

NEW ZEALAND

JULY 2007  
VOL 17 NO 6



# Preparing tomorrow's new industry leaders

building today

THE OFFICIAL MAGAZINE OF THE REGISTERED MASTER BUILDERS FEDERATION



**We're back online!**

See page 38 for details and how you can win a Bosch Rockbox!



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# building today

Apprentices claim the limelight in this issue, with three Registered Master Builders Carters 2006 Apprentice of the Year winners joining three BCITO specialist trades apprentices and 24 other apprentices from construction-related industry training organisations at an Outward Bound course at Anakiwa recently.

The 21-day course was designed to help develop young tradespeople into industry leaders for the future.

July 31 is also the closing date for the Registered Master Builders Carters 2007 Apprentice of the Year competition.

This year sees the introduction of a National Apprentice of the Year title, so it's a great time to be an apprentice in New Zealand's thriving construction industry!

**Andrew Darlington**  
Editor



*BCITO apprentice Hamish Furniss of Hamilton was amongst a group of construction apprentices on a recent 21-day Outward Bound course to help develop young tradespeople into industry leaders for the future.*

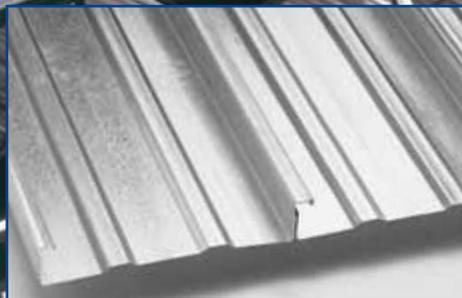
**cover story 35, 5**

**Publisher:** Taurean Publications Ltd,  
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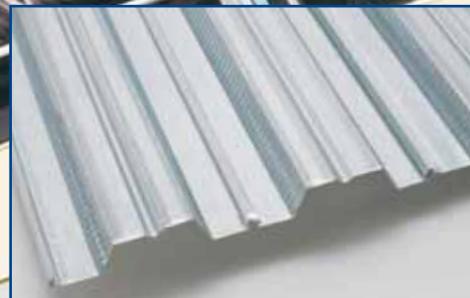
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# chief's chat

by ceo pieter burghout

## Housing affordability — it can be fixed!

One of the recent, big public issues has centred around housing affordability, with nearly everyone jumping on the bandwagon and suggesting how it can be fixed.

For certain, Kiwis have aspired, and probably always will aspire, to own their own home — their own “quarter acre section of paradise”. And that's entirely how it should be.

Unfortunately, the lift in house prices over the past five or so years has put the average home out of the reach of the average Kiwi family, which is not good.

For some time the Registered Master Builders Federation has communicated with the Government over housing affordability issues and, therefore, we welcomed the announcement from the Commerce Select Committee that it was going to hold a Housing Affordability Inquiry.

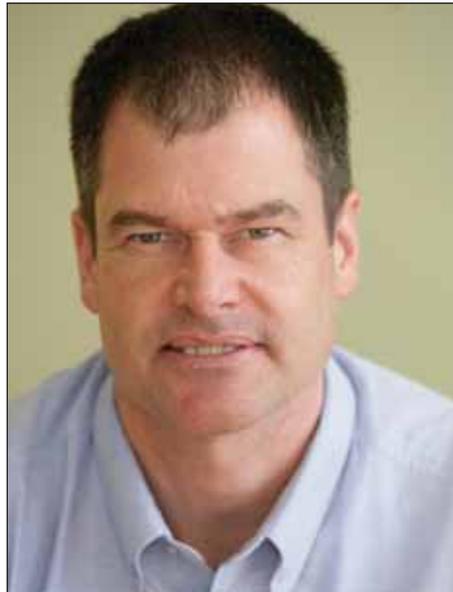
The construction industry, and New Zealand as a whole, benefits from having an affordable housing sector, and we believe there are a number of measures that can be taken to improve housing affordability.

The main points we made in our submission to the Inquiry are noted below. Our research, within New Zealand and offshore, validates that the key drivers of the housing affordability issue have been, in order of priority:

- rises in land cost,
- rises in local authority infrastructure levies and fees,
- increasing compliance costs, and
- increased labour and material costs.

This analysis is shown in the graphs at right.

And as the prices of new homes have risen, so have the prices of existing homes — because that's how the market works!



If these are the cost drivers behind house price increases, then what are the things that need to be done to fix them and make houses more affordable again?

First, the biggest factor affecting land cost is supply, and central and local government need to consider what measures can and should be taken to free up land availability, particularly in the main centres.

Second, the biggest percentage increase in cost has been burgeoning increases in local authority infrastructure levies and fees. These should be better assessed and monitored to ensure they are fair and reasonable — rather than the laissez faire approach that applies currently.

The construction industry can and should pay for those

extra infrastructure costs that it imposes, but it's not fair that new home owners pay inflated infrastructure levies to subsidise existing home owners who otherwise have lower rates to pay.

And third, the next largest significant increase has been in the area of compliance costs. Some of these costs are reasonable as the industry lifts overall quality levels since the leaky building saga, but some are unreasonable, and steps should be taken to reduce them, particularly:

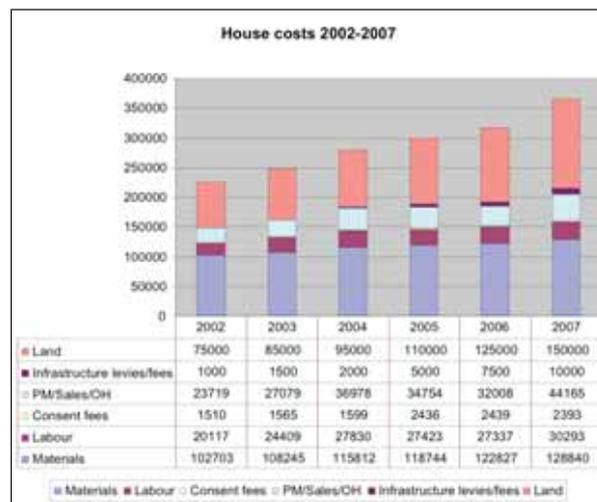
- consent process delays (consent, inspections and code compliance certificates),
- consenting uncertainty and variability, and
- producer statement uncertainty and variability.

There have been increases in labour and material costs but, in our view, both of these are subject to strong competitive pressures across the industry and across the economy as a whole. We are generally comfortable with where these costs sit in perspective against the other cost drivers noted above.

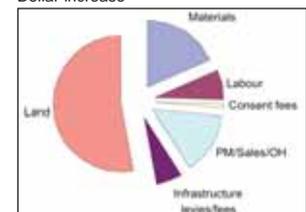
The final point we made in our submission to the Inquiry is that similar housing affordability issues apply in other countries, and New Zealand should take heed from the remedial measures being proposed in those countries to adopt what is applicable here.

In nearly all the cases we researched, the three factors we have highlighted — land prices, infrastructure levies and compliance costs — are at the top of the list of things to fix. And so it should be in New Zealand, too.

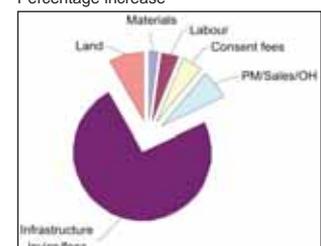
The problem won't be fixed overnight, but it can be tackled, and we strongly encourage the Government to do so.



Dollar increase



Percentage increase



# Top apprentices bound for success

Spending three weeks in the bush without a cellphone or a TV wouldn't be the ideal holiday for many young men, but for two of the country's top carpentry apprentices it was the experience of a lifetime.

Registered Master Builders Carters 2006 Apprentice of the Year winners Simon Dumble and Andrew Meiklejohn say completing the Outward Bound leadership course they won as part of their Apprentice of the Year prize package was one of the most valuable things they have ever done.

"At first the experience was a bit of a shock to the system," Simon, 22, says. "You're thrown into this foreign environment with a group of people you've never met before and asked to complete a range of physically and mentally challenging tasks."

The Bay of Plenty Apprentice of the Year competition winner believes the course was a really rewarding self-development process.

"The experience pushed me to my personal limit and made me recognise what I could achieve when I really put my mind to it," he says.

Held in Anakiwa in the Marlborough Sounds, the 21-day leadership course aims to inspire personal and social development through value-based experiential learning in an outdoor environment and, along with a \$2000 study grant and tool kit, is part of the prize package for regional Apprentice of the Year winners.

The Outward Bound group was made up of a mixture of apprentices from a range of other industry training organisations, including electrical, plumbing, flooring and cabinet making.

The group was separated into two smaller "watches" and set a range of physically and mentally demanding activities, including spending three days and nights solo in the bush.

## Dramatic change of pace

"Being alone in the middle of the bush was a dramatic change of pace, especially after working with the people in my watch and completing so many group-based activities," Andrew, winner of the Southern region's 2006 Apprentice of the Year competition, says.

"It really made me stop and reflect."

Both men agree many of the skills they learnt on Outward Bound can translate to the building site.

"There was a massive focus on leadership and working as a team to achieve a common goal, which is essential on any building project.

"It was great to come back to work and be able to apply some of the things I had learnt," 21-year-old Andrew says.

After three weeks working and learning together, it's no surprise that both apprentices plan to stay in touch with the people from their watch.

"We all got on really well and I made some great friends. We're all going to stay in touch, and the guys are even planning a snowboarding trip later in the year," Simon says.

## Last chance for emerging apprentices!

It's the last chance for talented young carpentry apprentices to get their entries in to the Registered Master Builders 2007 Apprentice of the Year competition.

With the support of principal sponsor Carters, entrants will be in with a chance to experience the Outward Bound leadership course.

All entrants in the competition will receive a complimentary one-year apprenticeship membership to the Registered Master Builders Federation.

Regional placegetters will receive prize packs from Carters, including tools and products from DeWalt, Patience & Nicholson and Stanley Tools, along with merchandise from the Building and Construction Industry Training Organisation (BCITO) and the Department of Building and Housing (DBH).

Backed by principal sponsor Carters and supporting sponsors the BCITO, Registered Master Builders Federation and DBH, the 2007 competition will also see the introduction of a National Apprentice of the Year title for the first time.

To find out more about the Registered Master Builders 2007 Apprentice of the Year, or to download an entry form, visit [www.masterbuilder.org.nz](http://www.masterbuilder.org.nz) or [www.bcito.org.nz](http://www.bcito.org.nz), or drop into your local Carters store to pick one up.

Entries in this year's competition close on July 31.

• **Further story, page 35.**



This is a reproduction of RMBF's electronic newsletter to members.

Go to your online copy for access to all the information!

## Employment Guide seminars

An employment guide programme has been designed to provide members with a general understanding of a number of Acts relating to employment legislation, including the Holidays Act, Employment Relations Act, Privacy and Human Rights Acts, and the Wages Protection Act.

Course content has been further enhanced to develop exercises and coaching tools that reflect actual cases and situations from the construction industry.

The programme schedule for the half-day course is:

July 19: The Irish Rover, 69 Peel Street, Gisborne

July 20: Hastings RSA, Avenue Road West, Hastings

July 25: The CT Club, Moncur Drive, Rotorua

July 26: Tauranga Yacht and Power Boat Club, Keith Allen Drive, Sulphur Point, Tauranga

August 6: Trailways Motor Inn, 66 Trafalgar Street, Nelson

August 7: Rydges Hotel, 140 Fitzherbert Avenue, Palmerston North

August 14: ARMBA, Unit 14, 36-42 Sale Street, Freemans Bay, Auckland

August 16: Plymouth International Hotel, Cnr Courtenay and Leach Sts, New Plymouth

August 21: WRMBA, 271-277 Willis Street, Wellington

August 23: CRMBA, Home of the Trades, 6 Burdale Street, Riccarton, Christchurch

August 24: ARMBA, Unit 14, 36-42 Sale Street, Freemans Bay, Auckland

Register through your local RMB Association.

## SNZ on-line service

The Standards NZ special on-line service provides RMBF members access to a library of all New Zealand construction Standards.

For a special, exclusive RMBF member annual subscription rate, members have the ability to access copies of all Standards electronically.

And as an added value, subscribers to this service have the ability to order hard copies at a special members' rate. The special rate is applicable to members who subscribe to the on-line service.

Members who are yet to sign up to the on-line service will be charged the retail rate. Subscribing to this exclusive members-only service will save you hundreds of dollars. For more information log on to the RMBF members web site.

# Food for thought

By RMBF president  
Ashley Hartley

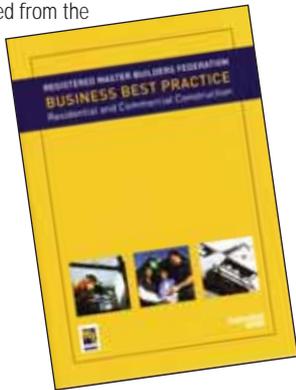
One of the astonishing things I find as I go around the country meeting members, is the general unawareness or misunderstanding of basic contract law.

We builders use contracts all the time, and it's important we understand what they mean for our businesses and how we make best use of the contract terms and conditions to ensure our business' sustainability and profitability.

The basic elements of contract law are not that hard to follow. At its simplest a contract is a legally binding arrangement between two parties that creates enforceable rights and obligations, and they provide certainty on which businesses can act and allocate risk.

This is very well explained in the *RMBF Business Best Practice* book (below), so make sure you and your staff have a copy available for day-to-day reference.

The *RMBF Business Best Practice* book can be purchased from the



RMBF for \$39.95 + GST and postage. To order call Kathy on 0800 762 328 or email [mbf@masterbuilder.org.nz](mailto:mbf@masterbuilder.org.nz).

## A case in point

There is a legal case which, though not included in the book, was first brought to the attention of RMBF members in 1987. I thought it was well worth reviving it from the archives.

Does the contractor have to follow specification, or produce a result?

In the case of *Cable (1956) Ltd v Hutcherson Bros PTY Ltd (1969)*, the client (Cable) called tenders for the construction of the storage bins on reclaimed land.

The contractor tendered for, and won, the contract. However, alterations were made to the drawings of the foundation both before and after the date of acceptance of the tender.

An Articles of Agreement signed after the acceptance of the tender date contained the agreement that the contractor was to execute the works shown on the contract drawings and described in the specifications,

in a workmanlike manner.

The foundations were then found to be inadequate, and the client purported to cancel the contract when the contractor refused to do the piling work required to secure the bins. The contractor then referred the matter to arbitration.

The arbitrator found that the work referred to in the plans was carried out by the contractor in accordance with the plans and in a workmanlike manner. He found that under the agreement between the parties, the contractor was not required to erect bins otherwise than according to the plans.

He stated as a question to the court whether the contractor was liable for the efficient operation of the storage bins.

The client was of the belief that the cost of piling the foundation of the bins was the contractual responsibility of the contractor, and that it was the promise of the contractor to produce a result — that is, that storage bins that would operate and carry out the client's scheme or project.

The client also relied on a "basis for tender" clause whereby the tenderer guaranteed the efficient operation of the plant for a 12-month period.

The High Court on Appeal agreed that the "basis of tender" clause in the specification was only a step preceding the agreement. Even if it was part of the agreement, it was still not operative.

Thus, the High Court ruled that the contractor was not liable for the efficient operation of the plant. The contractor had promised no more than to carry out the specified work in a workmanlike manner.

As the arbitrator had ruled that this had been done, the appeal by the client was dismissed.

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# Starring award-winning builders!

**A**n ex-All Black and the War Birds singers attended three Registered Master Builders 2007 House of the Year and RMB Commercial Project Awards gala dinners but, ultimately, the local builders were the stars of the night.

Sponsored by PlaceMakers, the first of 19 local awards nights kicked off last month in Gisborne, Tauranga and Hawke's Bay.

## Gisborne

At the Bushmere Arms in Gisborne, Peter Stevens, managing director of D Stevens Builders took out the PlaceMakers Supreme Award and the RMB

Commercial Project of the Year.

D Stevens Builders won the House of the Year supreme title for a Wainui Beach property in the New Home \$600,000 to \$1 million category. Upon receiving the award, Mr Stevens dedicated it to his site foreman Keith Wells, who died of cancer earlier this year.

D Stevens Builders' construction of the Graham and Dobson offices, entered in the Retail and Business Project Award category, was given the top Commercial award.

Having entered eight properties in the national House of the Year awards since 1996 — and winning top awards twice — Mr Stevens seems to have the magic touch, which he partly attributes to being a perfectionist.

The Gisborne awards night was enjoyed by all who

attended — from the table games during the dinner break to the entertainment performed by the War Birds singers (who do a great Andrews Sisters impersonation).

## Tauranga

It was first-time entrant Shaw Builders who took out the 2007 PlaceMakers Supreme Award for a new home at Papamoa, entered in the over \$1 million category. Shaw Builders has been a Registered Master Builder for only three years, and the company was delighted to have scooped the top residential prize in its region.

In his acceptance speech David Shaw acknowledged his wife, who he described as "his rock", and dedicated the award to his father who had passed away a week earlier.

It was the Papamoa Library and Service Centre, entered into the Education Project category, which most impressed the commercial judges for the RMB Commercial Project of the Year. The library was built by Mainzeal Property & Construction.

## Hawke's Bay

Ex-All Black Eric Rush compered the Hawke's Bay awards gala at the War Memorial Centre in Napier. The PlaceMakers Supreme Award was taken out by Welch Builders and Construction for a new home that sits high on a hill in Havelock North, entered in the \$600,000 to \$1 million category.

The RMB Commercial Project of the Year went to Gemco Construction for its construction of a new building at Napier Girls High School. The Hague Building, as it is known, was entered in the Education Project category.

*Building Today* will feature highlights from the remaining 16 local awards ceremonies in upcoming issues.



*Left, from left: Graham Baker (Tauranga City Council), RMBF chief executive Pieter Burghout and Terry Murphy (Mainzeal Property & Construction) after Mainzeal won the RMB Commercial Project of the Year (Tauranga) for the Papamoa Library and Service Centre.*

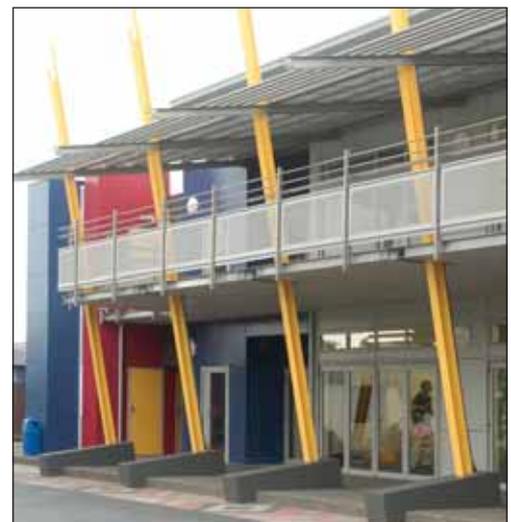


*Below left: D Stevens Builders enjoyed a successful night, winning the PlaceMakers Supreme Award and the RMB Commercial Project of the Year at the Gisborne RMBA*

*House of the Year dinner. From left: The home owners, Peter Stevens (builder), RMBF director David Fabish and Grant Sharpe (PlaceMakers).*

*Below: The PlaceMakers Supreme House of the Year (Hawke's Bay) by Welch Builders and Construction.*

*Right: The RMB Commercial Project of the Year (Hawke's Bay) award winner Gemco Construction's Hague Building at Napier Girls High School.*



## Queenstown's first 'true' 5 star hotel

Queenstown is home to New Zealand's very first Sofitel hotel. The boutique five-star hotel, which opened to much acclaim in 2006, was built by Amalgamated Builders 2001 Ltd, which won the top accolade in the Siesmic Tourism and Leisure Commercial Project category in the national RMB 2006 Commercial Project Awards, in association with PlaceMakers.

Located in the heart of the city, just 15 minutes' drive from the airport and 20 minutes from Coronet Peak ski field, the luxury hotel is on a large site on an elevated boundary of the town centre.

The hotel has 82 luxury rooms and suites, all

containing a double spa and most offering private balconies with either mountain or lake views.

Considerable care was taken not to dominate the townscape with the sheer size and aesthetic feel of the hotel. The designer decided it should exert responsible influence over the environment, rather than be overbearing.

The over-arching design philosophy was for the building to sit comfortably in its environment and to look like it "had been there for years".

### Modern interpretations

The Sofitel Queenstown has simple modern interpretations of details found in some of

Queenstown's heritage buildings, such as the portal column detail creating relief on the large external elevations, high level "eyebrows", Juliette balconies and their subtle cast branding logos.

Amalgamated Builders understood its client's need to deliver a guest experience equal to any other contemporary Sofitel Hotel.

Consequently, there is emphasis on detail to enhance the guests' experience.

The hotel's public spaces are relatively small, in keeping with the hotel's boutique vibe. The true experience is in one of the guest rooms, with classic style and thoughtful accoutrements such as spa baths, audio visual systems, heated floors, and possum fur throws.

The finishes are of a quality that is expected in such a property, but not overdone. Carpets are wool, and in feature areas have been especially designed and commissioned.

### Scope for extravagance

There is some scope for the extravagant — as expressed in the men's public toilets — and rather than a traditional pond and obligatory fountain, the hotel has a stunning linear water sculpture.

The competition judges were very impressed with the quality workmanship of Amalgamated Builders and the attention to detail.

"Only the finest materials and finishings were used in this luxurious building.

"The contractor's ability to bring the many facets of this project together highlights their skill, and has resulted in a trend-setting building that will impress for years to come.

"The builder is to be commended."



*The Sofitel Hotel in Queenstown.*

## Funding for volume builders helps brighten the day

The Energy Efficiency and Conservation Authority (EECA) wants to encourage the uptake of solar water heating in more new homes.

As a result, volume builders may be eligible for financial assistance towards installing solar water heating systems, which EECA is now offering.

Grants of \$500 are available to volume builders who commit to install solar water heating systems which meet certain criteria on at least 20 new homes within 12 calendar months from the signing of the contract

with EECA.

Grants of \$3000 are also available for a volume builder to install a packaged solar water heating system which meets certain criteria in a show home. The volume builder must also install solar water heating systems in at least 20 new homes within 12 months (\$500).

Other funding options under EECA's solar water heating programme include:

- Funding for home owners through a \$500 contribution towards a loan or a \$500 grant towards installing solar water heating systems.

- Grants for the public sector to have systems installed in government-owned buildings are also available.
- An innovation fund which EECA is developing and will support solar water heating projects not targeted by the other schemes.

EECA's solar water heating programme focuses on growing the solar water heating market by significantly expanding sales, improving quality and reducing prices.

For more information visit [www.solarsmarter.org.nz](http://www.solarsmarter.org.nz), phone 0800 SMARTER (762 7837) or email [solar@eeca.govt.nz](mailto:solar@eeca.govt.nz).

# Living the Kiwi dream

**W**hakatane-based builder John Fretwell Builders Ltd created a dream home for its client and, in doing so, won the top prize in the New Homes \$350,000-\$450,000 category of the Registered Master Builders 2006 House of the Year, in association with PlaceMakers.

The award-winning two-storey home, built on the sand dunes of Coastlands Beach, embraces its coastal location and was designed to make the most of the panoramic views from East Cape to Mt Putauaki.

John Fretwell Builders Ltd and its architect designed the home so that every room in the house has a view of the sea and the coastline — even the ground-floor bathroom.

Competition judges said: "This house represents every



Kiwi's dream of a holiday house by the sea, except the clients are living the dream every day.

"Floor-to-ceiling windows and dual sliders give the home a spacious feel, while a huge deck on the northern face creates good indoor-outdoor flow and enhances the contemporary style of the property."

The southern deck is protected from wind by a titan board wall, with cedar trellis trim providing added privacy. The house is adjacent to a popular beach access which is screened by a high wall, a first-floor boarded corral and judiciously-placed stained louvre screens.

Upper-floor bedrooms open to timber decks, draining through to protected membranes below, all with glass balustrades. All windows and doors are well-flashed, robust aluminium.

No home by the beach would be complete without a special place for the boat, and this vital detail has certainly not been overlooked at this property, which has a two-car and a boat garage.

To disguise the height of the boat garage door, the panel above the up-and-over door is secret and opens on gas lift struts, allowing a hardtop boat to be parked undercover.

"The boat garaging innovation is the pride of both contractor and owner, and is a measure of the careful thought that has gone into making a well-structured and finished house," the judges said.

John Fretwell acknowledges the garage is one of the most distinctive and interesting features of the property.

"The design of the garage with its hinged wall above the garage doors allows a large boat to be parked in what appears to be a standard-height garage," he said. It was the home owners who suggested to Mr Fretwell that he enter the property into the competition.

Having previously done well in local House of the Year competitions, he was aware of the standard of workmanship required by the judges, and acted on his client's suggestion.

And, as they say, the rest is history . . .

## RMBF stand a hit at BuildNZ 2007

The Registered Master Builders Federation stand proved to be the most popular stop-off point at the BuildNZ and designxnz expo held in Auckland recently.

With comfortable couches and free lattes, flat whites, moccacinos and hot chocolates, members and all sorts of other visitors were well looked after for the three days of the expo.

It was the perfect opportunity for members — many from out of town — potential new members and industry partners to get together in a relaxing environment at what was being touted, by the attendees, as the best BuildNZ they had attended so far.

The RMBF's strong brand presence at the event was hard to miss, and went a long way to confirm the Federation's place as the premier construction industry organisation in New Zealand.

RMBF chief executive Pieter Burghout's daily presentations on an industry perspective of builder prospects and licensing were well attended by builders and designers.



Many thanks to Samsung, who came to the party by donating a 42in plasma television to give away. The

lucky winner was Ash Cryer from Stephen Matthews Architects Ltd in Auckland.

## Apprentices enjoy Wellington's Big Day Out

Wellington City turned on a fantastic winter's day for the sixth annual Trade Training Day for carpentry apprentices. Run by the Wellington RMBA, the trip was attended by more than 80 building recruits, a record number to date.

Led by John Hanna, a long-time Association member who is passionate about encouraging apprenticeships in the building trade, the group went on a bus tour of building-related manufacturing plants, namely Metropolitan Glass, First Aluminium Windows and Doors and Carters Pre Nail Plant, as well as the BRANZ research facility.

Carters put on a barbecue lunch at BRANZ and the Wellington City Council hosted a social hour at the end of the day in the council chambers with guest speaker Councillor John "Mystery" Morrison. Also, a number of prizes were kindly donated by Carters, The Toolshed and the RMBF, and given away in a draw that afternoon.

The success of the day was, in no short part, due to the ongoing support of Carters, BCITO, Weltec, First Aluminium Windows and Doors, Metropolitan Glass, BRANZ, the RMBF and the Wellington City Council.

"The council is an integral part of the building industry, and to support an event of this kind puts some substance

behind it. This is a fantastic and important trade for our city," said George Skimming, director of the council's Building Consents and Licensing Services Department.

There was overwhelming support from all the supporting partners for the day, with Craig McMahon from Carters saying how enthusiastic they are to be a part of this day and encouraging the group to further their knowledge within the industry.

RMBF chief executive Peter Burghout congratulated the apprentices on their choice of career, and encouraged them to consider entering the Apprentice of the Year competition.

Wellington MBA president Graeme Sutton says the association has always supported every initiative to encourage young people to join, stay and progress in the industry.

It has also recently facilitated an arrangement with the local council to host four RMB member apprentices for two days a month, to visit the Building Consents and Licensing Services Department and gain an insight into how Building Consent applications are processed, how the building inspection process works and how Code Compliance

Certificates are signed off and issued.

The Wellington Association looks forward to hosting more enthusiastic apprentices in 2008!

### What they said:

"I really enjoyed seeing the professionalism and technology of the glass and aluminium factories. Also it was great to see the maturity and enthusiasm of everyone in the group and the industry as well."

**Pippa Jones, Martin Goulden Builders Ltd**

"I'm new to New Zealand so it was good to see the manufacturing side of things here. I also enjoyed meeting new people and it's great to see people my age and women in the industry."

**Matthew Harris, Bembo Trust**



Apprentices at BRANZ watch the testing of a ceiling frame.



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# The house that Kath built

Long time association secretary experiences life on other side of construction fence

By Jenny Baker

**A**s the Registered Master Builders Federation House of the Year enters its 17th year, there wouldn't be many members who have been involved with the competition longer than Gisborne Registered Master Builders Association former secretary Kath Kitchen.

Kath's house won not only a Gold Award, but also the Bathroom Award and Future Proofing Award at the Association's 17th House of the Year competition recently.

She says after a 15-year association with the competition, it was an eye opener to be on the other side of the fence.

"I wanted to know our house was good enough — it took a lot of soul searching to enter.

"It's a huge thing to do, to put your house on public display and allow photos to be taken of it. I never realised before how stressful it is," she says.

This is the first, and she vows, the last house that Kath built. Gisborne architect Graeme Nicoll translated her many ideas into a plan, and Kath put her 1993 qualification in bathroom and kitchen design to good use.

Following the modern trend, Kath and Graeme focused on future-proofing using double glazing, heavier than standard insulation in the walls and ceiling, hot concrete block walls and passive solar heating to ensure an environmentally-sustainable home.

The house is also fully accessible for the disabled.

"Having spent time in a wheelchair myself, I know how difficult it can be and exactly what you need to do to make the house wheelchair-friendly," she says.

Kim Currie of Currie Construction built the house, with Kath supervising the construction.

"It was an amazing, unbelievable, wonderful experience, the things I had to do and the things I learnt — which is why I appreciate the awards all the more now," she says.

With its simple, minimalist decoration and landscaping, the house has a calm, restful ambience, and "is really lovely to live in".

For Kath, the trio of awards is a highlight in a long career in the construction industry which commenced when she completed a New Zealand Certificate in Engineering upon leaving school.

With the ink barely dry on her papers, she joined the Ministry of Works' draughting office. By 1980 when



*Above: Kath Kitchen's stunning new home, built by Currie Construction Ltd, won three awards at the Gisborne RMBA House of the Year Awards recently.*

*Below: Kath Kitchen, pictured with Mark van Wijk of Currie Construction, has built a 22-year association with the Gisborne RMBA.*



she put her career on hold to care for her young family, she had been running the ministry's Gisborne architectural office for three years.

Some time later Kath lost her husband. When she joined the workforce again in the late 80s, it suited the single mother very well when her father, Lester Traue, made her an offer of employment in his business.

Mr Traue, a RMBF past president, is a qualified carpenter and joiner who spotted a good opportunity when aluminium came into general use in the 1960s.

He established Traue Joinery 50 years ago, and the company became one of the country's first aluminium franchises, Fisher Aluminium.

Under Kath's leadership as manager, Traue Joinery & Fisher Aluminium last year won a WANZ Commercial Aluminium Window Association of New Zealand Award.

Kath says her dad taught her how important involvement in the industry is. In 1985, she started a

22-year association with the RMBF when she became the manager of the Gisborne Association.

She served as secretary for 22 years, was pivotal in organising the 1993 RMBF conference in Gisborne, and is now on the branch's executive.

She says it was not always easy to be a woman in the construction sector, and she had to work extra hard to gain the impeccable reputation and respect she enjoys today. "But I also get extra rewards. I really enjoy every minute of it, because you learn something new every day in this industry."

When she is not building a house, Kath's other hobbies are swimming, needlecraft and reading crime novels. She is the treasurer and a past president of the Gisborne Business and Professional Women's club.

Her advice for a happy life? "I'm a very single-minded person. When I want to do something, I just do it. I also believe it's important to keep busy, and to take time to enjoy family life."

Kath is now realising a long-held ambition by enrolling for a postgraduate diploma in Construction Management.

She believes staff, lack of people and lack of incentive are the biggest challenges facing the New Zealand construction industry.

"We do a lot of training and it takes a lot of money to train youngsters, and then you always run the risk that they leave. It would be fairer if the Government did more to share this financial risk with us," she says.

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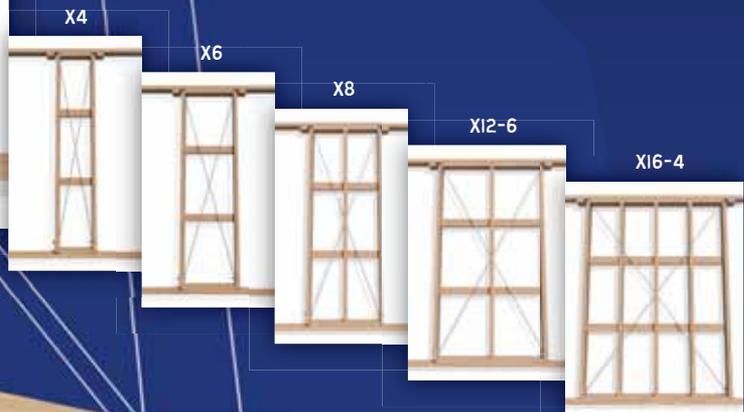


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## Lockwood ceiling a work of art

Photographs of the ceiling of an artist's Lockwood holiday home have been selected for exhibition in one of New Zealand's leading contemporary art awards.

Waikanae artist Fiona Richter's work, titled *Knot Dogs*, was one of just 69 works selected for the Norsewear Art Award exhibition from 466 entries. Hers is an unusual and arguably humorous piece from her Knot Art series.

She had been trying for more than six years to have a piece selected for the prestigious exhibition and was surprised to have got in with an art work she put together quickly.

"Over the years I've sweated blood, tears, ego — everything to try and get into the Norsewear," she says.

The three photographs are of the bedroom ceiling of her Taupo bach. In the mornings her children join her in bed and spotlight shapes on the ceiling with a



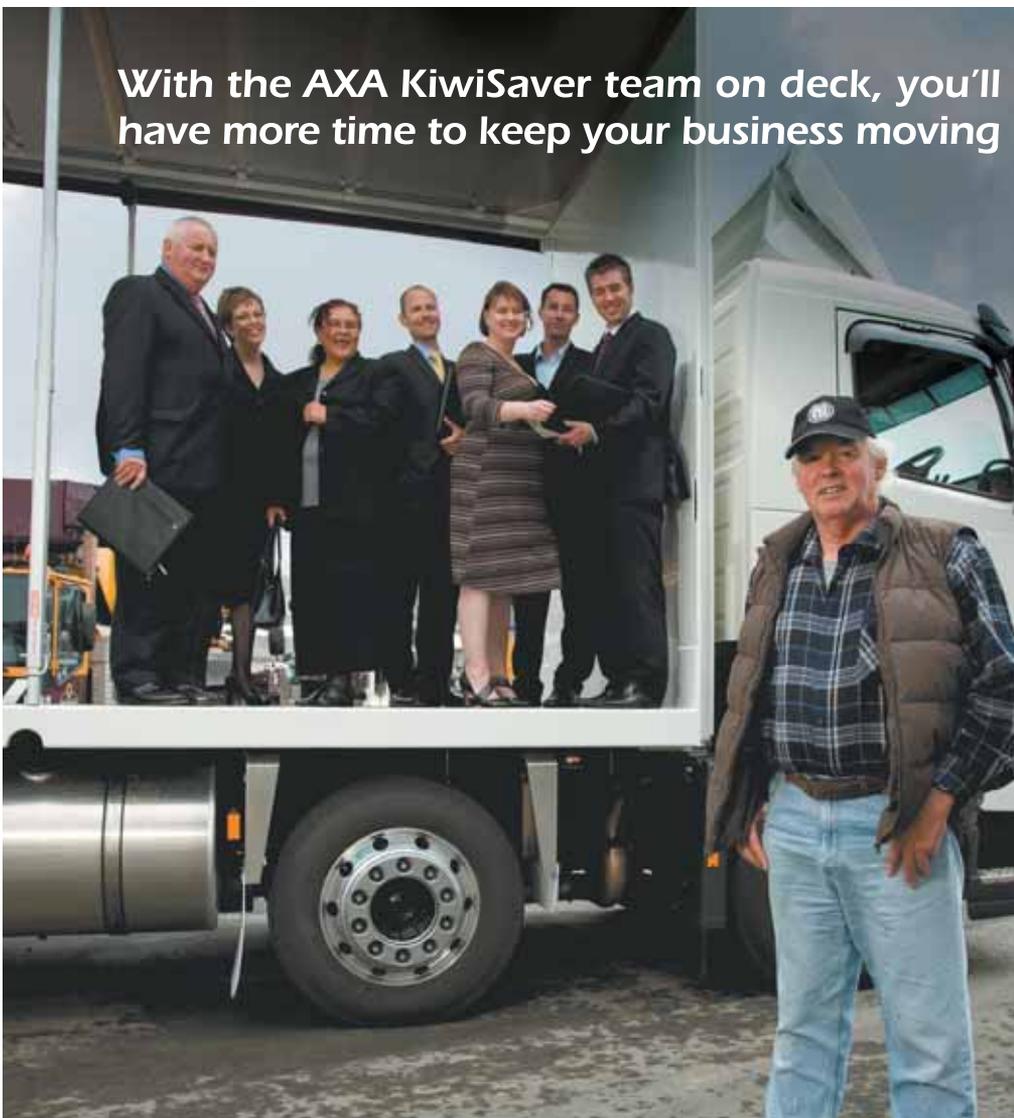
torch. The "knot dogs" are some of the shapes they've found.

The winner of the \$20,000 supreme prize in the 2007 Norsewear Art Award was Seraphine Pick of Wellington. Her oil on linen painting, titled *Phantom*

*Limb*, sold for \$30,000.

Winners of \$4000 merit awards were painters Peata Larkin of Auckland, John McLean of Taranaki and Wellington artist and jeweller Emily Valentine Bullock.

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Be Life Confident

# Labour: Biggest energy efficiency steps in 30 years

**N**ew insulation requirements and moves to make it easier and cheaper to install solar water heating systems are part of major changes to the Building Code and building compliance documents announced recently by Prime Minister Helen Clark and Building and Construction Minister Clayton Cosgrove.

Labour says the changes are the most significant improvements to the energy efficiency of buildings in 30 years, and the latest steps in the Labour-led Government's sustainability agenda.

"The Labour Government believes New Zealand should strive to be the world's first truly sustainable nation," Helen Clark said.

"Creating more efficient houses and commercial buildings is a triple win for New Zealanders' health, our environment and our power bills."

The changes will see:

- tougher insulation requirements (including double glazing in most climates) resulting in new homes using about 30% less energy to achieve healthy average indoor air temperatures,
- a new compliance document making it easier to install solar water heating systems across New Zealand, cutting the price of installation by as much as \$500, and
- new requirements for energy efficient lighting in new and refitted commercial buildings, a move expected to save building owners around \$8 million a year in energy costs nationally.

"A home built under the new standards will save anywhere from \$760 to \$1800 a year on power bills, quickly making up for any additional up-front costs associated with the regulations. We also know that warmer and dryer homes are much healthier homes,"

the Prime Minister said.

From November, new houses in the South Island and the North Island's central plateau will need more insulation and double-glazing. Improvements to house insulation in the North Island will take effect in most of the North Island in July 2008, and for Auckland and further north from October next year.

Mr Cosgrove also announced two further proposals for public consultation. The first would require domestic hot water systems in new homes to be more energy efficient, while the second would apply energy efficiency standards to heating, ventilation and air-conditioning (HVAC) systems in new commercial buildings.

More information on the existing measures and new proposals can be found at [www.dbh.govt.nz/energy-efficiency](http://www.dbh.govt.nz/energy-efficiency).

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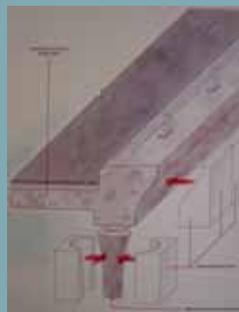
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## news

# BOINZ initiative to boost confidence of home buyers and sellers

**T**he Building Officials Institute of New Zealand and a special interest group made up of inspection and surveying industry professionals has launched an initiative designed to protect home buyers and sellers through a new programme of accrediting building surveyors.

Institute chief executive Len Clapham says accredited surveyors will have to adhere to a code of ethics and accreditation criteria, New Zealand property inspection standards and an improved level of service and assurance to consumers in New Zealand.

"While there has been a lot of discussion on this topic the Institute and the industry special interest group have been working solidly to create a robust process and infrastructure to support the new accreditation programme," Mr Clapham says.

He goes on to say that the programme will undertake assessment, training and development for the profession, including auditing.

The accreditation process will be a structured method of evaluating the competency of building surveyors to undertake pre-purchase and pre-sale surveys, safe and sanitary reports, investigation inspections, quality assurance inspections, council building record inspections, maintenance inspections and sampling of lead and asbestos.

### Enhanced service to be offered

Accredited building surveyors will offer an enhanced service and certificated level of competence to reassure home buyers and sellers. The programme has been developed to deliver consistency in the pre-purchase and pre-sale inspection industry.

"In time, it will weed out the individuals and companies within the industry who do not meet the required level of competency," Mr Clapham says.

The accreditation process and other administration duties will be undertaken by the Institute.

Lumley General Insurance (NZ) Ltd has lent support to the initiative by providing comprehensive insurance cover to accredited professionals. Support has also been signalled by the finance sector.

Similar levels of accreditation and certification have been undertaken in other countries, including Great Britain and the USA.

"This is an exciting initiative for improvement in the industry," Mr Clapham says. "The group is to be congratulated on its positive moves to achieve a higher standard of professionalism and service which will result in another measure of protection for the consumer."

"The accreditation process is being piloted in Auckland, Hamilton, Wellington and Nelson, and will be fully available for online applications by the end of July."

The Institute is advocating that every house sold in New Zealand will be required to have a home information pack that contains a pre-sale survey to New Zealand property inspection standards, terms of sale, evidence of title, standard searches, planning consents and building control certificates, Land Information Memorandum (LIM), warranties and guarantee and, in future, an energy efficiency assessment.

# Tough new standards to foil recladding mishaps

**A**uckland City Council has introduced a new process to check the recladding of buildings to give current and future owners greater confidence in the quality of remedial work.

Throughout New Zealand, reclads of buildings are becoming a common occurrence. Experience overseas, especially in Canada, reveals that a number of recladding systems have failed, incurring further loss and anxiety for home owners.

The council is advising the industry that it requires all remedial work for reclads to have a quality assurance plan and three additional inspection types at the beginning and during the work to ensure work undertaken is code compliant.

The new standards will ensure all involved are satisfied with the reconstruction process, and that adequate supervision is in place on-site while reconstruction takes place, giving owners greater assurance.

The council inspections will be done by specialist building officers and known as "category one inspections".

## Breaking new ground

Council principal building officer Bob de Leur says the council is breaking new ground with the quality assurance process, and he hoped it would eventually be adopted industry-wide.

"The unfortunate experience overseas is that people are having their homes reclad only to find the work is failing and the job needs to be done again," he says. "That can amount to a huge financial burden, not to mention the stress involved."

Mr de Leur says as a result of watertight issues, the recladding industry is in full swing with a range of consultants and other players involved.

"Many are very good but some, I'm afraid, don't know what they are doing or are still coming up to standard with the potential for a bad outcome for owners.

"Lack of competence causes delays in the consenting process while adequate documentation is being provided for approval.

"Some people are being told they need to undertake more work than is necessary in fixing their homes and, in other cases, not enough is being done."

The objective of the new process is to provide greater assurance for all parties — owners, consultants, architects and builders — requiring ownership of the process by all involved.

The three new inspection types must be completed in

order to gain a code compliance certificate. They are:

- pre-construction meeting held on-site before any work and attended by the project manager, the builder, the owner or agent, relevant consultants engaged by the owner and council staff involved with the consent application,
- strip-off inspection when areas of the original cladding or wraps have been removed, and prior to any remedial framing. The same team must attend this meeting, and
- remedial works inspection carried out when work has been completed prior to new building wrap and recladding being fixed.

These new steps are followed by cladding inspections, the number depending on the type and complexity of

the work, and a final inspection.

Many modern buildings were complex in design involving different angles and rooflines, which added to the risk of something going wrong, Mr de Leur says.

"We are putting an emphasis on including the other players such as consultants and designers in the inspection process. This will give greater confidence and educate the industry on the standards it should be striving for," he says.

The new process affects all new consent applications for recladding projects.

"We have been working with the industry over the past 12 months to bed the process down with good results," Mr de Leur says.

## 3D house model wins innovation award

**A** three-dimensional model of a luxury house, created using new printing technology, has been awarded a gold medal at the New Zealand Pride In Print Awards, the industry's most prestigious gathering.

The model of a multi-million dollar mansion entered by Albany company 3D Print Ltd won gold in the "innovation in print" category.

3D Print director Peter Dawson says the technology offers opportunities for new home owners to get models of their dream home created overnight, surgeons to create models of injured or diseased organs and patent attorneys to create models of new inventions.

"The three-dimensional modelling technology is ideally suited to architects and designers, property companies and developers. It also has far reaching applications in industry and engineering," he says.

These include the creation of prototypes, industrial tooling and pattern making for moulds.

"The house model entered in Pride In Print was designed by leading New Zealand architect Pete Bossley who provided us with drawings and CAD files of the house plans.

"From these, we were able to produce a model of the actual house by using ink-jet printer technology.

"The print process involves interpreting the CAD files into individual layers, and the printer plots these to scale and with accuracy. At the end of the process, there is a perfect scale model."



Peter Dawson with the Pride In Print gold medal.

Mr Dawson says since completing the house project, the three-dimensional print technology had also been applied in other fields, such as foundry casting of tools, which raised some interesting engineering possibilities, and also the creation of prototypes for protective sports wear.

3D Print, based in Albany on Auckland's North Shore, grew from a specialist print company, The Colour Box, which has been operating in the large format ink-jet market since the mid-1990s, specialising in exhibition displays, posters, outdoor signs and banners.

## Sustainability web site launched

**B**RANZ has launched a web site providing information about sustainability, tailored specifically to New Zealand construction industry professionals.

Interest in sustainability has taken off this year, and the construction industry is playing a key part. More construction companies and products are being promoted as environmentally friendly, and there are a growing number of environmental rating schemes on offer.

But where can you find independent advice and technical help in working out what is truly sustainable?

That's where the new web site, [www.level.org.nz](http://www.level.org.nz), comes in. Built over the past year by BRANZ writers and scientists, the site has been put together specifically as an authoritative resource for the New Zealand industry, and is primarily aimed at providing "Informed Sustainability", not merely "green-wash".

### Mainstream technical advice

Level covers building site analysis and site use, passive design, materials, water use, energy, assessment and guidance tools, and health issues. There is a particular focus on residential construction.

The site provides technical options facing building professionals, their advantages and disadvantages, schematic drawings, background explanations, regulatory requirements, and links to sources of more detailed and specialist information. The fact sheets can be downloaded.

Much of the content applies to mainstream construction.

"We knew from the start that the web site couldn't be limited just to topics like straw bale construction or composting toilets," says David Hindley, project manager for the web site's development.

"It contains information which can be used to varying degrees on just about any project."

However, topics of limited applicability such as micro-hydro energy generation are still covered.

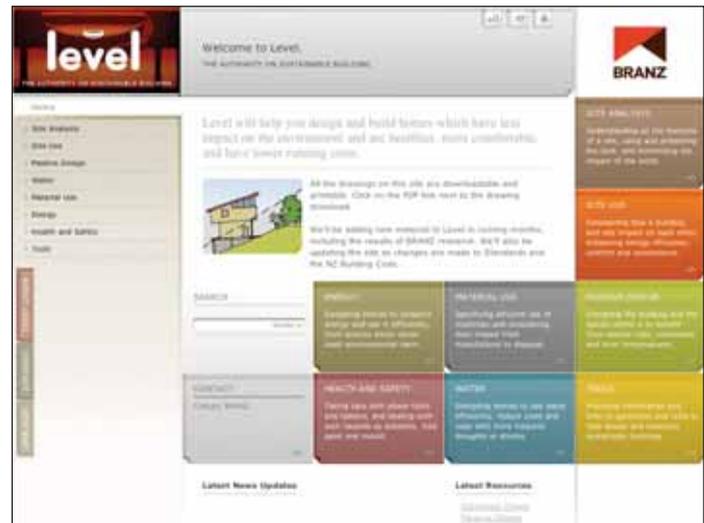
### Complements Consumer web site

At the same time as it was being developed, another site targeted at consumers has been put together. Funded by the Ministry for the Environment and produced by the Consumers' Institute, the site covers similar ground to Level but in a less technical way.

It has been planned that if clients of an architect or designer find something on the Consumer site that they want to be part of their home, the architect can turn to Level to find out how to achieve it.

### On the level

And the name "Level"? The word has an obvious



meaning in the construction industry, where spirit levels or laser levels are used on every job.

"It also implies balance," Mr Hindley says, "and sustainability is all about balance. There is also the meaning that something which is on the level is reliable, and BRANZ's site will certainly be that."

The site joins a growing number of BRANZ publications and tools on sustainability topics. Almost half of recent BRANZ Bulletins have been on topics related to sustainability, such as heat pumps, solar water heating and rainwater collection.

Four books focusing on sustainability in specific areas of building will also be published over the next year.

The development of the site was funded by the Building Research Levy.

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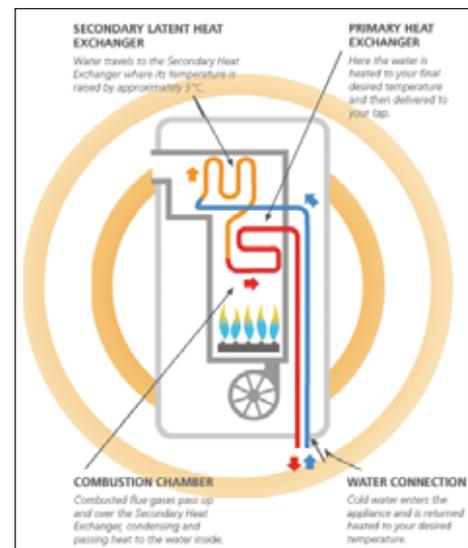
<sup>1</sup> The Department of Building and Housing's draft paper "Energy Efficiency of Buildings. Consultation on energy efficiency revision to the New Zealand Building Code and Compliance Documents" pages 24-25 compares CO<sub>2</sub> emissions generated by different fuel sources in the generation of hot water.

Electrically heated hot water produces nearly twice the CO<sub>2</sub> emissions of that heated directly with Natural Gas. (103kg CO<sub>2</sub>/GJ vs 52 kg CO<sub>2</sub>/GJ).

<sup>2</sup> Calculations are approximate only and do not include line or bottle charges or other fixed charges. Actual costs may vary.



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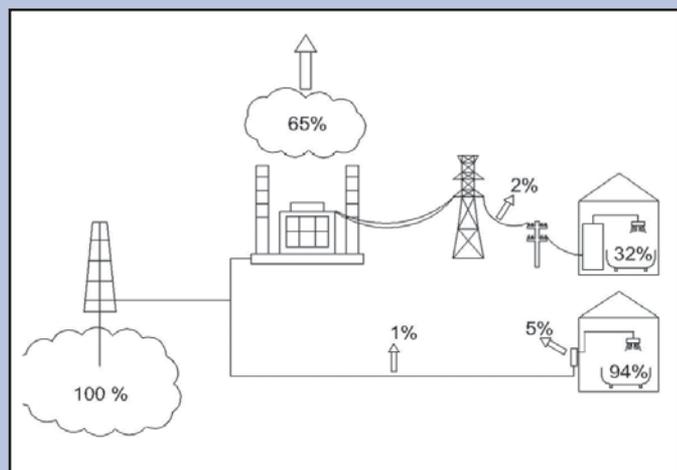


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Whilst electric tanks claim 100% efficiency, up to 75% of energy can be lost in creating electricity from fossil fuels - as demand for electricity increases our reliance on these fuels has grown.

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<sup>3</sup> Actual numbers may vary slightly - these are based on a number of industry sources and approximations.



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# House insulation — a look at the trends

By Colin Prouse  
Building Scientist, BEAL

**W**ith the recent announcement from the Minister of Building Issues for higher house insulation requirements ringing in our ears, it is timely to look at current and future house insulation products.

The New Zealand Building Code requires buildings to meet a "whole building performance index", not a specific R-Value for a wall, floor or ceiling, as most of us are led to believe.

Since calculating the "whole building performance index" requires the use of a computer modelling program, a simplified calculation method has been developed for ease of calculating minimum performance requirements, which uses R-Values for all the components used in a wall, roof or floor.

R-Values are used universally for calculating the effective insulation of a building. It is a best estimate and, because it is easy to use, is a popular method.

The difficulty of using the calculation method to estimate a building's effective insulation is that the R-Value for each external wall, roof, window, door and floor component must be known, and many new products are not known.

To find out the R-Value of a wall, window or roofing system, one must have the system measured using a sophisticated apparatus called a guarded hot box.

This apparatus measures the flow of heat through all the components of the system and, therefore, measures the overall thermal resistance of the wall, window, roof or floor system.

To date, many building systems have been measured but many have not. EECA is now commissioning BRANZ to measure as many new building products as they can in order that there is a large database of information available for calculating a building's effective insulation.

Soon EECA will be commissioning contractors to carry out assessments of the overall energy efficiency by measuring the effective insulation using R-Values.

This will lead to a building or house being given an Energy Star Rating to provide information to home owners about the energy use for their house.

The focus on thermal efficiency for building products is clearly going to increase dramatically as this new service begins to become more popular.

In New Zealand the most popular form of in-wall insulation has been fibreglass batts, followed by polyester-fibre batts and, of course, wool-fibre batts.

There are also loose fill materials such as mineral fibre and fire-resistant cellulose fluff.

In recent years houses have incorporated insulation sheets as part of their external cladding, known as External Insulation Finishing Systems (EIFS).

There are many variations of this using Expanded Polystyrene, HEBEL (aerated autoclaved concrete),

Compolcrete (a mix of recycled EPS and concrete) and, more recently, High Density Extruded Polystyrene.

Each of these products can be used in wall, floor and roofing systems to provide the desired level of effective insulation.

In addition, new materials are being imported from Asia such as MGO board, which also offers insulation but is more of a fibre cement-type product.

The future of insulation is clearly going to be one that all will follow with interest as the standards and requirements continually improve, and add cost to the construction.

On the other hand, it will be fascinating to watch how new products and systems are introduced, and how they will affect energy costs and comfort in buildings and homes.

## Whats New!

*Building Element Assessment Laboratory (BEAL) has been looking at the need to measure the insulation properties of new building materials, and is looking at providing insulation measuring and calculating services in conjunction with other facilities.*

*The demand for such services seems to be growing rapidly, and is useful for product manufacturers to know what the R-Value for their product is. Watch this space for further developments.*

## We want your feedback - check out our web site forum!

*Building Today wants to know about your experiences with insulation or interior building products you have worked with during the past five years — both good and bad — for our "Interiors" Part 2 feature next month.*

*For example, was the product itself a good quality product whose specs stood up to the demands of the application?*

*Do you have any feedback on the products or opinions featured in this*

*issue?*

*Go to the forum on our web site at [www.buildingtoday.co.nz](http://www.buildingtoday.co.nz) and let us know your views on vital industry issues — and be in to win the Bosch rockbox!*

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## 'Turning the corner' on interior wall design

By Jenny Baker

**P**refabricated curved joint-free plasterboard units are providing builders with innovative solutions for internal walls and ceilings.

Corner Solutions International (CSI) recently launched the Roundy Wall Plaster Board Unit system, a Kiwi-developed plasterboard system that provides builders with corner solutions.

Business development manager Margaret Hensch says designers are always looking for ways to set their designs apart from those of others by using visual and practical appeal. The Roundy is proving an exciting and flexible new tool in their arsenal.

"Builders and architects often aim to create visually appealing projects. The characteristic of a building that is most visible to the average person is the internal walls," Ms Hensch says.

"Cultural traditions vary from country to country, and these traditions give rise to different design opportunities. In New Zealand designers have taken the local laid-back lifestyle and incorporated it into building plans.

"From there, a simple bend in one man's paradigm led to this exciting new product — a not-so-ordinary

plasterboard shaped in a new way," she says.

Porirua-based developer of the new system, Walter Hensch, says he believes his new flexible plasterboard is the future of internal walls. It can enhance visual appeal, increase safety and expand design options for any building.

He says prior to The Roundy, the only other option for internal curved corners was to make them with fibrous plaster.

"This made curves expensive and time consuming," Mr Hensch says. "Other types of flexible plasterboards are in use, yes, but they can only be bent up to a certain radius, among several other limitations," he says.

### Patented technique

The Roundy is different. Mr Hensch says by applying his patented technique to the plasterboard currently used in the construction industry, CSI can create curves with a radius down to 200mm.

Not fracturing or cutting the plasterboard creates a seamless and joint-free corner. The system can be used for convex and concave corners.



He says The Roundy's soft lines allow smoother flow in narrow areas and increase the amount of usable floor space. CSI premanufactures the rounded plasterboard units to the required dimensions and then installs them on-site. All that is required prior to this is standard framing up to where The Roundy will be placed.

Once The Roundy is in place, the wall is ready for finishing.

The result of three years' research, The Roundy provides builders with a controlled product that fits easily into the New Zealand building practice of drywall lined stud walls.

"The Roundy's smart, integrated appearance provides more design options for architects, The Roundy's curves sustain less damage and consequently have low maintenance costs, they make for less wasted space and are safer for the physically challenged and elderly.

"In addition, they create a point of difference in a very competitive marketplace. I believe The Roundy Wall Plaster Board Unit system could be just what is required for the current trends in organic building design, as seen in some of the latest architectural design in New Zealand and around the world," he says.



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# Shhh . . . be quiet in my space

By Jenny Baker

**A**utex Insulation recently launched Quietspace, the latest addition to its range of thermal and acoustic insulation products.

Quietspace is a polyester fibre, sound-absorbing product for use in commercial design, available as the Quietspace Workstation screen, the Quietspace Panel or any combination of both.

Product manager Rob Croot says Quietspace is the result of extensive research and investment in new production technology. The product is also backed by Autex's 11 years' experience producing quality polyester-fibre insulation materials in New Zealand and Australia.

"Our long-held core philosophies of ecologically-friendly design and design freedom were among the key drivers that shaped the footprint and characteristics of the Quietspace range of products.

"We believe this new high-performance product offers architects and designers a leading edge in complete acoustic control without boundaries," he says.

Both the Quietspace Panel and Quietspace Workstation are engineered for "superior sound absorption and balanced acoustic design".

Mr Croot says the Quietspace Panel is ideal for fixed wall and ceiling applications, and can be either fabric faced or, using the latest digital printing technology, imprinted with any image or design as an acoustic detail, panel or artwork.

It is available as units measuring up to 2400mm of either 25mm or 50mm thickness, with performance up to NRC 1.0.

The Quietspace Workstation screen is a high-density, rigid polyester fibre panel designed for use as partition divider or pre-finished panel in office workstations.

Available in a range of earthy, modern colours and tones, the screen has a pinnable surface, is portable, and offers flexibility in workspace design.

The Quietspace range, like all Autex products, is manufactured from 100% polyester fibre. The company subscribes to a low "embodied energy" zero-waste policy, and collects and re-uses waste fibre wherever possible.

Any Autex product may consist of up to 70% previously recycled fibre, and all products are, in turn, fully recyclable. In addition, the company designed Quietspace products to minimise the use of component-based products that add cost and affect recycling.

Mr Croot says the Quietspace Workstation product is "the perfect example of dematerialisation, as it is the finished surface, doing away with the traditional use of substrates and fabrics".

Health-conscious consumers will find the Autex thermal bonding process a bonus — the polyester fibres do not require added chemical binders such as formaldehyde to bind, but binds by heat to form the structure of the material. "All of which means a user-friendly product which supports safer indoor quality," Mr Croot says.

Other products in the Autex stable are GreenStuf thermal insulation and QuietStuf acoustic insulation. The Autex range of products is manufactured under ISO 9001 quality control systems, and meet all requirements of the NZ and Australian Building Codes, including the AS1530 fire performance requirement. GreenStuf is fully BRANZ-appraised.

Mr Croot says all Autex products are non-carcinogenic, non-irritant, non-toxic, non-allergenic and not associated with any health concerns.

Autex Insulation is a division of the privately and New Zealand-owned Autex Industries Ltd. The company also operates in Australia and exports its products to 23 countries across the globe.

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# Roofing industry welcomes licensing

Association lobbying hard for members on vital issues

**W**hile some sectors of the construction industry remain unprepared for the impact of the Building Act 2004, the Roofing Association of New Zealand Inc (RANZ) has been actively preparing for one of the biggest changes in the history of construction in this country — occupational licensing.

RANZ was established as a national body in 1994, representing the interests of the roofing contracting industry and encompassing every type of roofing system available in New Zealand.

RANZ members represent more than 200 specialist professional roofing companies throughout New Zealand that are directly involved in the installation of roof systems, roof coating/restoration, repairs and fitting of related roofing products.

In addition to these primary members, there are more than 40 key manufacturers and suppliers of roofing products that are associate members of the association, along with industry service providers.

RANZ is proactive in ensuring New Zealand has a more professional, well trained, skilled and qualified industry so that, collectively, quality installation is achieved.

The installation of a quality roofing system for a home or business is a substantial investment, and RANZ encourages people to use a member of the association rather than risk employing an incompetent tradesperson.

When looking for a professional roofing company, the association says for peace of mind one of its members should be used.

Contractors wishing to join the association must submit to an admission process that ensures they meet the high standards of professionalism required of member companies.

## Changes coming

With roofing a restricted trade where regulation will be required under the Act, RANZ is working closely with the Department of Building and Housing on the



development of the Licensed Building Practitioner licences and the direction the process takes as it applies to roofing.

Licensing is welcomed by the roofing industry which views it as a way to flush out the cowboy operators who have given roofing a bad name in the past.

When licensing becomes voluntary in 2008 (mandatory from 2011) the industry hopes to have avoided a scramble from its members to become qualified as there has been a steady stream of roofers registering with the ITO for the National Certificate in Roofing in the past two years.

In other areas the Association also lobbies hard for its members on industry training, health and safety, technical education, contractual issues and membership support.

## Deluge of compliance

To assist members deal with the deluge of compliance and new legislation emanating from the Building Act 2004, recent RANZ conferences have been geared to assisting contractors deal with a raft of issues causing headaches for contractors, such as E2/AS1 — sometimes called the weathertightness solution — and a number of other issues related to the new legislation.

One of the reasons RANZ is so supportive of the licensing of roofers under the Building Act 2004 is that it will become extremely difficult for “cowboy” operators in roofing to survive with licensed inspection of work becoming law.

When home owners or building contractors are looking to have a new roof installed or a roof replaced, they shouldn't be tempted by cheap deals or products that seem to be inexpensive, or the advice of door knockers commenting on the appearance of a roof and offering to fix it.

And they should always obtain some comparative quotes and ask RANZ for a referral of members operating in the area.

In New Zealand's environment, location is always a factor that must be taken into account. Check if there are extreme conditions that could cause corrosion or breakdown of products before deciding what type of roof is best for a specific situation.

Aesthetics should be secondary to the performance and durability of the roofing material.

Look out for a warranty on the product and then find a reputable company to install the roof. RANZ provides referrals of members who operate in specific areas.

There are many types of roofing products on the market, from long run steel, metal tiles, concrete and clay tiles, membrane, torch-on membrane, shingles, slate and others.

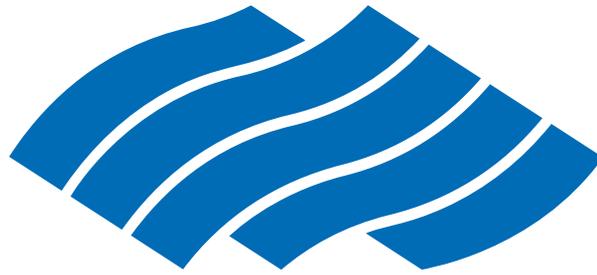
When purchasing a new roof there are a few things that should be taken into consideration, because once the roof is on it cannot be removed and replaced cheaply.

For example, for better sound insulation qualities look for a concrete tile or slate roof. Darker coloured roofs are affected by heat more than light colours so they can crack and creak — known as thermal expansion — during sudden changes in the weather.

Some roofing materials are warranted for 50 years, although there are conditions relating to the maintenance frequency.

Some materials will last longer than others in given situations, such as zinc, copper and concrete which, when installed in the right location, can last for decades.

Incorrect installation can result in rapid breakdown of the materials.



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## Three-year study to explore best green roof design

University of Auckland engineering student Emily Voyde is embarking on a three-year study to find the most suitable materials to use in "green roofs" in Auckland City.

Ms Voyde, 23, has received a Top Achiever Doctoral Scholarship to fund her study.

She is the first female Maori PhD student in the University's Faculty of Engineering, and the only PhD student assigned to conduct research on Auckland City's only green roof, which was built on top of the university's engineering building in September last year with funding from the Auckland Regional Council (ARC).

"The main purpose of a green roof is to reduce the volume of stormwater meeting our waterways, but it also benefits air quality, insulation and attracts biodiversity to the city," Ms Voyde says.

"My goal is to find the most effective combination of plants and substrates that release the most amount of water back into the atmosphere in Auckland's conditions."

Her study is looking at materials to retrofit existing commercial buildings with green roofs. Because of this, the materials must be low-cost, low-maintenance and very light in weight. Soils are not used in the study because they are too heavy for most existing buildings.

Ms Voyde will focus on native plants and locally sourced substrates, such as pumice and zeolites.

Using her results, she will model the environmental impacts if green roofs were installed across Auckland City.

The results will feed into the Faculty's overall aim of producing design guidelines for the ARC on retrofitting green roofs.

The Top Achiever Doctoral Scholarships are funded by the Government. Scholars receive an annual stipend of \$25,000 for up to three years towards their PhD study, course fees and conference funding.

## Hundreds earn ACC Workplace Safety Discount

Hundreds of companies have earned the right to an ACC discount through completing a self-assessment course.

The ACC Workplace Safety Discount (WSD) scheme was launched in the residential construction sector in September 2006.

Since then, more than 580 residential construction small businesses or self-employed contractors have earned the right to a 10% discount off their workplace ACC levies.

In order to do this, they have successfully completed the self-assessment booklet and/or have attended the four-hour, ACC-subsidised (free) WSD Site Safe training programme.

In all, more than 1000 builders have attended the training.

The ACC's Jennifer O'Loughlin says it was pleasing to speak to many members of the RMBF and the CBANZ at their respective association conferences this year who had completed the process.

Some of the positive feedback received included:

- communication on site had been vastly improved, leading to improved production,
- the course had fulfilled the requirement of some councils and other principal contractors of implementing a safety management system,
- an increased awareness of hazards. The programme had also encouraged young workers to speak up about possible hazards they may previously have ignored,
- Department of Labour health and safety inspectors supported the initiative, and
- the free training was very informative.

If you have further feedback or are interested in finding out more about the discount programme, please contact Jennifer O'Loughlin on 09 915 8142, or go to [www.acc.co.nz/wsd](http://www.acc.co.nz/wsd).

To find out more about the free training course, visit Site Safe at [www.sitesafe.org.nz](http://www.sitesafe.org.nz) or call 0800 222 776.

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You could be eligible to take a SiteSafe safety training workshop. You'd then be able to apply to rub 10% off the work component of your ACC levy.

Check your eligibility and download an application form at [www.acc.co.nz/wsd](http://www.acc.co.nz/wsd), or call SiteSafe on 04 499 2509 to enrol for training FREE of charge.

# Directorship offered to roofing excellence award winner

## Matamata company recognises talent and dedication

**J**ames Putt of Matamata has received the 2007 Dimond Award for Excellence in Roofing at the annual conference of the Roofing Association of New Zealand (RANZ) in Auckland last month.

Dimond general manager Brad Bridges presented the award and prize money of \$3000 to James, and summed up by saying the award was easy to support.

"Dimond believes in supporting industry and encouraging excellence in roofers. I am delighted to hand over this award to James who clearly demonstrated great leadership and skill during his metal roofing and cladding apprenticeship."

James, who works for Comag in Matamata, was clearly delighted with his medal and financial windfall.

### 'Just awesome'

"This is just awesome. It was unexpected and just great to win. I am really looking forward to the next few years, as I just want to keep learning and improving my work."

Plumbing, Gasfitting, Drainlaying and Roofing ITO chief executive Ian Elliott says the ITO is delighted James won the award.

"The pursuit of excellence is a key component of how Dimond and the ITO both work," he says.

Dimond and the ITO set up the award in 2005 to promote and support quality work in roofing. It is



James Putt (left) of Comag Ltd receives the 2007 Dimond Award for Excellence in Roofing.

awarded to the apprentice who demonstrates an excellent standard of practical on-site workmanship, great communications and leadership skills.

He or she must be a team player who works well together with colleagues and the community.

The winner must be within the top range of practical training and competency assessments gained during their off-job course.

James, who started his apprenticeship with Comag in

Matamata, typifies the hard working dedicated apprentice.

Comments from colleagues, tutors and judges include: "James is innovative and dedicated. He is committed and hard working. James works well with others, leading by example."

Comag has recognised his talent and dedication by inviting James to join the company as an owner/working director.



The roofing industry has become increasingly aware of the need to supply the highest quality products to meet the demands of an ever more discerning market.

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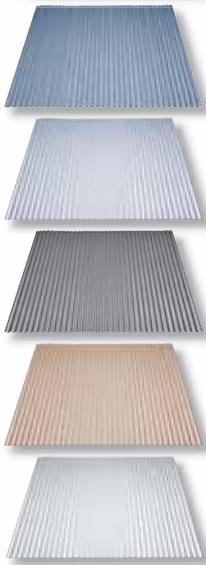


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Mini Orb® is great to work with because you can print it, cut it, shape it or post-paint it in any colour you like. In fact, because Mini Orb® is so versatile, you can really let your imagination run wild.

And because it's long run, there are other benefits too. These include placing joints wherever **you** want them, the ability to process pre-cut sheets for small jobs in non-ferrous metals, and the ability to perforate Mini Orb® for acoustic applications.

And just to round things off, Mini Orb® is available in a great range of substrates and stylish finishes. Galvsteel, Zinalume, Colorsteel, Copper, Stainless Steel, VM Zinc and Aluminium will all visually enhance your project and deliver durability and reliability as well.

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# Going Barefoot in Hawaii



It was perfect timing — just as the temperatures started to drop in New Zealand the Carters Advantage Barefoot group were packing their swimsuits and getting ready for the sun, sand and surf on the island of Oahu, Hawaii.

The group was welcomed with perfect weather and a traditional flower lei, then transported to the magnificent Hilton Hawaiian Village Beach Resort and Spa, located right on Waikiki Beach.

Monday arrived and the fun started with an outdoor Welcome Cocktail Party. Participants learned how to dance the Hula, create their own flower lei, have a tattoo or try the traditional art of "poi pounding", all while enjoying tropical cocktails as the sun set.

Being in Hawaii set the perfect theme for the Barefoot Beach Party, held at the famous Pink Palace. The event caused many a hotel guest to turn their head as the group arrived in costume and some unusual hula creations were seen! A great band had everyone kicking up their heels.

A trip to Hawaii wouldn't be complete without sampling a traditional I'uau. Everyone had the opportunity to taste this unique style of food preparation, and enjoyed a Pacific extravaganza of dance from seven Pacific Island nations after dinner.

An island such as Hawaii, with its colourful history and culture, is the perfect destination for optional activities, and many took the opportunity of participating in a tour of Pearl Harbour or circumnavigating the island. For some, the call of the outlet shopping mall was too great and many a great bargain was purchased.

Carters ensured the week in paradise finished on a high note with its farewell function held on board the famous Battleship Missouri, the location of the signing of the Japanese surrender, signalling the end of World War II.

The Barefoot group enjoyed entertainment from the Liberty Belles, as well as the opportunity to look around this historic vessel.

The evening was made all the more special as Alan Bones from Carter Holt Harvey Woodproducts performed the ceremonial flag lowering at sunset, and was presented with the American flag that was flown on the 60th anniversary of the signing of the peace treaty.

It wasn't long before the sun was setting and the week in Hawaii came to an end. If you were one of the lucky



*Above: The view of Waikiki from Diamond Head.*

*Right: Pearl Harbour.*

*Below: The Hilton Hawaiian Village Beach Resort.*



ones to walk Barefoot along Waikiki Beach then we hope you had a great time.

To those who were not able to join Carters, there is always next year. Carters Advantage is excited to announce that Barefoot 2008 will take off to the captivating country of Vietnam.

This gracious and graceful location teeming with natural beauty and culture will be a unique and interesting destination for all who attend.

So start saving those Advantage points — Carters Barefoot Vietnam 2008 awaits . . .



# Painting a different picture

Plant oil ingredients ensure healthy paint option

**P**ainting can be nothing but a headache with toxic fumes getting up your nose and harming you and your family's health.

It's not a job anyone really relishes — even if someone else does it for you — with the disruption and lingering fumes.

However, there is always a big element of satisfaction with the transformation you have achieved. But there's also a downside in terms of the impact on the environment and your health, with chemical paints having an effect even after the job is completed.

Bio Paints are naturally-based products that paint quite another picture, in terms of making the job more pleasant and protecting long-term health and the health of the environment.

Based on ingredients obtained from plant oils, tree resins and waxes, Bio Paints are a safe alternative to conventional paints.

Bio Paints managing director Tony Mount says major paint brands have played on the green image but, in his opinion, they're really on quite flimsy ground as they only go part way.

## 'Minimal residual effect'

"With Bio Paints there is minimal residual effect on the environment, and they are safer to use whilst, at the same time, being better for your family's health," he says.

With the recent trends in "green awareness" making it eco chic, some might imagine Bio Paints to be a new development.

"Bio Paints have been producing and selling natural finishes in New Zealand for more than 16 years," Mr Mount says.

"We import some of our products from Germany, a country that developed natural paint products some 30 or more years ago. This was back in the 1970s when environmental awareness really began to awaken.

"We think of ourselves as 'Clean Green New Zealanders' but, in this case, Germany was well ahead of us.



*Bio Paints: The naturally beautiful finish.*

"'Green Washing' is a term that has recently emerged, the environmental equivalent of 'White Washing' in politics. If we're honest, many of us just pay lip service to the green cause.

"We'd rather not compromise the environment but when it comes to decorating, neither do we want to compromise the quality and durability of the job."

Mr Mount offers some convincing assurances on these accounts. "Providing you do the usual proper preparation you can expect a high quality finish. With Bio Paints you get a superb finish with the added bonus of maintaining the balance of nature and helping maintain your family's health."

**The issues are not just the immediate ones of toxic emissions and having to breathe in harmful fumes while the job is being done. The negative effects of painting with chemicals can be longer term than that.**

The issues are not just the immediate ones of toxic emissions and having to breathe in harmful fumes while the job is being done. The negative effects of painting with chemicals can be longer term than that.

Emissions can be released long after the user has finished painting, particularly in the first few weeks,

but it could be for the full duration a chemical paint is on the wall.

Studies are ongoing to confirm just how long these harmful emissions continue. Creating safer paint finishes is a careful balance between making products that perform well and endure, but that are as safe as possible.

When asked how well accepted Bio Paints have been, he says more and more painters are becoming aware of the health dangers within their business and, despite strong allegiances to their old paint companies, there is a growing awareness and acceptance of Bio Paints.

"Some of them say they don't like the citrus smell of Bio Paints and actually prefer the chemical smell. Others have been known to get withdrawal symptoms when they take a break from working with some of the toxins.

"Breathing in these fumes can be harmful and there is a growing body of evidence that there are some

pretty serious diseases linked to the long-term use of chemical paints.

"It's their choice and yours but, now with Bio Paints, there is another, more natural choice for consumers."

## Smart flushing loos combat water price hike

**A**ustralian-made smart flushing toilets could be just the ticket for Aucklanders seeking to combat increased water charges.

Designed to help reduce water use in drought-stricken Australia, the new generation dual-flush toilets have the potential to save tens of thousands of litres a year.

“Water is an increasingly scarce commodity and the trend worldwide is to use less and be more careful with it,” according to Caroma Industries NZ general manager Scott Simpson.

“For Aucklanders wanting to beat water price hikes, it makes sense to install water-efficient loos. It’s all about making water work harder and using less,” he says.

“Caroma’s Smartflush toilet suites use just 4.5 litres for a full and thorough flush as opposed to the old style single flush cisterns that can use 11 litres or more.

“Most existing dual flush toilets use at least 6 litres, so reducing it down to just 4.5 litres for a full flush is a huge saving.

“For an average household the saving could be up to 35,000 litres a year.

“It just makes sense to take advantage of the new technology when building or renovating, especially when the new loos are no more expensive than the old inefficient models,” he says.



## Energy-efficient solar panels fully recyclable

**A**zzuro Solar is New Zealand’s fastest growing solar water heating company and a leading supplier of evacuated tubes to the residential and commercial market.

Its systems have an exceptional working reliability and long service life, especially when compared with standard flat panel collectors. They come with a seven-year warranty and five-year service plan, ensuring customers receive extensive ongoing support.

The systems can easily be individually replaced without needing to decommission the whole system. The evacuated tube collectors minimise heat loss which significantly improves their efficiency and performance when compared to flat panel collector technology.

The tube collectors are one of the most energy-efficient solar water heating panels available worldwide.

The company is committed to sustainable business practices, and its evacuated tube systems can be fully recycled, reducing the amount of waste going to landfill.

## Construction trainees join together for Outward Bound

**I**n June a group of apprentices from the construction sector were given a unique opportunity to share the life-changing Outward Bound experience on two customised Outward Bound watches.

An initiative of the BETA (Built Environment Training Alliance) group of ITOs, the objective of sending a group of construction apprentices on the 21-day Outward Bound course was to help develop young tradespeople into industry leaders for the future.

Three BCITO specialist trades apprentices were awarded BCITO scholarships to attend the course alongside 24 other apprentices from construction-related industry training organisations. They joined three Registered Master Builders Carters 2006 Apprentice of the Year winners.

Outward Bound is based in Anakiwa in the Marlborough Sounds, and was established in 1962. The 21-day classic programme focuses on the development of self awareness and inner strength through a wide range of activities involving physical challenges, social sharing and creative expression.

Hamish Furniss, a BCITO frame and truss apprentice from PlaceMakers in Hamilton, said he arrived in Anakiwa and was blown away right from the beginning.

“When I arrived in Anakiwa I was a bit nervous and I didn’t know what to expect. They welcomed us with a powhiri which was primo.”

Hamish says he knows the skills he learnt on the course will help him in his life and also in his workplace.

“We learnt about self confidence and self belief. I know I can achieve a lot — the hardest part can be motivating myself to get going. Once I’ve done that the rest is easy.”

Hamish also learnt about the value of constructive criticism. “I learnt how to take feedback without it getting me down. Now I know how to turn it to my advantage”.

The course was also a lot of fun. “I loved the day out sailing and the whole crew getting on together. It was an awesome experience and I would definitely come back to Outward Bound again if I get the chance. I encourage others to give it a go if they get the opportunity.”

BCITO apprentices Trevor Waaka from R & R Plasterers Ltd, and Gray Nelson from Construction Techniques Ltd were also awarded BCITO scholarships to attend the course.



Back row (from left): AOY winners Simon Dumble, Andrew Meiklejohn and Michael Johnson. Front row: BCITO apprentices Gray Nelson, Hamish Furniss and Trevor Waaka.

# Leaky building decision — Builder 40% liable, Council 60% liable

**Tim Bates** of Auckland law firm Legal Vision reports on the liability held by individuals behind developer companies in leaky buildings cases



**A** new District Court decision of Judge Hubble — namely *Standen & Standen v Waitakere City Council & Others* — has found that the council ought to bear a 60% apportionment of liability for the repairs to a leaky building.

In February 2001 the Standens purchased from the Third Defendants (Mr and Mrs Ashwell) a 1950s brick and tile home in Green Bay, Auckland.

Mr and Mrs Ashwell had owned the property since 1992, but in 1998 they carried out extensive alterations in accordance with plans and specifications drawn up by the Fourth Defendant (architect Mr Little).

There were a lot of issues with settlement of the property as it did not have a code compliance certificate (CCC).

Correspondence passed between the respective solicitors acting on the sale of the property. Eventually, the purchaser agreed to settle without a CCC having

been issued on the property. Settlement and possession took place in April 2001.

Towards the end of 2001, the Standens noticed some cracking in the plaster, particularly at the junction of the new work with the old brick and tile building. Mr Alexander, a building consultant, was employed to look at the problem.

They received his report on March 25, 2002, and, at this point, they knew for the first time that this was a leaky building.

By July 2002, the Standens had completed the four items that had been holding back the issue of a CCC, and asked the council to carry out its final inspection.

A visual inspection was completed by the council in August 2002, and it was then obvious to them that the stucco finish had many faults as previously identified by Mr Alexander.

The principle failures which allowed water ingress into the walls of the house were the method of construction adopted for the roof apron flashings, head flashings and balustrade flashings. Plaster was also taken down to ground level without clearance.

The Standens then carried out \$115,000 worth of remedial works as recommended by Mr Alexander, and a CCC was eventually issued. These proceedings were then brought and Judge Hubble found in favour of the Standens as follows:

- The cleaning of the spouting or the failure to clean the spouting did not cause the water ingress issues at the house.
- The architect Mr Little was engaged merely to supply sufficient plans for the grant of resource and building consents. He was neither asked, nor required, to produce detailed drawings.

His fee (\$4000) was a fraction of what it would be if he was a supervising architect called upon to provide full working drawings. It was possible for the house he designed to have been built waterproof.

- The Standens must accept some responsibility for entering into the contract when a CCC had not actually been issued. Judge Hubble assessed this as 10% contributory negligence.

- The defendants were unable to prove to the requisite

burden that any delay in repairs caused additional damage.

- The council was negligent in issuing the original building consents. If the consent plans had included properly detailed cross sections of decks and deck barriers, they would have showed a sloped top (not a flat top), a break between the balustrade walls and the deck membrane, and the east deck subfloor ventilation.
- The council accepted that the architect was not asked for detailing in crucial areas, and subsequent inspections failed to ensure that the deck balustrades were probably waterproofed.
- There was no break at the base of the walls to the decks, there was insufficient height differential between the internal and external decks, and the ground, and there were no head flashings on the joinery in some areas.

## Council and builder found negligent

Judge Hubble therefore concluded that the council had been negligent in missing these defects in construction in its 12 inspections.

It was concluded that Mr Ashwell had been negligent as the builder in failing to ensure that the house alteration had been done in accordance with the building code, and that the council and the builder ought to share the apportionment of liability as regards every construction defect bar the front entrance up-stand and the foundation.

In respect of these two defects, the council was totally in control, and so was found solely responsible for them.

In conclusion, the council was found 60% liable for the cost of the remedial works, whereas the builder was found 40% liable.

This now stands as the highest apportionment yet to be found against a council on a direct basis. Prior to this it was 33% in the decision of *Chase v De Groot*.

Previously, a council may have paid out as much, but only because other liable parties were unable to meet their share of liability due to impecuniosity.

It remains to be seen whether this finding will be appealed by the council.



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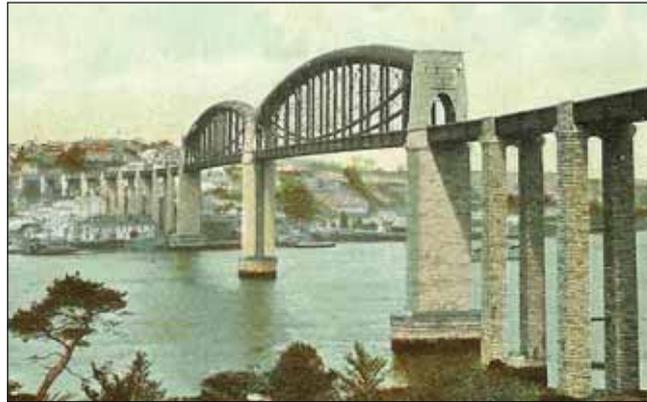
Legal Vision specialises in providing legal advice to the Building Industry.

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# I K Brunel's masterpiece

Dr Kerry Rodgers salutes "a Victorian bloke in a tall hat"



The Royal Albert Bridge, circa 1900.

It was a late autumn day in 1973. We had just left Plymouth and turned a corner on the A38. There it was branded with letters over two metres high — "I K BRUNEL / ENGINEER / 1859". It was the Royal Albert Bridge.

The difficulty of its construction rates as the high point in an engineering feat that saw the Great Western Railway become the wonder of the Victorian world.

I had grown up on a diet of Isambard Kingdom Brunel. I learned of his Great Western and Great Eastern. I knew he had flown in the face of convention and insisted on a seven foot gauge for his railway.

I even knew of his attempt to launch an air-powered railway in Cornwall. Now on that fateful day in 1973 I finally got to see his remarkable Saltash bridge.

## Going West

The Royal Albert is one of Brunel's bridges that still carries trains in England's West Country. He designed it



The Royal Albert Bridge under construction.

Image: Science Museum

in 1855 after Parliament rejected his plan for a train ferry across the Tamar.

It consists of two main 139m spans, some 30m above mean high spring tide, and 17 shorter approach spans. It carries trains in and out of Cornwall across the River Tamar between Plymouth and Saltash

Brunel understood that passengers wanted to enjoy the romance of rail travel. He believed trains should appear to float over the landscape in unencumbered ease. To this end he built the numerous viaducts, tunnels, embankments and even sea defences that characterise his Great Western Railway.

The Royal Albert Bridge was not only his greatest challenge but his greatest contribution to his illusion.

## Spanning the divide

Brunel's design consists of a two-span bowstring suspension bridge with a single rail track. Head room for sailing ships required a central pier. He solved this difficulty by constructing a Great Cylinder that he

floated into position and sunk to act as a coffer dam.

Each of two main spans consists of a compressed wrought iron tubular arch with a parabolic profile. This is combined with a suspension chain in tension that acts to hold in the bridge abutments. The catenary curve of the chain is such that the

tube's rise equals the dip in the chain.

Between these two chords, cross bracing and suspension members beneath the chains carry the railway deck.

The spans were constructed on the Devon foreshore and floated into position. The brickwork of each pier was built up one metre at a time, and the spans raised by this amount. This was repeated until the design height was

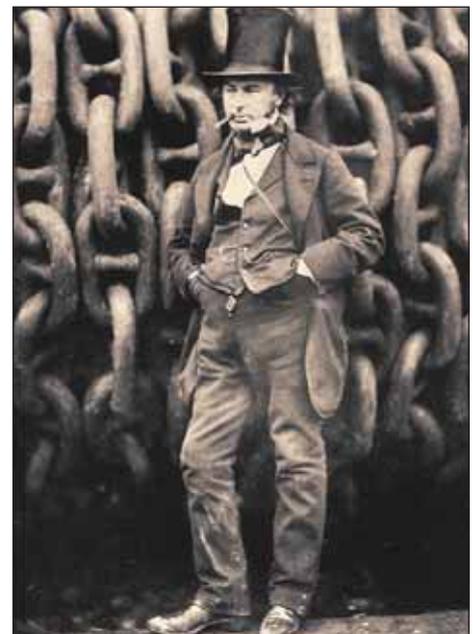
achieved.

## Live fast . . .

On September 5, 1859, Brunel's 40-cigar-a-day habit caught up with him. He collapsed on the deck of his almost completed Great Eastern and died two days later. His Saltash bridge had been opened only a few weeks earlier by the Prince Regent.

His achievements had fired the imagination of Victorian Britain. Not only did the rich and famous assemble en masse for his funeral but several thousand of his railway workers arrived to pay their respects.

In 2002 BBC viewers voted Brunel the second most important Briton of all time after Winston Churchill. A 2006 bicentenary celebration can be found at [www.royalalbertbridge.co.uk](http://www.royalalbertbridge.co.uk).



I K Brunel: "...a Victorian bloke in a tall hat"... Jeremy Clarkson.

# What's On the Web?



Building Today launches its new-look web site on July 25.

We hope to make this your first port of call if you need to find out anything about the New Zealand construction industry — along with being able to use the resources contained in Building Today magazine, the official magazine of the Registered Master Builders Federation.

We'll be asking you, our readers, to give us your opinion on vital industry issues in our Quick Poll, as well as presenting issues for discussion on our Industry Forum.

It's all about user interaction, so make sure you get

online and have your say!

We welcome any feedback you can give us to help make the site even more useful to you.

In the meantime, there's plenty of chances to win a flash Bosch Rockbox to keep your building site rocking!

So visit [www.buildingtoday.co.nz](http://www.buildingtoday.co.nz) from July 25, and we'll give you heaps of reasons to keep coming back for more!



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### Tip 39. General fixing requirements for ceiling diaphragms

- Linings shall be installed over the entire area of the diaphragm.
- Fastening shall be no less than 12mm from sheet edges.
- Sheets shall be supported by framing members (eg, ceiling battens) spaced at no more than 450mm centres for 10mm GIB plasterboard and at no more than 600mm centres for 13mm GIB plasterboard.
- Sheets within the diaphragm area may be fastened and finished conventionally in accordance with methods described on page 79 of the GIB Site Guide. All joints shall be paper tape reinforced and stopped. It is recommended that sheet butt joints are formed off framing and back-blocked.
- When installing a ceiling diaphragm, it is important that the sheet sizes comply with Figure 1. This may require cutting the first sheet to ensure that the final sheet is 600mm or greater in width.
- Use full width sheets where possible. At least 900mm wide sheets with a length not less than 1800mm shall be used. Sheets less than 900mm wide but no less than 600mm may be used provided all joints with adjacent sheets are back-blocked (Refer Figure 1).
- Openings are allowed within the middle third of the diaphragm's length and width. Fixing of sheet material to opening trimmers shall be at 150mm centres. Neither opening dimension shall exceed a third of the diaphragm width. Larger openings, or openings in other locations, require specific engineering design.
- Fasteners are placed at 150mm centres around the ceiling diaphragm starting at 50mm and 150mm from the sheet corners.
- GIB ceiling diaphragms are strong and stiff horizontal bracing elements which effectively transfer loads over large distances. They are used to space bracing lines further apart than 5 metres (single top plate), or 6 metres (double top plate). A ceiling diaphragm shall be square or rectangular. Its length shall not exceed twice its width — the width being measured horizontally between supporting walls. Ceiling diaphragms under light and heavy roofs are required to comply with NZS3604:1999.

Figure 1

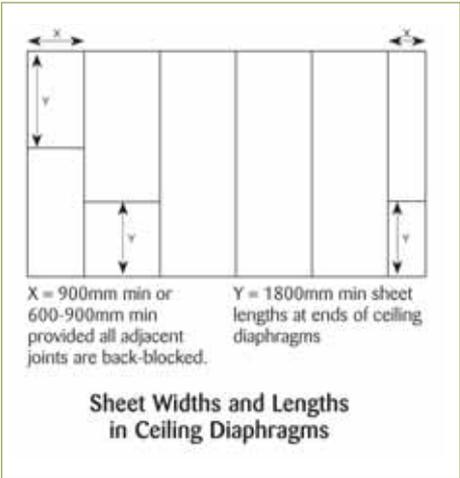
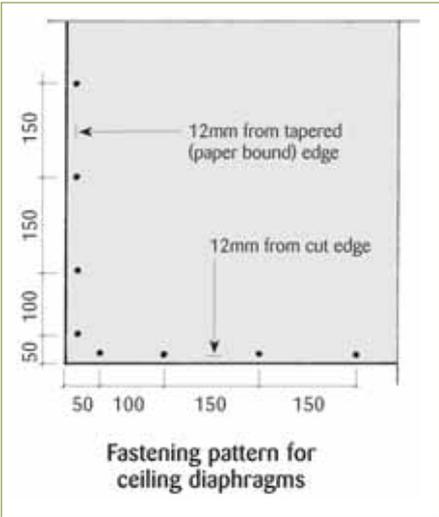


Figure 2



# NO BRAINER



RRP \$185

**13mm GIB Ultraline® PLUS will produce a superior ceiling for nearly the same price as 10mm GIB Ultraline®. Buy \$1000<sub>excl GST</sub> or more of the stuff and we'll give you a **FREE** handheld GPS unit. It's a real no brainer.**



See your copy of Trade Leader, page 12, for more information on 13mm GIB Ultraline® PLUS.

Entry is automatic on invoices raised on 13mm GIB Ultraline® PLUS between 1 June and 31 July 2007 and for trade account holders only. One handheld GPS per qualifying customer. GPS units will be distributed in August.

**CARTERS**