ISSUE 22

SCOPE

MRM

NZ METAL ROOFING MANUFACTURERS INC.

SCOPE

CONTENT ISSUE 22

Below is a brief introduction to the 2009 executive of The NZ Metal Roofing Manufacturers Inc.
It is intended that Scope be representative of the industry and therefore material of interest is welcomed from all sectors of the building industry be it design, research, manufacture or construction.

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IN PURSUIT OF DESIGN EXCELLENCE

Having published several projects designed by Davor Mikulcic from studio MWA Ltd. in Wellington, two primary factors seemed to be consistent. The first was the excellence in design and the second was that his clients were not just happy with the results but they had established a lasting friendship with Davor.

To better understand the chemistry behind this we asked Davor to elaborate on his personal approach from concept to completion. How does the creative process work for him and his clients?

The Dulieu Home provides an insight to this process.

The clients, Dianne and Barry Dulieu having just purchased their site, were advised by the previous owner to discuss the potential of the site with Davor as he had been commissioned to do some site analysis and preliminary sketches which may prove beneficial. The first meeting was in the new Lendrums studio that was designed by Davor and illustrates his skills in architectural

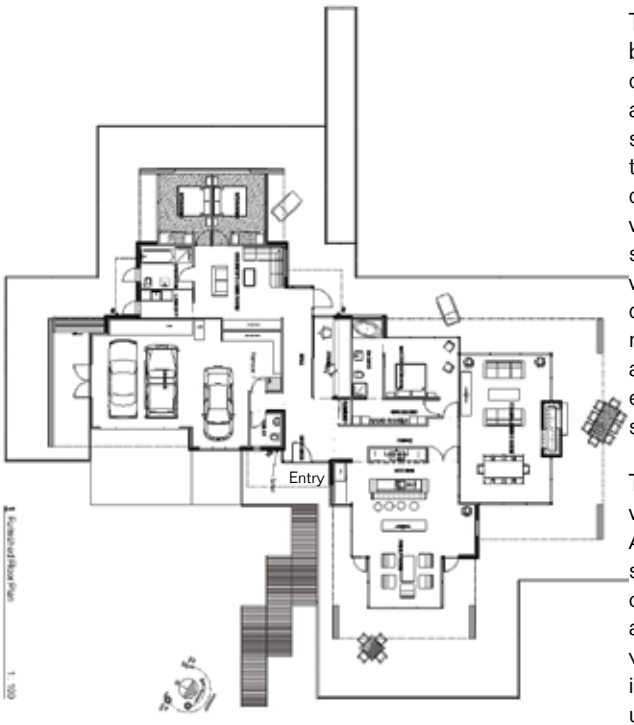
and colour composition. The first of many projects that have won recognition with a NZIA Awards. The Dulieu's later confided that they had been impressed by this creative and unusual office space.

The Dulieu's were no new comers to the design and build process having worked together over the past 30 years building and marketing a few houses every year. They had in fact designed all the previous houses for clients but had never designed one for themselves. Now they wanted their own home, one that would last them through their retirement years. Something unique. Something Special.

Managing Director, Bob Lendrums from Lendrums, attended the first meeting and having listened to the client brief his comment to the Dulieu's was short and honest. "If you want something that is special, unique and with flair you have come to the right person but you have to be prepared for the journey. it will be challenging but enjoyable and in the end you will have something very special you can be proud of."

And so the journey began.

Davor is quick to point out that although familiar with the site it was crucial to begin at the beginning. A site visit, the first of many as it was important to spend time walking and talking to get the Dulieu's impressions of the site and which aspects of the property they enjoyed and to get to know one another. The site is magnificent. The approach is from above and as you look down on the clearing in the bush (of approximately 60 metres) you get a feeling reminiscent of a Greek theatre. There are nature water features, streams, waterfalls and 100 meters from the building platform is the Akatarawa River.



This natural wilderness is surrounded by hills, native bush and water. In the clearing you have a sense of isolation and connection only with nature; the sounds of the Akatarawa River and the abundant bird life whose song dominates the site. Over the next weeks and months many visits to the site were made during good and bad weather, at night and throughout the day. Clearly the site would dictate many of the final design attributes and in approaching the design Davor explores every detail and mood of the site.

The client brief was relatively simple with nothing particularly unusual. A contemporary residence, on single level with a simple indoor / outdoor flow. The home should take advantage of every aspect of the very unique site. Easy maintenance inside and out with the maximum usage of passive solar energy and good building orientation, under floor heating – heat pumps were installed to heat the under floor water system) double glazing with maximum thermal insulations for floors, walls and ceilings.

The room specification was simple including an entry hall (if possible with gallery for many interesting family photos and art work), a studio with two work stations, a big open plan kitchen and family living as one big room with easy access to decks and terraces. A separate formal living and dining room, with an open fire, that could be opened to the rest of the house when required. The master bedroom was to be generous with a walk-in wardrobe and ensuite including a bath and shower. (Dianne specifically wanted the old established trees to become the "focal point" from the master bedroom. This was achieved in the final design.) A separate third living space with an additional two double bedrooms with wardrobes, separate bathroom and outdoor access.

Further requirements included a separate laundry utility / storage room with easy access out to clothes line, a triple garage with workshop (possibility to work in and out under cover) and generous storage space,

As with all clients the basics were established and at this point Davor outlines clearly what his expectations are to enable him to deliver their dream home. The first point is total honesty and openness. "I have to dream their dream", says Davor. "To do this I have to know them well, I have to understand their way of life, I have to know them as friends with open hearts. Only in this way can I do my best for them. And that is what we all, as architects, have to strive to achieve….something above our clients expectations."

For both Davor and Jonathan Wilson, design is more than a business, it is a passion. "The budget (large or small) does not reflect the success of the project. You can recognize a project that is driven only by money,' says Davor. "The defining factor is the degree of personal involvement and understanding between the design team and the client. This is the separator between good design and excellent design.

Throughout the design process Davor acknowledges that his clients have to be prepared to discuss details and to understand that there is a reason for his design approach as he will never willingly compromise his professional opinion of the best design solution. "Naturally, if during discussion, there are some aspects of design that are to radical we find an alternative solution. Generally when there is a point at issue site visits are arranged to show the client similar finished concepts. At this stage drawings and photos do not suffice. It is important to touch, feel and see the results. This builds confidence and trust and helps to broaden the horizons. Discussion between different clients and site visits is always beneficial and often leads to a refined brief and detail, "says Davor.

An example on the Dulieu residence was related to the exterior cladding. In the first instance there was a desire to use natural schist, which proved very expensive. Having visited other projects and seeing first hand the visual effect achieved with a combination of schist and the vertical metal cladding a decision could be made with confidence. This is now a feature of the residence.

"At the outset I asked Dianne and Barry for their permission to explore many different options from the bizarre to the conservative. They were open to this approach and this latitude and freedom to explore is vital to the creative process of design."

So from a blank canvas the first ideas are formed. Davor recognizes his background varies from most New Zealand and Australian architects and as a result his approach may be different. He is, in his words, "From the old school" and relies on a camera to capture the site moods and a sketch pad that is constantly with him. In developing the concept studio MWA takes advantage of every design facility from coloured pencils to scale models, to ArchiCAD computer models and renderings. "Anything that will help bring the design and client closer and help push boundaries a little further. In the preliminary stages many design options are explored and discussed. Some are developed and some discarded but it is only through continued exploration of the differences between concepts that the final design concept emerges. On this project the initial stages of design concept took about 3 months to develop to a point where we where all satisfied, "says Davor.

In some instances clients do not understand why small details of colour, texture, materials, appliances, fittings, furnishings, etc are discussed early in the design process. This becomes clearer as the project evolves. It was fortunate that Barry Dulieu was in fact a very, very accomplished builder. A man Davor describes as having "golden hands", a perfectionist whose attention to detail was a work of art. As a commissioned lecturer in Architecture in Brisbane, Davor tries to impress on students the importance of this detail and it's execution. "This is what architecture is …the combined result of small details that build the complete composition. It is a balance and achieving the right balance is what separates one designer from another."

Many aspects of the design had to be considered and these included factors which are influenced by; the clients' brief, site, surroundings, context and a variety of compliance criteria. The site is within the 100-year flood zone and required design solutions to ensure it would not be an issue in the future. Two large water tanks, a septic tank with inffluent field and the inclusion of gas for hot water where mandatory. Some of these elements represent a design challenge and must be incorporated as an integral part of the design, not added on. Something that is often over looked.

Barry built and project managed the house part time, with help from his son. (Rhys Dulieu is owner and director of Rhys Construction from upper Hutt – www.rhysconstruction.co.nz)

Often when clients decide to manage a project it is a recipe for disaster but in this case there was no doubt they had the skills and experience to complete a high end residential project.

The building that others describe as a "Butterfly" is first seen from above (fifth elevation) making the roof a prominent aspect of the design that forms two connecting "L" shapes. These forms allow shelter in all weather and take full advantage of the sun and assist with natural ventilation throughout the building via strategically placed opening windows. Part of the sustainable strategy and one of the goals of the design was the use of passive solar energy, natural ventilation, rain water collection and the use of natural materials. In essence to be sensitive to the site and enhance the natural aspects of the surroundings.

The building platform is on one level to allow residence, now and in the future, to enjoy easy access to the home with no compromise.

Again being able to visit a previous project, the Blundell's residence, was a great example.

Polished concrete floors with under floor heating was one of the imperatives from the start. With good building orientation, this project maximized the use of passive solar energy with highly compressed polystyrene thermal insulation under the concrete slab.

To achieve large open plan areas, with more than 70 % of the buildings elevations in glass, an elegant steel cantilever structure was chosen as the main form. The structural steel was incorporated into the thickness of roofing structure or walls giving the entire composition a light appearance

To achieve these big open spaces without any additional support between, a simple yet elegant support was designed at the end of the cantilevered eaves that turns down the roof to touch the ground. This creates a very simple, clean line form that frames the view from the interior. This cantilevered section provides bracing to the virtually glass structure, with eaves that extend 3-4 meters providing shade in the summer.

The "trough section" metal profile of the Dimondek 400, was an excellent cladding choice as it helps to maintain simple clean lines in both sloping and vertical planes, Sharp lines emphasize the simplicity of straight lines. Roof and wall claddings are without any penetrations avoiding potential problems and give an aesthetically pleasing appearance. Schist was strategically used on corners in L shaped forms and with the intention of creating a dramatic appearance to the exceptionally well-executed masonry. From the start the intention was to use some of exterior materials (like schist) and incorporate them as interior details providing continuity and a connection between the inside and out. Mr. Glen Bosworth, from Bosworth Stone Ltd. in Upper Hutt, and his team worked nearly 6 months to achieve an incredible, unique finish – definitely one of "key" features in new Dulieu Residence.

The interior design initiated some lively debate as Davor had deliberately chosen Marine plywood (Brownwood) for much of the interior joinery. The Dulieu's concern was that the plywood could devalue the project.

Again, it helped to be able to show them finished examples (on Davor's own Lower Hutt home) that illustrated the goal… to create timeless design that would was functional and yet pleasing. This resolved the issue and the concerns the Delieus had.

Studio MWA ltd. pride themselves on original design, choice of structure and materials that are not influenced by fashion trends...design that will endure without dating.

As on previous projects Hadrian Noble from Noble Kitchens in Upper Hutt manufactured and installed the joinery for the kitchen, bathroom, laundry and walk-in wardrobe. His attention to details and his input to "fine tune" the design was much appreciated by the MWA team and client. Davor and colleague Michael Maddern's goal is to create uncluttered work spaces with clean lines that are functional yet aesthetically pleasing, The kitchen is a focal point in family area of Dulieu residence. The central free standing island is the main entertaining "hub" and is finished in a combination of stainless steel , plywood, glass and Seratone. At 4.5 m in length this is fantastic work space that is particularly useful when entertaining.

The majority of interior walls and ceilings are gib lined and plastered with level 5 finishes and painted in white to emphasis other material combinations; the polish concrete, cedar sliding doors, dark brown-black plywood cabinetry, dark slate grey aluminium joinery with gray tinted double glazing and schist to name a few.

All connections between walls and ceilings are a simple square finish with no skirting between the floor and walls giving the impression of lightness and floating that further simplifies the interior. Beautifully crafted cedar timber sliding doors, in combination with glass, form a real feature in the interior.

In the bathrooms, ensuite and toilet wall finishes are in a two colour composition of Seratone that contrasts with the polished concrete floor, white ceiling and dark plywood cabinetry.

,

Throughout the house halogen lighting is used in blocks of usually 2,3 or 4 lamps. This gives a bright, dramatic appearance and in the evening transform the house. Exterior halogen lamps, strategically located, provide soft lighting to the covered exterior decking and make a transition between the very bright interior light and pitch-black exterior.

In the final analysis of any home design the ultimate judgement will be from the client. In this case Dianne and Barry Dulieu have aptly called their new home "Paratiho" which is the Maori for paradise. "We are living in Paradise",says Barry, "everything is in harmony with the preservation of natural beauty."

This is what Studio MWA strive to achieve ...the moment when the synergy between client and designer produces a result they are both proud of.

Studio MWA

Studio MWA now works in collaboration with the new, Brisbane based office of Davor Mikulcic Architect. With today's technology we can synchronise our working environments via video conferencing that brings the skills of our Wellington offices into the Australian market.

The range of projects is a spread between commercial and residential. Our primary focus is on high end residential and we currently have a few very exciting projects on with several other on hold due to recession constrains.
Our new clients predominantly are the result of recommendations, or they are people who have seen our work through publications, Industry Awards or from visiting completed Projects through friends and acquaintances.

The core team consists of Practice Manager Jonathan Wilson, Davor Mikulcic (Architect) and Micheal Maddren (interior design and ArchiCAD specialist).

Micheal Lectures at Wellington Weltec in interior design and ArchiCAD systems and Davor Mikulcic also lectures in the Queensland University of Technology (QUT) -faculty of Build Environment.

Davor was on the jury for the 2009 Royal Australian Institute of Architects (now AIA) for Queensland and Brisbane and this year was invited onto the jury for the international architectural student's competition, Denver , Colorado

Client: Dianne and Barry Dulieu
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Project Team:
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David Thomson – arch. Technician - Cad operator
Daniel Casas – architectural graduate
Davor Mikulcic – architect
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Stone work : Mr. Glen Bosworth
Bosworth Stone Ltd. Upper Hutt
Mob: 021 27-74099

Roof & wall metal cladding:
T.W. Clark Roofing 202 Ltd
Lower Hutt
Metal profile: Dimond – 0.55 mm Dimondek 400.
www.dimond.co.nz

Engineer: Whakatiki Engineering Ltd. (structural steel)
Upper Hutt
Telephone: 04 528 8982

Windows: Mr. Paul Cunningham
Westview Aluminium Ltd
Upper Hutt
Telephone: (04) 526 4400

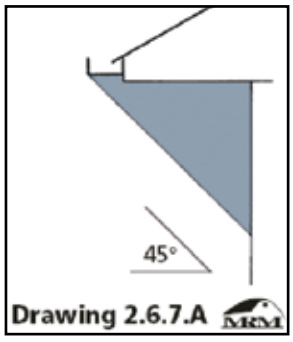
Kitchen: Mr. Hadrian Noble
Noble Kitchens
Upper Hutt
Telephone: (4) 528 3965

WHAT IS THE PROBLEM WITH UNWASHED AREAS?

Article by Stuart Hayman and Stuart Thomson

Designers have usually many other priorities to concern themselves with than details about unwashed areas, however the purpose of this article is to raise awareness of this potential problem. The description of an unwashed area is given in the NZMRM Code of Practice 2.6.7. It is mentioned 41 times in that document so we think it is pretty important.

The drawing 2.6.7.A. shows the circumstance to be 'average' i.e. with an average wind blowing and the 'washing' referred to is rain, whereas 2.6.7.B. shows a practical example of such an unwashed area. N.B. This detail is verboten by E2/AS1 8.1.3.1. however there is a way to do it!!



Why should this be a problem?

All building materials start to deteriorate the moment they are exposed to the elements, however some are more sensitive to dirt and contaminants than others. While all materials have their own problems the focus of this article is on metal roof and wall cladding.
One way to minimise this deterioration is to wash them like our cars, or windows or even clothes. Rain does this automatically and regularly however those places that do not receive this benefit require help to reach their expected longevity potential.
This could be achieved by design or it could be by the continuing expense of regular maintenance.

Most parts of New Zealand are exposed to airborne corrosive materials carried in the air. The distance airborne marine salt is carried varies significantly with local wind patterns and in some locations salt may be carried more than 30kms inland.
In agricultural areas, the dust may contain fertiliser particles. Even in cities (nearly all of which are close to the sea) industrial pollution can carry minute particles of chemicals. Any building surface exposed to contaminating air will allow the particles to coat the surfaces which form a fine layer of dust on the surface containing a cocktail of salts and chemicals, some more damaging than others.
Particularly on humid days and nights, the typically hygroscopic particles absorb moisture attracting and holding corrosive materials that end up as a very concentrated solution or paste sitting on the surface. If it is washed off then that's fine, but if its not?

Logically, the severity of the environment determines the severity of the corrosion.
Unwashed areas can deteriorate more than four times the rate of washed areas as a small micro-climate is produced in areas such as under air conditioning units or solar collectors, unless they have a cricket type penetration design that avoids the unwashed area.
Galvanised and Zinc/Aluminium alloy coated steels and aluminium actually need a small amount of contaminants to start the oxidation or carbonation process which

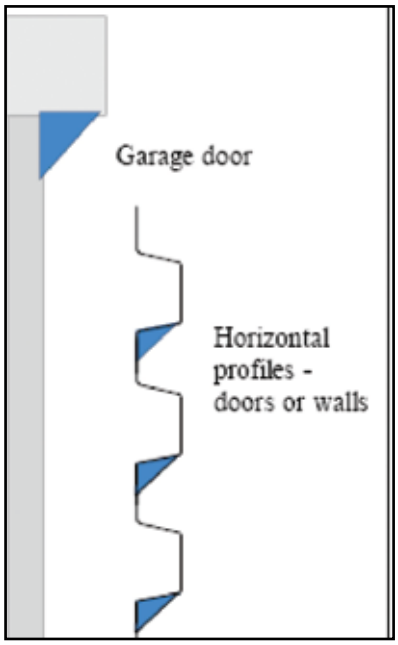
gives them 'natural protection; but not too much! Painted metal surfaces are more sensitive to this dirt build-up than plain metals for the reason that they need to be able to "breathe" and although the paint finishes are water resistant they are not totally impermeable to water and water vapour. In places that are not exposed to direct rainfall, soluble corrosive material can find its way through the paint, and be recognised as blistering, with corrosion products underneath. Eventually if left untreated, this will lead to deterioration of the protective metallic coating and ultimately to failure by perforation.

While painting metal roof and wall cladding primarily provides an aesthetic appeal, it also provides protection from the elements but only providing it is cared for by design or maintenance.

This is largely the designer's prerogative –not to design unwashed areas or plan a maintenance programme for the new owner. Some of these areas can be tricky and some ingenuity has to be exercised to avoid premature deterioration.

HORIZONTAL CLADDING

Horizontal cladding must only be used in exposed areas to prevent the build-up of dirt or a strict maintenance programme must be set up and adhered to. Also the drip edge of painted metal is vulnerable because



build-up of pre-treatment, primer and top coat at the extreme edge of the sheet.

In the same way garage doors and their flashings need regular care. Garage roller-doors being horizontal suffer from their inherent 'protected' design and need to be washed regularly. The joints in sectional garage doors are not so obvious but they too are vulnerable.

OVERHANGS.

The overhang erroneously favoured by the DBH as a means of weather tightness is a major cause of corrosion, but only when the designer has placed the metal cladding in the unwashed area. Not only the wall cladding below it but the soffit lining suffers as well. Unlined soffits, horizontal or sloping, where the underside of the roof is exposed, curved roof soffits and curved covers to walkways – crimped or otherwise, canopies above load-out doors and service station canopies are all subject to a harsh environment so they must be treated as a special maintenance cases.

UNDERSIDE OF SHALLOW ROOFS AT EAVES.

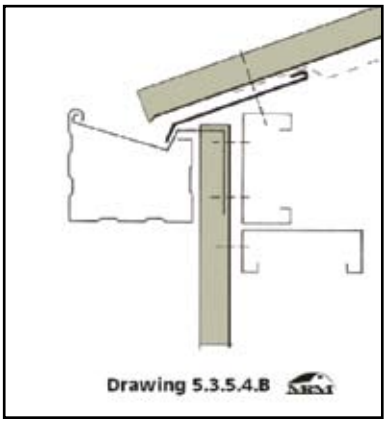
In coastal locations where the underside ends of roof cladding are exposed, this unwashed area becomes susceptible to corrosion and a gutter apron can minimise this risk as it becomes a sacrificial flashing. Where PVC spouting is used, there is an air gap between the spouting and the fascia because of the thickness of the brackets. If you can see the underside of the roof, then salt spray has access to it.

SOLAR PANELS AND AIR CON EQUIPMENT.

Solar water heating panels and other air con equipment items located on top of the roof cladding effectively create an unwashed area. While in theory the rain can run down the pans the ribs do not get washed.
G12/AS2 the Acceptable Solution does not take this into account and in fact allows collectors to be directly fixed to the cladding. The COP (2.6.9.) does not.

.NZMRM COP 2.6.9 Solar collectors must not be fixed directly to metal roof cladding. The collector must be mounted so that there is provision for cleaning, washing and maintenance with a minimum of 100mm clearance between the collector and the metal roof cladding. Such cleaning must be carried out every three months in severe environments.

The mounting of any collector to create an unwashed area voids the manufacturer's warranty. Without a minimum of 100mm clearance it is not possible to brush down the tops of the cladding ribs and to prolong the life of any metal roof.
A suspended solar collector (or air-con unit) is very likely to cause condensation underneath it which will also collect on the roof cladding. Such condensation can accumulate contaminates and if premature deterioration is to be avoided, a maintenance program is required to remove the corrosive salts and dirt that cause corrosion. The person who creates the unwashed area is responsible for any subsequent damage.

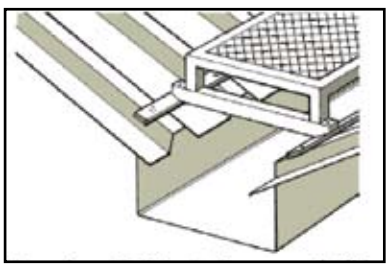


UNDERSIDE OF GUTTERS AND FASCIAS

These are totally sheltered from rain – see diagram. Small roofs sheltered by porches or atriums – see photos.

WALKWAYS.

Access walkways for maintenance and gutter snow or hail boards can create an unwashed areas and so should always be made of open mesh. Timber must not be used.



PREVENTION – ALSO CALLED MAINTENANCE

Few people would buy a new car and not wash it occasionally. Maintenance of your new metal cladding is no more onerous than washing every three - 12 months (depending on location and how dirty it gets). As well as protecting it from corrosion it will also keep it looking like new.
Washing by a hose in many cases is insufficient without brushing and even scrubbing

CONCLUSIONS

Metal roof and wall cladding material, rainwater goods, garage doors, canopies, walkway covers and other applications are widely used and in some applications the only material which can realistically be used.
Areas in these applications which are not naturally washed by rainwater can suffer premature corrosion failure when exposed to various chemicals in the air, primarily salt spray particles which can be carried to most parts of New Zealand by wind.
Such premature failure is easily avoided by design to minimise unwashed areas in the first instance.
Where this action is not taken then a maintenance programme for unwashed areas will improve the life as well as the appearance the cladding.

DEPARTMENT OF BUILDING AND HOUSING ENDORSES THE CODE OF PRACTICE

The DBH has endorsed the NZ Metal Roofing Manufacturers Code of Practice by way of formally acknowledging its value by issuing this Foreword. The Foreword recognizes the industry's experience and expertise in the preparation of the Code of Practice and its usefulness as a resource for the industry.
The COP is already used as a reference document by large sectors of the industry and this endorsement, by the DBH, will encourage others to utilise the information with confidence.

PIHA CAFÉ

By Graham Hepburn

A combination of traditional looks and new technology means the Piha Café sits comfortably within its seaside environment and, more importantly, will be kind to it. The wooden homestead-like structure of the café has been designed so that the timber will silver off over time. It's tucked back against the hill on its northern side to give it a sense of nestling on the site. Being set back from the road not only allows visitors a feeling of arrival as they approach but also serves the more pragmatic purpose of creating room for a car park.

The café uses photovoltaic cells in flexible panels laid directly on to the north face of the COLORSTEEL® roof to harness energy that helps to drive the heat pumps that warm the concrete floor of the cafe and provide its hot water.
"We basically get free heat and free hot water," says Andy Higgs, one of four owners along with Richard Hatton, Christian Fougere and David Bensley, who drove the build as project manager.
"If Dave hadn't come on board it would have been a disaster without him," says Andy.

The café also has an inverter so it can export any excess power back to the grid.
"It's behind the walls where people usually cut costs, but that's where we've put in the investment," says Andy. "The payoff is lower impact on the environment and lower running costs."

And it's not just behind the walls where they've spent money; a fair bit has gone underground with an 87m deep bore supplying fresh drinking water, or "Piha pure" as Andy calls it.

There is also a sophisticated on-site wastewater treatment set-up, which actually sits under the carpark. The carpark itself is grassed to provide a permeable surface that won't create stormwater runoff. The grass is laid over Permathene Turfpave grass pavers, made from 100% recycled polypropylene, which help the grass to withstand traffic. Beneath the

carpark Andy says there is a 80m long network of 2m deep scoria trenches that can cope with up to 3000 litres of wastewater a day.
"By the time the wastewater gets to the end of that it's pretty much drinkable," he says.

There has also been a conscious effort to avoid using paints, sealers or stains as much as possible. Andy says the macrocarpa and Japanese cedar in the building don't require finishing to withstand the elements and will age beautifully.
Attention has been paid to the

smallest details to minimise the building's impact: the toilets are low-flush, the taps are triggered by sensors and there are even sensors on the hallway lights to the toilets. The building has been insulated to the latest standards and the windows are double glazed. On cold winter days, extra warmth is

provided by a retro-looking but highly efficient low emission burner, called an Oh-Ah.
Skylights are used on the southern side of the roof to flood the café with light but not on the northern side as the direct sunlight would have been too harsh.

"The really innovative thing about this is where we've used technology we've used the latest greatest things but where we haven't had to we've gone secondhand," says Andy.

Some appliances have been sourced from other cafes as have the tables and chairs. And there's a fair assortment of rescued items from demolition yards and secondhand stores such as the light fittings, toilet doors, and packing crates under the counter.

The interiors were done by Tony Brandso and Liv Harper, of Material Creative, who had to be resourceful and imaginative on a limited budget.

Andy says the takeaway bar on the eastern side of the building could have had nice modern lines but instead they chose to use a 5m wide slab of macrocarpa for the bench to give the area warmth and character.

Architectural graduate Nick Dalton says the building had to be modest because planning rules dictated the site coverage of the café and the number of seats it was allowed. But carrying off that look wasn't as easy as it might seem.

"It just looks like a really simple box but it's deceivingly complex to do it well," says Nick. "It's got all the bells and whistles but we didn't want it to look like it's got all the bells and whistles."

He says the building's simple lines and easy flow can be attributed to hammering out every detail beforehand and then leaving it to the craftsmanship of people like head builder Duncan Clarke, of Coastal Construction, and Derek Mullooly, of New Zealand Log Homes.

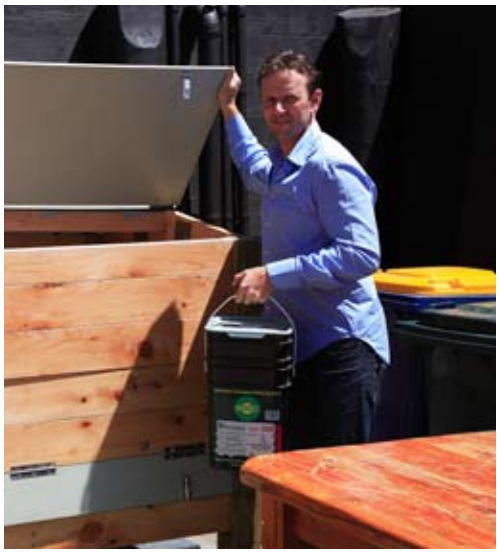
Features such as a seamless threshold are difficult to achieve but look elegant and make it easier for customers coming and going as well as providing a sense of openness, especially when the glass doors slide backwards from the southwest corner to embrace the view of Lion Rock. The deck on this corner also has a hidden fixing system, meaning no nails and this gives the wide eucalypt boards a look that is flawless and flowing.

Andy laughs when he recalls how he was tempted by the offer of some free roofing in a sandy colour but Nick wouldn't have anything to do with it. Nick was adamant they had to go with a silvery grey colour to blend with the environment. The colour and the clean, simple lines of the Euroline SeamLok complement the building's form. As Nick says, "It was really important that the roof looked right as the whole building is supposed to silver off over time so it will look like it's always been there."

While the café is now up and running, Andy says it's been a tough and costly battle for him and his fellow owners to get it off the ground after fighting local opposition through hearings at the Waitakere City Council and then in the Environment Court.

HarleyDalton Ltd

HarleyDalton Ltd was established in 2006 by husband and wife team Anna Harley and Nicholas Dalton. Both graduates from Auckland University Architecture School, Anna and Nicholas have received national and international design awards for innovation in architecture and urban design. Their experience is diverse, taking in hospitality related, residential and urban design projects including converting a 100-year-old derelict church into an apartment in the South island, a stunning house in Blenheim overlooking the Dryhills vineyards, and a state of the art dental surgery in Tokyo. HarleyDalton is an energetic inner city practice which is committed to the continuing evolution of urban culture in Auckland. Nicholas and Anna pride themselves on working closely with their clients to produce enduring designs.



That process took almost three years and cost hundreds of thousands of dollars but there has been an upside.

"All the local tradesmen have pitched in and cut their rates or done us a good deal because of the battle we've had and because they've believed in the project," Andy says.

"Mind you, if we hadn't spent two-and-a-half years in the courts we wouldn't have got that sort of support."

Nick says the irony is that people who opposed the café on heritage grounds were conveniently overlooking the fact that in recent times Piha had been a vibrant seaside community with a movie theatre and milk bars.

"So when people who oppose the café say they want to preserve the heritage of the area that is what we wanted to achieve as well," says Nick.

But with that battle fought and won, one of the nicest touches in the café is that it still has some of the old post boxes from the post office that used to be on the site.

Andy says the idea is that regulars can keep their coffee cups in them or people can leave keys there or messages for friends.

As Nick says, "That was a really important thing for us because it had been the site of the old post office and we wanted to keep that sense of community."

Above: Innovation in water dispensing, historic post office memorabilia, and even the worms recycle the restaurant waste in the on site worm farm.
Right: The water heating system and the electrical system, powered by the solar panels, work in tandem.

Designer:
Nicholas Dalton of HarleyDalton,
6A Ponsonby Road
Auckland 1011
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email nick@harleydalton.co.nz
www.harleydalton.co.nz

Builder: Duncan Clarke,
Coastal Construction,
Telephone: 021 679 656.

Roofing Manufacturer:
Steel and Tube,
Telephone: 09 274 4056
Profile: Euroline SeamLok
COLORSTEEL® Maxx; colour "Smokey"
Roofing installer:
Cowperthwaite Roofing,
Telephone: 09 525 3095.

SUSTAINABILITY: WASTE REDUCTION

By Graham Hepburn

Metal roofs have long been recognised as one of the best ways to keep buildings weather-tight but most people probably don't realise they are a shining example of waste reduction.
From manufacture to installation, metal roofing has come a long way – not only is it made more efficiently but the process is cleaner with waste minimised at every turn.

The fact that steel and other roofing metals such as aluminium, copper and zinc can be recycled repeatedly with no loss of performance gives them an endless life cycle and means less energy is wasted converting raw materials into new metal products.
This constant recycling means that steel especially is not ending up in landfill like other waste or demolition building materials. The recovery rate of steel from buildings is estimated at 85% and a recent report on commercial construction waste found that more than 90% of steel was recycled.

Scrap metal is a valuable commodity to New Zealand's two steel-makers, particularly Pacific Steel, a division of Fletcher Building, which makes all its steel from scrap.
New Zealand Steel, which makes 620,000 tonnes of steel a year at Glenbrook, has an average pre-consumer recycled content of about 12% in its products. New Zealand Steel manufactures coil and sheet for use in building cladding and other industries. The coil may be metal coated with zinc – commonly known as galvanized steel – or a combination of aluminium/zinc alloy to produce ZINCALUME® steel. Since the introduction of ZINCALUME® steel nearly two decades ago nearly all new steel roofs use it as their substrate. ZINCALUME® steel uses less raw materials (Aluminium/Zinc Alloy – 150 gms/m2) than Galvanised (Zinc – 450 gms/ m2) whilst providing better durability.

Scrap metal is not only used to feed the kilns but also to control the temperature generated by the chemical reactions in the furnace.

While recycling steel reduces the amount of materials being dumped in landfills, the process also saves an enormous amount of energy: recycled steel can be made by using as little as 25 per cent of the energy it takes to make virgin steel and that doesn't take into account the knock-on effects of reductions in mining, transportation, and greenhouse gas emissions.

The American Institute of Architects estimates that each tonne of recycled steel saves 1100 kg of iron ore, 600 kg of coal, and 50 kg of limestone. The AIA also states that every kilogram of steel produced from recycled sources rather than raw materials saves 12.5 MJ of energy, 86% less emissions to air are produced; 40% less water is used; and 97% less mining waste is created. Thus the relatively high embodied energy in steel made from virgin materials is significantly reduced globally by the universal high percentage use of scrap.

One of the problems with steel production used to be the piles of slag generated by the process but rather than slag being a nuisance "byproduct" it's now looked on as a "coproduct" that is treated and then widely used for drainage, filtering and roading.
Water usage also used to be an issue in the steel making process

but these days Glenbrook recycles the 1 million tonnes a day it uses so that only 1 % of cleaned waste-water is discharged. Technological advances have meant even the waste gases from the kilns used in the steel making process at Glenbrook are recycled in a cogeneration plant that produces up to 70 per cent of the electricity used on site.

It's not just the steel-making process and the base coating (ZINCALUME® steel) that has become more efficient, but also the paint systems used to produce COLORSTEEL® and ColorCote® have too. They have far less by-products such as solvents as

Extensive coatings test facilities in many locations provide a data base to improve paint systems

improved paint technologies have allowed the wide use of water borne paint systems that not only have less waste and are better for the environment but also last longer.

Metal roofing technology has become much more advanced over the decades, meaning that less steel is needed to make metal tiles or longrun roof material used in both residential and commercial applications.

High tensile steel uses less resources and provides a stronger product.

One of those advances came about when manufacturers began making long-run roofing from high strength steel coil, which has higher strength than the softer steels previously used. Because it is high strength this steel can be produced in thinner gauges, this means less steel is required and consequently less waste generated. The typical gauge now used on residential buildings is 0.40mm and commercial buildings, 0.55mm. This lighter product enables designers to optimises building design and reducing cost.

Another factor in waste reduction is the durability gained when zinc-coated (galvanized) steel was superseded by a combination of zinc and aluminium (ZINCALUME® steel) that gives the steel a lifespan up to 4 times greater than before. Durability has also been enhanced by colour-coating steel coil which could then be turned into ready-painted steel rollformed into a range of shapes. These advances in durability mean roofs need replacing less often and that saves resources, energy, time and money.

These sheets were made to size using the Dimond on-site manufacturing unit for the new 8000m2 Turners and Growers facility in Christchurch.

The advent of long-run roofing (made to measure in one length from ridge to gutter) also reduced waste as the roof can be made to the exact size required and achieves a much longer lasting result particularly with large commercial buildings which would have had a series of overlaps with standard sheets, leading to corrosion and the need to replace the roof much sooner. Unlike virtually all other building materials there is minimal on-site waste with long-run roof and wall cladding because it is made to length in the factory, and even in the factory waste is minimal at typically less than 1.5%, and 100% of this waste can be recycled!

These Colorcote® ZRX Corrugate sheets were manufactured to size by Roofing Industries, Auckland, reducing waste. The 50 year old metal roof was removed and recycled.

With manufacturing sites all around the country producing longrun roofing, there is less energy used to transport the product long distances to building sites. Because of these shorter distances, the amount of packaging used when the roof is transported can be reduced to save waste. There is also minimal damage incurred transporting steel compared with other roofing products such as concrete that can suffer significant breakages and waste during transportation. Even small improvements can have a big impact in the fight to reduce waste - more efficient roof profiles have been developed, which means there is less steel used per square metre than in old profiles. This combined with thinner gauges could mean up to 35% less steel is used in a modern roof, which also lasts longer and requires less supporting structure.

All these progressive developments over the last few decades have resulted in metal roofing that is far more efficient, more environmentally friendly, and more durable whilst providing just about endless design options.

PRESERVING HISTORY.

Anyone visiting Devonport will be aware of the location of this highly visible landmark; The historic ST Francis De Sales Church building which was originally designed by Edward Mahoney and built in 1918, replacing the earlier church on the site.

In 2008-2009 Phillip Hartley from Salmond Reed Architects Ltd, Devonport, was contracted to design and project manage the repairs and maintenance which involved re-roofing, brick re-pointing and stone repairs.

The project presented some interesting issues in the repair methods and materials to combine old technology with new.

Metro Roofing Ltd, Auckland was contracted to make the repairs and replace the existing metal roof. This posed some compatibility problems as the existing cold rolled galvanised cladding covered all of the existing lead edge, galvanised, pre-painted flashings. To simply replace the cladding with newer technology was likely to cause problems in the future, To remove and replace the existing flashings would have added significantly to the costs. Fortunately the existing flashing materials remained in very good condition and so it was a case of finding a suitable roofing product which would be compatible with the existing materials.

Roofing Industries solved the problem by manufacturing and supplying Corrugated manufactured as 0.55BMT Double Sided "Pioneer Red". The pre paint system selected utilised a Colorcote® 8000 series paint system over a galvanised substrate alleviating any dissimilar metal concerns

A custom, colour matched, wide ridging with lead edge was manufactured and supplied by Roofing Industries (Central Ltd) in Palmerston North in order to complete the waterproofing and material compatibility.

Metro Roofing have done an excellent job this iconic church. The re-roofing presented some interesting installation challenges as the roof pitch is 55 degrees and 6 meters from the ground to the fascia. Every length of roofing had to be loaded into position by hand as there was no machinery access.

Designer Project Manager:
Phillip Hartley
Salmond Reed Architects Ltd
Telephone: 09 445 4045

Roofing Manufacturer:
Roofing Industries, Auckland
Telephone: 09 414 4585
Roof Profile: Corrugated manufactured as 0.55BMT
Colorcote® 8000 series
www.roof.co.nz

Roofing Installer:
Metro Roofing Ltd
Freephone: 0800 766 3496
Mobile: 027 25 65 035
Phone: 09 479 6241
Fax: 09 479 6251

STRUCTURAL COST SAVINGS. LIGHTWEIGHT VS HEAVYWEIGHT ROOFING.

It is generally accepted that structural framing requirements for a lightweight roof are less than for a heavyweight roof and can result in cost savings.

The degree of these cost savings is often debated, so the NZMRM engaged an independent consultant to look at the savings that could be achieved using a lightweight roof.

This work was carried out by an independent consultant, Mike Flooks of MF Design Ltd. Mike Flooks is well respected in the industry and has just been appointed Chairman of the board of the Architectural Designers NZ Inc.

The review has now been completed and the findings show that significant structural costs savings are achievable when using lightweight roofing materials compared to using heavyweight roofing materials.

An NZMRM Information Bulletin has been prepared titled – "Lightweight vs Heavyweight Roofing Structural Cost Comparison".

This bulletin summarizes the findings and provides advice on how builders, designers and merchants can maximise the cost savings for their clients through using a lightweight roof.

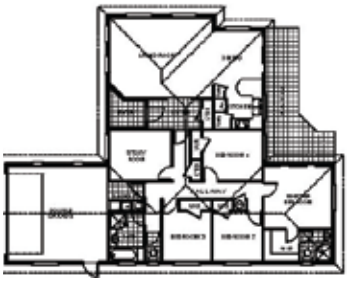
Extracts of the information bulletin follow. The full information bulletin can be downloaded from the NZMRM website – www.metalroofing.org.nz

Extracts from NZMRM Information Bulletin – Lightweight vs Heavyweight Roofing Structural Cost Comparison,

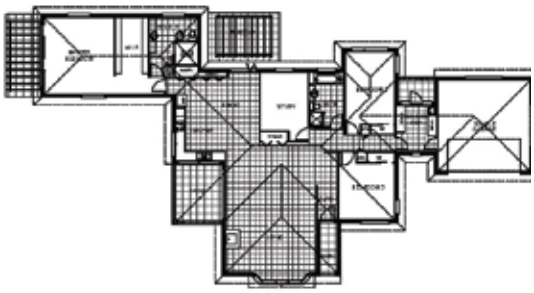
EXECUTIVE SUMMARY

The average approximate structural cost savings using a lightweight roof compared with a heavyweight roof were as follows:

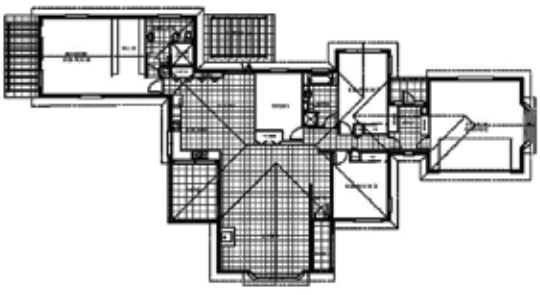
Area of savings	Approx. average savings	
Truss supply (materials)	- $900	- $3.00 / m2
Roof bracing (materials)	- $450	- $1.50 / m2
Lintels & framing (materials)	- $700	- $2.30 / m2
Lintel & Top Plate Fixing down (materials)	+ $50	+ $0.15 / m2
Total materials	**- $2,000**	**- $6.65 / m2**
Labour (mainly Roof bracing savings)	- $1000	- $3.30 / m2
Total materials plus labour	**-$3,000**	**- $9.95 / m2**



Single Storey (2) (Gables & Hips)



Single Storey (Ashmore Cres) (Hips)



Single Storey (Ashmore Cres)(Gables)

METHOD

Three typical single storey roof designs were chosen. The structural requirements for a heavyweight roof and lightweight roof were then optimised to the minimum allowable under current standards, primarily using NZS3604. The costs for these structural requirements were then compared.

The following design parameters were used:

Design Wind Speed: High
Design Earthquake Zone: C

RESULTS

Table 1 - Shows structural savings for a lightweight roof vs a heavyweight roof.

Designer managing project:
Mike Flooks - MF Design Ltd.
Quantity Surveyor:
Quantech Consultancy Ltd.
Structural Engineer:
Airey Consultants Ltd.
Note: The full structural comparison table, methodology and summary notes is available from www.metalroofing.org.nz

Table 1 - Shows structural savings for a lightweight roof vs a heavyweight roof.

Plan	Truss Supply	Roof Bracing	Lintels & Framing	Lintels & Top Plate Fixing Down	Totals		
	Variation	Variation	Variation	Variation	Total Variation	Plan Roof area M^2	Variation $ per M^2
PLAN: SINGLE STOREY (2 GABLE HIPS)							
Materials	-$1,041	-$381	-$85	$74	-$1,433		-$6.12
Labour		-$843	-$84	$246	-$682		-$2.91
Total	**-$1,041**	**-$1,224**	**-$169**	**$319**	**-$2,114**	**234 sq. m**	**-$9.04**
PLAN: SINGLE STOREY (ASHMORE CRES) (GABLES)							
Materials	-$716	-$656	-$1,135	$27	-$2,481		-$7.43
Labour		-$1,373	-$113	$63	-$1,422		-$4.26
Total	**-$716**	**-$2,028**	**-$1,248**	**$90**	**-$3,903**	**334 sq.m**	**-$11.68**
PLAN: SINGLE STOREY (ASHMORE CRES) (HIPS)							
Materials	-$925	-$334	-$992	$27	-$2,225		-$6.56
Labour		-$630	-$255	$63	-$822		-$2.42
Total	**-$925**	**-$964**	**-$1,247**	**$90**	**-$3,046**	**339 sq.m**	**-$8.99**
AVERAGE COST SAVING							
Materials	-$894	-$457	-$737	$42	-$2,046		-$6.77
Labour		-$948	-$151	$124	-$975		-$3.33
Total	**-$894**	**-$1,405**	**-$888**	**$166**	**-$3,021**	**302 sq.m**	**-$9.99**

DISCUSSION

The analysis of these plans shows that significant structural cost savings are achievable when using lightweight roofing materials compared to using heavyweight roofing materials.

Savings achieved could be higher or lower depending on house design and location. For example the design parameters chosen for these plans are generally considered less favourable to lightweight roofing. Additional structural savings are likely to be achieved in lower wind zones, higher earthquake zones and if moving to two storey construction.

It should be noted that lightweight structural cost savings will increase as more gables are present in the roof design.

HOW YOU CAN ACHIEVE LIGHTWEIGHT STRUCTURAL SAVINGS

Truss supply

Truss design and pricing is determined by the frame & truss merchant. Check that your frame & truss merchant is optimising the truss design for a lightweight roof, that they are providing separate truss prices for lightweight roofing and that they are passing on the full cost savings to you.

Roof bracing

Roof bracing design is determined by the designer. It has been found that it is common to "over brace" roofs which incurs additional cost. By referring to the appropriate tables and specifying roof bracing to the minimum, good material savings can be achieved in this area. Additional labour savings for roof bracing could also be achieved if builder's payment methods accommodate this.

Lintels

Lintel design is determined by the designer. By referring to the appropriate tables and specifying lintels to the minimum good material savings can be achieved in this area.

Lintel & top plate fixing hold downs

There is an additional cost in this area for a lightweight roof that is small compared to the savings in other areas...*continued over*

NZ METAL ROOFING MANUFACTURERS INC.

NZMRM engaged an independent consultant, Mike Flooks - MF Design Ltd. to calculate these potential cost saving when using lightweight roofing materials and to provide tips and considerations in roof design.

DESIGN TIPS / CONSIDERATIONS FOR ROOF BRACING, LINTELS AND FIXING DOWNS

These design tips have been prepared by Mike Flooks of MF Design Ltd to assist designers to optimise specification of Roof Bracing, Lintels and Fixing Downs.

Definitions & Notes:

Generally it is recommended that a preliminary truss layout be completed by a truss fabricator prior to completing construction drawings, this should also include fixing down of trusses to top plates.

Generally a hip roof has roof planes on adjacent sides rising in part or full toward a common ridge over external walls.

Generally a gable roof is a roof which has two opposing roof planes rising to a common ridge, forming a triangle shaped wall below on one or both ends.

A light roof is a roof with roofing material (cladding and sarking) having a mass not exceeding 20 kg/m2 of roof area i.e. Longrun profiled metal, pressed metal tiles.

A heavy roof is a roof with roofing material (cladding and sarking) having a mass exceeding 20 kg/m2 of roof area but not exceeding 60kg/m2 i.e. concrete tiles, slate.

Roof Bracing:

Refer to "Summary of Roof Bracing Systems" Table 10.1 NZS3604" for bracing Requirements

Roof areas less than 6.0m2 do not require bracing (e.g. dormers and porches)

Open areas below exceeding 6.0m wide require Dragon ties or Ceiling diaphragms.All to NZS3604.

Ceiling Plane Braces (CPB) - (As required in table 10.1) Place at 2.5m centers max. to top plates supporting hip-end jack trusses or jack rafters and connect to a brace wall below (Not required if the top plate is a boundary member of a ceiling diaphragm). All to NZS3604.

Roof space braces (RSB) – (As required in table 10.1) Place at each gable end, not more than 7.5m centers along the ridge and ensure not less than 2.0m from a parallel external wall. Provide at least half the braces within 2.0m of the ridge. RSB's in elevation, shall not be steeper than 45° and brace runners shall be within 300mm of a parallel brace wall below or over a ceiling diaphragm. All to NZS3604.

Roof Plane Braces (RPB) – (Where required) Either a timber member or a "pair: of diagonally opposing strip braces with tensioners at not greater than 45° to the ridge in plan view, running from the ridge to the external wall. (May be omitted if sarking or a complying ceiling diaphragm is fixed to the "underside of the rafters") All to NZS3604.

A hip or valley rafter running from the ridge to the top plate (or extended to do so) can be counted as a roof plane brace for both roof plans in L shaped roofs.

Lintels and Fixings Downs:

Top Plate fixing down - Consider what is most cost effective and appropriate to use: NZS3604 or an alternative solution , e.g. Lumberlok etc. Ensure correct loaded dimensions are used from the tables in all instances.

Lintel design (including beams) – Consider what is most cost effective and easy for the Builders to install, Timber - NZS3604, LVL – Lintel design software, steel or an alternative solution.

Lintel fixing down (including beams) - Consider what is most cost effective and appropriate to use NZS3604 fixings or an alternative solution e.g. Lumberlok etc.

DESIGNING A LIFESTYLE

Having a wealth of experience in both design and building Wayne Bishop embarked on the design and development of a lifetime...creating, designing and building an entire lifestyle environment. A huge project, not to just design the subdivision but to design and build every home in what was to become Western Rise.

The original 90 acre block has been designed to create 30 individual sites providing the owners with the space and opportunity for a private, rural lifestyle...to pursue their individual interests be it horses and animals, landscape design or small scale agriculture.

Gerard Senator Shingle

Gerard Senator Shingle

Gerard Senator Shingle

Whilst the location is only 5 minutes drive from the Levin town centre considerable attention was given to the size of each block and the location of each home to ensure that Western Rise did not reflect a suburban subdivision. In Wayne's words,"I did not want the town to come to the country with a row of similar homes that all looked the same".

Wayne is the first to admit that creating 30 homes that will be situated in the same area, and achieving a different style for each, is no easy task. Much of the influence has come from researching magazines, visiting sub-divisions and country estates. The primary objective was to create homes that reflected the rural landscape.

Gerard CoronaShake

Most of the homes are around 260 to 300 square meters and use a variety of external claddings and roofing profiles. From a design perspective Wayne's personal preferences lean towards tiles, shakes and shingles that assist in achieving the "manor" concept."The roof design", as Wayne points out, " sets the style for any residential building."

Gerard CoronaShake

As designer and builder Wayne has an appreciation of the design benefits that lightweight roofing materials offer and in the Gerard range of profiles he found the diversity of profiles he needed.

As the development progressed it became increasingly difficult to source new and fresh ideas. "It is about keeping your eyes and ears open." says Wayne.

Gerard CoronaShake

Gerard Senator Shingle

Gerard CoronaShake

Gerard CoronaShake

"The range offered by Gerard has been very beneficial in this instance and the new profiles being produced have made the design aspects easier and more interesting. To date I think we have utilised every profile in their range to excellent effect."

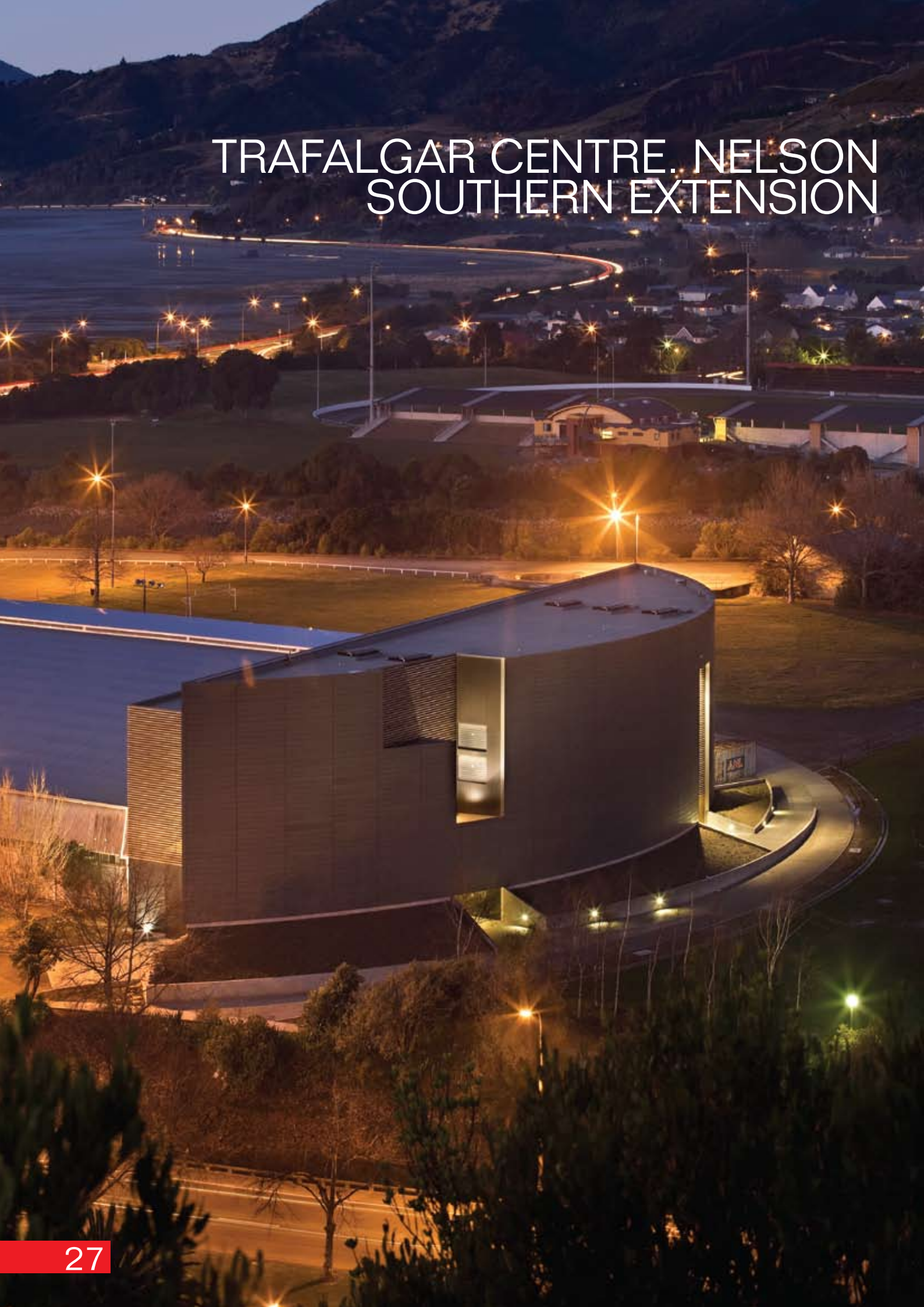
With only 3 homes left to complete it is no surprise that the vast majority have a Gerard roof. "Building a strong relationship with Chris Burgess, our local Gerard distributor, has been a great asset to the development and build process. I no longer have to be concerned about the fixing of the roofing, the time it will take or the standard of workmanship.

Designer: Wayne Bishop
Ohau Levin
Telephone: 06 368 1859
email: wbbishop@xtra.co.nz

Building Contractor:
Wayne Bishop Builder Ltd.
Telephone: 06 368 1859

Roofing Manufacturer:
Gerard Roofs
Telephone: Phone: 0800 104 868
www.gerardroofs.co.nz
Profiles: Gerard CoronaShake
Gerard Senator Shingle

Roofing Installer: Chris Burgess
Reliable Roofing Ltd
Telephone: 0800 106 449
E-mail: reliableroofing@xtra.co.nz



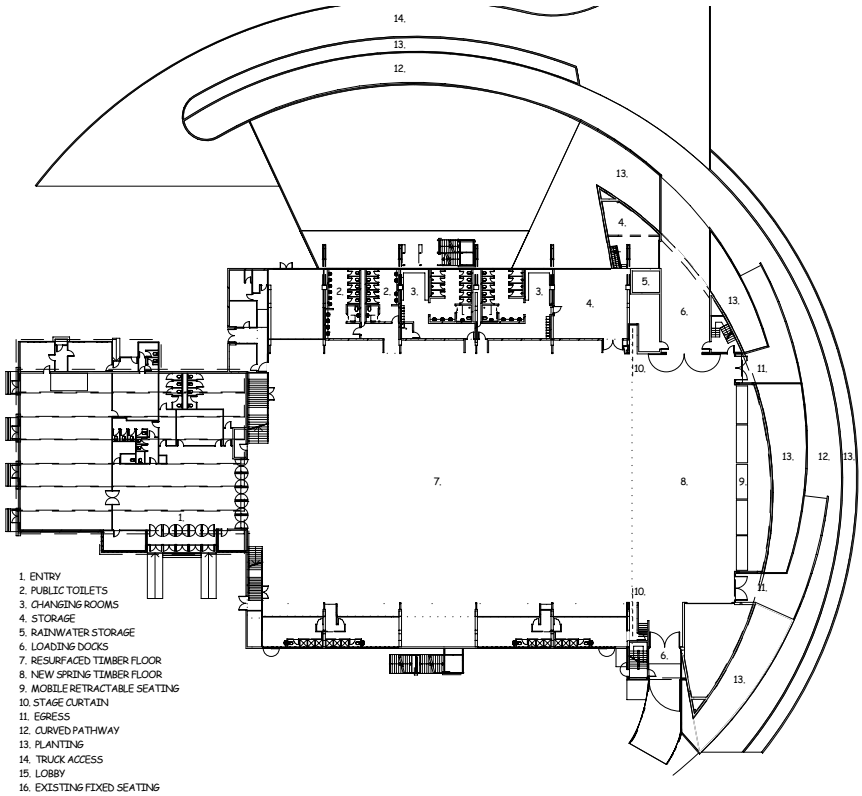
TRAFALGAR CENTRE. NELSON SOUTHERN EXTENSION

The Trafalgar Centre, designed by Alex Bowman and built in 1972, has served Nelson well. For a number of years, however, it has been unable to meet the operational requirements of modern sports and entertainment events or to accommodate growing numbers of spectators.

This is Stage 1 of a two stage upgrade. The complete upgrade involves book ending the curved roof part of the original complex with two larger volumes that are curved in plan. The concept is designed in part to respond to the existing curved roof with the additional intent to break down the formal edges of the structure. This gave additional impact to the design with the curve maximising the changing light as you move around the building. As the extension faces to the south the tall facade of the building would otherwise (had it been a straight wall) have presented a very dark face during the winter months particularly when contrasted with the low sun angles that reflect from the existing structure. The design intention was to balance the strength to the new extension with the existing bold form. Increasing the scale of the Trafalgar Centre so significantly has implications for the Nelson city scape. This fact influenced design choices with regard to form and materials. The curved southern wall, clad in matt dark green zinc panels, terminates at both ends in a slender edge aimed at reducing the visual impact of this large volume.

The future extension to the north is intended to reflect the curve of stage one but will be of a more transparent nature enabling sunlight to enter the building and to take advantage of the views to the north.

The cladding and flashings are titanium zinc. The profile is the Reinzink V25 reveal profile from Eurometals Ltd and the colour is Graphite Grey. Right from the initial sketch plan the intension was to use a metal product to accentuate



the curve of the building, provide a homogenous skin, and link back to the existing aluminium cladding. A variety of vertical and horizontal products were considered before settling on the Reinzink. The V25 profile allowed the sheets to be fixed to the curve on site rather than pre-forming. This minimised the joints and accentuate the horizontal line of the curve which runs at 1° adding drama to the façade. The durability of any material placed on this façade was also important as the building is very close to the sea we were determined that what ever we used would look as good in 10 – 15years as it did the day it was installed. Arthouse worked closely with the supplier on how the panels fitted together and especially on the detailing of the top capping as we felt it was important that there was no obvious capping to the building – we were keen to blur the edges.

In such large spaces sound can be an issue and a new acoustic suspended ceiling was installed under the existing Woodtex using a combination of white Ecophon 1200 x 600 Super G tiles over the main court area. Coruline metal finish corrugated sheeting with acoustic blanket backing was used over the seating area. For the extension ceiling black Sombra tiles were used above the exposed metal trusses. The walls behind the terraced seating were lined with Decortech Decorsound panels finished in Beech veneer. To complete the package the inside face of the curved wall is finished in Ecoply plywood with 90 x 40 radiata batten pattern to disperse the sound.

The original entry and front spaces are still being used but once inside the original sports hall everything has changed. The ceilings and walkway walls have been treated acoustically, passive ventilation has been introduced to the ridge and heating panels have been installed above the seating. New changing rooms and public amenities are provided.

The extra space provided by the addition creates room for an extra court or performance space with the increased height allowing greater flexibility and more options for lighting and props. Five hundred new mobile seats can be moved around allowing for different theatre and sports layouts. The patterned plywood and timber back wall acts as an acoustic screen as well as providing a vibrant backdrop to the new space.

Arthouse have recently been awarded the 2009 NZIA Nelson Marlborough Architecture Award for the Trafalgar Centre Southern Extension in the Public Architecture section. Coman Construction Ltd also received a gold in the local Master Builders Awards for Tourism and Leisure for their work on the Centre.

Designer:
Arthouse Architecture Ltd.
Nelson
Brian Riley - B.Arch, B.F.A., A.N.Z.I.A.
Telephone: 03 546 6664
Email:
brian@arthousearchitecture.co.nz
www.arthousearchitecture.co.nz

Main Contractor:
Coman Construction Ltd
Telephone: 03 544 6050

Cladding Supplier:
Eurometals Ltd
Telephone: 04 293 6422
Profile: Reinzink V25
Colour: Graphite Grey

Cladding Installer:
Freeman Roofing
Nelson
Telephone: 03 544 3108.

Photography: Simon Devitt.

Arthouse Architecture Ltd.

Arthouse Architecture Ltd. was formed in 2001 when David Wallace and Min Hall merged their individual firms. In 2008 a third Director, Jorgen Andersen, joined them bringing new energy and fresh ideas to what is the largest architectural practice in the Nelson Marlborough region.

The bulk of Arthouse Architecture's work is located in Nelson and Marlborough and the firm is actively involved in discussions focussing on the region's future as one of New Zealand's most desirable locations. With the benefit of thirty years experience in the area they have a particular interest functional and innovative design solutions to projects of all scales.

Arthouse has a long standing commitment to sustainable and energy efficient design reinforced by ongoing research. Every project is an opportunity to not only meet or exceed clients' needs and aspirations but to make a positive contribution to the built environment.

The practice consists of twelve staff including Directors, Registered Architects, Architectural Graduates, Draughts people, Interior Designers and an Office Administrator.
The studio / office is set up for designers to work collaboratively. This team approach flows through to a close working relationships with clients, consultants and construction teams.
Arthouse and it's predecessors, have consistently been recognised for completed projects gaining awards in both the NZIA Architectural Awards programme and the Master Builders Awards. Current projects range from residential, commercial and community developments.

Arthouse proudly produces consistently well detailed projects and this high level of documentation contributes to reduced build time and variations during the project.

A high level of thought is applied to contextual considerations of each project and thorough planning at the concept stage. Incorporating cost efficient solutions that relate to the site and use of the building.

www.arthousearchitecture.co.nz

SCOPE NEWS AND VIEWS

Zinc and storm water run-off.

Article supplied courtesy of Jenny Bain, Rooflink.

The Auckland Regional Council (ARC) has done an about turn on its earlier claim that zinc-based roofs were responsible for increased levels of zinc in harbour sediments.
The ARC now acknowledges that the use of COLORSTEEL® prepainted steel and ZINCALUME® steel roofing products have contributed to falling zinc levels noted in the harbours and that this trend will be likely to continue.
The council has added that run off from unpainted ZINCALUME®roofs should also be treated no differently to painted ones – marking a major turning point in the debate over zinc run-off.
Unfortunately the fallout from the earlier ruling by the ARC means that many regional councils and territorial authorities followed the ARC's lead when it circulated its now defunct document Policy Implications from roof run-off study" and have been determining policies based on what has turned out to be an incorrect ruling.
One such council is Environment Canterbury (ECAN) whose decisions on the use of unpainted ZINCALUME® have been influenced by those previously imposed by ARC. New Zealand Steel has now requested ECAN to review its current storm water discharge consent conditions.
Any RANZ members who experience issues with resource consent for a metal roof – either with material selection or water run-off should advise the MRM's Sustainability Sub-committee who will ensure that councils and designers are correctly informed about zinc run-off.

New Fletcher Building "Roof Tiles Group" General Manager

Fletcher Building has recently formed the Roof Tiles Group, that will comprise the current AHI Roofing business based in New Zealand and Decra Roofing based in USA.

Peter Wilson, formerly the Regional President for Bluescope in Thailand and Indochina, took up the newly created role of General Manager for the Group at the end of October.

Peter, an Australian, has had a successful career with BHP and more recently Bluescope, commencing as a graduate sales cadet, progressing through domestic and export sales management and marketing roles to general management.

Peter says, "I look forward to using my international experience to lead and support the roof tile team to rapidly build the business from the strong base already created in many markets across the globe and to work with the very diverse team of people we have across the portfolio."

Peter has a very strong track record in building and growing businesses. He has had significant exposure to the roofing industry and has demonstrated his ability to lead growth in product and geographical niches.

"His skills and experience create an opportunity to integrate our existing, successful businesses and take the next step toward achieving their full global niche growth potential," said Chris Ellis, Chief Executive Building Products.

Pacific Coilcoaters New Website.

Pacific Coilcoaters has fully update its website. The site carries a range of material to assist the industry, including brochures, case studies and advice, technical bulletins, and the ability to inquire on-line for a pre-approved warranty for a specific project *(see www.colorcote.co.nz/warranty-inquiry.html). Please visit the site at www.colorcote.co.nz .*

CPD Provider to BOINZ.

Pacific Coilcoaters is pleased to have been appointed a CPD provider to BOINZ. This enables us to present detailed information on correct product, designs and environmental issues to consider, and to answer any general questions and concerns that BOINZ members may have. The presentations are conducted locally (at Council offices normally) to maximise the ability of members to attend, and to allow for 'localised' issues to be addressed specifically.
If you are interested in having one of these sessions contact our Architectural Manager, Rob Armstrong, on rob.armstrong@colorcote.co.nz, or 0800-ARXZRX, or 021-927314.

ZAM material.

PCC recently started providing the ZAM® substrate to the New Zealand market. ZAM® is a steel substrate with a zinc rich metallic coating that incorporates magnesium. This metallic coating provides superior corrosion protection, especially on the cut edges, compared to other materials.

The ZAM® substrate is being used under our standard Water borne and PVF2 paint systems, and is supplied as ColorCote® ZM8™ (water borne) and ZMX™ (PVF2 paint). The products are designed to provide improved corrosion resistance for products such as rainwater products and spouting, and to improve corrosion performance in severe marine and severe industrial conditions (note however they do not replace Aluminium products in very severe marine and geothermal areas).
For more information, visit www.colorcote.co.nz or contact Rob Armstrong (our Architectural Manager) on 021-927313 or rob.armstrong@colorcote.co.nz.

Latest Developments: Low gloss PVF2 paint

Pacific Coilcoaters has developed a low gloss (10% nominal) version of our PVF2 paint system used on our ARX™ and ZRX™ paint systems. This is the first time in the world, as far as we know, that a low gloss version will be used commercially. The application is for an airport where a combination of highly chemical-resistant paint and low glare (low reflectivity) is required. PCC worked with the building's Architects and owners to develop the paint system for this project, and it will provide the best outcome possible offering maximum durability for the life of the material.

Hardcoat acrylics

PCC has also been working with our paint suppliers for a number of years to develop a harder version of our waterborne ZR8™ and AR8™ paint systems. The benefits are that the surface will be more resistant to scratching (approx 2-3 H pencil vs. F pencil for existing water borne systems), and this means less damage during transport and installation, and also improved metal marking resistance at the rollforming stage. This latter aspect is particularly relevant as it enables us to move more colours in our ZR8™ range to waterborne, thus improving our environmental impact and allowing us to use less solvent throughout our process.

Roofing Industries now in Christchurch

With a branch opening in Christchurch this month, Roofing Industries can now justifiably lay claim to being the only 100 per cent New Zealand owned and operated national long run roofing manufacturer.
Production is due to start on 1 December at the Annex Road, Middleton branch of the company following installation of new roll forming machinery during November and Christchurch members will see the new Roofing Industries branded trucks and utes out and about in the city as the company makes its presence felt.
Trimrib® and Corrugated will be manufactured and Roofing Industries will also be drawing the highly successful Multirib™ product from Freeman Roofing, manufactured under an arrangement with Roofing Industries.
The company, founded by Dave Gellatly, has achieved recognition for being service focussed, and several nationally positioned customers expressed interest in Roofing Industries manufacturing in the South Island . With branches in Whangarei, Albany, Hamilton, Taupo and Palmerston North, in the end they couldn't ignore the requests to open in Christchurch. To facilitate activity from the new Christchurch branch, Roofing Industries will also have a depot in the lower South Island to service that area
Manager for Roofing Industries in Christchurch is Paul Brady whose background is in engineering and construction having also served in the police force in places that include Te Puke, Ranfurly and Waimate. Factory Manager is Robert Gillespie who was formerly production manager with Roofline Products, Christchurch. .

A LIFESTYLE VILLAGE.

Whilst often referred to as retirement villages, Sanctuary Villas prefer to think the residents have done everything but retire. In fact the accent is on enjoying life without the stress and commitments of home maintenance, leaving village folk to pursue their individual pleasures.

Property Lifestyle Concepts Ltd's directors, Jedd Pearce and Mark Revis, have considerable experience in the area of lifestyle development with two similar projects completed and a third underway.

The village concept depends on several key factors. Location, size of units, privacy of individual units and the right choice of material to provide exceptional service life, with little or no maintenance. In this instance residents are able to personalise their homes by choosing their own interior decor.

There are 41 Villas in the village, all of varying sizes to accommodate the personal needs of occupants and their household belongings. The owners are carefully selected to ensure that those surrounding them have similar pursuits and a positive outlook on living. Each self contained residence has it's own "space" for those who choose to garden or enjoy a drink as the sun sets. The overall concept is designed to give privacy but offers security which becomes an increasing concern over time.

A unique aspect of the village is the ownership which gives residents a freehold title allowing the resale of their home at anytime. The owners can enjoy the profits and capital gains made from their property investment. A big plus for the residents and a welcome move away from traditional leasehold titles with strings attached.

For those who have chosen to live in Sanctuary Villas the testimonials are very positive with an appreciation of the space, the quiet ambience their homes offer, the well maintained grounds, the layout and most importantly the friendships they have been able to establish with like minded people.

The location overlooks what is known as the Travis Wetlands, which borders the village, providing many walkways and an ever changing environment for both the

residents and the abundant bird life that inhabits the area. Something most of the residents enjoy during a peaceful evening stroll.
To protect the adjoining wetlands from pollutants and sediment run-off Aurecon designed swales which are installed throughout the village. These swales filter any run-off and sediment before it enters the wetland which is crucial to the environment and wildlife.

The site was originally purchased from Telecom and resource consent was given by CCC and ECAN for the village concept. Jedd and Mark worked closely with Aurecon who provided some excellent solutions to meet the Resource Consent in both roading and specially designed foundations. Due to an underlying sand base, liquefaction issues and proximity to the wetlands, specialised consideration was given to the engineering and geotech requirements.

The grassed area (centre) is the only visible sign of the swale filter system that prevents sediment from entering the wetlands

Aurecon's experts advised that the best way to proceed was to minimise the weight of the villas where possible. This together with piled foundations would provide the best stability of the site. The site now boasts 2500 piles to a depth of 5 metres providing both stability and an additional safety feature should the area ever experience a major earthquake.

The building materials represent a balance between aesthetics, maintenance and weight. The choice of high quality, low maintenance materials is very important to the residents who are sceptical about many modern designs due to the publicity on leaky buildings. The use of Gerard Roofs Colortile has saved considerable weight and enhances the clean, formal design.

Whilst the Villas deliberately follow a traditional design there has been considerable effort put into an eco-friendly solar energy hot water system to conserve power. This has proven to be a popular and cost effective benefit to the residents and the rebates, then offered, to developers made it a viable addition. Unfortunately the rules have now changed and the solar rebates are no longer available to developers which is disappointing.

As the concept of the Village is about hassle free living, an onsite caretaker is responsible for the maintenance of common lawns and gardens within the village, as well as regular cleaning of external windows and repainting of linea board when required. This routine maintenance programme keeps the standard of the village high, ensuring uniformity and the best possible return on investment.

Sanctuary Villas with the choices of design, material, location and environmental sensitivity has provided a safe, peaceful and stress free home for it's residents.

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Kaiapoi
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Roofing Manufacturer: Gerard Roofs
Profile: Gerard Colortile
Colour: Karaka
Telephone: Phone: 0800 104 868
www.gerardroofs.co.nz

Roofing installer: Harvey Roofing Centre
Christchurch
Telephone: 03 343 1590

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.

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