Elifie Kitchingham Hamilton - 1391407

Tūrangawaewae

*Exploring the relationship between two indigenous cultures,*

*and their connection to their ancestral land*

**Explanatory Document**

A Research Project submitted in partial fulfilment of the requirements for the degree of

*Masters of Architecture (Professional). Unitec Institute of Technology, 2017*
Please note:

Aboriginal and Torres Strait Islander people are advised that this document may contain images, names, or references to deceased persons. ¹

Historical information is used to provide context for the purpose of this research project. ²

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² Ibid.
Abstract

This research explores New Zealand Māori and Australian Aboriginal peoples’ connection to their ancestral land, and how their relationship to the land has changed, and continues to change, over time.

The overall master planning and design of a Marae Cultural Centre, sited on significant Aboriginal Darug land in Western Sydney, is developed through the use of Glenn Murcutt’s philosophy of designing to respond to the site and to ‘touch the earth lightly.’ There is a particular focus on the marae atea as a forum for bi-cultural expression and interaction.

An analysis of traditional building techniques, and how they can be adapted using modern systems and materials is also explored. This gives a construction detail-focused architectural outcome which complements the overall master planning and environmental design drivers of the project.

Figure 1: Sketch of Māori carving at Potahi Marae, Te Kao, Northland.
Acknowledgements

Thank you to my friends and family for supporting me through the highs and lows of the past year. Also, thank you to my supervisor Mike Austin, I would have been lost without your guidance and encouragement.
‘When you are in the bush, talk to the bush and remember to allow the bush time to talk back to you.

When you are at the sea, talk to the sea and listen to what the sea has to say.

When you are with people, talk to people and allow time for them to talk back to you.

Talk to meeting houses, any meeting house, because they are the treasures of our ancestors, and they will talk back to you.’

Poem by Thomas Houston Walters

‘The marae, buildings, such as meeting-houses and halls, with appurtenant amenities, have always been the chief preoccupation of a Māori community. Until these are provided the community will not seriously take up other problems, and will not freely contribute funds for these other affairs.’

Sir Apirana Ngata speaking at Otaki, 1950

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'The meeting-house emerged as a reaffirmation of a threatened culture, and architecture is seen as perhaps the most enduring manner of stating social identity and expressing faith in the stability and continuity of the future.'

Michael Austin, 1976

‘Aboriginal lore, in the form of language and cultural practices, was often stifled and suffered, with many languages and cultures lost. However, the underlying spiritual connection to Country never faltered. That connection was, and is today, the central point in many Aboriginal people’s lives.’

National Trust, 2012

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6 Susan Hanson, ‘We’re a Dreaming Country’: Guidelines for Interpretation of Aboriginal Heritage ([West Perth, WA]: National Trust of Australia, 2012), 10.
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1.0 Introduction

1.1 Te Karanga ‘First Voice’
The geographical distance between the South Pacific islands of Aotearoa New Zealand and the continent of Australia is just over two thousand kilometers.\(^7\) This close proximity resulted in both countries being colonised by the British from 1788 onwards. New Zealand was constitutionally recognized as an outpost of New South Wales until 1841, one year after Te Tiriti o Waitangi was signed, when it became a separate colony.\(^8\) Two hundred years on, the Māori people, through the ongoing process of rectification of (mis)interpretations of Te Tiriti o Waitangi’s principles, are internationally recognised and celebrated as being a contemporarily successful indigenous people.

Increasingly, over the past twenty years there has been a renaissance of traditional Māori principles being reintegrated, recognised and indeed utilised for the betterment of New Zealand as a culturally rich nation. Māori principles are progressively being included as part of overall design and management strategies for projects such as protecting natural land and seascapes, revitalising public spaces, restoring public buildings and master planning of communities. Māori values are increasingly being written into modern legislation and town planning documents.

The visibly recognisable mana of Māori culture, and the acceptance of a Māori worldview into everyday life are affirmative signs that māoritanga is increasingly strong here in Aotearoa New Zealand, through all aspects of society. But what about the māoritanga (Māori culture, practices and beliefs) of the thirty-two thousand people who identify themselves as Māori living in New South Wales, Australia?

This research aims to create a dialogue around the subject of Māori and Australian Aboriginals’ deep cultural connection to the land; asking questions and providing possible solutions to how a group of people can maintain their values and traditions in a new landscape, whilst separated from their ancestral home. Furthermore, if a Māori run Cultural Centre in Sydney is to be established in order to further support māoritanga, how will it acknowledge, respect and support the Aboriginal history and their affinity with the land it stands on?

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\(^7\) Distance From To, “Distance from New Zealand to Australia,” accessed August 5, 2015, http://www.distancefromto.net/distance-from/New+Zealand/to/Australia

1.2 Background of the Project

In December 2015 three Sydney-based Māori community organisations, ‘Nga Uri O Rahiri,’ ‘Te Aranganui’ and ‘Sydney Marae’ came together to form the ‘Sydney Marae Alliance’ (SMA). The SMA are lobbying for and planning a new Marae Cultural Centre in Western Sydney, New South Wales, Australia. Currently at town planning stage, their marae is slowly coming closer to built realisation.

The SMA are not the first group wishing to establish a marae in Australia. Nagti Porou church leaders in Western Australia began planning a marae in 2013. Currently they have a website, and have established a management committee, but no progress has been made in regards to a secured site or a town planning application. Marae Melbourne are also currently raising funds to establish a Cultural Centre Marae in Melbourne. In 2015 they partnered with RMIT Masters of Architecture students with a design competition to envision what a marae in Melbourne could be. Currently no ground has been broken by Marae Melbourne.

Establishing a marae in Australia has been a long talked about dream of numerous Māori communities based in Australia. As mentioned above, a number of groups have begun the process, but are currently stalled, usually due to a lack of understanding of the lengthy and costly town planning process involved. The Sydney Marae Alliance have come the closest so far.

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1.3 Project Outline, Aims and Objectives

Through design driven research, this mahi (work) will investigate both Māori and Aboriginal histories and cultural values with particular focus on each group’s relationship to whenua (land). Tangible, and intangible values will be explored and utilised in the design of a cultural centre masterplan to include and benefit both groups. Alongside this, a construction detail-focused study will be carried out on the traditional building techniques of each group; specifically asking how these details could be reinterpreted in contemporary buildings through the use of modern materials, technologies and systems, whilst remaining true to what these buildings mean socially and culturally.

One objective of this research is to create an overall design scheme for what could potentially be Sydney’s first and long dreamed of marae. The aspirations of the Sydney Marae Alliance Committee, along with cultural value indicators of the local Darug people, will be drivers for both the research and design. Outcomes will include a masterplan of the selected site, taking into account the culturally significant spatial relationships between the buildings and outdoor spaces within the marae proper; how the rest of the site could be managed and developed; and how the marae cultural centre will relate to the wider environmental context of the area. The design will at all times consider and reference the relationship between Māori and Aboriginal people.

Another objective is to generate a reinterpretation of the traditional, yet constantly evolving, wharenui, marae atea and associated buildings. A series of modeled construction details will accompany technical drawings and printed visual imagery. These will demonstrate how indigenous peoples’ tangible and intangible relationships to whenua, along with modernised traditional building techniques, can be combined through a design process to generate an appropriate architectural response to establishing a Māori marae cultural centre in Sydney.

An overarching objective of this project is to ensure that the masterplan and its buildings and spaces are relatable and more importantly, are accessible to the surrounding community. Essentially, this is a bicultural endeavor where the architecture will at all times aim to be inclusive, whilst still remaining true to the historical cultural values of its users.

Lastly, the design outcome will respond to the environmental conditions of the chosen site. This is particularly important as marae in New Zealand have evolved in response to specific geographical and climatic conditions; it is expected that a marae in Australia will look and perform differently as the chosen site is located within the Australian geographical and climatic context.
1.4 Scope / Limitations

The scope of this research is confined to the master-planning and building design of a marae cultural centre in Western Sydney. There will be a particular focus on how marae buildings, spaces, customs and protocol can work in harmony with traditional and contemporary Aboriginal cultural values and ceremonial customs, whilst also welcoming the surrounding community to engage with the activities and events being held there. Exploration of how both Māori and Aboriginal people relate to their whenua (land) through their architecture is the main driver of this work. Australian cultural values will be considered as part of the social context of the design, but will not be a main focus.

Within the scope of this research is the development of structural systems using traditional building techniques and detailing as a basis for a contemporary architectural outcome. A focus on the temporary nature of both culture’s seasonal structures, along with the ways in which they interact with and impact the land, will inform the design.

A limitation of this research project is an inability to directly consult with members of the marae hapori and the local Darug people in Sydney. Had this been an option, meetings and collaborative design workshops with the end users of the marae cultural centre could have achieved an end user driven design. It is recognized that a design process based on community values, input and feedback would most likely result in optimal outcomes for the end users. However, this process would be lengthy and the timeframe of this research requires an end date, so an alternative design process has been chosen.

1.5 Research Question

*How can one culture’s architecture be built in another culture’s landscape, when both groups’ identities are tied to their ancestral lands?*
1.6 Methods

This mahi follows Australian architect Glenn Murcutt’s design philosophy of designing site specific architecture that aims to ‘touch the earth lightly.’

... look for the contours, look for the sunlight, look for the watertable levels, look for the drainage patterns, look for the soil conditions, look for the rocks. I seek out how to build so that the site is not disturbed.11

Murcutt’s philosophy of touching the earth lightly results in buildings that ‘...are fine tuned to the land and the weather.’12 Techniques such as orientating a building to capture summer breezes and take in views, using louvres to provide layers of shade and ventilation in the summer, narrow floor plates allowing sun to penetrate the inner plan in winter, are all a perceptive response to site and environment.13

Murcutt begins by exploring the conditions of the site thoroughly. Contour, wind direction, existing natural features, are taken into consideration as a first set of constraints for design, then worked from there. This method will be used when designing the marae cultural centre’s buildings and spaces.

11 Glenn Murcutt, quoted in Phillip Drew, Touch This Earth Lightly, (Potts Point, NSW: Duffy & Snellgrove, 2001), 100.

2.0 Bi-cultural Architecture

During the 1970s there were a number of events that brought New Zealand’s bi-culturalism into mainstream discussion. Beginning with the television series Tangata Whenua which aired in 1974; the Māori Land March and the instigation of the Waitangi Tribunal in 1975; land occupations in Raglan and protests in Auckland at Bastion Point. These events highlighted New Zealand’s two distinct cultures who were bound by a unique treaty, a relationship that became internationally recognised.

In the 1980s New Zealanders began to value Māori culture. The Te Maori exhibition was displayed in New York at the Metropolitan Museum of Art. Due to its success internationally, the exhibition toured New Zealand on its arrival home, adding to the growing awareness of Māori culture as a treasure to be valued.

Architect John Scott’s Futuna Chapel in Wellington is considered to be New Zealand’s first successful example of bi-cultural architecture. The building, which opened in 1961, was described in the late 70’s as ‘the result of a harmonious collaboration, and simple construction techniques, which reflected Maori and Pakeha architectural cultures…’ Today Futuna is recognised as ‘… perhaps the most complete example of a true modern ‘indigenous’ New Zealand design.’

Judging from the comments on what makes Futuna an important building, in particular to what makes it a bi-cultural New Zealand building, it seems that one major factor stands out; simple construction that is clearly influenced by both cultures. This comes as a surprise, as many contemporary buildings which are considered bi-cultural, tend to reference the indigenous culture by wrapping the building in an icon-heavy patterned rain-screen façade; as if this was enough to make them bi-cultural. Somewhere along the way New Zealand architecture has forgotten the lessons learned from Futuna, and adopted façade motifs as an expression of bi-culturalism in architecture.

There is a sense, when researching Australia’s bi-culturalism, that the country never really recognised itself as bi-cultural, and now firmly sees itself as a multicultural nation. This may be due to the absence of an official treaty between Aborigines and the British settlers which would have enforced a partnership.
Figure 4: John Scott’s Fatana Chapel.
2.1 Architects Views on Bicultural Design

“I just don’t worry about bi-culturalism per se. I think the world is a multicultural world, and bi-culturalism is a step in that multicultural awareness. And quite often it traps you. Although it is important for realisation and respect it will trap you, and it should not be embodied in a building per se. And if you do try to embody it, it will often not be seen. So then you have to talk about it. And if you have to talk about it being a bicultural building, then I think we’ve failed.”

Ian Athfield

"if we set out to design an architecture that’s Australian, we’re in trouble. All we’d end up with is [the equivalent of] people riding bicycles with kangaroos on them. The important thing is that we address the issues, the landscape, the brief, the place; if we address these things, and do them rationally and poetically at the same time, then we’ll be getting somewhere."

Glenn Murcutt

What can be surmised from these views on bi-culturalism as a driver for design, is that it should not be an aim, rather it should be a result of good architecture. When a space is thoughtfully and thoroughly designed for its end users, if they are of a number of different cultures, it will work for all.

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2.2 Religious Buildings - Mosques

Mosques are an example of a culturally specific architecture adapting over time to new geographical locations and social environments. Racial relations between the Muslim community and Australian people have at times been fraught with tension, and, as a result, newly established mosques are being designed to promote openness and inclusivity with their surrounding communities, they are becoming bi-cultural. This is appropriate, as part of the opposition to mosque architecture derived from the inward orientation of their design, with high perimeter walls and very little or no visual or physical connectivity to the street. This architecture promoted the perception that Muslim communities in Australian suburbs were not attempting to integrate with the local people.

Comparisons of insular or exclusive architecture can be drawn with Marae in New Zealand. There is an element of unapproachableness for non-Maori New Zealanders when entering a traditional marae. As with many other religious and cultural buildings, there are customs and protocols regarding entry and use of the spaces that, to the uneducated visitor, can be intimidating. Whilst maintaining customs and protocol is important for the continued survival of an indigenous culture, a marae in Sydney must also relate to and include the surrounding community. From personal experience, feeling comfortable on marae grounds comes only from repeated visits over time, and a genuine sincerity and willingness to learn. A marae in Sydney must be spontaneously accessible to the local community, using program to draw people in to certain areas, whilst at the same time allowing for powhiri (formal welcome) and other marae activities to take place.

A flexible and varied program of community services is a key way to create an inclusive architectural environment. Mosques, like marae, are managed by a committee and:

*The stronger and more active the management committee, the more services and activities are offered to the community. In a small number of cases where the mosque did not have a management committee, the mosque was a quiet place with no activities taking place except the five daily prayers.*

---

2.3 Precedent - Australian Islamic Centre, Newport, Melbourne, Australia

A collaboration between Australian architect Glenn Murcutt and Architect Hakan Elevli, who is of Islamic background; the Australian Islamic Centre is “perhaps the first truly contemporary Australian mosque… an architectural and social marker of a new perception of Islam in Australia”  

Currently under construction, the building challenges the perception that mosques built within Australian communities are insular and unapproachable to outsiders. It does this through creating visual connections between the users and people on the street, allowing for a formal transparency.  

The absence of high perimeter walls also allows for a visual permeability, especially from the adjacent public park which has been integrated into the design.

A significant design decision was to exclude the minaret dome - which is both a physical and spiritual symbol associated with Islamic culture  - and reinterpret it using triangle shaped roof mounted lanterns capped in a golden yellow. To exclude the minaret is not uncommon in Australian mosques, as the call to prayer does not happen; this is an example of a shift in cultural tradition caused by a change in location, where the modern Australian mosque has adapted to its new social context.

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24 Ibid.

Figure 6: The traditional minaret has been replaced with roof mounted lanterns on the Australian Islamic Centre.

Figure 7: View from inside the prayer hall during construction, showing the roof lanterns.
2.4 Precedent - Al-Islah Mosque, Punggol New Town, Singapore

The idea of an ‘open mosque’ was adopted by Formwerkz Architects when designing the Al-Islah Mosque in Punggol New Town. The overall form is made up of three blocks, separated to give the impression of a village cluster. Entry is through three large arches at the front; from this point the main prayer hall can be seen, allowing for visual porosity. Boundaries are marked with laced metal screens and landscape water features, not walls, furthering the ‘open mosque’ concept by allowing the public to see in. Programmatically, education is a key driver for the mosque, with classes available for Muslims and non-Muslims.26

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Figure 9: Entry to the Al-Islah Mosque is through one of three oversized arches.

Figure 10: View from within the Al-Islah Mosque looking outwards towards the street.
2.5 Public Buildings

Bi-culturalism is increasingly becoming a requirement in the design of new public buildings as contemporary societies are becoming more and more multicultural. Key examples of this are national museums, which in the case of Te Papa Tongarewa in Wellington NZ, and The National Museum of Australia in Canberra, both document and display the bicultural history of their country.

Both Te Papa and the NMA emerged from architectural competitions which stressed the importance of the national museum symbolically and spatially reflecting the nation’s identity.\(^{27}\)

2.6 Precedent - The National Museum of Australia, Canberra, Australia (NMA)

Commission of the National Museum of Australia (NMA) began as a design competition. Won by Architects Ashton Raggatt McDougall and Robert Peck von Hartel Trethowan, the initial entry consisted of the tag line “This is not yet a design,” accompanied by the image of a ‘knot’ extruded from an abstract site plan.

A historically and culturally significant site was chosen for the museum. First occupied by the Ngunnawal, it was a place by the water with views to the Brindabella Ranges. It is fitting that this meeting place for indigenous people has been returned to the people and is once again a place for wandering and whether or not people are visiting the museum it is a public space.\(^{28}\)

“And a place to roam, to argue, or to get a moment’s rest, a place to test our monumental claim, a place to mark, to scarify, to decorate, and also to acknowledge fame and fortitude and failing, and to give the past and present our full attention for a moment. But most of all perhaps, we hoped to make just that kind of revealing place, that even now, even as we look, is somehow always emerging from a future perfect tense, as if calling us to pilgrimage.”\(^{29}\)


\(^{29}\) Ibid., 33.
A metaphor is used to describe the physicality of the main hall’s layout, a ‘knot box.’ The interior space of the museum is the negative space of the interior of the knot, all ideas, histories, failures and successes tied together and left as a void with a past. A void to be occupied and filled.\textsuperscript{30} Forming the knot is a ribbon following an axis from Uluru, another to Parliament, referencing the nations “natural and cultural monuments.”\textsuperscript{31}

\textbf{Figure 11:} The NMA sits on the banks of the Molonglo River in Canberra.

\textbf{Figure 12:} The Garden of Australian Dreams forms the courtyard of the NMA. This space explores the ideas of ‘place’ and ‘country.’

\textsuperscript{30} Ibid., 34.

\textsuperscript{31} Ibid., 130.
2.7 Precedent - Te Papa Tongarewa, Wellington, NZ

The spatial layout of Te Papa drew inspiration from the contrasting settlement patterns of Māori and Pākehā. The museum’s Marae space was positioned higher up, oriented – as wharenui often are - towards the rising sun. Whereas the Pākehā exhibits were arranged by a grid pattern and oriented towards the street.32 These two contrasting spatial arrangements are at the same time joined and separated by a 'cleaved' space between,33 which according to architect Pete Bossley, is a reference to the ‘shifting nature of the relationship between the two cultures in a process of continual redefinition.’34 The Treaty of Waitangi exhibit is housed in the ‘cleaved’ space.

The Architecture of Te Papa strongly references its waterfront site. No exhibits are housed on the ground floor in acknowledgment of the possibility of tsunami. Exhibits relating to Papatuanuku are located on the lower floors, as close to the earth as practical.35

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32 Walliss, “Imagining the National Landscape,” 5.
33 Ibid.
35 Walliss, “Imagining the National Landscape,” 6.
2.8 Conclusions

Mosques are a prime example of one culture adapting its architecture when in a new cultural location. This has not been an instant adaptation and has come about from decades of misunderstanding, largely derived from the ‘closed off’ nature of many mosques. One key design idea that can be taken from both the Australian Islamic Centre and Al-Islah Mosque is the use of the ‘open mosque’ concept. Both buildings use visual connections to the street as a method of breaking down mistrust of what is happening inside. Also, letting natural spaces permeate the building in the form of water features and public park spaces creates a feeling of physical openness. Programmatically, using education as a means to draw the local community into the building furthers this feeling.

The NMA uses symbolism to tell the story of Australia’s history. Use of symbolism and imagery in the marae atea, referencing that the land that the marae sits on belongs to the Darug people, will be explored.
3.0 Māori

3.1 The Māori of Aotearoa New Zealand

The Māori navigated to New Zealand from East Polynesia on seafaring waka in the 13th century.36 They brought with them staple crop plants, such as kūmara and yams which thrived in warmer North Island locations, and quickly adapted to hunting native wildlife, with species such as the moa hunted to extinction.37

With numbers reaching up to 100,000 before colonisation,38 Māori lived mostly in unfortified seasonal settlements in family groups or kāinga. However fortified pā were occupied at times of war. In times of peace, pā were used to store food and are an example of how Māori shaped their landscape. Through terracing of the land, they could utilise a hill site for its secure position and extensive outlook, whilst creating flat surfaces to build on.

In primitive Māori society, law and general social order were largely governed by the concept of tapu. If a place, object, action or person was deemed to be tapu, which was sacred or prohibited, actions in relation to it were controlled by protocol. Consequences of breaking the rules of tapu were grave; punishment by the gods and members of the tribe could result in the removal of personal possessions or go as far as punishment by death. Thus, the concept of tapu can be seen as the Māori version of British law or possibly compared to the practice of Christianity. However, tapu was more effective than Christianity as punishment for breaking the rules happened in real time with immediate consequences, not in the afterlife with banishment to hell.39

Mana is another important Māori concept; it is similar to status or power in European society. A person is born with mana, how much depending on the mana of one’s atua, or ancestor. Mana is an expression of one’s atua; the person is not the source of mana, just a vehicle for it. People with plentiful mana are usually elevated to being leaders in Māori society, increasing the tribe’s mana by successful actions such as trading, negotiations and warfare.40

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37 Ibid.

38 Ibid.


After brief encounters with the initial European explorers, the first groups of whalers came to New Zealand in the 1790s. Māori traded with the whalers and worked aboard their ships. Often Māori customs and values, such as protocol around tapu and mana, were disrespected by the visitors, and retaliation was not uncommon. One example of retaliation happened aboard the Boyd in Whangaroa, where local Māori slaughtered the ships crew, causing shipping to New Zealand to cease for many years.

The first official British settlement of New Zealand was in the Bay of Islands in 1814, with a mission station set up in Rangihoua Bay by Anglican Reverend Samuel Marsden. From this point Māori trade with Europeans’ began to flourish.

The trading relationship between Māori and Europeans gave Māori access to muskets. Wars between Māori tribes and loss of life due to introduced European diseases had a dramatic effect on population numbers; eventually Māori chiefs saw adoption of Christianity as a way to end warring between tribes.

In 1840 Te Tiriti o Waitangi was signed.

Figure 15: Carved pou at Koroniti Marae.

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41 Metge, The Māori of New Zealand, 29.
42 Ibid.
43 Ibid.
44 Ibid., 30.
3.2 Urbanisation

After the signing of Te Tiriti o Waitangi in 1840, there was an increased trend of Māori adopting European ways of life. This included the planting of European crops, using steel tools as opposed to stone, wearing European clothes and owning introduced animals such as pigs and horses. Māori-owned enterprises such as flour mills and trading ships were common and increasingly drew Māori into urban situations.45 Land disputes brought about by the misunderstandings within The Treaty, and the shift from rural to urban living, contributed to a disconnect between Māori and their land.

During the late 1960s and early 1970s, a trend began of increasing numbers of urban Māori returning home to visit their marae, reconnecting with their whakapapa and reviving their sense of māoritanga.46 This was partially driven by the continued effort of rural marae communities to build, maintain and restore wharenui, marae buildings and grounds. Urban Māori took the opportunity to participate in these activities, resulting in a renewed awareness of their whakapapa and the acquisition of traditional skills such as carving, painting and weaving. This pull towards home is seen as being a major contributing factor to the rebirth of māoritanga here in New Zealand.

The longing felt by urban Māori in New Zealand in the 1960s to reconnect culturally and establish a stronger sense of māoritanga has been felt by Māori settled in Australia for a long time. Australian born Māori are experiencing the need for turangawaewae, a place to stand, where a connection to whenua and whakapapa through practicing tikanga (customs and protocol) and participating in marae events can occur.

Historically, in New Zealand there was political opposition to urban marae, with influential figures, such as Sir Hugh Kawharu, not necessarily against them, but opposed the process of urbanisation as it stood at the time. This was due to the lack of consideration for Māori social cultural values shown by planners and officials.47

Marae, in particular urban marae, have become a vital community support place in times of distress such as after an environmental disaster where people are displaced from their homes. During the November 2016 Kaikōura earthquake, Takahanga Marae opened its doors, providing shelter, food and general support to those in need. The Māori cultural value of hospitality is evident in extreme situations such as this, where the marae community reaches out past its own people to look after others.

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45 Ibid., 32.
3.3 The Wharenui

Wharenui can be seen as a symbol of Māori’s resistance to their diminishing status in an environment changed by British colonisation of New Zealand.\(^{48}\) Wharenui evolved from wharepuni (sleeping houses). These gabled structures had a porch at the front, and a hearth inside for keeping the space warm at night. Rectangular in shape, wharepuni were an adaptation of Polynesian houses.\(^{49}\)

Strength, permanence, respect and remembrance of whakapapa are key elements to wharenui. These values are shown through the metaphor of building elements representing the body of the ancestor. Perched atop of the maihi, or welcoming outstretched arms, is the tekoteko. Usually a figurehead ancestor of the iwi, often associated with their first canoe, the tekoteko is a representation of determined leadership.\(^{50}\) The tāhuhu backbone of the wharenui, or ridge beam, is a robust element both in an engineering sense, and also metaphorically. “The back must be strong, for you must continue to stand, to resist the elements, and to be a sign of strength and permanence.”\(^{51}\)

The post colonisation adaption of the family unit wharepuni into the modern wharenui appeared common in the 1850s.\(^{52}\) The space in front of the marae, known as the marae atea, was a meeting space used for decision making and a place where customs and social order were maintained. Today this space is still controlled by these past customs and protocols, it is still a place where Māori can express and maintain their Māoritanga.

The construction of church buildings by the colonists reinforced the importance put on buildings as a demonstration of power and importance. Developing the marae atea space and incorporating it as an ordered built space was both a physical and visual way for Māori to reassert their importance and relevance in the New Zealand context of the time.

![Figure 16: Sketch showing parts of the wharenui.](image)

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51 Ibid., 25.
3.4 Spatial Organisation of Marae

Three guiding principals have been observed that define the spatial layout of marae buildings and space. The first is the positioning of buildings in relation to the surrounding landscape. Secondly, the concepts of tapu and noa dictate that some spaces should be kept separate from each other. Thirdly, the need for flexible spaces to cater for large and small groups, and different groups simultaneously, affects building and room layout and positioning.

Much about the placement, layout and orientation of buildings on a marae is derived from the surrounding landscape, and buildings are positioned to evoke a sense of either enclosure or openness. Wharenui usually face towards open ground allowing a far-reaching outlook, with mountains, hills or bush to the rear creating an overall sense of enclosure behind.53

During special events, such as powhiri, the positioning of people around the marae atea adds to the sense of enclosure, with the tangata whenua standing to the side of the wharenui, often the right, with their backs to other buildings. Essentially they are positioned with their backs to an enclosed space, with exposed space in front.54

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54 Ibid., 229.
Tapu and noa dictate which side of the wharenui the tangata whenua and the manuhiri sit during a powhiri and where they sleep. The hosts generally sit in front of the door, with the visitors in front of the window. The tangata whenua side is considered noa, or common, and the manuhiri side is tapu, or sacred. It is suggested that as the wharekai houses food and is noa, it should be located to the noa side of the wharenui.

Whilst European architecture is organized spatially around rooms, with walls enclosing spaces, most often of a rectangular arrangement and for a specific function; contemporary Māori architecture is spatially structured differently, focusing on multipurpose spaces, with adjoining outdoor areas.

A key example of large flexible spaces within a marae is the marae atea, where activities ranging from children’s games, to the welcoming of guests, to dramatic war dances are carried out. When in use, this is the most formal space on any marae.

The wharenui is a large flexible space and is the heart of any modern marae. As mentioned above, wharenui evolved out of a response to colonial impacts on Māori life, they needed a physical symbol of their place within the new and diversifying community, and were influenced by the houses and churches of the British colonists. As a flexible multipurpose space, wharenui are extremely effective. With community events and discussions happening during the day and sleeping at night, the wharenui completely transforms, efficiently accommodating many people with minimal effort and fuss.

Another large flexible space is the wharekai, where food is prepared and served, often to large numbers of people at once. As in many other cultures, dining is often followed by entertainment, the wharekai transforms into a performance venue, sometimes with a stage area for song and traditional dance. Storage spaces adjacent to the dining hall are vital for the removal of chairs and tables, allowing the space to be used for any purpose. Wharekai represent hospitality, a key Māori cultural value.

The way in which spaces and buildings blend into one and other and adapt throughout the day is vital to the spatial organisation of the marae. Formal movement from one space to another is dictated by traditional protocols.

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56 *Maori Architecture*, 15.
4.0 Australian Aborigines

4.1 The Darug (Dharug) People of Western Sydney

Residing inland within the Greater Sydney area of NSW, the Aboriginal Darug people, with their many sub-tribes, collectively known as the bediagal-tugagal-tugara, or *“men from the flat, cold, woody country”* are the original inhabitants of the land surrounding Prospect Reservoir where the marae cultural centre will be built. J.L. Kohen’s research into the lineage of the Darug tribe, published in 2006 and spanning the previous twenty five years, traces family histories and tells some of the stories of the twenty thousand people who identify themselves as of Darug descent.  

Whilst in other parts of Australia Aborigines were forced off their tribal lands by settlers, the Darug largely remained within their own territories. This was due to the establishment of reserves such as La Perouse, and the Sackville Aboriginal Reserve, located on the Hawkesbury River. Remaining on traditional lands allowed the continuation of cultural traditions, with knowledge still being passed on today.  

There are documented cases of Darug people living in traditional bark gunyas up until the 1890s. There are a number of totems associated with the Darug people, including the brushtail possum, grey kangaroo and the yam.

“There is my backbone... I only stand straight, happy, proud and not ashamed about my colour because I still have land... I think of land as the history of my nation.”

Galarrwuy Yunipingu, Aboriginal musician

By the 1870’s, most Darug had converted to Christianity. See Appendix A 15.1 Timeline for further information on Darug history in NSW.

Today, there are a number of organisations established by the Darug people whose function is to facilitate the continuation of their culture. Cultural heritage sites have been identified, the Darug people work with the Department of Environment and Conservation to protect these sites and to educate land owners on their importance.

Figure 18: Painting of corroboree.
4.2 Corroboree

The word corroboree is an English adaption of the Aboriginal word caribberie. Corroboree is a ceremonial meeting where Aborigines’ interact with the Dreamtime. These meetings can be either informal or formal, and involve dancing, passing on of traditions, knowledge and stories, and initiation rituals. They traditionally took place in clearings, with many paintings by settlers depicting Aborigines with painted bodies dancing in a circle around a central fire. Body art, instruments used, and costumes worn depend on the nature of the ceremony.64

4.3 Spatial Organisation of Aboriginal Architecture

Traditional Aboriginal camp settlements varied between regions, but often follow common patterns of spatial arrangement. These patterns were influenced by tangible factors such as: length of occupation, number of occupants, availability of resources, climatic conditions and natural landscape features of the site.65 In larger camps, communal areas such as places for gathering water, dancing, practicing rituals and defecating were required. Also, areas surrounding a camp were restricted by gender.

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65 Paul Memmott, Gunyah, Goondie and Wurley: The Aboriginal Architecture of Australia (St Lucia, QLD: University of Queensland Press, 2007), 112.
5.0 The Land

5.1 The Dreaming

The Australian Aborigines’ Dreaming began over sixty thousand years ago in the mind of the Spirit of All Life. The Spirit existed in an infinite nothingness, until dreams of red hot flames lit up the darkness in the mind of the Spirit. Next came thoughts of swirling wind and driving rain. The wind and the rain and the fire raged a lengthy battle against each other in the Dreaming; the exhilarating display of forces enthralled the Spirit. Eventually a calmness ensued, and in this calm the Spirit began to dream of earth, land, sea and sky. The Spirit’s dreaming was lengthy and tiresome, so the secret of the dreaming was passed on to the barramundi, the first creator spirit, who took this knowledge into the world.66

Barramundi understood the dreams of calm river waters. When the Dreaming took barramundi to the ocean, he did not understand the knowledge, so passed it on to the turtle, who knew well the wild ocean waves. The turtle’s dreaming took him past the beach to the hot and dry land, which, like the barramundi, he did not understand; so, he passed on the Spirit to the lizard. The Spirit was passed from river to ocean, to land and then to the sky. Eventually the Dreaming was passed from the kangaroo to man and women, who understood the knowledge of the rivers, oceans, land, sky, forests and plain; man and woman continued the Dreaming.67

By revisiting the Dreaming of their spiritual cousins, the creator spirits, man and woman learned that they must protect all life. They knew that the Dreaming must be passed on to their children who would soon arrive. Man and woman dreamt of ceremonies, stories, dance and art; these were to become vessels for passing on the secret of the Dreaming to future generations.68

The Spirit of All Life knew that the secret of the Dreaming was safe in the hands of man and woman, so came to earth and rested within the land. This is why all life eventually returns to the land to be with the Great Spirit of All Life. Aborigines are the guardians of both the land, and the secret of the Dreaming, as they are one and the same.69

67 Ibid.
68 Ibid.
69 Ibid.
5.2 Ranginui and Papatuānuku

Back in a time when the land was flat and there was only darkness in the sky, the land mother Papatuānuku, and the sky father Ranginui, fell in love. They had many children who longed for more freedom as they were trapped in the tight embrace of their parents.\(^{70}\)

The children noticed that whenever Ranginui lessened his embrace on Papatuānuku, a beam of light would escape from the exposed space between them. The children decided to separate their parents so that they could live in the light. Tāwhiri, the god of wind and weather, did not want to separate his parents, he rose up to Ranginui and told him of his brother’s plan. Hearing this, Ranginui tightened his embrace on Papatuānuku. The other children in turn tried to push them apart, but their parent’s embrace was too strong. Lastly Tāne Mahuta the god of the forest, strengthened himself between his parents and stood tall, forcing them apart and letting light into the world. He continued pushing Ranginui upwards until the sun’s rays covered the land and warmed his siblings, who were now standing tall for the first time.\(^{71}\)

The wailing cries of Ranginui and Papatuānuku almost made the children regret their actions, but the magnificence of mother earth was now visible, and they were overwhelmed by her beauty. Ranginui’s tears fell in torrents, so in their fear of drowning they turned their mother to face away from their father by pulling at her hair. She curled into a tight ball; the lakes, rivers and ocean forming in the folds of her body, and filling with her lover’s tears.\(^{72}\)

Eventually Ranginui and Papatuānuku forgave their children, but always yearned for each other’s embrace. When the morning mist rises from the valleys, it is Papatuānuku weeping in longing for her love; and in return, Ranginui’s dewy tears cover her body each morning. Tāwhiri did not forgive his siblings for separating his parents, and to this day his rage can still be felt in the piercing wind and driving rain.\(^{73}\)

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\(^{70}\) *Ranginui and Papatuanuku*, Beth Te Aho (New Zealand: Tribes Komfur, 2008), YouTube, https://www.youtube.com/watch?v=XsEAab_Tnl4

\(^{71}\) Ibid.

\(^{72}\) Ibid.

\(^{73}\) Ibid.
5.3 Shaping of the Land

Both the Aboriginal Dream Time stories and Māori mythology give explanations of how landscape features, such as rivers and mountains, were formed. These explanations feature human and animal ancestors who shape the landscape using their bodies, or their bodies become the landscape.

Furthering the stories of creation, ancestors named the land after parts of their body. One story tells of the chief Mananui Te Heuheu of Ngati Tuwharetoa, who named the land as parts of his own body, making it sacred. In this story, he...

... manipulated his body so it spread over a vast distance. One of his thighs was upon Titi-o-kura, another on Otairi. One of his shoulders was upon Paretetaitonga, another on Tuhua... as domain for his spiritual authority... 74

By naming the earth after himself, personifying it, he claimed possession and guardianship of it, to look after the land is to look after himself, his family and his ancestors.

In Māori mythology, Māui pulled up a giant fish which became the North Island of Aotearoa, Te Ika-a-māui; the violent slashes of his brothers’ weapons against the fishes back creating the topography. 75 Similarly, the rainbow serpent creator spirit slithered its way across the land to create Australia’s landscapes. In these two stories, it is not an overarching God placing features onto the land, instead we have mythological versions of regular humans and animals shaping the land. These stories highlight the interconnectedness of humans, nature and landscape.

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5.4 Traditional Aboriginal Land Use and Management of Country

Bill Gammage’s book discusses Aboriginal land management strategies practised before the arrival of the British to Australia in 1788. At this time, every inch of Australia was managed by the Aborigines; land care was their main preoccupation. Families managed their territory at a local scale contributing to a countrywide environmental system with the guiding rule ‘Think universal, act local.’ The Dreaming created the land, no area was considered wilderness as to dream the land is to ‘know’ it. Gammage uses historical accounts from settlers’ diary entries, reports, letters, sketches and paintings to describe how the Australian landscape was shaped by the Aborigines extensive use of fire.

On arrival to Australia, many descriptions of the countryside expressed confusion at its composition, and compared it to an English gentleman’s park. Confusion largely arose as the was no under bush, grass grew on fertile soil, and trees on infertile soil, contradicting what usually occurred in nature.

Attributing the sculpted landscape to the management of Aborigines was a leap in thinking that settlers were not willing to make, as this would compare them to English gentry. At the time, land in Australia was considered ownerless, with Aborigines not even considered to be people, so connecting the exceptional landscape to the natives was absurd.

Whilst Aborigines did not actively plant crops or till the soil, they did significantly shape vegetation patterns to encourage and discourage species; this was done through the highly skilled use of fire. Vegetation was slowly adjusted over time, with different plant species requiring specific types of burn. Patterns of vegetation were created to enhance habitats, with edges, belts, clumps and clearings encouraging biodiversity, and creating an overall manicured parklike landscape.

Documented by early colonists, clearings were often ‘… used by the aborigines for war dances and fighting.’ Clearings were important for ceremony and were used as temporary campsites, but also for hunting, as they often encircled a water...
source which attracted animals. The edges of clearings were rich in biodiversity, as this is where “… the right balance of sun, shade and nutrient…” was found.

Traditional burning took place in a number of areas of New South Wales until as late as the 1830s. The burning was described by the Darug as how they ‘cleaned up their country.’ However, burning was not the only way in which the Darug managed their country, they also distributed seeds in specific places, and created holding areas in rivers where fish were kept until harvest time.

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85 Ibid., 199.
86 Kohen, Darunganora, 23.
87 Ibid., 24.
5.5 Traditional Māori Land Use and Management

Metge describes the tangata whenua as descendants of Māori who occupied and owned land for many generations.\(^8^8\) Like most indigenous peoples, Māori have a strong connection to the land, seeing people and nature as equals.\(^8^9\) Kaitiakitanga is guardianship, not ownership, of the land. Guardianship of the land comes about from ancestral association with that land.

Whilst the Aborigines land management methodology supports maintenance of the environment, Māori were not opposed to change, and would work the land in order to achieve maximum gains. One example of this is the planting of kumara patches. Māori brought kūmara and yam with them during settlement and planted crops in order to support their iwi. In contrast to this, Aborigines did not plant crops, but would harvest wild yam growing on riverbanks. Māori shaped the landscape, with numerous pa sites throughout New Zealand. Highly visible from above, terraces and pits were carved into the earth, they were often located on hills and headlands.

Kawiti’s Ohaeawai Pa in Northland is one example where the land was manipulated by Māori. Great fortified trenches were established, and Kawiti held off British troops when outnumbered 6 to 1. Ngawha Prison was built adjacent to this site, with the original plan being to flatten out the earth. Removing the existing contour was deemed not in keeping with the site’s history, so minimal earthworks were carried out. Criticism of the built outcome has suggested that moving the earth would have been more in keeping with Māori tradition.\(^9^0\)

*Kawiti’s construction was not tamed by the natural contours of the land, instead he manipulated the land to create the salient and flanking-angles necessary for victory.* \(^9^1\)

Establishing a marae on land with no association to ancestors or tribal ties to the area is a sensitive task. As illustrated in the example above, misinterpreting cultural values can easily happen.

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\(^8^8\) Metge, *The Māoris of New Zealand*, 107.

\(^8^9\) Royal, “Story: Kaitiakitanga.”


\(^9^1\) Ibid.
Figure 21: Maori women harvesting kumara ca.1910.

Figure 22: Image showing a young Maori girl at Te Ariki Pa, with whare and gardens beyond, 1880s.
5.6 Storytelling

In the same way that The Bible records Christianity’s explanations of creation, the Dreamtime and Māori mythology stories are vessels for passing on Aboriginal and Māori beliefs to future generations. One key difference between indigenous and western methods of passing down knowledge is that indigenous people traditionally did not record their stories in books, they were spoken, and depicted through dance, song and art work. As a church is a space for passing on Christian teachings, there are also forums for passing on indigenous knowledge.

The wharehui or wharekura are where stories are told and teaching happens on a marae. In Aboriginal culture, clearings are used for corroboree, being within the environment of which people are a vital component. Creating spaces that allow for teaching and passing on knowledge through indigenous methods, such as large and small performance areas, display areas for art, and flexible indoor and outdoor workshops, is a way of promoting cultural traditions.
6.0 Context

6.1 Sydney Māori

There has been a notable Māori presence in Western Sydney for over 200 years beginning when Rangihoua chiefs Te Pahi and Ruatara formed strong ties with Reverend Samuel Marsden. In 1792, Marsden was appointed as the Assistant Chaplin to the Australian colony of New South Wales, where he established the Anglican faith. He set up residence on a 100-acre block on the banks of the Parramatta river developing crops, near what is known today as Ranighou Reserve. When Māori chiefs were visiting the area for trading purposes, Marsden would accommodate them as he saw the Māori to be good candidates for evangelisation. His relationship with Māori was further strengthened with the establishment of the first permanent European settlement in New Zealand, in Rangihoua Bay in the Bay of Islands on Christmas day 1814.

Marsden later established a school on his land in Parramatta where visiting Māori learnt about farming and trade. Marsden had great respect for the Māori, writing that ‘… They are a noble race, vastly superior in understanding to anything you can imagine…’

With over eight thousand people living in NSW identifying as Māori in the 2011 census, the Māori presence is increasingly strong in Sydney. Events such as Sydney Waitangi Festival, held in the Holroyd Gardens, attract large crowds, 8000 people attended in 2013.

The Sydney Marae Alliance give the following reasons why a marae is needed for their community:

- A place to be Māori, a sense of belonging,
- To promote economic, social and cultural growth and wellbeing,
- An ability to build cultural capacity such as; Te Reo (Language), Kapa Haka (Dance), Waiata (Song) and other services,
- To conduct Tangihanga (Funeral) and practice Tikanga (Custom) to maintain our cultural identity,
- Provide a space for non-Māori to experience the Māori culture,
- Provide a place to gather, to socialise, to hui (meetings), to practice what’s relevant to us and our tamariki (children), and future generations,
to be connected as Māori, and

- It brings together two indigenous cultures, and highlights the close relationship with the Indigenous people of Australia. ⁹⁷

6.2 Māori Assimilation through Sport

Involvement in Australian sports and sporting events is one key way Māori people have integrated and gained acceptance into local communities. A love of sport is ingrained in the Australian psyche, similarly to in New Zealand, so it is a natural fit for Māori in Australia to become involved.

Many traditional protocols which would usually be carried out within a marae setting are being practiced in the sporting arena, translating and adapting cultural interactions to a new setting as the marae environment is not available. The sports field fills the function of the marae, with wero (challenge), karanga (welcoming calls of women), whaikoreo (oratory speech), waiata (songs), hongi (formal pressing of noses), and karakia (prayers), often occurring before sporting events, commencing with a hangi (shared meal) before the event properly begins. ⁹⁸ This translation of cultural practices is understandable, as Māori find ways to connect to their cultural roots in a relevant way, and even more so when considering Māori’s history of warrior practices. Expressing a team’s ferociousness and sporting superiority through a traditional haka (war dance) prior to the match sets the tone for the encounter, and is a way for Māori men to express their cultural identity in a way that is socially accepted. ⁹⁹

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⁹⁹ Ibid.
A Draft Plan of Management for Hyland Road Park\textsuperscript{100} (which neighbours the site) plans a complete redevelopment of the park into both indoor and outdoor sporting facilities. Close relations between the marae cultural centre and the sporting facilities will further enhance community involvement and interaction with the marae. It is proposed that visiting sports teams, such as the All Blacks, will visit the marae and use the sporting facility for training, thus increasing the mana of the marae.\textsuperscript{101}

\textsuperscript{100} Environmental Partnership NSW Pty Ltd. *Gipps Road and Hyland Road Regional Parks: Draft Plan of Management*. ([Sydney, NSW]: Holroyd City Council, 2013).


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\textsuperscript{102} http://www.dailytelegraph.com.au/newslocal/parramatta/maori-group-nga-uri-o-rahiri-planning-australias-first-marae-at-greystanes/news-story/7b8ac0f9ac0f4907e64016af79713641
7.0 Theoretical Discussion
One - Detail Informing Architectural Form


_insofar as it communicates an idea about place, it does so through an understanding of scale. Insofar as architecture communicates spirituality, it does so through weight. Insofar as it communicates an idea about society, it does so through joints. Insofar as it suggests something beyond, something different from, even something contradictory to its own reality, it does so using its own construction as a point of departure._

“Details are the basis for, not an accessory to, understanding a building.”

Ford defines five categories of detail: the non-detail; the detail as motif; the detail as representation of construction; the detail as joint; and the autonomous detail.

Modernist architecture typically favours the negative detail, described by Ford as the non-detail, where details are sufficiently well hidden that the building elements appear detail-less blending seamlessly into each other. Zaha Hadid said of details ‘…if they are done well, they will go away.’ Whilst not modernist in design, this suppression of assembly details has been noted by Wallace and Irwin in early whare construction, where, viewed from inside, it is not visually evident how the building is constructed. Whilst not an advocate of the non-detail movement, Ford maintains that the selective expression and suppression of details can be key to the success of the non-detail. When designing a contemporary Australian wharenui, the traditional suppression of certain elements of construction may be accentuated by the expression of others, thus making the non-detail a key design element of the building.

In deciding where to suppress and where to express details, a hierarchy of detailing can be used. For example, in Norman Foster’s Sainsbury Centre, the roof has

103 Ibid.
104 Ibid., 20.
105 Ibid., 50.
expressive detail as it is the prominent structural element, the curtain wall mullions are made of glass to make them disappear, giving the wall a structure less appearance.  

Ford writes that ‘…the fundamental question of design is how one divides the parts of the building into these hierarchies…’ In terms of the wharenui, this hierarchy has already been determined with the elements clearly being distinct parts of the body of the ancestor, they are a constant and prominent feature of the modern wharenui.

The detail as motif or ‘generative idea,’ where one or a few patterns or shapes are used throughout, from large formal expression to intricate details, can be seen in many of Frank Lloyd Wright’s works. Motifs from nature, such as a leaf and butterfly wing are used in the Dana-Thomas House in Springfield Illinois. They are seen extensively as decorations to windows, furniture and lamps, but also formally in elevation as upturned eaves.

Ford states that detail as motif is most successfully executed when used with restraint. The koru pattern is a motif used extensively as decoration in Māori architecture, particularly in wharenui, and cannot be avoided if carvings are to be used. The argument of whether carvings on wharenui are decoration will not be discussed. The koru will not drive this design, it will be a decoration added to the structural members of the building.

Detail as representation of construction came about with the development of claddings, and was further enhanced by regulations around fireproofing of structure in the late 1800s. This method diverged into two categories; one using nonstructural elements to represent the actual concealed structure behind; the other using nonstructural elements to represent the history of the system used, not necessarily what was being concealed.

Detail as representation of a historical structural system is common in modern wharenui, where steel structure is concealed and traditional timber heke rafters, or ribs of the ancestor, represent the historical structural system. Unitec’s Te Noho Kotahitanga Marae’s ‘Ngākau Mākaki’ wharenui chose not to do this, instead carver Lyonel Grant used as many traditional construction techniques as possible, with structural timber members.

Whilst buildings are made up of numerous components, these components combine together to form parts, separated by joints, that together make up the whole. Throughout history meaning has been associated to these parts and their joints, or the detail as joint. One such meaning is that ornament of the joint is an expression.

\[\text{107} \quad \text{Ford, The Architectural Detail, 70.}\]
\[\text{108} \quad \text{Ibid., 71.}\]
\[\text{109} \quad \text{Ibid., 95.}\]
\[\text{110} \quad \text{Ibid.}\]
\[\text{111} \quad \text{Ford, The Architectural Detail, 103.}\]
\[\text{112} \quad \text{Ford, Architectural Detail, 31.}\]
\[\text{113} \quad \text{Ibid., 178.}\]
of structural forces, i.e. the ionic capital is spread over the top of a column by the weight of the architrave above. Though the stone has not actually been squashed, it metaphorically appears so.\textsuperscript{114} This also has the functional result of reducing the span of the beam between columns.

The distinction of the part and the whole is another metaphorical meaning given to the detail as joint. Historian H. P. L’Orange saw the controlled structure of the early Roman and Greek orders, with columns as members of a society standing and working together, as a ‘...manifestation of the democratic.’\textsuperscript{115} Perhaps an appropriate metaphor for the joining of two or more cultures of the marae can be described by the joints in the architecture.

The autonomous detail, described by Ford as the most ‘intriguing’ detail of all,\textsuperscript{116} does not follow the same rules as the building overall, yet visually sits harmoniously. The autonomous detail is not necessarily functional, but will be derived from ‘...the fundamentals of building – shelter, construction, structure, and accommodation.’\textsuperscript{117} Autonomous details will be assessed in this research by four criteria as described by Ford:

1. construction— an awareness of how the building came to be— its parts, and the way in which they are joined and assembled;

2. structure— an awareness of the forces of gravity and wind upon the building and the way in which these are resisted;

3. program— an awareness of our own engagement with the building, of how it serves us as a piece equipment to help us move about or accommodate an activity— eating, sleeping, working, or not working;

4. performance— an awareness of the building as shelter, how it keeps us dry, warm, or cool.\textsuperscript{118}

The autonomous detail relates to one of the above criteria in either a literal or abstract way. The literal positive detail connects the user to one of the criteria, overstating their awareness of it. The abstract negative detail does the reverse, it denies the construction, structure, program or performance of the building entirely.\textsuperscript{119}

\textsuperscript{114} Ibid., 179.
\textsuperscript{115} Ibid., 182.
\textsuperscript{116} Ibid., 236.
\textsuperscript{117} Ibid.
\textsuperscript{118} Ibid.
\textsuperscript{119} Ibid., 237.
Figure 24: Norman Foster’s Sainsbury Centre.

Figure 25: Frank Lloyd Wright’s upturned eaves demonstrating detail as motif.
7.2 Indigenous Construction Techniques

7.2.1 Wharenui

Traditional wharenui construction is unique in that the rafters do not sit on top of the ridge pole as would be expected; instead, they are supported between the ridge pole and the wall posts, and held in place by post-tensioned lashings which connect the ridge pole to the wall posts. The ridge pole is supported at each end by a carved pole, often with an additional pole in the center called the pou tokomanawa (the heart post). This method of construction dictates that the wall posts are evenly paired with the rafters.

In archaeological studies of early Māori houses, there is evidence that the structural joints were hidden from view, covered by decorative interior linings. Recorded historic observations of early houses lacked mention of the construction techniques, perhaps because they simply could not be seen.

It is suggested by Wallace and Irwin, that the relatively unchanged form of the wharenui throughout history is due to the concealment of the structural detailing, allowing progressively modern construction materials and techniques to be used without forcing a change in form or aesthetics. Whilst building elements such as the tahuahu (main ridge pole), and the heke (rafters) are visibly expressed, the point where they connect structurally is concealed. Modern wharenui often appear to be built with traditional timber members, but the reality is that steel structure is now used beneath timber carvings and woven panels.

An example of a modern whare whakairo using traditional construction is Unitec’s Te Noho Kotahitanga Marae’s Ngākau Mākaki. Ngākau Mākaki is the first whare whakairo to be constructed in the last century using traditional building techniques. Carver Lyonel Grant chose to make the carvings a structural component of the wharenui.

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121 Ibid., 37.


123 Ibid., 84.


125 Austin and Treadwell, “Constructing the Māori Whare,” 44.
Figure 26: Te Noho Kotahitanga Marae’s Ngākau Mākaki, with the newly constructed wharekai to the left.
7.2.2 Aboriginal Stone Shelters

In Northern Sydney, there are remains of stone shelters used by Aborigines in the winter months. Dennis Foley, who is of the Gai-mariagal people, describes these shelters based on stories told by his people. In order to avoid the strong winds, shelters were substantial. They were built in an elongated, almost egg shape. The structure was of a strong hardwood beam, using a ‘y’ or fork shape, with other supporting limbs. Rocks or sods of clay were used in the lower wall structure, up several levels... Shelters were consistently orientated towards the north-east to protect against the prevailing south-east, south and west winds and to allow morning winter-sun entry. A hole was made in the roof to let out the smoke, and an animal hide was used as a cover in the rain. The walls were covered in branches, leaves or matted reeds... Shelters were big... 5-6 meters long, 3-4 meters across... they mostly had a dome shape.\textsuperscript{126}

With colonisation came smallpox and other diseases, resulting in large numbers of Aborigines dying in these stone shelters. Due to the fear of what had happened they were no longer used. This brought about another population decline as these shelters were vital protection against winter weather. This also fueled the Aborigines’ growing dependence on support from the colonists to provide blankets in the winter months.\textsuperscript{127}

Other sources describe the Darug as living in triangle bark huts.\textsuperscript{128} Although no resource has been found to describe them, similar huts were recorded in Central Victoria in 1868.\textsuperscript{129} It is assumed that a similar construction was used by the Darug.

7.3 Conclusions

The methodology for this research by design is to use Ford’s descriptions as a basis for designing. Starting with the details and structural systems first and building around and from them, the reading of the building overall will tell the story of the structure and details. This is important, as key construction will be derived from historical Māori and Aboriginal detailing developed with the use of modern materials and technologies.

Detail as representation of construction will not be necessary, as the tectonic nature of the architecture will make a feature of the construction, using it to tell the story of the two cultures. This storytelling, or giving meaning to the details will be as Ford described using the detail as joint, with the joint representing a meeting of cultures.

\textsuperscript{126} Memmott, \textit{Gunyah, Goondie and Wurley}, 187.
\textsuperscript{127} Ibid.
\textsuperscript{129} Memmott, \textit{Gunyah, Goondie and Wurley}, 153.
8.0 Theoretical Discussion Two – Relating to Landscape

8.1 The Rural Australian Vernacular
A Google search of ‘the Australian vernacular’ turns up hundreds of images, mostly depicting rural residential structures which are raised off the ground on pile foundations, with walls of lightweight metal cladding or timber slats dispersed with louvres. Overhanging corrugated iron roofs fly outwards over verandas, gutter-less, and supported by fine steel structural members. A colour pallet of neutrals, with occasional flamboyant bursts of earthy reds and burnt orange to match the land, and metals left exposed and simple. Tectonic in nature, you can see how they are put together, with little will to conceal structure, the detailing an important part of the overall design. This style of building is a response to the environmental conditions.

Figure 27: Peter Stutchbury’s Paddock House.
8.2 Glenn Murcutt’s Design Drivers

8.2.1 Follow the Contours

“With few exceptions... my buildings follow the contours.”

Murcutt follows the contour with his buildings as this minimises the need for cut and fill, causing less disruption to the ground plane. Working with the slope of a site lessens the need for high piles on the downward side of the building making buildings appear to be more ‘grounded’ to the site.

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\[130\] Glenn Murcutt, quoted in Phillip Drew, *Touch This Earth Lightly*, 97.

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\[130\] Figure 28: Sketch illustrating the difference between orientating a building with and against the contour.
8.2.2 Expressing the Transport of Water

Water systems within a building are important to Murcutt. This is perhaps due to the importance and often scarcity of water in the Australian environment. Expression of the physics of water flow is seen in the helical downpipes of the Kempsy Museum. The fabrication system, which expresses the joins in the metal, imitates the spiral motion of water as it falls down the pipes.

What is usually seen as a necessary evil by architects is celebrated by Murcutt. Spouting systems are delightfully playful, not dutifully tacked on to meet regulatory requirements.

Figure 29: Sketch of helical rainwater downpipes at Murcutt’s Kempsy Museum.
8.2.3 Alluding to Landscape – Horizontality

Murcutt talks of the horizontality of the Australian landscape. His buildings often formally take on a linear quality alluding to it, and materials are orientated specifically to emphasise horizontal lines. To build vertically is to compete with trees, which he believes are the principal vertical elements.131

Murcutt’s choice of materials often emphasise the level plane of the land, one example being corrugated iron, which he runs horizontally. This is used extensively at the Kempsey Museum. He explains that it is for aesthetic, but also practical reasons, making fixing to studs easier.132

Figure 30: Kempsey Museum has iron sheets running horizontally.

131 Ibid., 95.

132 Ibid.
8.2.4 Steal Colours from the Landscape

For his projects Murcutt uses colours inspired by the landscape in which they sit. Pavers the colour of dry earth, tiles like wet earth, ironbark translated into paint color for internal spaces. Color is another way to link the architecture to the landscape.133

Figure 31: Photos taken on site at Hyland Reserve.

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8.3 Permanence V’s Impermanence

The wharenui appearing to be impermanent, whilst at the same time responding to the specific site, is one way that the problem of connection to and guardianship of land, or in this case the absence of that connection, could be dealt with. Although the region as a whole may have significance to Sydney Māori, the specific site has no direct historical, spiritual or physical connection. However, the site does have significance to the Darug people. Respecting that this is not Māori land, and therefore not wishing to scar it with a heavy foundation or massive shifting of earth, the wharenui will sit lightly on the land, with minimal disruption of the ground plane. The impermanent impression given through the use of tectonic architecture, that the building could be disassembled, removed and relocated, as seasonal Aboriginal and Māori shelters were,\(^{134}\) will drive design. The site may be returned to its untouched state if desired.

8.4 Conclusions

A ‘lightness’ of structure is to be explored through the structural systems used in the marae buildings, from foundation to roof construction. However, this ‘light’ footprint on the land is in conflict with traditional notions of the wharenu, with its inclination to hunker down into the earth, hugging the land and cementing itself within it.

The chosen building platform for the marae buildings in Hyland Reserve appears relatively flat; however, there is a fall of five metres over the width of the area. A flat lawn area for the marae atea and outdoor performance space is desirable, but explorations of a timber decking structure will be carried out to see if flattening part of the site can be avoided. Avoiding major disruption of the soil by orientating the buildings with the contour will be a priority.

Creating a feeling of enclosure and a clearing-like space, vertically encasing the atea and outdoor performance space, will contrast with the ideas of horizontality that Murcutt speaks of. Toning down the vertical structure with horizontal elements or material orientation will be explored.

The expression of building systems will be considered in the design of the marae buildings. The intake, storage and exit of water from the building will be carefully considered, as Māori value water sacredly. They believe that rivers and streams are Papatūānuku’s arteries.135 Expressing this through the architecture will be a visual cue that water is important and at times scarce, it should be conserved and valued.

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9.0 The Project

9.1 Program

Three main buildings will be designed as part of this research project. The wharenui (meeting house), wharekai (food hall) and flexible community rooms. Particular focus will be on the wharenui and marae atea. Outdoor performances spaces for corroboree will also be designed. Other areas such as the hangi pit and children’s play areas will be considered and will contribute towards the overall design. There will be a focus on flexible spaces, as events such as Waitangi Day celebrations and tangi (funeral) will attract large numbers of people.

9.1.1 Wharenui

The wharenui will be an open hall-like space accommodating large numbers of tangata whenua and guests. Storage space for mattresses and chairs will be provided. The surface treatment of the marae atea will be designed, along with the surrounding landscaping.

9.1.2 Wharekai

Catering for large and small gatherings, the wharekai will house a commercial kitchen, dining hall to seat 150 diners inside with overflow outside, indoor performance area, storage and covered outdoor areas for food prep and outdoor dining. A hangi pit (earth oven) and market gardens will be located close to the wharekai.

9.1.3 Community Rooms

Flexible classroom spaces catering to the surrounding community will be included in the development. These will be available for hire for events such as children’s birthday parties, dance classes, team building workshops etc, and can be utilised by the marae community for kapahaka practice and Māori language lessons. Office space for the SMA Committee will be included in this building. During large events, the community rooms can act as overflow sleeping space if the wharenui is full. These rooms will be integrated into the marae space, sharing its facilities and outdoor areas.

9.1.4 Wharepaku

The toilet and shower block will separate men and women’s areas, with disabled facilities for each; laundry facilities will also be housed here. Whilst the wharepaku will not be a focus, its position relative to the wharenui and wharekai is important, so basic room planning will be carried out.

9.1.5 Whare Kaumatua

Kaumatua housing will be located on the masterplan. Providing for elders is important in both Māori and Aboriginal culture.

9.1.6 Tangihanga

Tangihanga take priority over all other events on a marae. Allowing for funerals to take place at the same time as other important activities is vital, as canceling an event such as Waitangi celebrations would be impractical. The arrangement of buildings to allow for multiple events to happen at once is a priority. This may mean there is provision for a second wharenui to be built at a later stage.
9.2 Site Analysis

9.2.1 Site Location within the Existing Urban Fabric

The chosen site for the Marae Cultural Centre is Hyland Road Reserve, off Hyland Road in the Western Sydney suburb of Greystanes. Hyland Road has no through traffic as it is a dead-end road. Previously used as a nursery, the site has been gifted by the Holroyd Council to the iwi on a long-term lease.

The suburb of Greystanes is primarily residential, however, neighboring suburbs Merrylands, Pemulwuy and Smithfield containing large industrial blocks which are in close proximity to the site. The immediate context is undeveloped bush/scrub reserve area, with the most significant environmental features being the nearby Prospect Reservoir. Mar-Rong Reserve, known as Prospect Hill, which is to the north but not visible from the site is a significant area with special importance to the Draug people.

*Figure 33: Image showing the location of the site in Western Sydney.*
Figure 34: Site analysis drawing, NTS.
9.2.2 Climate

Sydney’s climate is described as temperate, with slightly more varying temperatures inland in Western Sydney. Recorded near to the site at Prospect Dam, January has mean high temperatures of 28.4°C and mean low of 17.6°C, and July has mean high of 16.8°C and a mean low of 6.1°C. Prevailing winds are from the SW in winter, and the NE in summer. Rainfall ranges from 50-90cm mean monthly.

9.2.3 Vegetation and Natural Features

The site slopes gradually to the NW, with a natural watercourse running along the eastern boundary. Due to earthworks on the site, a naturally formed wetland area occurs to the NE of the main site entry point after significant rain.

A number of eucalypts including red gum and narrow-leafed ironbark are present on the site as well as the native indigo and sickle wattle tree, with blackthorn being the predominant scrub. Native grasses such as blown grass are also present.

Within the chosen building platform are five existing trees shown on the site survey as being 12 meters in height, these will be retained and integrated into the landscaping of the development.

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138 Environmental Partnership NSW Pty Ltd., Draft Plan of Management, 16.
139 Ibid., 18.
9.2.4 Site Sections

Figure 36: Site Sections. NTS.
9.2.5 Site Photos
Figure 37: Panorama photo shot from existing entry to the site off Hyland Road.
Figure 38: View of existing site entry from grass verge.

Figure 39: View into site from existing entry.
Figure 40: Existing site tracks are unmaintained.

Figure 41: View of building site facing North East.
10.0 Masterplanning

There were a number of key points considered when devising the masterplan, they are as follows:

- Contour – The buildings will loosely follow the contour so as to avoid heavy cut and fill of the land,
- Orientation – The entry of the whareUna is oriented towards the winter rising sun and the building is located in a visually prominent position in relation to the surrounding buildings,
- Enclosure – The area marked for native bush regeneration will create a sense of enclosure behind the whareUna,
- Focal Space – The atea and corroboree area is enclosed by buildings to give the feeling of being in a clearing, landscaped grass mounds will help define these spaces,
- Prevailing wind - Aboriginal shelters orientate openings away from the prevailing wind, with a thick wall providing protection. The buildings will protect the outdoor spaces from the SW wind,
- Entry – The existing entry into the site will be retained as the main entry, with informal pedestrian entry’s being established to connect to the neighboring residential area and the cycle way,
- Community Engagement – Community rooms will be incorporated into the masterplan to activate the development on a daily basis. This will also be an avenue for community participation in marae activities and events.

Figure 42: Development sketch showing the community rooms to the South wrapping around the marae atea space, sheltering it from the winter SW prevailing winds.
Figure 43: Final Masterplan. NTS.
11.0 Design Process

11.1 Formal Design Exploration One – Indigenous Construction Techniques

Aboriginal architecture was largely domestic, with groups using up to seven or eight varying seasonal shelter types during the year depending on their location. Construction was determined by the number of occupants, purpose of the shelter, regionally available materials and weather conditions of a particular area. Whilst usually modest in size and complexity of construction, the spatial arrangement and occupation of the structures was complex due to the cultural beliefs of the Aborigines.

For the purpose of this research, a pyramid form Aboriginal ethno-architecture style of shelter will be analysed. This type of shelter is documented in Queensland, and is said to have been used in NSW also. Features analysed will be structure type, ground connection and cladding type.

Figure 44: Image showing Aboriginal shelters oriented to provide protection from the cold SE prevailing wind.
Figure 45: Drawing of a group of Aborigines standing in front of a conical shaped bark clad shelter. Extra sheets of bark are applied to the ridge for waterproofing.
11.1.1 Gunyahs - Cone and Pyramid Forms with Bark Cladding
On the east coast of Australia cone or pyramid style shelters with bark cladding were common as bark was a readily available material.\textsuperscript{140} These shelters, known as gunyahs, they were described in the mid 19th century by Petire:

\textit{The men obtained a long, thin sapling which would bend and crack in the middle without breaking through. Both ends of this were stuck into the ground, and then a forked stick was placed to support it on one side, and against the other a number of sticks were slanted and tied if necessary to keep them in place. Their ends were also stuck in the ground. Next sheets of tee-tree bark were fixed against the stick-wall and a sheet bent over the top surmounted the lot. All round the hut where the bark stood, a drain was dug, and the earth thrown up against the base kept the bark in position. Extra supports were placed overall, if wind were blowing.}\textsuperscript{141}

Whilst usually clad only on one side, in bad weather conditions bark would be laid against the open side to create more enclosure. Bark placed over the ridge in a ‘shingle’ like fashion contributes to the water tightness of the shelter. This overlapping will be explored when designing a roof form.

Structurally, these shelters use a tripod system with the supporting poles slightly embedded in the ground. A fork in the top of the primary support holds the secondary member in place. A modern reinterpretation of this ‘fork’ connection will be explored.

As these shelters used the ground as their floor surface, drainage channels around the outside were important. These channels could be accentuated as rain gardens, highlighting them as an architectural feature in a similar way that Murcutt used the spiraling downpipes at the Kempsey Museum. By making the rain garden a prominent feature of the building, it is acknowledging water as an important resource.

\textsuperscript{140} Memmott, Gunyah, Goondie and Wurley. 14.

\textsuperscript{141} Petire quoted in, Memmott, Gunyah, Goondie and Wurley. 14.
Figure 46: Model of traditional 'tripod' pyramid shaped bark shelter.
11.2 Formal Design Exploration Two – Structure

This model study has been informed by Austin and Treadwell’s exploration of the traditional wharenui. Post tensioning is a key design element, along with the traditional idea that the structural members represent the bones of an ancestor’s skeleton. The use of laminated timber is a modern reinterpretation of the traditional timber members.

11.2.1 Laminated Timber

The use of large timber members joined without mechanical connection is inspired by the architecture of Shigeru Ban, particularly his Tamedia Office Building in Zurich, Switzerland. Tectonic in nature, massive laminated timber columns and beams are connected using plywood dowels and timber poles as ‘locking pin connections.’\(^{142}\)

Figure 47: The structure of Shigeru Ban’s Tamedia Office Building is structural laminated timber beams and columns.
11.2.2 Model Study – A Post Tensioned Structure

This model explores the use of a framed structure consisting of timber heke held in place with rods running the length of the building. The tāhuhu ridge beam is represented with a rod, connecting the heke at the apex; with two more rods at either side lower down the structure. The tāhuhu will be further developed into a larger structural member in order for it to visually represent strength.

Alternating primary and secondary heke either stop short at the lower rods (secondary), or extend past the walls to connect with the earth (primary). Shorter secondary heke enable less points of contact with the ground, these heke are supported in a post tensioned state, allowing the load to be shared between the tāhuhu and the lower rods.

Post tensioning of the secondary heke references early whare construction, as described by Austin and Treadwell, ‘from an early date lateral stability in the wharepuni was achieved by the tension and compression technique…’[143] Extending the primary heke past the walls, although not traditional, has been done before by carver Lyonel Grant in Te Noho Kotahitanga at Unitec.144

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Figure 49: Model exploring the use of a post-tensioned structure based on traditional wharenui construction.
11.3 Formal Design Exploration Three – Wharenui Roof Form

Bark cladding seen in Aboriginal gunyha shelters is the inspiration for the form of the wharini roof. This overlapping bark form has been accentuated in the wharenui, but instead of the form being used to shed water, it has been arranged to let in sunlight.

The wharenui is oriented towards the winter rising sun. Capturing the drama of the sunrise, windows facing back towards the NE, which are only visible to the occupant once fully within the wharenui, have been developed. These windows will flood the space at sunrise, helping to wake the sleeping occupants. The roof form will shade the windows from the midday sun, reducing the heating loads on the building.

Whilst traditionally a dark space, modern wharenui are becoming more brightly lit through the inclusion of skylights. This is perhaps due to their increasingly multipurpose use. The wharenui at Rapaki Marae on the Banks Peninsular is an example of a wharenui with skylights.

Shigeru Ban’s Cardboard Cathedral in Christchurch uses high level windows for dramatic effect. The churchgoer experiences the majesty of the triangle shaped stained-glass window almost as a surprise; only once fully inside the cathedral, when they turn around, the window comes into full view with a burst of godly light and colour. The effect of this window is dramatic and enchanting. The roof of the wharenui aims to emulate this sense of delight.

Figure 50: The skylights are an architectural feature of the roof of the wharenui at Rapaki Marae on the Banks Peninsular.

Figure 51: Shigeru Ban’s Cardboard Cathedral in Christchurch has a dramatic stained-glass window.
Figure 52: Sketch showing wharenui roof form. NE facing windows are visible from the back of the space, not from the front.

Figure 53: Sketch showing possible window treatments for the wharenui’s clerestory windows.
Figure 54: Model of wharenui roof.
11.3.1 Sun Study – Wharenui Roof

A sun study of the wharenui roof form, with its slanted and staggered panels, shows that too much sun is entering the space during the middle of the day, overheating of the building will become a problem. Increasing the overlap of the roof panels will solve this problem.

Figure 55: Sun study of shadows cast by wharenui roof throughout the day.
11.4 Formal Design Exploration Four – The Skeleton

Structure representing an ancestor’s skeleton is explored using the skeleton of a serpent as inspiration. The rainbow serpent is said to have shaped the Australian landscape during the Dreaming, forming waterholes and river ways, finally resting in a deep pool. Aborigines typically do not alter the landscape through displacing soil, but using the serpent form is an appropriate choice as the site will be shaped by this architectural insertion. By allowing the sinuous structure to cut into the site, the contour is modified.

11.4.1 Basic Anatomy of a Snake

Snakes have many more vertebrae than humans, 180 to 400, allowing their backs to bend extensively. Each vertebra to vertebra connection has a small range of motion, but working together the backbone has much flexibility. Except in the tail, each vertebra is connected to a set of ribs; these are not connected to each other at the base so are expandable to allow large portions of food to pass through the digestive system. Internal organs are shaped to fit within the skeleton, making them long and narrow.\textsuperscript{145}

11.4.2 Sketch Exploration 1
To achieve the bending motion of the serpent, a pin connection could be used, with portions of the building split into parts, with an emphasised ‘bending point’ connection.

Figure 57: Sketches demonstrating a pin joints connecting identical parts to allow for bending. ‘A’ shows pin connection point.

11.4.3 Sketch Exploration 2
The bending motion of a snake spine is created by multiple small bends between vertebrae, at a larger scale these smaller bends are harder to achieve.

Figure 58: Sketches demonstrating fewer large bends in the structure as opposed to many small bends in a snake spine. ‘A’ shows connection point.
11.4.4 Sketch Exploration 3

The gestural displacement of earth is shown by the curving form pushing inwards as it wraps around the corroboree spaces.

Figure 59: Diagram showing soil displaced by snake slithering over the ground.

Figure 60: Sketch showing curving ‘vertebrae’ building forms pushing the soil inwards, helping to form the corroboree spaces.
11.5 Formal Design Exploration – Connections

‘Lightness’ of structure will be achieved through the use of modern laminated timber reinforced with steel at connection points. Contrasting with the classical expression of structural weight shown through ‘crushing’ of heavy stone column bases and capitols, fine timber and steel connections will be used, both where structure meets ground and between structural members. This emphasis on delicate structural connections will give a lightness to the architecture. This lightness will contribute to the impression of an impermanent building which could be easily disassembled and removed from the site.

In order to accentuate the ‘light’ structure of the wharenui, the storage room at the back will be a solid grounding element, providing a contrast. This concrete structure will form the back wall of the wharenui, the domain of Hine-nui-te-pō. She is the goddess of death, and her image will be cast into the concrete.

Figure 61: Sketch showing the storage room of at the back of the wharenui as a solid grounding element.
11.6 Formal Design Exploration – Environmental Systems

11.6.1 Community Rooms

The community rooms will have visible environmental systems as a means of educating the users on the importance of natural resources.

*Figure 62*: Water systems are made a feature with the roof free-draining into a rain garden. A guttering system to the other side demonstrates how the water is transported to the rain garden.

*Figure 63*: The overarching roof allows winter sun to penetrate the classrooms, and shades summer sun from the outside circulation space.
11.6.2 Wharekai

The Māori concept of reciprocity – the intake and exhale of breath – will be used as a basis for the wharekai’s environmental systems. The kitchen will use passive systems for cooling and for removing cooking fumes, with natural convection currents drawing hot air up and out of the space through a louvre system in the roof (exhale).

The intake and storage of water (inhale) will mirror the exhale, with gutter and water storage systems designed as a feature of the architecture.

Figure 64: A central circulation corridor space acts as a breezeway, passively cooling the wharekai by channeling the NE summer prevailing wind.
Figure 65: Reciprocity - the intake and exhale of breath – informs the environmental systems of the wharekai. These systems are visible to the users.
Figure 66: Development sketches exploring the idea of reciprocity expressed through the roof design, expressing the intake of water, and exhale of hot air from the wharekai building.
Figure 67: Development sketches exploring the idea of reciprocity.
12.0 Conclusion

The method proposed for this research was to study and re-interpret traditional construction techniques of Māori and Aboriginal culture as an indication of their architectural connections with the landscape. The research proposes that the success of bi-cultural architecture exists somewhere in between the traditional construction systems of each culture, and the landscape in which they operate.

A difficulty with this research has always been a lack of community participation. Through the course of the project, it became increasingly clear that approaching the SMA Marae Committee would cause confusion between this research, and the real-life marae project which they are currently working through. Giving false expectations of what could be achieved would have been a distinct possibility had they been contacted.

Being able to visit Sydney and to speak with local Aboriginal Elders, who could have provided more information about the site and surrounding area, would have been helpful. It is generally regarded that using regional Aboriginal principals, construction or customs as a blanket rule for all geographic areas is considered inappropriate, so the limited information on the area and the people had to suffice.

Despite these challenges, the thesis has worked through the design of a bi-cultural facility, and hopefully makes a contribution to the issues involved.
13.0 Drawings

13.1 Overall Floor Plan
Key

1. Drop-off area
2. Shaded waiting area
3. Marae Atea
4. Wharenui
5. Mattress storage
6. Landscaped Corroboree area
7. Wharekai kitchen with adjacent outdoor food prep area
8. Wharekai indoor dining hall
9. Wharekai flexible indoor-outdoor space
10. Wharepaku and laundry facility
11. Office / administration
12. Community classroom
13. Outdoor community classroom
14. Hangi pit
15. Kaumatua housing
16. Community gardens
17. Area of native bush regeneration

Figure 68: Overall floor plan (left), with zoomed in view (right). NTS.
13.2 Perspectives

*Figure 69:* Wharenui perspective sketch showing the lightweight copper roof. Corroboree landscaped grass area in the foreground.
Figure 70: Perspective sketch of wharekai.
Figure 71: Perspective sketch of wharekai through the breezeway, with the indoor dining hall to the left, and flexible indoor-outdoor space to the right.
13.3 Sections

Figure 72: Section through prefabricated community classroom. The overarching shade structure keeps the room cool in summer, but allows sunlight inside in the winter months. NTS.
Figure 73: Section through wharenui, marae atea and shaded waiting area. NTS.
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15.0 Appendix A

15.1 Timeline

1788 - Colonists of Australia in the late 1700’s assumed the Aboriginal’s lack of permanent architecture to indicate that there was no settlement or ownership of the land, they declared the land to be *terra nullius*, or nobody’s land, and used this as legal justification for settlement of traditional lands.\(^\text{146}\)

1788 – When the Europeans’ first arrived in NSW, the Darug population was between two and five thousand people.\(^\text{147}\) Starting in Parramatta, then Prospect and later the Hawkesbury, settlement and the plowing of land for European crops increased, Aboriginal people began to be marginalized and driven to the outskirts of developed areas.\(^\text{148}\)

1789 – Smallpox or ‘galgala,’ was widespread within the Aboriginal people. Between fifty and ninety percent of Aborigines from the Sydney area perished. A number of Darug clans were almost completely wiped out by 1791; some clans, including the Bidjigal, were devastated even before Europeans had settled their hill-country territory.\(^\text{149}\)

1791 – During the colonists first visit to the Hawkesbury area there was no close contact with the locals. However, First Fleet Writer and Captain Tench Collins noted that on the second visit to the area in 1791, Aboriginal people were extremely hospitable and assisted the visitors.\(^\text{150}\)

1794 – European settlement and clearing of land along the banks of the Hawkesbury and Parramatta rivers resulted in conflict between the settlers and the indigenous people. This land was rich with wild yam beds, which were a large portion of the Darug peoples’ diet. The loss of their ability to sustainably harvest this vegetable, coupled with diminishing access to rivers which were their water source, further fueled the already rapidly developing conflict between the two groups.\(^\text{151}\) By 1795, the yam beds were largely supplanted by European crops, which for the most part Aboriginal people were not permitted access to, and were often shot if found ‘trespassing.’\(^\text{152}\)


\(^\text{147}\) Kohen, *Daruganora*, 28.

\(^\text{148}\) Christopher Tobin, *The Dharug Story: An Aboriginal History of Western Sydney from 1788* (Sydney, NSW: C. Tobin, 2002), 3.


\(^\text{150}\) Ibid., 28.

\(^\text{151}\) Ibid., 28.

\(^\text{152}\) Kohen, *Daruganora*, 29.
1801 – A year of hostilities results in Governor King issuing a decree allowing settlers to shoot on sight any Aborigine seen on land within the Prospect, Parramatta and George River areas.  

1814 - Governor Macquarie was Australia’s first military governor. He wanted to reform the country’s ‘convict colony’ image and style Sydney more in line with a European city model with its laws, social systems, etc. He begins holding meetings with Aboriginal representatives in Parramatta to recruit children for his Aboriginal school. This meeting evolved into an annual meeting day between Aboriginals and colonists, known as the Parramatta ‘Feast Day.’ It is at these meetings that blankets were handed out, along with clothing and other basic items.

1816 – After almost two decades of increasingly violent conflict between the settlers and the indigenous people, Governor Macquarie deploys military forces to the Penrith area. Laws are created which prohibit aboriginals from congregating in groups of more than six people. An Aboriginal carrying anything deemed as a weapon within one mile of a colonist settlement, such as a farm or town, was also against the law. Conflict abates in late 1816 after fourteen Aboriginals, including children, are executed by soldiers whilst at their home camp, this was ‘…a dark and effective warning against any further reprisals.’

1818 – Thirty years after the British first arrived in Australia, Governor Macquarie instigates the celebration of Anniversary Day, now known as Australia Day.

1820s – Whilst some clans remained in territorial camps and practised customary ways of life, by the 1820s many Aboriginal people had been assimilated, to varying degrees, into the fringes of colonists’ settlements. This was a result of their increasing reliance on the colonists for shelter, food, and clothing; traditional ways of living were increasingly lost with the dispossession of indigenous tribal lands.

Kohen surmises that by the 1820s, the Aboriginal population of the Sydney area may have been as little as three or four hundred.
15.2 Acknowledgment of Country

An Acknowledgement of Country should be said as part of any event or ceremony happening on the marae, this should always be incorporated into powhiri. Using the following words as an engraving into the ground surface of the atea space will ensure users of the marae never forget to acknowledge that the land they’re standing on belongs to the Darug people:

I wish to acknowledge the custodians of this land, the [Aboriginal group/clan] people of the [Aboriginal nation] nation and their Elders past and present. I acknowledge and respect their continuing culture and the contribution they make to the life of this city and this region.

I acknowledge that we are meeting on the traditional country of the [Aboriginal nation] people of the [Aboriginal region] and pay respect to Elders past and present. I recognise and respect their cultural heritage, beliefs and relationship with the land, which continue to be important to the [Aboriginal nation] people living today.

I would like to acknowledge that this meeting is being held on Aboriginal land and recognise the strength, resilience and capacity of [Aboriginal nation] people in this land.

I would like to acknowledge that this meeting is being held on Aboriginal land, the land of the [Aboriginal group/clan] people of the [Aboriginal nation] nation. I like to pay respect to their Elders past and present.

I would like to acknowledge the [Aboriginal group/clan] people who are the traditional custodians of this land. I would also like to pay my respects to Elders past and present of the [Aboriginal nation] nation, and I extend that respect to other indigenous people who are present.

Before we begin the proceedings, I would like to acknowledge and pay respect to the traditional custodians of the land on which we meet; the [Aboriginal group/clan] people of the [Aboriginal nation] nation.

I am honoured to be on the ancestral lands of the [Aboriginal group/clan] people. I acknowledge the First Australians as the traditional custodians of the continent, whose cultures are among the oldest living cultures in human history. I pay respect to the Elders of the community and extend my recognition to their descendents who are present.159

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15.3 Sketch Exploration of Landscape

Image 1: Sketch of Orakei Marae showing vegetation.

Image 2: Sketch of Rangihou Bay in the Bay of Islands showing vegetation.
15.4 Gestural Drawings

**Image 3:** Gestural drawing of the movements of people during a pōwhiri.

**Image 4:** Gestural drawing of the movements of people during an Aboriginal smoking ceremony.
15.5 Concept Analysis – Australian Islamic Centre

Image 5: Analysis of the Australian Islamic Centre showing integration of the public green space into the private space.
15.6 Masterplan Concept Development

The original masterplan oriented the wharenui towards the summer rising sun; this allowed it to back onto an area of bush creating a sense of enclosure beyond. Once it was discovered that the area to the bottom left of the masterplan (right) was earmarked for native bush regeneration it was decided that the wharenui would face the winter rising sun, with the native bush eventually creating the feeling of enclosure beyond.

*Image 6: Masterplan concept one.*
Images 7 & 8: Initial concept sketches showing snake form curving around the site, creating the marae atea space within.
Image 9: Master planning concept sketch exploring connections between spaces and buildings.

Image 10: Ground Floor Plan concept at development stage. NTS.
15.7 Community Rooms – Unused Concept

Stone walled Aboriginal shelters were the inspiration for this concept. Interconnected spaces with separation and connection accentuated by thick or thin walls was the key driver.

*Image 11:* Sketch of the remains of an Aboriginal stone walled shelter by Dr Heather Builth. Reproduced from Memmott, Gunyah, Goondie and Wurley, 192.
Images 12, 13 & 14: Sketches exploring interconnected spaces based on ideas taken from Aboriginal stone shelters.
16.0 Appendix B

16.1 Final Drawings
Declaration

Name of candidate: Elfie Kitchingham Hamilton

This Thesis/Dissertation/Research Project entitled: Turangawaewae

is submitted in partial fulfillment for the requirements for the Unitec degree of Masters of Architecture Professional

Principal Supervisor: Mike Austin

Associate Supervisor/s: __________

CANDIDATE'S DECLARATION

I confirm that:

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• The contribution of supervisors and others to this work was consistent with the Unitec Regulations and Policies.
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Research Ethics Committee Approval Number: N/A

Candidate Signature: __________ Date: 25/02/2017

Student number: 1391407...
Full name of author: Elfie Kitchingham Hamilton

Full title of thesis/dissertation/research project ('the work'):

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Degree: Masters of Architecture Professional

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