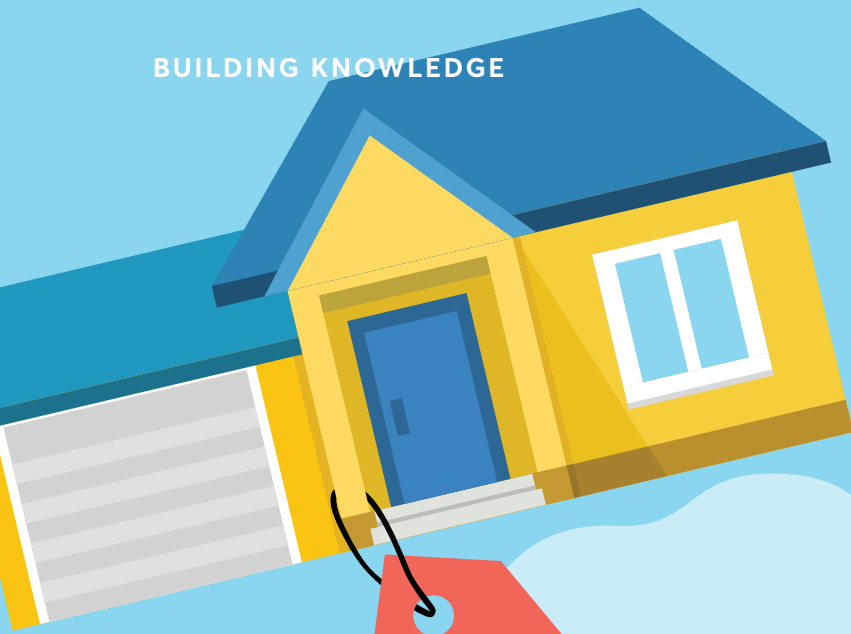




build

BUILDING KNOWLEDGE

ISSUE 204 | OCT/NOV 2024



Affordability

The complex fix



Testing and certification

buildmagazine.co.nz



BRANZ Appraised

BRANZ Appraised

**WE SPEAK
BUILDER**

**BUILDING
WILL NEVER
BE EASY.
WE TRY TO
MAKE IT
LESS HARD.**



"We'll see you right"



BCITO

**Sharpen your
career prospects.**

**bcito.org.nz
New Zealand's
leading building site.**

BCITO
He Hunga Hanga Mātou
building people

Contents



Feature

38 Affordability

Affording a home has remained stubbornly out of the reach of many. Will new initiatives such as loosening the supply of land and the government's pledge for fast-track approval of 55,000 new homes make a difference?

62 Testing and certification

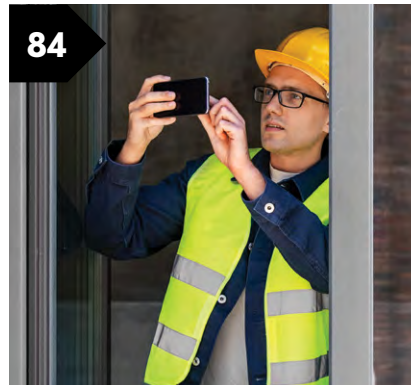
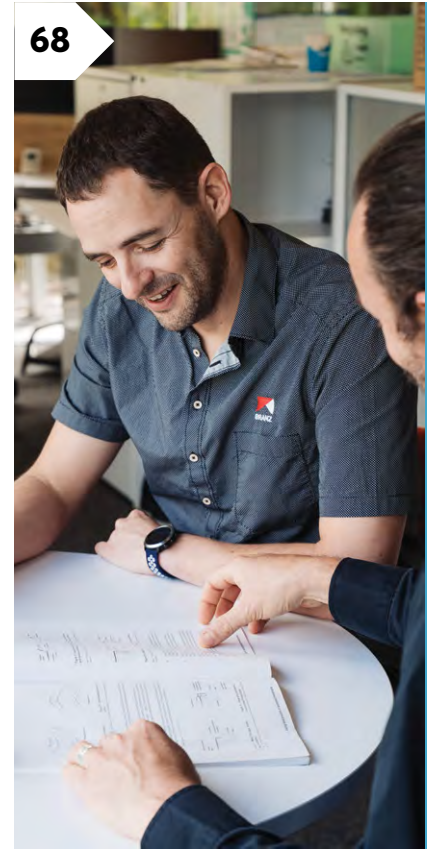
Comprehensive testing of building products and systems by independent experts has benefits for manufacturers, suppliers, customers and regulators.

IN THIS SECTION

- 40 Bringing house prices back to Earth
- 44 Supercharging the supply of land and housing
- 48 Affordable housing and construction
- 52 Rethinking the way Kiwis rent
- 54 Are residential building firms becoming more resilient?
- 56 Affordable comfort – how hard can it be?

IN THIS SECTION

- 64 The Appraisals journey
- 66 Assurance services



Regulars

- 4** Editorial
Rethinking the Kiwi ideal
- 6** Opinion
Stepping up and speaking out – what does the science tell us?
What do we mean by vocational education (page 8)
- 12** News

DEPARTMENTS

- 70** Research
High-quality data for carbon footprinting
- 72** Technology
Faster consenting and a permanent record of work
- 74** Business Matters
Signs of financial trouble

- 76** Legal
Towards a legal framework for our new climate normal
Tradies can benefit from retention money changes (page 78)
- 80** Sustainability
Students take on ex-state house retrofit
- 82** LBP Knowledge
Supervision
Remote inspections (page 84)
- 86** BRANZ Appraisals

The Right Stuff

DESIGN RIGHT

- 28** H1 compliance and construction R-values
- 32** Designing to achieve net zero

BUILD RIGHT

- 34** Air seals in exterior envelope penetrations
- 36** Boundaries and retaining walls

Get in touch

You are welcome to send
the Editor a note at any time.
Email build@branz.co.nz



Rethinking the Kiwi ideal

Many moons ago while on my OE, I befriended a German couple who invited me to stay at their home in Munich. After an overnight train journey from London, I recall my surprise at arriving bleary-eyed outside a large apartment complex.

My friends escorted me up an elevator and into a compact space full of all the usual effects and decorations of home. I learned that the room I'd be staying in was usually occupied by Stefan's parents, who were away on holiday. Multiple generations of his family had lived in the apartment for years – all as tenants.

With the Kiwi quarter-acre ideal lodged firmly in my psyche, I remember thinking how primitive their circumstances seemed. We talked about it, and I sensed they considered our norm of comparatively large stand-alone houses and lifelong indebtedness to a bank equally backwards. I think you can see where I'm heading with this.

Mindset and expectation play major roles in shaping housing markets. As the traditional ownership ideal drifts further and further out of reach for the average Kiwi, shifts in thinking by developers, purchasers, landlords, tenants and many others will be needed to ensure everyone has a safe and affordable place to call home.

As Nick Helm describes on page 52, alternative development and occupancy models such as build-to-rent are slowly taking hold here as viable ways to address the affordability challenge.

Of course, it's far more complex than that. On page 40, David Hindley unpacks the many factors that have contributed to our skyrocketing house prices. Then, on page 44, he examines various recently announced government initiatives aimed at tackling the problem.

It's understandable that many Kiwis feel disillusioned with a system that has stranded them on the wrong side of a yawning homeownership divide. However, I believe we can take heart from the kind of alternative thinking that has kept millions – including my friends in Munich – happily and affordably homed overseas.

Ngā mihi nui

Colin Barkus
Build Editor



BRANZ's vision

Challenging Aotearoa New Zealand to create a building system that delivers better outcomes for all.

1222 Moonshine Road, RD1, Porirua 5381

Private Bag 50 908, Porirua 5240

Telephone +64 4 237 1170

Email build@branz.co.nz

Web buildmagazine.co.nz and branz.co.nz

Build is published six times a year by BRANZ and is part funded by the Building Research Levy.

Please contact the Build Editor at BRANZ Wellington office for permission to reprint articles.

Print ISSN: 0110 4381 Online ISSN: 2537-740X

Editor Colin Barkus

E build@branz.co.nz

Deputy Editor Dael Climo

Design and layout Jill Ross, Rebecca Holden, Simon Russo

Proofreading and editing Mary Bennett

Advertising sales Jonathan Taggart

T 027 269 8639

E Jonathan.Taggart@branz.co.nz

Subscriptions and rates

Subscribe online through the BRANZ Shop at www.branz.co.nz or phone 0800 80 80 85.

Free to building contractors who pay the Building Research Levy.

One-year NZ subscription \$56.00

Students \$41.40

One-year overseas \$89.00

Printed by

Bluestar using soya-based inks. Paper is Sumo Offset stock from Hansol Paper Co. in Korea manufactured under the environmental management system ISO 14001 using elemental chlorine-free (ECF) pulp from sustainable, well managed forests.

Publication disclaimer

The information contained within this publication is of a general nature only. BRANZ Ltd does not accept any responsibility or liability for any direct, indirect, incidental, consequential, special, exemplary or punitive damage or for any loss of profit, income or any intangible losses, or any claims, costs, expenses or damage, whether in contract, tort (including negligence), equity or otherwise, arising directly or indirectly from, or connected with, your use of this publication or your reliance on information contained in this publication.

Advertising policy

Advertisements bearing the BRANZ Appraisal symbol are for specific products that have been appraised and are certified as fit for purpose. Claims made for products and services in other advertisements do not imply endorsement by BRANZ Ltd.



31/8/22, 86,788



Noiseline[®]

High performance plasterboard designed specifically for reducing the level of sound transmission between rooms.

gib.co.nz



[Learn More](#)

Stepping up and speaking out – what does the science tell us?



BRANZ CEO *Claire Falck* says it's clear the industry would like BRANZ to take a stand on impactful issues such as housing affordability, based on our independent scientific expertise, so that's what we are doing.

Many *Build* columns and stories focus on specific research and how BRANZ's work is helping to create a building system that delivers better outcomes for all. What is perhaps less visible is any position BRANZ takes when it comes to issues of critical importance to achieving that mission.

Our research is deeply valued

We have learned through engagement with industry that BRANZ's independence and research are deeply valued. However, the industry has also been clear that it wants us to use our independent scientific expertise to inform public discussion.

In short, BRANZ needs to do a better job of promoting that evidence and using it to support a clear, independent position or recommendation where appropriate.

I'm reminded of a comment in a recent survey that sums up the industry view: 'We'd really like BRANZ to step up and say, here's the evidence, here's the data, here's the rationale and here's what's needed to effect change across the entire industry.'

Speaking up on affordability

We've listened. BRANZ is increasingly promoting its evidence-based position on industry issues and opportunities, particularly regarding proposed policy changes to housing affordability.

For example, BRANZ has taken a position on overseas building product approval processes in response to the government's proposed change in policy to address building affordability.

Recognising the value of introducing a more efficient process and the need for additional quality building materials in the market, BRANZ has supported the proposed change, noting that the emphasis should always be on quality:

- Ensuring product assessments are evidence based.
- Minimising any unintended consequences by identifying both lower-risk and higher-risk product categories – for example, internal insulation (lower risk) versus exterior roofing products (higher risk).
- Ensuring that higher-risk products continue to be specifically tested in the New Zealand environment to perform appropriately in our unique conditions.

Ensuring the facts are heard

More recently, BRANZ has reinforced support for higher energy efficiency standards and is encouraging the sector and government to retain the updated H1 standards introduced in 2023.

The science does not support the theory that the impact of H1 standards on homes causes overheating due to increased insulation. BRANZ has noted:

- the updated H1 standards are based on scientific evidence
- contrary to popular misperception, insulation does not cause overheating
- overheating is the result of poor design rather than better insulation
- the costs of reversing the H1 changes can be avoided

- the new H1 standards help align the building sector with national climate goals. BRANZ has delivered and identified research that confirms energy-efficient homes have lower lifetime costs due to smaller energy bills. In addition, BRANZ continues to support the industry to identify cost-effective ways of delivering the H1 requirements without reducing insulation standards that improve our built environment and our lives.

Data and experience counts

In a third recent example, the government is progressing a requirement for building consent authorities (BCAs) to use remote inspections as the default approach so building a home is easier and cheaper. A public discussion paper has been released.

BRANZ will contribute meaningfully to this discussion and make public any submission. Our position will be based on the considerable data and scientific expertise we have generated through the development and implementation of our free remote inspection app Artisan, which is already used by many BCAs (see page 72).

Leading from the front

BRANZ is in a unique position to add valuable, fact-based insights on the widest range of industry issues. Going forward, where we have the evidence and facts to lead discussion and support decision making for the benefit of Aotearoa New Zealand, we'll continue to share our expertise and have a say. ◀



It's easier doing business
with people you know.

mitre10.co.nz/trade

MITRE 10
TRADE

WITH YOU ALL THE WAY

What do we mean by vocational education?



Malcolm Fleming, New Zealand Certified Builders Association Chief Executive, says vocational training needs to embrace not just the delivery of technical skills but the deeper education necessary to create successful businesspeople.

New Zealand's vocational education system has been through a series of upheavals in recent years, and more change is on the way.

Minister Simmonds has put forward some major proposals focusing on core qualifications, how they are delivered and who creates the content and administers the delivery.

Getting these details right is clearly important, but not enough attention is being paid to the question of what comes next for a learner who has graduated with their base qualification.

What comes next after basic training?

That's an area where trade associations like New Zealand Certified Builders (NZCB) play a pivotal role, as members typically stop their formal learning after completing their base technical qualification.

By contrast, professionals in related areas – engineers, quantity surveyors, architects and the like – are much more open to further education, often adding a business qualification to sit alongside their technical qualification.

When I moved from the New Zealand Institute of Building to NZCB in 2022, this difference in appetite for upskilling was very noticeable.

While all NZCB members are required to be trade qualified in carpentry, that qualification does not include business skills and so builders are left to the school

of hard knocks to create their own business structures and processes – something they do with varying degrees of success.

Early on in my new role, I heard from a member 10 years out from qualification who was contracting to a group-home builder. He was desperate to start his own building company but didn't know how to go about pricing a job. He knew almost everything about building, but his lack of business training was holding him back.

At the other end of the experience spectrum, I heard from a member one year out from qualification who had recently transitioned to self-employment. When he sat down with his accountant, he was told that, from a financial perspective, he would have been better off staying as an employee.

But how would a young builder know that without proper training? The Minister's proposals may produce great builders from a technical perspective, but without a broader perspective on what builders need from their education, we are still leaving it to chance as to whether they can graduate from being a great builder to becoming a great business owner.

A career path for young builders

That's why we have devoted so much time at NZCB to developing our education programme. We have always run technical workshops, and those will still be important for our members. However, our new Education team has responded to the

emerging demand by developing NZCB Learn – a more comprehensive programme focused as much on developing business skills and creating clear career pathways for young builders as it is on technical know-how.

I attended the 2023 Waihanga Ara Rau Summit and was struck by Sir Ian Taylor's keynote presentation. In that address, he commented that successful entities (including countries) of the future will be those that have an education-led strategy. I entirely agree with him and look forward to seeing how the Minister's vocational education proposals develop.

But it strikes me that we need a broader understanding of the concept of education, at least when it comes to vocational training. We need to ensure that our young people have the technical training they need to succeed, but also show them that that is just the beginning. We need to acknowledge that, if they want to start their own business and to nurture future generations of builders, they will need additional training in running a business, people management, how to market themselves and how to read broader economic trends.

NZCB is certainly not the only organisation to be committed to upskilling its membership base. Helping our members take the next step in their careers is fundamental to our association – it would be great to see this broader conception of education shape future vocational training as well. ◀

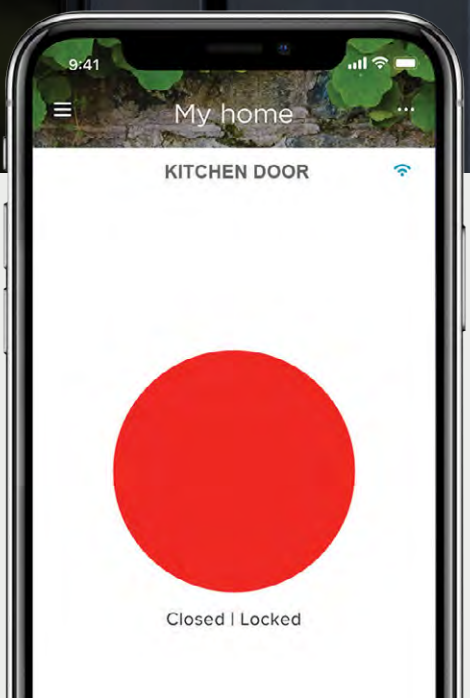


SCAN TO LEARN MORE

Introducing

Unity® Slim Smart Lock

A keyless, secure, and user-friendly smart lock designed for all types of hinged doors.



Key Free



Multipoint Locking Lift-to-lock



Fits narrow door stiles



Designed for New Zealand conditions



Total control via the app



Better engagement with you

We're gradually changing how we engage with you to ensure you get information from us faster and in more modern, flexible and shareable ways.



Build magazine has been BRANZ's flagship channel for informing the building and construction sector for over 30 years. We're pleased to be able to serve you with reliable, independent, research-based information that helps you plan, design and construct better buildings.

However, the feedback you've given us recently is very clear: digital is the future. You've told us that, to effectively deliver information that's topical, engaging and meets your varying interests, we need to be more active on modern digital channels.

At the same time, unfortunately, the cost of printing and posting hard copies of *Build* has risen sharply in the last few years – and continues to rise.

So to improve our engagement with you, we'll be reducing the frequency of the printed version of *Build* and we've begun developing the new digital channels you've been asking for.

A gradual transition from print to digital

In summary, we'll be:

- cancelling the December 2024/January 2025 printed issue of the magazine
- from next year, reducing the number of printed issues from six per year to four per year
- making greater use of the *Build* e-newsletter to share important information with you (use the link below to subscribe if you haven't already done so)
- gradually introducing new digital channels so the information you currently receive via *Build* reaches you much faster and in more interesting, flexible and interactive ways.

As these new channels take shape and we've ensured they're meeting your needs, we plan to further reduce the frequency of the printed magazine.

Greater value for you

We're excited about the benefits and opportunities that a digital-first approach will provide.

It will mean we can:

- deliver topical information to you much faster, with alerts to tell you when new content is available rather than relying only on the rigid publishing schedule of the printed magazine

- use more engaging formats such as video and interactive 3D drawings to convey technical information rather than relying on words and static images
- give you much easier and more flexible access to information on your preferred devices – on site, in the office or anywhere
- provide information in instantly shareable formats so you can inform your employees, colleagues or project partners
- create more interactivity, with new and better ways for you to ask questions or start important conversations with us and others in the sector
- allow you to choose and receive information that's directly relevant to you rather than relying on the 'one size fits all' approach of the magazine
- save some trees!

We'll keep you updated throughout the transition, and I welcome any questions, comments or suggestions you might have. You can contact me at buildditor@branz.co.nz.

I also encourage you to sign up for our free e-newsletter using the QR code below. As noted, while we're developing our digital strategy, we'll be making greater use of the e-newsletter to inform you about our ongoing work aimed at helping you address the significant challenges confronting the sector.

Colin Barkus
Build Editor

Subscribe to the free
Build e-newsletter here



ARDEX: THE ANSWER TO CHALLENGING APARTMENT DECK REPLACEMENTS



Photo Credit: David St George

This 48-year-old Takapuna Apartment faced a daunting task when minor leaks prompted a full terrace membrane replacement. Initial plans were derailed by weight restrictions and the slab levels being unexpectedly unsuitable. ARDEX rose to the challenge, collaborating with engineers, architects from Fat Parrot Architecture, and applicators from Best Skills to develop a custom solution. By combining their expertise with innovative products like ARDEX UD 150, ARDEX WPM 1000, ARDEX K 12 (lightweight) and ARDEX A 48, they successfully created a waterproof system that met the project's stringent requirements. The ability for ARDEX to supply the complete system build-up on this project provides the building stakeholders with a unique peace of mind assurance that is unmatched in New Zealand. The use of ARDEX screeds, decoupling, tile products and world leading waterproofing technology allows ARDEX to provide a market leading warranty for the entire system from a single supply source.

Scan the QR code to learn more about this impressive project.



WeldTec®



ardex.co.nz

Auckland Council harnesses water solutions

Auckland and Canterbury are turning to age-old methods of managing streams and rivers to find fast solutions to the increasing incidences of flooding.

Making Space for Water is an Auckland Council initiative building resilience against future floods by using natural solutions. Its aim is to make room for waterways and improve urban environments by default.

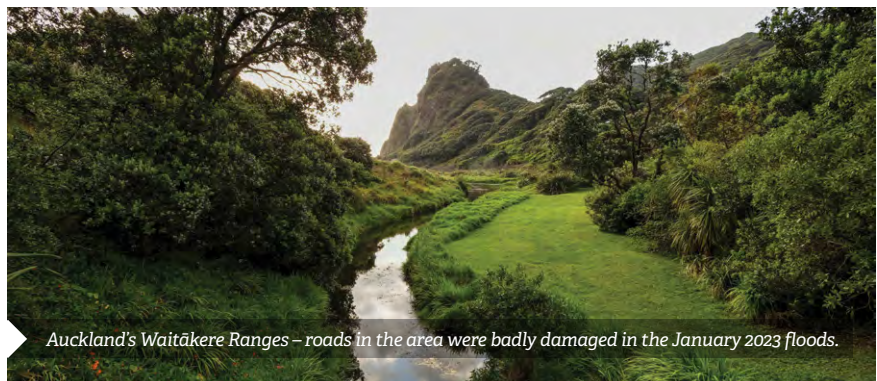
The hope is to deliver 10–12 fast-track projects over the next 6 years as the tragic events of early 2023 have accelerated the urgent need to progress projects that take people and property out of harm's way.

Tom Mansell, Head of Sustainable Outcomes: Healthy Waters at Auckland Council, says now is the time to stop, reset and start working with where water needs to go.

Developed as part of Auckland Council's flood recovery programme, it is expected the projects will be funded by a cost-sharing arrangement between the council and central government.

Decisions about the roll-out of projects in critical flood risk areas, which can include stream daylighting, enhancing parkland or open space, and property acquisition, will follow the decisions on property categorisation from government.

Many of the projects adjoin streams, and the significant component is land acquisition. The council may have to act as a developer or partner with others.



Auckland's Waitākere Ranges – roads in the area were badly damaged in the January 2023 floods.

One option may be to trade properties with single dwellings in high-risk areas for more intensive development in locations that are resilient to flood risk, and a development partner will manage the delivery of new housing.

The big expense is land acquisition, which will be funded through the flood recovery programme. Once the land is purchased, the team amenity and green space can be created at little extra cost.

Tom says the projects cannot be carried out in the usual way if they are to be delivered quickly. The starting point is to partner with mana whenua and the local community – an approach that has a positive track record for streamlining the consenting process, even when consents have been publicly notified.

The other important partner is other council organisations such as parks and community services. Traditional assets will be seen in a different light. Tom says that

there is an opportunity to create new places to walk, cycle, skateboard and play, but there needs to be acceptance that these areas will flood. It's about sharing open space and making space for water.

In Canterbury, Environment Canterbury (ECan) has received funding from the Ministry for the Environment to support three projects investigating nature-based flood protection solutions.

'The funding will allow us to investigate how we can make more room for the river, how protection and restoration of coastal freshwater and brackish wetlands can provide coastal flood mitigation and how mātauranga Māori can be incorporated into flood protection measures to improve outcomes for the community,' says ECan Chair Peter Scott.

'This kind of investigation and feasibility work is critical for us as we try to understand how we can work with nature to protect communities from future flooding.'

With Hardie™ exterior solutions, it's possible™

AXON™ PANEL

Brushed Concrete is a fibre cement shiplap panel with an embedded texture reminiscent of softly brushed concrete.



NEW

Axon™ Panel
Brushed Concrete
available now!



CodeMark»
CMNZ30165



Year
warranty



Easy to
paint



Easy to
install



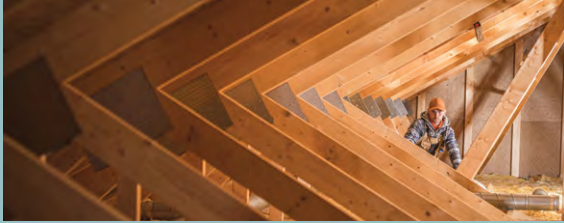
Embedded
texture

Ask James Hardie™ | Call 0800 808 868 | jameshardie.co.nz





FROM THE BRANZ HELPLINE



Effects of passive roof ventilation on durability

The BRANZ helpline has been asked several times recently whether introducing passive ventilation to roof spaces creates durability concerns. Most queries originate from callers in NZS 3604:2011 *Timber-framed buildings* exposure zones C or D – close to the coastline where corrosion rates are highest.

The required protections for steel fixings are shown in Tables 4.1–4.3 of the standard. While many specifications and definitions are provided, there is no clear prescription for closed roof spaces that may be ventilated.

All fixings in closed spaces are prescribed as mild steel or galvanised steel but there is no advice on if or how the designer should up-spec if ventilation is added to the space – potentially exposing it to airborne salts.

BRANZ Study Report SR462 *Comparative study of corrosion rates in vented and unvented roof cavities* (available on the BRANZ website) looks at this.

A BRANZ test structure was situated facing Cook Strait about 70 m from Wellington's south coast. Consistent with expectations, we found that corrosion rates on galvanised samples were higher in the vented part of the roof space than on equivalent samples in the adjacent unvented roof cavity.

However, the corrosion rates fell into the C1 (very low) and C2 (low) ranges so the overall impact on corrosivity of ventilating a roof space, even in this extreme environment, appears low.

If the brief is to provide a high-spec roof structure, upgrade the fixings to type 304 stainless steel. However, this will not be necessary in most cases.

FOR MORE ▶ See BRANZ Research Now: Roof ventilation #2 *Comparing rates of corrosion in vented and unvented roof cavities*. ◀



Government backs remote inspections

In a bid to speed up the consenting process, the government is backing the use of remote consenting.

The government plans to make remote building inspections the norm, making house building simpler and less expensive.

A discussion document has been published on a policy change to make remote inspections – carried out on smartphones – the default.

'Building anything in New Zealand is too expensive and it takes too long,' Minister for Building and Construction Chris Penk said. 'A constant frustration getting in the way of building is the cumbersome consenting system and building inspections, which are carried out to ensure a build is compliant with the Building Code.'

Former Master Builders Chief Executive David Kelly, who now works as a consultant, says remote inspections could speed up the building process.

'The real benefits are time, which is cost, and productivity and being able to get on and do things,' he says.

He says he knows of two smartphone applications that allow building inspectors to get the builder to show them the site. The apps reduce the risk of misuse as they provide the inspector with not only visuals of the building site but also the time, date, geographic location and other data.

'You need to have some security – and it's not just about the council, it's about the homeowners and future owners – that there's a good record of what's been done and that the consenting authority, the council, is comfortable that it meets the Building Code,' he says.

'There will be some rules, and I imagine initially it might be a little bit conservative. Over time, as you get more confidence in the system, you can extend it a bit more.'

He says it is a sensible move that Master Builders has been advocating for years. ◀

RMA's good contracting guidelines

New RMA contracting guidelines are set to improve productivity and collaborative relationships between clients and contractors.

New principles and guidelines that boost productivity and ensure risk and responsibility is fairly allocated during the planning of major construction work have been unveiled by Registered Master Builders.

The move is because lengthy and inconsistent procurement and pre-contract processes have been identified as the most significant issue impacting productivity and the delivery of critical infrastructure such as hospitals and schools on time and on budget.

Master Builders' Commercial Working Group, alongside the Vertical Construction Leaders Group and Hazelton Law, identified a need for greater education, support and clarity during processes such as pre-project planning and tender preparation as well as pre-contract services and contract negotiations.

Master Builders CEO Ankit Sharma says the formula is simple – good contracting produces good outcomes. 'This initiative is about improving productivity and fostering collaborative relationships between clients and contractors from the start.'

Good Contracting – Principles & Guidance offers guidance and information sheets for contractors, partners and clients about key areas, including termination for convenience clauses, extension of time principles



Wellington Hospital – the Good Contracting Project is about capturing the lessons learned when contracting is done well.

and float, and risk in NZS 3910:2023. It also introduces a standard form pre-construction contract template to ensure the equitable distribution of risk and responsibility on long-lead procurement opportunities.

Naylor Love Wellington Director Nick Clayton, part of the Commercial Working Group and Vertical Construction Leaders Group, has been pivotal in the creation of the new resources. When contracting is done well, nothing should be left to chance, he says.

'Clients, both private and government, often seek to transfer risk away from themselves to the contractor by using special

conditions. Contractors who don't have the specialist expertise and experience then accept those conditions even though it means they take on more risk than they should.

'The Good Contracting Project is about capturing the lessons we have learned from when contracting is done well. From my own experience at Naylor Love, project success is always a team effort led by best-for-project decisions rather than self-interest. Beyond the technical jargon, this is all about building trust and ensuring all parties have the confidence to proceed with a project,' Nick Clayton says. ◀

Green Star Buildings has launched

How to create a sustainable building has been further defined with the release of Green Star Buildings.

The next version of the New Zealand Green Building Council's Green Star for the design and construction of non-residential buildings is now available. Green Star

Buildings replaces Green Star Design & As Built – further defining what it means to create a sustainable building.

The new version of Green Star Buildings introduces eight categories, including the Responsible category, which outlines credits relevant to decisions about the design, construction and procurement

practices on a building project.

The category recognises activities that involve collaboration in design and construction, waste diversion, validating performance and operational efficiency, promotion and rewarding of responsible procurement of products and services, and support for the supply chain. ◀

MARKET INTEL



By Daniel du Plessis and Matt Curtis,
BRANZ Economists

OCR cut releases some pressure on construction

In August, the Reserve Bank announced the first cut to the official cash rate (OCR) since March 2020, cutting it by 25 basis points to 5.25%. Some of the major retail banks cut their variable lending rates immediately, providing relief to those on floating mortgage rates. Expectations are for further cuts in the coming months as general inflation returns to within the Reserve Bank's target band of 1–3%.

Builders and architects reporting lower workloads

EBOSS released the results of its sentiment surveys of builders and architects/architectural designers in August. The results suggested that the industry could be in for a patchy recovery, with some firms recovering at faster rates than others. Builders and architects reported difficulties with accurate pricing and converting enquiries.

For architects, 10% reported that demand was significantly down from 12 months ago and 40% anticipate that demand will continue to fall over the next 6 months. For builders, 25% reported a significant fall in demand compared to 12 months ago and 70% expect a tough market for at least the next 12 months.

Industry needs to work on public perception

A report from the New Zealand Chinese Building Industry Association (NZCBIA) sheds some light on public perceptions of the construction industry. NZCBIA commissioned Primary Purpose to survey New Zealanders on their perceptions of the industry. The main findings were that the industry was perceived as expensive and did not do enough to look after people and the environment. However, there were some positives from the survey, including the industry's provision of jobs.

FOR MORE ▶ Any comments? Contact daniel.duplessis@branz.co.nz or matthew.curtis@branz.co.nz ◀



Homestar design guide

Designers now have an informative guide to delivering healthier, more sustainable homes.

Te Kaunihera Hanganga Tautaiiao | New Zealand Green Building Council (NZGBC) has produced a Homestar Design Guide to support the interest in healthier, more efficient, and environmentally friendly homes.

Created with the support of Respond Architects, BRANZ, Te Kāhui Whaihangā | New Zealand Institute of Architects and Architectural Designers New Zealand, the guide details how to tackle issues like moisture control, embodied carbon and indoor air quality.

'We're now in a position where many in the industry appreciate the need to go over and above the New Zealand Building Code and are using Homestar to help do that,' says Matthew Cutler-Welsh, NZGBC Business Development Manager – Residential.

'However, we know many still need further guidance on some of the specifics of how to make it happen.'

The guide has information on meeting the latest version of Homestar, version 5, which introduced higher targets and new tools for the modelling of energy and carbon emissions and controlling overheating. Four case studies cover different housing typologies, allowing designers to start with performance and sustainability in mind rather than overlaying Homestar on an existing design or plan.

'Since updating the tool, we've seen many architects and developers try to shoe-horn the latest requirements into old designs. This can often be hugely expensive and add a raft of unnecessary challenges. As this design guide shows, it's straightforward and doesn't need to be expensive if the requirements are considered right from the start,' says Matthew.

FOR MORE ▶ View the Homestar Design Guide at nzgbc.org.nz/homestar-design-guide ◀



Resene Rockcote Apprentice of the Year Krishanee Tamou encourages other women to give it a go and take up an apprenticeship.

Breaking boundaries

An award-winner backs women apprentices.

BCITO apprentice Krishanee Tamou's dedication to exterior plastering was recognised when she was awarded the Resene Rockcote Apprentice of the Year for her hard work and commitment in a traditionally male-dominated field.

Winning the award was a significant milestone for Krishanee – out of 170 nominees, just five were women. 'I was stoked and straight off my seat to claim the award,' she says. 'Celebrating with my teammates was cool. It's great to be nationally recognised by the industry, especially as a woman, doing it for wāhine.'

Her introduction to painting and plastering was intense but rewarding. After moving

from Gore to Christchurch, Krishanee was immediately placed on a commercial site.

'I learned the ins and outs straight away and got a good understanding of the regulations quite early on. It was a good way to start and learn what is required on a commercial site compared to a residential site,' she explains.

'I was thrown in the deep end, but it was great. That's what I wanted – a challenge.'

She credits her success to her supportive team, including her employers, and encourages other women considering an apprenticeship not to hesitate.

'Don't be scared to ask for help. You can feel shy and intimidated, but who cares! Always put your hand up as people are willing to help. Give it a go, be curious and ask questions.' ◀

What they said...

'In a recent survey of Master Builders Association members 80 per cent reported having to deal with multiple BCAs, and 66 per cent experienced delays. The status quo is not serving New Zealanders well. We need to incentivise innovative solutions that improve productivity and enable building at scale. That's why we are beginning discussion on options to replace the current BCA system.'

– Chris Penk, Minister for Building and Construction

The Government's commitment to exploring solutions that will streamline building consents is a positive step toward addressing long-standing issues. It signals that we're moving in the right direction for a more efficient, predictable, and cost-effective development process.'

– Leonie Freeman, Chief Executive, Property Council NZ

Urban designers

Urban Designers Institute Aotearoa (UDIA) has been set up to promote consistency and transparency in urban design practice.

Its formation breaks new ground for Aotearoa New Zealand's urban design professionals. In introducing accreditation

to qualified urban designers, UDIA will reinforce confidence in the urban design profession and assist in professional education and mentoring.

UDIA's core initiatives are:

- establishing benchmark proficiency expectations for members
- accrediting qualified persons as registered urban designers

- requiring members to adhere to a code of ethics and code of practice
- establishing requirements for continuing professional development
- promoting consistency and transparency in urban design practice.

UDIA says it wants to complement rather than compete with existing built environment professional and interest group bodies. ◀



Insurance Council supports adaptation plans

The Insurance Council of New Zealand has put its support behind the development of a national climate adaptation model.

Te Kāhui Inihua o Aotearoa | Insurance Council of New Zealand (ICNZ) has urged the government to take a leadership role on climate adaptation, building Aotearoa's resilience against the impact of climate change on lives and property.

'The urgency of the climate crisis cannot be overstated,' says ICNZ Chief Executive Kris Faafoi. 'New Zealand's vulnerability to climate-related hazards, including rising sea levels, coastal erosion and extreme weather events, requires a clear and coordinated approach, which the government is best placed to lead on.'

'We support the development of a national climate adaptation model to guide policy and legislative frameworks and provide long-term clarity and certainty around our response to climate change.'

'We have seen firsthand the impacts of the Auckland Anniversary and Cyclone Gabrielle events on lives, property and the economy. By taking a proactive approach, adaptation measures can not only reduce these risks but also contribute to the economy's security and community resilience.'

'We also back the development of ambitious adaptation goals and clear outcomes such as a defined level of resilience achieved by 2050. The cost of achieving these outcomes should be estimated as much as possible so the funding required for adaptation is well understood.'

'A proactive approach to adapt now makes economic sense. Research shows that every dollar invested in adaptation yields substantial economic benefits. By addressing these risks now, New Zealand can avoid the higher costs associated with future climate-related disasters.'

'ICNZ is supportive of reforms that bolster adaptation, resilience and recovery from natural disasters and prevent developments in areas that exacerbate risk.' ◀

BRANZ brings conference to New Zealand

The science behind building healthy homes is the topic of a conference planned for Wellington.

BRANZ, supported by Tourism New Zealand and Business Events Wellington, will host the International Building Physics Conference (IBPC) in Wellington in August 2027.

This will be the first time this triennial forum for the International Association of Building Physics, which advances the science behind building healthy homes, will be held in the southern hemisphere.

'The conference will bring hundreds of delegates to New Zealand to connect and advance new ideas to solve pressing issues in building – ultimately helping to develop more affordable, sustainable, resilient and healthy housing around the world,' says Claire Falck, BRANZ CEO, noting that hosting the conference is a testament to New Zealand's well-established scientific reputation on the global stage.

'As New Zealand's building research provider, BRANZ has long been an independent and influential voice in building science internationally,' she says. 'Welcoming IBPC 2027 not only reaffirms our standing but also showcases our continued commitment to scientific excellence and innovation.' ◀

Waste timber CLT first

Researchers at University College London have developed what is thought to be the first building-scale prototype of a glulam and cross-laminated timber (CLT) structure made from 100% waste timber from demolition.

The 3.5 × 2.5 × 2 m modular structure was designed by UCL's Circular Economy lab in collaboration with Portakabin and other partners.

It comprises a glulam frame with CLT wall and floor panels, demonstrating a higher-value use of secondary timber, which in the UK is typically chipped, downcycled or incinerated.

According to Colin Rose, lead researcher on the project and co-founder of start-up UK CLT, the project aims to show how reuse as part of the circular economy can be achieved through a scalable process. ◀

AJP60400

2PC CLAMPING SAWHORSE



HORIZONTAL CLAMPING



VERTICAL CLAMPING



POST CLAMPING



EASY TO FOLD + CARRY



To Suit Light-Duty Bar Clamps
(2x Included with Purchase)

545KG
CAPACITY AS A PAIR



PONY | JORGENSEN®

AJP60

2-IN-1 CLAMPING WORKTABLE AND SAWHORSE



HORIZONTAL CLAMPING



VERTICAL CLAMPING



FOLDS INTO SAWHORSE



EASY TO FOLD + CARRY



6 ADJUSTABLE
HEIGHTS
890
865
840
815
790
765
mm

227KG
WORKTABLE CAPACITY

454KG
SAWHORSE CAPACITY



To Suit Medium-Duty Bar Clamps
(Not Included)

Degree-level apprenticeship pilots

There's now an opportunity for tertiary study while working.

ConCOVE Tūhura has launched a way for construction apprentices to obtain an undergraduate degree while maintaining full-time employment. A pilot programme combines on-the-job and off-the-job education and training, ensuring both practical experience and academic knowledge are achieved for more work-ready graduates.

'Degree-level apprenticeships are a game-changer for our industry,' says Katherine Hall, Director of ConCOVE Tūhura. 'By integrating academic study with practical work experience, we are equipping future professionals with the skills and knowledge needed to thrive in industry – faster.'

The first pilot programme is a collaboration between Architectural Designers New Zealand (ADNZ) and Ara Institute of Canterbury. 'This partnership will revolutionise the way we train our professionals, ensuring they receive both theoretical and practical education simultaneously, with industry shaping their education on the job,' says Keryn Davis, ADNZ Chief Executive.

ConCOVE Tūhura is also in discussions to establish further programmes with the civil engineering, surveying and construction management sectors. ◀

BRANZ Board appointment

Ian McCormick has been appointed to the BRANZ Group Board of Directors. Currently General Manager Building Consents at Auckland Council, he has considerable experience in the construction sector with a particular focus in the regulatory area. Ian is also a former Vice President of the Building Officials Institute of New Zealand (BOINZ) and he continues to be an active member. ◀



Amy FitzPatrick – creating opportunities for other women in the construction industry.

A bright spark

Being a role model is important to the winner of a women in construction award.

Amy FitzPatrick, the founder of Pink Sparky, a female-only electrical business, won the prestigious Outstanding Leader of the Year award in this year's National Association of Women in Construction awards.

The category celebrates women who make a significant leadership contribution to the building, construction or infrastructure industries in their chosen profession or expertise. It is open to women who have used their influence and position of power to make a difference to others.

Amy was recognised for her role as a leader who motivates and inspires her team and colleagues, ardently advocates for increased female representation in the construction industry and actively supports women in excelling in their careers.

She says being a role model means leading by example with integrity,

dedication and commitment to doing your best. 'Mentorship is so important to me, and motivating others to advance and grow in their careers is hugely rewarding and satisfying,' Amy says.

'I make an effort to actively participate in activities beyond our workplace to create more opportunities for other women in the construction industry. I love my job, so for me, it's about improving the environment for women in the building, construction, and infrastructure sectors so they can flourish and get the same fulfilment I get out of my job.'

Amy began her career as an electrician more than 20 years ago and has often been the only woman on a construction site. In 2016, she recognised the need for more women in the electrical trade and founded Pink Sparky. Based between Hamilton and Cambridge in Matangi and serving the broader Waikato region, the business has become a training hub for young and talented tradeswomen and has supported numerous women through their apprenticeship. ◀

BUILD WITH US



NEW!

PURFORM®
PURE PERFORMANCE

SIKAFLEX® -11 FC **PURFORM®**: STRONGER. FASTER. SAFER.

As the construction industry moves towards products with less chemical and environmental impact, Sika has released a new version of Sikaflex-11 FC: Sikaflex®-11 FC **Purform®**. This new version will build upon Sikaflex-11 FC's longstanding legacy in the construction industry, offering enhanced performance through a new generation advanced polyurethane technology.

USE IT IN THE SAME MANY WAYS AS THE ORIGINAL 11 FC - IT'S JUST STRONGER, FASTER, SAFER.

- **STRONGER** - gives you more durable bonds to many substrates (that's peace of mind!)
- **FASTER** - cures faster, so you can move on to the next job quickly
- **SAFER** - with less 'nasties' in the product, so it's safer to use for you, your team & your work environment



Scan the QR Code for
more info on **PURFORM®**

www.sika.co.nz



BUILDING TRUST

Behind the science

Principal Research Scientist *Ben Anderson* has brought his knowledge halfway round the globe to support BRANZ's work in understanding energy use in New Zealand housing, including new technologies.

Q. What's your background – where you grew up, education and first job?

I grew up in the English Peak District roughly halfway between Manchester and Sheffield, which is about halfway up England! The Peaks are the southern outpost of the Pennine Hills, which run up the spine of England. Although they're not mountains, they're high enough to offer weekends of tramping and rock climbing.

After school in Stockport, I completed a BSc (Hons) in biology and computer science at the University of Southampton and a subsequent PhD in computer studies at Loughborough University of Technology.

My main interest was how people used new technologies and I was involved in some early experiments with video conferencing over the internet. As I was supported by a scholarship from BT (previously British Telecom), this led to my first job in commercial research and development at BT's research labs in Suffolk.

Q. Could you explain your subsequent positions and what led you to BRANZ?

Moving to BT gave me the opportunity to get involved in a project collecting linked survey, time-use diary and interview data from the same households over time. This focused on how the families were using both traditional telephone services and the new mobile and internet-based communication services that were emerging from 1996 onwards.

After 6 years at BT, I moved to the University of Essex, initially to a research institute and then to the Department of Sociology where I became interested in patterns of water and energy use in the home. This led me to join the University of Southampton's Sustainable Energy Research Group in 2012 to work on research projects at the boundary between the social sciences and engineering.

In 2017, I was lucky enough to secure an EU-funded Marie Curie Global Fellowship to work at the University of Otago's Centre for Sustainability from 2018 to 2020. This brought the whole family to New Zealand and gave me the chance to work with a range of New



Zealand organisations, including BRANZ, on residential energy use. After heading back to the UK in 2020, we were keen to return to New Zealand, so when the opportunity arose to join BRANZ to work on household energy use, it seemed a perfect fit!

Q. Could you explain what a research scientist does and how that applies in your work at BRANZ?

A research scientist is essentially looking to fill gaps in what we know and communicate this new knowledge so it can be used. New knowledge and data are often also built into models that allow us to make predictions or to explore what might happen under different scenarios. In the case of BRANZ, I'm involved in the Household Energy End-use Project (HEEP2), which is collecting data

IN BRIEF

on when and why energy is used in New Zealand homes as well as data on the construction of the house and indoor conditions such as temperature and humidity.

This was last carried out in New Zealand between 1995 and 2005 before the widespread uptake of heat pumps and well before the emergence of solar panels, batteries or electric vehicles. The results will update our knowledge on energy use for space heating and hot water as well as providing updated data for building performance and energy-use modelling.

We have also deliberately studied houses that do have some of these newer energy technologies and are built to the current Building Code, or beyond, to understand what the future might hold.

Q. Scientists have been told they need to get out of their ivory towers and explain their work to the broader community. Is this happening and how?

Scientists working in applied research want to see the results of their work bring positive change and they understand that this is a two-part process. The first is intentionally doing research that responds to known problems while also keeping an eye open for future problems that a particular sector is not yet confronting.

At the same time and as part of the same process, scientists develop understandings of who might use their results to solve these problems and then work as part of a team to communicate these insights to ensure this happens. This is becoming common in universities where scientists are actively supported to communicate their work widely, whether to the public or to specific research results users.

BRANZ scientists are no strangers to this way of working, and my early impression is that BRANZ's applied sector focus, its horizon scanning and research prioritisation and its processes, tools and channels for engagement with the building sector (such as *Build*) are ensuring that there are no ivory towers here.

Q. What are your first impressions of working at BRANZ?

How friendly and welcoming everyone is! I've also been impressed by the breadth of work that goes on at BRANZ, not just in research but across our other testing and assurance services. I wasn't aware of the scale of these activities until I went on a campus tour – the size of the new fire and structures testing facilities is quite amazing. Oh, and Avril's cheese scones are pretty good too! ◀

QuakeCoRE role for David Carradine

Te Hiranga Rū | QuakeCoRE Communication, Education and Engagement Committee has announced that its newest committee members are David Carradine from BRANZ and student representative Kristian Azul (Waipapa Taumata Rau | University of Auckland). David is Structures Team Leader at BRANZ.

Recognition of Professor Hoete

The Royal Society Te Apārangi has appointed as a Fellow award-winning architect Professor Anthony Hoete of Waipapa Taumata Rau | University of Auckland for his advancement of New Zealand and Māori architecture worldwide.

Jewel of a project wins big

8 Willis Street & Stewart Dawson's Corner is the standout property in this year's Property Council New Zealand Property Industry Awards, taking home the Rider Levett Bucknall Supreme Award as well as category wins in the RCP Commercial Office Property Award and the Naylor Love Heritage & Adaptive Reuses Property Award. The building was previously a jeweller's shop for many years.

Poor productivity pinpointed

The New Zealand Chinese Building Industry Association released a report showing construction sector productivity levels have remained the same since 1985. It also found the time taken to build a home has increased by 50% since 2013, from 13 months to 19 months. ◀

Products to watch

People tell us about new things all the time, and while we don't review or recommend consumer products, we figure you might want to know what's out there.

Pryda FastFix™ Framing Screws

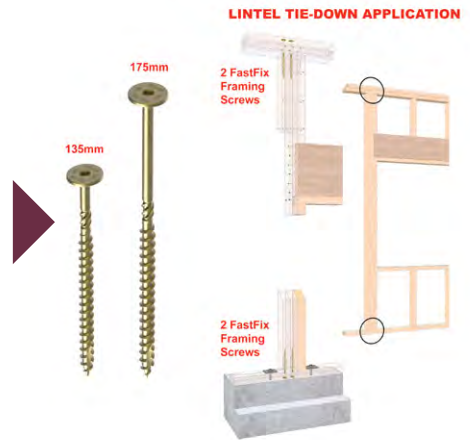
Pryda FastFix™ Framing Screws provide a safer, faster and easier tie-down solution for stud to wall plate and lintel/beam connections, eliminating labour-intensive tasks like hammering nails or cutting, bending and tensioning straps.

On all applications, the FastFix™ Framing Screws have 30% higher capacity than similar products in the market and can save up to 50% of fixings (per opening) on structural lintel tie-downs.

Pryda FastFix™ Framing Screws are available from Pryda Fabricators, hardware stores, and building materials suppliers.



www.pryda.co.nz



If you or someone you care about is facing tough times, please remember that help is available.

Don't hesitate to reach out to the free MATES in Construction Support Line at **0800 111 315**.

If you or someone else are at risk of harm, please dial 111 right away. You are not alone.

Revitalise your home

New windows and doors can improve your home's comfort, style and functionality. Check out our useful guide to explore the options and find the best solution for your home.



► Visit vantage.co.nz/renovation-guide for more information

Building
better
together

Upgrade your
projects with superior
strength, stability,
and sustainability.

Experience
PLX20®



PLX20® Lighter. Stronger. Smarter.

PLX20® by Prolam redefines innovation, offering unmatched strength, durability, and eco-friendliness. From garage lintels to ridge and floor beams, our steel-reinforced laminated timber beam sets new standards across the board.

Experience the benefits:

- ▶ 40% lighter
- ▶ Unparalleled strength and durability
- ▶ Enhanced spanning capability
- ▶ Effortless installation, saving you time and hassle.

Upgrade to PLX20® for projects that demand the best.

prolamnz.com



NZ designed & made



Prolam®
Engineered Laminated Timber

HOW TO

THE RIGHT STUFF

DESIGN RIGHT

28 H1 compliance and construction R-values

32 Designing to achieve net zero

BUILD RIGHT

34 Air seals in exterior envelope penetrations

36 Boundaries and retaining walls



H1 compliance and construction R-values

Designers have several options for achieving construction R-values that prove compliance with clause H1 *Energy efficiency*.

At a glance

- Increases in construction R-value requirements to prove compliance with H1/AS1 and H1/VM1 have created challenges.
- Skillion roof structures can be particularly problematic when using the schedule method of proving compliance.
- The calculation and modelling methods of proving compliance are options that give designers more flexibility.
- The calculation and modelling methods allow a reduction in R-value of one building element when compensated for by increases in R-values of other elements.
- The calculation and modelling methods are also useful for designing buildings to perform beyond Code.

Recently introduced increases in construction R-value requirements when using H1/AS1 and H1/VM1 to prove compliance with Building Code clause H1 *Energy efficiency* have created some challenges in both design and construction.

Increase in construction R-values for roofs

One change that has caused much discussion is the increase in the construction R-value requirement for roofs (H1/AS1 Table 2.1.2.2B) to a minimum of R6.6 across all six climate zones in Aotearoa New Zealand.

The challenge in designing to meet this requirement lies in accommodating the thickness of common bulk insulation materials required to achieve the minimum thermal performance within common roof assemblies.

A concession for assemblies with roof spaces where the insulation is installed



over a horizontal ceiling – framed/truss roofs – has been incorporated into the new requirements.

This reduces the construction R-value to R3.3 for a distance of up to 500 mm from the outer edge of the ceiling perimeter where space restrictions within the roof structure make it difficult to incorporate the thickness of insulation required for R6.6.

However, no concession is made for skillion roof construction where incorporating the required insulation thickness is challenging and can lead to significant increases in the required depth of the roof structure.

The capacity for skillion roofs to incorporate the required thickness of insulation also varies with skillion roof typologies and depends on where the ceiling lining is.

If the ceiling is on the underside of the rafters, there is more capacity within the structure as the depth available for insulation is formed by the combination of rafter and purlin depth.

Where the ceiling is installed on top of the rafters – with the rafters exposed – the depth available for insulation is formed only by the purlin depth. This has led to a significant increase in the overall depth of skillion roof assemblies that use bulk insulation to meet the minimum construction R-value of R6.6 – often proving incompatible with design.

Options for designers

What is often overlooked, however, is that the minimum construction R-value figures for roofs, walls, exterior joinery and floors

in Table 2.1.2.2B only need to be met when proving compliance using the schedule method.

Designers have the option to incorporate elements with different construction R-values when using the calculation or modelling methods to prove compliance.

These methods allow for a reduction in the construction R-value of one building element such as the roof when it is compensated for by increasing the construction R-value of other building elements such as the walls.

Let's have a look at each of the methods of proving compliance and the options they provide for varying construction R-values.

H1 compliance with H1/AS1 and H1/VM1

The schedule method is incorporated in H1/AS1 and uses the minimum construction R-values in Table 2.1.2.2B.

The calculation method is also incorporated in E2/AS1 and uses heat loss calculations to compare the thermal performance of the proposed building with a compliant reference building. This method allows different construction R-value combinations to those in Table 2.1.2.2B.

The modelling method is incorporated in H1/VM1 and is a more comprehensive methodology that compares the thermal performance of the proposed building with a compliant reference building. This method also allows different construction R-value combinations to those in Table 2.1.2.2B.

Schedule method

Using the schedule method, building elements must meet or exceed the minimum construction R-values in Table 2.1.2.2B. To use this method, you need to know the construction R-values of the building's roof, walls, exterior joinery and floor.

There are also some restrictions around the use of this method:

- Total glazing area must be 30% or less of the total exterior wall area.
- Total glazing area of the west, east and south-facing walls must be 30% or less of the total area of these walls.
- Skylights must be less than the greater of 1.5 m² or 1.5% of the total roof area.
- Opaque external door area must be less than the greater of 6 m² or 6% of the total wall area.

This method is often the default method for proving compliance as it is very straightforward to implement, requiring the building to be designed to the minimum requirements in the table.

However, it does not allow the designer to reduce the construction R-values below the tabulated figures, which can potentially be difficult to comply with – particularly with roof construction.

Calculation method

The calculation method uses heat loss calculations to compare the thermal performance of the proposed building with a compliant reference building where the heat loss of the proposed building must be less than that of the reference building. ▶▶

The reference building must have the same external envelope area as the proposed building, and each building element in the reference building must have the minimum building element construction R-values from Table 2.1.2.2B.

However, the construction R-values for the proposed building can be different to those of the reference building if the proposed building performs at least as well as the reference building with respect to heat loss.

There are also some restrictions around the use of this method:

- The construction R-values for roofs, walls and floors of the proposed building must be at least 50% of the construction R-value for the corresponding building element in the reference building, which is based on Table 2.1.2.2B.
- The glazing area of the proposed building must be 40% or less of the total wall area
- Where building elements in the thermal envelope of the proposed building incorporate heating systems, the construction R-value of these elements can't be reduced below those in Table 2.1.2.2B.

This method allows the designer some flexibility. For example, the construction R-value for the roof could be reduced by increasing the R-value of other building elements such as walls, exterior joinery and floor to ensure the overall heat loss of the proposed building is less than that of the reference building.

The calculation method is useful where design and construction parameters make it difficult to comply with the minimum construction R-values in Table 2.1.2.2B.

It is also useful for looking at options incorporating higher levels of insulation to create buildings that perform beyond Code.

Modelling method

The modelling method uses computer modelling as described in H1/VM1 Appendix D to assess the energy performance of the proposed building. The computer model simulates the building's thermal performance to predict both heating and cooling loads.

The results are then compared with the space heating loads and cooling loads of a reference building. The reference building must be the same shape, dimensions and orientation of the proposed building and the same simulation method must be used as for the proposed building. The building elements of the reference building must have construction R-values from Table 2.1.2.2B (as per the schedule method).

To prove compliance, the simulation must show that the sum of the annual space heating load and annual cooling load of the proposed building does not exceed that of the reference building.

The modelling method is useful for getting a much more detailed understanding of the thermal performance of the proposed building and it also allows for defining the performance of different construction R-values for any of the building elements.

This enables a wider range of comparisons and gives the designer flexibility to lower some construction R-values and increase others to compensate.

It is also useful for looking at options incorporating higher insulation levels to create buildings that perform beyond Code.

Thermal modelling tools

There are several third-party thermal modelling tools available for proving compliance as well as organisations that will carry out modelling on behalf of the designer.

BRANZ tools

The H1 Hub on the BRANZ website has a range of information and incorporates several useful tools. These include the BRANZ calculation method tool, which provides a format for easy use of the calculation method for proving compliance, and the BRANZ *House insulation guide*, which can be used to find the construction R-value of common building elements and assemblies.

BRANZ Bulletin 684 *Thermal modelling tools for houses* looks at the thermal modelling tools that are available for residential dwellings.

Further information

While it may be difficult to design a compliant building using the schedule method, don't overlook the calculation and modelling methods as design and construction options allowing combinations of building elements with higher or lower construction R-values to be used.

Keep in mind, too, that Aotearoa's overall energy efficiency standards are relatively low in international terms and these methods can be used to design buildings to perform beyond Code. ◀

FOR MORE

Visit the BRANZ
H1 Hub ▶

See the BRANZ *House
insulation guide* ▶



COMPOSITE STRENGTHENING SYSTEMS (CSS)



Integrated Design-Build Solutions

Simpson Strong-Tie offers state-of-the-art **Composite Strengthening Systems (CSS)** that leverage lightweight, durable, high-strength carbon and glass fibers bonded with adhesive resins.

Our CSS provide efficient **fiber reinforced polymer (FRP)** solutions to increase or restore the load-carrying capacity, ductility, and seismic resistance of various structures.

CSS products provide structural strengthening solutions, including:

- **Seismic Retrofit:** Enhance shear strength, displacement/ductility, and life safety.
- **Damage Repair:** Restore concrete structures affected by deterioration, corrosion, blast, or vehicle impact.
- **Commercial & public infrastructure,** including bridges, buildings, and industrial facilities

fib Symposium 2024

Visit our stand (#6) at the fib Symposium 2024, held at Te Pae, Christchurch, from 11-13 November 2024.

strongtie.co.nz/css





Designing to achieve net zero

Our low-carbon future will demand momentous changes to the way designers work that, while initially challenging, will become familiar over time.

At a glance

- Architects and designers have a critical role to play in helping the construction sector reduce carbon emissions.
- A fundamental – and initially challenging – re-evaluation of the way all buildings are designed will be required.
- Holistic design is key – from site selection through to end-of-life considerations.
- Comprehensive carbon modelling is the first step.
- Circular use of materials, basic building shapes, windows and interior décor are all part of reduced-carbon design.

As we approach 2050 and our net-zero carbon emissions target looms, it's time to consider the role architects and designers will need to play in the transition. The construction sector, which contributes approximately 20% of Aotearoa New Zealand's greenhouse gas emissions, has a huge part to play, and reduction efforts will initially be driven by building design.

Re-evaluating design

We won't achieve the target by incremental tweaks to the specifications of the relatively small number of our new buildings specifically designed to meet their embodied and operational carbon targets. It will take a complete re-evaluation of the way we design all buildings.

This cannot be limited just to new buildings. We must apply the same rigour to residential alterations and additions and any other buildings we may be adapting or repurposing.

The first step will be to require comprehensive carbon modelling of each building we design. While this will initially be a challenge, it's a task we ultimately must take on.

For under-resourced architects and designers, it might be work contracted out to external specialists. However, there's a strong imperative for each of us to upskill and master as much of this process as possible. The more we do, the easier and quicker it becomes.

Ultimately, we should be looking to develop an instinctive feeling for the best design choices to make and establish best-practice go-to options we can draw on without the need for detailed repetitive analysis and evaluation.

What lies ahead will be a significant change in the way we design our buildings. If architects and designers genuinely want to achieve low-carbon buildings, we will be reappraising almost all the basic design

tenets we have used thus far and taking a more long-term, holistic view.

We will need to consider everything from site selection, building location and sketch design – including building shape and size, orientation and perimeter/area ratios – to materials used, embodied carbon, life cycle energy use and building end of life.

While this may initially appear onerous, within the next generation, it may well become the new normal.

With these changes, new ideas and opportunities will arise. I compare it to the traditional preference for designers to stick to Acceptable Solutions for compliance when submitting building consent applications.

When legislation changes, however, they may find Alternative Solutions provide scope to do things differently and are often much easier than first thought. Designers and architects for future buildings will



Timber floors have longevity and are a good low-carbon design choice.

similarly need to positively embrace the wide variety of options and new opportunities that become available.

Let's take a quick tour through a few of the ideas I've mentioned.

Circular use of materials

Reusing materials or repurposing existing building stock will play a key role in the reduction of embodied carbon emissions as well as reducing the use of new resources during construction.

Some European local authorities are already preferring planning proposals that favour repurposing or retrofitting over demolition. To reinforce this preference, they may introduce whole-life carbon limits for a new building that must be less than or equal to a retrofit option.

The corresponding reduction in new resources and materials required will also dovetail nicely with the circular economy goals of reuse and recycling. Again, the

concept of holistic design is manifested and advantages are accumulated.

Simpler building shape

Another basic concept is the use of simpler, compact, efficient building shapes. An early indicator of the overall efficiency of the building is provided by the simple calculation of the perimeter/area ratio.

Complicated building footprints require more junctions and greater quantities of materials along with larger surface areas to be constructed to deal with thermal gain and heat loss. Compact and less-complex shapes are inherently more carbon efficient.

The building envelope must also be carefully considered, even during the preliminary design phase. The cladding selection, for example, can influence other components of the design and impact on both the embedded and operational carbon footprints of the building.

The importance of windows

As always, the fenestration will be a critical factor. The materials used, orientation, size, glazing, durability, cost and maintenance all play a huge role. While double glazing offers many advantages when considering operational carbon performance, insulating glass units (IGUs) do not last forever.

Replacement must be factored into the carbon equation, including scaffolding, removal, purchase, transport and installation – an example of the importance of a holistic design approach.

Don't forget interiors

Interiors are also a consideration currently less likely to be evaluated. It's generally accepted that interior décor has a limited life expectancy and will require periodic redecoration. However, this built-in obsolescence is unnecessarily wasteful.

The culture of following interior fashion trends doesn't need to remain. It's possible to create pleasant – even luxurious – environments by following classic design principles using natural or recycled products and materials and finishes that age well. Some might look even better as they develop a characterful patina.

All the while, we must be conscious of and look for low-carbon options. Another example is flooring finishes. Carpet may last as little as 10–15 years before needing to be replaced while timber floors have well-known longevity. ◀

FOR MORE

See *Design to cut carbon – the time is now* in *Build 177* ▶





Air seals in exterior envelope penetrations

Greater understanding of how to incorporate air seals in openings and penetrations in the exterior envelope of a building is necessary to prevent wind-driven water from entering.

At a glance

- Incorporating air seals into openings and penetrations in a building's exterior envelope is critical to ensuring weathertightness.
- Wind can create a pressure differential between the exterior and interior of a building, driving air through any openings and penetrations.
- If rainwater is sitting on the exterior of a building, that air flow can carry moisture inside.
- Accurately installing air seals in door and window openings and other penetrations such as meter boxes solves the problem.
- Air seals can also improve the energy efficiency of a building.

It's more than 30 years since E2/AS1, the Acceptable Solution for proving compliance with Building Code clause E2 External moisture, was introduced and widely adopted by the industry.

Increased understanding of weathertightness

E2/AS1 can be credited with bringing a new understanding of weathertight design and construction principles and practices to the wider industry – resulting in more resilient and higher-performing residential dwellings.

Frequently, however, design and building practitioners don't fully understand the rationale behind some of the requirements in critical areas of performance. One area of concern is incorporating air seals in openings and penetrations in a building's exterior



Any openings in the exterior envelope can create a leakage path to the building's interior.

envelope. Here, we look at why air seals are necessary and the key aspects of installation.

Air pressure

Even in situations with relatively low wind speed, wind acting on a building creates higher air pressure on the building's external envelope compared to the pressure on the building's interior.

If there are any gaps in the exterior envelope, no matter how small, this pressure differential can create an air flow or leakage path from the exterior of the building to the interior – from high to low pressure.

When rainwater is present on the building's exterior, it can be driven by the pressure differential along any air leakage path, which then becomes a water leakage path.

Some water leakage paths may carry water into the exterior wall assembly, but gaps around windows and doors and other openings such as meter boxes run continuously through the wall assembly from the exterior to the interior. They create the potential for water to be driven into the interior. This potential also exists with pipe/service penetrations through the exterior envelope.

Pressure moderation

To negate this pressure-driving effect, we need to moderate the air pressure within the trim cavity around exterior window and door joinery. This requires air seals to be installed in the trim cavity.

Installing an air seal at the interior face of the exterior wall framing allows higher-pressure air from the exterior to enter the trim cavity, but at this point, it is blocked from entering the building's interior by the air seal.

The air within the trim cavity moderates to that of the external air pressure, negating the driving effect of the pressure differential and eliminating the potential for water to enter the building's interior through the trim cavity.

E2/AS1 air seals to exterior joinery/meter boxes

Air seals need to be installed around the entire trim cavity, sealing off the gap between the rough opening frame and the reveals of the exterior joinery. With meter boxes, the seal needs to seal off the gap between the rough opening frame and the actual body of the meter box within the framing. The seal needs to be located on the internal line of the exterior framing.

Seals must be formed with either a self-expanding polyurethane foam or a compliant sealant, which is installed over a polyethylene foam (PEF) backing rod.

The backing rod ensures that, when the foam/sealant is installed, it does not migrate further into the trim cavity where it can come into contact with water on the exterior face of the wall framing behind the cladding/window flange.

This could cause the seal to deteriorate or water to wick into the building's interior.

Both the seal and backing rod must be accurately installed so they are continuous with no gaps. Even small gaps can create an air/water leakage path. Joinery packers need to be installed to allow a continuous run of air seal around the perimeter. The backing rod can run between any packers.

E2/AS1 air seals to pipe penetrations

Exterior pipe/service penetrations must be

installed prior to cladding installation. The penetration must be taped with flexible flashing tape around its circumference to the flexible wall underlay or rigid air barrier on the outside face of the framing.

Air seals need to be installed around all pipe/service penetrations, effectively sealing off the gap between the penetration and the external cladding. The sealant used needs to be compliant and accurately installed. This is then followed by the installation of a flange plate over the penetration, which is then sealed to the outer face of the cladding.

Building envelope airtightness

Another benefit of air seals around openings in the exterior envelope is that they contribute to the overall airtightness of the building. Although this may not have been a consideration at the time E2/AS1 was introduced, sealing off these air leakage paths has a large impact on our ability to manage the temperature of the building's internal environment.

Eliminating air leakage through the exterior envelope also improves a building's energy efficiency as it removes the potential for heat loss in the cooler months and heat gain in the warmer months. This ensures that heating and cooling of the building are more efficient and that the benefits of increased insulation are realized.

The key to effective air seals in exterior penetrations is directly related to the accuracy of installation of the seals. There is evidence that seals are, at times, being poorly installed. The challenge is to understand the importance of these seals and give due regard to their accurate installation. ◀



Boundaries and retaining walls

Property boundaries can be contentious. It can be difficult to work out where an actual boundary is, particularly when it may have been agreed on with the shake of a hand.

BRANZ has recently noticed an increased interest in property boundaries, both between neighbours and with adjacent public spaces. Usually the queries are about how to accurately locate a boundary, the legal ramifications of boundaries and what owners can do on their own property.

Interest has spiked in one territorial authority jurisdiction in particular following council plans to change its policy of maintaining council land that is crossed to access private properties.

This council's policy for the past century or so had been to share the costs of maintenance and upkeep with property owners. It is now looking to hand all costs and responsibility to the homeowners.

Many of the accessways are very old and in need of upgrading, and some have support structures such as retaining walls that may also be near or at their end of life. This makes it critical that the exact location of the boundary is established so the property owner – or prospective owner – can determine any potential financial responsibilities they may have.

It is not uncommon to find signs of a survey having been undertaken at some stage. The most obvious indicators are pegs – usually numbered, white-painted,



When a retaining wall sits on or near a boundary, ownership can be hard to determine.

square timber pegs in soil – commonly seen at the corners of a property section or along a boundary where there is a change of direction.

Other markers that may be found include discs in concrete or posts, bolts, plugs, rods and tubes. Be aware, however,

that these are not only found at ground level. They may also appear on vertical surfaces such as concrete walls.

Employing a cadastral surveyor

To the layperson, the relevance of these markers can easily be misconstrued and

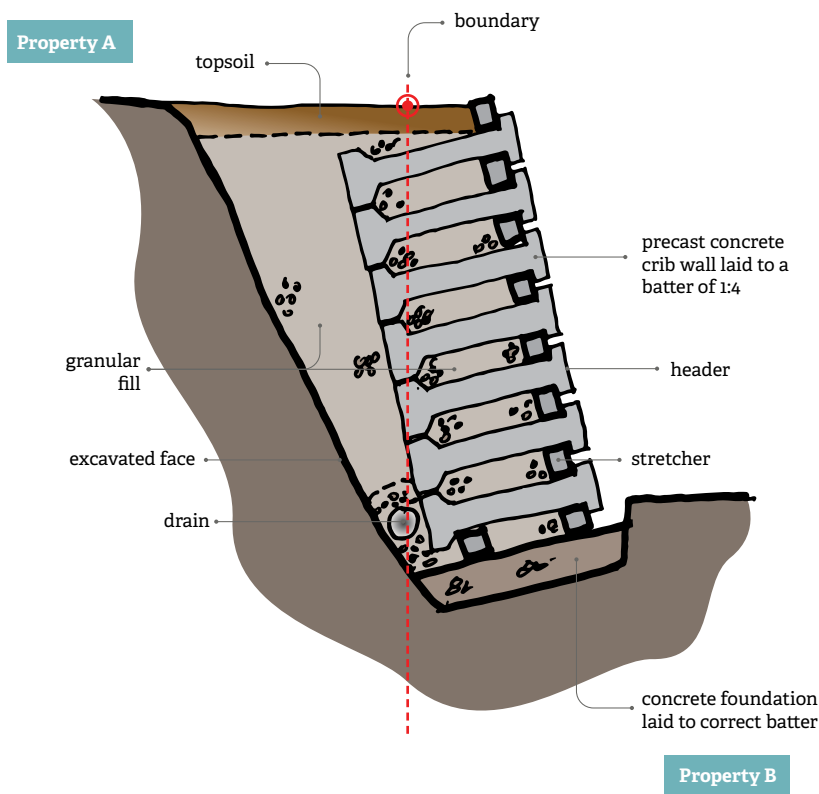


Figure 1. Cross-section showing the boundary within the retaining wall.

it can be dangerous to assume their meaning. While they may provide an initial indication of boundaries and a sense of comfort or concern, it's important to remember the markers may have been disturbed or moved or may be out of date and superseded by a more recent cadastral survey.

The only safe option is to engage a licensed cadastral surveyor to physically mark the exact current boundary locations. The surveyor will be able to locate and identify each boundary to a high degree of accuracy and record it in terms of the cadastre – the network of survey and boundary marks.

This is an up-to-date, parcel-based land information system containing a record of interests in the land, including rights, restrictions and responsibilities that apply.

A non-licensed surveyor, who may be satisfactory for tasks such as a building

survey or set-out or plotting various other physical features of interest, cannot undertake cadastral surveying.

Boundary retaining walls

A boundary retaining wall has usually been constructed on a natural sloping hillside and the general rule of thumb is that it is entirely built on the property of the party that will benefit from its construction.

This benefit may be at the foot of the wall created by excavation into the line of the original hillside or a flat area at the top created by the backfilling of the space behind the retaining wall structure – that is, on top of the slope of the original hillside.

Determining the legal boundary

The unknown factor with most retaining wall structures is the accuracy of the location of the legal boundary when they

were originally built. With older walls, in particular, the builder may have set it out relative to an existing boundary fence – many of which are notoriously inaccurate.

The wall could also have been located based on an informal verbal agreement between neighbours or an educated guess. So it's not always certain that the structure is even entirely on one side of the boundary or the other until the boundary is located.

One of the property owners must engage a surveyor to establish the position of the boundary. I've heard of two adjacent neighbours engaging separate surveyors who produced results a few millimetres apart, but they were deemed to be within acceptable survey tolerances.

When the survey is completed, several scenarios can exist. The boundary can be neatly located at the top or bottom of the retaining wall or sometimes a considerable distance from the wall, but the ownership of the wall is definitively established. More problematic is when the boundary is located within the depth of the wall structure (see Figure 1), essentially meaning that both parties share ownership.

It may well be the party benefiting from the retaining wall – who has gained the extra usable land – will own the major portion of the structure and will accept the responsibility and cost of maintenance.

If joint ownership is established, the best course of action is for both parties to meet, discuss the situation and try to find some common ground (pun apology!) that they can both live with.

However, when they cannot reach an acceptable agreement, the next step is for the parties to take legal advice. Hopefully this will facilitate an amicable agreement.

While these situations are essentially civil matters, there are some disputes that escalate and several have made it as far as the Environment Court for a final determination. Sometimes they even make it to the front page of the papers too – and most people don't want to find themselves there! ◀



FEATURE SECTION

Affordability

Affording a home has remained stubbornly out of the reach of many. Will new initiatives such as loosening the supply of land and the government's pledge for fast-track approval of 55,000 new homes make a difference?

IN THIS SECTION

- 40** Bringing house prices back to Earth
- 44** Supercharging the supply of land and housing
- 48** Affordable housing and construction
- 52** Rethinking the way Kiwis rent
- 54** Are residential building firms becoming more resilient?
- 56** Affordable comfort - how hard can it be?

Bringing house prices back to Earth

Buying a home seems increasingly out of reach for many. Moves such as opening up land for development and encouraging lower-cost multi-residential housing are cause for cautious optimism.

BY DAVID HINDLEY, FREELANCE TECHNICAL WRITER

Rocketing house prices might be welcomed by established homeowners, but they have big drawbacks, not just for younger generations but for the entire country. A Cabinet paper from earlier this year made it clear:

'Unaffordable housing has far-reaching social and economic consequences – children and families living in cars and motels, declining home ownership, health problems from overcrowding, poor productivity, and lower living standards for all New Zealanders. The government spends more than \$4 billion each year on accommodation support, which has doubled since 2017.'

The statistics paint the picture:

- Since 2000, average house prices have quadrupled in Auckland and tripled in many other cities.
- While 74% of households owned their own home in 1991, that had fallen to around 66% by 2023 and in one forecast will fall to just 48% by 2048.
- In 2020, New Zealand had the highest housing cost to disposable income ratio in the OECD.

The figures are turning

While the big picture data makes for glum



reading, if we extend the figures to very recent years, the international comparisons don't look so bad (Figure 1). Aotearoa New Zealand leapt well clear of the pack in real house price growth in 2021, but we have since fallen by more than most.

The international comparison of house prices to incomes shows a similarly encouraging pattern – a fall since 2021.

Looking at dollar figures, the Real Estate Institute of New Zealand says the national median house price peak of \$925,000 in

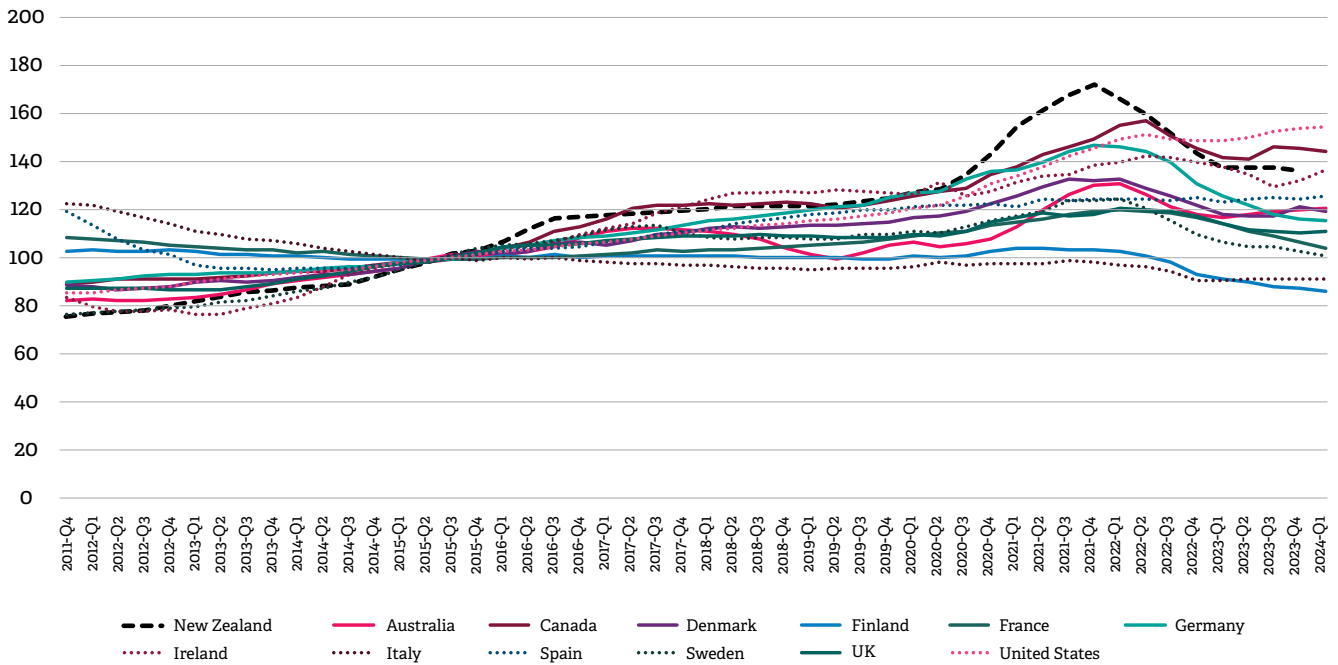


Figure 1: Real house price indices for New Zealand and 12 other countries. (Source: OECD Analytical House Price Indicators)

November 2021 fell to \$765,000 in August 2024, a drop of \$160,000 or 17%.

Why did prices go stratospheric anyway?

A range of factors created the perfect rocket fuel:

- Limited land availability – with constraints on both intensification (building up) and expansion (building out).
 - The impact of interest rates – very low interest rates increased the amount home buyers could borrow.
 - Land prices have grown substantially. In just one example, section prices increased by 658% in Hamilton City between March 2002 and June 2021.
 - Fewer new dwellings being built.
 - The homes being built became much bigger.
 - Population growth.
 - Construction material inflation hit record highs.
 - The way our tax system works increases the value of housing relative to other forms of consumption or investment.
- These don't all have an equal impact. A government study looking at house prices

found that 'the main driver of house prices in Aotearoa over the past 20 years has been a global decline in interest rates, in the context of restricted land supply'.

Land and housing supply affect price

There is evidence that zoning more land for housing tends to increase the supply of new homes, and increasing housing supply tends to reduce price growth in turn. That suggests that the current government push to increase land availability and house construction (see *Supercharging the supply of land and housing* on page 44) is likely to have a payoff.

In 2016, Auckland's Unitary Plan saw an upzoning of a large area of its residential land, precipitating a boom in housing construction (see Figure 2). Around 22,000 new homes consented in the 5 years after 2016 were estimated to be a direct result of the upzoning – the equivalent of 50% more homes.

Research from Auckland University Business School published in 2023 estimates that there was a reduction in dwelling prices of between 23% and 39%

compared to what there would have been if the upzoning had not taken place.

Economics consultancy NZIER found that dwellings consented per 1,000 residents were notably higher in Canterbury than in Auckland or Wellington over a long period, even before the earthquakes and the subsequent rebuild, citing, 'As a result of increased housing availability, house prices and rents in Canterbury have grown less than New Zealand as a whole.'

While increasing land supply is expected to lead to more homes and enhance affordability, it takes a very long time to make a difference, Reserve Bank Economic Advisor John Knowles told *Build*. 'The housing stock is so big – over 2 million homes – that it takes a while for the construction of new homes to impact affordability.'

Hamish Fitchett, Senior Economic Analyst at the Reserve Bank, says that the level of uptake from increased supply also depends on the removal of barriers to development.

House size and the rise of the townhouse

Part of the rise in house prices reflects >>

the fact that the median floor area of the homes built almost doubled from 107 m² in 1975 to 200 m² in 2010. This has fallen markedly in recent years. By the end of 2022, the median floor area of all homes consented was 126 m².

The main reason for this is the growth of multi-unit housing and townhouses in particular. ‘The house construction boom we saw recently was really the Auckland townhouse boom,’ CoreLogic Chief Property Economist Kelvin Davidson told *Build*.

The growth of multi-unit housing is moderating home prices. In a May 2023 article, economics consultancy Infometrics reported that, ‘Over the last year, the average dwelling value for new townhouse consents was \$292,000, almost half the \$553,000 recorded for stand-alone houses.’

Taken in tandem with the shrinking section size, this difference means that an average new townhouse with land might cost \$667,000 compared to about \$1,071,000 for an average new stand-alone house with land. ‘If you’re trying to get onto the housing ladder, there’s simply no comparison between the two numbers.’

Population growth

Economics consultancy Motu has investigated population, immigration and house prices and found that population growth puts upwards pressure on house prices.

On average, a 10% increase in local-area population was associated with an increase in house sale prices of 4–6.5%. The researchers found no evidence that a higher share of new (international) immigrants in an area is associated with higher house prices.

Construction inflation

‘One of the issues is the sheer cost of building a new house compared to the price of existing homes,’ says Matthew Curtis, Senior Research Analyst at BRANZ. ‘The differential keeps growing.’

There may be good news here too. CoreLogic’s Cordell Construction Cost Index (CCCI) for residential construction experienced its first recorded drop in the costs to build a new house in at least 12

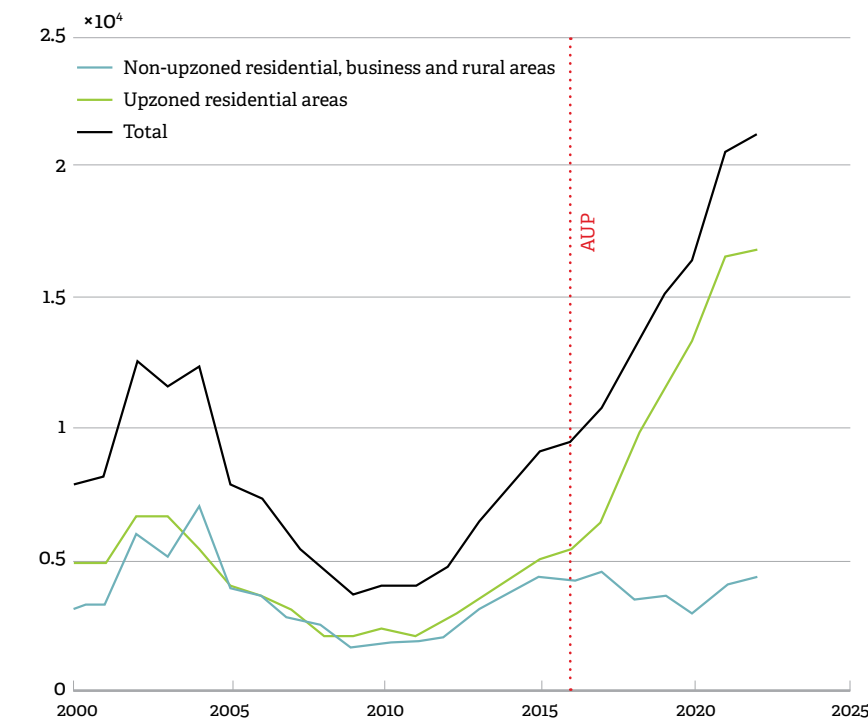


Figure 2: Dwelling consents in Auckland, 2000–2022. Areas upzoned in 2016 (green line) show a boom in new home construction that was absent from non-upzoned areas (blue line).

years, with a 1.1% decrease in the 3 months to June 2024. The peak inflation was 10.4% recorded in the fourth quarter of 2022.

Alternative options for lower-cost homes

While a boost in land supply for housing and changes aimed at reducing construction costs are welcome, for some potential homeowners, it is unlikely they will be enough to get their own home through the traditional route.

There are a growing number of alternative options. For analysis of changing developer and occupant models such as build-to-rent and rent-for-life, see page 52.

Westpac NZ’s *Shared Home Ownership Report* prepared by Deloitte and published in July this year found that 152,000 households are eligible for a shared homeownership pathway.

The study report ER81 *Enablers and barriers impacting on the development of affordable alternative housing tenures in New Zealand* prepared for BRANZ also

looks at various affordable alternative housing tenure models in Aotearoa.

BRANZ boosts research around affordability

BRANZ work around affordability is ramping up. In its *Investment Priorities Statement 2024*, BRANZ identifies affordable housing as one of four main areas of new investment, focusing on:

- developing a definition of housing affordability and how factors that make it up can be compared internationally and tracked over time (see page 48)
- understanding barriers to home affordability and intervention options
- new materials, systems, technologies and practices that will significantly improve housing supply and affordability
- developing low-cost pathways to supply warm, dry and healthy homes
- investigating supply and demand cycles of housing and their impact on vulnerable population groups and industry. ◀

SPECIAL
CAN BE
GRAND
AND
TALL.
BUT
IT'S
JUST
AS GREAT
WHEN
IT'S
LITTLE
AND
SMALL.

Nestled among 3rd generation avocado trees in Waihi Beach, Rach, Tim and their two boys enjoy their Homewerk cabin's sense of calmness. Making small feel big.

Special isn't reserved for a privileged few – it's all the things that make your home feel like you. If you're dreaming of a build or renovation project but concerned about cost, talk to an NZCB builder about how to make it happen in the right way for you.

Find your builder at nzcb.nz

LET'S BUILD
SOMETHING SPECIAL.



Supercharging the supply of land and housing

The government is cutting old rules and introducing new ones to boost land availability, reduce construction costs and speed up the supply of new homes. Will it work?

BY DAVID HINDLEY, FREELANCE TECHNICAL WRITER

In the first 8 months of the year, there was a blizzard of announcements around housing, land for housing and construction costs. Government proposals include:

- requiring tier 1 and 2 councils to live-zone feasible development capacity to provide for at least 30 years of housing demand
- requiring cities to be allowed to expand outwards at the urban fringe
- strengthening intensification provisions in the National Policy Statement on Urban Development, allowing greater density around strategic transport corridors
- allowing self-contained, single-storey detached houses of up to 60 m² – granny flats – that meet certain requirements to be built without a building or resource consent
- making it easier to use certain building products from overseas, with building consent authorities required to accept recognised overseas products as compliant with the New Zealand Building Code
- making building consent variations easier
- making remote building inspections the



Holiday house at Piha.

default approach, reducing delays and costs.

While some changes will just affect new home construction, others are likely to encourage more privately held land to be made available for development. 'With the

requirement for councils to zone land for 30 years of housing supply, people who remain holding land and not doing anything with it will miss the boat,' says Matthew Curtis, Senior Research Analyst at BRANZ.

Implementing the changes will in most

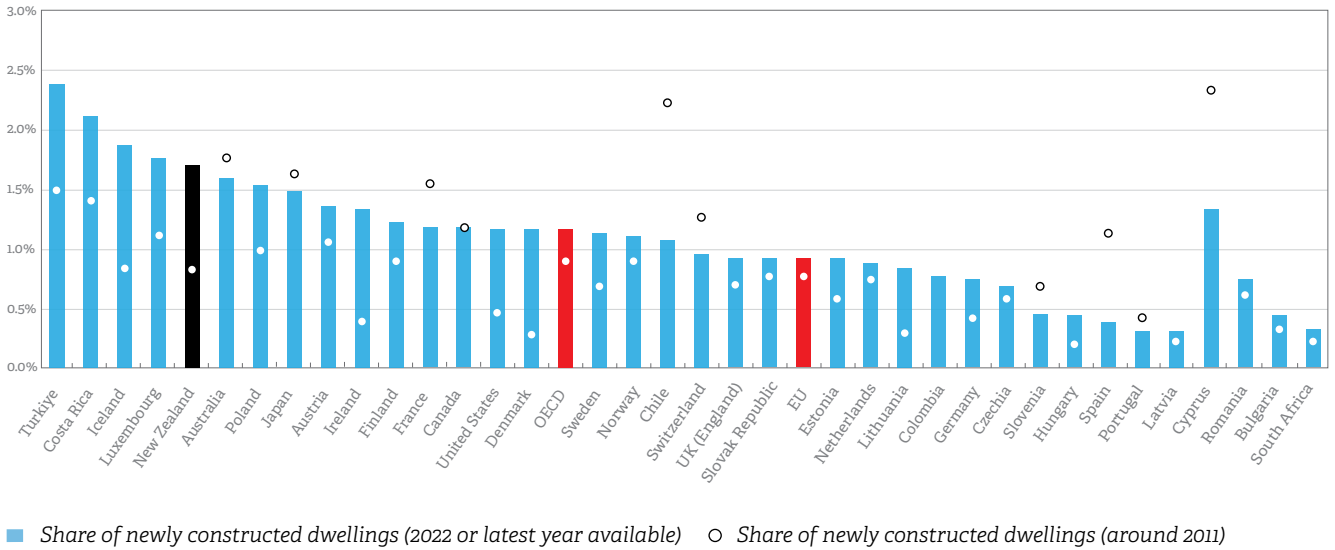


Figure 1: A graph to be proud of – New Zealand has in recent years been building more dwellings as a percentage of the total existing housing stock than many other countries (Source: OECD Affordable Housing Database).

cases require amendments to the Building Act or Resource Management Act or regulations, so any new rules won't come into effect for a while.

Why the changes?

We don't have enough homes. For each 1,000 inhabitants, we have 396 dwellings. That's fewer than the OECD average of 468 and well below the EU average of 514. For almost the entire 3 decades from 1990 to 2020, we had fewer homes for our population size than Australia, Canada, the UK or the US.

The tide has turned, however. While there remains a shortage of housing, the position isn't as dire as it was 2-3 years ago.

'In 2020/2021, interest rates were so low that they eventually pushed annual dwelling consents over 51,000,' Hamish Fitchett, Senior Economic Analyst at the Reserve Bank, told *Build*.

He points to OECD data that shows

that Aotearoa New Zealand has very recently been one of the leaders in the number of new dwellings it is building as a percentage of total housing stock (Figure 1). By this measure, we have been building around double the number of dwellings that we were in 2011 and building more than most comparable countries.

While it takes a long time to make a difference, and new consent numbers have slowed significantly from the peak of 2 years ago, there are some reasons for optimism. There is general agreement – and relief – that the worst point of this cycle is largely over.

'We could be close to the low point,' Reserve Bank Economic Advisor John Knowles told *Build*. 'Although consents have fallen in response to higher interest rates, it is encouraging that they haven't fallen more. They are not very low by historic comparison, even with higher interest rates. Things were much worse in the global financial crisis'. (As Figure

2 shows, in the year to September 2011, there were just 3.1 dwellings consented per 1,000 residents – less than half the figures achieved more recently)

'A bit of perspective is handy,' CoreLogic's Chief Property Economist Kelvin Davidson told *Build*. 'The numbers of new homes we are building are still good historically.'

The average annual number of homes consented per 1,000 residents between 1966 and 2023 was 6.7. In the 12 months to mid-2024, as the housebuilding industry approached a trough, the number stood at 6.6 – very close to the long-run average (see Figure 2).

There are reasons for optimism for the construction sector in the longer-term. Some forecasts see dwelling consent numbers reaching the bottom of a trough with around 30,000 consents per year in early 2025, growing to approximately 40,000 consents per year by the end of the decade. ▶▶

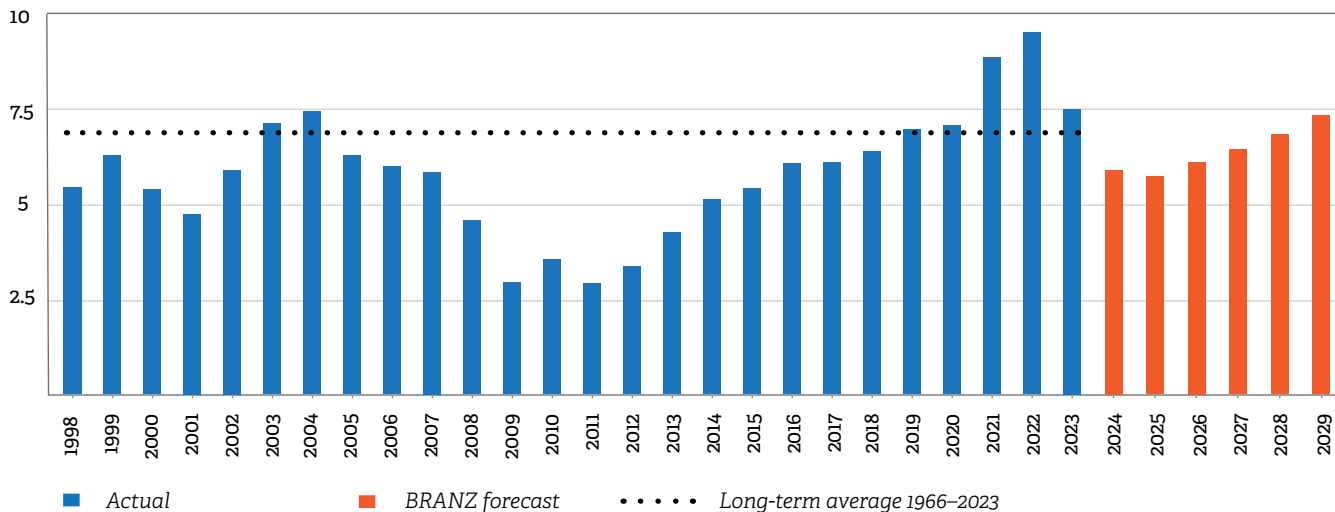


Figure 2: New homes consented per 1,000 residents, year ended September (Source: Stats NZ).

These forecasts mostly account for the government announcements in the first half of the year.

No return to 51,000 consents per year

A return to the record highs of recent years is not on the cards even with the government’s recent initiatives. ‘Even by 2030, we are not likely to return to the 51,000 annual consents we saw mid-2022,’ says Matthew Curtis. ‘But 40,000 consents a year is still a good number.’

One thing to bear in mind is that the figures don’t take account of demolitions/deconstructions, so they slightly overstate actual growth. For example, if one old house is taken down and replaced by four townhouses, the consents for the townhouses are recorded but the demolition usually isn’t. The data says there are four new

homes, where in fact the net gain is only three.

Does the push to free up land ensure more homes?

Rezoning or upzoning significant areas of land to make it available for housing, as the government is promoting, generally leads to more homes being built (see *Bringing house prices back to Earth* on page 40).

Whether or not that happens in any given location depends largely on the infrastructure in place to support the housing. One property developer told the *Waikato Times* in July, ‘I have a number of sites in Hamilton that I can’t develop because there’s no sewer infrastructure.’

Infrastructure capacity limits or poor performance are causing problems for towns and cities large and small.

Airbnbs and holiday homes not the problem

Occasionally, you hear the suggestion that the housing shortage is the result of far too many homes left empty or only occasionally occupied, but internationally, we rate very low on that score.

OECD figures show that just 6% of our dwelling stock is made up of vacant dwellings or holiday homes, compared to 9.6% in Australia and higher figures in many other countries.



New house under construction in Auckland.

In July, the South Wairarapa District Council announced that it would be pausing new wastewater connections in Greytown because it couldn't handle the requirements of a large residential development proposal.

The previous August, it had paused all applications for new wastewater connections in Martinborough. New wastewater connections have also been delayed in Warkworth and other centres.

Local Government New Zealand President Sam Broughton says, 'The logjam on housing has happened because councils are not resourced to support the level of growth that everyone knows we need ... New housing requires roads, footpaths, green space and services, which are currently really expensive for councils and ratepayers.'

How these are funded is the key issue. 'A 50% share of the GST revenue on new builds – as signalled in the Coalition Agreement – is a good place to start,' Sam Broughton says. 'Rates alone simply can't cut it.'

The government has said it is working on city and regional deals – agreements with individual councils about projects and their funding. Options such as sharing the GST earned on houses built are being considered.

The point that local body rates can't be increased to fund the growth required is widely accepted. 'There have been signals that growth needs to pay for growth,' says Matthew Curtis. 'This means targeted rates or increased development contributions for new development.' While targeted rates are not in wide use, they do exist in a few areas.

Little risk of changes being undone

'Freeing up more land doesn't automatically mean that it will be built on,' Kelvin Davidson says, 'and it takes time for the flow of new dwellings to come through.'

But there is an optimism that policy changes freeing up land will have a positive impact on housing supply and that there may be comparatively little political risk around it.

While it isn't uncommon for the actions of one government to be undone by a subsequent government with a different ideology, that may be less likely to happen with some recent initiatives. 'There is a growing consensus in the economics community that allowing greater supply is the most effective way to improve housing affordability,' John Knowles told *Build*. ◀

Affordable housing and construction

Fixing Aotearoa New Zealand's dire housing construction affordability problem requires deep structural change. Without it, Kiwis will increasingly become tenants in their own backyard. BRANZ is researching solutions.

BY DANIEL DU PLESSIS, SENIOR RESEARCH ECONOMIST, BRANZ

During an October 2021 Rethinking Housing conference, BRANZ had expressed its concern regarding the growing gap between what housing in Aotearoa New Zealand costs compared to what median households earn.

At the time, unabated population growth and expansionary monetary policy caused the demand for housing to increase beyond the production capacity of the construction sector.

Shifting affordability beyond reach

Consequently, average house prices increased by about 85 percentage points between 2019 and 2022 according to data sourced from the Bank for International Settlements. Median household incomes, however, only increased by 23 percentage points over the same period – effectively shifting housing affordability beyond the reach of low to median-income households (see Figure 1).

The impact of rapid population growth and expansionary monetary policy prior to 2022 also placed significant upward pressure on the cost of construction. Labour shortages and supply chain disruptions



New housing development in Flat Bush, Auckland.

Changes in house prices and household income

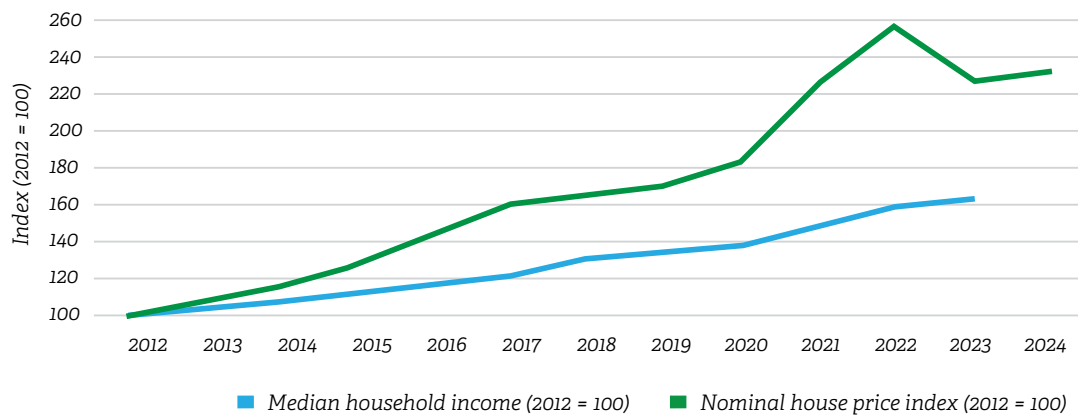


Figure 1: Changes in house prices and household income. (Sources: Stats NZ. Household Economic Survey: Year ended June 2023; Bank for International Settlements (2024), Residential property prices.)

placed further upward pressure on the cost of construction.

According to Stats NZ's capital goods price index (CGPI), the cost of producing a standard residential house by a large-scale builder increased by about 52 percentage points over the past 3 years.

Over the past 12 years, the CGPI for residential buildings increased by 98% – a staggering 65% higher than general increases in consumer prices since 2012. While some of the increase since 2021 can be attributed to labour shortages and supply chain disruptions, the absence of a decrease in construction cost since markets have normalised is noteworthy.

From a construction affordability perspective, households' median incomes – after accounting for inflation – only increased by about 31% since 2012, which

is about 34% less than the increase in the CGPI for residential buildings. As the data suggests, like housing, construction cost is moving beyond what a growing proportion of New Zealanders can afford.

Construction sector not in control of the issues

The drivers of housing affordability such as immigration, labour shortages, monetary policy and a low national wage framework, however, fall beyond the direct control of the construction sector.

Likewise, black swan events such as the global pandemic or the 2010/11 Canterbury earthquakes influence markets and affordability in ways that fall beyond any control. What is evident is that, in Aotearoa, housing affordability and construction affordability go together.

This raises the question, where and how can research focus to decrease the cost of construction and improve housing affordability?

Housing affordability is one of Aotearoa's most significant socio-economic issues. The concept of affordability means different things to different people. One perspective is that house prices should fall within a range of three to five times annual median household income. Another perspective is that adequate, including affordable, housing is recognised as part of the right to an adequate standard of living.

BRANZ ups investment in affordability research

In its 2024 Building Research Levy Investment Priorities Statement, BRANZ ►►

Changes in construction cost

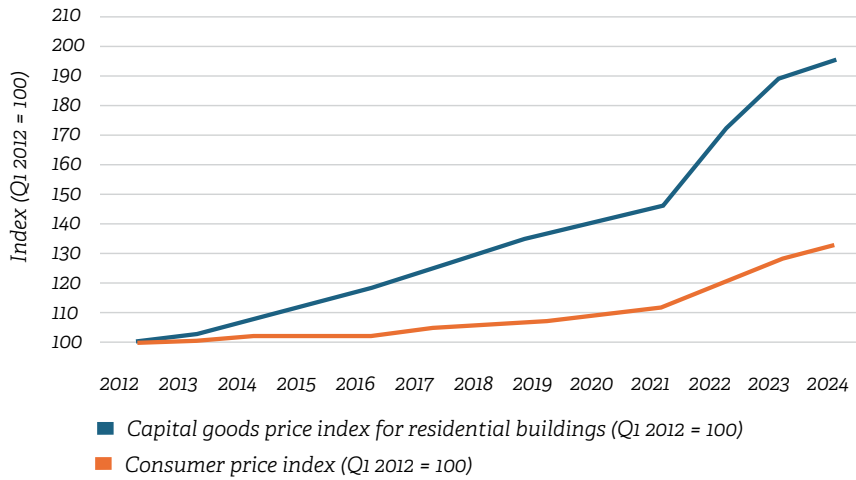


Figure 2: Changes in construction cost. (Source: BRANZ based on Stats NZ Infoshare GCPI data for residential buildings Table CEP011AA. Updated 16 August 2024.)

signalled an intension to invest further in affordability research. Work is now under way to define housing and construction affordability.

Creating a common language around affordability in housing and construction

will lay a foundation for future research to harness those areas of the housing and construction system that could improve affordability. BRANZ's independent and impartial role within the construction sector positions it well to explore opportunities

from an objective, systems perspective.

If you wish to be involved, discuss affordability issues with us or have your say about what role we can play, please get in touch. Our email address is economics@branz.co.nz. ◀



New BRANZ bulletins available now

BU 695 Structural Insulated Panels

The range of structural insulated panels (SIPs) commercially available in New Zealand has expanded rapidly in recent years. This bulletin looks at the design, installation and performance of SIPs, with a few notes on non-structural insulated panels.



BU 696 Seismically resilient design

Designing for seismic resilience in buildings and infrastructure enables communities to recover from significant disruption. This bulletin provides a checklist of key seismic considerations for designers and links to key references.



Eliment[®] insulation



- **New generation of dual thermal & acoustic glasswool insulation at highly competitive rates**
- **CodeMark certified and designed for New Zealand conditions**
- **Made using up to 80% recycled glass**
- **Compressed up to 15 times at packaging to reduce transport and CO2 emissions**
- **70 year product Warranty**
- **Find Eliment online on Smartspec, MasterSpec & Design Navigator**
- **Available to order nationwide through ITM, Placemakers and other selected building merchants and installers**
- **Now GreenTag Level A Certified, suitable for NZGBC Homestar & Green Star projects!**



*For more information visit
elimentinsulation.co.nz*

Proudly distributed by



HIGH PERFORMANCE BUILDING SOLUTIONS

Rethinking the way Kiwis rent

Build-to-rent schemes have been lauded as a potential solution to the housing crisis, but can they deliver on the hype?

BY NICK HELM, FREELANCE TECHNICAL WRITER

Everyone deserves a warm, safe and comfortable home. Unfortunately, a housing shortfall has increased demand, pushed up house prices and put mortgages out of reach of many low to middle-income New Zealanders.

Affordability crisis

A common measure of affordability – the ratio of average house price to mean household income – has increased from about 3:1 a few decades ago to around 9:1 in 2022. Anything greater than 3:1 is classified as unaffordable, according to a BRANZ study report that references the World Bank.

The problem is that incomes haven't kept pace with house prices. Over the long term, the average house price increases by about 5% per annum and average income increases by around 3% per annum.

The difference may not seem much, but compounded over several years, it creates a widening gap between the cost of home ownership and the means of those who wish to own them.

Falling ownership rates

As a result, a growing proportion of New

Zealanders are forced to rent rather than buy their home.

The *Westpac NZ Shared Home Ownership Report*, released in July, paints a clear picture – home ownership fell from 75% in the early 1990s to less than 60% today and is on track to fall below 50% by 2048. Essentially, more New Zealanders are renting and renting for longer.

Some in the industry see this as a maturing of our housing market – an inevitable shift towards more stable, longer-term tenancies, much like the long-term and generational tenancies seen in other developed countries.

Build-to-rent developments

A crucial question remains though – where will all these rental dwellings come from?

Widely used overseas, build-to-rent is any residential development designed specifically for renting rather than for sale, typically owned by institutional investors and managed by specialist operators.

Here in Aotearoa, build-to-rent schemes have received a lot of attention as a means to provide for growing rental demand and deliver housing to New Zealanders.

Several local institutional investors have invested heavily in build-to-rent assets in the last few years.

Investment potential

'Build-to-rent provides stable, long-term investment returns for our members through all phases of the economic cycle,' says Sam Stubbs, Co-Founder and Managing Director of KiwiSaver investment fund Simplicity, one of the largest build-to-rent asset owners in the country.

'Simplicity was set up with the firm belief that you can make money and do good, and this is a classic example. The returns from build-to-rent are very attractive. They aren't as high as some other investments, they're much less volatile, and that really matters when, for example, people are drawing down their savings in retirement.'

Build-to-rent developments typically yield around 5% in the first year and grow over time with inflationary increases in rent. In Simplicity's case, it constructs build-to-rent assets for approximately 30% less than valuation and keeps all the development management, project



Build-to-rent properties provide secure tenancy in a warm, dry home.

management, construction, leasing and property management in-house to avoid external provider margins.

'It also helps you sleep at night when you know that whatever the share market does, people will keep paying their rent. And the ultimate fence at the top of cliff for social problems is a warm, dry home and housing security,' says Stubbs.

What it means for tenants

Build-to-rent seems like a no-brainer for tenants – secure tenure in a dry, warm, well-located home, a responsive property manager, protection from maintenance cost shocks and the flexibility to invest in other assets – shares or managed funds, for example.

Some schemes even allow tenants to customise the interior fit to their preferences in an arrangement like many commercial leases.

The downside is that tenants miss the opportunity to participate in the capital gains of home ownership, although mechanisms like real estate investment trusts (REITs) can enable anyone to access the property market. Residential REITs are common overseas, and while they do

exist in Aotearoa, for now, they're mostly associated with commercial property.

Limited progress

So far, though, build-to-rent development has been slow.

'There is a lot of talk about build-to-rent which has yet to turn into action. If you look at actual homes built, rather than talked about, the numbers are relatively small,' says Shane Brealey, Managing Director of Simplicity Living, the home-building subsidiary of Simplicity.

'I believe the reason is that build-to-rent isn't easy given New Zealand's high construction costs and the approach the sector takes to design, procurement and construction,' he says.

Simplicity has 1,250 new homes in construction, design and consenting with sites for further homes under negotiation. There are a handful of other developers in the game, but the cumulative numbers are minuscule compared to the housing shortfall.

For example, the Auckland region has about 600,000 homes, of which about 200,000 are rentals. Those 1,000 new homes represent an increase of just 0.5% per year – well shy of the region's

estimated 2–3% per year population growth.

Even without considering other factors such as older homes that must be replaced, so far, it seems build-to-rent has had minimal impact on the rental shortfall.

Scaling up

However, spurred by build-to-rent's positive impact on similar housing woes in Australia and the UK, the government has announced plans to loosen overseas investment laws to encourage more foreign build-to-rent investments in Aotearoa.

Not only does Brealey see this as a good move, he also believes it's the only way build-to-rent can have a meaningful impact on our housing market.

'Australia has about 5,000 build-to-rent homes completed, another 5,000 in construction and another 5,000 in planning. Even with their A\$3.5 trillion superannuation funds (compared to \$120 billion in New Zealand), over 80% of the funds came from offshore,' he says

'Build-to-rent is very capital intensive and requires patient capital, but any option that increases the number of quality homes available for New Zealanders is a positive thing.' ◀

Are residential building firms becoming more resilient?

The stats show small building firms are losing ground to the better-resourced medium and large players, who are demonstrating resilience in their operations.

BY TYSON SCHMIDT, DIRECTOR, THIRD BEARING

Resilience can be measured in several ways. Levy-funded research looked at the financial ratios of different-sized residential building firms to see if their resilience has improved over time. The answer is yes for large and medium-sized builders, but concern remains for smaller building firms.

Large builders increase their share

Large builders – those constructing more than 30 dwellings a year – are completing a greater share of Aotearoa New Zealand's residential buildings – up from 22% in 2010 to 30% in 2020. This has been driven by the continued rise of national franchise builders and transportable home manufacturers.

Growth in homes built by large builders meant that the smaller builders were doing less when comparing 2010 to 2020. Small building firms were doing 59% of new residential dwellings in 2020 compared to 63% in 2010. However, in 2015, their share had dropped to 52%, so 59% represents a bounce back for them (see Table 1).

Medium-sized builders – those building 7–30 homes a year – slowly lost market share over the decade, down from 15% of

	2010	2015	2020
Large builders (30+ homes a year)	22%	35%	30%
Medium builders (7–30)	15%	13%	12%
Small builders (<7)	63%	52%	59%

new residential dwellings in 2010 to 12% in 2020.

What might be a surprise is that large builders make up 1% of all residential building firms in Aotearoa and that has stayed pretty much the same over the last decade. There are more medium-sized firms now – 7% of firms, up from 3% in 2010. Together, the large and medium-sized firms are 8% of all residential building firms but account for 42% of Aotearoa's new houses. Scale definitely matters.

A glimpse at the financials

Looking at some of the financial data, there are quite different business models in play for the large and medium-sized

firms compared to the small operators.

Smaller firms tend to have very few employees and do most of the work themselves – they don't spend a lot on subcontractors. Only 3% of small building firms have six or more employees, and less than 10% of small builders spend 50% or more of their expenses on subcontractors.

This switches around for medium and large building firms. Over 50% of medium builders and 70% of large builders have six or more employees. Medium and large builders spend more on subcontractors – 45% of medium builders spend 50% or more of their expenses on subcontractors, and this increases to 60% for large builders.

The number of employees has not

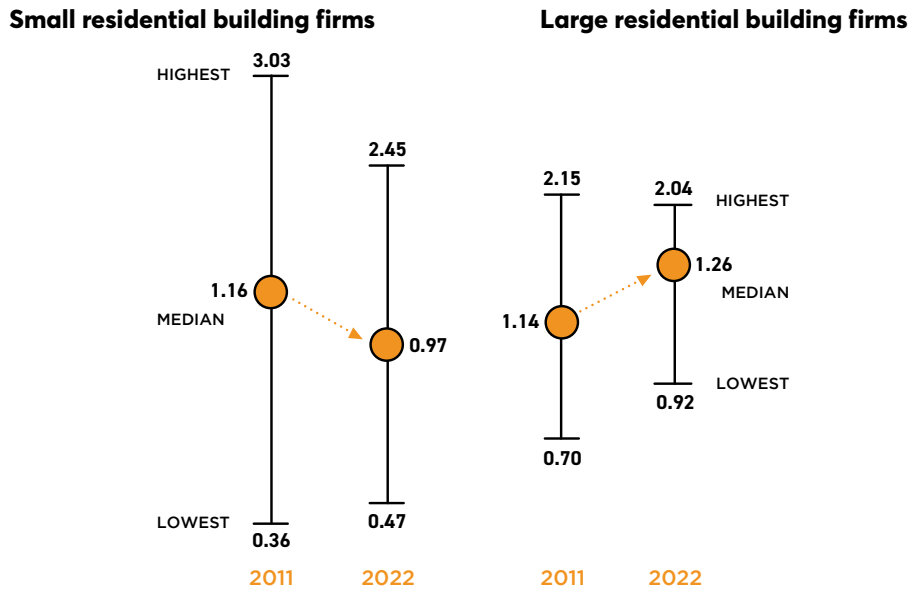


Figure 1: Current ratios for small and large residential building firms.

changed much between 2010 and 2020 for any of the size bands. The percentage of small building firms spending 50% or more of their expenses on subcontractors has also stayed pretty much the same over this time.

The percentage of medium-sized building firms spending 50% or more of their expenses on subcontractors steadily decreased between 2010 and 2020 – down from 60% to 45%. There was a smaller reduction for large building firms – from 67% to 60% – although it jumped up to 83% in 2015.

Is everyone improving?

A median or average is sometimes reported as a measure of the financial health of building and construction firms in Aotearoa. This can give a good overall picture but doesn't reveal the spread – how the worst and best firms are doing. To do this, we asked Stats NZ to provide maximum and minimum figures for financial ratios.

A good example is the improvement in current ratio by large residential building firms. Current ratio gives insight into a

firm's ability to pay its short-term liabilities. Anything under 1 suggests difficulty.

Figure 1 shows that between 2011 and 2022, the median for large firms increased from 1.14 to 1.26, telling us that, overall, their ability to pay has improved. What is even better is the lowest value went up – from 0.7 to 0.92 – so even the worst-performing large firm is almost at a healthy level. The median for medium-sized firms went down very slightly, but the worst-performing medium firms saw a similar improvement to that of large firms.

Unfortunately, small residential building firms have not shown the same improvement. The median dropped from 1.16 to 0.97 between 2011 and 2022. Most of that drop occurred early on, with a slow recovery towards the end. There is a glimmer of good news with the poorest-performing small firms improving their current ratios from 0.36 to 0.47, but this is still a long way below the ideal of 1.

It is a similar story for other financial ratios such as liability structure and return on assets. Large residential building firms have improved their ratios, while small and medium-sized

firms have either stagnated or struggled to improve their financial strength.

What does this mean for resilience of the sector?

The improvement in financial ratios for large residential building firms and the fact that they are undertaking a higher percentage of Aotearoa's new builds indicate improvement in resilience. This is especially the case when even the bottom end of this grouping has improved under these ratios. It isn't just a case of the best large firms dragging the performance of everyone else up.

The not-so-good news is that small builders have not experienced similar financial improvements over the last decade. Small builders still account for nearly 60% of new homes built in Aotearoa, so the lack of improvement remains a concern for overall industry resilience.

The question is whether efforts to improve resilience should go towards lifting up the performance of the many small firms, or do we try and grow the share of large and medium-sized firms who already demonstrate better performance? ◀

Affordable comfort – how hard can it be?

Energy hardship affects hundreds of thousands of households in Aotearoa New Zealand. Underheated homes, avoidable ill health and financial stress associated with energy bills are a harsh reality of winter for many. A BRANZ research project is providing insights that support change.

BY VICKI WHITE, BRANZ SENIOR RESEARCH SCIENTIST, BEN ANDERSON, BRANZ PRINCIPAL RESEARCH SCIENTIST, AND SUZANNE JONES, BRANZ RESEARCH SCIENTIST

BRANZ's Household Energy End-use Project 2 (HEEP2) – a national study of how, when and why people use energy in the home – is collecting vital data on indoor conditions, household energy use and occupant behaviours to help better understand how our homes perform.

A study like this (HEEP1) was last undertaken in Aotearoa in the early 2000s and the data it provided was instrumental in driving policy and industry change for more energy-efficient housing. HEEP2 will provide up-to-date data, contextual information and insights to support ongoing improvements that address energy hardship and support an effective and fair transition to zero carbon.



Defining energy hardship

Energy hardship is a complex multi-faceted issue. The Ministry of Business, Innovation and Employment (MBIE) recently developed a definition and framework of energy wellbeing for Aotearoa.

It defines energy wellbeing as 'when individuals, households and whānau are able to obtain and afford adequate energy services to support their wellbeing in their

home or kāinga'.

The Energy Hardship Expert Panel, set up to support MBIE's work, identified eight factors as key drivers of energy hardship:

- housing type and quality
- household energy needs
- efficiency of household appliances
- household income
- energy sources
- cost of energy

- where a person lives
- knowledge about energy.

Getting better data on energy affordability

HEEP2 has been monitoring energy use and conditions in hundreds of households throughout the country since August 2022, collecting data on all eight factors. Households were invited to participate in

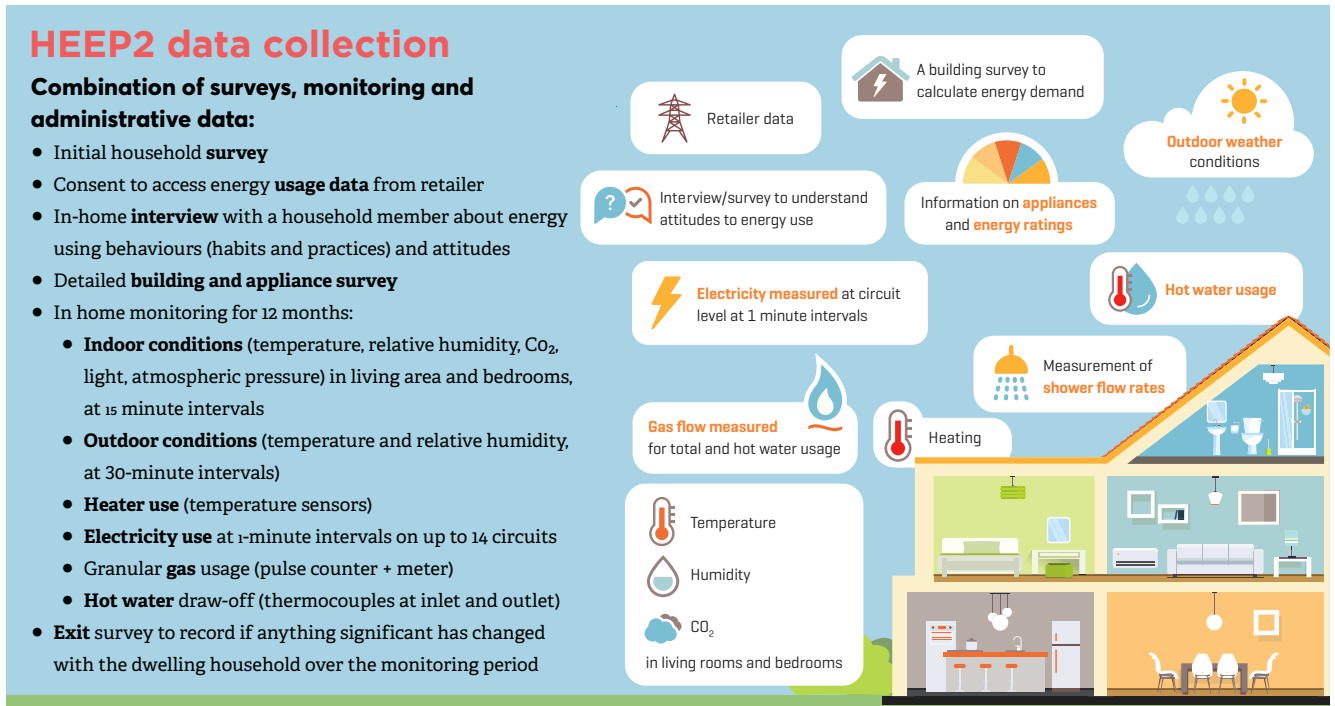


Figure 1: HEEP2 data collection processes.

HEEP2 through the Stats NZ Household Economic Survey. All household and dwelling types were eligible to take part. Early analysis shows that participants are mainly owner-occupied households with a tendency towards older age groups – unsurprising for a study of this nature.

The national sample comprises two cohorts. One (numbering 286 households) is surveyed and monitored (see Figure 1), and the other (co-funded by MBIE and numbering 137 households) takes part only in the survey components.

Understanding energy-using behaviours in combination with the data on energy end uses can help identify opportunities to address energy hardship through more efficient and effective use of energy in the home and improvements to our housing.

Indicators of energy hardship

Identifying the best indicators to measure energy hardship is notoriously difficult

because we need to be able to distinguish between those who underheat their homes through choice (or habit) and those who simply cannot afford adequate heating.

Relying on expenditure as an indicator of energy hardship does not provide a complete picture and will likely underestimate the scale of the problem. HEEP2 aims to help address some of the data gaps and understanding of energy hardship in Aotearoa, by providing insight into the level of 'energy services' delivered. For example, to what extent are householders heating their homes and are they achieving a healthy indoor environment, meeting minimum recommended temperatures of 18-22°C? If not, why not? Is it a building-related issue, inefficient and ineffective appliances, or a behavioural or cost issue?

While that detailed work develops, we can gain some initial insights from the HEEP2 householder interview, which explored a range of issues related to

participants' experiences of energy hardship, including attitudes towards energy use and comfort in the home.

Householders mindful of energy use and cost

Over three-quarters (76%) of the 423 households surveyed said they think about ways of saving energy in the home and 60% reported making changes to reduce their energy use. For around half (48%), keeping energy costs low was very important, and 5% had gone without heating at some time in the last year because they felt unable to pay for it (see Figure 2).

Energy hardship impacts wellbeing

The inability to afford energy to provide a healthy indoor environment – whether due to income constraints, high energy prices or poorly performing, energy-inefficient homes or appliances – impacts occupant comfort and wellbeing. ►►

Attitudes towards energy use from the HEEP2 sample

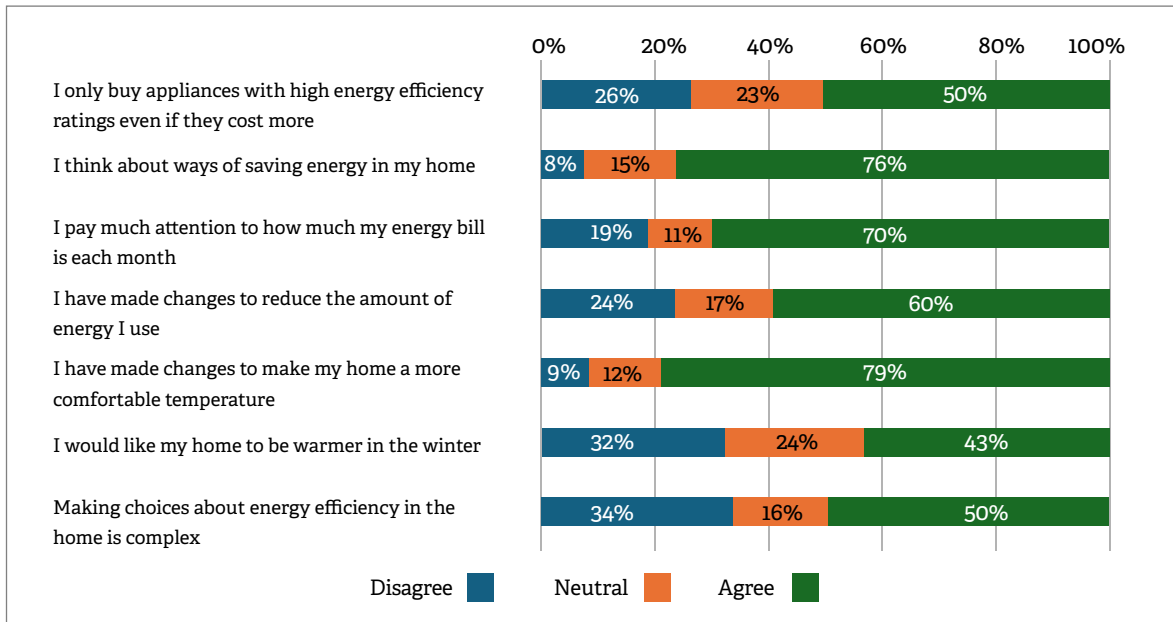


Figure 2: Attitudes towards energy use from the HEEP2 sample.

Nearly half the HEEP2 sample (48%) considered their home colder than they would like at least some of the time in winter, while for 14%, their home was always or often colder than they would like in winter. This is consistent with the 15% finding from the Stats NZ 2018 General Social Survey (GSS) for owner-occupiers.

As well as impacting occupant health and wellbeing, cold homes are more susceptible to damp and mould. Nearly half (48%) of the HEEP2 sample said their home did get mould, and for 10% of these households, this was always or often larger than an A4 sheet of paper – slightly higher than the 2018 Census figure of 7% for owner-occupiers. Around a third (32%) considered their home damp at least some of time – also slightly higher than the 2018 GSS figure of 27% for owner-occupiers.

Bedrooms underheated and cold

Analysis of data for a subset of 125 HEEP2 houses monitored over winter 2023 shows average temperatures in bedrooms were

1 in 7 respondents said their home was always or often colder than they would like in winter, 1 in 10 reported mould larger than an A4 sheet and 1 in 3 considered their home damp at least some of the time.

consistently below the WHO minimum recommended 18°C. For example, Figure 3 shows that the average (median) bedroom

temperature was always below 18°C, with 75% of measurements in the critical sleeping period of 11pm–7am below this level.

Although extreme values are not shown on the graph, around 8% of the bedroom measurements in this period were below 12°C. Overall, 66% of the houses recorded at least one measurement below 12°C in a bedroom during sleeping hours, while 92% recorded at least one measurement below 18°C in a bedroom in the same period.

Figure 4 shows median temperatures in bedrooms by annual household income band where we have this information. Although the number of houses in each income band is small (~25–30), the results suggest that those in the \$50k or below household income band experienced bedroom temperatures around 1°C lower than the other groups.

Bedroom temperatures dropped to an average (median) of around 14°C by 7am for this income group. There are a range of other potential factors affecting these measurements such as housing quality, the

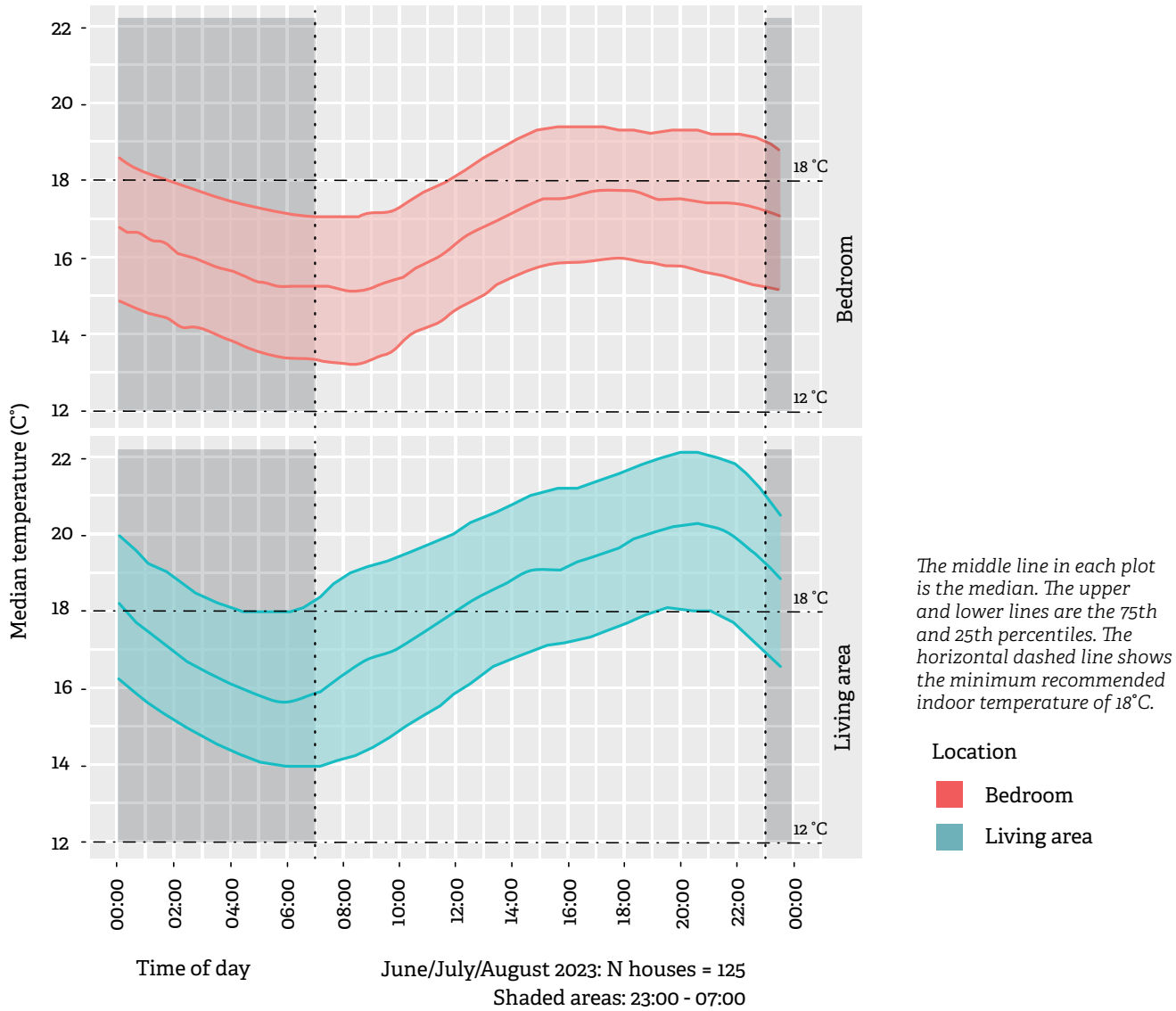


Figure 3: Average bedroom and living area temperatures, winter 2023.

availability and effectiveness of heating, daytime solar heat gains and bedroom occupancy. Unravelling these factors will be part of our future work at BRANZ.

Savings to be made from switching

Energy prices are a key factor in energy hardship. The ability to compare and easily switch between electricity retailers and plans enables consumers to ensure they are on the best tariff for their circumstances.

Consumer NZ reported that users of Powerswitch – its online electricity and gas retailer comparison website – who switched energy providers last year saved an average of \$409 per year.

However, navigating and actively participating in the energy retail market can be daunting, complex and inaccessible for some households.

Results from our HEEP2 householder survey showed that around 13% had switched electricity provider or plan within the last 12 months, but for over half the sample (52%), it had been more than 2 years since they'd switched and over a quarter (26%) had never switched (see Figure 5).

Help with winter energy payments

Recognising the cost burden of staying warm during winter, the government

introduced the Winter Energy Payment (WEP) as part of its Family Package in 2017 to provide financial assistance to eligible recipients over the winter months.

The WEP is a weekly payment of between \$20.46 and \$31.82 (around \$80–130 a month), paid automatically from 1 May to 1 October to people receiving New Zealand Superannuation, a main benefit or Veteran's Pension.

While designed to help households with the extra cost of heating during the winter months, the payment is not tied to the energy account but is an income top-up. We asked our HEEP2 households if they received the WEP and, if they did, how this

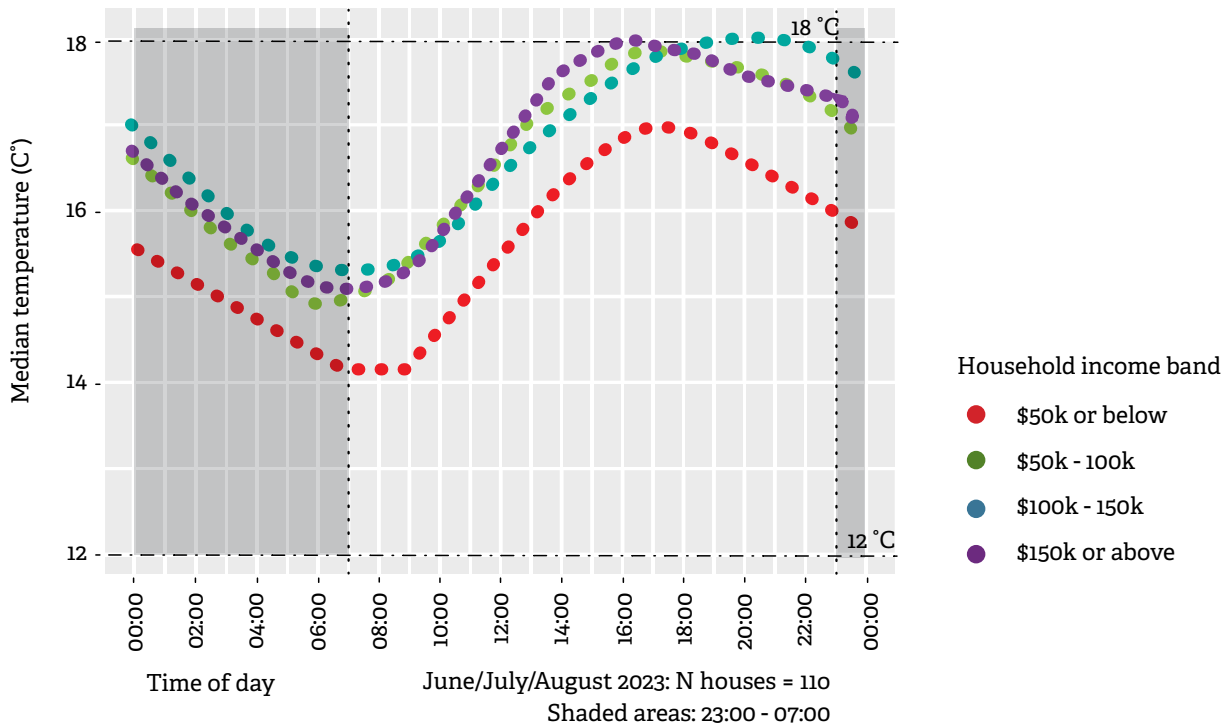


Figure 4: Median bedroom temperatures by income band, winter 2023.

affected energy use in the home. A high proportion (44%) received the WEP, likely reflecting the tendency towards older age groups (retirees) in the sample.

Of those who did receive it, around 16% said this payment did affect how they used energy in winter. Households described heating more, feeling less concerned about turning on the heater and worrying less about being able to pay their energy bill over winter as a result.

Improving housing quality can reduce energy hardship

A well-designed, energy-efficient home will have lower running costs than a poorly insulated home with inefficient appliances. Improving the quality and performance of our existing housing through retrofit and ensuring new homes are built to a high performance of energy efficiency is therefore key to reducing energy hardship in Aotearoa.

The insights provided here from HEEP2 draw on a small component of data collected in the study. As the project continues, we will share more results to support the industry in designing,

building and advocating for homes that will ensure all New Zealanders have access to affordable warmth.

Note: Results from indoor temperature measurements are preliminary and based on half the HEEP2 monitored sample only. This analysis will be repeated once all monitoring data is complete. ⬇️

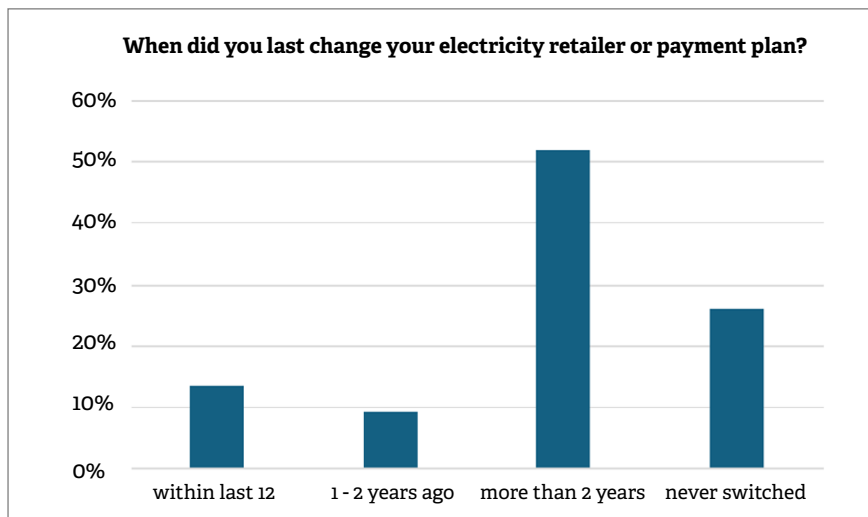


Figure 5: Time since last change of electricity retailer or plan.



In partnership with



Ministry for the
Environment
Manatu Mo Te Taiao



reducing building material waste

Find a place to take your building waste

branz.co.nz/resource-recovery-map





FEATURE SECTION

Testing and certification

Comprehensive testing of building products and systems by independent experts has benefits for manufacturers, suppliers, customers and regulators.

IN THIS SECTION

- 64** The Appraisals journey
- 68** Assurance services



The Appraisals journey

With so many local and international products and systems in the building materials market, a BRANZ Appraisal is a stamp of approval that assures customers they can trust what they're buying.

BY FIONA NORTEN, BRANZ MATERIALS SCIENTIST

Ask people in the industry what a BRANZ Appraisal is, and chances are the answers will range from an informative and detailed document great for helping achieve building consent to an expensive piece of paper to sell products in Aotearoa New Zealand.

So what is an Appraisal? Who would want one? And what's the point?

This year marks 50 years since the first BRANZ Appraisal – for a building strap tensioner – was issued. It seems like the perfect time to look inside this magic box and see what it contains.

Some misconceptions

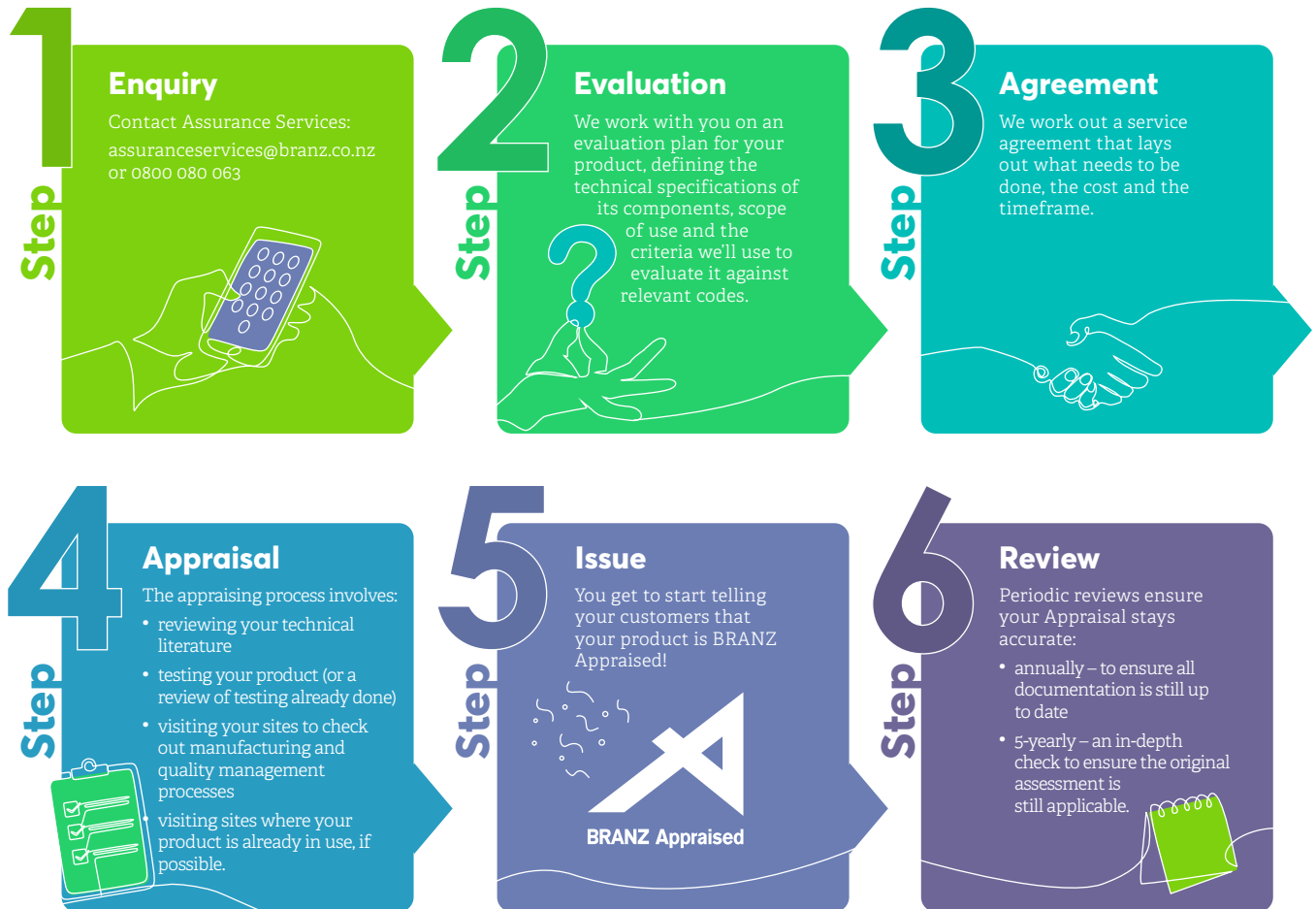
Before delving into what an Appraisal is, it's a good idea to address what it isn't. First, an Appraisal is not a requirement. The New Zealand Building Code does not specify that any product or system must have an Appraisal and BRANZ does not 'approve' products to enter the market. Nor is an Appraisal something that any manufacturer or supplier can just purchase.

Products that a manufacturer or supplier wants to have appraised are subject to detailed assessment and sometimes



Russell Clarke - BRANZ Assurance Services Project Manager and a leading expert on the New Zealand Building Code.

The Appraisal partnership



they're turned down because they aren't up to scratch. And no, it doesn't matter if you're Aotearoa's largest building materials supplier or brand new to the market – every product is subject to the same level of rigour.

What is an Appraisal?

Officially, BRANZ Appraisals are 'robust, in-depth independent evaluations for building products and systems to be deemed fit for purpose and Building Code compliant' but what does that mean?

Basically, it's a means by which products can be proven to work as they claim. To be

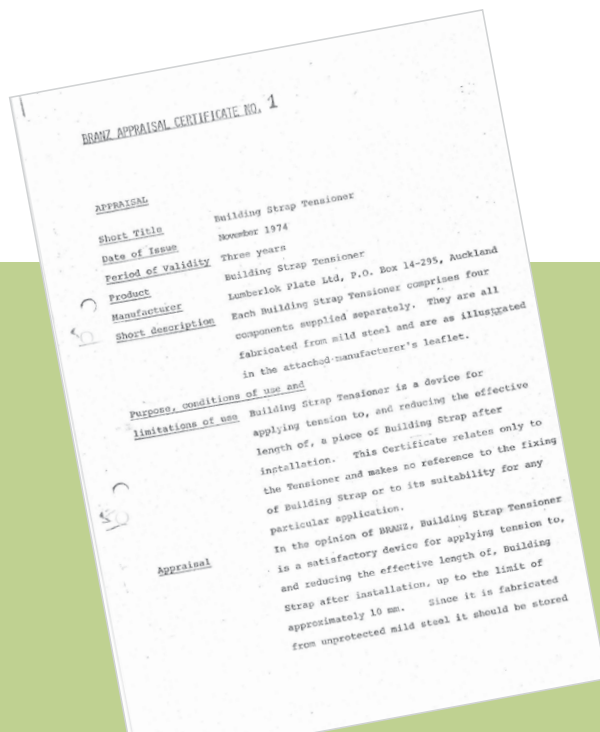
awarded a BRANZ Appraisal, a product or system must be shown to comply with all relevant clauses of the New Zealand Building Code or the National Construction Code of Australia.

How do you get one?

When you come to BRANZ with something you want appraised, the first thing we do is work out which clauses of the relevant code the product needs to adhere to. This includes the obvious like stability and protection from fire as well as the less obvious like safety of users and energy efficiency.

Once we know what you must comply with, we work with you to see how you can demonstrate compliance. Sometimes, this includes testing, which you might already have done. You might even have tested your product overseas and have certification to prove it. However, a BRANZ Appraisal is a chance to demonstrate compliance with the specific and up-to-date clauses of our unique Building Code.

You might choose to get the testing done elsewhere or BRANZ might be able to do it for you. Sometimes, we visit sites where your product is being installed or already in use to see it in situ. ➔



The very first BRANZ Appraisal – for a building strap tensioner – was issued in 1974 in a very no-frills style!

Alongside this testing, BRANZ will check your manufacturing and supply systems. Our team might visit your plant to watch you at work and see how you find and correct problems to make sure only top-quality products are hitting the market.

If we can demonstrate compliance to all the relevant codes and BRANZ is happy that you have good quality management systems in place, you'll be issued with your Appraisal. You can then advertise it on your website, marketing materials and even on the side of your van if you like!

Future assurance

As far as the BRANZ Appraisal journey is concerned, however, this is only the beginning. BRANZ wants to ensure consumers are getting high-quality

products every time, not just during the initial assessment. Each year, every Appraisal is revalidated to make sure the products are still up to spec. In addition, every 5 years, each Appraisal is reissued.

The reissue process involves BRANZ experts reviewing the product and making sure there haven't been any changes to the relevant Building Code clauses. It's a thorough check to ensure the original demonstration of compliance is still relevant.

BRANZ might request more up-to-date testing or to revisit your sites if it's been a while. This is the point where many clients choose to add or remove products from their Appraisal to reflect changes to their range, including new colours, styles or materials. ◀

What our clients say

Sto values our BRANZ Appraisals and considers them an essential part of our business from both a technical and marketing perspective. The Appraisals provide assurance to specifiers, builders and councils, confirming that our systems have undergone rigorous independent verification and are fit for purpose.

Jason Wanden, Senior Technical Manager, Stoanz Limited

One of the most important things for us about the BRANZ Appraisal process is that it is an ongoing evaluation, not just a single test at a point in time, which continues to monitor product performance attributes to ensure we deliver the desired level of systems performance.

John Jamison, Technical and Development Manager, Winstone Wallboards



Put our new Structural Engineering Laboratory to the test.



Our in-depth, independent structural tests assess the performance of building systems and products. Get in touch to find out how we can assist you with your structural testing needs.

Challenging Aotearoa New Zealand to create **a building system that delivers better outcomes for all.**



Assurance services

All BRANZ Appraisals are looked after by the BRANZ Assurance Services team, which includes some of this country's premier Building Code experts.

BY FIONA NORTEN, BRANZ MATERIALS SCIENTIST

The BRANZ Assurance Services team started out in the 1970s with two people and has now grown to a 13-strong team. These days, the team is made of people from a wide range of backgrounds, including councils, manufacturing plants and construction.

Many of you who've had contact with BRANZ over the years will know Stuart, Phil or Russell – our Appraisals veterans with 55 years' experience between them. The team also includes newer members who learn the ropes from their more experienced colleagues while bringing fresh ideas to the table.

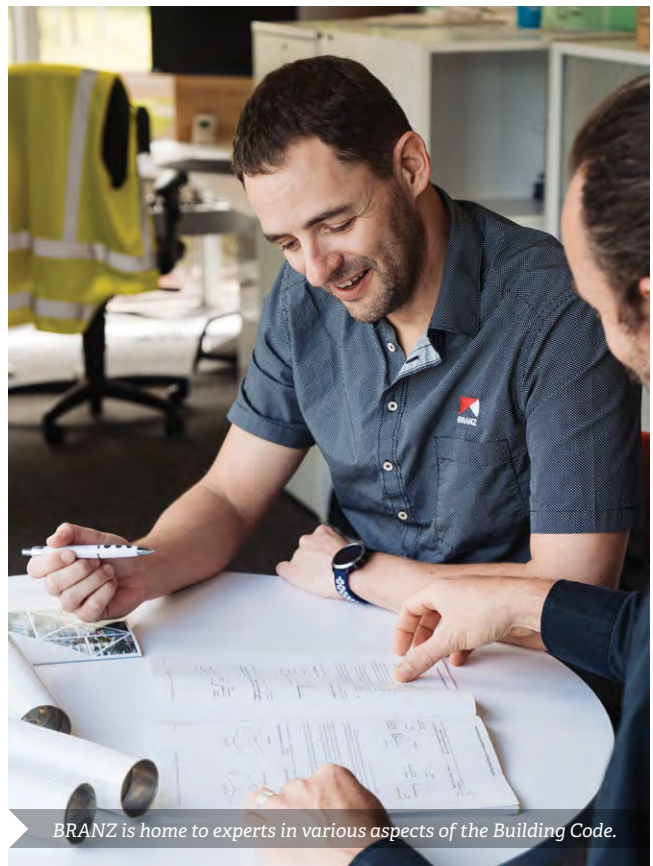
What's the point?

If getting and retaining a BRANZ Appraisal sounds like a lot of effort, you're right. It's a thorough process, and depending on your product or system, it can take anywhere from a couple of months to a couple of years. So why bother?

The clue is in the complexity of the process. Subjecting your product or system to the rigour of the Appraisals process demonstrates to the world that it's up to scratch. It can also help you learn things about your product you might never have thought of and is a marketing asset. A BRANZ Appraisal carries real weight in the marketplace.

BRANZ is home to some of Aotearoa's premier experts in various aspects of the Building Code. We pride ourselves in drilling down into the details of a product to make sure it is going to be suitable for New Zealand or Australian consumers.

BRANZ experts are also familiar with many international testing standards, so if you've had testing carried out overseas, a



BRANZ is home to experts in various aspects of the Building Code.

BRANZ Appraisal can be the best way to have it recognised without requiring repetitive new testing.

Testing capabilities

If any new testing is needed, you only need look at the enormous new fire testing laboratory that's recently emerged in the Wellington hills to understand how extraordinary BRANZ's testing facilities are. When completed next year, the fire lab will be the largest facility of its kind in the southern hemisphere.

Added to that, our Structures team also has a new lab, which can carry out two orthogonal directional testing on structures up to 3 storeys high. Further, our Materials team was at the forefront of developing weathertightness testing for the Building Code

and has labs packed with equipment for accelerated ageing and durability testing.

Breaking the barriers to innovation

Getting a BRANZ Appraisal for your product or system can be a challenging process, but acquiring one is a stamp of excellence showing your customers that your product is up to standard. ◀

FOR MORE ▶

More about BRANZ Assurance Services ▶



Independent expertise for our challenging conditions

The government recently proposed legislative changes to make it faster and easier for building products certified as fit for purpose in 'trusted' overseas markets to be introduced here. BRANZ's view on the suitability of any product for Aotearoa New Zealand's uniquely challenging environment will always be guided by our science.

BRANZ agrees that Aotearoa needs more quality, affordable building materials in the market to help reduce costs and delays associated with building a house. However, it's critical that those materials are safe, resilient and fit for purpose given the unique challenges we face from our climate, high UV levels and earthquakes.

BRANZ's scientists, technicians and product auditors draw on their extensive materials-testing expertise to assess a wide range of building products. They work in world-class

testing facilities that can replicate, accelerate or exceed the conditions that Kiwi houses can expect to face during their lifetime.

Among their responsibilities, BRANZ experts assess certifications and evidence from overseas tests against Aotearoa's regulatory requirements and environment. This ensures products will meet our current building standards and perform as they're supposed to.

BRANZ does not set Aotearoa's building standards or approve products for use here. Those are responsibilities of the regulator and building consent authorities. Instead, BRANZ's independent team works with product manufacturers, importers and authorities to provide robust scientific evidence of whether new materials will be safe and durable if used in Aotearoa's buildings. ◀

By Jarred Butler, Building Environmental Scientist, BRANZ, and Mike Jackson, General Manager – Construction Specification, CIL

High-quality data for carbon footprinting

In an initiative endorsed by MBIE, BRANZ and CIL are establishing a single-source-of-truth national carbon data repository for use by designers assessing the carbon footprint of their buildings.

A new industry-led initiative aims to reduce the environmental impact of Aotearoa New Zealand's buildings, which contribute up to 20% of the national carbon footprint.

What is carbon footprinting?

Carbon footprinting or building life cycle assessment is used to estimate the greenhouse gas (GHG) emissions from the creation, use and disposal of a building. It is derived from international standards EN 15978 and EN 15804 and is beginning to be used more widely in our construction sector.

However, sourcing consistent and robust data for the embodied carbon in construction products and materials is a key challenge. When data is missing, incomplete or poor quality, assessments are harder to carry out, increasing the risk that calculated carbon savings won't deliver actual, real-world reductions in GHG emissions.

To help tackle this issue, BRANZ has partnered with Construction Information Limited (CIL) to leverage existing data and research and find a solution.

Embodied and operational carbon

Carbon footprinting is generally used

during the early design stage to help project teams understand how they can design a building to emit less and, therefore contribute less to climate change. However, it can be conducted throughout the design process – and beyond – to track the emissions of a building.

Several well-known sector initiatives consider carbon footprinting. For example, the New Zealand Green Building Council's Greenstar and Homestar certifications offer credits for conducting carbon footprinting and using it to lower the carbon emissions of a design.

Carbon footprinting is very data intensive and requires an understanding of the impact of all the resources a building will use over its assumed 50-year life (for example, materials, energy and water). It is often split into:

- embodied carbon – GHG emissions released to manufacture, install, use and dispose of products and materials, which can be reduced by using fewer materials and choosing lower-carbon options
- operational carbon – GHG emissions released to supply resources such as energy (for example, electricity and gas) and water to a building while it is being used, which can be lowered by reducing the quantity of resources used.

Figure 1 shows how embodied carbon is categorised into life cycle stages and modules when a carbon footprint calculation is conducted.

Robustness and consistency

There are challenges associated with embodied carbon data, including the quantity needed and the assumptions required to develop it.

Data on potentially thousands of products and materials that could go into a building is needed, and how they will be used once they leave the factory must be assumed:

- How will materials be transported to site?
- How much material is going to be wasted on site and what happens to it?
- How will materials be installed and will installation consume more resources – for example, do you need a crane?
- How often will materials need to be replaced or require maintenance?
- What happens to the materials at the end of the building's life?
- Are there other factors to consider outside of the building's typical life cycle – for example, opportunities for recycling?

To ensure that carbon footprinting leads to lower GHG emissions, robust evidence

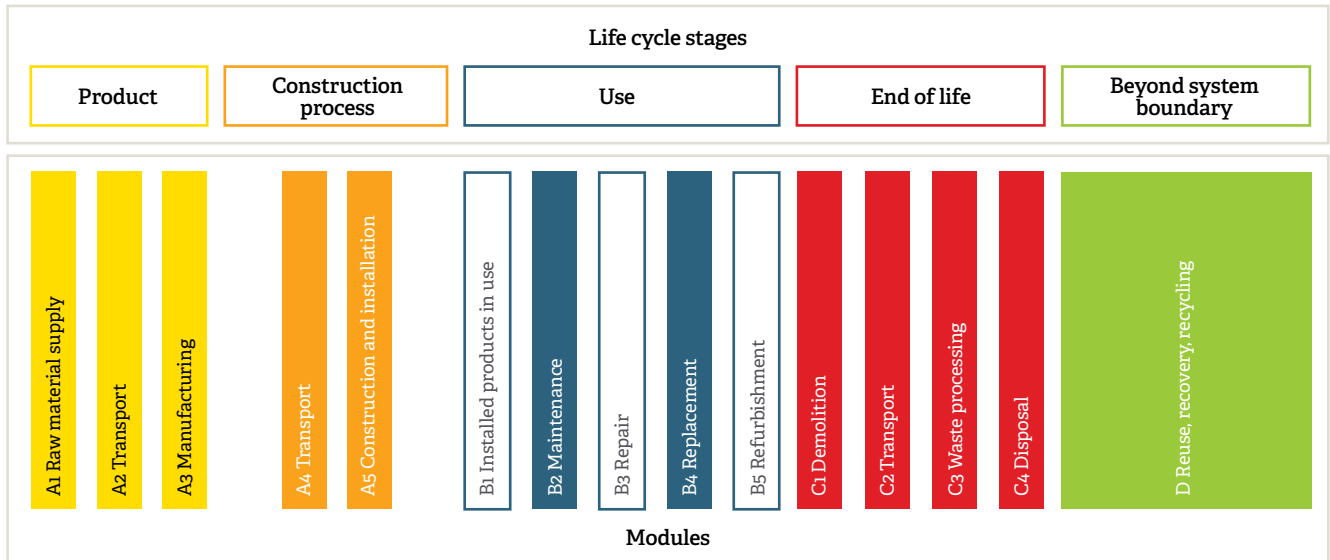


Figure 1: Embodied carbon categories.

must inform assumptions and ensure they are applied consistently between carbon footprint assessments.

Taming the wild west of embodied carbon

Aotearoa is early in its journey to assess the carbon footprint of buildings.

Many early adopters have been practising for some years but a larger number of organisations are just starting.

In the absence of a standardised, national methodology, organisations have developed their own methods, tools and assumptions – and there is growing inconsistency between the assessments being undertaken.

A key piece of technical infrastructure needed to tame this ‘wild west’ of embodied carbon is a single source of carbon data truth, which BRANZ’s partnership with CIL will deliver.

BRANZ’s role

For the past 13 years, BRANZ has been collating embodied carbon data for construction products and materials

available in Aotearoa. Rather than simply bringing the information together, we also ensure the data is based on latest scientific evidence to improve its robustness and relevance to our environments.

This data forms the basis for much of BRANZ’s research and to build tools such as LCAQuick – an Aotearoa-specific life cycle assessment tool that more recently has been used as a data source for other tools through CO₂NSTRUCT.

In response to industry demand and with endorsement from MBIE, a national data carbon repository will use BRANZ’s underlying data to create an accessible and usable national data resource covering a broader range of construction products and materials.

BRANZ will ensure the carbon data feeding the online resource is reliable and accurate. The data will be available through multiple channels but largely through an application programming interface (API), making it accessible for developers of embodied carbon tools.

How the data has been developed will be clearly visible and open to interrogation,

giving industry evidence to better inform assumptions and ultimately improve the quality of the data underpinning assessments.

The resource will be able to hold more data, which will be managed more effectively – including systematic updating. In addition to product-specific information, it will contain data on generic materials that can be used in lieu of product information or in the early design stage when specific products have yet to be decided.

The next steps?

We are still in the planning stages of this project – identifying the project team, others who need to be involved and the key delivery workstreams - and expect to have the first data available from 2025.

We’ll be sharing updates in BRANZ’s quarterly *Zero-Carbon Research News* e-newsletter. You can sign up at www.branz.co.nz/environment-zero-carbon-research/transition or send questions to us at zerocarbon@branz.co.nz. ◀

By Colin Barkus, *Build* Editor, BRANZ

Faster consenting and a permanent record of work

In July, the government signalled its intention to make remote building inspections the default approach to help streamline and reduce the cost of building a house. Artisan, BRANZ's free remote inspection and quality assurance app, is on the job.

Few in the building and construction sector – or Kiwis building a house – would argue against making the inspection and consenting process faster, more consistent and cheaper. The government's announcement earlier this year shone a spotlight on the role technology will need to play in making that happen.

Remote inspection technologies currently in use in Aotearoa New Zealand range from video-facilitated tools, where a builder points a phone camera at building works on site and an inspector from a building consent authority (BCA) conducts a normal inspection from afar, to comprehensive evidence-based quality assurance tools that create a permanent record of work.

Gold standard

BRANZ's free app Artisan is considered by many in the sector to be the gold standard in the latter group – with advantages that go well beyond improved productivity.

Artisan is installed on a builder's phone or other smart device. The builder then uses that device to photograph building works as they progress. Artisan provides instructions on exactly what needs to be photographed and when, then enables

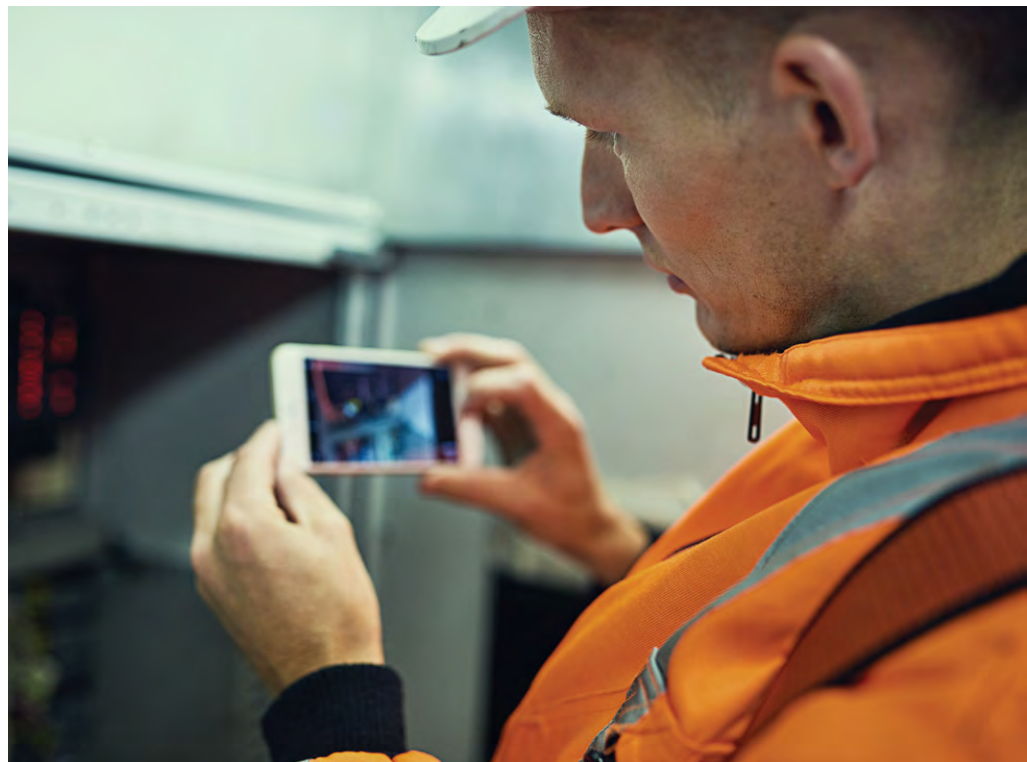
the photos to be submitted to the BCA for inspection.

Using the Artisan web portal, the BCA inspector views the photos and inspects the work. The inspector uses Artisan to either approve the work or send advice

back to the builder, in real time, on how to achieve the required standard.

It's a simple concept with multiple benefits.

Artisan eliminates the need for inspectors to travel, which can significantly





increase the number of inspections completed in a day. It also lowers costs for BCAs and reduces their carbon footprint by getting vehicles off the road.

Artisan's shot lists describe the nature and level of workmanship the builder should be trying to achieve throughout the project. This increases the likelihood that work will be done right first time and that repeat inspections won't be necessary, thereby speeding up the process and lowering costs for the BCA, builder and client.

The heart of the matter

More than that though, Artisan helps to tackle the problem of time-consuming and expensive inspections at its very heart.

Traditional BCA inspection processes, involving in-person, on-site checks at multiple points during a building project, are designed to minimise the risk that substandard or non-compliant workmanship will need legal or other redress in the future.

These processes have contributed to making Aotearoa's homes among the most expensive in the world to build – but without consistently achieving the desired quality.

While the traditional processes record whether an inspector has passed or failed a project, little evidence in support of

that decision is typically retained. Some inspections do include photos, but there's no consistency or central mechanism for storing and retrieving them.

Artisan requires a build team to provide a consistent set of photos for every inspection, every time. That record is kept in perpetuity and can be accessed at any time.

For insurers and litigators – should the need arise – easy access to the exact evidence used by the inspector to decide is invaluable. Artisan's photos isolate and identify any compliance issues.

Simplicity and consistency

Artisan doesn't require any special infrastructure. Builders install an app on their phone and BCA inspectors interact with information on their web browser. Full training is given.

Every inspector must check the same elements of a build for compliance, but they may take different approaches to checking those elements and look for different things. Artisan is paving the way for all BCAs to check the same elements in the same way.

Proven benefits

BCAs and builders currently using Artisan, including Auckland Council and Kāinga Ora, represent a significant percentage of the total building activity in Aotearoa.

The tool has been adopted by volume builders as a quality assurance tool, while Kāinga Ora has chosen Artisan to support its efforts to obtain New Zealand Green Building Council Homestar certification for its new homes.

The Artisan team says that, during its 5 years of operation, they've lost count of the times builders have reflected to BCAs that they didn't know what compliance looked like until Artisan's shot lists told them what BCAs look for and therefore what builders need to achieve.

One volume builder told *Build* that the benefits of Artisan's open digital record were immediate. They incorporated Artisan into a wider project where audits, education and training formed a large part of the investment.

They believe the benefits would have been lost had it not been for their ability to implement Artisan across their network. As a result, they've been able to audit contractors working in their segment of the industry and, where necessary, provide extra training and assistance to help them achieve the required standard. ◀

FOR MORE ▶

visit
www.branzartisan.nz ▶



By Natalie Bennett, Business Advisory Services Client Manager, Baker Tilly Staples Rodway, Tauranga

Signs of financial trouble

It's natural to expect that some businesses won't survive a recession. Would you know if one of your customers or suppliers is facing financial difficulty? Here's what to look out for.

Weathering the storm can be tricky in times like these. Multiple factors such as lending barriers, interest rate increases, shipping difficulties, material shortages, rising employment costs and increases in other expenses like fuel and electricity can compound and then threaten businesses.

Recognise signs of financial distress

The first step is recognising the signs of financial distress. You may experience a change in behaviour such as more-demanding requests, short-tempered responses or impatience. Your calls may even get ignored.

Payments might come in later than usual or suppliers could request payments earlier than the usual terms of trade.

You may be asked to pay deposits where you haven't before – although that can be part of the supplier's mitigation of risk.

You could start to receive partial or delayed orders, although this could be due to a shipping issue or something else. It is a good idea to ask your supplier about the change and the reasons for it.

Strategies for managing

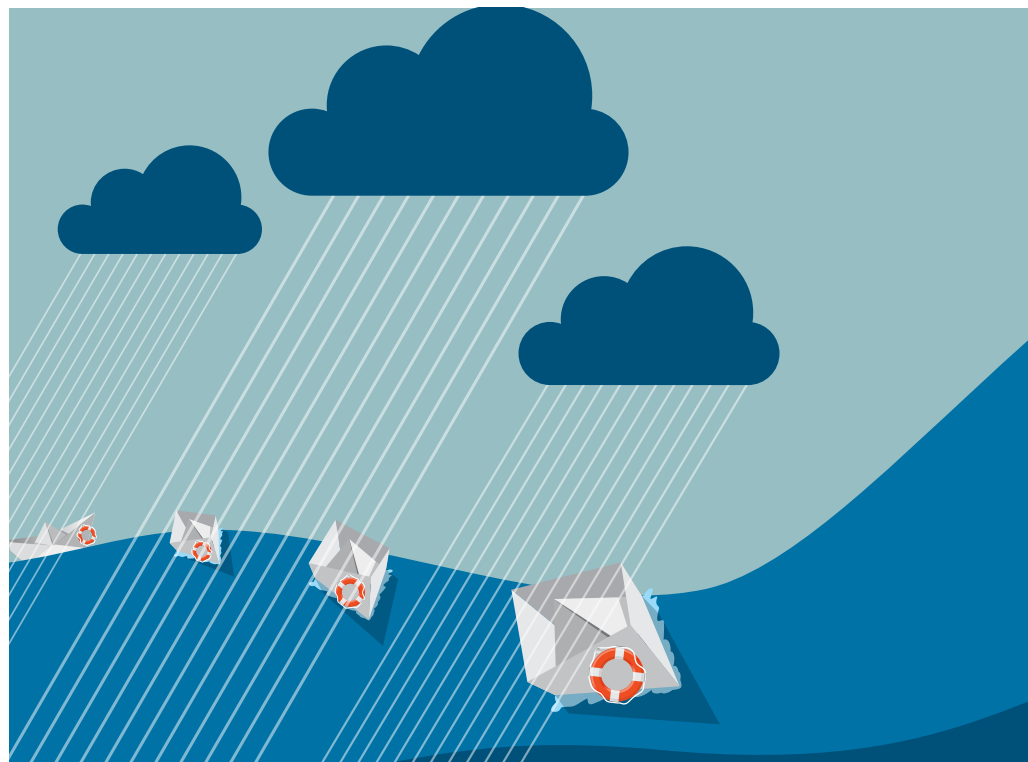
Communication is key. Make it part of

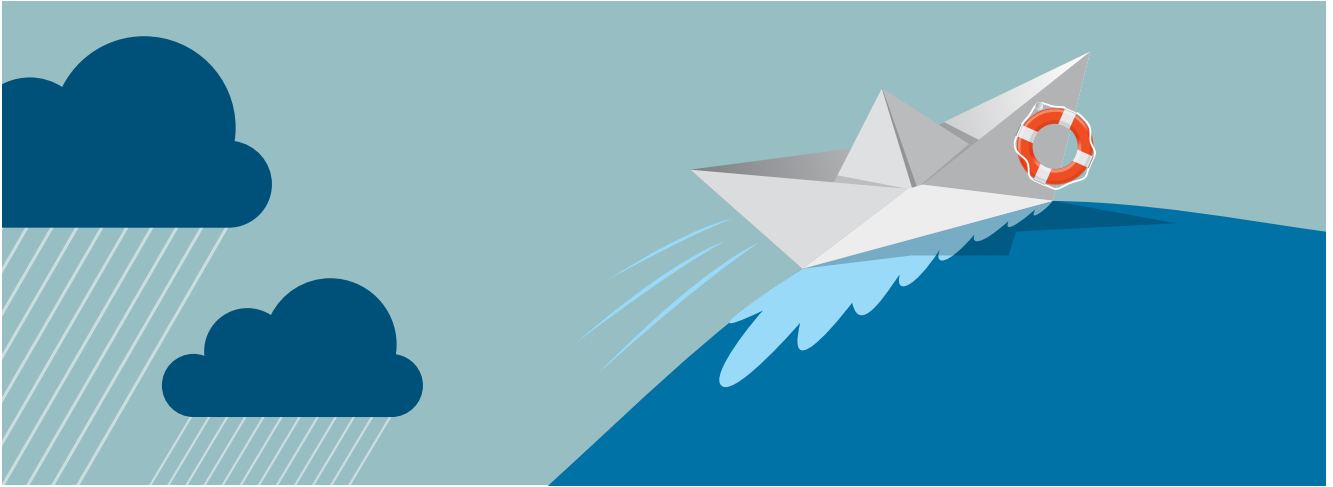
your accounting process to touch base with customers and suppliers, paying particular attention to the ones most in need of support.

Be patient, listen and understand your customers' challenges. Investing a small

amount of time with your customers and suppliers and hearing them out can really pay off in the long run.

Offer whatever flexibility you can. You could consider setting up payment plans based on their cash flow or help them





renegotiate terms that will keep you in business and ease pressure for them.

You should also consider what additional protection you can acquire through the Personal Property Securities Register (PPSR) and personal guarantees, which are discussed below.

Support generates trust and loyalty

When you support customers and suppliers, you generate trust, loyalty and resilience in your business relationships. You have customers who respect you and that can generate growth. Creating a supportive and collaborative environment with your suppliers is also recommended. This will benefit you in the immediate future as you won't need to spend time sourcing new suppliers. This may lead to better discounts and prioritisation along with more flexibility and less disruption.

Receivership and liquidation

You may find one of your customers or suppliers has been put into receivership or liquidation. If they operate a company, this process is legislated. The relationship will then change, as you will instead be required to deal with the receiver or

liquidator. They will issue reports and communicate with known debtors and creditors, so it is important to provide information directly to them when requested.

If you hold a personal guarantee, you may be able to recover debt directly from the guarantor if your claim is not met in the liquidation process.

If your debtor is an individual and they file for bankruptcy, the official assignee will perform a similar role to a liquidator and make allowances for any repayments available on a priority basis. Personal guarantees cannot protect you here as the individual's assets are already subject to the bankruptcy.

Being proactive

There are proactive steps that you can take now. Create policies within your business for regular check-ins with customers and suppliers. Discuss progress, milestones and areas where support is needed.

Making this a regular occurrence cements the relationship and keeps your interests at the forefront. If you cannot meet face to face, phone or video conference contact is recommended because meaning can be lost over emails and written messages.

Make use of the PPSR where you can. Use the search functions to check any security interests of potential customers or suppliers. If you have an agreement that includes holding title until payment is received, register your interest.

This will make you a priority creditor over the asset rather than an unsecured creditor should the debtor fall into financial difficulty. It is important to have a rigorous onboarding process for new debtors because they can try new suppliers during difficult trading periods while being on stop credit with their existing supplier.

When establishing debtor relationships, you could limit your risk by obtaining personal guarantees as protection. These should be carefully considered and documented, and legal advice is essential.

Any changes made to the terms and conditions of supply or purchasing arrangements should be in writing, and it's best to seek independent legal advice.

To conclude, it is important to continually monitor the situation, protect yourself and your business from any issues that may arise and talk to your business advisor as needed. ◀

By Nicky McIndoe, Partner, and Hermione Kemp, Solicitor, Dentons Kensington Swan

Towards a legal framework for our new climate normal

To date, Aotearoa New Zealand's response to extreme weather events has been ad hoc, reactive and financially unsustainable. The focus must shift from recovery and repair to adaptation and increased resilience.

As regions of Aotearoa New Zealand have reeled under the onslaught of extreme weather, bespoke legislation and Orders in Council (OICs) have been used as mechanisms to respond on an event-by-event basis. For example, the Severe Weather Emergency Legislation Act 2023 was passed under urgency and made temporary changes to existing legislation to assist with recovery efforts from Cyclone Gabrielle.

A second piece of legislation, the Severe Weather Emergency Recovery Legislation Act 2023, quickly followed, introducing an OIC mechanism to 'add flexibility to address specific issues recovering communities may be experiencing'.

The OIC addressed a range of issues, including how waste from the cyclone such as silt and debris was managed. More recently, an OIC was issued for flood protection works in Hawke's Bay.

Flooding caused by Cyclone Gabrielle resulted in significant areas of land in Hawke's Bay becoming unsafe to inhabit without the development of new stopbanks and other works to protect homes and communities from future flooding. The OIC temporarily amends the Resource Management Act 1991 (RMA) and associated regulations

to speed up flood protection works in Hawke's Bay.

Current adaptation framework

To date, the response to these events has focused on recovery or repair after the fact rather than increased resilience or adaptation in advance of the future events occurring.

The current framework for addressing climate change includes the national adaptation plan (NAP), which goes some way to addressing climate adaptation and infrastructure although it is insufficient on its own, as explained below.

The NAP considers the impacts of climate change now and into the future and sets out a 6-year action plan for



Flooding in Cooks Beach, Coromandel, caused by Cyclone Gabrielle.

Aotearoa to adapt to the warming globe.

A proposed National Policy Statement for Natural Hazard Decision-making (NPS-NHD) was in the works under the previous government and would have directed councils to give greater weight to natural hazards when considering resource consent applications.

If the risk of a hazard such as a flood, earthquake or landslide was deemed too high, new development could be stopped. In areas where the hazard risk was moderate, developers would need to undertake risk-reduction works. The intention was for the NPS-NHD to be introduced early this year as an interim measure, while a more comprehensive National Direction for Natural Hazards was developed in the longer term. The government is yet to comment on whether the NPS-NHD will be issued.

Inquiry into climate adaption

We will see more events like the Auckland Anniversary floods and Cyclone Gabrielle in the coming years. While the temporary legislation and localised OICs were required to support recovery efforts in response to those specific events, Aotearoa needs to stop treating these events as isolated and one-off and start creating a system to manage this new normal.

In this context, it is a welcome step that Parliament has asked the Finance and Expenditure Committee to conduct an inquiry into climate adaptation in Aotearoa. The purpose of the inquiry is to develop and recommend guiding objectives and principles for the design of a climate adaptation framework that is intended to:

- set out the government's approach to cost-sharing
- help communities and businesses understand what climate adaptation investment is planned in their area and what support will be available to help recover from climate-related events
- improve information sharing
- guide decisions before a severe weather event happens as well as long-term recovery after such an event.

The Committee will prepare a report that identifies the high-level objectives and principles required to support the design of a climate change adaptation framework. This builds on the inquiry into community-led retreat and adaptation funding initiated by the previous government and undertaken by the Environment Committee.

The new inquiry's terms of reference do not specifically reference managed retreat or the resource management system, which some local government authorities have criticised as inadequate for preventing development in areas prone to natural hazards. However, the approximately 150 public submissions made under the previous inquiry and the expert working group report into managed retreat will be considered by the Committee in this new inquiry.

Legislation required to support the framework is expected to be introduced in early 2025.

New high-level climate strategy

In another relevant announcement, the government recently released a new high-level climate strategy, *Responding to a changing climate*, which sets out its approach to delivering on Aotearoa's climate goals. There are five pillars to the strategy, focused on ensuring:

- infrastructure is resilient and communities are well prepared
- credible markets support the climate transition
- clean energy is abundant and affordable
- world-leading climate innovation boosts the economy
- nature-based solutions address climate change.

The government provided an expanded definition of the first pillar – 'Delivering a fair and enduring adaptation system that helps New Zealand be ready for climate change and provides clarity on costs'.

Not on target

Consultation on the second emissions reduction plan has also opened. New projections show the country is no longer

set to reach the 2050 net-zero target nor the third emissions budget in 2031–2035.

The figures are a marked departure from projections developed under the previous government, which would have achieved net zero by 2041. According to a Treasury report, if we do not reduce our greenhouse gas emissions trajectory, the cost to meet the 2030 target in carbon credits is \$23 billion, which has not been budgeted for.

While we wait for adequate national direction or new legislation, infrastructure and housing are still being built in hazard-prone areas. In Auckland, for example, more than 1,400 consents for new houses and supporting infrastructure were granted in flood plains in the 12 months after the devastating floods of 2023

RMA shortcomings

Councils are increasingly using RMA instruments such as district plans to influence land use, but the RMA does not provide all the tools councils need – a way to change plans faster to address climate change-induced changes and more funding to update natural hazard data and models. RMA plans cannot direct who should pay for adaptation, including managed retreat, and RMA existing-use rights complicate council initiatives for managed retreat.

Overall, our current system is not equipped to deal with severe weather events. The process is too slow and ad hoc and is reactive rather than proactive. A new national structure and funding system for climate adaptation measures are required to:

- limit the impact of climate-related events in the first instance
- respond effectively and efficiently after the fact.

The new inquiry into adaptation and the progress report on the NAP give a good indication of where we are now and how we can move forward.

While this is a promising start, swift action is required so we can begin to adapt our infrastructure to climate change. Climate-related natural hazard events will not wait for Aotearoa to finish inquiries, reporting and planning. ◀

By Jaesen Sumner, Partner, Tradie Law (a division of Ford Sumner Lawyers), and Finn Collins, Barrister, Lambton Chambers

Tradies can benefit from retention money changes

Aotearoa New Zealand has strengthened legal protections over the handling of retention money, offering substantial protection and transparency for contractors in the construction industry.

Key points from new legislative changes over the handling of retention money include statutory trust protections so that retention money is deemed to be held in a statutory trust, ensuring that the funds have all the protections available to trust monies and cannot be misused by developers or financiers.

New transparency and accountability legislation enables contractors to request records of the retention money held in trust, providing greater transparency.

Contractors are being encouraged to insist that retention money is held in independent trust accounts, and if developers refuse this arrangement, it will raise concerns about their financial stability and their intended use of the retention funds.

Contractors now also have the option to apply for a mandatory injunction from the courts to transfer retention money into an independent trust account. This has several benefits:

- Cost recovery – contractors can recover their legal costs when applying for an injunction as the statutory trust regime is very clear on the trust status of retention money.



- Funds preservation – holding retention money in a trust account maintains the status quo, ensuring funds are available until any disputes are resolved.
 - Proactive protection – this helps prevent the misappropriation of funds and protects contractors from the financial instability of developers.
- There are implications for lenders, especially those unfamiliar with Aotearoa's statutory trust regime, who must be aware of their obligations. Failure to recognise the trust status of retention money could result in lenders becoming

parties to injunction applications, potentially increasing their liability.

Industry response

While the number of injunctions sought to date has been relatively low, the recent changes bring about a beefed-up and stricter regime to securing retention money. Contractors are urged to leverage this powerful legal tool to protect their interests, especially in the current market conditions where many developers face financial pressures.

The low number of applications can be

attributed to a lack of awareness among contractors about this robust and efficient method for securing retentions. Given the pressures facing many residential developers in today's market, more contractors should seriously consider this remedy.

NOTE Ford Sumner and its division Tradie Law recently secured an injunction from a developer under significant financial pressure. The injunction was granted within days, and the legal costs were also awarded. ◀

SITE SAFE MEMBERSHIP

Leading health and safety for construction

Show your commitment to health & safety and gain access to exclusive discounts and resources.



SITESAFE
Te Kaitiaki o Haumarū



0800 SITE SAFE (748 372)
sitesafe.org.nz



JOIN US

By Charlotte McKeon, One Tree Hill College

Students take on ex-state house retrofit

Secondary school trade students are retrofitting a former state house and, in the process, aiming for Homestar accreditation.

In a first, trade students at One Tree Hill College, a co-educational state secondary school in Penrose, are carrying out a deep retrofit on an ex-state house as part of their building apprenticeships.

The house, typical of 70,000 homes around Aotearoa, was relocated from Māngere East where Kāinga Ora has a major redevelopment. The students are upgrading it into a healthy, dry home, aiming to achieve New Zealand Green Building Council (NZGBC) Homestar 7 accreditation.

The 65 students enrolled in BCITO's level 2 and level 3 trade programmes at the college are being supervised by licensed builder Paul Williams and Head of Trade Charlotte McKeon. The students work on the house during the school day and can contribute on Saturdays and during the holidays.

Kāinga Ora and BCITO involved

Kāinga Ora is a partner in the project, and BCITO has been engaged, providing training advisors that support the different trades working on the house.

While the priority is training students to become apprentices, working to Homestar means they learn practices that exceed the Building Code and about new technologies. The focus is on materials, recycling and energy consumption.

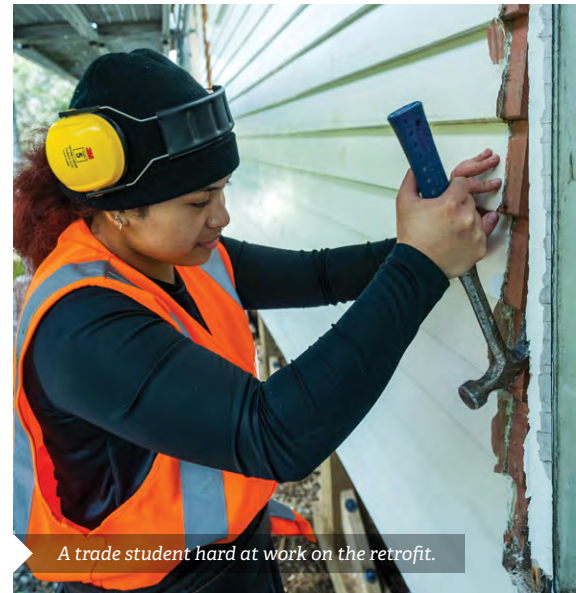
Energy efficiency challenge

Before the project started, NZGBC warned that exceeding the requirements of clause H1 *Energy efficiency* would be the first hurdle and achieving a tight thermal envelope would be challenging.

Homestar designer Sarah Elicker has used NZGBC's Energy and Carbon Calculator for Homes (ECCHO) tool to calculate thermal comfort, energy and carbon emissions. Timber used in the structural walls has been reduced by 20% by removing all nogs, and the walls are double insulated and incorporate a layer of ply for bracing. Those wanting to become electricians have wired a smart panel that will reduce electricity costs by 10–25%.

Additionally, an interior decorator is working with students interested in kitchen and bathroom design, and four students are on work placements at the factory where windows and doors for the home are being manufactured. Their work is supported by former students finishing apprenticeships at the factory.

To support cross-curriculum learning at One Tree Hill College, students studying other disciplines have visited the house. For example, level 1 history students studying state housing in Aotearoa took a first-hand look at the



A trade student hard at work on the retrofit.

original construction and learned about the challenges of heating older homes.

The house will be auctioned at the end of the year - fully furnished and staged. The buyer will relocate the fully furnished home to the site of their choice and proceeds will fund another ex-Kāinga Ora home for students to upgrade in 2025.

NOTE One Tree Hill College thanks its sponsors for making the project possible. ◀



One Tree Hill
COLLEGE

Thank you to all our sponsors!

The One Tree Hill College deep retrofit project would not be possible without your incredible generosity!



Want to know more?
Join us in 2025!

Contact Charlotte McKeon, One Tree Hill College, Technology Dept.
cmckeon@onetreehillcollege.school.nz



By Bruce Duggan, Senior Technical Advisor, Occupational Regulation, MBIE

Supervision

Undertaking supervision is an important role and it is important all LBPs consider the practical and legal implications of performing this function.

The Building Act 2004, in section 7, defines what it means to 'supervise' building work:

Supervise, in relation to building work, means provide control or direction and oversight of the building work to an extent that is sufficient to ensure that the building work:

- (a) is performed competently; and
 - (b) complies with the building consent under which it is carried out.
- Only licensed building practitioners (LBPs) can supervise restricted building work (RBW), and only that which they are licensed to carry out themselves. For example, an LBP with a carpentry licence can supervise non-LBPs doing carpentry RBW but cannot supervise a non-LBP doing blocklaying RBW.

Can an LBP supervise another LBP?

An LBP cannot supervise another LBP undertaking work in the same licence class. LBPs are legally entitled to carry out RBW and are always individually accountable for the work they themselves produce. The LBP who completes RBW must also be the one who completes a record of work afterwards.

Different types of supervision

There are three different types of supervision – direct, general and remote. The supervising LBP needs to consider both the work being done and who is carrying it out to be able to gauge the level of direction and control necessary – it is important to remember that the LBP supervising RBW is accountable for that work and must complete a record of work.

Complex tasks involving risky details being undertaken by low or semi-skilled workers require direct supervision or working one-on-one with them. An example of this might be an apprentice installing weatherboards for the first time.

However, if the person doing the work has previously demonstrated the ability to perform the task with limited supervision, then general supervision may be adopted – with the supervising LBP working in a different area on the same site but periodically checking the work as it proceeds.

Remote supervision could be used when an LBP knows that the non-licensed workers carrying out RBW on a different site are highly skilled.

It is important the LBP identifies specific tasks when he or she needs to be on-site to provide direction or oversight even when they can't be there constantly due to running more than one job at that time. With remote supervision, good lines of communication



must be available so that advice and assistance can be offered when and where required.

Design supervision

When a new graduate is undertaking Design RBW, direct or general supervision would probably be used when the design LBP is working in the same office.

Where a competent but unlicensed designer who is well known to the supervising LBP works in a different office, remote supervision would be appropriate, and would be provided primarily by phone or email.

As the supervising LBP is going to be providing a statement about the building code in their certificate of work (CoW), dialogue with the non-LBP throughout the design process is essential.

Records and certificates of work

It is crucial that the LBP accurately completes their record of work or certificate of work, outlining what work was carried out or supervised – there is plenty of space to do this on the form.

These forms will be held at the council for the life of the building they relate to, therefore having an accurate record is in the best interests of the LBP. You are unlikely to remember what you did on a particular job a year from now, so accuracy is important.

Site licences

Though not directly linked to carrying out or supervising RBW, the site licence is a critical part of the overall scheme. Holders of a site licence are practitioners who are recognised as possessing specific skills that relate to coordination, oversight, organisation and managing building projects.

The site licence is an indicator that you have the skills to manage personnel and provide technical site supervision within the scope of your licence. The site licence holder undertakes supervision of general building work, rather than the supervision of unlicensed people undertaking RBW.

What does poor supervision look like?

Poor supervision can involve poor on-site health and safety records, disorganised and untidy sites, little or no quality assurance, poor sequencing resulting in rescheduling of work, missed milestones or handover targets, or disgruntled staff or clients.

It can result in failed building inspections, poor quality workmanship, re-work – all of which are going to reflect badly on the supervising LBP. It is an offence to supervise in a negligent or incompetent manner, and you could be held to account.

Good supervision

Good supervision requires a solid understanding of your co-workers' skills and the complexity of work being performed, alongside the right mix of control, direction and oversight.

Just being licensed does not mean you are capable of supervising non-LBPs carrying out RBW. It may be difficult for newly licensed practitioner with only a few years' experience to supervise a non-licensed tradesperson with 40 years' experience.

It all comes down to competence, and not being afraid to say, 'I need more experience before I can competently do that.'

The above is taken from the Practice Note on supervision. ◀

Quiz

- 1. What is supervision, in relation to building work?**
 - a. Supervising other LBPs doing the same work as you.
 - b. Providing control, or direction and oversight of the building work.
 - c. You need to be the foreman to supervise building work.
 - d. Making sure the work looks right even if it doesn't comply with the building consent.
- 2. What would need to be in place when using remote supervision?**
 - a. Good lines of communication.
 - b. The supervisor knows the workers to be highly skilled.
 - c. The supervisor has identified certain tasks where he or she needs to be on-site to provide direction or oversight.
 - d. All of the above.
- 3. What is the site licence holder able to supervise?**
 - a. Licensed building practitioners.
 - b. Non-LBPs doing restricted building work.
 - c. General building work, rather than supervision of unlicensed people undertaking restricted building work.

Answers: 1. b, 2. d, 3. c.

LICENSED
BUILDING
PRACTITIONERS

By Bruce Duggan, Senior Technical Specialist, Occupational Regulation, MBIE

Remote inspections

The government has announced there will be a public consultation in the coming months on a range of options to increase the uptake of remote inspections.

Remote inspections are when building inspection activities are conducted remotely using digital tools and technologies. Instead of visiting the site in-person, inspectors may, at their discretion, use live video streaming or review photographic evidence to assess the building work from their office, with the builder following their instructions on-site.

The use of remote inspections increased during the COVID-19 pandemic and has also been utilised when factors such as extreme weather have caused road closures, when heavy traffic can disrupt appointment times, or when the building site is in a remote location.

Gaining further acceptance

Remote inspections have been gaining further acceptance, with building consent authorities (BCAs) using them to save inspectors time on the road and reduce travel costs, provide business continuity, and to ensure a timelier service to applicants.

Roles and responsibilities for inspections

The Building Act outlines the responsibilities of different parties involved in the building process under this Act, which includes:

- The owner has overall responsibility for ensuring the building work complies with the building consent and must ensure that they or their nominated representative enable inspections to be completed as required by the BCA.
- The designer is responsible for ensuring that the plans and specifications or advice they give on compliance are sufficient, if followed on-site, to result in the building work complying with the building code.



- The builder is responsible for ensuring that the building work is carried out in accordance with the approved plans and specifications.
- The BCA is responsible for checking that an application for a building consent complies with the Building Code, and that the building work has been carried out in accordance with that consent.

Benefits of the remote inspection process

Remote inspections benefit everybody involved in the inspection process. BCAs will be able to increase the number of inspections they carry out by eliminating the travel time.

This will also create cost savings in vehicle and travel expenses, minimise exposure to safety hazards on-site, help upskill of inspectors, improve record management through high-quality digital records which are geographically stamped, and make it easier to share resources with other BCAs.

Builders will get more timely inspections that are undertaken at a time that suits them, rather than relying on the inspector's availability. They will also see cost savings in not having subbies being paid while waiting for an inspection, a shorter build process through reducing down-time waiting for an inspection, a better understanding of the Building Code requirements through gaining an in-depth understanding of what's required for the inspection, and, of course, safety – fewer people on-site reduces the likelihood of accidents.

The wider building industry benefits through a collaborative approach which assists in building trust and reduced environmental impact through reduced travel-related carbon emissions. Remote inspections also provide for business continuity and resilience for the whole building and construction industry.

Using new tools, and considerations for BCAs

The industry has developed a variety of tools to undertake remote inspections which support the user to capture the information and evidence the inspector needs to check that the building work complies with the consent.

There are several considerations BCAs need to keep in mind with a remote inspection approach, including the building complexity and inspection types.

They may use their data on inspection failures to determine which inspections and building types it would consider for the early stages of adopting remote inspection. It may be that builders that are known to have a higher inspection pass rate would be preferred as early adopters for the BCAs approach.

Another consideration is the skillset of both the inspector and the builder. The inspector will need to be proficient in the remote inspection tool the BCA adopts, particularly for the livestream inspections.

Similarly, the builder will need to be competent in using the chosen software and technology and have a good understanding

of inspectors' expectations. BCAs could use existing relationships to identify suitable builders for early remote inspection adoption.

More information about remote inspections can be found on the building.govt.nz website. Talk to your local council to find out if they are looking to remote inspection for the future if they are not already using this technology.

Further guidance from MBIE

MBIE has just released a guidance document for BCAs on adopting and growing the uptake of remote inspections.

Although this guidance is aimed at the BCAs, it is also particularly relevant to licensed building practitioners and other tradespeople who participate in the inspection process. You can see the guidance document at building.govt.nz.

Learning how to use the particular tools the BCA adopts for remote inspections is also a relevant on-the-job learning activity for skills maintenance. ◀

Quiz

1. What is remote inspection?

- The inspector does the inspection from their car while parked outside the site.
- The builder gives the inspector some random photos of what they've done on the job.
- The inspection is conducted remotely using digital tools and technologies, instead of the inspector visiting the site in person.

2. What is the builder's responsibility under the Building Act?

- To complete the building as cheaply as possible for the client.
- To ensure that the building work is carried out in accordance with the approved plans and specifications.
- To finish the work as quickly as possible so they can get paid and get to the next job.

Is there any real benefit in making these changes?

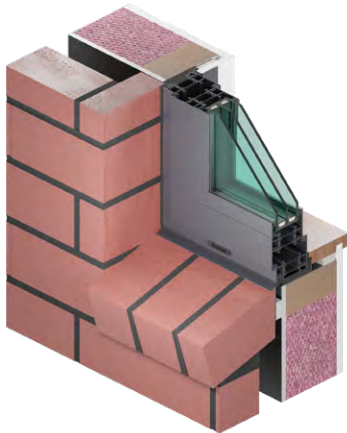
- Yes, there are many benefits to building consent authorities, builders, and the wider industry in adopting remote inspections.
- No, it's just something else I have to learn.

Answers: 1. c, 2. b, 3. a.



BRANZ evaluates building products and systems to ensure they are fit for purpose. Details of recently issued and reissued BRANZ Appraisals follow. For the latest official list of valid Appraisals, please refer to the BRANZ website at www.branz.co.nz.

New Appraisals



FMIBI 3 Sided Recessed Joinery Thermal Installation Method

APPRAISAL NO. 1260

The FMIBI 3 Sided Recessed Joinery Thermal Installation Method is thermally broken aluminium window and door joinery units that include a proprietary recessed installation method. The joinery units are available with fixed glazing or opening sashes.

For more, contact *FMI Building Innovation Ltd*

Ph: 09 574 2900

Web: www.fmi.co.nz



Thermafloor Undertile Heating

APPRAISAL NO. 1275

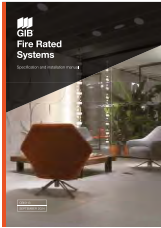
Thermafloor Undertile Heating is an electric heating system intended for floor surface warming of stone and ceramic tile finishes in residential and commercial buildings, including wet areas.

For more, contact *Thermafloor Ltd*

Ph: 027 898 1313

Web: www.thermafloor.co.nz

Reissued Appraisals



GIB® Fire Rated Systems

Appraisal No. 289

GIB® Fire Rated Systems are a range of fire rated constructions based on the use of GIB® plasterboards. The range consists of timber and steel-framed wall, floor/ceiling and ceiling systems as well as solutions for steel beams, steel columns, mass timber, risers, shafts, ducts and service penetrations.

For more, contact Winstone Wallboards Ltd

Ph: 09 633 0100

Web: www.gib.co.nz



Butylclad, Epiclad and Epiclad FBS Roof Membranes

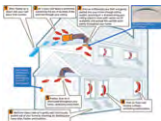
Appraisal No. 307

Butylclad, Epiclad and Epiclad FBS Roof Membranes are synthetic rubber waterproofing membranes designed to be used on roofs, decks, balconies, parapets and gutters.

For more, contact Viking Roofspec, a division of Viking Group Ltd

Ph: 0800 729 799

Web: www.vikingroofspec.co.nz



DVS® Home Ventilation Systems

Appraisal No. 375

DVS® Home Ventilation Systems are a range of roof space mounted, ducted, ventilation systems for houses.

For more, contact DVS New Zealand Ltd

Ph: 0800 387 387

Web: www.dvs.co.nz



NU-THERM EIFS Wall Cladding System

Appraisal No. 456

NU-THERM EIFS Wall Cladding System is a cavity-based exterior insulation and finishing system (EIFS) wall cladding. It is for use on residential and light commercial type buildings where domestic construction techniques are used.

For more, contact Ezymix Limited

Ph: 07 888 4324

Web: www.ezymix.co.nz



StoLite Stucco Cladding System

Appraisal No. 468

StoLite is a cavity-based monolithic stucco render wall cladding. It is designed to be used as an external wall cladding system for residential and light commercial type buildings where domestic construction techniques are used.

For more, contact Stoanz Ltd

Ph: 04 801 7794

Web: www.sto.co.nz



NU-SOLID Masonry Plaster System

Appraisal No. 471

The NU-SOLID Masonry Plaster System is a mesh-reinforced solid plaster system for use as a finishing system over a solid backing of concrete masonry, clay or concrete brick, or in-situ or pre-cast concrete.

For more, contact Ezymix Limited

Ph: 07 888 4324

Web: www.ezymix.co.nz



Ultraclad Horizontal Weatherboard Cavity System

Appraisal No. 487

The Ultraclad® Horizontal Weatherboard Cavity System is a cavity-based, interlocking powder-coated aluminium weatherboard system. It is designed to be used as an external wall cladding system for residential and light commercial type buildings where domestic construction techniques are used.

For more, contact Vulcan Steel Ltd

Ph: 0800 500 338

Web: www.buildingsystems.vulcan.co



Premier Glasswool Insulation

Appraisal No. 509

Premier Glasswool Insulation is a range of thermal insulating materials manufactured from resin-bonded, glass wool fibres. Premier Glasswool Insulation is available in blanket and segment form to suit a range of thermal insulation requirements and framing set-outs in walls, ceilings and roofs of buildings.

For more, contact PIL Group Ltd

Ph: 07 282 1184

Web: www.pilgroup.co.nz



Tekton® Building Wrap

Appraisal No. 548

Tekton® Building Wrap is a synthetic breather-type flexible wall underlay and air barrier for use under direct and non-direct fixed wall cladding on timber and steel-framed buildings. The product is manufactured from a coated spun-bonded polypropylene.

For more, contact Marshall Innovations Ltd

Ph: 07 543 0948

Web: www.mwnz.com



Insulated Façade System

Appraisal No. 633

Insulated Façade System is a cavity-based Exterior Insulation and Finishing System (EIFS) wall cladding. It is an external wall cladding system for residential and light commercial type buildings where domestic construction techniques are used.

For more, contact Rockcote Resene Ltd T/A

Resene Construction Systems

Ph: 03 338 6328

Web: www.reseneconstruction.co.nz



Gorilla Grip Adhesives

Appraisal No. 575

Gorilla Grip Adhesives are one-component, specially formulated, polyurethane-based construction adhesives for adhering plaster-board to framing. The Gorilla Grip 1 Hour Cure is a faster curing form of Gorilla Grip Adhesives.

For more, contact Soudal Ltd

Ph: 07 847 5540

Web: www.soudal.co.nz



J-Frame LVL Framing

Appraisal No. 646

J-Frame LVL Framing is laminated veneer lumber (LVL) structural framing timber available as 90 x 45 mm, 140 x 45 mm, 190 x 45 mm, 240 x 45 mm and 300 x 45 mm sections. It is boron preservative treated.

For more, contact Juken New Zealand Ltd

Ph: 09 373 3933

Web: www.jn.co.nz



One Piece Sill Tape Flexible Flashing

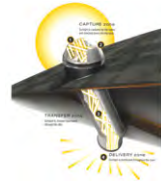
Appraisal No. 591

One Piece Sill Tape is a flexible flashing tape system for use around framed joinery openings as a secondary weather-resistant barrier.

For more, contact Marshall Innovations Ltd

Ph: 07 543 0948

Web: www.mwnz.com



Solatube Daylight Systems and Roof Penetrations

Appraisal No. 665

Solatube Daylight Systems and Roof Penetrations are for use on domestic and commercial buildings, providing a roof penetration system allowing natural light or ventilation to the interior. The system is supplied as a kit providing a tubular roof to ceiling light channel or ventilation duct and a roof flashing system matching the roof type.

For more, contact Just Life Group Ltd

Ph: 0800 765 288

Web: www.solatube.co.nz



StoTherm Masonry Insulation System

Appraisal No. 604

The StoTherm Masonry Insulation System is an exterior insulation and finishing system for concrete masonry, in-situ or pre-cast concrete walls.

For more, contact Stoanz Ltd

Ph: 04 801 7794

Web: www.sto.co.nz



Integra Lightweight Concrete Façade System

Appraisal No. 681

The Integra Lightweight Concrete Façade System is a pressure-moderated, cavity-based external wall cladding system for residential and light commercial type buildings where domestic construction techniques are used.

For more, contact Rockcote Resene Ltd T/A

Resene Construction Systems

Ph: 03 338 6328

Web: www.reseneconstruction.co.nz



Quickflash Ready-Made Flashings

Appraisal No. 688

Quickflash Ready-Made Flashings are a range of pre-fabricated flashing products designed to meet the flashing requirements of NZBC Acceptable Solution E2/AS1. The flashings are available in Z450 galvanised steel, AZ 200 Zinalume with factory applied paint coating, stainless steel or aluminium.

For more, contact *Tasman Contracting Ltd*

Ph: 03 543 2145

Web: www.quickflash.co.nz



Glasscorp Greenseal Backing Sealant

Appraisal No. 818

Glasscorp Greenseal Backing Sealant is a weatherproofing backing sealant for use in the manufacture of powder-coated and anodised aluminium window joinery.

For more, contact *Glasscorp Ltd*

Ph: 09 415 6338

Web: www.glasscorp.co.nz



Multitubo Piping System

Appraisal No. 740

The Multitubo Piping System consists of multi-layer composite pipe and fittings for use as the piping components for hot and cold water supply, radiant heating supply and in-floor heating elements. The pipe sizes range from 16 mm to 75 mm.

For more, contact *Central Heating New Zealand Ltd*

Ph: 0800 357 1233

Web: www.centralheating.co.nz



Viking Peel and Stick Membrane

Appraisal No. 826

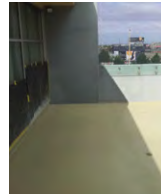
Viking Peel and Stick Membrane is a self-adhesive damp-proof membrane for basement retaining walls and floors.

For more, contact *Viking Roofspec, a division of*

Viking Group Ltd

Ph: 0800 729 799

Web: www.vikingroofspec.co.nz



LATICRETE HYDRO BAN® Exterior Waterproofing Membrane

Appraisal No. 865

LATICRETE HYDRO BAN® is a liquid-applied waterproofing membrane for use under ceramic or stone tile and slab finishes in internal wet areas.

For more, contact *LATICRETE New Zealand Ltd*

Ph: 09 634 0712

Web: www.nz.laticrete.com



Ultraclad Vertical Weatherboard Cavity System

Appraisal No. 796

The Ultraclad® Vertical Weatherboard Cavity System is a cavity-based, interlocking powder-coated aluminium weatherboard system. It is designed to be used as an external wall cladding system for residential and light commercial type buildings where domestic construction techniques are used.

For more, contact *Vulcan Steel Ltd*

Ph: 0800 500 338

Web: www.buildingsystems.vulcan.co



LATICRETE HYDRO BAN® Interior Waterproofing Membrane

Appraisal No. 866

LATICRETE HYDRO BAN® is a liquid-applied waterproofing membrane for use under ceramic or stone tile and slab finishes in internal wet areas.

For more, contact *LATICRETE New Zealand Ltd*

Ph: 09 634 0712

Web: www.nz.laticrete.com



Glasscorp Fabricator MSHP MS High Performance Construction Sealant

Appraisal No. 817

Glasscorp Fabricator MSHP MS High Performance MS Construction Sealant is a weatherproofing sealant for exterior use and a general-purpose gap-filling sealant for interior and exterior use.

For more, contact *Glasscorp Ltd*

Ph: 09 415 6338

Web: www.glasscorp.co.nz



REHAU uPVC Windows and Doors

Appraisal No. 1018

REHAU uPVC Windows and Doors are a range of window and door joinery units fitted with insulating glazing units (IGUs), for use in residential and light commercial buildings. The joinery units are available with fixed glazing or opening sashes. The opening sash window styles include awning, tilt-and-turn, and sliding. Door styles include tilt-and-turn and sliding doors.

For more, contact REHAU (NZ) Limited

Ph: 09 272 2264

Web: www.rehau.com



Gerard Roofing Systems

Appraisal No. 1096

Gerard Roofing Systems are available in nine different pressed metal roofing tile profiles with stone coated surface (textured) finishes or painted satin finishes in a range of finishing colours.

For more, contact RoofTG Pacific Ltd

Ph: 0800 100 244

Web: www.gerardroofs.co.nz



MAXRaft Concrete Slab Floor System

Appraisal No. 1054

The MAXRaft Concrete Slab Floor System is an insulated, concrete slab-on-ground flooring system for use in residential and light commercial buildings. The MAXRaft Concrete Slab Floor System features a continuous polystyrene insulating layer beneath the slab and to the exterior perimeter surface. The MAXRaft Concrete Slab Floor System can be designed as an insulated slab on grade where ground conditions meet requirements of good ground as per NZS 3604. Alternatively, it can be designed as a waffle raft floor designed to suit ground conditions on the subject site.

For more, contact MBSS Ltd T/A MAXRaft

Ph: 0800 629 7238

Web: www.maxraft.co.nz



TemperTherm Glasswool Insulation

Appraisal No. 1151

TemperTherm Glasswool Insulation is a range of thermal insulating materials manufactured from resin-bonded, glass wool fibres.

TemperTherm Glasswool Insulation is available in blanket and segment form to suit a wide range of thermal insulation requirements and framing set-outs in walls, ceilings and roofs of buildings.

For more, contact PIL Group Ltd

Ph: 07 282 1184

Web: www.pilgroup.co.nz

Enquire now about the benefits of a BRANZ Appraisal

- Comprehensive independent assessment of how your building product or system performs in NZ's uniquely challenging conditions.
- A prestigious marketing edge for you and peace of mind for your customers, specifiers and regulating authorities.



CALL FREE 0800 080 063 OR EMAIL ASSURANCESERVICES@BRANZ.CO.NZ



Plumbing and drainage design

Webinar series

28 Nov | 2 Dec | 10 Dec

Are you ready for the Code changes?

Stay ahead of the curve with our three-part webinar series on plumbing and drainage systems design.



Single webinar \$55 each

Register today branz.arlo.co



Advertisers' index

Key industry contacts	IBC
Architectural Profiles Limited	25
Ardex NZ Limited	11
Assa Abloy NZ Limited	9
BCITO	1
Enveloped	51
ITM Support Office	IFC
James Hardie	13
Mitre 10 (New Zealand) Ltd	7
New Zealand Certified Builders Association	43
One Tree Hill College	81
Prowood	26
Sika	21
Simpson Strong-Tie	31
Site Safe	79
STO Plaster Systems	OBC
Toolware	19
Winstone Wallboards Ltd	5

Win a ToolShed 74-piece Metric Tool set worth \$229

The ToolShed Metric Tool Set is a comprehensive, high-quality kit with 74 pieces designed to meet the needs of any home, garage or workshop.

This versatile set includes a wide range of commonly used tools, including pliers, screwdrivers, hex keys and spanners. The set also features an assortment of accessories, including extensions, spark plug sockets, a 45T ratchet handle and a universal joint – providing added functionality and convenience.

Each tool is meticulously crafted from polished chrome vanadium steel, with ergonomically designed handles with rubber grips to enhance user comfort during prolonged use. The entire set is organised in a sturdy, blow-moulded carry case with dedicated cut-out slots for each piece, ensuring safe storage and easy access.

To enter, see the details below.



FIND THE PICS

KEEN TO ADVERTISE IN BUILD?

Contact Jonathan Taggart

E jonathan.taggart@branz.co.nz

T (027) 269 8639

W www.buildmagazine.co.nz/advertising



FIND THE PICS is the challenge. To play, identify the pages the TWO images above appear on inside the magazine.

Then scan the QR code (or type c2tx3ksf.paperform.co into your browser) and complete the form.

You can also post your entry to: Build Editor, Freepost BRANZ, Private Bag 50 908, Porirua 5240 if you prefer.

Entries close on 30 November 2024. The first correct entry drawn wins. The Editor's decision is final. No employees of BRANZ or their relations may enter. Congratulations to the latest winner, Jonathan Rugg from Auckland.

Scan to enter



Key industry contacts

ADVERTISING PROMOTION



Advisory Helpline
For the building and construction industry:
0800 80 80 85
branz.co.nz

Experience the Best



GoldenEdge
Medium Density Fibreboard
0800 800 438



THE HEATING COMPANY
"The Total Package"
www.theheatingcompany.co.nz | 0800 432 846

Heating and Ventilation Systems




COLORSTEEL
For technical support, contact specifications@colorsteel.co.nz



Trust Our 60+ Years of Performance
SIMPSON Strong-Tie
ATS Quik Drive Fasteners Anchors Connectors
strongtie.co.nz



GAMMA
GAMMA BRACING TECHNOLOGIES Ltd
Brace your structures with the unflinching strength of the GAMMA
0800 272 733

HIANDRI Bottom Plate Packers

Ph: Alan 027 442 5238 or see our website www.hiandri.com
HIANDRI SOLUTIONS LIMITED *Raising the building industry to a new level!*



Get free Technical Advice
0800 RESENE (737 363)
www.resene.co.nz/techexpert
the paint the professionals use

Ask James Hardie™
Call **0800 808 868**


Resene  **ROCKCOTE**  **psl**
Construction Systems
0800 50 70 40
www.reseneconstruction.co.nz

Solutions engineered for comfort, climate and protection.

COMFORTECH
BUILDING PERFORMANCE SOLUTIONS
comfortech.co.nz

StoArmat Render Facades



A building that lasts is built the right way: with the right materials, the right partners, and with the future in mind. Together we bring your projects to life — aesthetically, sustainably and functionally.

Sto System: StoArmour (AAC) Facade Panel System.

Invested in building, www.sto.co.nz



Westshore House, Napier
Architect: Three Sixty Architecture
Construction: JPW Builders
Sto Contractor: Inex Plastering Services
NZIA Local Architecture Award: Housing