Guideline

January 2019

Welcome to this update on technical and informative advice for the building and construction industry on issues relating to building controls and good construction practices.

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Familiar voice retires

Voices fading

At Christmas, Tom Edhouse, the familiar voice of the BRANZ helpline, hung up his headset to embark on a well earned retirement. Many of you will have spoken with Tom over the 10 years he has manned the helpline. Tom approached all callers with respect, and hopefully you as callers got the information you needed.

Construction quality

Not all is good across the Tasman

Newspaper reports over the holiday period have highlighted some quality issues in the Australian apartment market, namely the cracking of concrete panels in Opal Tower, a 38-storey Sydney apartment block. The key question is whether the issues are widespread or whether they are confined to one building. There have been a number of media articles indicating that all is not well, so the quality problems are likely not confined to a single building.

In Australia, certification of building work can be done by private certifiers as well as local authorities. In the case of Opal Tower, private certifiers were responsible for signing off the work. (Private certifiers can also sign off work in New Zealand if they are registered as building consent authorities.) As of 3 January 2019, a crackdown on private certifiers has been forecast by the NSW Minister for Better Regulation Matt Kean.

Do Aussie challenges apply in New Zealand?

Yes!!!!

Quarles Business and Financial Strategists, an Aussie-based consulting firm, sees the following 10 items as the biggest issues facing the Australian construction industry:

1. No cash flow to pay incoming bills.
2. Preventing bad debt.
3. Skilled-labour shortages.
4. Small profit margins.
5. High insurance costs.
6. Communication issues.

7. On-site theft and vandalism.
8. Equipment breakdowns.
9. Document management.
10. Lack of a business plan.

Other websites identify unpaid work, retirement of experienced staff, inconsistent adoption of technology (which can make communication more difficult), unfavourable contract terms, safety (or lack of), project delays and mental health issues.

Amendments to Acceptable Solutions and Verification Methods
Changes applicable now

- Building Code clause B1 *Structure* B1/VM1 – B1/VM1 has been amended to reference a new standard for designing composite steel-concrete structures and a new technical specification for specifying durability requirements for steel structures. These new documents expand on information currently available. The former provides design options for a wider range of composite structures, and the latter enables designers to specify more corrosion protection systems. B1/VM1 also now references the latest version of the wind loading standard.
- Building Code clause B2 *Durability* B2/AS1 – B2/AS1 now includes durability requirements for steel structures and components. This amendment provides clarity on steel protection measures, avoiding the need to justify Alternative Solution proposals.
- Building Code clause E2 *External moisture* E2/VM1, E2/AS1 – Both the Verification Method and Acceptable Solution have been amended to include extra high wind zones. Amendments have been made to the Verification Method to clarify the testing requirements for ensuring adequate weathertightness performance of claddings. The revised testing requirements apply to all new testing – current test certificates will remain valid.
- Building Code clause G12 *Water supplies* G12/VM1, G12/AS1, G12/AS2 – Amendments have been made to the G12 Acceptable Solutions and Verification Method to reference amended standards for the jointing of common stainless steel pipework. This means common stainless steel pipework installation no longer has to be treated as an Alternative Solution proposal.
- Building Code clause G13 *Foul water* G13/AS1, G13/VM2, G13/AS2, G13/AS3 – Amendments have been made to the G13 Verification Methods and Acceptable Solutions to reference an amended standard relating to the testing of drains and inclusion of vacuum drainage systems. Use of these provisions will no longer need to be treated as Alternative Solution proposals.

The above amendments became effective from 30 November 2018. The previous Acceptable Solutions and Verification Methods will continue to comply until 31 March 2019. If used from 1 April 2019, the previous Acceptable Solutions and Verification Methods must be considered an Alternative Solution proposal.

Simple House Acceptable Solution (SH/AS1) – MBIE proposed to revoke SH/AS1 as part of the November 2018 update. During consultation, it learned that information on foundation design in expansive soils in SH/AS1 is not contained in any other Acceptable Solution. It now proposes transferring the information on slabs on ground in expansive soils to Acceptable Solution B1/AS1 as soon as possible as part of the biannual Building Code system update programme. Once this is done, SH/AS1 will be revoked.

Hot weather concreting
Keep your concrete cool

There are a few fixed rules on what constitutes hot or cold weather in respect of concreting operations. NZS 3109:1997 *Concrete construction* discusses the range 5–30°C, and AS 1379-2007 *Specification and supply of concrete* requires a temperature within the range of 5–35°C at the

point of delivery. Precautions will always be necessary when ambient air temperatures lie outside this range.

The effects of high temperatures include:
- shorter setting times and early stiffening
- increased rates of hardening
- possible 28-day strength loss
- increased tendency for plastic shrinkage
- difficulties in placing and finishing
- danger of cold joints – a cold joint is formed when plastic concrete is placed against concrete that has set and commenced hardening.

Precautions for hot-weather concreting should be initiated when the ambient temperature is expected to exceed 30–35°C. These precautions may include:
- dampening forms, reinforcement and sub-base
- erecting windbreaks and sunshades to protect exposed concrete surfaces
- cooling concrete ingredients (during transport of wet concrete) and cooling containers, pipelines, chutes and so on
- completing the transporting, placing and finishing of concrete as rapidly as is practicable
- informed usage of set-retarding admixtures (to counter premature stiffening of the fresh mix)
- immediately following the initial finishing operation, spraying a fine film of aliphatic alcohol over the exposed concrete surface to limit evaporation and help control plastic shrinkage cracking – this should be repeated as necessary during any subsequent operations up to final finishing
- immediately starting moist curing after final finishing is complete
- restricting placing to night-time when ambient temperatures are generally lower
- reducing temperature of aggregates, mixing water and cement
- using liquid nitrogen injections in the mixed concrete.

BRANZ seminars
BRANZ Answers 19 – Junctions

Most modern buildings have a degree of complexity that results in a wide range of junctions between materials and building elements. These junctions need to be detailed and constructed to ensure that the completed building will be Code compliant, particularly with respect to durability and external moisture.

E2/AS1 provides a limited number of junction details based on junctions between a single material such as weatherboard (internal and external corners) and elements such as aluminium windows and doors.

The aim of this seminar is to cover the key influences on junction details such as:
- Building Code clauses B2 and E2 – minimum B2 requirements, what E2/AS1 covers
- application of the 4Ds to junctions – cavity, cladding flashings
- impact of location – sheltered/exposed, internal corner, external corner, above/below
- risks – weathertightness, durability, trapped moisture, getting it wrong, drainage/drying, corrosion, wind, complexity/buildability, compatibility
- dealing with movement – thermal, moisture, building settlement, seismic
- protection to junctions – flashings (shapes, back upstand/cover, laps), cover boards, sealant
- dealing with different thicknesses/profiles – thin versus thick or vice versa, flat versus corrugate
- maintenance issues, future access
- fixing locations
- aesthetic – the transition needs to look good

- pressure moderation across junctions.

The seminar will then take attendees through a wide range of actual junction details backed by 3D drawings of those details, including:

- vertical wall cladding material junctions within the wall area and at corners such as profiled metal/weatherboard, weatherboard/brick veneer
- horizontal wall cladding material junctions such as weatherboard over brick veneer
- wall cladding over roofs (horizontal/raked aprons)
- wall cladding below roof (flush eaves, wide eaves)
- parapets, valleys, ridges, gables and hips
- rainwater heads and internal gutters.

Presenters

Greg Burn – NZCD (Arch), Dip Bus (Marketing) – Structure Ltd
Des Molloy – Building Consultant

Dates and venues

Wed 13 Feb	Hamilton	Claudelands Conference & Events Centre
Thu 14 Feb	Tauranga	Trustpower Baypark
Fri 15 Feb	Rotorua	Millennium Hotel Rotorua
Wed 20 Feb	Invercargill	Ascot Park Hotel
Thu 21 Feb	Queenstown	Crowne Plaza Queenstown
Fri 22 Feb	Dunedin	Dunedin Centre
Wed 27 Feb	Palmerston North	Distinction Palmerston North Hotel & Conference Centre
Thu 28 Feb	Whangarei	Barge Showgrounds Events Centre
Fri 1 Mar	Auckland – South	Novotel Auckland Ellerslie
Wed 6 Mar	Christchurch	Commodore Hotel
Thu 7 Mar	Hokitika	Order of St John Hokitika
Fri 8 Mar	Nelson	Rutherford Hotel Nelson
Wed 13 Mar	Auckland – Central	Crowne Plaza Auckland
Thu 14 Mar	Upper Hutt	Silverstream Retreat
Fri 15 Mar	Napier	Mission Estate
Wed 20 Mar	Timaru	Comfort Hotel Benvenue
Thu 21 Mar	Christchurch	Addington Events Centre
Fri 22 Mar	Blenheim	Scenic Hotel Marlborough
Wed 27 Mar	Auckland – North Shore	QBE Stadium
Thu 28 Mar	New Plymouth	The Devon Hotel
Fri 29 Mar	Wellington	InterContinental Wellington

Seminars will start at 1 pm with a 4 pm finish.

Online registration is available now.

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