

ISSUE 23

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COPE





Below is a brief introduction to the 2010 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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If you would like to submit material please contact any member of the executive or the publisher.

Visit our website at:
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SCOPE

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SETTING THE STYLE

When you combine the creative forces of a renowned film making duo and an architectural designer with a well-respected reputation for high-end quality, the results can be spectacular.

The creative synergy between this trio has come together in the form of working environment and home for Jeff and Michelle Aldridge and their extended family.

Martin Kennedy of Martin Kennedy Design is delighted with the outcome of the Aldridge project. "Once in a while you get a special project where everything comes together creating an exception home that stands out. Jeff and Michelle have considerable creative flair and a vision to match. Together they resolved many of the attributes they wanted and expected in concept plans prepared by Michelle and I was fortunate to be able to work with them expanding a few options and adding a few touches. Touches best described by Jeff as Edgy."



Jeff and Michelle are involved in the film industry specialising in adventure, mountaineering and documentary filming and production. This required some very special attributes to be incorporated into the project that would accommodate their business requirements and their family. In this case their own children and their parents effectively providing spaces for each to remain separate but collected within the same environment.

Most building briefs contain the usual "we want 3 bedrooms two lounges, a garage, etc" but Martin is quick to point out this was not the case in this instance. The wish list had been well considered and encompassed such ideas as the visual impact from the street approach to the vista through the house when greeting friends and clients.



The intent was to present the structure as a formal and commercial business with a serious design flare. The first impression from the street reflects this with the steel portals and glass canopy that provides shelter at the front entry. The formal symmetry of the front which extends as a facade above the second story is deliberate and provides an imposing visual impact but also has the practical benefit



of breaking the sometimes severe prevailing wind giving shelter to the home and living spaces behind.

The Jeff and Michelle were determined to build what is described as a "Masonry" home that includes both internal and external walls. The benefits of this have been well proven given the extremes in climate experienced in the area. Being well aware that future alterations or changes to a concrete structure could become expensive they chose to involve Martin's design and build knowledge from the outset. "This has proven to be a real asset", says Jeff, "as Martin brought considerable expertise to the project refining many of our ideas. This project has run without drama or flaws and this is due to his hard work and planning from the very early stages. He set some very high standards from the beginning that was followed throughout to the completion of the project.

The concept formed an "H" dividing work and living areas with a central courtyard. The courtyard features a reflection pool that gives an immediate impact from the entry and is visible from every aspect of the building. This was a feature that was always visualised in the design as a central theme with the building flowing around it.

The building is deceptively large at 650sq metres and features some exceptionally large roof spans



and overhangs. Bernard Whitham designed the structural engineering aspects of the building utilising considerable steel beams and reinforced concrete. The interior and exterior wall have been plastered by Graeme Glover who has done a magnificent job. "The strength and durability of these plastered walls is unbelievable", says Jeff, "who acknowledges that both he and the kids have put them to the test on several occasions with bikes or heavy camera gear....and 3 years on they still look like new!"

The work areas to the left of the entry include a full theatre for clients to view footage in the comfort of



recliner couches, a studio, office, editing facility and gallery. The garaging and storage areas are generous to allow for easy access to manage considerable camera gear and equipment.

The family bedrooms are on the second level and accessed by an impressive circular stairway which is cantilevered over the entry and flooded with light from the gallery windows that extend the full two stories.

The upper level is divided with the children's area, which includes a games room two bedrooms and bathrooms, to the right. The master bedroom and private area includes an impressive bathroom with a spar encircled in glass. The front entry and reception areas to the home and office can be viewed from this vantage point through louvers to the front. To the rear the bedroom looks out over the enclosed courtyard to the distance hills. These sleeping spaces provide a practical advantage in being easily able to monitor the entire building and the security of having the children close by.

The final testimony to a project well conceived and completed must go to those who live there. In Jeff's words, "If we were doing this again there is nothing we would change. Excellent I would say."

The Designer:

Martin Kennedy has been involved in the building industry since leaving college in the mid 60's. His early experience as a draughtsman, servicing the pre-cut market, lead him into the area of design and build.

Since 1972 Martin has been self employed and applied his industry experience, natural design flare and

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Roofing Profile: High 5*

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The kitchen, dining, family rooms and lounge are all on the right wing of the lower level. Each room opens to the courtyard providing indoor-outdoor living options and a sheltered private space for both friends and family to entertain or relax.

The left wing is home to Michelle's parents who are able to have privacy and autonomy or be a part of family life.

superb craftsmanship to create many fine homes. The Goodall home featured here is testimony to those skills. Of recent years Martin has concentrated more on design. His experience in the fundamentals of building has been invaluable and taught him to design from "the sticks up". "If I don't know how to build it, I don't expect anyone else to, and I won't draw it," says Martin. That will sound unfamiliar to a lot of builders and sub-trades within the industry but it is this practical knowledge and application, Martin believes, that sets him apart.



SUSTAINABILITY AND LIGHTWEIGHT ROOFING

By Graham Hepburn

Advances in technology over the years have meant that metal roofs have not only become more durable but also lighter.

Metal roofs have always been lighter than concrete tiles or slate but they have been refined to become progressively lighter over the years. The advent of longrun roofing – rather than using overlapping 3-metre-long sheets – has cut weight and waste but the invention of high strength steel coil has helped metal roofing to become even lighter.

Steel coil is now about twice as tough (tensile strength) as the softer steels previously used, meaning thinner gauges can be used. This dramatically cuts the amount of steel needed and makes for a much lighter product. The typical gauge now used in longrun, for example, is 0.40mm, nearly 30% thinner than 0.55mm which was traditionally the thinnest gauge available. This lighter product is not only more durable because of improved Zincolume® substrate and paint systems but easier to transport and takes less framing to support – reducing waste on several fronts. A recent analysis by an independent consultant showed that the framing for a lightweight metal roof was cheaper and easier to erect than that for a heavyweight roof such as concrete tiles or slate. For a 300 square metre home, the study showed that installing a lightweight metal roof could result in a saving of \$3000. On average, a heavyweight roof structure would require an extra \$2000 worth of framing materials and \$1000 more in labour costs. The study also pointed out that the structural cost savings on a lightweight metal roof will increase as more gables are added to the roof design.

A metal roof compared to a heavy weight roof uses less energy (less carbon) to transport because of its reduced weight and doesn't require as much framing. A typical truck

can carry enough metal roofing for about ten homes while only one house lot of concrete tiles would fit on the equivalent truck, because



of the tiles' bulk and weight. These increased transport costs mean heavyweight roofing becomes less competitive as the distance between factory and building site grows – not to mention the increased carbon emissions involved in carrying heavyweight roofing significant distances. This has a huge impact on the overall sustainability of the building material component of the building.

Because a metal roof is lighter – down to a tenth of the weight

of concrete tiles – it isn't prone to settling or sagging which heavyweight roofs can be subject to over time, reducing the risk of doors or windows jamming or cracks in claddings occurring which could then be prone to water ingress.

As well as structural cost savings, lightweight roofing provides added design flexibility and can be used on any structure as part of a re-roof.

A case in point is the Whangarei Girls' High School which was identified as needing remedial seismic work as part of a nationwide structural survey of all schools undertaken by the Ministry of Education. To meet modern earthquake standards, schools with concrete or clay tile roofs are either replacing them with lighter metal roofs or facing hefty costs to reinforce their buildings if they want to keep their heavyweight roofs. In the case of Whangarei Girls' High School, engineers came to

the conclusion that the walls mainly needed to be strengthened because they were supporting a heavy clay tile roof. By removing the clay tiles and replacing them with a metal roof, the required strengthening was limited and this significantly reduced costs. The school wanted to maintain the look of the clay tiles so they were replaced with Gerard Roof's Tuffcoat Tile in Marseille Clay. The end result was a strong, light metal roof that was still in keeping with the original building.

The new roof – all 2800sq m of it – weighs 12.76 tonnes compared to the estimated weight of 70 tonnes for the clay tiles. Cutting the weight of the roof by 57 tonnes meant the building required much less reinforcing to meet modern earthquake standards and makes it safer in an earthquake.

Having to disassemble the old roof at the school highlighted another advantage that lightweight roofing has over heavyweight roofing: it's not only easy to install, it's much easier to remove when the time comes!

Whereas a metal roof can be replaced relatively easily, removing the clay tile roof at Whangarei Girls' High School was a major project in itself, requiring a lot of labour and equipment. The job was done in stages over a ten-week period so as not to disrupt school activities and required an extensive screen of protective scaffolding, loading platforms and a rubbish chute.

Nearly all metal roofs that do need to be replaced in New Zealand are recycled, not only because this is good for the environment but also because there is such a strong market for recycled steel. Steel is the most recycled material in the world and there is a vast network in place to make it happen efficiently.

The good news for Whangarei Girls High School is that after the remedial works their buildings are now safer and the money they saved on structural reinforcements by going with a lightweight metal roof – about \$500,000 – was used to extend the gymnasium.

And it's not just buildings at risk from earthquakes that can benefit from a lightweight re-roof. Older houses with sagging rooflines due to the weight of tiles can have their appearance and weather tightness restored when they are re-roofed with metal roofing.

SCOPE NEWS AND VIEWS



A new Lightweight Gerard Roof for a Dunedin School.

In order to conform with the NZ Department of Education seismic strengthening requirements Macandrew Intermediate School has chosen to replace their concrete roof with a new Gerard Milano Tile roof. This proved to be more cost effective than strengthening the framing to support the heavyweight roof. The new 2800 m2 roof weighs just 18 tonnes which is a significant improvement given the old concrete roof, which was removed, weighed a staggering estimate of 134 tonnes. Removal of this excess weight is a comforting thought for those underneath.

Due to the safety requirement to have the roof completed during the Christmas holidays Gerard Roof's manufactured the roofing order, confirmed just before the close of school, to enable Horizon Roofing the time needed to meet the contract obligations.

The project team of 7 fixers was recruited from Gerard Roof's nationwide network to complete the entire project in 3 weeks.

For further information contact: Emanuel Silva, Horizon Roofing. Mobile: 027 4976 809



Gary McNamara joins Metrotile:

Gary McNamara joined Metrotile (NZ) Ltd in February in the role of Marketing and Business Development Manager, a move the company says will help with Metrotile's rapidly growing operations in the New Zealand market. For the past two years Gary has been branch manager for PlaceMakers, Takanini having previously spent 10 years with AHI Roofing as Sales and Marketing Manager (New Zealand, Australia and the Pacific) for Gerard Roofs. Prior to that Gary had been with Carter Holt Harvey Pulp & Paper.

When he accepted the PlaceMakers position in 2007, Gary's intention was to become a joint venture partner during the 2008/2009 financial year but then came the recession which, as members will know, has created uncertainties in the building and construction industries. Consents started to decline coupled with very volatile market conditions making trading very tough in this sector of the market.

Harry Boxall, national sales manager for Metrotile says Gary's knowledge and experience will be of great value to Metrotile, his role encompassing a mix of New Zealand and offshore responsibilities.

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A BUSH RETREAT

As with many vocations past projects are usually the strongest recommendation for a continuity of work and certainly this has proven to be so for Architect Darren Jessop. The client and owner of this unique home in Titirangi was inspired by a visit to a home in Ponsonby which had been designed by Jessop Architects some years before. The overall combination of interlocking ideas, materials, flow and clean simple and linear forms had an instant appeal.

Several points were unusual in the approach to the design of the home. In the first instance design work was started before the client had settled on a site. And in the second instance the client, due to his vocation, spends considerable time offshore. In fact over the past 12 years most of his time was spent living abroad and having a home in New Zealand to retreat to had considerable appeal.

This often prolonged absence from the country required considerable trust in the design skills of Jessop Architects as the entire project and the details of decor were largely left to them. Prior to making the decision to build his own retreat the client enjoyed living in and

apartment designed by world renowned Architect, Ian Athfield and expressed an appreciation for living in architecturally designed spaces. In the clients words, " I can recognise excellence in design but don't ask me to do it. It prefer to leave that to those with the skills to be able to visualise the final result". A refreshingly honest quality that would benefit many client/architect relationships and the resulting buildings.

The brief was reasonably straight forward with some influences coming from European design, lifestyle and just plain commonsense.



The first criteria stemmed from the desire to build a home that the owner could continue to reside in once retired in later years. Having seen others make the mistake of building or buying two story homes, which had proven to be problematic in later years, he was determined to have a single level home with easy access to all indoor and outdoor amenities.

Entertaining also plays a large part in the lifestyle of the owner who is passionate about fine cuisine and takes considerable time and effort in cooking, and entertaining guests . "I take the preparation and presentation of food very seriously. It is my passion and I enjoy it immensely"



Jessop Architects.

Jessop Architects has a commitment to excellence of design creating a quality of architecture that is clean, distinctive and functional.

Within our practice we all place an emphasis on hands on involvement and personal client contact to ensure we provide a successful end result to each project.

The look and feel of our architecture can be considered as modern Pacific Rim building forms that have classic lines and result in timeless structures. We strive to achieve a sense of warmth with our interiors and adventurous landscapes.

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*Cladding and Roofing Installer:
Counties Manukau Roofing Ltd
Telephone: 09-238 0085
Product: ZINCALUME® corrugate*

*Interior design: Duo Design Auckland
Telephone: 09 273 2467*



For this reason considerable thought has gone into the relationship between the kitchen appointment, the lounge and flexible entertaining and dining areas.

The focal hub of the entire home centres around kitchen and lounge with options to dine inside or out. A unique feature, with some European influence, is the all weather outdoor lounge. No matter what the weather this area provides an intermit, warm, dry space to either relax or entertain friends.

The lounge itself is extensive and drops just two steps from the kitchen platform giving a visual distinction to the spaces while retaining a constant connection. The ceiling in the combined area has a stud height of 4 metres which expands the feeling of space with natural light from the floor to ceiling windows which extend the entire width of the building. Each room has huge sliders which allow the areas to be opened to the deck



which borders the front of the home and connects the master bedroom and living area.

The site which was eventually chosen is unique in itself and is nestled into the native bush of Titirangi. The approach is from a well designed

private road way which is well off the main road giving the property a very quiet and secluded aspect. The tranquillity of this environment is much appreciated by the owner who is able to retreat here to "recharge the batteries" from an otherwise very busy schedule.



The exterior is described by Darren Jessop as "Two simple boxes that collide. One is silver and one is black. The black box has a lower stud which allows it to slide under the roof canopy of the opposing structure"

The black shadow clad sections of cladding blur the distinction between the building and the bush areas surrounding the house.

The balance of the building is clad in horizontal corrugated Zincalume® which contrasts with the black timber accentuating the linear lines of the building.

The house has been well positioned on the site retaining the mature native trees that surround the building. In the evening exterior lighting transforms the bush areas providing pools of layered light which add further interest and dimension to the location.

Considerable planting of additional native plants and shrubs has been undertaken and these will, in time, add to the privacy of the location.





SPOUTING THAT IS MADE TO MEASURE

The concept of continuous lengths of spouting has been in the industry for almost 20 years, yet many people are still unaware of how it actually works. With the increasing demand for sustainable building systems, the benefits of continuous spouting with “no joins, no waste”, continues to attract the attention of specifiers, builders and homeowners alike.

The benefits of using continuous spouting are many:

- The process used minimises the need for joins (other than on corners). No joins means that the chances of leakage due to poor adhesion or joint breakage and expansion are virtually eliminated.
- Less silicon and/or rivets are used – reducing costs as well as reducing the time taken to install.
- Waste is reduced to an absolute minimum.
- Aesthetics of the spouting are vastly improved by the absence of joins mid-length.
- It is a well-known fact that the overall strength of continuous spouting is superior to a sectional installation.
- The option of using pre-painted steel and aluminium, zinc or copper allows designers to specify a guttering system that is compatible with the roof cladding.
- A range of modern and traditional profiles designed to suit a wide range of architecture.

Much of the appeal of continuous spouting is in its simplicity. Once the shape of the profile is chosen, the relevant machine is taken out to site where the spouting is “roll formed” to measure. In the past there has been a misconception that the shape or profile options must therefore be limited - this is not the case. There are six different profiles available in continuous lengths.



Profile: 125 OG



Profile: 150 OG



Profile: Box



Profile: Quarter Round



Profile: Texan



Profile: Half Round

The roll forming machine is very compact and is able to access virtually any new or existing site. Minimising waste with tailored gutter sections reduces waste to a minimum.



From the standard ¼ round and Old Gothic (O.G) profiles, through to the popular ½ round and box gutter shapes, every ‘standard’ spouting profile can be done ‘continuously’ (although occasionally region-dependant).

Continuous Spouting was founded in Auckland 20 years ago and continues to be a leader in the industry. Having been an intrinsic part of the establishment of on-site installations, Continuous

Spouting is continually improving and developing product and methodology. Their product is of a totally uniform quality and reliability is assured, allowing them to provide comprehensive warranties – twelve years on product and ten years on workmanship.

Continuous Spouting pride themselves on the high quality and variety of metals available in their range of rainwater goods.

The pre-painted metal finishes on their Colorcote® ZR8 and ZRX, Colorcote® ZM8 and ZMH and Colorcote® ARX are manufactured in New Zealand specifically for New Zealand conditions. Titan Zinc performs exceedingly well in marine environments and has proved very popular with specifiers on a number of projects. Titan Zinc Black is a product that, along with some exciting new finishes, is being introduced into the range. Continuous Spouting's own Heritage® Copper has been developed over a ten year period with the aim of delivering a superior material designed specifically for use in the roll forming machines. The secret to the success of Heritage® Copper lies in the combination of selecting the correct grain size, structure, direction and hardness. The end result is a premium product with a uniform appearance – able to be repeated time and time again.

With individually owned branches throughout the country, Continuous Spouting are able to reach even the most remote of locations, whilst at the same time benefitting from the "umbrella" of a nationwide company.

A comprehensive technical manual is available, in addition to extensive product information that can be viewed on their website, www.continuous.co.nz.

CAD drawings and technical information can also be obtained and downloaded from www.eboss.co.nz or www.productspec.net.

Contacts at the following locations:

Continuous Spouting Auckland Ltd
Takanini
Telephone: 09 268 1555

Northland Spouting Specialists
Kerikeri
Telephone: (09) 403 8452

Continuous Spouting Waikato / Bay of Plenty
Hamilton
Telephone: 07 839 1812

Manufacturing the gutter sections on site avoids any issues with sizes and installation



Dugald Hamilton Spouting Ltd
Gisborne
Telephone: 06 868 6676

Taranaki Steelformers
New Plymouth
Telephone: 0800 655142

Continuous Spouting Hawkes Bay Ltd.
Napier
Telephone: 06 842 1180
Hastings Telephone: 06 870 6005
Hawkes Bay South
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THE LONGEST SHEET.

When Foodstuffs decided to build new warehouse in the Manawatu they contacted Palmerston North's Pro Arch Architects and together they decided to challenge the limits of large scale warehousing.

The project which was over 40,000m² included the aim to create a striking yet practical building in what many people have referred to as box building.

The simple yet practical design was created which saw one side of the roofing spanning 88.25m with no overlaps or steps, over 20m longer than the previous New Zealand record. Along with this was the aim to ensure that the building was water tight and dry.

The answer to both of these issues was solved with one simple solution. Dimondek 630 was chosen on its ability to meet both the design and practicality needs. The unique profile from Dimond, New Zealand's largest Metal Roofing supplier, features an interlocking clip system which means no fixings are required through the roof sheet, elimination over 140,000 possible leak points.

The system was a finalist in the DuPont Innovation awards for its unique but simple design and construction. The plastic clip system is laid on the roof and then the sheets simply clip on. This allowed the team from Martin Roofing Co Ltd to lay up to 2910 lm per day.

The next issues was the 88.25m sheets, being far to long to transport via road another solution was needed. The answer to this was to simply run the roofing required on site, another capability of Dimond's Dimondek 630. This gave the roofers the ability to run sheets as required.

A job of this magnitude required a roofing company with experience and the ability to handle a large job.



Martin Roofing Co Ltd took on the challenge to complete the project, with Roger Martin, a founding member of the Roofing Association of New Zealand, at the helm they were well guided. The size of the project saw Martin Roofing taking on extra workers from The Roofing Specialists Ltd and Project Roofing Ltd.

Roger Martin comments "The actual laying of the sheets, a clip based system as opposed to screwing, was relatively quick and straight forward, owing to the ease with which Dimondek 630 can be clipped into place.

Its nice to see 40,000m² of roof without a screw hole in it, every penetration in a roof is a potential leak, and elimination of 140,000 potential leaks is good for any roofing company and their client."

Shane Lewer of Palmerston North's Pro Arch Architects comments "The project has benefited right from

the start in having the knowledge that the product was available and the project team could move forward with confidence."

In total the project featured 35,000m² of Dimondek 630 Roofing, and over 8000m² of Dimond LT7 and Styleline for cladding.

Dimond General Manager Darren O'Brien says "its great to be involved in a project such as this , being able to provide the best possible option to complete this project. We had great confidence in our product and the team from Martin Roofing. "The projects where everyone else says it cant be done are the ones where Dimond can stand up and show our class. Dimondek 630 and the award winning plastic clip system is an example of Dimond's market leading innovation."

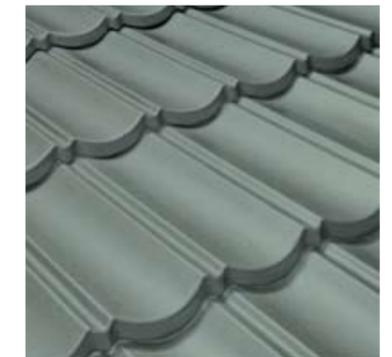
Roofing Manufacturer: Dimond.
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Email: dimond@dimond.co.nz
Website: www.dimond.co.nz



The Ross home is generous by any standard in both size and quality. The verbal brief to architect Kim Veltman was relatively simple giving him a freehand to create a large and impressive family home. A home that would also provide a self contained flat for extended family and take full advantage of the site and views over the surrounding countryside.

The location slopes towards the North with the home being well positioned to capture the maximum sunlight. The site was excavated into the hillside to allow convenient access to both levels of the building. The home is on the upper level with the flat below. Both being serviced by independent driveways and garaging. This required significant ground works and retaining walls to provide indoor/outdoor access to both levels.

The overall concept was to create not just an impressive and aesthetically pleasing building but one of timeless style. A well built home that would stand the test of time and be relatively maintenance free.



LIGHTWEIGHT METROTILE. THE FIRST CHOICE.

When your client is Ian Ross of Metrotile, a national and international roofing manufacturer with a reputation for high quality, the choice of roofing would normally be quite straight forward. When your client manufacturers both concrete tiles and metal tiles then the boundaries could become somewhat blurred with the best of both worlds on offer.

Not so.

For both Ian Ross and architect Kim Veltman the benefits of Metrotile lightweight metal tiles was the obvious choice. In addition to the UV, lichen resistant steel satin finish, Metrotile tiles make for an attractive low maintenance roof in a rural environment from which it is safe to collect potable water.



The foundations and concrete floor on the ground level and concrete block walls provide the strength to support the upper levels and even here, at ground level, the light weight roof is a benefit. A concrete roof of these dimensions would have significantly increased the need for structural support. The light weight frames and trusses were not only more cost effective but substantially easier to assemble than those that would be required for a heavy weight roof.



side of the building. The central hub of the lounge area opens to a balcony of generous size allowing family and guests to dine or just enjoy the view across the Manukau Countryside to Auckland city.

Over all this is an impressive home which has been created using the very best in materials, design and decor. A credit to all involved.

Kim Veltman Architecture

Kim Veltman Architecture is a small friendly Architectural firm based in Pakuranga, Auckland headed by Kim Veltman, an Architectural Graduate with over 20 years experience. We specialise in providing a wide range of Architectural designs, both contemporary and traditional for residential and commercial purposes. We are committed to listening carefully to our clients, their

what kind of home you want, you need to think about how you would like to live. In good design there is little wasted space. Optical illusions take advantage of long lengths of the home and use the outside environment to draw the eye in. What makes a great home is designing one that meets the needs of the people who live in it and you do this by following the first principles of design, using light, sun, views, aspect, climate and the surrounding environment."



The upper level is timber framed with brick veneer cladding providing the base for the plaster finish which links both levels.

The home, flat and garaging combined create an overall area of 950 square metres. The general design forms a semi circle to maximise the views from Manukau to the north and capture sunlight. The roof structure and design is impressive and formed by cascading the traditional hips that follow the ark of the building. The roofing cladding is in Metrotile

Bond Grey Friars satin finish that compliments the timeless design of the home.

The site is in a high wind zone (It actually sits at the same height above sea level as the top Auckland Sky Tower) and the interlocking metal tiles with horizontal fixing provide exceptional weather tight sealing and resistance to wind uplift. In fact they are rated to withstand Hurricane force winds of up to 190 kph. The consequences of a concrete tile being blown off a roof in a high wind environment are potentially dire.

The entry to the home is from the covered way and guests are greeted at the impressively carved double doors which open to the reception lobby. The entire top level of the building forms the main residence and includes guest rooms entertainment facilities, a pool room, family room and formal dining and lounge areas.

All areas on the front are connected via the external walkway which extends the length of the northern

requirements and wish lists. We like to see how they live or work, as appropriate, in order to ensure that the design created meets their requirements and is unique to them. We are aware of the importance of the project meeting the client's budgetary requirements and try to provide a realistic estimate of likely costs a project may incur. "Design today needs to take into account versatility of space. Choose a design that can change with the times.

Remember that the house will eventually be sold, so try to make it adaptable for a variety of living arrangements. When instructing an Architect you don't need to have a firm idea of

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NEWLANDS COMMUNITY CENTRE

This project, a community centre for the residents in the suburb of Newlands, Wellington, had its incubation borne from a desire by the local residents to create a facility that met the growing needs of their community. Through the consultation process driven by the Wellington City Council, a number of potential sites were identified and a final one selected after a comprehensive urban design and cost analysis was undertaken.



4. Street Presence: The site is situated on a back street. It was essential to ensure the building be easily identified from a distance. The 3 metre cross fall dictated the entry location to the southern side of the building in the right of way adjacent the tavern. So it was a critical issue to ensure the entrance although around a corner, was signalled from the street and easy to locate for visitors.

5. Community: With many varied and competing interests the design had to provide a functionality that accommodated the communities outline brief – Reception, meeting rooms, kitchen, cyber library, general purpose hall and toilets.

6. Cost: Being publicly funded, the project required transparent processes that were cost effective. The building had very tight cost constraints and through careful value engineering these were kept to a minimum.

7. Ongoing Maintenance: As a public building the project is used by a wide range of people for many activities. Thus the building needed to be easily maintained over the long term both interior and exterior.

The site is at the back of a small suburban shopping centre and immediately adjacent a tavern (it is actually built on one of the taverns old carpark areas.) CCM Architects were commissioned to work with community stakeholders to create a design that met the aspirations of the Newlands community.

Carried out over a period of two years the issues were many and varied and the design needed to respond to the following

- 1. Identity:** This is a strong community whose pride and energy was to be reflected in the new building.
- 2. Urban Design:** The site is at the back of an older suburban shopping area and the urban form needed to transform and reinforce a street presence from what was essentially a sea of asphalt.
- 3. Site Contour and Orientation:** The site had a cross fall of three metres. There was a requirement to accommodate level access for people with disabilities whilst fitting into the WCC urban plan.

KEY

- 1. ENTRY
- 2. FOYER
- 3. CYBER LIBRARY
- 4. TOY LIBRARY
- 5. PREFORMANCE SPACE
- 6. STAGE
- 7. WC/SHOWER
- 8. W/C
- 9. CLEANER
- 10. FOOD BANK
- 11. RECEPTION
- 12. KITCHEN
- 13. LIFT PLANT
- 14. STORE
- 15. LIFT
- 16. YOUTH AREA
- 17. UPSTAIRS FOYER
- 18. MEETING
- 19. PLANT
- 20. OFFICE
- 21. HALF COURT





Construction

The building is constructed with cost effective materials that will withstand the rigors of intensive use. The building is built in to a 3 metre bank which required it to have a significant retaining wall along the street frontage and down one side.



was relatively quick and easy to install, the straight clean lines of the material worked well with the required aesthetic treatment.

The exterior envelop of the building was made up of a range of materials including glazing, precast concrete, painted blockwork (retaining wall areas) cement sheet and profiled metal cladding. For reasons of contrast, profiled metal was used to help accentuate the clarity of the building forms. The effect of the profiled metal was to give the form textural interest and contrast with the lower planar elements of the cement sheet, glass and precast concrete. Another important consideration to ensure where there were large expanses of profiled metal cladding that it was installed with fixings that were consistent and in line. A small detail but worth the effort to get right.

Another important factor in the design was the need to ensure flashings are considered for two reasons
 – Functionally, to ensure they keep the building weather tight
 – Aesthetically, as these seemingly utilitarian, minor parts of construction provide the finishing touches to the building.

Knowing how to detail flashings and understanding how and why they work is essential to using profiled metal cladding as a finishing material that goes beyond its normally associated utilitarian image.

Overall the building has provided a cost effective solution to an interesting design challenge.

The building has been designed to provide a backdrop to the community that is modern, welcoming and has a unique identity. Using colour and a simple palette of materials the design provides spaces whose atmosphere is lively, eschewing the institutional feel so many public facilities exhibit. Opened since early last year it is proving to be a destination as a popular venue for the community.

continued...

The solution was to provide precast wall elements for the retaining wall that doubled up as external wall elements. It is constructed using a concrete slab on grade with an upper floor of timber construction. Generally constructed using light timber framing it uses a range of timber products including standard timber framing, LVL and plywood, both decorative and structural. Walls are lined with paint finished plasterboard and highlighted in high use areas with plywood. A cork based pin board lining was also installed in the main foyer for the large notice boards every community centre needs.

The roof is constructed using plywood panelling over exposed LVL's. This provided a cost effective solution that would allow the roof to be quickly closed providing the contractor with a roof over their head early on in the contract. The use of long run profiled metal roofing was selected for a number of reasons. It was cost effective,

Design Process

Being a public building this community centre was subject to an intense scrutiny by all people involved, and it needed to be. Having been discussed and talked about over many years, expectations about what was to be built were many and varied. As with all public projects, the accountability and transparency of the process was essential. Lead by the Wellington City Council, the design process first required selection of a site. There were a number of alternative locations proposed and each one assessed. The final position was selected and like any site it had a number of challenges that needed to be overcome. The Wellington City Councils Project Management Office engaged CCM Architects to work through a process that would work for its set budget and provide the end users an opportunity to contribute to the design. A stakeholder group consisting of a range of local community groups was formed, and the initial briefing took place. Over a period of a few months discussions with the stakeholders took place culminating in a design endorsed by the group. Once agreed the project was cost estimated and materials were reviewed to fit the quality/cost profile required. The internal and external finishes were selected on the criteria that they achieved the aesthetic and durability

requirements a project like this demands. With the estimate and design in place a full set of contract documents were prepared. The project was then tendered as a fixed price lump sum contract. Work started in January 2008 and was completed by December 2008 on time, on budget. A credit to the team involved.

Building Design

The Community Centre has been designed to take cognisance of the site constraints and turn them into positive design elements. The configuration of the building maintains its clarity through simple forms created by the interior function combined with the pitch of the roof. The overhanging box over the corner creates a verandah and signals the building entrance. As the entry is not visible from the road this strong form helps signal the centres entrance despite its adjacency to the road. The natural contour slopes away from the nearest main road, Stewart Drive. This creates an opportunity to give full effect to the buildings form, allowing the project to unfold as one walks around it. A verandah to the two pedestrianised sides was a mandatory District Plan requirement. Through this prescriptive rule, the designers were able to articulate the external spaces in different ways (one is a verandah attached to the



building and the other is a solid part of the building) adding interest to the facades. The large pink recessed window opening provides a subtle sign to the building that provides a signal of activity at this end of the building. This prepares the visitor for the colourful interior that is evident when users walk in through the door. The front reception is easy to find and is centrally located providing passive surveillance to entry points of the main facilities. Included in the facilities are meeting rooms upstairs of varying sizes, downstairs a large multipurpose hall, toy library, meeting space and cyber library, kitchen, youth room and toilets. Where possible, rooms have been



created with higher ceilings to provide a space that is light, airy and interesting to be in. Despite its reasonably large floor plate the main meeting rooms have been able to be naturally ventilated. The building was also designed for night time use as well. This gives the building a different feel at varying times of the day/night. The lighting was designed to make it feel bright and active at night thus allowing the community centre to be a beacon for evening activities. For those more energetic users of the centre a basketball half court is located at the back of the building, providing a good space to stretch and run.



CCM Architects

CCM Architects Limited (formerly Craig Craig Moller) is an award winning architectural practice established over 40 years ago. CCM Architects have been involved in a diverse range of projects from residential to commercial fit-outs and interior design to more complex projects such as civic developments, large healthcare facilities, and large commercial buildings.

The practice is owned by directors John Rogers, Guy Cleverley and Adam Flowers, leading an enthusiastic team of 16 staff with specialist skills in design and project management. We have developed close working relationships with allied professionals and contractors, selected to suit individual projects, to provide our clients with the best expertise available.

We place a strong emphasis on design excellence, quality systems, rigorous project management, and an overall professional approach which is reflected in the quality of our projects and service. We shape our architecture around context and the human experience, creating buildings that relate to the people who use them.

We focus on teamwork to provide the best result for our projects. We recognise the valuable contributions made by clients, user groups and other consultants as well as each

of our staff assigned to a project. Our approach emphasises the need to discuss, listen and understand the client's issues throughout the process.

CCM is committed to maintaining its position as one of New Zealand's leading architectural practices with a reputation for high quality planning, architecture and interior design.

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Roofing profile: COLORSTEEL®Maxx™ ST7
Roofing Contractor: Tararua Roofing*

Landscape Design: John Powell

Project year: 2006-2008

Photographs: Paul McCredie

FROM THE MRM CASEBOOK
Use of the COP to solve problems

THE LEAKING LOW-PITCH ROOF



- 1) Shows low gutter, short length of eave flashing, no underlay visible
- 2) No flashing or underlay – direct access for rain
- 3) Poor notching at top allowing water and dirt access

The problem.

A low pitch roof with a very low gutter (possibly too small domestic pvc gutter). Water getting blown in and leaking down the walls. Roof underlay not extending to the eave. No eave flashing except under one section. Ridge badly notched and full of rubbish.

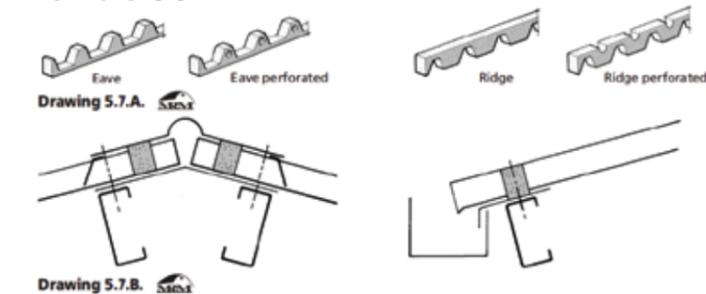
The questions

1. Is it acceptable that the roofing underlay finishes short of the fascia and/or gutter?
2. Should a foam closure have been used?
3. If use of a foam closure was recommended, what type should have been used, vented or un-vented?
4. If use of a foam closure was recommended, should this have been fitted under the upper flashing as well as at the lower (gutter) end?
5. Should there have been a flashing into the gutter and extending back under the roofing underlay?

The answers (referred to COP pages)

1. Roof Underlay should extend into the gutter, but can get rotted away.
2. Foam closure is optional and can be argued to reduce ventilation (as noted in the text)
3. Vented closures are recommended and comply with the NZBC. In this case closures for the ridge would be better to allow moisture to run out.
4. The upper flashing's main purpose is to prevent windblown moisture/salt and the upper end if detailed correctly should restrict this. Noted that it is notched badly, and the presence of "muck" which will remain wet means you are likely to see premature corrosion failure under the flashing. A foam filler here would have prevented this.
5. The drawings clearly show an eave flashing and unless the roof hangs well into the gutter this is usually fitted.

From the COP



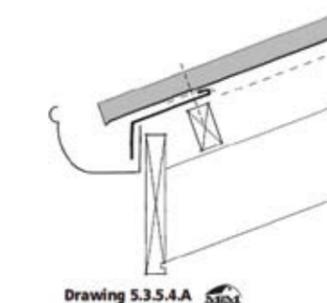
PROFILE CLOSURES

Profile closures, also referred to as filler blocks or profile foam fillers, are accessories capable of being compressed for retention and providing a means of closing the rib or pan cavities at ridge, where they are inserted between the roof cladding and ridging or flashing. (see drawing 5.7.B)

When profile closures are used at the eave they should be a closed cell and a vented or perforated type to allow some ventilation.

spouting and the fascia because of the thickness of the brackets. In coastal locations where the ends of roof cladding are exposed this unwashed area becomes susceptible to corrosion and a gutter apron can minimise this risk.

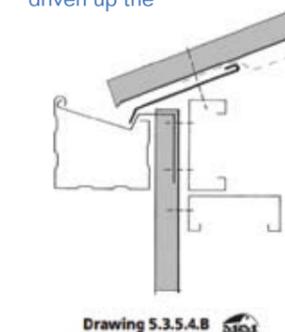
- If there is no spouting or it has a low front.
- Where the ends of roof cladding are exposed in a severe environment, contaminants can be driven up the



GUTTER APRON

Drawing 5.3.5.4.A
Where the ends of roof cladding are exposed to contaminants such as sea salt or industrial pollutants it is better practice to provide an over flashing which discharges into the gutter or spouting for the following reasons (see drawings 5.3.5.4.A and B) :

- It provides a measure of protection to the underside of the roof cladding and the underlay.
- It provides support for the roofing underlay which is subject to damage from wind and UV.
- Where PVC spouting is used, there is an air gap between the



ribs of the cladding. Metal scriber flashings or filler blocks can be used to prevent or inhibit ventilation. The over-flashing should extend 50mm into the gutter and the underlay finishes on the down-slope of the flashing. If there is no over-flashing to the gutter the underlay should be extended into the gutter by a minimum of 20mm. This overflashing in some instances quoted above will become a sacrificial flashing which can extend the life of the cladding. In these instances it is recommended that this flashing be made from aluminium.

A free copy of the COP can be downloaded from the MRM website. www.metalroofing.org.nz



RE-ROOFING THE MANUWERA CITY LIBRARY

In 2009 the Manurewa City Council made a decision to restore the city Library building. The building forms a curve which sets it apart from the usual square structure and whilst this is aesthetically pleasing it presents some very unique problems. Architect Dougal Mckay from GHD Architects was consulted to find solutions to the problems associated with the building- in particular the issues related to the roof.



The existing roofing, that was installed in the early 80's, was a cement based shingle which had not weathered particularly well and had suffered considerable damage due to vandalism and kids climbing on the roof. The roofing substrate was very fragile and brittle and in fact it was dangerous for anyone attempting to walk on the roof. In many areas the shingles were broken causing the roof leak. The curve of the roof and the original design required the roof be broken into sections of approximately 3-4 metres with valleys at each intersection. These valleys compounded the problems as the building was now surrounded by mature deciduous trees.

Harvey Roofing Centre Auckland first became involved in this project in 2007 after an approach from a building contractor. Considerable work was done in measuring and quoting the work involved in



re-roofing the library. In 2009 Dougal Mckay of GHD Architects was commissioned to resolve the design issues related to the building and as a result of the earlier specification work on the re-roofing he contacted Harvey Roofing.

The existing cement shingle roof had suffered considerable damage, was unsafe to walk on and was no longer weather tight.



"The team at the Harvey Roofing Centre and Gerard Roofs were very helpful in providing a solution to the roofing and went to considerable lengths providing test results on fastenings and batten layout. They were able to provide detailed information which was of considerable assistance in detailing the plans," says Dougal McKay.

The extensive curved roof required a very specific approach and Harvey Roofing centre was awarded the contract to work with Q Construction, the main contractor.

The approach to re-roofing was to strip the roof in sections. First removing the cement shingles and fixing counter battens of 50 x 25mm to the existing battens and then to fix the horizontal battens to these. This created a very strong double batted base to fix the Gerard Senator Shingles. The resulting roof combined with horizontal fixing and double battens is very strong.

The batten height was a critical factor as the roof has windows on the upper level which leave very little room to provide an adequate flashing between the roof and window joinery. Special flashings were made for some glazed areas and the tile turned up under the flashing provides a very weather tight roofing system.

To resolve the earlier issues of valleys the use of Gerard Senator Shingles, and the roof pitch, allowed the joining sections to be ridge caps rather than valleys which overcomes the problem of leaves collecting and restricting water run off.

Because of the location of this very prominent public building in Manuwera there were many safety standards which had to be followed. The site was restricted and closely monitored throughout the project by both Q Construction and Harvey Roofing with a minimum of disruption to public parking area and the library.



To maintain the weather tight integrity of the building the roof was stripped and replaced one section at a time

Two teams of roofers worked continuously on this project completing one section before moving to the next to ensure the building remained weather tight throughout the procedure.

The end result is an attractive, strong, durable and weather tight roof which is backed by Gerard Roofs 50 year pro-rata weatherproof warranty.

GHD

Located within the heart of Auckland city, GHD Auckland supports a network of 16 offices throughout New Zealand, employing more than 400 people. The office in the ASB Tower was designed by our architects to provide a modern and contemporary environment, an open yet flexible layout, and incorporates environmentally sustainable features throughout.

A significant achievement for the Auckland office is the success of the Clearharbour Alliance – a

partnership between Metrowater, GHD, Opus and Downer EDI to separate wastewater and stormwater pipes in inner city suburbs. In the transportation sector we have a team of people who work with the Auckland Traffic Management Unit to manage the region's 700 sets of traffic lights, along with people working on projects in the marine, aviation and rail sectors. Led from the CBD office, and utilising skills from across the world, GHD was responsible for the environmentally sustainable features of New Zealand's first Green Star rated school.

Our wider New Zealand and Pacific business serves clients in the water, energy and resources, environment, property and buildings, and transportation sectors. Our clients are leaders in managing New Zealand's infrastructure development and built environment. They face complex situations and ongoing challenges, and we are privileged to work alongside them.

Particular attention was given to the design of flashings beneath the windows. The ridge cap shown here replaced the valleys on all intersections of the roof sections.

A key aspect of our performance is our ability to attract and retain the best talent. Our people are united in a common purpose and commitment to our values - Teamwork, Respect and Integrity. GHD has been recognised as one of New Zealand's Best Places to Work by employee research consultancy JRA.

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Profile: Gerard Senator Shingle
Roofing Installer:
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Auckland

TIMBERLANDS: FORM AND FUNCTION



Opus architecture, Bay of Plenty, provided Timberlands with a functional design format which illustrates that traditional materials can be used in an innovative, interesting and effective way. The new offices for Timberlands exceeded the client's expectations functionally, aesthetically and financially.

entry features Large timber poles and beams, with simple proportion and detail, that emphasizes the grandeur of the forestry theme. The striking entry adds aesthetical value to the building as well as show casing the potential in the client's commercial field.

The poles supporting the roof are reminiscent of a tree supporting it's canopy. A single angled entrance pole contrasts with a straight pole gives the sense of a moving architectural element, evoking a "another dimension" to the space as people move through

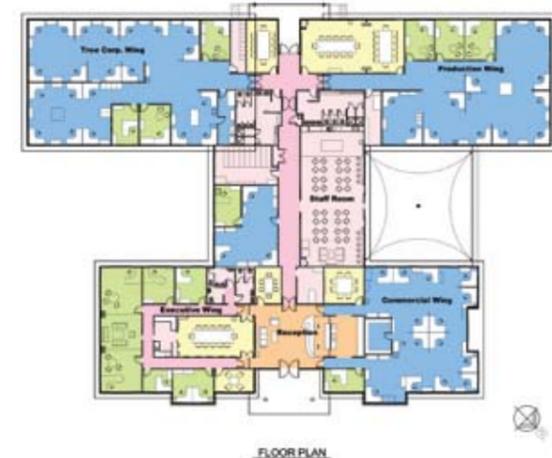
the building. The poles penetrate through the roofing, extending upwards, symbolic of trees that have shed their foliage. Both poles and beams are of Radiata pine, with stain finishing enhancing the timber's look and improving it's performance. By treating the 350mm diameter poles to a level of H5 the client is well assured that their building will last long into the future for generations to come.

Initially a physical design model was created in-house to test the visual effect prior to producing a computer model and progressing into detailed design.



The building provides a working environment for the administration staff of a forest management company and is located in the Te Papa Tipu Innovation Park, Rotorua. The site is zoned rural commercial and is surrounded by tall redwood trees and the rolling plains of Rotorua. The planning was simply drawn out of the functionality of the spaces that were required by the client's brief. A central spine dividing the 4 wings for 4 departments provides the front to back flow linked by the central staff common room. This allows the 4 distinctive bodies of this company to operate independently but communicate between each other from one location.

The front entrance projects the Timberlands corporate image to clients and visitors with understated elegance accented with bold highlights of colour. The welcoming



The careful design, detailing and the use of timber in both the building's structure and it's external form required specialised attention. To achieve the desired quality, workmanship and effect a specialist boat builder was consulted and employed.



A feature of the building is the undulating surface of the roof which demonstrates the ability of Timber Construction to provide organic forms. The truss system provides an economic basic form with purlins sitting at respective heights to create the curve. The roof design itself is a highlight of the of the building and had to be flexible to achieve the architectural design intent of the building. The curved roof was draped in Colorsteel® Maxx™

The smooth arc created in the timber fascia highlights the sharp curves that the design intended. The fascia is composed of finger jointed standard fascia boards bent to suit the curve of the roofline.

The cladding is treated Radiata timber weatherboard complemented by vertical timber facing panels. The horizontal lines of the weatherboard coupled with vertical timber facings helped to give the building a less commercial feel and allowed the

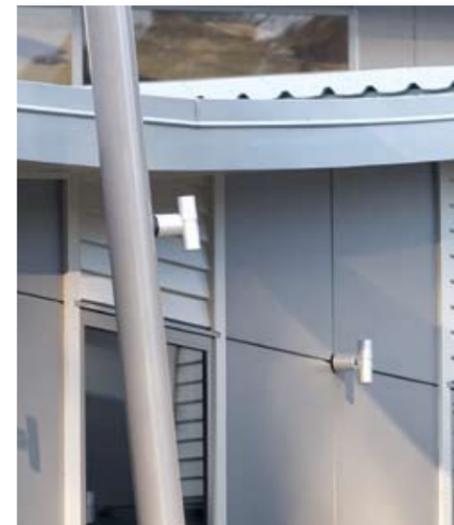


whole development to fit the rural /commercial site. The aesthetic quality of timber weatherboard is visually pleasing and in keeping with the client's forestry connections.

The interior continues the use of timber extensively throughout the office building in both bold & subtle ways.

Tasmanian Ash flooring has been used in the reception area after being treated with a hardening compound to enhance it's abrasive qualities and finished in a clear coat. The flooring 'look' was mirrored with the use of Asona Atkar hooped pine perforated acoustic ceiling panels.

Radiata timber pieces were curved and then laminated to achieve a



predominant use of timber in this zone, and the clients connections to the forestry industry made it a definite and clear preference. This is a timber focused company and wherever possible timber is used in the building. All the timber is locally sourced reducing the travel costs and carbon emissions.

A further consideration was the periodic lease on the site which required that the client had a flexible solution should the building ever need to be dismantled or relocated in the future. For this reason the four wings are flanged from the central spine. The building is double insulated with double glazing throughout to prevent heat loss during winter months. Heat pumps assist with air distribution during the winter with passive ventilation and opening windows during summer months. Further cross ventilation is created with double height ceiling spaces. The north facing windows have generous eaves to prevent excessive heat during summer and the common room is recessed with an exterior sail providing shade.

All storm water is collected into a pond with the option to utilise the collected water if required in the future.

As with all projects Opus were required to design the project to as specific budget. Whilst the exact budget remains confidential Opus were able to not only design within the allocated budget but in fact were able to implement savings of about 25%. This represented approximately a one million dollar saving. Clearly good news for any client!

reception top with character which again showcases the potential of timber when applied to different parts of the building process.

Looking to the future and the environment were key issues in the design concept. The site falls into the highly corrosive geothermal zoning in Rotorua and careful consideration was given to all materials used. The

The project has been awarded a regional award in the category of Commercial architecture by New Zealand Institute of Architecture. This is a very special project for Opus Architecture as it was the first to be completed by the Architecture team since their formation locally in Rotorua.

Opus Architecture

Opus Architecture is a division of Opus International Consultants, a global professional Infrastructure provider with offices in New Zealand, Australia, Canada and the UK. The award winning practice was the winner of the 2009 NZIA Architecture Medal, the first to be awarded in New Zealand. Offices are located in Auckland, Hamilton, Rotorua, Napier, Palmerston North, Wellington, Christchurch and Dunedin. The Rotorua team comprises of Aaron Thomsen, Richard Lancaster and Aladina Harunani who all work with the extended team and resources in Hamilton under the leadership of Mark Burk Damaschke the business group manager for Central Region. In addition to the Timberlands project, other recent work has included Mt Maunganui College, Rotorua CBD revitalisation, Rotorua Police Station, Rotorua Library, Mokoia Intermediate School, Whakatane Crematorium, Rotorua Coroners Court development and refurbishment of Hauora house, Department of Labour offices, Tauranga, Tauranga District Court master planning, and Knox Church development, Whakatane.

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Structure Engineers: Opus International Consultant Hamilton

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Profile " COLORSTEEL ® Maxx™

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