

GUIDELINE

Welcome to the BRANZ monthly technical update



No easy answer to thermal bridging in walls

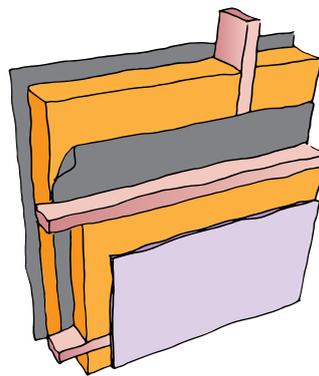
The best solution could be two layers of insulation

A research project looking to reduce thermal bridging in house walls found that using less framing timber is not a practical solution, but a new approach to insulation could be.

Part 1 of the Beacon Pathway study ([published here](#)) found that the average percentage of timber framing in external walls in new houses is over 34%, much higher than the 14-18% generally assumed. The results strongly suggest that designed R-values in walls are not being achieved in practice.

Part 2 of the research [just published](#) found that each piece of timber in the framing was there for valid regulatory and practical reasons. Optimising the percentage of framing will not lead to a sufficient reduction in framing (and thermal bridging) to achieve intended Building Code construction R-value minimums.

Five sample houses complying with the Building Code were modelled. The thermal resistance achieved in external walls was significantly below what the Building Code intends, with large areas of thermal bridging and weak points resulting in excessive heat loss.



An alternative approach that resolves many issues is to install an additional thermal layer on the inside or outside of the existing wall. This significantly reduces thermal bridging through framing as well as providing space to increase the thickness of the insulation. The alternative approach also provides solutions for weak points such as uninsulated corners and internal-to-external wall junctions. You can find a bulletin outlining this approach [here](#).

To find out more, come to the BRANZ/ Beacon webinar on thermal bridging on 1 July. [Register here.](#) ▶

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Construction productivity falls

New data makes tough reading



In 2019/20, the construction sector experienced a growth in output but a drop in productivity, fuelled by large increases in hours worked by employees. The figures are in the May 2021 report from the Productivity Commission, [Productivity by the numbers](#). The drop in labour productivity in construction was the third-highest fall of all sectors. (The data is to March 2020 so COVID-19 has little relevance.)

Over the last growth cycle, 2008-2020, the figures show that construction managed

annual labour productivity growth of less than 1%.

Over the long term, New Zealand has gone from being one of the most productive economies to one of the least productive in the OECD. GDP growth in recent decades has largely been the result of putting more people into work and longer hours of work. Innovation and technological change are critical to productivity growth. ▶

Bad, bad, bad – bad vibrations

The Beach Boys got it wrong



WorkSafe has published [Hand-arm vibration - information for workers](#), a guide for those regularly using hand-held power tools and machines, especially for long periods. Vibrations can lead to numbness or tingling in fingers, loss of feeling in fingertips and pain or loss of strength in hands or wrists. Symptoms can eventually become prolonged or even permanent.

To reduce the risks:

- use the right tool for the job
- ask for advice on how to operate new tools
- read any guidance from the manufacturer
- avoid gripping power tools and machines more than you have to

- make sure the tool is functioning properly and is well maintained
- limit your time on power tools and machines - share the jobs
- avoid using power tools and machines for long periods without breaks
- on a break, keep your fingers and hands moving to circulate the blood
- keep your hands warm and dry in cold weather
- if you start having problems, tell your manager and seek medical advice
- give up smoking. ▶

Changing the LBP Scheme

Ethics, complaints and discipline addressed

The government has approved a series of changes to the Licensed Building Practitioner Scheme. They include:

- introducing a code of ethics for LBPs
- amending licensing processes, such as:
 - moving the licence renewal process from the Building Act to the LBP Rules
 - allowing for the licence term to be set in the LBP Rules, the term to be no longer than 5 years in the Building Act
- providing that the public register can identify a licence suspended for disciplinary reasons
- making a licence cancelled or suspended for a disciplinary order visible on the public register for 3 years
- amending the complaints and disciplinary process in the Building Act to align with the Electricity Act 1992 to address issues around natural justice and fairness.

You can find more details on the [MBIE website](#). ▶

The return of the spiral staircase

What are the rules?

The BRANZ helpline is receiving calls about spiral staircases. What are the key requirements? Building Code clauses D1 *Access routes* and F4 *Safety from falling* are the main sources, and Acceptable Solution D1/AS1 gives useful but not mandatory guidance.

Is the staircase a “main private stairway” (between frequently used spaces), a “secondary private stairway” (to another floor containing only bedrooms, bathroom or similar) or a “minor private stairway” (used infrequently to one room, not a living area or kitchen)? This affects design (Figure 1).

For spiral stairs less than 1 m wide, the pitch line runs 300 mm from the outside handrail, or for stairs more than 1 m wide, 300 mm from the inside hand rail.

A “smooth, reachable and graspable” handrail is mandatory. A D1/AS1 drawing shows the handrail on the outside of the stairs. [Determination 2016/063](#) found that a single steep inside handrail (with no outside

handrail) does not comply with D1. While D1/AS1 requires handrails to have the same slope as the pitch line, in practice, outside handrails will be shallower and inside handrails steeper.

The balusters around the outside must be less than 100 mm apart.

D1/AS1 says that BS 5395-2:1984 *Stairs, ladders and walkways. Code of practice for the design of helical and spiral stairs* is an Acceptable Solution for spiral stairways with a diameter no less than 1500 mm. Stairs complying with this but less than 1500 mm “may be acceptable as an additional means of access to spaces adequately served by alternative access routes”.

Spiral stairs cannot be used on accessible routes (usable by people with disabilities), although private homes are exempt from accessibility requirements. Nevertheless, spiral stairs can be impossible for someone with a weakness on one side or to carry someone up or down the stairs in an emergency.

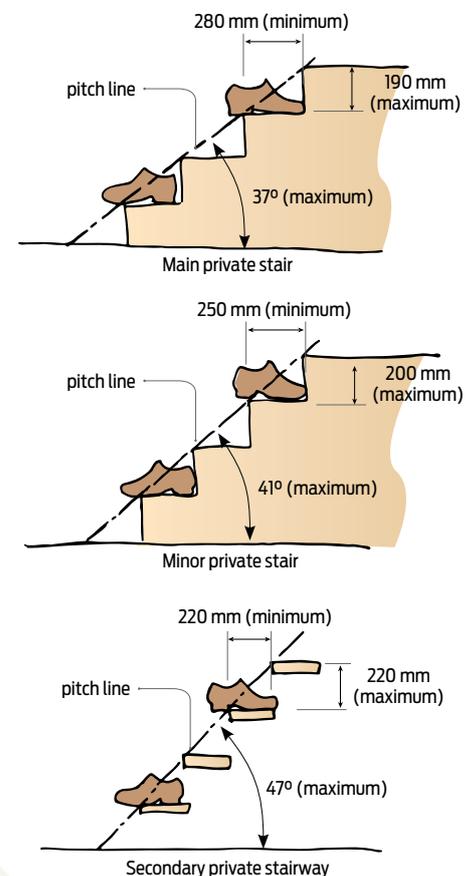


Figure 1. Pitch, risers and treads.

Climate change advice: changing how we build

Upgrades to existing buildings also necessary

The final advice of the Climate Change Commission to government was tabled in Parliament in early June. Recommendations that affect the construction industry include:

- extending MBIE's *Building for climate change* work programme (currently focused on new buildings) to also cover existing buildings
- making continuous improvements to minimum Building Code requirements such as energy efficiency standards
- encouraging construction based on low-emissions designs and practices
- scaling up energy efficiency assistance to low-income households
- mandating participation in energy performance programmes for existing commercial and public buildings.

In some areas there has been a strengthening from the Commission's draft advice earlier in the year and a softening in other areas. The latter can be seen in the advice around gas installations. The draft advice said that all new space heating or hot water systems installed after 2025 should be either electric or biomass - there should be no new natural gas grid connections or bottled LPG connections after 2025. In its final advice, the Commission recommends in more general terms that New Zealand phase down use of fossil gas (natural gas) in existing residential, commercial and public buildings and avoid the addition of new fossil gas demand from new buildings.

The government has until 31 December 2021 to set emissions budgets and release the country's first emissions reduction plan detailing policies to achieve the budgets.

The Commission says that, currently, New Zealand is not on track to meet its carbon commitments. "Achieving the emissions reductions needed to get to 2050 will require our elected officials to move fast to implement a comprehensive plan."

You can find the Commission's advice [here](#). ▶

Passive Houses are Go

Open days 25–27 June

Passive Houses have their performance carefully modelled before construction to ensure it meets strict criteria for things like energy efficiency and airtightness. The requirements are vastly superior to Building Code minimums. When the first certified Passive House home in New Zealand was completed in 2012 it was seen by some as a very European, niche idea. No more - there

will be almost 90 homes certified by the end of this year, and that figure is likely to rise exponentially with a significant number in the pipeline, planning and design phases.

Over 25-27 June you can find out what it is all about with [Passive House open days](#) around the country. ▶

News

WorkSafe launches Life Shavers

WorkSafe's new [Life Shavers campaign](#) raises awareness that workers who wear respiratory protective equipment (RPE) must be clean shaven for the equipment to form a proper seal. Cancers and respiratory harm account for 31% of work-related health problems in New Zealand.



Construction activity robust, shortages in skilled labour

In its Monetary Policy Statement of 26 May, the [Reserve Bank](#) says construction activity remains robust but with skilled labour in short supply. It expects residential investment to peak in the June 2021 quarter but to remain elevated, with limited spare capacity in the construction sector. It sees residential investment softening from 2022 but says the government's Housing Acceleration Fund and easier urban planning rules in some areas will support residential investment over the medium term.

New homes may require upgrading to be rented

From 1 July, private rental homes must meet the healthy homes standards within 90 days of any new or renewed tenancy. (The rules apply to boarding houses immediately.) Some standards are higher than minimum Building Code requirements, so a new house built to just comply with the Code and no more may need upgrading before it can be rented out. Tenancy Services has a [checklist of what is required](#).

BERL sees slight easing in house consents coming

In its [autumn issue of Bird's Eye view](#), economics consultants BERL forecast the residential building consents will continue to grow into 2022, then level off and fall slightly under the impact of capacity constraints. The forecast out to 2023/24 is still for consent numbers to be close to 40,000 per year.

Action under way to better protect subbies

The [Construction Contracts \(Retention Money\) Amendment Bill](#) has been introduced to Parliament. The changes in the Bill are aimed at giving greater financial protection for subcontractors.

Billion-dollar development takes a step forward

Independent commissioners for Waikato District Council approved rezoning a 178-hectare block of rural land to allow for the [\\$1.2 billion Sleepyhead development](#). The project at Ohinewai includes 1,100 homes for up to 3,000 people and a large factory.

Important court decision for building contractors

The [Employment Court](#) has found in favour of an Auckland builder who challenged his status as an independent contractor while working for a building company. The Court found that the nature of the employment was that he was an employee. A lawyer told Radio New Zealand that “those in the building industry can’t avoid employment obligations by simply labelling somebody an independent contractor”.

Building Act amendment becomes law

In early June, the Building (Building Products and Methods, Modular Components, and Other Matters) Amendment Bill [became law](#). Key areas to gradually be introduced as regulations are developed include certain mandatory information with building products, easier consenting for prefab construction and a stronger CodeMark certification scheme. Some changes, including to investigations and penalties, come into effect immediately.



Updated plumbing and drainage standards

Standards NZ has just published 2021 versions of the four-part [plumbing and drainage standard](#). The 2018 versions will remain in use for the time being as means of demonstrating compliance with the Building Code in building consent applications. Using the 2021 versions in building consent applications would be as an Alternative Solution. The 2021 versions are expected to come into effect as a means of compliance in November 2022.

COVID-19 impacts on housebuilding

Around half of new home building projects have been moderately or severely impacted by the pandemic, a recent [Stats NZ survey](#) found.

Consultation opens on housing and urban growth policy

Feedback is invited by 30 July 2021 on a [Government Policy Statement on Housing and Urban Development](#). This is intended to shape government policy and work programmes for years ahead.



New builds exempt from new tax treatment

The government has confirmed new build homes will be exempt from planned changes to the tax treatment of residential investment property. The proposals stop interest deductions being claimed for residential investment properties other than new builds. It is [consulting on details](#). Consultation closes 12 July 2021. The measures will apply from 1 October 2021.

BRANZ

FREE

THERMAL BRIDGING

WEBINAR

Thursday 1 July, 12:00 pm to 1:00 pm

High framing percentages and thermal bridging in timber-framed walls

- causes, effects, weak points, blind spots
- impact on as-built R-values
- examples of buildable solutions

[Find out more and register](#)

Beacon

Seminar on carbon emissions and the building industry: Have your say

BRANZ is planning to run a nationwide seminar series later this year on climate change, carbon emissions and the building and construction industry.

We would like to hear what you want us to cover in this seminar. Please [click here](#) to answer a few quick questions about what you'd like to know. It will only take 3-5 minutes max (yes, really - we timed it!)