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The official magazine of the Registered Master Builders Association

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May 2022

Volume 32 Number 4



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The infrastructure strategies needed to combat sea level rise in NZ

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BUILDING TODAY

May 2022
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From the editor

Climate change and sustainability are two themes that feature heavily in this issue.

A newly-released study shows that sea levels are rising faster than we thought, with vertical land movements around New Zealand exacerbating the vulnerability of many coastal areas, including our major cities.

According to the Government, the scale of the problem is huge — at present, 675,000 people, or one in seven New Zealanders, live in flood-prone areas, amounting to almost \$100 billion worth of residential buildings.

And some \$5 billion of local government infrastructure has been identified as being vulnerable to sea level rise.

Building more sustainably will be essential for a stable future in a rapidly changing world and, to this end, the country's first long-term Infrastructure Strategy has made 68 recommendations which are also outlined in this issue.

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Consents and H1 — navigating the bumpy road ahead

RMBA chief executive David Kelly, along with other industry groups, has asked for a year's extension to the transition period for the H1 Building Code changes, saying the November 2022 deadline will, among other issues, adversely impact the already increasing cost of building homes.

New Zealand's economic outlook, and the impacts on our sector, continue to dominate the news headlines. As we discussed last time, much of this is out of our control.

But there are also some areas where we can adjust to improve our sector's ability to build the homes and buildings New Zealand needs.

We are a key contributor to New Zealand's economy, and we are advocating to ensure we have the best conditions to withstand the choppy waters ahead.

We believe system-wide change is required to address the issues facing our sector but, in the meantime, we need to also address specific issues which can provide some short-term respite.

Two that we have been focused on recently include consenting, and thermal efficiency measures raised in the H1/AS1 changes to the building code.

Lumpy consents continue to cause significant delays

We continue to receive reports across the membership regarding the lumpy quality of consenting processes.

Delays across most or all regions are adding further stress to the already challenging environment. It is time for the Government to step up and address this issue.

We're supportive of the current review of the wider consenting process that the MBIE is conducting. Most players in the industry would agree the consenting system needs to be improved. It needs to be more efficient, easier to use, and should allocate risk more appropriately and in a more responsive fashion.

We have made the importance of these issues clear in our high-level discussions with the MBIE.

We support a full review and system change because band aids on the current system will not provide the level of change required.

There is a lot of work going into new technologies that can support quality assurance throughout the build process and make a more efficient consenting system. These should be incorporated into the system as a matter of urgency.

We know the cost of consenting delays is significant. On average, our builders have



reported that a delay of just one week incurs a cost of almost \$9500.

Annual costs of almost \$100 million

We estimate that our members are incurring costs of almost \$100 million annually. And that doesn't consider the cost to home owners who need to stay in alternative accommodation for longer.

We understand that it will take some time before the MBIE's review and other work makes any system-level change that will materially ease the pressure points in the consenting process to make it more responsive.

In the meantime, it comes down to communication. We encourage you to work closely with your council contacts so that you are prepared, and understand requirements.

Investing time in these relationships can really help. Then it is also about communicating with your home owners, so they understand the process and what to expect.

Changes needed long term, but not right now

The RMBA also wants to update readers on an issue where we've made strong representations to government on your behalf.

As members will recall, the transition period for the H1/AS1 changes to the building code will end in November 2022.

The RMBA, in concert with NZBC, Offsite NZ and Business NZ, have jointly written to the Ministers of Finance, Housing, and Building and Construction respectively, to request the transition period be extended for a further year given the acute challenges currently being faced across the sector.

While we support changes to the Building Code that result in better homes for New Zealanders, we reflected in our representations the strong feedback we received from our respective members and the wider industry that implementing the changes this year will cause extreme pressure to our already strained and stretched construction industry.

We pointed out that H1 insulation changes will:

- adversely impact the already increasing cost of building homes.
- negatively impact the already severely disrupted supply chain.
- provide too short a time given to current manufacturing methods to meet updated H1 requirements, especially for windows.
- negatively impact consumer confidence in the residential building industry.
- further dampen demand on the back of interest rate rises, more restricted credit, and economic uncertainty.
- exacerbate mental well-being issues which are already of great concern to us in the sector.

While acknowledging their importance for the government's climate change response and its commitment to improving build quality and performance, we emphasised that there is only so much that can be asked of the building sector at this time.

The current timetable for new regulations is, in our view, a bridge too far, so we have asked for a year's extension to ease one pressure being faced.

We will continue to provide updates on this important issue.

Other H1 stories in this issue:

- **Weather-tightness**, pages 24, 25
- **Straight Up With Mike Fox**, pages 36, 37

A RACE AGAINST THE CLOCK TO WIN!



JOSHUA FRASER

AUCKLAND REGIONAL WINNER
THIRD PLACE
NATIONAL REGISTERED
MASTER BUILDERS CARTERS
2021 APPRENTICE OF THE YEAR

Josh is employed by Craft Renovations and his training provider was BCITO, a business division of Te Pūkenga.



THE COMPETITION

When Josh placed third at the national competition, he felt extremely proud and grateful.

“Placing third in the national competition was not an achievement I did alone, but with the help of my community. The skills, knowledge, experiences and mindset I have are all thanks to the support of my mum, family, boss, colleagues, partner, and friends who support me.

“Being able to test and compare my skills against other apprentices was enjoyable, and something I don’t do often. The competition also gave me the opportunity to meet more like-minded people.”

CHALLENGES

The biggest challenge for Josh was the tight time frame during the practical building component at the regional competition.

“The experience as a whole is very different to real-life building. However, it has given me useful skills that I’ll carry with me throughout my building career. Although there was exceptional time pressure, I still consider it to be one of the best experiences and learning moments during my apprenticeship.”

EMPLOYER’S COMMENTS

Josh’s employer, Barrie Swarbrick, was very pleased with how Josh performed in the competition.

“Josh wanted to enter this competition to challenge himself, which really paid off. During the regional stage of the competition, Josh did a great job of presenting information to the judges about a home we had renovated, and spoke knowledgeably about the work he had completed himself.

“The national competition was a little disappointing, as Josh and I couldn’t attend due to Covid restrictions. It was a shame that Josh missed meeting his peers. Regardless, it was a really good experience for him, and we are very proud.”

JUDGE’S COMMENTS

Joshua’s motivation and determination really impressed the judges throughout the competition.

“Joshua was an inspiring apprentice. He was very open about his purpose and future in the industry as a role model for Pasifika. Joshua was motivated to become a carpentry apprentice after his parents were left with a problematic renovation when he was growing up. Joshua is determined to never do the same in his career. He was very well spoken and came across as extremely down to earth and genuine. While his project was small, he showcased evidence of his immaculate handywork. It gives us great pleasure in awarding Joshua third place.”

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HOUSE OF THE YEAR

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SALTER BUILDERS

National Outdoor Living Excellence



Successes

Salter Builders director Trevor Salter was beyond proud of his team after winning their first National Award at the 2021 House of the Year national competition.

“Winning was a nice surprise, especially given the number of finalists in the high-end category of the competition. This home was a real stand-out due to the multiple outdoor living areas and the unique ability to close in the pool seating area with the louvres, depending on the wind direction. I think we also did a good job of maximising the amazing views.”



Challenges

The team at Salter Builders had a few challenges while building this stunning home.

“Getting the exact location of the precast concrete panels at the beginning of the build, then joining the whole structure together, was a challenge. This aspect of the build required a large amount of structural steel work and complex bracing elements. Due to the extensive hard landscaping requirements and the details inside the house, the build time on site totalled 18 months,” Trevor says.

“Despite these challenges we worked together as a team to create something great. This win has been amazing for our company as it has helped reassure our current clients that they have chosen the right builder for their project.”



Judges' comments

When you have a site with glorious views of the mountains and sea, you want a house that truly celebrates them. This semi-rural luxury property does just that, and more. The owners of this long, sleek home enjoy a vista of the great outdoors from almost every aspect.

Two large fireplaces — one inside and one out — plus extensive underfloor heating mean the 400sqm home is toasty all year round. Instant warmth rises through plush carpets, laminate flooring and tiled areas, including the high-end bathrooms. This is a house with everything — a media lounge, pool, and sophisticated good looks, including concrete features that complement the landscape with their raw aesthetic.

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REGISTERED MASTER BUILDERS

HOUSE OF THE YEAR

A VISION BROUGHT TO LIFE

URBAN HOMES

GIB Show home



Successes

Urban Homes urban project manager Jonny Bird was incredibly humbled and proud of his team.

"The teamwork throughout this build was strong, passionate and incredibly proactive. The award win was an absolute "wow" moment for everyone who went on this incredible journey with us.

"Right from the design through to piecing it all together onsite, Urban's passion for influencing world class, innovative outcomes was showcased through the unique and different use of products, a lot which had never been seen before."

Challenges

For Jonny and the team, the major challenges were the cladding, and ensuring they brought the client's vision to life.

"The client's paramount eye for detail and indescribable standard of excellence kept us constantly pushing our boundaries! At Urban, our clients are everything. Without them, we do not exist. Every day, we walked in our client's shoes to ensure we lived and breathed their every thought, and delivered a home perfect for the life they love.

"The cladding was the other challenge. From an operational level, the stud spacings were not set out for Triclad on a 20mm cavity, so we had to map out the whole perimeter for the cover battens. This was time consuming but worth it!"

Judges' comments

Taking lifestyle to another level, Urban Homes' Pukekura show home encapsulates a modern, rustic style in a comfy family home. Designed with generations in mind, this 352sqm house is an exemplar of craftsmanship that showcases the Waikato builders' passion for perfection. Classic corrugated iron roofing is paired with board-and-batten cladding to evoke a black barn look. Designed to enhance both life and style, Pukekura's modular layout features four large bedrooms and three living areas. The central kitchen and dining area are at the heart of this high-end home, and are wrapped in excellence by the feature surrounds, including a glazed brick entrance wall, painted decorative cladding, eclectic wallpaper, and black and copper fittings. Each illustrates Urban Homes' commitment to blending style with functionality to deliver a masterpiece.

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Industrial Innovation

Mainfreight Tauranga

CATEGORY

Industrial Project Award

ENTRANT

Dominion Constructors

PROJECT PARTNERS

BSW Architects (Architect/Designer)
and Dominion Constructors
(Construction Company)



About the build

Mainfreight Tauranga is built with sustainability and the future in mind, installing a 100KWh solar array, rainwater harvesting, and EV car-charging stations. The facility is situated on a 6.1-hectare site, and includes an impressive entry foyer with whale carvings that pay homage to the history of the land. The carvings represent the local legend of a family of whales that swam into the harbour and became stranded. The land that the depot is on was once part of the harbour, where the whales were stranded.



Challenges

Major challenges were maintaining momentum to complete the project on time during a pandemic, as well as constructing a dry pedestrian tunnel beneath the truck breezeway to encourage safe pedestrian movement between the terminal and staff amenity. The team pushed on using innovation throughout the build, to improve efficiencies in the build and make it more economical and faster to erect. The overall scale and size of the freight terminal make this project very prominent in the Tauranga landscape.



Judges' comments

This build seamlessly integrates the recognition of local iwi into the final design. The project team successfully enabled future-proofing for potential expansions and the integration of electric truck movements. The new space includes a large clear-span freight building alongside attached amenities and office space. This includes separate sleeping pods for drivers and fully catered kitchen facilities. The experience the design and construction team brought to the project, including valuable lessons learned from developing previous facilities, were incorporated in the build, and increased overall efficiency.

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NZ sea levels rising faster than we thought

Thanks to a new data management and analytics programme, New Zealanders will be able to see how much and how fast sea levels will rise along their stretch of coast and in their neighbourhood.

The NZ SeaRise: Te Tai Pari O Aotearoa programme developed by Takiwa, a data management and analytics platform, has announced that it will release location-specific sea level rise projections out to the year 2300 for every 2km of the coast of New Zealand.

Co-leaders of the programme, Dr Richard Levy, from GNS Science and Professor Tim Naish from Te Herenga Waka: Victoria University of Wellington, say climate change and warming temperatures are causing sea levels to rise, on average, by 3.5mm per year.

This rise is being caused by thermal expansion of the ocean, by melting land-based glaciers, and by melting of the Greenland and Antarctic ice sheets.

However, they say local sea level rise around the coast of New Zealand is also affected by up and down movements of the land.

"We are very aware when these vertical land movements occur in large jumps during earthquakes, but less obvious to us all is that smaller shifts occur continuously in between large seismic events," they say.

These small but continuous changes add up, and in areas that are going down (subsiding) the annual rate of sea level rise can double.

"We have connected this vertical land movement (VLM) data with climate driven sea level rise to provide locally-relevant sea level projections.

"Property owners, councils, infrastructure providers and others need to know how sea level will change in the

coming decades so that they can consider how risks associated with flooding, erosion and rising groundwater will shift," Levy says.

"Twenty years ago we thought sea level rise was like pouring water into a bathtub — if you put more water in, it rises uniformly around the world. But it's much more complicated," Naish says.

“

Property owners, councils, infrastructure providers and others need to know how sea level will change in the coming decades so that they can consider how risks associated with flooding, erosion and rising groundwater will shift.

”

The NZ SeaRise projections tool will allow users to click on a particular location on the coast and see how much sea level is expected to rise, and by when, under different climate change scenarios.

"We have estimated future sea-levels for 7434 sites around our coastline. The largest increases in sea levels will occur

along the southeast North Island along the Wairarapa coast," Levy says.

"Here, land subsidence rates are high, and sea level could rise by well over one and a half metres by 2100 if we follow the least optimistic climate change scenario.

"In contrast, land is rising near Pukowai in the Bay of Plenty, and uplift rates may keep pace with climate change-driven sea level rise, causing a small fall in sea level if we follow the most optimistic climate scenario."

Based on current international emissions reduction policies, global sea levels are expected to rise about 0.6m by 2100.

"However, for large parts of New Zealand this will double to about 1.2m due to ongoing land subsidence. We have less time to act than we thought," Naish says.

"We know that global sea level rise of 25 to 30cm by 2060 is baked in and unavoidable, regardless of our future emissions pathway," Levy says.

"But what may be a real surprise to people is that for many of our most populated regions, such as Auckland and Wellington, this unavoidable rise is happening faster than we thought.

"Vertical land movements mean that these changes in sea level may happen 20 to 30 years sooner than previously expected.

"For many parts of New Zealand's coast, 3cm of sea level rise is a threshold for extreme flooding, above which the 100-year coastal storm becomes an annual event."

Sea level rise projections for the entire

Continued page 12

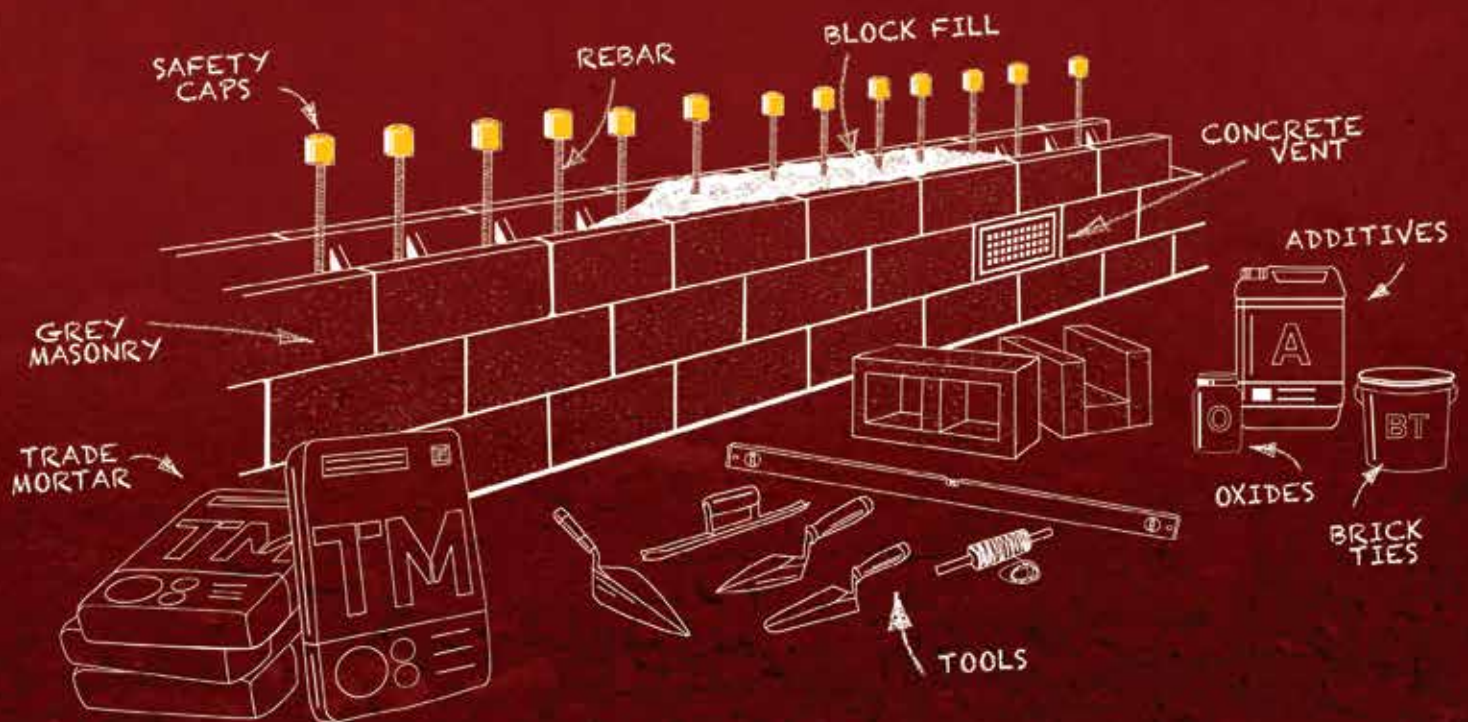
Based on current international emissions reduction policies, global sea levels are expected to rise by about 0.6m by 2100.



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From page 10

coastline will allow better decision-making about how to adapt to rising seas. The new projections are being incorporated into the next Ministry for the Environment guidance for local government practitioners on coastal hazards and climate change.

“With the recent release of the Government’s draft National Plan on Climate Adaptation, the timing couldn’t be better, as the impacts and risks of sea level rise are poorly defined for large parts of the coastline,” Levy says.

“We expect councils and planners will be the primary users. The finance and insurance sectors have already been asking for the data – in part driven by the Task Force on Climate Related Financial Disclosures reporting requirements that need to be met by 2024.”

Sea level rise can be kept to a minimum by enacting policies to meet Paris Agreement targets to limit global warming by 2100 to between 1.5° to 2°C.

“The severity with which we will experience sea level rise, and other impacts of climate change, can be lessened if we do all we can to limit warming by reducing emissions now. The sooner we act, the more effective that action will be,” Naish says.

“To be forewarned is to be forearmed, and this new science gives us the time and opportunity to put in place equitable and effective adaptation measures that will limit the impact of unavoidable sea level rise for the people of Aotearoa.”

NZ SeaRise is a five-year research programme funded by the MBIE’s Endeavour Fund. It brings together 30 local and international experts from Te Herenga Waka-Victoria University of Wellington, GNS Science, NIWA, University of Otago, and the Antarctic Science Platform to improve projections of sea level rise in New Zealand. To find out more, visit www.searise.nz/maps.

New climate change report a reality check

The Intergovernmental Panel on Climate Change’s (IPCC) Working Group III has released its mitigation report titled *Climate Change 2022: Mitigation of Climate Change*.

Infrastructure New Zealand says the group’s findings make for a sobering read. At current global mitigation policy settings, greenhouse gas (GHG) emissions are likely to exceed 1.5°C this century.

Without substantially strengthening policies beyond those already in place internationally, we are likely to see a median increase of 3.2°C on pre-industrial levels, by 2100. If we are to limit warming to 2°C, a rapid acceleration of mitigation efforts is

needed.

The building, transport and energy sectors received significant attention in the report.

Globally, the built environment contributes 40% of emissions, so is central to any chance of limiting warming.

In New Zealand, emissions from construction have jumped 66% in the past decade, and represent 20% of the country’s total emissions.

The authors caution that unambitious policies will lock in carbon-emitting construction processes, and curtail the potential benefits of effectively implemented mitigation and adaptation interventions.



The Intergovernmental Panel on Climate Change’s (IPCC) Working Group III findings in its mitigation report titled *Climate Change 2022: Mitigation of Climate Change* note that, globally, the built environment contributes 40% of all greenhouse gas emissions.

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New Zealand's first Infrastructure Strategy 'can lay a foundation for a thriving future'

New Zealand's first-ever long-term Infrastructure Strategy has made 68 recommendations to transform New Zealand – and protect \$5 billion of vulnerable local government infrastructure.

The New Zealand Infrastructure Commission, Te Waihanganga, says New Zealand's first long-term Infrastructure Strategy sets a vision for how New Zealand's infrastructure can lay a foundation for the people, places and businesses of the country to thrive for generations.

Tabled by Minister for Infrastructure Grant Robertson, *Rautaki Hanganga o Aotearoa - New Zealand Infrastructure Strategy 2022-2052* is the culmination of two years' independent investigation.

It incorporates feedback from more than 20,000 New Zealanders, more than 700 consultation submissions, and meetings and workshops with stakeholders from all over New Zealand.

Te Waihanganga chief executive Ross Copland says it identifies some of the most pressing issues New Zealand is facing, and the changes needed to overcome them.

"Infrastructure is critical to our national objectives and well-being, whether that be the sustained effort needed to meet net zero carbon commitments, ramping up housing supply, easing congestion in our cities, or meeting the expectations for drinking water that is fresh and clean," Copland says.

"But to meet these ambitions, there are some big decisions and trade-offs that

NZ's infrastructure challenge



need to be made. Electricity generation capacity needs to increase by some 170% to meet our net zero carbon goals; while it will cost about \$90 billion to fix New Zealand's water networks.

"Some \$5 billion of local government infrastructure is vulnerable to sea level rise. These challenges come at a time when construction costs are rising 60% faster than prices elsewhere in the economy, and we expect a shortfall of 118,500 construction workers in 2024," Copland says.

"More of the same simply won't cut it. The strategy shows we will have to be

smarter about how we plan, deliver and pay for our infrastructure.

"This includes changing the way we pay so we can better manage demand and use of networks.

"We also need a consenting system that actively prioritises meeting our net-zero carbon goals and housing New Zealanders. Much of our existing resource management system is not enabling of our national objectives.

"There is a lot of change going on already, and there's more to be done. We need to make sure all this work delivers what we need, in the best and most efficient way possible," Copland says.

"In a rapidly changing world, we need to be flexible and adaptable to change, so we will revise this at least every five years. This is the beginning of a much longer-term ongoing conversation with all New Zealanders."

The Government will prepare its response, which will be shared in September 2022.

Rautaki Hanganga o Aotearoa - New Zealand Infrastructure Strategy 2022-2052 is available at www.strategy.tewaihanganga.govt.nz.

• **Canterbury student set to make a "greener" industry with seaweed plasterboard, page 30.**

Infrastructure Strategy recommendations include:

- Achieving net-zero carbon emissions at minimum cost, and making it easier to leverage our abundant renewable energy resources.
- Making use of tools such as congestion charging on busy roads to make better use of our transport connections.
- Increasing housing opportunities in areas with good access to infrastructure access, and enabling greater and easier urban development through minimum levels of upzoning and mixed use zoning.
- Allowing for water meters to manage demand and encourage water conservation.
- Preparing infrastructure for the impacts of climate change.
- Reducing the amount of waste we create, particularly for

products that can't be recycled.

- Increasing technology use, including greater uptake of real-time data about infrastructure that can help with planning and maintenance – for instance, through digital twins.
- Standardising planning policy across New Zealand and ensuring New Zealand cities plan for significantly more growth.
- Streamlining consenting processes, particularly for infrastructure that helps meet national objectives, such as a zero-carbon economy, and reducing the regulatory burden on construction materials.
- Providing greater certainty for businesses in infrastructure industries to invest in skills and training development, and developing the talent required to deliver New Zealand's future infrastructure.

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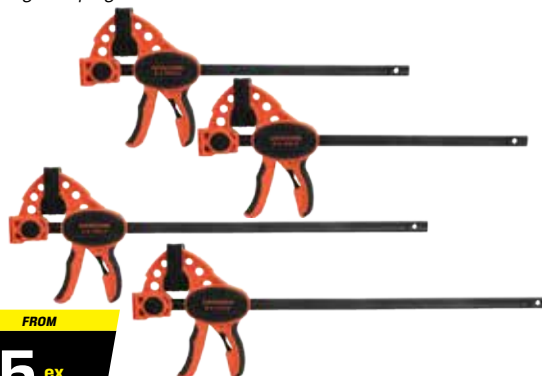
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Scholarships help Manawatu builders upskill

For Manawatu builders Jack Lord and Connor Deane, receiving a Freemasons Willson Lewis Scholarship is an opportunity to take their careers to the next level.

The Freemasons Willson Lewis Scholarship is a joint initiative between Manawatu Kilwinning Lodge No 47, UCOL and Registered Master Builders that began in 2017.

It is aimed at helping tradespeople working in the construction industry develop their skills further.

Scholarship recipients have the option of studying one of three programmes at UCOL part-time for a subsidised fee — the New Zealand Diploma in Construction, the New Zealand Diploma in Architectural Technology, or the New Zealand Diploma in Business.

CEDA and Mitre 10 Mega Palmerston North also provided Mitre 10 gift vouchers to the scholarship recipients.

Lord joined Isles Construction as a labourer in 2017 after studying UCOL's New Zealand Certificate in Construction Trade Skills (Carpentry). He went on to complete his building apprenticeship in October 2021.

"I feel grateful that people have seen my talent, my commitment to the trade, and my keenness to pursue it further," Lord said on receiving his scholarship.

Unlocking creativity

He has chosen to study the New Zealand Diploma in Architectural Technology, as he has ideas around designing buildings that he wants to bring to life.

"I felt that the Architecture programme would be a great way to unlock my



From left: Paal Iversen of Registered Master Builders Manawatu, UCOL executive dean engineering and applied technologies Danny Reilly, Jack Lord, Palmerston North MP Tangi Utikere, Connor Deane, Scholarships Committee chairman Darren Shadbolt, and Manawatu Kilwinning Lodge No. 47 Master Ainsley Watson after the presentation of the scholarships.

creativity," he says.

Deane, a foreman at Turbine Residential with seven years of experience in building, will study the New Zealand Diploma in Construction.

He says the programme will give him the skills to step up into a project manager role.

"Construction has always been my passion from a young age, and I'm at the stage in my career where I'm ready to pursue it at a higher level and gain more well-rounded knowledge," he says.

"I love being part of the team and on the tools. That said, I'm keen to take a bit of weight off my boss' shoulders in terms of the paperwork side."

UCOL executive dean engineering and applied technologies Danny Reilly says UCOL is proud to be part of a scholarship initiative that helps put learners through its highly successful construction and architectural technology programmes.

"The staff leading these programmes go above and beyond in not only teaching our learners, but also connecting them with employers," Reilly says.

Graduates highly sought after

"Graduates of these programmes are highly sought after, and all gain employment.

Our skilled and passionate staff have

achieved so much through hard work, tenacity, and a true desire to deliver for learners and industry. We need those qualities now more than ever before.

"I congratulate Jack and Connor on receiving their scholarships, and believe that they will make the most of this opportunity to

expand their skill sets."

Ainsley Watson, Master of Manawatu Kilwinning Lodge No. 47, says the Freemasons Willson Lewis Scholarships are an important part of the charitable contributions the Lodge makes to the community.

"We appreciate being able to help our recipients to further develop their knowledge and skills. We are pleased to be supported in this initiative by the Registered Master Builders, UCOL, and the national Freemasons Charity," Watson says.

Registered Master Builders Manawatu president Shaun Mainwaring says the scholarships are a great way for the next generation of tradespeople to upskill and challenge themselves without having to leave the workforce.

"It's great for our community to have quality skilled tradespeople giving back to our region, especially in these current times where there is a real shortage of qualified tradespeople," he says.

"I hope the scholarship recipients gain wider knowledge within the building sector and that it helps them to move forward in their careers.

"I encourage builders who feel their financial situation could be a barrier to further study to apply for these scholarships in the future."

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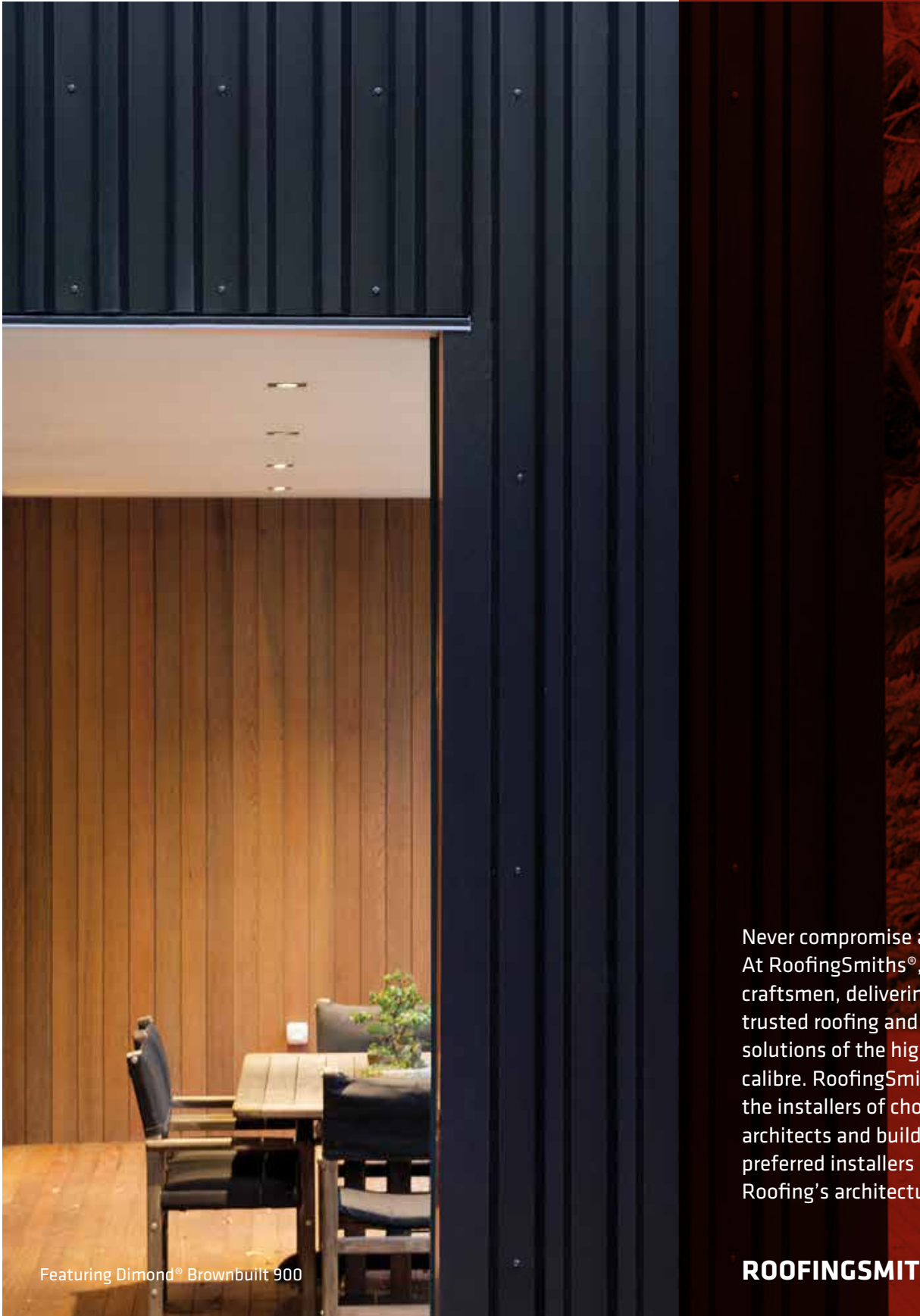


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Timber Design Centre director appointed

The Timber Design Centre has appointed Dr Robert Finch as its director.

Dr Finch was formerly director of the Quake Centre, hosted at the University of Canterbury. Prior to this, he was the chief executive for the Structural Timber Innovation Company.

The Timber Design Centre was launched in March 2022 to provide expert advice, research, information and educational resources for key stakeholders involved in building design and construction.

The Centre is an initiative between Te Uru Rakau - New Zealand Forest Service and a consortium comprising Scion (Crown Research Institute), the Wood Processors and Manufacturers Association (WPMA), New Zealand Timber Design Society and BRANZ.

Key support role

Dr Finch says the centre will play a key role in supporting and encouraging greater use of mass timber building products in the New Zealand construction sector.

"Timber, in all its forms, is a highly desirable building material, and the more that is sourced from sustainably-managed forests and deployed into built structures,



New Timber Design Centre director
Dr Robert Finch.

the greater the sequestration of CO₂ from the atmosphere.

"This will bring real benefits to our communities, the built environment and the planet.

"The Timber Design Centre will promote and assist more widespread selection and application of New Zealand timber into built structures, with a particular focus on commercial, retail, public and industrial

building sectors.

"New Zealand, along with most other countries in the world, is facing the very real challenge of limiting and dramatically reducing total greenhouse gas emissions to minimise the adverse effects of climate change.

"A critically important mitigation strategy in sequestering CO₂ from the atmosphere is to ensure that sustainably-grown timber is recognised and used wherever possible and appropriate in the built environment sector."

Scion sustainability architect Andrea Stocchero says the director appointment is an important step forward for the centre.

Unique skillset

"He brings a unique set of skills and experience that will enable the Timber Design Centre to grow quickly and support wider adoption of timber-based construction technologies and systems by the New Zealand building sector," Stocchero says.

"This will, in turn, support the transition to a low-carbon built environment in New Zealand."

Read more about the Timber Design Centre at www.timberdesigncentre.co.nz.

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New research centre aims to help reduce Covid-19 indoor transmission risk

The newly-established Indoor Air Quality Research Centre (IAQRC) aims to increase public awareness of indoor pollutants, and related health outcomes, and to advocate for improved indoor air quality in New Zealand.

The IAQRC brings together indoor air quality research expertise from seven leading research organisations. It comprises a multi-disciplinary team, including researchers from BRANZ, GNS Science, Massey University, NIWA, University of Otago, Victoria University of Wellington, and the University of Canterbury.

The mission of the IAQRC is to advance the understanding of indoor air quality by co-ordinating research, and sharing knowledge and resources.

It also aims to provide practical advice to the public to improve indoor air quality, including mitigating the transmission of Covid-19 indoors.

"Covid-19 can spread on air currents, but good ventilation can quickly remove particles carrying it," IAQRC member and

BRANZ principal scientist Dr Manfred Plagmann says.

"Its spread can be minimised by bringing as much fresh air as possible indoors, as recommended by the IAQRC.

"Opening several windows on more than one side of a room can create a cross-draft that will exchange air in the room with fresh air in about 10 minutes," he says.

Over the past few months, IAQRC members have provided advice to Government organisations on how to reduce the risk of Covid-19 transmission indoors and improve air quality in public buildings.

There are many other sources of in-home air pollution.

Some of these, such as wood-smoke from fires, stoves and log-burners, are more obvious than others, such as chemical vapour from furniture.

"To understand how we can reduce health risks associated with poor indoor air quality, we first need to understand what pollutants people are being exposed to in

their homes, schools and workplaces.

"We look forward to providing more practical solutions to help New Zealanders improve indoor air quality while advancing our collective understanding of indoor air pollutant risks," Dr Plagmann says.

The IAQRC encourages researchers, businesses and members of the public to visit its web site at <https://iaq.org.nz>, which is a repository of the latest research and independent advice on how to improve indoor air quality, and welcomes interested researchers to join the centre.

IAQRC members are:

Dr Julie Bennett (University of Otago), Dr Mikael Boulic (Massey University), Dr Guy Coulson (NIWA), Dr Perry Davy (GNS Science), Professor Mark Jermy (Canterbury University), Dr Mark Jones (BRANZ), Dr Ian Longley (NIWA), Dr Bill Trompeter (GNS Science), Professor Robyn Phipps (Victoria University of Wellington), Dr Manfred Plagmann (BRANZ), Dr Caroline Shorter (University of Otago), Anna Walsh (BRANZ).

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Environmental Site Management course offered

Site Safe has unveiled its new Environmental Site Management training course.

The two-hour online course, developed in partnership with Auckland Council, is designed to improve environmental practices on small residential building sites.

It is suitable for all residential builders and subcontractors undergoing permitted construction activities.

The course, to be co-hosted by Site Safe and Auckland Council, will initially be rolled out to builders in the Auckland region in conjunction with several breakfast activities to be scheduled around the Auckland region over the coming months.

However, given the course is online, builders outside Auckland may also enrol.

Those participating in the course will learn about erosion and sediment control, on-site waste management, chemical and pollutant control practices, and construction and demolition.



Auckland Council waste solutions general manager Parul Sood.

Participants who complete the course will receive an e-certificate and two Licensed Building Practitioner points, and a better understanding of how to protect the environment.

Auckland Council waste solutions general manager Parul Sood says they are excited to have partnered with a leading health and safety solution provider such as Site Safe to deliver the course.

"The activities we do on-site can harmfully impact our local environment. But with some simple changes, we can reduce our impacts, leading to environmentally safe sites," Sood says.

About the course:

The fully online course covers seven interactive topics and includes:

- Waste, erosion and sedimentation of the building industry.
- How it all works.
- Why managing it matters.
- Consequences of poor practices.
- Site waste plans.
- What good practice looks like.
- Minimising waste on projects.

For more information on how to register for the course and what you will learn, go to www.sitesafe.org.nz.

Catalina Bay Apartments construction begins

Construction has officially started on Willis Bond's Catalina Bay Apartments development in Hobsonville Point, Auckland, with more than 75% of the 82 apartments and terraced homes already sold.

Located at the northern-most point of Hobsonville Point, the \$150 million freehold waterfront development is the largest of its kind to commence construction this year.

Barfoot & Thompson head of projects Matt Baird says this is a testament to the quality of the build, uniqueness of the site and reputation of the developer and team involved.

After a successful pre-sales period, including several lockdowns and Covid-19 restrictions, Willis Bond managing director – development David McGuinness says the company is thrilled to have Registered Master Builders Association contractor LT McGuinness on-site.

"It's great to reach this milestone and see such enthusiasm from our buyers who are looking forward to making Catalina Bay home. It's really a coming of age for apartment living north of the bridge," McGuinness says.

Construction on the waterfront homes follows the successful stage one restoration and refurbishment of seven heritage Royal New Zealand Air Force buildings into a mix of high-quality offices, award-winning eateries and retail.

"Stage one really set the tone for

Catalina Bay and helped people to see the potential for this unique site. We've since seen increased ferry sailings direct from Catalina Bay to the city, and great progress on the landscaping works in the precinct."

"The benefit of a master-planned precinct like this is that all facets have been considered to build a forward focused, sustainable, seaside community," McGuinness says.

Designed by Architectus, the building takes inspiration from its natural environment, with coastal-inspired interiors and architecture that adds to the contemporary village environment.

Sustainability is heavily integrated into

the design of the building, targeting a Homestar 7 rating.

Residents at the development will benefit from an on-site concierge, theatre, and water sports storage, as well as direct access to the ferry terminal, coastal boardwalk and local amenities including The Hangar - shared office, Catalina Bay Farmers Market, award-winning eateries and a boutique pilates studio.

There is a selection of two-bedroom wharf terraces, one and two-bedroom apartments, and two exquisite three-bedroom penthouses still available.

Construction completion is expected in early to mid-2024.



Dignitaries from Willis Bond, Architectus and Kainga Ora breaking ground at the Catalina Bay Apartments development in Hobsonville Point, Auckland.

Quality systems for ready mixed concrete plants



The Concrete NZ Plant Audit Scheme provides a rigorous and objective audit of the quality systems in place at a ready mixed concrete plant.

Engineers, builders and their clients can be confident that concrete from a producer audited by the scheme meets the requirements of the Building Code through NZS 3104 Specification for Concrete Production.

What the scheme provides

The scheme operates to audit Concrete NZ Readymix Sector Group members' concrete plants as defined in NZS 3104.

The scheme audits the quality systems in place at a concrete plant, with audits carried out by the Plant Audit Committee, a group of experienced engineers.

The management system of the scheme conforms with the requirements of ISO 9001, and is independently audited by Bureau Veritas New Zealand.

What the scheme requires

Compliance with NZS 3104 and

the relevant parts of related documents is mandatory under the scheme, along with an appropriately qualified concrete tester at each plant, and a suitably qualified plant engineer.

Records must be properly maintained to provide an audit trail confirming the test records analysed are correct and complete.

Specific benchmarks audited

Plants report performance data to the committee annually, and are subject to an annual data review, together with an on-site audit every second year.

Performance criteria audited includes concrete strengths, aggregate quality, and equipment calibration, as well as production and testing records.

Maintaining an audit certificate

In addition

to the benchmarks audited, the frequency of testing within each quarter must be submitted to the committee.

Failure to maintain testing requirements can result in the withdrawal of an Audit Certificate, which is issued for a period not exceeding 12 months.

Compliance with NZS 3104 can also be demonstrated outside of the Concrete NZ Plant Audit Scheme by the producer obtaining an Audit Certificate from an appropriately qualified engineer.

When using concrete from a plant that does not have an Audit Certificate, the purchaser (or their agent) is responsible for ensuring that systems are in place (eg testing) to verify the concrete meets NZS 3104.

It's in the mix

Concrete NZ's Plant Audit Scheme is:

- Independent

and rigorous

The scheme provides a thorough and objective audit of the quality systems at a concrete plant to ensure the concrete produced complies with NZS 3104, the main Standard used to specify structural concrete.

• Preferred choice

The majority of concrete producers choose to be members of the Concrete NZ Readymix Sector Group, and use the scheme to demonstrate that the concrete they produce meets the required industry Standards.

• Consumer confidence

Purchasers can be confident that concrete from a producer audited through the scheme meets NZS 3104. This provides assurance that the concrete will achieve its strength and durability requirements in its application.

A full list of audited plants is available on the scheme's web site at www.rmcpplantaudit.org.nz.



Changing window thermal performance

Rob Campion of the Window & Glass Association NZ touches on the impacts of the revision to Clause H1 of the Building Code.

It's here! We've been working on parts of this document with the Ministry of Business Innovation and Employment (MBIE) and BRANZ for some time now, so were aware of what was coming — and on November 29 it dropped silently into our inboxes, Clause H1 the Fifth Edition.

It may have taken a couple of months, but as the building industry comes to terms with the impact of the changes, it now appears that drop was more like a silent thermal quake ...

The revision of Clause H1 brings a new set of regulations governing the thermal performance of our building envelopes, with impact on each of the primary building elements — roofs, walls, floors, and most definitely for windows and doors.

Welcome to the new world. But be aware this revision is only the first step, albeit a significant one!



Changes — overview

So, as you're all aware, H1 is the Clause of the Building Code that regulates the Energy Efficiency of our built environment. It "Provides for the efficient use of energy and sets physical conditions for energy performance."

The revision to H1 modifies those conditions in line with, or as a first step towards, the Government's Building for Climate Change desires, by increasing the minimum required R value for each of the primary building elements.

Previously, glazed elements

required a minimum performance value of R0.26, satisfied by a cold aluminium frame with clear double glazing, long recognised as being barely adequate.

The Fifth Edition of H1 has done two things for glazed elements. First, it moved from basing window and door performance on a single standardised window to looking at the weighted average R value of a house lot of joinery, providing a much more holistic view of the contribution to the performance of the thermal envelope.

Second, the minimum R value requirements have increased. We now have two values spread across six climate zones — R0.46 for Zones 1 to 4, and R0.50 for Zones 5 and 6. These requirements kick in for consents lodged from November 3, 2022.

However, there is a slight reprieve for Zones 1 and 2, where 70% of construction is currently happening. The minimum R value required in these zones alone has been reduced to R0.37 for a further 12 months, through to November 2023.

Beginning of the beginning

But how will these changes impact the window and glass industry? For the bulk of our construction, Zones 1 and 2, in the first 12 months it is mostly just a change of glass type.

Using a traditional cold aluminium frame but changing from a clear on clear double IGU, to one that includes a pane of high performance Low E glass, with an argon gas fill, will achieve the required R0.37.

However, to achieve an R0.46 or greater performance value will require a change of frame material to thermally broken aluminium, uPVC, or timber and the clear on clear IGU will vanish for all but timber-framed windows.

Therefore, for consents issued from November 2022 in Zones 3 to 6, and from November 2023

in Zones 1 and 2, cold aluminium frames and clear on clear double IGU's will essentially be removed from our construction methodology.

Thermally superior frames and Low E glazing will be the new normal and, in my opinion, that is not a bad thing.

The Schedule method and Table E.1.1.1

There are three ways of demonstrating compliance with Clause H1 — the Schedule, Calculation, and Modelling methods, each with their own set of parameters and uses.

However, the schedule method is traditionally the most commonly used, based on a look-up table of window and glass combinations and their respective R values.

With the Fifth edition and the shift in philosophy around the evaluation of thermal performance for glazed elements, Table E.1.1.1 in H1/AS1 was created using the more meaningful weighted average R value of a house lot approach.

The table was developed using windows and door

Not all Low E glasses are the same, and to help identify this Table E.1.1.1 identifies the variation through the use of terms Low E₁, Low E₂, Low E₃, and Low E₄.

Of course, there are other IGU make-ups that will provide differing U_{COG} values, so architects, designers and builders must work with their suppliers and be clear that their specification reflects the desired outcome.

Impact

The window and glass industry absolutely supports the Government's initiative around creating warmer, healthier, more energy-efficient homes, and the changes to H1.

However, these changes are not without their impacts, expense, risk, pain and stress for the people and businesses involved.

Aluminium suppliers are redesigning systems and shifting to thermally broken frames, uPVC suppliers are increasing their capacity, timber window manufacturers are adjusting for the changes, and

Type of glazing	U _g ¹⁰	Spacer type ¹⁰	Example IGU ¹⁰ (Informative)	R _{frame} (m ² -K/W) for different frames			
				Aluminium frame	Thermally broken aluminium frame	uPVC frame	Timber frame
Double pane	2.63	Aluminium	Glass: Clear/Clear Gas: Air	R0.26	R0.32	R0.40	R0.44
	1.90	Aluminium	Glass: Low E ₁ /Clear Gas: Argon	R0.30	R0.39	R0.50	R0.56
	1.60	Thermally improved	Glass: Low E ₂ /Clear Gas: Argon	R0.33	R0.42	R0.56	R0.63
	1.30	Thermally improved	Glass: Low E ₃ /Clear Gas: Argon	R0.35	R0.46	R0.63	R0.71
	1.10	Thermally improved	Glass: Low E ₄ /Clear Gas: Argon	R0.37	R0.50	R0.69	R0.77
	0.90	Thermally improved	Glass: Low E ₄ /Clear Gas: Krypton	R0.40	R0.54	R0.76	R0.85

configurations from a variety of current popular house plans to ensure they reflect what is being built today.

The thermal performance of the combinations was calculated using underperforming generic frame types that were further downrated to ensure the product delivered to site actually achieved the requirements of the Code.

glass suppliers are reassessing their product offerings to align with the new requirements.

These changes have required significant investment in people, machinery and processes as we work towards the time frames afforded us by the MBIE.

But the industry is convinced it will be ready to supply suitable product come the November 2022 and 2023 implementation dates.

The 'what' and 'how' banana skins of upcoming H1 Energy Efficiency changes

Chief executive Graham Moor says the Roofing Association NZ (RANZ) agrees that the thermal efficiency of our building stock must improve, but that the timing of this change needs to shift.

How appropriate as we head into winter that H1 Energy Efficiency is such a hot topic.

I attended a Zoom meeting recently with RMBA chief executive David Kelly and the MBIE about the proposed introduction date of this significant change to the nation's buildings, both new and existing.

To be very clear, like the Registered Master Builders Association, RANZ absolutely agrees that the thermal efficiency of our building stock must improve.

However, the timing of this change needs to shift. *Building Today* columnist Michael Fox's March 2022 column made the very valid point about consequences that always come with change.

Critically, there needs to be a significant educational document so that it is well understood and explained clearly. The "why" is simple. The "what" and the "how" are the banana skins here.

For our roofing industry on a new build, insulation takes place well after we have left the site. Here there is a 500mm set back from the top plate, where the R-value can be less to reduce the bulk to allow for our typical space as the rafter goes over the top plate.

However, I struggle with this, given the R stands for resistance. This 500mm band is, in part, defeating what we are setting out to do. So maybe there should be a combination of insulating products required to improve this situation?

Given the dominance of bulk products, some more thinking is required and solutions rolled out around this.

Now if we look to a typical skillion/lean-to roof, that is quite some depth required



when bulk insulation is 260mm to 290mm thick.

It is critical that there is a 20mm gap between the roofing underlay and the insulation. If this is not achieved, then the roofer gets called in to explain the mould appearing on the ceiling as moisture wicks via the insulation onto the ceiling.

Likewise with metal wall cladding. As we seek to increase the R value, it is just as important that we force insulation into the framing which then bridges across the critical cavity.

I was left scratching my head with some of the official's replies during the Zoom meeting — in particular, for us as roofers, where we retrofit insulation when re-roofing.

I heard that if there is not sufficient room to get the R6.6 insulation, then thickness and therefore resistance can change to accommodate the room available. Sounds logical.

However, the majority of housing stock is well short on the available space, and we really need to have a better solution than fit-what-you-can.

Given the dominance of bulk insulation, we will certainly improve thermal efficiency, but we defeat some gains when the carbon footprint to transport twice the amount of insulation is factored in.

Increased cost is a given, and this just adds to the pile of increases that keep coming at us and, ultimately, our customers. Consumer confidence is tanking, and this will add to that.

There have been some that say we just need to get on with it. What about if we start from a couple of steps back first, set the scene via education and understanding, and have the solutions and answers in place.

Starting from those few steps back will enable us to eventually take the giant stride forward to more thermally-efficient buildings.

But the whole industry needs to be set to take that stride. Not just the idealists.

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Weatherboards provide timeless appeal...

A considered approach when selecting materials creates homes that perform better, and provides timeless appeal.

So when it comes to cladding, builders wanting the above for their clients won't need to give choosing Dynex PALLISIDE® weatherboards a second thought.

The product's classic weatherboard design is timeless, featuring elegant lines and a versatile range of colours to enhance any palette of materials.

Proudly made in New Zealand, the design provides long-lasting protection against New Zealand's harsh UV rays, locking in the colour for years to come.

The system has been engineered with a unique weatherboard interlock which hides the nail and incorporates an anti-capillary groove to prevent moisture ingress.

Lightweight, quick and easy to install, there's no need to prime or paint, which saves time during installation. The system is weathertight-proven, and also backed by a 25-year warranty.

What's new?

- The latest additions to the Dynex PALLISIDE® weatherboard system are new boxed corners and window facings.
- These design accessories present a strong traditional aesthetic, a popular look for single-level residential homes.
- A full range of boxed corner components are available to suit different applications, including 90° corners, 135° corners, flat boxed jointers and endcaps.
- The pre-cut scribes save time on-site when installing Dynex PALLISIDE® traditional weatherboards with boxed corners.

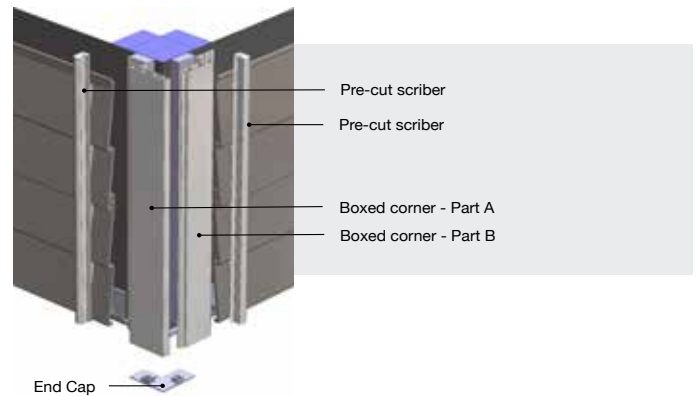
Coming in a range of colours and profiles, the system has been engineered to be impervious to water. Weathertightness is built in to the product through features including:

- Interlocking weatherboards.
- Concealed channelling.
- Double-profile corner soakers.
- Engineered dimensional accuracy.

Ian Thrush from Parallel Architecture renovated his family home, choosing Dynex PALLISIDE® weatherboards with box corners and window facings.

The overall outcome is clean lines for a modern home with character that emulates a traditional weatherboard look. To read more, visit palliside.co.nz/case-study-6.

The Dynex Palliside weatherboard system is BRANZ-appraised. So do it once, do it right, and never worry about it again.



Don't give it a second thought

A considered approach when selecting materials creates homes that perform better and provide timeless appeal.

How will your home look in 25 years? Are the products recyclable? With a versatile range of colours and profiles, PALLISIDE® weatherboards complement and enhance any palette of materials. But it's what you can't see that makes the real difference; the thick protective skin co-extruded onto a lightweight aerated structural core prevents blistering, splits and cracks. The colour is engineered right through the protective skin providing long lasting defence against NZ's harsh UV rays, locking in the colour for years to come.

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Image courtesy of Resolution Design

Austral and Monier bricks now backed by 100-year warranty



Crevole by Monier bricks, Fletchers project, Auckland. Photo: Patrick Reynolds

Construction materials have caused much consternation in New Zealand in the past few years.

But there's a new offering that will smooth the brows of architects and their

clients — a 100-year warranty on Austral and Monier bricks.

The Brickery's Kerry Heard says the warranty will apply to all Austral and Monier bricks they distribute throughout New Zealand.

"Big respected residential home builders have already turned to brick as their clients, having seen this country's leaky home debacle, ask for their homes to be durable and with easy maintenance," Heard says.

Historic homes and commercial and industrial buildings have provided testament to the longevity of bricks for construction.

"What's more, when old brick buildings are torn down for the construction of a new place, those bricks are still valuable, and are reused in a variety of ways," Heard says.

"Our joint venture partners, Brickworks and CSR, are committed to achieving sustainability, and bricks will remain at the forefront of designing for a future-proofed environment."

Ten reasons why bricks are a great cladding product:

- Bricks last forever.
- Bricks can be reused or recycled.
- Bricks are maintenance-free, and they don't fade, rot or rust.
- Bricks are fireproof.
- Bricks are known for their outstanding durability and colourfastness.
- Bricks are a thermal battery, keeping homes cooler in summer and warmer in winter.
- Brick homes are more energy efficient than those constructed with lightweight materials.
- Bricks have excellent sound-reducing qualities.
- Bricks are the natural healthy choice as they breathe and allow moisture to escape.
- Bricks emit no Volatile Organic Compounds.

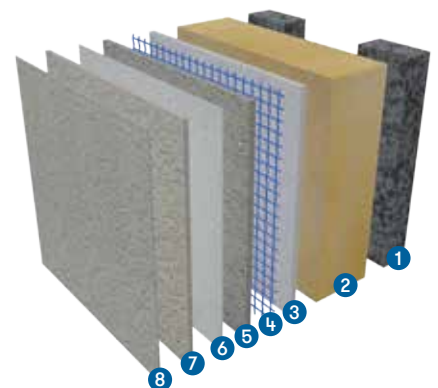


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CSR

Canterbury student set to make a 'greener' industry with seaweed plasterboard

A revolutionary new plasterboard design incorporating seaweed could reduce the carbon footprint of building materials, thanks to the work of a Canterbury international student.

Bachelor of Product Design student Andy (Minhong) Park has developed a bio-composite wall panel that uses algae — or seaweed — as a bio-filler which could help the construction industry become greener.

Originally hailing from South Korea, Park, 21, experimented with the low-cost plasterboard alternative as part of his final year project after identifying the significant environmental impact of the construction industry.

"Currently the building industry contributes 20% of New Zealand's carbon emissions," Park says.

"As the sector faces the challenge of reducing carbon emissions but building more houses, and with plasterboard used in almost every home, seaweed plasterboard offers a viable green alternative."

The plasterboard has moisture control features, and is a low-cost material, helping the building industry reduce its footprint through recyclable components.

Compared to traditional gypsumboard, seaweed plasterboard requires significantly less energy to manufacture, further reducing its environmental impact.

Damaged or deformed seaweed

plasterboard can be ground and used as a fertiliser, so is suitable for the construction and agriculture industries.

Because the plasterboard is made without harmful and non-recyclable ingredients such as fibreglass and vermiculite, it is also an environmentally-friendly approach to fireproof plasterboard.

"Seaweed is fast-growing, at 0.5 metres per day, and is capable of sequestering around 173 million metric tons of carbon annually," Park says.

"It's easy to cultivate and can be farmed offshore, not competing for farmable land with other bio-based materials, making it an attractive, low-cost farming commodity.

"Because seaweed can absorb carbon underwater, large wall-panel manufacturers could employ seaweed farming as a carbon offset by growing it," Park adds.

Seaweed bio-filler also contributes to warmer, drier, safer homes, and Park says preliminary testing indicates fire performance at the level of commercially available products.

"Seaweed has been proven to reduce ignition risks, increase flame retardancy, and promote auto-extinguishing behaviour of seaweed-based composite systems

because it contains boron, a natural fire retardant," Park says.

"Seaweed is also recognised for its ability to absorb and release moisture, and is a greener alternative to traditional passive fire protection materials due to the absence of non-recyclable elements. This also makes it able to be recycled and used as a fertiliser."

The finished seaweed plasterboard product has a glossy marble surface, coloured green, red or brown depending on the type of seaweed used.

Park's eco-alternative to traditional plasterboard was recognised in the UC Innovation Jumpstart Greatest Commercial Potential Award, and won the accompanying \$20,000 prize.

After the success of his 12-week project development plan, Park and his lecturers are in the early stages of a commercialisation plan, and are working with Kaiarahi Rangahau Maori to identify suitable species of seaweed for product development and marine agriculture.

Park and his team are calling on additional funding and input from industry experts to assist in further research and business development.



Bachelor of Product Design student Andy Park has developed a bio-composite wall panel that uses seaweed as a bio-filler to help the construction industry become greener.



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Eco-friendly packaging a 'change for good'

Miles Nelson is committed to supporting the practice of recycling and biodegradability and, as such, its popular S Range door handles are now available in eco-friendly packaging.

In an effort to reduce on-site waste, and with an ongoing desire to supply a packaging solution that does not deplete the ecosystem, the company is proud to announce its S Range is now available in recyclable packaging.

The new packaging design is fully recyclable and compostable, and is made from reconstituted pulp. The printing ink is non-toxic, and only water-based dyes are used.

The viewing panel is made from Polyethylene Terephthalate (PET). These products are 100% recyclable in New Zealand, and its low diffusion co-efficient and thermo-stability means it can be recycled up to seven times.

All packaging can be placed with residential kerbside recycling. Alternatively, the box can be home compostable.

The one packaging option is suitable for use as a trade box, and also converts nicely into a hang sell option.

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Sercombe's maturity and focus key in Concrete Industry Apprentice of the Year win

Maxwell Sercombe of HEB Construction has been presented with the 2021 Concrete Industry Apprentice of the Year award by Concrete NZ and the BCITO, a business unit of Te Pukenga Work Based Learning Ltd.

The pandemic greatly impacted the construction sector and hospitality industry, leading to multiple postponements of Concrete NZ's conference, at which the Concrete Industry Apprentice of the Year is traditionally acknowledged.

As such, Sercombe was joined by his HEB Construction colleagues and extended family, along with the Concrete NZ and BCITO teams, at a recent function in Wellington dedicated to celebrating his achievements.

In congratulating Sercombe, Concrete NZ chief executive Rob Gaimster noted that the quality of entrants was exceptional.

He said entrants included apprentices from precast manufacture, concrete placing and finishing, concrete production and concrete construction, making the judging process more challenging than is normally the case.

"Maxwell's maturity and focus helped to elevate him above other entrants, and he deserves applause for his enthusiasm, dedication and thirst for knowledge," Gaimster said.

"He has shown tremendous professional growth over recent years which, combined with his outstanding personal qualities,



Concrete Apprentice of the Year 2021 Max Sercombe (third from right) with the BCITO team, from left: Mike McFarlane, Glenn Duncan, Greg Durkin, Ben Hilder and chief executive Jason Hungerford.

make Maxwell a worthy recipient of the award."

BCITO director Jason Hungerford expressed similar sentiments in praising Maxwell's hard mahi (work) and achievements to date, also noting that the function was an opportunity to celebrate with the people that have supported him on his learning journey.

"In conjunction with industry associations, apprentice awards are held each year across all BCITO trades," Hungerford said.

"For me, these awards are a culmination

of everything we're about at the BCITO — training, learning, and rewarding excellence, and they reflect what we want everyone training in the construction sector to aspire to! Well done, Maxwell."

HEB Construction structures training manager Raymond Puhara congratulated Sercombe on his achievement, noting that it was obvious from the start that he was a go getter, punctual and reliable.

"Max gives his all in whatever he does, and is definitely one of our future leaders," Puhara said.

The Concrete Industry Apprentice of the Year award has gained great momentum since its inception in 2016, and is an important tool to celebrate apprentice success, the importance of trade training, and the value of employer and family support.

"Over recent years, the number of those enrolled in BCITO qualifications has increased dramatically, hitting 20,000 in 2021," Gaimster noted.

"Within this environment of trade training growth, the Concrete Industry Apprentice of the Year award highlights the fantastic opportunities available in the concrete industry for those contemplating a career in construction."

The award was open to all those enrolled in, or who had recently completed, one of the BCITO concrete apprenticeships.

The Concrete Industry Apprentice of the Year award was made possible thanks to major sponsors Concrete NZ and the BCITO.



Max Sercombe receiving his award from BCITO director Jason Hungerford (left) and Concrete NZ chief executive Rob Gaimster.

Environmentally-conscious drainage system made from recycled plastic

The Allproof Commercial Channel is a New Zealand-made linear channel drain with a 200mm clear opening.

Injection moulded from 100% recycled material, it provides an environmentally-conscious and economic drainage system.

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traffic.

The channel comes as 100mm or 150mm internal depth, both in one-metre lengths, with stainless steel edge rails providing a clean and robust install.

<https://allproof.co.nz/product/commercial-channel-200mm-clear-opening>



We've got another pair of Monza Sahara workboots, courtesy of Safety at Work Wholesale, to give away to the lucky winner of this month's Trivia Question, worth

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Congratulations go to Larry Thomas of Christchurch, who won last month's Monza Sahara workboots worth \$259.

Building Act 2004 convictions — appealed

Timothy Bates of Auckland law firm TM Bates & Co reviews a recent appeal to the High Court of convictions and sentence for charges laid under the Building Act 2004.



This case concerns the convictions of three appellants who had been charged under section 40 of the Building Act 2004, which prohibits carrying out building work other than in accordance with a building consent.

Bella Vista development

The convictions each relate to a development of land near Tauranga. The first appellant was Mr Cancian, the director/shareholder of Bella Vista Homes Ltd (Bella Vista), which was the developer.

Bella Vista acquired land near Tauranga for the purpose of undertaking a subdivision known as The Lakes. It subdivided the land into sections and then sold land and building packages in the subdivision to the public.

The second and third appellants were The Engineer Ltd, the company contracted to carry out the engineering work in relation to the construction of the dwellings, and Mr Cameron, the director/shareholder of that company.

As work progressed on the development, Worksafe New Zealand and the council grew concerned regarding the quality of the work and the safety of Bella Vista employees.

They intervened, leading to the cessation of construction work in the subdivision.

Charges were ultimately laid by the council against the three appellants under the Building Act 2004 and, in the District Court, the appellants were convicted on several charges of carrying out building work not in accordance with building consent in relation to some of the properties in the subdivision.

Mr Cancian

Mr Cancian appealed against his convictions in relation to three of the eight properties at the subdivision. His appeal was successful in relation to 301 Lakes Boulevard only.

In the appeal, Justice Lang found that the filing of a Record of Work does not establish that the Licensed Building Practitioner that files it carried out or supervised the restricted building work.

He ruled that it is a record of restricted building work having been carried out, not building work per se. In addition, the court noted that section 88(4)(a) of the Building Act 2004 does not, of itself, create any liability in relation to any matter to which the Record of Work relates.

It followed from this that the only ground that Mr Cancian could have been convicted in respect of this property was if he had project managed construction at this property.

There was no evidence that he had occupied this role in respect of this property, thus the conviction here was overturned.

The High Court did rule that Mr Cancian's project management role had been established as regards 297 Lakes Boulevard.

Although Justice Lang did not agree with some of the reasoning applied to the conviction, the conviction was upheld in respect of this property on the basis that Mr Cancian was the overall project manager for the particular property.

In particular, the court held that where Mr Cancian was directly involved in excavation decisions relating to the heights and siting of houses to be built in the subdivision, then this directly impacted on the rear walls of 297 and 301 Lakes Boulevard, which could not be constructed as consented and required significant variation in height and footing size.

The High Court considered that Mr Cancian must have been aware of that fact.

As regards 5 Aneta Way, Justice Lang upheld the conviction on the basis that the particulars were proven beyond reasonable doubt, and Mr Cancian had a responsibility on the basis he was the LBP on-site.

Producer statements

The second and third appellants appealed convictions on charges relating to four of the eight properties at the subdivision.

The charges laid by the council against Mr Cameron and The Engineer Ltd were based on the fact they had filed producer statements with the council confirming that work had been carried out in accordance with the consent when this was not the case.

The court noted that producer statements have long been fraught with issues as to their legal status.

Their widespread use under the 1991 Building Act has led to issues, due to being relied upon without sufficient scrutiny.

Although their legal status was altered pursuant to the Building Act 2004 with constraints on resources, they are still widely used as a means of establishing compliance with code and building consents.

At paragraph 58, Justice Lang helpfully notes the utility of producer statements, avoiding the need for building consent authorities (BCAs) to expend their resources in the physical inspection of every item of building work.

He observes they have particular value in relation to building works such

as foundations, masonry, and structural aspects within buildings.

It was noted:

"These can be very technical parts of a construction project, and many BCAs do not have the resourcing or in-house capability to inspect these aspects of the building."

Justice Lang found that the issuance of producer statements in relation to non-compliant building work did not give rise to liability under section 40, primarily on the basis that the building consent did not refer to producer statements and, therefore, issuing a producer statement could not be in breach of that building consent.

Ultimately, the court therefore ruled that Mr Cameron and The Engineer Ltd's appeals against conviction were allowed, and the convictions and fines were quashed.

This decision makes some important comments about the significance of producer statements and the problems they create where they are not accurate.

Whilst an engineer or architect may take comfort from this case that liability under section 40 will not flow where a producer statement is shown to be inaccurate, the liability of an inaccurate producer statement may lie in negligence or other causes of action.

Furthermore, the inaccuracy of a producer statement may bite to its provider in so much as a BCA may no longer be willing to accept a provider's future producer statements.

Note: This article is not intended to be legal advice, nor a substitute for legal advice. No responsibility or liability is accepted by TM Bates & Co or *Building Today* to anyone who relies upon the information in this article.



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All of industry needs to be ready for H1 requirement changes

EasyBuild director Mike Fox reckons the Government and officials appear in denial of the costs and delays that will be caused by rushed H1 Energy Efficiency changes due to be implemented in November this year. He follows up his Building Today March column with another look at the likely consequences.

Since writing my March article, which helped raise awareness of the impending H1 requirements, a number of things have happened.

Not surprisingly, the MBIE have come out in defence of their rushed stance where they have stated the upfront cost to the consumer of these measures to be between \$8800 to \$12,100 for a single-level, timber-framed, four-bedroom home, dependent on climate zone.

I consider the costs to be woefully underestimated, and no breakdown of them has been given.

When the real costs become a reality, I'm sure many disgruntled new home owners will be wanting answers — and access to the MBIE's mythical suppliers to get the discounted rates it has used.

Overwhelming mandate

The MBIE also states they had an overwhelming mandate to go as hard and as fast as possible with the implementation of these requirements.

They base this on the number of positive submissions that think increasing insulation in new homes as much as possible and as quickly as possible is a good idea.

Most people do actually think it's a good idea to do this, including myself — as long as it's practical and cost-efficient.

This favourable feedback was garnered from the population at large, with a tenant from, say, Dunedin having the same say as a manufacturer or builder that may have invested millions in providing product or services, and who will have to deliver the outcome.

Another way to look at it, is it's like asking everyone if they would like a pay rise. Of course the answer would be yes. However, if the same question was asked but in return you'd need to work seven days a week for the next 20 years to pay for it, what do you think the answer would be?

Support would plummet to the point where reality of return on investment would come into play.

That's what's missing from the MBIE's argument about the increases — they haven't countered it with the true costs, or taken enough time to consider the practical implications.

A very poignant and detailed joint letter



from the RMBA, CBANZ, Offsite NZ and Business NZ unanimously calling for a longer transition period has been sent to Ministers Wood, Robertson, Williams and the MBIE. At the time of writing, a formal response is awaited.

If the Government wants another term in office, they would be smart in heeding the advice from this group who represent the vast majority of the builders and doers within the industry.

They are foretelling the Government of the impending mess if this is slammed through.

This solid group of leading builders and businesspeople are the ones charged with delivering these changes, and they are, rightfully, saying they need more time!

The rushed and ill thought-out nature of these changes will not end well, with delays and significant costs for the consumer.

Business failures

This will come on top of hyperinflation, rising interest rates, material shortages, labour shortages, housing shortages, housing affordability, Covid-19 and, now, a cooling market which, combined with the above, is already resulting in business failures.

For measures like H1 to be implemented smoothly it needs all of industry to be ready, not just parts of it. And it is plain for all to see from the collective industry response that the industry is not ready.

It is also becoming clear that some of these measures have, in fact, gone too far, and will have little payback — in particular,

slab requirements which appear to be in contradiction to their own Cost Benefit Analysis recommendations.

Opposition parties are also now getting up to speed with what the changes mean, and are asking pertinent questions of the Government.

They are asking for full justification of the extent, timing and implications of the changes.

Watch this space as the pressure for proper answers mounts, and the issue becomes more political.

It is amazing how focused, fleet of foot and sensible politicians can become when there is warranted heat applied, and the poll numbers are dropping away as they currently are.

Since my earlier article, I have been supplied the Cost Benefit Analysis that the MBIE used to justify pushing ahead with the H1 requirements.

Below is an excerpt from the Cost Benefit Analysis which raises some serious questions:

Findings: Detached single-storey, double-storey and MDH typologies

"Patterns of what options returned favourable/unfavourable results are consistent across the three typologies.

- Favourable carbon results are more consistent compared to favourable economic results.
- Comfort as a metric is relatively insensitive to the various changes.
- Returns on roof insulation are the best, as it is cheap to insulate. Glazing is the next best to upgrade, although the returns here depend on what overheating/cooling setpoint and schedule assumptions are made.
- Wall upgrades are very expensive and not economical due to the cost of extra framing. However, extra timber may be a good thing from a carbon standpoint as it allows for additional sequestration.
- Edge insulation appears to have a poor return from a carbon and financial perspective, mostly due to the need for protection. Underslab insulation may be economical in the coldest parts of the country.

It should be noted that the benefit/cost ratios of most of the final construction sets

“

A very poignant and detailed joint letter from the RMBA, CBANZ, Offsite NZ and Business NZ unanimously calling for a longer transition period has been sent to Ministers Wood, Robertson and Williams, and the MBIE.

”

were below two. Thus, reducing the benefits by a factor of three or four may result in them becoming negative, and not paying back within the 50-year lifespan examined here.

That being said, the ratios for the carbon analysis were significantly higher, and may still provide a positive return in many cases, even if the energy savings are significantly reduced.”

A concerning note is the finding about slab edge insulation and its poor return on investment, given the change in methodology now mandated by the MBIE significantly reduces the calculated R value compared to the current NZS4214 or BRANZ approach.

A RibRaft or similar slab used to have an R rating of circa R1.7. Now that same slab is rated well below the required R1.50.

Under the new formulas to achieve the required R rating of

R1.50, slab edge and under footing insulation will be required from Kaitaia to Bluff if the schedule method is used.

This is what Firth now refers to as Ribraft HotEdge extra plus hot base. However, there is little detailed information currently available.

This requirement will add significant cost to the project with minimal return, along with some tricky bottom plate fixing detailing.

It will also slow the foundation contractors down, who will now need to increase staff if they want to maintain current volumes.

Below I have estimated the average real costs to the consumer for meeting the new H1 requirements on a typical single-level 200sq m, timber-framed house on a slab in zones 1 to 4.

Roof and wall insulation upgrades	\$5900
Window upgrades	\$13,800
Slab with edge and under footing insulation	\$10,800
Total increase to consumer	\$30,500
including GST, margins and labour	

By my estimate, that's \$30,500 versus the MBIE's estimate of \$8800 to \$12,100. Either the MBIE has not included slab insulation into their figures, or something is awry with their estimations.

So, what should happen from here?

- The MBIE should defer the implementation of the H1 requirements for 12 months from the original time line. This is in line with overwhelming industry requests, and gives breathing space to re-check assumptions.

- The Cost Benefit Analysis should be ethically revisited to include real world figures, implications and the inclusion of the slab edge and underfooting insulation costs.

- Once the Cost Benefit Analysis has been revisited, the MBIE should check their recommendations and then engage with the practical side of the industry to develop cost-effective solutions that can be delivered in a timely manner.

If the MBIE push on with the original time lines, then based on the costs and the MBIE's own Cost Benefit Analysis recommendations, slab insulation requirements, at a minimum, should be made optional in all climate zones except in zones 5 and 6, or when in-slab heating is used.

• 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.

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Here is what new employer accreditation looks like . . .



From May 23, 2022, Immigration NZ (INZ) will launch its new employer accreditation, which means no employer can employ anyone from overseas unless they are accredited. Building Recruitment director Kevin Everett says this new accreditation process is nothing more than a cash cow, with red tape prevalent at every stage.

There's no doubt about it – Immigration NZ's new employer accreditation comes with additional costs and processes that, quite frankly, are over the top and unnecessary, as well as time consuming.

There is also the issue around employing lesser skilled workers, such as labourers which are essential to our industry, for a minimum \$27 per hour.

Who can be accredited?

All employers must meet a minimum set of accreditation requirements, including:

- being a viable and genuinely operating business.
- being compliant with employment, immigration and business regulatory standards.
- completing activities to support the settlement of migrant employees.

The type of information they may be looking for includes:

- Financials.
- Employer history such as previous H&S, training, number of New Zealand employees, and personal grievance cases against an employer.
- Employment contracts and HR processes.
- Accommodation provided for overseas workers.
- Sustainable workload.

What is Job Check?

In addition to the Accreditation Employer Work Visa (AEWV), INZ has implemented a new process called Job Check.

Job Check is compulsory, which costs each employer \$610 per job check and \$240 for reconsideration if declined.

For multiple workers with the same job title, only one Job Check is required if it's covered under the same wages, advertising and location.

Each Job Check is valid for six months,

after which you need to get another one.

It is estimated that a Job Check will take 10 working days to process, causing needless delays. We all know there is a massive skill shortage in our sector, so why is the Government enforcing this process and these costs?

Advertising

There are requirements to advertise each role locally before you will be considered, which will, again, cause needless delays.

Advertising must:

- be for a minimum of two weeks on a national job listing web site where suitable New Zealanders are likely to apply, or another advertising channel more likely to attract suitable New Zealanders to the specific role.
- show significant terms and conditions, including the minimum and maximum pay rate, the minimum guaranteed hours of work, and the location of the job.
- show the estimated actual earnings where a significant portion of the pay is by piece rate, commission or other rates or bonuses that are not guaranteed.
- show minimum qualifications, work experience, skills or other specifications necessary to do the job.

What are the types and cost of accreditation?

There are effectively four accreditation types and costs:

- Standard, split into 2 categories:

a) Standard is up to 5 overseas workers	\$740
b) High volume 6-plus	\$1220
- Franchisee Accreditation \$1980
- Controlling Third Party Accreditation (Labour Hire) \$3870

Process time: 10 working days, and for a migrant worker visa to be approved, 20 working days.

Summary:

In my opinion this new accreditation process is nothing more than a cash cow, with red tape prevalent at every stage.

Opening the borders to skilled labour is critical, but there are costs everywhere and massive time delays now involved acquiring Immigration Accreditation.

If you do the sums, an employer looking to hire one worker will need to pay a total of \$1350 for Accreditation and Job Check, plus advertising, the cost to process their accreditation which can take many hours to complete, and the cost of the work visa.

Then there are all the time delays which extend the process from accreditation application to a visa being granted to 40 working days.

As a labour hire business, we are bringing in 10 job types, and in various locations across New Zealand. When you start adding these costs, we are looking at \$20,000-plus which must be factored in, resulting in higher rates to the industry, resulting in needless increased costs.

But wait, there's more!

Another weakness in this process is that we can no longer bring in lesser-skilled migrant labour which is vital for our industry.

As we all know, finding reliable labourers, for example, is near impossible. We are looking for such people in daily discussions with WINZ, and are receiving nothing.

I know most are in the same situation. We pay above minimum wage, offer training and long-term work and many other incentives, yet still cannot attract anyone reliable or drug-free. And other industry sectors are in the same position.

However, as a result of this accreditation process, the only way we can bring in such vital workers is to pay them \$27 per hour.

This is not sustainable and, as an industry, I urge you all to take this up with your Registered Master Builders Association branch and other industry associations to have the ministry grant the building sector an exemption.

It is my understanding there are pathways in place to do this, but we need to do it collectively.



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 Web site: www.buildingrecruitment.co.nz

Building Consents Information

For all authorisations, March 2022

Dwellings	\$2,266,286,459	Total All Buildings	\$3,288,894,496
Domestic Outbuildings	\$24,440,970	Non-building Construction	\$58,052,166
Total Residential	\$2,290,727,429		
Non-residential	\$998,167,067	Total Authorisations	\$3,346,946,662

Number of new dwellings consented

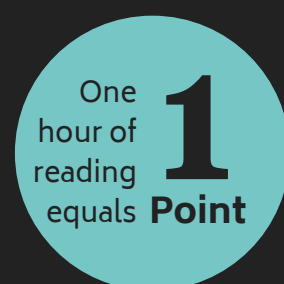
	Mar 2022	Feb 2022	Mar 2021		Mar 2022	Feb 2022	Mar 2021
Far North District	40	48	29	Palmerston North City	37	33	56
Whangarei District	64	69	114	Tararua District	3	2	7
Kaipara District	35	27	20	Horowhenua District	63	39	45
Rodney District	132	126	76	Kapiti Coast District	27	21	16
North Shore/Albany Wards	234	230	384	Porirua City	65	48	23
Waitakere Ward	384	286	181	Upper Hutt City	46	27	20
Auckland Wards	874	394	396	Lower Hutt City	153	107	74
Manukau/Howick Wards	354	350	249	Wellington City	84	60	90
Manurewa-Papakura Ward	261	190	220	Masterton District	15	18	21
Franklin Ward	74	65	116	Carterton District	3	23	8
Thames-Coromandel District	47	21	21	South Wairarapa District	14	8	6
Hauraki District	12	12	13	Tasman District	70	61	69
Waikato District	105	85	104	Nelson City	27	25	22
Matamata-Piako District	25	35	34	Marlborough District	18	12	16
Hamilton City	180	102	135	Kaikoura District	3	4	4
Waipa District	81	57	106	Buller District	12	8	7
Otorohanga District	5	5	11	Grey District	7	5	7
South Waikato District	10	7	7	Westland District	8	7	0
Waitomo District	10	1	14	Hurunui District	20	25	16
Taupo District	40	24	29	Waimakariri District	79	124	101
Western Bay of Plenty District	42	23	59	Christchurch City	593	601	323
Tauranga City	141	93	141	Selwyn District	161	150	189
Rotorua District	34	37	28	Ashburton District	32	27	17
Whakatane District	21	6	11	Timaru District	29	12	22
Kawerau District	0	1	1	Mackenzie District	10	8	7
Opotiki District	4	3	2	Waimate District	1	4	5
Gisborne District	12	15	10	Chatham Islands Territory	0	0	1
Wairoa District	2	0	0	Waitaki District	9	18	14
Hastings District	33	22	60	Central Otago District	28	23	26
Napier City	27	22	24	Queenstown-Lakes District	131	152	84
Central Hawke's Bay District	12	9	10	Dunedin City	65	42	58
New Plymouth District	47	50	97	Clutha District	11	9	9
Stratford District	6	3	7	Southland District	22	15	16
South Taranaki District	14	15	9	Gore District	4	2	5
Ruapehu District	6	5	9	Invercargill City	26	12	25
Whanganui District	24	6	10	Area Outside TA	0	0	0
Rangitikei District	11	4	14				
Manawatu District	24	15	58				
				Total	5303	4195	4218

Based on 2006 census areas | Each dwelling unit in a housing project is counted separately | Figures in these tables may differ from published statistics | Source: Statistics New Zealand

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