SUSTAINING MĀORI CULTURE THROUGH THE REPRESENTATION OF TRIBAL HISTORY IN ARCHITECTURE.

TIROHIA - TE MARAE KĀREWA

MASTER THESIS EXPLANATORY DOCUMENT

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**Abstract**

This project employs knowledge of tribal history to inform the design of a community at Tirohia, a rural marae belonging to the people of Ngāti Hako in Hauraki. Ngāti Hako have lived in Hauraki for nearly one thousand years and plan to continue to occupy the area for the next thousand years.

Ngāti Hako have an interesting history that originally saw them as a prolific tribe throughout the Hauraki rohe (tribal area). They were then diminished and assigned to living in the swamplands. This wet environment and its resources resulted in a different mode of settling and building from that with which we are familiar. In the Hauraki Plains the high water table and propensity for flooding meant that whare could not be semi-subterranean with earth floors, nor could food be stored underground. The people of the Hauraki Plains needed specific responses to their environment.

Traditional Hauraki Māori values and attitudes towards the natural environment have a similar purpose to the modern approach to sustainable design and, as such, a contemporary marae community that looks to the past for inspiration must also adopt ‘sustainable solutions’. However, for Māori, the attitude towards the environment is one of obligation by the tangata whenua to take care of the environment, to preserve and protect it not only for the benefit of present and future generations but also to respect the ancestors to whom these resources are linked.

Treaty settlements are enabling iwi and hapū around the country to look at developing their marae, whether they are renovating, upgrading, building, or developing papakāinga communities based around their marae. Cost often drives design decisions. This study proposes an argument for considering tribal history in the creation of sustainable marae communities to encourage strong identification with the marae and one’s past.

The research question posed is ‘*Can architecture through the contemplation and representation of Tribal History, encourage cultural identity, and help to ensure the sustainability of the culture for future generations?’*
Acknowledgments

I acknowledge my father, Jim Nicholls (1940-2010) who dedicated much of his life to working for the betterment of Māori, from the setting up of the Hauraki Māori Trust Board to his role as deputy chair of the New Zealand Māori Council and the building of a small community in Paeroa in the 1980’s, to ‘house his people’. I acknowledge my sister, Lorna (1966-2006) whose early death gave me the impetus to pursue a career in architecture.

I want to acknowledge the people of Tirohia Marae, particularly; John Linstead, Josie Anderson, Margaret Graham and Larn Wilkinson: my supervisors; Rau Hoskins and David Turner: my mum, Miria Black for her constant belief in me and particularly my son, Tague for his love and support.

*I whakapapa to Ngāti Hako through my father.*

Hako
Hue
Turanganui
Te Kura
Te Uruwhakamaro
Ponga
Haru

Hera Te Whakawa – William Nicholls (English)
James (Hemi) Ponui – Hera Kiriwaitai Pepene (Ngāti Hako)
Hamupere Ponui – Te Awhinake Kepa (Ngāti Maru)
Iehu Ponui – Hekeiterangi Tuhakaraina (Ngāti Haua)
James (Jim) Ponui – Miria Robin Gray (Ngāti Awa, Tuhoe)
Lorna Ngarangi  Naeri Robin  Mathew James Ponui
Tague Ponui

The name Ponui comes from the creation myth when Rangi and Papa were held in a tight embrace. Te Po, the darkness or the night was referred to in various ways, Te Po Nui, Te Po Roa, Te Po Uriuri, Te Po Tangotango. Po Nui means the big night.

My father grew up in Hauraki. As a boy living beside the Waihou River, he remembers watching pumpkins bobbing on the surface of the water when the river burst its banks. This image of floating pumpkins tentatively tethered to the land by vines, came flooding back to me when I thought of designing for Tirohia Marae on the banks of the Waihou.

This project is dedicated to my dad.
# TABLE OF CONTENTS

*Abstract*  
*Acknowledgments*  
*Table of figures*

1. **INTRODUCTION**
   1.1 Aim  
   1.2 Overview of Content  
   1.3 Methodology

2. **HISTORY**
   2.1 The boundary of Hauraki  
   2.2 Tribal History  
      2.2.1 *Ngāti Hako ‘Iwi noho puku’ – the original settlers of the land.*  
      2.2.2 *Ngāti Hako and Marutūahu Connections*  
      2.2.3 *Musket wars with Ngā Puhi*  
   2.3 Location / Historical Environment  
   2.4 Te Ao Māori o Hauraki  
   2.5 How did Ngāti Hako live in the swamplands?

3. **ARCHITECTURAL PAST**
   3.1 Kōhika swamp pā, an example of a swamp pā.  
      3.1.1 *Timber plank construction*  
      3.1.2 *Pole and thatch construction*  
      3.1.3 *Differences between there two methods*  
   3.2 Food storage  
   3.3 Architectural responses to similar conditions  
      3.3.1 *Marsh Arabs*  
      3.3.2 *Netherlands*  
      3.3.3 *Peat bogs.*  
   3.4 Floating whare in Hauraki?

4. **MARAE**
   4.1 Typical marae layout  
   4.2 How ceremony directs marae layout  
   4.3 How Tikanga, and the concepts Tapu and Noa direct marae layout  
   4.4 Wharenui  
      4.4.1 *Life of the building*  
      4.4.2 *Wharenui symbolism*

5. **TIROHIA**
   5.1 Current environment  
   5.2 Tirohia Marae current situation

6. **DESIGNING FOR TIROHIA**
   6.1 The marae buildings  
      6.1.1 *The approach*  
      6.1.2 *Marae Ātea*  
      6.1.3 *Kōtahitanga*  
      6.1.4 *New Wharenui*
6.1.5 Wharekai 43
6.1.6 Kitchen 44
6.1.7 Service area 44
6.2 Awa kāinga 45
   6.2.1 Awa kāinga ātea 46
   6.2.2 Awa kāinga whare 46
6.3 Kaitiakitanga Sustainability. 47
   6.3.1 Heating and cooling 47
   6.3.2 Water 48
   6.3.3 Gardens 48

7. CONCLUSION 49
8. FINAL EXAM PRESENTATION IMAGES 50
   BIBLIOGRAPHY 59

Table of figures

Figure 1.1: Hauraki Plains 10
Figure 2.1: Map of the Hauraki Tribal Boundary 12
Figure 2.2: Vegetation on the eastern Hauraki Plains Ngati Hako Pā sites. 16
Figure 2.3: Chris Gaskin drawing of Raupa Pā. 18
Figure 2.4: Cultural Landscape. Locations of importance to the history of Ngati Hako 21
Figure 3.1: Detail of tauwhenua, heke and tāhuhu junction. 23
Figure 3.2: Detail of internal and external framing and the tauwhenua 23
Figure 3.3: Reconstruction of a carved house. 23
Figure 3.4: Drawings by George Angus of post and beam whare. 24
Figure 3.5: Drawings by George French Angus of Pataka. 25
Figure 3.6: Marsh Arab reed house 26
Figure 3.7: Marsh Arab reed village. 26
Figure 3.8: Mōkihi, Raupo boat. 26
Figure 4.1: Kōtahitanga interior 32
Figure 5.1: Tirohia location images 34
Figure 5.2: Photographs of Tirohia Marae 35
Figure 6.1: Early site model considering reinstating a wetland 37
Figure 6.2: Site model considering floating 37
Figure 6.3: Marae buildings surrounding circular ātea. 39
Figure 6.4: The marae ātea 40
Figure 6.5: Cladding panel 42
Figure 6.6: Exploring the representation of Ngati Hako's reliance on the sea 43
Figure 6.7: Development of awa kāinga 45
Figure 6.8: Ply pumice panel 47
Figure 6.9: Awa kāinga section and floor plan 47
Figure 6.10: Tirohia future projection 48
Final exam images

Figure 8.1: Site plan and section
Figure 8.2: Floor plan
Figure 8.3: Arrival – tangata whenua
Figure 8.4: Arrival – manuhiri
Figure 8.5: Whare kai from the water
Figure 8.6: Boardwalk to whare kai
Figure 8.7: Whare kai interior
Figure 8.8: Children’s play area
Figure 8.8: Raised garden beds and goods delivery to the whare kai.
Figure 8.9: Water view of the north facing kāinga.
Figure 8.10: Boardwalk to the individual whare
Figure 8.11: Whare interior
Figure 8.12: Whare interior
Figure 8.13: Whare sections
Figure 8.14: View of Tirohia – Te Marae Kārewa from the bike track

All photos and images produced by the author unless stated otherwise.
1. **INTRODUCTION**

In the past the Waihou River wound past many Māori settlements. Much of the river was surrounded by swamplands in which the giant kahikatea tree grew. Peat swamps and wetlands was the environment in which Ngāti Hako resided. Of the remaining Hauraki iwi, Ngāti Hako were the first.¹

Traditionally, Māori information and knowledge resided in the memories and minds of the people and in the traditional visual arts of rakau whakairo, (carving) raranga (weaving) and kowhaiwhai (painted design). Knowledge was passed down from parents and elders to children in informal and formal learning situations by vocal expression, waiata and chants. Oral literature was recited continuously until it was ‘carved into the house of the mind’ “Ka whakairohia ki te whare o te mahara.”² While this phrase lyrically interprets the passing down of knowledge it also makes reference to the whare. The wharenui contains the tribal history of the iwi in carvings, kōwhaiwhai and tukutuku panels. The architecture of the marae: the orientation, interaction between buildings and the surrounding environment also have historical reference to people, places and traditions.

Māori see history as part of and necessary to the future. The concept of past is intertwined with the future, rather than being a period which is concluded. The words ‘mua’ and ‘muri’ mean in front and the past and behind and the future respectively. The past is known therefore it is in front while the future is unknown and therefore is behind. This idea of the interdependence between the past and future is relevant to this project as the concept of designing for the future must incorporate the past.

Tribal history and traditional Māori architectural form, symbolism, concepts, methods and construction from the past will be used to inform the design of a marae community. This expression, reflection and acknowledgment of the past seeks to provide an environment where connection with the marae and tribal history is accessible to descendants of Ngāti Hako. The concept of a ‘Māori History’ is recent. Royal states:

‘There is no such thing as Māori history, only tribal history. Tribes are complexes of families. Therefore, any tribal history is family history.’³

¹. Tūroa, Taimoana. *Te Takoto o te Whenua o Hauraki*, (Singapore: Reed Publishing, 2000). Edited by Te Ahukaramū Charles Royal. 44
³., ibid
Therefore ‘traditional Māori Architecture’ must be thought of in the same light. The architecture of pre European Hauraki Māori is fragmentary and that of Ngati Hako is mysterious. Understanding the architecture of Ngati Hako required accessing pieces of information and using those to inspire a response. Regarding understanding Māori architectural past Brown suggests:

‘Time and distance places limits on our understanding of the architectural past, particularly when that past has been fragmented by age, dislocation, culture and exchange. The limitations of recovering an architecture that has lost its materiality can be overcome, to a certain extent, by crossing disciplines and looking at alternative material forms to find traces of construction. … The solution appears to be accepting the limits of the incomplete for interpreting the past, and redefine completeness so that the fragmentary can be considered a starting point for new built developments.’  

This project explores an architectural response that aims to document the tribal history of Ngati Hako within architecture.

1.1 Aim

To explore the history of Ngāti Hako, their cultural protocols, building and settlement traditions and use that information to inform the design of a community development based around Tirohia marae.

- To approach the design by drawing on the tribal history of Ngāti Hako, and connecting with their point of difference.
- To document the tribal history of Ngāti Hako in architecture to strengthen tribal identity and carry the past into the future.
- To design for the changing landscape.
- To develop a strong connection to my marae and contribute to it.
- To provide a position on sustainable marae design: its implementation in marae development and how it aligns with Māori values.

1.2 Overview of Content

This thesis begins by outlining the tribal history of Ngāti Hako with reference to tribal boundaries, ancestors and the interconnectedness of the Hauraki iwi. The Hauraki environment and way of life is then discussed. A description of what is known of building methods is then provided, followed by a brief outline of how people deal with similar environments. The form and meanings of Māori Architecture is then discussed along with an explanation of practices, which influence this. An analysis of the site and the architectural problem is then provided followed by design solutions.

1.3 Methodology

The literature review utilises architectural, historical and archaeological disciplines to develop an understanding of the tribal history and traditional Hauraki Māori architecture, building techniques and materials.

Discussions with the people of Tirohia Marae have provided an overview of its history and helped the author to understand the aspirations of the people for the future of their marae. Written works by Taimoana Tūroa and Jim Nicholls that covered the tribal history of the people of Hauraki were extremely helpful in developing a picture of the tribal history.

Archaeological studies by Caroline Phillips and Geoffrey Irwin provided insight into life on the Waihou River and building techniques at a lake pā on the Rangitaiki Plains. ‘The Hauraki Report,’ prepared for the Waitangi Tribunal, as well as written material and video recorded interviews with kuia and kaumātua, provided knowledge of Hauraki tāonga and the way of life covering mainly the period since Pākehā settlement.

The combination of research and design encouraged a process of evolution and re-evaluation. The initial research influenced the design on an often subconscious level. Revisiting the research stimulated development of the design in some instances and provided justification in many others.

Figure 1.1 Hauraki Plains
2. **HISTORY**

2.1 **The boundary of Hauraki**

This traditional version of the Hauraki boundaries is recited like a chant at the beginning of a speech, and indicates the boundaries of Hauraki.

I rongo au i te tai e pari ana i te akau, te unga mai o nga waka. Neke tuku titiro ki Tikapa moana e wawahia ana nga wai kaukau o nga tipuna kua wehe ki tua o te arai. Hoki ki uta ki nga awa nei, Te Piako, Te Waihou, Te Ohinemuri te whakatere nga waka o ratou ma. Piki ake ki nga maunga, mai Moehau ki Te Aroha ki Ngakuri-o-Wharei te ara i whara mai a ratou hikoi nga. Ūnei te mana kua eke. Tihei Mauri ora.

I listen to the tide that caresses the shores, the landing place of canoes. I cast my eyes towards the Firth of Thames that carries my ancestors to the horizon where the sea and the skies are joined, I return inland to the rivers of the Piako, the Waihou and the Ohinemuri, the waterways along which their canoes travelled, I look upwards to the mountain ranges from Moehau to Te Aroha then down to the sunken rocks of Ngakuri-o-Wharei. This is the mana. This is my right to stand. Let there be life.\(^9\)

The southern boundary runs from Nga Kuri o Wharei, the islands east of Waihi, to Te Hoe o Tainui. Hape-te-Kohe and the Hunua ranges mark the western boundary and to the north, parts of the Tamaki Isthmus to the Matakana river estuary and out to the Great Barrier Island then back south to Waihi and includes the outlaying islands. The Hauraki territorial boundaries include about 500 kilometres of coastline and two mountain ranges. At the foot of these ranges lie the Plains where Ngāti Hako lived.

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Figure 2.1: Map of the Hauraki Tribal Boundary and the showing different iwi/hapū groups. Adapted from Nicholls. *Ko te Timatanga*, 17.
2.2 Tribal History

In the 8th or 9th century, Kupe took a journey of discovery and exploration to Aotearoa. On returning home to Hawaiki he provided instruction on how to navigate back to Aotearoa. Three centuries later, Toi te Huatahi left the islands in search of his mokopuna, Whātonga, who was lost at sea. His waka, Te Paepae-ki-Rarotonga arrived in Tikapa Moana o Hauraki (Hauraki Gulf) where he and his crew married in to the local Maruwi. He then continued exploring the area, naming many Hauraki landmarks and living in various areas including Hauturu and Aotea (Little and Great Barrier islands). Later he journeyed to Whakatāne and settled himself at Kapu-te-rangi the maunga that overlooks Whakatāne and Ohope beach.  

2.2.1 Ngāti Hako ‘Iwi noho puku’ – the original settlers of the land.

It is believed that Ngāti Hako are the descendants of the original tangata whenua; Te Tini o Toi, the multitudes of Toi, the descendants of Toi te Huatahi. While they are recognised as the original settlers, their appearance can only be traced back to (1450) around six generations after the arrival of the Tainui waka and six generations prior to the arrival of the Marutūahu tribes. Commonly iwi can trace their line right back to the arrival of their original ancestor however Ngāti Hako are only able to trace back as far as Hako. It is suggested that knowledge of pre Hako ancestors was lost due to the continued warring and subjugation of Ngāti Hako by the Marutūahu tribes during the 16th and 17th centuries.

People of Tirohia use the following tauparapara (chant) to identify who and where they are from.

| Ko Rae o te Papa te Maunga | Rae o te Papa the mountain |
| Ko Waihou te Awa | Waihou the river |
| Ko Tikapa te Moana | Tikapa the sea |
| Ko Hauraki te whenua | Hauraki the land |
| Ko Te Kōtahitanga te Whare nui | Te Kōtahitanga the meeting house |
| Ko Tirohia te Marae | Tirohia the place |
| Ko Tohora te Waka | Tohora the canoe |
| Ko Ngāti Hako te Iwi | Ngāti Hako the people |

11. ibid., 44-47.
12. Tauparapara is a chant that is recited before speeches and includes that which is important to the people; the mountain, river, sea, land, wharenui, marae, canoe and iwi.
This pepeha gives Tohora (the whale) as the canoe on which Hako arrived. Without the identification of a migration waka, Ngāti Hako have adopted the Tohora as their waka.

2.2.2 Ngāti Hako and Marutūahu Connections

The history of the Marutūahu tribes is better known as they were the victors of the wars and much of what is known of Ngāti Hako history is entwined with the stories from the Marutūahu tribes.

The Marutūahu incursion into Hauraki began with the banishment of Hotunui, a Tainui chief from Kāwhia. His father in law, Māhanga accused Hotunui of stealing kūmara seedlings. Hotunui chose banishment and left his pregnant wife requesting that she name the child Marutūahu. Hotunui travelled east and lived with the Hauraki tribe Te Uri-o-Pou on the west of Tikapa Moana.

When Marutūahu was old enough, he left Kawhia in search of his father. On his travels he met and married two sisters, Paremoehau and Hineuranga with ancestry to Te Kāhui Ariki and Te-Uri-o-Pou. Finding his father living as a slave to Te Kāhui Ariki, he vowed to seek vengeance on them and, with the assistance of Te Kāhui Ariki, he annihilated Te-Uri-o-Pou. He then settled down to raise five sons, Tamatepō, Tamaterā, and Whānaunga, by Paremoehau, and Te Ngako and Tāurukapakapa by the younger sister, Hineuranga. His sons and their descendants form the collective tribes of Marutūahu. Marutūahu’s second son Tamaterā married Ruawehea of Ngāti Hako. This union is referred to in the pepeha below:

Haere mai, nau mai
Haere mai, kuhu noa mai ki nga huha o Ruawehea.
Come forth, welcome.
Come forth and enter through the thighs of Ruawehea

Tamaterā and Ruawehea lived on the Waihou River at Pipimohe Pā and had four children, Paretera, Tahrara, Taireia and Taiuru. The sons, Tahrara and Taiuru founded Ngāti Tamaterā. There was peace between Ngāti Hako and the Marutūahu tribes throughout this period, however relationships between Tamaterā and his brothers deteriorated when, on the death of Marutūahu, Tamaterā took Hineuranga, his father’s second wife, (his mother’s

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13. Hotunui, the late nineteenth century whare whakairo (carved house) displayed at the Auckland War Memorial Museum was given by Ngāti Awa to Ngāti Maru as a wedding gift.
15. ibid., 45.
younger sister), to be his wife. This act incensed his younger brothers who threatened him. Tamaterā left Ruawehea and he and Hineuranga went to live with his (and Ruawehea’s) sons, Taharua and Taiuru at Ohinemuri. Tamaterā later travelled to Whakatane to live with his daughter.17

Tāurukapakapa, the youngest son of Marutūahu and Hineuranga, had a beautiful wife, Waenganui, of Ngāti Hako and Ngāti Huarere origin. She was captured by Ngāti Hako living at Ōruarangi Pā. Marutūahu people destroyed the pā and when Tāurukapakapa was subsequently killed, the Marutūahu then set about to annihilate the two tribes, Hako and Huarere.18 Ngāti Huarere were wiped out through this campaign19 and Hako, once a strong and prolific tribe, was greatly reduced in numbers. Three generations after the war began the now elderly sons of Tamaterā and Ruawehea, Taharua and Taiuru intervened at the Ngāti Hako pā of Matai, which sat in the nook between the Hikutaia and Waihou rivers. Taharua recited to his younger whānau the connections between Ngāti Hako (his mother Ruawehea’s people) and the Marutūahu tribes (his father Tamaterā), reminding these descendants of Marutūahu that they were in fact also descendants of Ngāti Hako. He insisted that revenge had been exacted and that further killing would only lead to the destruction of Marutūahu. He placed Ngāti Hako under his protection at Te Waitangi-o-Hinemuri.

Although Ngāti Hako were not completely wiped out they were subjugated by the conquering iwi and forced to suppress their cultural identity, which was forgotten over time. Tūroa describes them as being ‘assigned to the fringe swamplands of the interior plains where as vassals they became food gatherers and hunters,’ their best food they gave to their masters.20

2.2.3 Musket wars with Ngā Puhi

When Ngā Puhi invaded Hauraki in the 1820’s armed with muskets, the Marutūahu tribes fled to Waikato, taking up residence in Ngāti Haua lands for ten years. Ngāti Hako however stayed in their swamp. This indicates that the swamplands could both sustain life, with its rich food sources, and provide protection, by being impassable for those who did not know the area.

17. Tūroa, Te Takoto, 59-60.
18. ibid., 60-61 Tūroa states that Wanganui was captured and killed by Ngati Hako, however, Rihitoto Mataia’s account in the Komata North hearing of 1889 (cited in Phillips. C) has no mention of being killed. John Linstead (personal communication, February 2013) queried the logic of her being killed by her own people and suggested she stayed with her people by choice. This could explain why revenge was taken on both Huarere and Hako given that it was only Hako that ‘detained’ her.
19. ibid., 49.
20. ibid., 46.
Tūroa describes Ngāti Hako as ‘an enigma in that they have survived despite a long history of conflict with the Marutūahu peoples’\(^\text{21}\) He states that the beginning of Ngāti Hako’s emancipation from Marutūahu people came when the Māori Land Court awarded them undisputed ownership of their lands.\(^\text{22}\) However the ten-year absence of the Marutūahu tribes allowed Ngāti Hako to strengthen their position in Hauraki.\(^\text{23}\)

Figure 2.2: Vegetation on the eastern Hauraki. From Phillips, *Waihou Journeys.*

22. ibid., 46.
2.3 Location / Historical Environment

The Hauraki Plains are approximately 12 km wide and 30 km long. They are flanked on the east by the Kaimai ranges that rise to a height of 800m before falling to sea on the other side, and to the west, by the undulating ranges of Hapūakohe that rise to a height of 500m. The ranges produce waterways that run down into the basin to either of the two the main rivers Waihou and Piako, which meander through the plains and out to Tikapa Moana (the Hauraki Gulf). The plains are low and flat rising to only four metres above sea level 20 kilometres inland at Paeroa. The land formation has been caused by the Kerepehi Fault that runs beneath the Plains, which has caused the Plains to sink and the ranges to rise.24

The Hauraki Plains were not a typical environment for settling in. The wetlands extending inland for 80 kilometres to Matamata, dried out in summer to reveal rivers, streams and swamps and in winter the Plains resembled an inland sea.25 There were a large number of settlements along the Waihou river, defended and undefended pa and kāinga. Although it is commonly understood that Māori migrated with the seasons to areas that could provide a rich source of food, it seems that on the Waihou there was permanent occupation of sites presumably due to access to food sources all year round.26 The river enabled easy access to the sea for fishing trips and the nearby foothills were home to a variety of bird species. The propensity for flooding on the Plains however meant there was a need to develop new techniques to enable habitation in this environment.

The resources found in the area were many. The kahikatea trees in the swamp to the west of the Waihou grew to a height of 50m. Around the east bank of the Waihou; kahikatea, kauri, rimu and tōtara grew and were used for building. Other trees such as the karaka, maire and hīnau produced fruit, which in turn attracted birds like tui and kereru. Water birds like duck and rails also inhabited these watery surrounds. The swamps supplied nutrients to the streams providing rich feeding grounds for fish, eels, whitebait and flounder. Flax and raupo were in abundance in the wetlands and provided materials for clothing, cords, roofing, cladding and insulation for buildings.27 In this area there was plenty of kai, plenty of building materials and plenty of fresh water. The rivers and wetlands also created a transport network between villages and out to sea.

27. ibid., 20-23.
In the early 17th century parts of the Hauraki plains subsided following an earthquake. The people of Hauraki then went to a great deal of effort to continue their permanent occupation. They used huge quantities of sub fossil and midden shell to create free draining, dry shell mounds on which to live. Phillips states:

The settlements in this region were certainly not the result of a merely temporary occupation. Indeed, the effort of constructing the extensive sites and the presence of pā indicated that the inhabitants were keen to secure their rights to the territory, and it was suggested that there was a settlement system, which linked them all together.28

These platforms covered entire pa sites and were at a height of at least 40cm.29 Around these mounds shallow wide ditches were dug and these provided defence and protection from flooding. Phillips states that, while Māori often disposed of food waste away from settlements, the people of Waihou used the shell to raise platforms on which to dwell. This shows that people altered their social and religious practices to suit their environment.30

Figure 2.3: Artist Chris Gaskin has based this picture on Marsden's account and archaeological evidence of 1987 excavations of Raupa Pā. From Phillips, *Waihou Journeys*. 79.

29. ibid., 157.
30. ibid., 50.
2.4 Te Ao Māori o Hauraki

Te Ao Māori o Hauraki (the Hauraki Māori world view) is an holistic view of spirituality that links the physical elements of nature with Māori ancestral past. The tangata whenua have an ancient obligation as kaitiaki (caretakers) to sustain the mauri (life-force) of the natural environment.\(^\text{31}\)

The connection with papatūānuku (the land), awa (river), and moana (sea) goes beyond the present moment. These elements are perceived as valuable, not merely for the benefit they provide in the present but also their importance to past and future generations. They are not perceived merely as resources but tāonga that need to be looked after.

Rivers are perceived as tūpuna
\(\backslash\) (ancestors) from whom we descend. The river is the people and the people are the river. It is said that the health of the river reflects the health of the people. The Ohinemuri River, which joins the Waihou River at Paeroa is described by Pitaup Williams;

The Ohinemuri River defines us the river tribes. It was our greatest economic asset, our transport system and our most revered spiritual asset. We have lived beside our tūpuna for hundreds of years. The only way I can get across how we feel about Ohinemuri is that it is like a leg or arm from our bodies.\(^\text{32}\)

The Waihou river linked the Hauraki tribes with their Tainui neighbours, Ngāti Haua. The whakatauki (saying) goes;

‘Waihou te awa hononga tangata’
‘Waihou the river that joins the people.’\(^\text{33}\)

2.5 How did Ngāti Hako live in the swamplands?

Ngāti Hako are described as persistent.\(^\text{34}\) They maintained their foothold in Hauraki throughout the war with Marutūāhu and they did not give it up to Ngā Puhí. Food and water were abundant and consistent. However, to those not familiar with the environment, it was treacherous and difficult to navigate. Muskets may not have been as efficient in this close environment as the patu, the taiaha or the tewhatewha. Ngāti Hako held the swamps against the

32. Waitangi Tribunal ”The Hauraki Report,”1137.
34. Ibid.
Ngā Puhi and, in doing so, held them back from invading Waikato through this avenue. The place name Kai Kahu (Hawks Food) refers to a battle between Ngāti Hako and Ngā Puhi. Here the bodies of the slain Ngā Puhi were left to be eaten by the hawks.\(^{35}\)

Ngāti Hako are described by the people of Tirohia as living in floating whare that could be sunk into the swamp to protect tāonga from being pillaged or desecrated.\(^{36}\) An ancient pā site, Te Maunu o te Kōura was hidden in such a manner. The name references the fresh water crayfish (kōura) that hides when under attack.\(^{37}\)

Ngāti Hako were the only Hauraki tribe to live in the swamps. The ‘Patetonga’ carving\(^ {38}\) was found in the swamp at Patetonga and is said to belong to Ngāti Tamaterā and Ngāti Paoa.\(^ {39}\) However, the webbed feet shown in the carving identifies it with Ngāti Hako history and aligns with their protocol for hiding tāonga in the swamp. This carving was a pare, a door lintel. The central figure is a woman surrounded by six web footed, sinewy fish like figures. This could represent Ruawehea and her children and the doorway may signify the doorway to Hauraki.

The way of life was one of predominantly hunting and gathering with some agriculture. Fish would have been speared or caught in nets and birds would have been snared. People would have moved around by waka. Flooding, rather than being detrimental to their way of life, would have been seen as a blessing, a time of plenty, allowing a freedom of movement.\(^ {40}\) Increased water levels meant an increased ability to travel easily and for greater distances.

\(^{35}\) Personal communication John Linstead February 5, 2013.
\(^{36}\) Conquering invaders would take tāonga from the tangata whenua and dishonour the mana of the tāonga, and subsequently the mana of the tangata whenua, by vandalising it or using it in ways that diminish its mana and change its state from tapu to noa. Brown, Māori Architecture.
\(^{38}\) Patetonga normally at the Auckland War Memorial Museum is currently being exhibited in the Tainui Exhibition (until September 2014) at Te Papa Museum of New Zealand. It is displayed at the entrance to the exhibition.
\(^{39}\) Sidney M. Mead The Art of Māori Carving 45. The central figure is believed to represent Hinenui te po.
\(^{40}\) Personal Communication John Linstead. 24 April 2012.
Figure 2.4: Locations of importance to the history of Ngati Hako
3. ARCHITECTURAL PAST

The draining of the Hauraki wetlands to make way for pasture has meant that evidence of early Hauraki Māori architecture was not preserved. The Kopuatai Wetland Reserve, administered by the Department of Conservation, may contain evidence of Hauraki’s architectural past. However, in the seventeenth century Kōhika Swamp pā on the Rangitaiki Plains, between Mutatā and Whakatāne, artefacts have been well preserved by the wetland and they provide evidence of construction methods in a similar environment.

3.1 Kōhika swamp pā, an example of a swamp pā.

The Kōhika swamp pā was inhabited for two generations in the second half of the 17th century, before European settlers arrived. The artefacts indicate construction techniques at this pā. An ‘elaborately carved house made of dressed planks, as well as other more simply constructed pole-and-thatch sleeping houses with minor decoration’ were found.

The Rangitaiki Plains had similar characteristics, a low-lying area with peat swamps, natural levee systems of rivers and streams, and it was also prone to flooding. Kōhika pā sat on a small island in a freshwater lake and swamp. Most of the site was on higher ground however some floors were artificially constructed to raise the floor above water level. This artificial floor was confined to the footprint of the house and immediately in front of the house. The people of Kōhika chose to leave the pā (after one or two generations) following flooding rather than finding ways to deal with the environmental challenges.

3.1.1 Timber plank construction

Irwin describes construction of this whare as follows:

Construction began by setting up a line of centre posts, spanned by a ridgepole (tāhuhu) that projected at the front. As this formed the primary structural support, the house can be seen as being built from the top down. The walls were then formed by setting vertical boards in the ground, poupou at the sides and epa at the ends. Each poupou had a slot in the top to take the tongue (teremu) of a rafter (heke) forming a

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41. Irwin, Kōhika 82.
42. ibid., 241.
43. ibid., 65.
44. Irwin, Kohika, 240
mortise and tenon joint… A cable (tauwhenua) ran up each poupou, along the top of the rafters and down to the opposite poupou.\textsuperscript{45}

The structure was held down, rather than held up, using the tension on the rope and compression of the rafters and subsequent poupou into the ground. Shallow post-hole depths support the idea of a tension and compression structure, as the holes were not deep enough to achieve lateral load resistance.\textsuperscript{46}

Irwin suggests that the rafters were lashed together at the tāhuhu, which meant the poupou were not directly opposite one another.\textsuperscript{47} Austin points out that, under tension, the heke would pull away from the tāhuhu and would need to be lashed to or notched in to the tāhuhu. He questions the crossing and lashing of the heke, stating that ‘crossed rafters would not be used because of the difficulty of wrapping across the top of the rafters at the ridge’ and points out that were the heke lashed at the top, they and the subsequent poupou would not be positioned directly opposite one another.\textsuperscript{48}

A lighter, vertical and horizontal structure supported the primary structure. Near the top of the sidewalls on the outside the koho paetara (a horizontal batten) ran the length of the side walls. Tumatahuki, (vertical battens) were lashed to this element between the poupou. Light horizontal sticks which ran behind the

\textsuperscript{45} Irwin, \textit{Kōhika}. 125-126. \\
\textsuperscript{46} Austin, \textit{Constructing the Māori Whare}, 6-7. \\
\textsuperscript{47} Irwin, \textit{Kōhika},124-125. \\
\textsuperscript{48} Austin. \textit{Constructing the Māori Whare}, 8-9.
poupopu, were then lashed to the tumatahuki. To the back of these sticks insulation made of bundles of raupo were lashed in to place vertically. On the inside between the poupou, tukutuku panels hid the insulation. Raupo was also used on the roof topped with an extra layer of thatch made of toitoi. The whatitoka (front door) and, matapihi (front window) were made using slabs of solid wood that slid sideways within a wall cavity. 49

3.1.2 Pole and thatch construction

At Kōhika most houses were of post and beam construction with only little decoration. Some were built backing on to the palisade fence using the fence as structure for the back wall. These houses were not necessarily smaller than the dressed plank houses and were similar from the outside as they were both clad in the same way. The differences between the two houses would have been noticeable from the inside, one having expressed joints and the other having no visible joints. 50

3.1.3 Differences between there two methods

Pole and thatch building techniques from Polynesia were adapted to the colder climate in New Zealand by extending roof cladding to the walls. 51 Dressed timber construction may have arisen as a response to both the different materials (larger trees) and the colder climate in New Zealand. 52 The deliberate concealment of jointing is vastly different to the pole and thatch expression of joints. In eastern Polynesia joints are both functional and decorative. Austin suggests that the purpose of concealing them may be to empty the house of meaning, ‘in order perhaps, to allow its re expression on the interior surfaces of the building’. 53

49. Irwin. Kōhika, 126.
50. ibid., 126.
52. Irwin. Kōhika, 141.
53. Austin. Constructing the Māori Whare, 10.
The technology behind fitting together timbers, mortise and tenon joints and hidden lashings originates from waka construction. Waka required lashings to be concealed on the exterior of the hull. In the whare it is the interior that has concealed lashings. The Pacific’s dualistic relationship between waka hull and whare roof is reiterated. However, rather than the waka being overturned to become shelter (or visa versa) the waka hull is turned inside out, the underside of the waka becoming the ceiling of the whare.

3.2 Food storage

Naturally, under ground storage pits were not suitable in the Hauraki Plains because of the high water table. Pātaka were built high off the ground. In other areas this was a method of deterring rodents but here it was essential to keep the storage area dry. It is clear that the piles and the wall poupou of these buildings are two different elements and that the piles are driven in to the ground and the little whare sits on top similar to a raft. The frame is braced by the dressed timbers of the side walls or in some cases the gabled roof extends to the edges of the platform.

3.3 Architectural responses to similar conditions

There are a number of ways to live on water. A building may be:

• Stationary atop an artificially built up island
• On stilts
• Moored to piles with the ability to move up and down with the rise and fall of the water
• Anchored with the ability to move around within the tethered area
• Designed for self-propulsion (with a motor).

Like a boat, flotation is achieved through water displacement. The object sinks until the weight of water displaced is equal to the weight of the object. Concrete barges float because of

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54. Irwin. Kōhika, 141.
the amount of water they displace. Adding positive floatation (polystyrene or pumice) assists in negating the negative effects of water encroaching in to the concrete float eliminating the need for a bilge pump.

3.3.1 Marsh Arabs

In Southern Iraq between the Tigris and Euphrates rivers, the salt marsh is home to the Ma’dān people or Marsh Arabs who built their villages on floating bundles of reeds called ‘kibasha’ or on more permanent islands of layered reeds and mud called a ‘dibin.\(^{55}\) Their houses were constructed with these same reeds bundled and lashed together.\(^{56}\) Interestingly the Marsh Arabs have a building, the ‘mudhif’ that serves a similar function as the wharenui and Māori bound reeds (raupo) to make shallow hulled boats for river and lake crossings.\(^{57}\)

Figure 3.6: Marsh Arab’s reed house and 3.7: Marsh Arab’s reed village. 

Figure 3.8: Mōkihi, Raupo boat. Source: http://www.teara.govt.nz. (accessed February 26, 2013.)

3.3.2 Netherlands

The low-lying landscape in Holland and rising sea level demands a long-term solution. The constant battle with the encroaching water is beginning to be addressed with

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55. The marsh lands were drained in the 1990’s by Saddam Hussein, dispossessing the Marsh Arabs. Currently efforts are being made to recreate the marshes.
solutions that work with rather than against the water. Dutch architecture firm, ‘Waterstudio’, is proposing floating houses, communities and even city blocks. Their method of floatation is a concrete box base that can also be used as a storage area.58

3.3.3 Peat bogs.

Historically trees have been laid in peat to form a raft on top of which walkways and roads have been laid. As water levels rise the peat rises with it. If water rises too quickly the peat bog is flooded. Tree trunks of beach and manuka would be laid on the peat and would sink in. On top of this raft could be laid the path.59 Adding weight too quickly results in sinking. The Nelson lakes of the National Park contain a 100 year old road that has been laid in this way using beach trees. Rather than rotting, the wood is preserved by the peat.60

3.4 Floating whare in Hauraki?

Floating whare in Hauraki swamplands may have been achieved in a number of ways. There is evidence that islands were created using shell that was imported to the site. However, this cannot account for how the whare were able to sink into the swamp. Logs may have been sunk into the peat bogs and whare built on top. However again, the question is how was the whare able to sink? Collapsing the lightweight whare is unlikely to have provided enough weight to encourage the whare to completely sink into the peat. Logs or bundles of raupo may have been bound together to form floating platforms. These platforms could then be unbound and the whare left to sink.

At the nearby Ngāti Hako pa of Te Maunu o te Kōura, the whole pa was ‘put to sleep’ in the swamp to avoid desecration by the invading Ngā Pūhi.61 The name of the pā ‘Te Maunu o te Kōura’ refers to hiding. Maunu means to hide and kōura is the crayfish. When crayfish are in danger they hide. Posts that have been found at the site were driven down into the swamp and could have been used as moorings for floating platforms.

59. Personal Communication with Bruce Postil of the Department of Conservation, who worked on a peat bog walkway in Lake Matheson, 35 years ago. It remains.
4. **MARAE**

The marae is used as a formal gathering place for iwi and hapū, for tangihanga, wānanga, celebrations, (weddings and birthdays) and general meetings. It is where Māori can find a connectedness with their hapū, their Tūpuna (ancestors) and where protocol and customs are practised. 62 Mead describes the marae as:

… a place where Māori culture can be celebrated to the fullest extent, where the language can be spoken, where Māori can meet Māori, where intertribal obligations can be met, where the customs can be explored, practised, debated, continued, or amended, and where necessary ceremonies – such as welcoming visitors or fare welling the dead – can be carried out. It is the place where the generations before the present ones held the mana of the iwi or the hapū, maintained the tikanga to the best of their ability and kept the culture alive…. It is a place to be kept ‘’warm’’ by the owning group, and as one generation passes on another takes their place in looking after the marae. 63

Tūrangawaewae means a place to stand. For Māori, this is the marae they are connected to through their whakapapa. The need for a place to stand became particularly important as Māori were alienated from their ancestral lands and disconnected from their life sustaining resources. Land alienation meant rural communal life became difficult to sustain by traditional methods of living off the land and eventually Māori needed to make the change to a cash economy.64 During the 20th century Hauraki Māori migrated to cities seeking work and opportunities as jobs in local industry (e.g. timber logging and gum digging) became scarce.65

Marae need people, the tangata whenua, to keep the home fires burning and the manuhiri to whom the tangata whenua can extend their hospitality. The migration of Māori to cities particularly during the middle of last century means that now many marae lack kuia and kaumātua to conduct ceremonies and the ahi kā or presence of the tangata whenua is lacking. Currently there is no continual human presence on Tirohia marae. It sits quietly until it is required.

4.1 Typical marae layout

Today’s marae generally includes a collection of communal buildings arranged around a large open space, the marae ātea. The wharenui (big house) or whare tūpuna (ancestral house) is given visual prominence and often directs an axial line through the marae ātea to the waharoa (gateway) and the vista beyond. This is often an elevated position however, in the case of the people on the Waihou River, it was a point from which to view the comings and goings on the river. The wharekai (kitchen and dining room) is often off to one side and the wharepaku (ablutions block) positioned between the wharenui and wharekai towards the back.

4.2 How ceremony directs marae layout

When visitors arrive at the marae there is a powhiri (formal welcoming ceremony). A kuia from the tangata whenua chants a karanga to call the manuhiri who have collected at the waharoa. A woman from the manuhiri responds to the karanga and, as she calls, she leads the manuhiri on to the marae ātea. On either side of the ātea there may be seating or an open sided building, a paepae, in which to sit during the powhiri.

The marae ātea is historically the domain of Tūmatauenga, the God of War, where there is challenge and debate. The wharenui is the realm of Rongo, within which, peaceful discussion, learning and sleep take place. Today guests are welcomed through an exchange of speeches between the tangata whenua and the manuhiri. During the speeches, the maunga, (mountain), awa (river), moana (sea), waka, marae and wharenui are addressed, ancestors are acknowledged, departed whānau are remembered and tribal histories are related. Generally the speakers on the marae ātea are men. Women support the speakers with waiata.

This references the marae ātea as the realm of war where men stand in front.

The last speaker for the manuhiri may then present a koha (gift) to which a kaumātua from the tangata whenua will respond. The manuhiri are then invited to cross over to the tangata whenua to hariru (shake hands) and hongi (press noses) to share one another’s life force, and then are invited to enter the wharenui or called in to the whare kai to eat with the tangata whenua.

At Tirohia there is no set protocol as to the order of the welcoming speeches other than that the tangata whenua always speaks first and last. The order of speakers in

66. Brown, Māori Architecture. 54
between is dependent on the occasion and the number of speakers available. Sometimes the
manuhiri will be invited directly into the wharenui by a kuia who stands outside and, as the
manuhiri enter, another kuia will continue the karanga from within the wharenui.  

4.3 How Tikanga, and the concepts Tapu and Noa direct marae layout

Tikanga refers to the correct way of doing things. Kawa is more specific and
refers to practices particular to each marae. The separation of buildings on marae relates to
principles of tapu, meaning sacred or restricted, and noa, meaning normal, common or without
tapu. The wharenui is tapu because it is sacred, depicting an ancestor, however the level of tapu
depends on what is taking place and this dictates how one should behave. During tangihanga
the level of tapu in the wharenui is high whereas it may be lower during a general meeting. The
wharekai where food is cooked and eaten is noa. The wharepaku is tapu because of its
‘unclean’ function.

Historically the kāuta (kitchen) were open sided buildings, while eating took
place outside. This has now been replaced with wharekai, which include both the kitchen and
the dining room. The eating of food is a way of bringing people back to a noa state.

4.4 Wharenui

The earlier decorated chief’s house evolved into the communal meeting house as
a response to colonisation and the need for Māori to meet and discuss land, politics and
religion. McKay states:

‘As traditional tribal structures, forms of authority and social organisation were eroded
during the colonial period, the meeting house was developed through new functional
requirements, for new social reasons, and through the possibilities of new technology.
It quickly became the focus of Māori social organisation and cultural representation.

67. Personal Communication John Linstead 24 April 2012
68. Mead, Tikanga Māori. 65-70
69. ibid., 104
70. ibid., 105
The meeting house became a repository of tribal mana (prestige, power) and history in a time of change, loss of land and cultural erosion.  

4.4.1 Life of the building

Kuia and kaumātua are the ‘storehouses of knowledge’ and the minders and mentors for children. McKay argues acceptance of impermanence of the whare relates to the acceptance or reverence of elders. He suggests that allowing buildings to decay not only acknowledges and respects the passing of time, by requiring constant reconstruction it also brings the community together, strengthens relationships and facilitates the transference of skills.

Allowing buildings to decay is feasible in a community that has the time, skills and resources to maintain or reconstruct as necessary. The changed landscape and lifestyle, however, does not encourage this attitude toward impermanent building. Careful consideration and planning of resource regeneration could allow future generations to embrace architecture that is not frozen in time, by recapturing the acceptance of impermanence within architecture and providing a benefit from social consequences.

4.4.2 Wharenui symbolism

The wharenui is generally seen as the body of an ancestor or important mythological person. The koruru or tekoteko (carved figure at the apex) represents the head and is addressed in welcoming ceremonies. The maihi (front bargeboards) are the outstretched arms and at their ends are the raparapa (fingers). The mahau (front covered threshold) is the roro (brains) of the ancestor. The matapihi (front window) is the eye. Inside the wharenui is the chest, poho, with the tāhuhu (central ridge beam) representing the spine and the heke (rafters) depicting ribs. The central support is the poutokumanawa, the heart. Some wharenui have a small rear window that appears to have two purposes; one is to allow light into the back of the

73. McKay, “Transforming Western Notions”, 7-10.
wharenui and the other more importantly is to acknowledge the backdrop, most often the maunga of that wharenui.

Carved and painted poupou represent ancestors and are given identifying features to acknowledge deeds or reputation. Kōwhaiwhai patterns are believed to originate from waka paddles. Along the tāhuhu they relate to genealogy and descent. Kōwhaiwhai also references natural forms but the resemblance to the natural form may be as simple as a prominent feature. For example the huia bird in the kōwhaiwhai pattern at Kōtahitanga (the wharenui at Tirohia) is seen in the curve of the koru, one long and one short, symbolising the male and female huia bird by the shape of their beaks. Also referenced in the kōwhaiwhai is the pātiki (flounder), which is kaitiaki (guardian) for Ngāti Hako. The importance of awa and moana is acknowledged in the form of waves painted at the top of each tukutuku panel. The purapurawhetu patterns of the tukutuku panels represent the stars. The wharenui and its art contain their own mauri (life force) like the natural resources from which they are made.

McKay argues that the wharenui is not a decorated shell but rather that the carving, painting and tukutuku are essential to the house. The wharenui acknowledges and records the past, portraying history in the architecture, the carvings, paintings and tukutuku.

79. Personal communication Margaret Graham 15 May 2012 (kuia at Tirohia, explained Kōtahitanga’s painting.)
80. McKay, Transforming Western Notions, 6.
5. **Tirohia**

The area ‘Puapua Tirohia’ means surveyed gift and was named when one tribal leader gifted land to another to strengthen the ties between them. Together they climbed the maunga adjacent to the marae. The recipient shaded his brow and scanning the landscape described the boundary of the gifted land as;

‘Mai i tenei rae o te rangi tērā rae o te papa, ko te puapua e tirohia e au’
‘From this my lofty brow in the sky, to that arched in the horizon is the gift that I survey’

Two and a half kilometres to the west of Tirohia Marae lies the Kopuatai Peat Dome. It is the largest (10,200 hectares) raised peat dome left in New Zealand and is home to a variety of fish and birds and contains the remnants of a kahikatea forest in the southwest corner. One and a half kilometres to the east lies the foot hills of the Kaimai ranges. The nearest stream running past Tirohia Marae from these ranges is the Owhakaitina Stream. It is described as a sacred life-sustaining gift of the gods, Te Waiora o Tane, (the spiritual water of Tane). It was a kōhanga o nga ika (fish nursery), home to eels and whitebait. Once, the junction of the Owhakataina Stream and Waihou River was a popular white-baiting spot. Now however the silt from mining has polluted the stream and changed its mauri.

5.1 **Current environment**

The swamplands around the Waihou had an abundance of resources, kahikatea, rimu, tōtara, raupo and flax, sea birds and land based birds, fresh-water and salt-water fish. The land and waterways have changed dramatically. The swamps were drained and forests felled to make way for pasture. The rivers were and still are used to carry waste to the sea. Cows graze up to the edge of the riverbank and their effluent pollutes the river, which in turn pollutes the sea.

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81. Tūroa, 137.
Flooding is the most common natural threat to the Hauraki Plains. The Kaimai and Coromandel ranges attract high-density rainfall, which is transported to the Plains often by steep short waterways. Deforestation has reduced the ability of the land to absorb rain, increasing the likelihood of flooding. During the 20th century waste from the goldmines\(^{84}\) raised the riverbed and the water table. Draining of the wetlands and swamplands to provide pasture further diminished the ability to absorb water. To rectify the damage these actions caused, the riverbanks have been straightened to allow a faster flow and, to provide protection from flooding, stop banks have been constructed and natural levees cut down. Land between the stop bank and the river was taken under the Public Works Act 1908.\(^{85}\) Thus the land between the stop bank and the river was alienated and Ngati Hako’s connection to the river was severed. The marae is now disconnected both visually and physically from what was, in the past, a most important resource. Currently this land is leased for grazing. While there is a fence separating the cattle from the river, the separation is not sufficient to prevent their effluent from violating the river.

Figure 5.1: Images showing location of Tirohia Marae with relation to the surroundings as mentioned in the text.

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84. Under the Mining Act of 1891 the Ohinemuri and Waihou rivers were declared ‘sludge channels’
85. The Waitangi Tribunal, “The Hauraki Report”.
The Waihou River starts off pristine at Putararu, 84 kilometres up stream and gradually gets more and more polluted as it progresses through the Hauraki Plains. By the time it gets to Te Aroha, 14 kilometres inland from Tirohia, it is contaminated. Of 77 New Zealand Rivers surveyed for their purity, the Waihou River was ranked 66th. The riverbanks are barren, providing no protection or filtration and the resulting river environment is not conducive to supporting aquatic life.

The soil conditions at Tirohia marae are poor due to the wet ground as a result of the high water table, poor drainage and the overflow from the river and streams. Currently it is suitable for occasional cropping, pasture and forestry. The low flat plains are also susceptible to high winds.

The marae is enclosed on one side by the old railway tracks, now a bike track, and on the other by a stop bank. The Tahuna-Paeroa Road disrupts the connection between the marae and the nearby papakāinga and urupa. The visual connection with Rea-o te-papa remains, providing a spiritual backdrop for the marae.

Wharenui are often named after ancestors however Whakakōtahitanga wharenui was named with reference to the Kōtahitanga movement of the 1870’s, which, like the Kingitanga movement, sought to unite Māori in dealings with the Crown. Whakakōtahitanga

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86. NIWA, http://www.niwa.co.nz/our-science/freshwater/our-services/water-quality-monitoring-and-advice/rivers-league-table (accessed April 17, 2012). Ranked from (1) to least (77) suitable for contact recreation, e.g. swimming based on visual clarity and faecal pollution (as indicated by E. coli bacteria).
88. Particularly with regard to retaining land that was being ‘legally’ alienated.
means to unite or bring together. The name of the wharenui has since been shortened to Kōtahitanga.

The wharenui was floated on a barge up the Waihou River from Okahukura Pa, which lay on the west side of the river, to its current site seven kilometres south west of Paeroa. Originally the marae was named Te Kōtahitanga Marae after the wharenui. The name Tirohia was adopted for the marae when the railway first went through the area - ‘Tirohia ki te tereina’ Look at the train!

5.2 Tirohia Marae current situation

- The marae is visually and physically disconnected from the river by the stop bank and due to the straightening of the river.
- The marae is deserted for much of the time lacking the tangata whenua, kuia and kaumātua to maintain the ahi kā.
- The marae is underutilised and, when it is used, the facilities are often insufficient to cope with large numbers of people.
- The wharenui is too small, the wharekai is inefficient and the wharepaku needs replacing.

The people of Tirohia Marae consider themselves to have inhabited the area for 1000 years and plan to remain here for the next 1000 years. The following design explores how this might be achieved.

6. DESIGNING FOR TIROHIA

This design reconnects the marae with the river and firmly connects the current and future descendants of Ngāti Hako with their tribal history. It seeks to build a community that contains a strong sense of tūrangawaewae, anchoring the tangata whenua with their history. Visual and physical reconnection of the marae and the tangata whenua with their river is paramount, not only because of the life sustaining role the river had in the past but also because of the obligation the tangata whenua have as kaitiaki of the river. By connecting with and utilising the river, the constant awareness and interaction will enable the people to better care

90. Tūroa, 137.
for this tāonga and its health so that in future the river might once again be a productive resource.

Ngāti Hako’s history, their way of life and their ability to remain and strengthen as an iwi, despite the conflict, is recognised and celebrated in this design. Their point of difference as the only Hauraki iwi to live in the swamplands is acknowledged and proposed as a way of life for future generations. In this proposed marae community Ngāti Hako’s past relationship with the wetland environment is recaptured and a swamp, fed by the Owhakataina Stream, is created before reconnecting with the Waihou River. The community floats upon this swamp, stretching over it like a net set for eels. Although pollution from farms means the water is currently too polluted to sustain a healthy environment for fish, the concept of the net reflects the past abundance of food available from the river and provides a vision for the future.

The marae buildings, the wharenui, whare tāonga, wharekai, and wharepaku, and the adjacent ‘awa kāinga,’ which includes; the kāinga, gardens, kōhanga reo, medical centre and a social area, float on platforms, tethered to permanent moorings, rising and falling with the water level.91 While floating may have been achieved using bundled raupo or the trunks of

91. Throughout the rest of the document ‘marae’ refers only to the buildings listed here as ‘marae buildings’.
kahikatea trees, now raupo is relatively scarce and there are only a few protected stands, not forests, of kahikatea in Hauraki. The floating platform will be achieved using hollow concrete slabs. Recreating a wetland with a raised building platform, similar to the method used on the Waihou riverbanks was considered. However, the particular characteristic of Ngāti Hako is that they were the iwi that lived in the swamps in floating whare and this history sets them apart from the rest of Hauraki iwi. Their other point of difference; their persistence in maintaining occupation in the area, is also acknowledged. To design a community that can maintain occupation for another 1000 years, the rising water level and increased rain fall needs to be accepted and as such a community designed to float can survive this changing landscape.

Connecting this community back to the river begins a process of reconnection for other river marae in Hauraki whose own histories are linked by the Waihou River and its tributaries. Rejuvenation of the river and surrounding environment will radiate from Tirohia. Riverboat and waka trips leaving from Tirohia will utilise this ancient transport route providing education and a cultural experience to guests. Access to the river for sport (waka ama) will generate activity around the community. Guests will arrive by car however, eventually the people of Hauraki will reclaim the river and it will again be used to transport people throughout the rohe (area).

The architecture within the community references aspects of tribal history. This reflects the way history is documented in the architecture of the wharenui and in the same way assists in the passing on of knowledge. The wharenui is pre history Māori writing and is used as such in this design.

6.1 The marae buildings

Buildings are separated depending on their tapu and noa status. Crossings between these platforms are lighter, accentuating their separation whilst also referring to the crossing of water that assists in changing from one state to another. There is separation between the marae buildings and the awa kāinga. All the tangata whenua need not be in permanent attendance to manāki (care for) the manuhiri and this separation allows the tangata whenua to retreat to their own space when manuhiri are visiting.
6.1.1 The approach

The wharenui faces northwest down the Waihou River in the direction of Tikapa Moana. Manuhiri approach the marae either from the river or the car park to the north of the waharoa. A three-fingered pontoon (near the car park at the end of Tutaki Road) is provided for riverboats to dock and from where two boats ferry people to and from the area outside the waharoa. These are mobilised using a winch system that can be operated from both sides. The low flat boats are capable of carrying large numbers of people, their possessions and coffins. The waiting area is shaped to represent the coming together of two iwi at the gate. A three dimensional kōwhaiwhai pattern carved into the pou on either side of the gate represent the interconnectedness of the people of Hauraki and the central figure at the top represents Ruawehea. This references the pepeha;

Haere mai Nau mai
Haere mai, kuhu mai ki ngā hūhā o Ruawehea.  

Figure 6.3: Marae buildings surrounding circular ātea.

6.1.2 Marae Ātea

The original name of the wharenui, ‘Whakakōtahitanga’ meaning ‘to Unite’ is referenced in the circular ātea symbolising unity. Depicting Ruawehea at the waharoa, a prominent Ngāti Hako woman, whose marriage with Tamaterā integrated the two iwi, is a deliberate device to unite men and women on the marae. To design for the future and to encourage youth to form a relationship with the marae, the issue of male and female ‘traditional’ roles deserves attention. In the past the marae ātea was the realm of war where,

92. Tūroa, Te Takoto, 45.
93. Some iwi are completely opposed to allowing women to speak on the paepae. However the subject of women speaking on the paepae is relevant. Kuia who have knowledge of protocols and are fluent in te reo may karanga and waiata but are generally not allowed to whai korero, however Pākehā men may
for most iwi, only men spoke. Today physical strength is not as important in this arena. Oratory skill, however, is important and women are equally capable of such verbal expression. It is argued that women express themselves through karanga and waiata however these forms of expression are limited. This role delineation is likely to evolve and the deliberate use of a woman straddling the waharoa anticipates this change.

The paepae shelters are positioned opposite one another: that of the manuhiri is closer to the gate and that of the tangata whenua is closer to the wharenui. These open sided buildings reflect the simple post and beam construction. Historical flax lashings are referenced with expressed joints and the ponga fence that encloses the ātea is used as the back wall. The marae buildings are arranged around the circular ātea and further help to enclose this space. During tangihanga, when the body (tūpāpaku) is brought on to the marae, the accompanying people are called directly in to the wharenui. The design embedded in the direct path from the waharoa to the wharenui indicates passing through life and this is the path travelled by the tūpāpaku on its final arrival at the marae. During the next three days the wairua will leave and on the third day the body is carried out through the waharoa again and taken to the urupa.

6.1.3 Kōtahitanga

The current wharenui ‘Kōtahitanga’ is too small to satisfy the needs of the people now and in the future. Adding to the face at the front or extending the spine by adding to the tāhuhu is unfavourable because of the symbolism of the whare. Extending it would make the whare fragmented and deplete its mauri (life force). In this design Kōtahitanga is restored, its mauri recaptured and it is retained as a Whare Tāonga (Treasured House). The responsibility of hosting manuhiri will pass to the new wharenui and Kōtahitanga will be allowed to rest with dignity.

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94 Refer to the post and beam construction at Kōhika as discussed in Section 3.1.2.
Restoring the whare will involve dismantling it so timber can be preserved or replaced. Care will be needed to ensure everything is labelled so it can be reconstructed to interlock once again. The original kōwhaiwhai, hidden beneath layers of paint, will be carefully revealed and the tukutuku panels will be replaced using carefully sourced original materials like pingao and kiekie for the lattice threads of the tukutuku.

Historically the tukutuku panels of Kōtahitanga were repaired in situ from the exterior of the building. This would have required the cladding and light framing to be removed. The current cladding cannot be removed in sections so that work can be carried out from the outside and framing hinders this process. Clad again in raupo, Kōtahitanga will provide a strong visual reflection of the past and is in keeping with the concept of the aging building. This cladding will require constant upkeep ensuring the passing of knowledge of past construction methods, enable the repair and maintenance of the tukutuku panels in situ and will serve to bring the community together.

The two back doors added to the wharenui in response to fire safety rules in the 1980’s are not only poorly constructed they were also unceremoniously notched into the end poupou. The mauri of all these four notched poupou are diminished. Raising the side walls of the wharenui to allow for a fire door to be placed on the side wall, between poupou, has been done elsewhere, however here it would mean that the house cannot be locked together. Either the poupou would lose connection with the ground or heke would be disconnected from the poupou. An Historic Places Trust classification would require the whare to be returned to its original design and therefore the back doors will be removed.

6.1.4 New Wharenui

An examination of how to design a wharenui in the current time, whilst acknowledging the past and addressing design issues, was necessary. Wharenui are often cold, dark places. The small front window or eye and the front door are often the only visual connection with outside. The mahau (front porch) hinders entry of the sun. While it is important to retain a sense of enclosure in the wharenui it also needs to be a comfortable place to inhabit. Passive responses to light and heat were considered.

Although the poupou in Kōtahitanga are not carved, Ngāti Hako have a history of carving their whare. The depiction of the webbed fish like characters of the pare ‘Patetonga’

95. Marae Hui April 2012
96 Marae Hui April 2012
97. Pou in the side walls are placed further apart at around 900mm.
98. Personal Communication Rau Hoskins. 18 February 2013.
and the fact that they hid their tāonga in the swamp validates this history. In the new wharenui the carved poupou support the house as the history supports the culture. The poupou tell a story of the history of Ngāti Hako from Toi and Hako, to marriage and war with Marutuahu people, their life in the swamps and battles with Ngā Puhi, their interaction with pākeha, land and resource alienation by pākeha laws and wars through to today when there is a process of reclamation of land and resources through the Waitangi Tribunal claims process. The poupou depict events, ancestors, the landscape and the way of life for Ngāti Hako. The wharenui is a story book recording their history.

Building material availability and construction methods have changed since Kōtahitanga was built in the 1870’s. Using local original materials is appropriate for this design however locally grown and locally milled native timber is scarce. Instead there is now an abundance of pine and ponga that grows in the pine forests in Hauraki. It is the aim of the community as kaitiaki to replant and regenerate native forests and fauna in the area, however, in the meantime local materials found in abundance have been considered as well as timber sourced from sustainable forest farms.

The concept of locking together and tying down the structure has been adopted. External visual cues are given to indicate the structure has been tied down. Sustainably sourced tōtara will be used for the structural elements of the wharenui, the tāhuhu, heke and pou.

Historically pumice was used in whare as insulation. Pumice based concrete ‘pumice crete’, a cast lightweight self-supporting insulated cladding panel, attached to the structurally supportive pou could be removed to access the backs of the tukutuku panels. The tukutuku panels will again conceal the cladding beyond. A raupo relief on the exterior visible from the wharekai, references the historic cladding material and depicts the whare as belonging on the water.

The use of translucent concrete panels was considered for the wharenui walls. Translucent concrete can be achieved using optical fibres in fine concrete to transmit light. The purapura whetu (myriad of stars) pattern is portrayed in Kōtahitanga’s tukutuku panels. Translucent concrete panels would allow light through during the day and if lit at night from the outside, the walls inside the wharenui would twinkle adding to the atmosphere created by

stories told at night. This idea was abandoned because, while the twinkling of walls at night seemed attractive, the tukutuku panels would be dispossessed. Secondly the concrete needs to receive direct light in order to transmit it. Sun light would only illuminate the panels when shining directly on them. The proximity of the adjacent buildings and the overhang on the mahau would reduce the efficacy of the panels. Instead translucent panels will be used on the roof of the whare. This solves the problem of the dark wharenui during the day. Solar powered light would provide a starlit ceiling at night.

The new wharenui is more than twice the size of Kōtahitanga and can comfortably accommodate over 100 people. The floor will be carpeted however the central avenue will be inlaid timber continuing the path from the waharoa to the very back of the wharenui where the tūpāpaku lies during tangihanga. The view of Rae o te Papa is cut off by the current wharekai and wharepaku. A window at the back of the wharenui on the southeast wall frames the maunga thereby acknowledging its importance as the maunga for the people of Tirohia. The side door in the wharenui allows easy access to the wharepaku and the wharekai. It is near the end and on the side that the tangata whenua sit (during welcoming ceremonies), allowing them to slip out discreetly during long ceremonies. Sometimes, directly after one group of manuhiri are welcomed then invited to eat, another party may arrive and the ceremony will be repeated. This is particularly relevant during tangihanga when the whānau pani (family of the person laying in state) remain throughout much of the ceremony. The side door also provides a covered direct access to the bathrooms for overnight guests.

6.1.5 Wharekai

The current wharekai is too small, has no outdoor eating area and the kitchen is inefficient. Different sized groups use the wharekai at different times and while it works well for large groups it is inefficient for smaller numbers.\(^\text{101}\)

The new wharekai is angled to enclose the marae ātea. The cladding references the importance of the swamp and sea as the predominant food source for Ngāti Hako. The design in the concrete floor represents the swamp environment in

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101. Marae Hui April 2012
which Ngāti Hako lived. Although the wharekai is already separated by water, the paepae of the tangata whenua helps to complete the visual separation of the marae ātea from the wharekai and particularly the north facing outdoor area. This provides some flexibility when different groups are using the marae. Ceremony on the ātea needs to be separated from the noa activity of eating and drinking.

6.1.6 Kitchen

The kitchen in the wharekai needs to be efficient in situations when there are both many people visiting and when it is only accommodating the day to day catering for the inhabitants of the awa kāinga. To do this, essential functions need to be centralised. The following identifies the proposed kitchen layout:

- A walk in chiller on the east facing wall close to the entry door for ease of access
- Walk in pantry on the east again for ease of access
- Oven bank and food prep area on south wall
- Walk in equipment storage on the west with deep freeze
- A large stainless steel double sided food preparation island and the south facing food prep area
  - A middle shelf to store items that are constantly required: oils and seasonings etc
  - Storage beneath the bench
- Sinks
  - Handwashing sink near the door on the east
  - Food washing sink at the end of the food prep area (south wall)
  - Double dish washing sinks on the dishwashing island near incoming servery
- Servery
  - Out going and incoming servery
  - Two way cupboard space between the ingoing and outgoing servery through which trolleys loaded with plates and cutlery are stored and transported.
  - Storage shelves beneath outgoing servery for tea and coffee supplies
  - Space beneath incoming servery for recycling, compost, pig and rubbish bins.
- Commercial dishwasher on the dishwashing island.

6.1.7 Service area

The service area floats to the south of the wharekai and includes the wharepaku, washhouse and storage room. The wharepaku uses dual flush composting toilets that separates liquid and solid waste. The liquid waste is fed through the grey water system, and filtered through the wetlands.
6.2 Awa kāinga

Housing for eight to ten kaumātua and kuia was proposed to enable them to return to the marae from cities, be part of a community, be available to the marae and to provide an avenue so that that their knowledge may be passed on.\(^{102}\) The intention for the kaumātua whare was to design small units that were versatile enough to satisfy a variety of family sizes; grandparents and their moko, two separate kuia/kaumātua living in the same house or a family. Today’s preoccupation with everyone in the household having separate rooms was not considered appropriate for this scheme.

The housing is separated from the marae, allowing people to remove themselves from proceedings so that while some of the whānau are attending to the manuhiri the rest are going about their business.\(^{103}\) There are eight units in the awa kāinga arranged around an ātea, courtyard, in a spear-head formation referencing their history as hunters. The form created by the buildings also represents the pātiki, the kaitiaki for Ngāti Hako. Consideration was given to separate individual whare around the edges of a wetland but this was abandoned early as bringing people together under one roof reinforces the idea of community. Being at close proximity with one another while also providing transition spaces between public, communal, semi private and private, encourages interaction. Boardwalks between the ātea and kāinga allow a transition space from the private kāinga to the communal kāinga ātea and then further to the more public space of the marae.

![Figure 6.7 Development of awa kainga. Social area in the foreground, marae buildings in the background.](image)

The design is organised to encourage communality. The way of life is based around community and coming together. Combining people, young and old ensures that knowledge is passed from one generation to the next and while there are separate sleeping areas in the kāinga, most day to day functions are socially inclusive. At the northern most point is the

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\(^{102}\) Personal communicaton John Linstead 24 Aril 2012
\(^{103}\) ibid., John Linstead felt it was important for kuia and kaumātua to be involved yet able to go home and rest. Children at the kōhanga will not be required all the time and may only attend to welcome manuhiri and assist in cooking.
communal lounge area or social space, with north facing decks overlooking the lagoon and at
the southern most point is the kōhanga reo, which encloses a north facing play space. The
kōhanga reo and medical centre in the awa kāinga bring together the surrounding community
and generate activity on site. Resources are shared in the community and in doing so this brings
the community closer. Earlier in the design the communal lounge area included kitchen and
dining however using the marae kitchen to feed the community is a practical use of space and
resources and reinforces the intention of continual use of the marae, not just on occasions when
hui are being held or formal business is taking place. The laundry room is also shared, which
again helps to ensure a continuous presence on the marae.

A car park for the tangata whenua and people using the kōhanga reo and health
centre is to the east of the awa kāinga. Supplies can be transported by boat or carried to the
community. No road vehicles will access the community. The land connection between the
awa kāinga and the papakainga is lined with fruit trees.

6.2.1 Awa kāinga ātea

The houses on the north and the kōhanga reo on the south enclose the kāinga
ātea. The ātea is a communal, shared space for the kaumātua and tamariki. Within the courtyard
the kai gardens, tended by both kaumātua and the tamariki, are a place to share knowledge and
te reo. The soil in these raised garden beds will need to be replenished as nutrients are drawn
from it. Importing material to site references the method of raising platforms out of the wetland
using shell and midden. The housing protects the area from the strong winds coming across the
Plains.

6.2.2 Awa kāinga whare

The kāinga community is predominantly for kuia and kaumātua, however the
60m² homes have been designed to also accommodate mokopuna and families. In the second
bedroom a ladder climbs to a loft space above the bathroom, utilising the roof height to provide
storage space. Families can also inhabit these units, closing off the living room if they require
more private space. Not every child needs a bedroom. Marae style sleeping can occur in the
lounge space.

The units are mainly sleeping spaces, while eating, socialising and clothes
washing is communal. Each unit does however have a small kitchen and bathroom. One of the
reasons kuia and kaumātua do not stay on the marae is the distance to the bathroom. The
kitchen is for making cups of tea and snacks rather than making a meal. Overflow from the housing can access the marae facilities whether it be for sleeping or bathing.

In the past kitchens and bathrooms were separate to living and sleeping quarters because of their different states of tapu and noa. In the kāinga flat ceilings denote these areas as separate from the rest.

The balcony to the front of the unit is a place to dock boats. The sliding wall between the two units allows the opening up of this balcony to the neighbouring one.

The raked ceilings and expressed seams reference the post and beam whare. The kaumātua housing is deliberately designed so negative detailing between ply panels provide an expression of the rhythm of the post and beam structure. The same detail between the light ply panels on the raking roof will have the same expression. To recognise the kaumātua as the holders and passers on of knowledge the woven design on the exterior end walls represent the three baskets of knowledge.

6.3 Kaitiakitanga Sustainability.

6.3.1 Heating and cooling

The concrete platforms have good passive heating and cooling properties. Under floor solar heating with gas back up will be used throughout. Buildings will utilise passive ventilation. Air, cooled by the surrounding water, will be vented up from beneath the floor to be drawn across rooms to opposing high windows.
6.3.2 Water

Water is collected from the wharekai roof for drinking and cooking while water from the roof of the service area is collected and used in that area, thereby separating noa from tapu. The tapu status of the new whareenui and Kōtahitanga means that collection and use of water from these roofs is inappropriate, therefore it will be allowed to fall directly into the lagoon. Although rainwater is collected the nature of the marae means that at times there will be a huge requirement for water and therefore reliance on town supply will remain until such time as the our waterways are clean enough to use. Services are transported to site using flexible service pipes beneath the boardwalks. The regeneration of wetlands, replanting and fencing of streams and rivers will assist in cleaning the water.

Water will be solar heated with gas back up. Instant gas back up is particularly necessary in the marae wharepaku and wharekai to cater for the large groups of people who stay intermittently. Grey water will be treated through the wetlands (near the car park) and fed clean into the river.

6.3.3 Gardens

The awa kāinga gardens feed the people of the community and provide for guests. Suitable food waste and paper will be composted in worm bins and then used to feed the kai gardens. Garden material will also be composted and used. The plant nursery between the awa kāinga and the papakāinga will generate a process of replanting forests, wetlands and the river banks to give future generations ready access to building materials and recreate a sustainable environment.

Figure 6.10: Tirohia future projection
7. **CONCLUSION**

The aim of this project has been to capture the fragments of Ngati Hako’s tribal history and weave that into an architectural design that acknowledges and references the past in order to strengthen tribal identity and to sustain the culture and the environment.

The research explored tribal history and the historic environment to develop an understanding of Ngati Hako’s past. The tribal history is fragmented because of their years of subjugation however Ngati Hako’s persistence and commitment to their occupation of the area has ensured their survival. The dependence on the river and waterways is a fundamental part of their history however the current day sees them disconnected from the river that historically was vital to their existence. As kaitiaki, Māori have an obligation to look after natural resources to ensure their health in reverence of their ancestors and to ensure sustainability of the resource for future generations. Designing for Ngati Hako demanded reconnection with this disengaged resource and a commitment to rejuvenating its mauri.

The concept of the floating whare required a broader investigation given the lack of information. The Kōhika Pā provided insight into construction methods in a similar environment and examples of communities living in floating houses was explored. The evidence of how floating whare in Hauraki were in fact constructed and how they were able to sink into the swamp may currently be preserved in Hauraki’s remnant swampland in the Kopuatai Reserve.

The function and layout of today’s marae was considered with reference to tikanga and ceremony. The symbolism of the wharenui, its mauri and the concept of history carved, painted and woven in to it was explored.

The resulting design draws on the research, expressing the tribal history in architecture, adopting construction techniques and acknowledging marae protocol. This communal environment encourages knowledge sharing and ensures a continued presence of the tangata whenua on the marae. Some of the ideas presented in this design might provide inspiration for the future development of Ngati Hako’s Tirohia Marae.

In conclusion, it is believed by the author that architecture is an appropriate vehicle for the representation of tribal history and this expression will help to support cultural identity and help to sustain the culture for future generations.
8. **Final Exam Presentation Images: Tirohia Te Marae Kārewa**

Figure 8.1 Site plan and section
Note: Individually moored whare replace the spearhead layout. This allows for movement of the individual whare and growth of the awa kāinga. The form developed to reflect the harakeke (flax), which continues to grow on the riverbanks, and the lighter forms of the individual whare represent the idea of being tentatively tethered to the land.
Figure 8.2: Floor plan

1. Marae ātea
2. Kōtahiŋa (Whare Tāonga)
3. Te wharenui hou (New wharenui)
4. Whare kai
5. Kāuta (kitchen)
6. Kōhanga reo
7. Whare ora (medical centre)
8. Mara kai (salad vegetables and herbs)
9. Papa takaro (playground)
10. Whare e rua nga rūma moe (two bedroom house)
11. Whare e toru nga rūma moe (three bedroom house)
12. Whare paku - tāne (men’s toilets)
13. Whare paku - wahine (women’s toilets)
14. Mattress and linen storage
15. Ruma horoi kākahu (laundry)
16. Wahi whakairi kākahu (drying area)
17. Rāpihi (refuse / recycling and worm farming area)
18. Mezzanine
19. Water storage
20. Deliveries
Figure 8.3, top: How the tangata whenua view the marae upon return from a journey on the Waihou River. Note: The water tower in the background acknowledges the importance of water, raising it up and housing it in a pataka form. The roofs of the kāinga reflect the undulating maunga in the background.

Figure 8.4, bottom: The view manuhiri have upon their arrival and welcome to Tirohia. Note: The waiting area outside the waharoa is excluded in the final design; instead the waiting area is on the jetty attached to the land. By doing this, the manuhiri are called on to the marae across the ātea and the karanga is performed throughout their waka journey.
Figure 8.5: The whare kai from the water.
Note: The whare kai faces towards the river mouth. The broad opening references the mouth of the whale that followed the pātiki upriver.

Figure 8.6 following page top: Boardwalk to the whare kai from the marae ātea.
Note: The importance of Rae o te Papa, the maunga for Ngāti Hako, is acknowledged by the view shaft when journeying toward the whare kai from the wharenui / marae ātea. The whare paku is screened by a living wall, which symbolically cleanses the water from the whare paku’s roof. It provides both a visual screen and a weather break for those using the whare paku directly from the whare nui. The boardwalk’s balustrade references the raupo which grows at the water’s edge.

Figure 8.7 following page: Interior view of the whare kai.
Note: The kitchen and dining area are often quite separate with only small serveries. Here the kitchen is open sided and this openness flows through to the outdoor eating area. This reflects the historic form of the open sided kāuta. The kitchen can however be screened off from the dining room providing a smaller space for everyday meals for the tangata whenua. The social space, at the north end of the previous spearhead design, was incorporated into the wharekai to ensure a continuous presence on the marae. The whare kai was developed so that it could perform a more versatile role, catering for both busy and quiet times. The form of the whare kai and the exposed beams reference the original vision of floating pumpkins.
Figure 8.8, top: Children’s play area
Note: The raised pataka playhouse references past storage methods.
Figure 8.9, bottom: Raised garden beds and goods delivery to the whare kai.
Figure 8.10, following page top: Water view of the north facing kāinga.
Figure 8.11, following page bottom: Boardwalk to the individual whare
Figure 8.12 and 8.13: Whare interiors.

Figure 8.14: Whare sections
Figure 8.14: View of Tirohia Te Marae Kārewa from the bike track.
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