

Determination 2007/17

Determination regarding a code compliance certificate for two buildings at 31 Abraham Heights, Nelson



1. The matters to be determined

- 1.1 This is a determination under Part 3 Subpart 1 of the Building Act 2004¹ (“the Act”) made under due authorisation by me, John Gardiner, Determinations Manager, Department of Building and Housing (“the Department”), for and on behalf of the Chief Executive of that Department. The applicants are the owners of two houses (“Unit 1” and “Unit 2”). The owners of Unit 2 are Mr Busch and Mrs Meikle (“the applicants”), the owners of Unit 1 are Mr Charleton and Ms Saunders (“the joint applicants”) and the other party is the Nelson City Council (“the territorial authority”).
- 1.2 The matter for determination is the territorial authority’s decision to refuse to issue a code compliance certificate for two 13-year-old houses because it was not satisfied that the buildings complied with clauses B2 “Durability” and E2 “External Moisture”

¹ The Building Act 2004 is available from the Department’s website at www.dbh.govt.nz.

of the Building Code² (First Schedule, Building Regulations 1992). As the territorial authority has raised the issue compliance with clause E2 of the Building Code, the Department commissioned an independent expert (“the expert”) to inspect the cladding.

- 1.3 The matters to be determined are whether:

Matter 1: the cladding

The cladding as installed to the walls of the buildings (“the cladding”), complies with the Building Code (see sections 177 and 188 of the Act). By “the cladding as installed” I mean the components of the system (such as the weatherboards, the flashings, the joints and the coatings) as well as the way the components have been installed and work together.

Matter 2: the durability considerations

The elements that make up the building work comply with clause B2, taking into account the age of the building.

- 1.4 In making my decision, I have considered the submissions of the parties, the report of the independent expert commissioned by the Department to advise on this dispute (“the expert”), and the other evidence in this matter. I have evaluated this information using a framework that I describe more fully in paragraph 6.1.
- 1.5 In this determination, unless otherwise stated, references to sections are to sections of the Act and references to clauses are to clauses of the Building Code.

2. The buildings

- 2.1 The building work consists of two small detached houses (“the units”) situated on a sloping south-facing site, which is in a high wind zone for the purposes of NZS 3604³. The units are very simple one-storey high buildings of similar design. Construction is conventional light timber frame, with timber pole foundations, aluminium windows, fibre-cement weatherboard cladding and 15° pitched roofs. Unit 1 has a pressed metal tile hipped roof, while Unit 2 has a profiled metal gable roof. Both units have roof projections of 600mm (excluding gutters and fascias).
- 2.2 Both units have small timber-framed decks with timber slat floors and open timber balustrades with diagonal infill members between the uprights and handrails. In Unit 2, the deck extends to the east from the living room and is supported on timber foundations. In Unit 1, the deck extends from the south elevation (supported by diagonal struts from the pole foundations) around the corner to a small access ramp on the east elevation. The balustrade to this deck has timber trellis applied over the original balustrade structure. An open car deck, with open timber balustrades and pole foundations, is sited on the west face of Unit 1.

² The Building Code is available from the Department’s website at www.dbh.govt.nz.

³ New Zealand Standard NZS 3604:1999 Timber Framed Buildings

- 2.3 I have received no written evidence as to the treatment, if any, of the external wall framing timber. However, given the date of construction in 1993, I accept that the external wall framing is likely to be boracic treated.
- 2.4 The walls of the house are clad with “Hardiplank” fibre-cement weatherboards fixed through the building wrap to the framing, with an acrylic paint finish applied over the boards and metal soaker flashings at corners and beneath joints in the boards.
- 2.5 I have received no copies of producer statements or warranties for the cladding.

3. Sequence of events

- 3.1 It appears that the territorial authority issued a building consent (which I have not seen) on 22 April 1993 for the construction of the two units, and undertook various inspections of both units during construction. The territorial authority’s inspection records are unclear as to the type of inspections undertaken.
- 3.2 The territorial authority carried out a final inspection on 12 October 1993, and the inspection record notes “Reinspection Required”. It appears that there were no further inspections until 7 March 2000, when a final inspection of Unit 1 was carried out.
- 3.3 Following the completion of outstanding items, the territorial authority issued an interim code compliance certificate, dated 15 December 2000, for Unit 1. The certificate notes “Final inspection undertaken on Unit 1 only”.
- 3.4 Following a request for a code compliance certificate for Unit 2, the territorial authority wrote to the applicants on 27 March 2006 explaining that the age of the house presented a problem with regard to the durability provisions of the building code and noting:
- As it is now approximately thirteen years since construction commenced, it would not be appropriate for this period to be added to the durability time frames identified in the New Zealand Building Code. Nelson City Council therefore cannot be satisfied on reasonable grounds that the work now meets all the requirements of the building code, especially B2 durability and E2 external moisture.
- 3.5 The territorial authority did not issue a notice to fix as required under section 164(2) of the Building Act 2004.
- 3.6 An application for a determination from the applicants (the owners of Unit 2) was received by the Department on 2 May 2006.
- 3.7 In a letter to the applicants dated 11 May 2006, the Department explained that (as the building consent was issued for both of the units) the code compliance certificate would need to include the two buildings, so the owners of Unit 1 would need to join the application. The application from the joint applicants (the owners of Unit 1) was subsequently received on 23 May 2006.

4. The submissions

4.1 Within the application, the applicants said:

Interim Code Compliance Cert. issued for House 1-31 Abraham Heights. (Final inspection carried out on unit 1 only. Can get no answers why inspection not carried out on unit 2, therefore allowing full CCC to be issued for both units.)

4.2 In a statement attached to their application, the joint applicants noted that, when purchasing Unit 1 in 2004, they had been informed that the property had a code compliance certificate. They had now discovered that this was only an interim certificate, and had been informed by the territorial authority that one code compliance certificate is required for both units. The joint applicants noted:

Nelson City Council state that it is thirteen years since construction commenced, so it is not appropriate to add this period to the durability time frame identified in the Building Code. However Unit 1 was inspected and found satisfactory only five and a half years ago in December 2000, so we fail to see why a second inspection after such a short period is still required.

4.3 The applicants forwarded copies of:

- the plans
- the interim code compliance certificate for Unit 1
- the letter dated 19 April 2006 from the territorial authority
- various other statements.

4.4 The territorial authority made no submission.

4.5 A copy of the applicants' submission was provided to the territorial authority, which made no submission in response.

4.6 The first draft determination was sent to the parties on 25 November 2006 and a second draft determination was issued on 5 December 2006: the second draft determination was issued to assist clarity. The drafts were issued for comment and for the parties to agree a date when all the building elements installed in the house, apart from items that have to be rectified, complied with the Clause B2 Durability.

4.7 All the parties accepted the draft determination and agreed that compliance with B2 Durability was achieved on 1 January 1995.

5. The expert's report

5.1 The expert inspected the claddings of the units on 27 June 2006, and furnished a report that was completed on 3 July 2006. The expert noted that the buildings generally appeared "to be sound and true and workmanship is generally of a good standard". However, the expert also noted that a lack of maintenance was apparent,

and some areas indicated that insufficient consideration had been given to flashings and details to prevent water entry at certain locations.

- 5.2 The expert noted that the windows installation appeared to be in accordance with the manufacturer's instructions at the time. The windows were face-fixed with head flashings that underlapped the weatherboards, no sill flashings and timber scribes at the jambs. I note that the manufacturer's instructions did not require sill flashings, but recommended them as "good trade practice".
- 5.3 The expert took non-invasive moisture readings through linings of exterior walls throughout the house, and no elevated readings were noted. Invasive moisture readings were taken through the wall cladding below the jamb of a window in both units and at two other risky areas in Unit 2; and no elevated readings were noted.
- 5.4 The expert made the following specific comments on the cladding:
- There are unsealed gaps at the window jamb scribes in some locations, and a scribe at the sliding door in Unit 2 is damaged.
 - The sealant used at the weatherboard joints is in poor condition.
 - There are some areas of minor damage and cracks to the weatherboards.
 - The paint to the weatherboards is in poor condition and appears to be original.
 - The bottom of the cladding is below the soil at the northeast corner of Unit 2.
 - The meterboxes are poorly sealed and lack top flashings.
 - The entry deck to Unit 1 butts against the cladding, with no drainage gap.
 - There is a build-up of debris in the gutters.
- 5.5 The expert also noted that 4.5mm fibre-cement sheet has been used at the gable ends of Unit 2 and beneath the car deck in Unit 1. While the manufacturer recommends this thickness only be used for soffit lining, these areas are not subject to mechanical damage and the thickness is therefore considered adequate.
- 5.6 The expert also made the following comments:
- There is no seismic restraint fitted to the hot water cylinder in Unit 2.
 - The balustrades were built in accordance with the consent drawings, but do not comply with the current requirements of clause F4 with regard to opening sizes and/or heights.
 - There are no smoke detectors in Unit 2.
- 5.7 The expert also noted that he had sighted a Producer Statement Construction Review dated 3 March 2000, completed by Page and Associates, Consulting Civil and Structural Engineers, in regard to the pole foundations.

5.8 On 7 July 2006 copies of the expert's report were provided to each of the parties.

Matter 1: The cladding

6. Evaluation for code compliance

6.1 Evaluation framework

6.1.1 In evaluating the design of a building and its construction, it is useful to make some comparisons with the relevant Acceptable Solution⁴, in this case E2/AS1, which will assist in determining whether the features of this house are code compliant.

However, in making this comparison, the following general observations are valid:

- Some Acceptable Solutions cover the worst case, so that they may be modified in less extreme cases and the resulting alternative solution will still comply with the Building Code.
- Usually, when there is non-compliance with one provision of an Acceptable Solution, it will be necessary to add some other provision to compensate for that in order to comply with the Building Code.

6.1.2 The approach in determining whether building work is weathertight and durable and is likely to remain so, is to apply the principles of weathertightness. This involves the examination of the design of the building, the surrounding environment, the design features that are intended to prevent the penetration of water, the cladding system, its installation, and the moisture tolerance of the external framing. The Department and its antecedent, the Building Industry Authority, have also described weathertightness risk factors in previous determinations⁵ (refer to Determination 2004/1 *et al*) relating to cladding and these factors are also used in the evaluation process.

6.1.3 The consequences of a building demonstrating a high weathertightness risk is that building solutions that comply with the Building Code will need to be more robust. Conversely, where there is a low weathertightness risk, the solutions may be less robust. In any event, there is a need for both the design of the cladding system and its installation to be carefully carried out.

6.2 Weathertightness risk

6.2.1 In relation to these characteristics I find that the units:

- are built in a high wind zone
- are a maximum of one storey high
- are very simple in plan and form

⁴ An Acceptable Solution is a prescriptive design solution approved by the Department that provides one way, but not the only way, of complying with the Building Code. The Acceptable Solutions are available from the Department's website at www.dbh.govt.nz.

⁵ Copies of all determinations issued by the Department can be obtained from the Department's website.

- have eaves and verge projections of more than 600mm above all walls
- have fibre-cement weatherboards which are fixed directly to the framing
- have external wall framing that is likely to be treated, so providing resistance to the onset of decay if the framing absorbs and retains moisture.

6.2.2 When evaluated using the E2/AS1 risk matrix, all elevations of the units demonstrate a low weathertightness risk. The matrix is an assessment tool that is intended to be used at the time of application for consent, before the building work has begun and, consequently, before any assessment of the quality of the building work can be made. Poorly executed building work introduces a risk that cannot be taken into account in the consent stage but must be taken into account when the building as actually built is assessed for the purposes of issuing a code compliance certificate.

6.2.3 I note that E2/AS1 does not require the provision of a drained cavity for the fibre-cement weatherboard wall cladding installed to the walls of these houses.

6.3 Weathertightness performance

6.3.1 Generally the cladding appears to have been installed in accordance with reasonable trade practice. However, I accept the expert's opinion that remedial work is necessary in respect of the following:

- unsealed window jamb scribes
- poorly sealed weatherboard joints
- minor damage and cracks to the weatherboards in some locations
- poor condition of the paint coating to the weatherboards
- lack of cladding clearance at the northeast corner of Unit 2
- inadequate weatherproofing of the meterboxes
- lack of a drainage gap at the entry deck to Unit 1
- debris build-up in gutters.
- any other building elements associated with the above that are consequently discovered to be in need of rectification.

6.3.2 I note the expert's comment in paragraph 5.5 on the fibre-cement sheet thickness, and accept that the locations where it is used are not subject to mechanical damage. I therefore consider that the sheet thickness is adequate in the circumstances.

6.3.3 I also note the expert's additional comments in paragraph 5.6 and, although not all those items were code requirements at the time of construction, I recommend that these defects be remedied in accordance with the current requirements of the building code.

7. Discussion

- 7.1 I am satisfied that the current performance of the cladding is adequate because it is preventing water penetration into the buildings at present. Consequently, I am satisfied that the buildings comply with clause E2 of the Building Code.
- 7.2 In addition, the buildings are also required to comply with the durability requirements of clause B2. Clause B2 requires that a building continues to satisfy all the objectives of the Building Code throughout its effective life, and that includes the requirement for the house to remain weathertight. Because the cladding faults on the buildings are likely to allow the ingress of moisture in the future, the units do not comply with the durability requirements of clause B2.
- 7.3 Subject to further investigations that may identify other associated faults, I consider that, because the faults that have been identified with the cladding system occur in discrete areas, I am able to conclude that satisfactory rectification of the items outlined in paragraph 6.3.1 should be expected to result in the buildings remaining weathertight and in compliance with clauses B2 and E2.
- 7.4 I note that these units have not been well maintained.
- 7.5 Effective maintenance of claddings is important to ensure ongoing compliance with clauses B2 and E2 of the Building Code and is the responsibility of the building owners. Clause B2.3.1 of the Building Code requires that the cladding be subject to "normal maintenance", however that term is not defined in the Act.
- 7.6 I take the view that normal maintenance is that work generally recognised as necessary to achieve the expected durability for a given building element. With respect to the cladding, the extent and nature of the maintenance will depend on the material, or system, its geographical location and level of exposure. Following regular inspection, normal maintenance tasks should include but not be limited to:
- where applicable, following manufacturers' maintenance recommendations
 - washing down surfaces, particularly those subject to wind-driven salt spray
 - re-coating protective finishes
 - replacing sealants, seals and gaskets in joints.

Matter 2: The durability considerations

8 Discussion

- 8.1 The territorial authority has concerns about the durability, and hence the compliance with the building code, of certain elements of the building, taking into consideration the completion of the building in 1993. I also note that the territorial authority's inspection records indicate compliance with clause B2 at the time of those inspections.

- 8.2 The buildings were substantially completed by late 1993 and were both subject to a final inspection on 12 October 1993 by the territorial authority. A further final inspection was carried out by the territorial authority on Unit 1 only, prior to the issue of the interim code compliance certificate for that building on 15 December 2000.
- 8.3 The relevant provision of clause B2 of the Building Code recognises that building elements must, with only normal maintenance, continue to satisfy the performance requirements of the Building Code for certain periods (“durability periods”) “from the time of issue of the applicable code compliance certificate” (clause B2.3.1).
- 8.4 These durability periods are:
- 5 years if the building elements are easy to access and replace, and failure of those elements would be easily detected during the normal use of the building
 - 15 years if building elements are moderately difficult to access or replace, or failure of those elements would go undetected during normal use of the building, but would be easily detected during normal maintenance
 - the life of the building, being not less than 50 years, if the building elements provide structural stability to the building, or are difficult to access or replace, or failure of those elements would go undetected during both normal use and maintenance.
- 8.5 It is not disputed, and I am therefore satisfied that all the building elements installed in the house, apart from items that have to be rectified as described in paragraph 6.3.1, complied with clause B2 on 1 January 1995. This date has been confirmed by the applicants and the territorial authority, refer paragraph 4.7.
- 8.6 In order to address these durability issues, I sought some clarification of general legal advice about waivers and modifications I have now received that clarification and the legal framework and procedures based on this clarification are described in previous determinations (refer to Determination 2006/85) and are used to evaluate the durability issues raised in this determination.
- 8.7 I continue to hold the views expressed in the previous related determinations, and therefore conclude that:
- (a) The territorial authority has the power to grant an appropriate modification of clause B2 in respect of all of the elements of the building if the applicant applies for such a modification.
 - (b) It is reasonable to grant such a modification, with appropriate notification, because in practical terms the building is no different from what it would have been if a code compliance certificate had been issued in 1995.
- 8.8 I strongly recommend that the territorial authority record this determination and any modification resulting there from, on the property file and also on any LIM issued concerning this property.

9 The decision

9.1 In accordance with section 188 of the Building Act 2004, I hereby determine that the cladding on the building does not comply with clause B2 of the Building Code, and accordingly confirm the territorial authority's decision to refuse to issue a code compliance certificate.

9.2 I also determine that:

(a) all the building elements installed in the house, apart from the items that are to be rectified, complied with clause B2, 1 January 1995.

(b) the building consent is hereby modified as follows:

The building consent is subject to a modification to the Building Code to the effect that, clause B2.3.1 applies from 1 January 1995 instead of from the time of issue of the code compliance certificate for all building elements provided that this modification does not apply to the elements that have been altered or modified as set out in set out in paragraph 6.3.1 of Determination 2007/17.

(c) once the defects set out in paragraph 6.3.1 of this determination have been fixed to its satisfaction, the territorial authority is to issue a code compliance certificate in respect of the building consent as amended.

9.3 I note that the territorial authority has not issued a notice to fix as required by section 435. A notice to fix should be issued that requires the applicants to bring the building into compliance with the Building Code, identifying the defects listed in paragraph 6.3.1, but not specifying how those defects are to be fixed. That is a matter for the applicants to propose and for the territorial to accept or reject. It is important to note that the Building Code allows for more than one method of achieving compliance.

9.4 I would suggest that the parties adopt the following process to meet the requirements of paragraph 9.3. Initially, the territorial authority should issue the new notice to fix, listing all the items that the territorial authority considers to be non-compliant. The owner should then produce a response to this in the form of a detailed proposal, produced in conjunction with a competent and suitably qualified person, as to the rectification or otherwise of the specified issues. Any outstanding items of disagreement can then be referred to the Chief Executive for a further binding determination.

Signed for and on behalf of the Chief Executive of the Department of Building and Housing on 14 February 2007.

John Gardiner
Determinations Manager