

HOW TO PREP A HĀNGĪ

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A Framework for End User Engagement Within the Design Process

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Pepeha

Tēnā koe,

Ko Kahuranaki tōku maunga

Ko Ngaruroro tōku awa

Ko Takitimu tōku waka

Ko Ngāti Hori, Ngāti Toaharapaki ōku hapū

Ko Kohupātiki tōku marae

Ko Ngāti Kahungunu, Ngāpuhi, Ngāti Tūwharetoa, Ngāti Maniapoto ōku iwi

Ko Robert Turongo Robin, rāua ko Audrey Norma Murray ōku mātua tipuna

Ko Jenny Desiree Robin, rāua ko Jiles Lawrence Middleton ōku mātua

Ko Jahmayne Murray Wanoa Robin-Middleton ahau

Greetings,

My mountain is Kahuranaki

My river is Ngaruroro

My waka/ canoe is Takitimu

My sub-tribes are Ngāti Hori and Ngāti Toaharapaki

My marae is Kohupātiki

My tribes are Ngāti Kahungunu, Ngāpuhi, Ngāti Tūwharetoa, and Ngāti Maniapoto

My grandparents are Robert Turongo Robin and Audrey Norma Murray

My parents are Jenny Desiree Robin and Jiles Lawrence Middleton

I am Jahmayne Murray Wanoa Robin-Middleton

Figure 1. Photo of tāhuhu (ridgepole) inside Tanenuiarangi.

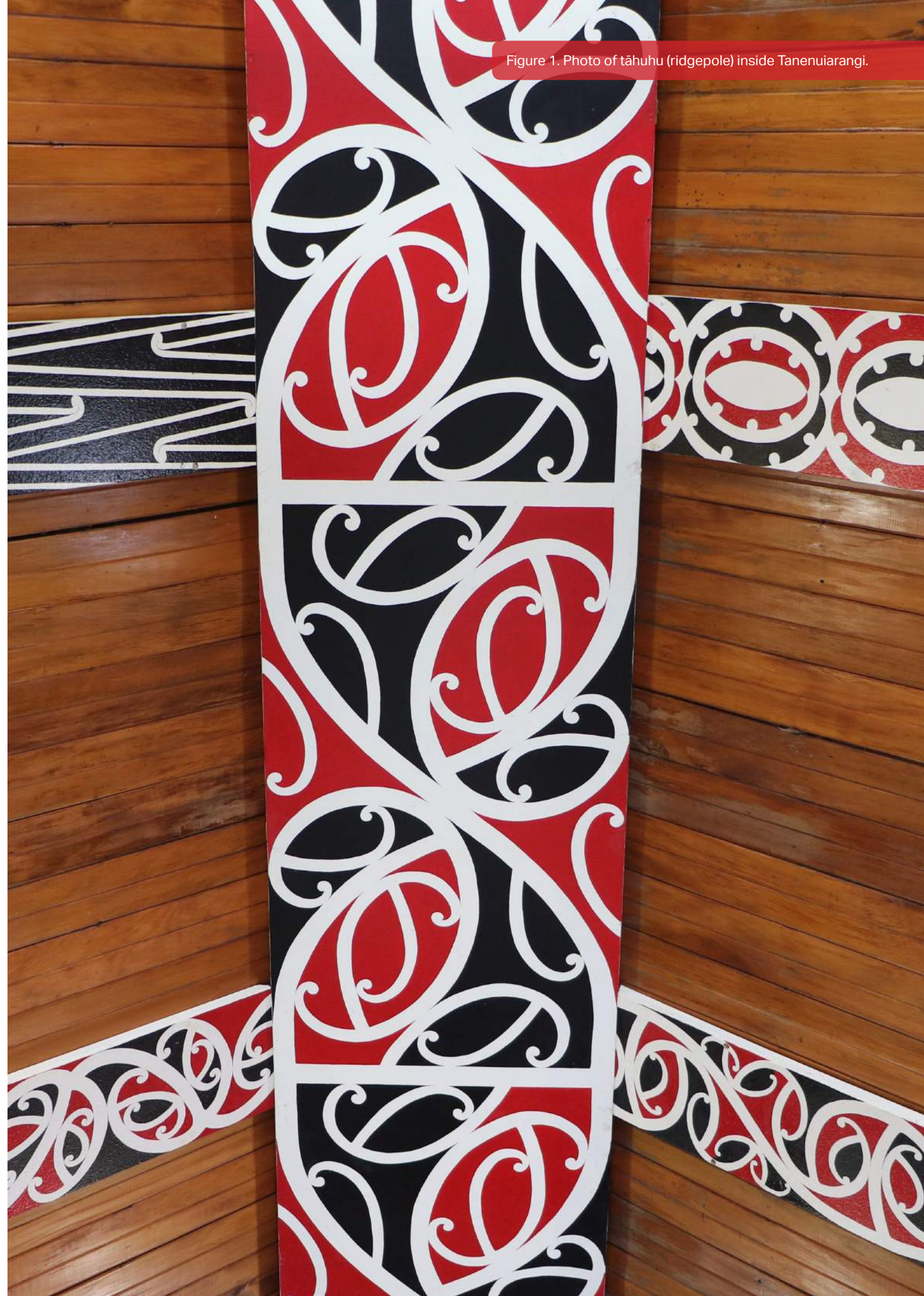




Figure 2. Photo of author and grandmother.

Dedication

This thesis is dedicated to my Nan; thank you for your unparalleled support over the last 6 years, and for always believing in me.

Acknowledgements

Firstly, I must thank my supervisor Derek Kawiti for your guidance and support over the course of this research. In addition, thanks must also go to the *Indigenous Material Domains* gang for your feedback and assistance.

Whānau consultation was a key part of this research, and would not have been possible without the assistance of a number of individuals, in particular, Matthew Bennett (or Koro Matt). Thank you for your wisdom and support in helping to set up this consultation.

Thanks must also go to all of my Kohupātiki whānau, who attended the Open Design Studio earlier in the year, and contributed greatly to the overall research.

To my immediate whānau (Mum, Dad, Nan and Papa in particular) thank you so much for your immense support over the course of my studies, and encouraging me to pursue a higher level of education through tertiary studies.

Finally, thanks to my amazing Kea. No one has had to put up with me (and my sometimes difficult ways) more than you. You are my rock, and you will never quite understand how essential you were to me finishing this damn thing.

Abstract

Observations over recent years of New Zealand architectural practice indicate that there is growing interest in tikanga Māori in architecture and design practice.

With significant opportunities now available to support Māori in realising their housing and infrastructural aspirations, there is much discussion surrounding the role of the architect, and how they conduct themselves when working with mana whenua (partisan identifiable tribal groups who hold customary authority over Māori freehold land).

Most agree that working with mana whenua requires a collaborative approach, added to that, an approach that sees significant end user engagement.

To this affect, end user engagement within the design process is the primary subject of the research.

The largely Māori settlement of Kohupātiki is the proposed site for this research. Given the interests of this research and its focus on Māori communities, it is quite appropriate that Kohupātiki be the selected site to drive this research.

The community is made up of 4 main families; the Rapanas, Chadwicks, Punas, and Broughtons, all of whom have a vested (customary) interest in the site as it is potentially about to undergo significant transformations over the next 10-20 years.

Some of these transformations include the improvement of road access to the site, the development of a series of Papakāinga (housing developments on Māori land), and a number of refurbishments to significant communal facilities located on the site's Marae settlement.

These developments offer significant opportunities for architectural and landscape intervention, and will serve as a vehicle to drive a participatory design process.

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01

Introduction

“One of the best resolutions to the issue of architecture is to ensure that there is, wherever possible, a **dialogue with mana whenua**. So, if you are involved in the development of a commercial or a school or a health environment within a particular tribal area, then have a conversation about what you are trying to achieve or, probably more importantly, ask the people what’s important to them in terms of symbolism and architecture in this area. Then it can be challenged but it cannot be undermined if the mana whenua have been a part of that process. So I think that’s probably key.

If there’s been a conversation and if the architect has been sensitive enough to have a conversation and to do their homework, and the people are engaged, then there’s a **relationship of integrity** there. This won’t necessarily make great architecture but it will ensure that there’s been a really important conversation there so that those sort of critiques can’t be fully landed.” (Harvey, 2012).

-Rau Hoskins on the subject of engagement with mana whenua.

Engaging with Mana Whenua

Observations over recent years of New Zealand architectural practice indicate that there is growing interest in tikanga Māori in architecture and design practice.

With significant opportunities now available to support Māori in realising their housing and infrastructural aspirations, there is much discussion surrounding the role of the architect, and how they conduct themselves when working with mana whenua (partisan identifiable tribal groups who hold customary authority over Māori freehold land).

Most agree that working with mana whenua requires a collaborative approach, added to that, an approach that sees significant end user engagement.

To this affect, end user engagement within the design process is the primary subject of the research.

Exploring Engagement

To explore this area of interest further, this research explores the use of participatory design tools as a means of improving design outcomes for Māori communities. It proposes and develops a series of tools that will:

1. Allow Māori communities to have more of a say within the design process, and enable them to determine the shape and form of their own living environments
2. Support collaboration and dialogue between Māori communities and design professionals
3. Educate design professionals/ students/ enthusiasts about important concepts and principles relating to mātauranga Māori
4. Support the discovery of a meaningful architecture, specific to site, and the people in which it is being designed for

Kohupātiki

The largely Māori settlement of Kohupātiki is the proposed site for this research. Given the interests of this research and its focus on Māori communities, it is quite appropriate that Kohupātiki be the selected site to drive this research.

Kohupātiki is a small rural settlement located near Clive; 14 minutes from both Napier and Hastings.

The community is made up of 4 main families; the Rapanas, Chadwicks, Punas, and Broughtons, all of whom have a vested (customary) interest in the site as it is potentially about to undergo significant transformations over the next 10-20 years.

Some of these transformations include the improvement of road access to the site, the development of a series of Papakāinga (housing developments on Māori land), and a number of refurbishments to significant communal facilities located on the site’s Marae settlement.

These developments offer significant opportunities for architectural and landscape intervention, and will serve as a vehicle to drive a participatory design process.

Ultimate Outcome

Finally, the research also develops a speculative masterplan for the future, which will consist of a series of architectural and landscape interventions, all of which will be conceived through the participatory design process, and will reflect and support Kohupātiki’s unique identity.

Primary Research Question

How might Participatory Design Processes or End User engagement within the design process lead to improved design outcomes for Māori communities?



Figure 3. Author and whānau at Open Design Studio.

Research Aims

01 This design-led research proposes and develops a series of participatory design tools which will:

1. Allow Māori communities to have more of a say within the design process, and enable them to determine the shape and form of their own living environments
2. Support collaboration and dialogue between Māori communities and design professionals
3. Educate design professionals/ students/ enthusiasts about important concepts and principles relating to mātauranga Māori
4. Support the discovery of a meaningful architecture, specific to site, and the people in which it is being designed for

02 The research also develops a speculative masterplan for the future, which will consist of a series of architectural and landscape interventions, all of which will be conceived through the participatory design process, and will reflect and support Kohupātiki's unique identity.

Research Objectives

01 These aims can be achieved by firstly understanding what the participatory design process is, and how it is traditionally employed within architectural practice. To build this understanding, the research explores the works of Arki_lab, an interdisciplinary urban design firm based in Copenhagen who actively employ participatory design methods within their projects.

02 Once the participatory design process is understood, it is possible to develop tools to engage with the Kohupātiki community, tools centred around mātauranga Māori concepts and principles. To guide the development of these tools, the research builds off ideas discussed in documents that include *Ki te Hau Kainga- New Perspectives on Māori Housing Solutions*, by Rau Hoskins, Rihi Te Nana, Peter Rhodes, Philip Guy, and Chris Sage. Additionally, the research explores ideas discussed in *Developing Māori urban design principles*, by Shaun Awatere, Shadrach Rolleston, and Craig Pauling (edited by Keriata Stuart and Michelle Thompson-Fawcett).

03 A final speculative masterplan will be conceived through the usage of the participatory design tools developed in the early stages of this research. Significant community engagement will take place during the Open Design Studio (O.D.S), a design workshop that will be held at Kohupātiki Marae. It is thought that establishing a masterplan that is unique and meaningful will be achieved by allowing the Kohupātiki community to share their knowledge, and also make informed design decisions that will impact the site and final design outcome.

Whakataukī (Māori Proverb)

*Nā tō rourou, With your food basket
nā taku rourou and my food basket
ka ora ai te iwi the people will thrive.*

Kīwaha (Colloquialism)

Kanohi ki te kanohi Face to face contact

Use of Māori Proverbs and Colloquialisms

Whānau consultation began from the outset of the research. During this consultation, whānau introduced both a whakataukī and kīwaha to the research, and suggested their use to inform the research's collaborative design process.

The whakataukī, *Nā tō rourou, nā taku rourou ka ora ai te iwi* describes a situation or scenario of individuals coming together, regardless of their background or area of expertise, and sharing and exchanging knowledge for the betterment of the community. This was certainly relevant to the research, and the collaborative design process that it hoped to achieve. The whakataukī was a significant driver within the research, and informed a number of the decisions made throughout.

The kīwaha, *Kanohi ki te kanohi* describes face to face contact, which whānau indicated was very important to them. This kīwaha is what largely informed the decision to host the Open Design Studio, which is discussed later in the research.

The use of the previously stated whakataukī and kīwaha to inform the research's design process is very significant, as through their utilisation, the research begins to enter into the domain of Te Ao Māori (a Māori worldview), and in doing so, starts to become Māori, or whānau-based design research.

Research Structure

01 Introduction

This chapter provides an overview of the research, articulating the research's interests, Questions, Aims, and Objectives. Design methods, scope of research, and structure are also established.

02 Contextual Analysis

The contextual analysis chapter supports the addressment of Research Aim 02 by enabling a better understanding of the Kohupātiki community, and their unique identity.

03 Literature Review

This chapter examines three pieces of literature, the first of which is a text by Arki_lab, an interdisciplinary urban design firm based in Copenhagen. Their text *Building Cities With People-Democratic Urban Design* discusses the participatory design process, and its employment within architectural practice. Examining this text will support the addressment of Research Objective 01.

The chapter concludes by analysing two final texts, which include *Kite Hau Kainga- New Perspectives on Māori Housing Solutions*, by Rau Hoskins, Rihi Te Nana, Peter Rhodes, Philip Guy, and Chris Sage, and *Developing Māori urban design principles*, by Shaun Awatere, Shadrach Rolleston, and Craig Pauling (edited by Keriata Stuart and Michelle Thompson-Fawcett). Examining these texts will enable a better understanding of the use of mātauranga Māori concepts and principles within the design process, and in doing that, support the addressment of Research Objective 02.

04 Tools for Participation

This chapter introduces the various participatory design tools developed for the Open Design Studio. The development and utilisation of these tools support the addressment of Research Objective 02 and Research Aim 02.

05 The O.D.S

This chapter discusses the Open Design Studio, a design workshop hosted at Kohupātiki Marae on the 4th and 5th of August, 2018. Hosting this event supported the addressment of numerous Research Aims & Objectives, including Objectives 02 and 03, and Aim 01.

06 Nga Taonga

This chapter discusses Nga Taonga (The Treasures), which were the resulting outcomes of the Open Design Studio. Nga Taonga can be described as a series of ideas or opportunities, which we (Kohupātiki) thought had potential in improving land productivity. Ideas ranged in both scale and effort of application. Producing these outcomes supports the addressment of Research Objective 03, and Aim 02.

07 The What if?

This chapter presents Kohupātiki's *What if?*, a speculative masterplan for the future, for Kohupātiki. The chapter envisages selected interventions from the previous chapter *Nga Taonga* on site. The production of Kohupātiki's *What if?* marks the addressment of all Research Aims & Objectives.

08 Conclusions & Critical Reflection

At this point, all Research Aims & Objectives are addressed. This chapter provides an overall reflection on the research, the various lessons learnt, constraints and limitations, and future advancements.

01 Phase 01

- Development of Research Proposal
- Establishment of Research Question(s)
- Establishment of Research Aims & Objectives
- Contextual Analysis- Understanding Kohupātiki's history and unique identity
- Examination of literature relating to Participatory Design Processes
- Examination of literature relating to mātauranga Māori concepts and principles
- Establishment of Research Methodology & Process
- Development of Participatory Design Tools for Open Design Studio
- **Design Review 01- Proposition, Background Research and Concept Design- 17th & 18th May, 2018**

02 Phase 02

- Continued development of Participatory Design Tools for Open Design Studio
- Completion of Participatory Design Tools
- **Hosting of Open Design Studio- 4th & 5th August, 2018**
- Reflecting on Open Design Studio
- Development of Nga Taonga- The outcomes of the Open Design Studio
- **Design Review 02- Developed Design- 30th & 31st August, 2018**

03 Phase 03

- Continued development of Nga Taonga
- Taonga selected for further development
- Development of Kohupātiki's *What if?*, a speculative masterplan for the future
- **Visual Presentation and Examination- 3rd, 4th, 5th & 6th December, 2018**

04 Phase 04

- Conclusions & Critical Reflection
- **Completion and submission of Exegesis- 4th April, 2019**

Note: Ideally the completed research will be presented to the Kohupātiki community.

01 Consultation with Kohupātiki community to organise Open Design Studio

- Organising venue, dates, and participants

02 Dates confirmed for Open Design Studio

- Open Design Studio confirmed for 4th & 5th August, 2018

03 Consultation with Kohupātiki community to establish selected Taonga

- Taonga selected for development

- Supports addressment of Research Aim 01
- Supports addressment of Research Aim 02
- Supports addressment of Research Objective 01
- Supports addressment of Research Objective 02
- Supports addressment of Research Objective 03



Figure 4. Author and kaumātua discuss research.

Scope of Research

The research ultimately aims to develop a speculative masterplan for the community of Kohupātiki, through the utilisation of the participatory design tools developed in its early stages.

It will attempt to develop participatory design tools that enable design at multiple scales. It hopes to achieve both design concepts for potential housing, and an overall speculative masterplan.

Due to the nature of the research, its focus on participatory design processes, and its engagement with the Kohupātiki community, it is anticipated that time and the ability to consult with the Kohupātiki community will be limited.

The research is primarily focused on ways of engaging with mana whenua, and this will more than likely impact the amount of time that can be spent developing final design outcomes.

Engagement will be limited due to Kohupātiki being located in Hawkes Bay. (The researcher is based in Wellington).

02

Contextual Analysis

Place People Past

Purpose of Chapter

The purpose of this contextual analysis is to understand what the research establishes as *The 3 P's- Place, People, and Past*. It is thought that understanding these 3 subjects will support the advancement of the research, and unlock valuable knowledge to help inform design decisions.

The analysis discusses Kohupātiki's history, and some of its unique features, including its wharenui (Tane-nui-a-rangi), The Old Chadwick Homestead, Rapana (or Robin) Road, and finally, the Old Ngaruroro River, which neighbours the site. The analysis also touches on road access to the settlement. All subjects are highly relevant to the research, as they provide significant opportunities for architectural and landscape intervention.

The research then moves on by discussing Kohupātiki's current situation concerning its population makeup.

To conclude, the research discusses lessons learnt from the contextual analysis exercise, as well as opportunities for design.

It should be established at this point that much of the information provided in this chapter has come from the author, who comes from Kohupātiki, and has extensive knowledge of the settlement. This approach was due to a lack of documentation that discussed the site. When unsure about a particular matter relating to the site, the author has consulted with various kaumātua to confirm information.

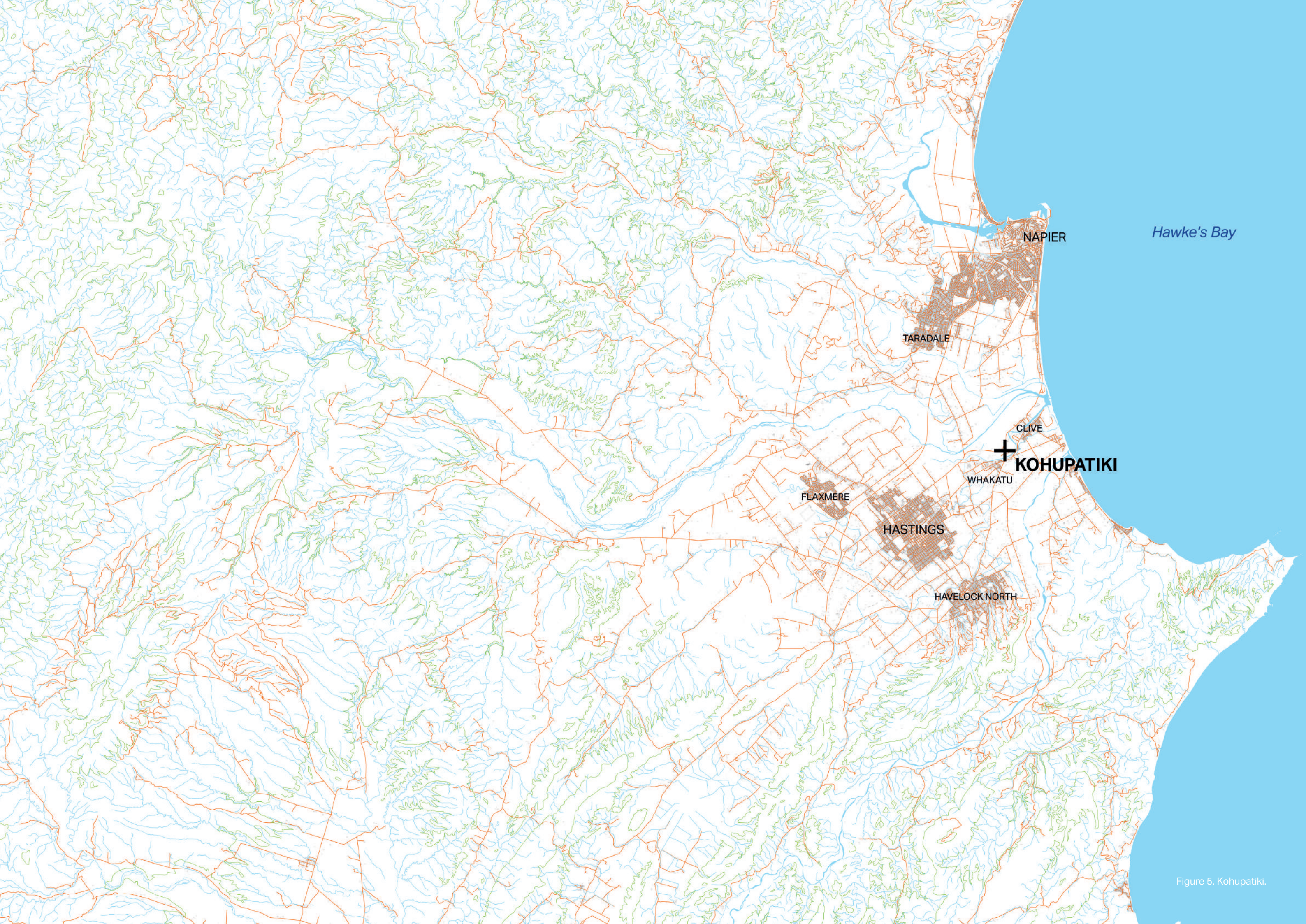


Figure 5. Kohupātiki.

A Very Brief History of Kohupātiki, and the Rapana (Robin) Connection

On November 18th, 1869 the Rotopounamu No. 1 Block (where Kohupātiki Marae is situated) was Crown-granted to five grantees; Paora Torotoro, Te Waka Kawatini, Tamehana Pekapeka, Tareha Te Moananui, and Ahere Te Koare.

The Rapana's connection to Kohupātiki begins with Ihakara (Ike) Te Tuku Rapana (figure 6), who married Mata Kato, a descendent of Paora Torotoro (one of the five grantees). Due to his significant contributions to the Kohupātiki community, Rapana received land from two kuia (female elders); Warihia Ihukino and Paea Teaho, Paora Torotoro's daughters.

It is through Ihakara Te Tuku Rapana's relationship with Mata Kato that the current Rapana whānau are connected to Kohupātiki.



Figure 6. Ihakara (Ike) Te Tuku Rapana.

Tane-nui-a-rangi (Kohupātiki's Wharenui)

Tane-nui-a-rangi (figure 7) is over 100 years old (its centenary was celebrated in 2013). Of all the key features that exist on site, the wharenui is perhaps the most significant. Typical of most contemporary wharenui, Tane-nui-a-rangi sports a traditional gable roof, and is adorned with beautiful red carvings (figure 8), which in many instances depict the whānau genealogy of the Kohupātiki community. The wharenui is regularly used by whānau (and the wider community) for hui (gatherings), as well as tangihanga (traditional Māori funerals).



Figure 7. Tane-nui-a-rangi.



Figure 8. Poupou (carved wall slabs).

The Old Chadwick Homestead

The Old Chadwick Homestead (figure 9) was built towards the end of the 19th century. Initially a residence, the building had to be permanently vacated due to previous flooding issues caused by the Old Ngaruroro River. Following vacation, the building was used by whānau as a storage unit. Later on, the building was repurposed into a workshop, commonly utilised for the practicing of whakairo (traditional carving). A number of the carved panels that are found on Tane-nui-a-rangi were produced out of the Homestead.

Due to its old age (and perhaps under-maintenance) the building is currently in a poor state. Whānau (and in particular the Chadwick whānau) on a number of occasions have indicated an interest in its repair, and redevelopment.



Figure 9. The Old Chadwick Homestead.

Rapana (Robin) Road

Significant whānau action has been taken in exploring options for the development of a series of papakāinga, along Rapana Road (figure 10). The properties that make up Rapana Road belong to various descendants of Ihakara Te Tuku Rapana (mentioned earlier). Through their consultation with local council, and according to local District Plan regulations, whānau have established that 26 new homes are capable of being built along Rapana Road. This provides a significant design opportunity for the research.



Figure 10. Rapana Road.

The Old Ngaruroro River

The Kohupātiki community share a strong relationship with the Old Ngaruroro River (figure 11). This is primarily due to its previous role as a mahinga kai (a significant food gathering resource). From this river, previous tīpuna (ancestors) would gather fish, waterfowl, and plants. The river was also utilised by tīpuna as a means of commuting between various other marae (many marae were located next to the river).

Due to significant channelization the river is currently in a poor state, and its ongoing establishment by local council as a flood channel, continues to significantly impact the river's water flow, and quality, which as a result, has dramatically impacted the river's biodiversity. Species that once thrived in the river such as pātiki and matamata have mostly been lost.

As kaitiaki, the Kohupātiki community are very interested in the river's restoration, and over recent years, various individuals have committed their time and effort to consulting with local council, and developing restoration programmes and initiatives, to support the rehabilitation of the river.



Figure 11. The Old Ngaruroro River.

Road Access to Kohupātiki

Primary access to Kohupātiki (figure 12) is off Farndon Road, which is a significant connecting route, regularly used by motorists to get from Hastings to Napier (and also Clive). If coming from Hastings, the main entry is located immediately on your right after exiting off a bridge. As there is no turning bay or other measures put in place to allow motorists to pull over, entering Kohupātiki at times can be hazardous. Whānau on a number of occasions have expressed their concern over road access to Kohupātiki, and are interested in solutions.



Figure 12. Access to Kohupātiki.

Population Makeup

Kohupātiki is the home of around 40 whānau members. That population is made up of rangatahi (youth), pakeke (adults), and kaumātua (elders). Whilst the past has demonstrated that kaumātua have been Kohupātiki's primary inhabitants, over the years, the community has seen more and more of their younger whānau members either staying or returning to their tūrangawaewae (ancestral homeland).

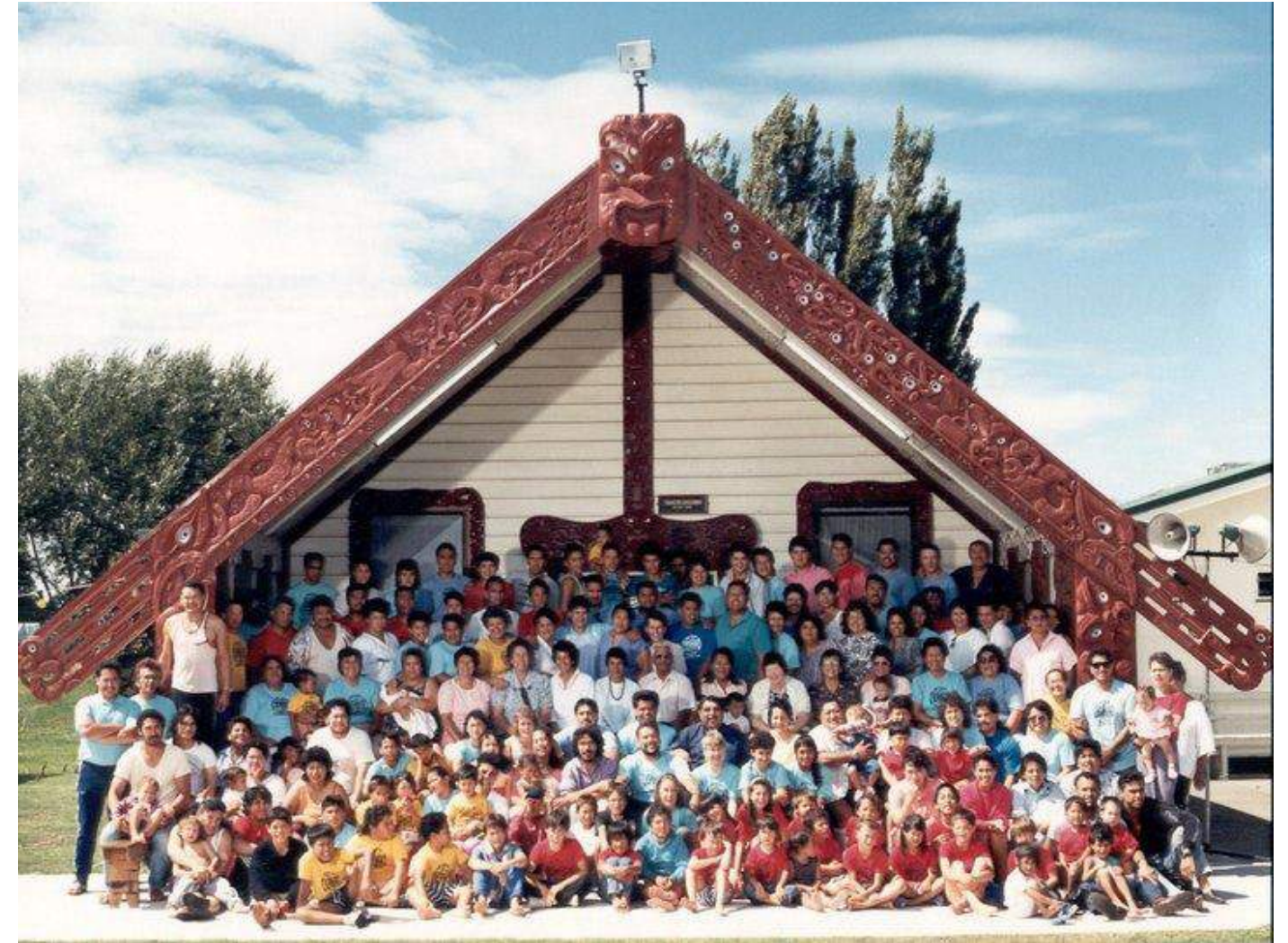


Figure 13. Whānau gathering in 1988.

Reflection

The contextual analysis exercise proved to be useful in building an understanding of Kohupātiki, its history, key features, and population makeup. Learning of its history and key features in particular presented a number of opportunities to further develop the research. For instance, through this exercise the research has established that whānau are interested in:

- Safer road access to the site
- The development of a series of papakāinga along Rapana Road
- The restoration and redevelopment of the Old Chadwick Homestead
- The restoration of the Old Ngaruroro River

Various learnings can also be utilised to help inform design decisions. For instance, the gable roof and whakairo found on Tane-nui-a-rangi have the potential to inform the design of future speculative buildings or structures developed later on in the research, as do historically and culturally significant species such as the pātiki and matamata, which could potentially influence formal design decisions.

This contextual analysis supports the addressment of Research Aim 02, in that it enables a better understanding of the Kohupātiki community, and their unique identity. Moving forward, the research looks to existing literature that discusses the participatory design process, and its employment within architectural practice. This is to support the addressment of Research Objective 01, which ultimately leads to the fulfilment of Research Aim 01.



Figure 14. Photo of tāhuhu.

03

Literature Review

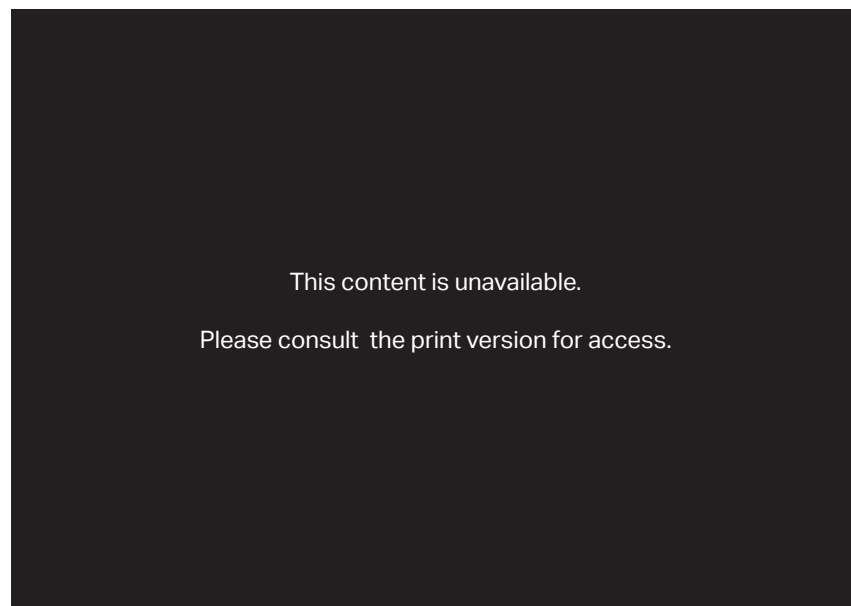
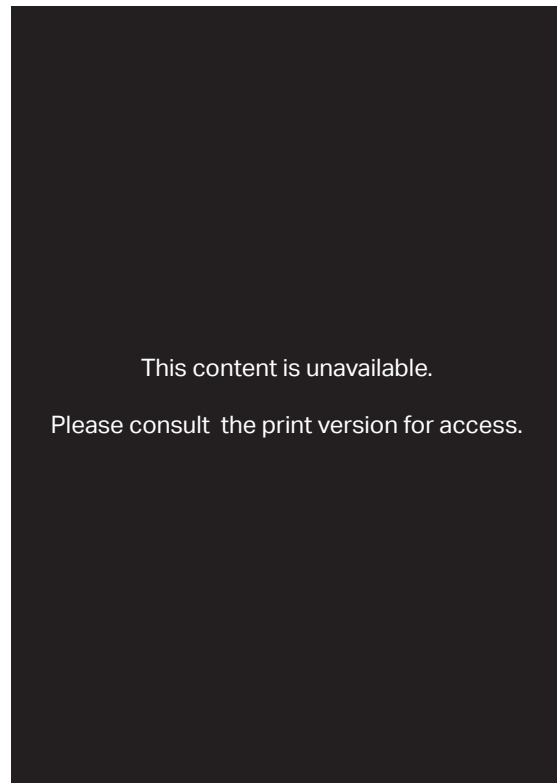
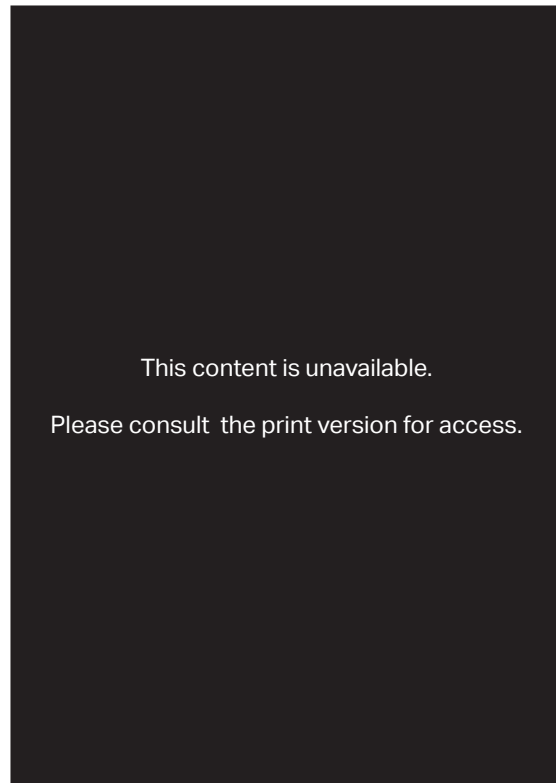


Figure 15. Selected texts for Literature Review.

Purpose of Chapter

To advance the research, a Literature Review was carried out. The Literature Review serves 2 key purposes. 1; to ground the research within an already existing body of knowledge (relating to the research's area of interest), and 2; support the addressment of the research's objectives (which ultimately lead to the addressment of the research's aims).

The Review begins by analysing a text by Arki_lab; an interdisciplinary urban design firm based in Copenhagen. Their text; *Building Cities With People-Democratic Urban Design* amongst other things discusses participatory design, and its employment within architectural practice. (Significant to addressing Research Objective 01).

Analysis continues by examining 2 final texts; *Ki te Hau Kainga- New Perspectives on Māori Housing Solutions*, by Rau Hoskins, Rihi Te Nana, Peter Rhodes, Philip Guy, and Chris Sage, and *Developing Māori urban design principles*, by Shaun Awatere, Shadrach Rolleston, and Craig Pauling (edited by Keriata Stuart and Michelle Thompson-Fawcett). Both texts offered valuable insights into the use of mātauranga Māori concepts and principles within the design process. (Significant to addressing Research Objective 02).

The chapter concludes with a reflection on the final outcomes of the Literature Review.

“When designing urban spaces, the focus should be put on engaging people in all the design stages. The attention of the architects and urban planners has to be shifted towards the processes of urban formation instead of being stationed on the final product.” (Frisk, Aarup Due, & Pilechian, 2015).

Building Cities With People- Democratic Urban Design

Arki_lab

Author: Rasmus Frisk

Co-Author: Thomas Aarup Due

Co-Author: Yalda Pilehchian

Research Objective Met: Research Objective 01- *Build understanding of participatory design processes, and its employment within architectural practice.*

Arki_lab are an interdisciplinary urban design firm based in Copenhagen. Most notable about their office is their people-centred approach to design. Their inclusion within the Literature Review was based on the fact that they 1; are an architecture practice, and 2; they actively employ participatory design practices within their projects.

In addition to their built works, Arki_lab are active contributors to the architectural research community, producing a number of papers relating to Democratic Design, community building and engagement, and tools for participatory design. Their paper, *Building Cities With People- Democratic Urban Design* provides a strong foundation for the research, as it provides significant insights into these concepts. (All very much relevant to the research).

Central to their attitudes for design, Arki_lab believe that it is paramount that end-users are engaged within the design process (at all stages), and they achieve this through the development of participatory design tools, which activate, educate, and engage the communities that they work with. This point is relevant to addressing Research Aim 01- *The development of participatory design tools.*

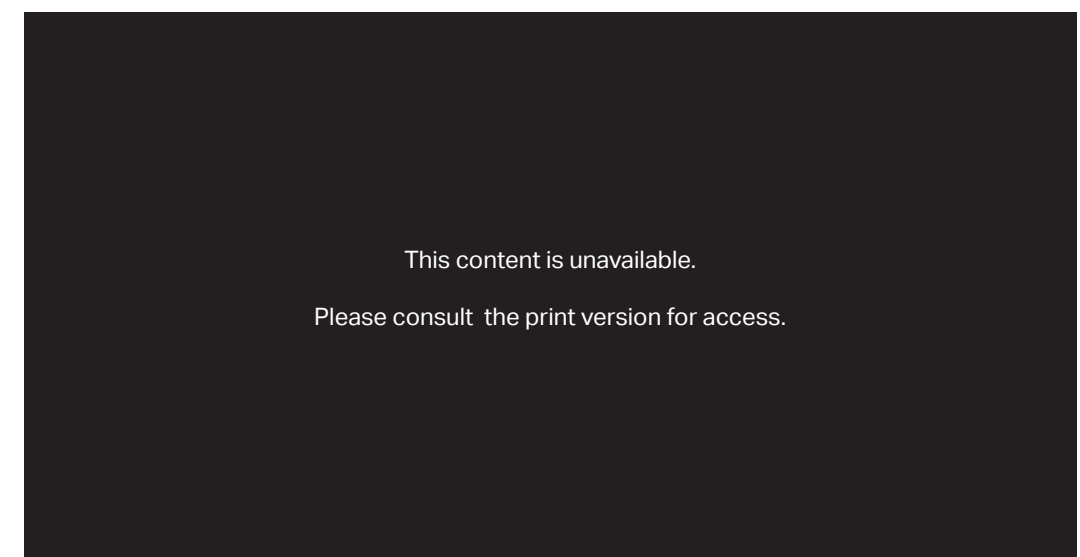


Figure 16. Arki_lab design team at planning workshop.

An example of their approach can be seen in the application of their Arki_nopoly board game (figure 17) that was developed to allow for community input within their projects. The design tool is ultimately used to extract information relating to a given site, and to help understand the practices of the people who use it. Also worth noting is the design tools flexibility (it can be reapplied for use in different projects), the playfulness it brings to the design process, and its ability to facilitate a collaborative process between a range of users (young and old).

The latter point is particularly relevant given the fact that Kohupātiki is made up of a range of demographics/ user-groups, from rangatahi, through to kaumātua.

Another one of their tools, the CoCityApp (figure 18) is a smartphone application that allows its users to develop speculative visions for their built environment through the method of digital collage. Upon completion, collages are uploaded to the web, and can be accessed by the public and more significantly, local government (the ultimate decision-makers). Significant about the tool is its easy to use interface, and its ability to connect members of the public up with local government.

The tool ultimately provides a platform for discussion surrounding the built environment, and supports decision-making relating to local government-driven projects and planning. Also worth noting is that the tool moves away from conventional methods of participatory design (such as questionnaires and surveys) and utilises technology as means of extracting information.

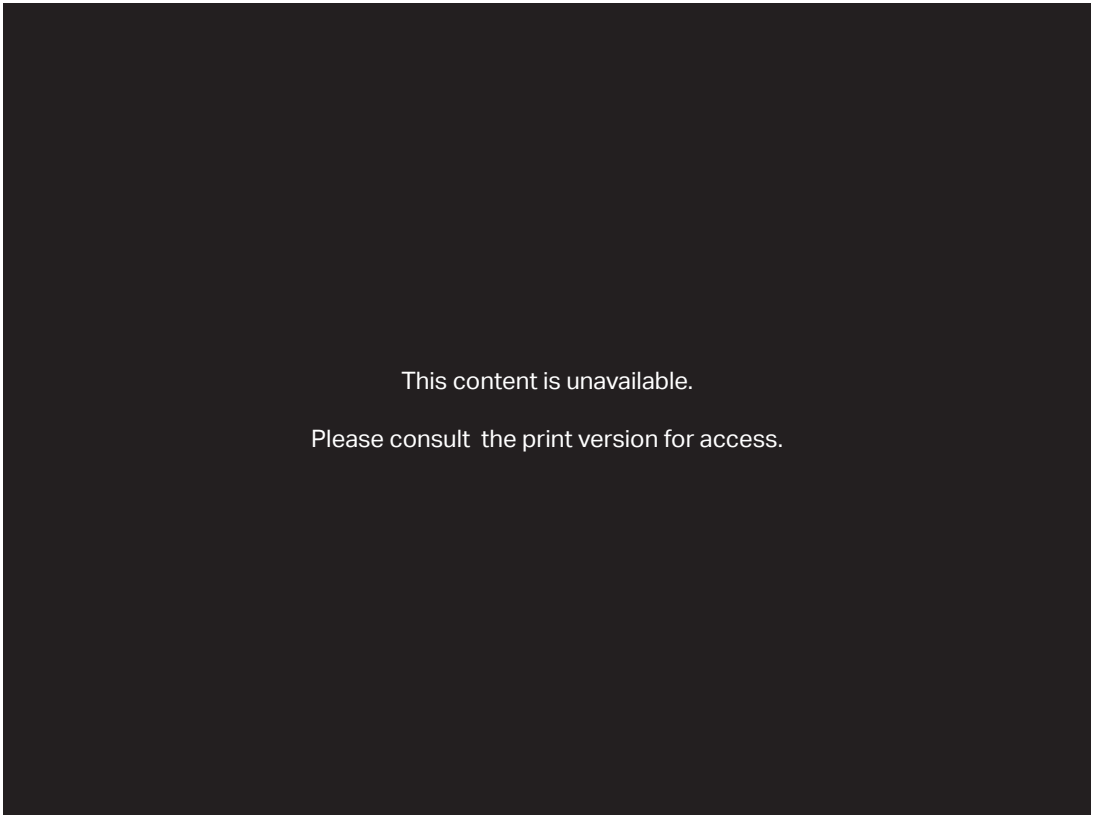


Figure 17. Arki_lab's Arki_nopoly Board Game.

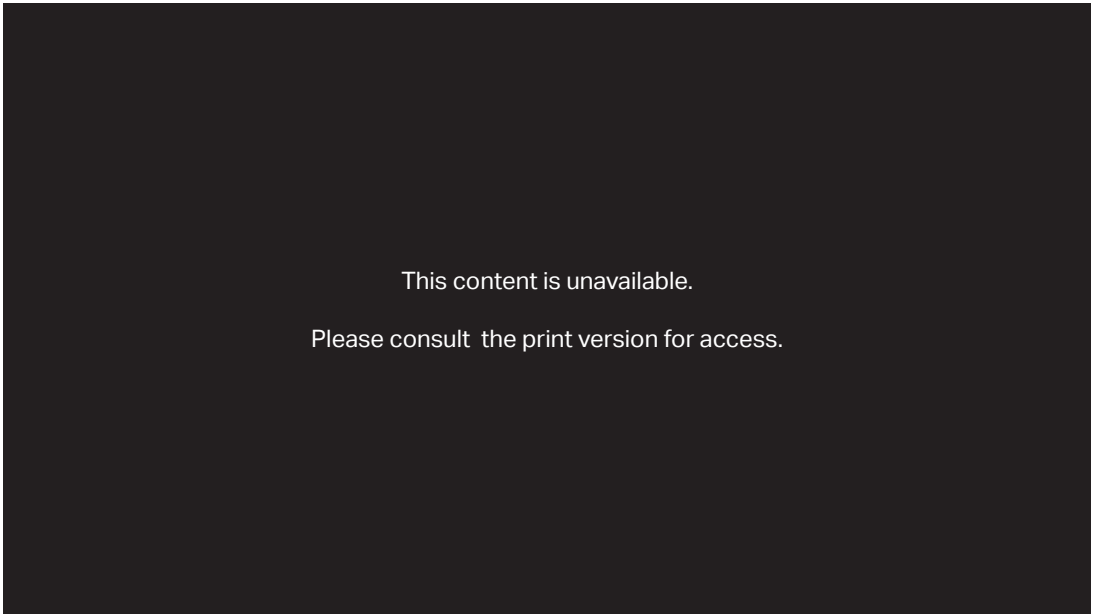


Figure 18. Arki_lab's CoCityApp.

The final design tool(s) to be discussed are Arki_lab's Arki_probes (figure 19), which are essentially a series of easy to use documenting and recording devices. The probes ultimately allow users to document their practices and behaviour when using space. Examples of some of these probes include printed questionnaires, maps (to draw on), dairies, and disposable cameras. Probes can either be used separately, or combined into what they call *probe-kits*, which can be designed to engage with different user-groups.

Although the probes represent a more traditional approach to participatory design, they are still an effective method of extracting valuable information. The successful application of one of these probes can be seen in a memory-dairy that was designed for a project that engaged the elderly. Elderly participants were asked questions relating to their life experiences living in a particular neighbourhood. The information was then used by the Arki_lab team to inform design decisions. The successful application of the memory-dairy is significant, as the elderly have been identified as a more difficult user-group to engage with.

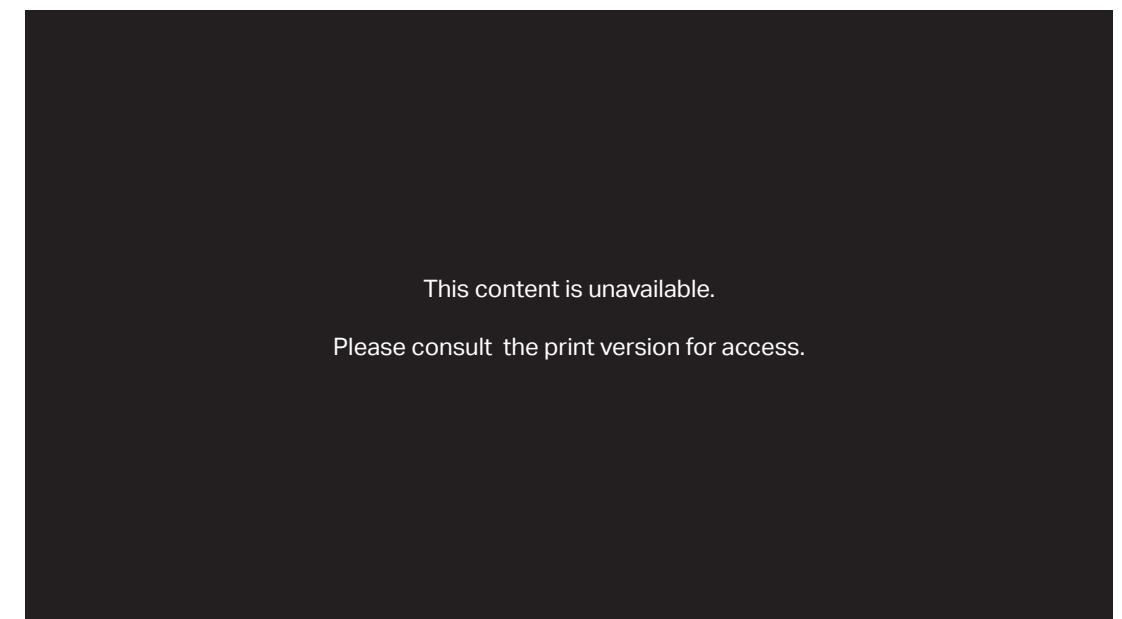


Figure 19. Arki_lab's Arki_probes.

Flexibility Playfulness Collaboration Ease of Use Innovation

Reflection

Examining this text proved to be a rewarding exercise, as through it, the research was able to establish a set of design principles to inform the development of the participatory design tools for the O.D.S, and the wider research. These principles are as follows:

Flexibility

Like Arki_lab's Arki_nopoly board game, the participatory design tools developed in this research must attempt to be flexible enough so that they can be used and reapplied to different situations and scenarios. (Projects, sites, etc.).

Playfulness

Again, like Arki_lab's Arki_nopoly board game, the participatory design tools developed in this research must attempt to bring an element of fun to the design process.

Collaboration

The participatory design tools developed in this research should facilitate a collaborative process, particularly between design professionals, and the whānau members (of Kohupātiki) being engaged with.

Ease of Use

The participatory design tools developed in this research should be easy to understand and use.

Innovation

Like Arki_lab's CoCityApp, the participatory design tools developed in this research should look to go beyond traditional methods of participatory design, such as questionnaires and surveys, delivering innovation to the existing approach.

Moving Forward

Whilst examining this text enabled a better understanding of the participatory design process (and its employment within architectural practice), it did not advance the research in terms of providing insights into the use of mātauranga Māori concepts and principles within the design process. (Significant to addressing Research Objective 02).

At this point, the research introduces 2 final texts; *Ki te Hau Kainga- New Perspectives on Māori Housing Solutions*, by Rau Hoskins, Rihi Te Nana, Peter Rhodes, Philip Guy, and Chris Sage, and *Developing Māori urban design principles*, by Shaun Awatere, Shadrach Rolleston, and Craig Pauling (edited by Keriata Stuart and Michelle Thompson-Fawcett). These texts support the addressment of Research Objective 02.

“In all cases, it is essential that Māori housing solutions are conceived, planned and delivered with the Māori community.” (Hoskins, Te Nana, Rhodes, Guy, & Sage, 2002).

Ki te Hau Kainga- New Perspectives on Māori Housing Solutions

Author(s): Rau Hoskins, Rihi Te Nana, Peter Rhodes, Philip Guy, and Chris Sage

Research Objective Met: Research Objective 02- *Build understanding of mātauranga Māori concepts and principles, and their employment within the design process.*

Advancing the research required a built understanding of mātauranga Māori concepts and principles, and their employment within the design process. This was necessary, as the community being engaged with for this research was largely Māori.

Māori of course have a complex understanding of life, and the universe, which is heavily influenced by a number of principles (cultural and spiritual in nature). They also share a unique relationship with the land, one that is primarily influenced by the principle of Kaitiakitanga (guardianship of the land).

In an effort to understand these principles and concepts further, the research firstly looked to *Ki te Hau Kainga- New Perspectives on Māori Housing Solutions* (KTHK).

The primary purpose of KTHK is to provide consultation and design advice to support designers (who primarily come from western backgrounds) when working with mana whenua.

KTHK offers some useful insights into how current design practice engages with mana whenua, and the intention in analysing this text is to understand how mātauranga Māori concepts and principles can inform design process.

In addition, the research is also interested in how those same ideas might be integrated with concepts relating to Participatory Design, in an effort to speculate on a new whānau-based design process, that architects and designers could potentially consider using when working with mana whenua.

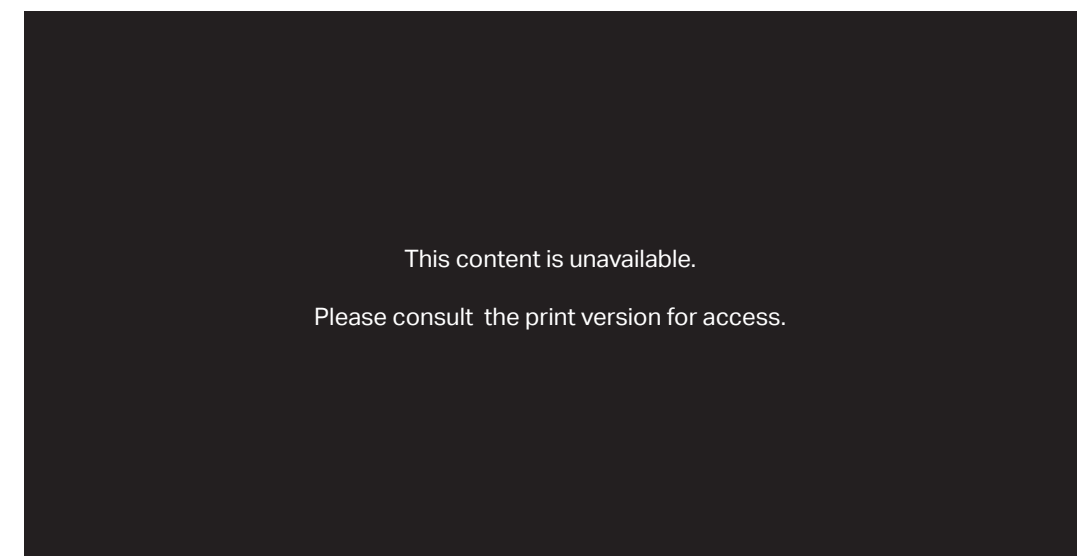


Figure 20. Design session with scaled model.

“Designers should be skilled in cultural and community design processes. The use of physical models is highly recommended for facilitated community design workshops.” (Hoskins, Te Nana, Rhodes, Guy, & Sage, 2002).

KTHK establishes a set of General Planning Principles for architects and designers to consider, when working with mana whenua. Some of these planning principles relate to building orientation, maximising spaces for communal use, and providing space to allow for future extensions and additional dwellings.

The document also details Specific Design Issues that should be addressed through design. These culturally specific design issues largely relate to planning (figure 22), flexibility of spaces, *Manuhiri Zones* (figure 24), and Tapu and Noa cultural sensitivities (figure 25).

The text concludes by providing a series of design concepts (figure 21); developed with the previously discussed planning principles and design issues in mind.

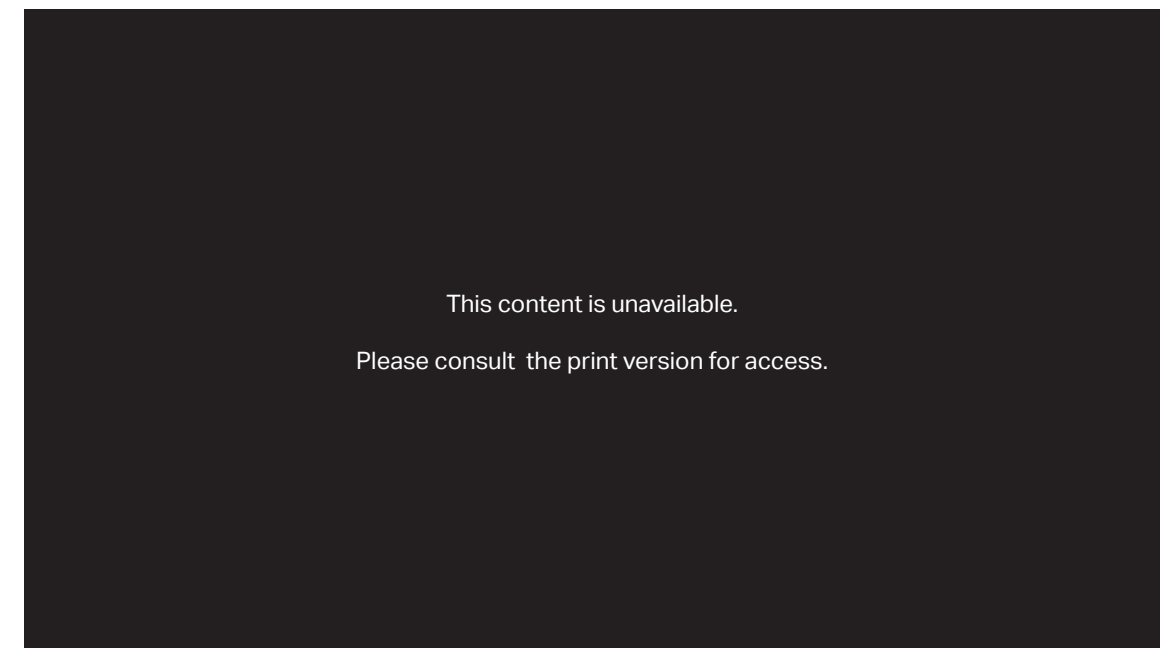


Figure 21. Housing design concept.

Planning

The document provides a series of General Planning Principles for designers to consider when designing, many of which most designers will already be familiar with. It suggests that:

- The length of buildings be oriented to the north
- Open and accessible space be maximised to the north
- Dwellings be grounded and connected to the site for ease of access
- Outdoor spaces be sheltered from prevailing winds
- Overall masterplanning consider future extensions and future additional dwellings

Although most designers will already be familiar with the previously stated principles, they are still useful to whānau members who will be attending the Open Design Studio, to assist them with their designing.

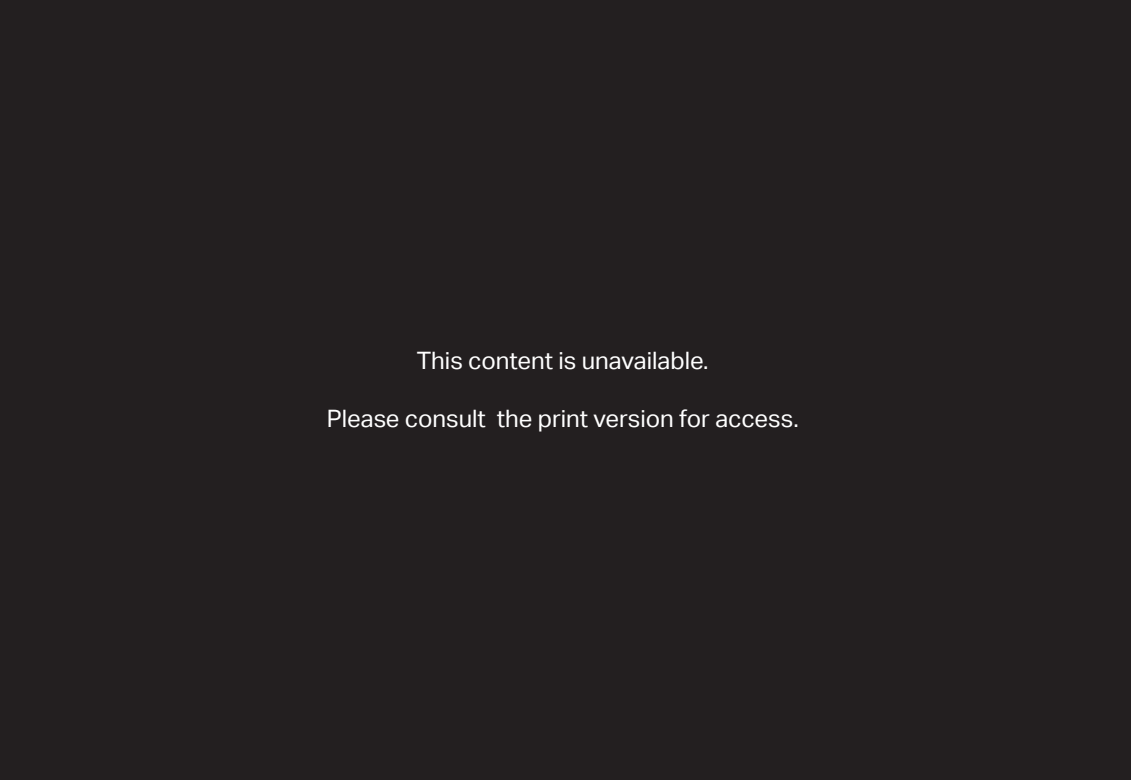


Figure 22. Sketch plan of single dwelling.

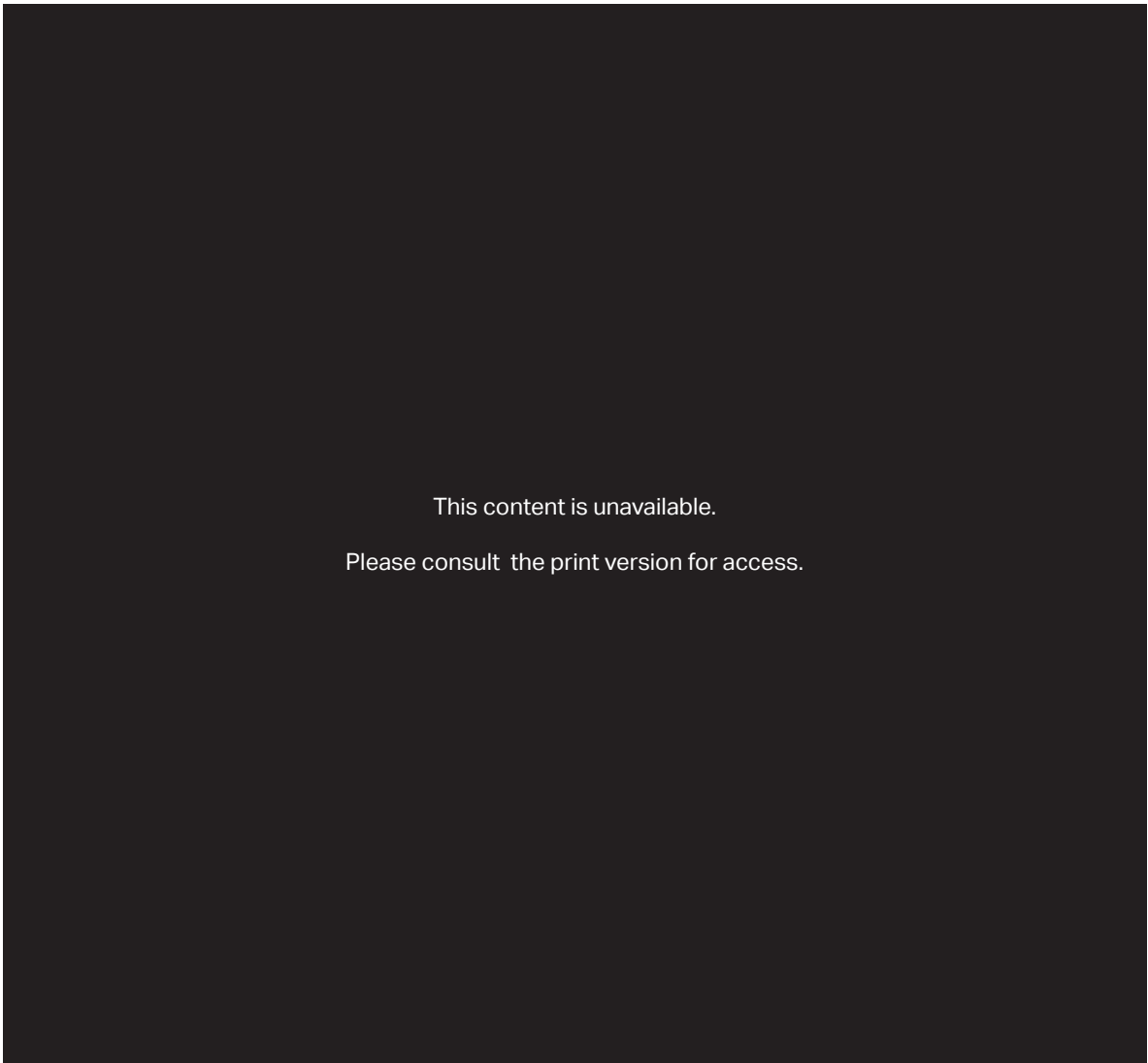


Figure 23. Housing design concept- Floor Plan.

Flexibility of Spaces

The document recommends that designers consider space flexibility to accommodate the changing needs of whānau. It suggests that bedrooms be generously sized to allow for greater capacities, and that solutions such as removable walls be explored. It also discusses the planning of a sleep out.

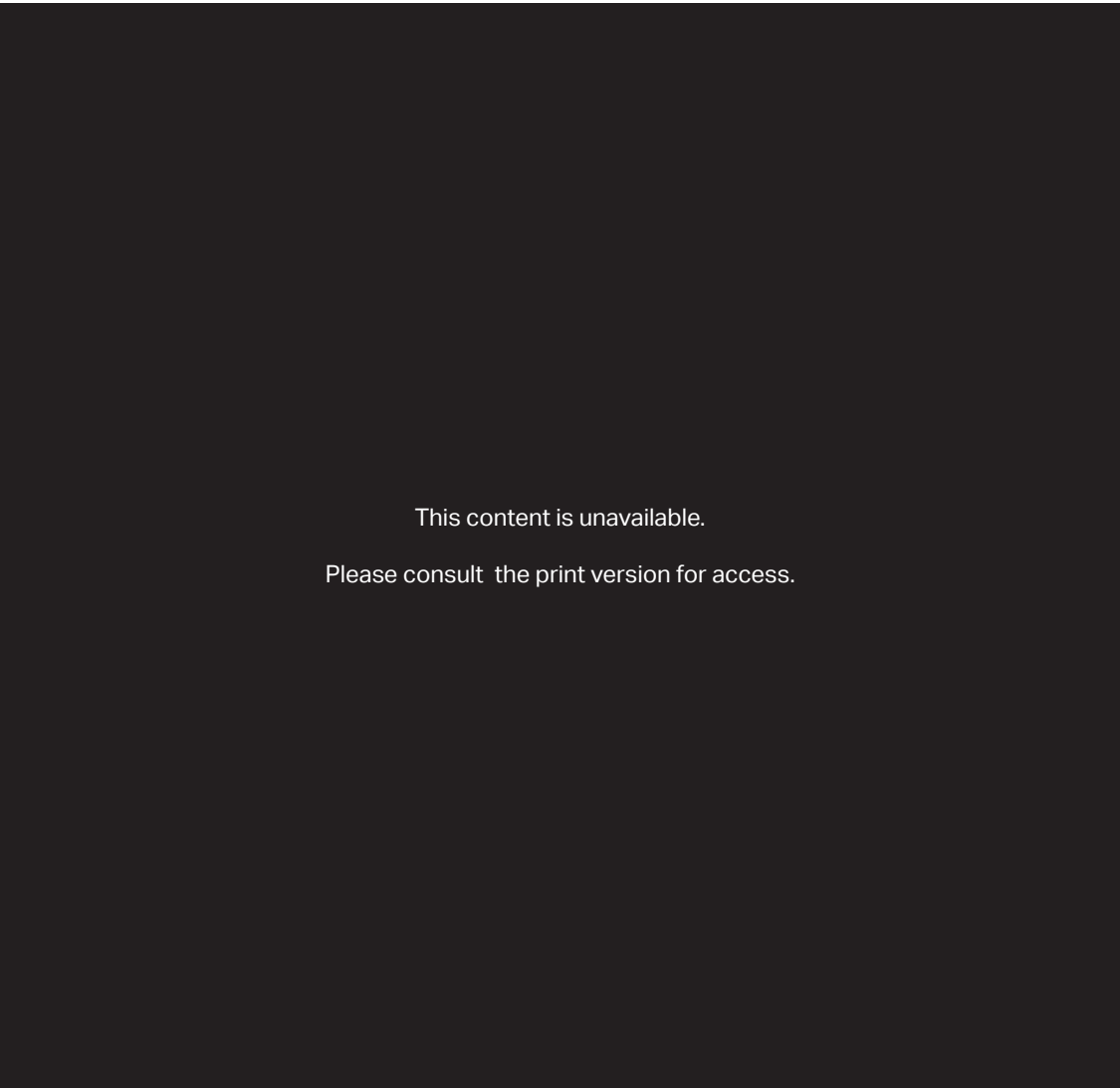


Figure 24. Diagram illustrating zones for manuhiri and tamariki.

Manuhiri Zones

The document encourages designers to consider the provision of spaces to accommodate manuhiri (guests) in the event of hui and tangihanga. This consideration is particularly appropriate given the regular use of Kohupātiki Marae, the close proximity of whānau housing, and the community’s proud history as excellent hosts of guests and events.

Tapu and Noa Cultural Sensitivities

Traditional Māori protocol dictates that certain spaces within a home be kept separate from one another. This is to protect the tapu (or sacred) nature of specific spaces. For instance, it is undesirable to locate laundry facilities near a kitchen. This is because food (typically found in kitchens) is considered as tapu, and to locate a laundry within close proximity would compromise it.

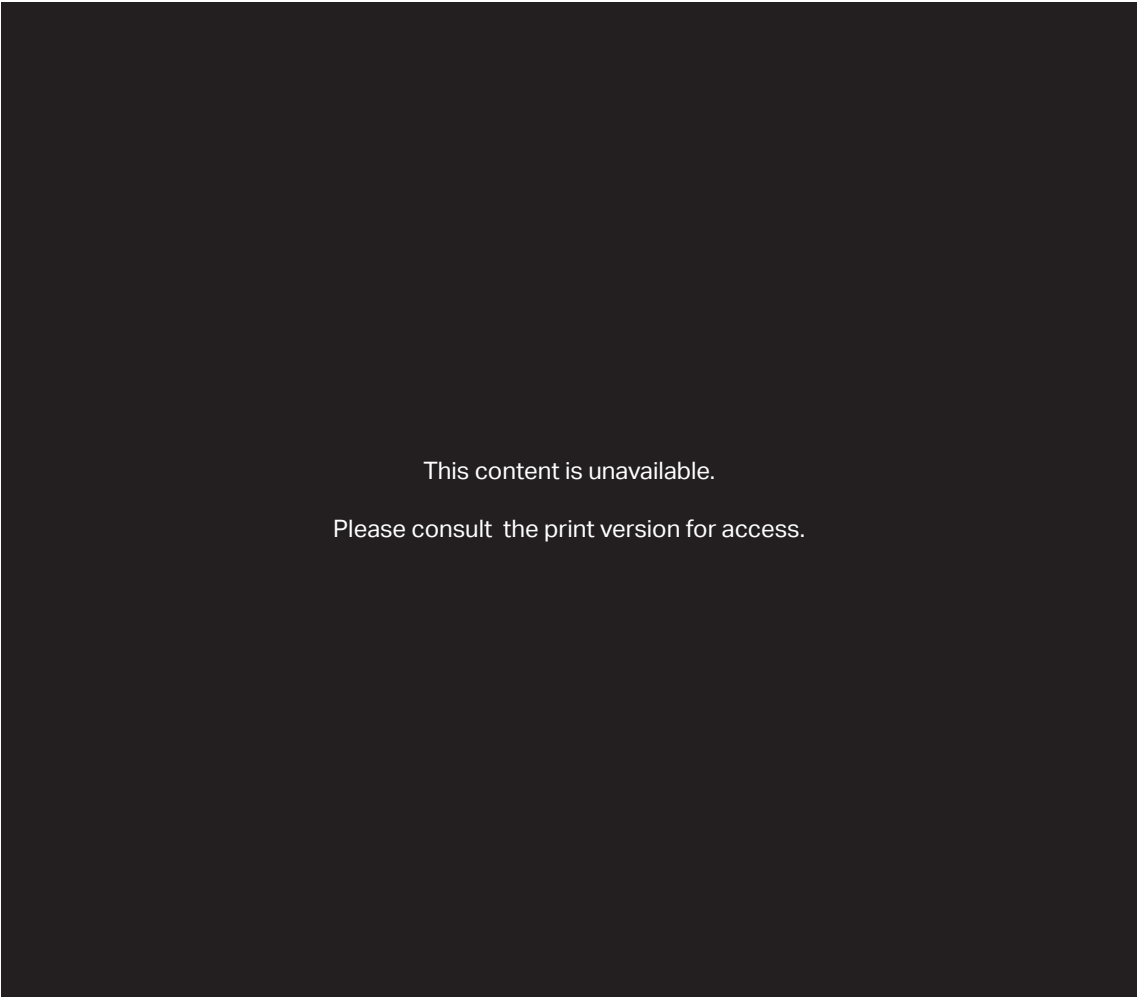


Figure 25. Table illustrating tapu and noa relationships.

Reflection

Like *Building Cities With People- Democratic Urban Design*, KTHK highlights the importance of engaging whānau members within the design process. This is significant as we can start to establish a relationship between the 2 texts; one with shared values.

Examining this text proved to be a useful exercise, and has inspired the development of what the research will call the *Design Assistant* (figure 26), a new design tool for the O.D.S. This *Design Assistant* utilises those important planning principles discussed in KTHK to create a tool that will assist whānau members with their designing, at the O.D.S.

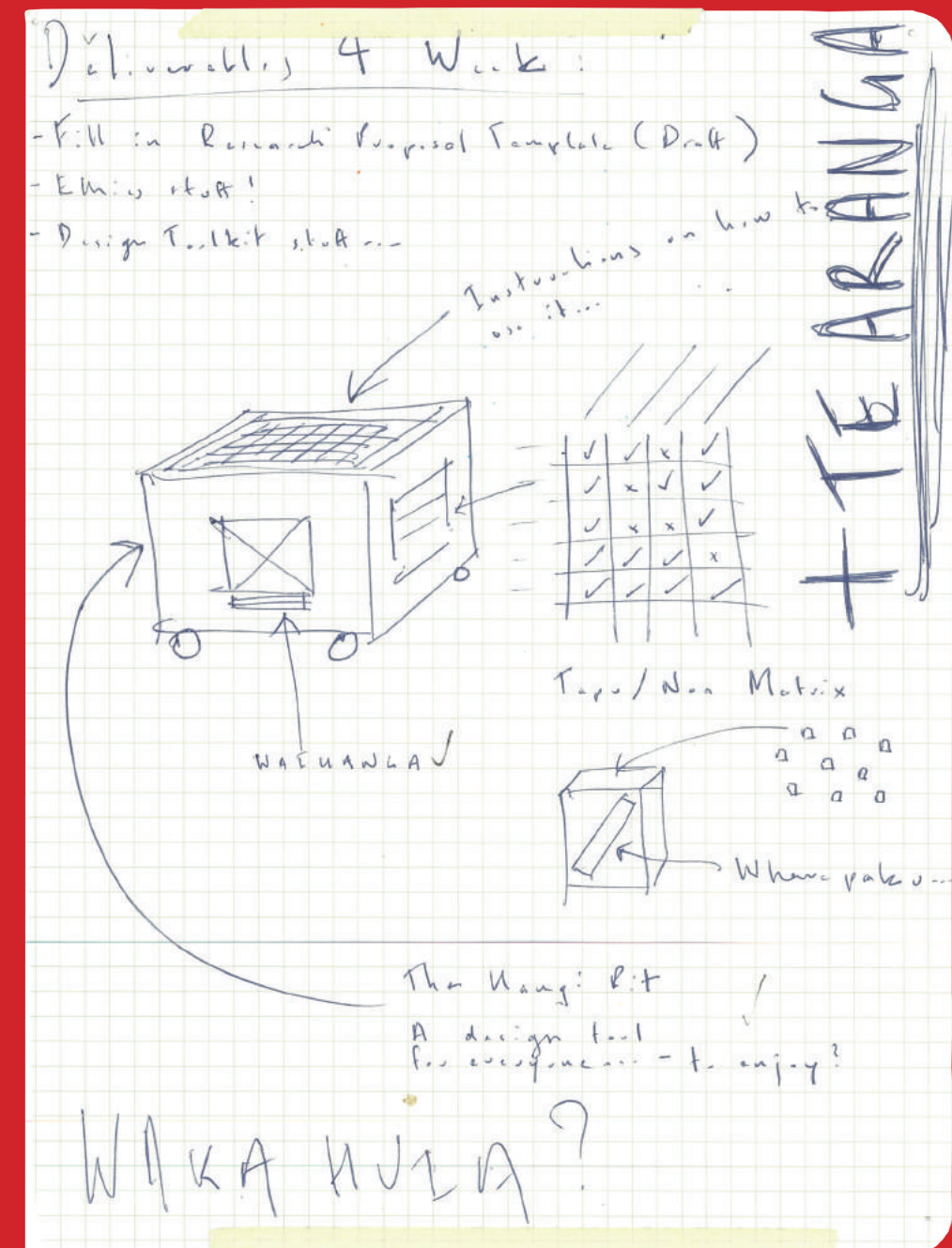


Figure 26. Early sketches for the Design Assistant.

Moving Forward

Examining KTHK set a foundation for addressing Research Objective 02, which related to building an understanding of mātauranga Māori concepts and principles, and their employment within the design process.

In an effort to understand these concepts and principles further, the research examines a final text; *Developing Māori urban design principles*, by Shaun Awatere, Shadrach Rolleston, and Craig Pauling, and edited by Keriata Stuart and Michelle Thompson-Fawcett.

The text is an invaluable resource, as it explicitly discusses how mātauranga Māori principles such as Kotahitanga, Wairuatanga, Manaakitanga, etc. can inform design process and the design of the built environment.

The intention in examining this text was not only to address Research Objective 02, but also to develop more design tools for the O.D.S.

"Urban development that fails to recognise and deal with issues concerning cultural perspectives and aspirations can lead to large inequities between Māori and non-Māori in terms of home ownership and standards of housing." (Awatere, Rolleston, & Pauling, 2010).

"Development of Māori urban design principles is a new approach to finding solutions to these issues. Applying Māori urban design principles by whānau, hapū or iwi in papakāinga is one way to tackle the problems of inequity and of inadequate Māori housing." (Waldgrave, King, Walker, & Fitzgerald, 2006).

Developing Māori urban design principles

Author(s): Shaun Awatere, Shadrach Rolleston, and Craig Pauling

Research Objective Met: Research Objective 02- *Build understanding of mātauranga Māori concepts and principles, and their employment within the design process.*

Developing Māori urban design principles is a relatively new concept being discussed within New Zealand architectural discourse. In this text, Shaun Awatere, Shadrach Rolleston, and Craig Pauling discuss how these Māori principles (such as Kotahitanga, Wairuatanga, Manaakitanga, etc.) can inform design process, and the design of our built environment.

It should be noted that whilst the authors have associated these principles with the urban environment, their application is also very much applicable to a rural setting (hence why this text is being examined).

The purpose of examining this text (and in particular, the Māori principles discussed within it) was to further understand the use of mātauranga Māori concepts and principles within the design process (relevant to addressing Research Objective 02), and further develop a criteria for assessing the final outcomes of the research. In addition, it was thought that examining this text would lead to the development of more design tools for the O.D.S, and the wider research.

Māori Design Principles

Significant to this research, is the authors’ discussion surrounding the use of mātauranga Māori principles for urban planning and the shaping of the built environment. The authors suggest that this development approach has the potential to support design outcomes that align with and capture the cultural perspectives and aspirations of Māori.

In the table that follows (figure 27), the authors establish these mātauranga Māori principles, elaborating further by discussing their translations, descriptions, purposes, and potential design responses. For instance, the authors propose that an appropriate design response to the principle of Kotahitanga might be a community centre, or an amphitheatre.

Important to note at this point is that the principles displayed in this table and their various translations and design responses should not be considered as fixed, but more so as flexible. This is because different Māori communities will have their own unique understandings and interpretations of each principle.

What this table does effectively is provide a foundation for discussion amongst design professionals (who perhaps have little knowledge of these concepts) and Māori, which is its real value.

Principle	Translation	Description	Purpose	Responses
Kotahitanga	Cohesion and collaboration	Collective cooperative and effective partnerships and collaboration with community	To encourage community unity and identity	Providing a community centre, amphitheatre, community facilities, parks, reserves, walkways, good access links between spaces
Wairuatanga	Embedded emotion/ spirit	Emotional connection with the environment that links people	To maintain and preserve the essence of tangata whenua	Site orientation to landmarks important to tangata whenua, site lines, environmental restoration projects
Manaakitanga	Hospitality and security	Acceptance and hospitality given to visitors, and protection and security of the community	To embrace and welcome all peoples, especially visitors, and to provide a safe and secure community environment	Restoring and accessing traditional medicinal and food resources, communal gardens, designing communities using CPTED (crime prevention through urban design) principles
Whanaungatanga	Participation and membership	Participation and membership in the community and social setting	To encourage community participation and pride through building and emphasising community identity	Providing communal facilities, community centres, communal laundromats, open reserves, parks, communal gardens, common and civic spaces reflecting local identity
Kaitiakitanga	Guardianship and stewardship	Protection of significant landscape features important to the local community	To support the protection of important environmental and cultural features through community ownership and collective responsibility	Providing on-site mitigation for water, recognition and protection of spiritual guardians, restoration of waterways and natural areas, cluster buildings to maximise communal reserves and the natural environments
Rangatiratanga	Leadership, identity and self-determination	Communities can lead and take responsibility for creating and determining their own future	To promote self-determination and independence	Being able to live and work from home, mixed high density living environments, clustering of dwellings, providing heritage markers (pou)
Mauritanga	Essence/ life-force	Life-force or essence of a natural environment	To identify and promote the maintenance or restoration of mauri	Community monitoring of the natural environment, swale systems for stormwater, rain-tank collection systems, grey-water recycling systems, passive solar design
Orangatanga	Health and well-being	Maintain health and wellbeing of the community	To promote environmental protection and a safe community	Developing restoration projects, maintaining community access to resources (flax, eels, waterways etc), indigenous flora on public and encouraged on private space, encouraging walking and cycling by linking spaces, traffic calming measures, CPTED principles, ensuring public transport is available
Mātauranga	Knowledge and understanding	Understanding of community history, identities, character	To encourage community understanding and pride through shared knowledge	Education promotions, interpretation boards, heritage markers (pou), heritage trails

Figure 27. Māori urban design principles from *Developing Māori urban design principles*.

Utilising These Principles

To develop the research, a number of the previously discussed mātauranga Māori principles were selected (see figure 28). This includes Kotahitanga, Whanaungatanga, Rangatiratanga, and Mātauranga. These selected principles were considered most relevant in informing a speculative whānau-based design process for the research. They can also be used as an additional criteria, to assess the success of final design outcomes.

Principle	Translation	Description	Purpose	Responses
Kotahitanga	Cohesion and collaboration	Collective cooperative and effective partnerships and collaboration with community	To encourage community unity and identity	Providing a community centre, amphitheatre, community facilities, parks, reserves, walkways, good access links between spaces
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Mātauranga	Knowledge and understanding	Understanding of community history, identities, character	To encourage community understanding and pride through shared knowledge	Education promotions, interpretation boards, heritage markers (pou), heritage trails

Figure 28. Selected principles most relevant to research.

Reflection

Conducting this Literature Review has supported the advancement of the research by grounding it within an already existing body of knowledge (relating to participatory design processes and tikanga Māori in architectural design practice), and supporting the addressment of a number Research Aims & Objectives.

Examining *Building Cities With People- Democratic Urban Design* enabled a better understanding of the participatory design process, and resulted in the establishment of a series of design principles to help inform the development of future participatory design tools for the Open Design Studio. These design principles included flexibility, playfulness, collaboration, ease of use, and innovation. Analysing this text supported the addressment of Research Objective 01.

Ki te Hau Kainga provided useful insights into the use of mātauranga Māori concepts and principles within the design process. Its discussion relating to the consideration of General Planning Principles and Specific Design Issues for Māori housing led to the ideation of the *Design Assistant*, a design assisting tool for whānau participants to utilise at the Open Design Studio. Also worth noting is its recommendation for the use of physical models, which suggests that the research is on the right track. Analysing this text supported the addressment of Research Objective 02.

Finally, *Developing Māori urban design principles* enabled the establishment of a series of Māori design principles to help advance the research, and support the development of the whānau-based design process that it aims to achieve. These principles included Kotahitanga, Whanaungatanga, Rangatiratanga, and Mātauranga. Like KTHK, analysing this text supported the addressment of Research Objective 02.

Proceeding into the next chapter, *Tools for Participation*, the research introduces the various participatory design tools developed as a result of this Literature Review. The development of these design tools and their utilisation is fundamental to addressing Research Objective 02, and Research Aim 02.

KOTAHITANGA
WAIWUATANGA
MANAAKITANGA
WHANAUNGATANGA
KAITIAKITANGA
RANGATIRATANGA
MAURITANGA
ORANGATANGA
MĀTAURANGA

04

Tools for Participation

Purpose of Chapter

By conducting the previous Literature Review, we were able to understand the participatory design process, and its employment within architectural practice. In building this understanding, Research Objective 01 was addressed.

This next chapter details the various participatory design tools that were primarily developed out of the examination of literature that took place in the previous chapter (figure 30). Production of these tools supports the addressment of a number of Research Aims & Objectives including Research Objective 02, and Research Aim 02.

The chapter provides a brief description of each tool, discussing their purpose, and also how their development was informed by the literature in the previous chapter.

Tools for Participation



03. Drawing & Physical Modelling Station

02. Question Boards

01. Questionnaires

06. Design Assistant

07. *The Hāngi Pit*- Planning Tool- Koro Matthew

05. Inspiration Board- Images of Existing Projects

07. *The Hāngi Pit*- Planning Tool- Papa Robert

04. Drawing Station

07. *The Hāngi Pit*- Planning Tool- Koro Peter



Figure 31. Information Board.

Information Board

The Information Board effectively provided some context for whānau members/ participants, and detailed information relating to the research (Research Questions, Aims, Objectives, relevant literature, etc.).

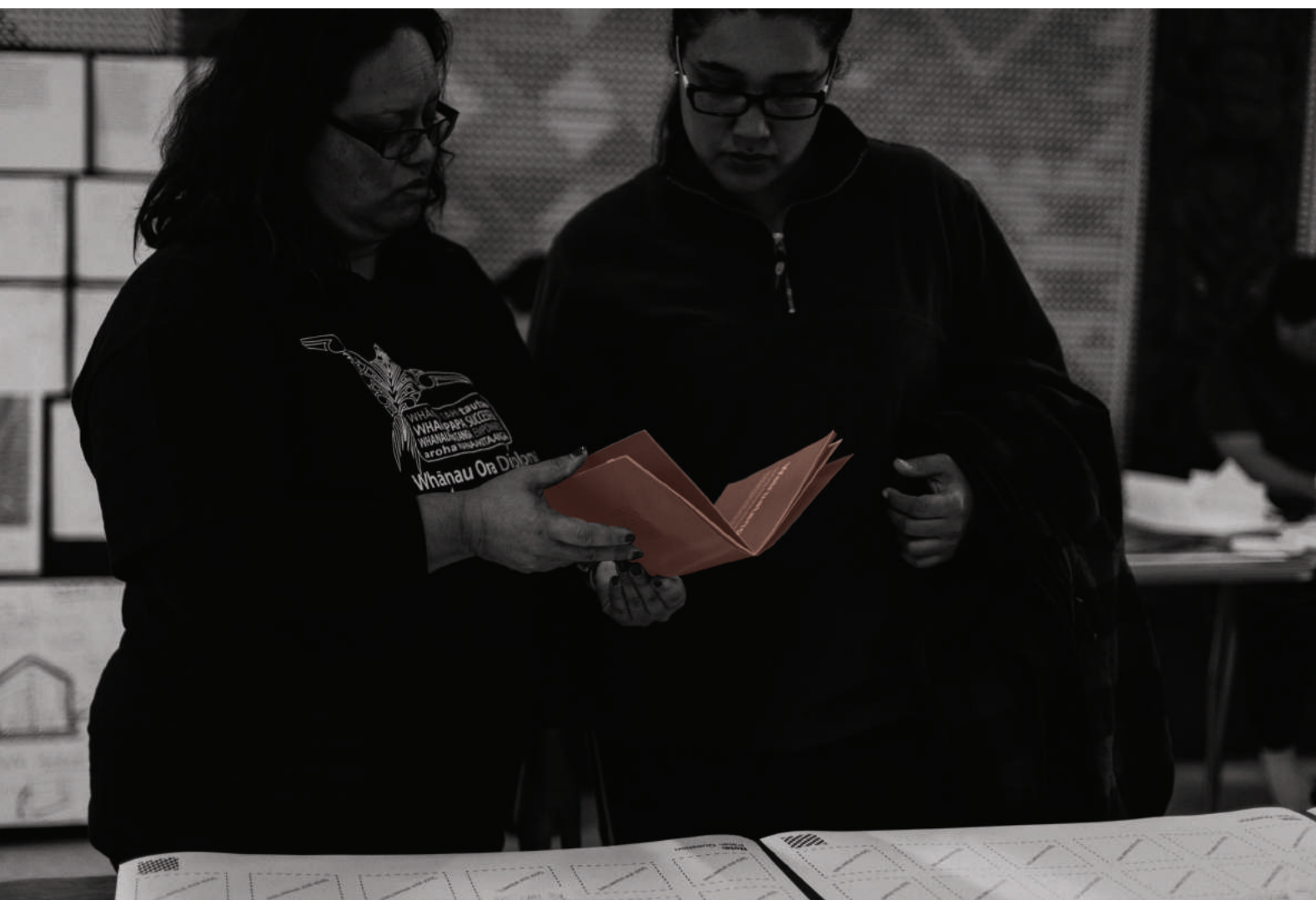


Figure 32. Questionnaire.

Questionnaires

Fifteen Questionnaires were sent out prior to the O.D.S. The intention was that answering the Questionnaire would serve as a warm-up exercise prior to the O.D.S, and give whānau members an idea of what to expect at the event. The continuing pages detail Questionnaire content.



Figure 33. Questionnaire Spread (01).

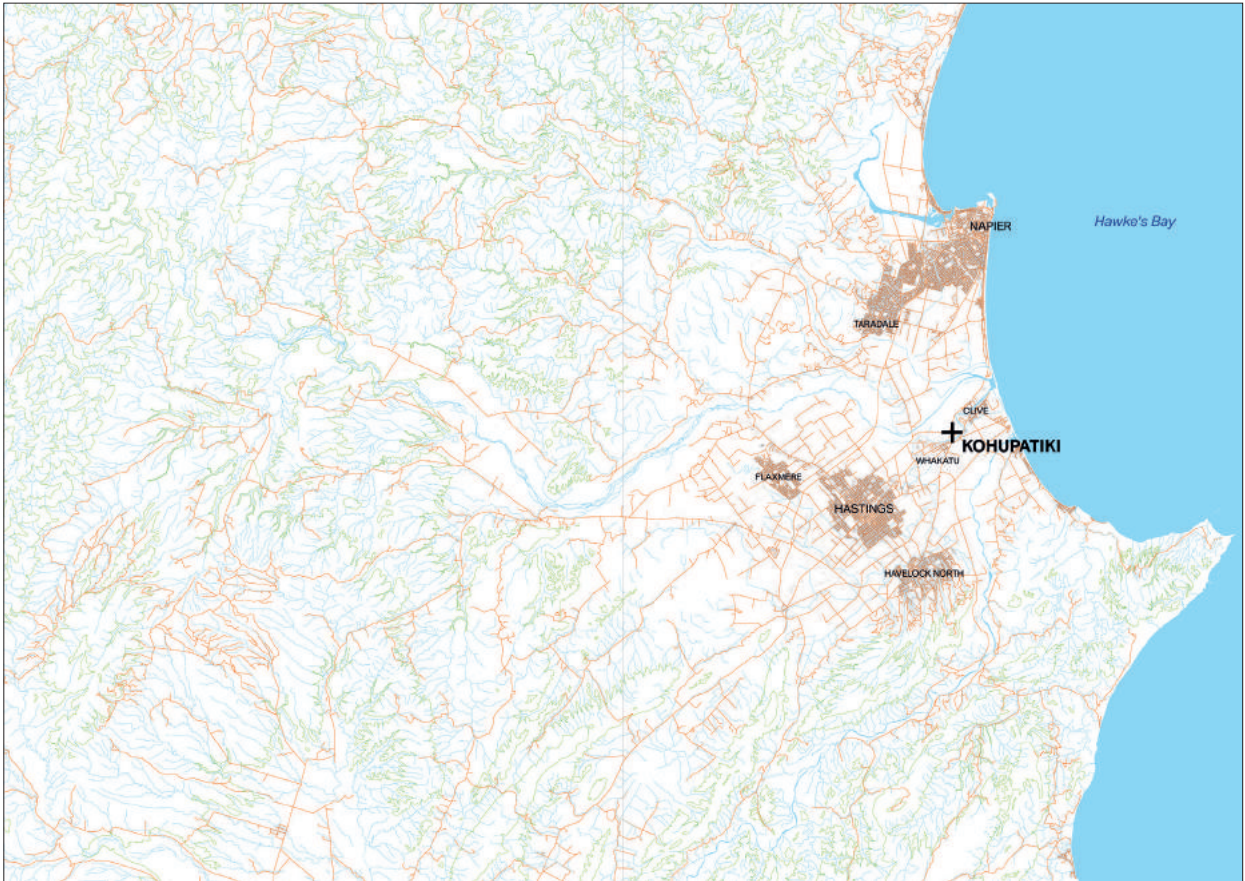


Figure 35. Questionnaire Spread (03).



Figure 34. Questionnaire Spread (02).



Figure 36. Questionnaire Spread (04).

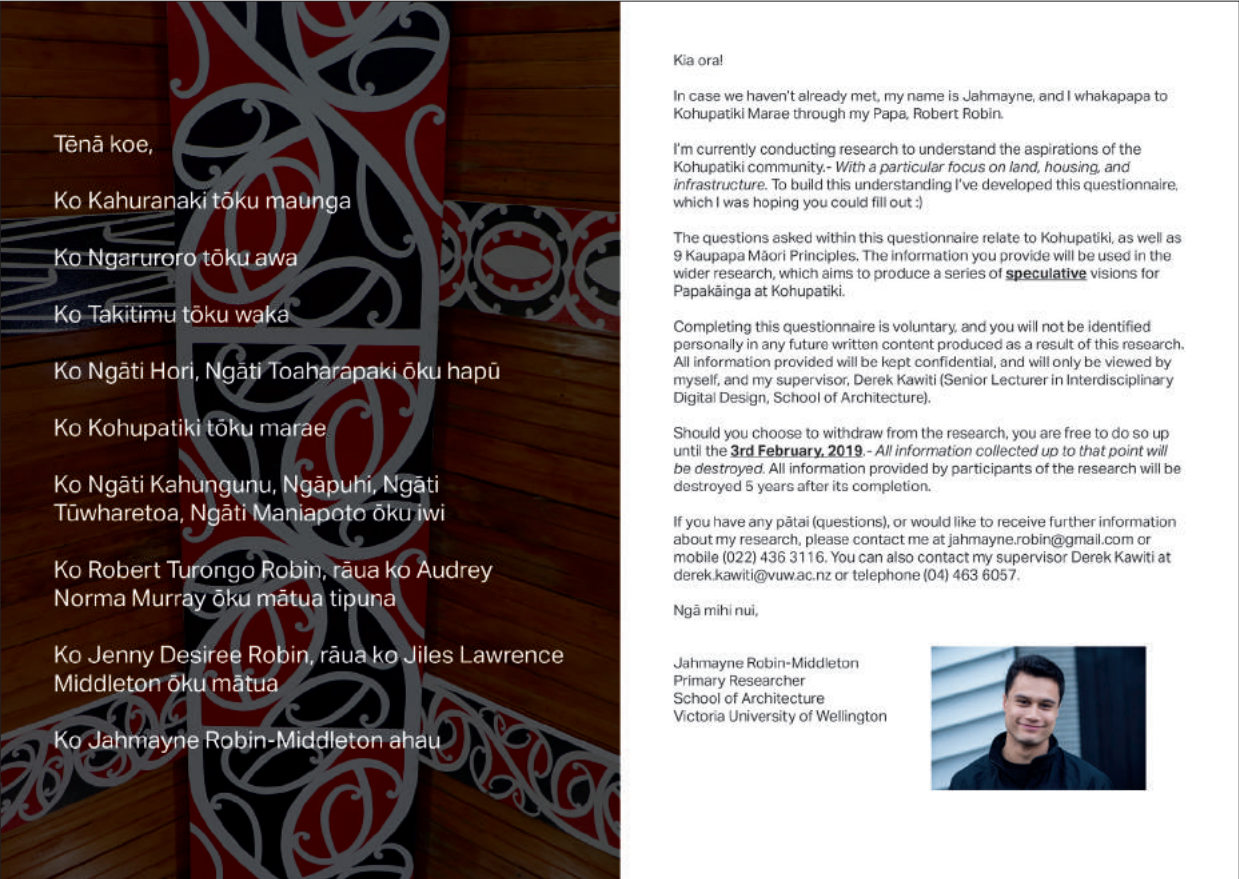


Figure 37. Questionnaire Spread (05).



Figure 39. Questionnaire Spread (07).

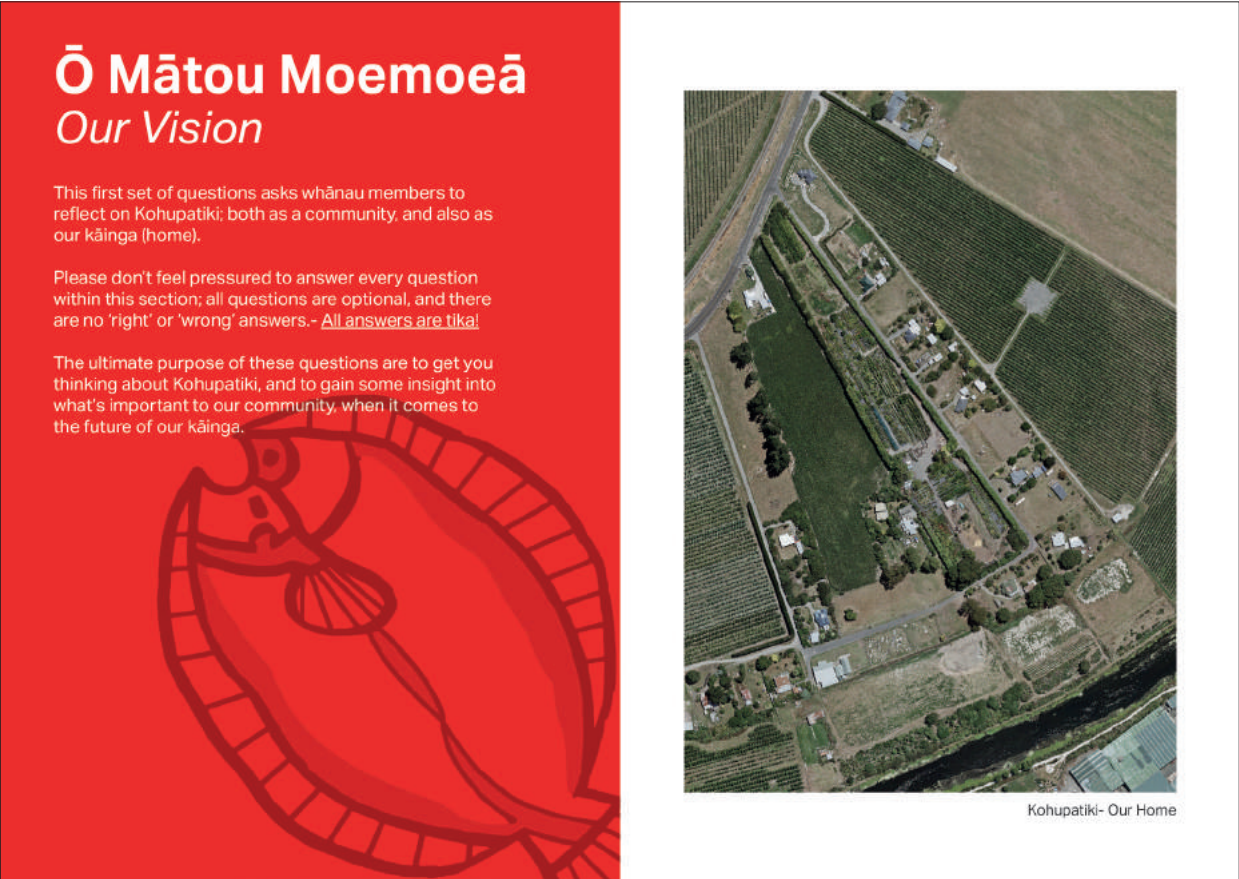


Figure 38. Questionnaire Spread (06).

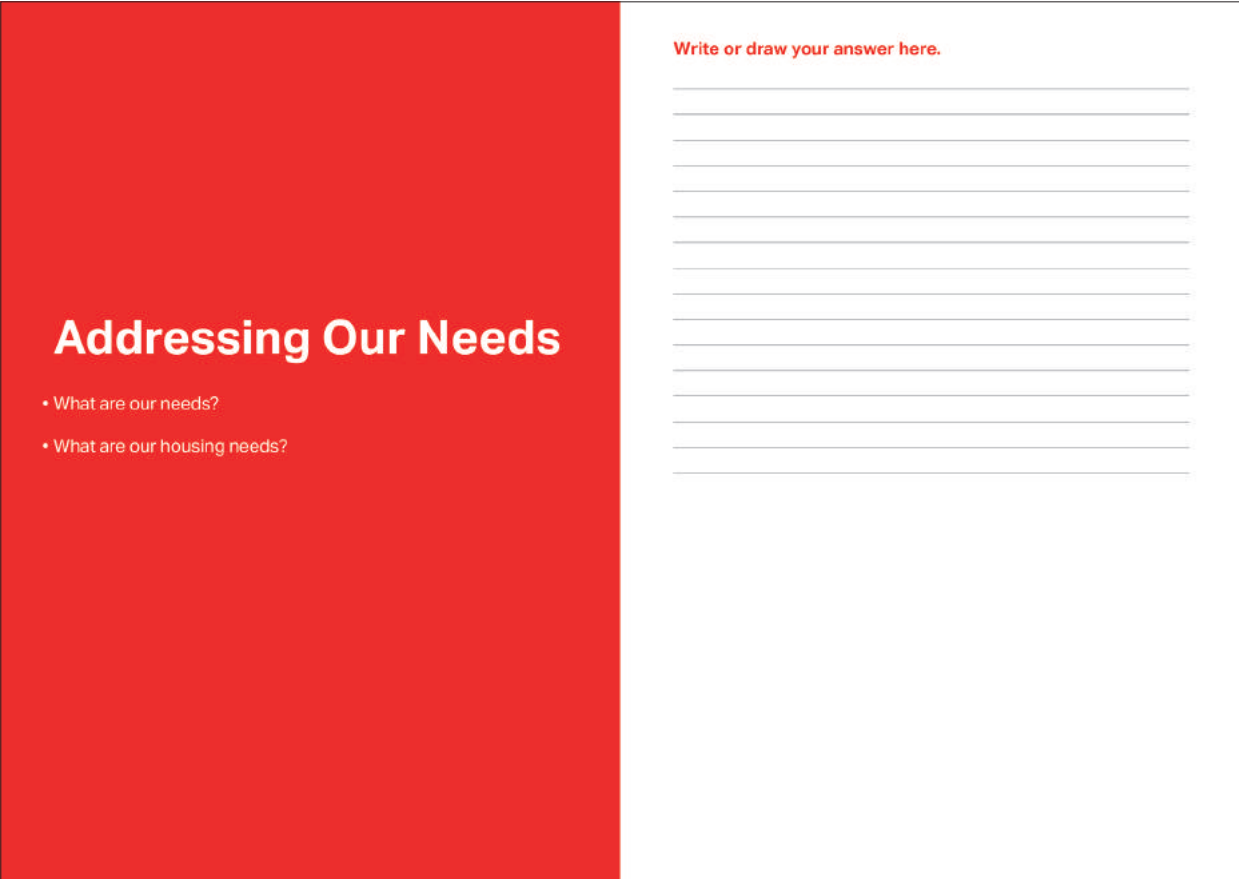


Figure 40. Questionnaire Spread (08).

Creating a Vision for Kohupatiki

- Describe or draw your future vision for Kohupatiki.
- Considering the future, who will be living at Kohupatiki?
- How will they be living?
- How might living at Kohupatiki differ from living somewhere else?
- How might we reflect our identity within our built environment and landscape?
- How can we effectively manifest mātauranga Māori within our built environment?
- What are our key aspirations and drivers for this project?

Write or draw your answer here.

Kotahitanga

The principle of kotahitanga relates to the ideas of unity, togetherness, collaboration, and collective action.

Reflecting on this principle, how might kotahitanga inform our practices as a community?

What steps might we take to promote better collaboration amongst our whānau, and also the wider community?

Write or draw your answer here.

Kaupapa Māori Principles

This next set of questions asks whānau members to consider the following Kaupapa Māori Principles: Kotahitanga, Wairuatanga, Manaakitanga, Whanaungatanga, Kaitiakitanga, Rangatiratanga, Mauritanga, Orangatanga, and Mātauranga.

Whānau members are challenged to think about how these principles might be used to develop innovative strategies or solutions that might contribute towards building an even bigger and brighter future for Kohupatiki. – *The strategies or solutions that you develop in this section could potentially relate to our tikanga (practices), our land, our housing, or even our infrastructure.*

As was the case with the first set of questions, please remember that there is no pressure to answer every question, and that there are no right or wrong answers.



Wairuatanga

The principle of wairuatanga relates to the idea of one's spirit, as well as their emotional connection to the land.

Reflecting on this principle, what actions might we take, or strategies could we implement to protect the wairua of the Kohupatiki community (or tangata whenua)?

Write or draw your answer here.

Manaakitanga

The principle of manaakitanga relates to hospitality, kindness, and security.

Reflecting on this principle, how might Kohupatiki become an even more hospitable and inviting community?

What actions might we take, or strategies could we implement to ensure that community members (as well as visitors to Kohupatiki) feel embraced, and also, importantly, safe.

Write or draw your answer here.

Kaitiakitanga

The principle of kaitiakitanga relates to the guardianship of our land, as well as other important taonga (assets).

Describe how Kohupatiki might exercise the principle of kaitiakitanga on their whenua (land).

What strategies could we implement to exercise the principle of kaitiakitanga?

Write or draw your answer here.

Whanaungatanga

The principle of whanaungatanga relates to the ideas of relationships, family connections, the sharing of experiences, and working together.

Reflecting on this principle, how might Kohupatiki develop an even stronger community spirit?

What actions might we take, or strategies could we implement to encourage more whānau participation within our community?

Write or draw your answer here.

Rangatiratanga

The principle of rangatiratanga relates to leadership, self-determination, and self-management.

How might the Kohupatiki community become leaders amongst the wider Māori population?

What actions might we take, or strategies could we implement to transform Kohupatiki into a community that is capable of determining their own future?

Write or draw your answer here.

[illegible]

Mātauranga

Mātauranga relates to knowledge and understanding.

Reflecting on this principle, what strategies could we implement to promote mātauranga Māori concepts and principles within our community?

Added to that, what steps might we take to promote Kohupatiki's unique history, identity, and character?

Write or draw your answer here.

Orangatanga

The principle of orangatanga relates to the ideas of health and well-being.

Reflecting on this principle, what strategies could we implement to maintain the health and well-being of our community, as well as our whenua?

Write or draw your answer here.

Final Reflection

Reflecting on the previous principles, which of them do you value the most? Use the scales below to indicate the value of each principle, '1' meaning that the principle is not valued, and '10' meaning that the principle is valued strongly.

Kotahitanga

○ 1 ○ 2 ○ 3 ○ 4 ○ 5 ○ 6 ○ 7 ○ 8 ○ 9 ○ 10

Not Valued Valued Valued Strongly

Wairuatanga

○ 1 ○ 2 ○ 3 ○ 4 ○ 5 ○ 6 ○ 7 ○ 8 ○ 9 ○ 10

Not Valued Valued Valued Strongly

Manaakitanga

○ 1 ○ 2 ○ 3 ○ 4 ○ 5 ○ 6 ○ 7 ○ 8 ○ 9 ○ 10

Not Valued Valued Valued Strongly

Whanaungatanga

○ 1 ○ 2 ○ 3 ○ 4 ○ 5 ○ 6 ○ 7 ○ 8 ○ 9 ○ 10

Not Valued Valued Valued Strongly

Kaitiakitanga

○ 1 ○ 2 ○ 3 ○ 4 ○ 5 ○ 6 ○ 7 ○ 8 ○ 9 ○ 10

Not Valued Valued Valued Strongly

Rangatiratanga

○ 1 ○ 2 ○ 3 ○ 4 ○ 5 ○ 6 ○ 7 ○ 8 ○ 9 ○ 10

Not Valued Valued Valued Strongly

Mauritanga

○ 1 ○ 2 ○ 3 ○ 4 ○ 5 ○ 6 ○ 7 ○ 8 ○ 9 ○ 10

Not Valued Valued Valued Strongly

Orangatanga

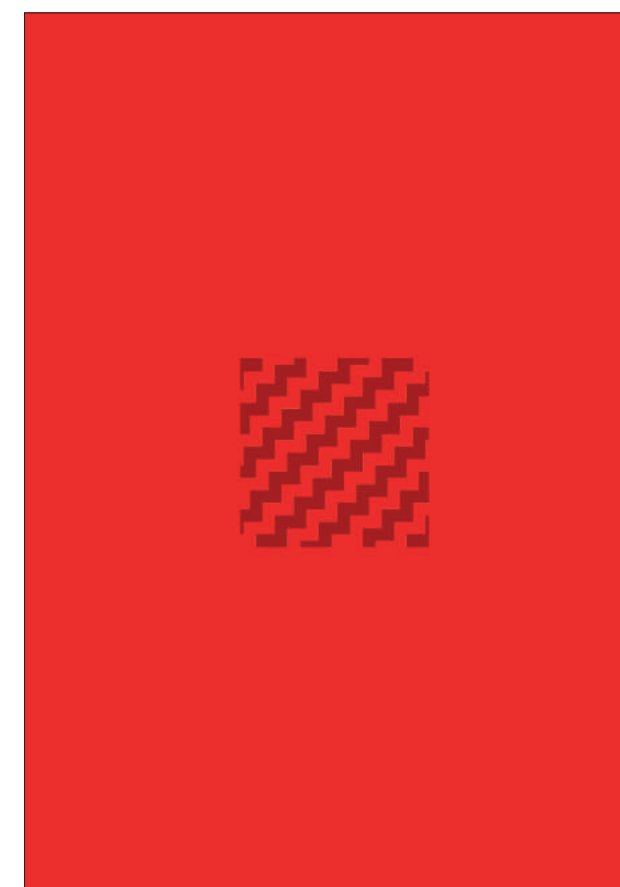
○ 1 ○ 2 ○ 3 ○ 4 ○ 5 ○ 6 ○ 7 ○ 8 ○ 9 ○ 10

Not Valued Valued Valued Strongly

Mātauranga

○ 1 ○ 2 ○ 3 ○ 4 ○ 5 ○ 6 ○ 7 ○ 8 ○ 9 ○ 10

Not Valued Valued Valued Strongly

[illegible]

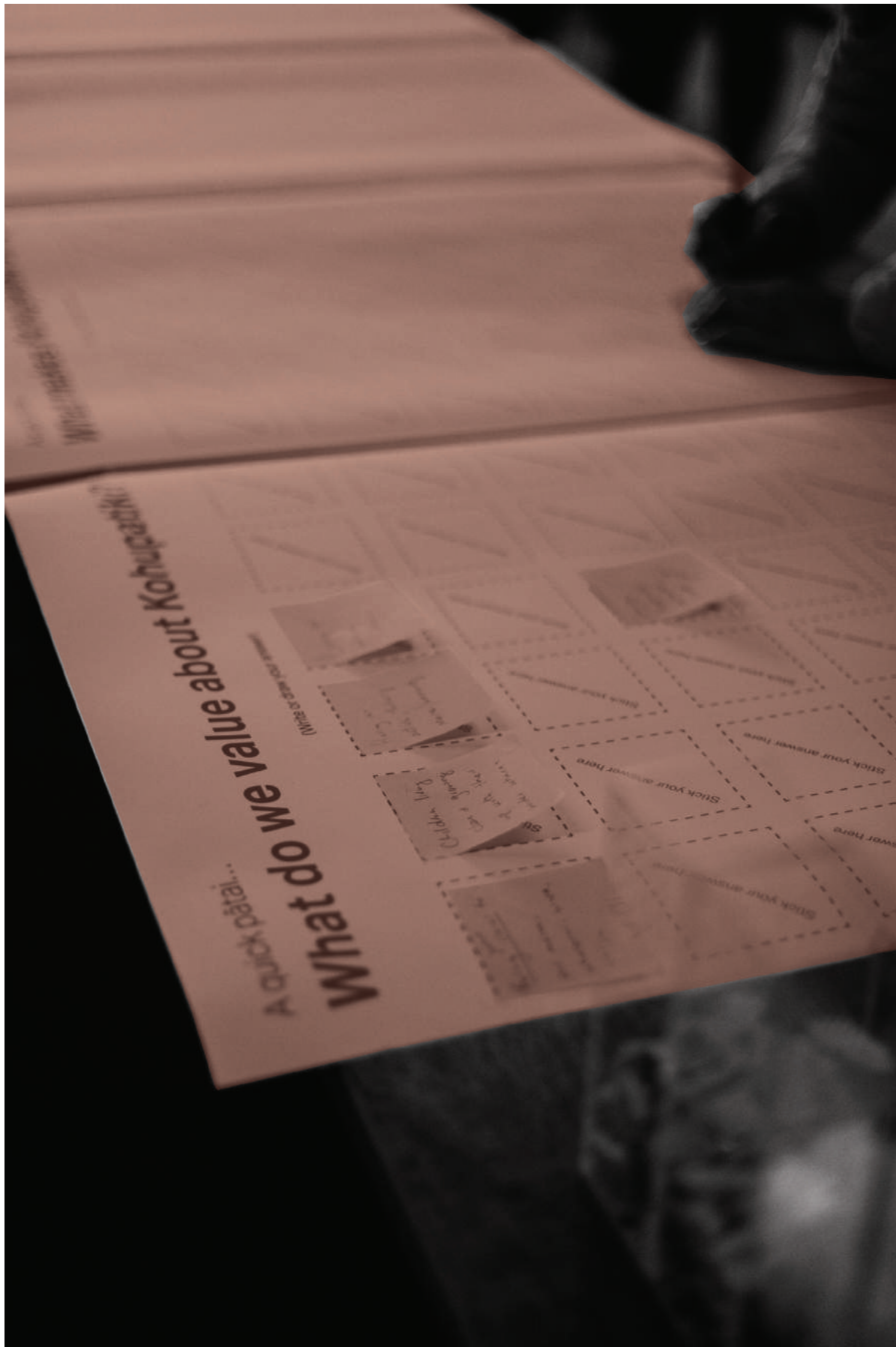


Figure 56. Question Boards.

Question Boards

Six Question Boards were produced and utilised at the O.D.S. The questions asked by these Question Boards built off the questions asked in the Questionnaires (some repeated, others newly introduced). The intention was that the Question Boards could be used by whānau members who either did not receive a Questionnaire (prior to the O.D.S), 'floating' whānau members who came in during the day and were interested in participating, and potential whānau members who did not have anything to do.

What makes Kohupatiki unique?

A 6x6 grid of 36 squares. Each square has a dashed red border and the text "Stick your answer here" written diagonally from the top-left to the bottom-right.

What do we value about Kohupatiki?

[illegible]

Figure 58. Question Board (02).

A quick pātai...

How can we improve Kohupatiki?

(Write or draw your answer)

Stick your answer here	Stick your answer here	Stick your answer here	Stick your answer here	Stick your answer here	Stick your answer here
Stick your answer here	Stick your answer here	Stick your answer here	Stick your answer here	Stick your answer here	Stick your answer here
Stick your answer here	Stick your answer here	Stick your answer here	Stick your answer here	Stick your answer here	Stick your answer here
Stick your answer here	Stick your answer here	Stick your answer here	Stick your answer here	Stick your answer here	Stick your answer here
Stick your answer here	Stick your answer here	Stick your answer here	Stick your answer here	Stick your answer here	Stick your answer here
Stick your answer here	Stick your answer here	Stick your answer here	Stick your answer here	Stick your answer here	Stick your answer here
Stick your answer here	Stick your answer here	Stick your answer here	Stick your answer here	Stick your answer here	Stick your answer here

Note:
Pātai- Question



Figure 59. Question Board (03).

Describe or draw your future vision for Kohupatiki.

(Write or draw your answer)

Stick your answer here	Stick your answer here	Stick your answer here	Stick your answer here	Stick your answer here	Stick your answer here
Stick your answer here	Stick your answer here	Stick your answer here	Stick your answer here	Stick your answer here	Stick your answer here
Stick your answer here	Stick your answer here	Stick your answer here	Stick your answer here	Stick your answer here	Stick your answer here
Stick your answer here	Stick your answer here	Stick your answer here	Stick your answer here	Stick your answer here	Stick your answer here
Stick your answer here	Stick your answer here	Stick your answer here	Stick your answer here	Stick your answer here	Stick your answer here
Stick your answer here	Stick your answer here	Stick your answer here	Stick your answer here	Stick your answer here	Stick your answer here
Stick your answer here	Stick your answer here	Stick your answer here	Stick your answer here	Stick your answer here	Stick your answer here

Note:
Pātai- Question



Figure 60. Question Board (04).

A quick pātai...

How might we reflect our identity within our built environment and landscape?

(Write or draw your answer)

Stick your answer here	Stick your answer here	Stick your answer here	Stick your answer here	Stick your answer here	Stick your answer here
Stick your answer here	Stick your answer here	Stick your answer here	Stick your answer here	Stick your answer here	Stick your answer here
Stick your answer here	Stick your answer here	Stick your answer here	Stick your answer here	Stick your answer here	Stick your answer here
Stick your answer here	Stick your answer here	Stick your answer here	Stick your answer here	Stick your answer here	Stick your answer here
Stick your answer here	Stick your answer here	Stick your answer here	Stick your answer here	Stick your answer here	Stick your answer here
Stick your answer here	Stick your answer here	Stick your answer here	Stick your answer here	Stick your answer here	Stick your answer here
Stick your answer here	Stick your answer here	Stick your answer here	Stick your answer here	Stick your answer here	Stick your answer here

Note:

Pātai- Question




Figure 61. Question Board (05).

A quick pātai...

How can we effectively manifest mātauranga Māori within our built environment?

(Write or draw your answer)

Stick your answer here	Stick your answer here	Stick your answer here	Stick your answer here	Stick your answer here	Stick your answer here
Stick your answer here	Stick your answer here	Stick your answer here	Stick your answer here	Stick your answer here	Stick your answer here
Stick your answer here	Stick your answer here	Stick your answer here	Stick your answer here	Stick your answer here	Stick your answer here
Stick your answer here	Stick your answer here	Stick your answer here	Stick your answer here	Stick your answer here	Stick your answer here
Stick your answer here	Stick your answer here	Stick your answer here	Stick your answer here	Stick your answer here	Stick your answer here
Stick your answer here	Stick your answer here	Stick your answer here	Stick your answer here	Stick your answer here	Stick your answer here
Stick your answer here	Stick your answer here	Stick your answer here	Stick your answer here	Stick your answer here	Stick your answer here

Note:

Pātai- Question




Figure 62. Question Board (06).



Figure 63. Drawing & Physical Modelling Station.

Drawing & Physical Modelling Station

To enable design input, drawing and physical modelling material was provided at the O.D.S. This allowed whānau members to generate design concepts for the research.

The decision to include the Drawing & Physical Modelling Station at the event was largely informed by points made earlier in KTHK, which encouraged the use of physical models.



Figure 64. Visuals of Existing Projects.

Visuals of Existing Projects

A selection of visuals of existing projects was also provided for design inspiration. It was also thought that this approach would be useful in establishing design tastes, as through the provision of the visuals, whānau members had an opportunity to discuss which projects they did, and did not like.

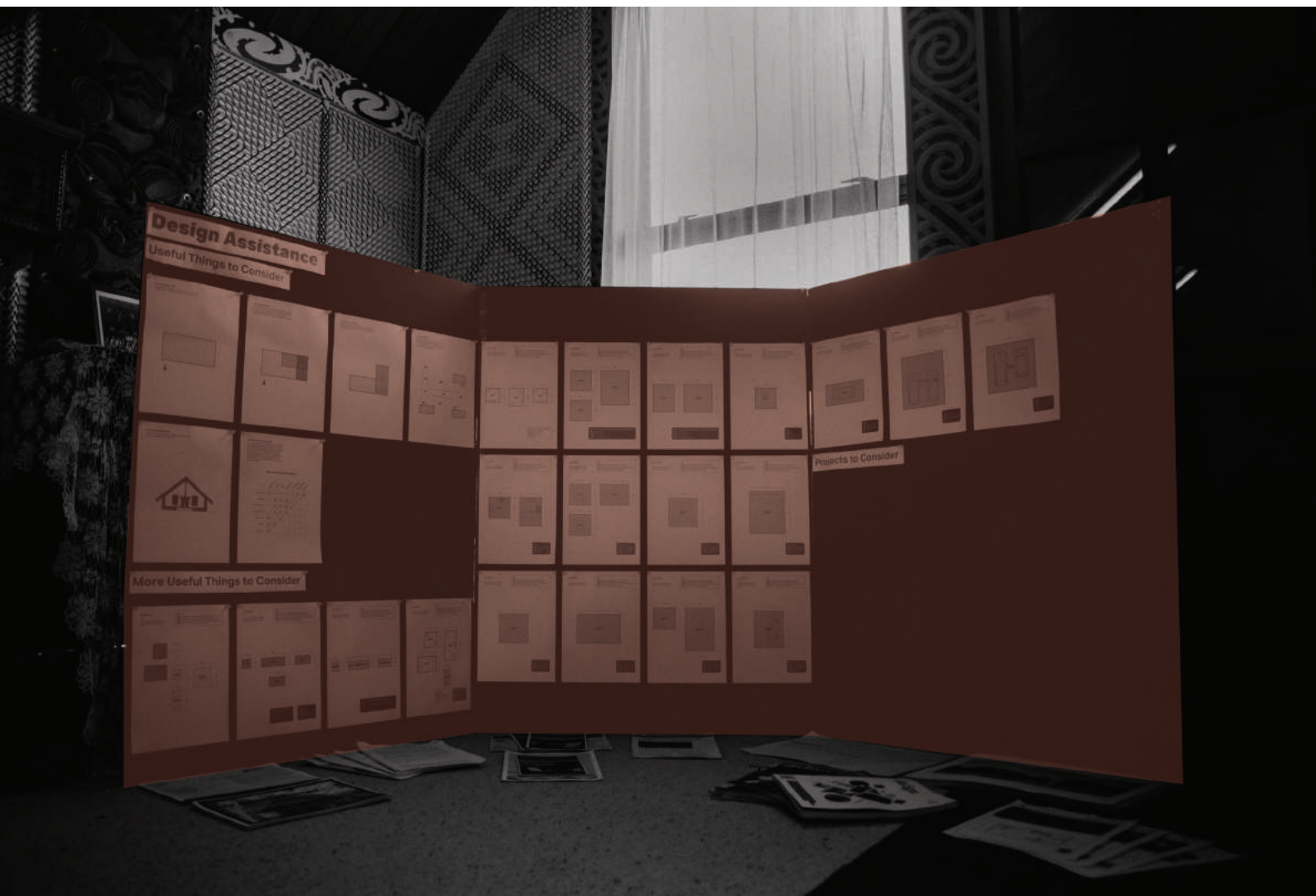


Figure 65. The Design Assistant.

The Design Assistant

To support whānau members with their designing, the Design Assistant was developed. The Design Assistant provides useful information relating to planning and design, and utilises important concepts discussed within documents such as KTHK. The continuing pages detail content from the Design Assistant.

Maximising Solar Gain

To maximise solar gain, it is recommended that the length of your whare be oriented towards the north.

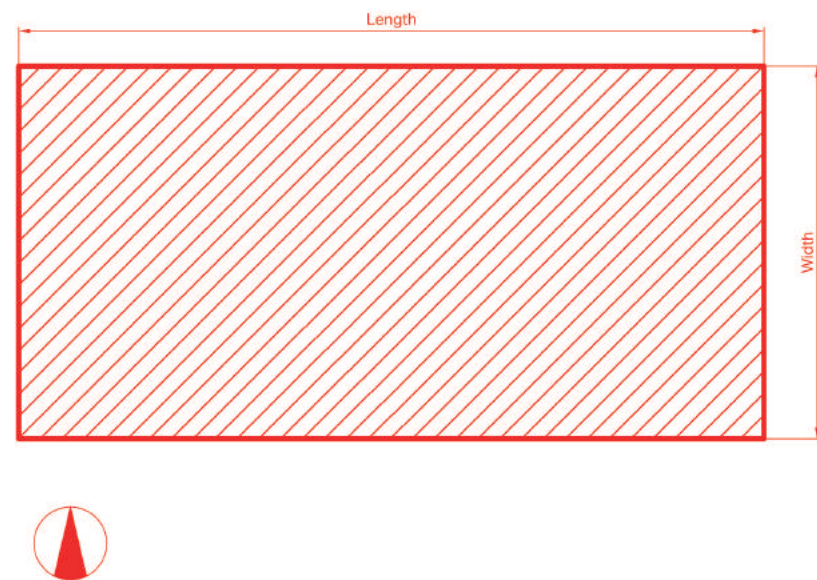


Figure 66. Design & Planning Tip (01).

Maximising Comfort

To maximise comfort, living, dining, whānau, and outdoor areas should be located towards the north. Spaces such as bathrooms, water closets, laundries, and garages can be located to the south.

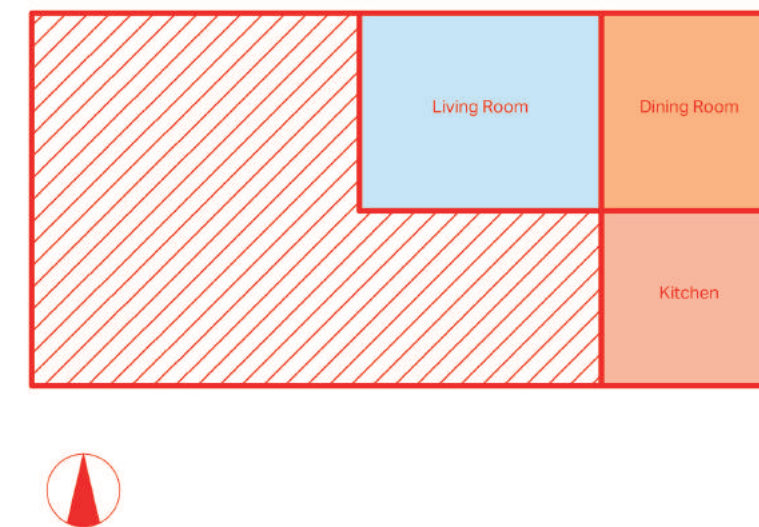


Figure 67. Design & Planning Tip (02).

Think About the Future

When planning, consider opportunities for future extensions to your where, as well as the building of additional dwellings.

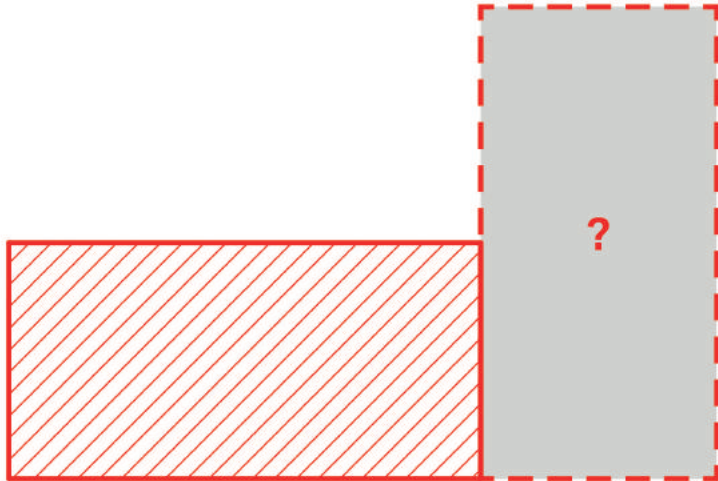


Figure 68. Design & Planning Tip (03).

Ensuring Security

Consider access ways, driveways, outdoor communal spaces, and other buildings on site. Plan your where to allow for the supervision of these spaces. This will help support a safer and more secure living environment.

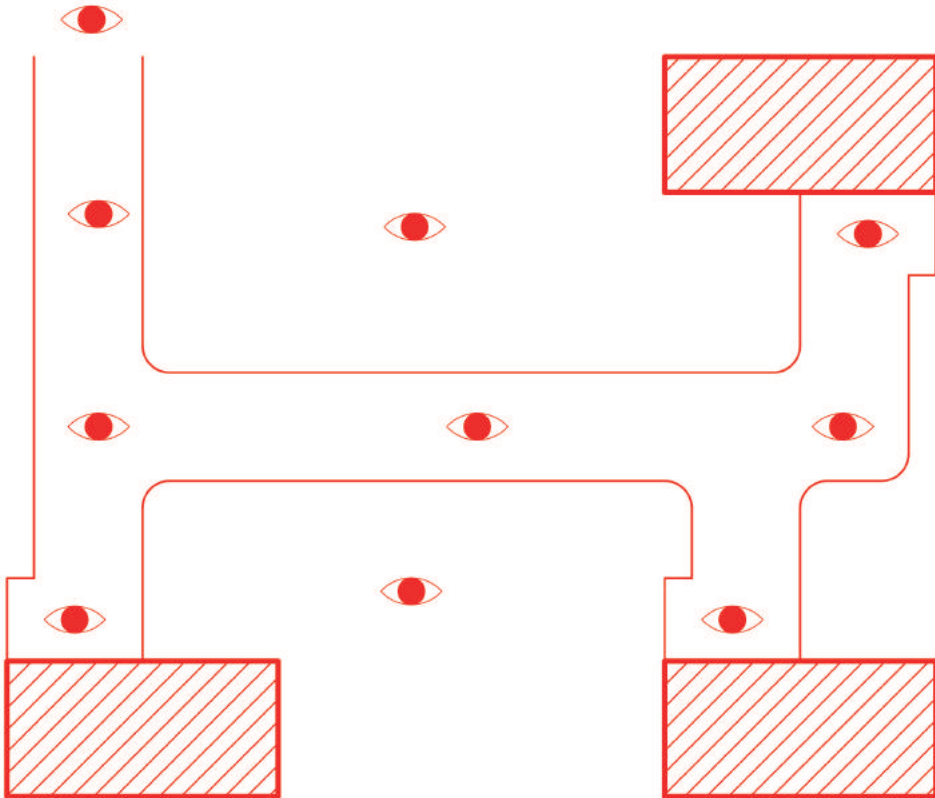


Figure 69. Design & Planning Tip (04).

Accommodating Manuhiri
When planning your whare, consider how you might accommodate manuhiri (guests).

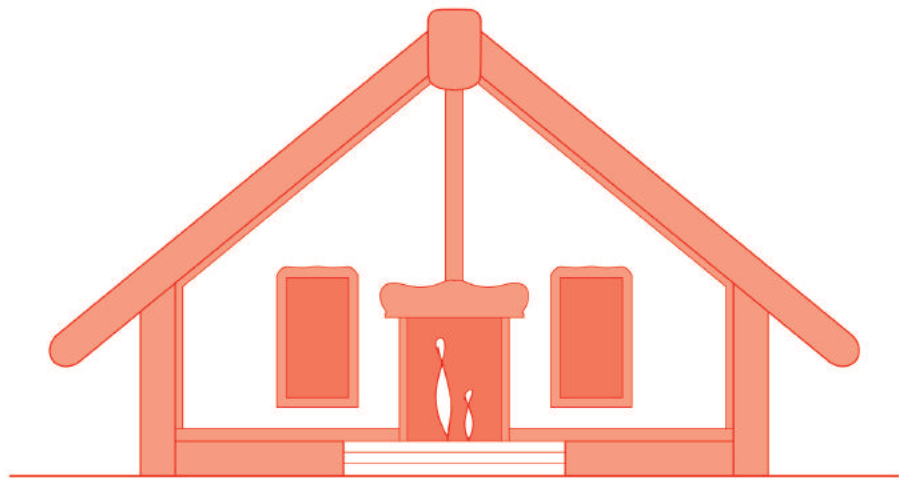


Figure 70. Design & Planning Tip (05).

Cultural Practices: Tapu and Noa
Our cultural practices dictate that certain spaces within the house be kept away from one another. To respect these practices, consider the *Tapu and Noa Planning Matrix* below when planning your whare. A tick indicates a desirable relationship between two spaces, whilst a cross indicates the exact opposite (an undesirable relationship). A wave indicates that the relationship between two spaces is neutral.

Tapu and Noa Planning Matrix

	Main Entry	Laundry	Toilet	Bathroom	Living Room	Dining Room	Kitchen
Bedroom	✗	~	~	~	~	✗	✗
Kitchen	~	✗	✗	✗	✓	✓	
Dining Room	~	✗	✗	✗	✓		
Living Room	✓	✗	✗	✗			
Bathroom	✗	~	✗				
Toilet	✗	✗					
Laundry	✗						

Figure 71. Design & Planning Tip (06).

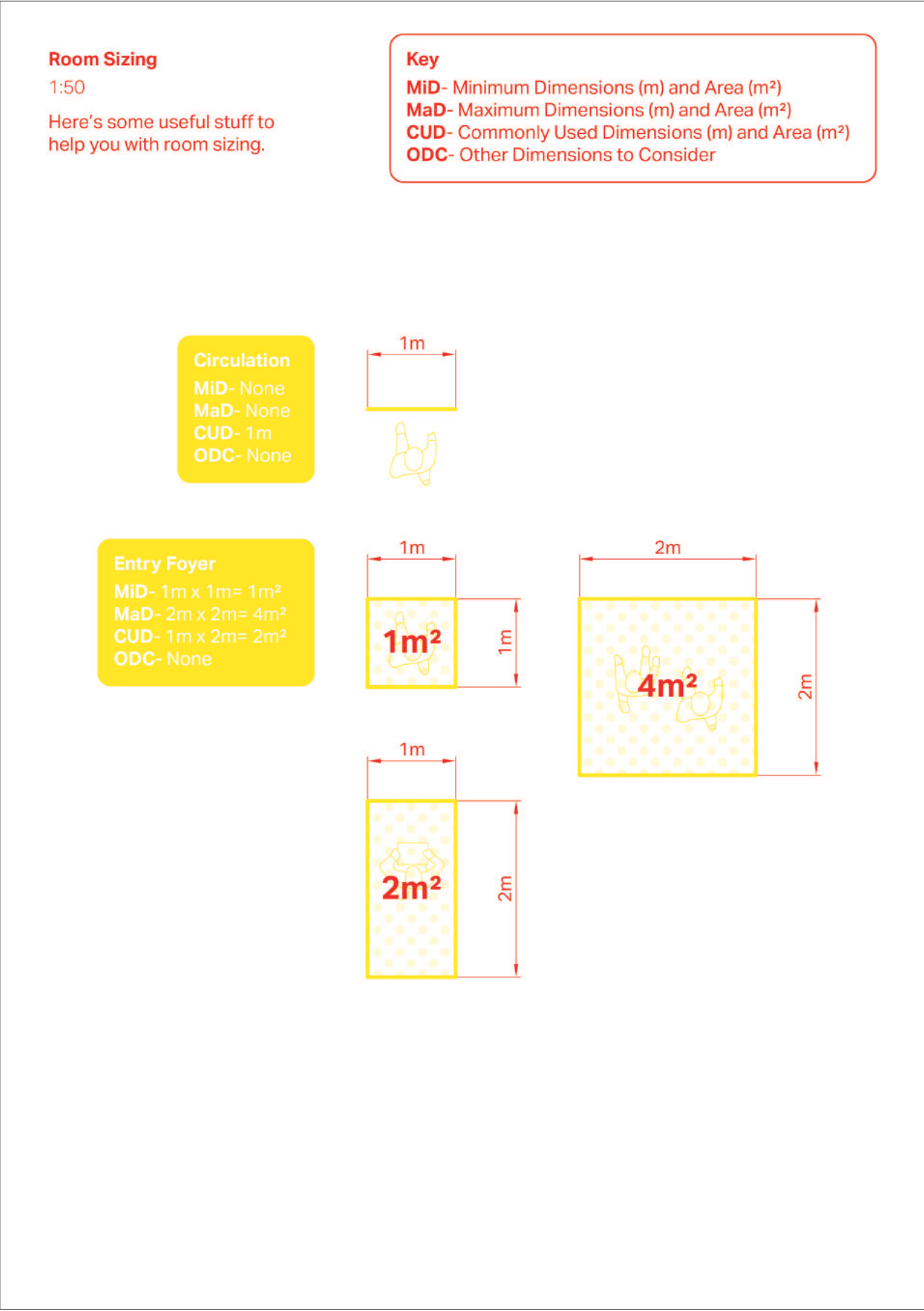


Figure 72. Design & Planning Tip (07).

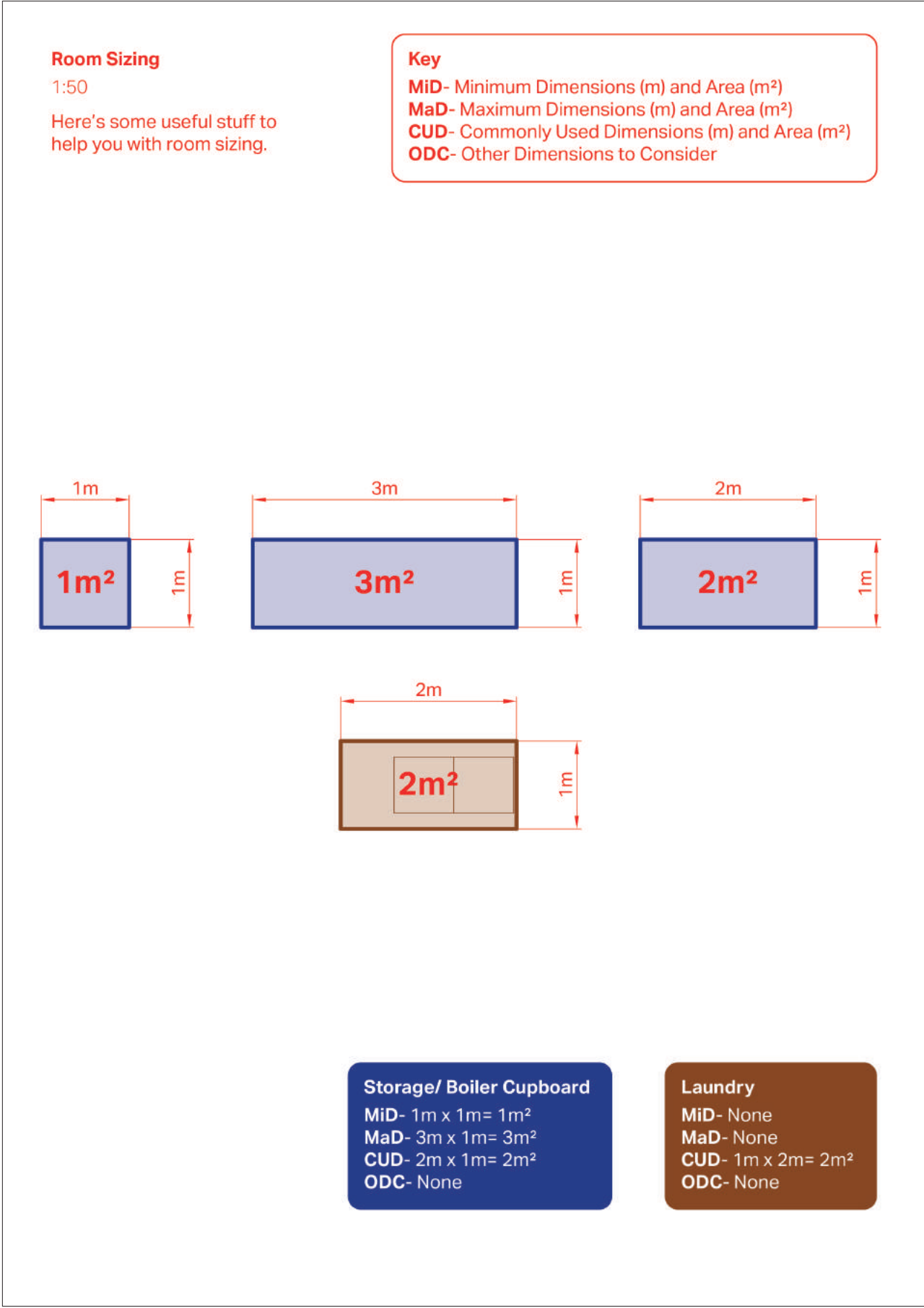


Figure 73. Design & Planning Tip (08).

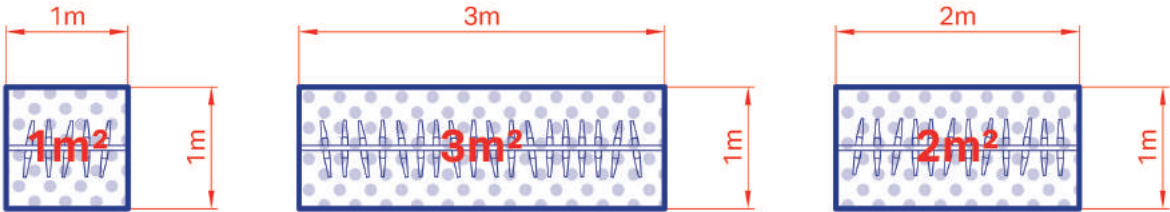
Room Sizing

1:50

Here's some useful stuff to help you with room sizing.

Key

- MinD**- Minimum Dimensions (m) and Area (m²)
- MaxD**- Maximum Dimensions (m) and Area (m²)
- CUD**- Commonly Used Dimensions (m) and Area (m²)
- ODC**- Other Dimensions to Consider



Wardrobe (Each bedroom should have one)
MinD- 1m x 1m= 1m²
MaxD- 1m x 3m= 3m² (Typically for master bedroom)
CUD- 1m x 2m= 2m²
ODC- None

Figure 74. Design & Planning Tip (09).

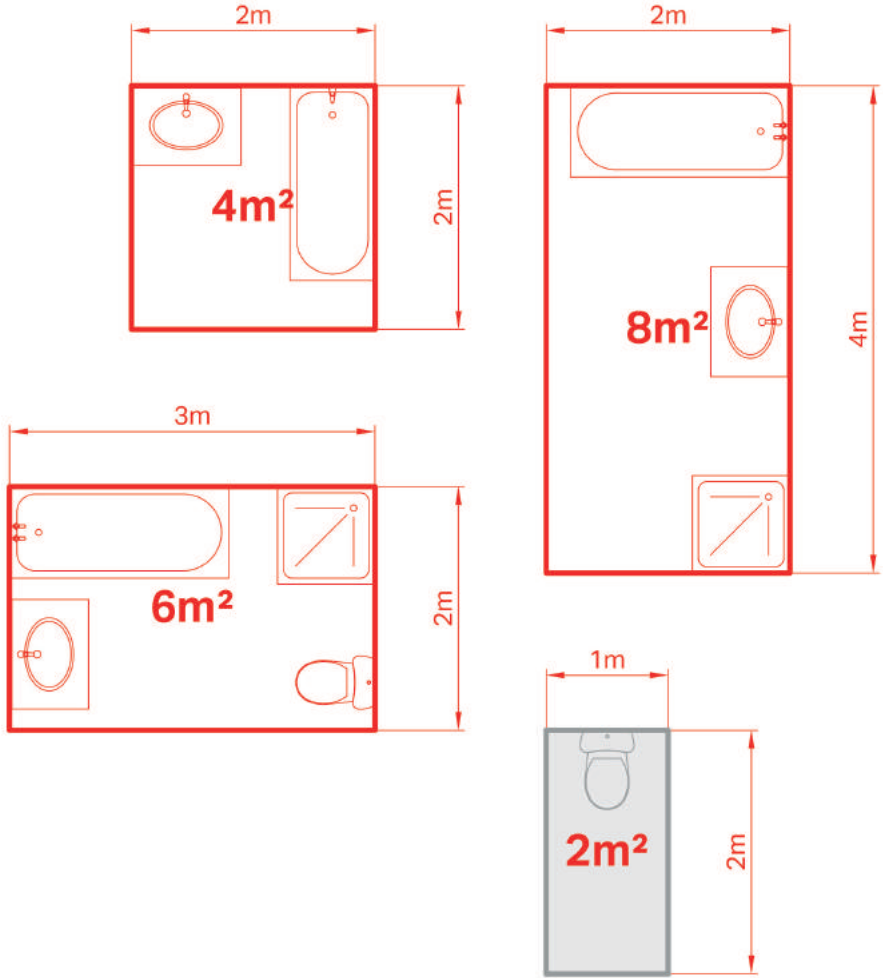
Room Sizing

1:50

Here's some useful stuff to help you with room sizing.

Key

- MinD**- Minimum Dimensions (m) and Area (m²)
- MaxD**- Maximum Dimensions (m) and Area (m²)
- CUD**- Commonly Used Dimensions (m) and Area (m²)
- ODC**- Other Dimensions to Consider



Bathroom
MinD- 2m x 2m= 4m²
MaxD- 2m x 4m= 8m²
CUD- 2m x 3m= 6m²
ODC- None

Water Closet (WC)
MinD- None
MaxD- None
CUD- 1m x 2m= 2m²
ODC- None

Figure 75. Design & Planning Tip (10).

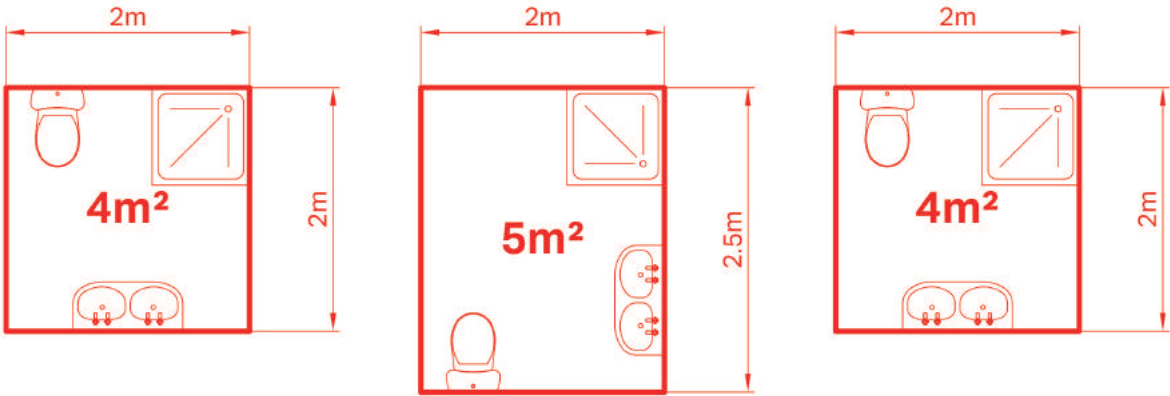
Room Sizing

1:50

Here's some useful stuff to help you with room sizing.

Key

- MinD**- Minimum Dimensions (m) and Area (m²)
- MaxD**- Maximum Dimensions (m) and Area (m²)
- CUD**- Commonly Used Dimensions (m) and Area (m²)
- ODC**- Other Dimensions to Consider



Ensuite (For master bedrooms)

- MinD**- 2m x 2m= 4m²
- MaxD**- 2m x 2.5m= 5m²
- CUD**- 2m x 2m= 4m²
- ODC**- None

Figure 76. Design & Planning Tip (11).

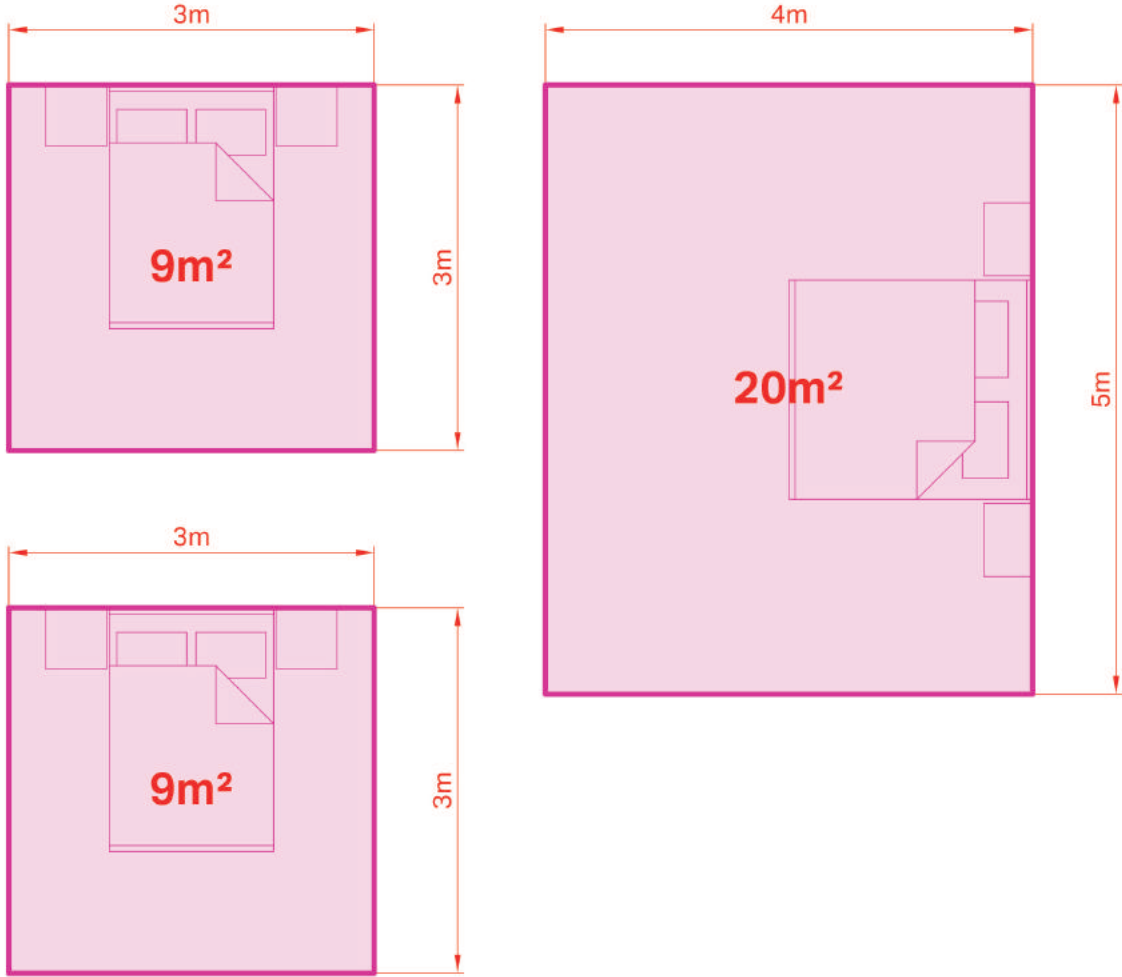
Room Sizing

1:50

Here's some useful stuff to help you with room sizing.

Key

- MinD**- Minimum Dimensions (m) and Area (m²)
- MaxD**- Maximum Dimensions (m) and Area (m²)
- CUD**- Commonly Used Dimensions (m) and Area (m²)
- ODC**- Other Dimensions to Consider



Bedroom (Dimensions do not include wardrobes and ensuites)

- MinD**- 3m x 3m= 9m²
- MaxD**- 5m x 4m= 20m²
- CUD**- 3m x 3m= 9m²
- ODC**- 3m x 4m and 4m x 4m

Figure 77. Design & Planning Tip (12).

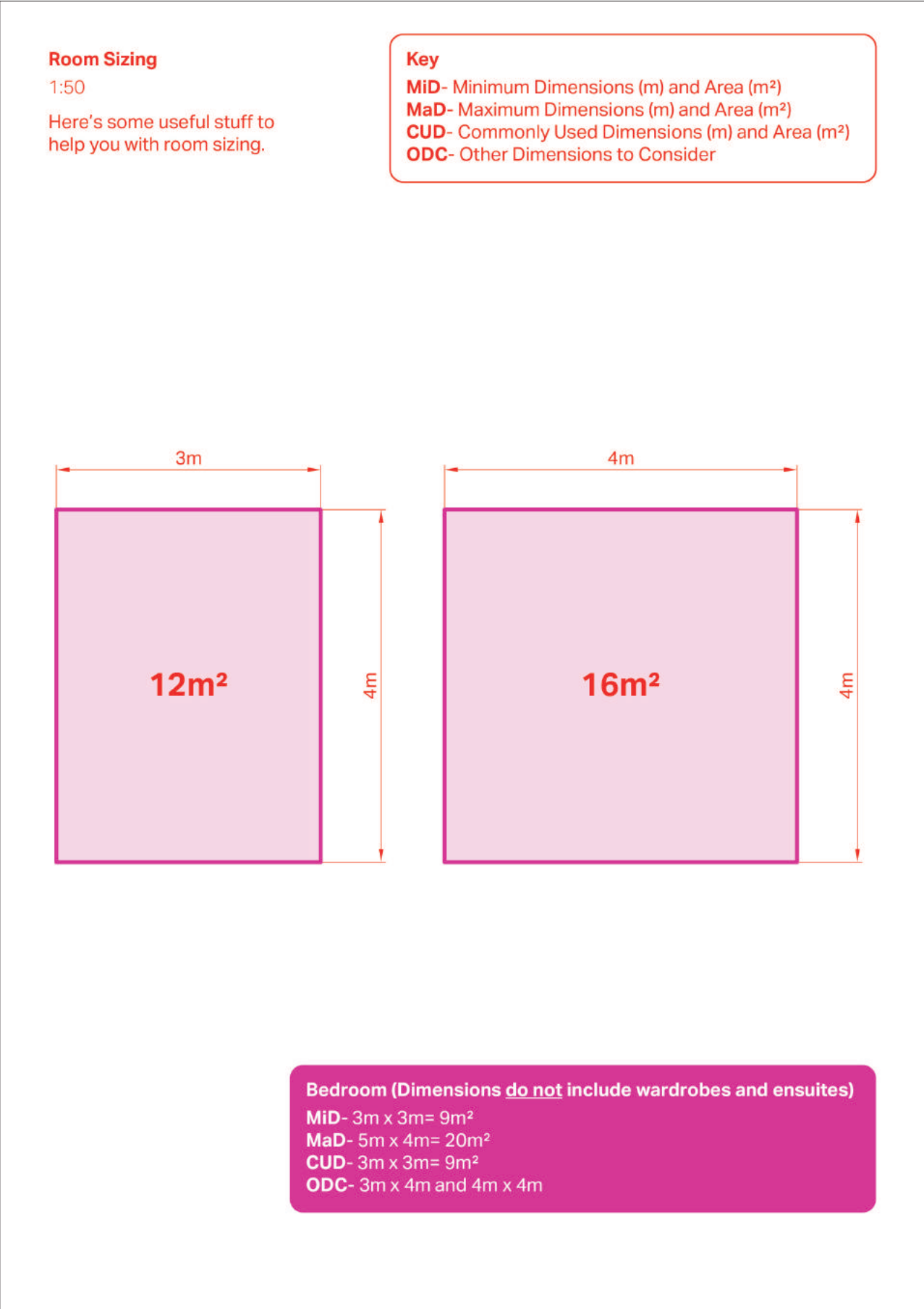


Figure 78. Design & Planning Tip (13).

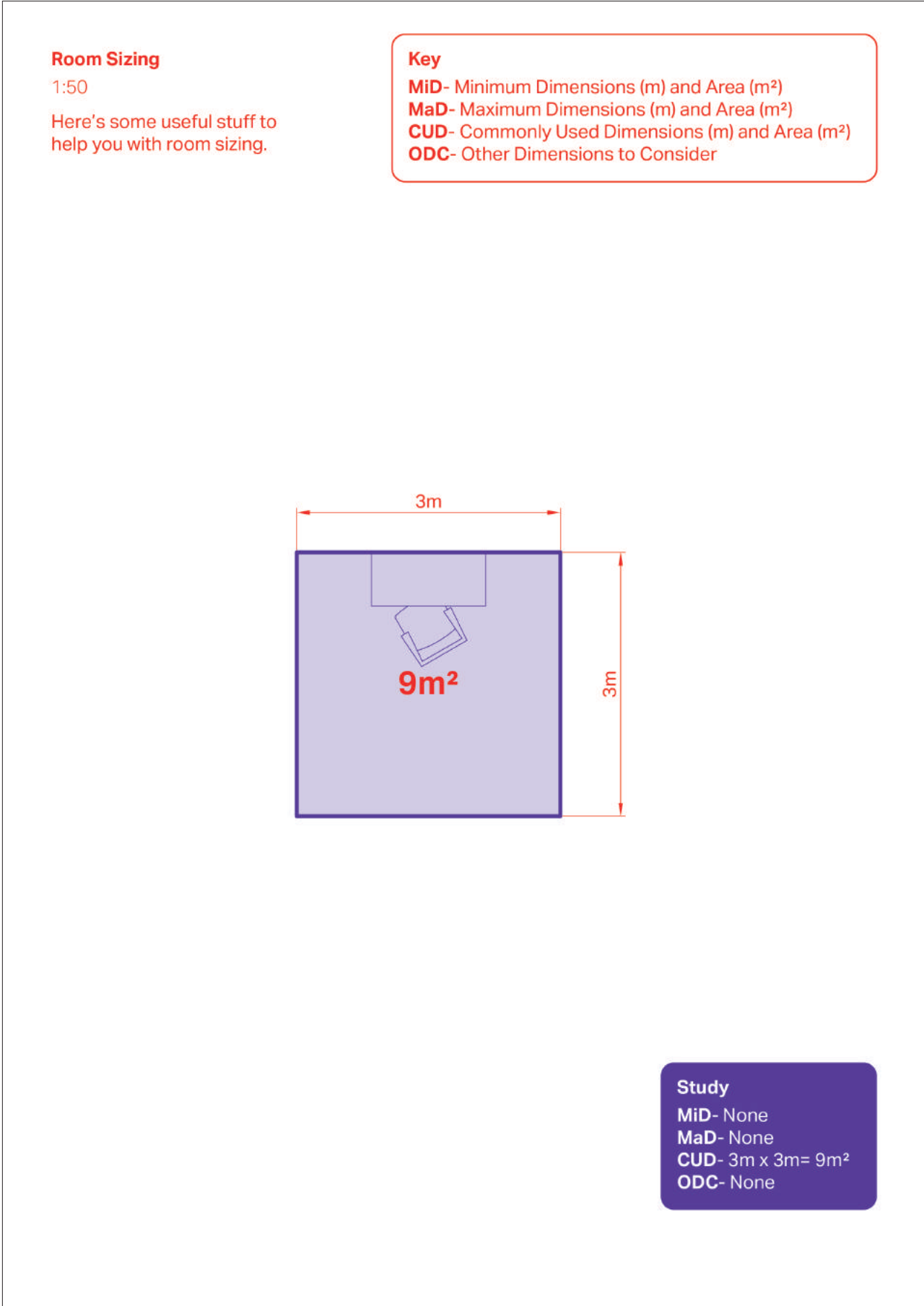
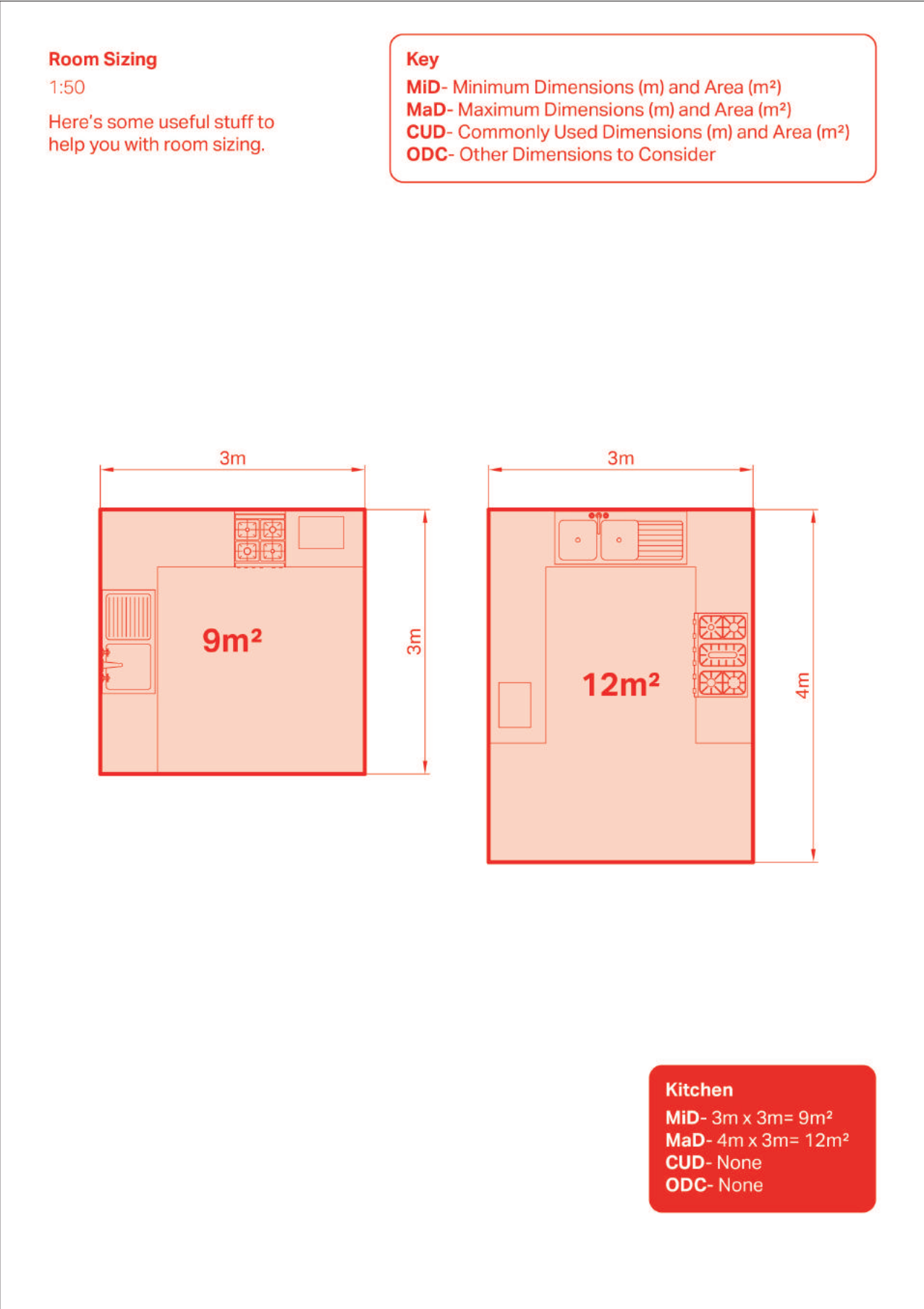


Figure 79. Design & Planning Tip (14).



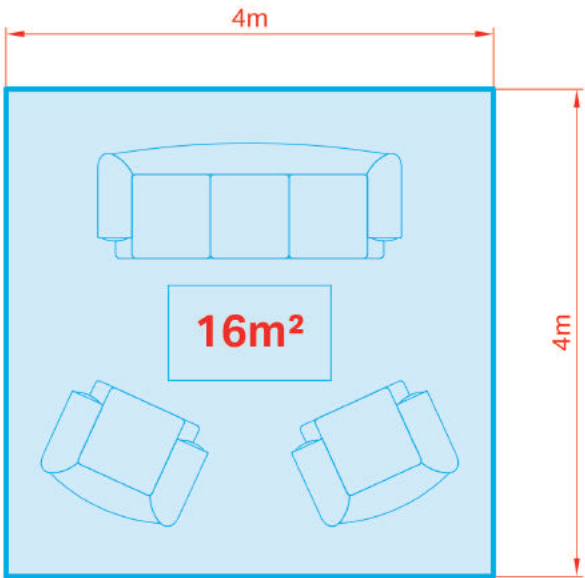
Room Sizing

1:50

Here's some useful stuff to help you with room sizing.

Key

- MiD**- Minimum Dimensions (m) and Area (m²)
- MaD**- Maximum Dimensions (m) and Area (m²)
- CUD**- Commonly Used Dimensions (m) and Area (m²)
- ODC**- Other Dimensions to Consider



Living Area

- MiD**- 4m x 4m= 16m²
- MaD**- 5m x 6m= 30m²
- CUD**- 4m x 4m= 16m²
- ODC**- 4m x 6m

Figure 82. Design & Planning Tip (17).

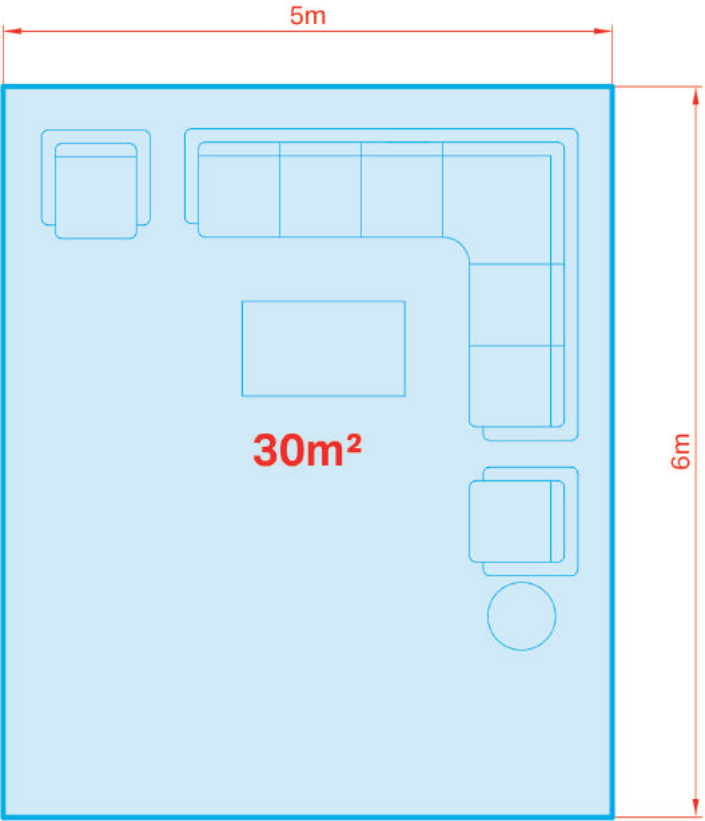
Room Sizing

1:50

Here's some useful stuff to help you with room sizing.

Key

- MiD**- Minimum Dimensions (m) and Area (m²)
- MaD**- Maximum Dimensions (m) and Area (m²)
- CUD**- Commonly Used Dimensions (m) and Area (m²)
- ODC**- Other Dimensions to Consider



Living Area

- MiD**- 4m x 4m= 16m²
- MaD**- 5m x 6m= 30m²
- CUD**- 4m x 4m= 16m²
- ODC**- 4m x 6m

Figure 83. Design & Planning Tip (18).

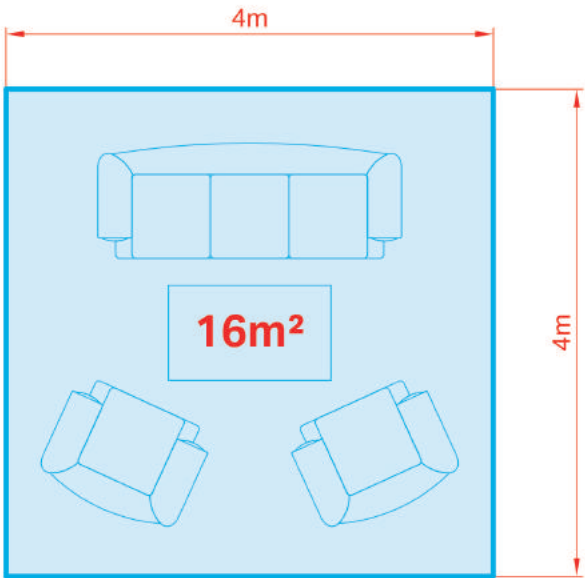
Room Sizing

1:50

Here's some useful stuff to help you with room sizing.

Key

- MiD**- Minimum Dimensions (m) and Area (m²)
- MaD**- Maximum Dimensions (m) and Area (m²)
- CUD**- Commonly Used Dimensions (m) and Area (m²)
- ODC**- Other Dimensions to Consider



Living Area

- MiD**- 4m x 4m= 16m²
- MaD**- 5m x 6m= 30m²
- CUD**- 4m x 4m= 16m²
- ODC**- 4m x 6m

Figure 84. Design & Planning Tip (19).

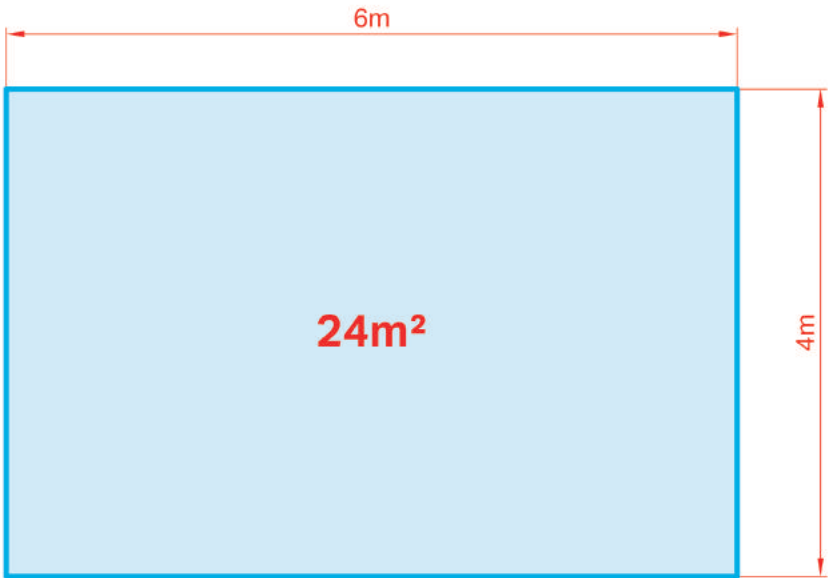
Room Sizing

1:50

Here's some useful stuff to help you with room sizing.

Key

- MiD**- Minimum Dimensions (m) and Area (m²)
- MaD**- Maximum Dimensions (m) and Area (m²)
- CUD**- Commonly Used Dimensions (m) and Area (m²)
- ODC**- Other Dimensions to Consider



Living Area

- MiD**- 4m x 4m= 16m²
- MaD**- 5m x 6m= 30m²
- CUD**- 4m x 4m= 16m²
- ODC**- 4m x 6m

Figure 85. Design & Planning Tip (20).

Room Sizing

1:50

Here's some useful stuff to help you with room sizing.

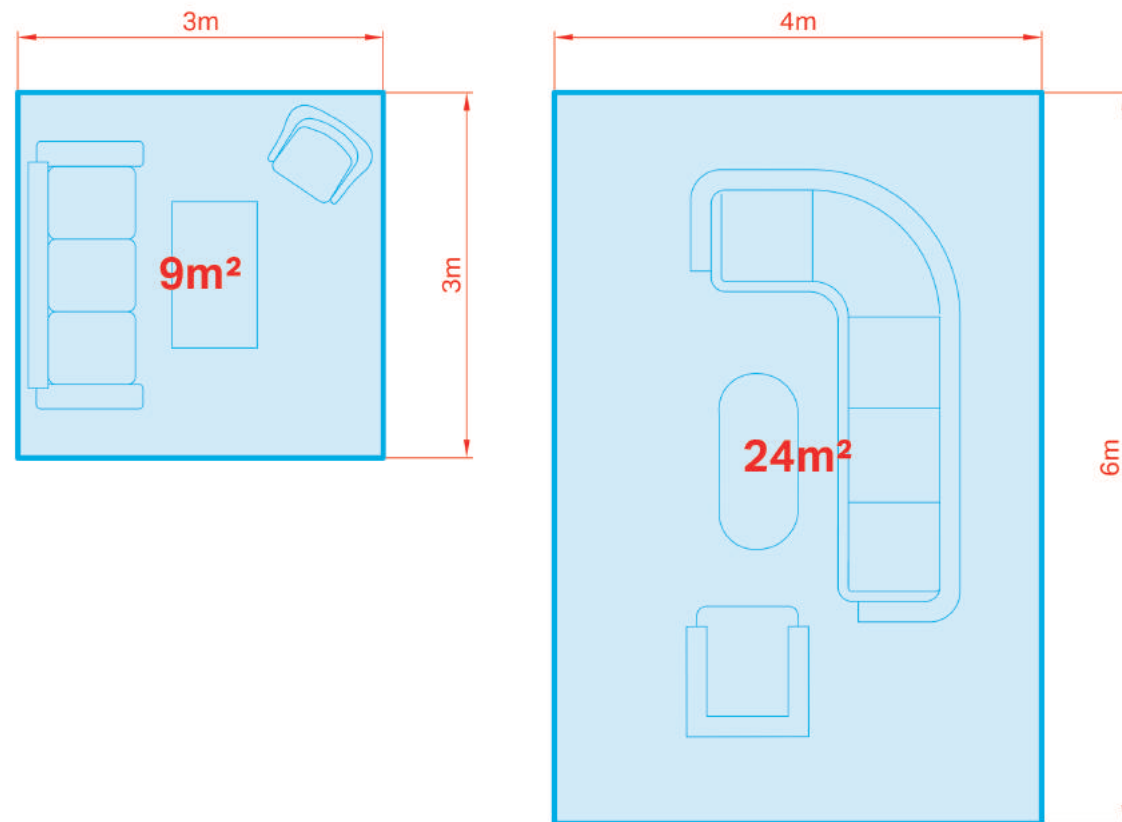
Key

MiD- Minimum Dimensions (m) and Area (m²)

MaD- Maximum Dimensions (m) and Area (m²)

CUD- Commonly Used Dimensions (m) and Area (m²)

ODC- Other Dimensions to Consider



Whānau Room

MiD- 3m x 3m = 9m²

MaD- 6m x 4m = 24m²

CUD- 4m x 5m = 20m²

ODC- None

Room Sizing

1:50

Here's some useful stuff to help you with room sizing.

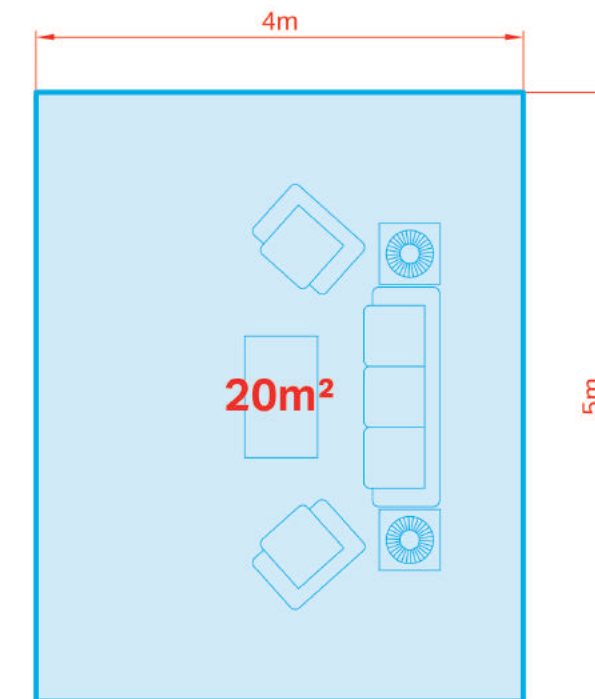
Key

MiD- Minimum Dimensions (m) and Area (m²)

MaD- Maximum Dimensions (m) and Area (m²)

CUD- Commonly Used Dimensions (m) and Area (m²)

ODC- Other Dimensions to Consider



Whānau Room

MiD- 3m x 3m = 9m²

MaD- 6m x 4m = 24m²

CUD- 4m x 5m = 20m²

ODC- None

Figure 86. Design & Planning Tip (21).

Figure 87. Design & Planning Tip (22).

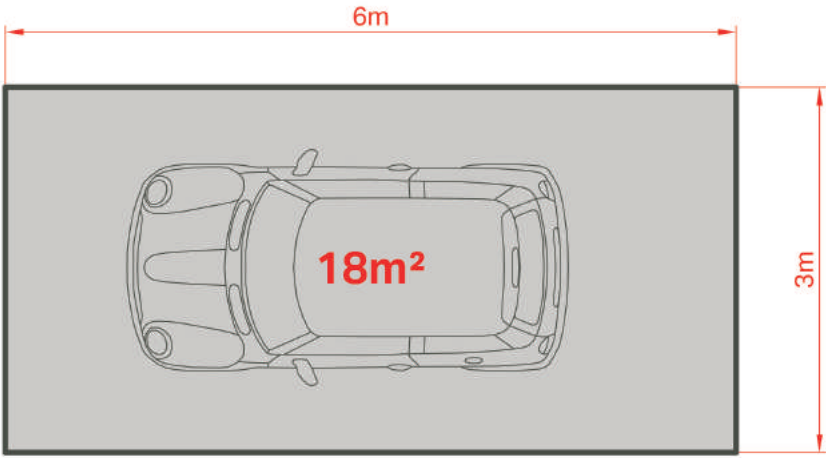
Room Sizing

1:50

Here's some useful stuff to help you with room sizing.

Key

- MiD**- Minimum Dimensions (m) and Area (m²)
- MaD**- Maximum Dimensions (m) and Area (m²)
- CUD**- Commonly Used Dimensions (m) and Area (m²)
- ODC**- Other Dimensions to Consider



Garage

- MiD**- 6m x 3m= 18m²
- MaD**- 6m x 7m= 42m²
- CUD**- 6m x 6m= 36m²
- ODC**- None

Figure 88. Design & Planning Tip (23).

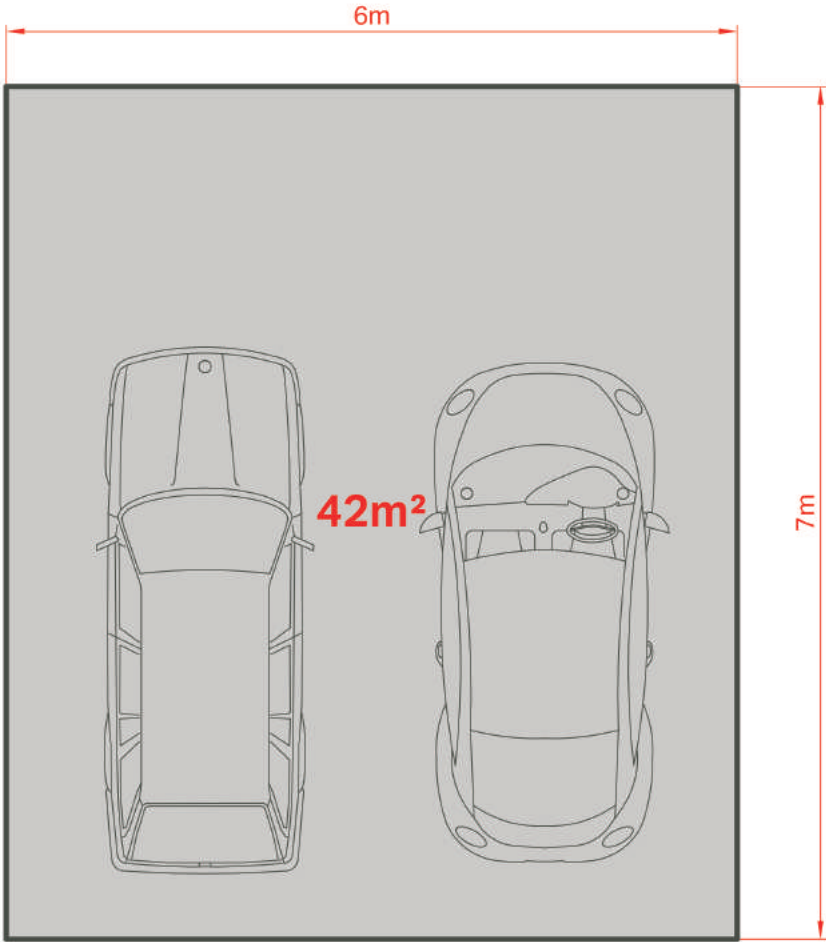
Room Sizing

1:50

Here's some useful stuff to help you with room sizing.

Key

- MiD**- Minimum Dimensions (m) and Area (m²)
- MaD**- Maximum Dimensions (m) and Area (m²)
- CUD**- Commonly Used Dimensions (m) and Area (m²)
- ODC**- Other Dimensions to Consider



Garage

- MiD**- 6m x 3m= 18m²
- MaD**- 6m x 7m= 42m²
- CUD**- 6m x 6m= 36m²
- ODC**- None

Figure 89. Design & Planning Tip (24).

Room Sizing

1:50

Here's some useful stuff to help you with room sizing.

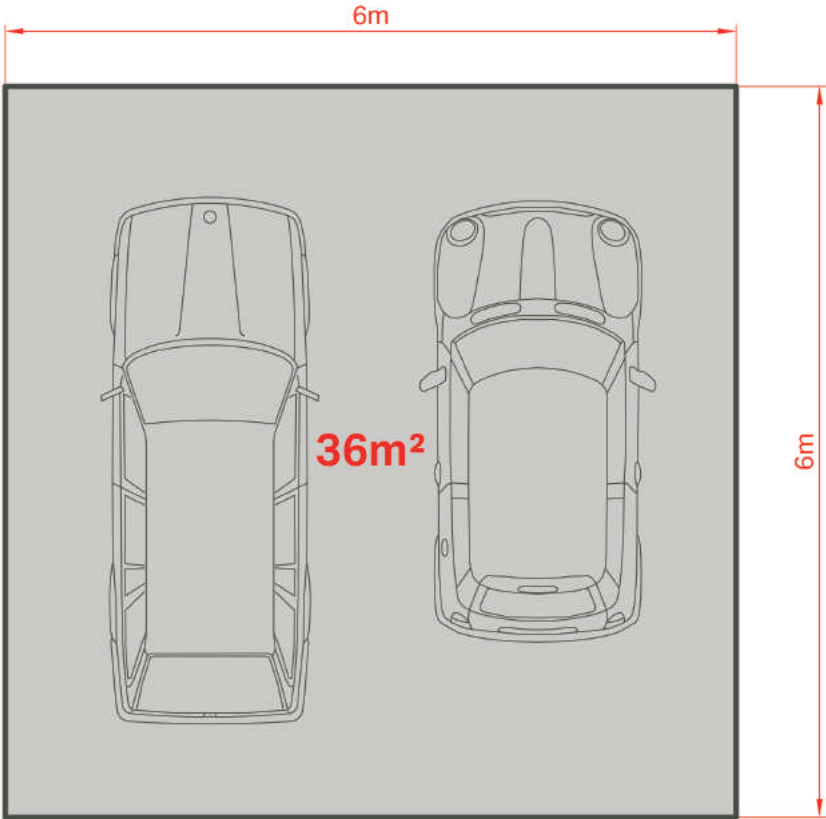
Key

MinD- Minimum Dimensions (m) and Area (m²)

MaxD- Maximum Dimensions (m) and Area (m²)

CUD- Commonly Used Dimensions (m) and Area (m²)

ODC- Other Dimensions to Consider



Garage

MinD- 6m x 3m= 18m²

MaxD- 6m x 7m= 42m²

CUD- 6m x 6m= 36m²

ODC- None

Figure 90. Design & Planning Tip (25).



Figure 91. The Hāngī Pit (A Planning Tool).

The Hāngī Pit (A Planning Tool)

The Hāngī Pit is essentially a planning device, used for generating design concepts for potential housing at Kohupātiki.

The tool consists of three layers; the first of which is a 1:50 scale Site Plan (figure 92). Layered on top is site information obtained from the Hastings District Council website (figure 93) (information includes boundaries, easements, etc.). The third and final layer is a grid (figure 94) (operating at a 1:50 scale) where each individual square represents 1m².

To allow for design concept generation, a number of colour-coded m² cut-outs representing the various spaces within a typical home were provided, which whānau members could begin to use to plan out housing.

Three Planning Tools were developed for three different sites, Rotopounamu 1B1E7B1 (Property of Robert Robin) (figure 95), Rotopounamu 1B1E5 (Property of Ted, Matthew and Lambert Bennett) (figure 96), and Rotopounamu 1B1E8 (Property of Peter Robin) (figure 97).

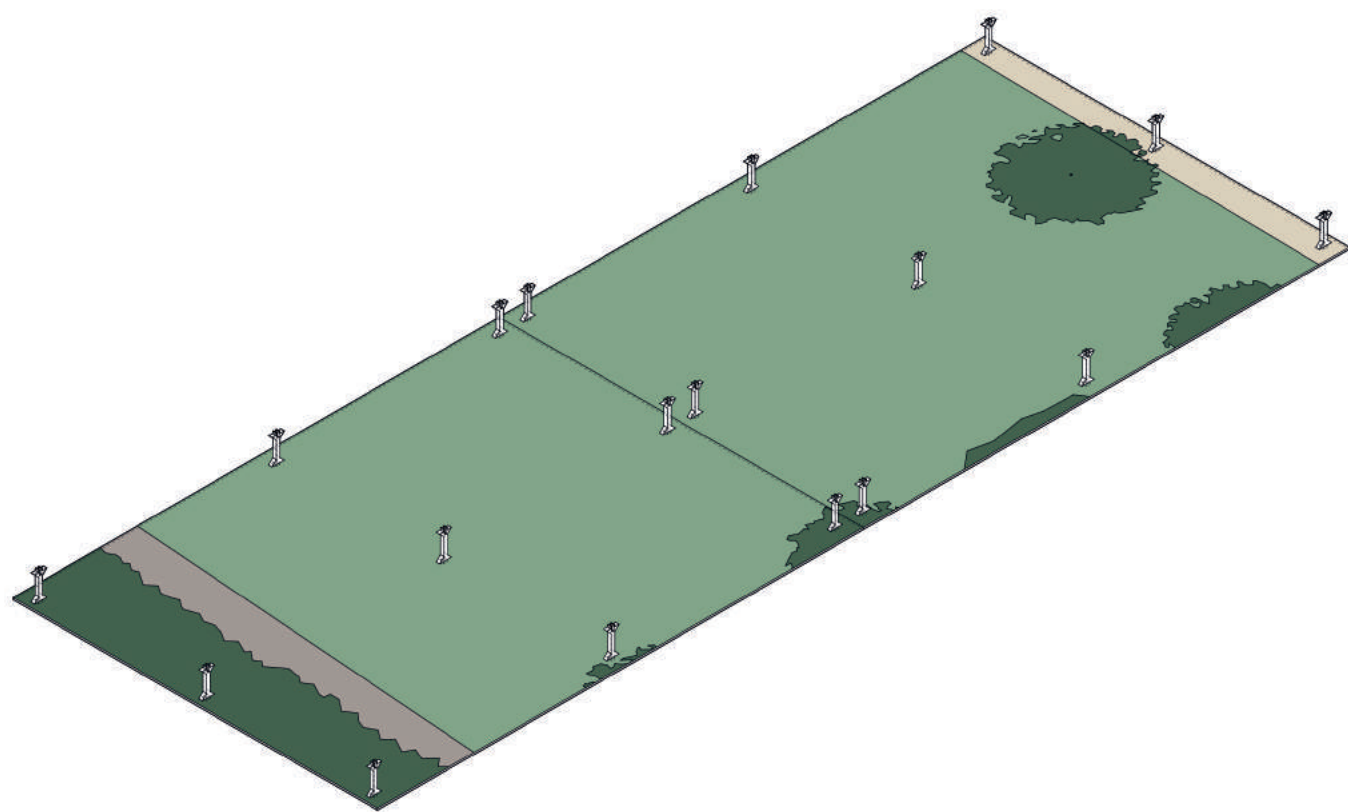


Figure 92. Layer 01 - Existing site details.

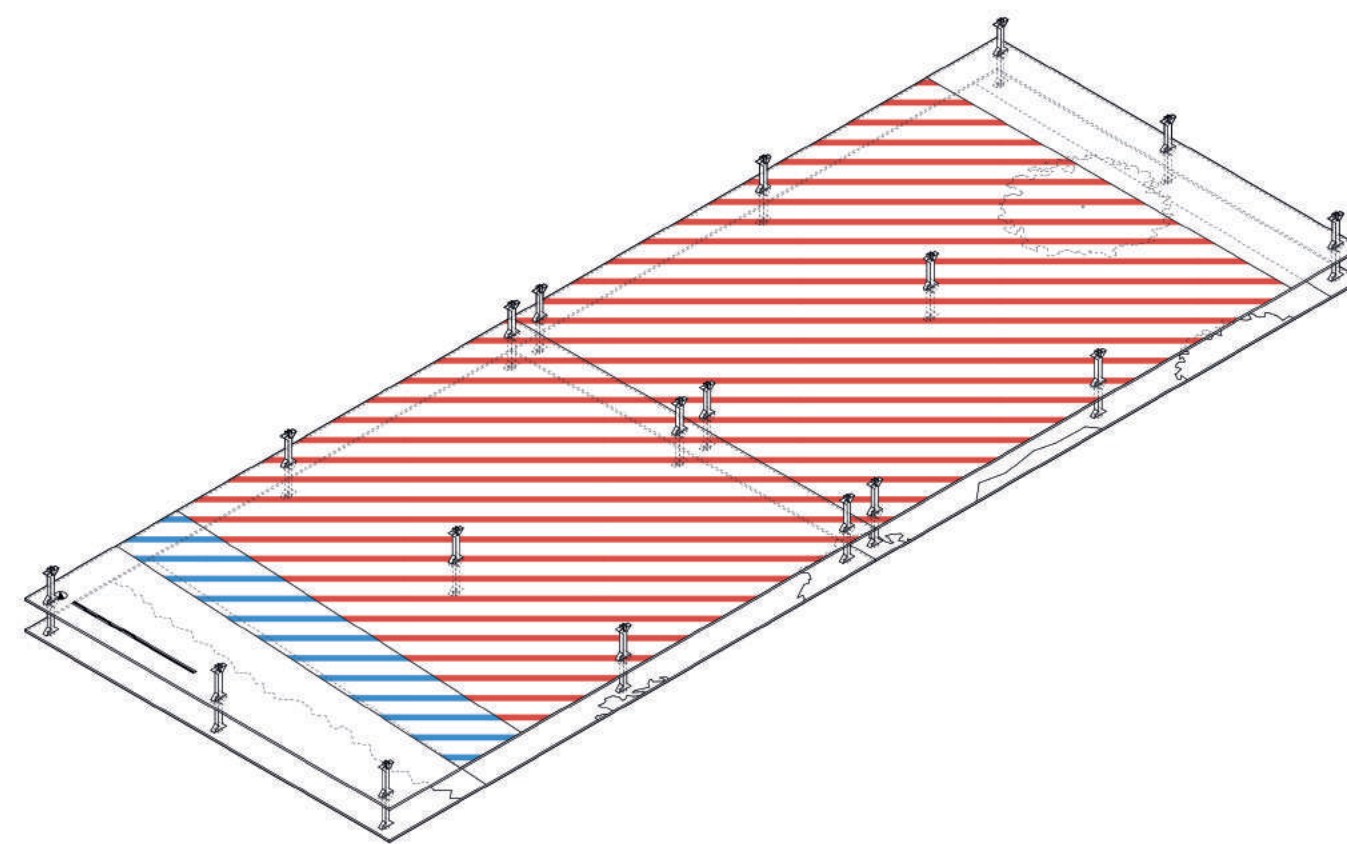


Figure 93. Layer 02- Additional site information from Hastings District Council.

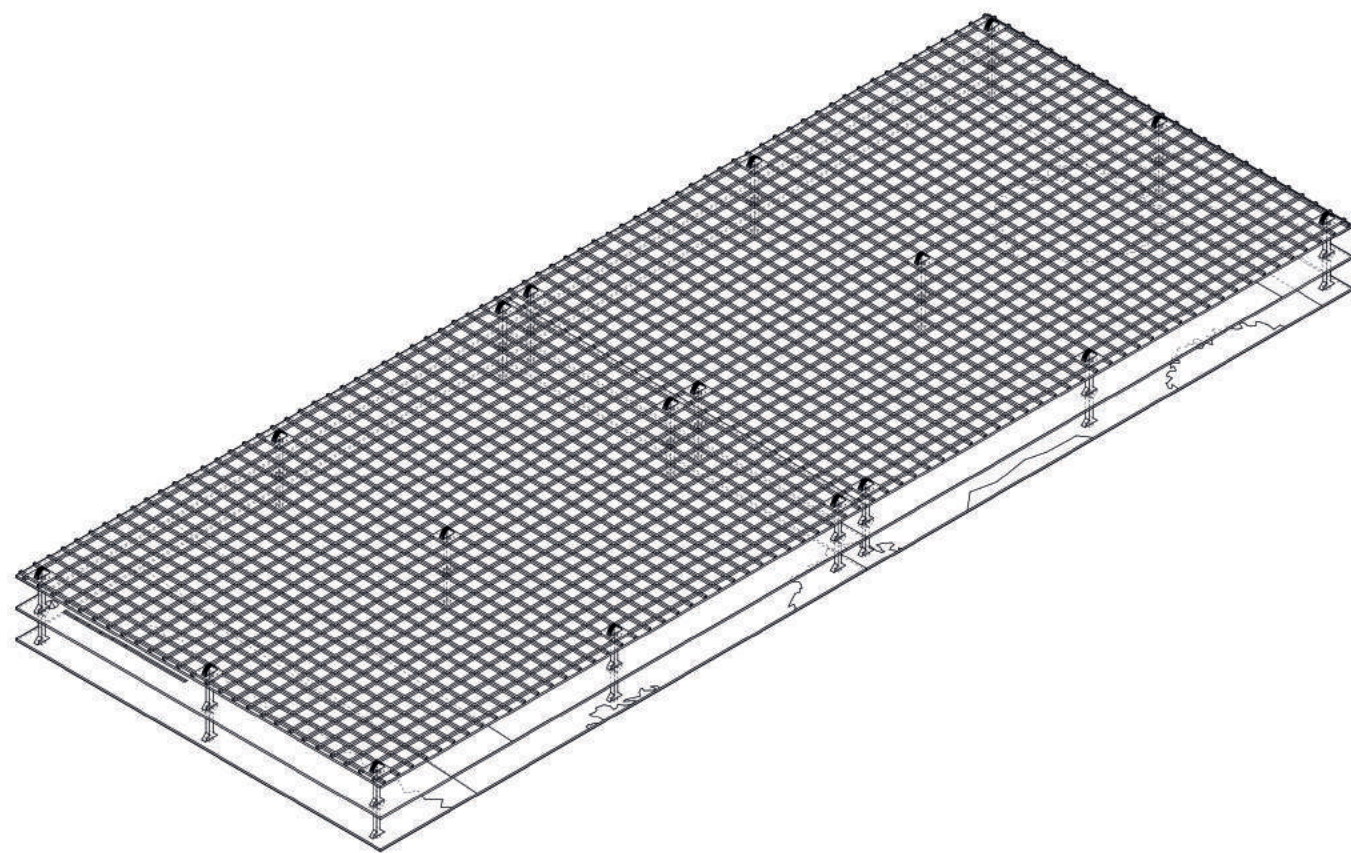


Figure 94. Layer 03- The Grid.

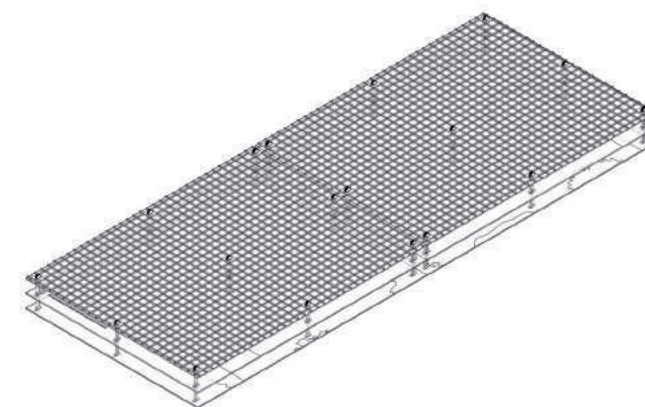


Figure 95. Planning Tool (For Robert Robin).

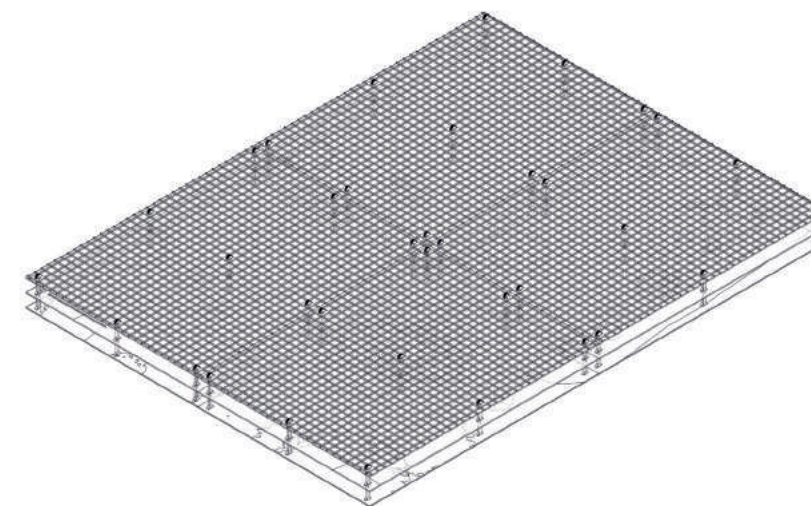


Figure 96. Planning Tool (For Matthew Bennett).

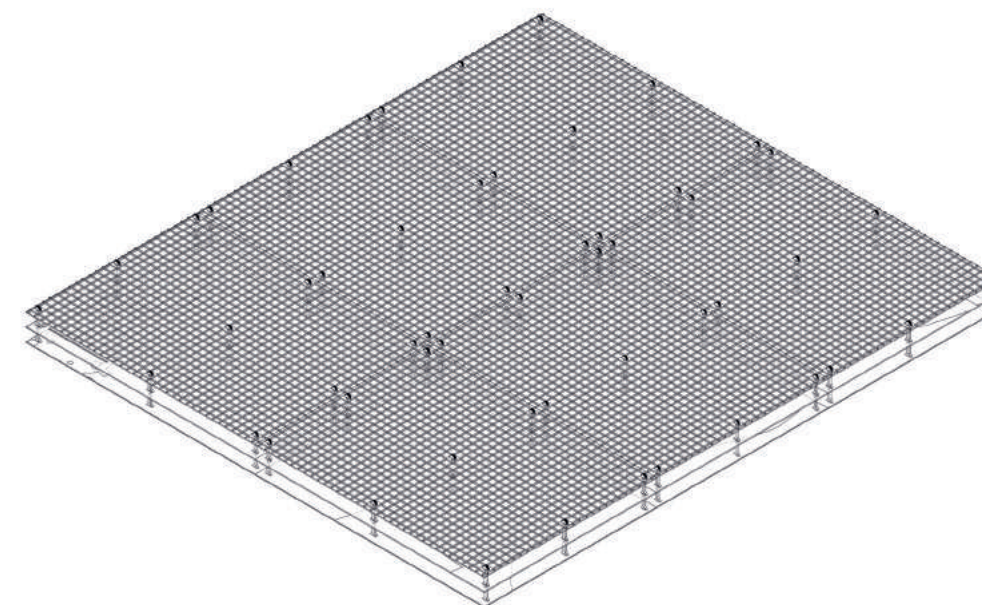


Figure 97. Planning Tool (For Peter Robin).



Figure 98. Plan view of Planning tool- Robert's Property.



Figure 99. Plan view of Planning tool- Matthew's Property.



Figure 100. Plan view of Planning tool- Peter's Property.

Moving Forward

The production of these tools enables whānau participation, fulfilling Research Objective 02 and Research Aim 01. In the following chapter *The O.D.S.*, we discuss the Open Design Studio, a design workshop held at Kohupātiki Marae on the 4th and 5th of August, 2018. The chapter provides a commentary on the event, reflecting on the running of the O.D.S, the participatory design tools utilised, findings and outcomes, and potential future developments.

05

The O.D.S



Figure 101. Whānau members gathered outside Tane-nui-a-rangi.

Purpose of Chapter

The following chapter discusses the Open Design Studio (or O.D.S), a design workshop that was hosted at Kohupātiki Marae on the 4th and 5th of August, 2018. It provides a commentary on the event, reflecting on the running of the O.D.S, the participatory design tools utilised, findings and outcomes, and potential future developments.

In hosting the O.D.S, several Research Aims & Objectives were addressed, including Research Objectives 02 and 03, and Research Aim 01.



Figure 102. The kaupapa of the event is discussed with whānau, and the participatory design tools are introduced.



Figure 103. Understanding how to use each tool took some time (particularly the Planning Tool), but we got there eventually.



Figure 104. Various whānau members reading and answering Question Board questions.

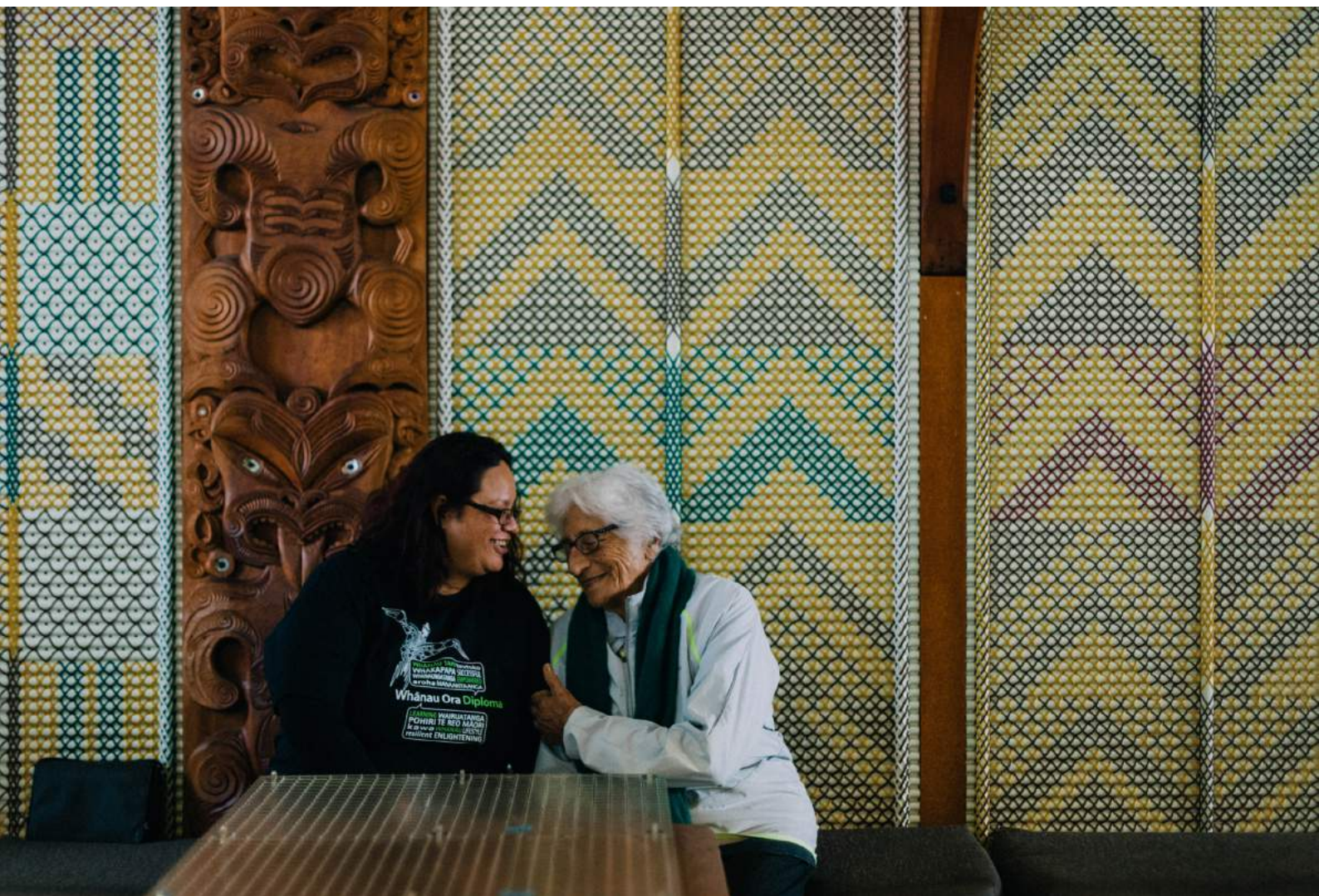


Figure 105. Some kaumātua were happy to just sit and observe the event. Every now and again, they would provide some input.



Figure 106. Unsurprisingly, the Question Boards proved to be quite popular with whānau, as they were quite easy to engage with.

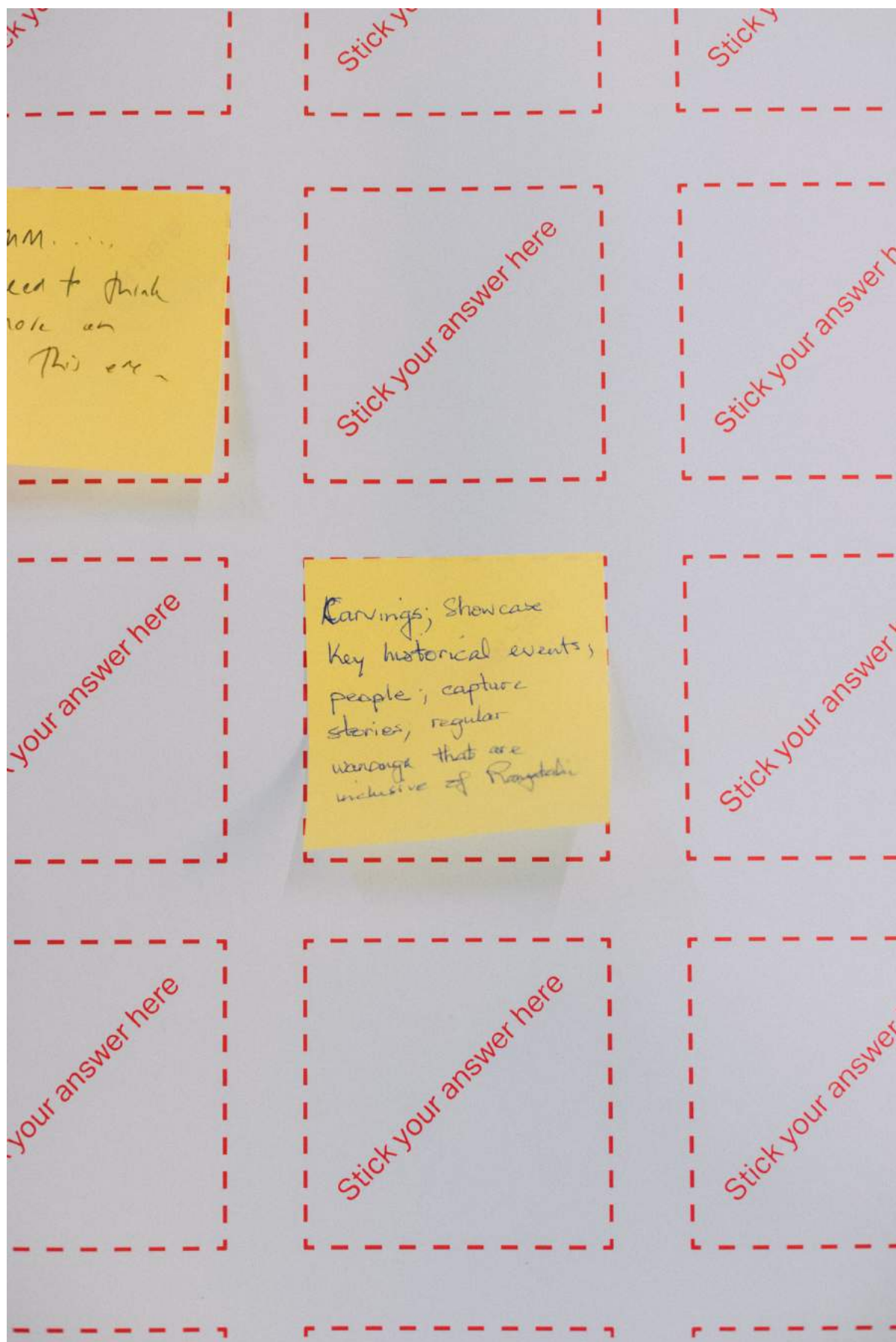


Figure 107. A whānau member discusses how our identity is embodied within our carvings.

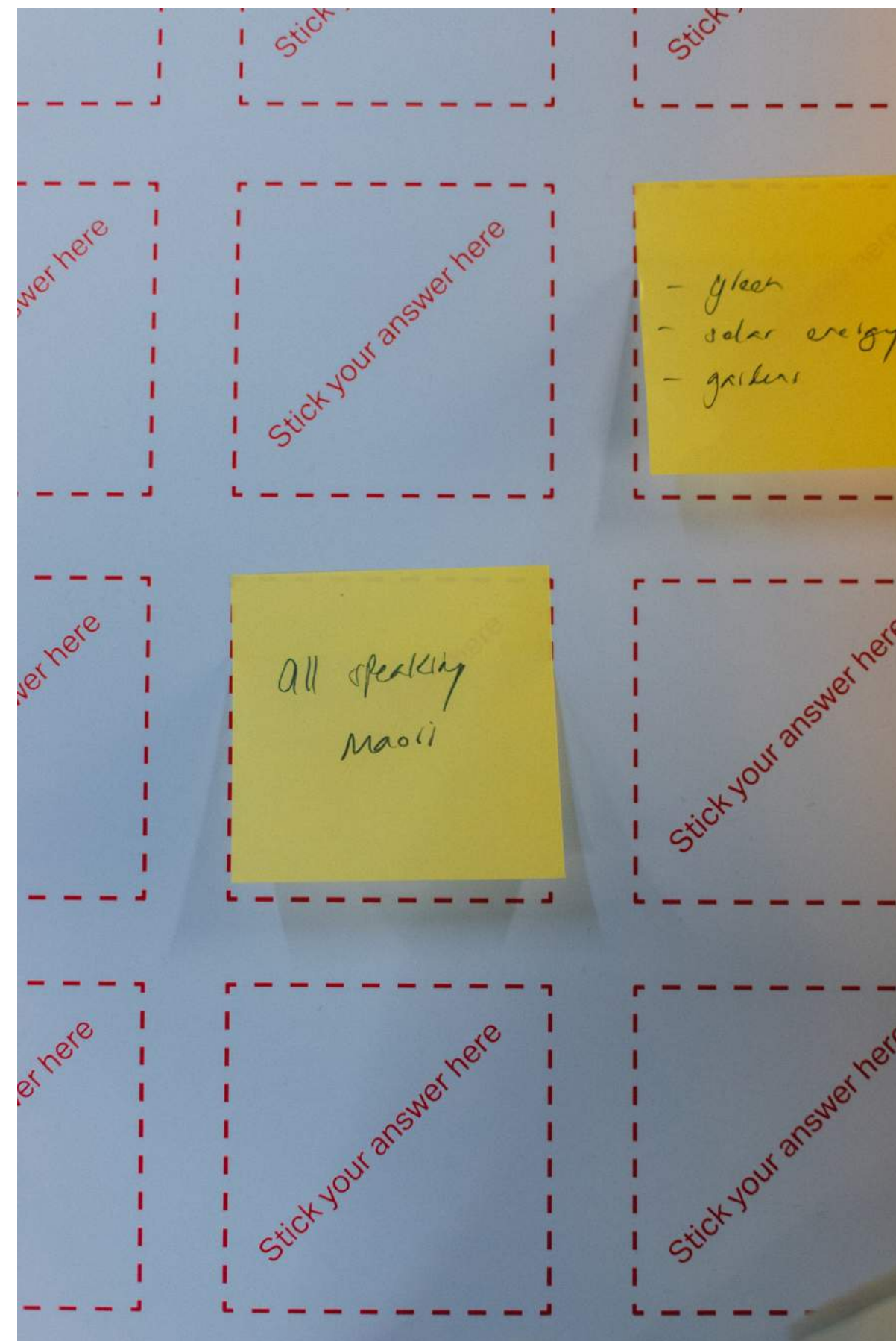


Figure 108. A whānau member hopes for an increase in the number of whānau speaking Te Reo Māori.



Figure 109. A whānau member and architecture colleague discuss existing projects.



Figure 110. Question Boards slowly building up with responses.



Figure 111. Whānau members sketch design concepts with an architecture colleague.



Figure 112. Whānau members working at the Drawing & Physical Modelling Station.



Figure 113. A whānau member sketching design concepts for housing.



Figure 114. A whānau member designs her dream home using the Planning Tool.



Figure 115. A whānau member discusses her design concept with the primary researcher.

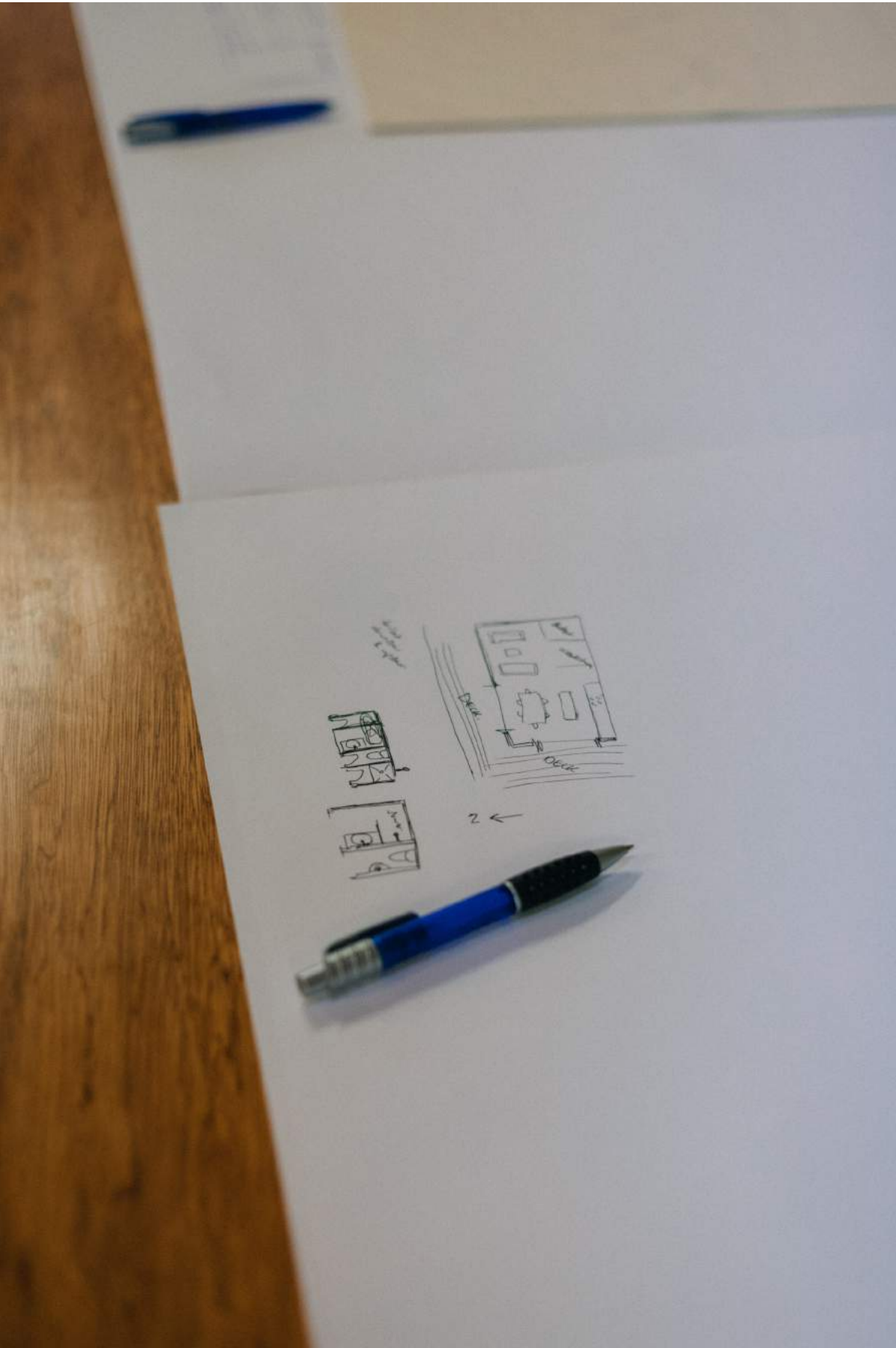


Figure 116. A sketch by a whānau member depicting the arrangement of what looks to be a Living Area and Bathroom.



Figure 117. A kuia answering questions from the Question Boards.

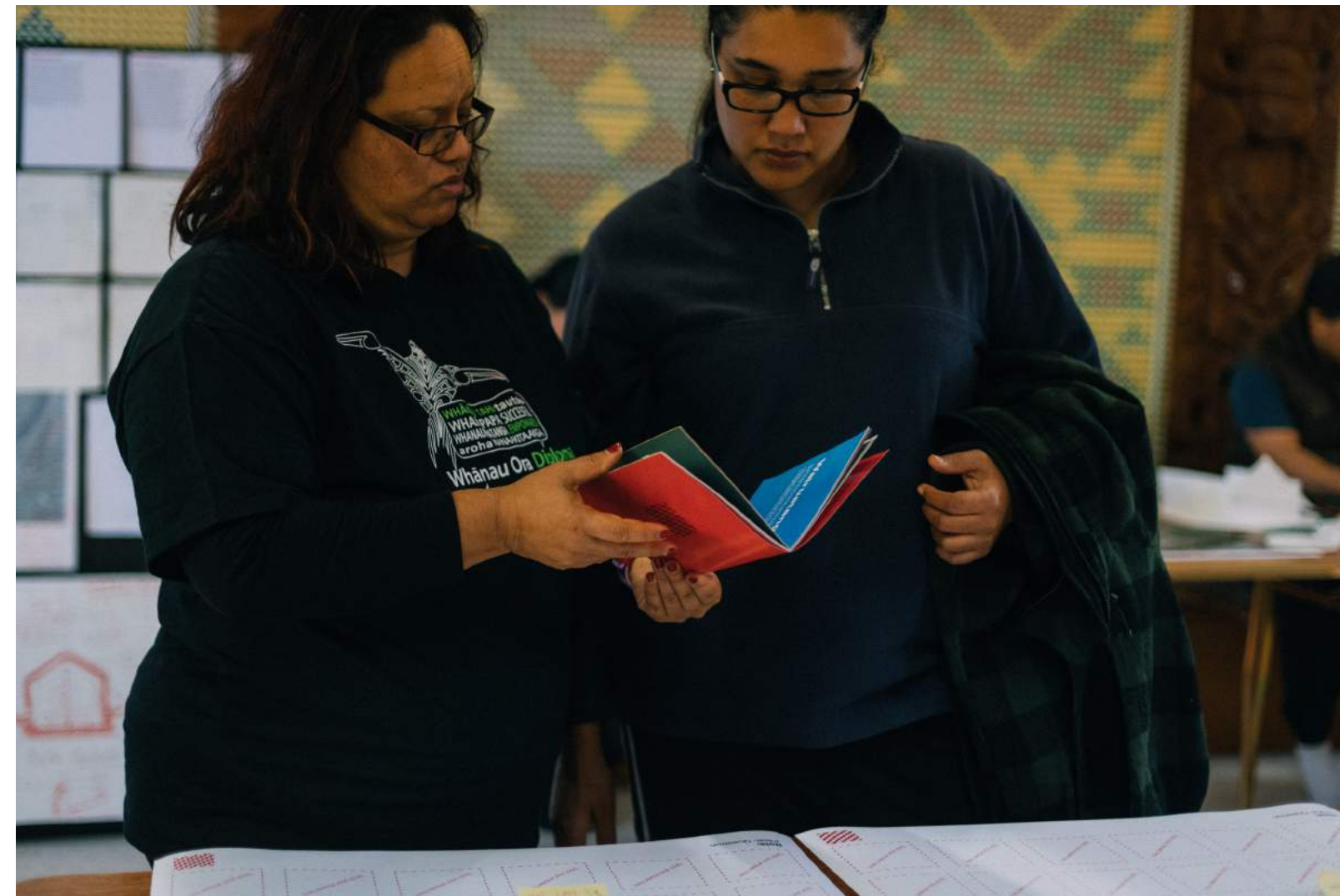


Figure 118. Two whānau members discussing questions from the Questionnaire.



Figure 119. A mother and daughter discussing their housing design concept.



Figure 120. Notes left on visuals of existing projects.



Figure 121. Nearing the end of Day 1. Two whānau members observing some of the design concepts produced during the day.



Figure 122. Young boy and his whare.



Figure 123. A whānau member discusses the value she gained from the O.D.S, and her aspirations for Kohupātiki.



Figure 124. A kuia discusses how much Kohupātiki has changed since she was a young girl, and her aspirations for the future.



Figure 125. Whānau members at the end of Day 1 of the O.D.S.

Reflection

Whilst the O.D.S mostly ran smoothly, it is worth touching on some of the challenges that were faced, both leading into, and during the event.

Participatory Design- IT TAKES TIME!

Preparing for an event such as the O.D.S requires a great deal of time and effort. Organising the event, sending out invites to potential participants, confirming a venue, confirming dates, producing and setting up the participatory design tools, were just a few of the tasks required to run the event.

It certainly could be argued that this approach would not work in architecture practice, where 'real project' constraints such as time and budget in most instances outweigh and control things such as social capital, and design quality. As this is however research, we were presented with an opportunity to explore the participatory design approach to a certain extent.

In reflecting on the event, had an opportunity presented itself to redo the O.D.S, fewer tools might have been produced and utilised (thus reducing a significant investment of time and effort).

Working With Whānau- IT HAS ITS CHALLENGES...

Working with indigenous communities such as mana whenua presents its own unique challenges, and it would be fair to argue that most designers (who predominantly come from European backgrounds) are operating in unfamiliar territory when working with Māori. Much of this has to do with tikanga.

Tikanga is a term used to describe the customs and traditions that very much govern a Māori way of living. Tikanga can also refer to the values that are sought after or embedded within the social fabric of a Māori community. Regardless of its meaning, it is important that tikanga is respected when working with Māori. Useful advice for designers would be to familiarise yourself with whānau tikanga prior to engagement.

In addition, when working with whānau, prepare for the unexpected. This point is made as there were a number of unanticipated whānau quarrels that took place both before and during the event. The research will not spend too much time discussing these arguments in detail (as they were quite trivial), but it should be noted that they were fundamentally the result of whānau dynamics.

Like many Māori communities, Kohupātiki has a whānau structure that consists of rangatahi (youth), pakeke (adults), and kaumātua (elders), the latter of which are viewed as authority figures. Questioning the assumptions and decisions of kaumātua can sometimes lead to altercations between whānau, which is what we saw in the incidents that occurred at Kohupātiki. Considering this, it is important that designers are mindful of whānau structures, and are sensitive in their engagement approach (particularly with kaumātua).



Figure 126. A kuia using the Planning Tool.

Participatory Design- A Valuable Design Approach

Whilst hosting the O.D.S certainly had its challenges (particularly leading into the event), it provided a great deal of value to the research. Through the O.D.S, we were able to:

- 1. Address a number of Research Aims & Objectives
- 2. Better understand some of the aspirations of the Kohupātiki community
- 3. Establish and develop a number of design concepts for potential housing and infrastructure
- 4. Reaffirm a number of assumptions that are made in documents such as KTHK, which relate to specific planning and design for Māori housing

Finishing Up Early

Although the O.D.S had been initially organised as a 2-day event, we found that we had more than enough material to work with after the first day, and so the decision was made to call an unofficial end to the event. We did have whānau members turn up the following day however, and as the equipment was still set up, they had an opportunity to provide their input.



Figure 127. Photo of tekoteko (carved head attached to the gable of Tane-nui-a-rangi) taken at the end of Day 1.

Reflecting on the Participatory Design Tools

In reflecting on the participatory design tools utilised at the O.D.S, it should be noted that some reflective material has come from various academics and professionals who have reviewed the research over the course of the year. These individuals include:

Derek Kawiti – Senior Lecturer in Interdisciplinary Digital Design, School of Architecture, Victoria University of Wellington

Kerstin Thompson – Architect, Kerstin Thompson Architects

Dr Mike Austin – Academic, The University of Auckland- School of Architecture and Planning

Academic & Professional Feedback

The participatory design tools utilised for the O.D.S were generally well received in reviews by academics and professionals. In most instances, queries were typically asked of the Planning Tool, as some reviewers were not entirely convinced by the use of a grid. Their argument (which was somewhat expected) being that traditional Māori settlements were less constrained compared to European, and that a degree of flexibility was lost through the grid, which were certainly valid points. – There is material to support these assertions.

Kerstin Thompson also asked a query of the Design Assistant; her interest was in its use and application to an indigenous community. She questioned whether it was required in the first place, and concluded that an opportunity may have been missed through its use, as it may have constrained whānau participants in their designing, thus deterring opportunities for innovation. – Again, a valid point, it should be noted however that the Design Assistant resulted from an initial consultation with whānau members, where they indicated a need for the tool.

Dr Mike Austin had a final question regarding the use of physical models. He asserted that whilst the physical modelling approach had been considered, it perhaps was not executed to a level desirable for the research. He concluded that it may have been beneficial to have produced some physical models prior to the O.D.S, and to have them on display for whānau members to look at during the event. – Another valid point, and it should be noted that this approach was considered, however there was some concern that in providing physical models produced prior to the event, whānau members would either reuse or slightly readapt them out of ease, which would have reduced opportunities for innovation.



Figure 128. Wharenui model completed with whānau.

Personal Reflection

In general, all tools were easily utilised by whānau participants (with the exception of the Planning Tool, which took some time to explain how to use). Unsurprisingly, the Questionnaires and Question Boards were popular amongst whānau as they were very easy to engage with (reading and answering questions is a fairly simple exercise, that most whānau were familiar with). Responses to the Questionnaires and Question Boards provided valuable material to continue developing the research.

A significant amount of information was gathered utilising the Questionnaires and Question Boards. After reflecting on this information, several themes became apparent. These themes related to:

- 1. The revitalisation of Te Reo Māori, and the upholding of important tikanga
- 2. Whānau development and identity
- 3. Rangatahi or child welfare
- 4. Housing & Infrastructure
- 5. Protection of the whenua or land, and its waterways

These themes are elaborated on further in the following chapter, *Nga Taonga*, where specific interventions that address each theme are discussed.

Whilst still relatively easy to engage with, both the visuals of existing projects and Drawing & Physical Modelling Station were perhaps underutilised during the O.D.S, with only a small number of sketches and physical models produced. These sketches and models did however provide some useful insights. Sketches illustrated how whānau were interested in the use of Māori patterns and motifs, and models indicated an interest in the traditional gable form of the contemporary wharehau.

As mentioned earlier, it took some time explaining how to use the Planning Tool. The same can be said for the Design Assistant. Once understood however, we saw a number of housing design concepts produced (figure 121). Final design concepts are discussed in further detail in *The What if?* chapter of this research, but it should be mentioned at this point that a number of reoccurring planning and design decisions were identified from the various design concepts produced. Concepts typically:

- Had building footprints ranging from 80-200m²
- Consisted of a separate, independent dwelling, that could either serve as a Kaumātua Flat, accommodation for manuhiri, or in the case of a large family, serve as an additional bedroom
- Had 2-3 bedrooms
- Had an open plan Kitchen/ Dining/ Living Area arrangement
- Had been planned to make the most of natural daylight
- Had been planned with respect to tapu and noa cultural sensitivities

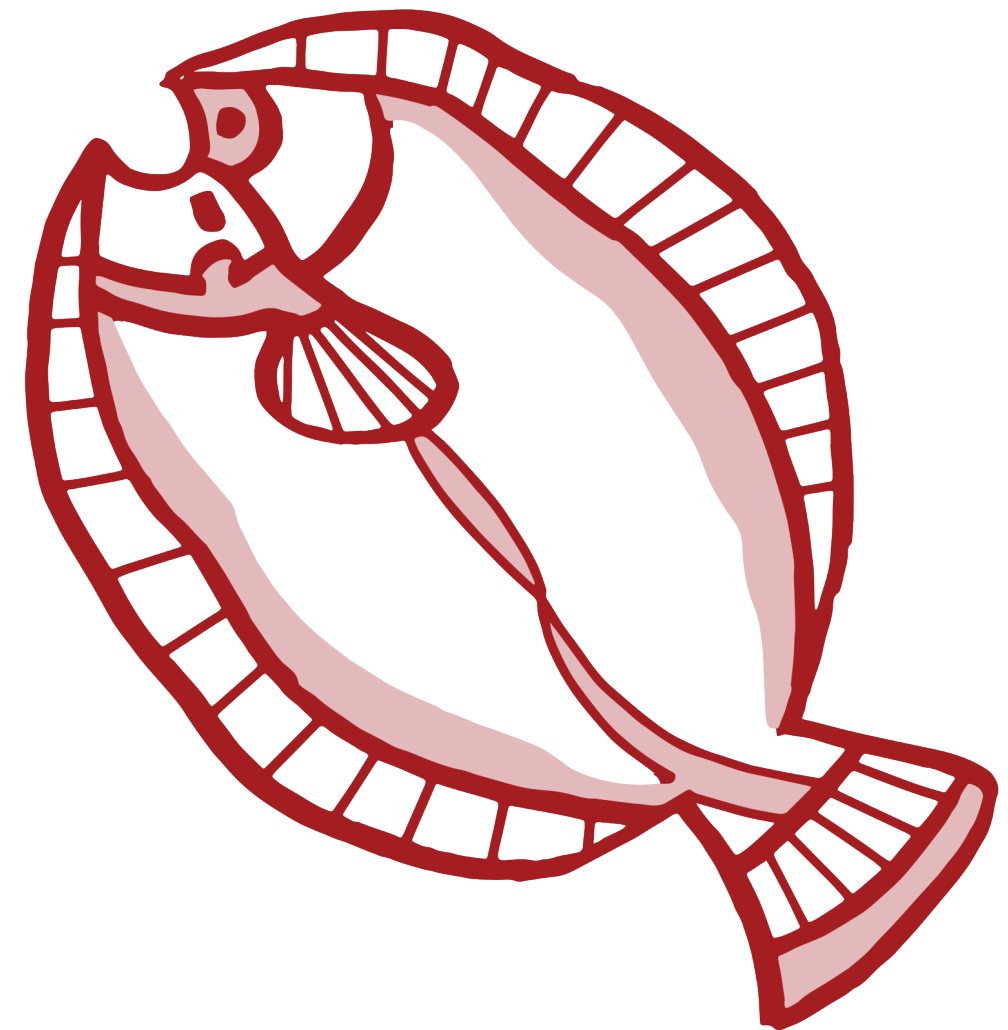


Figure 129. A housing design concept completed by whānau.

Final Comments

Final comments should be made about what whānau valued and thought was unique about Kohupātiki. To begin with, whānau valued Kohupātiki's location, and proximity to the Marae. They also added that they thought it was an awesome place for kids to grow up, as there was a strong sense of community, and they valued being close to their kaumātua, and being able to learn from them.

In terms of what made Kohupātiki unique, they discussed their rich Christian history, their manaakitanga (hospitality), their location next to the Old Ngaruroro River, and their association with the Pātiki (flounder) (figure 130), whose population once thrived in the Old Ngaruroro River, and was an abundant food source, but whose population had suffered a significant decline, due to river channelization.



Moving Forward

By hosting the O.D.S, Research Aim 01 was fulfilled. In addition, the hosting of the O.D.S began to address Research Objective 03, and Research Aim 02. In the following chapter, we discuss Nga Taonga (The Treasures), the resulting outcomes of the O.D.S. Nga Taonga are essentially a series of collectively established ideas or opportunities, which we (Kohupātiki) thought had potential in improving land productivity. Nga Taonga marks a significant moment in the research, as it leads to the development of Kohupātiki's *What if?*, a speculative masterplan for the future, for Kohupātiki.

06

Nga Taonga



Figure 131. Illustration of wharehau.

Purpose of Chapter

The following chapter discusses Nga Taonga (The Treasures), which were the resulting outcomes of the O.D.S. It begins by elaborating further on Nga Taonga, discussing its inception and purpose. It then proceeds to detail all of the various interventions that make up Nga Taonga. The chapter concludes by discussing the selected Taonga that ultimately lead to the development of Kohupātiki's *What if?*, a speculative masterplan for the future, for Kohupātiki.

The production of Nga Taonga contributes towards addressing a number of Research Aims & Objectives. These include Research Objective 03, and Aim 02.

1G

1 2 5

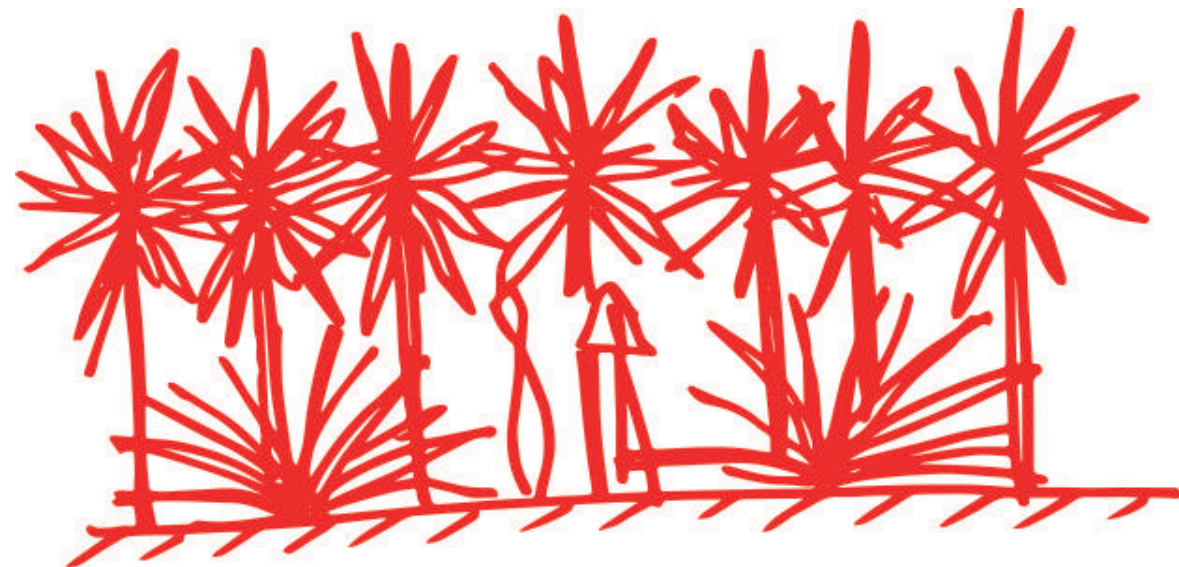


Figure 132. Native Plant Restoration

About Nga Taonga

Taonga are considered to be anything (tangible or intangible) that carries significant cultural or social value. Te Reo Māori is sometimes referred to as a taonga, as is the land, and in particular Māori land. It was through this understanding that the concept of Nga Taonga (or The Treasures) was established.

Nga Taonga are the resulting outcomes of the O.D.S, and were developed through a thorough reflecting process. They are best described as a series of ideas or opportunities which we (Kohupātiki) thought had potential in improving land productivity. These ideas ranged in scale and effort of application (some ideas could be realised quite easily, such as regular wānanga at the Marae, whereas others, such as the development of housing were considerably more challenging).

Whilst ideas were diverse, ranging from Apiculture (beekeeping), through to a new cycling track to Clive, upon closer inspection, interconnections were established between the various individual interventions, and so were grouped into a series of categories that could ultimately contribute towards addressing the themes that were established and discussed in the previous chapter. For instance, intervention 1G- *Native Plant Restoration* (figure 132), which fell under the category of *Agriculture and Horticulture*, could contribute towards addressing theme 1- *The revitalisation of Te Reo Māori, and the upholding of important tikanga*, theme 2- *Whānau development and identity*, and theme 5- *Protection of the whenua or land, and its waterways*.

Finally, various Taonga were selected for further development and would contribute towards the development of Kohupātiki's *What if?*, a speculative masterplan for the future, for Kohupātiki. The process in selecting these Taonga was primarily influenced by what whānau wanted to see developed, and also their impact in addressing the previously discussed themes. Selected Taonga have been highlighted in proceeding pages.

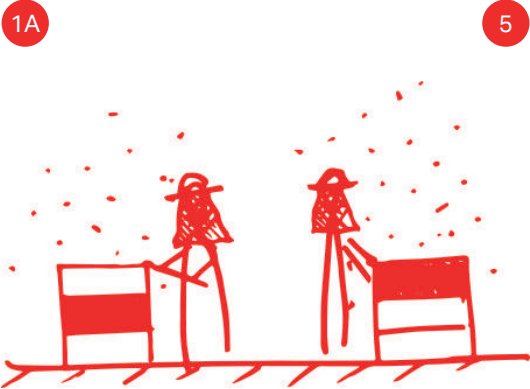


Figure 133. Apiculture (Beekeeping)

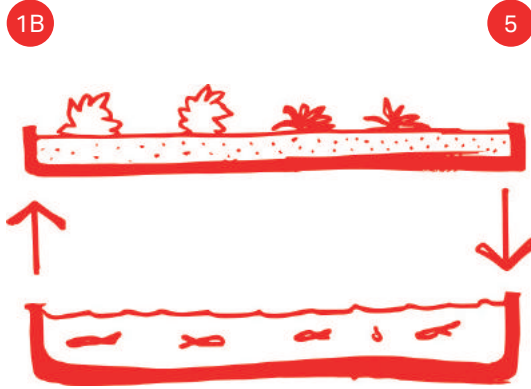


Figure 134. Aquaponics

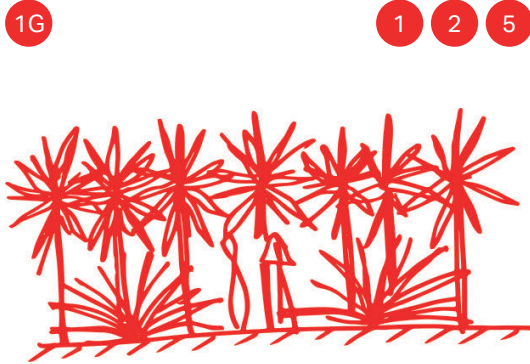


Figure 139. Native Plant Restoration

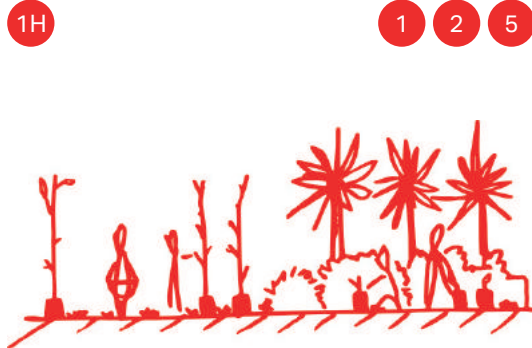


Figure 140. Plant Nursery

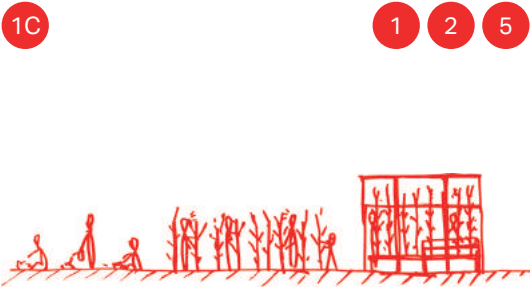


Figure 135. Community Gardens



Figure 136. DIY Organic Waste Management Systems



Figure 141. Vege Market

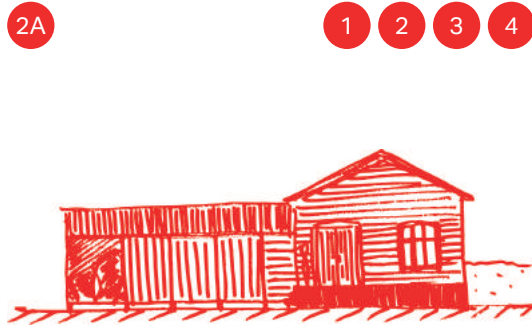


Figure 142. Carving House Renovation



Figure 137. Hemp Farming



Figure 138. Improve/ Protect Biodiversity



Figure 143. Community Generated Art

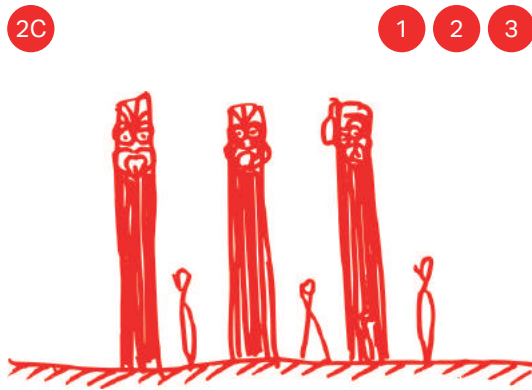


Figure 144. Pou

2D 1 2 3

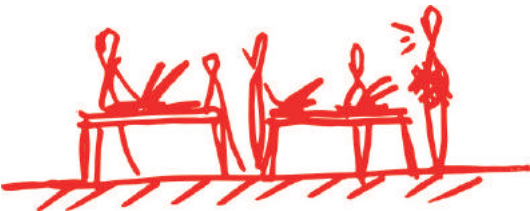


Figure 145. Various Wānanga- Raranga (Weaving)

2E 1 2 3



Figure 146. Various Wānanga- Whakairo (Carving)

3D 2 3



Figure 151. Gym

3E 2 3



Figure 152. Kohupātiki Marae Games

2F 1 2 3



Figure 147. Whare Raupō

Health and Wellbeing

3A 2 3



Figure 148. Basketball Court

3F 2



Figure 153. Onsite Medical Support and Caregiving

3G 1 2

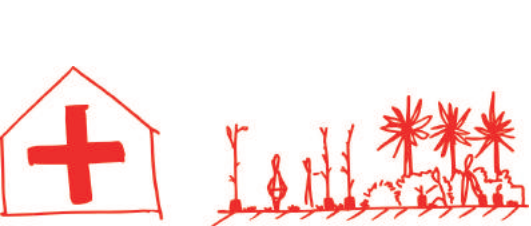


Figure 154. Rongoā Māori (Māori Medicine)

3B 2 3

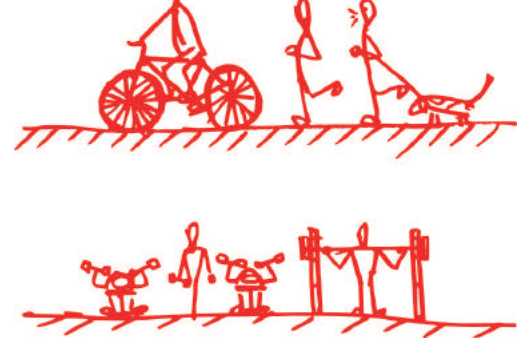


Figure 149. Community Exercise Sessions

3C 2 3



Figure 150. Community Playground

3H 2 3



Figure 155. Running and Cycling Track

History and Education

4A 2 3 5



Figure 156. History Trail

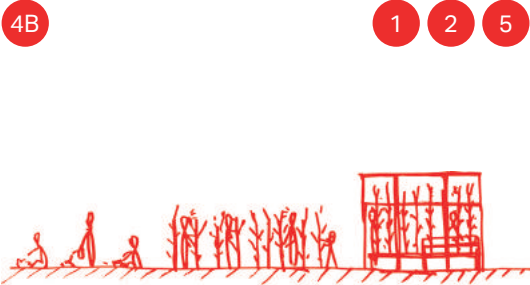


Figure 157. Various Wānanga- Growing Kai



Figure 158. Various Wānanga- Mau Rākau

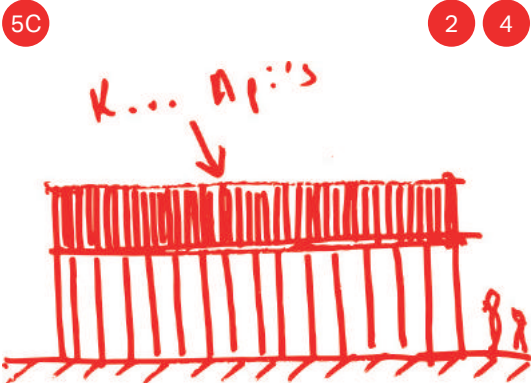


Figure 163. Koro Api's Shed- Fit Out

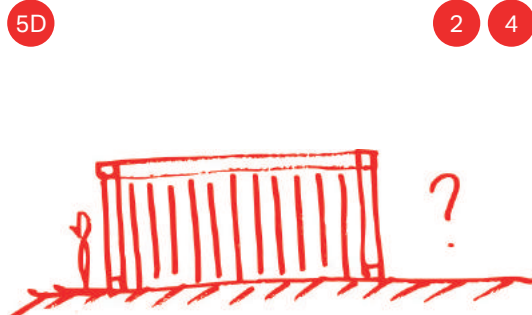


Figure 164. Koro Api's Shipping Container- Fit Out



Figure 159. Various Wānanga- Our Roots



Figure 160. Various Wānanga- Te Reo Māori



Figure 165. Marae Accommodation



Figure 166. New Housing

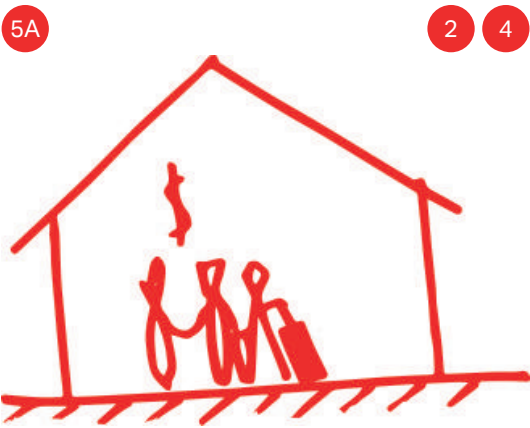


Figure 161. Airbnb



Figure 162. Camping



Figure 167. Occupying the Empty

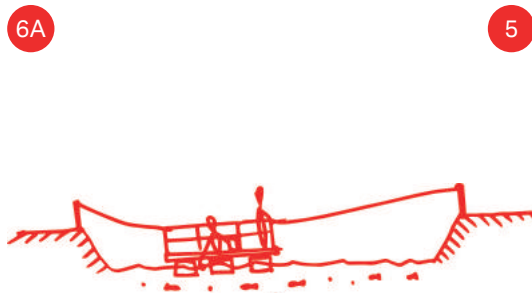


Figure 168. DIY Pontoon



Figure 169. Footbridge

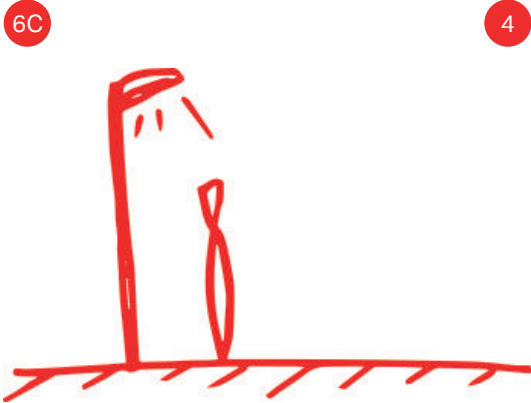


Figure 170. Lighting



Figure 175. The Old Ngaruroro River- Improve and Protect



Figure 176. Treehouse



Figure 171. Pātaka- Elevated Structure



Figure 172. River Boardwalk

Recreational Activities



Figure 177. Basketball Court

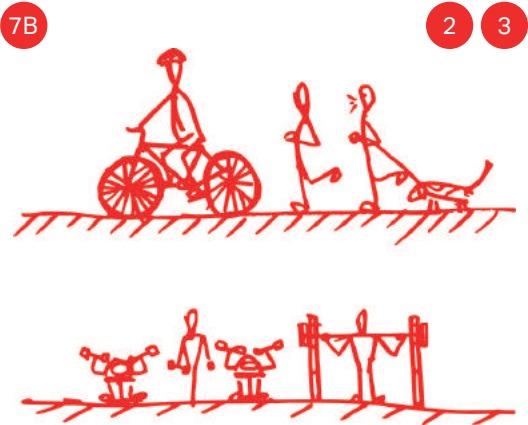


Figure 178. Community Exercise Sessions



Figure 173. Signage

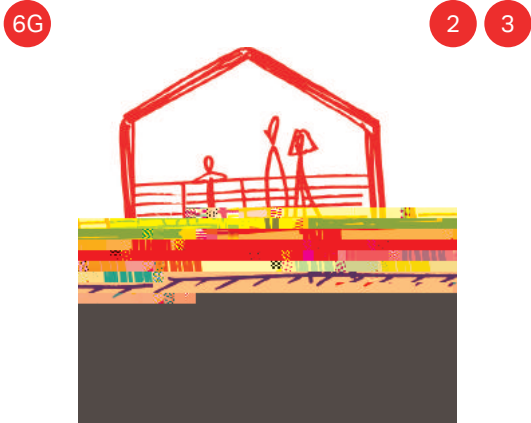


Figure 174. Story Boxes



Figure 179. Community Playground

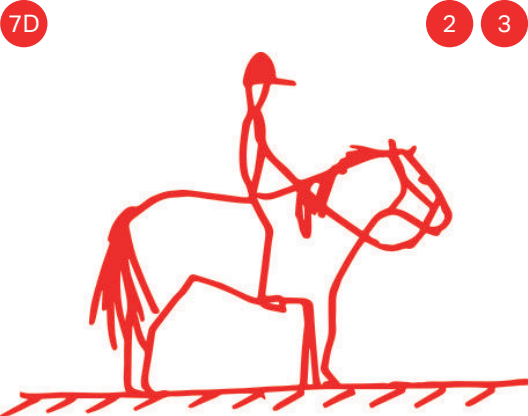


Figure 180. Horse Riding

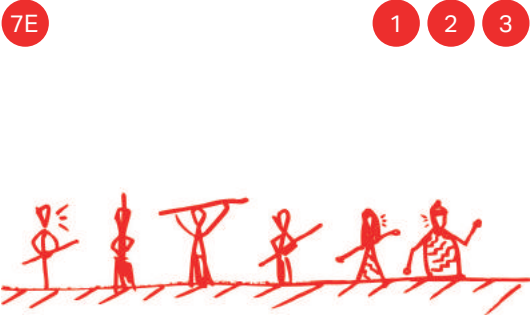


Figure 181. Kapa Haka



Figure 182. Kohupātiki Marae Games



Figure 187. Footbridge

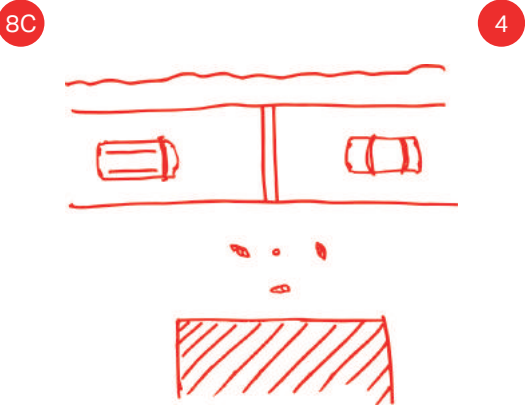


Figure 188. Improved Road Access and Safety



Figure 183. Running and Cycling Track



Figure 184. Tours of Kohupātiki Marae



Figure 189. Rainwater Harvesting

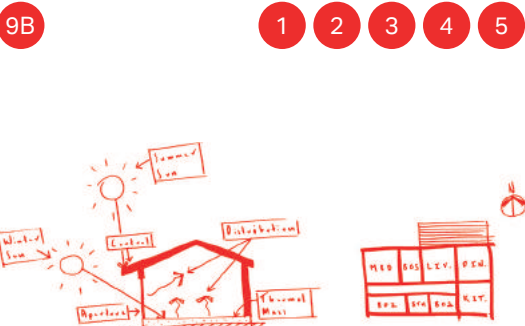


Figure 190. Smart Design- For Passive Solar Gain



Figure 185. Various Events- Markets



Figure 186. Cycle Route to Clive



Figure 191. Solar Power Systems

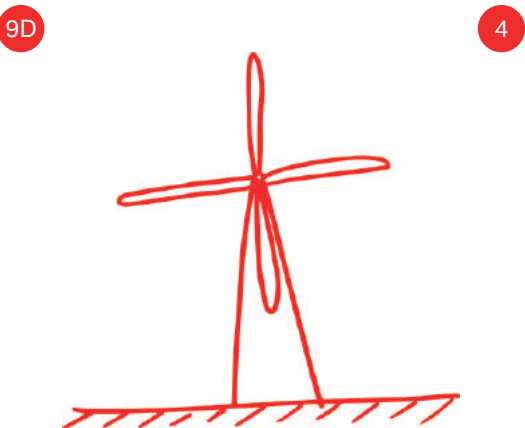


Figure 192. Wind Power Systems

Sustainable Solutions

Site Access and Safety

Moving Forward

Nga Taonga was the product of a thorough reflecting process, and was valuable in distilling all of the information gathered at the O.D.S. It also helped to understand the various interconnected relationships between each intervention. Through the development of Nga Taonga, Research Objective 03, and Aim 02 were addressed.

As mentioned earlier, various interventions were selected for further development. It should be noted that whilst a number of interventions are not explicitly developed in the following chapter, due to their interconnected nature, a fair argument would be that through the development of the selected interventions, other interventions are inherently addressed. For instance, the development of 2A- *Carving House Renovation* (figure 142), could inherently address 2D- *Raranga (Weaving) Workshops* (figure 145) and 2E- *Whakairo (Carving) Workshops* (figure 146), as the Carving House could host these kinds of events. The same can also be said for non-selected interventions.

The next chapter introduces Kohupātiki's *What if?*, a speculative masterplan for the future, for Kohupātiki. This masterplan begins to envisage the selected taonga on site. This chapter marks a significant moment in the research, as through it, all Research Aims & Objectives are addressed.

07

The *What if?*

Purpose of Chapter

The following chapter discusses Kohupātiki's *What if?*, a speculative masterplan for the future, for Kohupātiki. It begins to envisage the selected interventions from the previous chapter (Nga Taonga) on site.

Interventions are presented in the form of a narrative that aims to take readers on a journey through the site. As readers go on this journey, they are introduced to the various interventions conceived and developed collaboratively with individual whānau members. These interventions are now established as their *What if?* For instance, intervention 01 is Nanny Portus's *What if?* (figure 194), which was road safety signage, which was developed out of Nga Taonga, which was first established through the O.D.S. In addition to this narrative, comments are provided discussing some of the design decisions made in developing each taonga.

This chapter marks a significant moment in the research, as through its completion, all Research Aims & Objectives are addressed.

Kohupātiki's *What if?*

Figure 193. Kohupātiki's *What if?*, a speculative masterplan for the future.



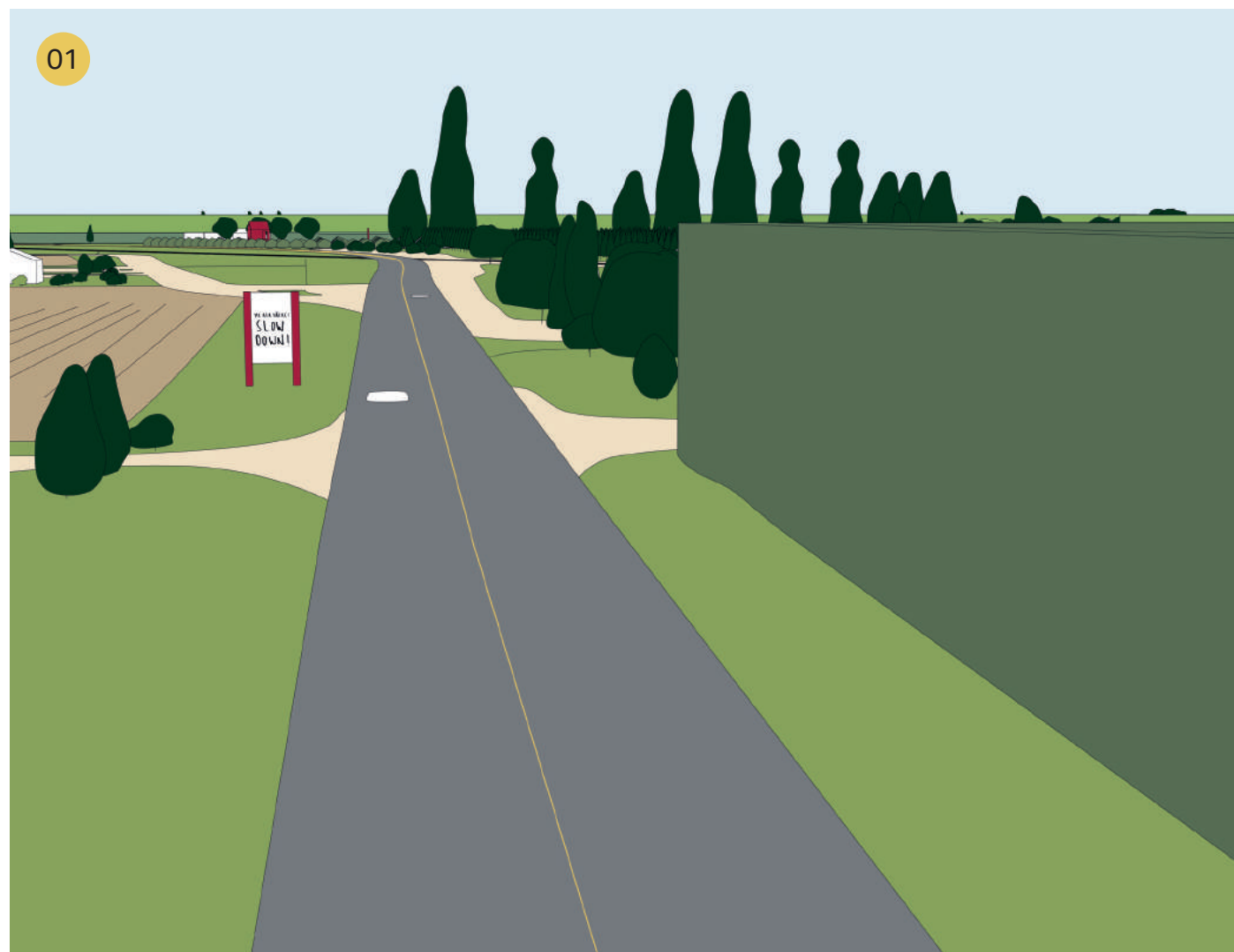


Figure 194. ME ATA HĀERE! (SLOW DOWN!)- Nanny Portus's *What if?* Ensuring whānau safety on the road.

Nanny Portus's *What if?*

Nanny Portus's *What if?* was simple; road safety signage instructing motorists to slow down as they approached the main access point to Kohupātiki. Her concern for whānau road safety was very appropriate, given the unfortunate location of the site's main entry on Farndon Road.

Themes addressed through intervention(s)

4. Housing & Infrastructure



Figure 195. Nau mai! Nau mai! (Welcome! Welcome!)- Koro Dave's *What if?* Kohupātiki community art project to welcome all onto site.

Koro Dave's *What if?*

Koro Dave, a local tohunga whakairo (master carver) was interested in how mahi toi (arts and crafts) might bring together our community, and help foster community identity. His *What if?*, involved a community art project, which would result in a large-scale wayfinding directional sign, welcoming whānau and visitors on to site. Looking closer, we can see an image of a pātiki, which is culturally and historically significant to Kohupātiki, as mentioned in previous chapters.

Some of the new housing (coloured in earthy-brown) can also be seen, as can Koro James's solar panels and community gardens.- New housing is discussed in further detail in following pages.

Themes addressed through intervention(s)

1. The revitalisation of Te Reo Māori, and the upholding of important tikanga
2. Whānau development and identity
4. Housing & Infrastructure



Figure 196. Maintaining and reinstating existing and past traditions.- Pā Harakeke- Aunty Selena's *What if?*

Aunty Selena's *What if?*

Aunty Selena, a local tohunga raranga (master weaver) was interested in the establishment of a Pā Harakeke (flax plantation). She asserted that as kaitiaki (land stewards) we had a responsibility to see to the restoration of native plant species, adding that the establishment of such an intervention would allow for the continued exercising of traditional practices such as raranga, and also rongoā. The planting of harakeke also had the potential to help prevent riverbank erosion, which addresses theme 5- *Protection of the whenua or land, and its waterways*.

Also worth noting is Aunty Audrey's *What if?*, which related to Apiculture (Beekeeping) and can be seen in the foreground. We can also see a series of pou (carved posts) located around the plantation, which are used as wayfinding devices. On the right of the image you can see

two elevated structures, whose forms begin to resemble that of the pātaka (elevated storehouse), which is synonymous with Māori architecture, and is discussed on the next page. You can also see the New Chadwick Homestead further in the background, which again, is elaborated on in upcoming pages.

Themes addressed through intervention(s)

1. The revitalisation of Te Reo Māori, and the upholding of important tikanga
2. Whānau development and identity
5. Protection of the whenua or land, and its waterways

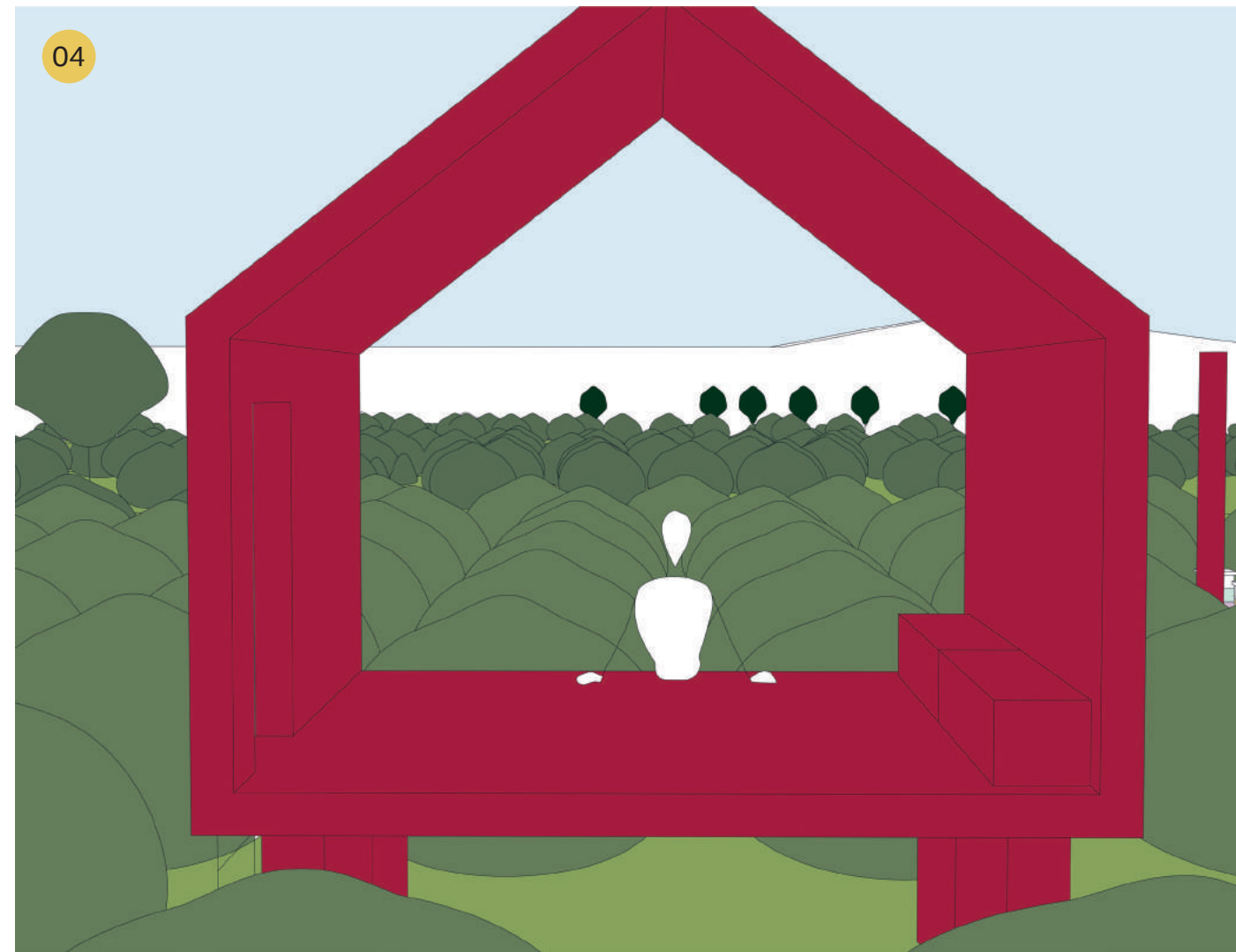


Figure 197. Acknowledging the past.- Elevated structure oriented towards the Old Ngaruroro River and Tane-Nui-A-Rangi Pa site.

Elevated Structures

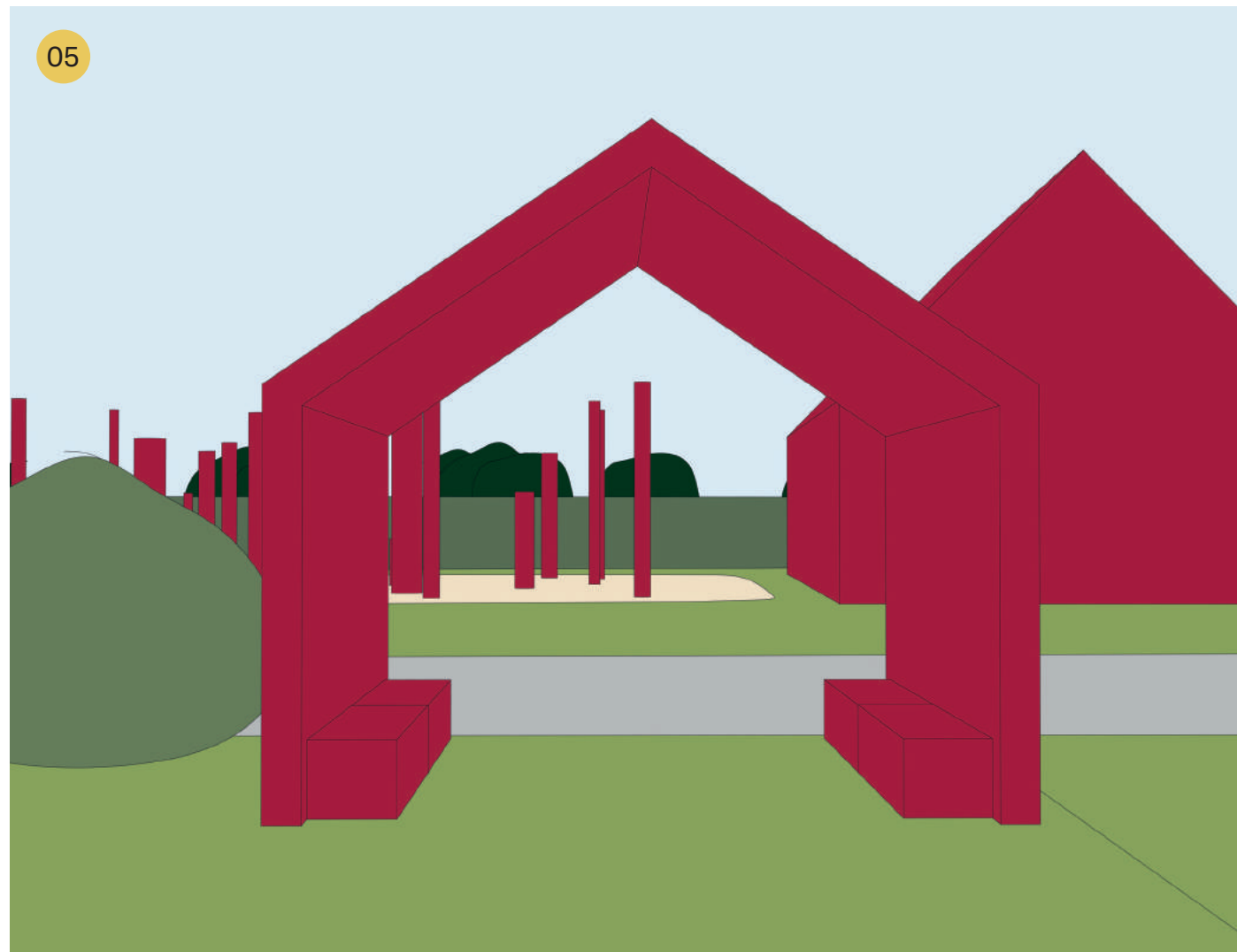
Various whānau members discussed the importance of respecting our past, and protecting our taonga. They then continued to discuss how they considered structures such as the whareni and pātaka as important taonga, and how they wanted to see the development of these structures within the masterplan.

In response to this discussion, a series of elevated structures resembling the pātaka were located around the site. In fitting with the theme of respecting our past, these structures were oriented towards significant landmarks throughout the site, including the Old Ngaruroro River, and Tane-Nui-A-Rangi Pa. These structures would serve as a fun place for whānau to gather, socialise, and reflect on our past.

Themes addressed through intervention(s)

1. The revitalisation of Te Reo Māori, and the upholding of important tikanga
2. Whānau development and identity
3. Rangatahi or child welfare
4. Housing & Infrastructure

05

Figure 198. A new Waharoa.- Koro Bevin's *What if?*

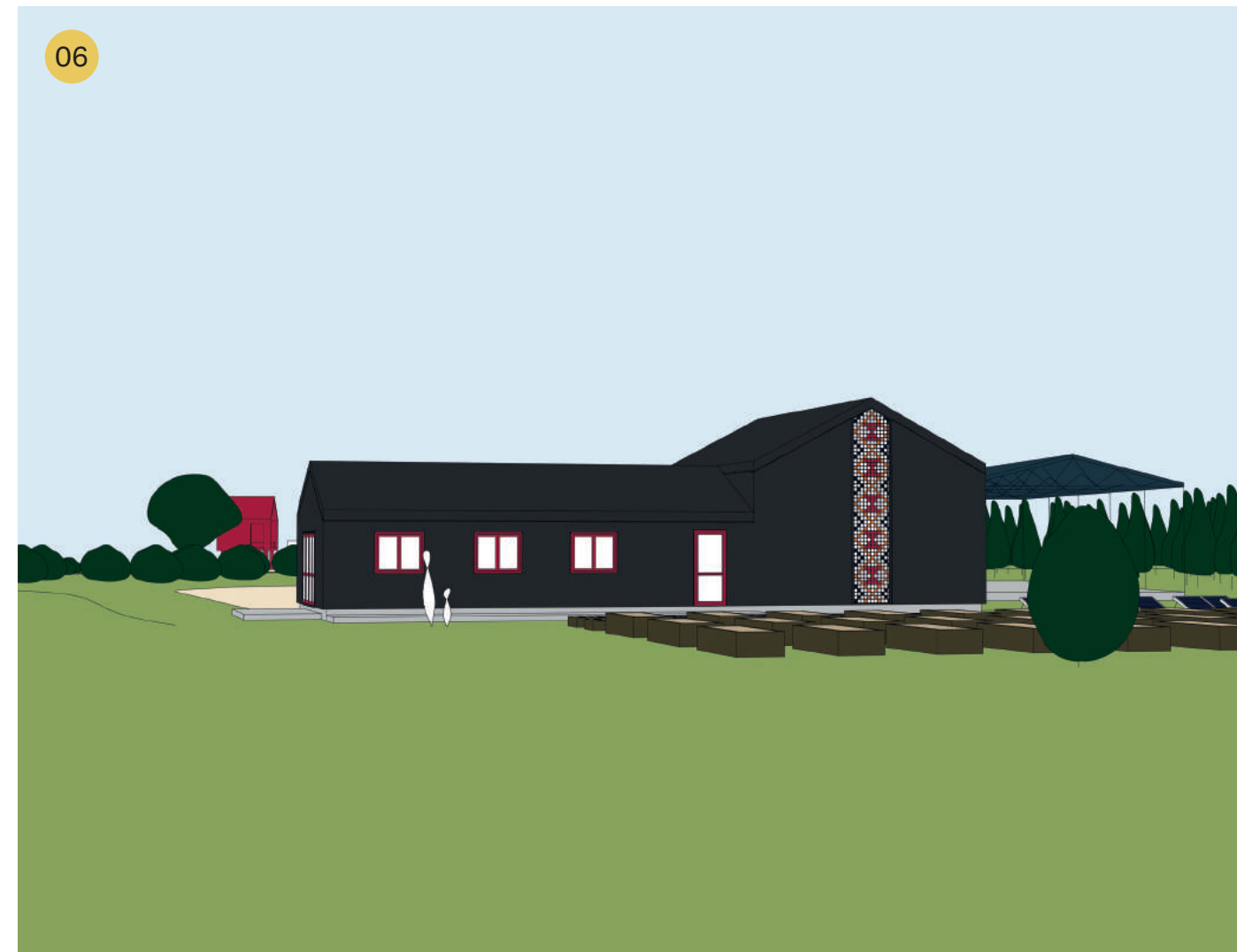
Koro Bevin's *What if?*

Koro Bevin's *What if?* was a waharoa; a gateway (often carved) where manuhiri (visitors) gather before being formally welcomed on to a marae for the first time. Koro Bevin's *What if?* was appropriate given that Kohupātiki has never had a waharoa, yet has played host to a number of large community gatherings. Both the proportions and gable form of the waharoa were informed by Tane-nui-a-rangi. Further in the distance we can see Audrey-Bayley's *What if?*, which was a pou playground for rangatahi to play on.

Themes addressed through intervention(s)

1. The revitalisation of Te Reo Māori, and the upholding of important tikanga
2. Whānau development and identity
3. Rangatahi or child welfare
4. Housing & Infrastructure

06

Figure 199. The new Chadwick Homestead.- The Chadwick's *What if?* Building finishes allude to the sites unique history.

The Chadwick's *What if?*

The Chadwick whānau were keen on seeing the development of a new Homestead for Kohupātiki. The Homestead could serve a number of purposes; providing accommodation for whānau and manuhiri, and also hosting regular wānanga (workshops) for Te Reo Māori, whakairo, raranga, and rongoā.

Again, in an effort to pay respect to our past, and the old Homestead, the previous building's proportions have been maintained. In addition, several allusions to Kohupātiki's unique history and identity have been made through the new Homestead's building finishes. For instance, the charred timber cladding alludes to the pātiki, and the red joinery references the red carvings typically found on contemporary wharenui.

The development of a stained glass window was largely inspired by a John Scott building (a church) which is located across the Old Ngaruroro River. The window incorporates motifs that are significant to Kohupātiki, such as the red chalice, which is symbolic of Kohupātiki's Christian identity, and the orange and black diamonds which reference the pātiki.

Themes addressed through intervention(s)

1. The revitalisation of Te Reo Māori, and the upholding of important tikanga
2. Whānau development and identity
3. Rangatahi or child welfare
4. Housing & Infrastructure

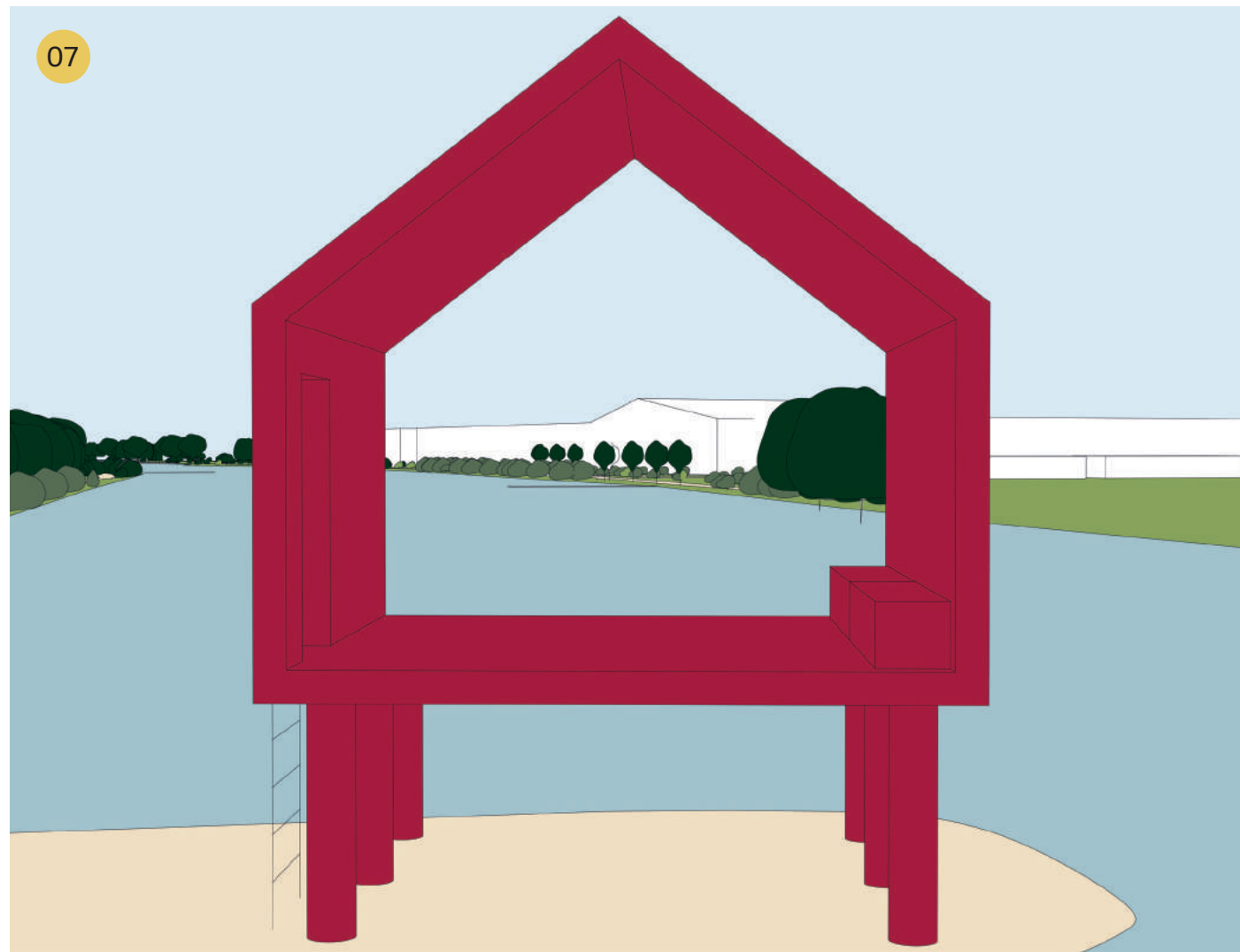


Figure 200. Restoring of the river's mauri (life force).- Introduction of groynes to support improved sediment management.- Cousin Margie's *What if?*

Cousin Margie's *What if?*

River Training solutions such as groynes were utilised to support improved sediment management within the Old Ngaruroro River. Whānau members were hopeful that these groynes would ultimately support the establishment of suitable environments for pātiki to spawn in. A number of elevated structures would also be located on selected groynes for amenity and maintenance purposes.

Themes addressed through intervention(s)

1. The revitalisation of Te Reo Māori, and the upholding of important tikanga
2. Whānau development and identity
3. Rangatahi or child welfare
4. Housing & Infrastructure
5. Protection of the whenua or land, and its waterways



Figure 201. View over Kohupātiki Marae.

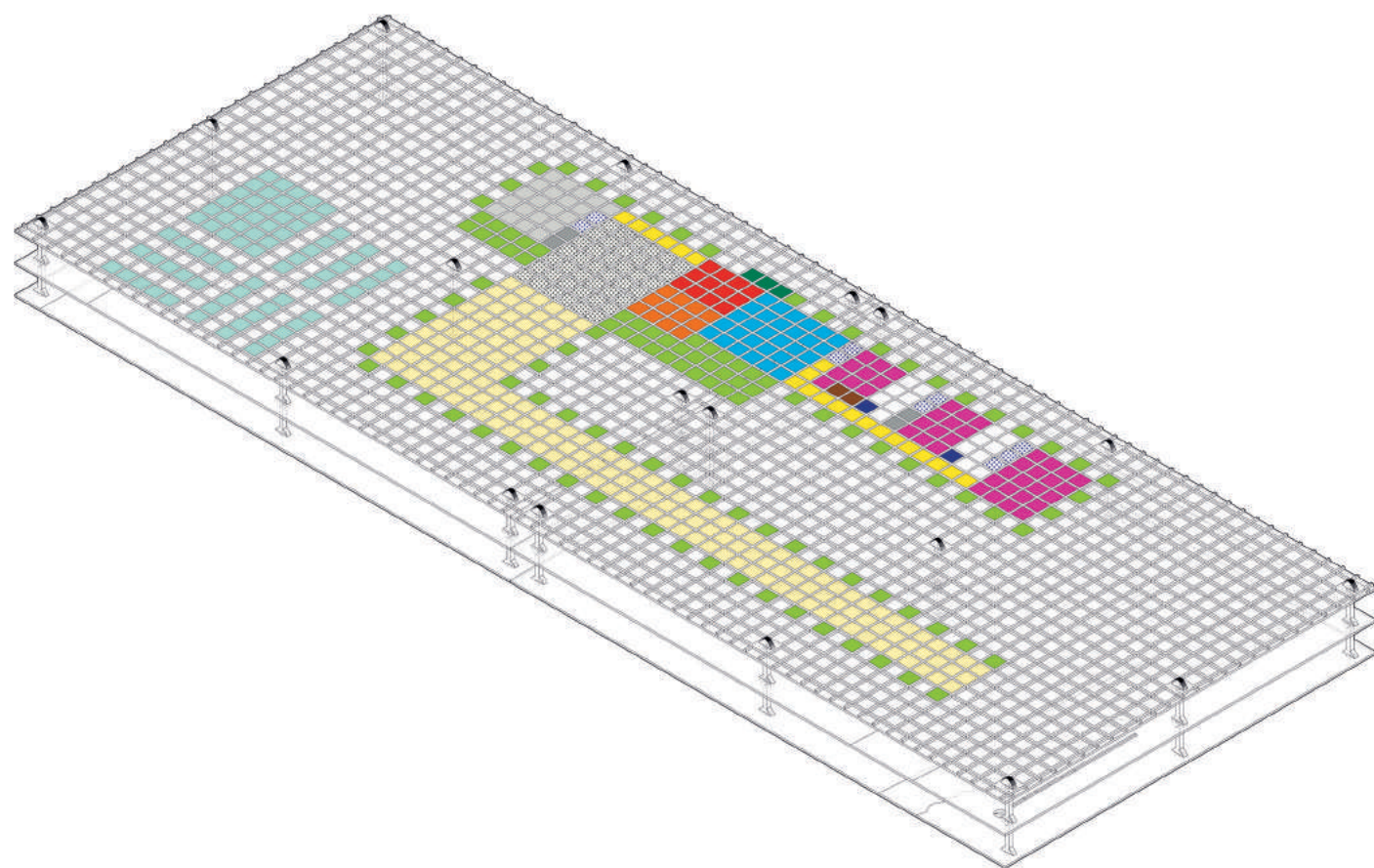


Figure 202. Illustration of housing design concept produced using the Planning Tool.

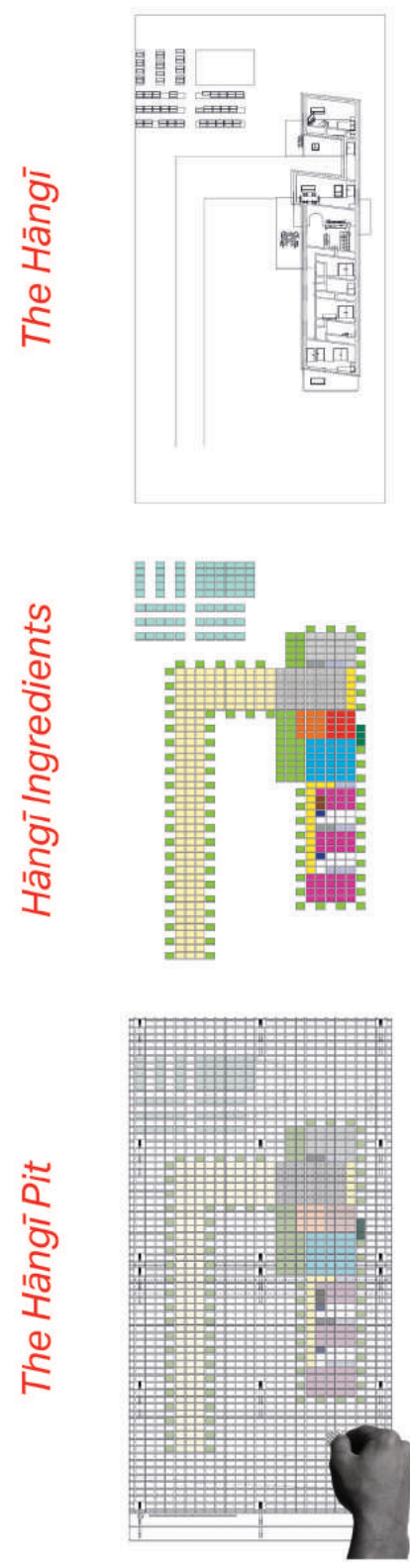
Housing Design Concepts

The following pages present the various housing design concepts produced for the properties of Robert Robin, Matthew Bennett, and Peter Robin. These design concepts are the products of a collaborative design process, first conceived during the O.D.S, and then further developed over the remaining course of the research.

As mentioned earlier, after examining the design concepts produced at the O.D.S, several reoccurring planning and design decisions were identified. Design concepts typically:

- Had building footprints ranging from 80-200m²
- Consisted of a separate, independent dwelling, that could either serve as a Kaumātua Flat, accommodation for manuhiri, or in the case of a large family, serve as an additional bedroom
- Had 2-3 bedrooms
- Had an open plan Kitchen/ Dining/ Living Area arrangement
- Had been planned to make the most of natural daylight
- Had been planned with respect to tapu and noa cultural sensitivities

These same reoccurring design decisions are reflected in the design concepts that follow.



Robert's What if?

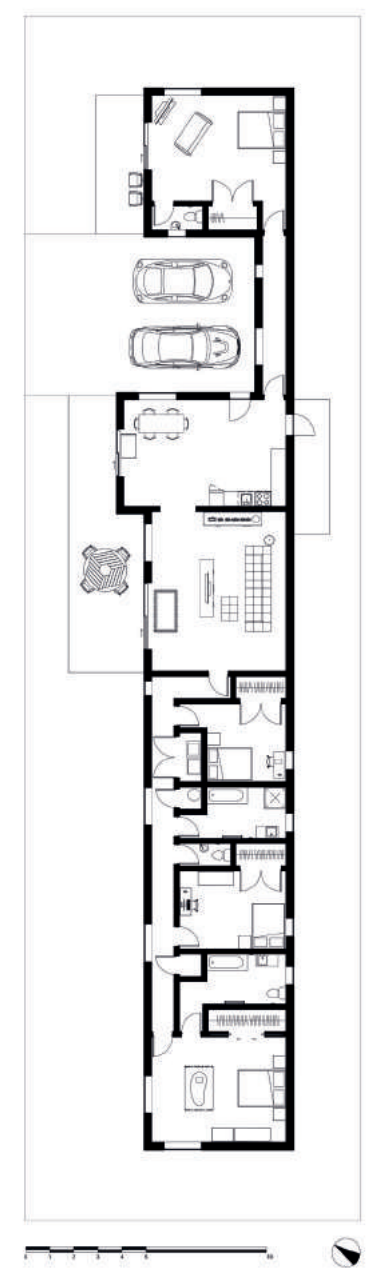
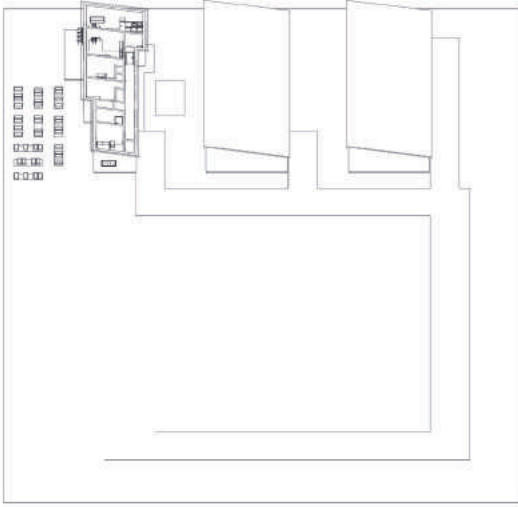
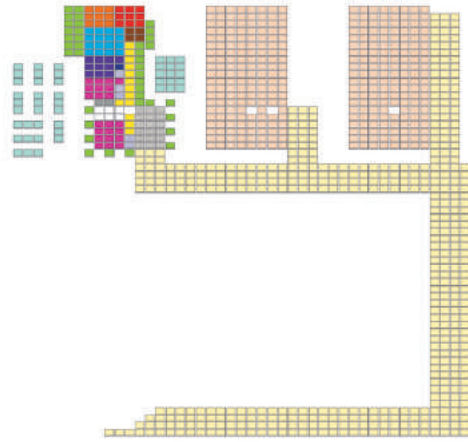


Figure 203. Housing design concept for Robert Robin's property.

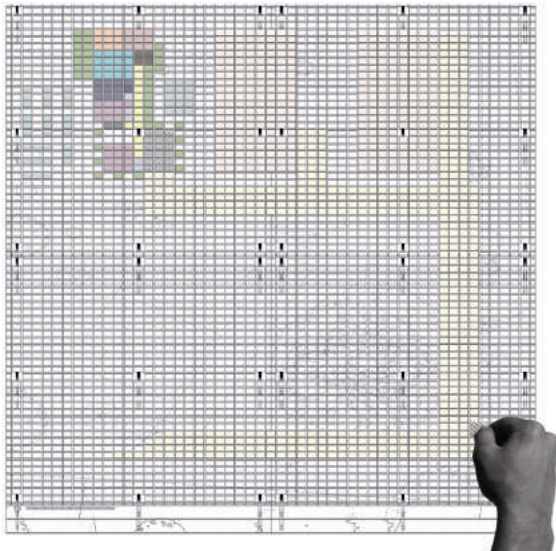
The Hāngī



Hāngī Ingredients



The Hāngī Pit

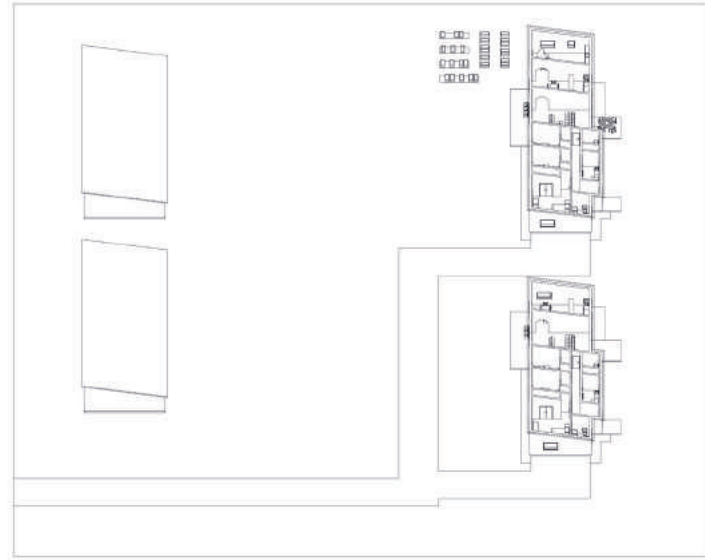


Mathew's What if?

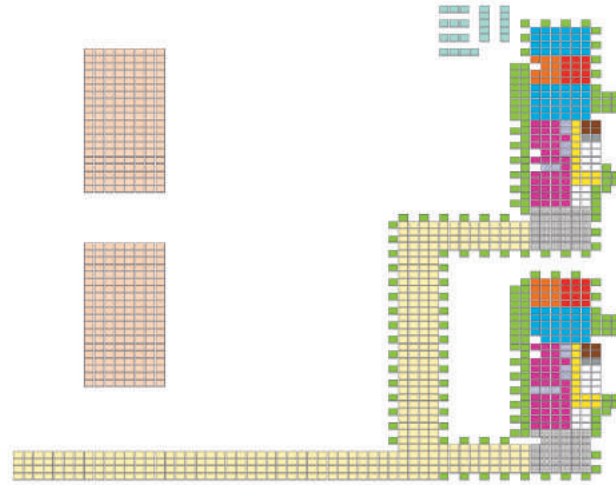


Figure 204. Housing design concept for Matthew Bennett's property.

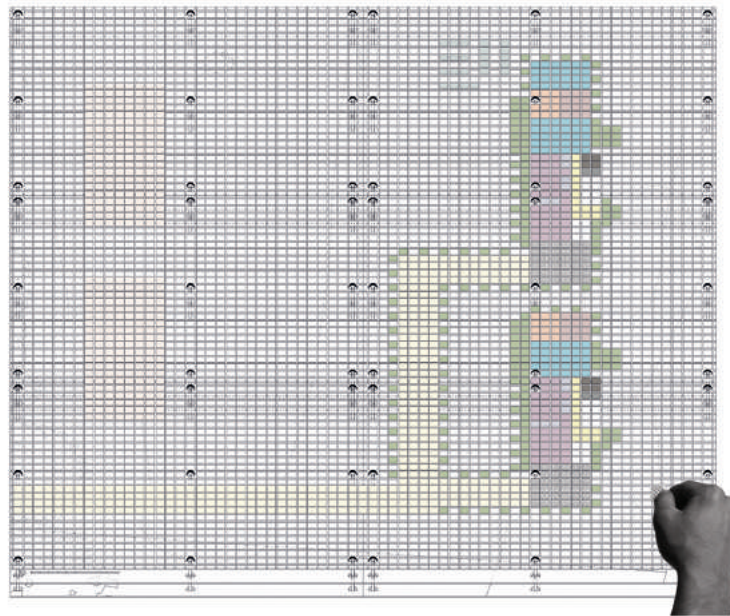
The Hāngī



Hāngī Ingredients



The Hāngī Pit



Peter's What if?

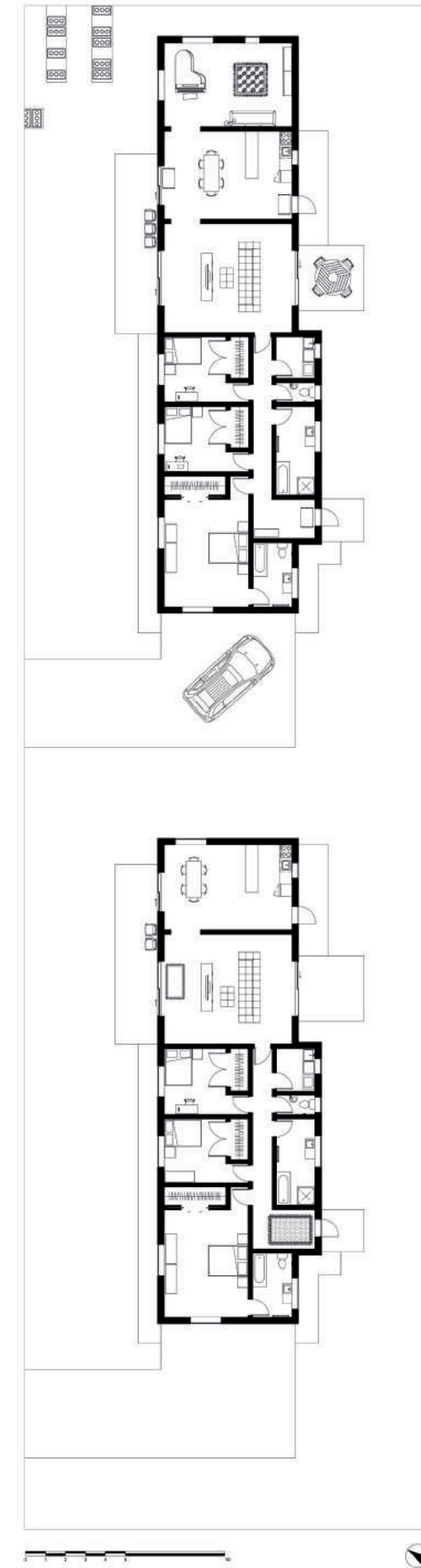


Figure 205. Housing design concept for Peter Robin's property.



Figure 206. Haere rā! (Farwell!).

Reflection

Relevant in assessing the success of Kohupātiki's *What if?* and its various interventions are Research Objective 03, Research Aim 02, and the 5 themes established earlier on in the previous chapter, *The O.D.S.*

Research Objective 03 and Aim 02 required the development of a speculative masterplan, conceived through the usage of the participatory design tools developed in the earlier stages of this research. This masterplan was required to be unique and meaningful to Kohupātiki, and this would be achieved by allowing the community to share their knowledge, and make design decisions that would ultimately impact the site, and final design outcomes.

In addition, final design outcomes were required to address the 5 themes established following the O.D.S, which related to:

1. The revitalisation of Te Reo Māori, and the upholding of important tikanga
2. Whānau development and identity
3. Rangatahi or child welfare
4. Housing & Infrastructure
5. Protection of the whenua or land, and its waterways

Reflecting on this, all final design outcomes in one way or another address the previously specified criteria.

The interventions that make up Kohupātiki's *What if?* were first conceived during the O.D.S, through the utilisation of the participatory design tools provided, such as the Questionnaires, Question Boards, and the Planning Tools.

In many cases, final design outcomes reflected Kohupātiki's unique identity through design moves that were largely informed by the information that whānau provided at the O.D.S. For instance, the new Chadwick Homestead made a number of allusions to Kohupātiki's identity through its building finishes, and the motifs utilised in its stained glass window. These motifs, and their symbolic meanings, were first introduced to the research by whānau, during the O.D.S.

Finally, all final design outcomes contributed to addressing the previously specified themes that were established following the O.D.S.

08

Conclusions & Critical Reflection

Conclusions & Critical Reflection

The decision to engage in this area of research was largely due to a quiet fascination in how architects and designers engage with Māori communities. This fascination developed through observations of trending discussion surrounding the use of mātauranga Māori concepts and principles within architecture and design practice.

In addition, the significant underutilisation of Māori Freehold Land in New Zealand sparked an interest in the role of the architect and designer (as well as creative design thinking) and what they had to offer in terms of addressing the issue.

Discourse from various sources all seemed to agree that the best design approach to utilise when working with Māori communities is one that is collaborative, and allows for end user engagement. This agreement is what informed the decision to explore participatory design processes. What has been learnt from performing this research is the following:

- Alternative design practices such as participatory design can activate and empower Māori communities to think more deeply about the future of their land, and its resources
- Participatory design has the potential to be an effective tool for planning
- Although insightful, participatory design can be both testing and laborious
- Mātauranga Māori concepts and principles CAN inform design process (as demonstrated by the research)
- Following and respecting tikanga IS important, but appears to be more valued by the older generation.- They appeared to be far more knowledgeable about the subject
- Despite the developments that have been made in this area of New Zealand architectural discourse, most architects and designers continue to display a weak understanding of the subject matter

Response to Primary Research Question

The Primary Research Question for this research asked the following:

How might Participatory Design Processes or End User engagement within the design process lead to improved design outcomes for Māori communities?

Response:

By conducting this research, and utilising a participatory design process, the conclusion can be made that participatory design processes improve design outcomes for Māori communities by ultimately allowing them to share their knowledge, unique perspectives, and indigenous worldviews. When appropriately utilised, this valuable information has the potential to inform design decisions that result in design outcomes that reflect place and identity, and meet the specific needs of those being designed for.

Response to Research Aims

Research Aims were as follows:

Research Aim 01

This design-led research proposes and develops a series of participatory design tools which will:

1. Allow Māori communities to have more of a say within the design process, and enable them to determine the shape and form of their own living environments
2. Support collaboration and dialogue between Māori communities and design professionals
3. Educate design professionals/ students/ enthusiasts about important concepts and principles relating to mātauranga Māori
4. Support the discovery of a meaningful architecture, specific to site, and the people in which it is being designed for

Research Aim 02

The research also develops a speculative masterplan for the future, which will consist of a series of architectural and landscape interventions, all of which will be conceived through the participatory design process, and will reflect and support Kohupātiki’s unique identity.

Response:

The final design outcomes of this research address all previously specified Research Aims.

The participatory design tools developed and utilised at the O.D.S addressed Research Aim 01 by ultimately allowing for whānau participation and collaboration. These tools allowed for the exchanging of valuable knowledge that led to the development of meaningful interventions, specific to site, and the people in which they were being designed for. Given these interventions made up the final speculative masterplan developed in the previous chapter, the masterplan was inherently the product of a participatory design process, reflecting Kohupātiki’s unique identity, which addresses Research Aim 02.

Constraints and Limitations of Findings

Constraints and limitations of the research included time, and the ability to regularly consult with whānau.

The development of the participatory design tools and organising an event like the O.D.S required significant time and effort. This in turn placed limitations on the amount of time that could be spent developing final design outcomes, and in retrospect, refinement of scope may have benefited the outcomes by allowing more time for their development. It should be noted however, that due to the interests of the research, priority was given to the design of a process, rather than a building or architecture.

Face-to-face consultation with the Kohupātiki community was limited given their location in Hawkes Bay (the researcher was based in Wellington). Whilst valuable consultation was

achieved through the O.D.S and other methods such as phone calls and social media, more face-to-face consultation could have benefited the research, through the potential continued use of the participatory design tools.

Research Application to Other Contexts

The reuse of the participatory design tools developed in this research is encouraged. Due to their flexible nature, with minor adjustments, these tools have the potential to be used in other contexts, particularly scenarios involving planning and community engagement.

Advancing the Research

Through the research, a significant relationship was established between the researcher (and inherently Victoria University of Wellington) and the Kohupātiki community. This relationship certainly has the potential to be ongoing, as various individuals from the Kohupātiki community have indicated an interest in the continued development of the research, and some of the interventions produced within it.

The participatory design tools developed in this research are also capable of being developed into participatory design resources, for planners, architects, designers, and whānau to utilise when engaging with one another. In addition, these tools could be developed into some kind of digital platform or application, which would have the potential to improve consultation, and make information more accessible.

09

Works Cited

Works Cited

Awatere, S., Rolleston, S., & Pauling, C. (2010). Developing Māori urban design principles. In K. Stuart, & M. Thompson-Fawcett, *Tāone Tupu Ora: Indigenous knowledge and sustainable urban design* (pp. 17-22). Wellington: Steele Roberts Aotearoa.

Frisk, R., Aarup Due, T., & Pilechian, Y. (2015). *Building Cities With People: Democratic Urban Design*. Copenhagen.

Harvey, J. (2012). Conversation: Bicultural architecture. *Architecture NZ*, 31-40.

Hoskins, R., Te Nana, R., Rhodes, P., Guy, P., & Sage, C. (2002). *Ki te Hau Kainga: New Perspectives on Māori Housing Solutions*. Auckland.

Waldgrave, C., King, P., Walker, T., & Fitzgerald, E. (2006). *Māori Housing Experiences: Emerging Trends and Issues*. Wellington: Centre for Housing Research, Aotearoa New Zealand and Te Puni Kōkiri.

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