

## Determination 2008/77

### Refusal to issue a code compliance certificate for 13-year-old alterations to a house with fibre-cement weatherboard cladding at 118 Amanda Avenue, Hamilton



#### 1. The matter to be determined

- 1.1 This is a determination under Part 3 Subpart 1 of the Building Act 2004<sup>1</sup> (“the Act”) made under due authorisation by me, John Gardiner, Manager Determinations, Department of Building and Housing (“the Department”), for and on behalf of the Chief Executive of that Department. The applicant is the owner M Toomey (“the applicant”), and the other party is the Hamilton City Council (“the authority”) carrying out its duties and functions as a territorial authority or building consent authority.
- 1.2 This determination arises from the decision of the authority to refuse to issue a code compliance certificate for 13-year-old alterations and additions (“the alterations”) to a house because it is not satisfied that the building work complies with Clauses B2 and E2 of the Building Code<sup>2</sup> (Schedule 1, Building Regulations 1992).

<sup>1</sup> The Building Act 2004 is available from the Department’s website at [www.dbh.govt.nz](http://www.dbh.govt.nz).

<sup>2</sup> The Building Code is available from the Department’s website at [www.dbh.govt.nz](http://www.dbh.govt.nz).

1.3 The matters for determination are:

**1.3.1 Matter 1: The cladding**

Whether the cladding as installed on the alterations (“the cladding”) comply with Clause B2 Durability and Clause E2 External Moisture of the Building Code. By “the cladding as installed” I mean the components of the system (such as the weatherboards, the flashings, and the joints) as well as the way the components have been installed and work together.

**1.3.2 Matter 2: The durability considerations**

Whether the building elements that make up the alterations comply with Clause B2 Durability, taking into account the age of the alterations.

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 building**

2.1 The building work consists of extensive alterations and additions to an existing detached house situated on a sloping site which is in a low wind zone for the purposes of NZS 3604<sup>3</sup>. The original simple single-storey house was built in 1980 and had light timber framing, suspended timber-framed floors, fibre-cement weatherboard cladding, aluminium windows and a 13° pitch corrugated steel gable roof.

### **2.2 The alterations**

2.2.1 The 1995 alterations consist of a large basement level to the north and a new garage to the south, which has resulted in 3 levels within the house – the original level, the lower level and the garage. The construction is conventional light timber frame, with aluminium windows and claddings to match the original house.

2.2.2 The lower level has a suspended timber-framed floor, and is set within the slope of the site at the northern end of the building with concrete block retaining walls at the south. The lower floor extends beyond the original upper level, and includes a large decked area, with timber slats and open timber balustrades, which wraps around the three sides.

2.2.3 The new garage extends into the original house area, replacing a bedroom and the original bathroom and laundry. The garage has concrete block foundations, and the concrete slab is about 700mm below the original floor level.

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<sup>3</sup> New Zealand Standard NZS 3604:1999 Timber Framed Buildings

- 2.2.4 The lower level accommodates the kitchen and living areas, with the original kitchen and dining areas converted to a bedroom and bathroom to replace that lost by the garage addition.
- 2.3 The wall cladding is fibre-cement weatherboards, with timber scribes at corners and window jambs. The imitation “rough-sawn” surface of the weatherboards has been finished with a wood-coloured polyurethane coating.
- 2.4 The expert has noted that he was unable to confirm whether the wall framing is treated. Given the date of construction and the lack of other evidence, I consider that the external wall framing is unlikely to be treated.

### **3. Background**

- 3.1 The authority issued a building consent (No. 95/0054) for the alterations, and carried out various inspections during construction, including a pre-line inspection on 12 May 1995 and a plumbing inspection on 16 June 1995.
- 3.2 The alterations appear to have been substantially completed during 1995, although a final inspection was not carried out until 3 September 1999.
- 3.3 In a letter to the original owner dated 19 October 1999, the authority noted that fixings were required to the terminal vent pipes and the waste pipes to the gully trap required sealing. The authority asked to be informed when the work was complete so that an inspection could be carried out and a code compliance certificate issued if the work was satisfactory.
- 3.4 No final inspection was requested, and the authority wrote again to the original owner on 28 October 2005 asking for information on progress on the outstanding work. By that time the applicants had purchased the property, and a final inspection was requested.
- 3.5 The authority inspected the building work on 11 November 2005, and the inspection record notes the following outstanding items:
- 1) Strap all soil and stormwater pipes under house. At present they are wired.
  - 2) Add clips to downpipe outside kitchen area and lounge area.
  - 3) No clips on vent pipe front entrance.
- 3.6 It appears that the authority was not called to inspect completion of the above items, as a “General memo” signed and dated 28 August 2006 included the following note:
- Have outstanding plumbing issues as per memo dated 11/11/2005. No response and due to age of project we have not issued a Code Compliance Certificate.
- 3.7 I am not aware of any further correspondence between the applicant and the authority, but it appears that the authority continued to refuse to issue a code compliance certificate as the Department received an application for a determination on 11 June 2008.

## 4. The submissions

- 4.1 In a letter to the Department dated 5 June 2008 accompanying the application, the applicant outlined the history of the project. The applicant noted that the outstanding plumbing work identified in the final inspection had been completed, but during the completion of the work “the Code of Compliance period expired”. The applicant explained that he now wished to sell the property and wanted a code compliance certificate “effective from the date of building (1995)”.
- 4.2 The applicant forwarded copies of:
- the consent drawings and specification
  - the consent documentation
  - the authority’s inspection summary
  - the authority’s general memo dated 28 August 2006
  - photographs of the completed plumbing items.
- 4.3 As the authority made no submission, the Department sought additional information on whether the matter to be determined was restricted to the age of the building work. The authority verbally advised that it was also concerned about Clause E2 and B2 aspects relating to the claddings (refer paragraph 1.3.1).
- 4.4 The draft determination was sent to the parties on 19 July 2008. The draft was issued for comment and to agree a date when the building complied with Building Code Clause B2 Durability. Both parties agreed that compliance with Clause B2 was achieved in September 1995 and I have therefore used the agreed date of 1 September 1995.

## 5. The expert’s report

- 5.1 As discussed in paragraph 1.4, I engaged an independent expert to provide an assessment of the condition of those building elements subject to the determination. The expert is a member of the New Zealand Institute of Building Surveyors. The expert inspected the house on 24 June 2008 and furnished a report that was completed on 9 July 2008.
- 5.2 The expert examined authority records, and noted that “inspectors had recorded passes for all the usual inspections”. The expert noted that the outstanding plumbing work identified in the final inspection appeared to have been attended to. On inspecting the cladding, he noted no significant variations from the consent drawings.
- 5.3 The expert noted the construction was generally of good quality with the cladding “finished to a good standard”. The expert added:
- The overall appearance is that this is a good quality home which has been well finished, but could do with some maintenance, particularly of the exterior cladding. It has had those minor problems that homes experience over the years, but these are isolated rather than systemic.

- 5.4 The expert noted that the roof addition was fairly simple and appeared to “have been executed in a tradesman-like manner”, with no high risk roof to wall junctions. The expert also noted that no obvious defects in gutters and downpipes were apparent.
- 5.5 The expert noted that the windows and doors appeared satisfactory, with metal head flashings largely protected by soffits and “typical” timber scribes used at the jambs.
- 5.6 The expert inspected the interior of the house, taking non-invasive moisture readings, and no evidence of moisture was detected. The expert also noted that inspection of the carpet fixings at the exterior walls indicated no moisture problems.
- 5.7 The expert also carried out thermal imaging of the external walls, which indicated that there was no moisture intrusion in any area. Due to the lack of evidence of moisture penetration, the nature of the construction materials and the lack of high risk features, the expert did not consider it necessary to carry out invasive moisture testing.
- 5.8 The expert noted that the fibre-cement weatherboards and timber battens required recoating, along with several areas requiring attention to sealants. Bark touching the cladding beside the garage side door was removed by the owner when it was pointed out. The expert regarded the various problems observed as being maintenance matters, as there was no sign of associated moisture penetration.
- 5.9 The expert concluded that the additions appeared “to meet the performance requirements of both B2 and E2”, providing the garden soil and bark were kept away from the boards on the side wall of the garage.
- 5.10 A copy of the expert’s report was provided to each of the parties on 11 July 2008.

## **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 Solutions<sup>4</sup>, 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 are written conservatively to 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 one or more other provisions 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

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<sup>4</sup> 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](http://www.dbh.govt.nz).

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 determinations<sup>5</sup> (for example, Determination 2004/1) 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 these alterations:

- are built in a low wind zone
- are to a fairly simple, single-storey building
- have 600mm eaves and verge projections above most walls
- have a ground floor timber slat deck with open timber balustrades
- have fibre-cement weatherboards fixed directly to the framing
- have external wall framing that may not be treated to a level that provides resistance to the onset of decay if the framing absorbs and retains moisture.

- 6.2.2 The alterations have been evaluated using the E2/AS1 risk matrix. The risk matrix allows the summing of a range of design and location factors applying to a specific building design. The resulting level of risk can range from 'low' to 'very high'. The risk level is applied to determine what cladding can be used on a building in order to comply with E2/AS1. Higher levels of risk will require more rigorous weatherproof detailing; for example, a high risk level is likely to require a particular type of cladding to be installed over a drained cavity.

- 6.2.3 When evaluated using the E2/AS1 risk matrix, the weathertightness features outlined in paragraph 6.2.1 show that all elevations of the alteration work demonstrate a low weathertightness risk rating, and would not require a drained cavity to comply with the current requirements of E2/AS1.

## Matter 1: The cladding

### 7. Discussion

- 7.1 As noted in paragraph 4.3 the authority made no submission in response to the application and made only a limited response to the Department's request for additional information about the matters to be determined. In my view the authority should have taken a more active role in articulating why it would not issue the code

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

compliance certificate. I note that under the Building Amendment Act 2008, it would be required to do this. In addition, and in respect of matters related to the cladding at least, I believe the authority was capable of making a decision as to code compliance without the need to refer the matter to the Department.

- 7.2 I consider the expert's report establishes that the cladding has been installed according to good trade practice and that there is no evidence of external moisture entering the building. Accordingly, I accept that the cladding installed on the alterations to this house complies with Clauses B2 and E2.
- 7.3 I note that the expert has identified various areas where maintenance is required, and I draw these to the applicant's attention. Effective maintenance of cladding is important to ensure ongoing compliance with Clauses B2 and E2 of the Building Code and is the responsibility of the building owner. The Department has previously described these maintenance requirements, including examples where the external wall framing of the building may not be treated to a level that will resist the onset of decay if it gets wet (for example, Determination 2007/60).

## **Matter 2: The durability considerations**

### **8. Discussion**

- 8.1 There are concerns about the durability, and hence the compliance with the building code, of the building elements of the alterations taking into consideration the age of the building work completed in 1995.
- 8.2 The relevant provision of Clause B2 of the Building Code requires 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).
- 8.3 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.
- 8.4 The 12-year delay between the substantial completion of the alterations consented in 1995 and the applicant's request for a code compliance certificate raises the matter of when the building elements in the alterations complied with Clause B2. I have not been provided with any evidence that the authority did not accept that those elements complied with Clause B2 at a date in 1995.

- 8.5 It is not disputed, and I am therefore satisfied, that all the building elements complied with Clause B2 on 1 September 1995. This date has been agreed between the parties, refer paragraph 4.4.
- 8.6 In order to address these durability issues when they were raised in previous determinations, I sought and received clarification of general legal advice about waivers and modifications. That clarification, and the legal framework and procedures based on the clarification, is described in previous determinations (for example, Determination 2006/85). I have used that advice to evaluate the durability issues raised in this determination.
- 8.7 I continue to hold that view, and therefore conclude that:
- (a) the authority has the power to grant an appropriate modification of Clause B2 in respect of all the building elements.
  - (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 for the alterations had been issued in 1995.
- 8.8 I strongly recommend that the authority record this determination and any modifications resulting from it, 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 additions to this house comply with Clauses E2 and B2 of the Building Code, and accordingly reverse the 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 alterations complied with Clause B2 on 1 September 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 September 1995 instead of from the time of issue of the code compliance certificate for all building elements contained in the alterations as described in Determination 2008/77.
  - (c) the authority is to issue a code compliance certificate in respect of the building consent as amended.

Signed for and on behalf of the Chief Executive of the Department of Building and Housing on 14 August 2008.

John Gardiner  
**Manager Determinations**