



## Determination 2012/055

### Regarding the refusal to issue a code compliance certificate for an 11-year-old house with monolithic cladding at 61B Oceanbeach Road, Mount Maunganui, Tauranga



#### 1. The matters 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, Ministry of Business, Innovation and Employment (“the Ministry”<sup>2</sup>), for and on behalf of the Chief Executive of the Ministry.

1.2 The parties to the determination are:

- the building owner, L Gage-Brown (“the applicant”) acting through the builder of the house (“the builder”)
- Tauranga City Council (“the authority”), carrying out its duties as a territorial authority or building consent authority.

1.3 This determination arises from the decision of the authority to refuse to issue a code compliance certificate for an 11-year-old house, because it is not satisfied that the building work complies with certain clauses<sup>3</sup> of the Building Code (First Schedule, Building Regulations 1992). Concerns about compliance of the house relate to its age and to the weathertightness of its claddings (see paragraph 4.2).

<sup>1</sup> The Building Act, Building Code, compliance documents, past determinations and guidance documents issued by the Ministry are all available at [www.dbh.govt.nz](http://www.dbh.govt.nz) or by contacting the Ministry on 0800 242 243.

<sup>2</sup> After the application was made, and before the determination was completed, the Department of Building and Housing was transitioned into the Ministry of Business, Innovation and Employment. The term “the Ministry” is used for both.

<sup>3</sup> 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.

1.4 The matter to be determined<sup>4</sup> is therefore whether the authority was correct to refuse to issue a code compliance certificate. In deciding this, I must consider:

**1.4.1 Matter 1: The external envelope**

Whether the external building envelope of the house complies with Clause B2 Durability and Clause E2 External Moisture of the Building Code. The building envelope includes the components of the systems (such as the monolithic cladding, the windows, the roof claddings and the flashings), as well as the way the components have been installed and work together. (I consider this in paragraph 6.)

**1.4.2 Matter 2: The durability considerations**

Whether the building elements comply with Clause B2 Durability of the Building Code, taking into account the age of the house. (I consider this in paragraph 7.)

**1.5 Matters outside this determination**

1.5.1 I note that all inspections during the construction of this house were undertaken by a building certifier approved under section 53 of the Building Act 1991. During 2003 the scope of approval for building certifiers was amended to exclude claddings outside E2/AS1 and the project was therefore passed to the authority for completion of cladding inspections.

1.5.2 The building certifier ceased operating as a building certifier in 2005, but continued operating under another name as the authority's agent to provide inspection services for the authority ("the authority's contractor") until September 2010<sup>5</sup>. The authority has not raised any concerns about other elements of the construction and this determination is therefore restricted to the matters described in paragraph 1.4.

1.6 In making my decisions, I have considered the applicant's submission, the report of the expert commissioned by the Ministry 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.

**2. The building work**

2.1 The building work consists of a two-storey detached house situated on an excavated building platform in an exposed coastal site in a high wind zone for the purposes of NZS 3604<sup>6</sup>. The original long narrow site slopes down towards the beachfront and was subdivided to provide three individual lots, with this house occupying the mid-section. The expert has taken the garage doors as south-facing, and this determination follows that convention. The house is fairly complex in plan and form and is assessed as having a high weathertightness risk.

2.2 Construction is generally conventional light timber frame, with concrete foundations and floor slab, monolithic wall cladding and aluminium windows. Flat membrane roofing is bordered with parapet bands that project 200mm. At the lower level, 30° pitched asphalt shingle lean-to roofs overhang most walls by more than 600mm.

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<sup>4</sup> Under section 177(1)(b) and 177(2)(d) of the Act

<sup>5</sup> On 1 September 2010, the authority purchased the assets and systems of Bay Inspections and now undertakes all inspections.

<sup>6</sup> New Zealand Standard NZS 3604:1999 Timber Framed Buildings

- 2.3 The monolithic wall cladding is EIFS<sup>7</sup>, which consists of 60mm polystyrene backing sheets fixed directly to the framing over the building wrap, to which a mesh-reinforced textured plaster system has been applied. Although the expert was unable to identify the particular proprietary product used for this house, the system includes purpose-made flashings to windows, edges and other junctions.
- 2.4 Two tiled decks, supported on EIFS-clad timber columns, extend from the upper level living areas and the master bedroom. The drawings show the deck membrane applied over a plywood substrate and timber framing, with the deck floors sloping towards internal gutters at the outer edge. The EIFS-clad balustrades have retro-fitted butyl rubber membrane cappings, with the textured coating extended over the membrane and metal handrails side-fixed into the framing.
- 2.5 The specification called for the framing to be boron-treated radiata pine or similar and the builder advised the expert that framing was Douglas fir. Given the lack of evidence and the date of framing installation in 2001, I consider that the wall framing of this house is not treated.

### **3. Background**

- 3.1 The authority issued a building consent for the house (No. 4068) to the applicant on 28 December 2000 under the Building Act 1991, based on a building certificate issued by the building certifier on 22 December 2000.
- 3.2 The building certifier carried out ten inspections during construction, including pre-line building inspections in May 2001. The last inspection recorded was for drainage on 3 July 2001. Producer statements indicate that the house was substantially completed by the end of August 2001. According to the builder, a final inspection was carried out during 2001, but there is no record of this inspection.
- 3.3 The building certifier's approval as a building certifier expired during 2005 and the company became the authority's contractor. In 2006, the authority's contractor issued a pro-forma notice, notifying the applicant that the building certifier was no longer in business and final inspections were therefore required for the house.
- 3.4 Final inspections were carried out on 11 October 2006, which identified some outstanding documentation and other items, including 'metal capping to parapet'. According to the builder, the work was completed and documentation was supplied but no re-inspection was carried out.
- 3.5 I have seen no record of further correspondence between the parties until the builder contacted the authority in 2011 and was apparently 'told by the council to apply for a determination'.
- 3.6 The Ministry received an application for a determination on 28 November 2011 and sought clarification on the matter to be determined. The application was accepted on 27 April 2012 and the Ministry advised the builder to seek another final inspection to clarify the current performance of the building.

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<sup>7</sup> Exterior Insulation and Finish System

3.7 Following further correspondence, the authority inspected the house with the builder on 1 June 2012. An internal email dated 11 June 2012 confirmed the site visit 'to assess the building regarding weathertightness issues' and noted:

...the following areas of concern:

1. The builder has direct fixed the EIFS cladding. It appears that it has been well maintained, however the builder confirmed that some years after construction he returned to the address and installed a cap flashing on the parapet. He also reconfigured the enclosed deck balustrade by installing a membrane over the top and sloping the top of the balustrade. It is unclear what precipitated this but it is concerning that the building had flat uncapped parapets and a flat balustrade with the handrail fixed through the top surface.
2. [The builder] had a non invasive moisture [meter] on site and we found areas in the upper soffit where readings were off the scale (>32%). The downpipes discharge into the soffits and it appears that the dropper system used is creating the problem.
3. Some windows have arched tops. There was no evidence to suggest that they are leaking, however this is a design feature that we have had problems with in the past.

On the basis of the above I believe that there is enough evidence to justify the decision not to issue the [code compliance certificate] on the basis that the building does not comply with NZBC B2 (Durability) and E2 (External Moisture).

## 4. The submissions

4.1 The builder initially made no submission, but subsequently clarified the background in an email to the Ministry dated 25 April 2012. The builder provided copies of:

- the pro-forma notice from the authority
- the final inspection record dated 11 October 2006
- various producer statements and certificates.

4.2 In a letter to the Ministry dated 1 May 2012, the authority outlined the background to the situation, noting 'failed' final inspections in 2006 and the lack of further requests to visit the site. On 11 June 2012, the authority forwarded the record of the site visit outlined in paragraph 3.7 and asked the Ministry to treat that email as the authority's response to the application for determination.

4.3 The authority forwarded a CD-Rom which contained documents pertinent to this determination including:

- the building consent and the building certificate
- drawings and specifications
- the inspection summary.

4.4 A draft determination was issued to the parties on 26 July 2012. The draft was issued for comment and for the parties to agree a date when the house complied with Building Code Clause B2 Durability.

4.5 The authority accepted the draft without further comment on 31 July 2012. Both parties agreed that compliance with Clause B2 was achieved on 11 October 2006.

- 4.6 In an email to the Ministry dated 7 August 2012, the builder stated that the items identified in the expert's report and in paragraph 6.3.1 of the draft determination were 'minor and can be easily rectified, therefore making the house eligible for a [code compliance certificate]'.
- 4.7 In response to the builder's submission; I agree that the items to be rectified are relatively minor in nature. Satisfactory rectification should result in the claddings being brought into compliance with the Building Code (see paragraph 6.5), and when the authority is satisfied as to compliance, a code compliance certificate will be able to be issued.

## **5. The expert's report**

- 5.1 As mentioned in paragraph 1.6, I engaged an independent expert to assist me. The expert is a member of the New Zealand Institute of Building Surveyors and inspected the house on 28 June 2012; providing a report dated 10 July 2012.

### **5.2 General**

- 5.2.1 The expert described the overall standard of workmanship as 'very good', with the wall cladding 'in very good condition, well fixed and aligned'. The expert also noted that flashings appeared satisfactory and 'generally tidy and effective', with apron flashing junctions 'very well executed' to guide water into gutters.
- 5.2.2 The expert observed that windows and doors were recessed by the thickness of the EIFS, with metal head flashings installed. At windows, uPVC sill flashings were visible, with a drainage gap under sill flanges and plastered sill reveals sloped at about 17°. The expert could observe uPVC jamb flashings below the doors and considered that joinery installation appeared satisfactory, with no evidence that any sill/jamb junctions have failed to remain weathertight.

### **5.3 The roof and parapets**

- 5.3.1 The expert noted that the torch-on roof membrane was in good condition, with sufficient fall to internal gutters at the perimeter and overflow outlets through the parapets provided. Gutters fall towards outlets, which drain into downpipes that are concealed within the parapet bands and are exposed below the bands.
- 5.3.2 The expert noted that cap flashings appeared satisfactory and included a 5° slope to the tops. The roof membrane had originally been taken over the top of sloped and EIFS-clad parapets. Although there was apparently no failure of the parapet tops, metal cappings were installed in 2008 to provide added protection.

### **5.4 The decks and clad balustrades**

- 5.4.1 The expert noted that deck tiles were laid over what appeared to be a butyl rubber membrane. Deck floors slope towards membrane-lined perimeter internal gutters, with satisfactory overflow outlets provided. Although cladding and floor clearances at the decks are below current expectation, deck floors are well drained, with no debris accumulating below the cladding and no evidence of moisture problems.

5.4.2 The original balustrades had included a flat EIFS top, with handrails fixed through the tops. In 2008, balustrade tops were reformed to provide a 25° slope and butyl rubber cappings were installed to provide additional protection; with coating applied over the membrane. Handrails were also re-fixed to the side of the balustrades.

## 5.5 Moisture levels

5.5.1 The expert inspected the interior of the house and took non-invasive moisture readings; noting no evidence of moisture penetration internally.

5.5.2 On the exterior, the expert noted high non-invasive readings on the underside of the parapet band soffits, where similar high readings had been observed by the builder during the inspection with the authority on 1 June 2012 (see paragraph 3.7). However, invasive moisture readings in the same locations were low and the timber felt solid when prongs were inserted. The expert concluded that the former and current non-invasive readings were unreliable (see paragraph 6.3.2).

5.5.3 The expert took invasive moisture readings through the wall cladding into the framing at 30 locations considered to be at particular risk of moisture penetration. Readings varied from 11% to 16%, and the expert concluded that no moisture was entering the structure. The expert also observed that drillings appeared sound and the timber felt solid when inserting prongs, concluding that there was no indication that any water has entered the structure and caused timber damage in the past.

5.6 Commenting specifically on the external envelope of the house, the expert noted that:

- the clearance from the bottom of the cladding to bedroom 3 is insufficient
- there is a hairline crack at the balustrade/wall junction on the east elevation
- TV aerial fixings to the roof rely on sealants only for weathertightness
- there are no spreaders to downpipes discharging onto lower lean-to roofs.

5.7 A copy of the expert's report was provided to the parties on 24 July 2012.

## Matter 1: The cladding

### 6. Weathertightness

6.1 The evaluation of building work for compliance with the Building Code and the risk factors considered in regards to weathertightness have been described in numerous previous determinations (for example, Determination 2004/1).

#### 6.2 Weathertightness risk

6.2.1 The house has the following environmental and design features:

##### Increasing risk

- the two-storey house is in a high wind zone
- the house is complex in form, with roof parapets and other complex junctions
- there are two upper level decks, with tiled floors and EIFS-clad balustrades

- there are limited overhangs to shelter the upper wall cladding
- the EIFS cladding is fixed directly to the framing
- the external wall framing may not be treated to a level that provides resistance to decay if it absorbs and retains moisture.

#### **Decreasing risk**

- there are generous overhangs to shelter most of the lower wall cladding.

6.2.2 When evaluated using the E2/AS1 risk matrix, these features show that the elevations of the house demonstrate a high weathertightness risk rating. I note that, if the details shown in the current E2/AS1 were adopted to show code compliance, EIFS cladding would require a drained cavity at all risk levels. However, I also note that a drained cavity was not a requirement at the time of construction.

### **6.3 Weathertightness performance**

6.3.1 Taking account of the expert's comments in paragraph 5.6, I conclude that some minor remedial work is necessary in respect of the following areas:

- inadequate clearance from the cladding to the ground outside bedroom 3
- the hairline crack to the balustrade/wall junction on the east elevation
- inadequate sealing of TV aerial fixings to the roof
- the lack of spreaders to downpipes discharging onto lower lean-to roofs.

6.3.2 I note the authority's concern about the high non-invasive moisture readings at the parapet band soffits observed by the builder during the inspection on 1 June 2012 (see paragraphs 3.7 and 4.2). However, the expert's moisture testing as outlined in paragraph 5.5.2 has satisfied me that interference of metal around gutter outlets is causing false moisture meter readings at locations close to gutter outlets.

6.3.3 I also note the authority's concern about the possibility of moisture penetration prior to the changes to roof parapets and deck balustrades. However the expert's moisture testing as outlined in paragraph 5.5.3 leads me to conclude that there is no evidence of present or past moisture penetration into these areas.

### **6.4 Weathertightness conclusion**

6.4.1 I consider the expert's report establishes that the current performance of the claddings is adequate because there is no evidence of moisture penetration into the timber framing. Consequently, I am satisfied that the house currently complies with Clause E2 of the Building Code.

6.4.2 However, the building envelope is 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 may allow the ingress of moisture in the future, the building work does not comply with the durability requirements of Clause B2.

- 6.5 Because identified cladding faults occur in discrete areas, I am able to conclude that satisfactory rectification of the items outlined in paragraph 6.3.1 will result in the claddings being brought into compliance with Building Code Clauses B2 and E2.
- 6.6 Effective maintenance of claddings is important to ensure ongoing compliance with Building Code Clauses B2 and E2 and is the responsibility of the building owner. The Ministry has previously described these 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**

### **7. Discussion**

- 7.1 There are 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 house in 2006.
- 7.2 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).
- 7.3 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.
- 7.4 In this case the delay since the completion of the building raises concerns that many elements of the building are now well through or beyond their required durability periods, and would consequently no longer comply with Clause B2 if code compliance certificates were to be issued effective from today’s date. However, I have not been provided with any evidence that elements did not comply with Clause B2 in October 2006.
- 7.5 It is not disputed, and I am therefore satisfied that all the building elements complied with Clause B2 on 11 October 2006. This date has been agreed between the parties (refer paragraph 4.5).
- 7.6 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.

7.7 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, if requested by an owner
- (b) it is reasonable to grant such a modification, with appropriate notification, as in practical terms the building is no different from what it would have been if a code compliance certificate for the building work had been issued in 2006.

7.8 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.

## **8. What is to be done now?**

8.1 A notice to fix should be issued that requires the owner to bring the house into compliance with the Building Code, including the defects identified in paragraph 6.3.1, but not specifying how those defects are to be fixed. It is not for the notice to fix to specify how the defects are to be remedied and the building brought to compliance with the Building Code. That is a matter for the owner to propose and for the authority to accept or reject.

8.2 I suggest that the parties adopt the following process to meet the requirements of paragraph 8.1. A proposal as to the rectification of the specified matters in response to the notice to fix should be submitted to the authority.

8.3 Once the items listed in paragraphs 6.3.1 have been rectified to its satisfaction and the authority is satisfied that the building work is compliant, the authority may issue a code compliance certificate in respect of building consent No. 4068 modified as described in paragraph 7.

8.4 Any outstanding items of disagreement can then be referred to the Chief Executive for a further binding determination

## **9. The decision**

9.1 In accordance with section 188 of the Building Act 2004, I hereby determine that the external envelope does not comply with Building Code Clause B2, and accordingly I confirm 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 house, apart from the items that are to be rectified as described in Determination 2012/055, complied with Clause B2 on 11 October 2006.

(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 11 October 2006 instead of from the time of issue of the code compliance certificate for all the building elements, except the items to be rectified as set out in paragraph 6.3.1 of Determination 2012/055.

Signed for and on behalf of the Chief Executive of the Ministry of Business, Innovation and Employment on 14 August 2012.

John Gardiner  
**Manager Determinations**