BRANZ

July 2021

GUIDELINE

Welcome to the BRANZ monthly technical update

Evaluating building performance

Invitation to contribute to a collective roadmap

Buildings need to be warm, dry, healthy and zero carbon, but how do we evaluate whether a design will meet these performance requirements?

We currently have multiple tools with varying scopes, methodologies, purposes, underlying data and outputs. However, several issues such as thermal performance, energy efficiency, embodied and operational carbon, and moisture risk have the potential to be brought together in a coherent digital solution that aligns with design and consenting workflows.

The BRANZ Roadmap project will scope how we can work towards a web-based, accessible, integrated predictive solution, that draws on existing tools and data. The roadmap will outline where we are aiming to get to and by when, and will identify the metrics, tool(s), methodologies and data needed to move to warm, dry, healthy, zero-carbon new houses.

We would like to invite you to be involved.

There are two parts to the project: a survey, and a series of stakeholder engagement meetings.

To complete the survey, click here: Roadmap survey.

To register interest in the stakeholder meetings and to receive more information, email the Project Manager jonquil.brooks@branz.co.nz.

In this issue:

Answers to burning questions

Issues raised in recent fire webinar

Participants in a recent BRANZ webinar about fire Acceptable Solutions had some questions. Here are a few answers that may be helpful to a wider audience.

Can risk groups from C/AS2 be used for alteration and change of use building work?
Yes. Clause 1.3.1 states that C/AS2 can be used "to determine compliance of building work (in relation to an existing building)". C/AS2 can also be used for a change of use.

Why does the webinar suggest counting as a bedroom/sleeping space, a room such as a study that is not actually labelled as a bedroom?
C/AS2 does not require you to count as a bedroom, a room not labelled as a bedroom. It is good practice to do this in some circumstances, however, taking a more holistic approach to fire safety design rather than focusing just on Building Code compliance. It is common to have people permanently sleeping in spaces not shown as bedrooms on the drawings. A designer should consider what actual occupant numbers could be, over and above what are shown as beds on the plans. This is particularly important in larger buildings where occupant numbers are close to a threshold that will trigger more stringent requirements.

With bed spaces, are vertical spaces (i.e. bunk beds) included? Are bed spaces defined?
In calculating occupant loads you need to account for all bed spaces. Typically for a house/apartment, this is a double bed (and hence two occupants) per bedroom. This would obviously cater for a bedroom where there was a single two-tier bunk bed (with two occupants) but not where there were, say, three bunk beds (with six occupants) in one bedroom. Bed space is not defined in C/AS2 or the Building Code Handbook. The wording of clause 1.4.6 in C/AS2 does shed some light on what is meant by 'bed'.

What is the definition of ownership? If I build a 5-unit building and lease out each unit, would this require property or life separation or not, as I am the owner of all the units?
For this scenario, each unit is a separate firecell, regardless of whether the units are all owned by the same person/entity or under separate ownership. For same ownership, the fire separations require a life rating.

Floor wastes

What a waste!

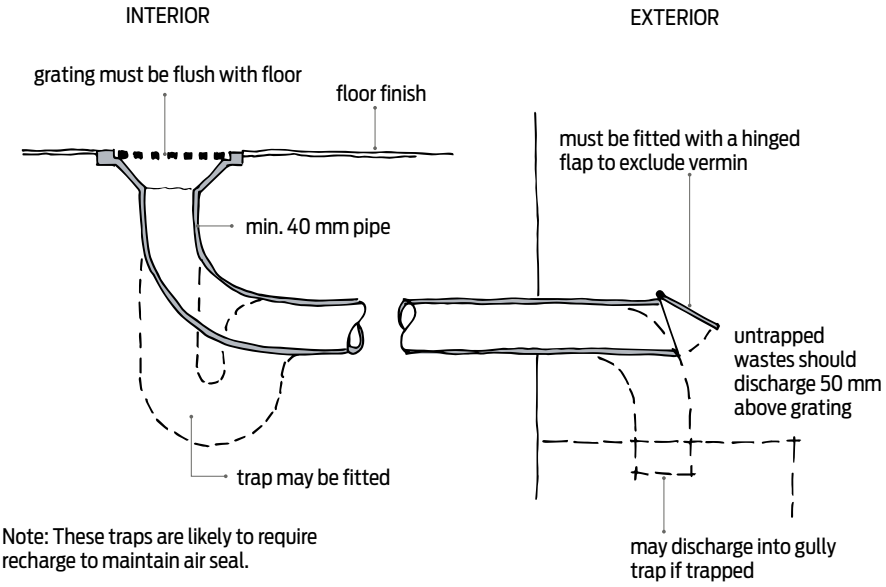
The growth in medium-density housing and 2-storey stand-alone homes makes it even more crucial to consider how wet areas cope with accidental water overflows. Water can affect adjoining homes or move from an upstairs bathroom to ground floor rooms. Some of last November's updates to Building Code Acceptable Solution E3/AS1 dealt with this topic.

Part of the solution is a floor waste outlet located at the low point of a graded floor.

Floor wastes should be installed in all upper floor wet areas and wet areas with a high risk of flooding, such as homes with children or elderly people. They are required in bathrooms where sinks don't have the required overflows. It is a statutory requirement to provide floor wastes/drains in multi-unit dwellings.

There are various types:

- A dry floor waste has a flush floor grating with a pipe that discharges either directly to the outside or over a gully trap (Figure 1). A dry floor waste does not have a water trap and must not be connected directly to a foul drainage system.
- A trapped floor waste is like a dry floor waste but has a water trap to prevent smells.
- A floor waste gully can receive discharge from several fixtures in the same room, but connections are limited by the number of discharge pipes and distance (Figure 2). They may also be used as shower outlets, so they save space, reduce pipe length and reduce the number of connections required to the drain. They may be noisy, and fixtures that discharge into them must be used regularly so they remain filled with water.



Note: These traps are likely to require recharge to maintain air seal.

Figure 1. Floor drain.

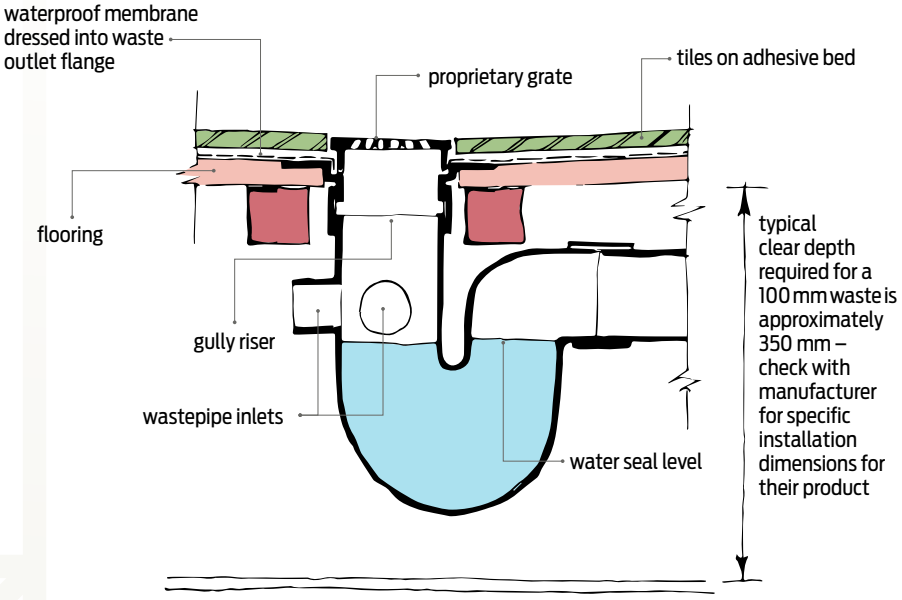


Figure 2. Floor waste gully trap.

Turning experience into qualifications

There is a pathway for good builders to get the paperwork

When the Licensed Building Practitioners (LBP) Scheme was launched 14 years ago, there was a commonly held view that entry requirements would eventually be upgraded to make qualifications mandatory. That has not happened so far, and around one-third of LBPs - an estimated 8,000 people or more - have no paper qualifications.

Those practitioners haven't missed the boat, however - there are pathways for them to gain paper qualifications, and they usually don't require years out of the workforce. A training organisation can look at the skills you have and match them with what is required to gain a professional qualification. You can complete a lot of the work involved at your own pace.

The process has a cost - a Certificate in Joinery through BCITO costs $1,650, for example - but potential benefits such as an improved career and bigger paypacket can outweigh the cost.

Ventilation in skillion roofs

What is required?

Some callers to the BRANZ helpline have asked if skillion roofs must be vented. While this is not currently a Building Code requirement, BRANZ recommends that skillion roofs should include ventilation openings to effectively manage roof moisture .

Some roofing manufacturers recommend or require roof ventilation with their products. We have also heard that some building consent authorities (BCAs) require ventilation in a skillion roof before they will issue a consent.

Natural ventilation is limited for practically airtight claddings such as long-run trough/tray section profiled metal, membranes or asphalt shingles. Deliberate ventilation channels help to introduce some airflow to the system and are enhanced with the use of ventilated battens.

Ventilation channels will typically improve the moisture tolerance of a roof space, but they are not a panacea. Measures should also be taken to limit the amount of moisture that migrates into the roof space (by indoor ventilation, limiting the air permeability of ceilings etc.). There are also cases when the roof is heavily shaded in winter where ventilation can contribute to a moisture problem. For such sites, alternative designs such as warm roofs should be considered.

For more information, see the fact sheets at www.branz.co.nz/pubs/branz-facts/roof-ventilation/.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BRANZ FACTS
MEDIUM-DENSITY HOUSING #8

Specified systems and building warrants of fitness

Some types of medium-density housing (MDH) – typically apartment complexes – have controls placed on them to make sure they are safe and healthy for people to enter, occupy or work in.

These controls ensure that critical components within the building such as lifts, emergency lights, heating and ventilation systems and fire protection systems are adequately maintained once the initial building work is complete.

Collectively, these components are known as specified systems and are listed in a special document called a compliance schedule. The compliance schedule must identify each specified system and remain up to date for the life of the building. It must describe the expected standard of performance and how each specified system will be monitored and maintained to ensure it continues to perform correctly.

The building owner or their representative (such as a body corporate) must periodically (usually every 12 months) issue a building warrant of fitness (BWoF). This confirms that all specified systems have been checked and maintained in accordance with the compliance schedule.

Specified systems

Specified systems help ensure people remain safe and healthy when they enter, occupy or work within a building.

Because they have the potential to affect health or life safety if they fail to operate properly, specified systems require ongoing inspection and maintenance to ensure they function as required. It is the responsibility of the building owner to ensure the specified systems continue to perform as was intended when they were installed.

The specified systems are listed in Schedule 1 of the Building (Specified Systems, Change the Use, and Earthquake-prone Buildings) Regulations 2005. They include any of the following:

1. Automatic fire suppression systems.
2. Integrated or multi-unit emergency warning systems.
3. Electromagnetic or automatic doors or windows.
4. Emergency lighting systems.
5. Escape route pressurisation systems.
6. Riser mains for use by fire services.
7. Automatic backflow preventers connected to a potable water supply.
8. Lifts, escalators, travellators or other systems for moving people or goods.
9. Mechanical ventilation or air-conditioning systems.
10. Maintenance units to provide access to the exterior and interior walls.
11. Laboratory fume cupboards.
12. Audio loops or other assistive listening systems.
13. Smoke control systems.
14. Emergency power systems or signs.
15. Any of the following features, provided they are part of the means of escape from fire and that means also includes automatic fire suppression, riser mains, mechanical ventilation/air-conditioning or smoke control (items 1–6, 9 and 13):
    - Spoken information to facilitate evacuation.
    - Signs intended to facilitate evacuation.
    - Final exits (as defined by the Building Code).
    - Fire separations.
    - Smoke separations.

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Technical timesavers

Boning up in a building boom

With record building consent numbers and huge pressures on everyone's time, you may think that keeping up with technical research and guidance is one thing you have to let slip. BRANZ has a handy solution - an ever-growing list of fact sheets where key findings are boiled down to just a couple of pages of plain English, drawings and photographs.

Go to the Publications section of the BRANZ website, and you'll see the headings *BRANZ Facts* and *BRANZ Research Now*. From corrosion to roof ventilation to fire design, there are over 100 fact sheets that can be freely downloaded.

And the nominations are ...

A quick update on nominating means of compliance

We regularly hear from both architects/designers and BCAs that processing of building consent applications often stalls at the point of demonstrating Building Code compliance. A few things to bear in mind:

- First up, make sure your application ticks off all the required clauses. For a residential new build, they typically include B1, B2, C1-6, D1, E1, E2, E3, F2, F5, F7, G1, G2, G3, G4, G7, G8, G9, G10, G12, G13, E1, E2, E3 and H1.
- Add D2 if there is a lift, F4 if there are fall hazards, F9 if there is a pool, G6 if there is an inter-tenancy wall and G11 if there is gas.
- Checking element by element is useful. For example, if the stormwater management includes a soakpit, then E1/VM1 is relevant.
- Some clauses are frequently forgotten, including F2 *Hazardous building materials* and F5 *Construction and demolition hazards*.
- Finally, don't nominate means of compliance that are irrelevant, such as clauses that don't apply to housing.

Silicosis update

Searching for stonemasons

Do you know someone who used to work with engineered stone (kitchen benchtops and the like) but moved on to a different job? Point out this WorkSafe web page to them. They should also get a health check with their GP.

The problem is a lung disease called silicosis and a fast-developing version called accelerated silicosis. Workers can get these from breathing in workplace dust. These are serious illnesses - there have been deaths from them in Australia.

It is common for people with this type of disease to not notice any symptoms in the early years, but if they have been exposed to silica dust for 6 months or more within the past 10 years, they should talk to their GP and lodge a claim to be assessed.

ACC has had 99 claims lodged for screening/assessment (where ACC covers the cost of testing). Of these, 11 have been diagnosed with and received cover for either silicosis or accelerated silicosis

In just the past 2 years, WorkSafe inspectors have issued 279 notices to engineered stone businesses over issues such as failure to monitor or control dust exposure and badly fitted protective equipment.

News

Procurement guide to reducing building carbon emissions

MBIE has published a *Procurement guide to reducing carbon emissions in building and construction*. The document gives industry a practical understanding about how to approach tenders for public projects.

Huge investment required in three waters

Recently released analysis estimates the investment required to upgrade New Zealand's ageing water infrastructure over the next 30 years at $120–185 billion. (As a comparison, New Zealand's nominal GDP for 2020 was $194 billion.)

Skilled labour shortage at record levels

NZIER's Quarterly Survey of Business Opinion in July showed a strong pipeline of residential, commercial and government construction work over the coming year. It noted that capacity pressures are becoming more acute, reflecting supply chain disruptions and labour shortages. Building construction firms' difficulty finding skilled labour is at the highest since the survey started in 1976. Profitability in the building sector is the strongest since December 2002, reflecting the ease with which firms are passing on increased costs by raising prices.

Commerce Commission OKs roof tile deal

The Commerce Commission has granted clearance to IKO Industries Ltd to acquire all of the shares of Ross Roof Group Ltd. IKO and Ross Roof Group both supply steel roof tiles that are predominantly used on houses and are known by the brands Gerard and Metrotile. Chair Anna Rawlings said that the Commission is satisfied that the acquisition is unlikely to substantially lessen competition.

Supervision vital with machinery

WorkSafe New Zealand says it is unacceptable to allow staff to operate cranes and other machinery without direct supervision or appropriate training. This comes after the agency investigated a fatal incident in Christchurch in January 2019 when a worker was crushed by a pack lifter crane implement attached to a 2.5 tonne pack of glass. The company was fined $270,000, and reparation of $110,000 was ordered to go to the victim's family.

Draft RMA replacement released

An exposure draft showing key aspects of the proposed Natural and Built Environments Act has been released. The new law will be one of the replacement laws for the Resource Management Act 1991 (RMA). An exposure draft is a document put out for feedback before a Bill is introduced to Parliament, which in this case is expected in early 2022.

New claims process after natural disasters

On 30 June 2021, a new insurance claims process was introduced for claims after natural disasters. Instead of having to deal with both EQC and their own insurance company, property owners just have to contact their insurance company. Eight private insurers are part of the scheme.

MBIE launches tool for building consent exemptions

MBIE has launched a website, Buildit, to help people determine whether or not a building project requires building consent. The website currently covers the most common exemptions - more exemptions will be added in future.

Construction and the environment

A paper *Environmental challenges, opportunities and transitions for construction in Aotearoa New Zealand* has recently been published. It covers the development of the Environment workstream of the Construction Sector Accord's Transformation Plan.