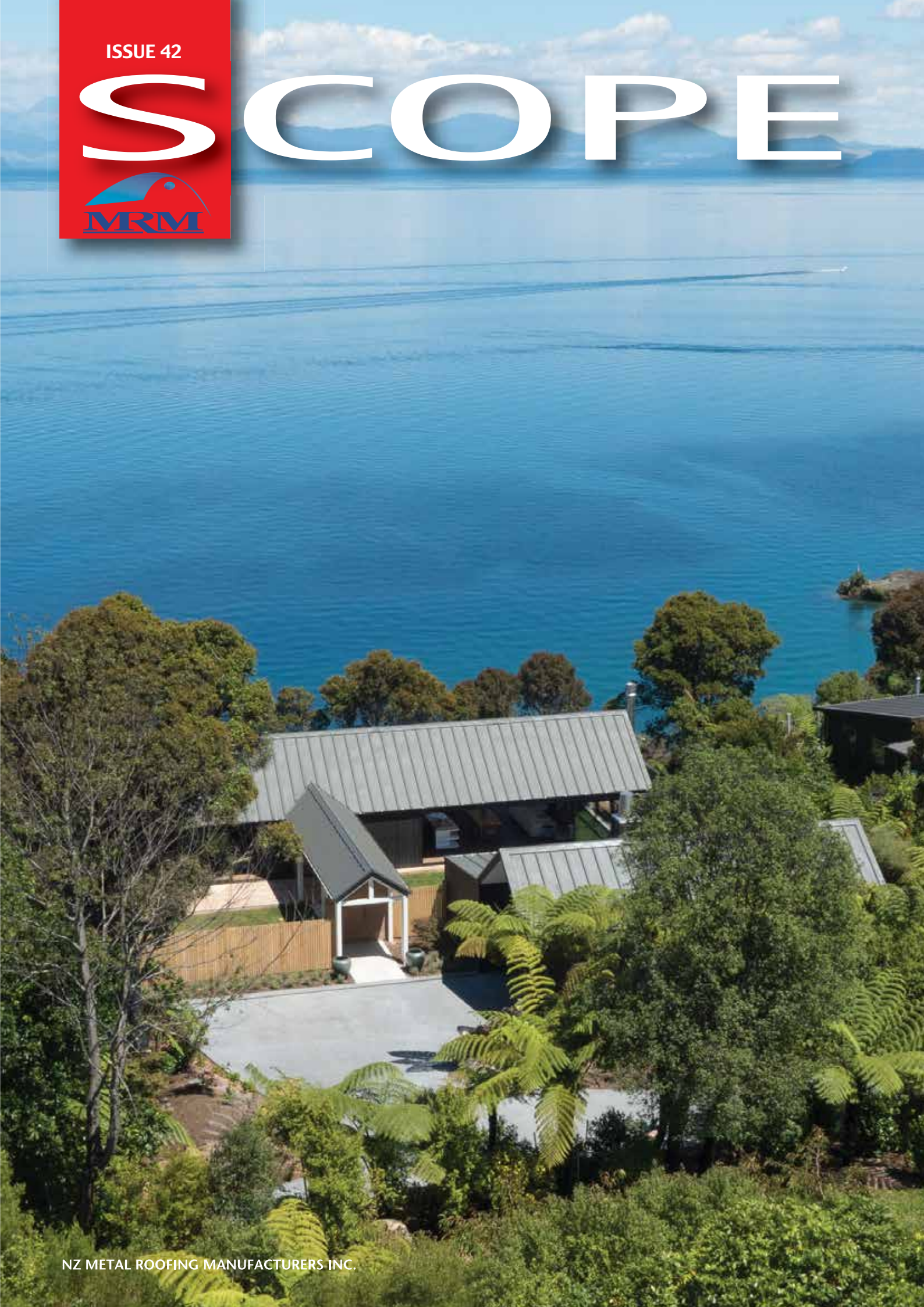
ISSUE 42

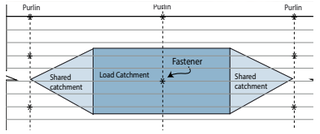
SCOPE



NZ METAL ROOFING MANUFACTURERS INC.

SCOPE

ISSUE 42 August 2016



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TAUPO HOLIDAY HOME

For a young Kiwi/Belgian family living in Hong Kong, having a holiday home on Lake Taupo provides an antidote to apartment living in the fast-paced financial hub.

When Dan Kirton and Sylvie Doclot approached Fraser Cameron Architects, they wanted to build a holiday home on a site at exclusive Whakamoenga Point that could also host extended family and friends from around the world.

Whakamoenga Point overlooks Lake Taupo and is a 24ha gated estate with two private boat ramps, barbecue area, communal club house, tennis court and large tracts of bush reserve and gardens with walkways.

Fraser Cameron says, “We’ve had a long association with the Point and have done a number of enjoyable projects there. Each site has a generous building area and around that is a zone of bush you can’t touch so you end up with a good depth of native bush around the house for shelter and privacy.”

Designing a pavilion stretching along the cliff top with stacking sliding glass doors on its southern and northern sides means the views of the lake and mountains can be enjoyed from the sheltered and sunny grassed courtyard on the northern side of the house. When the doors are pushed right back there is an easy flow from the courtyard through the living area of the house and out to the cantilevered deck, which has a glass balustrade for unobstructed views.

On the northern side of the lawn, a lanai opens out to the green space via stacking sliders. This large living room was designed as a lean-to off the over height boat garage to break up the bulk of the building and add depth to the courtyard.

The Hong Kong family’s property is south-facing with views across the lake to the mountains in the distance. For Fraser Cameron that meant designing a home that made the most of those views while bringing in as much sun as possible. “It’s a fairly typical Lake Taupo problem where you have the views of the lake and the mountains to the south so you have to work out how you can open the house to the view and also open it to sunny and sheltered areas,” says Fraser. “To achieve this we do a lot of pavilion designs so you can see through the pavilion to the views, and a courtyard or L-shaped design also gives you shelter from the wind.”

Fraser Cameron principal Belinda Ellis adds, “Eaveless roof forms were a deliberate choice for this bush clad site and to maximise sun to the outdoor grass courtyard.” That grassed space was a must for the Hong Kong family who wanted to feel lawn under their feet. Creating the flat lawn meant building a retaining wall so the area could be levelled.

The courtyard has a feeling of enclosure as it is flanked by a barbecue area on its western side and, on the eastern side, a covered walkway out to the lanai and garage.

Belinda Ellis says positioning the house was tricky because the waterfront site drops away steeply close to the shore. Because the clients wanted a boat shed and turning circle on flat land, that meant pushing the house as close to the cliff top as possible to provide the necessary space for outdoor living as well

as a more informal, open space with shutters - was properly enclosed so that it could serve as overflow accommodation.

By day the lanai is an airy living space but by night it can become a

On the eastern side of the walkway there is another grassed courtyard connected to the house by a deck. This grassed area has potential to be the site of a cottage to provide more accommodation

bedroom by virtue of a concealed pull down queen size bed. It also has two day beds, an open fire, fridge and large bathroom making it a self-contained space. Behind it is another bedroom and bathroom.

The top level of the main house has a long open plan kitchen/dining/living space with an exposed gabled roof line. An open fire warms this room, which opens on to the deck overlooking the lake.

At the eastern end on this level is a separate bunk room with window seats along two walls that serve as beds. With a TV in here, the family tends to use it as the children’s rumpus room.

Downstairs, there are three bedrooms each with a private deck with lake views. The master bedroom has a walk in wardrobe, en suite and, on its deck, a large outdoor stone bath and shower. The other two bedrooms share a bathroom.

While the house has been designed for the views, it has also been designed to recede into the landscape to be sympathetic to the unique site.

Fraser says the materials and exterior colours have to meet light reflectance values as set out by the developer rules, which, in this case, are enforced by the local council.
He says the clients had specified Calder Stewart Solar Rib® for the roofing because they liked its Euro tray appearance but it does not come with the associated additional costs of a seam formed roof. The roofing can be coated with Photo-Voltaic Laminate technology to produce solar energy although the clients on this project chose not to harness the sun's energy.

Belinda says the choice of roof colour was important to tie the home to its site, and was the subject of a lot of consideration. "The roof colour caused quite a debate with many photos going back and forth between Hong Kong and Taupo. 'Flint' was eventually settled on as a 'green-based' grey appropriate to the bush setting but still referencing a zinc roof.

The spouting is Roofman 150mm 1/2 Round in Colorcote® Flint along with contrasting stainless steel gutter clips for added detail, a favourite design device of the architect."

Black aluminium joinery complements the cladding of the house, which is western red cedar painted black. Detail is worked into the black cladding by using two Herman Pacific profiles: a vertical shiplap and a bevel back weatherboard.

Belinda says for the interiors "a slightly edgy palate with a rustic note was carefully selected, befitting of the holiday house use and brief".

"The clients were quite specific about using plywood lining for the interior walls, and wanting more rugged materials that would suit a young family," she says.

Oak finished floors and cabinetry continue the rustic theme.
The project received an NZIA Award in 2015. The NZIA jury, led by Camden Cummings, noted the challenging conundrum of views and sun occupying opposite compass points on the site.

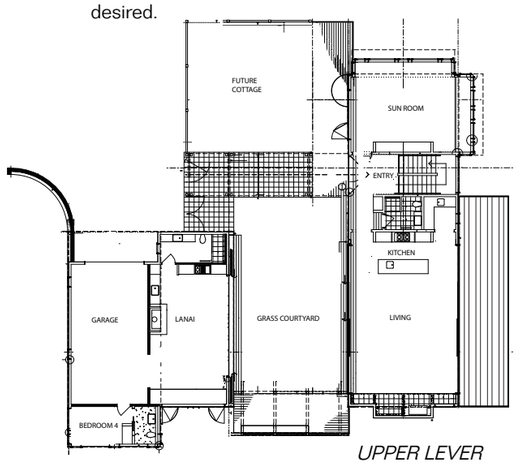
"This elongated pavilion, perched on a Taupo cliff edge with a panorama of lake and mountains for company, solves the problem through extensive glazing on two long sides - a manoeuvre that maximises the opportunities for views form the south and north, while providing a sun-welcoming living court that is protected from the cold southerly wind. Serene interiors draw on the boat shed form, emphasising the elegant exposed trusses and utilising to effect a quiet texture-based material palette, all complemented by the skilful use of concealed lighting".
The house is available to enjoy through airnbnb.co.nz/rooms/5184352

Solar Rib®
Since 1970 Calder Stewart Roofing have been developing innovative products to meet the evolving demands of the New Zealand construction market, supplying specialist materials for everything from woolsheds to industrial warehouses to architecturally designed houses. Solar Rib® is New Zealand's only roofing profile specifically designed to generate electric power through the use of Photo-Voltaic Laminate (PVL) solar panel technology. An attractive profile offering elegant looks, Solar Rib® can be installed without the PVL, with the laminate being added onto the profile at a later time if desired.

Fraser Cameron Architects Ltd

A New Zealand Institute of Architects registered practice established in 1997 by principals Fraser Cameron and Belinda Ellis, Fraser Cameron Architects has been involved with many high quality residential projects throughout New Zealand, of all budgets, from compact cost-effective builds to large homes, and with bespoke and enduring interior fitouts appropriate to the project.

The practice maintains a small office in Taupo providing direct principal service throughout the project, and can offer full services of design, documentation, interior design and contract administration.
The practice has a strong history of successful projects gaining a multitude of regional and national level awards, and part of an established network of service driven building contractors, trades people, product suppliers and lighting designers.



UPPER LEVER *LOWER LEVEL*

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Roofing: Calder Stewart Roofing
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Roofing profile: Solar Rib®
Colour: Flint.

Roofing manufacture:
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StratCo, Taupo,
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Resource consenting:
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Telephone: 0800 501 069

Lighting consultants:
Coombes and Gabbie, Hamilton
Telephone: 07 838 0753

Interior joinery:
Cromptons Joinery, Taupo
Telephone: 07 378 7968

EPL BUILDING CHRISTCHURCH

As a company that makes cutting edge products, EPL wanted a Christchurch head office and manufacturing facility that embodied its drive for innovation.
Elastomer Products Limited (EPL) was founded in Christchurch in 1974 and its extruded rubber and polymer products are used in construction, appliances and electronics, as well as in the marine and medical sectors.

A new building was required after their existing premises were damaged in the Christchurch earthquakes, causing disruption to the business.

Located at the foot of the Port Hills, the firm's new premises are part of a recently established industrial area linking the port of Lyttelton to Christchurch City.

Last year the EPL building won three regional ADNZ design awards (Commercial/Industrial; Commercial Interior Architectural Design; and Colour in Design) and was a winner nationally in the latter category.

Cymon Allfrey, of Cymon Allfrey Architects, says, "The client wanted the building to embody the innovative elements of their business. While it is a manufacturing facility with areas for research and development, testing and distribution, it is also their head office here and they wanted something relatively unique that epitomised innovation."

He says the building is comprised of two forms: the understated, gabled, primary industrial building - a steel and pre-cast concrete structure - and the 'twisted' administration building.

Cymon says the latter is organised by a rhythm of steel portals, each pitched 1.25 degrees steeper than the previous. This allows the roof to gently twist adding to the volume of the building as one moves from the parking area to the main reception space. The roof of the administration building is clad in Calder Stewart Euro-Tray™ providing the tolerance in the sheet joints demanded by the roof twist.

"It's really a series of straight lines with a slight difference in width between the bottom and top of the tray because there's enough tolerance in a standard cap that we didn't need wedge-shaped pans," says Cymon. "The tolerance that was there – it's only a few millimetres really – allowed that shape to happen easily. We had string lines set out for each pan so we knew how much creep they would need to get that effect."
This roof, along with the corresponding dark painted soffit, drapes to create a deliberately cavernous entrance from which subtle changes in height reveal the full volume of the building very slowly, cumulating in the light-filled, two-level reception area to the north.
The remainder of the administration building is clad with painted fibre-cement then wrapped with a powder coated aluminium sheet which has been treated with perforations taken from an image of the neighbouring hillscape. This rain screen detail allows the bold corporate electric blue to be used in a subtle manner.

Cymon says the building planning allows visitors and prospective clients to be welcomed into the commercial office environment and led on operational tours of the site via corridors that navigate the edges of the building allowing an understanding of the process and activity carried out on the site but without entering the highly restricted research and development centre.
The planning of the internal space is largely organised around the 4.5m x 4.5m structural grid creating a generous office proportion. The twisted roof form allows a hierarchy of space to be set up through the variable volume with service and administrative offices to the areas with less volume and senior management, reception, media room and meeting spaces to the greater volume at the northern end.
The internal space is largely finished in an understated palette of neutral tones which act as a canvas for the rear reception wall and the service core finished in the corporate brand 'electric blue' and for product and process display within the foyer area.

A long and slender counter of natural finished oak and white acrylic defines the reception. The form of this counter has been crafted as a nod to the extrusion process of the business. These finishes are utilised within the space to decorate other fixtures including the stair and bar area.

Roofing and cladding supplier Calder Stewart says Euro-Tray™ was chosen not only because of the tolerance between the trays but also because it could

be manufactured on site, a huge advantage on this job as the sheets were too long for transportation.

Calder Stewart says, "All design is a collaborative effort. A robust discussion was had prior to commencement to be sure the end result was exactly as envisaged by us and the client. When designing something outside of the "normal" way of doing it, you need to take the time and advice from fabricators and installers to ensure that it is done correctly. TM Consultants, who were the structural engineers, also played a fundamental role in achieving the end result."

Cymon Allfrey Architects

Having practised in Christchurch for 25 years, Cymon Allfrey established Cymon Allfrey Architects in early 2010. Cymon Allfrey Architects offers meticulous attention to best practice that ensures the company will continue to achieve – and deliver – the highest level of design.

This multi-disciplinary practice specialises in all aspects of design including residential projects, commercial buildings, apartment complexes, retail premises, alteration work and interior design.

"Our aim is to create sound, interesting buildings that exceed the expectations of our clients. Liveable, economical, usable; the key is to express ourselves in a way that is realistic."

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www.caarc.co.nz

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www.roofer.co.nz
Roofing material: Calder Stewart Euro-Tray™ Rollcap ColorCote® ZR8 'Slate'

Eurotray Installer:
CS Roofing Canterbury
Telephone: 03 338 0400
Commercial Roofing Installer:
Graham Hill Roofing
Telephone: 03 343 1030

Main contractor:
Arrow International, Christchurch
Telephone: 03 366 5418

Structural engineer:
TM Consultants Limited, Christchurch
Telephone: 03 348 6066.

Fire and Services engineer:
TM Consultants Limited.

Landscape architect: Chris Glasson Landscape Architects Limited, Christchurch
Telephone: 03 3654599.

Interior architecture: Cymon Allfrey Architects Limited.

Colours and finishes: Cymon Allfrey and John Burt (Working Ideas).

VOLUNTEER NEPAL

At last year's Roofing Association conference (2015) Richard Vetter stood up and said, "I was in Nepal just before the earthquake and loved the place and the people. One of the Villages where I stayed has been flattened by the earthquake and I am going back to help them rebuild their community centre. Who wants to come along?"

Rod Newbold, from Steel & Tube, along with his wife, Rex Harkin, Dion McFlynn from Viking and friends and family of members were "in" and formed the team.

Rod reports on this amazing experience and the contributions, made by Kiwis, to the people of Khunde Village.

The trek started from the airport at Lukla, 45 minutes by air from Kathmandu. This airport is 3 days walk from the nearest road end and was put there by Hillary to help his work building hospitals and schools

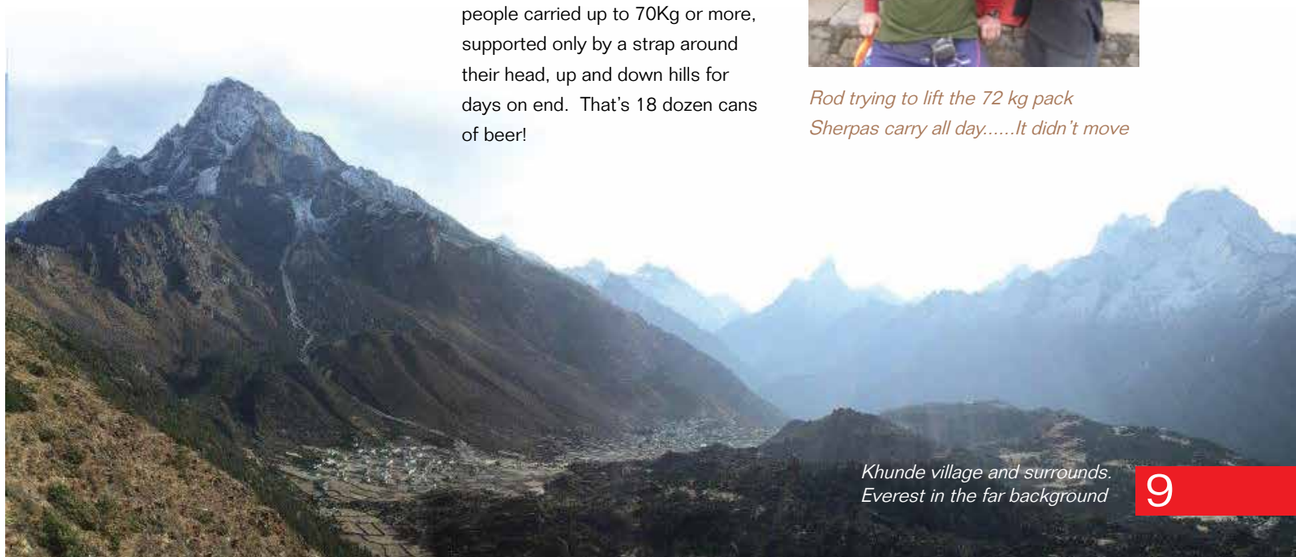
Some of the team. It was a relief to see a herd of yaks cross the high swing bridge behind us before we had to tackle it.

in the valley. Getting there was an adventure in itself, Google "Scary airports" and you will see why.

We set off walking up the beautiful Khumbu valley, steadily gaining altitude. It was amazing to see how much civilisation there was in such a remote area. All we carried ourselves were light day packs. The Sherpas carried the bulk of our gear, these slightly built people carried up to 70Kg or more, supported only by a strap around their head, up and down hills for days on end. That's 18 dozen cans of beer!

Nothing is wasted here. The only thing they can grow at this height is potatoes, which took up the whole of every front lawn, and fires are fuelled by yak dung. Human waste is composted and used for fertiliser.

Rod trying to lift the 72 kg pack Sherpas carry all day.....It didn't move



Khunde village and surrounds. Everest in the far background

After 3 days trekking we arrived at Khunde Village, site of our project. 95% of the buildings here were destroyed by the earthquake, nearly all had been rebuilt in the ensuing 12 months, apart from the Community Hall. (Christchurch City Council, take note.) Helping to rebuild the hall was our project.

We immediately got to work. The walls were already up, constructed from dry laid blocks of granite hand chipped on site from boulders. We split into teams doing roof structure then the roof, wall lining and floors.

The ladies spent the mornings helping to teach English at the local school, and helped with the building in the afternoons.

By the end of 5 days we had the roof on, and the walls and floor half done. We left the rest to the Sherpas, they couldn't wait to use our tools and were right in behind us.

Khunde is at a height of 3,800 metres, (higher than Aorangi Mt Cook), so we certainly felt the effects of height. It is a beautiful spot, surrounded by high peaks, a short walk in the morning gave you a view up the valley at Chomolungma (Mt Everest).

Unfortunately one of our team, one of the youngest and strongest, got altitude sickness and was flown out by helicopter to Kathmandu, where he made a rapid recovery. Luckily a recently built hospital was right beside us. Thanks Sir Ed.

The cost of the build was about USD$100,000, of this we raised about USD$45,000 in donations and the remainder was raised by the Sherpas. ITM were a major contributor of tools, MSL gave us some fasteners and connectors, and Rex Harkin and Peninsular Roofing made significant personal contributions.

The Khunde Community hall. Tools donated by ITM were left for the Sherpas

Some returned to Kathmandu at this point, myself and 4 others continued for 3 days up to Everest Base Camp at 5,300 metres. Not much to see here really, just dozens maybe hundreds of tents strewn along a bleak moraine bank, but it felt like quite an achievement.

As we travelled back down the valley we felt fit and altitude acclimatised, so took the scenic route. As the beautiful scenery unfolded at every corner, changing as we lost height, I felt sad to be leaving such a beautiful country and people. I'll be back.

Sherpas carrying loads.

If you are interested in coming with me in 2018 to work on another project, give me a call.

THE DACHA

Russian meaning for a home away from home

Mt. Gold Place, Wanaka

At the first meeting on site, between the client and architect, they could hardly see the lake view due to the dense vegetation. They had to climb to the roof of the architect's car to see the potential outlook. It was breathtaking. The brief for design and layout then evolved from a repeated phrase..."don't let the house get in the way of the view, it's all about the view."

A long stacked stone wall, inside and outside, is the spine of the house that divides the service and entry side of the house, that faces the street, from the private and glazed side of the house that faces the lake. At street level, the boat and car garages were split in to two separate forms to break up the expanse of size. The garage areas also contain the mud and laundry rooms, plant room, and wine cellar. Glimpses of the lake can be seen from the slotted windows at the entrance porch that is under the two car drive through Porte Cochere.

Through this formidable stone wall, and Corten steel clad door, the house opens up to the views beyond. The guest wing, at the west end of the home, adjoins a central outdoor room providing separation from the main living area, master suite and study located in the East wing. The goal was to allow views of the lake from every room, not only direct views but views through corners and adjoining rooms to capture more of the panorama. Lots of glass, cantilevers, and large spans were needed.

The Guest Wing contains 4 bedrooms branching off the central lounge. Two luxury double bedrooms with ensuites and walk-in wardrobes face the lake view.

Corner windows widen the views. Mirrors were used in the wardrobes reflecting the lake to give the appearance of looking outside. The other two bedrooms are bunk rooms, but these are no ordinary bunk rooms. They are designed as Japanese style sleeping platforms, where the mattresses are on tatami matts that slide, so beds can be arranged as single or king sizes. Each bunk room can therefore accommodate couples, or groups of individuals. The bathroom

arrangement for the bunk room is also unconventional in that the rooms are separated into shower room, vanity room, and WC. With potentially 8 occupants, staying in the bunk rooms, this provided the maximum flexibility in the bathroom arrangement.

The outdoor room faces the lake, yet can be sheltered from the wind by stacking wind screen doors that slide into a cavity when not in use. During the winter, the closing off of the outdoor room, with high clerestory windows and skylights over garden area, creates a greenhouse effect increasing insulation levels in the three, otherwise external, walls of the kitchen, dining, gallery hallway and guest wing.

Verandahs control the solar gain in the summer, let in winter sun, and provide rain shelter over the rooms that open out to the patio overlooking the pool terrace below. The 1.8m wide verandah floats without posts that would obstruct the view. The verandah proportions were carefully designed using computer modelling to calculate the shading effects within rooms during different times of the year. Shade and sunlight simulation movies were emailed to client, in time lapse format, so that they could approve the amount of light and sun planned for each room.

The terrain was a challenge from the outset of planning this project. A small area of relatively flat land was at the top of the site along the drive with no street parking. There was not enough flat area to contain a large scale house and to provide ample space for car, boat and guest parking and turning. The main part of the house had to be built over the steeply sloping terrain. This meant parts of the north facing patio would be up to 3 meters above the existing ground level. With the brief mantra, “it’s all about the view”, in mind a balustrade free solution was needed. To complicate the design the clients asked for a pool. A series of cleverly designed stepped planter boxes provide for safety and allowed the pool fencing below to be screened from the house. The planter elevation eliminated the need for fencing from the lake view side of the pool.

The clients wanted to provide a journey through the site’s rough terrain and indigenous stands of Kanuka. A schist patio was created on the outlook knob, which provides 360 degree views of the surrounding mountains and lake. On the downhill slope the clients wanted to build a hut as a retreat for their teenage daughters. During construction the building was named “The Banya”, meaning a spa or retreat house in Russian. The rustic timber lined internal walls make the space feel warm and inviting. The building form is designed to tuck in to the hillside, blending with the landscape.

Materials

The lines from the interior and exterior were blurred, as materials such as the patio tiles, stonework, metalwork, cedar, aluminium composite panelling, were all consistent.

The solution was the use of cedar cladding on many of the ceilings and interior walls. The ambience of the natural timber gives a relaxing, warm, holiday feel without the pressure of spending free time staining sun beaten weatherboards. Gaboon plywood and cedar T&G is used for exterior soffit linings.

There were strict resource consent conditions that meant that the exterior cladding colour had to be dark and recessive tones. This was be easily achievable with a metal cladding solution.

The clients loved the look of natural cedar exterior cladding but the on going maintenance was off-putting.

The cladding for the exterior became metal, stone, and lots of glass.

Metalcraft Espan roof and wall cladding was selected for the look of its standing seam profile and its hidden clip fixings without penetrations. The Thunder Grey colour from the COLORSTEEL® Maxx® colour chart complied with consent conditions. The Espan product was used on all the main 5 degree pitched roofs, including the 3 degree roofs over the garages that were hidden behind parapet

walls. Membrane roofs were used for the 2 degree pitched roofs over the Porte Cochere, hallway link, and verandahs.

The upper roof over the living area and outdoor room, supported on a series of internally positioned steel portals, appears to float between the two massive stone chimneys. Metalcraft provided architectural spouting in a custom made wide angular profile that enhanced this floating effect. The spouting was fixed to fascias made of aluminium composite panels. The same aluminium composite panels were also used on the interior to line the inside faces of the skylights.

What you don't see

The most exciting parts of this project, are the items that you don't see at all. They are deep in the ground, under the slab, and hidden behind the linings. Controlling energy consumption, harvesting energy from the site and utilising passive design principles. These were all driving forces in decisions of how the house would be constructed.

Eliska says, "I'm particularly proud of the building team, that were not phased by the scope and intricacy of this project and the many challenges of the site conditions."

Substantial earthwork retaining walls were constructed to stabilise level lawn areas that house geothermal heating fields. The underfloor heating for the house, the towel radiators, the hot water cylinder, and even the 10 pair ski boot drying rack are all heated by geothermal energy.

To preserve this harvested heat the house was designed to minimize heat loss. The floor slabs were constructed with double thickness, where the insulation is sandwiched between the structural slab and the topping slab, to eliminate thermal bridging through foundation walls.

Steel posts, which are a good conductor, were exposed and brought to the warm interior part of the house, rather than having them positioned in walls to become cold bridges. Aluminium joinery had low emission glazing and thermally broken frames.

The external walls have Metalcraft cladding with proprietary cavibats on a rigid plywood air barrier fixed to 140mm framing. The walls are lined with Proclima Intello vapour check and airtightness membrane, with an additional layer of 45mm battens with insulation laid to bridge the studs and provide fixing for the interior wall linings. The 45mm battens also provide a service cavity, so that the main exterior insulation could remain intact.

Houses of this scale have to accommodate a large amount of cabling and ducting. It was important to maintain maximum levels of ceiling insulation, and not allow heat loss by penetrating in to this roof space. A Proclima Intello vapour check and airtightness membrane was attached, to the underside of the roof framing, with all services running below this layer. Services were methodically planned to be contained within dropped ceiling areas designed over the hallways and bathrooms and cupboards. The architects design makes use of these bulkheads to take services to areas that didn't have dropped ceilings effectively making them design features.

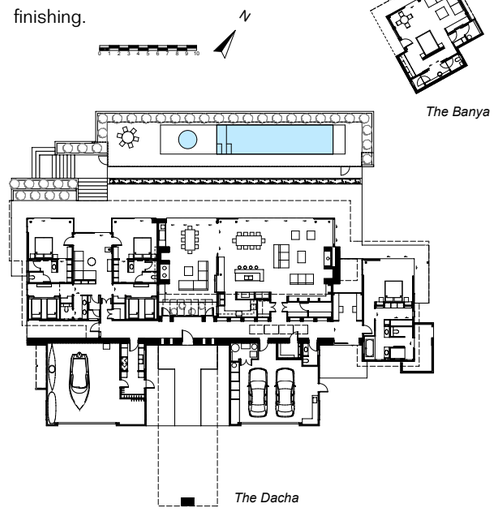
The final phase of this project will be the installation of future photo voltaic panels for generating electricity. Conduit has been put into the roof space and left ready for a installation. The Metalcraft Espan roofing profile allows for the panels to simply clip to the standing seams without additional penetrations to the roof.

The result is a future proofed, minimal maintenance, home that balances the energy resources needed to maintain comfort.

Eliska Lewis Architect Ltd.

A small practice with big goals for each project. The philosophy is to develop designs that are innovative and well crafted, with an emphasis on sustainability. Eliska Lewis has been practicing in Wanaka for over 20 years. The practice specializes in residential projects with complex resource consent applications

3D technology is used throughout planning, to allow clients an interactive design experience, where they can navigate around the site and through the house model that is kept continually current with design developments and interior finishing.



"Many times clients are from out of town or overseas, and this method of communicating the design proves a valuable tool. For the Dacha project at Mt. Gold Place, the entire design drawing phase over a period of 6 months, happened with only two client meetings. The rest were regular Skype meetings, the longest clocked at over 5 hours, with the client and architect navigating through the model together and making notes along the way."

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Metal Roofing / cladding
Manufacturer and Installer:
Metalcraft Roofing Cromwell
Telephone; 03 445 4180

Roof and Wall Cladding Profile:
Metalcraft Espan 450
COLORSTEEL® maxx®:Thunder Grey

Photography: Simon Larkin
Web: www.simonlarkindesign.com

BARRIE MOSS

OBITUARY

Barrie Moss, one of the pioneers and stalwarts of the longrun roofing industry in this country, and lifetime member of the MRM, passed away earlier this year.

Born in 1929 in Gisborne and schooled at Gisborne Boys High School, Barrie started as a plumbing apprentice for Oldings before settting up his own business in 1952.

Barrie's son Roger Moss says that in his early years he did a lot of work up the East Coast, especially for the Mangatu Blocks farms and the Department of Education . "He would leave on a Monday and come back two weeks later," says Roger. "Sometimes he would have to wait for the tides to come right."

With his plumbing business well established, Barrie got into roll forming roofing in 1965, buying his first rollformer from Hayes engineering and many more over the years.

As Barry Bunting recalls, "Barrie ('BJ') had been at the forefront of roll forming in New Zealand right from the start. His machine was commissioned only shortly after the late Owen Marshall's machine in Invercargill, which was the first.

"There was a bond forged by the early roll formers - one with the other - as they got to grips with the idiosyncrasies of their machines and the steel being produced and shipped to them by NZ Steel."

Brian Cosgrove recalls those early days: "My first introduction to Barrie Moss was back in 1966 with myself as a 24-year-old and Barrie in his mid- to late-30s when the Corrugated Iron Manufacturers Association was being formed. Ted Howarth, of Dimond Industries Ltd, in Wellington had invited all recent purchasers of longrun corrugated iron machines and any other current manufacturers with machines to a meeting at the Shaw Saville Lodge in Kilbirnie, Wellington later known as the White Heron Lodge. The machines except one had all been manufactured from Hayes Engineering Ltd in Rotorua. These machines were to set a new system in metal roofing manufacturing in this country and in fact the world."

Brian adds, "Barrie was an inaugural member of the Corrugated Iron Manufacturers Association, which had around 12 founding members. He was always a strong supporter of the Association and attended the AGMs each year right through until the last five years or so of his life.

"Barrie was a very valued member of our Association, well supported by his lovely wife Jill and son Roger, who also attended the conferences."
Duncan Shand says he first met Barrie when working as a sales rep for Metalcraft in Palmerston North.

"Later, when I started Hawke's Bay Longrun in Napier [1970], we kept in touch. Barrie became a client when we sold him L E Ridging as he did not have room for a ridging machine in his already packed plumbing and roofing workshop. It took Barrie about five years to change from Imperial to Metric but he did eventually start ordering the ridging by the metre!"

In 1974 Barrie upgraded his eight corrugation rollformer to a Dimondek 200 machine, which was made by Ted Howarth & Co.

Dave Gellatly says Barrie became a great friend over the years and will be missed by all in the industry.
"Barrie was one of our industry pioneers who I first met some 30-plus years ago when I had just started in roll forming," Dave says. "His knowledge and wisdom he freely gave and this was the start of a great relationship with BJ Moss Ltd that continues to this day."
Gordon Taylor, who first met Barrie at a conference in 1970 at the White Heron Lodge in Wellington, says he was fiercely independent but "always prepared to help fellow roll formers".

"If you were short of coil, he would lend it to you," Gordon says."He was very close to fellow independents, and always prepared to try new ideas."

Barry Bunting says he first visited Gisborne and Barrie Moss while employed by NZ Steel as their Central Region Manager out of Wellington in 1985.

"BJ Moss was a client of some of the then mill agents, who were the equivalent of today's Sales and Marketing team at New Zealand Steel. Regular meetings at New Zealand Steel for the mill agents of which there were four at the time. - A M Satterthwaites, Joseph Nathan, Lysaghts and my employer of the time Richard Thomas & Baldwin - often had a rollformer or two in the vicinity. Barrie was one who often 'dropped in' at Glenbrook in the early days.

"Having New Zealand Steel virtually on their doorstep was encouragement enough to get BJ and his 'cronies' like Gordon Taylor (Tauranga) and Gary Irwin (Auckland) to visit the mill and talk to the people who influenced their deliveries and quality. While the 'mill agents' were supposedly the first point of contact for a roll former with the mill, these lines of demarcation were often (understandably) abused. Mainly due to delayed shipments and the roll formers' need to get steel 'on the road'. Friends in high places were as valuable as good stock way back then."

Brian Cosgrove says Barrie's influence on and input into the industry will be missed.
"Barrie was treasured for his humour and honesty throughout his years in business especially in our Roofing Manufacturing Association," Brian says. "Barrie always had a smile on his face and was like an unelected patron of the Association who always was very well respected. His opinions and statements at meetings were well received because we all knew he spoke from experience and from the heart, with facts, not a lot of hot air."

Son Roger Moss says the heyday of his father's business was probably the 1970s when he employed 35 staff. In recent years, the business has moved away from plumbing and gone more into manufacturing.

Roger says his father was also behind building projects and subdivisions around Gisborne. He built spec houses and was involved in the construction of packhouses and coolstores as well as buildings for government departments, banks and retailers in the city.

One of his subdivisions of 130 lots has streets named after his wife, children and grandchildren.

Barrie and Barry Bunting also shared a common interest in horse racing.
"He raced horses for his daughter Joanne and was her patron at her stable," Barry says. "Barrie used to joke that the horses were keeping him poor but were keeping young Joanne happy."
"He raced and won several important races but it made no difference to 'BJ'. Win, lose or draw his smile was the same and his attitude to his competition was always gracious and sympathetic – when he was on the winning side."

Barrie, who died in March of this year, is survived by his wife Jill, five children and nine grandchildren.

LORRAINE MILLS

CEO Lorraine Mills – gone too soon

By Rooflink Editor, Jenny Bain

Words seem inadequate during times of loss and the sudden passing of CEO Lorraine Mills was a shock, not only to her family but to all who knew her at a professional level in the roofing industry.

We all assume that we have plenty of time in life but for Lorraine it came to an abrupt end on 19th April, leaving an industry and the Roofing Association of New Zealand members and staff stunned and saddened by her premature passing at the age of 66. She was robbed of a retirement so richly deserved – should she even have been persuaded to take one.

Testament to the high regard in which Lorraine was held across the roofing sector was reflected in the large numbers gathered at North Shore Crematorium for her funeral on 26th April and the flood of messages received from members around the country.

It was well known that Lorraine had struggled with poor health for many years, but in the weeks leading up to her death, following a brief spell in hospital, she was doggedly persevering at the computer with the early planning and management of this year's conference. She was completely committed to RANZ.

Lorraine's passion and enthusiasm for the association have been a major reason that RANZ enjoys the respect and recognition it now enjoys. Her professional approach was admired by all in the roofing sector – in particular the contracting fraternity. She genuinely cared for members and shared a valuable working relationship with the Executive board. Her service to RANZ was never off her radar.

At the time RANZ was formed the founding members had clear objectives and goals in mind. It was a major coup in 1994 when Lorraine was seconded on contract from the Auckland Master Plumbers to manage the affairs of the newly formed trade association. Her focus was on professional achievement in the industry, working with thoroughness and precision.

In 1998 Lorraine became the full time CEO with RANZ having its own headquarters in Albany and the CEO continuing to provide an array of functions single-handled until additional staff were employed from 2001.

The annual conference was always a major focus for Lorraine and her commitment to this year's event is reflected, once again, in the quality of the material generated and the excellent programme set down – much of this achieved in the last weeks of her life.

Members will have received the conference pack with details of what's in store for this year and it goes without saying Lorraine would encourage members to avail themselves of this valuable opportunity to expand their knowledge and network with others in the industry. Lorraine had an excellent memory and never forgot a face. Conference was always an opportunity for her to catch up with members from around the country. Life Membership conferred at the 2014 RANZ conference at SKYCITY Auckland Convention Centre Lorraine became a Life Member for her service to the association and its members.

Over the years the CEO has been supported by a very competent executive who in working closely with her always admired her meticulous attention to detail across all facets of the role. RANZ staff members Colleen Waters and Jenny Bain will attest to her surprise and thrill to becoming a Life Member. It was the best kept secret in the history of the association – goodness knows how we kept that from her.

Some of the many Tribute messages received at the RANZ office.

"Lorraine was a tireless CEO as we have all more than once commented on. But as we know she was much, much more than that. Lorraine was also the backbone to the roofing installers in New Zealand, trusting and also very trustworthy, honest and to the point, and she knew when the truth stopped and bullshit started.

"She had a great sense of humour, loved a good joke and always had a smile on her face and spare sneaky cigarette when we were away at conferences. I have said before that I mark the year by the roofing conference and one of the main reasons for this was to catch up with my friend Lorraine and have a good old yak and a bit of a laugh" – ***Kerry Andrew, Ampelite (NZ) Ltd***

"We were both surprised and saddened to hear Lorraine has passed away and our thoughts are with you. I had a good conversation with her earlier in the month and whilst she was clearly trying to manage her pain I had no idea her condition was life threatening.

"RANZ has been her passion for the last 20 odd years and she is going to be missed. She was a worker until the end" – ***Chris Kay, Marketing Manager, New Zealand Steel Ltd***

"I am happy Lorraine's efforts were formally recognised with the life membership as she undoubtedly has been a huge factor in the growth of our industry organisation" – Terry Hunt, TH Commercial Roofing Ltd, Tauranga
"So very sorry to hear of Lorraine's passing. She was a great lady with a lot of mana. Kia kaha, kia maia, kia manawanui" – ***Rena Schuster, Project Unite Ltd, Hamilton***

"For all these years, no matter how many times we (the old guard), discussed our concerns about Lorraine's commitment to RANZ in terms of the hours she spent well beyond what should be expected of anyone, how she was consumed for the well being of RANZ and how she seemingly ignored all the other health warnings that surrounded her – NOTHING would have prepared us for this" – ***Paul Wayman, RANZ Life Member, Wayman Roofing Services Ltd***

"Lorraine has been dedicated to the industry and to RANZ for such a long time. She has been instrumental in driving our industry ahead with so much passion. She will be such a hard act to follow. Just the lovely way she welcomed all members of the association – young/old, new/long time. The RANZ conference has always stood out for being such a friendly and welcoming event and she played such a large part in this" – ***Jennie Gillespie, Topline Trade Services Ltd***

"I would like to pay my respects to a beautiful woman, friend and industry leader" – ***Melanie McIver, Brick & Blocklayers Federation of New Zealand***

"Please accept our condolences as I know Lorraine was very well respected in the sector and was also supportive of much of our work" – Paul Hobbs, Registrar Building Practitioner Licensing
"We at Steel roofing had the greatest respect for Lorraine and as an industry were extremely fortunate to have her on our team" – ***Brent Botha, Steel Roofing Ltd***

"She will be a great loss to us all" – Keith Ivey, CS Roofing Southland Ltd
"Words cannot express the sadness at Dimond for the loss of Lorraine" –
Philippa Morris, Dimond

"RIP to a great lady who was loved and will be missed" –
Andy Stevens, Steel & Tube, Tauranga

NAILING PATTERNS FOR CORRUGATE

We have revised the requirements for fastener patterns in Corrugate. The current table in E2/AS1 is conservative at one end of the scale, and overstated at the other, and will be reviewed in line with the COP.

Use one pattern over the whole roof

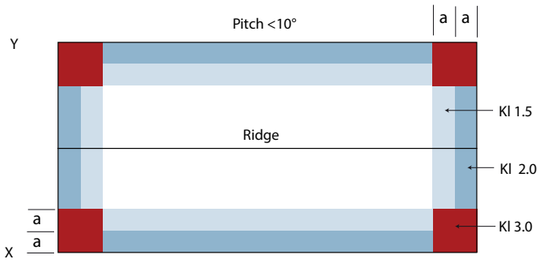
The current Code of Practice has no simple recommendations for nail pattern requirements to houses (buildings built in the scope of NZS 3604). To arrive at one, you have to convert wind speed to kPa, convert this to serviceability (which it doesn't advise you on), and refer to the Load Span graphs.

On engineered buildings including houses in SED wind zones, the local pressure factors vary from 1.0, 1.5, 2.0, and 3.0 depending on their location.

The COP addresses local pressure factors by saying to reduce end spans by 1/3rd. This isn't correct, local pressure areas take up large areas of an average house roof. Fortunately NZS 3604 simplifies this by applying a factor of 1.5 over the entire roof.

Local Pressure (Kl) factors as per AS/NZS 1170

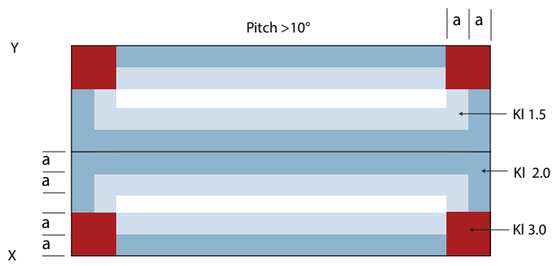
a = Lesser of:
Building Height, or
0.1 x Building width, or
0.1 x Building length



Pitches below 10° do not have local pressure factors at the ridge

Local Pressure (Kl) factors as per AS/NZS 1170

a = Lesser of:
Building Height, or
0.1 x Building width, or
0.1 x Building length



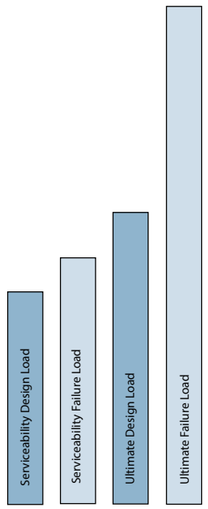
On smaller roofs the local pressure factors comprise the majority of the roof

For pierce fastened profiles use serviceability design loads, not ultimate design loads

Why do we use serviceability loads? In building design, load calculations are made for ultimate design loads (when the roof would blow off) and serviceability design loads, (when the roof will permanently distort.)

An ultimate design load is about 1 ½ times the serviceability design load. In testing we find that ultimate failure loads are about twice serviceability failure loads. Therefore if a pierce fastened profile passes a serviceability design load test for a particular design, it will easily exceed ultimate deign loads.

Typical serviceability failure. Distortion around fastener lead.



Our load span graphs are based on serviceability because ultimate failure loads are very high

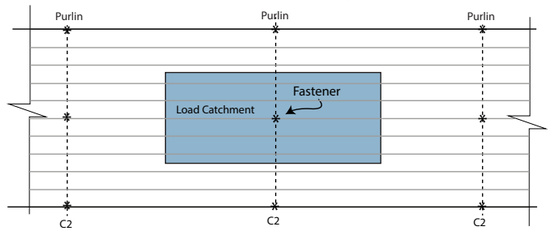
Use the same fastener pattern on every purlin

It is intuitive that if a given fastener pattern is marginal for a situation, then alternating rows with denser fastener patterns will give greater resistance. However when you observe a wind uplift test you can understand why doing such can be counter-productive.

When a symmetrically fastened sheet is under uplift load, the unfastened crests bow upwards for the entire length of the sheet, the pressure being shared by the adjacent crests' fasteners. Put a fastener into that otherwise unrestrained crest, and that fastener will be trying to resist uplift of that crest for the entire length of the sheet.

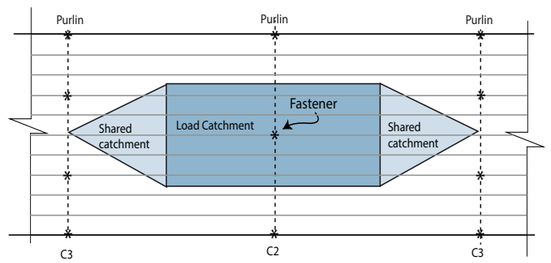
Our generic testing indicates that asymmetrical fastener patterns will provide similar load resistance than the lesser of the two patterns on its own would provide. In some cases they may even provide less.

Symmetrical fastener pattern



With a symmetrical pattern all fasteners share an equal catchment

Asymmetrical fastener pattern



A fastener through a crest which is not fastened at adjacent purlins has a greater load catchment with asymmetrical fastener patterns than when the patern is symetrical.

New fastener pattern codes represent the number of fasteners per sheet

The new Load Span graphs for Corrugate are a result of new testing on spans down to 600 mm with 2-5 fasteners per sheet.

New codes denoting fixing patterns will reflect the number of fasteners per sheet, i.e. the current fixing pattern C2 with 4 fasteners per sheet will now be coded C4, C3 will require 3 fasteners per sheet, etc.

Load spreading washers are not included in the new table. Generally, if C4 fastening in .40 material will not make it, you are better going to .55 G500 material.

The new load span graphs show NZS 3604 wind zones

The new fastener tables will show the relevant Wind Zone from NZS 3604, as well as the kilopascal values. That will be easier for both roof installers and compliance officers alike.

Gone will be the conversion table from wind speed to pressure. The calculation used includes values for roof self-weight and internal pressure (Yes even lined houses have internal pressure). It is converted to serviceability load, so is only relevant for pierce fastened products.

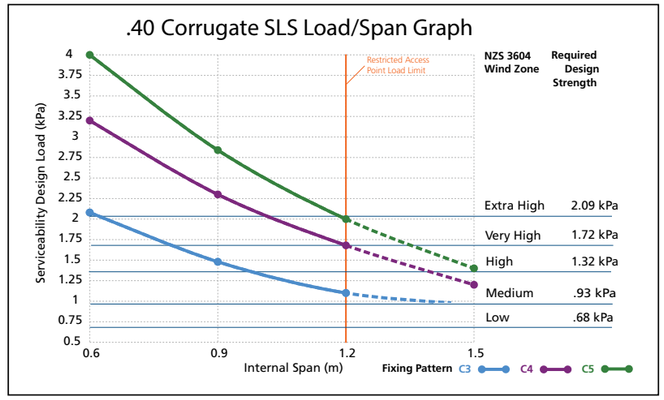
Otherwise, Ask the designer for the serviceability design wind loads.

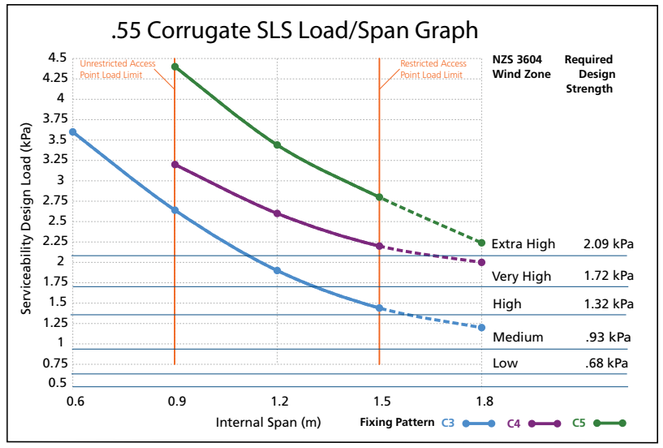
Why ask the designer to do it? Because calculation of wind pressures is very complicated, even the experts can arrive at some quite different calculation results for the same job. The design loads have already been calculated by an engineer and agreed by the TA prior to the consent being issued. No need to do it again.

If a designer specifies that fastener patterns should be based on a given wind speed, ask them for a roof plan giving purlin spacing and serviceability design loads. (Or ultimate loads in respect of clip fastened products.) Ultimate loads can be converted to serviceability loads (if necessary) by applying a factor of .71 in all parts of the country.

Key Points

- For NZS 3604 designs quoting a Wind Zone, use the new nail pattern guide.
- In Very High and Extra High Wind Zones, it is worth considering .55 mm material rather than .40 mm material with very dense fastener patterns
- If a design quotes wind speed in m/s, ask for a roof plan showing design loads and purlin spacing
- Apply Serviceability loads for pierce fastened products, Ultimate loads for clip fastened profiles.
- Fastener patterns on NZS 3604 buildings should be consistent throughout the roof (excluding top and bottom rows)
- Fastener patterns on other buildings should be consistent on consecutive purlins within a pressure area





Material Thickness (BMT)	Internal Span	Wind Zone to NZS3604:2011				
		Low	Med	High	V High	E High
0.40	0.6	C3	C3	C3	C3	C3
	0.9	C3	C3	C3	C4	C4
	1.2	C3	C3	C4	C5	
0.55	0.6	C3	C3	C3	C3	C3
	0.9	C3	C3	C3	C3	C3
	1.2	C3	C3	C3	C3	C4

C5 5 Fasteners per sheet. Hit one, miss one

C4 4 Fasteners per sheet. Hit one, miss one, hit one, miss two

C3 3 Fasteners per sheet. Hit one, miss two, hit one, miss three

SCOPE NEWS AND VIEWS

How to use the new steel credit (Mat-8) in Greenstar rating for your new building

In the last issue of Scope we described how you can finally claim Greenstar points for use of steel in your building design without the requirement for post-consumer recycled content. After several years of discussion the new Mat-8 Steel v3.0.0, now requires as a pre-requisite that 90% of the steel used in the building comes from a "Responsible Steel Maker".

This means the steel making facility must have:

- Valid ISO 14001 Environmental Management System (EMS) certification or Enviro-Mark NZ Diamond level certification; and
- Be a member of the World Steel Association's Climate Action Programme

Having met this pre-requisite, up to three points can be awarded for steel roof or wall cladding under Criterion A "Product Sustainability", which can be demonstrated by one of several additional initiatives, including -

- Third Party Certification

And you can then get up to 3 points as follows

- 1 point when at least 30% of all steel used complies;
- 2 points when at least 60% complies; and
- 3 points when at least 90% complies.

The only New Zealand steel manufacturer, New Zealand Steel, provides ZINCALUME ® unpainted and COLORSTEEL® painted steel on ZINCALUME ® base. Pacific Coil Coaters makes ColorCote® painted steel also on ZINCALUME ® base.

Members of NZ Metal Roofing Manufacturers Inc use all three products, (ZINCALUME ® and the two painted products using ZINCALUME ® as a base) for making high quality roof and wall cladding products and rainwater goods. Metal tile manufacturers either use ZINCALUME ® as a base or use COLORSTEEL®.

New Zealand Steel's steelmaking facility complies with the prerequisites for Responsible Steel Maker.

New Zealand Steel has used the Third Party Certification route to demonstrate Product Sustainability and has chosen ECNZ (Environmental Choice) to obtain an Eco-Label Level A, which under Mat-8 provides the maximum weighting of 1 to the points.

In 2015 ECNZ reviewed EC41-09 and replaced it with EC41-15 which recognises the oxygen steelmaking route and covers Flat Products as well as Long Products, and NZS made a submission to the DRAFT EC-41-15 Specification in June 2015.

NZ Steel was successfully assessed to EC41-15 in March 2016 and its products which carry the ECNZ label can be found at http://www.environmentalchoice.org.nz/specifications/ec-41-15/. This covers currently ZINCALUME® which is used unpainted or painted as COLORSTEEL® or ColorCote® ® as above.

This means that using NZ Steel's ZINCALUME ® alone or as a base for coated NZ made roof or wall cladding and rainwater goods qualifies for claiming up to 3 points for Greenstar rating under Mat-8 : "To encourage responsible sourcing and the reduction of environmental impacts of steel building materials" .

Jonathon Telfer receives his award from Rob Lawson, Key Account Manager of the Ross Roof Group.

Telfer Roofing wins metal tile award

Jonathon Telfer of Telfers Roofing, Kerikeri is the winner of the 2016 RANZ Professionalism in Metal Tile Installation Award, sponsored by Metrotile.

He received the award at this year's RANZ conference, held at SKYCITY Auckland Convention Centre, judge Des Cowperthwaite of NZ Roofing Consultants Ltd commenting on the exceptional quality of workmanship from this year's entries.

Telfer Roofing is 100% involved in the residential sector in the Far North where Jono has worked as a roofer since leaving school, with a few breaks in-between.

Says Jono: "The most satisfying aspect of winning this award is being recognised for the quality of our installation: it has been a lot of hard work to attain this level of competency and we can now reap the benefits with new marketing opportunities".

Joint directors of Telfers Roofing, it was Jono and wife Janine's own new home that was nominated for the award, an architecturally designed, 42m long, single level residence featuring a ridgeline on the same level throughout involving various changes to the roof plan to accommodate certain pitches and valleys.

Joint runners-up were Chris George (Cooke Roofing Ltd, Hamilton) whose work was exemplary while Trevor Mason (Mason Roofing, Rotorua) had to remove 12 tonnes of concrete tiles before re-roofing a hacienda-style home with metal tiles in the Bay of Plenty.

High Performance Vent Solutions for Builder's Own Home

Extraction and sanitary vents from Metrotile efficiently remove moisture from the home, ensuring a healthier atmosphere for the occupants.

There is no simple answer to in-house ventilation. As BRANZ Building Physicist, Stephen McNeil stated in a recent article: "sufficient ventilation is crucial as our homes become more airtight. A mix of passive and mechanical options can work well, but all designs should start by getting the source extraction measures right."

It's about the whole system and how its design efficiently releases moisture from the building.

Facing the same issue with in-house ventilation, David Easton, a builder by trade, is building his own home in Bombay. When David talked to Scott Harris, an experienced roofer, on how he can address this kind of issue, Scott recommended Metrotile's integrated vent solutions. The vents are integrated with the roof tiles and offer a replacement for traditional penetrations, without the reliance on flashings or silicone to remain weathertight for the life of the structure. "I'm happy to choose the integrated venting system," says David, "as a builder, I don't need to worry about the soffit for an air outlet, and there's no need for my plumber to climb onto the roof to seal it."

There are two extraction vents (HV160) and two sanitary vents (HV110), which help to efficiently remove moisture from David's new home. He said ventilation must be watertight and the integrated design with Metrotile's interlocking roof tiles are the perfect solution.

The Extraction vent is designed to provide an integrated outlet for both passive and mechanically vented rooms. It is an ideal outlet for bathrooms, the kitchen and laundry extraction systems, but will work equally well as an outlet for any passively ducted areas where the release of moist air from the structure is desirable. It is far preferable to after-market mushroom type roof vents that require a penetration in the roof and additional flashings to retain the roof's weathertight integrity.

Metrotile also has a roof vent — LV75 Roof Space Vent which is designed to provide an integrated outlet for the passive release of moisture laden air from the roof space. When used in conjunction with venting at the eaves, it creates a simple in / out airflow pattern to adequately ventilate the roof space.

Roof: Metrotile Shake profile
Colour: Grey Friars
Builder: David Easton
Phoenix Builders Ltd
Mobile: 027 289 5176
Roofer: Scott Harris
SH Roofing Ltd
Mobile: 021 424 542

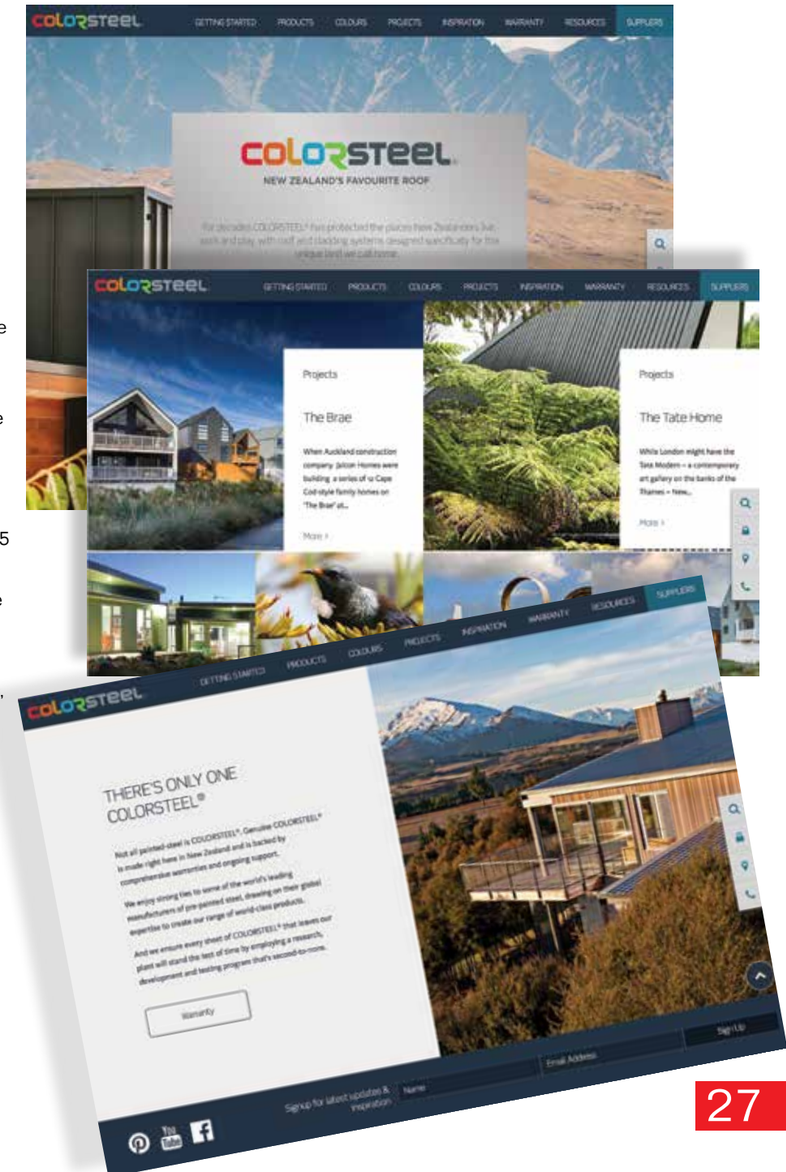
New website helps sell the COLORSTEEL® story

The team at COLORSTEEL® are committed to helping their partners grow successful and enduring businesses. And through their new website you'll find all the resources and information you need to do just that!

The new website offers a variety of tools to help you guide your customers through the decision-making process. These range from samples and swatches to articles on everything from colour rules to inspiration.

They have also gone to great lengths to create a suite of technical resources that are both highly informative and easy to use. They are constantly updating these resources, adding fresh content as new products are launched, new research is published, and new innovations are developed.

Don't hold back, take a look around - www.colorsteel.co.nz



WAIHEKE ISLAND

Having lived on Waiheke Island for more than 20 years, architectural designer Claudia Lapp is familiar with its often challenging topography.

But for this Oneroa site the challenge was more in getting the most out of a home that would have a west-facing orientation to capture the sea views.

Claudia opened her own practice on the Haruaki Gulf island after emigrating from Germany in 1994, where she worked as a registered architect. 12 years ago she joined with fellow architectural designer Ole Toft (Barch) to form Lapp & Toft Architecture Ltd.

It was through their work on the island that the owners of this Oneroa site came to them with a specific brief for their home.

"The clients were really clear about what they wanted to achieve" Ole says. "And we use a questionnaire that we get our clients to complete, which seems to pull out the important things the clients want." The clients also supplied a scrapbook with ideas & photos and the detailed brief was established in several design meetings.

Ole says that for Waiheke it was "a fairly flat site but close to the edge of a steep embankment. The access was good, so site related issues were pretty straightforward".

Their clients wanted a home of around 200sq m with the majority of the living spaces and bedrooms to face the western sea view, and for the home to have high sloping

ceilings, clean and contemporary living spaces, and provision for art work to be displayed.

An expressive roofing profile was part of the brief, as was contemporary building materials with

Passive solar features including the use of thermal masses were a key element as were efficient space and water heating systems. Two heat pumps service the under-floor heating and the hot water system.

Claudia says, "With a need to capture the sea views on the western elevation while

morning sun. Covered porches above the patio and the deck facing the views provide shelter for outdoor living year-round.
"A high roofed entry hall, separating the living area and the bedroom wing opens up to the view, as do all the bedrooms and the rumpus room."

a selection of cladding surfaces. The clients wanted an easy flow between the interior and the deck areas facing the sea, accessed by all bedrooms, as well as covered porch areas on the east and west elevations to create morning and afternoon outdoor spaces. An outdoor patio off the dining space was to be protected from prevailing southwest wind to provide an alternative entertainment area as well as access to the barbecue and vegetable and herb planters.
One bedroom was to be designated as a multi-use office/guest room/ living room extension.

optimising the passive solar aspects, a gullwing roof design provided the most desirable solution."

She says Calder Stewart's Solar Rib was chosen to accentuate the roofline with its "attractive roofing profile offering a strong linear pattern", with Solar Rib, Photo-Voltaic Laminate (PVL) solar panel technology to be added at a later stage.

Claudia adds, "This four-bedroom home features a spacious kitchen/ dining/living area oriented towards the sea views but also a private patio area protected from the prevailing south-westerly winds, receiving the

Ole says the house has a strong, almost commercial presence and one of the most noticeable features is the glazed gallery that runs along the eastern side of the home adjacent the main entry..

He says, "We created a gallery for artworks and to bring a lot of light into the bedrooms and as a space it does lead to the bedrooms quite elegantly. The fenestration along that length was important with the long narrow joinery along that hallway." The horizontal fenestration scheme to this elevation was important, with the stacked narrow joinery units accentuating the corridors length."

Lapp & Toft Architecture Ltd.

Set up in 2004 by Claudia Lapp and Ole Toft, Lapp & Toft Architecture takes a team approach to all projects, with a commitment to exceeding client expectations on design, service, delivery and quality. "While we provide technical and design expertise, the clients are continuously involved in the journey that is the design process, to ensure a design that satisfies their individual needs".

Claudia has had a lifelong interest in sustainability. She studied architecture in Germany, graduating in 1985. From 1985 to 1992 she worked in different German architectural practices, in each practice her work focused on ecological building/sustainable design.

Ole studied Architecture at the University of Auckland, graduating in 2003. Prior to that he worked as a building contractor for 10 years, mostly on residential builds and alterations to villas.
Before commencing practice as Lapp & Toft Architecture, he worked for an established architect's practice.

Lapp & Toft Architecture,
Telephone:09 372 5118
www.lapptoft.co.nz

Roofing manufacturer:
Calder Stewart
Telephone: 0800 333 670
www.calderstewart.co.nz
Roofing: Calder Steward Solar Rib
Colour: Ironsand
Gutter & down pipes:
Colorcote ARX® Ironsand

Roofing installer: Mike Dodds
Plumbing & Roofing, Waiheke Island
Mobile; 021754712

Internal Box Gutter membrane:
EQUUS De Boer DuO
Installed by Gunac,
South Auckland GME Ltd,
Telephone: 09 278 6428

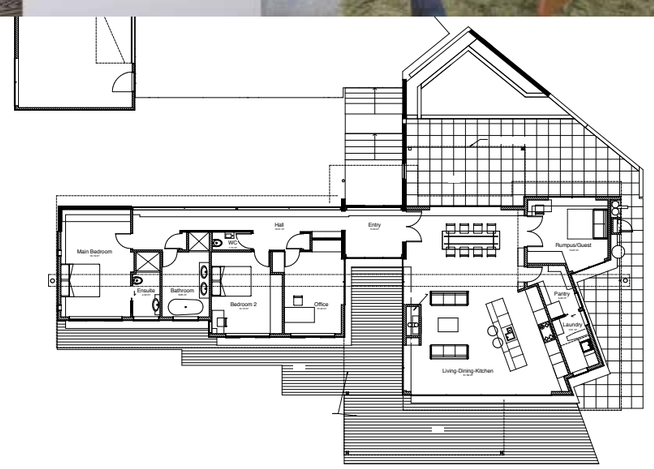
Porch roofs:
PSP, ClearVue Polycarbonate
Telephone: 09 274 1800

"All bedrooms and the rumpus room feature clerestory windows with eaves over, to allow the morning and midday sun to enter as desired," says Claudia. "The concrete slab and concrete block walls serve as a thermal heat store providing consistent ambient temperature. A gas fireplace features in the living room and can be used during the colder months. Together with the thermal insulation, which exceeds NZ Building Code requirements, and the use of low toxicity building materials, an even temperature and healthy living environment was achieved."

The clients wanted the house to have a colour scheme sympathetic to the environment and to appear anchored within it.. Concrete slab foundations, concrete block walls, a low deck and courtyard elements help it to feel part of the landscape, while vertical cedar shiplap weatherboards treated in a palette of earthen colours were selected to complement other aspects of the building. Landscaping contrasts with the earth colours of the house.

Exterior Titan board is painted in Resene Lumbersider CoolColour tinted to Resene 'Oilskin', complemented by Resene Lumbersider CoolColour tinted to Resene 'Ironsand' on fascia boards and Resene Lumbersider tinted to Resene 'Quarter Truffle' on the fascia lining. The exterior palette is finished with Resene 'Stonehenge' on the pergola.

The interior colour palette becomes lighter with Resene Zylone Sheen waterborne low sheen tinted to Resene 'Wan White' on the walls and ceilings, and doors in Resene Lustacryl semi-gloss waterborne enamel tinted to Resene 'Triple Sea Fog'.



WHAREKAI, UNITEC MARAE

When Auckland's Unitec opened a marae on its Mt Albert campus more than seven years ago, it was a milestone for the institution.

Te Noho Kotahitanga was officially opened on Friday, March 13, 2009 with the wharenui (meeting house), called Te Ngākau Māhaki, at its heart.

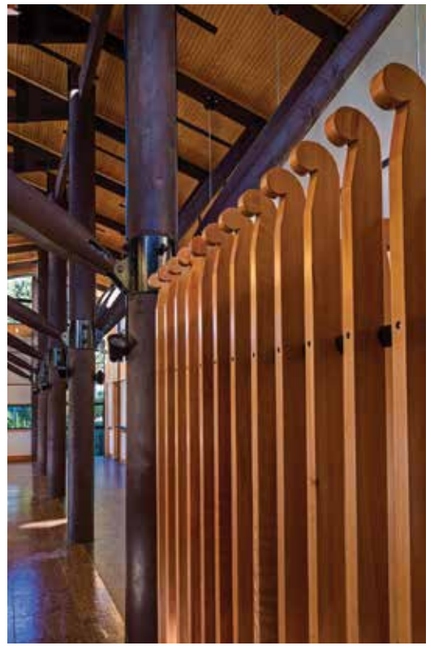
But it wasn't until the Wharekai (dining hall), called Manaaki, was completed that the development was finished and felt whole.

Hospitality towards guests is at the heart of Maori custom so the 200-seat dining room and purpose-designed kitchen allows the marae to host visitors in the appropriate manner.

Architect Alastair Kay says the Wharekai was designed to reference the buildings either side of it – the Puukenga building (a Maori staff and student centre) and the Wharenui - and to form part of a concept for the marae developed by master carver Lyonel Grant of a bird-headed Manaia reclining on the land. A Manaia is a communicator between the spirit and earthly worlds and is a guardian against evil.

"The concept of the marae was initially established with the Wharenui forming the head of the Manaia," says Alastair, who was with Kay and Keys Architects at the time but is now with Ministry of Architecture + Interiors. "Our design for the Wharekai located and shaped the building to evoke the idea of the creature's reclining body."

The diagonal arrangement of the oiled cedar weatherboard cladding ties it in with the other buildings, as does the COLORSTEEL® Endura roofing in 'Karaka'.



Alastiar adds, "In our response to the site we were also struck by the idea of the Marae being in openness at the edge of the bush. The concept of the people sitting facing the Marae, sheltering under a cloak became a parallel idea to that of the Manaia.

"The connection to the open space of the Marae was important and so the building was designed to open generously to the Marae and to form an active edge that would be used by the people."

"We elected that the new building would follow the existing buildings in form and materials and aim to tie the adjoining buildings together into a set," Alastair says. "We were sensitive to the ethos of Maori and their respect for the land and resources. We designed the building to sit lightly on the land, to be constructed from natural materials, to be naturally ventilated and cooled and to celebrate the evidence of the hands that made it."

He adds that they approached evoking the Manaia in the building design in the same way that a carver might emphasise different features to bring the creature to life.

"The internal structure can be seen as the spine and skeleton and also the people sheltering," Alastair says. "The ceiling drapes a skin over the skeleton and is the cloak over the heads of the people. The outside shape is softened to form the body. The curved stone wall forms the shoulders. The sharp shapes of projecting timbers evoke the claw-like hands and feet of the Manaia."

On a practical level, a servery and gallery separates the dining hall from the kitchen and ablutions areas respectively. A combination of eye-level and high windows flood the dining rooms with light.

A macrocarpa veneer slatted ceiling and high-span engineered timber beams are supported by poles and struts with a carved, organic look.

"With the inside of the building the idea was of being in the bush so the poles and struts have a tree-like structure," Alastair says.

The vision for the wharekai and its execution saw the building win awards from the Property Council, the NZIA and in the Master Builders Commercial Projects.
And even better, as Alastair says, "The people of the Marae say that the building has evoked the Wairua, the spirit, of the place."

Design: Kay and Keys Architects.

Project architect Alastair Kay (now with Ministry of Architecture + Interiors)

Alastair Kay is a registered architect with 40 years of professional experience. His project experience has ranged over a wide variety of project types and scales. While he has held roles at management and director level through his career, Alastair has always maintained a hands-on involvement in projects and in all facets of the design and delivery of projects. His design work has been recognised with a number of awards and by grateful clients.

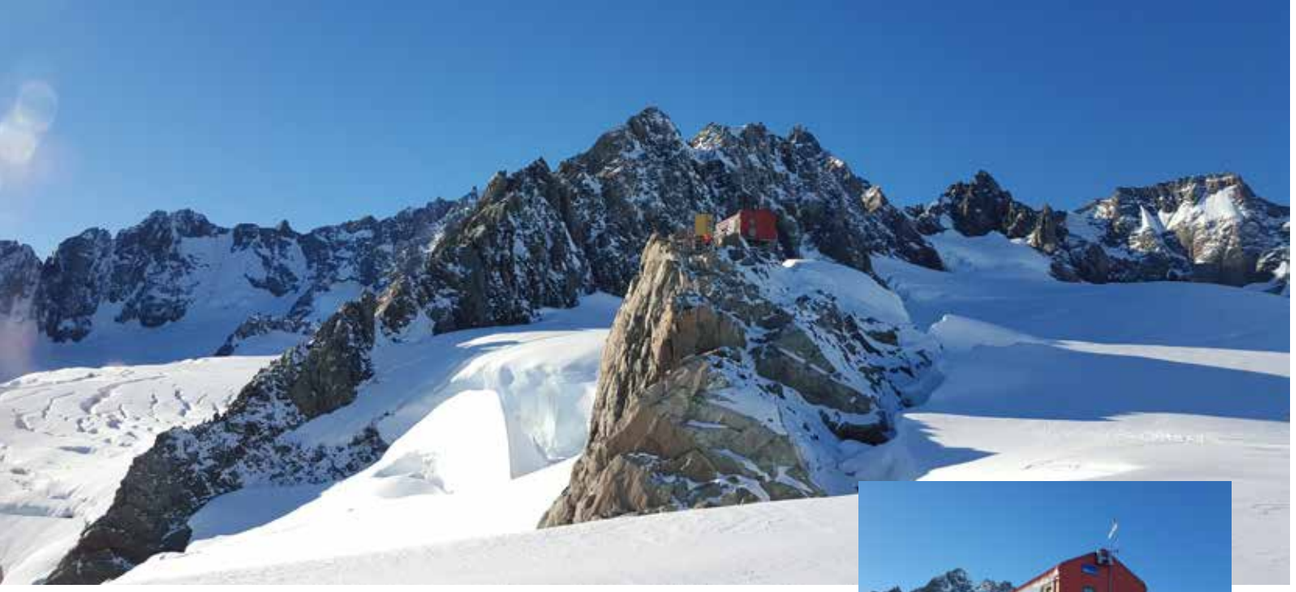
Architects:
Alastair Kay
Kay & Keys Architects
Auckland
Telephone: 09 5299481
www.kayandkeys.co.nz

Roofing Manufacturer:
Steel and Tube
Telephone: 0800 427 663
Roofing:
COLORSTEEL® Endura
Colour: Karaka

Roofing installer:
Kiwi Roofing, Auckland
Telephone: 09 263 9988

Construction: Kalmar Construction, Auckland,
Telephone: 09 489 3470

Photography: Greg Kempthorne



PIONEER HUT

Pioneer Hut is one of the busiest alpine huts in New Zealand and sits high on a rocky cliff above the Fox Glacier. The hut provides are numerous opportunities for skilled alpinists, from ski mountaineering, to ascents of the mighty Mount Tasman, New Zealand's second highest peak.

As a roofer Clinton Ainger is used to ropes and harnesses but having to wear crampons on his boots for a job took things to another level. The crampons came into play when he landed by helicopter for a re-roof job at Pioneer Hut, which sits on the edge of a rocky cliff above the Fox Glacier.

"You had to put crampons on as soon as you got there to be able to get up to the hut," says Clinton. "But luckily they managed to build an ice shelf beside the hut so the helicopter could drop the roofing material off there."

Max Dorfliger, of New Zealand Alpine Club, which owns the hut, oversaw the reroofing job which was funded by a Department of Conservation grant.

He said the original flat iron roofing on the gable-roofed hut built in the 1990s had been laid straight on to the plywood ceiling meaning there was no ventilation so moisture was trapped in the hut, causing condensation to run down the walls. "I was looking after safety making sure there were anchors on the roof and everyone was clipped on and had a harness," Max says. "A mate of mine did the scaffolding along the back." "

Over Anzac weekend, Clinton's team installed purlins over the flat iron then installed Covertek 407 underlay before putting on a new roof of corrugated curved G300 in Pioneer Red. This created a cavity to reduce condensation. They also installed barges and a wide 200mm ridge to suit.

Clinton says it was a straightforward job despite the fact there was an 80m drop-off on one side of the hut.

"The job itself took about a day and a half but we were delayed a little bit by bad weather that meant the roofing materials couldn't be helicoptered in."

Max says Pioneer Hut is popular as a staging point for climbers ascending Mount Tasman, New Zealand's second highest peak, or people taking part in ski tours. The hut has basic facilities – bunks with mattresses, a water tank (providing the water isn't frozen) and an outdoor toilet.

Roofing supplier:
Roofline Christchurch
Telephone: 03 349 8439
Roofing material:
Curved corrugate G300
Colour: Pioneer Red'
www.roofline.co.nz

Roofing installer: Clinton Ainger
CS Roofing Ltd
Telephone: 027 226 5301

EPSOM VILLA RE-ROOF

Joining two homes together created an impressive 600sq m character villa in the Auckland suburb of Epsom.

But it also created a problem where the two homes were joined. As Josh Barnes, director of Roofing Works Services Limited, explains. "Where the two homes are joined there are widows walks with internal gutters and they had rusted out because water was pooling there because there wasn't enough fall." And the roof in general was in "pretty poor condition" and leaking when Roofing Works Services Limited was called in to replace it in its entirety.

Josh says the roof was repitched to allow the internal gutters to drain properly, a new bull-nosed roof was put on the veranda, and his team also had new flashings designed to replace the existing around the brick chimney. Two solar tubes were installed in addition to the existing seven skylights in the home. Being set on a large site – big enough to accommodate a swimming pool and tennis court – made for easy access and room to cut materials on site. The sprawling villa with intricate fretwork and wraparound verandas has been in the same family for about 50 years.

Josh says there was a fulltime builder on site – as well as his team – in case any structural timber needed replacing or weatherboards needed removing to accommodate flashings.

"It was a big job," says Josh. "We had five or six of us there for about 14 or 15 days, and we were doing it before Christmas so the pressure was really on to finish before the break."

Roofing Works Services Limited

A New Zealand owned family business, Roofing Works Services Limited has been based on the North Shore of Auckland for more than 30 years. Eddie Barnes started contracting as Roofing Works more than 30 years ago, and has a wealth of experience, skills and knowledge in the roofing industry. Eddie's son Josh is a qualified Licenced Building Practitioner, and started as an apprentice working with Eddie 18 years ago. Now a director of Roofing Works Services, Josh ensures compliance with the NZ Metal & Wall Cladding Code of Practice, demands the highest quality of workmanship, and puts huge importance on the safety of his team.

"We pride ourselves as high level, qualified roofing practitioners in both residential and light commercial roofing. Specialising in long-run iron roofing, we offer a supply and install solution for your new home or replacement roof. Our services also include metal wall cladding, prepainted steel gutters and downpipes, and metal rainwater heads."

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NZ Steel
Telephone: 09 375 8999
Roofing:
COLORSTEEL® Corrugate
Colour: Grey Friars

Main contractor:
Metalcraft Roofing,
Telephone: 09 444 1813

Roofing Installer :
Roofing Works Services Limited,
Telephone: 0210 537 440
www.roofingworksservices.co.nz

For further information on Metal Roofing or Cladding or details of any of the articles which appear in this publication please contact any of the members listed below.

If you would like to submit material please contact any member of the executive or the publisher. Visit our website at: www.metalroofing.org.nz

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Contact: Clark Ellery

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www.azko.co.nz

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Contact: Roger Moss
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Contact: John D'Arcy
www.calderstewart.co.nz

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Contact: Nick Claridge
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P.O. Box 2317
Stoke, Nelson
Telephone: 03 5443108
Contact: Shane Atherton
www.roofing.co.nz

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Glen Innes, Auckland
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Sarah Widdup

HB Longrun Ltd
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Napier
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Contact: Chris Patheyjohns

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Contact: Tom Marshall
www.marshalls.co.nz

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Contact: David Moselen
www.megamiroofing.co.nz

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Telephone: 09 274 0408
Contact: Tony Barbarich
www.metalcraftgroup.co.nz

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Contact: Jan Alberts
www.metaldesignsolutions.co.nz

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Contact: Sean Wu
www.metrotile.com

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Telephone: 03 442 3883
Contact: Bill Giller
www.qtroof.co.nz

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Levin, 5540
Telephone: 06 3679480
Contact: Bruce Love
www.quinbuildings.co.nz

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Contact: Paul Ross
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Contact: Colin Megaw
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