a lower-density suburb*

6. Design Process

Site analysis, Design process and documentation. Responding to project aim 4.

6.1 Site Analysis

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Figure 33: *Sewage system built in Ōkahu Bay, 1914*

Site History

1914 - Due to Auckland's increasing population, extensive public works were undertaken to install and update urban utilities (Jones, 2020). The government confiscated land at Ōkahu Bay for a sewer pipe to be installed in front of the Papakāinga, contaminating the iwis kaimoana.

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Figure 34: *Ōrākei Papakāinga, 1951*

1920s - Land above the settlement was taken by the government for housing and was used as a state housing suburb from 1938. Many iwi members living in Ōrākei had their land seized under the Public Works Act 1882.

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Figure 35: *Fires at Ōrākei Papakāinga, 1951*

1951 - The Crown seized 12 and a half acres in Ōkahu Bay, only leaving the urupa (Jones, 2020). They proceeded to burn down Ngāti Whātua Ōrākeis village and marae to avoid it being an 'eyesore' at the anticipated 1953 visit of Queen Elizabeth II, and replaced the site with a park.

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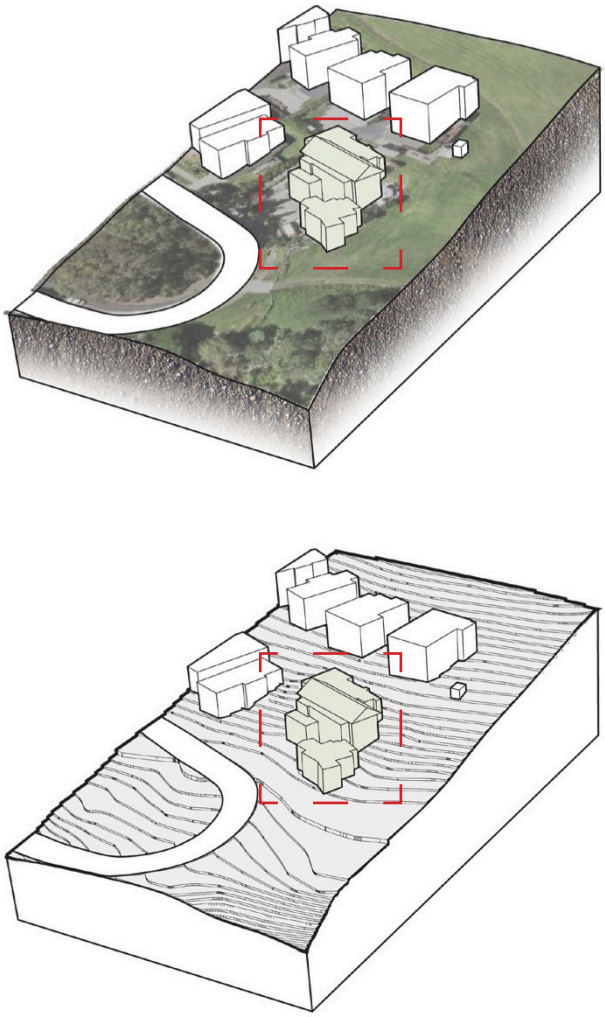
Figure 36: *Ōrākei Reserve, Pa has been replaced and housing has intensified, 1960*

1950s -In replacement of their village, the Auckland City Council built state houses, with the plan that displaced Māori would move into them. However, those moving into the houses would have to pay rent and 'be of a certain character' (31 Kitemoana Street Ōrākei Feasibility Study, 2021).

Figure 37: *Ōrākei Reserve today, 2022*

2022 - The site sits on Māori purpose land, where the marae has been rebuilt and neighbouring suburbs have been densified.

Original Site



The site is 825m2 and has been informally extended from a 3-bedroom house to now accommodating up to 14 people living there at once. This is not an ideal nor structurally sound space for the Hawke whānau. Due to the complexity of gaining funding for development on iwi-owned land, a feasibility study, created in 2021 by Master of Architecture and Bachelor of Architecture students at Auckland University of Technology, was developed as part of a proposal to apply for an infrastructure grant through Te Puni Kōkiri, the government's policy advisor on Māori well-being and development. This study provides site analysis and ideation that acted as the initial stepping stone from which the present co-design project has developed.

Figure 38: *Current site model, (31 Kitemoana Street Ōrākei Feasibility Study, 2021).*

Figure 39: *Site map*


N
Ko Māhuhu ki te rangi te waka
Ko Maungakiekie te maunga
Ko Waitematā te moana
Ko Ngā Oho, Te Taoū, Ko Te Uringutu ngā hapū
Ko Ngāti Whātua te iwi.
Bastion Point
Mission Bay
Kohimarama
Site

Figure 40: *Site map*

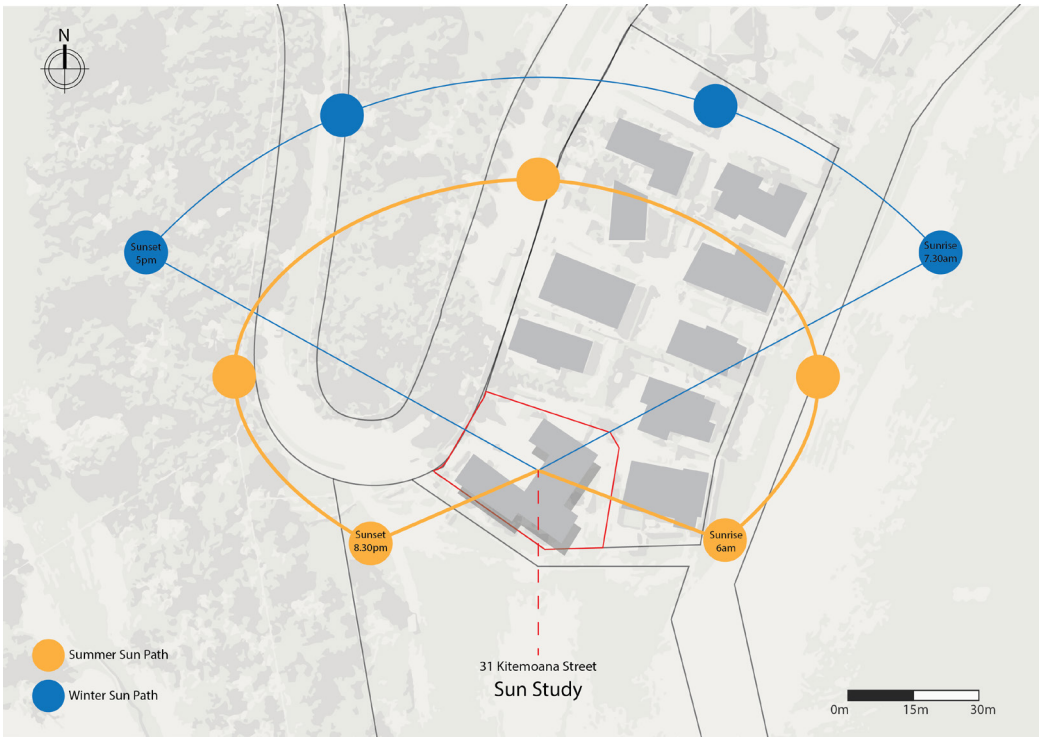

N
Ōrākei Marae
Kitemoana Street
Ngāti Whātua Ōrākei Whai Maia
31 Kitemoana Street

Zoning

- Site
- Special Purpose - Māori Purpose Zone
- Residential - Mixed Housing Urban Zone
- Residential - Mixed Housing Suburban Zone
- Residential - Terraced Housing and Apartment Buildings Zone
- Open Space - Sport and Active Recreation Zone
- Open Space - Informal Recreation Zone
- Open Space - Conservation Zone

Figure 41: *Zoning, (31 Kitemoana Street Ōrākei Feasibility Study, 2021).*

Sun Study



Sun studies influence the placement of the building on the site and inform plan layouts on the placement of public vs. private interior spaces, as well as helping with decision-making on planting and outdoor decking. The analysis revealed the following features:

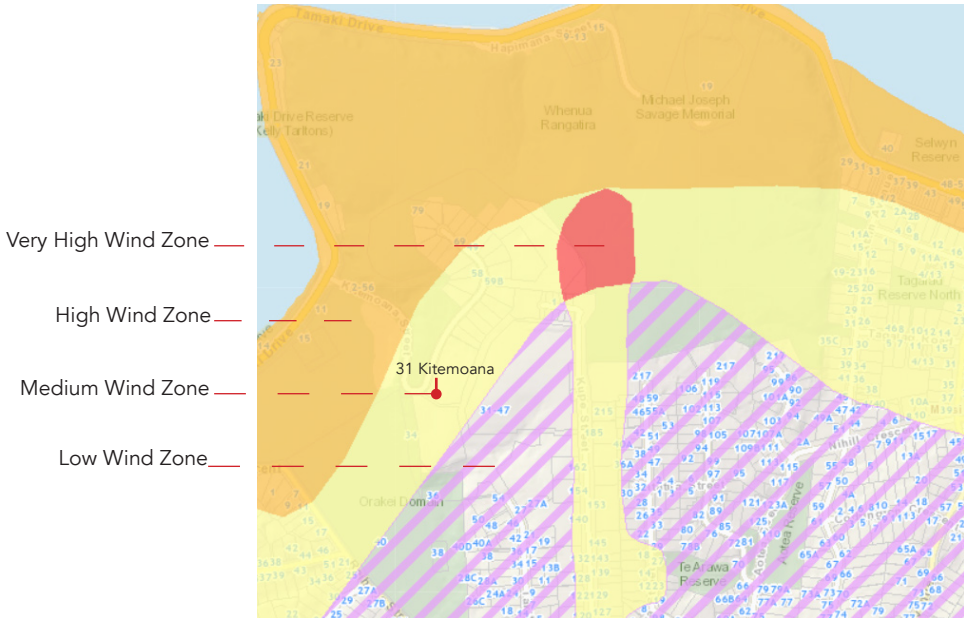
- Low levels of light coming in from the south all year round.
- Harsh mid-day summer sun entering from the Northwest.
- The northern side of the site gets good sun all year.

With this in mind it was important to:

- Open up the northern facades to maximise the amount of natural light entering the site.
- Place spaces utilised in cooler/darker times of day to the southern sides of the site.
- Put communal areas towards western sides of site to allow everyone access to views across the city.
- Give the option for shade over north/west areas of the site.

Figure 42: *Sun study of 31 Kitemoana Street*

Wind Study

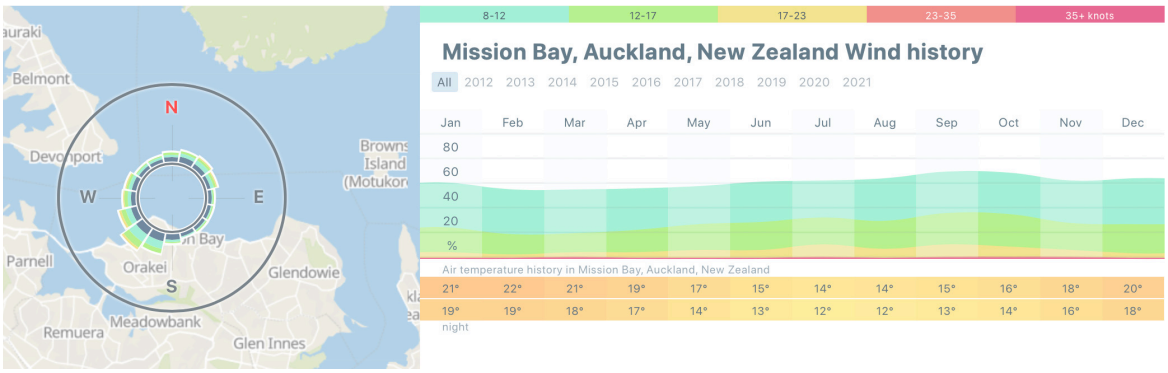


31 Kitemoana Street sits in a medium wind zone with the strongest winds entering from the south of the site, with the following key aspects:

- Strong south-westerly winds.
- Little to no wind shelter on the southern side of the site.
- 16-24kmph winds consistently throughout the year.

Important design principles were to:

- Restrict window sizes on the southern walls of the building.
- Use wind tolerant plantings to create a wind barrier for southern outdoor areas.
- Push the building to the south site boundary to open up the less windy north and east sides.



Top: ***Figure 43:*** *Wind Zones, GeoMaps Auckland.*

Bottom: ***Figure 44:*** *Wind chart, Mission Bay, windy.app*

Site Survey

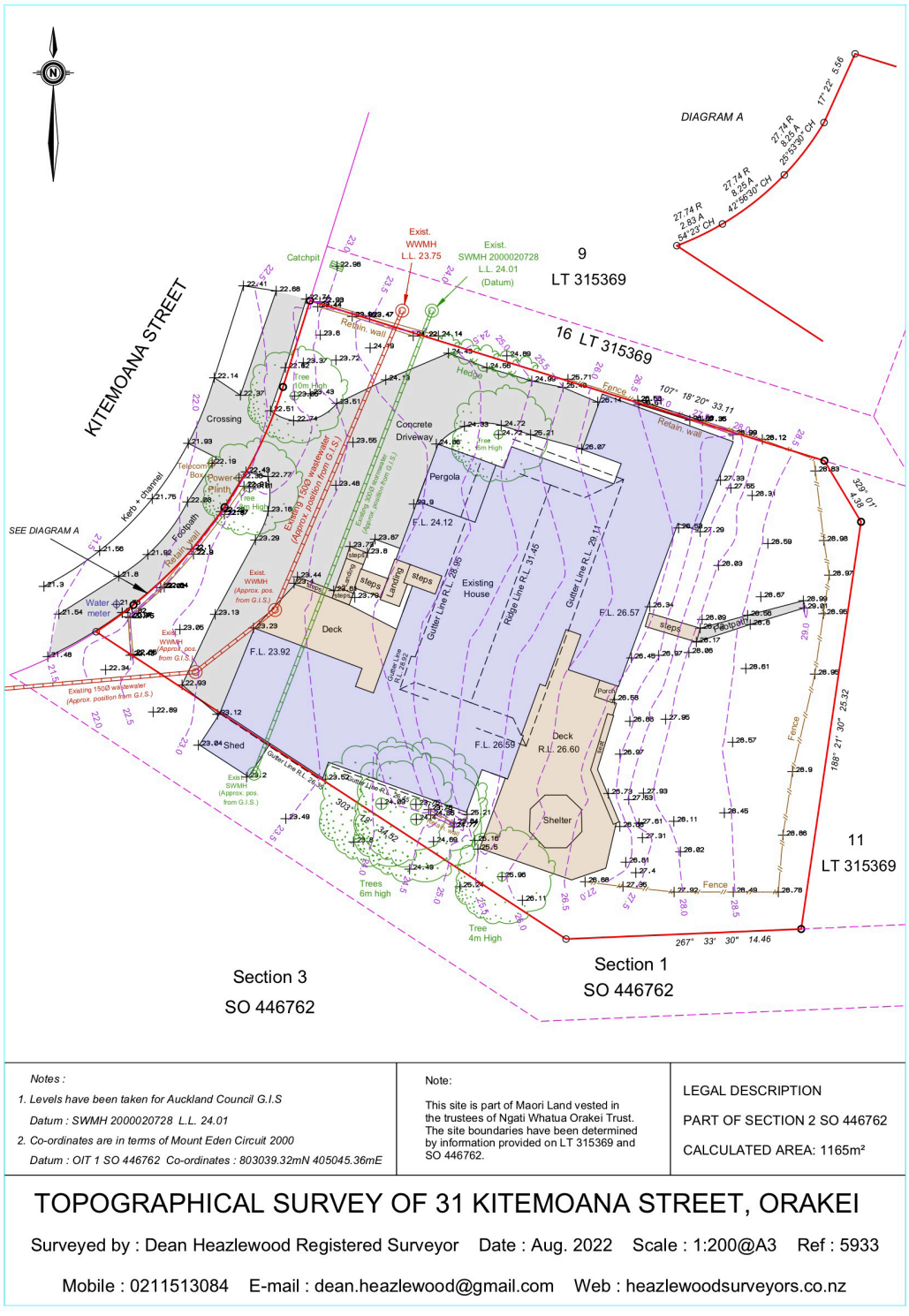


Figure 45: *Site Survey*

6.2 Iterations

Co-design Model Making Session

Figure 46: *Twin stack with terraced decks.*

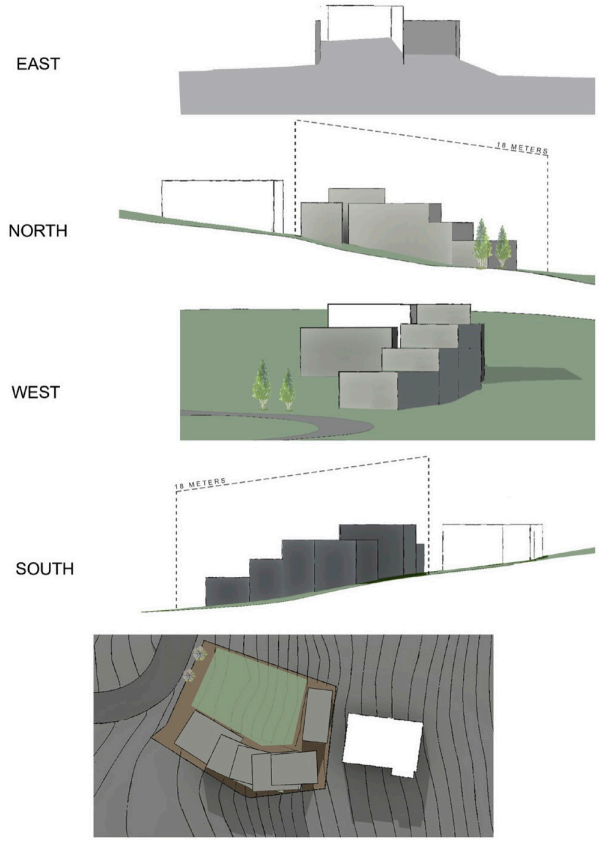
Figure 47: *Low level village like development.*

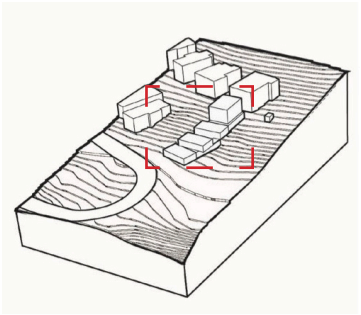
Figure 48: *Terraced stack with whare hui on top.*

Figure 49: *Terraced stack with rooftop garden.*

In a co-design session with the whānau, we talked through site requirements, discussing how many car parks the whānau might need, how many storeys and what kind of communal spaces to include. This led to us create a series of models in a co-design session with the whānau, visualising different possibilities for the site. Co-design model-making gave us a good understanding of how the whānau wanted to develop their land and we were able to begin developing a series of bulk and location schemes.

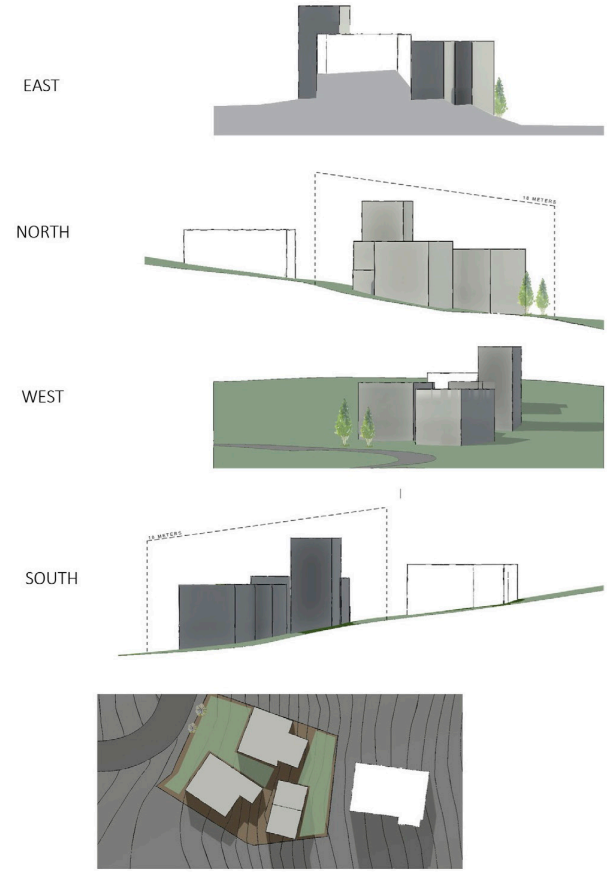
Bulk and Location, Feasibility Study

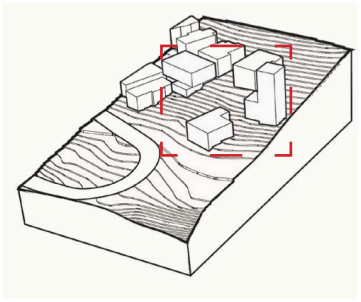




Terraced

- Open outdoor area to the north
- Balconies open out to views over the city.
- Will need multiple stairwells and elevators.
- Back of the site will have poor natural lighting.

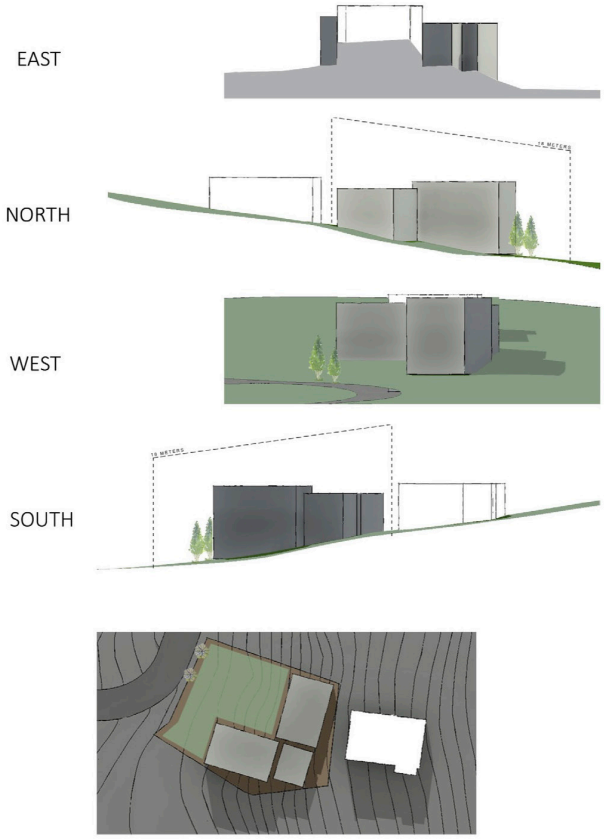


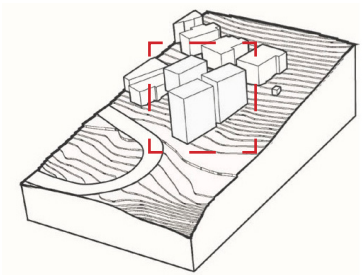


Internal Street

- Multiple separated buildings.
- North buildings will shadow over southern buildings, making the outdoor spaces inbetween dark and cold.
- Can allow for good separation between Hawke whānau and Oranga Tamariki, keeping personal and work life separate.

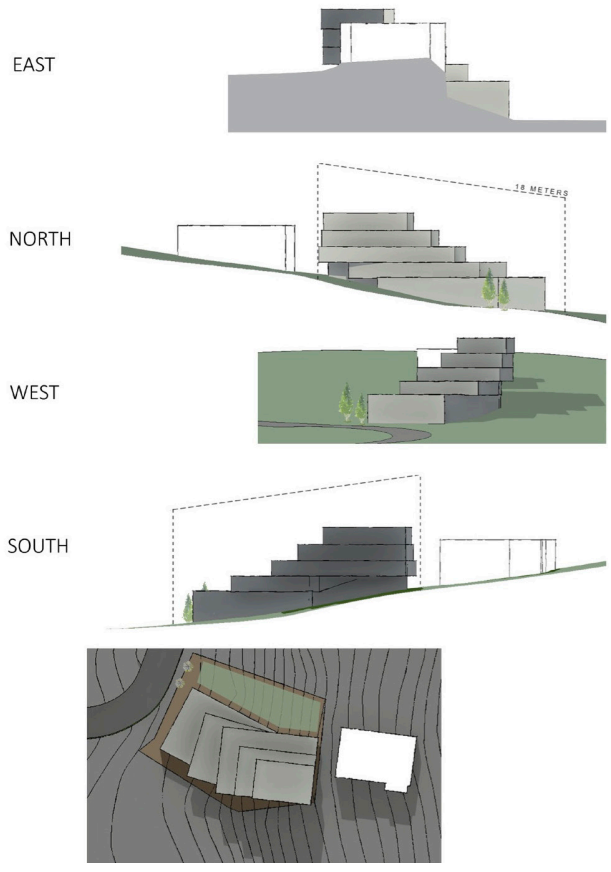
Figure 50: *Bulk and Location, (31 Kitemoana Street Ōrākei Feasibility Study, 2021).*

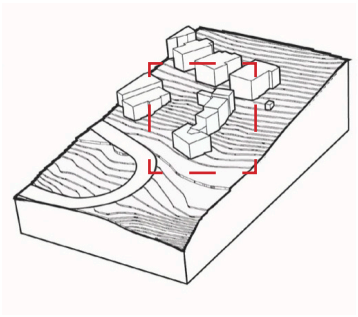




Wharenui:

- Central access.
- Opens up at the front of the site for green cover.
- Whare hui at the top of the site.

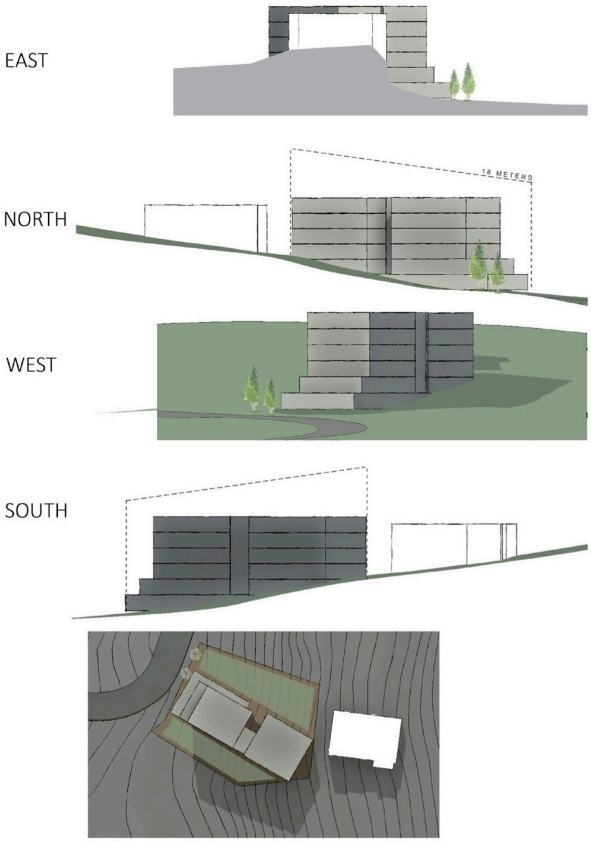


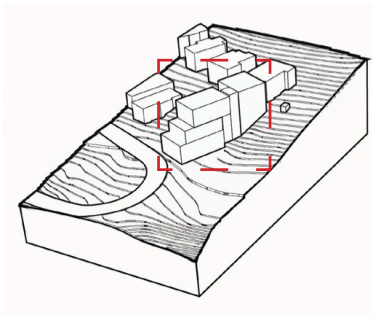


Crescent

- Terraced with balconies that open to give view over the city.
- Will need multiple stairwells and elevators for access.
- Low levels of light on the southern side of the building.

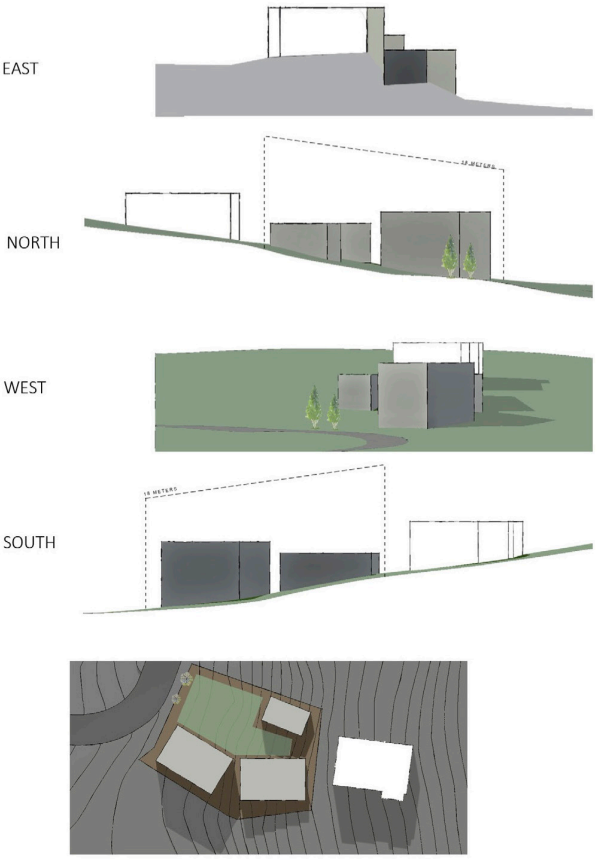
Figure 51: *Bulk and Location, (31 Kitemoana Street Ōrākei Feasibility Study, 2021).*

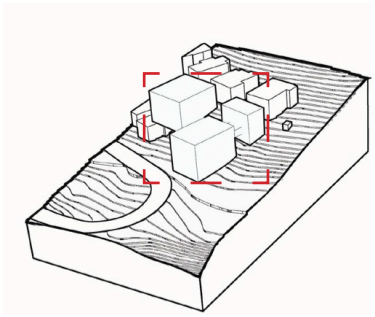




Twin Stack

- Easy central access.
- Lack of view shafts for the back building.
- Allows for maximum green space.





Saddle

- Central outdoor courtyard
- The separation between Hawke and Oranga Tamariki sides to allow for privacy.

Figure 52: *Bulk and Location, (31 Kitemoana Street Ōrākei Feasibility Study, 2021).*

Initial Scheme

- 6-storey apartment complex with communal amenities.
- Underground parking.
- Veggie garden and dense green space.
- Southern deck and east garden.
- The separation between the Hawke whānau and Oranga Tamariki areas to allow for privacy and separation between personal and work life.
- Shared central stairwell and elevator.
- 13 dwellings, 25 bedrooms.

Underground Parking

1. 7 cark parks
2. Access to stairwell
3. Bicycle parking
4. Rubbish bins

Perspective of level four

Ground Floor
Communal Living

1. Veggie gardens
2. Communal living
3. Gym + Toilets
4. Communal kitchen
5. Guest accommodation
6. Apartment storage
7. Southern deck

Figure 53: *Plans and perspectives of Authors inital scheme*

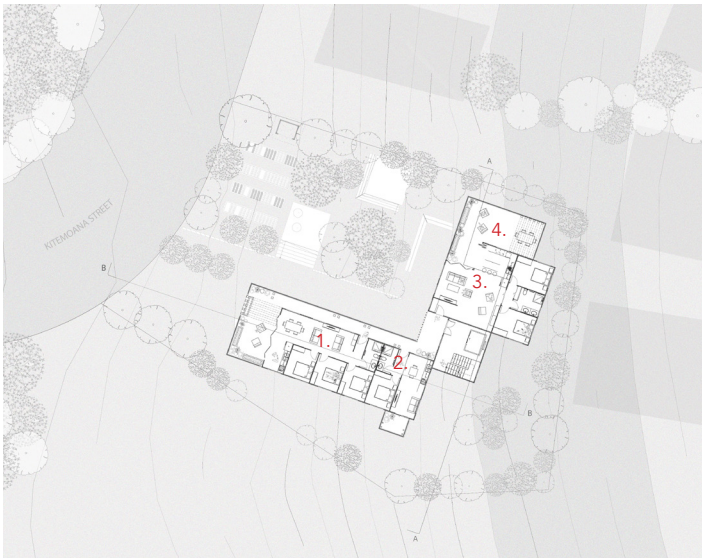
Level One

1. 4 Bedroom apartment
2. Oranga Tamariki young boys apartment
3. Access to northern garden
4. Hawke whānau apartment

Level Two

1. Oranga Tamariki mums and babies apartments
2. Hawke whānau apartment

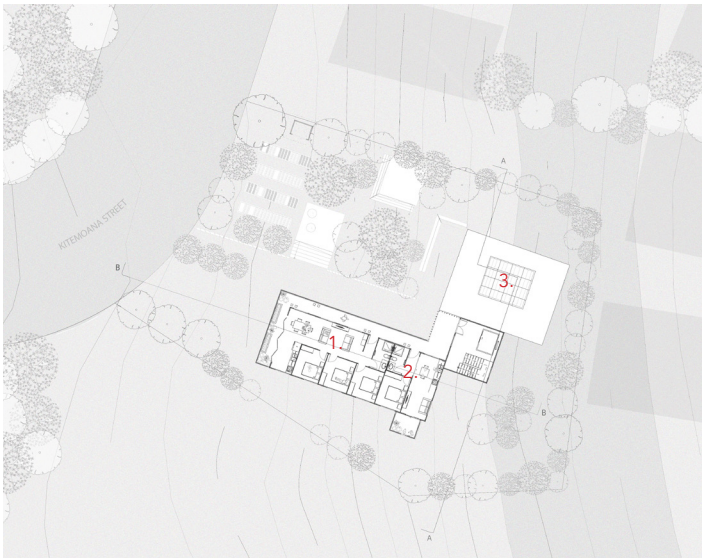
Perspective of level two



Level Three

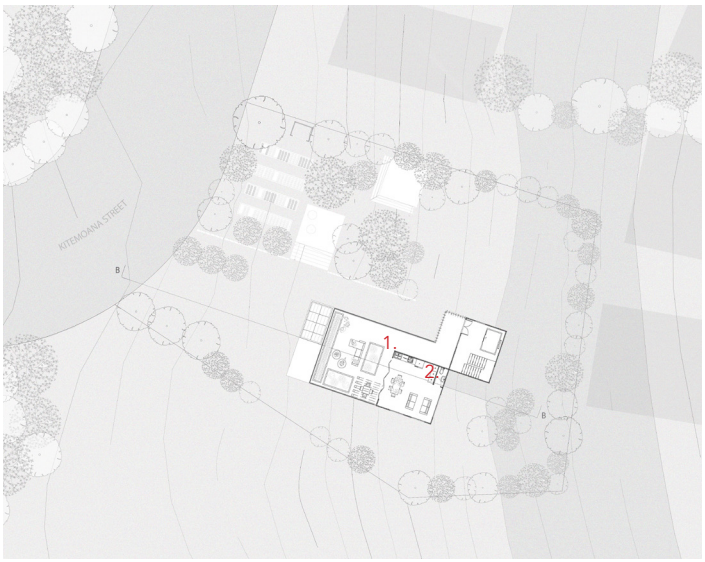
1. 3 Bedroom apartment
2. 1 Bedroom apartment
3. Hawke whānau communal kitchen and living
4. Hawke whānau rooftop deck

Figure 54: *Plans and perspectives of Authors inital scheme*



Level Four

1. 3 Bedroom apartment
2. 1 Bedroom apartment
3. Solar panels



Level Five

1. Communal rooftop, deck and kitchen, open to all residents
2. Shared laundry

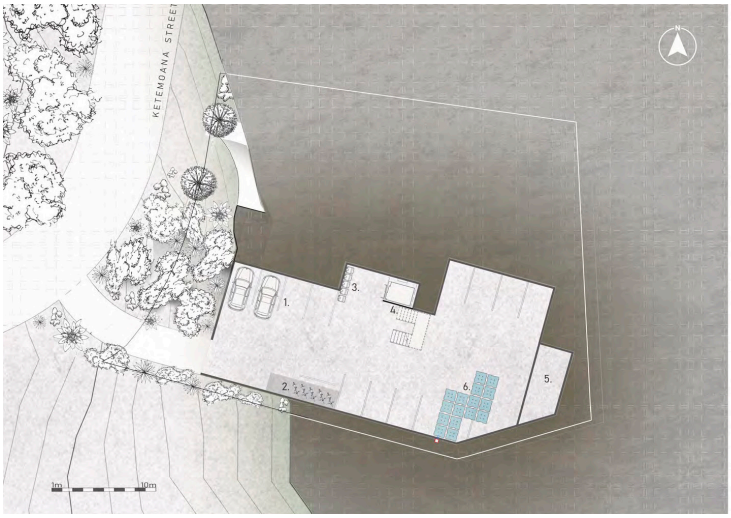
Perspective of entrance

Perspective of southern deck

Figure 55: *Plans and perspectives of Authors inital scheme*

Figure 56: *Sections of Authors initial scheme*

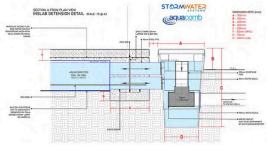
Rory's Scheme

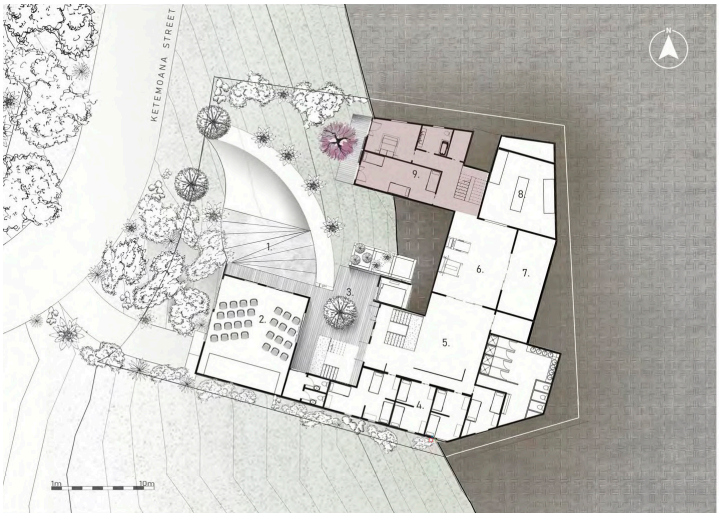


UNDERGROUND PARKING

PARKING LEVEL AVAILABLE FOR GUESTS AND RESIDENTS.

1. PARKING SPACE FOR UP TO 14 VEHICALS
2. BIKE LOCKING
3. WASTE DISPOSAL
4. CIRCULATION
5. STORAGE
6. AQUACOMB WATER RETENTION + DETENTION POD SYSTEM (INSLAB)
(SUPPLIED BY STORMWATER SYSTEMS)

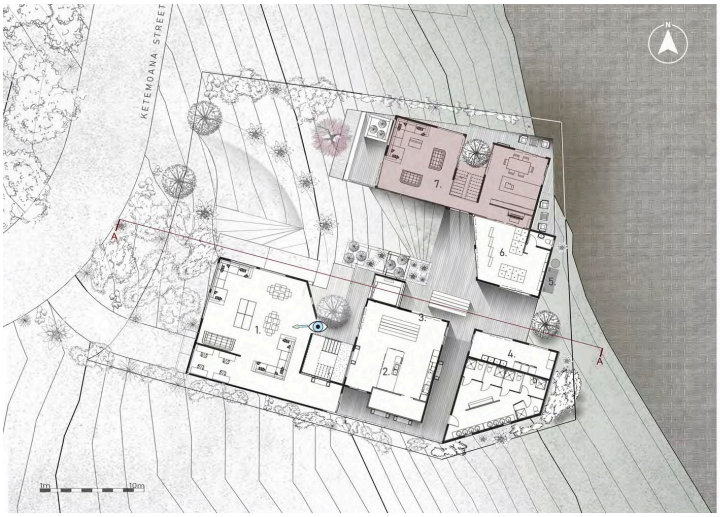




GROUND FLOOR

TO THE WEST OF THE SITE, CERIMONIAL STEPS LEAD UP TO A WHARE NUI FOR HOSTING EVENTS AND PERFORMANCES. A COURTYARD LEADS INTO AN ACCOMODATION WING, JOINED TO A VERSITILE HALL AREA THAT CAN EITHER OPENED TO ACCOMODAT EEVENTS OR BE CLOSED UP AS SEPERATE SPACES.

1. WELCOMING AREA
2. WHARE NUI
3. COURTYARD
4. GENERAL ACCOMODATION
5. HALL SPACE
6. GYM
7. STORAGE
8. WORKSHOP
9. HAWKE PRIVATE RESIDENCE



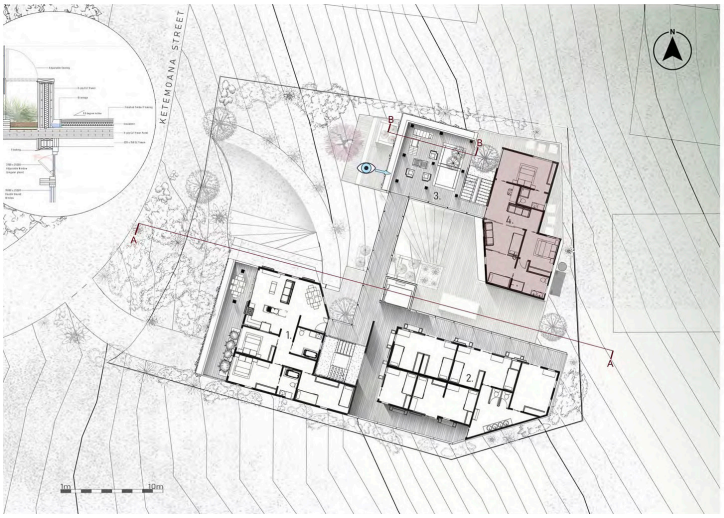
FIRST FLOOR

COMMUNAL LEVEL FOR ORANGA TAMARIKI GUESTS. A COMMUNAL LAUNDRY TO SERVE ALL RESIDENTS. COMMUNAL LIBRARY OPEN TO ALL RESIDENTS.

Looking West: Oranga Tamariki Co-living space

1. ORANGA TAMARIKI CO-LIVING
2. O.T KITCHEN
3. O.T DINING
4. COMMUNAL LAUNDRY
5. COMPOST SYSTEM
6. COMMUNAL LIBRARY
7. PRIVATE HAWKE RESIDENCE

Figure 57: *Rorys Hawke Whanau Scheme, 2021*

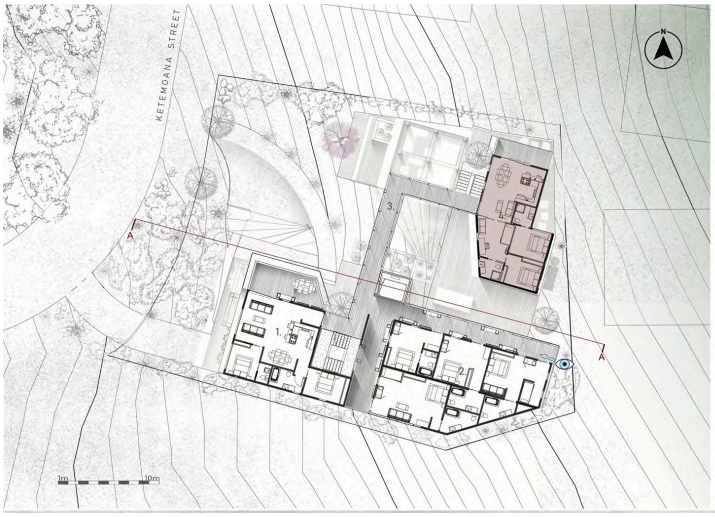


SECOND FLOOR

ORANGA TAMARIKI ACCOMODATION TO THE SOUTH. A PRIVATE APARTMENT FACING WEST. A COMMUNAL PATIO TO THE NORTH ACTING AS A MIDDLE GROUND BETWEEN THE GUEST AND PRIVATE RESIDENCE. THIS HELPS TO AFFIRM THE CONCEPT OF 'PARALLEL LIVING'

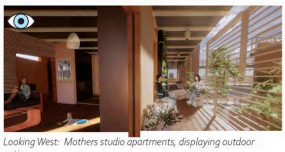
Looking East: Communal outdoor patio

1. RENTABLE PRIVATE APARTMENT
2. O.T BOYS DORMITORY
3. COMMUNAL PATIO
4. PRIVATE HAWKE RESIDENCE



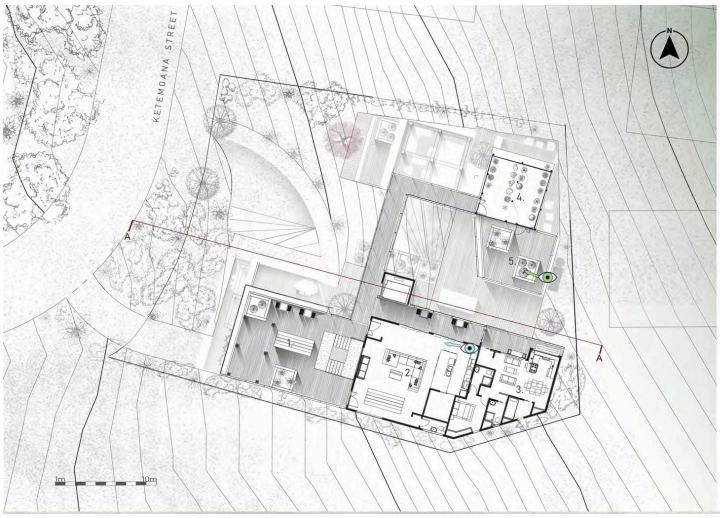
THIRD FLOOR

A PRIVATE APARTMENT FACING WEST. MOTHERS STUDIO APARTMENTS TO THE SOUTHEAST. HAWKE RESIDENCE CONNECTED WITH BRIDGE. MOTHERS ACCOMODATION PLACED NEARER TOP COMMUNAL FLOOR.



Looking West: Mothers studio apartments, displaying outdoor patio

1. RENTABLE PRIVATE APARTMENT
2. MOTHER STUDIO APARTMENTS
3. ADJOINING BRIDGE
4. PRIVATE HAWKE RESIDENCE



FOURTH FLOOR& ROOFTOP

PRIVATE APARTMENT TO THE SOUTHEAST. MOTHERS CO-LIVING SPACE AND KITCHEN FACING WEST. THE LIVING SPACE OPENS OUT ONTO A COMMUNAL PATIO OVERLOOKING THE WAITEMATA HARBOUR.

Looking West: Womans communal space

Looking West: Rooftop garden and greenhouse

1. COMMUNAL PATIO
2. MOTHERS CO-LIVING AND KITCHEN
3. RENTED PRIVATE APARTMENT
4. ROOFTOP GREENHOUSE
5. ROOFTOP GARDEN

Figure 58: *Rorys Hawke Whanau Scheme, 2021*

Reflection of Schemes

The whānau took to the materiality and essence of Rory's (a member of the collective) initial scheme. There were things that needed to be addressed to make it more efficient and concise to maximise functionality and minimise cost. We took these initial plans and each created iterations to develop the design.

We focused on:

- Efficiency.
- Better light in lower levels.
- Reducing excavation.
- Material detailing.
- Position on site.
- Exposure to weather on the south façade.
- Integrating work by Ngāti Whātua artists, Beronia Scott and Lawrence Makoare.

Planning from each iteration was taken to produce the final outcomes.
In particular, my initial concept has efficient planning that limits hallways and gives the option for privacy between private and communal spaces such as bedrooms and living areas.

Development of Plans

Ground Floor:
- Whare Hui
- Hosting area
- Gym
- Guest bedrooms
- Workshop

Exploring arrangements of the space as the east side of the building is underground.

Level 1:
- 3 Bedroom Apartment
- Private Hawke residence
- Communal living and kitchen

Shifting communal spaces and adding an apartment to accommodate for more people.

Level 2:
- 3 Bedroom Apartment
- Private Hawke residence
- OT Boys accommodation

Adjusting plans for more efficient bedrooms.

Level 3:
- 3 Bedroom Apartment
- Private Hawke residence
- OT Mothers accommodation

Providing more space and communal areas for mums with babies.

Figure 59: *Development of plans from Rorys scheme.*

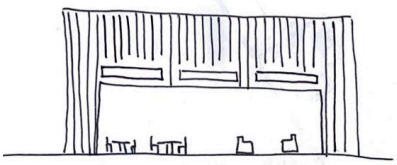
6.3 Whare Hui

Incorporating the whare hui acts as an informal space to host gatherings and allow for activity - a place for kotahitanga and whanaungatanga - essentially an open hall space that allows for multi-purpose use, whether that be family gatherings, a place for guests to sleep, tangi, hosting classes and workshops, or games and events. The space sits on the ground floor alongside communal amenities.

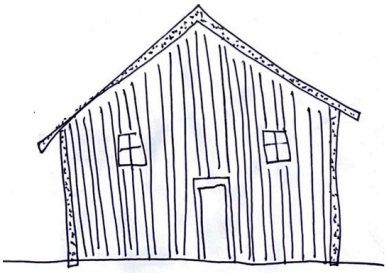
Social Impact

The Hawke whānau spend a lot of time together in their current ground-level lounge and knew they needed a whare hui in their new development to carry on with these activities. Embedding whanaungatanga and kotahitanga into the design from the beginning embraces all areas of hauora, including both wairua and tinana. Having communal areas supports and enhances the social sustainability of the development by allowing residents to form a community and whānau to come together.

This design approaches housing as something more than shelter. It gives space for whānau to connect with each other, to the land and their tupuna, moving away from Eurocentric mindsets by shifting the focus from economic gain to positive social outcomes. Fitting into the communal and family-orientated lifestyles of the Hawke whānau puts te ao Māori at the centre of the design.



COMMUNAL KITCHEN + DINING



WHARENUI

HUI - A - WHANAU

+ GYM

KAUMATUA FLAT

Figure 60: *Sketches of Ground Floor amenities.*

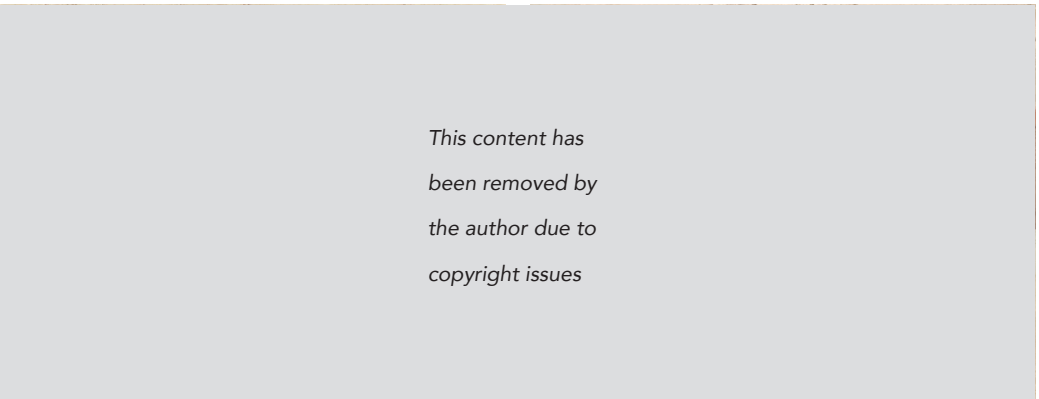


Figure 61: *Layers of Whare Uku.*

Figure 62: *Whare Uku imprinted with pattern.*

Whare uku

Earth building has six typical techniques that achieve varying outcomes. Certain walls and elements of the ground floor of the Hawke whānau development, including the wharenui, are to be made of whare uku, otherwise known as rammed earth. Originating from Pakistan in 7000BC, the rammed earth style is extremely durable and solid and suitable for many climates and weather conditions (EBANZ, n.d.).

Using soil that is excavated on site to make way for an underground carpark, the walls are formed from soil that is just damp enough to hold together. Sandy crumbly soil with a clay content of 15-30% is best for constructing rammed earth walls (EBANZ, n.d.), as it limits shrinking that leads to cracking. The soil gets tamed between shutters with manual or pneumatic (operated by air or gas under pressure) rammers, and sometimes a wooden skeleton is used to create a safer structure.

Rammed earth has many benefits, including the following:

- Made from naturally occurring materials making it non-toxic.
- Low embodied energy, easy to manufacture and construct.
- Little to no waste; any leftover earth can be spread across the site or reused.
- Energy efficient, thermal mass that maintains internal temperatures throughout the year.
- Low maintenance
- Good sound insulation
- Fire resistant

Materiality

Flooring

Lino
Sustainable options and durable
Customisable patterns/colours.

Upcycled Timber Flooring
Sustainable and durable
Hard floor may not be suitable for the activies in this space

Neutral Wool carpet
Warm and soft suitable for sleeping and sitting on.
Installed in squares to make it easily replacabled if it wears.

Poutama Wool carpet
Warm and soft suitable for sleeping and sitting on.
Installed in squares to make it easily replacabled if it wears.
Poutama pattern in the iwi colours.

Figure 63: *Material Samples*

Walls

Whare Uku
Seen throughout the ground floor.
Sourced from site.
Unique patterns.
Can be imprinted on.

Poutama Pattern Wall
Prominent pattern for the family.
Creates a space entirely focused on te ao Māori.
Represents the iwi in its colours.

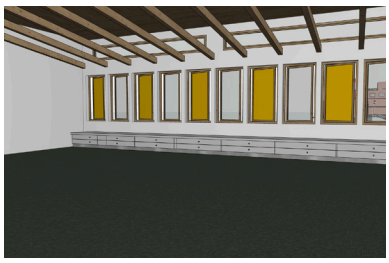
Upcycled Timber Weaved
Timeless, won't go out of style.
Weaving pattern symbolic of whanau ties and strength.
Can be sourced from the current site. Tie in the history and life of the old with the new development.

Figure 64: *Material Samples*

Windows

Simple windows
Eurocentric
Doesn't feel considered for the whanaus needs.

Stained glass
Whanau artwork can be embedded into the windows.
Shade to provide protection from harsh northern sun.



Bay windows
Pivot to open
Inbuilt seating and storage, makes space less flexible.

Pivot doors
Extends the space out towards the garden and proch.
Allows for light and airflow.
Moves away from a more traditional whare.

Figure 65: *Whare Hui ideation*

Entry to the site

The whare hui sits at the front of the site and is one of the first spaces most guests will enter when coming into the site. The entry acts as a transitional space between kitemoana street and the building.

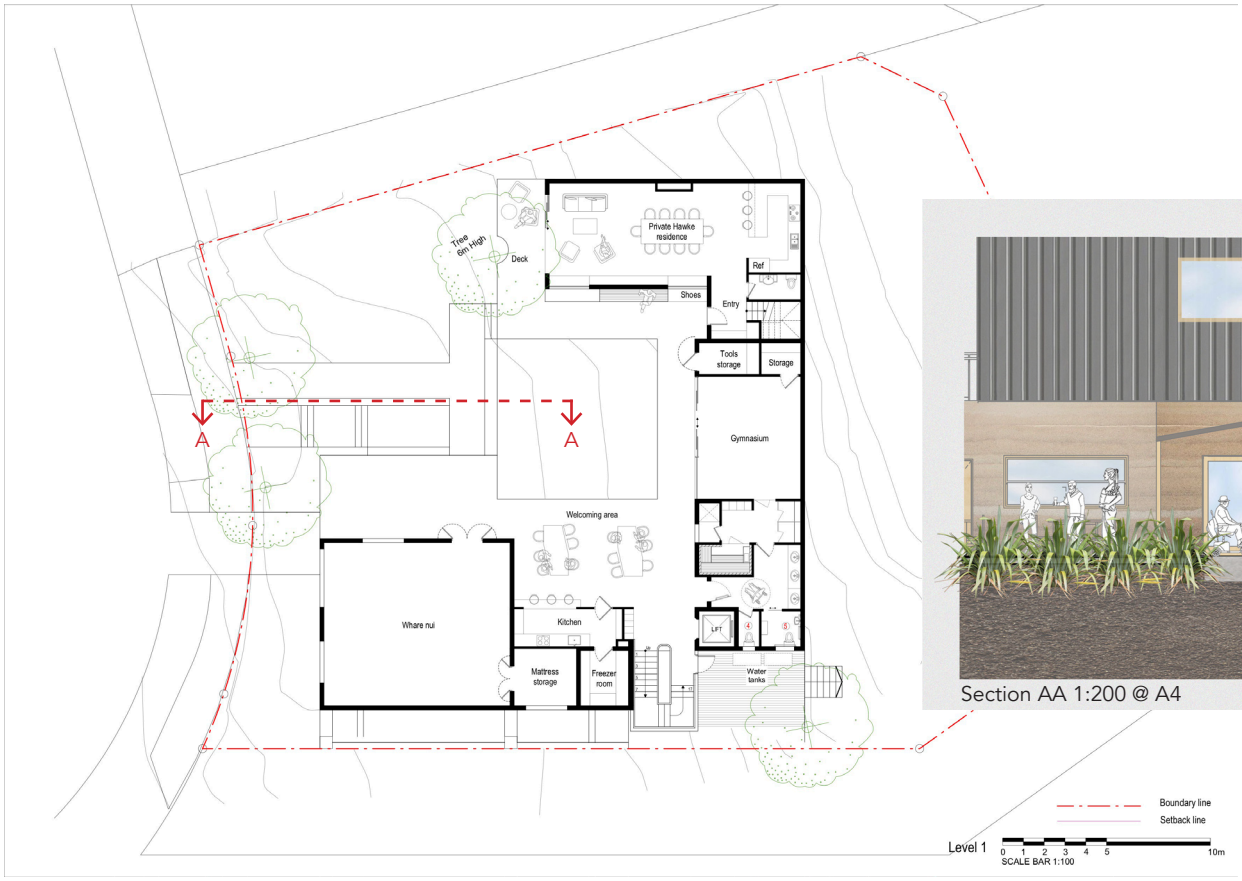
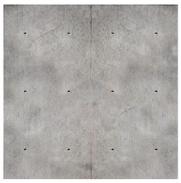


Figure 66: *Development of site entrance*

Whare Uku
Rammed earth wall
Gives a unique appearance and signifies the iwis value of kaitiakitanga.

Timber
Keeping to the whanaus fondness of natural aesthetic.

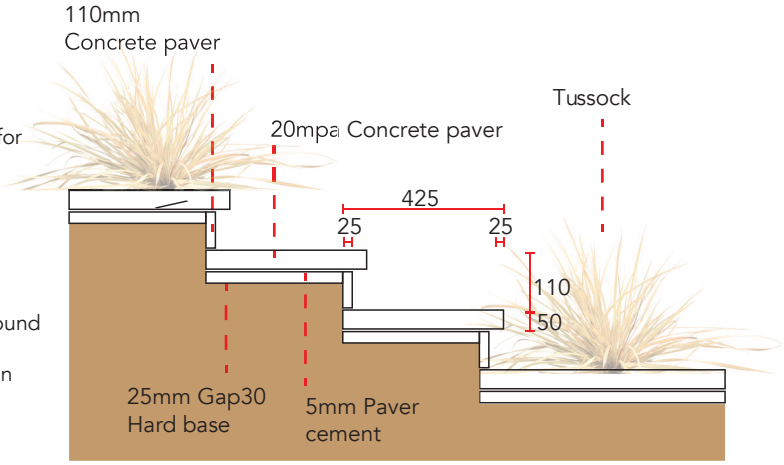
Landscape
Refer to landscaping (pg. 120) for details.



Concrete
Poured concrete on site for ground flooring.
Steps are precast then placed in the site.

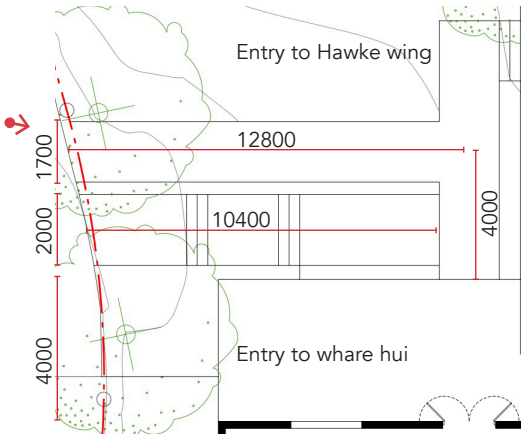
Accessability Ramp:
Rise of 1.4m
Standard: 1m rise to 12m length
Accessability ramp = 16.8m minimum

Stair Detail
1:20 @ A4



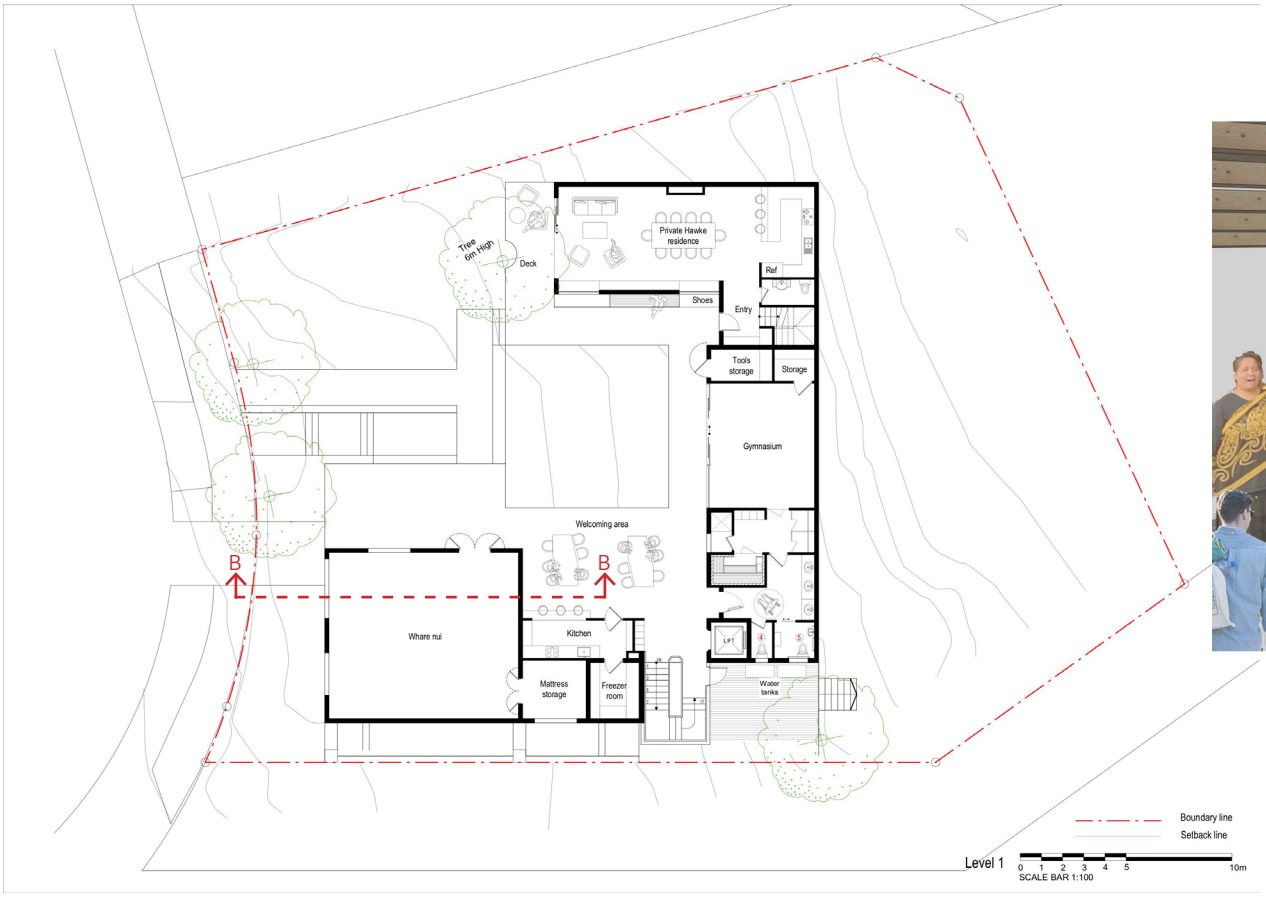
Perspective view entering the site

- Dense native green cover
- Accessible pathways
- Access to Whare Hui and to the north wing
- Highly active space
- Gives space for powhiri and larger groups to enter the site at the same time.

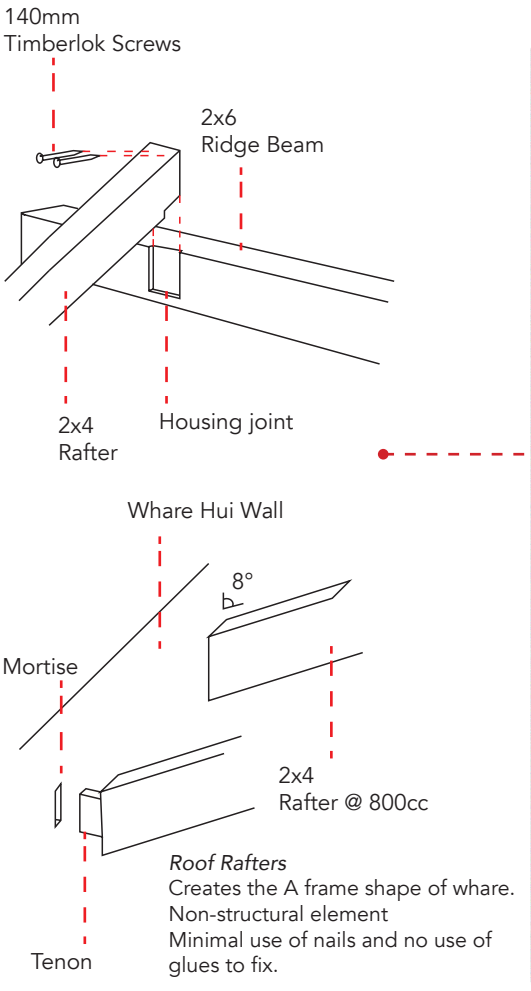


Alternative entrance section large pivot doors to enter the whare hui which can all be opened to show the poutama wall.

Inside the Whare Hui



Perspective view singing waiata.



Roof Rafters
Creates the A frame shape of whare.
Non-structural element
Minimal use of nails and no use of glues to fix.

Figure 67: *Development of whare hui interior*

Rafters to create the A-frame shape of whare.

Windows can include artist work within the panels or be etched into the glass.

of Ngāti Whātua Ōrākei

The space can be used for:

- Kapa Haka
- Sleeping
- Workshops and education
- Presentation
- Ceremony
- Gatherings
- Play

Perspective view of mums and babies playing in the whare hui and exploring materiality options.

Upcycled Timber Herringbone
Gives a natural look to the space that the whanau were wanting.
Adds texture and depth.
Made using wood the current house is made from.

Landscape
Refer to landscaping (pg. 120) for details.

Wool Carpet
Dark woolen carpet
Soft surface suitable for activities that will take place in the whare hui.

Exposed Timber Rafters
Decorative element to recreate the typical A-frame of whare.
Can be carved and ornate if whanau wish.

Section showing a lecture in the whare hui space and exploring another combination of materials and entry ways into the space.

6.4 Whare Taonga

Whare taonga, where whare means house and taonga means treasures, are often referred to in museums or galleries that hold valued photos, artefacts, clothing, and art.

Bob Hawke of Ngāti Whātua Ōrākei, papa and husband, passed in late 2021. His children and wife will be living in this development and wanted to include a space to honour him. Bob would bring people into their home to tell stories and share the history of Ngāti Whātua Ōrākei over kai and kōrero. The purpose of a whare taonga as part of the Hawke whānau development is to pay homage to Bob, with a space for his children to carry on this tradition of oral storytelling and sharing insight into the iwi. This space sits on level four of the development.

Social Impact

The whānau have many taonga. At site visits their spaces were decorated with photos and artworks that represent their family and hold special meaning. They wanted to include a space in the new development to honour their tupuna and display their taonga, a place that acts as an acknowledgement to whakapapa and the interconnectedness of all. It focuses on manaakitanga, with its main function being to commemorate and educate. Ngāti Whātua have a rich history and have been involved and at the forefront of many events regarding Māori issues and land rights. Having this space as a physical manifestation of the iwi, used only to celebrate te ao Māori, is pivotal in housing to allow for Māori to exercise ahi kā, keep the home fires burning. This space is one of a kind, sharing Ngāti Whātua's story that connects iwi to their homelands and working against the Eurocentric institutions that Māori have been forced to live in since colonisation.

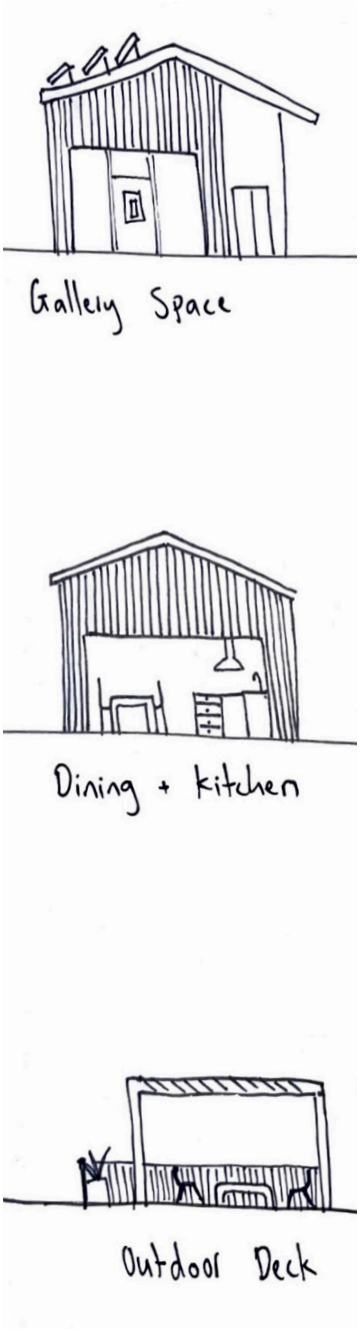
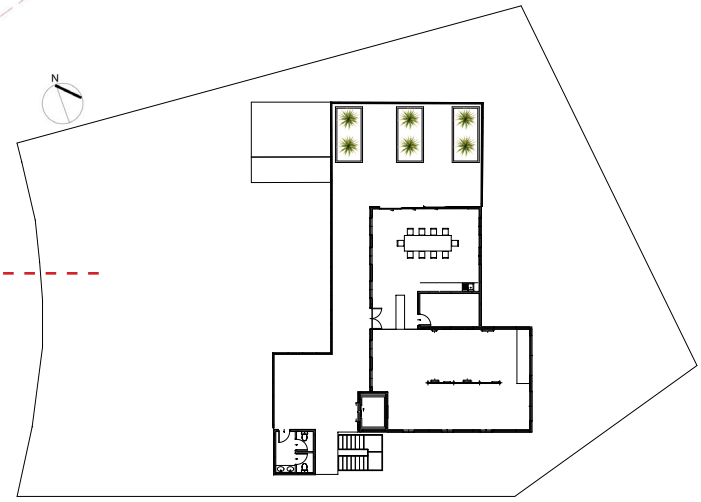


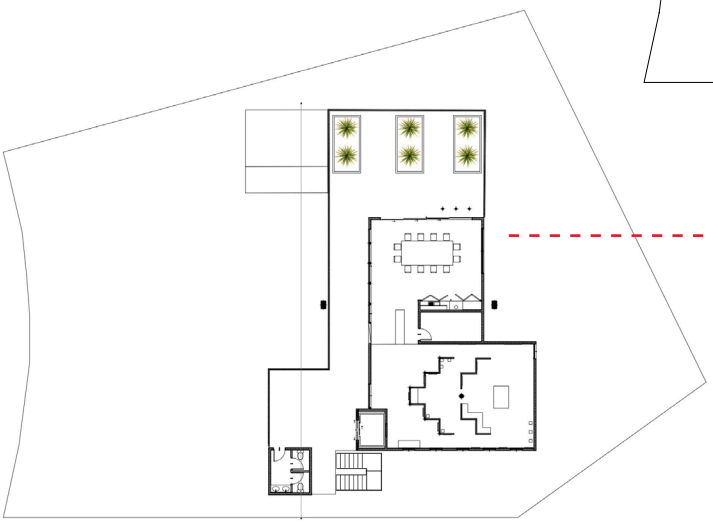
Figure 68: *Sketches of Whare Taonga amenities*

Plan Development

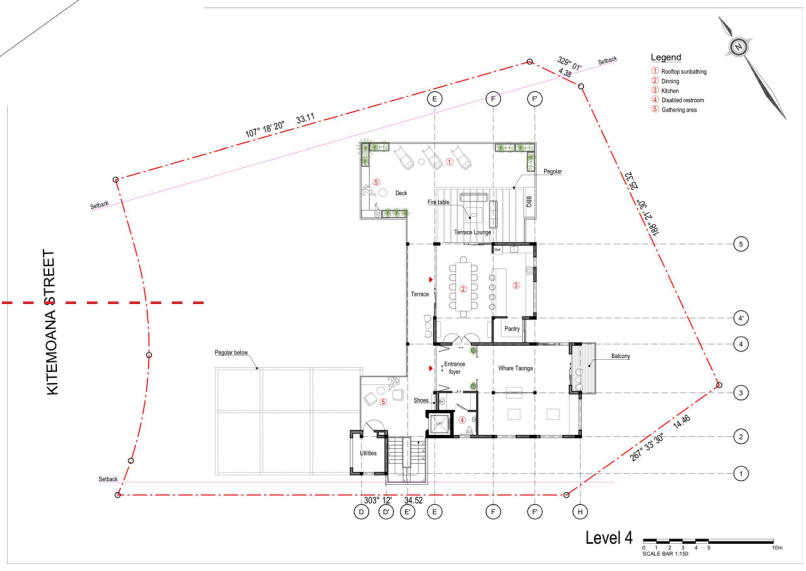
Initially level 4 was a combination of apartments and a gallery space. However, The family wanted this level to be entirely dedicated to the taonga and manaakitanga.



The level was stripped down to create a simple and open space with dining, storage, outdoor deck and gallery space.



Further development of the gallery space to incorporate poutama pattern and allow for the whanau to display taonga.



Addition of a full kitchen, pergola and small changes of spaces like storage and bathrooms for better access and flow.

Figure 69: *Development of the whare taonga*

Perspective iteration of level 4 dining area.

Perspective iteration of level 4 dining area showing view points.

Perspective iteration inside the whare taonga.

Significance of the Poutama

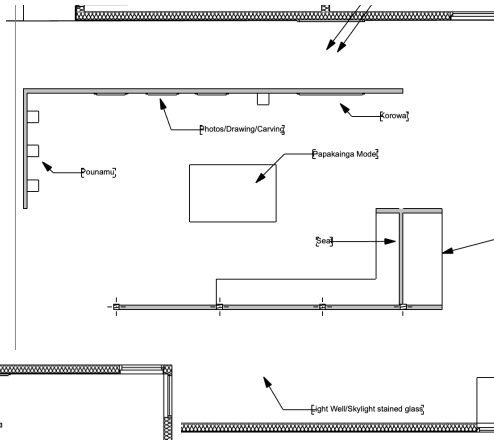
Poutama is a stepped pattern often seen in tukutuku panels or woven mats. It symbolises whakapapa and various levels of learning and intellectual achievement (Te Aka, n.d.). Many Hawke whānau members work as educators and highly value education and knowledge-sharing. The Poutama pattern seen throughout the whole development represents this knowledge-sharing, support and positive growth of the whānau and their work with Oranga Tamariki.

Figure 70: *Perspectives inside the Whare Taonga*

Gallery

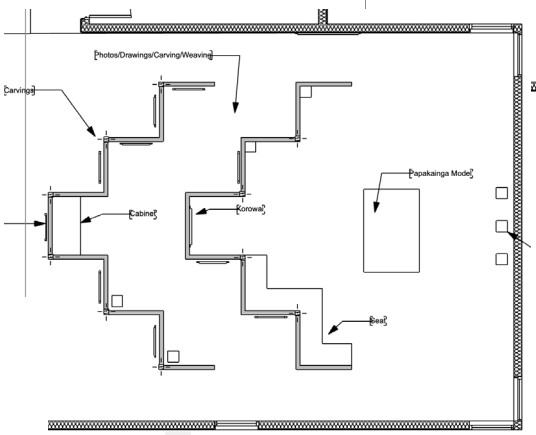
Iteration 1:
Beginning exploration of planning in the whare taonga.

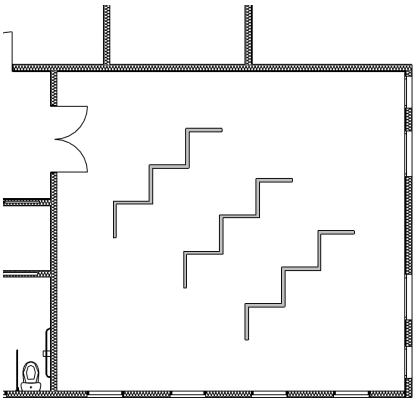
- Feels eurocentric.
- May not accommodate to the display of certain taonga.



Iteration 2:
Incorporating the poutama pattern into the space.

- Provides more opportunity for display.
- Might feel confined



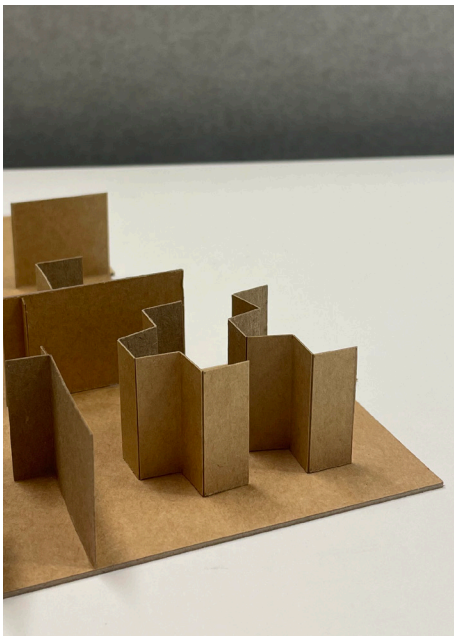


Iteration 3:
Experimentation with poutama shapes.

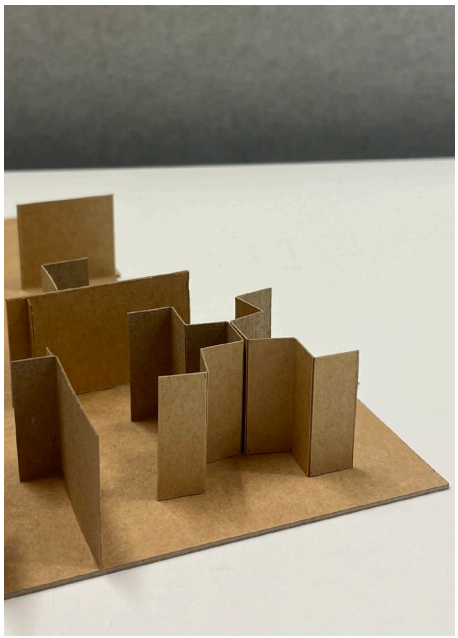
- No natrual flow
- Seems unconsidered for what the space will be used for.

What will be displaye

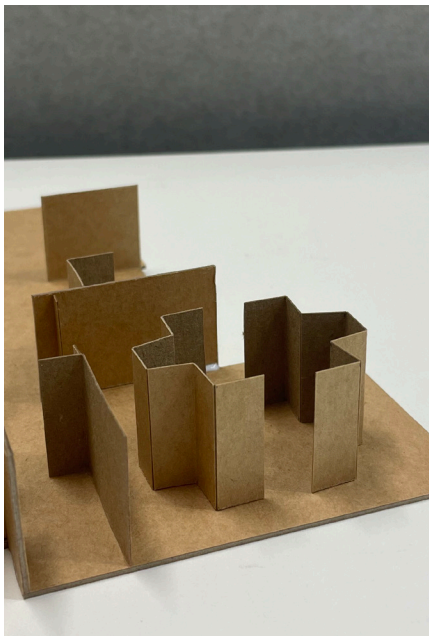
- Pounamu
- Model of the orig
- Korowai
- Photographs
- News articles
- Drawings/Painting
- Carvings
- Weaving
- Tukutuku panels
- War weapons



Model Making 1
Shows the traditional poutama pattern.
Might create some awkward spaces that disrupt flow.



Model Making 2
Gives maximum wall space.
Simple flow around the room.
Areas can be sectioned off or themed.



Model Making 3
Creates dark spaces in the centre
Might make the space feel cramped.

Figure 71: *Development of the Whare Taonga*

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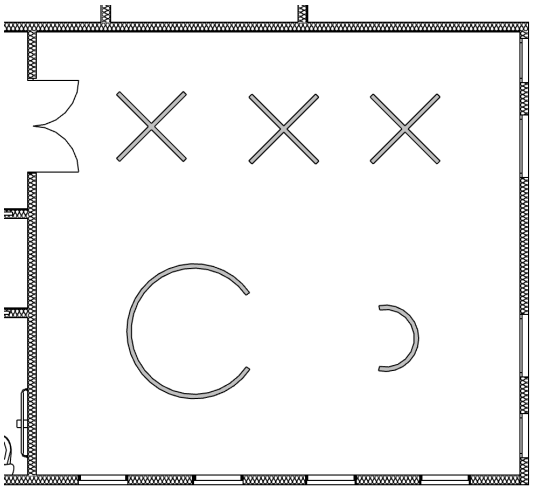
Ngāti Whātu Artist Intergration
Allows the iwi to have ownership over the space.
Creates a space embedded in te ao Māori

Painted Walls
Simple and typical of a gallery space.
Allows for the gallery to be constantly changing.

Upcycled Timber Floor Boards
Upcycle wood from the current house to intergrate into the new development.
Simple and effective in achieving the whanaus desired aesthetic
Connection to whenua

Gallery



Iteration 4:
Experimentation with different shapes.

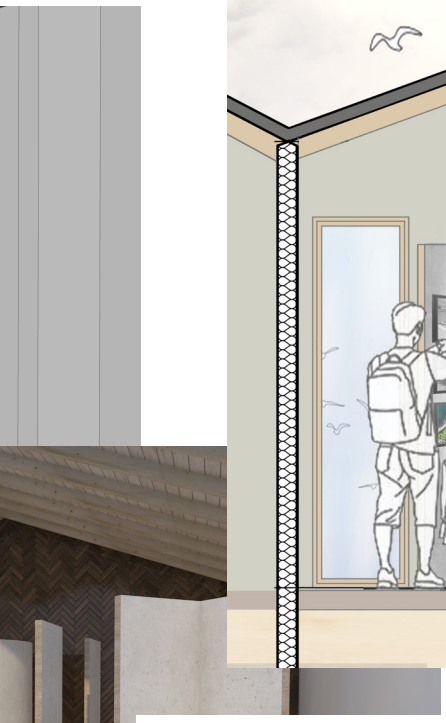
- Modern and flexible
- Includes more openings for better flow through the space.

Perspective view of iteration 4.

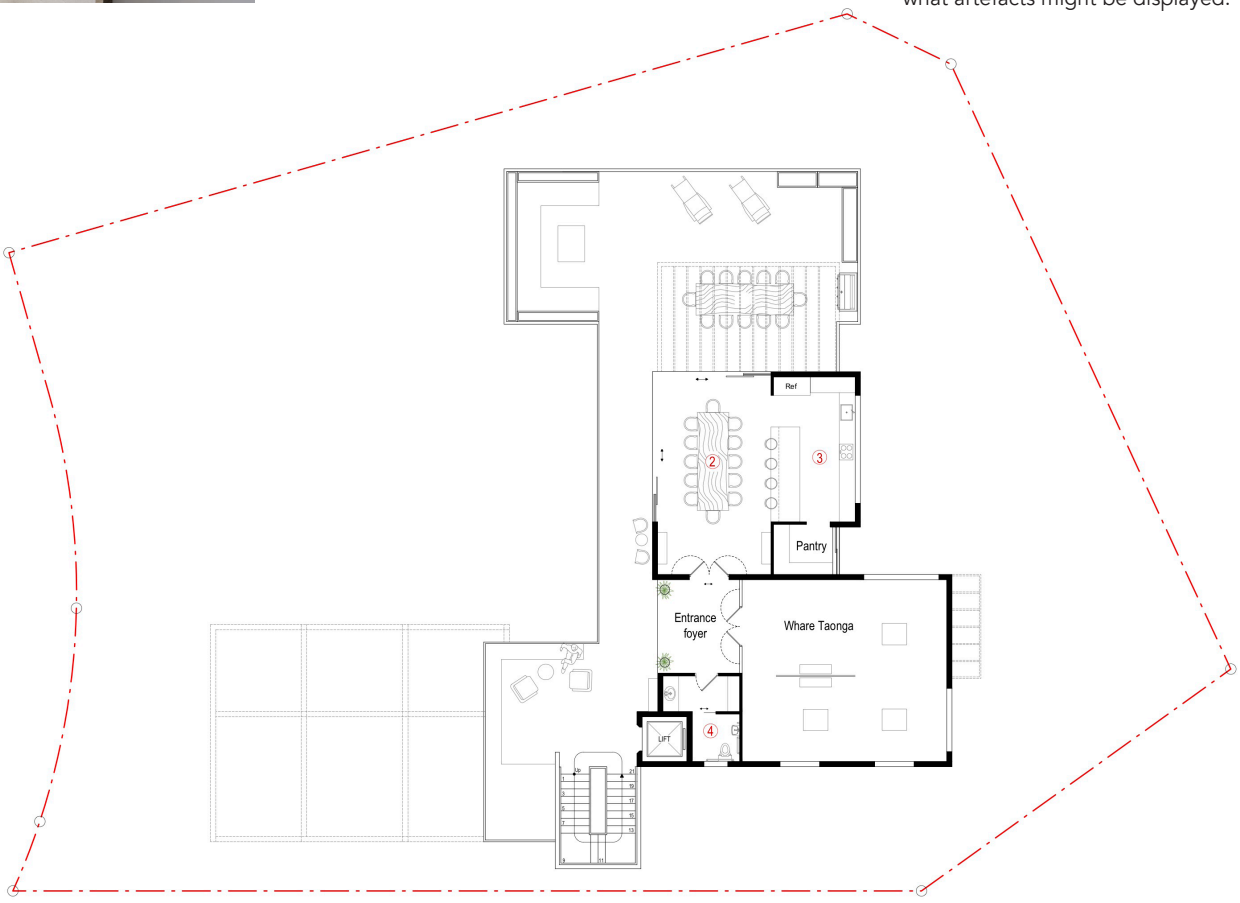
Perspective view of iteration 4 with lighting and materiality.

Section FF 1:20 @ A3 showing materiality and lighting of the space.

Figure 72: *Development of the Whare Taonga*



Section GG 1:20 @ A3 showing what artefacts might be displayed.



6.5 Landscaping

Improving biodiversity on productive land can have benefits for indigenous species. For example, planting indigenous trees as a shelterbelt provides habitat and food for indigenous birds and insects while providing shade or warmth and preventing soil erosion (New Zealand Government, 2020). It seems a natural progression to create a landscape full of native plantings.

Maintenance

Planting native species typically means that less maintenance is needed and once properly established can thrive and can mostly self-maintain. As well as attracting and providing habitat to native fauna, native plantings create a garden with many benefits to Aotearoa's biodiversity and the natural environment, as well as being aesthetically pleasing. For the first two to three years, until the plants are established and start shading and covering ground, it will be necessary to weed and replace the mulch. Once initial trees and shrubs are established and provide shelter and shade from winds, sun and frost, more tender plants such as ferns, pigeonwood and kawakawa can be planted underneath (Department of Conservation, n.d.).

Ecological Impact

Kaitiakitanga is a central value to Ngāti Whātua, with landscaping works to reflect this value and positively affect the whānau's mental, physical and spiritual well-being. A resilient city is typically one that is prepared and well-equipped to contend with and mitigate the multiple effects of climate change (Lehmann, 2019). Increasing plantings and green cover in urban gardens is one step toward a more resilient city. Trees and vegetation help to take pressure off stormwater systems in the event of flooding or heavy rain, help provide shade and shelter, mitigate the effects of urban heat islands, absorb emissions for better air quality, and improve humans' well-being through nature connectedness. Increasing urban greenery while increasing density is not a contradiction; the most effective green space is not a lawn but a garden with tree cover and a diversity of trees and bush (Lehmann, 2019). Using the garden space in the Hawke development to plant a diverse range of native trees, ferns and bush will allow wildlife to live in and move through habitats that aren't compromising to them, by increasing ecological corridors through networks of green space in close proximity (Lepczyk, 2017).

Suitable native plantings for an urban site

Located on an urban site, plantings are needed that can thrive in urban conditions and are of a suitable size. Pictured below are common native species that will grow in the Auckland Central environment and are easily sourced (Forest and Bird).

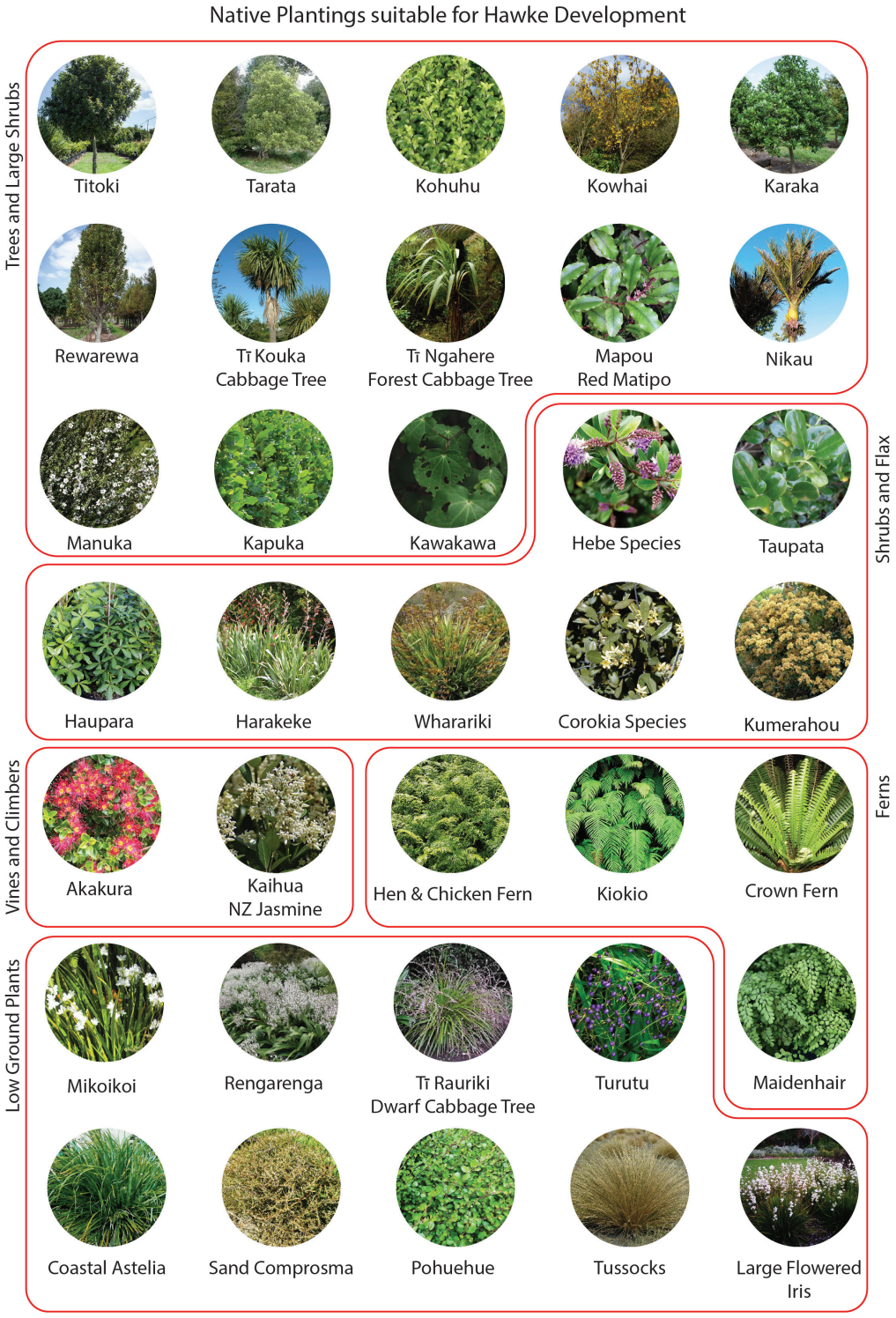
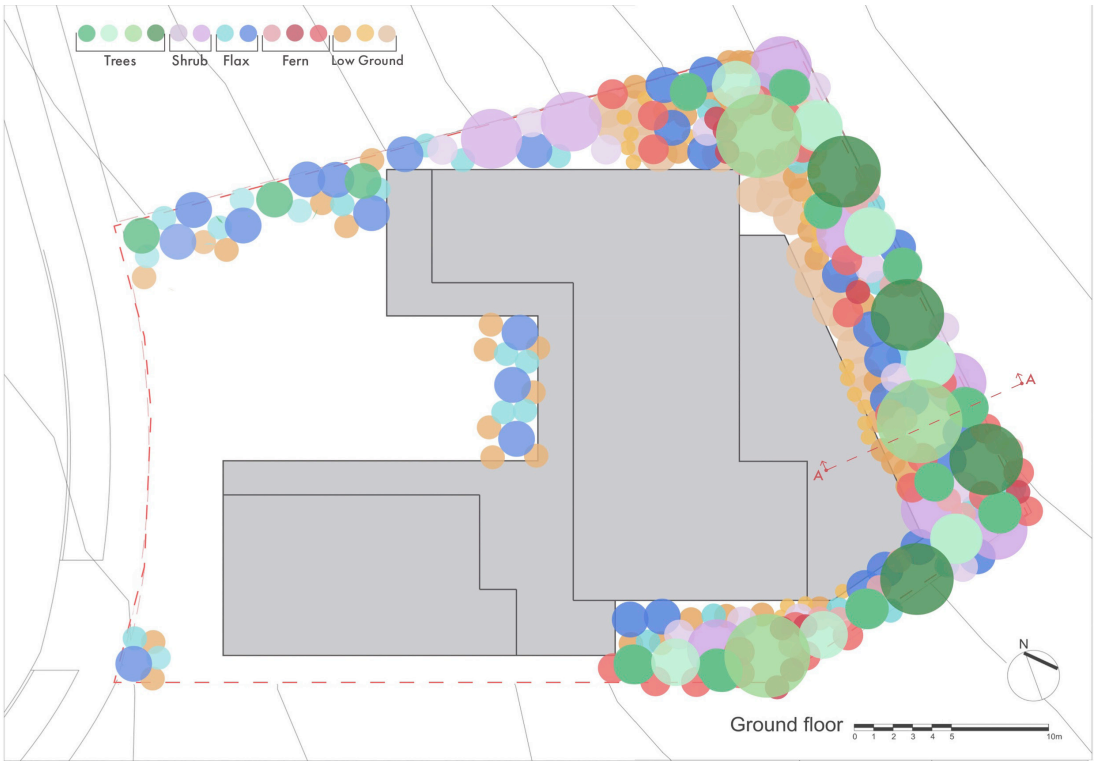
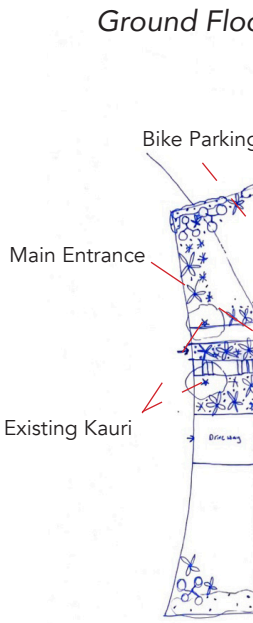


Figure 73: *Possible plantings for the site*

What to plant?





Over Time

In time the landscape will transition and grow, giving a different feel to the site. When young and first established the site will feel open and exposed, made up of stronger trees, flax, and bush. After 3-5 years, the garden will provide enough shelter to introduce ferns and low-ground plants, at which stage it begins to self-maintain.
After 20 years the garden becomes bountiful and creates a dense green cover that provides shelter from wind, rain and sun, and a habitat for birds and wildlife, protecting the site and creating a sense of calm and comfort.

Name	Mature Height	Benefits
Nikau	7m	Attracts native birds Slow growing
Ti Kouka	5m	Versatile
Tarata	5-10m	Can be used for hedging privacy
Rewarewa	15-25m	Red Flowers Attracts native birds and i
Haupara	1-5m	Berries attract native bird
Kapuka	5-8m	Can be used for hedging privacy
Whaririki	1m	Food source for native bi insects and geckos
Harakeke	3m	Food source for native bi insects and geckos
Hen & Chicken Fern	1m	Grows well under trees
Crown Fern	1m	Good ground cover unde
Kiokio	2m	Good for banks or wall c
Tussock	0.3-1.5m	Large variety of species
Turutu	0.6m	Good for mass planting v distinctive purple berries
Pohuehue	0.5m	Can outcompete weeds

Figure 74: *Development of the landscaping*

or Planning Sketch

- Selecting plantings that naturally occur together in nature to create a resilient garden.
- Considering plants' heights to create varying layers and depths.
- Choosing plantings that will benefit the site. Suitable for steeper land, attract native birds and wildlife, create privacy from neighbouring property, are versatile, wind and shade tolerant, adds to the beauty of the site.
- A diverse group of plants to enhance the site ecosystem.

Level One Planning Sketch


Whaririki


Tussock

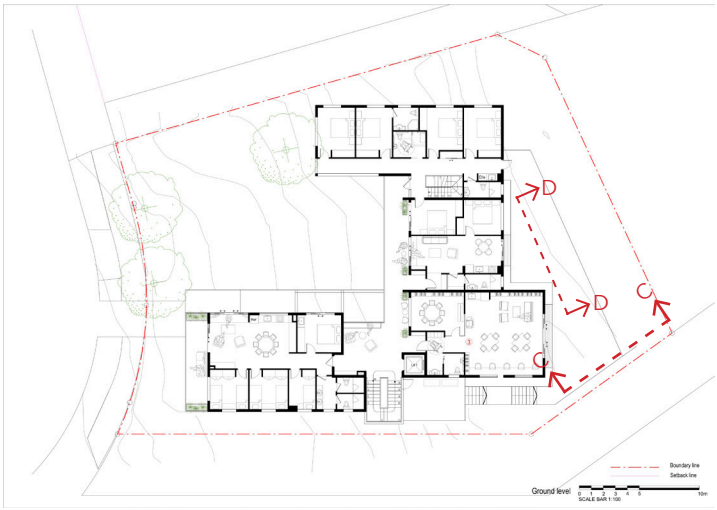

Haupara

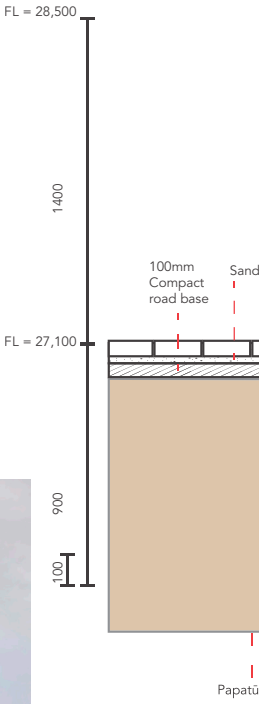

Pohuehue

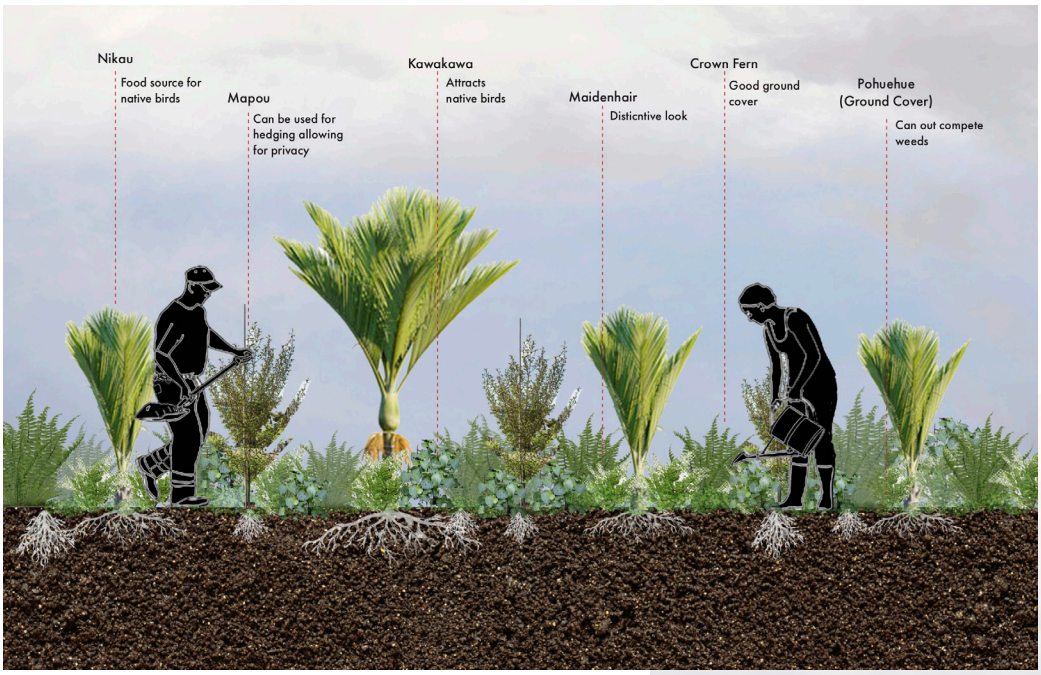

Kiokio

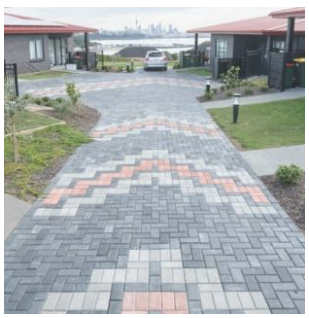

Turutu

Courtyard



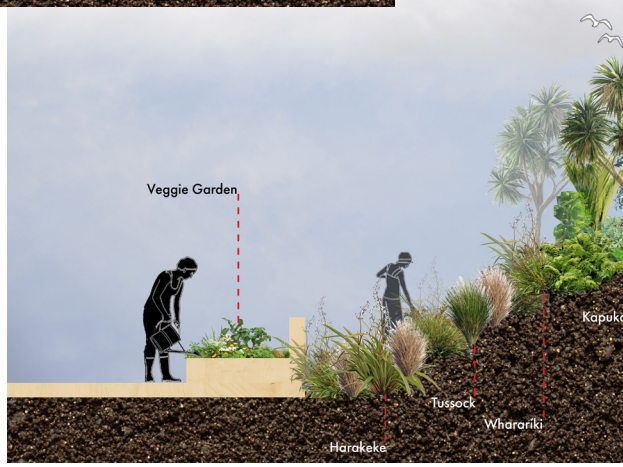






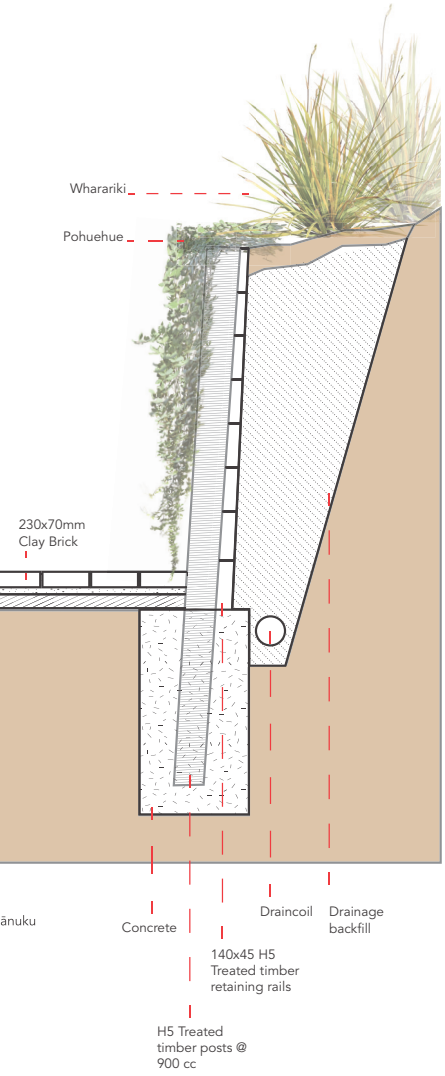
Brick pathway at Kāinga Kaumātua, Orākei, 2022

Concrete Tile Flooring at Commercial Bay, Auckland, 2022



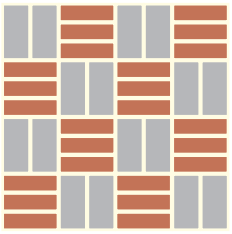
Section CC 1:100 @ A3

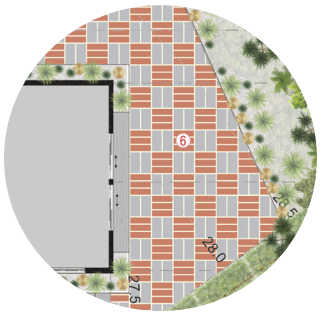
Figure 75: *Development of the landscaping*



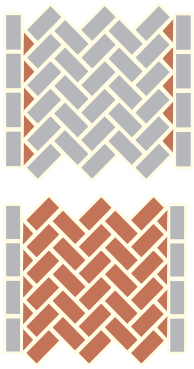
Patterns:

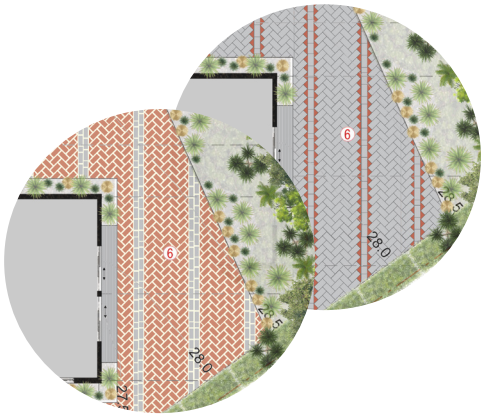
On site:



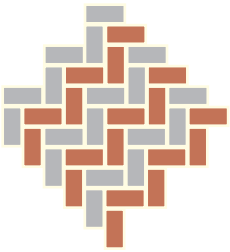


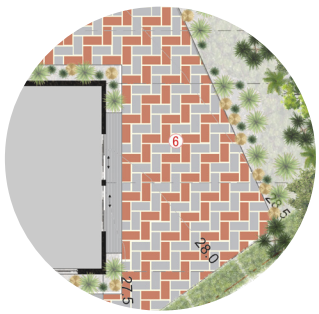
Basket Weave



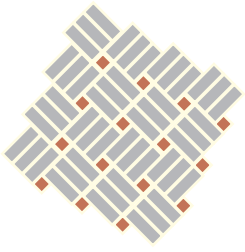


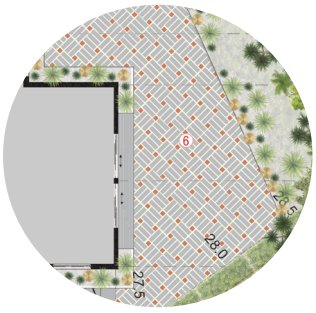
45° Herringbone





Poutama





Basket Weave Variation

Front of Site

Sourcing

Ōkahu Rākau, Ngāti Whātuas native bush care and nursey is part of the iwis ecological restoration project. The project aims to increase the biodiversity of birdlife, plants, insects and habitats which upholds a combination of the iwis values (Ngāti Whātua Ōrākei, n.d.) they are actively seeking to enhance the Mauri of the lands which makes landscaping of this project an important element to uphold kaitiakitanga.

The landscaping for this project can be sourced through or with help from Ōkahu Rākau and could also be a part of the volunteer programme. The site can then be planted up by residents and iwi members, allowing residents to take responsibility for the site. This is a way to educate people about te ao Māori and the ecological impact green spaces have on our urban environmennts. Connecting the whanau and residents to their whenua.

Figure 76: *Development of the landscaping*

Figure 77: *Development of the landscaping*

7. Design Outcomes

Final design output.

1:100 Site Model

1:100 Site Model

Figure 78: *Photos of site model*

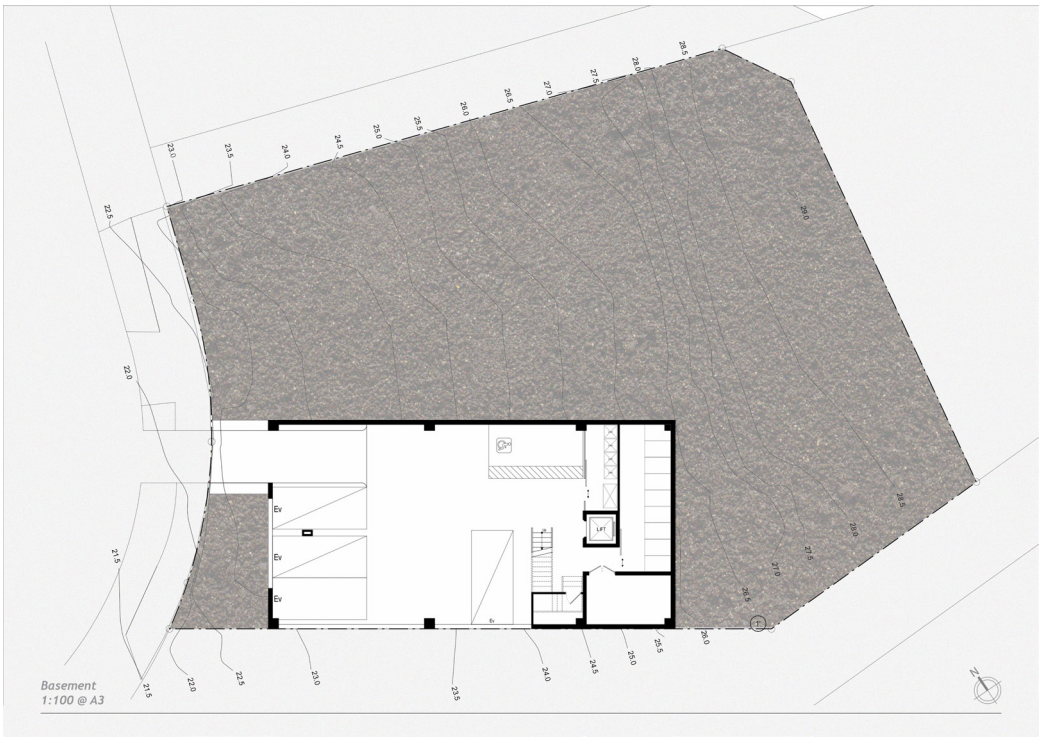


Figure 79: *Plans*

Figure 80: *Plans*

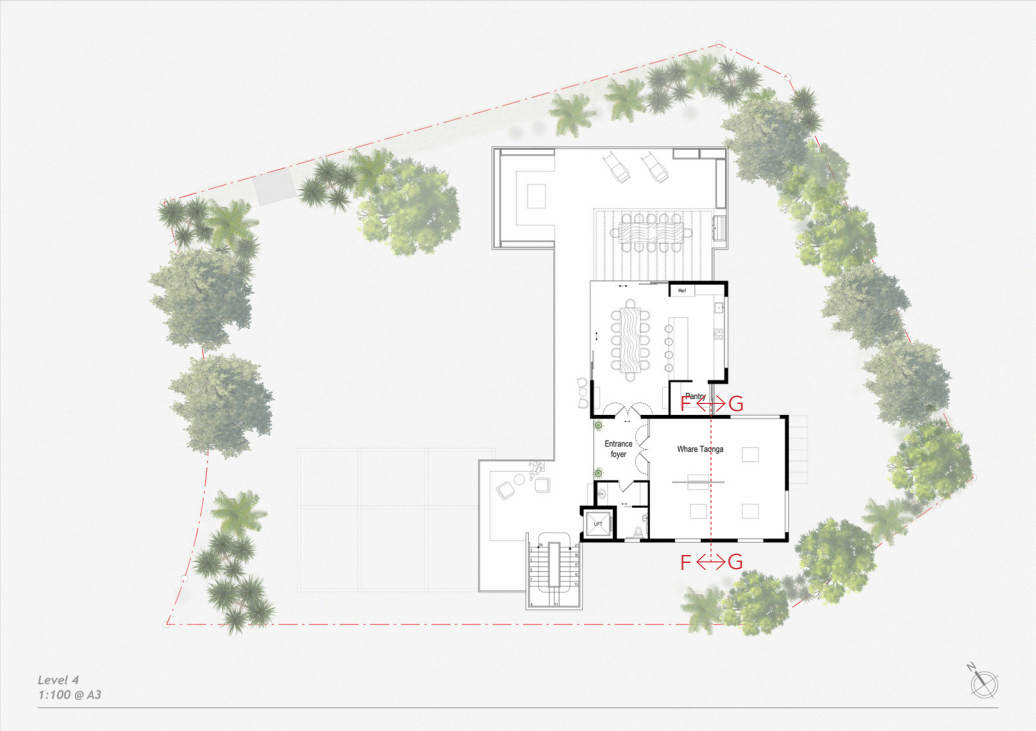


Figure 81: *Plans*

Street View

Figure 82: *Perspective view from Kitemoana Street*

West Elevation

1:200 @ A3

Figure 83: *West Elevation*

Bike Shelter

Section EE 1:20 @ A3

Figure 84: *Bike Shelter*

Entry to the site

Figure 85: *Perspective view entering the site*

Whare Hui

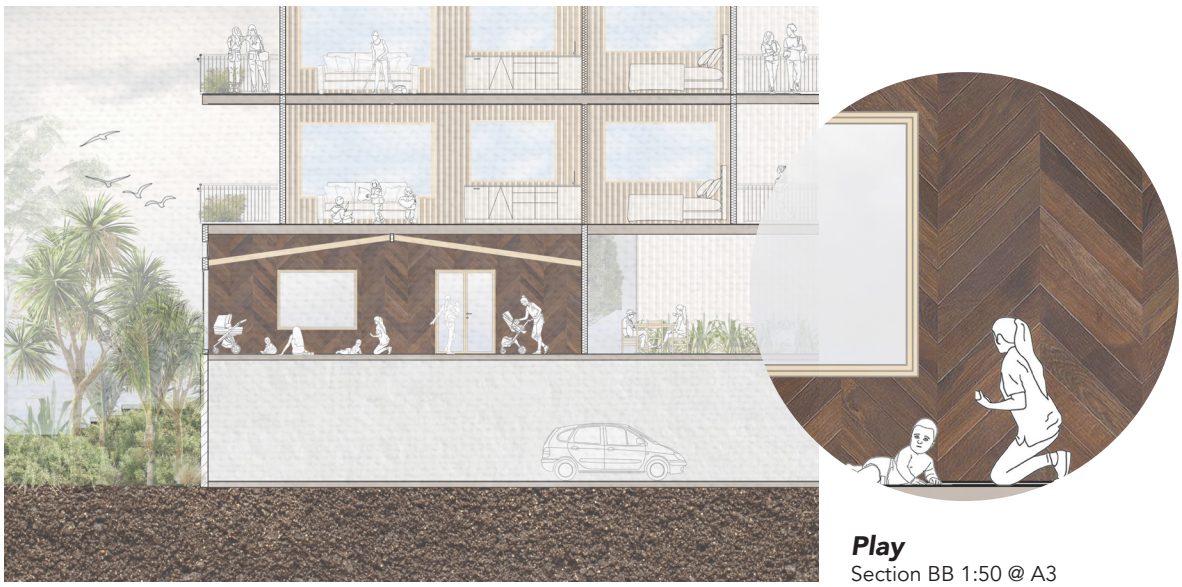
Figure 86: *Perspective view inside the Whare Hui*

Entring the Whare Hui
Section AA 1:50 @ A3

Figure 87: *Entering the Whare Hui*

Education
Section BB 1:50 @ A3

Sleep
Section BB 1:50 @ A3



Play
Section BB 1:50 @ A3

Figure 88: *Different uses of the Whare Hui*

Courtyard
Section DD 1:20 @ A3

Figure 89: *Courtyard section*

Courtyard

Figure 90: *Perspective view of the Level 1 Courtyard*

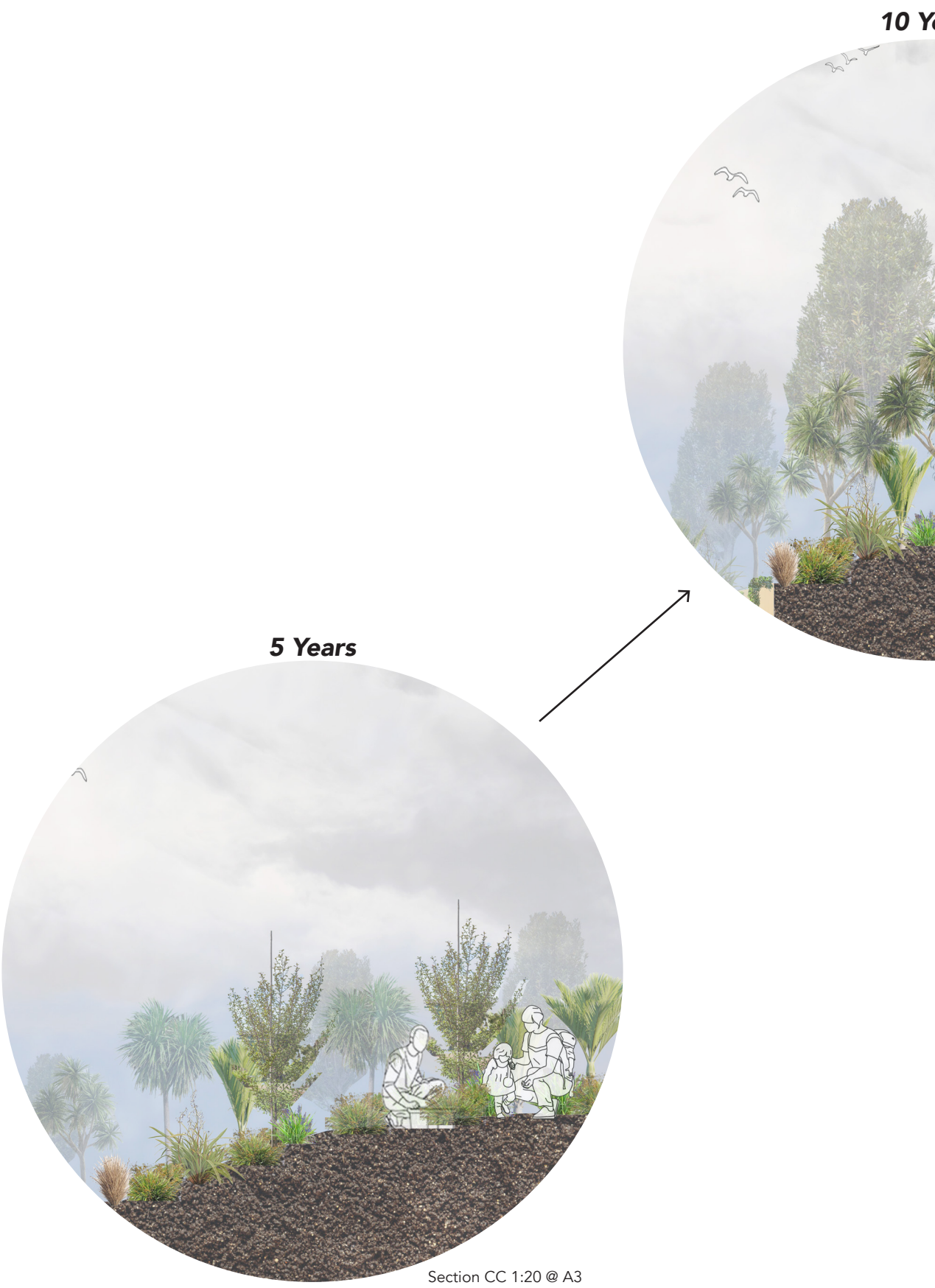


Figure 91: *Landscaping overtime*

ears

Section CC 1:20 @ A3

20+ Years

Section CC 1:20 @ A3

Walkways

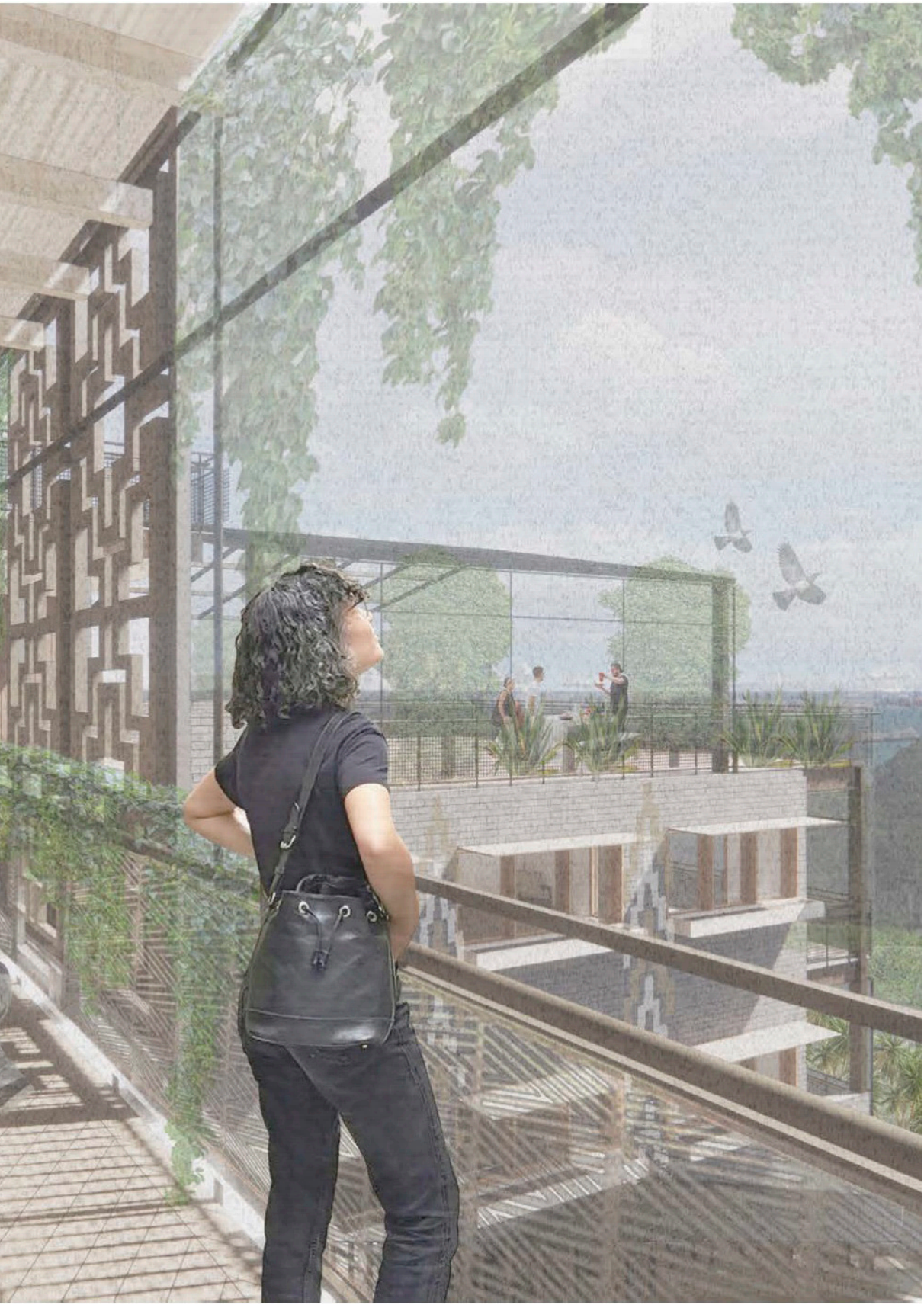


Figure 92: *Perspective view of shared walkways*

Level 3 Patio

Figure 93: *Perspective view of Level 3 Patio*

Whare Taonga Gallery
Section FF 1:20 @ A3

Figure 94: *Section of Whare Taonga Gallery*

Whare Taonga Gallery
Section GG 1:20 @ A3

Figure 95: *Section of Whare Taonga Gallery*

Whare Taonga Gallery

Figure 96: *Perspective view of the Whare Taonga Gallery*

Whare Taonga Outdoor Dining

Figure 97: *Perspective view of the Whare Taonga Outdoor Dining*

8. Conclusion

Conclusion, responses and reflections.

8.1 Conclusion

Deciding to take part in this co-design project embedded in te ao Māori came from the sadness that Aotearoa's history has long been overlooked and that our current housing does not meet the needs of Māori.

As our built environments move towards higher density, we see that architects or designers tend to forget what it means to be human in their designs, and often don't know what it means for Māori to be human. Previous design has frequently failed to account for the fact that a family might prefer to live with multiple generations under one roof, want to have guests stay from time to time, or have a space where multiple families can come together. Māori-centred housing should be a place where Māori can be human and where architecture is a tool used to enhance Māori values and ideas of whanaungatanga, manaakitanga and kotahitanga.

The analysis of the current state of Aotearoa's housing and its impacts on Māori shows, rather obviously, why we might adopt the practice of co-design in our social housing projects. The outcomes of the project's planning, overall function, and aesthetic would not be as successful if it weren't for the whānau taking the lead and being the experts in this project.

This thesis has successfully challenged the usual Eurocentric and architect-led approach to housing we see in Aotearoa. Through this research and co-design process, I found that designing from te ao Māori perspectives means prioritising our built environments' social and ecological outcomes. By considering the impacts architecture has on people, wildlife and land, this project shows that we can utilise architecture to support Māori and their whenua which, ultimately, benefits everyone.

8.2 Response to the Research Question

How can an exploration of te ao Māori influence the development of the Hawke Whānau Whare to create sustainable housing on iwi land that supports Māori and whenua?

The ability to work directly with the Hawke whānau, as well as conduct research using relevant literature, guided the collective to better understand how we can approach housing from the perspective of te ao Māori. Embracing the holistic and intertwined view of the world meant it was a natural outcome for the design to be socially and environmentally sustainable, inclining the collective to be more conscious of architectural impacts, and influencing the Hawke whānau development by crafting each space to function for Māori.

The conclusion can be made that when we design housing using a te ao Māori approach, socially and ecologically rich environments are created that put Māori at the centre of the design. Using co-design to embed te ao Māori in the project from the very beginning ensured that we met the Hawke whānau's needs and upheld the iwi values throughout the process.

8.3 Response to Research Aims

The aim of this research project was to discover how te ao Māori can influence design outcomes of housing in support of Māori and their whenua.

1. *What is te ao Māori, in relation to Ngāti Whātua?*

Literature analysis and korero with Ngāti Whātua Ōrākei formed a response to this research aim from the perspective of the iwi and author. Personal experiences influenced how te ao Māori concepts were defined and allowed me to create a deeper connection to te ao Māori. Central to this thesis, all areas of research and design were viewed and reflected on through a te ao Māori lens. The resulting research presented informed the final design outcomes and allowed the iwi values to be embedded into the project.

2. *How has housing changed in Aotearoa and what socio-ecological impact has this had?*

The use of relevant literature informed a timeline and overview of the changes seen in housing throughout Aotearoa. Identifying social and ecological outcomes and how they impact Māori gave an awareness to approaching the design from the perspective of the Hawke whānau - another reason why co-design was so central to this thesis project.

3. *How might te ao Māori be used in a design process? What precedents already exist?*

Analysis of five design precedent works was used to respond to this aim, analysing through a te ao Māori lens to inform how Māori values can be upheld in architecture, and looking at precedents both designed from a Western perspective and embedded in te ao Māori to gather key findings.

4. *What does a te ao Māori approach look like for the Hawke Whānau development?*

The design outcomes show how this research and design precedents influenced the outcome, while keeping in mind the limitations and restrictions that come with basing this thesis on an existing and ongoing project.

8.4 Response to Hawke Whānau Aims

These aims were desired project outcomes for the whānau and collective. Although not all aims were explored in depth in this thesis alone, by synthesising all theses in the collective, we have each contributed to achieving these aims.

1. Support immediate and extended whānau/iwi members

Careful consideration of the planning took up the majority of the project time and was ultimately guided by the whānau itself. Dwellings and communal amenities were informed by the whānau. Our collective role was to include these spaces where they were desired in an efficient and functional way.

2. Create income by having apartments for renters

Spaces in planning are dedicated for renters as well as creating flexibility in the future to change the spaces from Oranga Tamariki-focused to be able to be rented out or house family.

3. Multi-generation living. Kaumātua don't move away.

Multi-generational living was the basis on which this project was approached, as the whānau have multiple generations living in the current home. Consideration was given to kaumātua's needs and placing their spaces in sociable areas, as well as making the building entirely accessible.

4. Support the whānau's work with Oranga Tamariki

Certain spaces are dedicated to be used by Oranga Tamariki while not imposing on future possibilities of the development, thus giving the whānau privacy by creating a separation between the family and their work.

8.5 Limitations

It is necessary to consider the limitations and restrictions of this project.

The lack of resources and research surrounding te ao Māori and Māori-based design was challenging and meant this thesis relied heavily on utilising contemporary resources and design precedents. As te ao Māori is a significant topic, the past 12 months allowed this thesis to only scrape the surface of the complex world that is te ao Māori, taking from a few pieces of literature and personal experience to guide research surrounding te ao Māori.

Co-design is a relatively new practice within architecture, so there are few resources to turn to. This meant our collective had to figure it out as we went through the processes. Though a hugely valuable experience for us, it meant taking perhaps more time than necessary to come to design conclusions, needing to give time to communicate with the Hawke whānau and figure out how we each played our part.

Having only 12 months to collate this research project was not enough time. This means that the output of this design is merely a starting point for the project's development. However, being part of a collective, we were able to dive far deeper to produce a rich body of work that we would not have been able to achieve at an individual scale.

8.6 Reflection

This thesis research project was hugely beneficial and insightful, allowing me to explore my personal interests and deepen my connection with te ao Māori. It was an honour to be part of a new approach to architecture through education in Aotearoa and to build a relationship with and understanding of the Hawke whānau of Ngāti Whātua Ōrākei.

This thesis and the collective hope to fill a gap in literature and influence future approaches to architecture in education. This thesis can be used to provide insight into te ao Māori-centred design approaches and how co-design can contribute to those approaches. This research is merely a starting point for how we might see social housing and housing on Māori-owned land change in the future.

9. Glossary

Aotearoa	Māori name for New Zealand
atua	gods/deities
hapū	sub-tribe
hauora	health and well-being
hui	gathering
iwi	tribe
kai	food
kaimoana	seafood
kaitiakitanga	guardianship, environmentalism
karakia	prayer
kaumātua	elder
kaupapa/kaupapa Māori	philosophy/Māori philosophy
kōrero	talk
kotahitanga	unity
mana	prestige, authority, power
mana whenua	territorial rights, authority over land
manaakitanga	hospitality
Māori	indigenous people of Aotearoa New Zealand
marae	Māori area of community
Marutūāhu Collective	iwi collective
mātauranga Māori	Māori knowledge
maunga	mountain
mauri	life force or essence
moana	ocean
ngahere	forest
Ngāti Whātua	a New Zealand iwi
Ngāti Whātua Ōrākei	sub-tribe of Ngāti Whātua
noa	free from tapu, ordinary
Pākeha	Māori name for Europeans
papakāinga	original home, village
Papatūānuku/Papa	earth mother, husband of Rangi
pātaka	shelter for food storage
poutama	stepped pattern
rangatira	Māori chief
Ranginui/Rangi	atua of the sky, wife of Papatūānuku
rohe	tribal homelands, territory

rongoā	medicine
Tāmaki /Tāmaki Makaurau	Māori name for Auckland
tangata whenua	people of the land
tapu	sacred
te	the
te ao Māori	Māori worldview
Te ao marama	the world of light
Te reo māori	the Māori language
Te Tiriti o Waitangi	The Treaty of Waitangi, Aotearoa's founding document
tikanga	customs, method
tupuna	ancestors
urupā	cemetery
utu	balance
wāhine	woman/female
wairua	spirit or soul
waitahi/tinana	physical body
waka	canoe
whakapapa	genealogy
whānau	family
whanaungatanga	relationship, sense of family
whare	house
whare whakairo	carved meeting house
wharepuni	sleeping house
whenua	land

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