Cavity closures
We have been advised recently by BCAs that cavity closures, required under E2/AS1 for nominal 20 mm drained and vented cavities, are not always being installed. Cavity closures are required to restrict the entry of vermin into the cavity space while allowing drainage and ventilation to occur. They are required:

- at the base of the wall where it terminates above ground, paving or a waterproof deck
- across the tops of window and door openings – a cavity closure is also required across the top of a meter box where the cavity is drained
- at interstorey junctions where the cavity is drained
- where a wall terminates above a raked or horizontal apron flashing.

Borer in particleboard
The BRANZ helpline has had calls regarding borer infestation of particleboard flooring. In these cases, high levels of dampness in the subfloor and the particleboard appear to be the contributing factors. It is important for the long-term durability of particleboard that it remains dry in use. Key to this is ensuring:

- the subfloor space is well ventilated and dry – where subfloor moisture levels are high, even if the ventilation meets minimum requirements of E2/AS1, laying polythene sheet over the ground is recommended
- the upper surface of the particleboard is protected from moisture where particleboard has been laid in wet areas – this means a vinyl sheet or tiles over a waterproofing membrane
- there are no plumbing leaks that are or have been wetting the floor
- there are no cladding leaks that may be affecting the particleboard.

Changes in installation instructions
While it can be time consuming to do so, it is important that designers and builders keep up to date with the latest versions of trade literature, particularly product-specific installation requirements.

As an example, the latest version of the *GIB site guide* (January 2010) changes the requirements for the back-blocking of joints.

Top plate to stud connection
Section 8.7.6 of NZS 3604:2011 details generic top plate to stud connection requirements for top plates supporting roof members. These are based on the loaded dimension of the wall, wind zone, roof weight and rafter/truss spacing. Table 8.18 gives a specific fixing requirement or the design capacity of the fixing if an alternative fixing option is being specified.

Other fixing options must be submitted for consent as an alternative method (once accepted by the BCA and consented, it becomes an Alternative Solution) supported by testing in accordance with clause 2.4.6 of NZS 3604:2011.

If a BRANZ Appraisal is being used to show compliance, the connections are product specific and must fall within the specific parameters set in the Appraisal, such as maximum stud length and moisture content.

Allowing for movement
The recently released Bulletin 531 *Designing for thermal and moisture movement* gives examples of ways the potential thermal and moisture movement in building materials can be calculated. For thermal movement, it is important that realistic maximum and minimum temperatures are used as materials can be colder than the air temperature at night and significantly hotter than the air temperature on sunny days.

This bulletin has example calculations that can be applied to different materials to indicate what movement is possible for a given set of parameters.

Finding R-values for glazing
R-values for a range of glazing types to determine H1 compliance are given in NZS 4218:2009 *Thermal insulation – Housing and small buildings* Tables C1 to C4 inclusive. These tables provide a range of R-values that cover different glass types, glass thickness, the space between panes in IGUs, the use of different glass types in an IGU as well as the range of frame systems available.

Floor joist deflection
Spans given in NZS 3604 for timber floor joists are the maximum structural span for the specific timber size based on the ultimate strength of the timber and not the possible deflection when loaded or walked on. As a result of this, suspended timber floors – particularly where joists are taken to their maximum span – may feel springy or bouncy when walked on and there may also be noticeable noise effects such as objects rattling within cabinets, both of which may be unacceptable to clients and result in disputes after the building is completed. Designers should discuss the effects of maximising timber joist spans with clients and consider options available to reduce spans, as attempting to remedy floor deflection once a building is completed, particularly for upper floors, can be difficult and costly.

Bulletin 533 – clarification of minimum waterproofing durability
The recently released BRANZ Bulletin 533 *Green roofs – an overview* refers to NZBC clause B2 *Durability* and states in paragraph 4.1.2 that 'The main roof components must be provided with a durability of not less than 50 years.' Where a green roof system is designed so that it is considered moderately easy to repair/replace the waterproofing system (by removing the growing medium), it is believed that a durability that is equal to the serviceable life of the garden system, but not less than 15 years, would be appropriate for the waterproofing system. A durability of not less than 50 years would still apply to the supporting structure.

A durability of not less than 50 years is, we believe, appropriate for a waterproofing system that is difficult to access for repair and/or maintenance. Factors that would influence this include ease of access on to the roof, height of the roof and the depth of the growing medium.

Ceilings with downlights – R-values
Table 7 of the BRANZ *House Insulation Guide* (4th edition) allows the construction R-value of the ceiling to be calculated for a range of CA-rated downlight sizes.

NZS 3604:2011 and Timber Treatment Seminar
The 11 remaining dates and venues for this important seminar and an online registration facility are available on the BRANZ website. Discounted copies of NZS 3604 can be ordered with your seminar registration.

Guideline *is a free monthly update on building issues prepared by BRANZ and funded by the Building Research Levy.*

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