ISSUE 16

SCOPE

NZ METAL ROOFING MANUFACTURERS INC.

Below is a brief introduction to the 2007 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.

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

Gregg Somerville: Vice President
Marketing Manager for Dimond.

Immediate past President
Tony Barbarich: Director of Business Development for Metalcraft Industries.

Executive Members:

Dave Hall: Manager of Freeman Roofing

Stuart Hayman: Technical Develpoment Manager AHI Roofing Ltd.

Philip Meyers: Marketing Manager of Roofing Industries Limited.

Warren Oliver: Managing Director of Franklin Long Roofing.

Gregg Somerville: Marketing Manager for Dimond.

Mark Winnard: Executive General Manager Manufacturing.
Steel and Tube Holdings Limited

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

SCOPE

CONTENT ISSUE 16

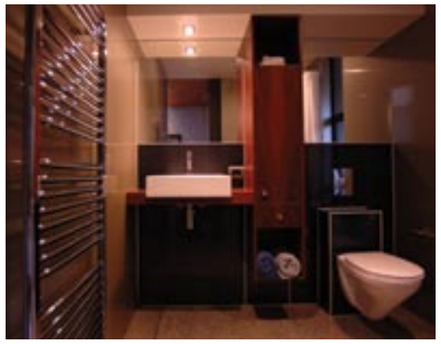
NZ METAL ROOFING MANUFACTURERS INC.

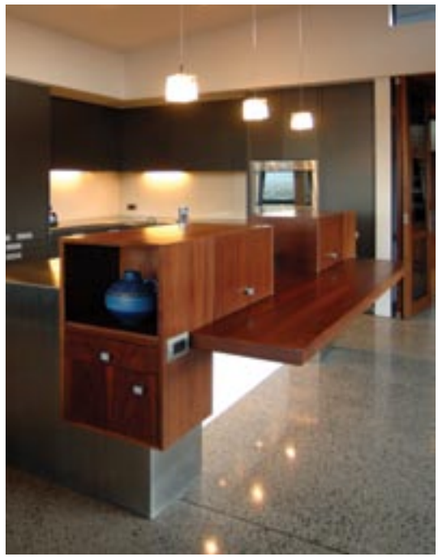
Scope is the official publication of
The NZ Metal Roofing Manufacturers Inc.
Executive Officer: Peter Atkinson
Private Bag 92 066, Auckland.
DDI Ph: 09 367 0934,
Ph: 09 367 0913
Managing Editors: Christine Wilkinson, Warren Oliver, Gregg Somerville.
Published by ICG Limited.
57 Glendhu Road, Glenfield, Auckland.
Telephone: 09 444 2424.
Fax: 09 444 2524
e-mail: conceptart@xtra.co.nz

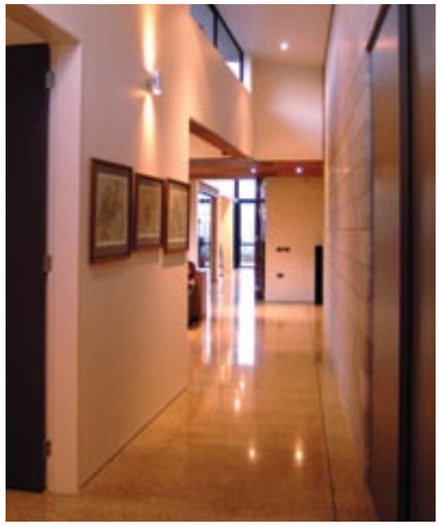
visit our website at:
www.metalroofing.org.nz

INNOVATIVE CREATIVE INSPIRED

Words we all associate with excellence in the craft of architectural design but not always the words we hear from clients.
The work of architect Davor Mikulcic has won this praise from clients Helen and Phillip Blundell and as a result has established a life-long friendship.
The Blundell home, designed around a very specific brief, has been recognised with numerous industry awards.







The Blundell's new home in Upper Hutt was the first time they had ventured into the process of designing and building a home. Despite the many stories of the stresses that can be associated with building the Blundells acknowledge this project was a pleasure from the outset until the final detail was complete.

The synergy between client, architect and builder was of paramount importance to them and the success of the project. To achieve this they spent some time researching, interviewing and discussing their dreams with potential candidates. Initial discussions included three architects and as many builders until they settled on architect Davor Mikulcic and builder Brian Marriner. This proved to be a winning combination.

The design brief was extensive. In fact ran to 10 pages of very specific details not the least of which was to accommodate for Mr. Blundell and other visitors who are wheelchair bound. The spatial requirements were conventional but required considerable exploration to achieve the indoor/outdoor flow which would allow Mr. Blundell to enjoy gardening and access to every area of the home. A single level home, despite a sloping hilltop site, was a priority as lifts were considered a restriction. Ease of access was the key with no internal or external obstructions or boundaries.

The home was to be flexible enough to be comfortable for their elderly parents and exciting enough to stimulate the grandchildren. Mr. Blundell says "We did not want a home that said "disability", we wanted a home that anyone could move into and enjoy. Davor has achieved this. Anyone would love it!"

In addition to these specifics the home was to maximise the use of passive solar energy, include underfloor heating, solar panels, double glazing and the best thermal insulation available.

Architect Davor Mikulcic was given a free hand in the choice of internal and external materials that would compliment the design composition and budget.

"Everything about this project has significance." says Mr. Blundell." Davor provided us with many options...everything he suggested was exactly right. From the colours to the materials from the interior to the exterior. He has a great eye for detail and an appreciation of our needs and taste. He has created more than a home, he has created our home.

Davor is equally as appreciative of his clients and acknowledges the success of the project is due to an open and transparent relationship where each appreciates their differences but strives to achieve the same goal. The home creates spaces to inspire, shelter, dream. play. love and entertain friends. The ability to merge areas gives the impression of spaciousness and sliding doors and walls quickly provide opportunity to create intimate spaces.

With some passion Davor describes the project as, "an exciting journey of exploration creating a beautiful home but more importantly a life time friendship. To achieve both, in my experience in the industry, is rare."

The details in every aspect of this project are a tribute to the skills of the Architect and Builder

The soaring, lightweight, longrun roof structure is braced with steel allowing the removal of many supporting internal walls. This provides additional space for wheel chair mobility and to accommodate moving walls that provide flexible living areas.
The exterior is clad in vertical Colorsteel and Titan board.

The basics the home provides is 3 bedrooms, 3 bathrooms, a study, open plan kitchen adjoining the a family room, a formal dinning and living area.

The entry and garaging to the front provides easy access through a massive ceiling high doorway which opens into a generous reception lobby. Hallways are spacious as are all traffic areas throughout the home. The northern aspect has floor to ceiling double glazed windows allowing winter sun to penetrate the heat sink provided by the polished aggregate concrete floor and concrete block core to the building. Solar panels boost the water heating during October through until May and during winter months the German made Rotex boiler provides controlled, integrated underfloor heating to various areas of the home.

Lower benches in the kitchen area, custom designed laundry facilities, 50mm high electrical plugs, electrically operated windows, wheelchair accessible showers and doorways, door handles at one meter heights are all details designed into the interior of the home.

“Our new home exceeds our expectations ‘ says Mrs. Blundell, “it is a joy to live in. Whenever we have been away it is pleasure to return to an environment where functional design makes life so much more relaxing.”

When asked to comment on his work Davor’s response is simple, “From the beginning the new Blundell residence, for me, had an imperative goal to celebrate good, functional, innovative, sustainable, brave and imaginative architecture, Different than the ordinary that would push the ‘boundaries’ of the everyday stereotype. The photos of my work and testimony of my clients tell the story better than I can.”

Architects profile

Studio MWA Ltd, is a newly formed partnership between Principal Architect Davor Mikulcic and Practice Manager Jonathan Wilson. Included in the mix is Michael Maddern as interior designer and ArchiCAD guru.

The team is concentrating on high end residential and commercial projects including Urban Design. The accent is on design orientated architecture.

Davor has an established association with Thompson Adsett Architects Brisbane office and forms part of a design management team working on Australasian and International projects.

Blundell House Awards:

New Zealand Institute of Architects Wellington branch award for Architecture for Residential category (special needs).

Master builder (Wellington region) winner for the best House of the year 2007 for category $ 600,000.00 - $ 1.0 million.

Master builder (Wellington region) Gold medal for House of the year 2007 for category $ 600,000.00 - $ 1.0 million.

Mico bathrooms excellence for innovative design for bathrooms.

Future – proof Building Award.

Davor with clients Helen and Phillip Blundell in their new home.

Clients: Helen & Phillip Blundell

Architect: Davor Mikulcic.
Dipl. Eng. Arch. (Sarjevo) ANZIA
Studio MWA Ltd.
Telephone: 64 4 801 8141
Email: davor@studiomwa.co.nz
Website: studiomwa.co.nz

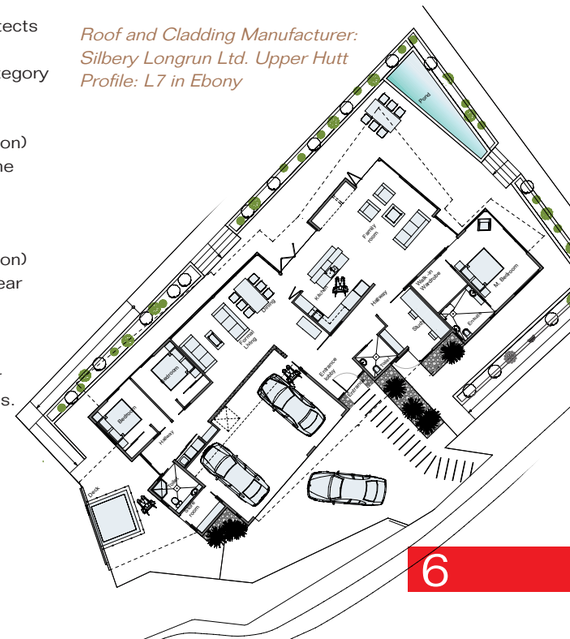
Main Contractor: Brian Marriner
Maridale Construction Ltd.

Structural Engineer: Martin Mayers
Structural Engineers .

Kitchen Joinery: Hadrian Noble
Noble Kitchens.

Bathrooms: Peter Bartley
Peter Bartley Building Services

Roof and Cladding Manufacturer:
Silbery Longrun Ltd. Upper Hutt
Profile: L7 in Ebony



A NEW PRODUCT TO IMPROVE CUT-EDGE PERFORMANCE

Pacific Coilcoaters announces that following extensive market research and feedback, they will be offering ColorCote® pre-painted products using a ZAM substrate imported from Nisshin Steel, Japan.

ColorCote® ZMXTM pre-painted ZAM.

Pacific Coilcoaters decided to produce ZMXTM in response to market concerns over cut-edge performance and durability of current substrates in more severe situations. ZMXTM will provide improved performance in these situations.

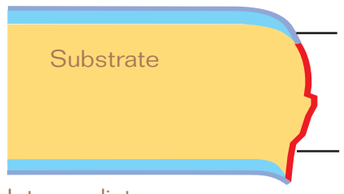
The ZAM substrate is an aluminium-zinc alloy with the addition of magnesium. It has 6% aluminium, 3% magnesium, and 91% zinc in the metallic coating layer. The addition of magnesium in combination with high zinc content provides an improved performance over commonly used metallic coatings.

Pacific Coilcoaters will issue a full bulletin, including warranty details, early 2008.

For further information contact Pacific Coilcoaters ph 09-5799199, or email PCCWebSales@fcsp.co.nz .

The protective mechanism for ZAM is as follows:

Initial exposure period of up to several weeks

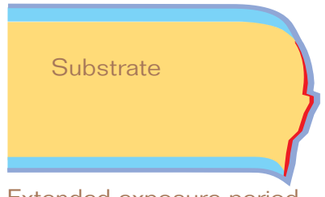


Coating Layer

The exposed cut end of substrate is oxidized.

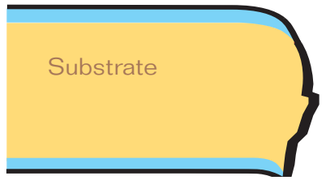
Red rust

Intermediate exposure period after several weeks



The thin Zinc-based film containing Mg on the coating layer flows over the cut end
Gradually changes to gray and eventually a gray-black colour

Extended exposure period in excess of one year



The protective effect of the thin Zinc-based layer coating Mg. The sacrificial anticorrosive effect of the highly corrosion resistant coating layer has a long life inhibiting cut-edge rust.

Source: Nisshin Steel ZAM product brochure.

SCOPE NEWS AND VIEWS

Fixing of ColorCote® ARXTM pre-painted aluminium.

Pacific Coilcoaters has reviewed the recommendations for fixing of its ColorCote® ARXTM and AR8TM pre-painted roofing. The following are our recommendations:

- It is very important to use either 304 Stainless Steel or Aluminium fasteners with ColorCote® ARXTM. These fasteners need to have suitable, low-carbon washers to isolate them from the aluminium (dissimilar metal contact).
- Over-sized holes are required to allow for expansion as well as assist in isolating the fixings from direct contact with the aluminium.
- Profiled metal washers improve all-round performance in terms of durability and wind-loading.

A common failure we see of ColorCote® ARXTM is perforation at the bottom purlin line. This is caused by moisture (usually salt laden) getting wicked-up by the paper, corroding netting and fasteners, and so perforating the roofing.

The use of a sacrificial eave flashing with the building paper drawn back from the gutter/end of sheet is recommended. This means the paper won't get wet from wind-blown rain, and cause subsequent rusting of netting or damage to the bottom purlin. This in turn means the ColorCote® ARXTM roofing won't be affected.

Alternatively, an inert separation membrane (e.g. a bitumen/aluminium layered membrane) may be installed between the underside of the ColorCote® ARXTM sheet (bitumen layer against the aluminium), and the building paper along the bottom purlin line. This ensures that there is no reaction between the ARXTM and building paper, or collected moisture, salt and dirt.

Installation of the spouting to correctly cover the profile ends will assist in eliminating wind-blown, moisture from severe environments (e.g. off the sea) from getting under the roofing.

For a re-roof situation, is very important that any old fastenings or paper staples/grippers are either totally removed or isolated from the new roof to prevent corrosion.

In the Winter 2007 edition of Rooflink, Thomo's Technical Tips #7 discussed a case study where pre-painted aluminium had been used. Pacific Coilcoaters would make the following comments:

- Point # 1. "DO use double-sided paint-coated coil or paint the wash coat underneath with an acrylic roof paint at least for the area between the bottom purlins."

Comments:

- Whilst it would be beneficial to use a factory double-side coated coil this would add to the price of the roof. The decision should be, is it actually necessary.
- Painting the area between bottom purlins would negate the product warranty. Post-applied paints don't always allow the product to 'breathe', trapping moisture and causing corrosion. Additionally, the paint system used may well react with the manufacturer's system.
- Point #2. "Sheet fixings should be 12 # 75mm 316 Stainless steel screws fixed on alternate corrugations."

Comments:

- (see above) Sheet fixings must be 304 Stainless steel screws fixed through over sized holes and using profiled metal washers with low-carbon EPDM washers. Testing at our Muriwai Beach site has shown these to be the best solution. Alternatively, a fully aluminium screw can be substituted for the stainless steel screw.

For further information contact Pacific Coilcoaters ph 09-5799199, or email PCCWebSales@fcsp.co.nz

Gary McNamara moves from Gerard to Placemakers Takanini.

Gary moves into the role of Branch Operator at Takanini taking the responsibility to grow the operation to a sustainable level of profitability that will allow it to become a Joint Venture Partnership.

Gary leaves AHI roofing after 9 years in the role of Sales and Marketing Manger for New Zealand and from 2004 this role was expanded to include Australia and the South Pacific. During his time at AHI Roofing he re launched the Gerard brand moving away from a the two brand strategy and revered a trend decline in market share in both New Zealand and Australia.

Since 1999 until 2007 Gary has been on the Executive of the NZMRM as Chairman of the Marketing Sub-committee and involved with Group direction, conferences and Special Projects. In 2002, together with Tony Barbarich, he was responsible for the launch of Scope.

In all aspects of his involvement within the building industry Gary has shown his enthusiasm, skills and leadership qualities and on behalf of the NZMRM we extend our thanks and wish him the very best in his new venture.

Contact: 09) 269 0118
Mobile: 021 975 891

The NZMRM Conference 2007

The annual NZ Metal Roofing Manufacturers Conference was held in September this year at Aggie Gray's Lagoon Beach resort in Samoa. Some highlights of this year's events were the two Sponsor Dinners (PCC and NZ Steel) one with a 50's theme, the other with an island theme. Both dinners featured fantastic cultural performances involving fire dancing, singing, and island culture. There were plenty of on-water activities too with snorkeling, sailing, kayaking and fishing. The MRM fisherman successfully caught 11 fish of various types which formed the best sashimi ever!

The conference business sessions were focused around sustainability, with two excellent presentation-workshop session by BOINZ (Len Clapham) and BRANZ (Paul Shortis). Supplier presentations were up to the usual high standard, and the MRM technical sessions were relevant and interesting.

MAYFIELD PRIMARY SCHOOL

Houston Architects enjoy the challenge in finding innovative solutions that add value to a building project. Seven years ago Mayfield Primary School was looking to have a new Administration Block built for this decile ten school. Wayne Houston offered to produce a sketch plan for Principal, Colleen Murray, that would demonstrate their design ideas for the building. Two other architects were also invited to submit their concepts from which Houston Architects were eventually appointed.

The administration building hinged on several key points.
1. It had an economic monopitch roof three degrees from front to rear.
2. It needed to be a commanding building showing some dynamic design to the street frontage giving the school an opportunity to present a fresh face to the community.
3. It needed to have a reflection of the Polynesian culture of the school.

The design solution was to bridge the building from front to rear with a stylised inverted Waka shape. This would be used to provide shelter to the entry for the students at the rear of the building and the parents at the front. The resulting shapes were also able to provide overhead clear storey lighting to the arrival area, making this rather small area appear light and spacious. The entrances to the building opens to the reception area that has a curved desk divided by a sheltered money counting area that enables the two receptionists to receive the pupils at the rear entrance or the adults at the front entrance. An interview room and sick bay is adjacent to this area and both spaces are able to be supervised and visually monitored by the reception staff.

The staffroom is a generous size with a curved wall presenting to the street acknowledging the mature oak tree in the front yard. The curve of the wall defines the staffroom turning away from the street to create a private outdoor staff area sheltered by a shade sail with generous bi-fold doors opening out for summertime enjoyment.

Key materials chosen for the cladding of the building are longrun roof over the monopitch roof. A torchdown roofing on ply for the Waka shape overlaid with diagonal battens of timber. The curved walls are clad in Powdercoat Silver Pearl corrugated Zincalume® which references the iconic New Zealand heritage of early corrugated iron shelters. This is also reflected in the babyiron profile for the curved reception desk.

In 2002 when the administration block was completed the school turned its attention to the need to provide a library facility for the students. Some time was spent in investigating renovation of an existing prefab but eventually funds were found to provide for a brand new building. Some items requested in the brief were; a water feature, a sunken pit for a student/teaching area and to provide an attractive reading environment encouraging students to enjoy the time spent there. Again three architects were invited to produce a design solution and Houston Architects were again selected to continue the design linking it with the administration building.

The two buildings relate to each other by “reaching out of hands”, as it were, in titan board clad fences which bypass each other either side of a tree. The fence is used as an architectural device moving through the new library dividing the building into two areas. The first is the public arrival area and parent room.

The second the student library and IT facility. The library area has several break out areas with bi-fold doors towards the east and bi-fold doors to the northern verandah. Other parts of the library have corner floor to ceiling windows with a pleasant outlook to encourage the children to sit and read comfortably in bean bags. The IT facility butts the library on the south side and is separated by sliding acoustic doors so that both areas can function at the same time without interference. The entry features a striking raised lantern with a convex roof over the clear storey windows and a waterfall seeming to come out of the clear storey surround flowing over pebbles as it descends to the floor. The pebbles symbolically continue in a river pattern suggesting the waterfall is linking to the outside. The façade towards the classrooms is curved glass making the inside of the library visible to the children as they walk by each day. The colourful interior and displays are an attraction to draw the children in and to kindle a desire to participate in using the library.

The Prime Minister, Helen Clark, opened the library midway through 2007. The children and the staff are enjoying the facilities provided for them.

Wayne Houston enjoys the experience of designing these facilities finding it very satisfying to create expressive buildings for the use of those members of our society that can best be inspired by them. Houston Architects especially enjoy the ongoing relationship with schools and providing continuity in design themes from one building to another.

Houston Architects Ltd.

The company focuses on providing leadership in planning, architecture, urban design and interior design and has received a number of awards for their architecture.

The essence of Houston Architects is Total Design

Total Design is a holistic, creative philosophy that integrates design disciplines, characterises leadership style, informs their design and management processes and describes the way they run their business

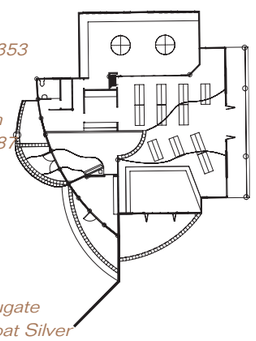
Total Design is fundamental to their culture and the way they think. Wayne has been involved in architecture since 1975 and has an energetic commitment to the design process, the production of working drawings and control of the building site. This energy comes from working closely with clients to the completed building and resulting in the best production of good architecture.

This approach has been successfully applied to projects ranging in size from a five star hotel 20 storey building in Wellington (The Bolton) to the smaller but just as important project.

Client: Mayfair Primary School

Architect: Wayne Houston
B. Arch.NZCD(Arch) A.N.Z.I.A.
Houston Architects Ltd.
Telephone: 0-9-623 4400
Email: wayne@architects.org.nz

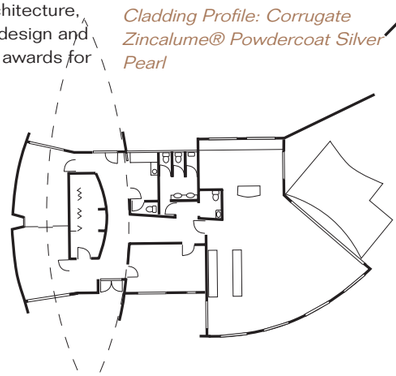
Main Contractor admin. Block:
Ross Pacey
Foster Construction
Telephone: 0274 894 353
Library Block:
Steve Langford.
Auckland Construction
Telephone: 09 837 1987



Roof and cladding Manufacturer:

Roofing Profile:

Cladding Profile: Corrugate Zincalume® Powdercoat Silver Pearl



FRANKLIN: THE CENTRE

Franklin 'The Centre' takes pride of place in Pukekohe as a regional centre of knowledge, information, arts and culture.

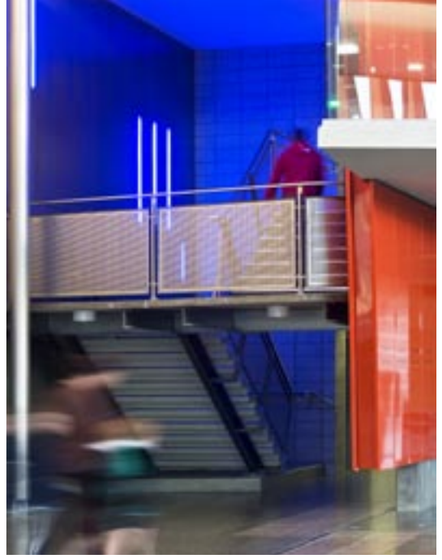
The building a culmination of The Franklin Council's vision with funding from New Zealand Steel and other Franklin Corporate sponsors was opened on the 30th June this year. In a very real way the resources of the Franklin region have been used to build 'The Centre.' From Steel produced from the black West Coast sands - the building showcases Steel building products manufactured locally by New Zealand Steel and their customers. The support for Franklin 'The Centre' is an extension of community participation, The Centre employees, their families and locals who will benefit from this multi-use facility.

Recently the building was awarded the NZIA Regional award for 2007' Buildings of Community & Cultural Significance'

In early 2005, the Franklin District Council organised an architectural competition between several practices for the design of a new library and arts facility for their rapidly growing district. The new facility was to occupy a disused site, previously a bowling green, alongside the impressive war memorial Town Hall on Massey Avenue.

ASC Architects were selected to progress their design, which is now built and complete. The form of the building came from their intentions to:

- Express the dual uses occupying the building, being the central library for Franklin District of around 1400 square metres on one level, and the Arts Centre of similar size on two levels. The main approach axis bisects the building from front to back, with the Library to the east and the Arts Centre to the west.
- Create a building sympathetic to the strongly massive and rectilinear Town Hall. The orthogonal forms of the new building reflect its neighbour, but in a more light and open language than the earlier building. The height of the upper roof matches that of the Town Hall, to make clear the civic importance of the Library and Arts Centre.
- To improve the urban qualities of the neighbourhood. Massey Avenue is not the main street of Pukekohe; rather it is busy bypass one block removed from the main street, with heavy traffic. Most buildings along the street, apart from the Town Hall, are not substantial, and ASC sought to create a civic oasis as the first step of a rejuvenation of the area. The two main building elements embrace a new civic space, Franklin



Court, which is covered and largely enclosed, useful for community activities in all weather. This space opens out toward the Town Hall, and is further enclosed by the smaller building element of the café and information centre.

The building uses natural light and ventilation. The Library saw-tooth roof admits south light and exhausts air through operable louvres. Temperature and humidity control are provided mechanically only when needed, and then in conjunction with the natural systems. The Arts Centre is naturally ventilated except for the gallery, which is climate controlled to enable museum-quality exhibitions to be held there.

Steel is a predominant feature of the building, both structurally and for exterior and interior finishes; more details provided in the chapter below.

NZ Steel is the biggest local industry and was a major sponsor of the facility. To soften the interior spaces, plywood and matching battens have been used, keeping the overall materials palette very simple.

A wide range of steel products have been used; following are some of the main feature applications.

■ Predominantly structural steel & Steltech pre engineered beams in the building, with Hi-bond, concrete composite upper floor slabs and some precast concrete panels. The primary structural steel elements are left exposed inside the building; steel columns, beams, trusses and cross bracing are put on display. Secondary steel structure is concealed within the lightweight-steel framed walls.

■ Euroline standing seam wall cladding to the Library exterior of Franklin: The Centre, is part of the custom made look and an architectural feature. It is this hand made aspect of the product that sets it apart from other ribbed metal claddings, where ribs are close enough together to keep the steel flat between them. It is precisely this flatness, the close spacing of the ribs and their machined precision that gives these claddings their industrial appearance. The Euroline system, on the other hand, exhibits a hand-made quality. The more crafted softer look of the Euroline cladding was considered appropriate to the front of an important civic building, where the more closely ribbed metal claddings would look too industrial.

■ Steel Plate sign: The choice of steel plate sprang from a desire (evident through the materials used in the building) to express materials honestly and, as much as possible, in their natural state. One of the great natural materials, of keen interest to Architects over the past few years, is weathered steel. This material is difficult to use in buildings for numerous reasons (staining of adjacent finishes being a major one) but the opportunity to use it in a large format freestanding sign surrounded by garden circumvents those difficulties. The colour and texture of steel cannot be matched by any applied finish, and those special qualities give the sign a unique artistic and civic quality. Combined with the large scale of the sign it makes it a strong and artistic feature. The warmth and softness of the steel patina is a necessary foil to the overall size of the sign.

■ Feature wall in Franklin Court: Flat ZINCALUME ® sheet lining over plywood substrate arranged in a dynamic shape with automotive high gloss paint finish applied in strong accent colour. The smooth glossy surface contrasts the roughness of the off-the-form concrete base. Its sharp form emphasises the main north-south axis and cuts into the Franklin Court volume providing a focal element.

■ Other steel materials include ST900 profiled COLORSTEEL® prepainted steel cladding to Arts Centre exterior of the building and roofing.

■ Baby Corrugated COLORSTEEL® prepainted steel ceiling to Franklin Court.

Architects: ASC Architects
Telephone: 0 9 377 5332
Project Engineers:
MPM Projects Ltd
Construction: Gibson O'Connor Ltd
Roofing & Cladding:
Steel & Tube Roofing
Telephone: 09 273 7628
Product: COLORSTEEL® ENDURA

"Over the last few years I have tried to keep NZMRM members up to date with the changing Building Code situation, by means of presentations at our annual conferences. One of the ways to keep on top of changes to the rules is the use of standards. A recent article by Standards New Zealand in their official magazine "Standards" spells out the structure of building controls today in New Zealand, and the part played in building control by standards. Standards New Zealand has kindly agreed to NZMRM reprinting this article in Scope and here it is."

Stuart Hayman

Chairman Technical Committee

THE ROLE OF STANDARDS IN THE BUILDING INDUSTRY

There has been a lot of change in the building sector following the recommendations made in the Hunn Report. All aspects of building and construction are affected, from the Building Act 2004 and the New Zealand Building Code, through to Standards, licensing, and everything in between. This article outlines the relationship between the building regulations and Standards to help those working in the sector.

Standards New Zealand is New Zealand's leading developer of Standards and Standards' based solutions. Standards New Zealand is an independent organisation that uses a consensus-based approach to developing Standards. Standards New Zealand works collaboratively with industry, consumers and Government to develop and maintain Standards. Since its establishment in the wake of the 1931 Hawkes Bay earthquake, Standards New Zealand has worked in partnership with government agencies, key building sector associations, and industry representatives to develop Standards that provide robust guidance for building practice in New Standards are accepted specifications or codes of practice which define materials, methods, processes, and practices. Standards provide a basis for determining consistent minimum levels of quality, performance, safety, and reliability. Standards are developed by committees made up of representatives from the sector and a great deal of care is taken by Standards New Zealand to ensure a balance is maintained in committees. Public input is also an important part of the development process and the reason that drafts of proposed Standards are made available for public comment. A balanced committee, as well as an independent and transparent process, ensure that the content of a Standard is relevant, credible, and widely accepted in the sector. Once published, Standards are periodically revised to take into account changes in technology or industry practice. The frequency of review is determined by the sector and will vary depending on the subject matter. Proposals to modify Standards may be submitted at any time by committee members or by anybody using the Standard. Standards are voluntary compliance documents which only become mandatory if cited in legislation or in contracts. There are over 650 current building-related New

Diagram 1

BUILDINGAND CONSTRUCTION STANDARDS FACTS
650, or 22% of our total catalogue, are building Standards
Comprises:
Design and construction:76
Construction products:259
Water services:75
Fire protection:69
Civil engineering: 120
Building services: 24
Energy efficiency in buildings: 27

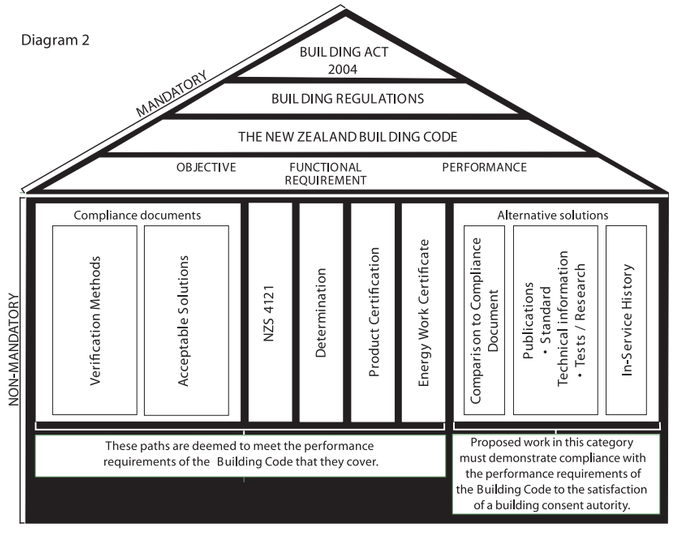
Zealand Standards and about 230 of these are cited in the New Zealand Building Code (see diagram 1).

What is the relationship between Standards New Zealand and the building industry?

(See diagram 2). Standards help the Building Code to function effectively by providing practical guidance to make complying with the Code achievable. Standards are strongly supported as methods of compliance by industry and the sector generally. All building work must comply with the Building Code. The objectives of the Building Code correspond to the purposes of the Building Act 1991 – which has been replaced by the Building Act 2004. The Building Code is currently being reviewed to align it with the 2004 Act. Essentially, the Building Code defines how a building must perform. Each clause of the Building Code sets out performance requirements that buildings must meet, such as durability, fire safety, energy efficiency, and access. The Code does not prescribe detailed requirements for design and construction. Because the Building Code is performance-based, it is essential that step-by-step guides are also provided. These are needed to give the industry a practical, straightforward way to comply with the performance requirements in the Code. Compliance documents, that can be used to demonstrate compliance with the Building Code, contain (or cite other documents that contain) step-by-step building methods called 'Acceptable Solutions', and 'Verification Methods' (such as calculations or tests). Compliance Documents often reference New Zealand, Joint Australian and New Zealand, and other Standards. Buildings built to the method described in a Compliance Document are automatically deemed to comply with the Code. Standards and other cited Acceptable Solutions and Verification Methods are not mandatory requirements for compliance with the Code. However they provide crucial, practical guidance on how to comply with the Building Code in a cost effective way. Standards are endorsed by the Department of Building and Housing (DBH), and designs based on them must be accepted by Building Consent Authorities as meeting Code requirements. Alternative designs are possible, but for the vast majority of buildings it is not practical or cost effective to come up with alternative designs.

HIERARCHY OF NEW ZEALAND BUILDING CONTROLS

Diagram 2



What are the benefits of using Standards?

The use of Standards in the building and construction industry offer a number of advantages. These include:

Industry acceptance of New Zealand Standards

– Standards have a long and proven history in the building sector and are recognised for their independence and integrity. In light of this, and the technical expertise involved, Standards produced by Standards New Zealand have a high level of industry acceptance. Where an expert committee has developed an acceptable solution through the Standards process, and has approved the resulting Standard through a consensus-based approach, there is inevitably a high level of sector acceptance of the resulting Standard. All parties who will be involved in the implementation of a Standard are represented on the development committee, so the possibility of the Standard having provisions that are impractical to implement is minimised.

Flexibility to encourage and support innovation

– Standards are useful as a means of ensuring a continued flexibility and responsiveness of prescribed methods of compliance with the code performance criteria. Standards incorporate current industry best practice through the committee development process. They are living documents open to review and amendment in light of changes to technology and practice. Amendments to Standards can be developed and published relatively quickly compared to the time frames for revising legislation. Standards are more flexible than regulations in responding to and reflecting industry trends and developments.

Legal robustness

– By adopting a Standard developed by the consensus of experts, representing all relevant sections of the building sector, legal challenge of its appropriateness as an Acceptable Solution is much less likely. This is both because of substantial sector acceptance (evident in the consensus-based approach) and because a public consultation process ensures the widest possible input to the development of a Standard, providing a very sound and legally defensible basis for the Standard's requirements.

Access to international Standards and expertise

– As well as drawing on experts from New Zealand for the development of Standards, Standards New Zealand has access to international Standards and expertise. This is through Standards New Zealand's role as New Zealand's representative on the International Organization for Standardization (ISO), and the International Electro technical Commission (IEC), and through contacts with other national Standards bodies. The formal processes to develop joint Australian and New Zealand Standards provide access to an Australasian pool of expert knowledge and promote a greater alignment of trans-Tasman trade and regulation requirements.

Cost effective to develop and maintain

– Standards New Zealand's business processes are specifically designed to ensure efficiency and effectiveness in the development process. As well as staff being recruited on the basis of their skills in managing the development of Standards, the Business Excellence programme also aims to continuously improve our people and processes to ensure efficient and effective delivery of Standards. Building sector standards represent a significant investment in intellectual

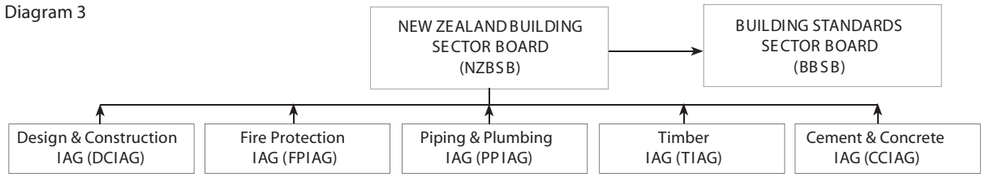
property and effort from industry experts over a long period of time. Reviewing and updating existing Standards represents an efficient means of providing a set of detailed compliance guidance documents for the Building Code.

Industry involvement in the development of Standards

Currently Standards New Zealand engages with industry (see diagram 3) through the Building Sector Board and a range of supporting Industry Advisory Groups (IAGs). Communicating with the various sectors of the building and construction industry is vital to ensure that sector requirements and standardisation issues can be identified, prioritised, and addressed. The combination of sector boards and industry advisory groups provides a good mix of strategic and industry specific operational advice. The advice received through these channels plays an important role in the allocation of Standards New Zealand's resources. Communication through the various boards and advisory groups is vital to ensure that Standards New Zealand is focused on delivering solutions that provide the greatest benefit to the building sector and the wider New Zealand community. There is strong evidence to support the continued use of Standards in the building and construction industry, particularly supporting the Building Code. Standards New Zealand is committed to working with government, industry, and the public to ensure that the economic and practical benefits of Standards are realised.

To discuss any of the topics in this article please contact Mark Batt, Business Relationships Manager at Standards New Zealand, email: mark.batt@standards.co.nz, Telephone: 04 495 0917.

Diagram 3



Stuart Thomson, the Roofing Industry member on the Design and Construction Advisory Group,(diagram 3) says 'there is a lot happening at Standards at the moment with a new CEO Debbie Chin and other restructuring. The continuing dialogue with Standards and the DBH is essential to ensure they are listening to Industry'

NEW ZEALAND STEEL CELEBRATES 25 YEARS OF COLORSTEEL® COIL PRODUCTION

The beginnings . . .

Approval to build the COLORSTEEL® prepainted steel multi-staged Paintline was given in mid-1980 with a plant construction budget of $15 million.

Project Team mid to late 1981. Back L-R Stuart Christie, Jonathan Keall, John Young, Alan Hughston, Dick Woolston, Stuart Farley Front L-R Dave Christian, Nigel Evans, Geri Van der Velden, Mike Hodgkinson, John Levien.

The estimated capacity at that time would be 50,000 tonnes per year adding to the company's traditional galvanised steel market and intended to attract significant opportunities in the export market. The operation was to include cleaning, pre-treatment, priming and finish coating.

John Lysaghts (Australia) Ltd was retained as design consultants to the line, installation, commissioning of the line and the marketing of COLORSTEEL® prepainted steel Construction of the plant began November 1980. Site preparations and drainage was done by W Stevenson & Sons followed by the steel fabrication which was erected, in early 1981, by McMillan & Lockwood. The completed line covered an area of 37 metres by 140 metres – almost equivalent in size to Auckland's Eden Park!

The decision to use a 'floating" curing oven, in which the strip is physically supported and positioned by multiple jets of high velocity hot air, was made after studying numerous overseas operations and evaluating the requirements of existing and potential users of prepainted steel. The priming and finished coats were to be applied using a 'reverse roll' process. The line was designed to run at 50 metres a minute producing painted coils of up to 10 tonnes. Initially the line would be run as a daytime operation only and later was to move to a full 24-hour, 5 day a week shift.

Media Launch 1982 : Viviene McLean of Industrial Equip News and Ray Chapman from the NZ Herald discuss the Coil Coating process with Neil Pollock.

New Zealand Steel employees for the pre-painted line were informed about the new product via a newsletter called the 'Prepaint Hotline' that was distributed to the industry in 1981. Diagrams of the line and photos of the progress at various stages were included. During this period Nigel Evans was appointed the Colour Coating Division manager, Dr Dave Christian product development manager, Stuart Christie the market development manager, Des Morrison the factory manager, Kevin Dolores the first representative and Jack Harper the division's market liaison officer.

Some members of the original line staff are still working on the line today while others, who were instrumental in getting the Paintline up and running, are still employed in other areas of New Zealand Steel and BlueScope Steel.

The start-up . . .

In early 1982 the first shift of Paintline operators were sent to the Lysaght line at Port Kembla for training and the first New Zealand coils were produced in April 1982. In May 1982 the Coil Coating Division hosted more than 150 representatives from rollforming companies for a two-day seminar which introducing the new Paintline and product benefits. Stan Edwards, a technical officer from John Lysaghts (Australia) Ltd, was one of the speakers. This

Works development chemist, Mr. Bob Naidu, tests noise levels with new monitoring equipment.

Coil Coating Division sales representative, Kevin Dolores, discusses the advantages of Colorsteel with a visitor to the stand at Auckland's Home Show

used at the Local Government and Public Works exhibition in November, the Wellington Home Show and the Buildex Exhibition in 1983. During this period COLORSTEEL® prepainted steel advertising appeared nightly on television –
a first for New Zealand Steel.

The first 50 tonnes of COLORSTEEL® 5000 were exported to New Caledonia in August 1982 and by September that year the Coil Coating Division was selling about 1000 tonnes a month.

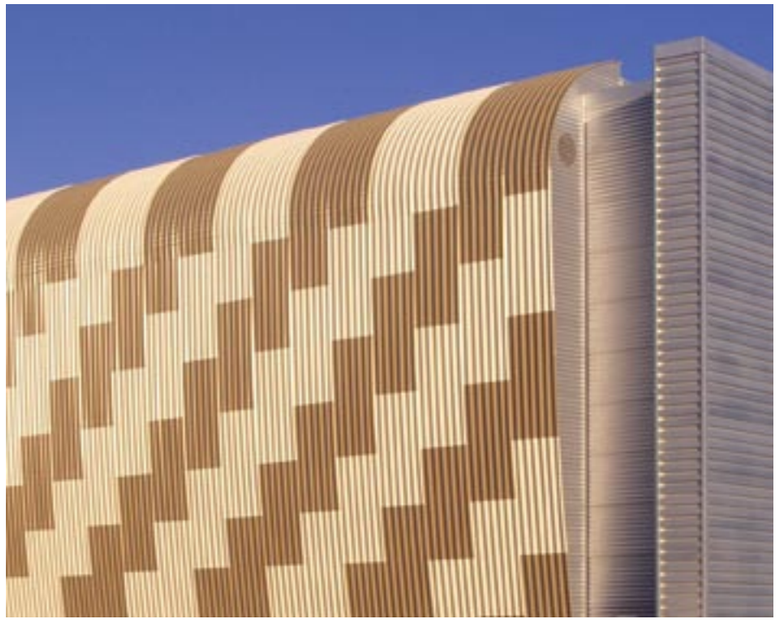
A number of upgrades to the line and plan have occurred in the 25 years since commissioning. In the late 1980s the installation of hot boxes brought paint drums up to room temperature, in the early 1990s the coater room booths were enclosed to separate and protect the line staff, in 1994 spray on pre-treatment was changed to roll on pre-treatment, in 2004 the replacement and lengthening of the finish oven to a full catenary oven and 2005 the packing and despatch area was up-graded. Refinements in both product and plant is a part of New Zealand Steel's on going commitment to efficiency, safety and excellence.

Product developments . . .

Significant product changes to the COLORSTEEL® prepainted steel range have been made over the past 25 years as new paint technologies and substrates were developed and improved. In 2007 COLORSTEEL® prepainted steel has two product ranges, Maxx™ and Endura™. Both have been designed to meet the demands of New Zealand's range of extreme environments. COLORSTEEL® Maxx™ prepainted steel is designed for use in coastal environments and comes in 12 colours and COLORSTEEL® Endura™ has 24 nature-inspired colours which blend with local landscapes.

St Andrews Centre Waiuku

Botany School



Above:Landcare Research building Auckland . BelowWaikato ASB Tennis Centre Hamilton

Above:Traditional: Carrington Northland . Below Modern: Blundell's residence Wellington.

COLORSTEEL®
innovation . . .

This history of innovation and market leadership is a tribute to those who were instrumental in the design and decision making process over the past 25 years. New Zealand Steel is proud of this heritage and committed to continued research and development to ensure COLORSTEEL® prepainted steel remains at the leading edge. We celebrate our success and acknowledge the skills of all involved, not the least of whom are the architects, designers, engineers and builders who use the products we produce in exciting and creative ways which keeps New Zealand design and our industry in world focus. Their work is a lasting monument to our achievements in creating a New Zealand Icon we can all be justly proud of.

The strength and light weight of steel gives greater design flexibility and the colour range gives designers the choice of blending or creating interest throughout a building. These design and aesthetic attributes have been instrumental in the historic and ongoing success of COLORSTEEL® prepainted steel with New Zealanders who strive to express their individuality in their living environments. This distinctive and emerging design style continues to position New Zealand Steel's profile as the Roof of New Zealand.

25 years
THE ROOF OF NEW ZEALAND®
COLORSTEEL®

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.

Members of the NZ Metal Roofing Manufacturers Inc.

A Ellery & Sons Ltd
PO Box 178
Greymouth
Telephone: 03 768 5029
Contact: Clark Ellery

AZKO Roofing Limited
41 Shakespeare Road
Christchurch
Telephone: 03 365 9808
Contact: Maurice O'Flaherty

Brockelsby Roofing Products Ltd
49 Rutherford Street
LOWER HUTT
Telephone: 04 566 1971
Contact: Malcolm Smith

B J Moss Ltd
PO Box 1007
Gisborne
Telephone: 06 867 1219
Contact: Roger Moss

B R Roofing & Walling Co Ltd
Ford Road
Onekawa
Napier
Telephone: 06 843 6968
Contact: Phillip Fendall

Besalon Industries Ltd
PO Box 58325
Greenmount
Auckland
Telephone: 09 278 3610
Contact: George Ling

Calder Stewart Industries Limited
PO Box 1400
Invercargill
Telephone: 03 214 5544
Contact: Andrew Protheroe

Continuous Spouting New Zealand Ltd
PO Box 151
Takanini
Auckland
Telephone 09 268 1555
Contact: Richard Mabin

Contour Roofing Nelson Ltd
PO Box 9015
Annesbrook
Nelson
Telephone: 03 546 4260
Contact: Dave Freeman

Dan Cosgrove Ltd
PO Box 211
Timaru
Telephone: 03 688 4169
Contact: Brian Cosgrove

Dimond
PO Box 22201
Otahuhu
Auckland
Telephone: 09 526 8885
Contact: Gregg Somerville

Franklin Long Roofing Ltd
PO Box 151
Pukekohe
Auckland
Telephone: 09 238 9249
Contact: Warren Oliver

Freeman Roofing
PO Box 2317
Stoke, Nelson
Telephone: 03 5443108
Contact: Dave Hall

Glenwood Roofing Industries
PO Box 5009
Tinwald
Ashburton
Telephone: 03 307 0593
Contact: Phil Hogg

Gerard Roofs
PO Box 18071
Glen Innes
Auckland
Telephone: 09 978 9043
Contact: Grant Williams

HB Longrun Ltd
PO Box 3056
Napier
Telephone: 06 843 6159
Contact: Chris Patheyjohns

Marshall Industries Ltd
PO Box 846
Invercargill
Telephone: 03 218 2579
Contact: Peter Marshall

Megami Metal Roofing Systems
Auckland Ltd
PO Box 113
Takanini Auckland
Telephone: 09 268 8959
Contact: David Moselen

Metalcraft Industries Limited
PO Box 51286
Pakuranga
Auckland
Telephone: 09 274 0408
Contact: Tony Barbarich

N S Irwin Ltd
PO Box 27029
Mt Roskill
Auckland
Telephone: 09 620 8149
Contact: Gary Irwin

Roof Manufacturers Limited
PO Box 319
Tauranga
Telephone: 07 578 2650
Contact: Gordon Taylor

Roofing Industries Ltd
233 Bush Road
Albany
Auckland
Telephone: 09 414 4585
Contact: Philip Meyers

Roofline Marlborough
31 Stuart Street
Blenheim
Telephone: 03 578 8793
Contact: Phil Hogg

Silbery Long Run Ltd
69 Montgomery Crescent
Upper Hutt
Telephone: 04 526 9343
Contact: Angie Silbery-Dee

Skyline Buildings Ltd
P O Box 12261
Penrose
Auckland
Telephone: 09 579 1226
Contact: John Paul

Steel and Tube Roofing Products
PO Box 259 019
East Tamaki
Auckland
Telephone: 09 273 7628
Contact: Rod Newbold

Stratco (NZ) Ltd
PO Box 8494
Christchurch
Telephone: 03 338 9063
Contact: Mark Moore

Taranaki Steelformers Ltd
Wanganui Steelformers
King Country Longrun
PO Box 36
Stratford
Telephone: 06 765 5191
Contact: Darrell Back

The Architectural Roofing Company
PO Box 8052
Hornby
Christchurch
Telephone: 03-3445991
Contact: Bruce Gibson

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