Guideline

July 2015

Welcome to this update on technical and informative advice for the building and construction industry. *Guideline* is a free monthly update on issues relating to building controls and good construction practices.

In this issue:

BCA inspection fails

What are the common reasons for failed BCA inspections?

Recent media reports have highlighted the significant number of failed BCA inspections - whether an interim or final inspection. When delving into the reasons for the fails, a significant number result from not carrying out basic building tasks correctly. Some examples of Building Code non-compliance are:

- double-fixing of timber weatherboards
- blocking cavity drainage either with battens or construction debris
- mortar build-up at the base of brick veneer cavities

- chopping out too much framing for services
- incorrect head flashings
- downpipes discharging onto membrane decks.

In terms of consent applications, failures resulted from:
- insufficient documentation
- no evidence of site investigations having been done
- no QA check of documentation by the designer
- non-compliant alternative methods or incorrect interpretation of a compliance path
- designers working outside the area of their licence class.

As an industry, we need to ensure that we design and construct quality buildings.

Safe domestic hot water temperatures

Not too cold and not too hot

There have been two recent cases reported in the media (stuff.co.nz) where homeowners have contracted Legionnaires' disease (a bacterial infection) from water in their own homes. One person had their feet amputated as a result of the disease. The bacteria were found in a hot water cylinder and in a water system, with the hot water cylinder a possible source.

Legionella bacteria can grow in water temperatures of 20-45°C. They thrive at temperatures of 32-44°C, but can't live at temperatures of 60°C or higher. G12/AS1 requires that the storage water heater control thermostat shall be set at a temperature of not less than 60°C. This is to prevent the growth of *Legionella* bacteria. It is important that the thermostat setting is not reduced to save energy.

Acceptable Solution G12/AS1 requires that the delivered hot water temperature (achieved by installing a thermostatic mixing valve on the supply line) at any sanitary fixture used for personal hygiene shall not exceed:
- 45°C for early childhood centres, schools, old people's homes, institutions for people with psychiatric or physical disabilities and hospitals
- 55°C for all other buildings.

Truss design and installation

Know the rules for trusses

While the use of trusses is covered under NZS 3604:2011 *Timber-framed buildings*, there are a number of design limitations applied. In summary, these are:
- the truss must be specifically designed in accordance with B1/VM1 and manufactured by an accredited fabricator
- a maximum truss span of 12 m
- a maximum truss spacing of 900 mm for a heavy roof and 1200 mm for a light roof
- the load on the ends of the trusses to be no more than 16 kN in both directions - up and down
- a maximum snow load of 2 kPa.

In addition, clause 10.2.2.3 requires (amongst other things) that:

- loadbearing elements supporting the trusses are identified - it is not uncommon for truss loads to occur over a wall that has been designated as non-loadbearing
- the truss connections (type and capacity) need to be specified for:
    - the connection to the loadbearing (supporting) structure
    - connections between trusses such as girder and truncated trusses
- the required lateral support to give stability to the trusses is specified.

All of this information should be provided in the design statement issued by the accredited fabricator.

A point often overlooked

Don't deviate from the consent documentation

Licensed building practitioner (LBPs) have a legal obligation to follow plans and specifications that form part of a building consent application. Any significant deviation (including product specification) from the consented documentation should be authorised by the building designer and dealt with through a formal amendment or a minor variation to the consent.

Changes to the skills maintenance scheme

New framework on the way

The current requirements for the LBP skills maintenance scheme are set to change from 2 November 2015. From this date, LBPs will start a gradual transition to the new skills maintenance scheme. The new framework moves away from an entirely points-based system in favour of a new mixed-model approach with the aim of promoting more meaningful and relevant learning for LBPs.

Click here for more details.

Landlords required to insulate rental properties

New rules coming

Landlords will be required by law to insulate properties and install smoke alarms as a result of recently proposed changes to the Residential Tenancies Act. The changes, which will go through Parliament later this year, will require retrofitting of ceiling and underfloor insulation in rental homes over the next 4 years.

The new rules will take effect from July 2016 for social housing that receives a government subsidy and from July 2019 for other rental housing.

New books from BRANZ

New publications just released by BRANZ

- *Designing for Maintenance*
- Good Practice Guide: *Profiled Metal Wall Claddings* (2nd edition)

- Good Practice Guide: *Tiling* (3rd edition)
- Good Practice Guide: *Timber Cladding* (3rd edition)
- Good Repair Guide: *Driveways and Paths*
- Good Repair Guide: *External Timber Steps*
- Good Repair Guide: *Insulating Timber Windows*

BRANZ Seminars app

Free download available now

The BRANZ Seminars app is a smartphone app that allows you to:

- once registered for a BRANZ seminar
  - receive a reminder
  - access venue directions
  - check in at the venue using the Q code
- at the seminar
  - access the seminar handbook for a year
  - take notes on your device
  - view our speaker and sponsor profiles
  - see who else is attending and request meetings with other seminar attendees
  - post message on the event feed and keep up to date with live alerts and tweets
- after the seminar
  - complete the seminar evaluation.

The app is free and can be downloaded from:

- Apple's app store
- Google Play store for Android
- for those without an iPhone or Android device, from https://branzseminars.mobi

---

Get your CPD points - BRANZ seminar: Key to Quality - 'a must for builders and designers'

Can we do better?

Media reports and anecdotal evidence backed by recent BRANZ surveys highlight a number of documentation, quality and performance issues with new housing. These reports have increased in recent times with rising workloads, time constraints and decreasing skill levels in the industry.

NZIA President Pip Cheshire says, "It is time that we, the building industry, showed confidence and a commitment to ensuring the products of our labours are the best that science, industry and creative endeavour can deliver."

But how bad is it really? How are we seen by our customers? Can we do better?

This seminar is primarily based on two BRANZ research projects designed to better understand the client and designer/builder relationships so that clients make better decisions.

The first is a regular survey of new house owners' levels of satisfaction, and the second has inspected 225 houses under various stages of construction. Problem areas and defects were recorded for each house and classified as either a performance defect or an aesthetic or finish defect. 81% of houses were considered to have performance defects, and 95% of houses had an identified quality defect.

This seminar will use a number of the real defects highlighted during the inspection survey to explore these issues:

- Why did the situation arise?
- How might you deal with the end result?
- What was actually wanted/specified/acceptable?
- Was what was specified buildable?
- Was sufficient detail provided?
- Did you have sufficient time?
- Who was responsible?
- What steps should you take to avoid it happening in the future?
- How prepared are you to effectively deal with building quality?

This *Key to Quality* seminar is a must for you if you are a designer, architect, builder, painter or other subtrade, building inspector or contract supervisor/manager.

Dates and locations:

Wed 29 Jul	Auckland – Central	Crowne Plaza Auckland
Thu 30 Jul	Auckland – Mt Wellington	Waipuna Hotel & Conference Centre
Wed 5 Aug	Christchurch	Addington Events Centre
Thu 6 Aug	Hokitika	Order of St John Hokitika-Hire Facility
Fri 7 Aug	Nelson	Rutherford Hotel Nelson
Mon 10 Aug	Whangarei	Forum North
Tue 11 Aug	Hamilton	Claudelands Conference & Exhibition Centre
Wed 12 Aug	Auckland – North Shore	QBE Stadium

Online registration is available now.

Senior Building Control Officers' Forum

20–21 August, Hamilton

This forum is specifically designed for senior building control professionals, government officials and others in a senior or management level position that have an interest in the building controls sector. The SBCO Forum combines presentations, case studies and interactive sessions for attendees to share common challenges and joint solutions.

This year, guest presenters include:

- Graeme Beattie, Principal Structural Engineer (BRANZ), who will be presenting on ensuring seismic resilience of building services
- Professor Geoff Broughton (TimberED Services, Australia)

- Darryl O'Brien (Central Queensland University)
- Bernard Toh (Skytec Engineering Consultants)
- Min Hall (International Straw Builders Conference 2016)
- Alex Cutler (New Zealand Green Building Council).

Register here, or for more information about the SBCO Forum, please visit www.boinz.org.nz.

Best-practice BIM in New Zealand

2-day workshop

Building information modelling (BIM) is poised to revolutionise the built environment. Governments around the world (including New Zealand) are mandating BIM as a means to eliminate waste from the design, construction and operational phases of their projects.

From product manufacturers to architects, contractors to building users, everyone in the hierarchy of the construction industry will be affected by BIM.

This 2-day workshop is facilitated by:

- Paul Oakley BA(Hons) DipArch RIBA - Associate Director of the Building Research Establishment's BIM Group in the UK
- Daniel Rossiter BSc Architectural Design Technology - a BIM consultant and training manager with the Building Research Establishment in Wales.

The workshop will provide a robust fundamental knowledge of BIM in New Zealand. It introduces the best-practice use of BIM in a local context by exploring established industry standards, methods and procedures. This includes emerging international information management standards, buildingSMART international standards, internationally recognised good practice and other local and international developments, such as the open BIM initiatives formed to facilitate interoperability.

The workshop explains BIM level 2 maturity and how to apply it as a practical means to enhance efficiency and productivity on construction projects. The presented techniques focus on information management and the information delivery cycle as the processes that enable successful BIM level 2 delivery.

Seminar sessions run from 8.30 am to 4.30 pm each day and cost $805.00 (incl. GST) for both days:

6–7 August	Auckland Central	Crowne Plaza Auckland
10–11 August	Wellington	Amora Hotel
13–14 August	Christchurch	Ilex Botanic Gardens

Register now