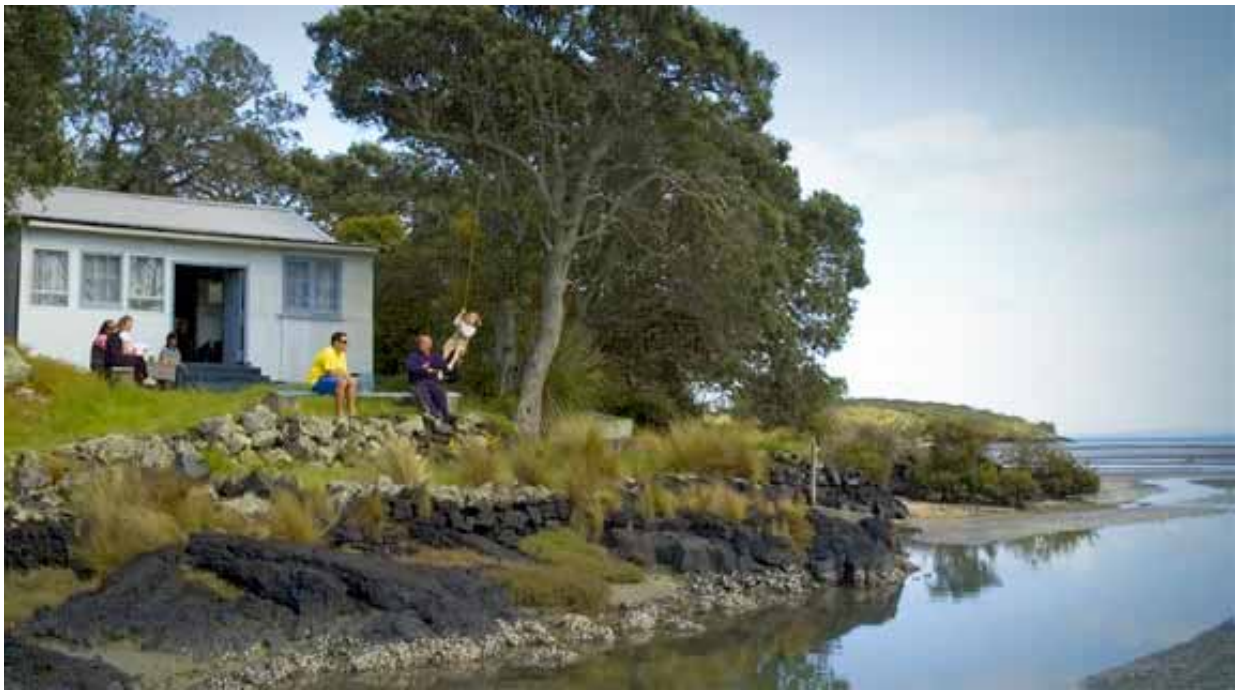
1 INTRODUCTION – TEAM PRESS RELEASE

Te Hira Bach 101

Vision for More Sustainable Housing

Sustainability has always been inherent in the typology of the classic Kiwi bach. You design and build it yourself, you reuse found and local materials, and you and your family progressively build a real connection to the place. You also become a kaitiaki or guardian for a piece of our precious coastline. However, with the combined challenges of coastal real estate price rises and the removal of bachs built on crown land from the 1980s, while still part of the Kiwi psyche, the true kiwi bach is now certainly an endangered species.



Te Hira Whanau Bach 101

Whats in a name? The name for our SHaC project is derived firstly from the Te Hira Whanau, who through their 93 year old mother/ grandmother / great grandmother hold one of the few remaining live bach leases on Rangitoto Island with the bach identified by its lease number 101. As a tertiary based project 'Bach 101' is also a play on ensuring students really came to appreciate bach fundamentals as in this being a foundation bach course.

Te Hira Bach 101 Fact Box

- The Te Hira BACH101 Team retrofitted a classic kiwi bach on Rangitoto Island

Te Hira Bach 101 - Rangitoto Island

- The Bach is owned by the Te Hira Whanau with a live lease still in place held by 93 year old Minnie Te Hira
- The bach was originally built in 1919 and is now only 1 of 11 remaining bachs in the Islington Bay bach community and 1 of 34 remaining bachs on Rangitoto Island
- Number of Bedrooms: 2
- Number of Students:11
- Number of whanau members involved: 14+
- Number of Professionals and Volunteers: 4
- Project Cost: 16,540.49 including GST

Progress

The Bach retrofits were finished in 2008. Following the 1 week student lead build, family members completed water tank reinstallation, soffit linings and bird proofing and during the summer the family added a photovoltaic solar panel to provide electricity to run efficient LED lights.

Challenges

The key challenge over the one week build was to manage unforeseen repairs required to the south wall and bedroom floor while trying to maintain progress on the three core areas namely the re roof, re cladding south wall and new composting toilet and generator /energy building.

Seating the Bio-loo composting toilet tank as low as possible into the basalt / lava substrate was a challenge early on in the build with crowbars, sledge hammers and the associated blisters the order of the day!

On discovering rot in the upper wall structure, the team also took the step of replacing all of the bach purlins in order to ensure a minimal 200mm eave. While this took up the best part of a day for four of the team, this intervention was made to minimise the chance of further water ingress and to ensure the longevity of the wall structure.

While all this meant a full on dawn to dusk building schedule we were well pleased to complete all elements to a fully closed in weather proof level in the six day period.

Longer term vision for Bach Sustainability

The Te Hira Whanau Bach 101 represents a beacon of resistance to both the ubiquitous gentrification of kiwi bachs (many claiming bach status but are really urban dwellings located by the sea) and the loss of those built on crown land. With Bach 101, the maintenance of low energy and water use practices and the adoption of appropriate technology solutions like Solar powered LED lighting systems and composting toilets has helped to preserve the essence of Kiwi bach life while enhancing cultural and environmental sustainability.

The opportunity therefore exists for SHaC to help promote more simple, appropriate technology coastal living solutions which seek to maintain, enhance and reclaim sustainable connection to place.

Te Hira Bach 101 - Rangitoto Island

Whanau Statement (Arohanui Ngaire Harris nee Te Hira)

(FROM RIBCA WEBSITE http://www.ribca.org.nz/communityHistory.html)

Te Hira Bach 101 sits as sentry guarding the causeway between the two islands, Motutapu and Rangitoto.

We consider ourselves the unofficial lifeguards, to the little rock pool under the bridge, and many a time a rescue has been performed from the pool.

Te Hira Bach 101 is first left off the path with the grey doors and steps to match. Those steps have seen some shocking colour schemes, (one year they were bright mandarin), and play a large role for grandstand seating, family portrait podium and general information centre to the thousands of day trippers.

Stepping inside, you're taken back to 1914 wartime period, same paint and lino to boot, because it was the first building bought over to be used as an army outpost office. Even the furniture is from that period. The wrought iron big bed is like the bed in the movie Bedknob and Broomsticks, but ours has a big dip in the middle of it. There are matching wrought iron bunks that also have a sinking pit in the middle. Most of the pieces were collected from other batches when they had to be demolished and for an avid antique collector these pieces would be prized possessions.

Given that there is no electricity on the island most of the cooking is done in The Cave. It is here we belt out hit songs of yesteryear, solve all the worlds' crisis, psychoanalyse our family and friends and dream about how we'd spend our lotto winnings. The open fire grand seating arrangements have seen many a visitor and TV documentary, and has become something of a legendary place to visit.

On a more serious course of discussion, we are all well aware of the environmental responsibilities arising from being kaitiakitanga or guardians. First and foremost is respecting the elements like whenua (land), te rangi (air) and tangaroa (the sea). Each generation has been taught about safety around fires, swimming, and clearing away weeds and rubbish. Our family realise the huge privilege of being a part of Rangitoto Island, and acknowledge our Grandmother Minnie TeHira for her vision of securing a little piece of heaven here on earth

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Te Hira Bach 101 - Rangitoto Island

PROJECT BACKGROUND

The Te Hira whanau are driving members of RIBCA – The Rangitoto Island bach Community Association. The following excerpt from the RIBCA website gives some important background to the Rangitoto Island bachs of which the Te Hira Bach 101 is now one of only 34 surviving examples.

(FROM RIBCA WEBSITE http://www.ribca.org.nz/communityHistory.html)

In 1890 Rangitoto Island had been set aside as a Recreation Reserve 'for the enjoyment of the Public'. To help pay for development camping sites were made available for lease from 1914, and bach sites from 1919. At that time bach communities were common around the New Zealand coast. Everyman could, conceivably, afford to build his own holiday home by the sea. All it took was some effort and a little do-it-yourself ingenuity.

The first baches were cobbled together from whatever materials could be found, often extending out from earlier simpler structures. Later, as the community grew and became more established, professionally built baches started to appear. Prison labour built the roads and paths, the tennis courts, and helped build the Stone Hall. By 1937 there were 140 baches in three settlements: Beacon End in the west, Rangitoto Wharf in the south, and Islington Bay in the east.

The bach families formed a close-knit community that continued through many generations. Co-operation, friendships and romances flourished. Evenings were spent at community dances or film evenings in the Stone Hall. Tennis tournaments and fishing contests were keenly contested. Many baches still display the banners and certificates won at these events. Christmas and New Year had their own island traditions: Santa Claus arriving by boat, fancy dress parades, sports events and carols accompanied by the resident's band.

However, in 1937 the powers-that-be had become concerned about the existence of the baches on public land. Auckland Museum botanists were particularly incensed by the community's presence in such a unique botanical area. While 'justice would have to be tempered with mercy', wrote the Minister of Lands, the writing was on the wall and the bach community's leases were only renewed for a final twenty years. After that the baches had to be removed. No new baches could be built and the existing baches could not be modified.

In 1956 the situation was reviewed again. This time, ironically, the bach community was supported by the Auckland Botanical Society which said that the presence of the community was of benefit to the island's vegetation. The community was credited with helping to protect the environment by fighting forest fires, keeping the numbers of browsing deer and wallabies low, removing invasive weeds, minimising the loss of timber by theft and keeping vandals away.

This time the leases were extended for the lifetime of the current lease holder, no sales, no transfers, and once again no new baches and no modifications to existing baches were permitted. As a consequence of this uncertain tenure, and of the restrictions imposed, the baches were changed very little. They are still without electricity, water is still collected from the roof and toilets remain long-drops out the back. Cooking is still managed on bottled gas, a wood range or open fire. Furniture and fittings have rarely been updated. They have retained the look and feel of the mid twentieth century.

As leases expired in the 1970s and 80s many baches were pulled down until only 34 remained. However, by then it was realised that the remaining bach settlements were among the last of their kind anywhere in the country. They have survived, says the Rangitoto Island Historic Conservation Trust, to become irreplaceable artifacts of New Zealand's architectural and social history.

Consequently, the three settlements on Rangitoto Island (Islington Bay, Rangitoto Wharf and Beacon End) were classified as historic settlements under the Historic Places Act. The Rangitoto Island Historic Conservation Trust (RIHCT) was formed to conserve and interpret this heritage. Today the Rangitoto Island bach community continue to do what they have always done and actively work to protect and preserve the remaining structures and the unique Rangitoto environment.

RIBCA families are proud to be the guardians of such a unique treasure and are honoured to be able to share it with all visitors.

1.1 BACKGROUND TO THE TE HIRA BACH 101 RESTORATION

The Te Hira Bach 101 challenge was taken up by Te Hononga o Whaihanga ki Wairaka, the Kaupapa Maori Unit at the UNITEC School of Architecture. The UNITEC architecture students designed and oversaw the changes under the guidance of the Unitec tutors and the architectural firm *design*TRIBE.

Further assistance was gratefully received from Allan Godsall of the Rangitoto Island Historic Conservation Trust. His experience in restoring bachs with the Trust helped guide the Te Hira family through the requirements of the Heritage and Historic Restoration regulations, and the practicalities of undertaking a project like this.

The Te Hira Bach is in the Islington Bay settlement and overlooks the Motutapu causeway in Gardiners Gap. It was built in 1919 by A. (Bill) Davidson and William B. (Bill) Dawson, and was one of the earliest baches on the island. In 1950 it was bought by the Te Hira family for £50 and a V8 car valued at £300. The current lessee is Mrs Minnie Te Hira. Mrs Te Hira is the sister of the builder Bill Dawson.

Some say that the bach is constructed around an abandoned army office dating from the First World War, although this has not been confirmed. Reminiscences record that extra timber for the building was salvaged from all around the coast and that the paths were made from Motutapu clay and shells from the beach.

Maintenance Deferred

Like most of the surviving baches on Rangitoto, maintenance had been deferred indefinitely because of the uncertain future these bachs have faced for many years. In 1957 leases were renewed for a further 33 years but the terms of the lease forbade additions or alterations. Furthermore, when the lease holder died the bach was to be pulled down. And that is what happened all through the 1970s and 1980s. With no long term future most bachs were changed very little, in effect becoming frozen in time. They kept the look and feel of the mid twentieth century. The Te Hira Bach 101 is no exception. The interior walls, flooring and fittings are the originals while the furniture dates from many periods, salvaged from other baches when they were demolished.

Now that the leases have been extended, a new confidence has returned. The Rangitoto Island Historic Conservation Trust has undertaken a number of renovations (baches 38, 78 and 114), while individual lease holders have begun long deferred maintenance and makeovers (bach 118 among others). And not before time..

The Results

The renovation work was mostly completed over six intensive days of building in the spring of 2008. Work concentrated on the

three most urgent areas: the south wall, the roof and the toilet.

The goal was to weather-proof the bach reducing the need for fossil fuels, while providing for the option of installing renewable energy sources at a later date. Up- until the renovation the bach used a petrol generator, candles and kerosene lamps for lighting and a gas heater for warmth. Cooking was and still is mostly on an open fire outside.

Recycled materials were available from a storage bunker on Motutapu that has housed joinery and furniture salvaged from the demolition of Rangitoto bachs in the 1970s and 80s.

The South Wall

Badly deteriorated, the old weatherboards were removed. The framing was repaired and insulated before being covered with ply cladding. The search is now on for recycled weatherboards to match the original 1930's rough sawn clap board look. The window frames were replaced by others sourced from the island with flashings recycled from the old roof.

The Roof

The roofing iron was replaced with marine grade colorsteel max corrugated iron, that matches the original, after repairing and insulating the supporting structure.

Composting Toilet

This is the first composting toilet on the island and was installed in an existing abandoned longdrop toilet hole. The roofing iron was recycled from the main house and recycled timber used in the roof, windows and door. The composting toilet shed roof is pitched and positioned to catch the sun should solar panels be wanted later. A battery storage area is included within the western portion of the toilet shed structure.

2 Technical Judging Criteria

* Difficult task of choosing materials wisely
* Passive design strategies
* Planning the new building
* Waste diversion during deconstruction

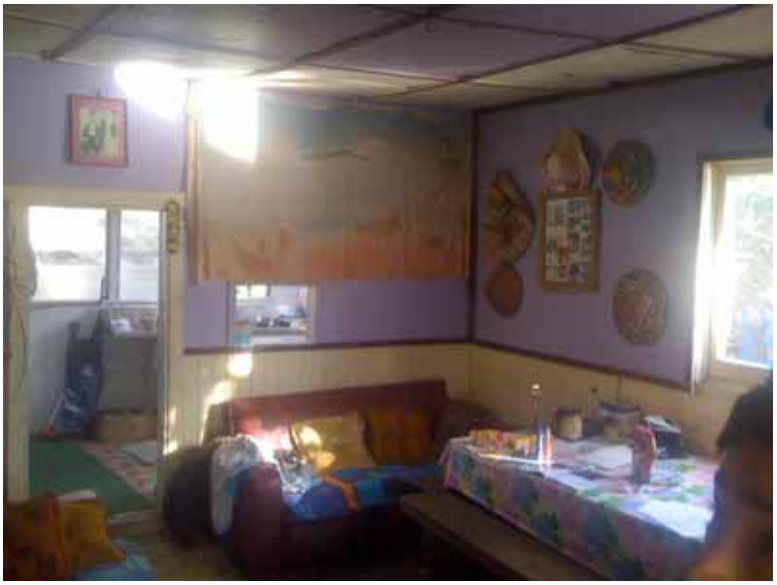
SHAC Judging criteria to address:

Energy and Indoor Environmental Quality, Water, Materials, Waste, Affordable and Suitable for Purpose, Supporting a Sustainable Community

Technical Judging Criteria

As a bach and not being lived in all year round, the Te Hira Whanau Bach 101 brings with it a unique set of technical criteria associated with this occasional and primarily summer use. While attempting to preserve and enhance the historic and cultural elements of this bach, the team have sought to in all technical criteria as follows:

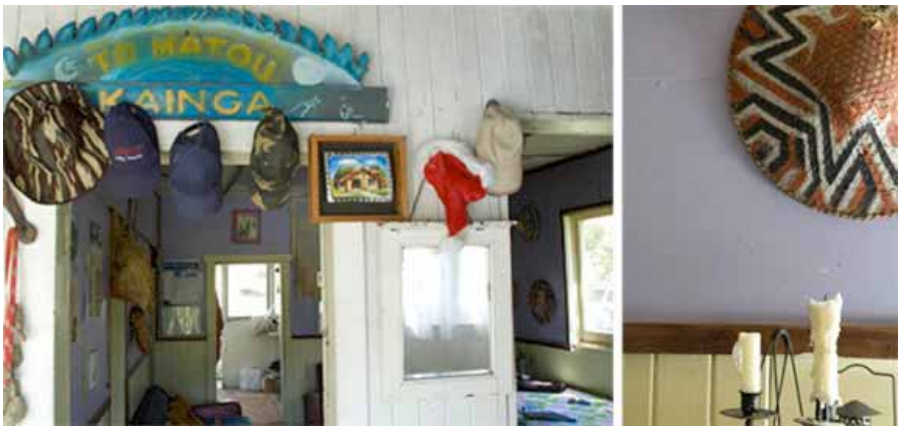
Energy and indoor environmental quality: When at the bach, the entire family's lifestyle is low-energy. The bach now has a new insulated south wall and ceiling and low-energy solar photovoltaic powered LED lighting system that replaced less efficient candles, lamps and generator powered electric lighting. Eliminating the need for candles and lamps not only reduces the use of fossil fuels, but helps to ensure the sustainability of the bach and the safety of its occupants through eliminating naked flame lighting.



Outdoor cooking in the 'cave' maintains a 60 year whanau tradition where an open fire, enclosed by basalt walls and corrugated iron roof, is used to both cook food and keep whanau members warm in the winter months and on cooler evenings. Insulation to the entire roof and south wall has made a major difference to indoor comfort levels. The temperate climate in the Hauraki gulf means that even in winter it is unlikely a heater will now need to be used.

Energy – transportation. As perhaps the closest Bach community to Auckland's CBD, Rangitoto Island is very 'green' holiday location with bach owners able to catch public transport to the Auckland Ferry terminal (Train or Bus) and then take a 20 minute trip on a Fullers Ferry or Reubens water taxi to the Islington Bay wharf on the eastern side of Rangitoto Island. Then with a 5 minute walk to the Bach, the whanau have used public transport, water transportation (more efficient than land based transport) and avoided 2-4 hours trips to either Northland or Coromandel as the most popular local holiday destinations for Aucklanders.

THE CAVE



BACH 101 INTERIOR

The Bach was originally built in 1919 from native timbers (mainly kauri) and has wall paper on scrim on kauri sarked walls. The floor has sections of 1930's lino on original kauri tongue and groove floor boards.

Water: Up until the SHaC build the whanau relied on rainwater collected from the bach roof stored in two water tanks of 2000l and 500l respectively. This water is used for all cooking ands washing with drinking water brought in inside 10l plastic containers. A second hand 2500l water tank has been purchased at the cost of $400.00. This tank will be installed on a basalt outcrop up beside the new toilet and generator structure taking water from this roof and acting as a header tank, the base of which sits 3m above the current bach floor level. In this way the water storage has been doubled and with a significant increase in water pressure from the header tank. For cultural reasons (being drawn from a roof used for toilet facilities) it is likely the water from this tank will be used for showering / washing as opposed to cooking.

Due to the unreliable rainfall in the summer months, water use per person will continue to be severely limited with tank levels monitored regularly. Over the summer months the whanau will assess water issues acknowledging both the increased amount of water storage available as well as the increased water pressure. From this experience water use protocols will be set and water saving measures implemented. Despite this the comparatively small amount of water storage ensures a real water conservation ethic amongst the whanau. This water consciousness also assists with minimising the amount of grey water created.

Materials: The materials used for the above 3 projects have been listed previously however a summary of their origin, durability and renewable / reuseable /recyclable resource nature is listed below:

Timber: Recycled native purlin timber reused for toilet roof purlins. Other sound native timber stored under bach for future projects. Rotten timber burnt in open fire for cooking. New H1.2 pinus radiata framing and purlin timber purchased at discounted and sourced from renewable NZ forests. Boric treatment will ensure the timber lasts for at least 50 years in the capacities used. H5 piles for the composting toilet shed are chosen for their durability and again are sourced from renewable pinus radiate NZ forests.

Insulation: Autex greenstuf insulation was chosen as it is locally made (Rosebank Rd, Avondale), low irritant being polyester, is

reuseable if ever removed from the bach and was offered to us at a highly discounted rate.

Bioloo: The bioloo tank is designed and molded in New Zealand (Rotorua based) The composting toilet system complies with or are better than New Zealand standards AS/NZS 1546.2.2001 and are made in conjunction with AS/NZS 1547. This means they also meet clauses B1 (Structure), B2(Durability) , G1 (Personal hygiene) , G 14 (Industrial liquid waste) of the New Zealand building code. The commercial size of the Bioloo is designed to acknowledge the realities of summer bach life with up to 40 people using the toilet per day. The commercial Bio-loo composting toilet tank is made from Polyethylene and represents a very durable long term solution to dealing with human waste.

Corrugated Colorsteel: Colorsteel Max is manufactured at Glenbrook south Auckland and made from NZ iron sands. Colorsteel max is designed for coastal climates and is powdercoated to extend its life. The project requires that the bach roof maintain its original look hence the need to match the original corrugated iron profile. The roofing material is the most durable corrugated iron product available and is re-useable and recyclable.

Window and door joinery: Windows and doors for the south wall and toilet / energy shed have been procured from a bunker on nearby Motutapu island. The bunkers were created for artillery shell storage prior to WW2 and have been used since the 1970s for the storage of joinery and furniture items salvaged from the demolition of Rangitoto bachs. The reuse of these items for the Te Hira bach is hence very appropriate with students able to walk 200m to the bunkers to select the items before returning to restore/ repair, paint and install the items.

SHAC Vision: All the materials are re-used, recycled or made from renewable resources. Building materials are durable, typically they will last as long as or longer than it will take to grow or produce those resources again. All materials are made entirely from materials grown or manufactured in New Zealand.

Team Goals: *To Source local, durable materials*

The Bach was constructed and retrofitted using many found, recycled and sustainable building materials. 12mm Marine Ply wood was selected for the south wall reclad and new composting toilet enclosure and R3.2 Autex Polyester Batts for wall and roof insulation. The new composting toilet and alternative energy shed was built with H1.2 boric treated radiata pine framing and recycled rimu rafters (removed from the bach 101 eastern lean to roof). The roofing iron for the new toilet / energy shed was also recycled from the eastern lean to roof. The commercial Bio-loo composting toilet tank is made from Polyethylene and represents a very durable long term solution to dealing with human waste.

Waste: Students were required to quantify the waste from all of the materials brought to the island and removed from the bach.

Reuse of materials reduces waste. This approach included recycled timber joinery windows (from previously demolished Rangitoto bachs) and recycled corrugated iron for the roof of the toilet and generator shed. All rotten timbers were cut up for dry firewood (to be used for cooking in the cave). All sound timbers of over 600mm were stacked under the bach for later reuse / bach repairs.

Te Hira Bach 101 – Rangitoto Island

The following is a summary of waste issues arising from the Building exercise undertaken to date:

Timber:

H5 timber pile off cuts reused as ramp stringers, short piles H1.2 off cuts reused for nogs, anything over 600mm stored under bach for future use, short lengths to be burned in open fire for heating / cooking. All native timber removed from bach recycled or burnt if rotten

Insulation and peat moss packaging: Plastic wrapping disposed of in plastic rubbish bags and returned to mainland

Cardboard boxes: For nails, Bioloo components etc..burned in fire

Empty silicon tubes disposed of in plastic rubbish bags and returned to mainland

Timber pellet reused as landing step for toilet

Dunnage stored under bach for later reuse

Affordable and Suitable for Purpose:

Built in large part by the family, the bach is inherently well-suited and adaptable. The front and rear lean to sections of the bach were built by the Te Hira whanau and are clad in 1950's fibrolite with a mixture of recycled timber and aluminium joinery elements.

Supporting a Sustainable Community: Bach life on Rangitoto island is critically endangered. The project is essentially concerned with the social and cultural sustainability of the Te Hira Whanau on the Island. The whanau are one of the last groups to have a living Lessee - Minnie Te Hira who is now 93 years old. The restoration and installation of new systems will hopefully allow for many more generations of the Te Hira whanau to maintain connection to the bach, the remnant Islington Bay community and Rangitoto Island. Transportation to the Island is by Fullers Ferry or by Rebens Water Taxi's. 90% of trips to the island are on scheduled runs so very few additional trips are made to the island than those going there anyway. In this way fossil fuel use for transportation to and from the island is minimised.

SHAC Vision: Supports well-being, good quality of life, and healthy local environment today and into the future.

As a humble dwelling occupied in the summer months virtually full time with occasional weekend stays in the spring, autumn and winter, the bach renovation represents an inexpensive set of interventions to increase comfort and safety levels (ceiling and south wall insulation plus eliminating naked flame lighting) while providing a high quality environmentally sustainable composting toilet capable of handling high summer loadings.

HERS Rating: Paul Stock was commissioned to give the completed Bach a HERS rating. The HERs rating given was 2 which is consistent with a 1970s habitable dwelling. The fact that the Bach was built in 1919, is not lived in year round and encourages connecting with the outdoor environment (as opposed to a modern cocoon) means that the HERS rating is not as relevant for this project.

Heating energy load is 227 x 60 = 13,620MJ annum

As noted by Paul Stock "A limitation of the Accurate program is that it assumes that the house is occupied year round - yet bachs and holiday houses aren't so the results need to be considered with this in mind."

OVERVIEW OF PROGRESS AND CHALLENGES TO DATE:

With a very concentrated student research, design and construction phase (7 weeks from 20 July to 7 September) we were well pleased with what was achieved following the 6 day build / renovation project. This was especially given challenges of transporting most materials to the island by boat. While we had anticipated a second / follow up construction visit, the positives of not returning was that the whanau took over the remaining core elements themselves, in particular the installation of the storage shed wall, rainwater plumbing, soffit linings and solar photovoltaic lighting system. Given that true bachs rely on continual owner improvements, this was an important and highly appropriate outcome.

As part of the research and design phase students researched a range of interventions for the bach and presented thesed to the whanau for feedback. While all of the resaearch streams were seen as valuable, several were not pursued either because they were seen as out of keeping with the basic bach experience, were too expensive or presented other potential problems as follows:

Wood stove: Students researched a period reconditioned Wood stove with wetback and while this was seen as a good way to return to an earlier era when there was a functional wood stove operating, the whanau were concerned about the potential for a bach fire, now preferring the outdoor cave cooking with its inherent basalt rock surround as a very safe open fire option.

Photovoltaic power system: Students researched a full photovoltaic power system to be housed in the new composting toilet / generator shed. While this was appealing to some whanau members, on further reflection there was a strong desire to maintain a real basic bach experience similar to that which they had as children - the older generation didn't want to give the teenagers any opportunity to bring their mobile phones and computer games to the island!

Shower platform: A shower fed by the new water tank (heated by wetback and solar panel) was proposed to be located on a platform with privacy screen to the north wall however, issues of maintaining privacy and a concern for water use ruled this out with the whanau opting to maintain solar showers as a simple means of controlling water use.

French doors to north wall: A key proposal was to add some french doors to the north wall of the bach to open up the living / dining area. Due to restrictions on alterations to the bach from DOC this intervention was reluictantly abandoned by the whanau.

3 TEAM FINDINGS

The key findings of our project team:

Among the many learnings derived from this project, perhaps the over riding finding was that here, environmental sustainability issues were inextricably connected to the less commonly understood issues of cultural sustainability – the sustainabiltiy of the unique Rangitoto bach typology and a whanau connection to the bach and its wider environs. As the only Maori whanau to have a bach on Rangitoto Island what we have tried to faithfully preserve is a unique Maori response to bach living on the island.

Notion of cultural sustainability. This involves connection to place, building of whanau traditions, ability for future generations of the Te Hira Whanau to have an authentic Maori / bach experience. The uniquely Maori dimensions to their bach tenure revolve around outdoor cooking (Kauta), dealing with larger whanau gatherings over summer (up to 40 at some times) and the reliance on kaimoana as a means of feeding the whanau as well as maintaining connection to the marine environment. The Te Hira whaanu take their role as kaitiaki very seriously extending this role to caring for the island, caring for visitors and daytripper in need and as a strong advocacy voice for RIBCA.

Sustainability of the cave / kauta as a Maori cooking and social institution – the only permitted open fire allowed on Rangitoto island – allows for important social / whanau dynamics to be maintained – a place where the 'problems of the world' can be solved on a nightly basis.

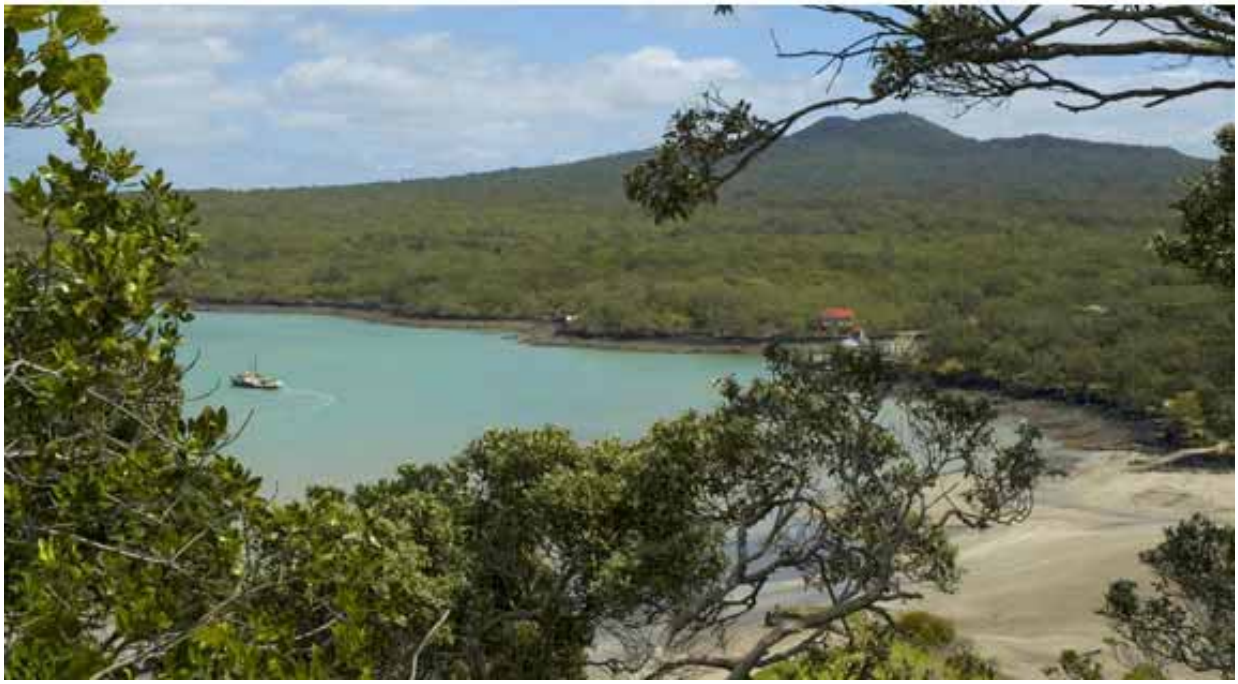
Notion of the sustainability of the Rangitoto bach typology – the Rangitoto bach typology is threatenned through Doc desire to rid the island of private bachs, the Rangitoto Island Historic Conservation Trust (RIHCT) which while undertaking valuable restoration work on many of the bachs, is unitentionally locking the bachs in time and removing the organic owner / bach relationship which is embedded in the process of ongoing modifications ie. A bach is never finished – it is an eternal work in progress!

The value of working with the client as opposed to working for the client. Up to 7 whanau members were working with the 10 student team at any given time. Whanau members also catered 3 plus meals a day for the entire team - this enabled 10 hours a day plus to be spent on the building site.

The value of a concentrated build exercise where team dynamics and project momentum can be built to a high level.

Advice for others:

1. Take care to establish strong working relationships with the kaitiaki / whanau / family group
2. Take care to consider what aspects of a bach are essential to preserving its essence
3. Consider wider notions of cultural sustainability, thinking beyond the actual bach
4. In retrofitting, allow for future modifications so the bach may continue to evolve organically over time
5. Ensure the client / family are as closely involved in the build process as possible
6. Allow for design decisions to be made in 'real time'



4 TEAM MEMBER COMMENTS

"A bach hopes to be a permanent structure. It's occupants only temporary whom come and go constantly evolving over time, then so does their place. The historical concept of contributing some addition to a space with unconsciously realising the connection they've established with their unknown future. The bach encompasses a different quality of life that can be experienced. It signifies solitude freedom and peacefulness."

Quotes

Students quotes:

"Taking the project through from initial designing stages, getting quotes, ordering the materials and taking part in the physical build gave this project an exclusive element of reality that we don't usually get to learn at university."

"Taking part in this project from start to finish taught me how important the initial meetings and planning stages were during the design stage to ensure that we achieved our goals during the building stage."

"Meeting with real clients and working alongside real builders on site is the real life experience that we need at university."

"Living in a historic bach whilst working on Bach101 made me appreciate why the survival of the Rangitoto baches are essential."

Client quotes:

Ngaire Te Hira (snr)

"My personal view on the project I think the team done a great job and we have good results to show a positive outcome and a big congratulations to the input of the team and those Whanau members who helped out."

Miriam Scanlan

"Highlights for me personally have been the respect and commitment you have shown to our Whanau especially under the sometimes difficult circumstances. We could not have completed the work ourselves and I am thankful for the opportunity that was given to us to partner with Design Tribe and Unitec on the SHAC Challenge."

5 COMMUNICATIONS CAMPAIGN

Please list promotions, communications and research outputs. Please list current and expected. Use either a formal (as below), or informal style as convenient. Attach copies of Media and Publicity Achieved by the team.

As a real client, the Te Hira Whanau are naturally careful about media coverage and maintaining a normal level of privacy. Getting full whanau agreement for any given media story can also be difficult, however both the following communications and the whanau's own web presence through the Rangitoto Island Bach Community Website (RIBCA) have successfully promoted the unique nature of this renovation project.

Auckland Heritage week October 2008

As part of the annual Auckland Heritage week activities the Te Hira Whanau have opened up the bach for public visits. Heritage week 2008 provided a great opportunity to showcase both the bach and the recent renovations that had ocurred as part of the ShaC project build the previous month.

RIBCA Website feature on the Te Hira Bach 101 ShaC project

http://www.ribca.org.nz/makeover101.html

RIBCA Website feature on the Te Hira Bach 101

http://www.ribca.org.nz/bach101A.html

Moodle site

As part of a learning publication project funded by Ako Aotearoa (http://akoaotearoa.ac.nz) Te Hononga have developed our own open source e learning site known as Moodle. This site has enabled us to record our sustainable design and build projects going back to 2002. In particular the Rangitoto Te Hira Bach 101 project has been able to be included in the site with a range of ShaC outputs included as well as photos and student interviews.

http://moodle.unitec.ac.nz/course/view.php?id=136

Magazine article

This article in issue 4 of Good Magazine featured the Te Hira Whanau Bach 101 with specific reference to the SHaC project.

Bach to basics

HOME » MAGAZINE » GOOD, ISSUE 4 » BACH TO BASICS

BY FRANCESCA PRICE

http://good.net.nz/magazine/4/the-goods/bach-to-basics

Media Article

Liz Sherwood has written the ShaC article for the Te Hira Whanau Bach 101 with Rau Hoskins contributing content and whanau representativr Miriam Scanlan checking and approving the final draft.

Alive Magazine Article (to be sourced)

6 COLLABORATION AND INVOLVEMENT

Please list your team members, email, and a few word description of their role.

Te Hira Whanau
Sam Te Hira, Andrew Te Hira, Ngaire Te Hira snr, Miriam Scanlan, Rob Scanlan, Travis Scanlan, Deodar Meggitt, Tony Meggitt, Noah Meggitt, Sam Meggitt, Ngaire Harris, Rob Harris, Alana Harris, Tabatha Harris Aaron Pau (NZ Navy signal men x 2), Michael Te Hira, Hinemoa Te Hira Robin Te Hira.

Sponsors – key helpers

John Duggan - Department of Conservation – provided assistance prior to and throughout the build week

Mike van Bennekom – Bio Loos vanb@wave.co.nz - supplied Bioloo at discounted rate

Bunnings – supplied discounted materials for the South wall

Autex – supplied discounted insulation material

Students: Carley Lockie, Pieter Koch, Tess Fenwick, Tobi Hall, Aimee Cudby, Caitlin Wilson, Keri Johnson, Elke Vermulen, Anika Blount, Duncan, John Taliva'a, Mike Stevenson, Duncan Craig

Tutors: Rau Hoskins, Miles Heine

7 BUDGET

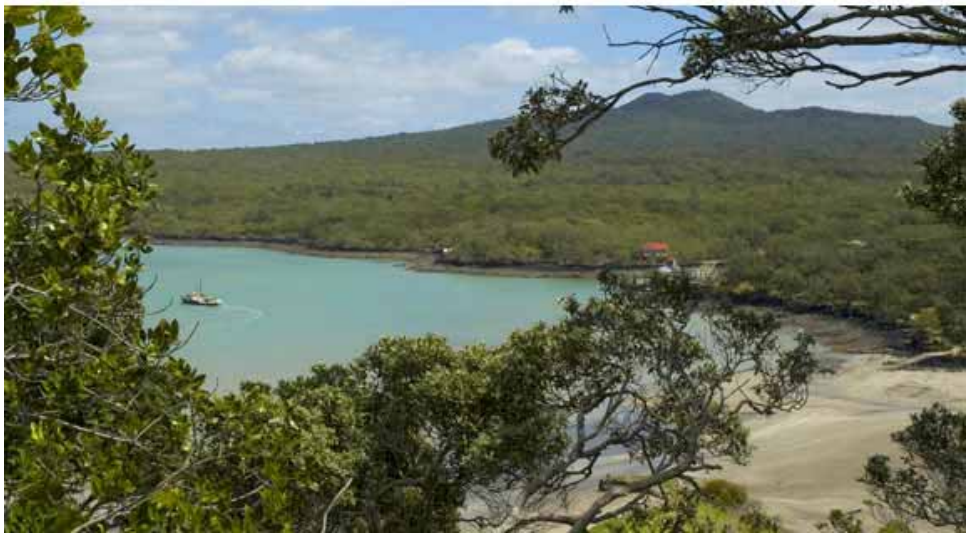
Please provide an indication of the significant budget items for the house construction working from your published plans. For houses that have yet to be sold, these numbers will not be published until after sale. Please attach a spreadsheet.

Item	Source / description	Cost (incl GST)
2500l Water Tank	second hand, sourced through Andrew Te Hira	$ 400.00
South wall materials	Bunnings, Plywood, building wrap, screws, metalex	$ 749.10
Framing timber, ply wood flooring, flashings	Placemakers	$4,121.05
Composting toilet	Bio-loo, including tank, wind cowling, toilet throne and seat	$3,888.00
Corrugated Iron Roofing	Smart Roofing, Colorsteel max marine grade roofing	$3,301.88
Flue flashing	(Mastertrade)	$ 65.48
Autex insulation	Autex Ceiling and Wall insulation	$ 984.93
Guttering	Plumbing world	$ 295.68
Lighting System	Photovolataic lighting system – panel, battery, regulator, wiring and LED light fittings	$1,704.37
Transport for materials	Hauturu Department of Conservation (payment by m3)	$ 990.00
Fuel for generator	Supplied by Rob Scanlan	$ 40.00
	TOTAL	$16,540.49

8 KEY PHOTOS

Please supply 5-10 hi-res photos of the project. Action shots of team, construction, design, and photos or rendering key concepts.

To be emailed / uploaded separately.



9 CONSENT DOCUMENTATION

As Bach 101 had no building consent and the alterations undertaken were primarily replacing like for like there was no requirement for building consent for this project. The composting toilet being non habitable and under 10m2 did not require building consent. The toilet is environmentally superior to any toilet on the island and has the approval of the Department of Conservation who are now installing these Bio-loos in a number of DOC campgrounds around Northland.

10 SURPRISE THE JUDGES

Please include, if desired, any more information or attachments that tells your team story to judges, the design community, and the general public.

The biggest vote of confidence for this project has come from an unexpected source – Te Hira teenagers have in the last 6 months started to build their own independent connections to the bach, without parental encouragment. They now make their own arrangements to spend time at the bach with the ShaC interventions perhaps acting as a catalyst for this new generation to see the value in this unique and beautiful environment. If they can in turn strive to preserve and enhance the bach itself, their whanau connection to it and the wider bach community, they will have honoured a five generation tradition and will have laid the foundations for many generations to come.

11 REPORT LICENSE

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