

ISSUE 32

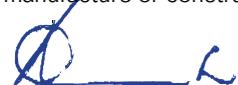
# SCOPE





Below is a brief introduction to the 2012 executive of The 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.



**Darrell Back:** President  
NZ Metal Roofing Manufacturers Inc.  
Managing Director of the Steelform Group of Companies.

Vice President

**Tom Marshall:** General Manager  
Marshall Industries Ltd.

Immediate past President

**Tony Barbarich:** Director of Business Development Metalcraft Industries.

Executive Members:

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**Stuart Hayman:** Consultant.

**Warren Oliver:** Managing Director Franklin Long Roofing.

**Darren O'Brien:** General Manager for Dimond

**Rod Newbold:** Commercial Manager Steel & Tube Roofing Products.

**John D'Arcy:** General Manager Calder Stewart Roofing

**Gary McNamara:** Marketing & Business Development Manager Metrotile Roofing

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](http://www.metalroofing.org.nz)

# SCOPE

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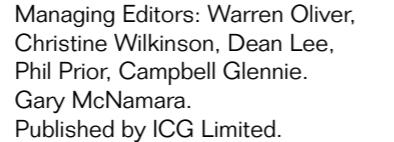
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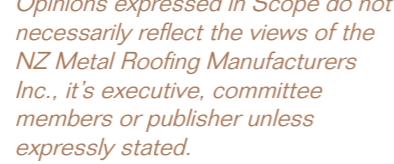
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Scope is the official publication of The NZ Metal Roofing Manufacturers Inc. Executive Officer: Peter Atkinson Private Bag 92 066, Auckland. DDI Ph: 09 367 0934, Ph: 09 367 0913

## PUROTU BACH

*Purotu ( Maori means "Beautiful")*

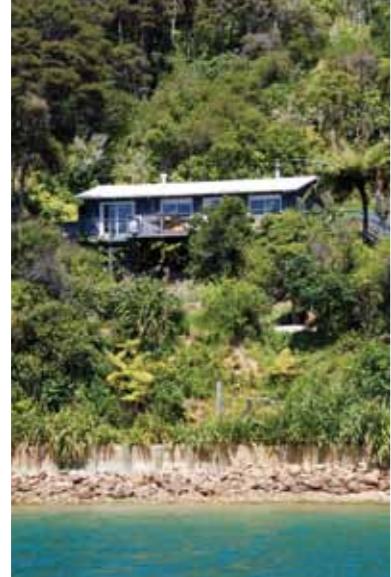
### DREAMERS NEST AT BAY OF MANY COVES MARLBOROUGH SOUNDS

Architect Davor Mikulcic admits he sometimes feels conflicted when asked to design a home that is going to sit in an area of natural beauty such as the Marlborough Sounds.

"To be honest, quite often at the start of the design process, after we have had a chance to talk to the client and experience the site for the first time, you ask yourself, 'Should I do anything to the existing site, or should the beautiful natural environment remain as it is. For the project at the Bay of Many Coves this was not an issue.

The clients, when they introduced us to the project, already had on the site quite an old cottage which was not in very good condition."





The original family cottage

Davor says. "Overall the site actually combines two individual lots with total area of 4611sq m, with the building platform elevated about 10 meters above the sea level, at the lower level of the hilly site. The lovely positioned cottage was a single storeyed two-bedroom simple weatherboard finish and pitched ColorSteel-roofed dwelling and was nicely nestled into the surrounding native bush. The client very much loved it and was quite a difficult decision we did together to actually remove it from the site and design something new in its place. Emotionally it was a difficult decision, but it was a logical, more sustainable and cost effective solution, particularly with the knowledge of the remoteness of the site and the logistical requirements of any long-term maintenance."



Building was also going to be more difficult than usual with Picton the closest town and the only access to the site being by boat (about a 40-minute trip) or helicopter. Most of the materials would have to be barged in.



"It is a tradition with Studio MWA's Wellington and Brisbane offices to begin projects by spending time together with their clients, preferably on the future site.

"There are many reasons for this, including to help us better understand the client's needs, wants, preferences, requirements, any special spots and views and to visualize and experience the site's constraints including access, orientation, context, services, topography and vegetation and any obstructions, or in simple wording the pluses and minuses we have to work with," says Davor.

"Michael Maddern, our Wellington studio MWA practice Manager, and I had the amazing experience of spending one weekend with our clients on the future site in the old cottage and by talking, walking, eating, drinking, fishing, photographing, sketching, measuring

we tried to live as the clients do to be as familiar as much as possible with the site and to try and understand our clients brief, which we developed even further."

Driving the design of the 165sq m home was the client's vision for a simple and functional dwelling - "the bach".

They wanted an open plan kitchen/dining/living area with a wood burner, three double bedrooms - all with a good orientation and view, a separate studio/office area, laundry-changing room after diving with exterior shower, main bathroom and a separate toilet. The outdoor space needed to incorporate the existing spa, which had to be strategically positioned to capture the view while remaining private. An outdoor shower in the same space was also a requirement.



Extensive decking was also needed to create outdoor areas all around the dwelling so the barbecue could be used in a variety of locations depending on conditions. A glass balustrade on the deck was a logical choice to preserve the stunning sea views.

Beginning the project in 2010, Studio MWA had free rein in the design process and used hand sketches, scale models, computer models and animations to give their clients a good feel for the design. Resource Consent was required because the position of the existing building and proposed building was inside the 8 metre setback from the protective 20 metre Queens Chain as per Department of Conservation requirements, and an excavation of more than 20 cubic metres of soil was required.

Davor says a lot of thought went into siting the new building so that it sat easily in the environment while capturing sun and views.

"From the first initial sketches we did with our clients during our first site visit, it was obvious that we all had the same goal – to nicely settle the building in the existing environment, without competing or contrasting with the surroundings but to simply blend it into the natural environment.

After much discussion, the site of the old cottage was used but in a slightly different fashion. We rotated the new building to capture an even better orientation and view, we also decided that by pushing the building back into the hill our project will at the same time perform as a retaining wall to eliminate any future possible erosion while giving us the opportunity to sit even better the building into the site.

The solution was to stretch the buildings form along the existing contours, to capture the amazing view and take full advantage of the very good position and north east orientation.

"Through the building we created an internal street with a continual curved timber wall starting at the front of building flowing up from



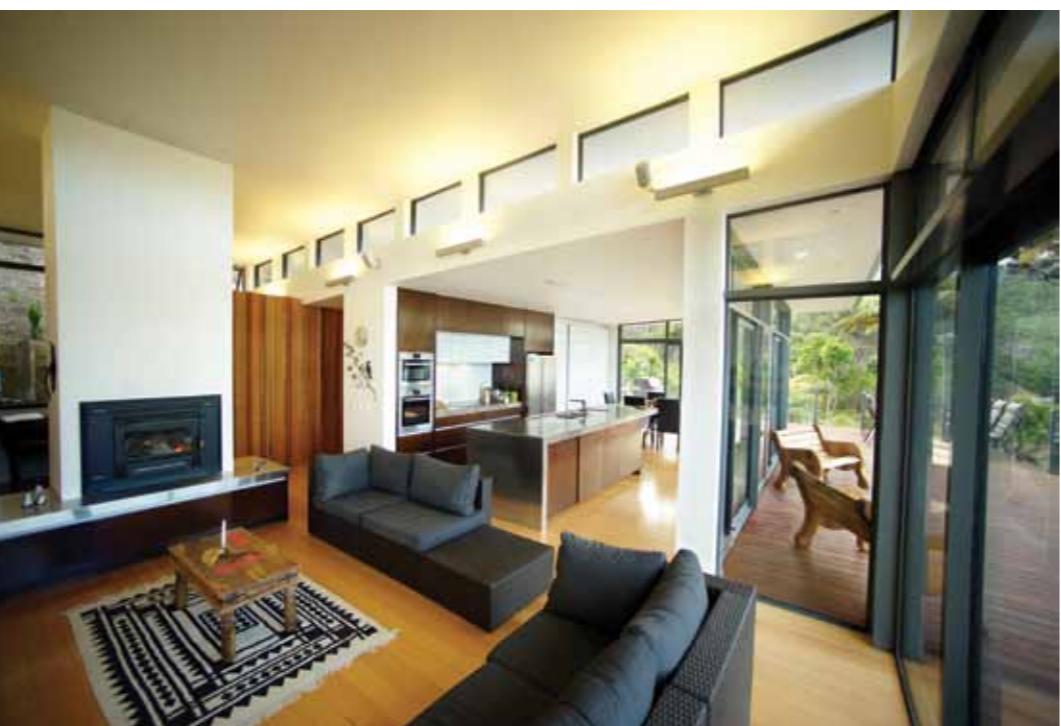
the timber deck on one side and finishing as a retaining wall on the other side of the building and curving 15 meters further, creating very intimate private courtyard with outdoor seating, spa and outdoor shower capturing the lovely sunsets at back and the stunning view to the front."

Because of the home's remoteness and coastal location using durable materials was of paramount importance.

"The main and the most dominant material on this project is definitely (together with grey tinted glass),



COLORSTEEL® Maxx™ metal roofing and wall cladding, by New Zealand Steel, helping to emphasise simplicity and elegant, clear, straight lines. The choice was a logical, easy and cost-effective solution for a low-maintenance material that performs very well in such a severe sea spray environment. The choice of Paneldek profile by Steel and Tube, with hidden clip fixings without penetrations, further improves the visual appearance and long-term performance and maintenance of the roof and wall cladding. The Thunder Grey colour from the COLORSTEEL® Maxx™ colour chart was quite an easy solution, gaining inspiration from silvery grey colours of manuka and kanuka barks and natives surrounding building site."



Having Sam Edwards and his team from Tory Channel Contracting as the main building contractors was a blessing, especially as they had the ability to see the job through from start to finish with a high level of craftsmanship. It also helped that the clients stayed on site serving as project managers and worked very hard to get the building delivered as well as doing extensive landscaping themselves.

Structurally, the bach is a single-storey steel and timber framed structure with skillion roofs, seated at the front on timber piles and at the back on concrete slab with a 1 metre-high concrete retaining wall and footing along the entire length. The home is double-glazed and has exterior aluminium joinery.



Simple but robust materials such as stainless steel and lacquered marine ply feature in the kitchen, laundry and bathroom. Tasmanian oak floors provide a natural, warm look.

The fireplace was positioned in the centre of the building not only so it radiated heat evenly throughout but also to make it a congregation point.

On cold winter days or spring and autumn coldish nights it is the real "heart" of the bach and a centre place for memorable stories about diving, fishing and hunting, or dreaming about the past and about the future.

### Studio MWA

Environmentally sustainable design is one of the firm's main goals with a focus on thinking towards a better future. "We strongly believe that a sustainable approach and environmentally sensible designs are important ingredients in quality architecture and we are proud to

incorporate it in every project. For many it is 'fashion' but for us it is essence in our everyday work."

To Studio MWA the principles such as the orientation of building, use of natural light, natural ventilation, use of passive solar energy, use of natural, recyclable and environmentally friendly materials and finishes (preferable local), effective sun protection, reduction of energy consumption, providing living and working comfort without sacrificing the environment of spaces, use of energy and water efficient systems, recycling and waste management, universal design principles - Lifemark - are all an integral part of our design discipline.

"We believe this sustainable approach to design should not cost more. Through our work we are seeking alternative solutions to balance the energy resources we use in our everyday lives and we bring this innovative spirit to all of our projects." We do not make



fashion architecture with etiquette style. We believe in pragmatic, but at the same time visionary architecture. Our aim is not to produce conventional and predictable architecture or for that matter, abstract architecture that does not have any connection with the existing world, context and reality. We strongly believe there is plenty of space between these two extreme approaches, to express our vision for a better human future.

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**Paneldek colour Thunder Grey.**  
**Flashings :0.55mm COLORSTEEL®**  
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# MOVE TO MODULAR BUILDING SYSTEMS

The face of building is gradually evolving in New Zealand, with one notable shift being a move to modular buildings constructed with cold formed steel.

With the development of software technology that incorporates both architectural and engineering design, larger scale commercial buildings can now be designed with more efficiency, meaning buildings are erected faster and are more cost effective.



The performance statistics and capabilities of cold formed steel are certainly being recognised through the Christchurch re-build, where buildings of strong structural integrity are being required within short time frames.

One recent example of this modular structure is the Pacific Motor Group commercial premises in Whangarei, designed and built by the Coresteel Northland team owned by Wayne Hill and James Senescall.

Coresteel uses proven design technology and a flexible portal system that allows for modular buildings of virtually any size and shape.

Featuring a 46 metre span ceiling, unispan floor, separate workshop, undercover car parking and separate Ford and Mazda showrooms, the Pacific Motor Group build is a great example of Coresteel's capabilities.

Partnering with Dimond, the build includes close to 3500sq.m of



saved the building owners over \$500,000.00

Stage Two of the project - a Mitsubishi and Suzuki building - has been awarded to Coresteel on the back of the overwhelming success of Stage One.

Coresteel's unique Bracketless Portal System and ability to manufacture larger steel sections than any other company in New Zealand gives them a unique position in the market. The construction of Coresteel portal frames uses no external brackets as the connections are manufactured as part of the column and rafter, with the members simply bolted together to form the portal frame.

The purlins, girts and windposts are connected using a total of six different brackets to form the entire building structure, with all connections standardised to limit tools changes and product



requirements on site. This simplicity of design results in a number of benefits including better raw material utilisation, and improved manufacturing, transport and erection times.

This results in a building that is designed and engineered to the highest standards, while minimising manufacturing and construction time frames.

Coresteel's National Manager, Haemish Reid, says modular building systems are the way of the future.

"They guarantee efficiencies with both design and delivery and they ensure a more cost-effective project. These days building owners are looking for someone who can offer a 'turn key project' that will save them time and money, from designing to manufacturing and installing. Coresteel can offer the whole package."

Coresteel is experiencing many enquiries for large scale projects. This has in turn generated offshore enquiries particularly in the Asia/Pacific, Australian and South African markets. This again proves that Coresteel has a superior system that is becoming known not only nationally but worldwide.

Dimond are pleased to have been a part of this job and are continuing to partner with Coresteel to deliver cost effective buildings which make use of the latest technology and are built to last. We look forward to mutually successful projects in the future.

*For more details on this Project or if you have any further enquiries please contact:*

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*Roofing Manufacturer: Dimond  
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Roof profile: Dimond DP955*



## FAMILY PLANNING FOR EXTENDED FAMILY

How do you go about designing a home that can cope with sleep overs for ten grandchildren from two to sixteen – plus their parents – and still enjoy your own space with peace and privacy?

Retired farmers John and Beverly Lundy think they've got it just about right. Their brief for their new 450sqm rural retreat in the Waikato centered on two key words: Closeness and separation.



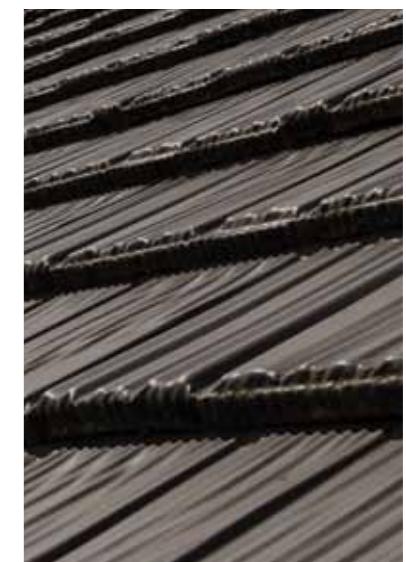
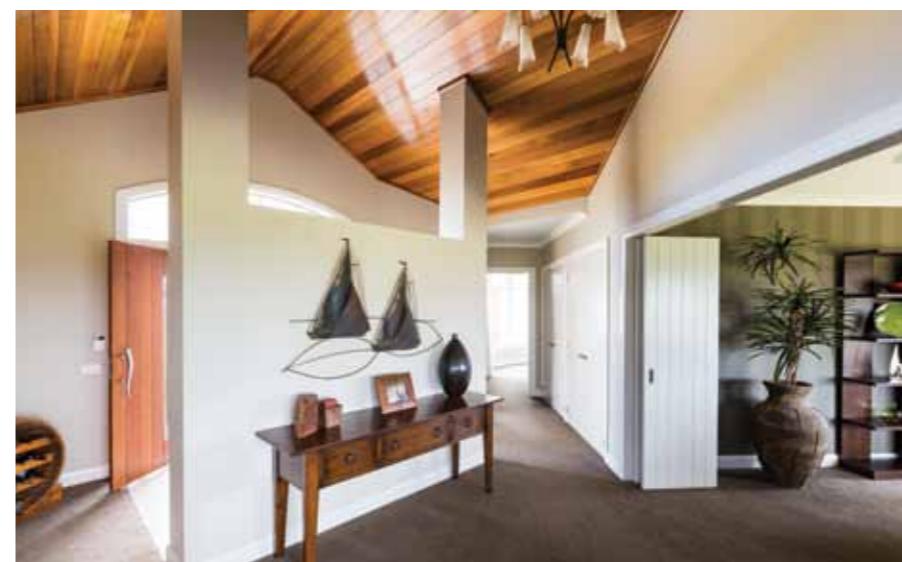
*The Lundy's really liked the Gerard Corona shake look, especially for a big roof with lots of angles.*

"The grand kids come around quite a lot, and we designed the home with that in mind," says John. "One bedroom at one end of the house for us with the lounge, kitchen and everything else in the middle so we can shut that off from the other part of the house.

"We live in one part of the house and when the family come down, they have the other half. We can have close family time when we want and still enjoy some separation when we need a break from it all." John and Beverly moved off their family farm in the Waikato two years ago, and their new home is certainly



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### Sense of space

Having been in their new home for just over two years, the Lundy's are delighted with how their planning ideas turned out, as is everyone else in the extended family. John particularly likes the sense of space in the new house.



a big step up from the traditional farmhouse they lived in for over forty years.

John explains: "Our last place was a small simple weatherboard farmhouse. We shifted there in 1970 and we renovated it a couple of times as the family got bigger. "We went up two storeys on that one, but with this one we've stuck to one storey. As we get older,

we didn't want to go up and down stairs."

John and Beverly have three grown daughters and a son. Some of the family live close by and visit regularly while others live in Auckland and visit less frequently.

"There's a large outdoor area at the front of the house, with bi-folds that open from the main living area and from the separate formal lounge. So it's quite a big area and we can open it all up for family get togethers.

"The way it turned out, we're really happy. It's even better than what we imagined when we were planning the house."

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### Timeless design

While the home has a grand visual presence, designer Grant Jury is reluctant to put the house into any kind of box in a design sense.

"Certainly it's contemporary in terms of materials and some of the lines, but it has a slightly traditional air about it. The word I think best sums it up is 'timeless'. It won't date. It'll still look good twenty years from now."

Based in Morrinsville, Grant has been a builder and designer for over 39 years and has built homes throughout the Waikato.

"I started as an apprentice when I was fifteen, then started my own business at twenty one. I do the designs myself, but I also worked on the building of most of the homes until the last few years."

"I used to swing the hammer up to about seven years ago when I decided to step back and concentrate on designing and project management."



"These days, I use outside contract crews. Generally, we use the same contractors on every job."

John and Beverly did considerable research before deciding to go with Grant, driving around looking at other new homes, visiting showhomes and talking with a number of group home builders.

"We told Grant what we wanted, something with interesting angles on it," says John. "We told him we didn't want a square box house. We

wanted the sun to come into all the rooms at some point from first thing in the morning until last thing in the afternoon. The angles of the house are good for that."

### Weather conscious

With intimate knowledge of the weather built up over 50 years of farming, John paid particular attention to how the home was sited on the section to maximize outdoor living potential and incorporate shelter from prevailing winds.



"We cut into the hill a bit and we created a bank to the west that we're growing native trees on, and there's another bank to the south and that helps protect us from the south westerlies."

"Even though it's been very hot of late (February), we can open certain doors and we have a very nice breeze going through keeping the house very cool."

According to Grant, most clients are very conscious of positioning their house for maximum sunshine, very few think about the impact of prevailing winds.

"The Lundy's home was built on a hill, so we planned that it should face east rather than west where the prevailing winds come from, and we made a sort of wind block to the west and south. If you block the wind, you can go outside any time of the year and leave your doors open. There's no point in having outdoor living areas if you can't get out and enjoy them."

### Striking the right chord

So how was the design and building experience?

"Grant struck the right chord straight away and he is extremely easy to get along with," says John. "He knew what we wanted and he delivered."

from then on, we were all talking about the same thing, on the same page as it were.

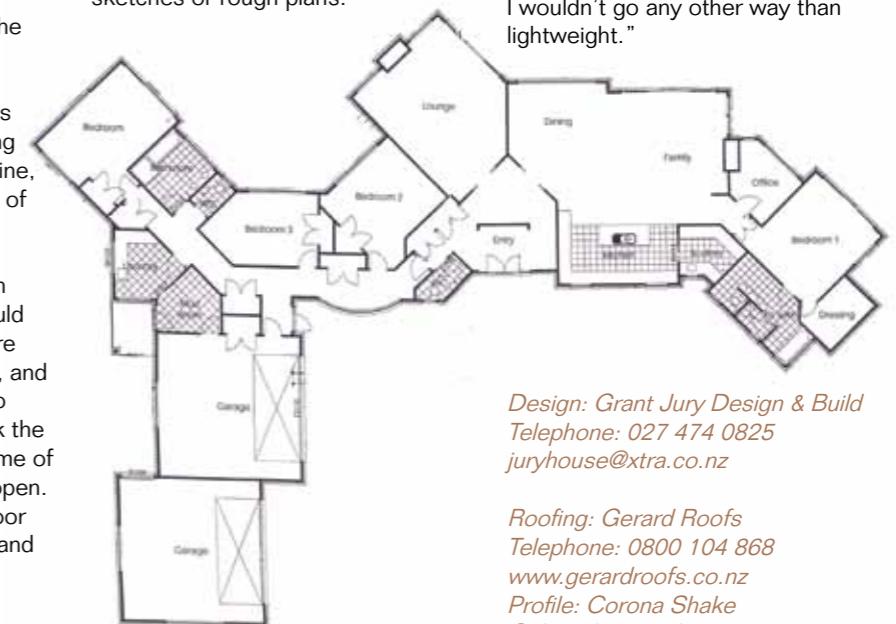
"They wanted the plaster look and that's what I recommended. The cladding is brick plastered over." Last minute change to Gerard Roofs According to Grant, the only significant change to his original design was the choice of roof.

"It was going to be asphalt shingles but when we started doing sketches, the Lundy's did a lot of driving around looking at different roofs and they really liked the Gerard Corona Shake look. And it does look good, it really sets the house off."

While cost wasn't a major factor, choosing the Gerard Corona Shake roof did achieve significant savings compared with asphalt shingles.

"It was a lot cheaper than the asphalt shingles – around 40% cheaper, and it's a big roof and it has lots of angles," says Grant.

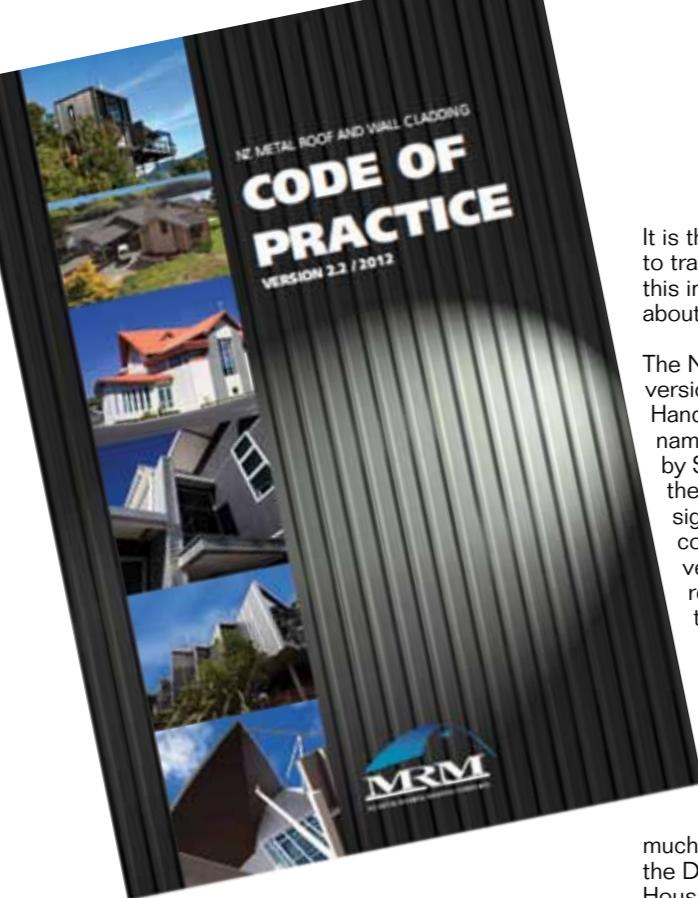
"We've used Gerard quite often before. It's a good roofing product. I wouldn't go any other way than lightweight."



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**www.gerardroofs.co.nz**  
**Profile:** Corona Shake  
**Colour:** Ironsand

**Roof Installer:** Westgate for Roofing  
**Telephone:** 07 850 9407



# CODE OF PRACTICE ON-LINE

As the NZM RM updates its COP and prepares for a new version, a brief review of the past and current documents is presented by Stuart Hayman of the MRM Technical Committee.

The NZM RM Metal Roof and Wall Cladding of Practice is now available as a downloadable pdf from the NZM RM website, [www.metalroofing.org.nz](http://www.metalroofing.org.nz) and has recently been updated to Version 2.2. It is intended to review the COP in 2013 as has been carried out at 5 year intervals, and it is possible that Version 3 will be web-based rather than a document converted to a web document. Watch this space.

In the meantime – some features of Version 2.2

## History

The NZM RM Code of Practice has been through several publication methods in the 10 years it has been in existence. This reflects the changes in the building environment and available materials which seem to occur with increasing frequency as time goes on.

It is therefore perhaps worthwhile to trace in summary the history of this important source of information about metal cladding.

The NZM RM produced three earlier versions of the "NZ Metal Roofing Handbook" under a couple of names, starting in 1978 all written by Stuart Thomson. Following the publication in 2000 of the significant update (which of course is now the previous version) of NZS 3604, NZM RM realised the need to revise these earlier books and also wanted to achieve greater recognition of our roofing knowledge database by the regulators.

At the time, the regulator was the Building Industry Authority (BIA) the very much smaller predecessor to the Department of Building and Housing (DBH) – which of course is just changing its name again, and becoming part of MBIE.

In those days it had 14 employees and talked to anyone. In July 2000 MRM asked for a meeting to discuss this matter and three of us (two from NZM RM and one from RANZ) met with BIA chairman Bill Porteous and his senior adviser Claire Benge to talk about our proposal to produce a completely new version of the Handbook (not yet called the COP) and to ask about BIA recognition of such a document and some possible funding.

They were interested in the proposal and supported the idea. They were not however able to produce any funding because the Building Levy funds were not available for such purposes! BIA also told us that there was to be a major upgrade to E2/AS1 and that it would be useful for the two things to coincide – in a year or two.

History overtook the BIA with leaky buildings and E2/AS1 became a very large document produced with little industry input, by the quickly becoming 700 person DBH. The Metal Handbook became the NZM RM Code of Practice for Metal Roof and Wall Cladding and was produced by the NZM RM Technical Committee and published at great expense in 2003 – as a glossy, loose-leaf document in a hard cover. The quality was similar to that of NZS 3604:2000, at the time the biggest NZ Standard - and at a similar cost.

This cost proved to be a bit of a stumbling block as designers didn't want to spend one hour's charge-out rate to buy a copy. Eventually the hard copies were paid for by NZ Steel and distributed free.

But before that time, it was realised a more serious real issue with the hard copy was that it was difficult to search, and so it was converted into a very large, copy protected, pdf and put onto CDs which were then sold at a nominal cost.

This allowed users to copy it onto their own computers and use the search function of Adobe Acrobat Reader and its clones.

This was undoubtedly a big leap forward (although hardly "cutting-edge" technology) and NZM RM still resisted people copying drawings or bits of text from it (which was not impossible, but difficult, and illegal). By 2007 the then version of E2/AS1 (2004) was more or less accepted, and a number of technical

amendments and updates that should be published before the development of Version 3.

The technical committee realised during the period since 2008 that there were a number of amendments and updates that should be published before the development of Version 3.

This was promoted by NZM RM widely to architects and designers and to Building Inspectors via BOINZ, and to anyone else we could and through Scope to our 11,000 readers.

It is pleasing to note that while at the 2009 BOINZ conference NZM RM participated in virtually no-one had heard of the COP and we gave away very large numbers, by the 2012 conference everyone said they already had a copy, or it was on their network.

The COP has by now achieved wide recognition and acceptance by the building industry and regulators compared to its profile when first issued in 2003.

The technical committee realised during the period since 2008 that there were a number of amendments and updates that should be published before the development of Version 3.

## Version 2.2

The existing pdf version had as its original a document written in a now-obsolete publishing programme and the entire 9 mb had to be converted into a newer system. Then the whole new version had to be amended in accordance with the Technical Committee's changes and then converted into a searchable pdf with good internal links. (Some of these had been lost in the 2008 version).

This is now published and can be downloaded from the website, as Version 2.2. Where to find it

Go to [www.metalroofing.org.nz](http://www.metalroofing.org.nz)

Click on the link and you go to the first page shown at the beginning of this article.

## Some changes Navigation

We have improved navigation round the document in a number of ways – some old but improved and some new.

There are some new and some updated links. If a link is available, running your cursor over it changes to an arrow or pointing finger

## 1) Sidebar

In addition pages are now all numbered to aid going to places.

The normal Adobe Acrobat Reader (or similar – allow me to recommend Foxit Reader, less overhead and quicker) Search function works fine. The index pages, right at the beginning also contain clickable links.

## Preface

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- 1.1. Disclaimer and copyright
- 1.2. Scope
- 1.3. Definitions
- 1.4. Descriptions
- 1.4.1. Domestic drawing details
- 1.4.2. Industrial drawing details
- 1.4.3. Product gear
- 1.5. Acknowledgments
- 1.6. Related documents

updates or new stuff. As you look for whatever interests you, you will find out if it has been changed. Changes are marked in the margin with the date.

There is far too much to list in detail but some areas in which you will see important changes are –

- Expansion allowance and provision – 4.1.6 – new diagrams and recommendations
  - Fastener durability – 7.8.3 et seq – reflects new products
  - Penetrations – where they are allowed and details of where to put them in the roof – Section 6 and drawings 6.2.6 a-d
  - Safety Mesh – Section 14
  - Loadings – updated to align with NZS 3604 2011 – wind load, snow load in Section 3
  - Oversize holes have been defined properly – in definitions and to be applied everywhere they are mentioned.
  - Gutter underlayment detail is added in 7.1.1
- And heaps more. You will find changes or additions are marked with a red line and amendment date. Please download it, replace your existing version and have a go.

# FALCON: LIFE AT HOME PARADE



The Falcon Homes ShowHome is one of eight Show Homes in the Life at Home parade of Show Homes at Karaka Harbourside in Auckland.

The concept behind the Life at Home parade of ShowHomes is to create a platform from which quality Master Builders can display great home designs, quality products and best practice building solutions, in the one street, in a manner that is accessible and achievable

for all New Zealanders. In addition to offering great ideas and advice to the public the Life at Home ShowHome destination also gives back to the community, and is aiming to generate over \$100,000 towards supporting those in need throughout the community.

It was the opportunity to be part of something special, that would set "benchmark" standards, at the same time as giving back to the community that convinced Vince Sussmilch, the owner of Falcon Homes, to be part of the Life at Home Karaka Harbourside parade of ShowHomes.



Falcon Homes is a small residential building company which has been building new homes in the Auckland area since the 1980s. Vince specializes in providing HomeOwners with a custom built



home that ensures their design and lifestyle requirements are achieved in full. In doing so he recognizes that many people find new home building a daunting task and he therefore endeavours to remove all the stress associated with building





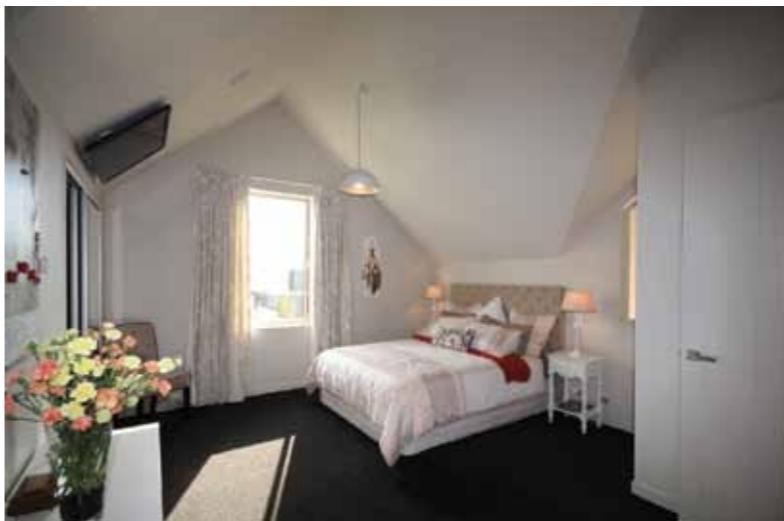
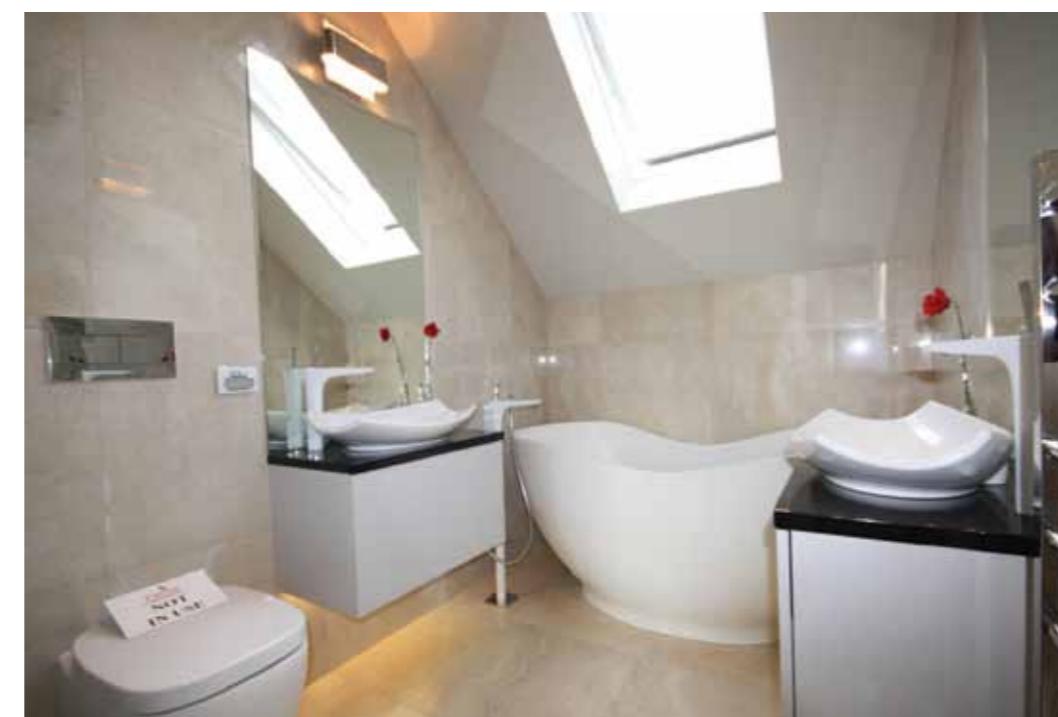
a new house by working closely with his customers, often from the section purchase, through to the home design, house build and the landscaping of the completed project. As a result of Vince's personalized and professional service many of his customers have built second and even third homes with him.

Vince's dedication, commitment to innovation, quality workmanship and excellent customer service has been recognized over the years with numerous reviews and multiple New Zealand Master Builder Federation House of the Year awards.



However as Vince will admit, he doesn't work in a vacuum, and his experience and "eye for detail" flows through to all aspects of his business, starting with his contractors, who he personally selects.

Bob Wilson, from Monier's mySteel Roofing Solutions, took personal responsibility for ensuring that the installation of the Metrotile Royal roof, on the Falcon Homes Show Home, met Vince's high standards. The actual installation of the roof was undertaken by Rangi Mathews who was highly commended by the



exceptional style and visual appeal. In addition, because the bricks are clay, they are low maintenance, durable and long lasting with good thermal mass, which aids energy efficiency.

The Metrotile Royal Metal Roof Tile, which has a natural stone textured finish and is available in a range of earthy colours, closely replicates the attractive low profile look of Asphalt Shingles and complements the Monier Brick external cladding. In addition the Metrotile Royal Tile is a low glare roof that does not adversely affect neighbouring homes. It is also a low maintenance product that offers all of the performance and cost benefits of a steel roof, that has been specifically designed for New Zealand conditions by a New Zealand manufacturer.

Vince was supported in the design of his Life at Home ShowHome by the team from Koia Architects. Koia Architects was established in Auckland in 1995 by Tony Koia and now has offices in both Auckland and Queenstown. Koia Architects enjoys designing a diverse range of residential and light commercial projects, and in 2009 were Award Winners in the Department of Building and Housing, Affordable Homes competition. The Falcon Homes ShowHome is the first two storied home that they have designed that incorporates the energy efficiency, thermal energy and lower running costs



components that were part of their Award Winning Affordable Homes entry. Whilst not a requirement for the Falcon Homes ShowHome, potable water can be collected from a Metrotile Royal roof, which is an important consideration for some HomeOwners.

The design of the Falcon Homes ShowHome is stunning. Its entrance draws you into an expansive and welcoming Indoor/Outdoor living and dining area, that utilizes Bi-Fold Aluminum Joinery to take full advantage of the sun and the corner site, which the house is located on.

One of the key components to the stunning living area and "manor" ceilings is the Metrotile lightweight roof, which has also enabled Vince to make full use of the roof space, where he has used large windows and an FS Fixed Skylight to help create a spacious home that is filled with abundant daylight.

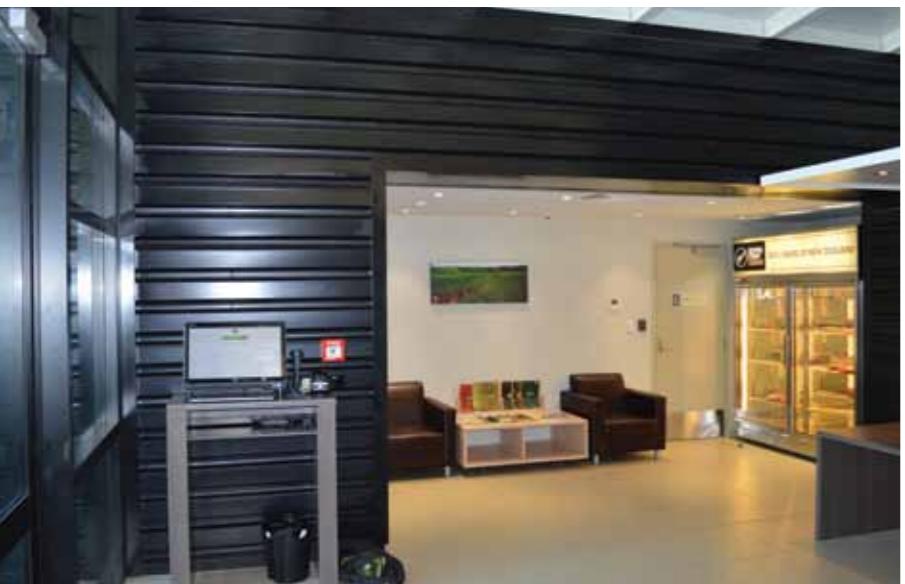
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Web: www.metrotile.com

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*Finish:* Textured  
*Colour:* Copper Brown

*Roof Installation Company:*  
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The new plant incorporates the latest meat processing technologies; including sophisticated traceability and yield measurement systems.

Provision has been made for future installation of technologies including robotic bagging.

Eco-efficiency and sustainability were top-of-mind considerations.

the rear of the plant, away from neighbours. Every effort has been made to reduce noise coming from the plant, even to the point that refrigeration equipment, undamaged by the fire, was relocated.

Health and safety was a major focus for the company when developing the specifications for the new facility. Process areas have been

In tough times, the company's significant capital spend also has provided positive spin-offs to the local economy as a result of the number of contractors throughout the region engaged during the course of construction.

Mr Cooper said the co-operative's loyal farmer-suppliers in the area were particularly supportive of the company through the re-build.



## SILVER FERN FARMS

**Two years after Silver Fern Farms' Te Aroha beef processing operation was destroyed by fire in December 2010, a state of the art facility is up and running in its place.**

Silver Fern Farms' new Te Aroha plant is a hot boned beef processing operation designed for best practice processing of manufacturing cows, bulls, steers and heifers from farmer suppliers across the Waikato region.

It joins a network of 23 Silver Fern Farms processing facilities employing over 7,000 staff throughout the country.

Te Aroha will employ up to 380 staff when operating at full capacity with two shifts in peak season with an annual capacity of 125,000 cattle.

At the plant's official opening in December last year Silver Fern Farms Chief Executive, Keith Cooper said the new design reflected the company's focus on plant economics and best practice processing and the investment was testament to the co-operative's strong confidence in the sector.

The plant was designed in consultation with internationally recognised experts in process layout and ergonomics. It is compliant to NZ, EU, USDA, China and Halal standards for the Middle East, Malaysia and Indonesia.

Architects Stiles and Hooker, a Hamilton based firm, brought considerable local and international knowledge to the project that was spearheaded by Architect Glenn McHardie and Engineer Iain Brown.

Roofco, Auckland, was contracted to install the roofing and cladding for the project. The majority of the roofing and cladding utilises the same profile, highly successful and multifunctional Multirib® supplied by Roofing Industries. The sheer size of the project produced many variables during construction that required a high degree of flexibility in support and deliveries in a rather remote rural location.

Site safety was of absolute importance during the build and Dave Dunford, Roofco, says, "Multirib® is an excellent product to work with. The sectional strength and ease of installation, due to its design, brings a sense of security to roofing fixers working at height. The continuity of using the same profile for both roof, wall and feature claddings provides value in both aesthetics and economies."



As a result, the new plant uses significantly less electricity and water per head and discharges less effluent per animal processed, setting new benchmarks in line with global customer requirements.

Mr Cooper said the rebuild gave the company an opportunity to review the environmental footprint of the operation. "Our focus is improving environmental efficiency while reducing costs through better use of resources and reduction of waste."

The plant has also been orientated to ensure noisy areas and truck movements are at the centre or

designed to minimise workstation hazards. A suite of solutions to minimise lifting, turning and carrying were factored into the design. The boning room has European-designed workstations intended to maximize productivity by minimizing operator fatigue and discomfort. At trim stations adjustable work heights, reach to meat and easy access to work positions make for a safer and more comfortable work environment for staff.

Separate viewing areas let people observe the slaughter and boning processes without interfering with workers on the floor. The plant layout also factors in separation between pedestrian and heavy vehicle movement areas to provide a safer environment for people.

Throughout the rebuilding process, Silver Fern Farms endeavoured to provide alternative options for staff whose livelihoods were affected by the fire, to the extent of making positions available at other company plants in the North Island and providing accommodation supplements in the early stages.

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Pacific White ZRX  
Cladding Profile: Multirib® .55  
Metallic Silver ZRX  
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Black Reverse run (no swage)*

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## WORKING WITH CONTRASTS TEXTURES AND LIGHT

The client's brief was to create a multi-levelled home which included the use of bleached cedar, exposed masonry and modernist cube forms. The home was to accommodate 3 bedrooms, providing privacy and an ensuite and generous storage options for the master bedroom. An open plan kitchen/dining and family living



room, a generous walk in pantry/scullery and a separate lounge that could be utilised as an office space. Garaging with internal access and a workshop. To achieve this the client had an all up budget of \$500,000 which was met.

The site slopes to the rear with a level front however the front area was un-compacted fill up to 8 meters in depth. To avoid costly foundations the site was excavated into the original, existing slope providing a building platform and the option to create a courtyard in the central level.

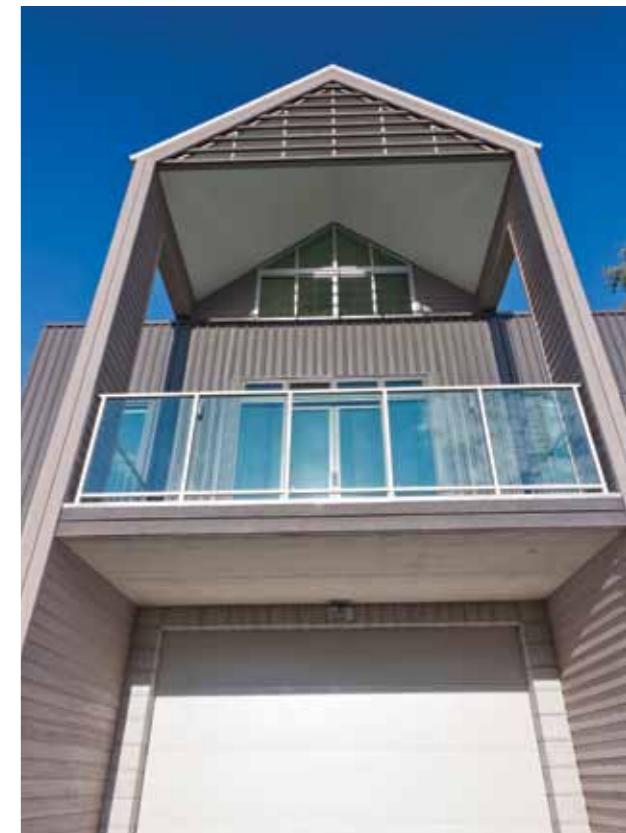


The conceptual form was one of an extruded "black box" deliberately punching through a traditional gable. The "black box" has been cantilevered to project speed and define the shape. It is clad with vertical COLORSTEEL "Metalcraft MC760" to enable a low maintenance solution with strong, sharp lines and features black aluminium joinery.

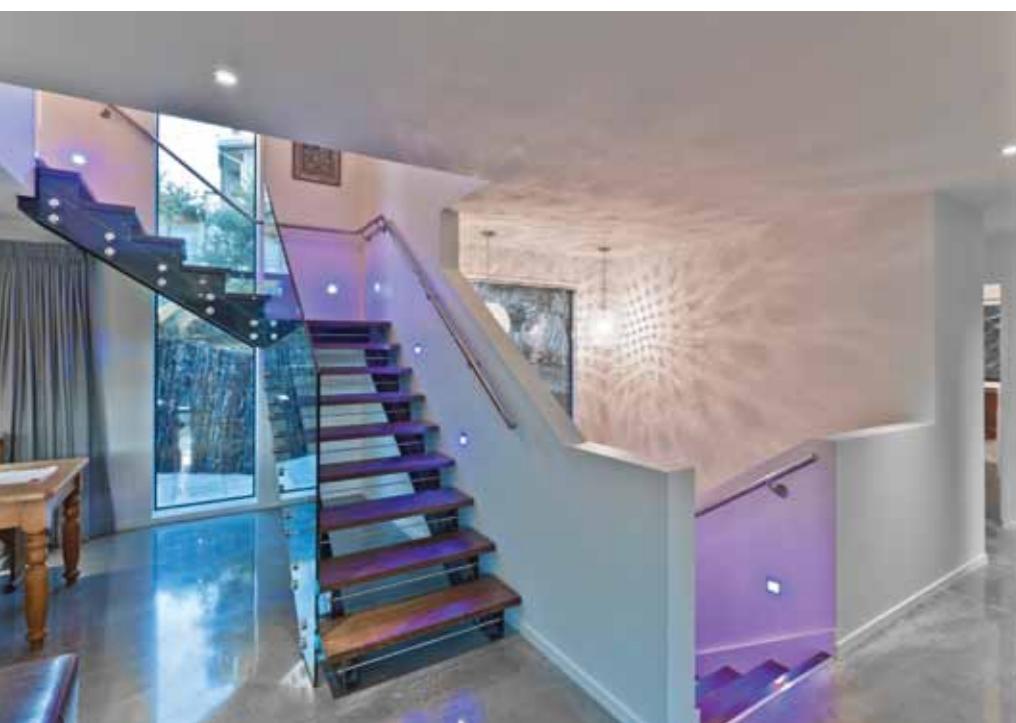
In contrast the gable form is clad in Hermpac Cedar weatherboard with custom profiled corners, bargeboards and fascias featuring silver aluminium joinery.

The block work foundation and garage retains the rear of the site and is sealed with Resene Multishield.

Sustainability features centre on energy efficiency with the house exceeding H1 by 40%. Thermal mass in the form of insulated precast concrete flooring is a key. The garage plus the middle section of the home have concrete floors and both use a 40mm Expol Thermaslab "S" grade insulated system. This, together with



the block foundation, provides a very efficient heat sink and enables the use of polished concrete to achieve one of the clients objectives in expressing the raw building components.



The key to the success of the design was the contrasts in textures. The philosophy used was to express the building components rather than simply apply decoration. These main components were the polished concrete floor with a salt and pepper grind, the stairs, built in oak shelves, oak and frosted glass office feature wall & door and the kitchen which used clear lacquered eucalyptus, Corian and stainless steel.

The lighting was carefully planned in ensuring the fixtures for each space, many of which were LED, had the right output for purpose, rather than an oversupply of light, thereby delivering an excellent, yet energy efficient result. Over 50 percent of the lighting utilises LED technology.

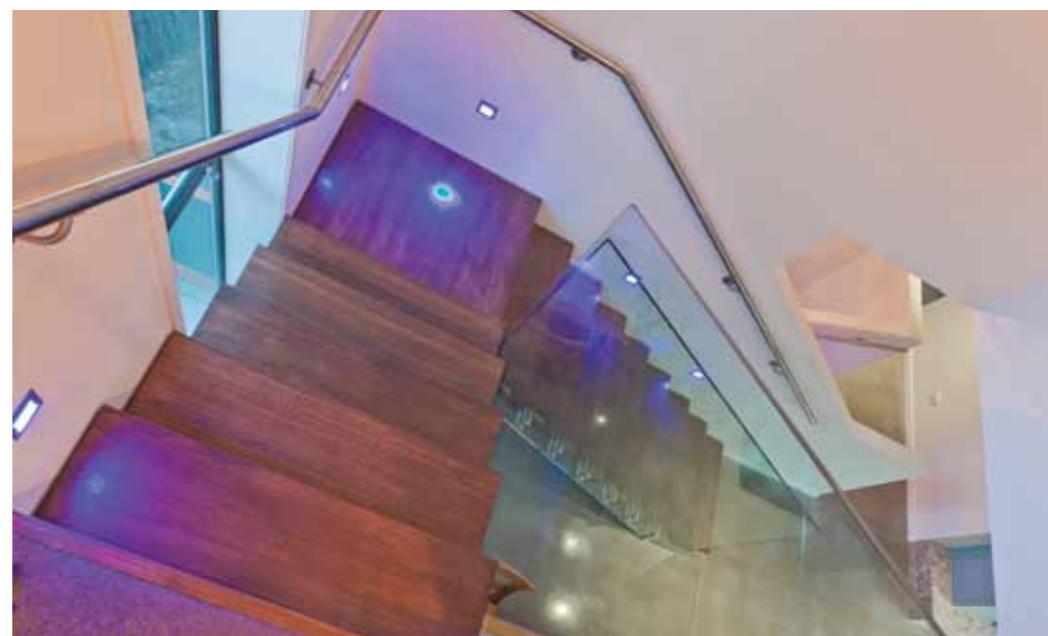
The client's brief for the interior of this home was for a light and airy

feel with texture and contrast. A cool grey/green based palette of Resene paints was used for the walls and ceilings to emphasise the light and airy feel and work in harmony with the external light transmitted through the green tinted windows.

The master suite top level features the strong lines of Hardigroove ceilings and a fully tiled en-suite with roof glazing. The existing bed was refurbished and painted to suit the new interior.

As part of the sustainability design materials have been sourced locally wherever possible and the interior timber has been sourced from sustainable plantations.

The main level stairs feature bead blasted steel which is clear coated



for a natural finish, glass balustrade, stained oak treads and stainless steel handrail.

Window treatments were kept within the grey/green palette to compliment the built forms rather than dominate.

### Tony Biesiek. Imagine Building Design

Tony Biesiek has been involved in the building industry for over 20 years, the last 11 owning his own design practice. He is a Professional Member of ADNZ and currently a Director on the ADNZ National Executive. Imagine Building Design is based in a purpose designed, home studio, and currently employs two full time technicians, one who has been with the firm since 2004.

Imagine Building Design is an award winning architectural firm that has specialist expertise in Residential and Commercial design as well as high quality 3D Rendering and Animation. With over 450 commissions to date firm's experience is wide and diverse with projects undertaken locally in Taranaki, throughout New Zealand and Australia.

Imagine Building Design, lead by Tony Biesiek, is passionate about quality design and work hard for clients to produce the best possible architectural solutions to meet their aesthetic, functional and budgetary requirements. This passion is reflected by the awards won, testimonies from clients and the feedback from builders and the general public. Tony is a columnist to the Close2Home lifestyle publication and enjoys presentations where he can share his passion for architecture and design and was recently involved, alongside Lindsay & Kerry Clare, in the ADNZ Design to Inspire series Aug/Sep 2012



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*Engineer: Dorrien Andrews  
Westpoint Engineers*

*Builder: Clelands Construction*

*Roofer/Cladding manufacturer:  
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Cladding:  
Vertical Metalcraft MC760  
COLORSTEEL® wall cladding  
MC760 roofing at 3 deg behind parapets  
COLORSTEEL® corrugate to gabled roof.  
COLORSTEEL® spouting*



## GRAND DESIGNS HOUSE

**Star Quality Shines On TV.**  
Partners Daniel Leipnik and Andrew Preston always imagined their dream home would be great for entertaining. But over two million people? Who would have thought...?  
Their Asian inspired tree top home at Trinity Beach in north Queensland was featured recently on Australia's Grand Designs TV series, with around 2.1 million people being given an intimate view of the spectacular vistas and meticulous detailing of the home.

So what makes this place so special?

"It looks and feels like a resort," says Mark Granger, senior designer with Chris Vandyke Designs.

"The house has Asian influences definitely, especially with the use of the timber (New Guinea Rosewood) and the shingle style roof, but it's still very much in the Queensland vernacular."

"I think when people say Asian in an architectural sense, they're generally thinking about a resort they might have been to on holiday in Asia. They are usually pavilion style, and in many ways, people want to recreate that feeling at home – a relaxed, care-free lifestyle in the tropics."

### Hidden features

Located on a two-acre bush block high on a hillside bordering World Heritage rainforest, and with panoramic ocean views over the Coral Sea, the home features extensive indoor-outdoor flow with a series of pavilions connected by covered walkways.

"The views were hugely important and the pavilions were arranged so that just about every room had a view," says Mark. "The master bedroom and the living rooms, the dining room, kitchen and the pool all have stunning vistas through the bush out to the ocean."

One aspect of the home that Mark believes is crucially important is something that is not immediately

evident, but affects the living environment in a significant way. "The house is orientated to pick up the south easterly breeze with the use of full length louvre windows and a gap between the living and guest bedroom pavilions. This allows for cool winds to blow into the courtyard benefiting the outdoor sitting area and the master bedroom."

"We always try and design houses so people can minimise the use of air conditioning, unlike a lot of homes here, that don't take natural ventilation into account. They have one big roof over a house with basically four walls and all the rooms are within that. The inner rooms, you can't get airflow in there, not efficiently."

"That's why our houses are generally one room deep so each room has windows on more than one side. The pavilion design works particularly well because the breezes can blow between the pavilions."

Reducing the visual impact of the home in such a pristine bush environment was also a big factor in the design process and the selection of materials, particularly the roof.

"When you look up the slope of a mountainside, you don't want to see houses that stick out and sully the landscape. We recommended

a Gerard pressed steel tile roof because it not only gave us the benefit of a shingle look that is very Asian, but also because of its non-reflective finish and the specific shade of grey."

"When you look into a rainforest, it's not just green. Overall, there's a lot of shadow. If you put a green roof in the rainforest, it would stand out, but if you put a dark grey roof in there, it looks like shadow and blends in."



## Tight schedule pressure

Daniel and Andrew's home was chosen for the Grand Designs TV show for a number of reasons: The ambitiousness of the project, the ground breaking design of the house, the many technical challenges of the location and the difficult access described as a "goat track". Furthermore, the budget and timeframe were very tight, and the owners had decided to project manage the construction themselves, even though they had no previous experience with building.

It might make great TV, but all these pressures and the ever-present video cameras made the project stressful at times.

Mark recalls: "Kevin Reilly, the builder, was brilliant. He is quite an unassuming man and I know he was very worried about the television thing and the effect it would have on his workers and subbies, and the potential for it to slow things down when the schedule was already extremely tight. But he was great, he took it all in his stride."

The owners had a timeline of just six months to complete the project. They started in May and it had to be finished by December to beat the wet season.

What made it most difficult was that the owners were based in Melbourne and had to try and project manage everything from 4000km away.

Daniel and Andrew: "We had to be in by Xmas because we were selling our house in Melbourne, so it had to be finished. If not, we told the builder we'd be moving in with him."

During the project, Daniel and Andrew made regular visits to the site, but it was arduous. They had to leave their home in Melbourne at 4am and didn't return from Cairns until around midnight – a gruelling 20-hour day.



## Sticklers for detail

The owners spent considerable time in the research and design phase when planning the internal aspects of their new home and were meticulous about the products they chose, and wanted "everything to be exactly as we imagined."

There were inevitable delays due to weather, plus numerous changes were made as construction progressed. There was a last minute change to the kitchen plans, as the original design to be made in Germany couldn't be delivered in time.

Midway through the project, one storm dropped more than 20cm

of rain in one day, which caused significant erosion on one part of the site, but thankfully no major damage to the house.

While Chris Vandyke Designs didn't project manage the construction, Mark nevertheless took time out to personally monitor progress. "We made site visits every two weeks or so to check with the builder. We wanted to make sure it turned out right; we wanted to see it through to completion. It was a difficult process, but worth it. I still love it as a house."

"When you're designing a home for someone, it's a very personal thing. You get really involved with people right down to the nitty gritty."



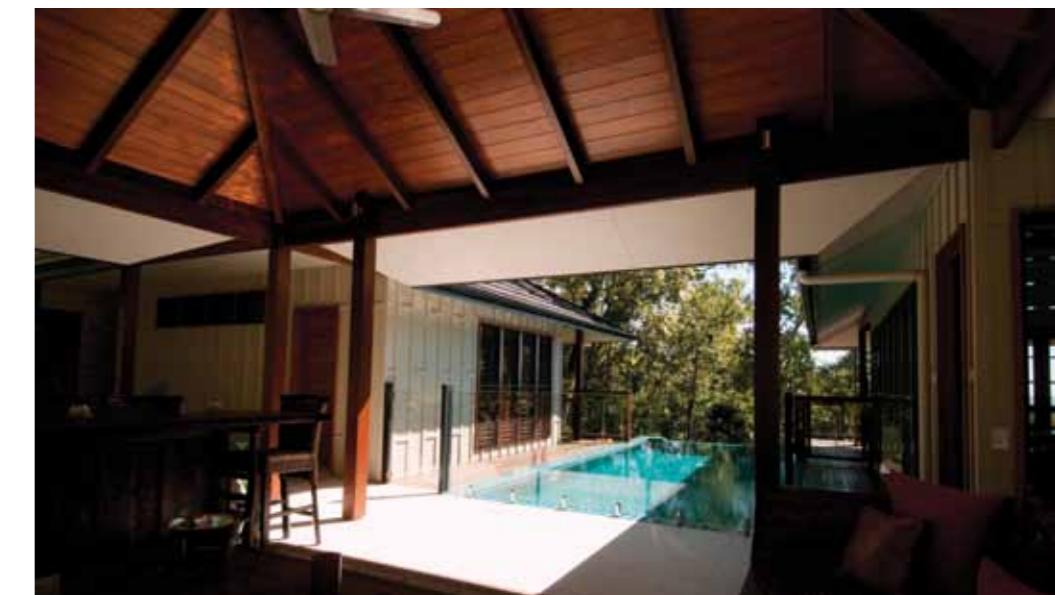
## Weathering the storms

While the weather in northern Queensland is nearly always balmy, it is subject to extremes with heavy monsoonal downpours and the occasional tropical cyclone.

Says Daniel: "As far as the roof was concerned, it had to be cyclone proof, that's the code, and it had to be zero maintenance. But most of all, it had to complement the aesthetic aspects of what we were trying to achieve."

"They put the roof up really fast – in about three days - and I think that's valuable in an area like this when you can have big downpours that can last for days."

"There was a lot of really positive feedback after the programme went on air and a lot of people singled out the roof as a feature."



## Chris Vandyke Designs

Winner of 7 National, 4 Premier and 19 State design awards, Chris Vandyke Designs specialises in open plan buildings that draw inspiration from Tropical, Asian and Mediterranean influences creating a distinctively Australian style. They are passionate about creating low impact buildings with a small environmental footprint, utilising passive solar design, shading and environmentally sustainable materials.

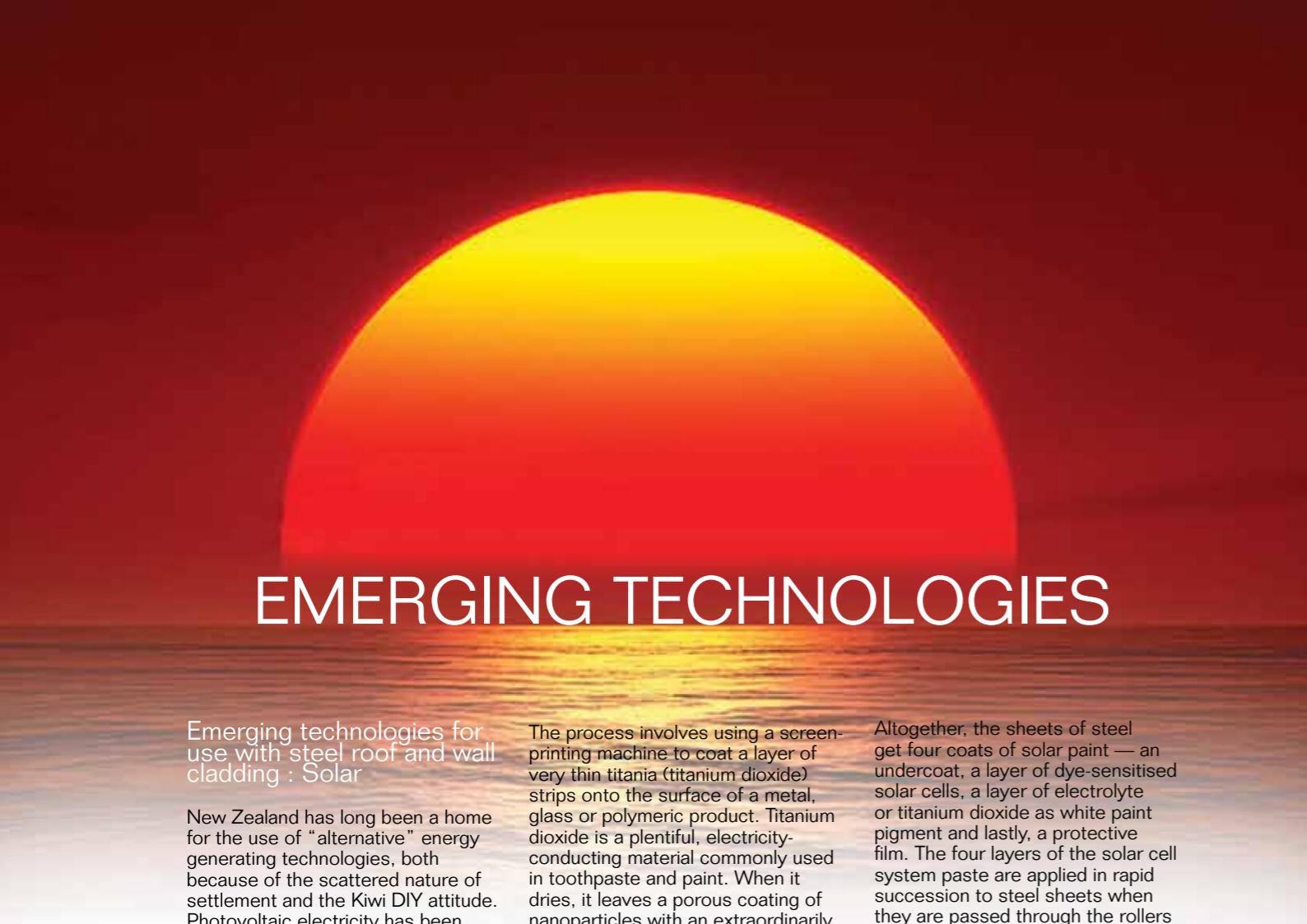
The focus is on indoor/outdoor living with an emphasis on water features. Working in close consultation with clients the outcome is a functional and livable internal environment that minimises the need for mechanical heating and cooling.

Chris Vandyke Designs' wide-ranging experience encompasses the design of resorts, luxury homes, beach houses, residences, hotels, schools and cultural centres.

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Telephone: 1800 249 616  
[www.gerardroofs.com.au](http://www.gerardroofs.com.au)  
Profile: Gerard Corona Shake  
Textured  
Colour: Charcoal*



# EMERGING TECHNOLOGIES

## Emerging technologies for use with steel roof and wall cladding : Solar

New Zealand has long been a home for the use of "alternative" energy generating technologies, both because of the scattered nature of settlement and the Kiwi DIY attitude. Photovoltaic electricity has been one of these technologies, and one that is currently changing rapidly.

Here we look at the potential use of steel roof and wall cladding materials as the base for several new photovoltaic coating technologies. These concepts use the entire roof area for integrated electricity rather than the current discrete small-area panels.

Co-operative research and development is taking place around the world with one focus on third generation solar technologies which are now fast gaining momentum, overtaking the first and second generation solar technologies of the hard panelled crystalline silicon and the flexibly thin-filmed amorphous silicon.

Australian company Dyesol is a global leader in third generation solar technologies. The Canberra-based company has developed industrial coatings for steel or glass that mimic the photosynthesis that creates energy in plants. Their Dye Solar Cell (DSC) process, developed originally in Switzerland, is a photovoltaic technology enabling metal, glass and polymeric-based products used in the building, transport and electronics sectors to generate electrical energy.

The process involves using a screen-printing machine to coat a layer of very thin titania (titanium dioxide) strips onto the surface of a metal, glass or polymeric product. Titanium dioxide is a plentiful, electricity-conducting material commonly used in toothpaste and paint. When it dries, it leaves a porous coating of nanoparticles with an extraordinarily large surface area created by the very thin strips.

If this surface is, for example, glass, the product panes are then dipped in a dye containing the metal ruthenium and fused to a second piece of glass coated in electrolyte. The ruthenium dye absorbs available solar energy in a similar way as chlorophyll does, taking in electrons and transferring them to the titania layer and so creating electricity.

In early 2007, Dyesol signed a \$1 million contract with Corus (now Tata Steel) to assess the feasibility of incorporating dye solar cells into its prefinished steel-roofing materials, with a view to generating clean power from the cladding. By the end of 2007, it was determined that Dyesol's cells could feasibly be printed on the surface of a coil of steel on a paint-coating production line at three to five metres per second.

Meanwhile in Europe, having successfully trialled Dyesol's dye-solar-cell technology, Tata Steel is currently working with researchers at Swansea University to produce sheet steel treated with a sensitive coating of solar cells in the form of a photovoltaic paint – a liquid paste – which is made up of a layer of dye and a layer of electrolytes.

Altogether, the sheets of steel get four coats of solar paint — an undercoat, a layer of dye-sensitised solar cells, a layer of electrolyte or titanium dioxide as white paint pigment and lastly, a protective film. The four layers of the solar cell system paste are applied in rapid succession to steel sheets when they are passed through the rollers during the manufacturing process.

The future of steel is looking bright as the global steel industry assesses and develops these breakthrough technologies with the potential to significantly reduce greenhouse gas emissions and improve energy efficiency, while underpinning steel's role in a sustainable future.

These developments come at an opportune time for New Zealand Steel, where improvements in energy efficiency in the 30 years since the early days of production have reduced the amount of energy required per tonne of raw steel by 50% – leaving only marginal room, planners estimate, for further improvement on the basis of existing technologies.

Competition to develop solar technology has been sharpening over the past decade.

The Victorian Organic Solar Cell (VICOSC) consortium announced in 2010 that within three years it aimed to develop flexible, large area, cost-effective, reel-to-reel printable plastic solar cells, creating a prototype of organic solar cells printed on plastic. The consortium, which includes BlueScope Steel, has moved away from solar cells based on silicon to dye-sensitised mesoporous

nanocrystalline titania cells, or polymer-polymer bulk heterojunction solar cells, believing that these technologies could be harnessed to generate low-cost flexible solar cells via traditional printing methods. Addressing the Ai Group Technology Summit 2012 in Melbourne in October, VICOSC Project Co-ordinator David Jones spoke of the consortium's work in developing these printable organic solar cells.

He noted that global energy demand is expected to at least double in the next 50 years and postulated that energy is the real currency of the world. Providing solutions to this increasing demand, he emphasised, was both essential and challenging. He said VICOSC aimed to develop a pre-commercial product by 2014 offering high speed printing of large areas at low cost.

He suggested that these low-cost printed solar cells would be integrated into building materials such as roofing materials, sheet or tiles and into shading material as well as being incorporated into consumer goods.

At the start of printing trials in early 2009 Australian Senator Kim Carr is reported to have commented: "To be able to manufacture flexible, organic solar cells which are 'printed' on to polymer in much the same way as money is made, quickly and cheaply, has enormous potential."

Meanwhile in June 2012 solar film developer Heliatek announced from Dresden, Germany that its transparent films could be used between glass sheets in double glazed windows to generate electricity. These windows will look like tinted glass as the unique vapour deposition technology for the solar films allows for a homogeneous coating of the solar layer without any distracting patterns or irregularities. Thus, transparent solar films, integrated into a building's design, will enable building glass to become energy harvesters.

Founded in 2006 and based in Dresden, Germany, Heliatek GmbH engages in the development and production of organic solar cells and is recognised as a technology leader in the development of organic photovoltaics (OPV) based on small molecules, and in the manufacture of organic solar films.

Earlier, an August 2012 news article reported that Heliatek's new ultra-

lightweight, transparent solar films could be integrated into building and construction materials, car roofs and street furniture. The first batch of solar films manufactured would be used for concrete façade projects and for pilot products and prototypes.

Heliatek has already announced a joint development agreement with elastic formliner and mould designer and supplier, RECKLI GmbH, whose formliners are used in precasting factories and in cast-in-situ concrete. The February 2012 agreement will see Heliatek's film used in concrete façades.

In New Zealand the over-riding message from the Sustainable Electricity Association of New Zealand (SEANZ)'s October 2011 conference was that small-scale renewable DIY power is becoming mainstream and that every home and business could potentially be generating its own grid-connected electricity. SEANZ's CEO Charmaine Watts maintained that the small-scale technologies of DIY power such as solar PV, small wind turbines and micro hydro give consumers more control over their electricity supply and demand while directly contributing to reducing green house gases.

In an article in Handymanmagazine.co.nz, Jan 2011, Sandra Bridekirk suggested installing even a small solar power system to capture sunlight and convert it into energy could save up to 1.5 tonnes of carbon dioxide a year – the equivalent to taking a car off the road. Solar power systems, it is suggested, can help increase the value of the home.

One company walking the talk is Hubbard's Foods in Auckland. In mid-2010 the company installed a 160 solar panel construction covering 227.5m<sup>2</sup> which aimed to generate 29,000 kW/h of electricity a year to be used to power the lighting for the finished goods warehouse.

While solar energy has not come cheap at this time, Chairman Dick Hubbard maintains this was not a short term commitment, reckoning that 20 years hence the panels would be functioning at similar levels to those presently achieved – no matter what happens to the weather, as the panels are able to function on a cloudy day provided that they are kept clean.

Auckland Airport's commitment to sustainability sees a photovoltaic solar array of 300m<sup>2</sup> solar panels installed on the roof of the new international arrivals hall which

generate enough solar energy to power the arrivals corridor lights during the day, providing an estimated energy generation of 49,500 kWh per year, equating to 16 days' worth of power savings energy. Also on the roof are solar water heating panels which provide pre-heating water in the hot water system. This solar energy is estimated to generate energy savings of approximately 15,000 kWh per year.

Several manufacturers are already successfully marketing and installing first and second generation solar systems, some specialising in flexible solar technology, in a product range that includes portable solar chargers, BIPV solutions (Building Integrated Photovoltaics), military applications and emerging innovations. This flexible system, which can be in the form of a solar shingle, can be installed on any roof under the sun – from flat to curved.

A standalone business within the BP Group, BP Solar has been dedicated for 40 years to the development, marketing and distribution of cutting-edge solar technology. BP launched its international solar canopy programme in 1999 and now has more than 400 sites with solar canopies throughout the world. Sixteen of these are in New Zealand, the largest at Rodney's Dairy Flat Service Centre.

However this one-time industry pioneer, BP Solar, announced in December 2011 that it was closing: "The major global solar markets have experienced tremendous change over the past few years and we have been unable to generate the necessary returns to continue our operations."

The market reality is that as more manufacturers produce a wider choice of solar options, so does the cost reduce to consumers: the price of solar photovoltaic panels is reported to have dropped more than 50% in the past two years. BP Solar is just one of the casualties in this rapidly consolidating solar industry. Parent company BP does, however, remain committed to alternative energies in onshore wind as well as biofuels.

We will keep you informed of these new technologies which, once taken beyond the research stage, offer the opportunity for our metal roof and wall claddings to play a significant part in energy collection across New Zealand. In the future such ideas could generate unlimited electricity without the need to ever build a new power station.



## TIMBERCORE

The brief for the Enterprise Precinct and Innovation Campus (EPIC) project specified - "In considering what is 'best', EPIC, amongst other things, designers should take into account the build cost efficiencies, an inspirational and innovative design, efficient use of land, room for growth, and sustainability principles.

The EPIC centre, a 3,800 sq.meter office complex in Manchester Street in Christchurch, is on the edge of the Red Zone.

The building houses fifteen tenants with space requirements from 24 sq metres to 1300 sq metres. in a restricted land area with a limited budget. Eight options were presented to the client before arriving at a final design that addressed all criteria.

In construction it is of some interest that the total foundation depth is just 500 mm. "This is one of the benefits of using lightweight construction materials," explains Kevin Barron. "If you want to reduce cost, one way is

to reduce the mass. In this project the use of engineered timber. The reduction in overall weight was achieved by using engineered laminated timber and steel cladding to providing strength, durability and a reduction in foundation requirements.

The simple yet innovative design using NZ engineered timber demonstrates the versatility of timber to meet the client's needs and to create a warm and pleasant working environment with all the modern conveniences. For around \$1,200 per sq metre, fully finished, the build cost efficiencies met the financial viability of the project.

The materials to construct the building required 500 cu metres of engineered timber and 200 cu metres of conventional timber framing, composite timber flooring at both levels and exposed timber panels as bracing walls and plywood linings.

One of the criteria for the building was it had to be relocated after five years. The exterior cladding had to be easily removable, reusable and visually pleasing. A mixture of black metal cladding, broken by painted panels and windows, was used to enhance the aesthetics and reduce the 'big box' look of a CBD building.



Inside the large public spaces the roof design gives a feel of permanence and grandeur with stair cases and bridges connecting tenancies.

"The use of engineered timber in New Zealand is still in its infancy, but it can be used in buildings up to four storeys without difficulty. Overseas, 12-storey engineered timber buildings are commonplace and up to 30-storey buildings are on the drawing board.

Engineered timber offers benefits to New Zealand, and the environment as well as the warm, natural look and feel of the finished product.

"As more and more engineered timber buildings go up, more people see the benefits. Timber is a sustainable building solution with Glulam and LVL manufactured to New Zealand and Australian standards including AS/NZ 4357, NZS3603, NZS3631, AS/NZS1328 and AS/NZS1491.

The Timbercore construction methods allow builders to erect a structure themselves without having to bring in additional construction sub-contractors. This saves significant time on site because all materials are pre-cut and prefabricated off site and delivered ready to be erected.



## TIMBERCORE

Timbercore Ltd build using engineered timber as their main structural element. Engineered timber is used for commercial, industrial, rural and residential buildings. This is chosen for the benefits to NZ and the environment, the beauty and aesthetic appeal of timber, along with the earthquake load capability and reduced foundation costs.

Timbercore has specialised in engineered timber structural buildings for the past 5 years and has now completed over 20 projects in the Canterbury region. Kevin Barron, Managing Director of Timbercore, offers a complete design and build service and is proud of the performance of all their Buildings. "None have sustained damage despite being located in earthquake stricken areas.

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*Main contractor:  
Timbercore Construction Ltd*

*Roofing/cladding Manufacturer:  
Metalcraft Industries  
Roofing Profile: T Rib - 23 metre max continuous span  
Cladding - Metcom 7 - 11m max continuous span  
Colour: Ebony*

*Roofing Installer:  
Timbercore Construction Ltd*

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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