

## Determination 2010/022

### Refusal to issue code compliance certificates and the issue of three notices to fix for a 15-year-old house with subsequent additions at 5 Ewing Road, Laingholm, Waitakere



#### 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, Department of Building and Housing (“the Department”), for and on behalf of the Chief Executive of that Department. The applicant is the owner, the OurThreeSons Trust (“the applicant”), and the other party is the Waitakere City Council (“the authority”), carrying out its duties as a territorial authority or building consent authority. I consider that the former owner of the building is a person with an interest in this determination.
- 1.2 This determination arises from the decision of the authority to refuse to issue code compliance certificates and to issue notices to fix for the house because it was not satisfied that it complied with certain clauses<sup>2</sup> of the Building Code (First Schedule, Building Regulations 1992).

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

<sup>2</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.

1.3 The matter to be determined<sup>3</sup> is therefore whether the authority was correct in its decision to refuse to issue the three code compliance certificates. In deciding this, I must consider the notices to fix in regard to the following:

### 1.3.1 Matter 1: The external envelope

Whether the external claddings to the house (“the claddings”) comply with Clause B2 Durability and Clause E2 External Moisture of the Building Code. The claddings include the components of the systems (such as the monolithic wall 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 matter in paragraph 6.)

### 1.3.2 Matter 2: The durability considerations

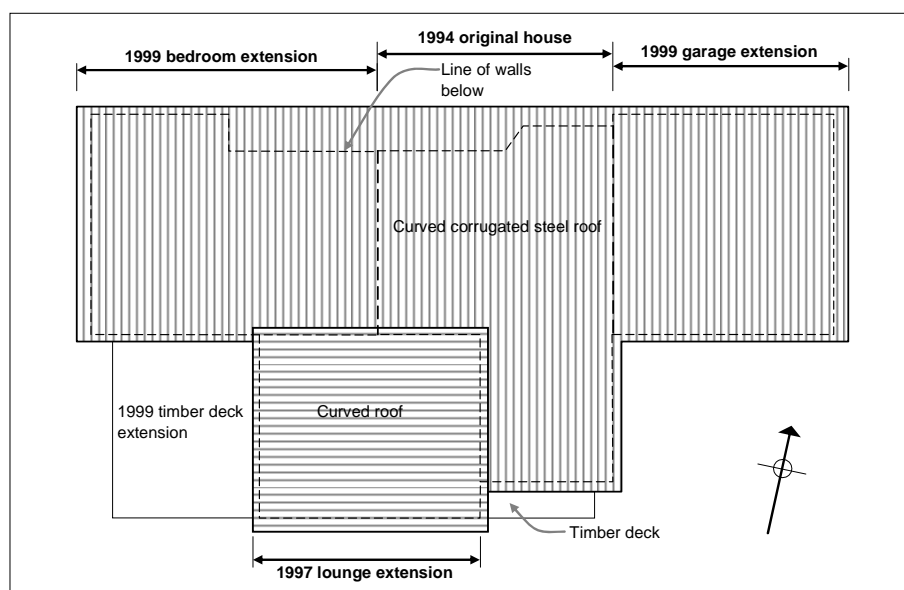
Whether the elements that make up the building work comply with Building Code Clause B2 Durability, taking into account the age of the house. (I consider this matter in paragraph 7.)

1.4 I note that there has been correspondence regarding unauthorised changes to the building consent drawings (see paragraphs 3.4 and 3.5). I have received no further information regarding this matter, which I leave to the authority to resolve.

1.5 In making my decision, I have considered the submissions of the parties, the report of the 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.

## 2. The building work

2.1 The building work consists of a single-storey detached house situated on a sloping coastal site in a high wind zone for the purposes of NZS 3604<sup>4</sup>. Construction is generally conventional light timber frame, with the original house and later extensions and alterations as indicated in the following figure:



<sup>3</sup> Under sections 177(b)(i) of the Act

<sup>4</sup> New Zealand Standard NZS 3604:1999 Timber Framed Buildings

## **2.2 The 1994 house**

2.2.1 The original building was a small cottage constructed in 1994, which provided a combined kitchen/living area, two bedrooms and a bathroom. The cottage had a stepped concrete slab and foundations, stucco cladding, re-used timber windows and doors, and corrugated steel roofing. The original house had a simple L-shaped form, with an asymmetrical low-pitched curved roof.

## **2.3 The 1997 extension**

2.3.1 The 1997 extension added a new living room to the internal corner of the L-shaped cottage, with a timber-framed floor raised about 450mm above the floor level of the original house. The claddings and windows match those of the original cottage, with a raised low-pitched curved roof that cleared the original roof cladding.

## **2.4 The 1999 extensions**

2.4.1 The 1999 extensions and alterations included:

- an extension to the west to provide two bedrooms and an ensuite bathroom
- the addition of a timber deck as an infill to the internal corner between the new master bedroom and the south living room
- the addition of a verandah and bay window to the north elevation
- an extension to the east to provide a double garage.

2.4.2 The 1999 extensions have concrete slabs and foundations. The claddings and windows of the western extension match those of the original cottage, while the eastern garage has unfinished fibre-cement sheet wall cladding. The curved corrugated steel roof of the northern part of the original cottage extends to cover the west and east extensions and the added verandah to the north elevation.

2.4.3 Either during or following construction, the carport shown in the 1999 consent drawings was extended and enclosed to provide a double garage.

## **2.5 The claddings**

2.5.1 The cladding to the walls of the resulting house is a monolithic system described as stucco over a rigid backing. In this instance the rigid backing consists of 4.5 mm fibre-cement sheets fixed through the building wrap directly to the framing timbers, and covered by a slip layer of building wrap, metal-reinforced 20 mm thick solid plaster and a flexible paint coating.

2.5.2 The cladding to the garage walls is unfinished and consists of the 4.5 mm fibre-cement backing sheets fixed through the building wrap directly to the framing but the plaster has not been completed.

2.6 The expert was unable to confirm whether the timber framing was treated. Given the date of construction in 1994, I consider that the wall framing of the original cottage is likely to be boracic treated. However, given the dates of the later additions in 1997 and 1999, I consider that the wall framing in those additions is likely to be untreated.

### 3. Background

3.1 The authority issued the following building consents, which I have not seen, under the Building Act 1991:

- No. ABA 1994-5139 for the original house, with the drawings stamped as approved by the authority on 12 September 1994.
- No. ABA 1997-1809 for the lounge extension, with the drawings stamped as approved by the authority on 3 June 1997.
- No. ABA 1999-2377 for the bedrooms, deck and carport extensions, with the drawings stamped as approved by the authority on 15 May 1999.

3.2 I have seen no records of inspections during construction or of any correspondence until the former owner wished to sell the property and sought a code compliance certificate in 2009.

### 3.3 The notices to fix

3.3.1 It appears that the authority inspected the house, although I have seen no record of that inspection. On 3 July 2009, the authority issued three notices to fix for the building work under the building consents.

3.3.2 The notices all stated that the building work undertaken under each building consent:

...does not comply with the objective and functional requirements of clause E2 "External Moisture" of the New Zealand Building Code.

To remedy the contravention or non-compliance you must undertake remedial work (to be proposed and agreed) to satisfactorily remediate the areas of concern, with regard to the plaster cladding system.

3.3.3 The notices to fix for ABA 1994-5139 and ABA 1999-2377 referred to the following 'areas of concern':

- Exterior cladding system does not contain a 20mm cavity, to adequately provide for ventilation, drainage and moisture dissipation.
- Exterior cladding does not have adequate/properly constructed vertical control joints as per the manufacturer's specifications/good trade practice.
- No sill/jamb/head flashings to exterior joinery.

3.3.4 The notice to fix for ABA 1997-1809 repeated the above, while adding two further 'areas of concern':

- The roof apron flashing does not have a stop end.
- Exterior cladding system is not sufficiently clear of/is touching roof flashings.

3.4 The authority also apparently wrote to the (now former) owner on 15 July 2009, regarding unauthorised building work. I have not seen a copy of that letter.

3.5 Email correspondence between the former owner and the authority continued over the following four months without resolution, regarding various questions and options available for remediating the house. Following a site meeting on 22 October

2009, the authority confirmed the notices to fix and recommended that a determination be sought on the issues raised. However the authority added:

Please note that this email only pertains to the Building Consent issues and does not include any of the unauthorised building work as detailed in [the authority's official's] letter dated 15 July 2009.

3.6 The Department received an application for a determination from the former owner on 10 November 2009. The purchase of the property subsequently finalised and the new owner elected to continue with the application for this determination.

## **4. The submissions**

4.1 The former owner forwarded copies of:

- the consent drawings
- the notices to fix dated 3 July 2009
- some correspondence from the authority.

4.2 The authority acknowledged the applicant's submission, but made no submission in response.

4.3 A draft determination was issued to the parties on 19 January 2010. The draft was issued for comment and for the parties to agree dates when the various stages of the house complied with Building Code Clause B2 Durability.

4.4 The parties accepted the draft without comment. The parties agreed that compliance with Clause B2 was achieved as follows:

- ABA 1994-5139 (the original house) - 12 January 1995
- ABA 1997-1809 (the lounge extension) - 3 August 1997
- ABA 1999-2377 (the bedrooms, deck and carport extensions) - 15 September 1999

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

5.1 As mentioned in paragraph 1.5, I engaged an independent expert to assist me. The expert is a member of the New Zealand Institute of Building Surveyors. The expert inspected the house on 11 and 21 December 2009 and provided a report that was completed on 12 January 2010.

### **5.2 General**

5.2.1 The expert did not report on variations from the consent drawings, noting that these changes appeared to be in the process of being resolved by the authority.

5.2.2 The expert considered that, in the context of the 'certain rustic style' of the house, the workmanship generally appeared to be of a 'reasonable and effective standard', with the flashings 'tidy and effective in most areas'. The stucco plaster appeared 'aligned and straight, with no significant cracks'.

- 5.2.3 The re-used timber windows and doors are generally recessed from the stucco face, and are installed in varying ways. The joinery has solid timber sills and no visible head or jamb flashings, with most windows having a 'bell out' in the plaster that shelters the window heads. The window to the unfinished north garage wall has a flashing in preparation for the stucco plaster to be belled out in a similar fashion.
- 5.2.4 The expert removed a section of cladding at the bottom plate below an exposed north window to observe the underlying construction, noting that the clearance above the ground was about 60mm, the cladding overlap was 25mm and the timber framing was sound, with a moisture content of 15%.

### 5.3 Moisture levels

- 5.3.1 The expert noted no evidence of moisture within the house, but was unable to take non-invasive readings due to metal mesh within internally plastered walls. However, some evidence of moisture damage was noted in exposed timber framing of garage walls, where the unfinished fibre-cement backing sheets were exposed.
- 5.3.2 The expert also took 'shallow penetration' invasive moisture readings through the cladding into the framing at timber windows and doors, recording moisture levels between 9% and 14%.
- 5.4 Commenting specifically on the cladding, the expert noted that:

#### Ground levels

- there are areas around the garage with no clearance below the unfinished fibre-cement backing sheets
- some other areas around the house have insufficient clearance from the bottom of the stucco cladding to the ground

#### Windows and doors

- although the plaster 'bell out' above most windows diverts water and protects the heads, some joinery lacks this feature and also lack head flashings
- the unflushed jambs of some windows and doors are not sufficiently protected against water penetration and some timber window sills do not project beyond the plaster to drain water away from the cladding
- some of the re-used timber windows and doors are deteriorating, with peeling paint, putty cracks, joint cracks, timber damage and corroding hardware.

#### Roof to wall junctions

- although the clearances above the lower roofs to the stucco at the south living room are generally adequate, some areas are insufficient
- there is no kickout at the bottom of the apron flashing

#### The unfinished garage

- the fibre-cement backing sheets to the garage have been exposed for some time, and the sheets should be investigated as they may have deteriorated
- there are no flashings installed to the garage door and window, and the end of the eave at the northeast corner is not weathertight

- there are signs of damage to the exposed garage framing, which needs further investigation to confirm its durability.

5.5 With regard to other items referred to in the notices to fix, the expert made the following comments:

**Verandah paving level**

- While there is limited clearance to the interior floor from the north verandah paving, the junction is well drained and protected by a deep roof overhang, with no evidence of associated moisture penetration.

**Control joints**

- While there is no evidence of control joints in the three walls that range from 5m to 6m in length, the stucco cladding has been in place between 10 and 15 years with no evidence of movement or cracking after that time.

5.6 A copy of the expert's report was provided to the parties on 14 January 2010.

5.7 In a letter to the Department, dated 29 January 2010, the authority 'generally [accepted] the Assessor's report' and reaffirmed its position as outlined in the notices to fix and related correspondence.

## **Matter 1: The external envelope**

### **6. Weathertightness**

6.1 The approach in determining whether building work is weathertight and durable and is likely to remain so, is to examine 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.

#### **6.2 Weathertightness risk**

6.2.1 This house has the following environmental and design features which influence its weathertightness risk profile:

**Increasing risk**

- the house is in a high wind zone
- some of the walls have no eaves to shelter the cladding
- the walls have monolithic cladding fixed directly to the framing
- most of the external wall framing is unlikely to be treated to a level that provides resistance to decay if it absorbs and retains moisture

**Decreasing risk**

- some walls are sheltered by deep roof overhangs
- the decks are free-draining timber

- the single-storey house is fairly simple in plan and form.

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

### **6.3 Weathertightness performance**

6.3.1 Generally the stucco cladding appears to have been installed in accordance with good trade practice. However, taking account of the expert's report, I conclude that remedial work is necessary in respect of the areas outlined in paragraph 5.4.

6.3.2 I also note the expert's comments in paragraph 5.5, and accept that these areas are adequate in these particular circumstances.

6.3.3 Notwithstanding the fact that the stucco backing sheets are fixed directly to the timber framing, thus inhibiting drainage and ventilation behind the cladding, I have noted certain compensating factors that assist the performance of the cladding in this particular case:

- The stucco cladding is generally installed according to good trade practice.
- There is no evidence of moisture penetration after more than 10 years.

6.3.4 These factors can assist the building to comply with the weathertightness and durability provisions of the Building Code.

### **6.4 Weathertightness conclusion**

6.4.1 I consider the expert's report establishes that the current performance of the building envelope, excluding the garage, is adequate because it is preventing water penetration through the cladding at present. Consequently, I am satisfied that the house, excluding the garage, complies with Clause E2 of the Building Code.

6.4.2 However, the building work 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 on the building are likely to allow the ingress of moisture in the future, the building work does not comply with the durability requirements of Clause B2.

6.4.3 Because the faults identified with the claddings occur in discrete areas, I am able to conclude that satisfactory rectification of the items outlined in paragraph 5.4 will result in the building being brought into compliance with Clauses B2 and E2

6.4.4 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 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**

### **7. Discussion**

- 7.1 There are also concerns regarding the durability, and hence the compliance with the building code, of certain elements of the house taking into consideration the ages of the three phases of the building work completed in 1994, 1997 and 1999.
- 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 between the completion of the three phases of the building work and the former owner’s request for code compliance certificates has raised concerns that various elements of the resulting house are now well through or beyond their required durability periods, and would consequently no longer comply with Clause B2 if code compliance certificates for each of the three building consents were to be issued effective from today’s date. I have not been provided with any evidence that the authority did not accept that those elements complied with Clause B2 at the relevant dates in 1994, 1997 and 1999.
- 7.5 It is not disputed, and I am therefore satisfied, that all the building elements, with the exception of those items that are to be rectified, complied with Clause B2 in respect of the three consents on 12 January 1994, 3 August 1997, and 15 September 1999. These dated have been agreed between the parties, refer paragraph 4.4.
- 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.
  - (b) It is reasonable to grant such a modification, with appropriate notification, as in practical terms the resulting house is no different from what it would have been if a code compliance certificate for the building work under each building consent had been issued in 1994, 1997 and 1999 respectively.
- 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 Although I am satisfied that the authority made an appropriate decision to refuse to issue the code compliance certificates and to issue the three notices to fix, I consider that the notices do not fully address the defects in this house and modification is needed to take account the findings of this determination.
- 8.2 In the case of this building, I suggest that a single notice to fix should be issued to the owner to cover all three building consents to rationalise and simplify the remedial work required to the house as a whole. That notice to fix should identify the areas listed in paragraph 5.4 and refer to any further defects that might be discovered in the course of investigation and rectification, but should not specify 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.
- 8.3 I suggest that the parties adopt the following process to meet the requirements of paragraph 8.1. Initially, the authority should issue the notice to fix. The applicant should then produce a response to this in the form of a detailed proposal for the house as a whole, produced in conjunction with a competent and suitably qualified person, as to the rectification or otherwise of the specified matters. Any outstanding items of disagreement can then be referred to the Chief Executive for a further binding determination.
- 8.4 Once the matters set out in in paragraph 5.4 have been rectified to its satisfaction, the authority may issue code compliance certificates in respect of each of the building consents amended as outlined in paragraph 7.

## 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 Clause B2 of the Building Code, insofar as it relates to Clause E2, and accordingly I confirm the decision of the authority to decline to issue the three code compliance certificates
- the authority is to modify the notices to fix, dated 3 July 2009, to take account of the findings of this determination.

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 on dates described in paragraph 4.4.
- (b) the building consents are hereby modified as follows:

ABA 1994-5139

The building consent is subject to a modification to the Building Code to the effect that, Clause B2.3.1 applies from 12 January 1995 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 5.4 of Determination 2010/022.

ABA 1997-1809

The building consent is subject to a modification to the Building Code to the effect that, Clause B2.3.1 applies from 3 August 1997 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 5.4 of Determination 2010/022.

ABA 1999-2377

The building consent is subject to a modification to the Building Code to the effect that, Clause B2.3.1 applies from 15 September 1999 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 5.4 of Determination 2010/022.

Signed for and on behalf of the Chief Executive of the Department of Building and Housing on 9 March 2010.

John Gardiner  
**Manager Determinations**