FORGET ME NOT
Critical Intervention of Totara North’s Decaying Industrial Heritage

"Explanatory Document"

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-35.040752, 173.723217
For mum, dad, and nan – aroha nui
This research project is a design-led investigation into how the people of Tōtara North could engage with their town’s forgotten industrial heritage while moving into the 21st century. Situated on the shores of the remote coastal town, the now derelict Lane & Brown Timber Mill and Shipbuilding Yard is the last standing example of a once functioning kauri timber mill.

With the first change in ownership in over a century in 2004, the township’s industrial heritage is disintegrating back into the ground where kauri once grew. In the past, the native forests provided a connection between the people of the town and their relationship to the place. The resulting disjunction has led to an uncertain future for the occupants and their once globally significant industrial heritage.

This project aims to stop this negative cycle and rejuvenate the industrial nature of the site whilst also providing people with a reason to stay. Informed by the past industrial process, which connected land and sea, the new programme seeks to reverse the path of production, from sea to land, reviving the past whilst also exploring alternative methods for future development. Through the dredging of the harbour’s excessive silt build up, a case for manufacturing adobe mud brick and a research centre for alternative earth construction is proposed, repurposing the kauri sediment from the seabed in order to construct a new future for the people of Tōtara North.

The project questions the fate of our small historic towns, investigating the role of the architect and of heritage conservation in this context. Through an understanding of both tangible and intangible heritage, the reimagined sheds explore the design potential for representing heritage based upon three initiatives: building the stories, provoking unique intervention, and repurposing the past. Each initiative entails a response to the site at both macro and micro scales, extending past barriers and constraints of the norm to inspire the people, re-establishing their identity and connection to the heritage of the place. As a result, the local people and the wider public are able to dynamically engage with their past.
"If we don’t honour our past, we lose our future, if we destroy our roots, we can not grow"

– Friedensreich Hundertwasser
My whakapapa descends from the Hokianga in New Zealand’s far north. My childhood memories are contained in this area of the far north, specifically Panguru: the birthplace of influential Maori leader and my great aunty, Dame Whina Cooper. Following in her footsteps, I decided to take on my own journey of exploration of the far north. The connection I felt at being back home in Northland sparked an interest in how things used to be, as opposed to how they are now. This inquisitive fascination with the past and its role in modern society was the impetus for this research project. These motives drew me across to Tōtara North, a small community of around 200 people situated on the northern shores of the Whangaroa Harbour. The historic coastal town is home to the Lane & Brown Timber Mill and Shipbuilding Yard, who produced some of the finest native timber ships to sail New Zealand waters during the late 19th century. In conjunction with this significant heritage, the timber mill is the very last kauri mill in existence and is in danger of being lost to the forces of nature. It was this concern with the forgotten industrial heritage of Tōtara North that led me on a design based investigation of architecture’s role within this context.
I would firstly like to thank my parents, Michael and Rebecca Scally, for their encouragement and patience with my academic studies. The journey would not have been possible without your continual love and support.

To my Nan, Carol Ngaropo. Thank you for your love and support throughout my studies, I am truly thankful.

To my Scally-wag siblings, thank you for the continual support during my studies.

To Shelby Craig, without your continual support and helping hand this thesis would not have reached its full potential. Thank you for all the late nights and willingness to give up your own time. Words cannot describe how thankful I am for your contributions.

My main supervisors, Dushko Bogunovich and Peter McPherson, thank you for your advice and guidance throughout the year.

Alan Drayton for your continual help with the preparation and testing of the mud bricks, thank you.

Chris Keenan for your cinematography assistance during the project.

To all the academic staff at Unitec, thank you.

To Bill Edwards and James Robinson from Heritage New Zealand, thank you for assisting me throughout this project.

Eljon Fitzgerald and Stephen Rush, for your showing me around the mill and assisting me with vital information – thank you.

George Frear and Grant Lane, for your insight into the good ol’ days at the mill - your stories and experiences were a key component to this project, so thank you.

Adrian Viegas and Jack O’Neil, your words of advice and encouragement is what pushed me to continually challenge myself and the potential of this thesis. I look forward to our friendship and our professional development in the future.

To my brothers, Hayden, Scott, Ben, Harry, Ollie and Frankie. Thank you all for your encouragement during my years of study.
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– INTRODUCTION –

BACKGROUND

Today we live in a society whose economy is essentially industrial. Our prosperity is based on the fruits of industrial activity and our surroundings, both urban and rural, are largely the result of over two centuries of progressive industrialisation. Milling and shipbuilding are two of the major industries that powered and built the colony and are still big players in New Zealand’s economy. During the late 19th century, Totara North’s connection to the sea and land presented industrial opportunities for the town, which became a thriving hub of commercial activity in Northland. However, due to the closing of the mill, the saws no longer ring and the kauri scows, island traders and schooners have long since sailed away.

For nearly two centuries, the people of Totara North have identified with the Lane & Brown Timber Mill and Shipbuilding Yard. By the end of the 19th century, the buildings had become a household name and the company was the provider for the local people. At the height of operation, more than 100 men were employed at Lane & Brown’s Timber Mill, supported by local businesses including two stores, three boarding houses, a bakery, a rope and flax works, brickworks and a telegraph office, the head office of kauri gum traders Molesworth & Saies and also a school for 100 pupils. The working culture at the mill contained embodied knowledge through learning by doing, apprenticeships, and skills passed down through generations. The operation was more than just a work environment; rather it became a self-contained and resilient community thriving because of its natural amenities, which provided for the local occupants.

3 Ibid, 26.
With the closure of the mill and the change in ownership of Te Runanga O Whaingaroa (a local Maori administrative body) in 2004, the remote town now struggles for significance in modern society. With a declining population of around 200, many local youth face unemployment, being forced to leave Tōtara North in search of job opportunities in larger towns. Resulting in the remaining population being that of the older generation.

In the larger context, Northland's current living conditions and unemployment have been on a steady decline since the 1990s; many families live in unacceptable housing including a large number of unemployed Maori. The unacceptable housing conditions in Northland are currently being overshadowed by Auckland's housing crisis, with minimal government efforts to counter this problem. An alternative solution needs to be unearthed, one which provides healthy living conditions, is affordable, and is easy to construct.

The negative effects of the mill closure have certainly left a mark on the town. Threatened by demolition due to the economic realities of preserving the derelict structures, the chance that these buildings could be pulled down is becoming a very real option for the owners.

Not only was the Lane & Brown operation a source of local employment, the culture and identity of the place was embedded in it. These qualities can be seen in the spirit of the people who still live there today. Although the Tōtara North Residents & Ratepayers Association organise communal projects such as the market day and communal garden, the cultural disorientation and its effects on the heritage of the place remain. As a consequence, the quality of life that existed in the past has certainly diminished, and may never be evident again.

Essentially, when we forget our past we forget our roots; we become a rootless nation. This project aims to engage the people of Tōtara North with their forgotten heritage to sustain a meaningful existence as a resilient community moving into the 21st century.

RESEARCH QUESTION

How can a derelict and forgotten piece of significant industrial heritage be revived and made purposeful through strategic architectural intervention?

AIMS AND OBJECTIVES

Forget Me Not aims to develop a new method for building upon significant heritage through the rejuvenation of a derelict industrial site, while also providing people with a reason to stay. The project seeks to build a sustainable future for the occupants to retain the culture and identity of the place as a way of being. Additionally, the project investigates the fate of our small historic towns, questioning architecture and heritage conservation in this context.

In order to achieve these aims, this project will:

1. Analyse the past and present conditions of the Lane & Brown site to inform the proposed future condition.
2. Utilise both tangible and intangible forms of heritage to construct a response specific to the place.
3. Propose an integrated programme that builds upon the cultural heritage of the place, while also providing a sustainable future for the occupants.

SCOPE AND LIMITATIONS

This research project is a hypothetical response to the critical condition of the Lane & Brown Timber Mill and Shipbuilding Yard at Tōtara North. The project has been informed by analysis of the existing site and its historic importance and therefore cannot be replicated in another small town, although the same methodology could be employed to bring about new ways of building upon significant heritage.

The proposed system of dredging mud from the harbour for use in earth constructed buildings assumes the soil is free of toxic contaminants; further professional testing is needed to prove this is possible. The mud bricks were tested and the New Zealand Earth Building Standards were applied to ensure the bricks are compatible for use in construction. No altering of these standards have been conducted: this is not a project on perfecting the adobe mud brick.

The design outcome expects that future generations will add another layer of heritage interventions to the existing buildings, therefore the continuation of the importance of heritage is illustrated through the architecture. The architectural response is one that reflects the current condition of the decaying mill as it investigates an alternative solution to what has been proposed by others for the site, though this has evidently has not yet commenced. The integrated mud dredging process is estimated to take around 15 to 20 years, hence the project is set within this time frame with the assumption that the next generation will find a new direction to head toward.
METHODS

Research Through Literary Informants

The literary review was carried out in the two separate yet intertwined areas of theoretical literature and architectural informants. Literature forms the base of existing knowledge in the heritage field and identifies crucial theoretical positions that are relevant to architecture's connection to heritage. Additionally, an exploration of existing architectural strategies was employed to provide guidance during the design process.

Research Through the Physical Context

The architectural response employs an in-depth understanding of the past and present site conditions to inform the proposed future of the Lane & Brown Yard. The past condition of the yard was analysed to indicate the principles that once made Tōtara North a thriving industrial hub. The present condition of the mill was analysed to explore the potential ongoing use of the site in a way that retains the cultural and heritage significance of the place. The future condition of the yard proposes the insertion of a new programme so it can become a place that extends on its history and builds on its traditions.

Research Through Programme and Architectural Informants

Through exploration of the past and present site conditions, programme and architectural informants were reviewed. These informants provide successful applications of earth construction, heritage conservation and architectural tectonics which aid the design process of this project.

Research Through Design

The design informants have developed methods for representing tangible and intangible forms of heritage through architecture. Through exploration of micro site analysis, the architectural response is based on three design initiatives building the stories, provoking unique intervention, and repurposing the past. Varying in scale and architectural complexity, each design initiative informs the other as a response to the past and present condition of the yard. These initiatives then informed the architectural interventions at a macro scale on the existing site. Finally, the developed design outcome encompassed both micro and macro site analysis to provide an architecture specific to the derelict industrial site.
Therefore, heritage is one of the ways we identify ourselves in the world and is what makes our existence meaningful, becoming an essential part of the present and future: who you are in it, where you are in it and how you are in it. The past is dead to us except through our ideas about it in the present. The things which are significant to us are those from which we can take away some meaning. Essentially, this research project analyses the concept of heritage as an architectural representation of tangible and intangible existences, building upon what exists physically on the site and what exists in the minds of those who belong to the place.

This section reviews the literature for architectural responses to heritage. Firstly, it addresses the renewed interest in the concept of heritage; then discusses its fundamental relationship to the identity of place. Theories are discussed to establish a literary context for questioning how architecture can engage with heritage. This context provides the framework for a design response that analyses the fundamental importance of heritage and its relationship with architecture.

THE CONCEPT OF HERITAGE

As defined in the Oxford English Dictionary, ‘heritage’ is ‘property that is or may be inherited; an inheritance’, ‘valued things such as historic buildings that have been passed down from previous generations’, and ‘relating to things of historic or cultural value that are worthy of preservation’. Michael King refers to heritage as the story of the human occupation of a place compiled from surviving evidence. The definitions are of utmost importance to this research project as they provide a basis for the concept of heritage, which suggests a close relationship with people and their contextual background. Heritage is a generational concept, a passing down of tangible and intangible existences. Tangible examples include buildings, objects, monuments and sacred sites, while intangible examples include stories, traditions, language and experiences. These existences capture the personal belonging to a place and pursue the ongoing concern for its preservation as an important part of cultural expression.

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7  Te Wanatanga o Aotearoa, “Rukuhia Rarangahia,” last modified August 22, 2016, tmoa.tki.org.nz/content/download/2207/.../RUKUHIA%20RARANGAHIA-WEB.pdf
HERITAGE AND THE IDENTITY OF PLACE

The notion of heritage provides insight into the identity of a place; heritage helps to form individual identity and provide a sense of place, as well as enriching the quality of life. But 'heritage' is also about all the reasons people feel attached to places, sites, and objects - heritage becomes a fundamental reason why people and communities identify with a place. Hence, place becomes a profound centre of human existence to which people have deep emotional and psychological ties. This research project utilises the identity of the place as a basis for which experiences and reflections can be represented through a unique architectural response, capturing the essence of a place's heritage and its people. Place and its inevitable relationship to heritage has subsequently become a crucial concept in the development of the identity and character of an occupied environment.

ARCHITECTURE AND HERITAGE

There are many theories as to how architects build upon significant heritage. To many modern architects, heritage has got to be robust and able to stand the test of time, and it is seen as something you can adapt; it is not of a time, it is timeless. Heritage conservation and architecture are buildings that embody a unique entity. It is this uniqueness that stimulates an urge to preserve. Accompanied by an understanding of and sensitivity about the past, new insertions in the spirit of the time could be the way of improving utilization, bringing new vitality to our heritage buildings. Through retention of valued components of the past, architects are able to insert new elements and interventions to meet the needs of changing patterns of social activity through improving technologies, breathing new life into a project and adding a new layer of heritage to the existing building.

9 Louise Thornley and Andrew Waa, Increasing Public Engagement with Historic Heritage (Wellington, New Zealand: Department of Conservation, 2009), 16.
10 Russell Staff, Re-Imagining Heritage Interpretation: Enchanting the Past-Future (Farnham, Great Britain: Routledge, 2014), 2.

The ongoing protection of heritage buildings is a very current issue in New Zealand's architectural realm. The Visitor Centre Aniwaniwa, designed by the late John Scott in 1974, is a case which questions our architectural heritage and its significance in a contemporary context. The building was constructed on the basis that it should ultimately connect us with our spirit. "The Aniwaniwa Visitor Centre connects us with the spirit of the Urewera - the bush, the water, the sounds and smells, the light – as a church might connect a believer to God." Currently owned by the Department of Conservation, the building was condemned as unsafe, due to the lack of weather tightness and susceptibility to earthquakes, and is now facing the wrecking ball. This case questions the reason for preserving heritage buildings, and suggests that heritage is more than just a physical building, or as John Scott describes it: "architecture is an experience, not a thing".

Essentially, architects explore possibilities for heritage buildings through a creative interpretation of the past, while abiding by local heritage guidelines and regulations. This research project utilises the ICOMOS New Zealand Charter as a practical starting point for the architectural intervention. The act of adaptation is explored, which aims to adapt a place for maintaining continual use, or change of use, while having few or no adverse effects on the cultural heritage.

16 Ibid.
value of the place." This approach explores the most radical changes to a heritage building that can be achieved while maintaining the original character of the structure. This is of critical importance to this project as it initiates a common ground, which the response will build upon.

**FRED SCOTT**

Fred Scott considers that approaches to building upon heritage can only result in memorials; he believes buildings should change as the city changes in order to remain useful. Heritage buildings are the result of changes in society due to progression and adaptation of the context. To Scott, adaptation is a design approach respectful of the significance of the building’s heritage, which acts to prevent demolition through an exploration of alternative architectural interventions. Scott critiques the relationship between the ‘host building’ and new interventions, discussing how a complete understanding of the context is crucial to forming a comprehensive appreciation for the original and the new: “the work of alteration can be thought of as translating a building from the past into the future.” He continues by saying “intervention must always aim to be equal to the host building in some respect, and better in others, or else it is a failure.” In this way, the architectural response becomes a new source of life, as a result of a change in use. This has significant relevance to this project as it reiterates the need to identify the heritage value of a building, in order to formulate an appropriate design approach.

**CHRISTIAN NORBERG-SCHULZ**

Christian Norberg-Schulz distinguishes architecture as an element that can evoke people’s experience of place. His insight into place was central to the development of hidden narratives within the surrounding context through the exploration of a potential future. The experiences of the elderly are seen as an aid in provoking a unique sense of place. Referred to in *Towards a Phenomenology of Architecture*, Norberg-Schulz expresses this need for exploration of the local environment when he says, “the existential purpose of architecture is therefore to make a site become a place, that is, to uncover the meanings potentially present in the given environment.” In this way the heritage, through uncovered meanings of the site, is illustrated in the making of place expressing the identity of the people. The development of a system of meaningful places then gives form and structure to our experiences of the world. Norberg-Schulz’s architectural theories place personal and social interaction at the centre of design. Place is then defined as a “focus where we experience the meaningful events of our existence.” These ideas are pertinent to this research project as it suggests ways of symbolising heritage through architectural intervention, one which reflects the local people, their place and identity. The interventions heighten the experience of the place for both the occupants and the wider public.

**RUSSELL STAIFF**

*Rusell Staiiff*’s theories are discussed in this research project as he specifically recognises heritage places as a medium that naturally provokes social and cultural engagement. He refers to these levels of engagement as interactions that focus on the visitor, thereby suggesting that visitors to heritage places can be regarded as being in dialogue with places, objects and landscapes; as having a dialogic relationship with parts of our planet marked out as being special and with something from the past/present that needs to be kept for the future. The dialogue represents an embodied engagement found within the heritage place and the person, creating a meaningful place for future generations to benefit from. Staiiff discusses this system of representation as heritage interpretation, which is regarded as a way of ‘teasing out the meaning already embedded in the place.’ He employs Michelangelo’s *David* sculpture to illustrate this relationship:

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25. Ibid., 9.
26. Ibid., 33.
within both tangible and intangible existences. In this way, architecture’s ability to engage with heritage is through our experiences of a place, provoking the stories, feelings, and emotions to gain a deeper understanding of the historical context of a place. Through perceiving the site and its associated emotional connections, designers can generate architectural interventions that build upon the significance of heritage.

JOAN METGE

Clear away the overgrowth, so that the flax will put forth many young shoots – Rev. Maui Marsden

The sculpture is well known and distinctive. It is the object of the attention of thousands of visitors every year. The stories of this statue seem to be carried by the material object hood of the David: the artist and his creation, his patrons, its style, its iconography, its various functions within the city… None of this would seem to make sense without the object itself and so it is easy, within Western thinking, to envisage the meaning of the David to be synonymous with the physical object and that the essence of Michelangelo’s David lies within the sculpture.27

Anthropologist Joan Metge’s book “New Growth from Old” alludes to the metaphor of harakeke (flax bush) as a process of growth, decay and regeneration, of continuity, adaptation and change.32 Essentially, flax plants innermost leaves (rito) are supported by the outer leaves (kaumātua), which over time become strong, nourishing the growth of the whole plant. As old growth dies, new growth takes its place.33 The rito replace the parent leaves, creating a unique connection with the place, allowing the imagination to immerse itself in the experience of those who came before us. Things that carry meaning about history are associated with important events or people of the past.30

Staff’s ideas were crucial to the development of this project as he suggests an inevitable connection between objects of heritage value and people, in order to construct a positive future. The connection illustrates the importance of ‘meaning’ in heritage, which essentially belongs

27 Ibid., 34.
29 Ibid., 34.
30 Ibid., 93.
33 Ibid., 290.
sustainable natural cycle in which the harakeke is preserved. This translates in physical terms as the transferal or passing of knowledge from one generation to another. The natural environment was, and still is, referenced as a source of inspiration for promoting key Māori ideals and principles, with a commitment that these key characteristics and behaviours are able to be transferred from one generation to the next. The nurturing of flax provides a strong and resilient future for generations to come, symbolising the importance of heritage and how we develop and implement these ideas into modern society. These symbols support identity, culture and character while building upon the significant heritage of a local community. Bill McKay alludes to these principles through Māori architecture. As buildings decay they are rebuilt a number of times, cementing social relations, ensuring a passing on of skills and invariably changing form. McKay argues that this is a form of cultural revitalising. Central to his argument is the acknowledgement of time, memory, embodiment and ornament as ordering principles of Māori architecture, which preceede static western notions of architecture as a physically structured object in space.

The metaphor of harakeke and McKay’s reflection on Māori architecture illustrates the connection between people, knowledge and their heritage. The metaphor captures the essence and importance of heritage; the continuation of past traditions in a place that lives on in the future. The application of this to architecture exists within the relationship between heritage and connection to place. Like the harakeke, architecture will bring people closer to the places they occupy through an understanding and integration of past values. Therefore, heritage within the architectural realm extends itself past tangible existences and seeks to incorporate intangible existences as a key component of the future.

REFLECTION

The writers and architects reviewed in this section have developed an understanding of the importance of heritage and its connection to a place. As discussed, heritage encompasses both tangible and intangible existences that represent the physical context, its people and the reasons why they become attached to these places. Architecture provides the opportunity to represent and enhance one’s experience of a heritage place with careful consideration of the past and present conditions, utilising these as a means for the future. The architectural intervention captures these theories through representation of the three design informants, creating an architecture specific to significant heritage sites and their place in the world.
Situated on the east coast of New Zealand’s far north, Tōtara North is a small historic town connected to the world via the mouth of the Whangaroa Harbour. The harbour has many natural water inlets, and is a collection of drowned river valleys. The identity of the Whangaroa Harbour is defined by its close proximity to dense native forest and picturesque waterways, historically presenting industrial opportunities including sealing, whaling, timber milling, shipbuilding and kauri gum digging; industries that powered and built the New Zealand economy.

The relationship with the sea began when one of the seven canoes of the Maori Migration, known as Mataatua, entered the harbour, later followed by the great whaling ships including Elizabeth, General Wellesley and Commerce, and again with the infamous Boyd ship massacre in 1809. The historic relationship to the sea demonstrates a path forward for the people of Tōtara North; the solution is embedded in the sea.

Tōtara North is nestled in the northern hills of the Whangaroa Harbour. The town faces the harbour with its back protected by the surrounding hills, forming a unique relationship between land and sea. Access to the town is limited by car to one road or by boat; a destination as opposed to a pass-through town. The common approach by vehicle follows the natural curves of its coastline, while century-old trees hang over the road creating a sense of natural enclosure, illustrating a feeling of being at one with nature. The approach by boat offers a unique experience, one which encapsulates its distinctive persona as a coastal community, which historically thrived on this connection to the sea.

Located at the base of the town’s surrounding hills and a 400m walk from the local wharf, the Lane & Brown Timber Mill and Shipbuilding Yard is the very last standing example of a once functioning kauri timber mill and shipbuilding operation in existence. The importance of the yard goes beyond the physical remnants of the buildings; rather, the loss of an important part of New Zealand’s maritime and industrial heritage is considered well gone.
Structure

Access

Function

Past Industrial Process

1. Site analysis [1-4]

Timber Mill

Drying Sheds

Shipbuilding Sheds

Wharf

Garage

Workshop

Store

Postoffice

Large timber columns with timber rafters

Timber truss on 400mm diameter columns

Timber-framed walls lined with heavy tongue and groove boards

Timber truss on 400mm diameter columns
During the mid-19th century, shipbuilders of the far north took advantage of Whangaroa’s natural waterways and close proximity to plentiful native forests, which included kauri, puriri, totara, rimu and pohutukawa trees. The English colonist, William Paine Brown, took up shipbuilding in the Bay of Islands, later becoming the most important individual boat builder in the area during the 1850s and 60s. In 1870, Brown and his apprentice, Thomas Major Lane, formed a partnership and began building boats on the Kaeo River, an inlet of the Whangaroa Harbour. With deeper waters and dense kauri forests, Tōtara North was an ideal site for a new and larger shipyard. In 1872 they located to the existing site in Tōtara North and began the Lane & Brown operation.

Lane & Brown constructed and exported over 50 fine sailing vessels of varying sizes; many of the finest sailing ships ever to be built in New Zealand left their waterways, the largest, the 320 ton three-masted topsail schooner Rainbow. In 1900, the Lane & Brown partnership at Tōtara North dissolved into Lane & Sons. The following years saw the demise of shipbuilding and the rise of timber milling. Heavy kauri logging began around 1820 in Northland, and by the late 19th century, less than 10 percent of the original kauri survived. It is now estimated that there is less than 4 percent of uncut forest left in small pockets throughout the North Island including in the Waipoua, Puketi, Omahuta and Coromandel forests, and also in the Waitakere Ranges in Auckland.

During the early to mid-20th century, with access to the Puketi Forest restricted, the Lane & Sons mill felled trees from the forest and processed them back on site. The native timbers were milled and then put onto the train at Otoria, bound for use in boat building in Auckland; all timber was exported out of Tōtara North. In the earlier days, the native timbers were mainly

41 Ibid., 31.
used for shipbuilding and building houses in the town; “the feeling of the times was that there was a nation to build”.43 Until the 1970s, timber was taken from the hills behind Tōtara North when changes in government legislation to protect the Kokako bird put an end to logging kauri. This brought about the short-lived milling of *Pinus radiata*, which consequently put an end to the native timber milling on the site.

The profound impact the operation had on the town meant that nearly all occupants of the town, when it was operating, had contact with it on a daily basis. As many families worked at the mill, there was a tendency to learn the skills of the trade through family members, typically from their fathers and grandfathers. The generational connection to the mill illustrates the relationship between the people and the place, through the passing down of embodied knowledge. Each generation benefitted from the lessons learnt from their elders, thus creating a resilient and sustainable community.

During the days of operation, many of the workers experienced hardship and lived very simple lives. Many of the Maori ‘bush gang’ workers lived in makeshift huts, which were perched on the sawdust pits. Work didn’t just stop at the sound of the 5pm whistle; the workers would go home and tend to their gardens and help out local people around the community.44 The workers were very happy people who enjoyed their lifestyles; they would never complain, nor want more than they could afford.45 The mentality of the people suggests independence and people were able to make do with what they had.

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45 Ibid.
The importance of the mill goes further than just the physical remains of the buildings, as the industrial process that took place on site was also important to this research project. The past process that took place on site gave a valuable insight into the future condition of the buildings, developed through the implementation of a new industrial process.

1. Carried out by contractors, the felling of trees was executed in particular areas of nearby forests.

2. The timber dam would block off water from the streams allowing it to fill the log catchment area.

3. When tripped, the large quantity of backed up water would flow downstream taking everything in its path with it.

4. Logs were huddled into rafts right up to the mangroves and taken back to the Lane & Brown Mill by pilot boats.

5. The logs then floated in the booms.

6. The logs were then dragged ashore by a substantial rope and pulley system into the breakdown shed in preparation for milling.

7. Once in the mill, logs were processed through a three-step system breaking-down, sorting and processing.

8. Processing allowed for a highly finished product through the use of drying sheds and kilns.

9. The timber was then used for the construction of boats.
Although New Zealand is accustomed in many ways to producing world firsts, not lasts, it seems this is a historic site of global importance that may be on its last legs.

In 2004 the local Maori administrative body, Te Runanga O Whaingaroa, bought the land and buildings from the Lane family. The body has an ongoing concern for its conservation as an important part of New Zealand’s industrial and maritime history; however, since the change in ownership little has been done to restore the site to its original purpose as a communal provider for the people. As a result, the sheds no longer have any purpose within the community, storing only junk and a few lengths of unwanted timber. Currently, the buildings are in an even crippled state than at the time of the change in ownership, due to severe weather conditions and less maintenance on the buildings.

Essentially, the exterior is very fragile, while the interior is very strong. Large interior kauri columns hold up the exterior cladding, in some way symbolising the inner strength of the people and their values as a community. There is no doubt that the people of Tōtara North possess this inner strength; however, the exterior appearance of the building may not illustrate this relationship so clearly.

Remnants of the past are scattered throughout the buildings with their unique architectural language illustrating the innovative nature of the workers during the mill’s days in operation. Original diesel-powered saws still remain, while chalk writing on walls indicates the actions of its past inhabitants.

A Heritage assessment prepared by Mathews and Mathews Architects provided the context for decisions about the ongoing use of the existing buildings and site. The report is utilised in this research project to identify key historical aspects made throughout the heritage assessment. Since the publication of the report, many of the structural conditions of the site have worsened, therefore a holistic approach has been conducted to the present conditions at the mill. Through exploration of the current site conditions, its context, history, and remnants of the past, the architectural response is represented.

LANE & BROWN TIMBER MILL AND SHIPBUILDING YARD

222 Okura Bay Road, Tōtara North, Whangaroa, Northland

Category 2 listed by the New Zealand Historic Places Trust

This is an archaeological site as defined by the Historic Places Act 1993.

The Far North District Council is the local authority responsible for the Whangaroa Harbour area.

The following site analysis assesses the cultural significance of the existing buildings as a whole, giving an overall heritage rating. The significance of the buildings on the site relates to the structures as a whole as it was not considered appropriate to rate each element individually. However, the individual elements were later studied in order construct an architecture specific to the industrial site.
A TIMBER MILL

Overall heritage rating: B

Constructed: 1939

The timber mill is located on the western edge of the site. The building consists of five linked structures: main timber mill, saw doctors workshop, north loading bay, mill east lean-to, and northeast workshops attached to mill building. The building replaced the original timber mill which was destroyed in a fire in 1939. The buildings are of high heritage value and reflect the extensive timber milling history of the site. The mill is made up of a main high gabled structure enclosed on the east and west sides, and opens to the south and partially open to the north, with a gable extension over an open storage area. The eastern lean-to extends from the main timber mill roof over an open work area. Substantial timber framing and posts support exposed timber rafters and purlins. The main timber mill floor is raised approximately 2.5m off the ground with substantial timber beams supported on large timber piles into the original ground. The original machinery scattered throughout the buildings lay dormant suggesting the rugged industrial typology of the site.

B_DRYING SHEDS

Overall heritage rating: D

Constructed between: 1966-1973

The drying sheds are located centrally on the site, between the shipbuilding sheds and the timber mill. The building consists of an open roof area which connects both north and south sheds. The southern sheds are double ended with 4 storage areas, whilst the northern sheds have two storage areas, a concrete block addition, and a timber kiln. The buildings are of low heritage value to the overall rating of the site. The simple timber framed structure is wrapped in vertically fixed corrugated iron sheets, whilst a low pitched roof protects the storage areas and connects the north and south sheds. The timber structure is approximately 17m in width, 40m in length and 7m in height, with an 8m wide void space connecting both sheds.
The shipbuilding sheds are located at the eastern end of the site with a direct connection to the water at the south end of the structures. The building consists of three linked structures: east high gable shed, west lean-to to high gable shed, inter-tidal shed. The buildings are of high heritage value and are considered some of the oldest remaining structures associated with the boatbuilding function of the site. The east high gable and inter-tidal sheds are mainly constructed from Kauri and Totara. Heavy pit sawn timber columns approximately 5m high support an 11m span gabled “truss” roof. The lean-to shed is constructed from timber and consists of diagonally braced timber stack rows. The inter-tidal sheds are constructed from 400mm Kauri or Totara piles, with a low pitch timber truss system supported on heavy bearers.
D_WHARF

Overall heritage rating: A

Constructed around: 1888

The wharf is located south from the east high gabled shed extending out into the estuary. The building consists of a circulation deck and two enclosed spaces, one which has boat ramp access into the water. The building was once an office space and is of high heritage value as it is possibly the earliest structure standing on the site and would have been a major element in the operation of the mill and shipbuilding yard. The wharf is constructed on large timber piles and bearers which support the floor timber structure, the timber clad spaces are fully enclosed and seem to be in a safe condition.
E_OTHER STRUCTURES

Overall heritage rating: N/A

Constructed: Pre 1947

The wider site contains small structures that were crucial to the overall heritage significance of the site. Located to the north of the existing site is four small timber structures: engineers shed, storage shed, store, post office, and accountant's office. These buildings were not assessed structurally as they are not owned by the Runanga and are locked. However, this research project utilises these buildings within the scheme to inform the future condition of the site.
The Most Significant Structures on the Site

- Timber Mill
- Shipbuilding Shed
- Wharf

Overall heritage significance
“Preserve country towns where they exist; and encourage the growth of new self-contained towns, with populations between 500 and 10,000, entirely surrounded by open countryside and at least 10 miles from neighbouring towns. Make it the region’s collective concern to give each town the wherewithal it needs to build a base of local industry, so that these towns are not dormitories for people who work in other places, but real towns able to sustain the whole of life.”

Looking forward, the historical significance of the Lane & Brown yard is an entity that simply cannot be forgotten about. The heritage ideals and values from the past suggest a way in which the town could move forward through building a sustainable future, thus also sustaining the culture and identity of the place as a way of being. In this way, the buildings feed back into the community and find a new purpose, while exposing its strong foundations. This section aims to introduce the proposed future condition of the timber mill, informing the reader about the programme, its relevance to context, and the design initiatives that dictated the outcome of this project.

Reversing the Process

Essentially, in the past, the process utilised the native trees available in the surrounding hills, processed them through the mill, dry stacked the resulting timber and finally used it to make boats. The millers took from the land and produced a physical object to be used on water.

Subsequently, the new process and programme reverses the past process, utilising built up mud material available on the seabed to produce a physical object to be used on land as a building material. Tree sediment in Northland harbours is the result of a long history of deforestation, which has caused land management issues throughout the catchment, such as soil erosion, silted-up waterways, poor water quality and a loss of biodiversity and productive land. The new process dredges the mud from the water and utilises this to manufacture adobe mud bricks, and to test/research alternative earth construction methods.

1. Dredging of the harbours silt.
2. Soil is moved by small barge to docking station.
3. Soil is taken to the mixing station.
4. Once the mud and natural additives are mixed, they are put into brick molds.
5. The bricks are then moved to the drying sheds and placed onto racks. During winter months, the kiln is predominately used to speed up the brick drying process.
6. Once dry, the bricks are moved to the packaging area, ready for transport to site.

As a response to the conditions of the past, the new process captures Tōtara North’s connection to the water and builds upon the previous processes of the yard, which utilised the natural resource available, turning it into a physical object that became the icon of the town in the early days. Similarly, adobe mud brick represents a new future, one which reflects the past and discovers a new direction for the people of Tōtara North.

Additionally, the mud brick builds upon the reference to both tangible and intangible heritage. In a tangible sense, the mud brick provides a construction material for Tōtara North, allowing the community and its wider environs to build unique structures that embrace the connection to water. In an intangible sense, the mud brick reinvigorates the spirit of the community, engaging young and old in an event which benefits the community. As an adaptation to kauri felling (which is now restricted under the Forests Amendment Act 1993), embedded in each brick is the invisible presence of the kauri sediment, which came from the logs in the estuary before entering the milling sheds. In this way, the mud brick becomes a new interpretation of the old processes and represents the kauri in a new way, re-engaging the people of Tōtara North with their globally significant industrial heritage.
Dredging Area 1 - 8.5 Hectares

Potential Dredging Area's
5 - 20 years
Relevance to Wider Context

New Zealand’s involvement in mud construction came with the early European settlers, who built homes with the most common materials available – earth, stone, and timber. Seen commonly throughout the far north of the North Island and heavily sprinkled around the South Island, earth building was, and still is, considered a modern material. The French architect, Louis Perret, helped Marist priests from the Lyons region of France to build the headquarters for the French Catholic Mission in the Bay of Islands, more commonly known as Pompallier House.

Located in Russell, the structure is New Zealand’s oldest rammed earth building and the oldest industrial building constructed in 1842. The building materials were all locally sourced; the earth was dug from the original site while the rocks, shells, and sand were sourced from local beaches. Pompallier House demonstrates a relatively undocumented building technique common in the Far North District and asserts its dominance as an earth building that has stood the test of time.

Similarly, the Category One listed Subritzky/Wagener Homestead in Houhora illustrates the permanence of earth buildings, as it was built in 1862. Said to be the first European settlers of the “Far North”, the Subritzky’s built their family home with no experience in architecture or building, employing the help of local Maori. The family continued a strong relationship with local Maori through the introduction of a centre for trading their produce and selling kauri gum while offering them a chance to work for wages. The homestead offers insight into the approach at Totara North, one that utilises available resources and engages with local people.

54 Ibid.
REFLECTION

This project recognises the adobe brick as a way forward for the people of Tōtara North. As with other forms of earth construction, adobe bricks are cheap, fireproof, durable yet biodegradable, low sound transmissions, and is a non-toxic building material which provides sufficient thermal mass to a building to ensure excellent thermal performance. Additionally, the site uses locally sourced mud to make the adobe bricks, which reduces the embodied energy of construction of nearby buildings. The construction method is a very simple system of building and can be learnt easily with limited experience and resources. The making of adobe bricks adopts the participation of young and old, in doing this, the community begins to builds upon its heritage significance while forming a regenerated sense of togetherness and identity.

Situated in Nelson, Solid Earth Buildings Limited conduct research, testing and making of earth building materials. The earth building initiative set up in 2002 by Verena Maeder, an earth construction specialist, illustrates her passion for high-quality adobe brick and mortar products. Through extensive experimentation and testing, the earth products are used in the construction of buildings, plaster renders, and restoration of historic buildings. The initiative informs the wider public about earth construction techniques, in doing so they generate communal engagement and learning. Consequently, the testing and research of earth building methods provides insight into the programmatic application at Tōtara North, one which utilises locally sourced earth material to build a sustainable future for all generations to engage with.
The making of traditional Jingdezhen porcelain pottery is an ancient Chinese process passed down through many generations dating back around 1000 years. The process consists of harvesting kaolin clay, then purifying it, molding it, outlining, painting and glazing it, then finishing with a firing in a 13th century wood kiln. A 1920s National Geographic article states 'there is only one factory in Jingdezhen where you can see all the steps in the manufacturing process in one place.' All resources are locally sourced, producing a sellable product at the end. The workshops are spatially configured in a production line of shanty stalls, similar to the architectural language of the timber mill. The process of manufacturing porcelain pottery provides insight into the design strategy at Tōtara North, as in many ways it repeats the timber milling and production processes that took place on site at the end of the 19th century.
Work Space

Structure as Drying Racks

Post and Beam Structure

Clear Circulation
Peter Zumthor’s Steilneset Memorial illustrates a clear relationship between architectural tectonics and contextual analysis. The memorial was designed to celebrate suspected witches who were burnt at the stake during the 17th century. The timber structures are derived from the wooden fish drying racks that were once common in the area. Typically, these structures used an ‘A’ frame construction and included bracing elements to add structural stability. The trapezoid form uses lateral bracing elements that appear visually stable. The repetition of structural timber elements completes the overall form of the building, while steel anchor rods highlight the visual connection to the ground. The simplistic architectural approach is synonymous with Zumthor’s work, which illustrates attention to tectonic detail and a material palette. The informant provides an understanding of tectonic elements and architectural form for the site at Tōtara North, defining a series of engaging elements that can be replicated throughout the sheds.
The Viller's Abbey Visitor's Centre by Binario Architectes demonstrates a clear relationship between a heritage building and architectural intervention. Through a procession of adapted spaces and interventions, the project unfolds as a sequence of experiences of the ruins. From arrival to departure, visitors engage with the buildings via internal and external footbridges and stairs, which intertwine through the existing structures and the landscape. The distinctive, yet subtle relationship between the heritage structure and the insertion design celebrates its historical significance while giving visitors a dynamic way to view the buildings. The project illustrates a successful approach to circulation and heritage adaptation for the site at Totara North.
60. Circulation across the site
61. Bridge circulation into existing structure
As a response to the past, present and future proposed condition of the derelict site and studied informants, three initiatives were created as a starting point for design application: building the stories, provoking unique intervention, repurposing the past. The initiatives comprise of micro and macro elements which find a new purpose for important qualities of the site's industrial heritage and its wider context. They explore the hidden meanings embedded within the site and aims to utilise them as a set of design tools to construct a new future for the abandoned buildings.

DESIGN INITIATIVE ONE: BUILDING THE STORIES

“Something is not secure enough by hearing, but it is made firm by seeing.”

Building the Stories was used to reconstruct the personal experiences of the very few mill workers left through reimagined physical representations, giving a specific architectural language for the design work. The approach is developed and illustrated through the conceptual informant: “Tāonga Wahine” by Ākau. The stories solidify unique experiences of the mill, which could only be explained through the ones who used to work on the saws. The use of stories created speculation around real life events supported by researched evidence, thus illustrating intangible existences through architecture.

Aims

As a response to the intangible qualities of heritage, building the stories aims to concretise the unique experiences of the workers who belonged to the place during its days of operation. Consequently, the design shows how one might apply these stories to buildings of heritage importance through the adaptation of the existing structures, and engaging intervention.

Methods

A narrative method allowed for and embraced unexpected findings that were evident within the stories of the past workers. The findings gave a sense of what it was like to work there, compared to its recent abandoned and decaying state. These stories were then illustrated in diagrammes, which informed the development of the findings into imaginative representations. The diagrammes brought about a simplistic interpretation of the stories, in an environment that was deemed chaotic and extremely dangerous for the workers.

Informant

Based in Kaikohe, Ākau is a young design-based studio that aims to engage youth in both creative and real projects. Relevant to this research project, “Tāonga Wahine” was an exhibition that captured the stories of local women and their families through a series of mark-making and photography. The stories were translated into a unique pattern and then expressed through common objects in the home including a small cabinet, a curtain, a down light, wallpaper, a bookshelf and children’s building blocks. These objects were a reflection of specific stories; a dynamic approach to representing the intangible existences evident within one’s home.

The concept advocated by Ākau forms the basis for the development of a new initiative. The representation of a tangible object developed on the premise of an intangible story provides insight into how the significance of heritage can be built upon. Applying that concept to this project gives an imaginative way of illustrating intangible heritage, one that captures the essence of what it was like to work at the mill during its working days, while developing methods for its representation in a modern context. The stories catch the imagination of the occupants and endeavour to provide unique social relationships, lifting the morale of the local people whose buildings have been sitting dormant for over a decade.
“GET BACK ON THE JOB!”

– George Frear (mill worker)

This was a story George Frear who used to work at the mill with his father who would work on the floor above him. The corrugated wall which separated the two spaces had two holes in it which he recalled his dad always checking if he was working hard, and if he wasn’t, he’d yell “get back on the job!”

This story questions how one views the spaces in the mill and seeks to represent this through the architectural interventions. The view shafts frame important parts of the process through the mill to inform the wider public of its historical significance and its new function.
“HIS BOAT WAS NEARLY SLEEPING WITH HIM”

– George Frear

Maori men used to work and live onsite on the old sawdust pits in small shacks. One of the men lived close to the water and would take his boat out every morning to catch fish from the harbour. A small jetty connected his house with the water.

This story reiterates the strong connection the Tōtara North people have with the water and aims to integrate this in a way which the occupants and the wider public can engage with and dwell on the water’s edge.
The timber mill building was in continual repair during its days in operation. The building would vibrate as the saws were running, and over time, many of the structural timbers would break needing to be fixed or replaced. These timbers are still evident within the mill today, symbolising the New Zealand 'do it yourself' mentality.

This story suggests that the architectural interventions have to be easily modifiable, and can adapt to changes in the environment. The 'rough and ready' nature of the site is reflected in the aesthetic qualities of the architectural interventions.
DESIGN INITIATIVE TWO: PROVOKING UNIQUENESS

Every identifiable place has unique content and patterns of relationships that are expressed and endure in the spirit of that place.58

Provoking Unique Intervention arose through analysis of the present condition of the mill. The informant responds at both a micro and macro scale that aims to build upon the innovative spirit of the past occupants, seeking to find a unique future for the current occupants. This sustains the cultural aspect of the town, while building upon their traditions and communal identity. The development of the initiative is illustrated through the Hundertwasser Public Toilets by Friedensreich Hundertwasser. Through unique elements in the buildings, the character of the place can be developed and illustrated to create an active environment for the local people and the public to visit.

Aims

As a response to both the tangible and intangible qualities of heritage, provoking unique intervention aims to reimagine the buildings as reflections on the spirit of the place. The unique nature of the existing structures and surrounding context is studied to evoke a response that reflects both its past and present condition. It is envisioned that the final interventions become a part of the place and a new centre for public engagement; thus the suggestion that people become a part of the building and the building becomes a part of the people.

Methods

A formal exploration of the existing context was used to represent uniqueness in the architectural response. The exploration also brought to the surface the distinct spirit of the place, while illustrating the creative and innovative minds of the ones who built the existing structures. Through the application of modelling and digital drawing, the distinct nature of the place became evident and allowed for further development of the unique interventions to be implemented into the structures.

Informant

Austrian architect and Bay of Islands local, Friedensreich Hundertwasser, was an influential character whose ideals celebrated the interconnection between man and his environment. During the 1990s the northland community, Kawakawa, struggled to adapt to the economic decline with the demise of its industrial sector. Through the creation of the eccentric Hundertwasser Public Toilets, Kawakawa soon became a thriving and resilient small town. The creation became a catalyst for positive regeneration and a reflection on the spirit of the place, clearly illustrating how expressed uniqueness can positively revitalise a declining town. Both the tangible and intangible heritage of Kawakawa has been illustrated through a commitment by the people and the architect.

The architectural approach advocated by Hundertwasser formed the basis for the development of initiative Two. Through representation of both a commitment by the local people and a reflection of the spirit of the place, Hundertwasser’s unique intervention suggests how significant heritage, tangible and intangible, can inform an architectural response.
Uniqueness of the Whangaroa Harbour

Conceptual testing
DESIGN INITIATIVE THREE: REPURPOSING THE PAST

Those who do not remember the past, are condemned to relive it – George Santayana

Repurposing the Past utilises remnants of the timber mill to inform new creations for future use. Through adaptive reconstruction, this initiative questions the potential of using fragments of the past as a framework for future creation, promoting new ideas and inventions for future generations. The development of the initiative is explored through the work of Giovanni Battista Piranesi, specifically his piece Via Appia Imaginaria. Through repurposing elements from the old structures, the past has a role within its future context, illustrating a connection between what was, and, what could be.

Aims

As an interpretation of the tangible qualities of heritage, repurposing the past aims to utilise existing elements that contain important values to the building. Through developing these elements, the initiative will reflect on the old purpose of the elements and evoke new interpretations, which contribute to the overall programme of the building. It is conceived that the repurposed elements will build upon the past and give new life to the dormant structures.

Methods

Following after the techniques of Piranesi, an abstract collage approach was used. Through experimentation of layering and sketching, the collages began to give formal suggestions for the interventions proposed on the site. Existing buildings and old machinery were overlaid to explore their potential for integration into the structures on the site.

Informant

The work of Italian artist, Giovanni Battista Piranesi, illustrates a vision for composing alternative futures from ruinous remnants, offering insight into the design approach and process for this project. Piranesi opposed the “rigorist” position of regenerating copies of ancient models that were devoid of any creative interpretation. He was discontented with the contemporary situation in Rome, which continued to fall short of its grand past and suffocated the remains of the past in amorphous decay.\(^5\) As an alternative, he instigated the use of archaeological fragments to promote new ideas and inventions. Piranesi’s Via Appia Imaginaria illustrates his design intentions for the reconstruction of the ‘queen of long roads. This crucial road, which connects Rome to Brindisi, is radically reimagined through repurposing ruins found lying around the city of Rome, including mausoleums, body parts, marble sculptures and a stone she-wolf suckling Romulus and Remus. The repurposed ruins embody the tangible heritage of Rome, and seek to find new possibilities for future continuation.

The incentive advocated by Piranesi formed the basis for the development of initiative Three. The reimagined representation of the past informs the future condition, constructing new possibilities out of existing elements. The repurposed elements provide a practical use within the architectural response, seeking to contribute to the incorporated programme of the building.


59 Repurposing the past [Piranesi’s Via Appia Imaginaria]
The wheel of change

Internet Access

Teaching and Learning

Rebuilding the Community

Window into the past
As a result of the findings from the design initiatives, four architectural interventions are proposed: raised viewing network, brick library & testing facility, inhabiting the workplace, and collective amenities. Each intervention captures the spirit of the place and aims to repurpose key elements of the past as a way of exploring new futures for the shipbuilding yard.
Raised Viewing Network

Brick Library & Testing Facility

Inhabiting the Workplace

Collective Amenities
The integration of a raised viewing network acts as an engaging experience for the wider public to learn about the heritage of the site and its application in modern society. The network comprises of two experiences: old and new. The old ‘linear’ experience is through the enclosed part of the structure, where visitors are informed about the old process which took place on the site. The new experience allows visitors to get involved with the adobe brick process; building bricks, drying and making pottery out of the dredged soils. The celebration of the old process and the engagement with new process gives the visitor a dynamic way to learn about the building’s significance.
77. Saw dust shoot

78. Saw dust shoot site location

95

96
80. Concept of viewing network
The repurposed timber mill contains an integrated brick library and testing facility. Firstly, the brick library displays samples of various mud brick which have been tested over time for people to view. Secondly, the testing facility provides a space for researchers to experiment with earth construction methods and research alternative building responses. The importance of this intervention works alongside the new integrated Adobe Brick manufacturing programme through engagement, learning, and teaching of earth building methodologies.
INHABITING THE WORKPLACE

As a response to the workers who previously lived and worked on the industrial site, this intervention provides accommodation for researchers. ‘Building the stories 2’ was used as a catalyst for this intervention, which suggests residing on the water’s edge – reiterating the inevitable connection with the water. Accessed by boat only, researchers dwell on the southern shores of the harbour inlet with views across to the yard and of the dredging process taking place in area 1. The forms are an adaptation of the existing nature of the site and its surrounding context.
CONNECTION TO CURRENT WHARF

ACCESS BY BOAT ONLY

DREDGING AREA

20BM.

VIEWS TO SITE

VIEWS TO WHANGAROA

DWELLING LOCATION OVER WATER

EARTH BRICK WALL

EXISTING TREES

LADDER ACCESS

FOUNDATION INTO ROCK
COLLECTIVE AMENITIES

Through adaptation of the small sheds located north of the yard, a space for communal events and activities are proposed. Initiated by the past, these buildings are reimagined into a market space, internet café, green grocery, and butchers. The series of buildings reflect the original purpose of the structures and find alternative futures for their continual use.
The aim of this project was to investigate how architecture can build upon significant heritage through the revival and repurposing of a now derelict industrial site, while also providing people with a reason to stay. This was achieved through design initiatives which provoked ‘plugin’ architectural interventions into the existing buildings on the site. Essentially the past condition was researched and represented to entice positive future change in a small town which struggles for significance in today’s context. The design outcome is a current work in progress, however, this document illustrates the direction in which architecture can act as a catalyst for future development.
Many small towns in New Zealand struggle for significance in modern society. Historically, some small towns began from industrial roots, with many towns dying out as local resources ran dry. This was certainly the case in the coastal town of Totara North, where the primary industries were once native timber milling and shipbuilding during the late 19th and 20th centuries.

This research project focused on the Lane & Brown Timber Mill and Shipbuilding Yard in Totara North, whose eventful history outweighs its present decaying and abandoned condition. As a response to the past process and its implications on the present condition of the site, the project reverses the path of production from sea to land; reviving the forgotten heritage of the site by proposing alternative methods for future development. By dredging the harbour’s silt-ridden seabed, the case is made for manufacturing adobe ‘mud’ brick and establishing a research centre for alternative earth construction methods. Through its design the project brings the critical condition of the yard into the public eye; promoting the revival of a vital piece of New Zealand’s industrial heritage while building upon Totara North’s strong historic foundations.

The proposed design acknowledges and seeks to honour significant heritage in this currently struggling small town. The literary context provided a framework for the analysis of the relationship between heritage and architecture. This framework was applied through three design initiatives which reveal and represent hidden meanings embedded in the site, using them as design tools for constructing a new future for the industrial site, and thus for Totara North. The initiatives informed the architectural interventions which capture the essence of the place through repurposing key elements of the past.

Through the repurposing of the existing buildings and the interactive interventions proposed, this small coastal town will become significant again – not only providing the residents with a reason to stay but also offering a reason for people to visit the place.

Can architecture alone stop the negative cycle of small town depletion? No, not necessarily, but the architecture can work alongside heritage conservation to elevate the environment and set the scene for new solutions for our struggling small towns.
BIBLIOGRAPHY


Frear, George, interview by Braeden Scally. 2016. Informal Interview (August 23).


King, Michael. 1997. Nga Iwi O Te Mate: 1000 Years of Maori History. Auckland, New Zealand:

Reed Publishing.


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<td>64.</td>
<td>Re-enactment of story 1</td>
<td></td>
</tr>
<tr>
<td>65.</td>
<td>Cross-section of story 1</td>
<td></td>
</tr>
<tr>
<td>66.</td>
<td>Sketch of story 2</td>
<td></td>
</tr>
<tr>
<td>67.</td>
<td>Collage of story 3</td>
<td></td>
</tr>
<tr>
<td>68.</td>
<td>Provoking uniqueness [Hundertwasser’s public toilets]</td>
<td></td>
</tr>
</tbody>
</table>
69. Uniqueness of the Whangaroa Harbour

70. Conceptual testing

71. Repurposing the past [Piranesi’s Via Appia Imaginaria]
http://dip9.aaschool.ac.uk/via-appia-imaginaria/

72. The wheel of change
73. Intervention locations
74. Architectural interventions
75. Facilitating the new and old process
76. Conceptual testing
77. Saw dust shoot
78. Saw dust shoot site location
79. Tectonic analysis
80. Concept of viewing network
81. Conceptual testing
82. The brick library
83. Conceptual exploration
84. Researcher dwelling informant
Reproduced from http://ndhadeliver.natlib.govt.nz/delivery/DeliveryManagerServlet?dps_pid=IE484752&dps_custom_att_1=emu
Reproduced from takasugi-an-by-terunobu-fujimori-2

85. Concept of researcher dwelling
86. Concept of communal amenities
87. Building a resilient community
88. Forget Me Not
A1. Adobe Brick making process
A2. Adobe Brick making tools and ingredients
A3. Alan Drayton drop testing the brick
A4. Final Adobe Brick sample
A5. Final dried Adobe Brick
A6. Wheel model with brick ontop
A7. Final Unitec presentation
A7. AAA Visionary Awards 2016
The adobe brick testing is in compliance with the New Zealand Earth Building standards, specifically NZS 4298:1998 Materials and Workmanship for Earth Buildings. The mud collected from the water's edge at 222 Okura Bay Road, Tōtara North, was used to test its feasibility as an earth-building product in the form of an adobe mud brick. The product used naturally available additives to strengthen the bricks and ensured all bricks contained the same amount of additives; 10% straw, 10% paper pulp, and 80% mud. The potential for this dredged material to be used for other uses was not tested in this section; however, the mud can be used in other and various earth building construction techniques once tested. The material was not tested for chemicals and other harmful substances; this would need to be further investigated under the supervision of a professional.
The feasibility experiment for using the dredged mud as a building material consisted of two batches of Adobe Bricks. The first experiment was not recorded and tested under the New Zealand Earth Building standards, as this requires a minimum of 5 bricks of the same construction assemblage – these bricks were constructed of a variation of additives including paper pulp, straw, hemp, and reclaimed soils. However, this batch of bricks showed extreme promise of being a usable earth construction brick. All bricks passed the essential drop test, with little or no damage induced on the bricks. Vital lessons were learnt during the initial testing:

- Drying time during winter months is at least quadrupled, compared to summer drying months
- The water to mud percentage was higher than typical soil used in the construction of Adobe Bricks, as the mud was dredged from the harbour that extended the overall drying time of the brick
- Additive materials were essential in giving the brick the strength it needs to pass the essential drop test
- The construction process was very simple and can be experimented by young and old people
- The making process was longer than expected. However, at a larger scale and with extra labour, the process time can be shortened
- The approach to mud construction is very ‘loose’, essentially there is no right or wrong answer. Only through extensive testing does one find the correct mixture for the Adobe Brick

The second experiment followed the New Zealand Earth Building standards, constructing 5 bricks from the same material properties.

<table>
<thead>
<tr>
<th>Test</th>
<th>Brick 1</th>
<th>Brick 2</th>
<th>Brick 3</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compression Test</td>
<td>PASS</td>
<td>PASS</td>
<td>FAIL</td>
<td>PASS</td>
</tr>
<tr>
<td>Started to see cracking at 75-78kg of applied load.</td>
<td></td>
<td>Created and split at 120kg of applied load. Very slow cracking period.</td>
<td>At 74kg of applied load the brick instantly broke. Small cracking sounds prior to instant break.</td>
<td></td>
</tr>
<tr>
<td>Wet/dry appraisal</td>
<td>Incomplete</td>
<td>Incomplete</td>
<td>Incomplete</td>
<td></td>
</tr>
<tr>
<td>Durability</td>
<td>Incomplete</td>
<td>Incomplete</td>
<td>Incomplete</td>
<td></td>
</tr>
<tr>
<td>Whole brick drop test</td>
<td>PASS</td>
<td>PASS</td>
<td>PASS</td>
<td>PASS</td>
</tr>
<tr>
<td>Little to no cracking or breakage from the brick.</td>
<td>Little to no cracking or breakage from the brick.</td>
<td>Little to no cracking or breakage from the brick.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
A3_ Alan Drayton drop testing the brick
A4_ Final Adobe Brick sample
A5_ Final dried Adobe Brick
A6_ Wheel model with brick ontop
A7_ Final Unitec Presentation
A8_ AAA Visionary Awards 2016
Full name of author: Braeden Michael Scally

Full title of thesis/dissertation/research project ('the work'):
Forget Me Not
Critical Intervention at Totara North's Decaying Industrial Heritage.

Practice Pathway: Architecture
Degree: Master of Architecture (Prof)
Year of presentation: 2016

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Date: 30.1.09.16.
Declaration

Name of candidate: Braeden Michael Scally

This Thesis/Dissertation/Research Project entitled: Forget Me Not

is submitted in partial fulfillment for the requirements for the Unitec degree of Master of Architecture (Professional)

Principal Supervisor: Dushko Bogomoch

Associate Supervisor(s): Peter McPherson

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• The contribution of supervisors and others to this work was consistent with the Unitec Regulations and Policies.

• Research for this work has been conducted in accordance with the Unitec Research Ethics Committee Policy and Procedures, and has fulfilled any requirements set for this project by the Unitec Research Ethics Committee.

Research Ethics Committee Approval Number: .................................................................

Candidate Signature: ................................................ Date: 30/09/16

Student number: 1379078