ISSUE 17

SCOPE

NZ METAL ROOFING MANUFACTURERS INC.

Below is a brief introduction to the 2008 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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Steel and Tube Holdings Limited

If you would like to submit material please contact any member of the executive or the publisher.

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www.metalroofing.org.nz

SCOPE

CONTENT ISSUE 17

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NZ METAL ROOFING MANUFACTURERS INC.

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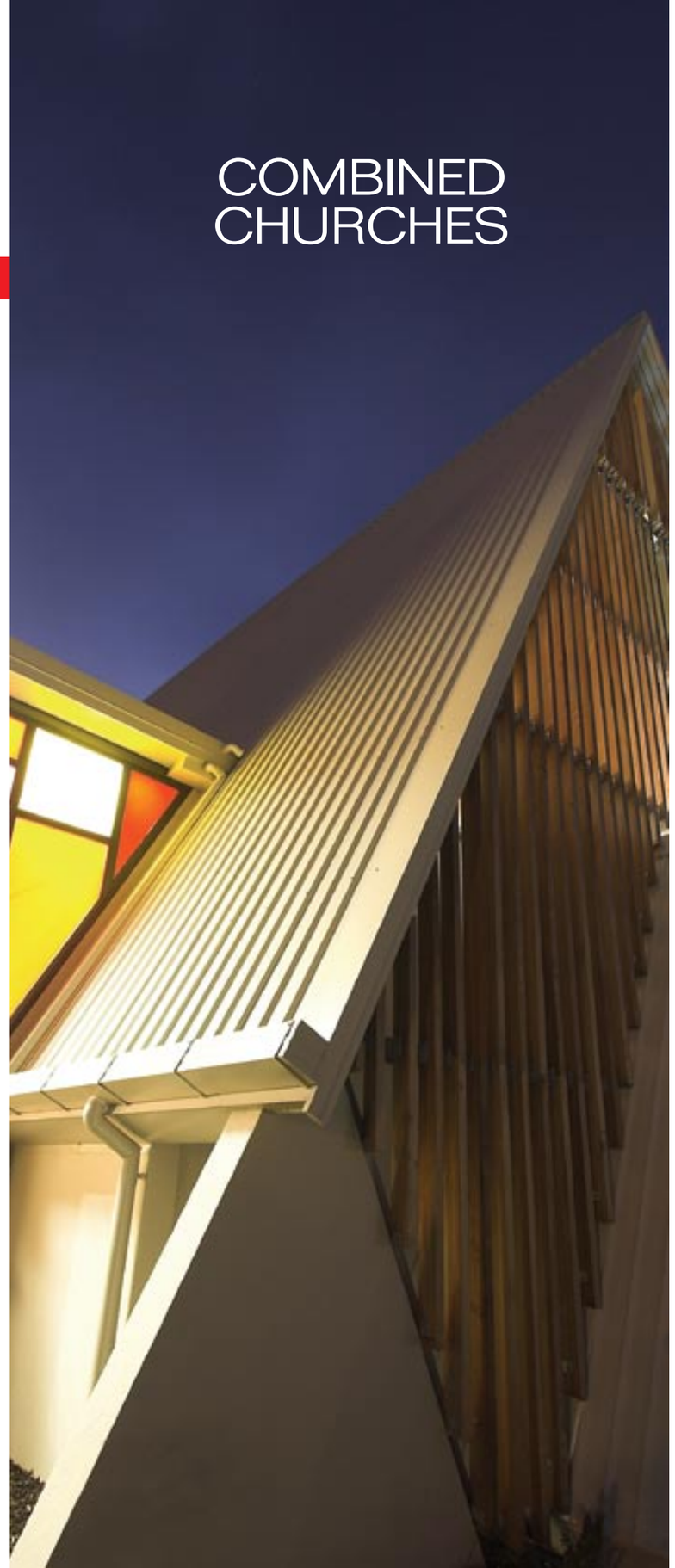

COMBINED CHURCHES

When two churches in Waiuku realised they were going to have to combine forces to survive, they faced a dilemma: which of the two church buildings should be the base for the new congregation. While the Methodist and Presbyterian congregations in the town South of Auckland were too small to justify having their own church, together they were too large for either of the existing buildings. So, the newly formed Waiuku & Districts Combined Churches group made the decision to expand and refurbish St Andrews Church, the A-frame Presbyterian church in the main street of Waiuku.

Jasmax was commissioned to design a building that would not only serve the congregation but also act as a central meeting place for the wider community. This meant the new building would need more rooms and improved facilities.
The original A-frame, built in 1964, had some drawbacks – among them that it was dark inside and the interior and exterior were dated. Also, because the building lacked insulation, the noise of any wild weather outside drowned out the service.

From a design point of view, it would have been easier to knock down the building and start again but the decision was made to integrate the A-frame in a new design. The reasoning was that the existing church was a familiar part of the streetscape and that it would have been more costly to build an equally imposing structure than to adapt the A-frame.

Hamish Boyd, the Jasmax director in charge of the project, says, "Significant alterations are often a challenge and the A-frame shape isn't the easiest to work with but it's nice to keep the connection with the history of the site."

The Jasmax team resolved the design challenge by intersecting the A-frame at mid-height with a long, low second structure on the northern side that meets the A and continues out, to a lesser extent, on the southern side. A slight incline in the roofline of the new building was introduced to soften the meeting point with the tall triangular shape of the existing structure.

The original building was stripped down to the frame, insulation went in, the foundations were strengthened and the buttresses replaced with steel beams. The original standing seam roofing was renewed using COLORSTEEL® longrun roofing ZINCALUME® steel and, in keeping with the strong lines of that material, the addition was clad in corrugated ZINCALUME®. The sides of the A-frame were opened up to the new wings on either side, and the body of the church was rotated 90 degrees to face the new stage area created by the south end of the addition. Glass doors behind the congregation seating open into the conference space that can be divided into smaller areas if necessary.

The northern addition, which also houses two lounges, an office, meeting rooms, kitchen and bathrooms, provides a solution to one of the congregations major concerns. As Hamish Boyd explains, "One of the things they said to us was that once the services were finished, people tended to drift off and go home so they wanted a space where they could have a cup of tea and a chat after the service."

The building's rimu interior lining was given a new lease of life, and the sections cut out to accommodate the new structure were used on the walls of the addition. A timber panel echoing the lining hangs from the ceiling of the A-frame at the height of the addition and has stage lights and a projector suspended from it. The glazing employed in the addition is a quirky, contemporary take on stained glass. Instead of using expensive coloured glass, Jasmax went for translucent stick-on panels in vivid shades, interspersed with clear panes of glass. This achieves a modern look and makes the church seem more open and inviting to the public.

In the upper part of the A, the original blue and pink stained glass remains but now sits behind an open vertical timber screen that gives the building a contemporary street frontage and helps to solve the problem of sometimes-blinding morning sun pouring into the building.

What was St Andrews Church reopened on April 1 2006 as St Andrews Centre and it wasn't just the congregation that was thrilled – the New Zealand Institute of Architects also liked what it saw. So much so, that the building won a 2006 NZIA Local Award in the Community & Cultural category. The judging panel said "This refurbishment and extension of a 1960s A-frame church focuses around the need to open the facility to the community and to create a building which is transparent and inviting to the public. The use of wrapping as a conceptual and sculptural/formal language is compositionally sympathetic to the existing structure, with an interesting juxtaposition of colour in glass against contemporary timber and white surfaces."

An incline in the new roofline was introduced to soften the meeting point of the existing structure.

The redevelopment of what was a tired A-frame structure has not only given the amalgamated congregation a more flexible and modern church that reaches out to its community, but has also given Waiuku a landmark building.

Jasmax

One of New Zealand's leading architectural practices, Jasmax has more than 180 people working in Auckland and Wellington, with specialist teams in the areas of interior design, landscape, education, transport and health. Over the past four decades Jasmax has specialised in the design and development of public facilities, with the aim of creating engaging and attractive environments. Projects include New Zealand's largest public museum, Te Papa, the development of Britomart, Auckland's transport hub, as well as the refurbishment of the Auckland Town Hall and Auckland's Civic Theatre. Jasmax believes that architecture has the power to stir the spirit while also meeting more practical everyday needs. The company applies the experience and skill of its team to create innovative and inspirational buildings and landscapes.

Article by Graham Hepburn.

Client: Waiuku & Districts Combined Churches.

Architect: Jasmax .
Hamish Boyd – Director in Charge.
Jeremy Bennett – Project Architect.
Project Team: David Mahon, Sandeep Ram, Matt Robinson.
Telephone: 09 366 9626.
Website: www.jasmax.co.nz

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Telephone 09-238 7758.

Services engineers: Lincolne Scott.
Telephone 307 7196.

Structural and civil engineers:
HLK Jacob.
Telephone 09 377 5622.

Structural steel: Harman Engineering

Roofing Installer:
Franklin Long Roofing.
Telephone 09 238 9249.
Profile: Styleline.

Roof: COLORSTEEL® Titania
www.colorsteel.co.nz

Photography: Vincent Kar.

"At the last NZMRM Annual Conference, Dr. Lou Gommans from PPG Industries gave an interesting presentation on the coatings technology used to make the paints which coat many of New Zealand's metal claddings. Significantly, and unexpectedly, he informed us that NZ leads the way in waterbased paint technology, with a far greater percentage of usage than anywhere else in the world. Our NZ-based knowledge, in which he is a world expert, is seen by the industry as world-leading.

With NZ's "clean and green" image taking a few knocks from our indigenous greenies, it is good to hear that NZ industry does lead the world and that in our industry, the NZMRM, is leading the way.

We invited Lou to summarise this topic for Scope, and here it is. It is fairly technical but read it and you will find it worth while. As designers and makers of metal-clad buildings you can now take pride in knowing that they not only look great, they are contributing significantly to NZ's environment"

Stuart Hayman

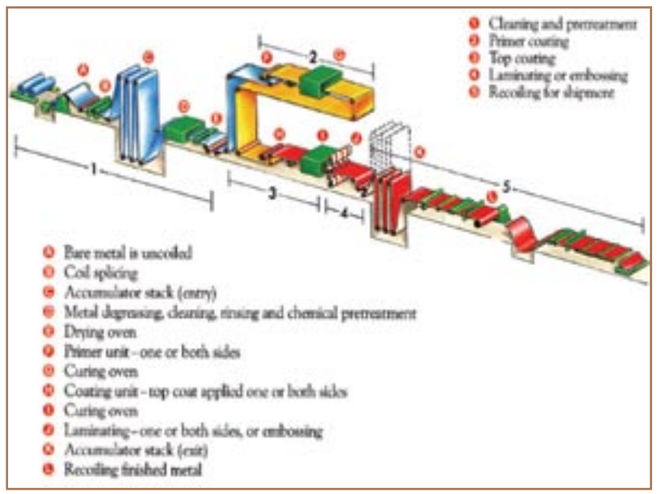
LEADING THE WORLD IN WATERBASED COIL COATINGS

Waterbased Coil Coatings Utilised 'Down Under'
L.H.P.Gommans and A.R.Shekhumia
PPG Industries New Zealand Ltd.

Waterbased coil coatings have been used in the New Zealand market since the late 1980's. Some common misconceptions about the use of waterbased coatings for coil coating need to be dispelled. The performance requirements of waterbased topcoats, designed predominantly for the residential roofing and siding markets, can be benchmarked against the recently revised AS/NZS 2728 Standard.

Coil coating is a process whereby paint is applied to a coiled metallic substrate (usually by roller application) although other application techniques such as spray or hot melt have been utilised. The coil strip is chemically cleaned prior to stepwise application of chemical pre-treatment followed by a primer then a topcoat application. All coatings are thermally baked at peak metal temperatures of ca. 230°C prior to the recoiled coils being 'consumed' in the market.

A schematic of a typical coil coating process is detailed in Figure One.



Roofing and siding is the predominant market for coil coated product in Australasia.
The versatility of the coil coating process becomes clear when one considers that many substrates (CRS, HDG, Zincalume TM and Al) and many differing paint systems (polyester, vinyl, PVC, fluorocarbon etc) can be utilised to provide technical solutions for the variety of coil 'end-users'.

The Coil Coating Process An Environmental Perspective

Resin suppliers and paint manufacturers are constantly striving to supply products which will ultimately reduce the release of volatile organic compounds (VOC) into the atmosphere. The subject of air quality and the control of air pollutants from industrial processes is a very comprehensive and complicated area of research. Significant legislative efforts are underway to limit climate change via reduction of pollutant emissions to the environment.

The development of policies to protect human health and safeguard sensitive ecosystems is just as high on government agendas.

Coil coating processes traditionally use gas fired ovens with after burner incineration/thermal oxidizers to ensure that noxious emissions to the environment are controlled and minimized. Stringent legislative controls (i.e. Resource consent controls) are placed upon the released combustion products (other than carbon dioxide and water). All emissions must be free from droplets, persistent fume/mist and must be free from offensive odour (boundary condition).

These global requirements map closely with typical resource consent conditions for coil processing in NZ with the proviso that specific detailed resource consent condition requirements differ with local district authority practices.

Coil Coating can be considered as a 'closed' process – 'closed' meaning that all solvents and gas i.e. 'fuels' are consumed in the combustion process and all by-products efficiently incinerated/oxidized prior to discharge to the environment.
A survey of the predominant coatings technologies, currently utilized by the NCCA/ECCA Coil Communities (Europe/USA) is conspicuous by the absence of low VOC waterbased technology (Refer Table One).

- Economics/ease of use/ durability/warranty considerations.
- The solvents in the paint are used as 'fuel' to cure the thermoset coating i.e. most ovens are gas fired.
- All combustion products (from gas fired ovens, polymer related split off volatiles) are 'sanitised' via afterburner incineration/thermal oxidizers/catalytic oxidisers.
- Waste containers are recycled i.e. 200ml drums, MBC or tanker supply
- The coil process is highly efficient w.r.t. energy consumption per m2/ paint application.
- The coil process uses water sparingly (predominantly coil quenching processes prior to recoiling).

Table One – Summary of Global Coil Paint type statistics

USA		EUROPE	
Polyester	41%	Polyester	36%
Epoxy	28%	Plastisol	19%
Plastisol	15%	SMP	3%
Fluoropolymer	6%	PVF2	3%
Waterborne	6%	Acrylic (solvent)	1%
Other	4%	Waterborne	1%
		Primer (Polyester)	17%
		Backing Coat Polyester	13%
		Miscellaneous	8%

In essence most of the technology summarised in Table One (excluding PVC Plastisol) is based upon medium solids, medium VOC solvent based technology. The exception is then PVC Plastisol which is a rapidly diminishing technology, because of expressed environmental concerns relating to the use of PVC and PVC Plasticiser technology. In addition Plastisol technology has a poor exposure performance record in Australasia's severe UV/Thermal exposure environments.

Why then do medium solids' solvent rich technologies continue to be used in the Coil Coating Process? The answer lies in the following bullet point summary.

- All paint technology products have 100% paint transfer (nil paint waste from overspray or potlife issues) - when roller coated.

Other Considerations. Environmental and Sustainability Issues

The UK Government has published key themes for sustainable construction. These can be summarized as follows:

- Design for minimal waste.
- LEAN Construction and minimize waste (i.e. use light, strong materials).
- Minimize energy in construction and use.
- Do not pollute the environment.
- Preserve and enhance. biodiversity (i.e. ensure no impact on biological communities).
- Conserve water resources
- Respect people and the local environment.
- Monitor and report (i.e use benchmarks).

The environmental 'friendliness' of the coil coating process, coil recyclability, long span in service, easy maintenance, excellent aesthetics and appearance make coil coating a strong 'environmental choice'. The alternative to coil coating processes are labour intensive spray applied processes, clearly these are not preferred cost effective options nor are they environmentally friendly ones.

The clear focus of sustainable development is to "improve the quality of life for all without increasing the use of natural resources beyond the capacity of the environment to supply them indefinitely "– this thinking is now mainstream. Considerable attention is being placed upon coating vehicles which can be seen as being carbon neutral through life cycle analysis studies. Research into sustainable acrylic technology is not surprisingly well advanced and well researched. Considerable effort is being focused upon generating sustainable acrylic raw materials via a number of novel processes (plant based production and /or generation from renewable feedstocks).

Acrylic technology is a very dominant global technology used for Surface Coatings- estimated to be 80% plus of the USA topcoat market.

Waterbased coatings with low VOC content are recognized as a preferred method of minimizing VOC emissions along with other options such as higher solids, powder, organic free coatings and radiation cure technology. The water based advantage becomes clearer when we look at "other Compliance matters" and refer to AS2728 requirements.

Other Compliance Matters

The awareness of sustainable materials and the issues listed below were considered as key drivers for change. In the 1980's the NZ market moved away from solvent borne technologies (PVF2, SMP).

■ Elimination of odour and toxicity associated with HAPS's (Hazardous Air Pollutants) eg Isophorone in PVF2.
■ Reduction of fire risks and associated ease of storage of large quantities of coil paint product in close proximity to hazardous, non flash-proof equipment (i.e. Ovens, electrical appliances).
■ Nil capital investment to switch from solvent borne to waterbased technology.
■ Removal of high vapour pressure HAP's which possessed a risk to human health with bioaccumulation hazard in coater room environments (solvent borne products containing lower boiling point solvent cocktails with higher TWA/TLV thresholds cf. waterbased technology).
■ Waterborne technology having proven durability advantages over solvent borne technologies.
■ Regulatory compliance with Dangerous Goods Storage and HASNO product labelling requirements,
■ Waste disposal regulations for waterbased product much simpler than for solvent rich technology.
■ Air resource consent requirements for fugitive emissions are minimized when water based options are exercised.

Summary of AS/NZS 2728:2007 – Prefinished/prepainted sheet metal products for interior/exterior building applications – Performance Requirements.

To quote from the Standard – "The objective of this standard is to specify the requirements for prefinished sheet and strip intended for fabrication into products for use in the building industry."

The "Standard classifies prefinished/prepainted metal products into six types according to their performance in respect to durability and aesthetics, in environments varying severity." The coil coated product types (there are six product types) are aligned with ISO 9223 Category and AS/NZS 2312/ISO9223 requirement descriptive. The corrosivity environment is correlated with corrosion rates of mild steel (µm/y) as a benchmark to measure corrosion rates.

The performance requirements for prefinished metal products cover standard aesthetic requirements as well as standard mechanical test property attributes i.e. appearance, specular gloss, dry film thickness, reverse impact, scratch resistance. In addition and most importantly, the Standard covers key performance attributes for coil coated product types. These key performance product types being related to the –
■ Durability of the organic film reflected in gloss loss, checking, chalking, colour change, cracking, flaking and peeling related to four year durability requirements of the organic coating at sunshine test sites. These sites have quantified solar weathering index requirements.
■ Humidity resistance and corrosion resistance (Cyclic corrosion testing salt spray resistance, humidity testing and four year corrosion resistance tests at ISO9223 ranked corrosion resistance sites).

Performance of Waterborne Coatings in accordance with AS/NZS2728 requirements
The waterborne topcoats supplied to the NZ market (from PPG) all meet with the four year durability requirements of the AS/NZS2728 Standard. PPG have adopted a continuous improvement philosophy to the development of new waterbased technology with developments of 5th and 6th generation topcoat technology already well into research and testing.

All new technologies are subject to AS/NZS2728 requirements prior to release into the market place.

Figure One illustrates PPG's Muriwai exposure site (illustrating the severe corrosion resistance testing that these coatings need to endure prior to market release). This site is extremely aggressive, is classified as a C5 site (under ISO9223 nomenclature) being located 80 meters from the breaking surf. The AS/NZS 2728 Standard benchmarks all corrosivity requirements for this site such that all test data from this site can be correlated with other C5 sites on a global basis.

Figures Two and Three illustrates some long term exposure building case histories for high profile coil clad structures. The aesthetic appearance, longevity and enduring beauty of these coated finished buildings demonstrates that waterbased coating solutions can

Figure 1.PPG's Muriwai Exposure site located on the West Coast of NZ

perform and are performing well in the real world. In short the colour, gloss and chalking requirements are easily meet with AS/NZS 2728 requirements as well as Customer warranty expectations.

Table Two shows the perceived inadequacies of water based coil coatings – in reality none of these inadequacies stack up with the coil processes operative in NZ.

Coil Perspectives on Coatings for the Future

The performance of Coil Coating Systems for today and expectations for tomorrow is an important consideration.
In essence:
■ Performance expectations from the consumer (and the coil applicator) are increasing NOT decreasing.
■ Compliance expectations are becoming more stringent as one would expect as Environmental expectations continue to be driven hard through Regulatory Channels.

Table Two Perceived Inadequacies pertaining to the use of waterbased coil coatings

Attribute	Performance Requirements	PPG Performance Requirements
Skinning/set up of waterbased coating in tray	Non skin >24 hours continuous coil line running	Pass OK
Poor mar/scratch resistance of waterbased topcoat	Pass PPG internal scratch/mar resistance tests	Pass OK
Poor flow/ appearance in roller application	Pass Customer requirements	Pass visually very good flow/ appearance
Solvent boil at high dry film thickness	Pass coil customer diff requirements	Pass at fast line speed
Corrosion resistance with compatible primer technology	Pass AS/NZS2728 4 year requirements	Pass/exceeds expectation
Durability Requirements	Pass AS/NZS2728 4 year requirements	Pass/exceeds expectation
Ovens 'rust out' because of continuous use of waterborne products	Ovens perform as per solvent borne coatings	Pass expectation

A high profile building demonstrating the aesthetic beauty of a waterbased Coil clad building.

Waterbased coatings continue to develop and evolve at a great pace. e.g. PPG already has 5th and 6th generation technologies already under development for topcoats, primers and backing coat technologies. The combination of good in-plant operational performance (long considered a draw back of waterbased coatings), excellent durability and good corrosion performance make waterbased Coil technologies of interest to all coil lines. The additional EH+S benefits realized in coater room environments, product storage, safety considerations, ease of transportation and lack of hazard ID protocol make waterbased Coil an interesting option. – no question about that.....!

PPG Industries is a global leader in the diversified manufacturing and servicing of protective, decorative and automotive coatings, industrial and speciality chemicals, flat glass and fabricated glass products. Headquarters in the USA, and with 113 facilities in over 20 countries, PPG's acquisition of US-based Ameron Coatings and European Sigma Kalon has strengthened its position in the heavy duty protective coatings market.
PPG Industries New Zealand Limited is New Zealand's leading manufacturer and supplier of a broad range of industrial coatings with a proud and long-standing tradition of quality product and innovative technology. Utilising global resources, PPG Industries New Zealand Ltd. offers applications for wood, general industrial, coil-coating and protective & marine coatings markets, developed for South Pacific climates. This wide range of surface coating options also include powdercoating, can & package linings and pre-prime coatings for timber.
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www.ppgnz.co.nz

This article is an edited version of Dr.Lou Gommans report. A copy of the full report can be obtained from PPG Industries.

FINDING SOLUTIONS

Brian and Sonia Dawes are delighted with their new Auckland residence but the consent process gave them, and Architectural Designer Mark Brown, a few anxious moments.

The site had an existing 1950's bungalow which bordered Cornwell park, Auckland, which is designated as a heritage zone. During the design and build process Auckland City bought in retrospective compulsory Resource Consent for any dwelling to be removed that was built prior to 1940. With the title issued in 1950 it was therefore considered unnecessary to apply for consent. However, council produced an aerial photo taken in 1935 showing a small cottage on the site.
"We could not prove otherwise, therefore had to obtain Resource Consent." Says Mark Brown," Fortunately the house had been designed in sympathy with the surrounding homes, and we were granted consent."

As the area was within the Heritage zoning Solutions Architecture recommended their clients consider an understated,

up-market, bungalow style which would fit comfortably into the fabric of the surrounding neigbourhood.

The site had a well established wooded area to the front with panoramic views over Cornwell Park to the rear. The concept takes full advantage of site and the materials and colour palette was deliberately chosen to blend with the colours and textures of the surroundings.

Bandsawn Bevel Back Cedar Weatherboards, were stained in Hackett black to blend in with the dark volcanic rock so prevalent in the area.

The Gerard Corona Shake, in Charcoal, blends well with the textures of the trees giving the home a subtle distinction from the traditional corrugated iron.

The Dawes had some very specific requirements. Brian, who has considerable experience in the building industry, was adamant that the house would be of the highest standard in both products used and the finishing.

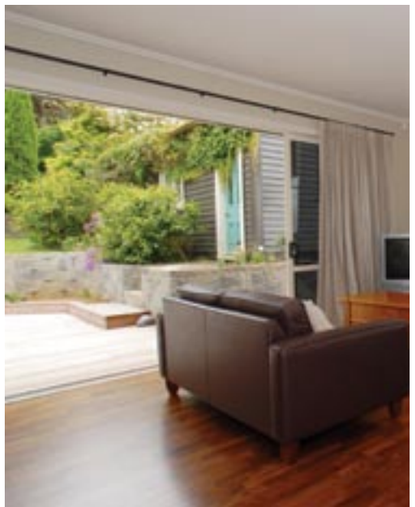
Limited street parking options required that on site parking be provided to suit family and guests and allow easy access to the rear

courtyard and outdoor/indoor living area. Site excavation was limited to minor ground work to accommodate the double garage.

Brian is a keen motor sport enthusiast and the design required the inclusion of a separate lounge space to entertain mates who regularly watch Grand Prix racing on the custom built, high end, entertainment system. The new home provides this "hide away" which Brian can enjoy with friends without disruption to family life.

The dinning and kitchen areas open at the rear to provide good access to the decked entertainment area and the Park beyond. Large glazed areas, of one way glass, provides privacy while maximising the views from the living areas and bedrooms.

Kitchen and bathrooms have been designed with state of the art facilities which facilitate the familys' busy lifestyle.



Mark Brown, Solutions Architecture, was recommended to the Dawes by Jalcon Homes as an architect who had considerable experience in residential design excellence. "We are very impressed." Says Brian Dawes, "The ideas and solutions the team came up with not only met our expectations but exceeded them. Our new home is a pleasure to live in, is practical, warm and fits well into the environment. We are very happy with the result. We were particularly impressed, despite the consent issue, as our home came within 3.3% of our budget. In my experience this was a first!"

Solutions Architecture

Solutions Architectures' new name reflects the growth of their business and their function. To provide solutions no matter what the design project.

Whilst Solutions Architecture pride themselves on their expertise in residential design solutions they also have considerable experience, and knowledge in the Health Care, Hospitality and Accommodation fields.

Solutions have completed projects from $200k to over $6m in the residential bracket and have been regional and national award winners in the ADNZ competitions.
The Dawes house gained a regional award in the Gerard Roofs category in 2007.

Mark Brown is a Professional Member Architectural Designers New Zealand Inc.
Auckland/Northland Branch President.

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Roofing Manufacturer:
Gerard Roofs.
Telephone 0800 104 868.
Profile: Corona Shake.
Colour: Charcoal.

Roofing Installer:
Harvey Roofing Centre.
Telephone: 09 978 9020.

KEEPING IT AUTHENTIC

Gavin Robins, Architect Director of Stiles and Hooker, who has a long held passion for dairy factories was commissioned to design Kaimai Cheese Companys' new facility. Robins' knowledge of historical dairy factory design stems from his childhood having been raised on a dairy farm which was directly opposite the Mangatoki Dairy Factory in the Taranaki region. As a young boy he spent many hours watching the process of cheese and butter making within this impressive, traditional, dairy factory powered by water wheels, pulleys and belt drives. He later wrote his Architectural Major Thesis on the development of dairy factories in the Taranaki region which focused on the history of dairy factory design.

The brief from the Kaimai Board of Directors was to replicate some of the traditional building forms from the 1950's and galvanise them with todays technology and efficencies. The facility was to include an upmarket cafe, cheese tasting facilities, sales and retail areas (which would provide public viewing of the cheese making process), training and cooking facilities and administration offices. This was to be designed to capture the ambience of historical values through the use of nostalgic memorabilia and recycled building materials salvaged from the old butter factory on the original Waharoa site.

The design of this building centres on the traditional building forms developed and designed by Architect John A Dufill, a pioneer in reinforced concrete construction with 60 dairy factory designs to his credit. Dairy factory construction from the 50's followed this trend. Photographic reference suggests each factory was individually designed although a number of synergies existed.

The design for Kaimai Cheese Co Ltd. factory adopts the traditional forms of the 1950's factories and emulates, to a certain extent, the historical form of the Waharoa Butter Factory which existed on an adjacent site until its demotion in 2005.

Construction utilises precast concrete external walls, timber framed gable structures with weatherboard cladding, timber window joinery constructed using traditional profiles, corrugated iron roofing, gutters and exposed timber beams. The factory interior is constructed using modern finishes to meet MAF quality standards in hygiene.

The retail area and café are constructed using precast concrete walls which are spanned by large, exposed, Oregon and Rimu trusses (salvaged from the Old Waharoa Dairy Factory). Surplus trusses have been recycled and used to good effect as exposed beams and rafters forming the roof over the Café area. Recycled tongue and grooved Rimu ceiling linings are used to compliment the timber trusses and joinery counter units to the Café. The Café flooring is recycled tongue and grooved Matai oiled to provide a rich contrast to the Rimu ceilings. The remainder of the internal finishes are natural concrete with painted timber window joinery. An air conditioned Office space is located within the roof space, over the maturation rooms, with visual connection into the retail space through glazing within the end of the timber trusses.

Natural lighting is via windows, dormers and gables which provides a visual connection with roof forms and the exterior landscaping.

The design brief specified the use of coloured roofing to give the effect of the old 'red lead' colours that were traditionally used on corrugate roofs in the 1950's era.

Architect Gavin Robins brief to Pacific Coilcoaters was to develop this colour especially for this project. The requirements were for a traditional appearance to stay in keeping with the historical flavour of the operation.

The colour was trialled and matched to the new colour, Kaimai Red, by PPG. PCC ran the coil in ColorCote® ZR8TM which was then supplied to Dimond, Hamilton, for forming.

The remainder of the building exterior is being progressively painted in a colour palette reminiscent of the era.

The ridge roof vents are a combination of units salvaged from the old Butter Factory and new units constructed in identical detail. These are functional applications and not just for effect.

An old concrete fire proof bunker was salvaged from another site and used as the basis for an outbuilding which houses water boilers and plant servicing the large kitchen juxtaposed to the Café.

The building is sited in a prominent position to State Highway 2 and appears as if it has existed since the 1950's.

A number of patrons have unwittingly commented on how well Kaimai Cheese Co. Ltd. have restored the old Dairy Factory building at Waharoa. This is an endorsement to the success of fulfilling the clients original brief and vision...." to replicate a traditional building form that endorses the Kaimai Brand."

Architects: Stiles and Hooker Ltd.
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Telephone 07 839 1254.
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For more information on custom colours for Roofing and Cladding, or for interior applications, contact Pacific Coilcoaters 0800-ARXZRX, PCCwebsales@fcsp.co.nz, or visit www.colorcote.co.nz.

Elva Reynolds and Warren Oliver. 1990

40 YEARS IN ROLL FORMING

Franklin Long Roofing reach a 40 year milestone in roll forming.

1967 does not seem to be that long ago but since that time there have been many significant changes in the supply, material and colour options available in steel cladding.

When the late Des and Elva Reynolds decided to take the plunge into a roll forming venture it was a generally unknown territory as the country had only a small handful of companies roll forming steel, equipment and raw materials were imported and expensive. At the time Des was in partnership in a thriving plumbing business and together with his business partner (Peter Smith) and Elva the new company, Franklin Long Roofing, was formed. This was a big gamble for the Reynolds and when Des unexpectedly passed away it left Elva at the helm in very uncertain times. Elva's brother, Stuart Oates, stepped in to help out but his ill health again left Elva in a difficult situation. In 1981 the business functioned with 3 factory staff, one of whom was Warren Oliver. Warren was 23 and Elva placed her faith and support in him giving him the opportunity to manage the factory production. Today Warren has a share holding in the business and continues in the role of Managing Director together with the Reynolds' Family Trust. "Being given this opportunity at just 23 years of age was a huge opportunity" says Warren," I will always be grateful to Elva for the trust and support she gave".

In the 80's it became obvious that the Pukekohe district was not going to provide sufficient workflow for a growing business. The area was reliant on farming and horticulture and fluctuations in the economy meant this market was not reliable or stable. "It was either a feast or a famine," says Warren. During this period the company actively advertised, because they could not afford the luxury of sales reps, and extended their sales and market supply north to Warkworth, Great Barrier Island and south of Hamilton.

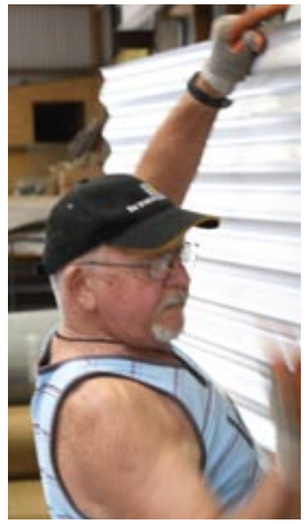
The original roofing and cladding materials were imported from either Australia or Great Britain as unpainted, pressed flat, galvanised steel sheets in 8 or 12-foot lengths.

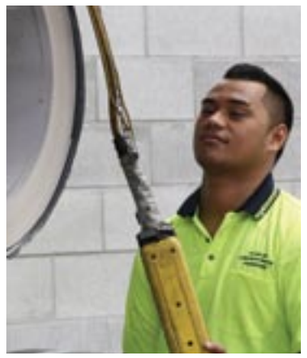
A young Warren Oliver building water tanks which was big business in earlier years.

The original Hayes rollformer is still in operation today.

The first roll formed product was galvanised corrugated iron sheets and the same machine (Designed by Tom Hayes) used then, is still in operation at Franklin Roofing today.

In 1976 Pacific Coil Coaters (Then Hunter Douglas) produced the first pre-painted coiled steel and in 1982 New Zealand Steel began producing coiled, COLORSTEEL®. At this time Franklin Long Roofing was operating two corrugated roll formers, a styleline roll former and curving machines. Today the company offers corrugated pre-painted steel and trapazoidal profiles,flashings, quarter round gutters, long run ridging and 125 profile guttering. Raw material continues to be supplied by both Pacific Coil Coaters and New Zealand Steel.





From left: Jamie Bain and Marcus McCarrick head the Franklin Long Roofing sales team.

In addition to roofing and cladding a large portion of Franklin Long Roofing's business was in the forming and manufacture of galvanised steel water tanks. Whilst the popularity and need for water tanks has diminished over the years the skills developed during this period placed the company in a unique position. With today's architectural trend, towards roll formed bull nosed and circular features, the company is able to offer this expertise to many of their traditional competitors. To meet growing demand in this area Franklin Long Roofing have recently imported a new auto curver which will significantly enhance their production and precision capabilities providing architectural options not previously available in New Zealand.

Warren Oliver

The company now has grown with 8 full time in roll forming, 20 contractors backed by management, customer and technical service representatives.

"The company has been built on trust and loyalty," say Warren Oliver, "We have very loyal staff, most of whom are long serving, our customer base has been loyal and in turn we have been loyal to our customers and suppliers, some of whom have traded continuously with us for 35 years. This was the business culture created by Des and Elva. It worked for them then.... and it works for us now."

EUROPEAN EXCELLENCE

Creating innovative and distinctive design concepts is always the challenge facing Architects. When the client is the distributor of two of the world's most prestigious motor car brands, excellence in design becomes crucial. When Team European approached Archaus Architecture Ltd. the brief was to dovetail, and yet keep separate, two major brands. Audi and Porsche. International design standards for both brands is stringently controlled by the German Manufacturers and universally adopted worldwide. The aim is to reflect the highest quality of product and design through architecture that is trend-setting and clearly distinguishes the brands from their competitors.

During the design process three design models were developed by the architectural team. The restrictions imposed by the site and the design standards set by Audi were primary considerations which lead to the final choice of the design model.

The concept intergrates the development to fit within Team European's surrounding operations. The aim was to create a positive relationship between the individual components. The combination of these elements ensures that the development as a whole can function as a well considered totality.

Both the Audi and Porsche showrooms have their own individual appearance and the consistency of high quality materials ensure that the two compliment each other. Simple in form and distinctive, due to the articulation of glazed and solid elements. The showrooms are separated by a central sloping canopy connecting both buildings visually and providing a protected area which was a functional client requirement.

The drape curved Dimond V-Rib roof provides a eye-catching design feature and is made possible by the 'best in class' curving capabilities of this symmetrical profile. The continuation of the glazing around the front of the showroom takes advantage of the openness of the site layout and provides good visibility

From the very beginning, individual site constraints, local materials and client requirements were all closely considered by Archaus Architects with the basic model adjusted to suit all the desired parameters. Early site massing studies presented the two showrooms as a combined building serviced by a central car "hand over" and entrance. Whilst this was the preferred strategy from the client's perspective, Audi Corporate stipulated that the showrooms had to be separate to clearly define the brands.

An option was drawn with the Audi showroom rotated 90 degrees with the frontage across the whole of the Cambridge Terrace site boundary. Although Audi Corporate preferred this option, it blocked the Porsche showroom, which was located to the back of the site.

It was finally decided that the best option was to position the showrooms along the southern and western boundaries, creating an open car yard in front of the showroom. Wellington City's urban design consultants initially favoured positioning the showrooms along the front of Cambridge Terrace, however they acknowledged the requirement for the brands to be separated and agreed the final layout was the best solution.

The Audi Hanger is an impressive structure in terms of both its design and its functionality. From the exterior the hanger has an aura of understated elegance and majesty. Visitors enter into the world of Audi through a glass and steel portal revealing the curvature of the ceiling. This is enhanced by perforated internal ceilings, produced by Dimond, which form part of the overall acoustic dampening system. The structure has an expansive yet weightless appearance creating a feeling of lightness and relaxation. Open, inviting, honest and above all a thoroughly human experience.

Audi's rejection of ornament, together with the refreshingly clear lines of the building, ensures that the hanger can accommodate a variety of planning requirements to suit individual dealers. The size of the hanger, which is divided into segments, varies from one showroom to the next.

The term "transparency" when applied to the hanger, refers not only to it's translucence but also to the clarity of its basic functional structure. Daylight provides the best lighting for top-class automobiles presenting them in a natural and authentic environment. A broad glazed skylight has been integrated into the roof providing natural light. Despite its lavish glass surfaces the light entering the hanger is evenly dispersed and controlled by tinted glass to the skylight and external louvres across the showrooms frontage.

The glass front to the showroom is sloped towards the onlooker, eliminating irritating reflections, providing an unimpeded view of the interior.

The Audi showroom footprint is a simple rectangular form, however the complexity and interest is found in the expression of the structural truss members which follow a curved profile. These are enhanced by the large double height space across the front of the showroom creating a dynamic and visually pleasing backdrop for the presentation of cars.

Audi continually evolve their standards and boundaries in showroom design. Archaus were asked to integrate these latest design standards. These involved changing the stair position, the profile of the curved mezzanine floor edge, re-configuration of the staff offices and integration of new loose fit furnishings. In close collaboration with their client and the local Building Authority the extensive re-design and submission of the amended building consent drawings, including the latest Audi trends, were carried out with minimal impact on the construction programme.

Modern architecture provides a suitable setting for the values and principles that Audi upholds. The material integrity and colours have been deliberately selected to reflect and accentuate this. Audi strive to create showrooms that embody the joy of innovation and the premium quality of their brand and to ensure their products and services are presented in the best possible manner. As a result, all materials and finishes are to the highest quality, conveying a sporty, progressive and sophisticated brand image.

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Website: www.archaus.co.nz

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Contractor: Fletcher Construction.
Planning: Urban Perspectives.

Roofing Installer: Premier Roofing.
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Roofing, Cladding & Ceiling.
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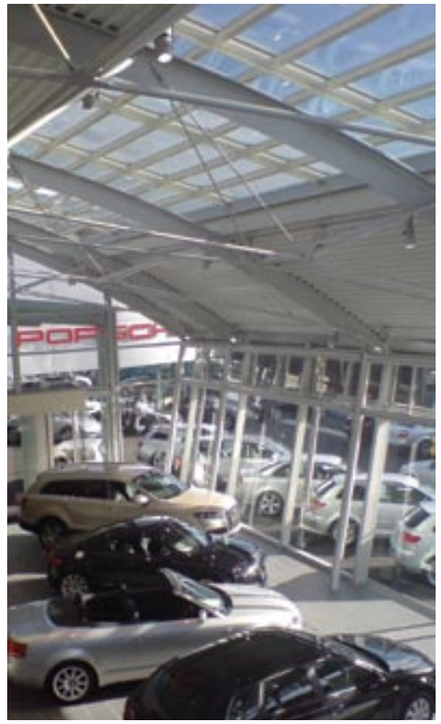
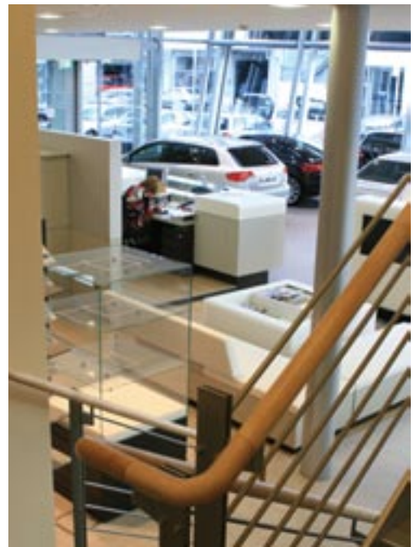
Dimond.
Telephone: 0800 346 663.
Technical helpline: 0800 766 377.
Email: dimond@dimond.co.nz
Website: www.dimond.co.nz

Curved Showroom Roof: Dimond V-Rib in unpainted Zincalume®.
Curved Showroom Internal Ceiling: Dimond BB900 - perforated with black felt behind for acoustic purposes.
Wall Cladding: Dimond Corrugate in unpainted Zincalume®.





SCOPE NEWS AND VIEWS

Scott Townsend leaves Dimond for the UK.

Scott has been a familiar face at Dimond since 2002 when he joined the team as a marketing assistant. His first involvement was to establish the companys' website and a variety of promotional brochures.

In 2004 he became Marketing Communications Manager adding advertising strategy, sponsorship and market research, product launches, conference and event management to his portfolio.

In 2006 Scott became Product Manager leading teams in new product development while continuing his involvement in all other facets of advertising and marketing.

Scott says " I have thoroughly enjoyed my time with Dimond. It is a great culture and team which leads the industry in innovation, presenting excellent opportunities for market and product development."

Scott has also been a major contributor and supporter of Scope Magazine over the years. His attention to detail has been second to none and much appreciated. On behalf of Scope and the MRM we would like to join with the staff at Dimond and wish him well in his travels abroad.

Troy Smith appointed as NZ Sales and Marketing Manager at Gerard Roofs.

Troy is no new comer to Gerard Roofs having previously spent 8 years with the company in manufacturing, sales,as Decragard Product Manager and Gerard Roofs Brand Manager.

Troy returns to Gerard Roofs having spent the past 5 years at Winstone Wallboards, as Residential Market Manager, promoting and develpoing the Gib® range of products.

Troy joined the team at Gerard Roofs in January and says, "I am delighted to be back at a company that feels almost like home."

On behalf of the NZMRM we offer our congratulations on his appointment.

Gerard Roofs add a new shingle profile to their range.

Rockport's strong side lap eliminates the need for a centre batten which is required with Senator. Rockport features a straight line, deep groove weather channel that runs the width of the shingle.

The heightened profile gives the Rockport Shingle a more robust, deep shadow line and is available in plain colour or with patching.

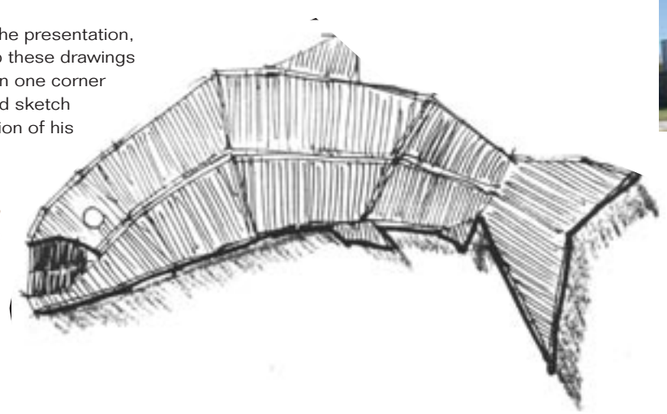
THE SALMON TALE

By Graham Hepburn.

When Nigel Lamb was commissioned to design a building for a salmon-based tourism venture in Rakaia, he struck upon the idea of a large steel fish. Not only would it be an eye-catching feature of the Mid Canterbury town, but it also referenced a local landmark, the Big Salmon, a large, leaping fibreglass fish on a pole that was erected to promote the area's salmon fishing. While Nigel was sure this was the way to go, he wasn't certain he could sell the idea to his clients. "The very idea of building a large steel fish in a small paddock in Rakaia, the northern entry to Mid Canterbury seemed a difficult proposition to pitch to my clients", he recalls. So, he came up with a cunning plan to make sure his idea wouldn't be the one that got away.

He worked through the brief for the project and sketched up a typical "Kiwi farm shed-like" tourist development that met the town planning requirements but was hardly inspirational.

On the day of the presentation, Nigel pinned up these drawings but also stuck in one corner a small freehand sketch plan and elevation of his steel fish idea.



This first conceptual sketch closely resembles the completed project and helped sell the idea.

The pair took the bait and when Nigel returned, Pat said, "This building is all right but we really want you to do this idea," as he pointed at the fish sketch.

The presentation went smoothly enough and at one point Nigel excused himself from the room, supposedly to get some more materials. Really, he wanted to give his clients, Pat Turton and Richard Dudley, a chance to look at and discuss the steel fish idea while he was out of the room.

The inspiration for the building came from Rakaia's renowned salmon fishing.

Having sold the idea, Nigel now had the challenge of making the salmon-shaped building a reality. But first and foremost, his brief was to make the building dramatic and eye-catching to lure travellers from State Highway 1. And he also had to keep a firm hand on practicalities such as incorporating a restaurant, visitor centre and souvenir shop all under one roof.

It didn't hurt that the project was a little controversial as that created a buzz about the new development.

And while it didn't conform to the town planning guidelines for the site, the Ashburton District Council was very supportive.

"I told my clients that we could probably expect a 50 per cent positive, 50 per cent negative response to the building but at least it would get noticed," says Nigel. "But the response has been hugely positive, especially from the town of Rakaia."

When Nigel began sketching how his abstracted salmon shape would work architecturally, he became excited about the dramatic forms that began to emerge on his drawing board.

Nigel says the aerial aspect of buildings has always fascinated him and in the age of Google Earth, with its close-up satellite images, he's looking forward to the day he can tap into a computer, zoom in on Salmon Tales Rakaia and see his "little mark on the world".

The steel roof is divided into six main planes supported by three asymmetrical portal frames to form the curved body of the fish. Two more roof planes form the tail and flick up from the rear to create a sheltered entranceway. The roof also sweeps up at the mouth end and is detailed to form small fins off either side of the body of the fish and these also shelter doors.

"I was trying to create a cubist type of form not a cliched representation of a salmon," says Nigel. "It was essential that the wall heights were different to get that movement in the roof and also changing the overhangs so they veer down to the ground in some places and up high in others."

Computer modeling was used to test and refine the geometry of the roof. Steel roofing was an early and logical choice because it resembled the shiny surface of a salmon.

Nigel used ZINCALUME® steel for roof and wall cladding, setting it horizontally on the walls through the body but at different angles at the tail and mouth ends of the building to create a sense of movement that hints the steel salmon might leap into the nearby Rakaia River. Charcoal ply is used in contrast to the ZINCALUME® to highlight the fish shape of the building. Outside the mouth end of Salmon Tales, which houses a 70-seat restaurant, there is a deck that seats a further 45 people and overlooks a salmon pond. Further inside is the Southern Gateway Visitor Centre and displays of souvenirs and arts and crafts for sale.

Nigel's design hooked his clients and since it had been up and running, Salmon Tales' unique premises have been reeling in the customers.

Nigel Lamb

After training and working in architecture and design in Melbourne, where he lived for 12 years, Nigel returned to New Zealand in 2002. His company, Architectura - Art of Building, has worked on a variety of commercial and residential projects, always with the aim of doing something innovative. Nigel says, "I design buildings that have some drama and also a sense of fun. I guess they have to possess a full personality. I like using materials honestly and expressively. I dislike the phrase and mindset 'that's the way it's always been done'."

Client: Salmon Tales Rakaia.
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Builder:Mark Wilson.
Bradford Building, Ashburton.
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E-mail: mark@bradfords.co.nz

Salmon Tales won a gold award in 2007 in the Master Builders regional Commercial and Retail sector. It was also category winner in Ashburton for the Master Builders Commercial Gold Award.

Structural Steel:
North End Engineering.
Telephone 03 308 8155.

Roofing Supplier:
Steel & Tube Roofing Products.
Telephone: 03 377 0994.

Installed By: Newfield Roofing.
Telephone 03 366 9645.
Roofing Profile :
ST900 ZINCALUME®
Cladding Profile: Custom Orb
Corrugate ZINCALUME ®

Restaurant Furniture: Harrows.
Telephone: 0800 142 233.

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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