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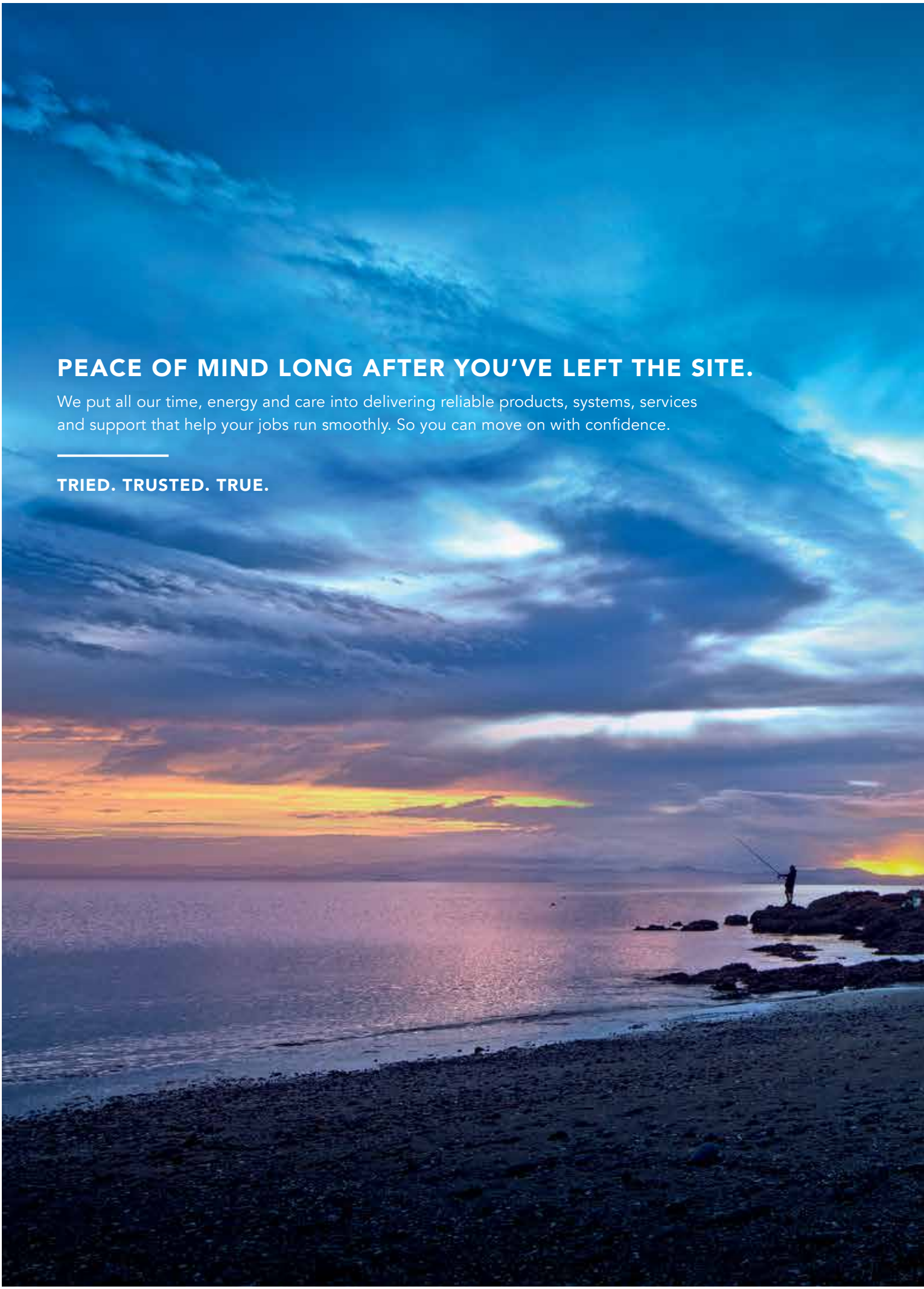
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FROM THE EDITOR

There's plenty to ponder in this month's issue, with four Industry Opinion articles to get you thinking about what's going on in the New Zealand construction scene.

Columnist Mike Fox wonders whether petty enforcement is driving builders away from the industry, while other topics include weatherboards, retentions and the Construction Contracts Amendment Bill, and the falls from height campaign.

We've also got behind the wheel of the latest Toyota HiAce ZX van to put it through its paces, in particular, focusing on the model's innovative Vehicle Stability Control feature.

And our comprehensive Roofing feature story asks whether "warm" roofs are the way of the future.

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Setting the benchmark for building guarantees

Chief's Chat

By CEO David Kelly

When we ask our members what they value most in belonging to Registered Master Builders, there are three areas that are consistently mentioned by residential builders.

They are the strength of the Registered Master Builders brand, the marketing strength of the House of the Year, and the importance of being able to offer the Master Build Guarantee.

Our brand has strong market recognition and consumer recognition, standing for quality building and professionalism.

The House of the Year continues to go from strength to strength as New Zealand's premier housing competition, with a reputation for the highest level of credibility with the public.

New benchmark for guarantees

And over the past few months we have been working on raising the bar with the Master Build Guarantees to establish a new benchmark.

In an age where home owners are increasingly aware of the need to protect their most valuable asset, we believe that building guarantees are a critical point of difference that we offer.

Specifically, we have increased the claim values and extended the length of some guarantees, while minimising any increase in premium or, in some cases, actually reducing it.

Ours is the only product in the market that has the benefit of more than 25 years in the New Zealand residential sector.

This gives us insights and a knowledge base that simply cannot be matched by others.

Whether a small alteration/addition or a high-end new build, the suite of Master Build Guarantees has flexibility of cover to suit any residential building project.

This gives consumers choice, which is an important point of difference for our members in a competitive market.

Increasingly, governments of whatever persuasion want to strengthen protection for consumers.

With our new guarantees we are leading the way and adding value to our customers.

Apprentice of the Year — a win-win for apprentices and employers

Licensed Renovations owner Russell Clark says he encourages his employees to enter the Apprentice of the Year competition because it's good for his business, and it's good for the apprentices.

Mr Clark's company has been involved with the competition for a number of years, with employee Cody Webby, winning the Auckland Registered Master Builders Carters 2014 Apprentice of the Year. Cody is a great example of the positive impact the competition can have on an apprentice.

"As a result of the competition, Cody is now 100% focused," Mr Clark says. "He is now really thinking about where he wants to be. It's got him to start thinking about what the building industry is going to look like in 10, 20 and 50 years' time when he has his own company."

The competition introduces apprentices to the wider parts of the building industry and its stakeholders.

"It shows apprentices it's not just about their little van and their little building site — there's a big industry out there, and it excites them and gives them vision," Mr Clark says. "These young guys will be our leaders one day. They will be building our rest homes!"

Mr Clark sees the benefits as being a real win-win for the business owner and the apprentice, and will continue to encourage his apprentices to take part.

The competition also introduces the apprentices to the Registered Master Builders Association. He sees this as another key part of the competition, introducing the young apprentices to the leaders in the industry.

Being a Master Builder is important for Licenced Renovations. "I love the support and the knowledge that you get through the Association, and obviously there are also the Master Build Guarantees," Mr Clark says.

"It's a pretty hard market out there still, and so it's nice to have people around that have been there and done that. The people that manage everything are so easy to deal with.

I've taken Cody to a few Registered Master Builders meetings now and to a business networking group too. If he wasn't in the Apprentice of the Year competition I probably wouldn't have given him the opportunity."

Licensed Renovations owner Russell Clark and Cody Webby.

The competition opens career opportunities for all entrants. "I'd hire anyone who has been involved with AOoY at the drop of a hat. The experience is just so rewarding. You want someone who wants a career in the building industry."

Apprentices, employers and young people aspiring to be a part of the construction industry are encouraged to join the Facebook page at www.facebook.com/apprenticeoftheyear.

For more information visit www.apprenticeoftheyear.co.nz.

Owned by the Registered Master Builders Association, the Apprentice of the Year competition is made possible thanks to principal sponsor Carters, the Building and Construction Industry Training Organisation (BCITO), and supporting sponsors the Ministry of Business, Innovation and Employment (MBIE) and APL through their Altherm, First and Vantage brands.

New national sponsor joins Apprentice of the Year

The Registered Master Builders Association is pleased to announce that APL, through its brands Altherm, First and Vantage, will be joining the Apprentice of the Year as a national supporting sponsor.

"The Apprentice of the Year has grown significantly over the past 10 years, and the time was right to bring another organisation on board to assist us with taking this competition to the next level," RMBA chief executive David Kelly says.

"We've been incredibly fortunate to enjoy fantastic, continuing support through our principle sponsor Carters, partner BCITO and supporting sponsor MBIE — and we look forward to APL becoming part of this group and bringing their perspective to this important segment of our industry."

APL general marketing manager Shane Walden says his company is thrilled to maintain its emphasis on supporting up-and-coming people in the building and design professions.

"The APL window brands — Altherm, First and Vantage — have had long associations with graduate development programmes in the architecture profession.

"So it seemed a good fit for us to join the Apprentice of the Year competition and make another investment in building our industry for the future. It's a sponsorship opportunity that we appreciate and value," Mr Walden says.

Local events for the 2015 Registered Master Builders Carters Apprentice of the Year commence on August 20, and the National Finals will take place on October 8-9 at The Cloud in Auckland.

Residential remedy — the 'new face' of medical facilities

A demanding brief within a difficult surrounding — that's the task that Leighs Construction Ltd, along with Wilson & Hill Architects Ltd, Lewis Bradford Consulting Engineers, Pedersen Read Ltd, Powell Fenwick Consultants and The Health Planner took on when creating a new-look medical facility in the heart of suburbia.

Judges were in awe of the design, quality and finish of the building, and awarded the project a Gold Award and the winner of the Health Category at the 2015 New Zealand Commercial Project Awards.

"It is a carefully considered architectural design that sits in absolute harmony with the surrounding residential environment, proving that health facilities need not adhere to the somewhat clinical and cold designs of the past," was what the judges had to say about this project.

Shoehorned within a leafy residential section of Merivale, Christchurch, the brief was to create a fully serviced, state-of-the-art eye surgery that would be in harmony with its residential surroundings.

Creative thinking was required to accommodate the services fit out, which included two operating theatres, a large pre-operative area, post-operative rooms, clean and dirty utility rooms, recovery spaces, reception, staff and office areas, all on TC3 land.

The resource consent for the build had already been lodged and approved before the site work took place.

Landscape and layout were carefully considered on this design build project, with Leighs taking ownership of the full design and implementation to achieve the concept by dividing the structure into three elements.

The use of natural timber for the exterior cladding, and the decision to leave existing trees on the property, allowed the building to veer away from feeling like a commercial clinic and blend with the surrounding environment.

Alternative methods were also devised for the construction of the foundations, to reduce vibrations and disturbances to neighbouring properties.

Leighs Construction South Island operations manager Graeme Earl says the project was achieved to an exceptionally high standard, and the team was very pleased with the result.

"It has exceeded everyone's expectations. We had a great team of professional consultants and good leadership that pulled us through this challenging project," Mr Earl says.

Christchurch Eye Surgery is co-owned by nine surgeons, and is now one of the largest private eye surgeries in the South Island.

"The biggest benefit to Canterbury is that this building enables nine surgeons to work out of one facility, removing the need for duplication and maximising their time. They have access to some of the best and most expensive high-tech operating facilities around," Mr Earl says.

Trading Up

REGISTERED MASTER BUILDERS
HOUSE OF THE YEAR

Seamless renovation wins Manawatu/Wanganui region's Supreme Award

Justin Green was proud, happy and a little bit relieved when his new business, Alteration Specialists Manawatu, won the Manawatu/Wanganui Registered Master Builders 2015 Renovation of the Year.

Justin says that by entering the awards he opened his company's work up for judgement.

"Entering the awards means your work is scrutinised, and I think winning this shows the high quality of the workmanship we produce."

"This is a big deal for us," Mr Green says, "because Alteration Specialists has been around for 28 years, and the company has won House of the Year awards before. But while I've been involved here for six years, this is the first year Alteration Specialists has won an award under my wife Kyla's and my ownership."

The renovation opened up the back end of a 1930s bungalow weatherboard house, and added a large entertaining area, which includes an updated kitchen and a dining area. A deck was also built next to a newly installed swimming pool.

"The focus of the new area is entertaining and outdoor living. It's now the perfect spot for a dinner party or barbeque with friends as there is an abundance of space to sit and relax."

The job was very detailed, and a lot of time went into matching the new renovation with the existing home.

"We wanted the retention of the existing building to be high, and it was. Everything was matched in perfectly. Our goal was to make it impossible to tell where the old building finished and the new one began," Mr Green says.

The judges were impressed by the winning Renovation of the Year, saying it offered hidden complexities for the builder which were executed superbly.

"The integration of the renovation work into the existing structure of this home was carried out to the highest level. Attention to the smallest detail saw the builder achieve fantastic retention of character," they said.

"A great variety of materials and a well-executed kitchen provided a cohesive interior and exterior connection. Well thought out detailing offered careful alignment of timber through to high quality finishing and paint work — this renovation was a pleasure to judge."

Manawatu/Wanganui Registered Master Builders 2015 Renovation of the Year; Gold Award & Category Winner Mitre 10 Renovation Award $250,000 - $500,000 — Alteration Specialists Manawatu Ltd for a home in Palmerston North.

Mr Green says business advantages come with competing in House of the Year.

"It's about recognising the hard work that you put in, and being acknowledged by your industry. If you come away doing well, you prove that you can do quality work.

"We've been successful in the past with the awards, so I think we are really proving that the work we do is top quality."

"It's great to walk away from a job and see a home that a family will be much more comfortable living in."

The Awards are made possible through the support of PlaceMakers, Master Build Services, James Hardie, GIB, Nulook, SafetyMate, Carters, ITM, Plumbing World, Resene, Westpac and Mitre 10.

Complex design creates simple living

Peter Breen was pleased for his project manager, his foreman, and all the team involved when Breen Construction was named as winner of the Southern Registered Master Builders Supreme Award in the 2015 House of the Year competition.

The winning Wanaka house, which is now a family home, was "a complex detailed job," Mr Breen says.

"All the team have a lot of personal pride in their work, so I was pleased that they could have some formal recognition."

Mr Breen says it's nice to be back winning an award in the House of the Year competition.

"We won a National award last year, so it's nice to go back to back with another high quality project. It shows that we maintain our standards across the company with different teams of people, and it shows our consistency.

"It rewards all of the hard work that everyone puts in every day that doesn't normally get recognised."

Breen Construction enters the Registered Master Builders House of the Year Competition every year.

"It's great to be judged by your peers and others in the industry," he says. "We don't set out to win awards, we set out to satisfy our clients, but these awards are a bonus."

The winning home stood out from others in the category because of a number of impressive details that were unusual.

"There was a diverse range of materials used, including off-the-form finished concrete, extensive cedar claddings, central Otago schist and recycled restive timber beams and trusses.

"This required various techniques and methodologies, and considered forward planning and programming. It was an all-round technical build that required co-ordination and co-operation from all parties," Mr Breen says.

Sometimes it takes a lot of work to make things look simple, and this was the case with this home.

"It may look simple from the pictures, but a lot of detail was required to get it to where it is."

Supreme Award and Southern Registered Master Builders 2015 House of the Year; Gold Award & Category Winner Westpac New Home over $2 million; Heart of the Home Kitchen Award — The Breen Construction Company Ltd for a home in Wanaka.

The judges were impressed by the work involved, calling the house a "complex structure executed to a very high standard".

"This large house has defined wings for guests, family and gatherings, each with adjacent outside spaces tailored to sun, privacy and entertainment," they said.

"There are three separate wings integrated around a central courtyard, with three other outdoor living areas.

"Different building materials and complex junctions have been completed to a high standard. The result is a restrained elegance with design surprises and a comfortable ambience."

Mr Breen says there are business advantages that come with competing in House of the Year.

"It gets your name out there a bit more through the good work of Master Builders. It shows clients consistency, and gives them confidence that we can achieve the quality."

The Awards are made possible through the support of PlaceMakers, Master Build Services, James Hardie, GIB, Nulook, SafetyMate, Carters, ITM, Plumbing World, Resene, Westpac and Mitre 10.

Around the Regions

Auckland

New appointments in Auckland

Michael Lieshout was recently elected to lead the Auckland Branch of the Registered Master Builders Association for the next two years.

Former president Kieran Mallon stepped down after his two years of service in the role, and has offered to stay on the Board to lend his experience of the current Association restructure.

Mr Lieshout says his leadership and commitment to the restructure, and his assistance in getting other Associations across the line, has not gone unnoticed.

Tony Pexton was elected onto the Auckland Board in place of Tim Arlott, who stepped down last year following his relocation to Tauranga.

Mr Pexton has been extensively involved with the North Harbour sub-Branch over the past few years. He is currently judging entries in the House of the Year, a competition that his company has won multiple awards in.

"Tony is passionate about Master Builders, and we welcome him to the Auckland Board. I believe that Tony's input to the Board will be invaluable in the coming years," Mr Lieshout says.

Meanwhile, Waiheke Island has been awarded Auckland region sub-Branch status. After putting in a great deal of work recruiting the required number of members and holding successful meetings, the new sub-Branch will come into being at the start of 2016.

"We would like to thank Kevin O'Grady for his persistence and the time spent organising and promoting this," Mr Lieshout says.

Mr Grady has agreed to be the inaugural branch chair, and reminds "mainlanders" that they are always welcome at their meetings.

The RMBA also has a new Regional Services Manager. Jennifer Haraki has taken over the Auckland South and Gisborne areas, and is available to members for advice, help and assistance.

Ms Haraki joins the RMBA from the Auckland Council. She has spent a long time in the industry, and has a number of building-related qualifications, including the New Zealand Certificate in Building.

She can be contacted on 027 480 4055, or email jennifer.haraki@masterbuilder.org.nz.

Correction

Last month's issue referred to Willie Apiata as "Corporal". As he is no longer serving in the Army his title should have read "Mr".

Building Today apologises for the error.

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BRANZ study valuing sustainability

Do features such as solar hot water or more durable building materials add financial value to a house? BRANZ is investigating.

This study looks at how builders, designers, real estate agents, valuers and home buyers value sustainability and resilience features. The first-year findings from a two-year project are reported in BRANZ Study Report SR333 (2015) *Valuing sustainability and resilience features in housing*.

Sustainable homes have features that reduce their environmental impact. These features could include windows with improved thermal performance, energy-efficient lighting or heat transfer kits, but also other elements such as proximity to public transport.

Resilient homes, with features such as more durable building materials, perform well in disasters such as flooding or earthquakes, with lower recovery times and costs.

The research shows that:

- home buyers seldom value sustainability and resilience features over things such as a nicer kitchen,
- there is little help for people to value these features, and
- the premium paid on the resale of a house may not accurately reflect the value of the sustainability features in the home.

A pilot study commissioned by BRANZ looked at 1031 house sales in Nelson, including 13 houses with solar water heating.

Builders' views

Builders from 10 large firms were interviewed across Auckland, Christchurch and Tauranga. They did not generally see their role as giving advice, but as delivering what clients wanted (with exceptions based on things such as personal experience).

Few clients asked about sustainability and resilience, preferring to spend on kitchens and bathrooms. Builders mostly felt that sustainability and resilience features added little extra value, although most builders acknowledged not having much technical expertise in this area.

Agents and valuers

A survey of real estate agents and valuers focused on solar heating systems as a well-known and discrete example of a sustainability feature.

Agents generally believed that solar hot water and photovoltaic (PV) systems added between $2500 and $3200 in value to a house respectively. This is below installation cost.

Valuers' average estimates were higher, at $2400 to $3700 for solar hot water and $4300 to $6500 for PV systems.

A pilot study commissioned by BRANZ looked at 1031 house sales in Nelson, including 13 houses with solar water heating. The price difference, with all else held equal, was the premium for solar hot water.

Houses with solar hot water had a premium of 1.35% of house value, or an average $7250 per house, although the sample size was small and further work needs to be done.

Upcoming research

Year two of the BRANZ study will:

- calculate whole-of-life cost and benefits for sustainability and resilience features,
- further quantify how much the market is willing to pay for these features (versus what they are worth), and
- pilot an approach to upskill builders, real estate agents and valuers on the net benefits of these features.

BRANZ Study Report SR333 (2015) *Valuing sustainability and resilience features in housing* can be downloaded from www.branz.co.nz.

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NZ quantity surveyors join global coalition

The New Zealand Institute of Quantity Surveyors (NZIQS) has joined a new global movement established to create international standards in construction measurement.

The International Construction Measurement Standards (ICMS) Coalition was formed earlier this year by non-profit organisations representing construction industry professionals in more than 140 countries.

"We see this as a very valuable initiative in which New Zealand's construction measurement professionals — quantity surveyors — must play an active role," NZIQS president Jeremy Shearer says.

Collectively, the coalition aims to create over-arching international standards that will harmonise cost, classification and measurement definitions in order to enhance comparability, consistency, statistics and benchmarking of capital projects.

In an industry estimated to be worth a staggering $15 trillion by 2025, inconsistency in something as fundamental as construction measurement and reporting can create huge uncertainty, misunderstanding and risk.

"Establishing and being able to work with standardised, international guidelines will be good for the local quantity surveying profession, and for the wider New Zealand construction industry as a whole," Mr Shearer says.

The formation of the coalition marks the first time the global construction, project management, cost engineering and quantity surveying sectors have come together in this way to develop unifying standards which reflect and enhance the increasingly international construction market.

Prestigious concrete awards now open

Entries are now open for the 2015 Concrete³ Sustainability Awards. This is an opportunity to show how your concrete-based product, project, programme or initiative has contributed to New Zealand's sustainable built environment.

The Awards celebrate achievement at the highest level of construction by acknowledging excellence in the production or use of concrete across the environmental, economic or social aspects of sustainable development.

The 2012 Supreme Concrete³ Sustainability Award winner was Athfield Architects for its extensive refurbishment of the new Christchurch Civic Building on Hereford Street.

This project involved the transformation of what was the New Zealand Post Building into an architectural statement that added tremendous value to Christchurch.

In 2013, Nauhria Precast was recognised for its stunning use of precast concrete throughout the redevelopment of Hurstmere Green in Takapuna, Auckland.

The Award is sponsored by the Cement and Concrete Association of New Zealand (CCANZ). Entries close on Friday, September 4, 2015, and the winner will be announced at the New Zealand Concrete Industry Conference in October.

Full criteria and details can be found, along with an entry form, at www.sustainableconcrete.org.nz.

BRANZ

Are you Designing for Maintenance?

This is the publication every architect, designer, property manager and investor should read.

Designing for Maintenance details the key issues to consider during the design process so buildings can be effectively and economically maintained.

Packed with numerous photos, this book covers topics such as building performance, getting started on a project, guide to making buildings easier to maintain, selecting materials that could influence maintenance and what to consider when handing over a building.

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New technology could

Cutting-edge thermal technology mixed with building materials could save Kiwi home owners on energy costs by up to 16% each day, new research has found.

But Phase Change Materials, or PCMs, won't become a reality for most New Zealand homes until their cost comes down, according to the Auckland University researcher who used them in a recently-published study.

PCMs, typically either paraffin or fatty acid esters, are materials capable of storing and releasing large amounts of energy by melting and solidifying at a given temperature.

When added into building materials, PCMs can substantially increase the thermal mass of the building materials without noticeably increasing their actual size.

"By having a large thermal mass, the temperature fluctuation inside the building can be significantly reduced, hence increasing the thermal comfort of the building, while also reducing the amount of electricity consumed for heating and cooling," Professor Mohammed Farid, of Auckland University's Department of Chemical and Materials Engineering says.

While solar energy was a form of energy often overlooked — the amount received by a typical residential building on a daily basis is many times more than its total daily energy requirement — this energy

cut energy costs significantly

was largely wasted in most modern buildings due to the lack of heat storage capability.

"By being able to store solar energy as latent heat using PCMs during the day in winter, the stored heat can then be released at night upon solidification, which provides passive heating," Dr Farid says.

In summer, the PCM stores the coolness at night and absorbs the heat during the day, hence also providing cooling.

Need for encapsulation

Realising that these materials needed to be encapsulated to prevent PCM from leaking out when melted, Dr Farid and his team developed its own microencapsulation technology, allowing it to be mixed with building materials in an easy way.

In an experiment, the researchers built two small huts — one lined with the PCM technology and another without it — and observed the indoor temperatures.

They found that the temperature of the PCM hut took between three and five hours longer to drop down to 17C at night, because its boards were slowly releasing the heat they'd absorbed earlier in the day.

In another test, a freezer was fitted with energy storage trays containing a eutectic solution of ammonium chloride, which had a melting point of minus 15°C.

"For the freezer application, the objective was not to save energy but improve food storage, especially in places where regular power cuts are experienced," Dr Farid says.

"However, in New Zealand, cost saving will be related to being able to not use electricity when it is expensive."

Based on New Zealand electricity rates, savings of up to 16.5 % and 62.64% per day were achieved for the freezer and building applications respectively.

"The benefits of applying PCMs in buildings is not limited to capturing day solar heat in winter and night coolness in summer, but also to create peak load shifting," Dr Farid says.

"When you have PCMs in the walls of your homes you could switch off heating or air-conditioning for extended periods without having the indoor temperature changing significantly.

"This means you could use electricity at low peak periods, reducing your electricity bills and contributing to levelling electricity peak load."

Because of its mild weather, PCMs could be ideal for countries such as New Zealand — and some modern buildings were already benefiting from it.

But there was some way to go yet before it could become accessible to most people.

"The cost of PCMs needs to be reduced — and it must be used wisely to make it economical," Dr Farid says.

His findings have been published in the journal *Energy*.

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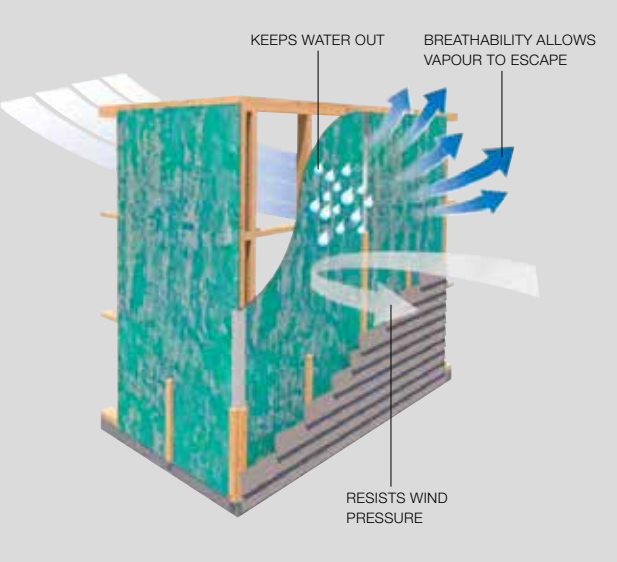

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Toyota ticks HiAce's last safety box

By Building Today motoring correspondent Sean Willmot

Safety seems to be the trump card that most van manufacturers wave when the subject of Toyota's HiAce comes up against their own offerings, which have a veritable alphabet soup of safety kit.

There was, therefore, much glee on the part of Toyota's competition as July 1 loomed and, with it, the mandatory introduction of electronic stability programs (which most mainstream van manufacturers already offer) for all new vans imported into New Zealand.

Would Toyota roll over, cry "uncle" and withdraw the evergreen HiAce? After all, Toyota was a little slow to introduce other safety features such as ABS brakes and dual airbags. Would ESP be the END?

The Toyota HiAce ZX van swallowed a truckload of stuff and offered easy loading and unloading through dual-side sliding doors and a massive rear tailgate.

The July 1 deadline rolled in and so did the latest crop of HiAces — equipped with Toyota's answer to Electronic Stability Control: VSC, or Vehicle Stability Control.

Remarkably unobtrusive

As a control system, VSC is remarkably unobtrusive in as much as it doesn't grab the vehicle by the short and curlies when traction is lost — after all, that's what ESC systems are designed to do — but gently allows wheel spin to be slowed to such a point that the wheels can regain some grip and allow the driver to remain in control.

Building Today found a gnarly bit of off-camber tarmac, liberally covered in gravel, and gave a fully-laden, high-top 3-litre, turbo diesel HiAce ZX far more welly than was needed, almost demanding the system not live up to its promise of sustainable traction.

HiAce's 3-litre turbo diesel can spit out an appreciable 300Nm of torque and 100 kilowatts of power, which should cause even the mighty Bridgestone factory-fit tyres to have a little bit of a hissy fit on unfriendly surfaces.

Sheer boredom!

However, VSC proved too smart and, other than a little dashboard light appearing, the results were terribly unexciting.

No blitzed gravel, no slides, no loss of control at all — Jeremy Clarkson might have punched someone out of sheer boredom!

As a safety system, VSC works as advertised — indeed, if not better. What, then, of the rest?

HiAce has traditionally suffered a little in ergonomics and front cabin space, but this has been dealt with effectively by losing the third (centre) seat, which few would be happy to use anyway.

with VSC

There's now a sensible-sized work area in place, with lots more room for the driver and offsider.

Cruise control works a treat, as does the reversing camera — complete with guidelines — in the rear view mirror. The now-standard Bluetooth-capable audio system with steering wheel controls is well and truly able to eclipse the roar of the engine when the HiAce is shuttling around town.

On longer trips, the engine burbles away, gently sipping between eight and nine litres per 100km according to the official figures. Sensible driving and use of cruise can get you down into the high seven litres per 100km mark.

The tested van swallowed a truckload of stuff and offered easy loading and unloading through dual-side sliding doors and a massive rear tailgate, while the vinyl floor covering and timber side protection systems stopped any nasty interior paint scratches.

It rather looks then, that Toyota's extensive HiAce range (starting from $46,830 for the ZL models and from $56,330 for the diesel-only ZXs) will continue to be a (safe) thorn in the side of its competition for many years to come.

The zero dust solution is here

New ZipDoor kits are the perfect way to create an effective dust barrier when all you need is to seal the doorway. With its unique, built-in double-sided tape feature, one person can easily install it in less than 60 seconds.

Two-door options are available — the ZipDoor Standard (914mm wide x 2134mm high) and the ZipDoor XL (1219mm wide x 2438mm high), which is used for commercial applications and is constructed from flame-retardant sheeting.

ZipDoor is part of the ZipWall system used to form a dust barrier or create a work zone. It is ideal for containing dust during renovations, demolition and maintenance in sensitive or occupied areas. Clean-up time, cost and effort is reduced to a minimum.

ZipWall requires no tools, tape or fixings, leaves no damage to walls, ceilings or floors, and is reusable many times over. Working height options are from 1.5m to 6.0m.

ZipWall is an effective temporary containment barrier for total dust control, protecting your health and your professional reputation.

For more information or for a catalogue, phone 0800 278 276, email sales@intex.co.nz or visit www.intex.co.nz/zipwall.

BT's Back in Time

20 years ago:

• Architects should have a greater role to play in shaping society, according to recently-elected New Zealand Institute of Architects president Alick Bellerby.

"As a profession we need to have a greater impact on the wider community beyond the traditional role of architect," he said. "Architects' education and training equips them to apply a creative and a practical perspective to problem solving."

Mr Bellerby suggested architects broaden their influence in areas such as local government, urban development and environmental issues affecting the built environment.

15 years ago:

• Dispute resolution had become an increasing part of the services provided by the Registered Master Builders Federation's Regional Service Officers (RSOs) around the country, but mostly in Auckland

Federation business development officer Steve Robinson said most of the disputes involved a lack of communication between builder and client.

"Ninety percent of the disputes RSOs are asked to assist with are resolved very quickly, either via on-site meetings between builder and client or via RSO phone contact with the client," Mr Robinson said.

"Clients often have unrealistic expectations over, for example, how long a project will take. They have trouble accepting delays caused by the likes of bad weather, or subcontractors not doing their bit at or in the specified time, whereas the builder knows that's part of building," he said.

10 years ago:

• RMBF chief executive Chris Preston announced he was stepping down at the end of the year after five and a half years in the role.

Mr Preston joined the Federation at a time when the organisation's reputation, even within the building industry, was at a low ebb. He listed one of his most satisfying achievements as being able to lift the RMBF's profile and reputation.

"Through constant efforts to lift the profile, I believe we have now regained the respect and recognition in the building industry and in government. Even our House of the Year competition enjoys a new level of interest," Mr Preston said.

5 years ago:

• The first certificates for MultiProof, a new streamlined National Multiple-use Approval Service for volume builders, were issued at a function in Christchurch.

The MultiProof service, launched by Building and Construction Minister Maurice Williamson, issued approvals for building designs that were to be replicated several times by volume builders.

It meant building designs with MultiProof approval were pre-approved for Building Code compliance, removing the need for the designs to be assessed by each individual Building Consent Authority. This resulted in faster processing times, reduced duplication by volume builders, and consumers being able to get into their new homes sooner.

Christchurch-based Spanbuild and Little Buildings Ltd of Palmerston North were two of the first companies to be presented with MultiProof certificates at the function by Mr Williamson.

Is petty rule enforcement driving builders from the industry?

Building Today columnist and industry stalwart Mike Fox ponders whether today's risk-averse and highly regulated environment is taking the enjoyment out of building.

Those that have been building for more than 20 years will remember an industry that was more co-operative, less aggressive, less regimented and certainly far more satisfying to work in than today's risk-averse, highly regulated and stifled environment.

So why has it gone this way, not only with the construction industry but in other areas of life as well?

We seem to have of lost sight of the real objectives, and have become a country of petty rule enforcers, creating jobs for clipboard Charlies getting job satisfaction out of enforcing minor misdemeanours. It seems that being an inspector of something has become a growth industry.

Let me explain further. In days gone by if you were planning a project you would visit and discuss it with the appropriate people at your local authority. You would work clearly on the best way to achieve the outcome, and collaboration would produce a reasonable outcome.

Then when the Resource Management Act came along, and leaky buildings prompted a tightening of the Building Act, local authorities no longer wanted to work collaboratively because they were more concerned about protecting themselves from liability, and collecting revenue.

What used to be how can we help make this project go ahead, has now become, inadvertently, how can we avoid the risk?

The only time I ever remember local authorities fully understanding the word service was when they had competition from building certifiers.

Consumers had a choice of where they wanted to get their building consent from. Council officers were so concerned about their jobs that they even used to come to your office to collect consent applications.

Unfortunately, the inability to get insurance finished the certifying scheme and returned us to the monopoly situation we now endure. It is probably time to revisit this and get some service back into the game.

Successive layers of compounding regulatory change is now reaching a tipping point, such that the system is becoming moribund with process and risk-averse behaviour.

Many local authorities are literally strangling

Mike Fox

progress on projects with excessive RFIs, inspections, re-inspections and regimented administration processes.

This behaviour is reluctantly understandable and, unfortunately, will never change until the law makers address the joint and several liability rules that make the last man standing responsible for every building fault, regardless of whether they caused them or not.

Everyone is looking to cover their backsides by pushing liability away, and increasing costs and loss of productivity is the result.

Australia has addressed the joint and several liability problem in the construction industry, and we should look closely at what we could adopt.

To make matters worse, many local authorities now have a new beast in the form of consent enforcement officers who prowl sites looking for something to catch you out on. Their very existence is, no doubt, measured by how many fines or prosecutions they can attain.

This, combined with over-zealous Worksafe inspectors, makes the life of a builder just that much more unpleasant. It is a hard industry to be in at the best of times, and with all these compounding factors it is not surprising that so many good builders are just getting out of it.

Some examples of where NZ has it wrong

In Britain and Australia, successful speed cameras are ones that don't issue many tickets because they warn you a camera is coming up, and the objective of slowing the traffic is attained. Ignore those warnings and you deserve to be fined.

In New Zealand a successful speed camera is hidden in a sneaky spot, and its success is measured by how much revenue it collects. We have no idea what effect we are having on slowing the traffic, but we sure are making plenty of money on the way. If a camera stops delivering income it gets moved to a more lucrative spot.

Road fatalities are invariably blamed on the driver and speed, but there is rarely any mention of the road they were on, or its condition.

If we seriously want to bring our road toll down to comparable countries then build comparable roads. Ours are often unsafe, but the capital required to fix them is not available.

Among many things, building inspectors are required to fixate on handrails and possible falls that a private resident might have within or around their own home.

However, that same resident is trusted to cross the busy road outside their home, walk along a waterfront with no handrail protection or drive a vehicle at 100km/h along a road without a median barrier! Where is the relativity in all of this?

Health and safety inspectors hound professional tradespeople who are proficient at working from heights as if they are incompetent to assess risk.

These inspectors' actions are now putting DIY consumers at risk who do not have the same health and safety restraints, but now can't afford to pay a professional to complete the work with the added cost of scaffolding.

They are now inadvertently forced into the risk of completing their own repairs, involving putting themselves at personal risk. And who knows what the quality of the repair work will be?

For a country of 4.5 million people we appear to be taking ourselves, and life, far too seriously. You only need to do a bit of travel to see the unfortunate way we are enforcing our rules compared to others.

The entrapment, fine and enforcement mentality we have perversely developed is unhealthy, and we need to have a serious rethink if we want innovation, productivity and an enjoyable, balanced work environment to return.

• This article contains the author's opinion only, and is not necessarily the opinion of the Registered Master Builders Association, its chief executive or staff.

Construction Contracts Amendment Bill (retentions) will impact on contractor cashflow

Hawkins Group chief executive and Construction Strategy Group chairman Geoff Hunt provides an insight into pending retentions regulation and what it will mean for the building industry.

The purpose of retentions is to ensure that customers get the specified services and quality delivered on time from the contractor. If work is not completed satisfactorily the retention money can be used to have another service provider complete the work.

Retentions can be multi-level, with the ultimate customer holding retentions on the main contractor, the main contractor holding retentions on its subcontractors, or larger subcontractors holding retentions on their subcontractors.

The Government is wanting to change the legislation to ensure that when main contractors, in particular, fail — for example, Mainzeal — that money has been set aside to pay subcontractors the retentions held on them.

Secondary intentions of the Government are to prevent retentions held being used as working capital by main contractors, and to prevent retentions being available to liquidators in the event of an insolvency.

No one will argue against the intention of the legislation to ensure that retention money is protected in the event of an upstream business insolvency. However, it is worth noting that unpaid progress payments, at the time of a main contractor business failure, will usually be much larger amounts than retentions held.

The draft legislation, as it stands, would have a major impact on construction industry cash flows and, indeed, companies with weaker balance sheets may be unable to continue trading.

The issue is best understood in terms of the diagram below which is simplified to just three parties — customer, main contractor and subcontractors.

Geoff Hunt

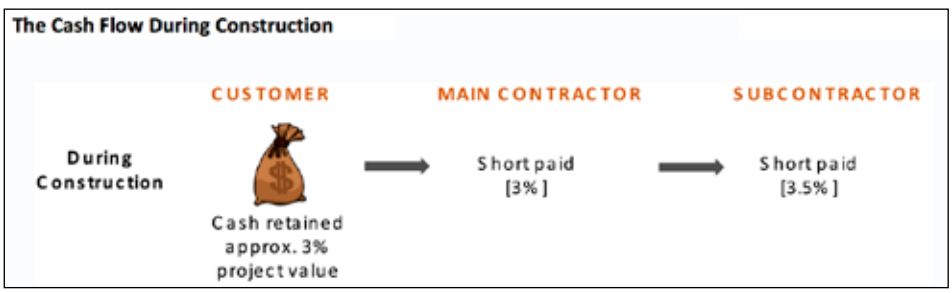
The current globally-operated system is well understood. The ultimate customer retains cash (short pays) from the main contractor who, in turn, retains cash (short pays) from the subcontractors.

Due to the retention scale, the main contractor will generally have retained more cash from the subcontractors than retained on it by the customer. This small cash balance may contribute to main contractor working capital.

The draft legislation, as it stands, requires each party to hold in a "deemed trust" the total value of retentions it holds on downstream parties.

For example, if a main contractor had annual sales of $100 million, its customers would need to be holding in a "deemed trust" approximately $3 million, and the main contractor itself would need to be holding approximately $3.5 million in a "deemed trust".

The draft legislation makes directors criminally liable should there be insufficient funds in the deemed trust upon business insolvency to pay out all retentions held on downstream companies.



The draft legislation, as it stands, would have a major impact on construction industry cash flows and, indeed, companies with weaker balance sheets may be unable to continue trading.

Under existing Trust law, the only way to avoid prosecution is to set aside and ring fence funds equivalent to the retentions held. While the intent of officials was that the amount deemed in trust should be the net amount — the difference between retentions held and those paid out — Trust law prevents this and, therefore, the prospect of retentions being co-mingled with working capital.

Our calculations show that contracting businesses holding retentions would need to find new funding of $3.5 million/$100 million of turnover, and to hold this separately on the balance sheet, and probably in a separate bank account.

With the non-residential construction industry currently worth approximately $12 billion annually, this would mean customers and main contractors holding $1 billion in separate "deemed trusts". This is cash removed from the industry.

The banks have indicated to the Government that they are unlikely to lend to contracting companies the additional funding required to be held in the "deemed trusts".

The Construction Strategy Group's (CSG's) original position was that the early aim of officials to have the new law on retentions operate with the net amount being subject to the "deemed in trust", and insolvency protection guaranteed, could address the concerns of subcontractors.

But when the larger main contractors identified the unintended consequences of the legislation as drafted, a search began to identify a solution that could meet all concerns — improved protection for subcontractors and an acceptable reduction in the overall financing cost to industry, particularly to smaller main contractors.

The draft legislation turned out, on review, to be a case of using a sledgehammer to crack a nut, with an overall very high financing cost to the industry which would be greater than the retention payments at risk.

The CSG is working with the MBIE and Treasury, to bring understanding to the Government about the issues that the draft legislation would create. We hope that solutions acceptable to the industry as a whole will come through changes made to the Bill.

The folly behind the falls from height campaign

By Dr Bryce Wilkinson, Senior Research Fellow at The New Zealand Initiative and the author of *A Matter of Balance: Regulating Safety*, elaborates on his report.

The New Zealand Initiative (TNZI) recently published a report, *A Matter of Balance: Regulating Safety*. It was critical of the Ministry of Business, Innovation and Employment's campaign to reduce injuries from falls from height of less than three metres in residential construction.

The thrust of the criticism was that the cumulative costs being imposed on the industry and, thereby, home owners, could well be more than $1 billion. Yet, apparently, no attempt had been made at the time to estimate them, let alone establish greater offsetting safety or other benefits.

I've said in the report that it is irresponsible of government to impose such large costs on industry, and thereby householders, without making such an evaluation in advance.

Systems should be in place that stop this from happening. The same systems should give those who are expected to foot the bill advance notice about its likely size, and a meaningful capacity to dispute the proposed cost imposition.

This is no more than good practice. What builder would do some costly work on a customer's house — uninvited and unpermitted — and then expect the customer to pay the bill!

Of course this is not a dispute about safety. Safety is important. Everyone can agree about that.

Because safety is important it must be prioritised. A dollar spent on safety here is a dollar less that could be spent on safety somewhere else. Road safety is an obvious alternative, but not the only one.

After all, does someone who doesn't care about safety priorities really care about safety.

A BRANZ report in 2014 found that the campaign could not be justified on safety grounds alone. Not remotely.

It put the campaign's (present value) cost to industry for the next 25 years at $1.07 billion, and the safety benefits at around $0.51 billion. Far greater safety benefits could indicatively have been achieved by spending the same amount of money on the roads.

Nor is safety the only thing that is important. Household budgets must also allow for spending on food, shelter, warmth, health care, education and much else.

The BRANZ report took account of such competing considerations. It found that the

Bryce Wilkinson

campaign might be justifiable if it also raised job productivity.

It reported that "averaging results of figures submitted by builders" suggested that there could be a small net gain in productivity of 0.8% per project.

All up, it valued cumulative productivity and related gains for firms at around $0.6 billion. Adding about $0.2 billion of benefits to taxpayers gave it a figure for total benefits of $1.13 billion as against costs of $1.07 billion. A positive net benefit is a tick for the campaign. But only if the calculations are robust.

The first problem is that the figures are not robust. This is not a criticism of BRANZ. No robust figures were available for establishing statistically significant safety gains, or to support the postulated productivity gains.

A second problem is that if the calculations were correct, there is no obvious need for the campaign. Productivity gains benefit the firm directly. Greater safety is an employer-provided, non-wage benefit for workers. Workers trade off wage and non-wage benefits.

So if the safety and productivity benefits combined really do exceed the costs, normal processes should see them being secured in the fullness of time without regulation.

A third problem is that the cost of the campaign to the industry and home owners is plausibly much higher than $1.07 billion — arguably, some billions higher in present value terms.

For a start, BRANZ put the additional cost of building a 200sq m single-storey building at $3304. The TNZI paper cites a detailed costing by Peter May of Homebuilt Homes. It comes to $7107 (GST inclusive) for such a building on a flat section in Palmerston North.

Independently, Michael Fox of Primesite Homes argues that once margins and other extras are factored in, the additional cost to the home owner would be more like $15,000. So how robust is BRANZ's $3304 figure?

A second point is that BRANZ's cost calculations excluded additional costs for repairs and maintenance, or even for accessing a roof in order to inspect it or a TV aerial or dish.

A purely indicative calculation in the TNZI paper shows how omitted additional costs for repairs and maintenance could potentially more than double BRANZ's $1.07 billion cost estimate.

Regrettably, the chief executive of WorkSafe NZ's reported responses in the *Dominion Post* to the publication of TNZI's paper did not attempt to justify the campaign in net benefit terms.

So how can it happen that government regulators can impose major costs on the community without adequate justification prior to launch? The short answer is that home owners bear the costs, not the regulators.

A very famous economist, Milton Friedman of the University of Chicago, once observed that when we are spending our own money for our own benefit we care about both the cost and the benefit.

When we are buying something for a stranger, we likely care about the cost more than we care about the benefit to the stranger. When we are spending a stranger's money for our own benefit, we likely care more about the benefit than the cost. When we are spending a stranger's money for the benefit of another stranger we likely care least about either the benefit or the cost.

The last of these four circumstances applies to government spending and regulation. That is why good process disciplines on government are necessary.

Well, ministers could have required officials to produce a detailed assessment of the costs and benefits of the campaign prior to launch. They did not do so. Why not?

The underlying problem is that the prime aim of a government is to get re-elected. What is good politics when emotions are high is not necessarily good for the community.

The Pike River mining disaster in November 2010 brought workplace safety to the fore in a

Continued page 29

Understanding timber weatherboards

Jenkin Timber Ltd sales and marketing manager Bruce Barclay responds to *Building Today* columnist Mike Fox's column in the June issue on timber weatherboard problems.

Timber weatherboards have been used to clad New Zealand homes for generations. They are a proven weathertight cladding that can offer peace of mind in the wake of our country's leaky building problems.

The most prevalent timber weatherboard in use today is a finger-jointed, treated and primed product manufactured from radiata pine.

Builders using a good quality product and following basic handling, installation and finishing procedures should ensure a quality job.

To get the best from the product it is important to read the care and instruction detail for the material. All good quality manufacturers place this on each board, and often on packaging as well.

Most building products have a best use protocol from suppliers that assists in product performance. Unfortunately, with the pressure to "get the job done" on many building sites throughout New Zealand often some of the little things get left out. These can make a big difference at the end of the job, especially aesthetically. Timber weatherboards are no different.

Bruce Barclay

Few high value products purchased for construction projects are bought on a whim. Some basic homework should be done. Claddings, regardless of substrate, (timber, ply, brick, block, PVC, or cement board) are a critical part of the building envelope. All claddings, irrespective of their make-up, have pros and cons.

I am not going to get into the detail here but it is naive to think one single product is perfect. The fact is, none are.

Timber is a natural product. It is hygroscopic and, in its raw form, will absorb moisture from air. Paint systems help moderate the amount of water absorbed, with the quality, type and quantity of the paint systems applied to timber weatherboards go a long way in determining the quality of the finish.

And remember, not all timber weatherboards are created equal. Manufacturers often offer a "good, better, best" range of alternatives for any given situation and price point.

Timber weatherboards range from a generic standard board right through to factory final colour-applied proprietary systems. Typically, the higher the price the better the quality of the timber that forms the substrate, and the better the durability of the coating system. Be wary of cheaper alternatives.

For best results, builders should work with their merchant to understand which product will be the most appropriate for the job. In some cases, the hard work may have already been done by the architect, who will specify the product best suited to the build. If not, do some homework. Ask your local merchant rep for advice. If they can't answer, well, delve deeper.

Good manufacturers should be able to meet builders on site to discuss product variations and explain product performance differences and price points. As a minimum, make a quick phone call to a manufacturer. All reputable manufacturers will have an 0800 number that can be called for free.

One of the key options that should be considered during the purchasing process is that of proprietary weatherboard systems. These systems are a huge advance on traditional generic boards and, typically, have a full component suite (precut scribers, window trims, and facings).

The best systems have complete architectural details, installation guides, specified flashings and nailing plans. They have a higher level of finish, and are often at least as cost effective installed on the wall as the traditional method of buying generic product and adding labour on site.

Some manufacturers, such as Jenkin with the A-lign range, take things even further by offering differing fixing systems and factory-applied top coats to the owner's colour choice.

Factory-applied top coats cover all external faces of the weatherboard, eliminating any possible visible lap line. Application in a controlled environment maximises quality control, and site work is kept to a minimum with fewer weather-related delays or chances of human error when top coating.

Factory-applied coatings often come with additional product and paint system warranties that can be passed on to the home owner for additional peace of mind.

Radiata pine weatherboards are a very user-friendly and versatile natural cladding product for residential and light commercial buildings.

A small amount of homework pre-purchase, combined with some basic care during construction and finishing, will see a top quality job that builders and home owners alike will be proud of.

From page 28

very emotional way. Being seen to be doing something was politically important.

One consequence was that the Government set up WorkSafe New Zealand to focus on increasing workplace safety. Another was to set a target of reducing workplace death and serious injury rates by 25% by 2020. Neither initiative appears to give cost as much attention as benefits.

Another reason why no cost benefit assessment was made is that the governing legislation does not require one.

The Health and Safety in Employment Act 1992 requires employers to "take all practicable steps to ensure the safety of employees while at work". This requirement also reduces compliance cost to a secondary consideration, if that.

So what is to be done? On the narrow issue, the campaign should be either properly justified, or reined in.

On the broad issue, control agencies and ministers should put better processes in place that make it harder for these things to occur. Neither will happen if apathy wins.

• *A Matter of Balance: Regulating Safety* can be downloaded from nzinitiative.org.nz.

Warm roofs — is this the future of roofing?

This article was written by the late Stuart Thomson, author of the New Zealand Metal Roof and Wall Cladding Code of Practice, first released in 2003, and currently undergoing its third revision.

Mr Thomson (Thomo) was an independent building consultant, contributing technical articles for *Rooflink*, the quarterly journal of the Roofing Association of New Zealand. *Building Today* acknowledges their permission to reprint this 37th instalment of Thomo's Tips from the Autumn 2015 issue.

A warm metal roof is a generic term for insulated panels, aka SIP (Structural Insulated Panels), Sandwich panels, Coolroom panels, Composite panels and Stressed Skin panels. Section 12.0 of the MRM Code of Practice describes all of these.

Although they can be made up of different materials, the majority of metal insulated panels are made from foam insulation with metal cladding on both sides. There are also many types of different foams with different fire and thermal performances, but for the roofer they are all about the same.

Some warm roof systems are hybrids — ie, they use a modified bitumen polymer membrane as the exposed roof surface.

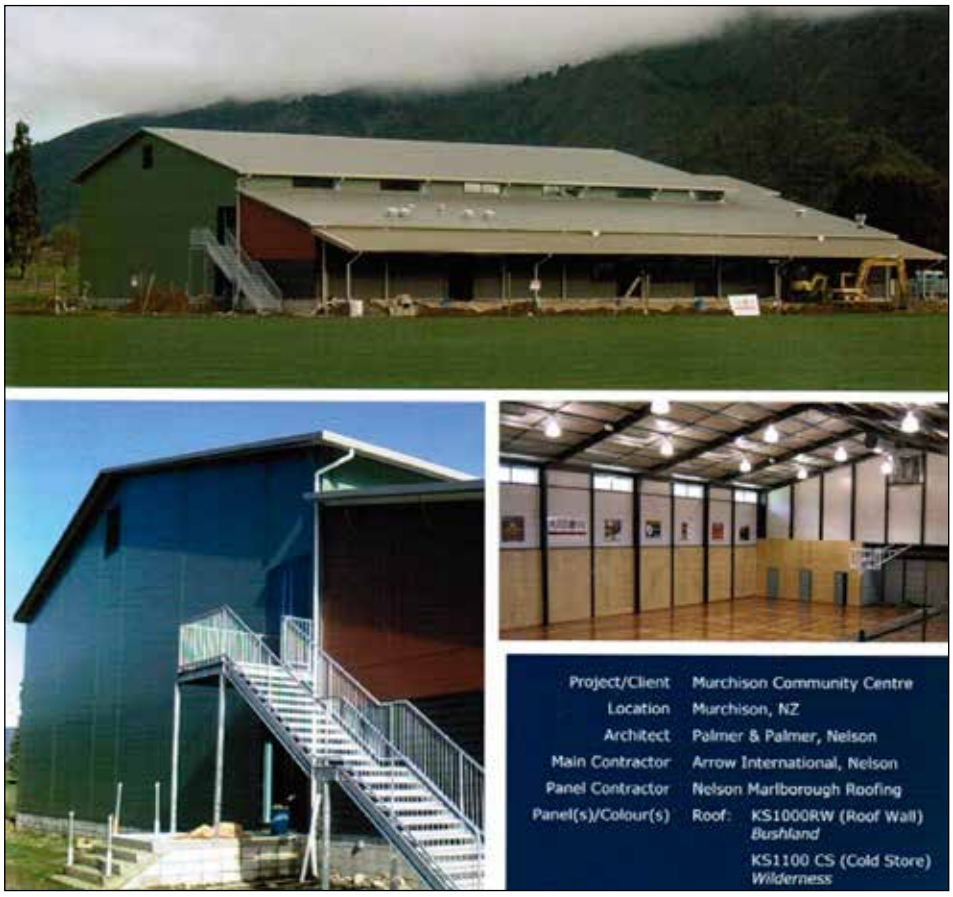
There are a lot of the dreaded acronyms used in this part of the industry, including:

- ISP: Insulated sandwich panel
- EPS-FR: Fire retardant expanded polystyrene
- PIR: Polyisocyanurate
- MF: Mineral fibre
- SPS: EPS Phenolic Hybrid

Warm panel roofs have an advantage called a "synergy" — ie, the product strength is much greater than the individual strengths of each of the component parts.

Very large spans can be obtained by increasing the depth of the insulation which can vary from 40mm to 150mm. Increasing the thickness not only increases the insulation value but also the panel's strength.

The panels act like an 'I' beam, with the top and bottom metal cladding acting as the flanges and the insulation acting as the web.



Easy to erect in a short time

The major difference when using panel construction is that there is no need for an underlay, insulation or safety mesh, and being in long lengths it is very easy to erect a lot of finished roof in a short time.

Too good to be true? Yes, there are some issues with panel construction and that is what this article is all about. The first would be cost.

Although costs have come down recently, this type of construction, on the face of it, is more expensive. However, it depends on how you do your sums.

Although they are a safe way to erect roofs quickly, safety edge protection and nets must be in place and a harness must still be worn. Scheduling a panel job is more crucial if the advantage of the speed of erection is not to be lost.

Some manufacturing companies have their own fixing and erecting teams, but the majority of standard building insulated roofs are going out for tender.

This type of construction has been around for a long time, but is becoming more popular with architects, particularly those designing school buildings, supermarkets and pools.

Perhaps this story is showing Thomo's age, but in 1984 he won first prize in an open building design competition for "Stressed Skin Design". The prize was a trip to Europe, and entry into a number of factories producing insulated panels around the world.

The uniqueness of the winning design was the detail at the ridge where specially curved panels structurally held the pitched panels apart. The structural steel frame ran the opposite way — instead of a portal frame, the frames ran the length of the building and became the purlins.

Unfortunately the building was never built because the company went into receivership — but I did get my trip!

When Thomo first joined NZ Steel as development engineer in 1982, one early job consisted of testing metal clad insulated panels under simulated wind load.

Over about 100mm thickness and using 6m spans, it became difficult to fail the panels as

the tests were on simple spans and the fixings were not able to restrain the panels.

The potential for this type of construction was publicised and a number of manufacturers started up but, unfortunately, without enough jobs to support the large capital outlay for their manufacturing plants, a number of companies fell by the wayside.

Warm roofs are not much different to cold roofs (the ones you are building all the time). The only difference is that they have to be closer to perfect!

If the warm roof did not have any holes (penetrations) in it, life would be easy but, as you know, "it don't work that way".

Vapour barrier

What we are doing is creating a vapour barrier on the underside of the panel which has to be perfectly sealed at the laps to avoid any moisture ingress from the inside — if there are any gaps there is trouble ahead.

Swimming pools are the great example. There are very few that have not had problems at some stage, and some pool roofs have had to be rebuilt because of the penetration of water vapour.

While supermarkets are usually air-conditioned, schools are not, so attention to detail is important. Ventilation at the moisture source is fine in theory but, again, we are looking for perfection.

Unlike waterproofing from above on cold roofs, air seals, strip butyl or gun sealants are relied upon for water vapour sealing in warm roof panel construction. Some joints have to be insulated on-site with expandable foam, but equal to the fire rating of the panel.

Tanks can't be nearly watertight — just as warm roofs can't be almost sealed.

Panel roofs are not a panacea for condensation. Although many buildings using panel roofs are air-conditioned and control humidity and have a large volume, small buildings such as mountain huts still require ventilation if condensation is to be avoided.

Thomo investigated a winery that was said to be leaking, and no one could find the leaks. The owner was not pleased when on entering the offending building he saw a smile on my face.

"This is not a laughing matter," he said. It was then pointed out that the blower heaters run off a bank of gas cylinders, so this was a problem of his own making. The answer to the "leaking" problem was not to heat the winery by unflued gas, and was received in disbelief.

The penetration limitation is recognised by most architects who usually design their penetrations in such a way that they can be easily sealed, but the plumber with his vents, the air-con man and the television aerial man appear oblivious to any problem as they usually are with cold roofs.

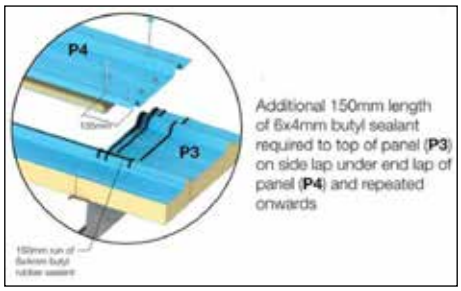
Metalcraft Metconospan at a Half Moon Bay, Auckland, complex.

The other detail which causes heartache with designers and the BCAs is when joining panels end to end. Waterfall or stepped joins are not easily fixed and sealed, but then nor are lapped joints.

If you are pricing warm roofs it pays to double your time allowance over cold roofs for flashing this detail. One manufacturer does do factory cut-backs though.

Even with joins and limitations with transport, some long lengths can be achieved, so the same expansion provision should be made for fixings as for cold roofs with lengths over 12m.

Screw fixings get very long with the thicker panels which, in itself, can be a good thing because there is some "fastener roll" that can occur — although it is only minimal because of the stressed skin effect of panels.



Some panels have a separate snap-on cover strip which can protect the fastener from the weather and contaminants. But the majority have top fixings which are subject to the same problems of fastener corrosion that we are currently addressing.

Edge details vary from different manufacturers but are generically classified into rib fixing (as per cold roofs) and flush fixing which are dependent on rain and vapour sealing.

Rooflights must be insulated with warm roofs. Most manufacturers have their own details for these, and joining these up becomes a tricky bit.

Gutters also have to be insulated, as any uninsulated path seriously diminishes the fire and insulation performance — one simple way to do this is to use panel as gutter support.

There is an Australasian Code of Practice published by the Insulated Panel Council of Australasia (IPCA) which has details for cool-room panels, and they have a panel certification scheme in place. Their web site is worth a visit: www.insulatedpanelcouncil.org.

Continued page 32

Project name: Weltec School of Construction, new campus, Petone, Wellington.
Architect: Mark Young, Designgroup Stapleton Elliot.
Roofer: RANZ member SWP Commercial Ltd.

From page 31

The hybrid systems are assembled on site and are said to equate in fire ratings and performance but require a lot more input from the roofer.

In a similar manner to single skin roof cladding, simply supported roof (one span) panels do not have equal spanning performance to multi-spans.

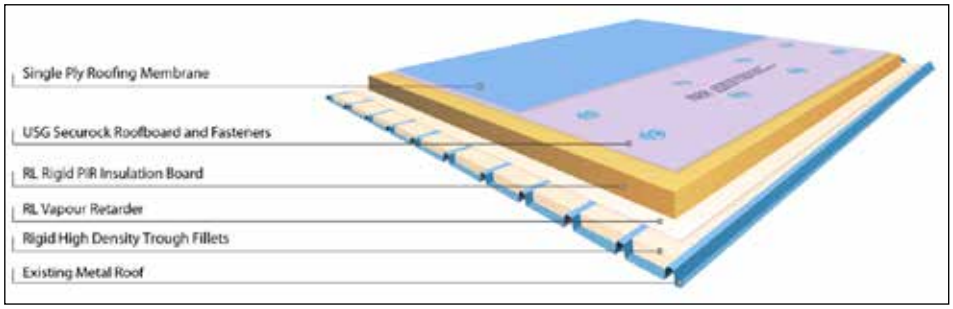
Similarly, dark colours can produce expansion problems so light colours are always recommended.

Safety issues are minimised but edge protection, safety nets and/or a harness must be used.

Some roofers may be wary of what they might regard as new innovations, but warm roofs are likely to play a much greater part on the roofing scene in the future.

There is nothing really to be concerned about except upping the standard of workmanship and understanding the problems, and knowing how to deal with the tricky bits before you start.

Maybe it is time to have a closer look at panel roofing?



Company provides safeguards for roof fixings and wall sheeting

Fasteners rigorously tested in the 'real world'

Liability — it's not a nice word for any construction professional. When it comes to roofing and wall cladding it can cost thousands of dollars if a product fails.

This is where EDL Fasteners Ltd comes in. The company has sourced the latest in corrosion protection technology to supply ArmaGalv screws to the market, providing safeguards while fixing roofing and wall sheeting, whilst providing customers with maximum performance.

Costly remedial work

EDL recognises that roofing screws are failing prematurely on New Zealand's buildings, resulting in costly remedial work for the builder.

These regular screws are manufactured to perform in a salt-spray test chamber that does not accurately mimic real-world conditions.

Galvanised screws need exposure to wet/dry weather cycles to develop their protective oxide layers, something that can't happen in salt spray chambers.

What are we left with? Screws that perform adequately in salt spray testing but fail prematurely on buildings out in the real world.

ArmaGalv uses a new way of applying the protective galvanised coating, and fusing it onto the screw.

Rigorous testing in the real world (an ISO Category 5 very severe marine site), and in a proprietary environmental test chamber enables the correlation of corrosion rates, and so allows EDL to predict the service life of the screws.

Features

• ArmaGalv plated screws are the only roofing and cladding screws that have a predicted (and warranted) service life in New Zealand's environments. This provides certainty of performance and greatly reduces liability.

• ArmaGalv screws exceed the requirements of AS3566.2 Class 4.

• Faster drive speeds enable the work to be completed quicker, saving time and allowing construction work to continue sooner.

• ArmaGalv screws have sharper threads, allowing for an easier and cleaner drive whilst retaining their galvanised coating to protect the screw from corrosion. They are also fully compatible with all steel roofing in New Zealand.

• The screws are available in plain, or colour-matched, UV-stable paint finishes for roofing/cladding sheets.

For further information and warranty details, refer to the EDL Roofing Catalogue, or visit www.edlfast.co.nz.

ArmaGalv screws can be purchased from leading rollformers, or from the nearest EDL branch.

Height safety easily achieved with simple edge protection

One of the key factors to an efficient building site is a safe one. Edge Protection can provide a cost-effective and speedy alternative to scaffolding in many cases.

Edge Protection NZ Ltd has been at the forefront of development for proprietary edge protection systems since 2012 with three main objectives for its customers — keep it simple, make it versatile and ensure it's cost effective.

With several bracket types catering for new housing, existing buildings, garages/sheds and commercial applications, there is an E Bracket system suitable for every builder.

With versatility being paramount for anyone considering purchasing a new product, there are several features making E Bracket systems stand out as an industry favourite.

These range from the one-piece laser cut and folded manufacturing technique ensuring stackability, to the preset rail heights enabling quick installation of guardrails and the ability to use either SG8 90 x 45 timber rails at 2.7m centres or galv and aluminium scaffold tube at up to 5.4m centres.

New housing brackets can be fitted to soffit sprockets, gable ends on the outrigger and truss top chords, whilst the Re Roofing variant uses a pole to the ground atop an adjustable base jack. Fitment under the eaves on an existing building is adaptable to suit flat or sloped soffits, gable ends and even roofs with no overhang.

This particular system is very popular as it can be used on new buildings as well as old, and leaves no damage due to a non-slip friction fit pad, making it ideal for alterations.

As proprietary systems are not considered a structural scaffold, E Bracket systems can be installed by any competent person with no

scaffolding qualification necessary and no height restrictions.

Value for money is obvious when the system pays for itself within a few jobs as opposed to continuously scaffolding and, as it is erected by the builder, there is literally zero down time waiting for installation or dismantling at the conclusion of the job.

What the customers are saying . . .

By John Oliver, Hiandri Solutions Ltd

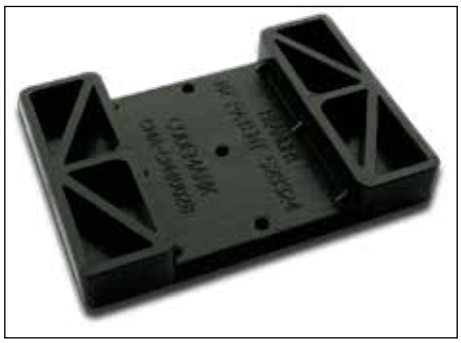
My Manukau Mitre10 rep, Johan Kuypers, first introduced me to Hiandri bottom plate packers, as he knew what a nightmare of a winter I had been through with wet timber, especially saturated bottom plates.

Costly heaters and dehumidifiers that don't really do the job, re-inspection fees and costly delays — there is no way I want to repeat that experience.

Now there is a great solution in Hiandri bottom plate packers. The idea's mint, and so easy to either put on yourself or have installed.

I can assure you, it will be installed on all future jobs I'm involved in.

Rob Harford
Builder
Rubix Construction



I've attended lots of trade evenings and Master Builder presentations over the years, and Hiandri packers would be the best idea I have heard of at one of these events. I left the meeting knowing I would be installing Hiandri on every job I did in future.

On my current job at Omaha, it is not uncommon to get half a metre of sand blown onto the floors over a weekend. We can now just get a blower to remove the sand and any puddled water that has not already escaped, solving a real problem for us.

I'm the first builder in the area to install Hiandri, and a number of builders I know have called into the site. First comment — "great idea" — and they are now all installing the product. The owner is also rapt, as he gets the long-term benefits of the product.

I will be using them all-year round, as having that air flow under the plates is so important. I said to my normal pre-cutter, "if you do not install Hiandri bottom plate packers on my frames, I go somewhere else" — that's how much this innovation means to me — and he installed them! I can highly recommend this system to all builders.

Mark Wilson
Master Builder
Matakana

Leaky buildings Round 2 — council potentially caught twice for the same house despite settlement agreement in place

Timothy Bates, principal of Auckland law firm Legal Vision, reviews a case concerning a Wellington house that was diagnosed twice as a leaky building.

I wish to review the recent decision of Devany & Others v Wellington City Council & Others which concerned a Wellington house in the suburb of Newlands that was diagnosed twice as a leaky building.

Facts

• The house in question was originally issued a building consent in April 1998.

• Kingdom Residential constructed the house and ultimately sold it to the plaintiffs in February 1999. A Code Compliance Certificate was issued by the council at or around the same time.

• Leaks were discovered in the house in February 2003, and the plaintiffs lodged a claim with the Weathertight Homes Resolution Service (WHRS).

• The WHRS report identified a number of weathertightness and associated structural issues which meant the house had shortcomings in its ability to comply with Clauses E2 External Moisture and B2 Durability of the Building Code.

• Ultimately, the WHRS claim was mediated and settled as between the plaintiffs, the council and Kingdom Residential.

• The terms of the settlement entered into had Kingdom Residential return to the house and carry out significant repairs. The council was to pay an undisclosed sum of money to Kingdom, no doubt to be applied towards the cost of the repair works.

• The claim was thereafter terminated.

• On March 12, 2005, Kingdom obtained a building consent for repair work on the house. The repair work comprised strengthening the

frames around six windows on the south east/south west elevations, and replacing the three windows on the south east elevation.

The 2005 consented building work was not co-extensive with the 2003 WHRS recommended repair work, nor the repair work that was agreed to by way of the settlement agreement.

• Notwithstanding the repair work, the plaintiffs discovered leaks again in June 2010.

• High Court proceedings were issued by the plaintiffs in October 2014 as against the council, alleging negligence and seeking $597,000 to repair the weathertightness issues.

The claim in negligence brought against the council was for the negligent issue of the 2005 consent, its negligent inspections and the negligent issue of a Code Compliance Certificate for the repair work.

But behind those generic allegations made against the council, the underlying claim as against the council was that it was under a duty to ensure the repair work carried out by Kingdom Residential was sufficient to, and did, satisfactorily address the house's weathertightness issues.

The council brought an application to strike out this allegation. Whilst accepting that it could be liable for any negligence surrounding the 2005 consent authority work, it argued that there was no additional duty of it to address any defects that did not come within the scope of the consented work.

As regards any defects outside the 2005 building consent, the council maintained it was:

(a) statute barred by a limitation defence,

(b) precluded by the "full and final settlement" terms of the settlement agreement, and

(c) based on alleged duties of care that were novel and not tenable, as they were inconsistent with the scheme of the Building Act 2004, and go beyond those recognised in relevant case law.

The court ruled that it was not tenable to argue that a consent authority, when issuing a consent for certain work, inspecting that work, and issuing a CCC, has responsibilities that go beyond that work, and extends to ensuring that the consented work would remediate the house's weathertightness issues.

However, the court went on to rule that the facts and the circumstances that gave rise to the original settlement agreement, plus the terms of that agreement itself, altered the position.

In short, the council had not issued the 2005 Building Consent in a vacuum, but with all of this information available. It was also issued with the framework of the Weathertight Homes Resolution Services Act 2002 fully in place, with the claim successfully settled and terminated using the methods prescribed by this Act.

Judge Clifford held that it was at least arguable in tort that the circumstances which led to, and the signing of, the settlement agreement created the necessary proximity or relationship between the plaintiffs and the council, such that it had to concern itself with the ability of the consented repairs to remedy the weathertightness issues in the house.

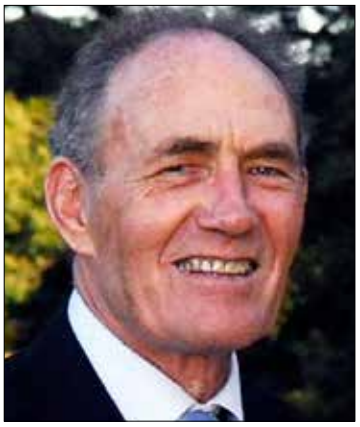
There was also a suggestion that there was a contractual claim open to the plaintiffs as against the council pursuant to the settlement agreement, where it placed the repair obligation not only on Kingdom Residential but also the council.

The strike out application was declined, and the council now faces not only potential liability in respect of this house, but a new class of claim where the consented remediation plan does not achieve the requirement of achieving weathertightness — effectively a Round 2 of already settled leaky building claims.

Note: This article is not intended to be legal advice (nor a substitute for legal advice). No responsibility or liability is accepted by Legal Vision or *Building Today* to anyone who relies on the information contained in this article.

Material quality

Architect Don Bunting has some views about how best to ensure the quality of construction materials.



During a recent visit to Sydney I watched a report on television about substandard imported building materials — specifically concerning the safety of electrical cabling and glass products.

It seems that many of these substandard products contained, or were accompanied by, false markings and documentation, purportedly showing that the products complied with Australian Standards and the Building Code.

A report in our local papers about phony top-brand cosmetics, many containing traces of urine, arsenic and heavy metals, shows that our industry is not alone in facing the problem of misleading or plainly illegal products and product descriptions.

A simple solution

Where building products are concerned, the answer to the problem of substandard products is quite straightforward — establish a national register of construction products.

For whatever reason, the Ministry of Business Innovation and Employment (MBIE) is not prepared to either introduce such a register itself, or to support another industry body to do so.

The most likely reason for their reluctance is concern about liability in case of failure. Not sure why, because as far as I am aware you can't sue a government department.

The MBIE might feel that with a performance-based building code it is up to the industry to prove compliance, not the Government. This is about as logical as changing all our laws so that the burden of proof falls on the accused, rather than the Crown.

If you make the rules you should be responsible for providing a clear compliance path. After all, the MBIE is quite happy to provide acceptable solutions and verification methods, so why not a register of compliant building products?

The building blocks for such a system are, or soon will be, in place. The MBIE is on the brink of releasing an update to its 2010 guide document *Using the product assurance framework to support building code compliance*.

This will be in the form of an on-line Product Assurance Toolkit, enabling a product manufacturer to produce what is called a Product Technical Statement (PTS) which will describe how a product meets the performance requirements of the Building Code.

There are also a number of companies and organisations, including Masterspec and BRANZ, who already produce Product Technical Statements for product manufacturers, and who list these PTSs on the internet.

No backing

However, it is clear that Building Consent Authorities will not accept a PTS on its own as sufficient proof of compliance. Among their concerns is that no third party is prepared to accept liability.

Of real concern is that BCAs will continue to make their own minds up on compliance, even though, with respect, most don't have the expertise to do so.

Disconcertingly, BCAs are more than prepared to accept a BRANZ Appraisal as proof, and will also accept a producer statement from a third party, such as an engineer. Why disconcertingly? Because neither of these fine documents has any formal status.

There is no mention of either an appraisal or a producer statement in the Building Act, Code or Regulations. BCAs rely on the apparent willingness of a third party — a party other than the product manufacturer — to back such statements of compliance.

In the case of a BRANZ Appraisal, I'm not sure that BRANZ does, but BCAs seem happy to accept them, nevertheless.

The Building Act is quite specific, regarding compliance, on who is required to do what. In the case of a product manufacturer, Clause 14G (2) states: A product manufacturer or supplier is responsible for ensuring that the product will, if installed in accordance with the technical data, plans, specifications and advice prescribed by the manufacturer, comply with the relevant provisions of the Building Code. There is no mention of a third party assurance.

The Act clearly expects the industry to accept a statement of compliance from the product manufacturer as proof.

Unfortunately, the MBIE is only prepared to produce guidance on how to create such a Product Technical Statement, but fails to give the resulting document any teeth. The result is that BCAs understandably run for cover, mindful of the fallout for them of earlier weathertightness issues.

Problem and solution

Is there a potential problem with poor quality building products, or of products whose provenance is, at best, doubtful, appearing on New Zealand's building sites? The answer is yes. Is there a simple solution to overcome this within the current legislative framework? Yes there is.

Why doesn't this happen? All it would take is for the MBIE to back up its current proposal for a robust, manufacturer-backed Product Technical Statement, by listing them on a database of approved building products.

The technology is available for manufacturers to prepare a PTS, and for designers and contractors to access and use them.

There is more than one company or organisation willing and able to manage and maintain such a database on behalf of the MBIE, at no cost to them. Inexplicably, the MBIE refuses to do this, thus refusing to allay the fears of BCAs being hung out to dry, yet again.

The industry must act

The recent incidence of below-strength concrete being delivered to 70 building sites in the Auckland region should have provided our industry with a wake-up call. But it hasn't.

If the MBIE won't act then perhaps it's over to industry members such as the RMBA, NZIA and IPENZ to encourage their members to specify and use only products where the manufacturer/supplier is prepared to certify how their products comply with the Building Code.

This is not a complete answer but, at least, it would be a step in the right direction.

Saying no to new business owners . . .

Terry Sage of Trades Coaching New Zealand says no to new business owners. Find out why in this month's column.

You have probably just read in the previous pages about an outstanding vehicle — or at least looked at the pictures.

So you are now either bored, dripping from the chin or looking for your shoes as you dash out the door heading for the nearest dealership.

Sorry, car sales people, but I'm going to say "NO, DON'T DO IT" — not to everybody but definably a certain group. Let me explain myself.

Seven weeks ago I met a young man, aged 25, living with his girlfriend, renting a small house, working for a decent builder, earning a reasonable wage for a tradesmen, and driving a Subaru Legacy station wagon (GT model no less).

Familiar and very cosy

All sounds familiar and very cosy. A couple of days later the boss called a staff meeting during which he announced that all his employees were going to be laid off — "I don't want to employ people any more, and I am only going to use contractors from now on," he said. So off they all went.

Now don't anybody go out and use the line above. You can do what the boss did, and it's legit, but to do it properly there's three or four pages that need saying, not a one liner.

Now we have cleared that up, just before the lads left, the boss said, "if anybody wants to be a contractor come and have a chat".

That all being seven weeks ago, I come across the same young man three days ago — still with his girl, in the same house but now a business owner.

He is the proud owner of Young Man's Construction Ltd — OK, I made that bit up as I can't remember what he called it.

He'd gone to have a chat with the ex-boss, got offered a huge contract worth $300,000, employed two of his mates who were also laid off and he was on his way to making millions.

Familiar and not very cosy

Then he did something else, something very familiar and not very cosy. Gone is the trusty Subaru Legacy station wagon (GT model no less) that has carried his tools for the past five years and has a tow bar for a trailer and, hello, he jumps out of a 2015 Ford Ranger — wheels big and black, a snorkel (why?), the ugly angry mesh front and cream leather seats (really, cream leather for a builder?).

But it wasn't the GT model, thankfully. Is there a GT model? On top of all this, actually behind it was a rather large, very shiny, twin-axel trailer filled with nearly shiny tools. We are talking upwards of $70,000 worth in total.

"So what," the shout goes out. Well, I will tell you so what. He spent nearly 25% of the contract price in the first week.

Question: Who makes 25% profit on a construction job these days anyway, and who spends the profit before it's earned?

Answer: Way too many people.

OK, so he didn't actually spend the money up front, he ticked it all up on the never never. If he actually worked it out first he may have thought twice about it (yeah right!). He had to work for two days a week just to make the repayments.

Back to the beginning, the reason I say no to new business owners is get established first and make sure the work is sustainable — and the list goes on and on.

You may think it's common sense and, of course, it is, but that big shiny, just sign on the bottom line sir, flash-as ute makes you feel and look like a real business owner.

Building Consents Information

For All Authorisations, June 2015

Dwellings	$816,994,000
Domestic Outbuildings	$15,258,000
Total Residential	$832,252,000
Non-residential	$453,786,000
Total All Buildings	$1,286,038,000
Non-building Construction	$23,666,000
Total Authorisations	$1,309,704,000

Number of new dwellings consented

	Jun 2015	May 2015	Jun 2014		Jun 2015	May 2015	Jun 2014
Far North District	15	16	24	Horowhenua District	4	3	6
Whangarei District	21	34	19	Kapiti Coast District	16	18	27
Kaipara District	20	11	8	Porirua City	12	14	10
Rodney District	85	79	48	Upper Hutt City	7	16	10
North Shore City	291	220	202	Lower Hutt City	12	48	23
Waitakere City	29	35	34	Wellington City	36	40	34
Auckland City	78	120	135	Masterton District	1	3	4
Manukau City	89	63	104	Carterton District	0	6	7
Papakura District	74	96	42	South Wairarapa District	4	5	3
Franklin District	58	38	34	Tasman District	31	31	22
Thames-Coromandel District	17	16	21	Nelson City	12	9	10
Hauraki District	6	4	3	Marlborough District	13	27	13
Waikato District	55	42	45	Kaikoura District	3	1	2
Matamata-Piako District	8	11	5	Buller District	4	2	1
Hamilton City	70	127	79	Grey District	4	5	2
Waipa District	26	29	38	Westland District	3	2	2
Otorohanga District	1	0	2	Hurunui District	12	11	13
South Waikato District	5	5	3	Waimakariri District	49	65	79
Waitomo District	1	1	0	Christchurch City	344	341	382
Taupo District	17	17	22	Selwyn District	92	94	104
Western Bay of Plenty District	17	28	24	Ashburton District	20	21	12
Tauranga City	120	105	78	Timaru District	18	13	25
Rotorua District	5	5	7	Mackenzie District	5	2	3
Whakatane District	4	6	5	Waimate District	0	1	2
Kawerau District	0	0	1	Chatham Islands Territory	0	0	0
Opotiki District	0	3	2	Waitaki District	6	3	10
Gisborne District	5	4	9	Central Otago District	22	14	15
Wairoa District	0	0	2	Queenstown-Lakes District	76	87	62
Hastings District	11	20	12	Dunedin City	17	39	29
Napier City	6	8	12	Clutha District	6	3	6
Central Hawke's Bay District	1	3	3	Southland District	4	6	5
New Plymouth District	40	43	21	Gore District	3	0	1
Stratford District	0	1	0	Invercargill City	3	9	13
South Taranaki District	2	3	4	Area Outside TA	0	0	0
Ruapehu District	0	2	0				
Wanganui District	5	6	4	Total	2042	2171	2002
Rangitikei District	1	1	0	• Based on 2006 census areas			
Manawatu District	2	15	6	• Each dwelling unit in a housing project is counted separately			
Palmerston North City	18	16	5	• Figures in these tables may differ from published statistics			
Tararua District	0	0	2				

Source: Statistics New Zealand

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