Guideline

August 2015

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

Chance to reflect on building quality

Issues still occurring

The BRANZ *Key to Quality* seminar series has been completed. The seminar content was aimed at those working on residential sites, as this is where a significant number of quality issues are occurring. Feedback from those who attended was good. However, the mix of attendees demonstrated that getting this information to those who most need it is difficult.

What was surprising was that quality issues identified by BRANZ and by Auckland Council inspectors were failures in basic construction techniques such as:

- concrete slabs that were out of square – 200 mm for a simple rectangular slab in one case
- inconsistency between slab and framing dimensions
- double nailing of timber weatherboards
- lack of cross fall to window head flashings
- wall framing that was neither straight nor plumb
- cut ends of timber left bare
- incorrect application of tie-down straps or plates
- insufficient edge distances for bottom plate anchors
- the omission of window sill support bars in cavity construction
- incorrect fitting of window air seals
- obstructed drainage cavity – whether timber cross battens or mortar droppings with brick veneer
- uneven mortar joints
- excessive framing notching and drilling
- lack of waterproofing to brick veneer slab rebates
- too many vertical cavity battens
- blocked cavity drainage (by paths and paving).

Also of concern was:

- an apparent lack of individual trades taking responsibility for their work or respecting the work of other trades
- construction drawings not being available on a number of sites
- overstretched construction supervisors and council inspection staff.

For those who missed the seminar, it will be available to view online shortly (and you can get your LBP or CPD points afterwards).

SED residential bracing

Check it out

Just released on the EQC website is the EQC-funded BRANZ Study Report 337 *Design guidance of specifically designed bracing systems in light timber-framed residential buildings*.

Structurally fixed cavity battens

What are the rules?

When timber cavity battens are structurally fixed to the underlying framing as described in BRANZ Bulletin 582 *Structurally fixed cavity battens*, there is no requirement that the battens be H3.2 treated. As they serve the same function as a standard cavity batten under E2/AS1, the minimum durability requirement is 15 years, and H3.1 treated timber can be used. Battens should be as durable as the cladding fixed to them, but they are not considered structural in the same way framing is.

However, a designer is at liberty to specify a higher level of treatment such as H3.2 treated timber.

When specifying H3.2 treated battens, specify that the timber must be:

- isolated from any metal cladding or components
- fixed with a minimum of hot-dip galvanised fixings (stainless steel fixings are required for copper azole and copper quaternary treated timber).

Where sheet bracing is attached to the outer face of the battens, refer to the bracing supplier's installation instructions, as all such systems are proprietary.

Fixing plasterboard

Position is important

Where adhesive is used in conjunction with mechanical fixings (screws or nails), the fixing must be located at least 200 mm away from the adhesive daub. Where mechanical fixings are closer than this or driven through the adhesive, there is a risk of nail popping as the adhesive cures and shrinks a little.

BRANZ Find

A search and locate tool

The BRANZ Find digital helpline is a useful, comprehensive directory of New Zealand building and construction industry information.

BRANZ Find provides free online access to building information and the documents commonly requested from the BRANZ 0800 advisory service.

Use it to search and find links to resources including study reports, online tools, Guideline, codes of practice, technical guidance, the Building Code, standards and legislation.

Retrofitting external wall insulation

Building consent required

It is a legislative requirement that a building consent is obtained where existing external walls of a building are to be retrofitted with any type of insulation.

This issue has been brought to the fore again as a result of a recent TV programme. This programme featured retrofitted injected or blown-in insulation for which no building consent appeared to have been obtained.

Issues that need to be determined before retrofitting insulation:

- Whether there is a wall underlay installed – if there is no underlay, insulation options are limited unless the cladding or lining are removed to allow underlay to be installed.
- Cladding type – the drainage cavity behind brick veneer should never be filled with insulation, as doing so may render the building non-Code compliant.
- Type of insulation proposed and the installation method – injected or blown-in insulation that is installed through holes drilled in the cladding creates a potential weathertightness risk at each of the many penetrations.
- Whether the advertised R-value of the installed insulation has been verified by an independent authority.
- What warranty is offered and the extent of its cover – for exterior blown-in insulation, is a warranty provided for continued weathertightness?

Slope of roof valleys

Know the limits

For designs to E2/AS1 (clause 8.1.6.2 and Figure 51), there are limits on the roof catchment area that drains into a roof valley. The limits are that a valley must:

- not change direction in plan – it must be a continuous straight run
- have a minimum underlap to roof cladding as specified in Figures 27, 37, 50 and 51 for the relevant roof cladding
- be formed from any of the materials outlined for flashings in paragraph 4.3 except 4.3.10 and 4.3.11
- be fixed at upper ends only and be secured with a purpose-made clip system for the remaining length to enable expansion/contraction along the length of the gutter
- discharge into an internal gutter or eaves gutter/spouting
- have minimum slopes and maximum catchment areas in accordance with Table 8 for valley gutters (reproduced below)
- not have spreaders that discharge directly into a valley gutter – hidden gutters must not receive discharges from downpipes or spreaders
- have a minimum width of 250 mm where receiving run-off from spreaders.

From E2/AS1 Table 8

Gutter width	Maximum catchment area	Minimum roof pitch
250 mm	25 m^2	8°
160–249 mm	16 m^2	12.5°
over 250 mm	outside E2/AS1 scope – specific design	

Gutters for lower-pitched roofs or for catchment areas other than those shown above require specific design. Additional information may be found in the New Zealand Metal Roof and Wall Cladding Code of Practice section 8.4.5.

BRANZ CPD – seminar

Non-structural Systems/Elements/Components

Non-structural elements or systems within a building are those parts of a building that, if they failed, would not be responsible for the building collapsing. They do not have a structural function, but they may be essential for the building to operate and require specific design.

Poorly designed or installed non-structural elements can present a significant hazard during a seismic event. Damage to these systems can also render a building unusable, leaving owners and occupants facing major business interruptions and economic impact caused by building downtime.

This 3-hour seminar provides designers, commercial builders and installers with a practical understanding of:

- what non-structural elements are
- building element behaviour
- consequences of damage
- consequences of not designing non-structural elements for earthquake (and wind)
- New Zealand regulatory requirements
- damage mitigation strategies
- why resilient design is not being achieved.

The seminar will cover the seismic behaviour of common non-structural and engineering elements, the mechanisms that cause damage and how to minimise the effects during a seismic event.

To do this, it examines common building behaviours during an earthquake, such as inter-storey drift and accelerations and how non-structural systems can be installed to tolerate these.

Locations and dates are:

Queenstown	7 September 2015
Dunedin	8 September 2015
Christchurch	9 September 2015
Auckland – North Shore	10 September 2015
Wellington	14 September 2015
Hamilton	15 September 2015
Auckland – Central	16 September 2015
Napier	17 September 2015

All seminars run from 1–4 pm.

Register online now.