Department of
Building and Housing
Te Tari Kaupapa Whare

Codewords is a free regular newsletter keeping you informed about New Zealand's building controls.

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codewords

better building blueprint

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'There is no quick fix,' said the Minister at the launch of MultiProof in February, 'which is why the *Better Building Blueprint* package of initiatives has been developed. These changes implement the next generation of building control; where we combine quality and cost effectiveness to get a more productive and efficient building sector,' he added.

The *Better Building Blueprint* is ongoing – measures announced in February and March are just the start. Other consenting and quality improvements will be added over time as decisions are made on the Building Act Review.

Read more about Better Building Blueprint initiatives on pages 2 to 4

what's inside

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what's inside

Wide debate on proposals for reform of Building

The opportunity to comment on ways to improve the building control system is being taken up by hundreds of people in the building and construction sector, local government, and homeowners.

The Government is undertaking a major review of the Building Act, the law that governs the system for checking that buildings are constructed to be safe and to meet essential requirements.

More than 500 people have attended a series of meetings around the country to discuss the proposals. Building consent authority staff, builders, architects, engineers, designers, building surveyors, product suppliers, lawyers, homeowners and other interested people have been involved in the discussion. Many written submissions are also coming in.

BUILDING ACT REVIEW KEY PROPOSALS

Moving to a more balanced building consent system

- Lowest-risk building work would not need a consent.
- Low-risk building work (such as a simple, one-storey house) would go through a quicker and simpler consenting process with fewer council inspections and more reliance on the skills of licensed building practitioners to get it right first time.
- High-risk, more complex houses would continue to go through the current approval and inspection process.
- Complex, major commercial building work would go through a simpler process than it currently does, recognising the experience and skills of those involved and that commercial contracts for major projects include quality control.

Rebalancing responsibility back towards building professionals and tradespeople

- Building professionals and tradespeople would take more responsibility for making sure their work meets Building Code requirements. Licensing of building practitioners will help identify those with the relevant skills.

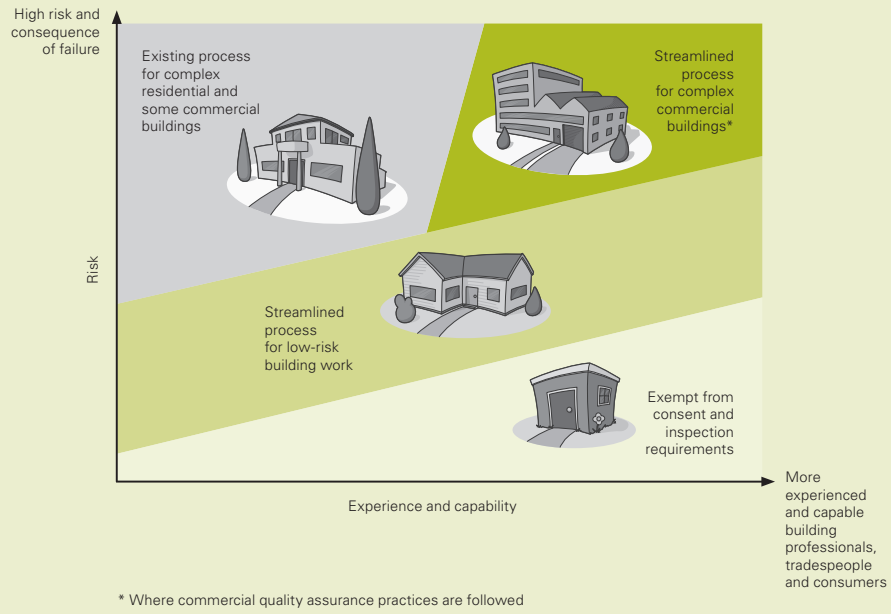
Better tools for consumers

- Better equip homeowners to hold building contractors to account, with more information and mandatory written contracts setting out what's expected, how any faults would be fixed, how disputes would be resolved and details of financial backing (surety).

Further improvements

- Make sure the fundamental elements of the system – the Building Code and the purpose and principles of the Building Act – are clear.
- Explore ways of making the administration of the system more cost-effective.
- Simplify processes to review the fire safety of building plans and the inspection and maintenance of essential systems such as fire sprinklers and lifts.
- Examine whether the building consent system is the best way to regulate public infrastructure works such as bridges and tunnels.

Overview of a balanced, risk-related building control system



* Where commercial quality assurance practices are followed

Act

Craig Hill, the Department's Acting Deputy Chief Executive Sector Capability, says it's good to see people taking the time to give their views.

'It's very helpful for us to get this feedback, because it will help us improve the existing systems. We've had a lot of useful comment on details that we need to work through.

'There's generally support for the principle that where people with good skills are designing and constructing a relatively simple building project within their level of expertise, there is less need for council checking and oversight. The idea of clarifying the responsibilities of building professionals and tradespeople, and consumers, through written contracts, is widely supported.

'However there's considerable debate about the level of skill in the sector, whether people in the sector are ready and willing to step up to take more responsibility, and how to determine whether building projects are lower risk.

'We will be working through all the comments and submissions as we develop final proposals for the Government to decide on,' says Mr Hill.

Simple House Acceptable Solution

The Simple House Acceptable Solution provides a framework for architects, designers and builders to develop affordable, innovative and easily consentable homes, without compromising safety or quality.

The Minister launched the Simple House Acceptable Solution in March at a site in Auckland where Housing New Zealand Corporation is building a house based on the Acceptable Solution.

'For the first time all the information needed to design a simple house, including compliance requirements and building standards, has been brought together in one place,' said the Minister.

The design for the house will be based on the Supreme Award winning entry from the Starter Home Design competition run last year. The competition aimed to encourage architects, designers and builders to come up with innovative and affordable solutions showing what can be achieved with limited resources.

The document is available at **www.dbh.govt.nz/building-code-compliance-documents**

MultiProof

The first in the series of measures announced by the Minister in February was MultiProof, the National Multiple-use Approval Service. This service allows volume builders to obtain a one-off approval of a basic building design with the intention of simplifying the building consent process where those plans are used.

By having a design that will be replicated a number of times pre-approved for Building Code compliance by the Department, building consent authorities need only assess site-specific details when issuing a building consent.

This will make the building consent process easier and faster for volume builders and those who replicate building designs more than 10 times over two years.

The MultiProof team has been giving presentations to BCAs across the country and conversations have taken place with volume builders who have expressed an interest in the service.

MultiProof Manager Peter Thorby says his team is working with volume builders on their requirements, taking into account their current business model and how MultiProof could work for them in their business.

Peter says, 'MultiProof provides certainty of delivery for a volume builder's customers and the value proposition of the service is beginning to make sense for them. They are seeing the potential of this as a competitive advantage'.

Several applications have already been received by the Department and others are in the pipeline. The first approvals will be announced shortly.

Streamlining for the Licensed Building Practitioner Scheme

Further streamlining for design and building practitioners took effect on 1 April. Instead of six design and site licence classes there are now just two – one for design and another for site practitioners – making licensing much simpler and more straightforward.

Other changes that took effect on 1 April include the introduction of a new foundations licence and new simplified application forms for tradespeople.

Mark Scully the LBP Registrar says, 'We took a long hard look at what information we really needed to ensure that we could properly assess competence, without having unnecessary complexity'.

These changes complement other streamlining changes announced by the Minister in February, including lower assessment fees and a simplified application process for qualified building practitioners. It's now faster, easier and cheaper for them to get licensed.

'Nearly 30 qualifications are now recognised under the streamlined application process,' says Mr Scully. 'Streamlining removes duplication, lifts efficiency and saves costs. For most classes, assessment fees for qualified building practitioners are cut by more than half.'

Keep up-to-date with licensing news at **www.dbh.govt.nz/licensing-update-index**

Competition opens to find this year's Apprentice of the Year

A package of prizes to the value of $12,000 is up for grabs this year as the competition opens for 2010's Apprentice of the Year when talented young apprentices vie for the coveted title.

Backed by the Department, the Apprentice of the Year competition recognises the incredible talent, skill and drive of carpentry apprentices and raises awareness of career opportunities in the building and construction sector.

Katrina Bach, the Department's Chief Executive says, 'The Apprentice of the Year competition supports the Department's commitment to working with the sector to achieve a well-performing, professional building and housing sector that has the capability and capacity to do a good job'.

The competition includes ten regional competitions building up to a national final in Wellington in October.

The winner of the National Apprentice of the Year title will be announced at an awards evening following national judging on Thursday 21 October.

Entries are open until 30 June 2010. For further information about the competition, including the criteria for entering, and the entry form, go to **www.masterbuilder.org.nz**, **www.bcito.org.nz** or pop into your local Carters store.

Apprentices can also look up the Facebook page for the Registered Master Builders Carters 2010 Apprentice of the Year at **www.facebook.com**

Nathan Biggs, 2009 Apprentice of the Year

New Plumbers, Gasfitters and Drainlayers Act 2006

From 1 April 2010 significant changes to the rules covering plumbers, gasfitters and drainlayers came into force with the full implementation of the Plumbers, Gasfitters and Drainlayers Act 2006. These changes are primarily aimed at improving public health and safety.

Following extensive industry consultation by the Plumbers, Gasfitters and Drainlayers Board, the Minister has accepted the Plumbers, Gasfitters and Drainlayers Board's recommendations on a wide variety of matters including licence classes for practitioners.

TWO LICENCE CLASSES

There will still be two classes of plumbers and gasfitters. Those currently known as 'registered' will be described as 'licensed'. This better reflects the fact that they have a licence to practice, rather than simply being registered, which is a status that applies to other categories of non-qualified persons on the register.

The other class, currently known as 'craftsman', will be described as 'certifying', as this better reflects the current role of certifying gasfitters, and allows for the possibility of plumbers and drainlayers self-certifying in the future. This also better reflects the Board's move to more actively enforce the requirement that 'licensed' practitioners are supervised by 'certifying' practitioners.

The two-tier licence system for gasfitters and plumbers is also being introduced for drainlayers. All existing registered drainlayer licence holders will be eligible to be re-licensed as a certifying drainlayer, provided that they satisfy the Board they have appropriate experience and proficiency in drainlaying.

OTHER CHANGES

The other main changes being introduced are:

- a new requirement for continuing professional development for plumbers and drainlayers
- clearer specification of requirements for supervision and testing of work
- requiring licence cards to be carried by practitioners.

From 1 April, as practitioners renew their licences they will be required to carry an authorisation card so homeowners and building inspectors can check their status. Cardholders are required to produce their card if requested to do so. If a person is required to be supervised, the name and registration number of their supervisor is printed on their authorisation card. This supervisor is ultimately responsible for the work done by the person they are supervising. Building inspectors should contact the supervisor if they have any concerns about any work being done.

NAME CHANGES	
Description under old legislation	Description under new legislation
Craftsman Gasfitter	Certifying Gasfitter
Craftsman Plumber	Certifying Plumber
(not existing)	Certifying Drainlayer
Registered Drainlayer	Licensed Drainlayer
Registered Gasfitter	Licensed Gasfitter
Registered Plumber	Licensed Plumber
Limited Certificate Apprentice Drainlayer	Limited Certificate Trainee Drainlayer
Limited Certificate Apprentice Gasfitter	Limited Certificate Trainee Gasfitter
Limited Certificate Apprentice Plumber	Limited Certificate Trainee Plumber
Limited Certificate Drainlayer	Exemption Drainlaying under supervision
Limited Certificate Gasfitter	Exemption Gasfitting under supervision
Limited Certificate Plumber	Exemption Plumbing under supervision

PUBLIC REGISTER

A public register of all licensed and certifying people is available at **www.pgdb.co.nz** – you can use the search function to find the contact details and licence status of specific individuals.

MAKING COMPLAINTS

Any person who believes work has been done by someone who is not entitled to carry out plumbing, gasfitting or drainlaying work (as appropriate), or has any other concerns about the competency of workers, can make a complaint to the Plumbers, Gasfitters and Drainlayers Board. The Board can be contacted on 0800 743 262 or by emailing the registrar at **registrar@pgdb.co.nz**

For more information about the changes being introduced on 1 April 2010, go to **www.pgdb.co.nz**

Practice Advisory No.12

UNSTIFFENED ECCENTRIC CLEAT CONNECTIONS IN COMPRESSION

PARTICULAR CARE NEEDED WITH DESIGN

The above Practice Advisory has just been released. Its purpose is to advise structural steel design engineers of problems with the use of unstiffened eccentric cleats used to connect compression members, such as braces and frame members to supporting members, and also to alert them about a flawed design method. For details and a copy of the advisory please go to **www.dbh.govt.nz/guidance-information**

Double-tee floors and SESOC newsletter

Since the publication of the SESOC News in September 2008, there has been considerable debate on the safety of flange-supported double-tee floors built with the loop bar detail (often known colloquially as the 'pigtail' detail).

SESOC has recommended against use of loop bar detail until more is known about its performance generally and particularly in earthquakes. The SESOC newsletter points to a number of potential ways in which loop bars may not comply with NZS 3101.

Manufacturers, however, point to the generally satisfactory performance in service of double-tee floors with the loop bar detail for over 30 years. They say that the gravity load tests carried out over the years have demonstrated adequate safety.

The following is the Department's position.

1. Designers and manufacturers need to be able to demonstrate, using a proper technical basis, that the overall design and the details used in the particular situation will perform satisfactorily and meet the requirements of the Building Code.
2. A proper technical basis for demonstration should be by either:
   a. calculation using generally accepted criteria for the assessment of capacity – for example using NZS 3101: 2006, or
   b. by testing taking into account NZS 1170.0: 2002 Appendix B.

   Alternatively, a combination of theory and testing could be used.
3. If the loop bar detail is to be used, it will be essential to demonstrate the adequacy of floor performance and the capacity to sustain load and movement under earthquake action. The Department recommends that designers familiarise themselves with the issues raised in the SESOC newsletter.
4. There will be new design situations where the loop bar detail will provide adequate structural performance to meet the Building Code. It is likely that these will be in situations with shorter than normal spans, with generous seating, and in stiff buildings with small displacements under earthquake and wind actions.
5. The tests carried out since 1972 on the loop bar detail, while demonstrating greater than expected capacity, have been mainly gravity tests. BRANZ carried out a test in 2009 to simulate earthquake movements and conditions. While results were encouraging, the gravity loading and boundary conditions did not match common practice or expectations.
6. More tests are needed that take account of earthquake effects and allow for variability in material properties, construction details and tolerances (as required by Appendix B of NZS 1170.0).
7. The supporting ledges of all double-tee floors must support the full reactions and accommodate likely movements such as creep, temperature, shrinkage and earthquake. As with all precast systems, the minimum seating must also take account of fabrication and construction tolerances. The supporting element (beam or wall) must be detailed so that its strength and stability are maintained at all times.

8. Owners or territorial authorities with concerns about existing buildings or new designs with flange-hung double-tee floors should obtain advice on the particular situation from a chartered professional engineer specialising in structural engineering.

The Department recognises the need for further work and is promoting dialogue between researchers, designers, pre-casters and builders to determine the actions necessary to better understand the behaviour of flange-supported double-tee floors and the implications for new designs and existing buildings.

Drains from hot water cylinder relief valves

GUIDANCE FOR PLUMBERS, PLUMBING DESIGNERS AND BUILDING CONSENT AUTHORITIES

The Department has received several enquiries about drain lines from pressure relief and temperature and pressure relief valves discharging to a PVC-U plumbing and drainage system. In some cases, the PVC-U pipes and stacks have melted causing a failure of the plumbing system and extensive damage.

It appears that this is due in part to the increasing use of solar water heating, and other heat sources that cannot be controlled by an energy cut-out device, requiring relief valves to discharge to prevent hot water cylinder explosions.

Relief valves are designed to reset after discharging and can discharge again and again until the heat source is reduced or a fault, such as replacing a failed thermostat, is fixed.

WHAT IS THE FUNCTION OF RELIEF VALVES?

Pressure relief valves are designed to relieve excess pressure to make sure valve-vented storage water heaters do not explode.

Temperature and pressure relief valves are designed to keep the temperature below 99°C and to relieve excess pressure to make sure valve-vented storage water heaters do not explode.

WHAT DO THE COMPLIANCE DOCUMENTS SAY?

Acceptable Solution G12/AS1, and Standards AS/NZS 3500.4: 2003 (cited in G12/VM1) and NZS 4607: 1989, all require:

- the drain line from the relief valve to be in copper
- discharge to an appropriate place that does not cause damage to the building.

AS/NZS 3500.2 (cited in G13/AS3) says the range of temperatures likely to discharge to the plumbing and drainage system must be taken into account when selecting materials for use in the plumbing system. Therefore, if the drain line discharges over a tundish into the plumbing system, the plumbing system has to be constructed of a material that will take the high temperature discharge from relief valves.

Failure to comply with these simple requirements could cause the PVC-U plumbing system to melt when a relief valve discharges, resulting in a failure of the plumbing system.

Anchor capacity at concrete slab floor

Guidance for designers, builders and building control officials who are involved with drilled-in and cast-in concrete anchor connections between bottom plates of external timber framed walls and concrete slabs-on-ground in construction complying with NZS 3604.

Care is needed to ensure appropriate anchors are used when they are located close to the edge of slabs, particularly when the edge of the slab is formed by using masonry header blocks. Designers should check that minimum edge distances required can be achieved and that loads do not exceed the recommendations provided below.

ANCHORS

Anchors are used to fix timber wall bottom plates to concrete floors to resist wall face loads as well as wall in-plane and uplift loads caused by wind and seismic actions (non-bracing applications). Anchors are also provided at the ends of wall bracing elements where they are required to resist in-plane wind and seismic loads by direct shear and tension to prevent wall bracing elements from sliding and over-turning (bracing applications).

Proprietary drilled-in anchors are commonly used in preference to cast-in anchors. Manufacturers of proprietary anchors must provide technical data relative to the intended application. Such data must include shear and tension strength with specified minimum concrete strength, minimum edge distance and minimum embedment of the anchor.

The minimum concrete and timber edge distance and durability of the anchor are important factors to consider. For example, some anchors are not able to achieve the 50 year durability requirement when header blocks are used in the sea spray zone due to insufficient cover.

BOXED CONCRETE EDGES

Cast-in and non-expanding drilled-in proprietary anchors can achieve specified characteristic strengths with boxed concrete slab edge construction. However, testing at BRANZ found that the uplift strengths of drilled-in expanding anchors near boxed edges can be up to one fifth lower than what is specified in some proprietary technical literature.

MASONRY HEADER BLOCKS

Testing at BRANZ found that the uplift load capacities of both drilled-in and cast-in anchors, when used with concrete masonry header block construction commonly used to form the perimeter of concrete slabs-on-ground, were up to one third lower than those specified in the proprietary technical literature.

RECOMMENDED ACTIONS

Non-bracing applications (Clause 7.5.12 of NZS 3604)

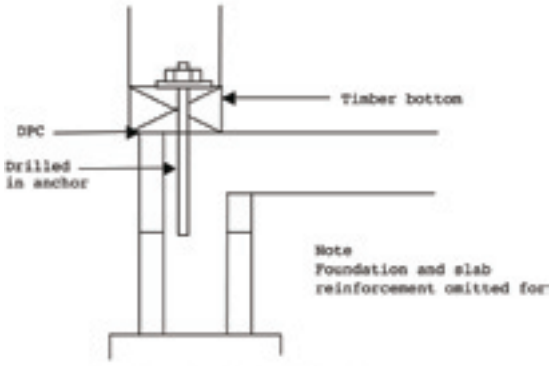
The Department recommends that unless the manufacturer's specified characteristic strength has been determined by testing and evaluation (see Note 1) of the actual application (eg, at the slab edge with header block or boxed concrete slab edge construction), the spacing of anchors should be reduced from that specified in NZS 3604. That is, anchors should be selected from proprietary technical literature on the basis that they meet the horizontal face load and uplift load requirements of NZS 3604 Clause 7.5.12.4 for 900 mm or 1400 mm spacing as appropriate, and be installed at recommended (reduced where appropriate) spacing as indicated in Table 1. The Department also recommends that the spacing of cast-in anchors used with header block construction is reduced on a similar basis.

Bracing applications (proprietary system)

Where the specified characteristic strength of a drilled-in anchor has been determined by testing (see Note 1) of the actual application, the anchor strength and design bracing value for the wall bracing element can be used.

Where the characteristic strength of a drilled-in anchor (with both masonry header block and boxed concrete slab edge construction) has not been established by testing (see Note 1) of the actual application (eg, the characteristic strength has been determined by analysis or by test results remote from a concrete edge/masonry header block and analysis to come up with a characteristic (design) strength at a concrete edge), the Department recommends that the anchor characteristic design strength (and hence the wall bracing rating) is down-rated until such time that application-specific supporting anchor test information is available.

edges



Section through edge of foundation

TABLE 1 SUGGESTED ANCHOR SPACING

Anchor types	NZS 3604 spacing (mm)	**Recommended spacing (mm)**
All drilled-in (post installed) anchors used with masonry header block construction	900	**600**
Cast-in anchors (bolts) used with masonry header block construction	1400	**1100**
R10 steel dowels used with masonry header block construction	900	**750**
Expanding type drilled-in anchors used with boxed concrete slab edge construction	900	**600**
Non-expanding type drilled-in anchors and cast-in R10 dowels with boxed concrete slab edge construction	900	**900**
Cast-in anchors (bolts) with boxed concrete slab edge construction	1400	**1400**

One way to do this is to down-rate the anchor characteristic strength at the edge of masonry header blocks by one third and at boxed concrete slab edges by one fifth. The down-rated characteristic design strengths (R) are:
R = 0.67.Qk kN
(for masonry header blocks)
R = 0.80.Qk kN
(for boxed concrete slab edge)
(see Notes 2 and 3).

The maximum available wall bracing rating in bracing units per metre (see Note 4) is then determined as the lower of 10.R or the published wall bracing rating.

Notes:

1. This means testing and evaluation by a recognised industry authority in accordance with NZS 3604 Clause 2.4.7.
2. R is the down-rated anchor strength in kN.
3. Qk is the characteristic strength specified in the technical literature for the edge distance intended to be obtained by test and/or analysis.
4. As tested in accordance with the BRANZ P21 procedure.

The exception to this is where the wall manufacturer specifies a minimum anchor strength but this cannot be achieved. In this case seek specific advice from the wall bracing manufacturer on whether a down-rated anchor can be used and, if so, what the amended wall bracing rating needs to be.

For example, consider an external wall bracing element of, say, 120 BUs/m on a masonry header block perimeter foundation. The anchor uplift strength has not been adequately verified for the intended application. The specified characteristic anchor uplift strength taken from the anchor manufacturer's technical literature is 15 kN. The down-rated capacity R = 0.67 x 15 = 10 kN. The available bracing rating is then limited to 10 x 10 = 100 BUs/m.

Another way to determine an anchor characteristic design strength is to calculate R when the anchor has passed the qualification test stipulated in ACI 355.2 (refer to NZS 3101: 2006 Clause 17.5.5). In this case the calculation method for cast-in anchors given in NZS 3101: 2006 Clause 17.5.6 may be used to determine a design value.

INTERNAL BRACING WALLS

Note that the above recommendations do not apply to internal wall anchors that are not in close proximity to a concrete slab edge. However care is required with internal wall anchors to ensure there is sufficient slab thickness to meet anchor embedment, hole depth and cover requirements specified in the technical literature. Slab thickening may be required in some applications.

Weathertightness of concrete masonry

Some weathertightness problems can occur in painted, single-skin concrete masonry buildings. So, what should designers and builders look for when designing and building waterproof concrete masonry to help ensure weathertightness?

A good place to start is remembering that a concrete masonry wall, by itself, is porous. The permeability varies depending on what the units are made of – for example lightweight pumice aggregate is especially porous.

Care needs to be taken with masonry because secondary drainage and drying principles, including drainage cavities that apply to framed buildings, aren't present in concrete masonry. Concrete masonry may be more naturally durable than timber, but the main 'tools in the armoury' for keeping water out of a masonry wall are good building design and effective surface coatings.

Building design that addresses the nature of materials and the environment they are used in can significantly improve the odds against leaking, as will careful detailing, such as around windows and doors. The principle of drainage cavities around windows and doors does apply, but the final back-stop is effective masonry sealing, especially in reveals of openings before joinery units are installed.

The mortar joints between concrete masonry units pose a particular weathertightness problem. As new mortar dries and shrinks, cracks develop between the mortar and the masonry units. Correct tooling of the mortar, which re-compacts the mortar after the masonry unit is laid, helps reduce the risk of cracking. This, plus a coating system that is correctly selected, applied and maintained, is especially important for ensuring weathertightness.

Therefore, the most effective means of weatherproofing concrete masonry will include combinations of:

1. building designs that deflect water away from the masonry, such as with eaves overhangs, upper floor overhangs, and rainscreens
2. details that deflect water away from critical joints, for example, flashings, drip edges and mouldings
3. good masonry design specification and construction
4. coating systems specifically formulated and applied to seal the surfaces of the masonry.

Building design

Buildings with good eaves all around will naturally be at less risk of leaking. Two principal 'drivers' for leaks are wind pressure and gravity. Reduce the water 'on top of a wall' through the use of eaves, and many leaks caused by gravity are eliminated. Reduce the amount of water running over the face of a wall or joint, and wind pressure can draw less water into the joint.

Horizontal surfaces, such as sills and horizontal ledges, should always be sloped to shed water, and drip edges should be formed at all overhang projections such as along window heads.

One particular problem is that tooled concave mortar joints can often provide water pathways past a joint. The use of sealants can have a limited (and short-term) effect, with the best solutions coming from flashings set into sealant in a rebated saw-cut.

Buildings with parapets (and associated box gutters) are more at risk of leaking because weather-tightness is more reliant on getting everything 'right' and it staying 'right'. They lack any of the 'forgiving' qualities that designs that shed water more easily provide.

Materials

The concrete masonry units, mortar, grout-mix, and workmanship are outlined in NZS 4210, Masonry Construction: Materials and Workmanship and NZS 4229 Concrete Masonry Buildings Not Requiring Specific Engineering Design. Following these Standards can provide a means of compliance with aspects of the Building Code and are a good prerequisite for effective weathertightness results. The quality of materials and work-manship, including recommendations such as filling all block cells, correct vibration, and using correctly formulated grout mix, will ensure greater stability of the wall on which the performance of water-resistant coatings depends.

Water-resistant coatings

It is important to choose a proprietary painting system designed for sealing concrete and concrete masonry. It is recommended that waterproof coatings applied directly onto concrete masonry are water-borne dispersion coatings giving 180 – 250 micron dry film thickness.

Coatings can also be in the form of coated cement or polymer-modified cement plaster, insulation material over-coated with polymer modified cement plaster, or applied waterproof membranes. Clear coatings are not generally recommended because of difficulties in achieving lasting weatherproofing performance.

An often-overlooked requirement is the sealing of hidden surfaces, such as reveals of windows and doors, or hidden wall surfaces immediately above eaves lines. While these surfaces may not be directly exposed, sealing them is important for the effectiveness of the waterproof joint. The sealing may only need to be the first one or two coatings of the coating system, depending on the coating manufacturer's recommendation.

The weatherproofing of concrete masonry is important for complying with Building Code Clause E2 External Moisture, which deals with the weathertightness of buildings. The Standards NZS 4229 and 4210 give guidance on how to achieve this. In addition, readers are referred to two other significant publications that deal specifically with the weathertightness of masonry. These are:

- *Concrete Masonry – a guide to Weathertight construction,* available free of charge from the New Zealand Concrete Masonry Association at **www.nzcma.org.nz**
- Weathertight Solutions – Volume 4, available through BRANZ at **www.branz.co.nz**

Determinations

DETERMINATION 2009/115

Dispute about a house built by one owner of a jointly owned block of Māori land

This determination arose from a dispute between the territorial authority (TA) and one owner ('the owner') of a block of Māori land. The land was jointly owned by a number of owners ('the shareholders').

The dispute was about the TA's:

- refusal to issue an amendment to a building consent
- inclusion of a condition of demolition in a notice to fix (NtF), and
- refusal to issue a certificate of acceptance (CoA).

The owner applied for the determination.

Background

The house is constructed on a site close to the sea. It is a single-storey detached house clad with a mix of vertical plywood sheets and horizontal steel corrugated iron with a steel and light timber frame. It has a relatively simple envelope shape. The pitched roof is of timber construction and steel tiles. There is a large verandah on the northern side and no eaves on the southern side.

The owner had not obtained the required building and resource consents before beginning construction of the dwelling. One of the shareholders complained to the TA that unconsented building work was being undertaken.

The TA visited and found a floor slab had been constructed and timber framing was being assembled. The owner was notified that no further work could be undertaken until a building consent had been issued. The TA visited the site again a month later and found that construction work had continued. As a result, a NtF was issued requiring that all work cease until the required consents had been issued. Applications for building and resource consents were subsequently made and, shortly after, the building consent was issued, subject to a certificate issued under section 37 of the Building Act, which stated that building work could not proceed until the resource consent was issued. The TA also obtained an injunction under section 381 of the Act that required building work to stop.

Investigations by the TA a year later revealed that all the building work had been completed, despite the injunction, and despite the lack of resource consent. The resource consent had not been issued because the owner had not obtained an occupation order from the Māori Land Court. The TA subsequently issued a second NtF that required the building to either be removed or demolished. The TA would not consider amending the building consent and would not consider the owner's application for a CoA, due to the fact that it had already issued a building consent for the building work.

Continued on page 14

Determinations continued

On-site inspection

An expert was engaged as a part of the determinations process to report on the condition and Building Code compliance of the building. The expert found that water ingress had caused the timber framing to decay. The expert outlined an extensive list of remedial work and that further investigation would be required if the building was to be brought into compliance with the Building Code.

The requirements of the NtF

The determination found that demolition may be a condition of a NtF. However, it considered that under the Building Act, demolition of building work which is neither dangerous or insanitary is a drastic step which should only be taken for compelling reasons.

The determination considered whether the demolition condition was appropriate for this NtF and found that it referred to the building work not being carried out in accordance with the consent and without a resource consent as being the contraventions of the Building Act. The determination took the view that a NtF was not the correct method to remedy a contravention of the Resource Management Act. The determination took the view that, while the building work appeared to be unlawful, the breaches at the time the NtF was issued did not constitute compelling reasons for requiring the building to be removed or demolished.

The issuing of the building consent and the refusal to issue a CoA

In order to consider the decisions concerning the refusal to issue a building consent amendment and refusal to issue a certificate of acceptance, the determination considered whether the TA correctly issued the building consent.

The issuing of a building consent is a statutory decision authorising building work to be undertaken. The determination considered that:

(a) the decision was not correct, in that the TA did not have reasonable grounds to be satisfied the provisions of the Building Code would be met
(b) the decision was not relied upon by a person undertaking building work, and
(c) there were compelling reasons to reverse the decision.

The determination found that the TA did not issue the consent correctly because the foundations and most of the external framing had been completed with no inspections undertaken to check the compliance of this work. The TA had also not checked the compliance of the work already undertaken against the plans and specifications. If it had, significant discrepancies would have been apparent.

The determination found that in undertaking building work, the owner had not relied on the decision to issue a building consent. A two-storey dwelling was consented, but a single-storey dwelling was constructed, and the house was built closer to the mean high water springs mark than designated by the building consent.

Little regard was shown for the regulatory systems governing building work and, while considerable building work had been undertaken, this work was not undertaken in reliance on the statutory decision to issue the building consent.

The determination also found that it was unlikely that a code compliance certificate could ever be issued for the building work, with no inspections having taken place during construction. It was concluded that reversing the TA's decision to issue a building consent provided the most appropriate way to proceed.

Since the determination reversed the decision to issue a building consent, the TA's decision to refuse to amend the building consent did not need to be considered.

The determination found the TA correctly refused to issue a CoA because there was a building consent for the building work. However, given that the determination reversed the issue of the building consent, it would be possible to consider a CoA. The determination did acknowledge that as a substantial amount of the building work did not comply with the Building Code, a CoA would not be appropriate.

The Decision

The determination:

- confirmed the decision of the TA to refuse to issue a CoA
- reversed the decision of the TA to issue the building consent, and
- required that the NtF be modified to take into account the findings of the determination.

DETERMINATION 2009/113

Refusal to issue a certificate of acceptance for building work to a relocated house

This determination arose from a dispute between a territorial authority (TA) and a homeowner following the TA's refusal to issue a certificate of acceptance (CoA) relating to illegal building work carried out on a relocated house and garage, including an on-site effluent disposal system. The owners applied for a determination.

Background

The house is U-shaped and made up of a small, 1940s, relocated dwelling and two additions. The additions were built in the same style and used the same materials as the 1940s dwelling: light timber frames, new braced timber piles, weatherboard cladding, and a clay-tile hipped and gabled roof. The garage was a conversion of an existing shed.

In support of their application, the owner employed the services of a licensed building practitioner to prepare a report that assessed and described the house and garage, including foundations and decks. The report also included a review of the services. Accompanying this report was an engineering report on the on-site effluent disposal system. The licensed building practitioner submitted that the purpose of seeking the CoA was to record the existence of the unconsented work.

The TA submitted that it was unwilling to issue a CoA because it was unable to be satisfied that the foundations and effluent disposal system complied with the Building Code. Furthermore, the TA was unwilling to assume any liability for any problems that might arise from the work at a later date.

On-site assessment

An expert was engaged to visit the site to carry out a detailed assessment of the work carried out and provide an opinion as to compliance. The expert noted specific items of work that did not, in his opinion, meet the requirements of the Building Code.

Discussion

Section 96 of the Building Act provides that a TA may issue a CoA for building work already undertaken where a building consent was required, but not obtained. In such a situation, the TA may, on application, issue a CoA but only if it is satisfied, to the best of its knowledge and belief and on reasonable grounds, that as far as it could ascertain the building work complies with the Building Code. The effect of section 96(2) is to require TAs to consider all available evidence such as plans, owner's records, producer statements etc to ascertain whether or not the building work complies with the Building Code.

The description of the work covered by a CoA (Form 9 of the Building (Forms) Regulations 2004) could be:

- a description of the physical building work, or
- a description of the Building Code clauses the building work complies with, or
- a combination of both.

Where a CoA does not cover work that is the subject of the application, it is essential the certificate clearly sets out the nature and extent of the work that is not covered by the CoA to ensure the certificate is not misleading. This list of building work that is expressly excluded from the scope of a CoA could appear immediately after the list of work that complies with the Building Code.

Section 99(2) and Form 9 both provide for a CoA to attach a further list of the building work an authority has been able to inspect. The list of the building work inspected will generally be narrower than the description of work covered by the CoA. This is because the extent to which an authority has been able to 'inspect' work will usually be less than the extent to which an authority has been able to 'ascertain' whether building work complies with the Building Code. In ascertaining, the authority will take into account all the relevant evidence available, including its knowledge and belief of the circumstances surrounding the building work, the builders and designers who undertook the work, and statements of opinion provided such as producer statements.

Building work undertaken to an existing building without consent may also affect the extent to which the existing building complies with the provisions of the Building Code. In the case where the building work is an alteration to an existing building, the TA may wish to consider whether the building's existing performance has been adversely affected, and may wish to note this on the CoA.

It is also important that a TA keep in mind the possible application of the dangerous and insanitary building provisions of the Act to any building work that has been undertaken, but for which it has concluded that there are not reasonable grounds to ascertain compliance with the Building Code.

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The determination considered the building work using the following analysis.

- Building work which could be inspected and confirmed as Code compliant
- Building work which could be inspected, but which was not Code compliant
- Building work that could not be inspected and for which Code compliance could not be determined

Using this analysis, the determination considered the compliance of each element of the building work against the relevant Building Code clauses and concluded that a CoA could be issued in respect of those elements of the work that did comply with the Building Code. However, the determination found the CoA should specifically exclude those elements that did not comply with the Building Code.

The determination considered that a notice to fix should be issued for those building elements that did not comply with the Building Code. The determination did not consider any of the building work was either dangerous or insanitary.

The Decision

The determination reversed the decision of the TA to refuse to issue the certificate of acceptance.

These are summaries only. The full determinations (along with all other determinations issued) can be viewed on our website: www.dbh.govt.nz/determinations

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