



## Determination 2010/90

### Refusal to issue a code compliance certificate for 7-year-old additions and alterations to a house at 579 Old Tai Tapu Road, RD2, Christchurch



#### 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 new owner H Devonish (“the applicant”) and the other party is the Selwyn District Council (“the authority”), carrying out its duties as a territorial authority or building consent authority. I consider the former owner to be a person with an interest in this matter.
- 1.2 This determination arises from the decision of the authority to refuse to issue a code compliance certificate for a 7-year-old addition to a house (“the addition”) because it was not satisfied that the building work 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 to refuse to issue a code compliance certificate. In deciding this, I must consider:

**1.3.1 Matter 1: The external envelope**

Whether the external claddings to the addition 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 wall cladding, the windows, the roof cladding 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: Other relevant code requirements**

Whether various other elements in the building work comply with the relevant clauses of the Building Code. I consider this matter in paragraph 7.

**1.3.3 Matter 3: 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 alterations. I consider this matter in paragraph 9.

1.4 I note that recent alterations to the garage building (“the garage”) have been issued with a certificate of acceptance; and this determination therefore does not consider that work, apart from wall and roof areas that form junctions with the addition.

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.

## **2. The building work**

2.1 The building work consists of an addition to a single-storey 1930’s house and detached garage situated on a flat rural site in a very high wind zone for the purposes of NZS 3604<sup>4</sup>. The original garage was a detached proprietary building, built about 1993 to provide a double garage and adjoining ‘rumpus room’.

2.2 The building work considered in this determination is shown in Figure 1; and consists of an addition that links the original garage with the house to provide a new living and kitchen area.

2.3 The addition is rectangular in plan and has a 15° pitch gable roof with eaves of about 600mm and verge projections of about 100mm. Construction is conventional light timber frame, with concrete foundations and floor slab, corrugated bituminous sheet wall cladding, aluminium windows and profiled metal roofing. The expert noted no treatment marks on the framing and, given the date of construction in 2003, I consider that the wall framing is likely to be untreated.

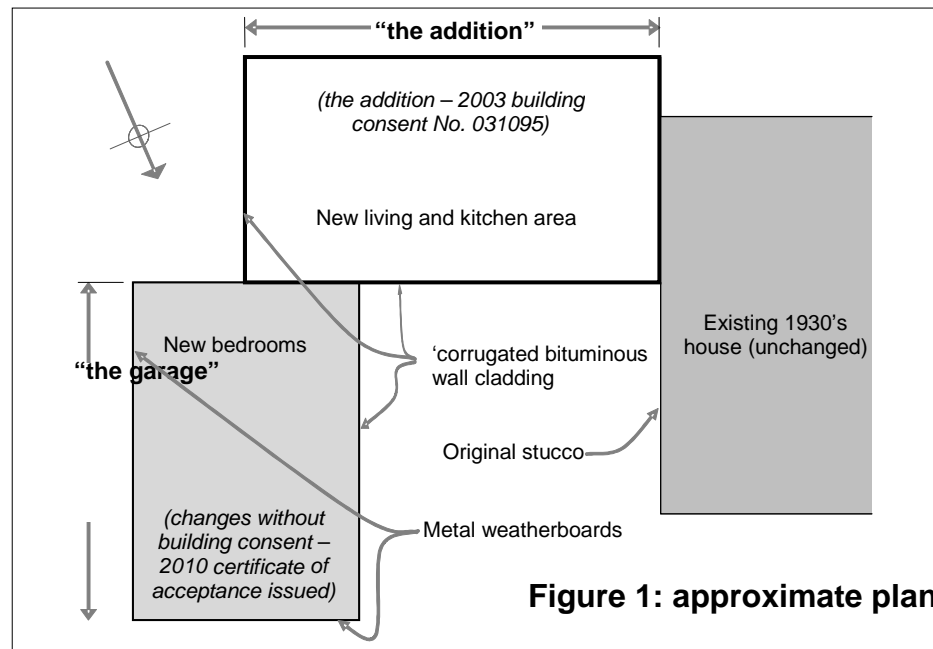
2.4 The garage was a simple proprietary building; built about 1993 to provide a double garage and adjoining ‘rumpus room’, which has now been changed into two bedrooms and a hallway to the living area in the addition. The unauthorised

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<sup>3</sup> Under section 177(b)(i) of the Act (prior to 7 July 2010)

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

alterations included new corrugated cladding to the west wall to match that of the addition. The gable roof has gutters only as eaves, and verge projections of about 150mm.



## 2.5 The cladding

2.5.1 The wall cladding to the addition and the west wall of the garage is a corrugated sheet product manufactured from bitumen-impregnated cellulose fibre and pre-finished on the outer side with a pigmented resin. The cladding is fixed through the building wrap directly to the framing.

2.5.2 The cladding had a BRANZ Appraisal Certificate No. 431 (2002), which has since been withdrawn. The certificate states that the product may age prematurely in very warm climates 'owing to degradation by solar heat and UV, especially if the product has not been given a protective coating system'. The manufacturer provides recommended details for window, corners and other junctions.

## 3. Background

3.1 The authority issued a building consent (No. 031095) for the addition on 25 August 2003, under the Building Act 1991. The consent drawings showed the addition clad with fibre-cement weatherboards, and showed no alterations to the garage.

3.2 The authority carried out seven inspections during construction, including:

- a 'pre-line/bracing' inspection on 17 September 2003 (noting bracing was 'all completed as per plan', with no comment on any changes to windows)
- a 'post line bracing' inspection on 1 October 2003 (noting 'brace panels completed as required' and recording that cladding was installed to two walls, with no comment on the change in cladding).

3.3 The authority carried out a final inspection on 10 December 2003, and the inspection record noted that ‘window flashings appear complete’ and made no comment on changes to wall cladding or window position. A number of outstanding items were identified, including (in summary):

- flashings between the roof and the adjoining garage ridge line
- back and cover flashings to all joins in the cladding
- flashings/seals between the cladding and the metal weatherboards to garage
- flashings between the addition and the existing house
- underflashings to jamb flashings
- flashings to penetrations.

3.4 When arranging to sell the house in 2009, the former owner sought a code compliance certificate and the authority inspected the building work on 11 November 2009. The inspection record listed outstanding items remaining from the 2003 final inspection and identified additional documentation that was required, including for the ‘change of cladding’.

3.5 Some remedial work was carried out and further documentation was provided. The authority re-inspected the building work on 2 December 2009, and the record notes that the inspection and submitted information was satisfactory, although several minor items required completion.

### **3.6 The authority’s refusal of a code compliance certificate**

3.6.1 The former owner applied for a code compliance certificate on 17 December 2009. The ‘CCC application processing summary’ issued by the authority noted that some flashings had ‘just been installed’ following the first re-inspection on 11 November 2009 and stated:

CCC not to be issued. [The authority] unsure as to what weather has penetrated claddings over last 6 years.

3.6.2 A meeting was held to discuss the situation on 19 January 2010, and the authority’s file note of the meeting recorded the former owner as stating that:

- the window details could not be described as there were no details available from the cladding manufacturer’s at that time
- he had not seen the consent plan showing bracing requirements, and the builder had guessed where windows would be for the building consent application
- he agreed that windows had changed in the living room and kitchen.

3.6.3 In regard to the unauthorized alterations carried out to the garage since completion of the addition, the authority issued a certificate of acceptance dated 19 January 2010.

3.6.4 In a letter to the former owner dated 19 January 2010, the authority outlined the durability periods required in the building code and refused to issue a code compliance certificate due to:

- the time elapsed since the building work was completed

- the concerns raised by BRANZ Appraisal Certificate about the cladding's durability without a protective coating system (see paragraph 2.5.2)
- concerns raised regarding the potential for moisture penetration and damage since 2003, when flashings were identified as outstanding but which were only installed six years later
- the change in wall cladding and the lack of supporting detail regarding flashings and junctions
- the windows added to the south and east walls raise concerns that the bracing as per the consent is reduced and therefore inadequate.

3.7 When purchasing the property, the applicant emailed the authority on 1 May 2010, stating that he was 'willing (and able) to promptly take whatever remedial or corrective action necessary to get the dwelling into compliance' and to ask for a meeting to 'outline a plan of action' to satisfy the authority's requirements. The applicant also noted that some cladding had been removed and he had:

...verified that the cladding and flashings as fitted are doing the job for which they are installed. I found the cavities to be dry and well protected.

3.8 The authority responded on 6 May 2010, noting it could not discuss matters with 'prospective purchasers' and suggesting that a determination could address the refusal to issue a code compliance certificate if the applicant purchased the property.

3.9 The applicant purchased the property and the Department received an application for a determination on 9 June 2010. Further information was sought from the applicant, which was received on 22 June 2010.

## **4. The submissions**

4.1 The applicant forwarded copies of:

- the consent drawings
- the authority's inspection records
- the authority's file note and letter dated 19 January 2010.
- the certificate of acceptance dated 19 January 2010 for the garage alterations
- the email correspondence with the authority
- various other information.

4.2 In an email to the Department dated 7 May 2010, the authority stated that its concerns remained as expressed in the letter dated 19 January 2010 to the former owner.

4.3 The authority forwarded copies of:

- the consent documentation
- the inspection records
- various other information.

4.4 A draft determination was issued to the parties on 13 August 2010. The draft was issued for comment and for the parties to agree a date when the addition could have complied with Building Code Clause B2 Durability. The applicant accepted the draft determination on 25 August 2010. The parties agreed that compliance with Clause B2 was achieved on 31 December 2003.

#### **4.5 The authority's response to the draft**

4.5.1 The authority responded to the draft determination in a letter to the Department dated 13 September 2010. The authority included comments on the expert's report, which I have summarised in paragraph 5.12.

4.5.2 With regard to the draft determination, the authority made a number of detailed comments which I have considered; amending the draft as I consider appropriate. The comments included (in summary):

- There were details for the corrugated bituminous cladding when it was installed, as this was stated in the BRANZ Appraisal at the time.
- The BRANZ Appraisal called for the installation of air seals.
- Bracing could not have been verified on site, as the inspector would have noted changes to windows if these had changed during the construction. Therefore, the windows must have changed after the inspections along with the bracing.

4.6 I make the following observations in regard to the authority's comments:

- The BRANZ Appraisal called for air seals to be installed in exposed windows, where the wind zone is very high or the roof overhangs are restricted. Given the shelter afforded by the soffits, the expert considered the window installation adequate in the circumstances.
- According to the former owner the builder 'guessed' window positions for the consent drawings, which I note were very rudimentary. There are no signs of patching of claddings or linings that indicate later window changes. I therefore accept that these changes occurred during construction and the associated bracing was seen and accepted during authority inspections. (I note that the inspection records also do not note the change in the wall cladding).

4.7 Both parties noted that the house had been subject to the 7.1 magnitude earthquake of 4 September 2010, and the applicant stated that no damage had occurred to the alterations and that the bracing is adequate.

### **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 addition on 12 July 2010 and provided a report dated 27 July 2010.

5.2 The expert considered that the addition had been constructed to a 'reasonable standard', apart from areas identified in paragraph 5.7. The expert also noted that 'little or no maintenance' had been carried out, with the cladding showing 'degradation, mould and damage from vegetation growth'.

- 5.3 The expert confirmed that changes from the consent drawings included:
- fibre-cement weatherboards replaced by the corrugated bituminous cladding
  - additional windows added to the east wall and the south kitchen wall
  - the position of the solid fuel burner changed.
- 5.4 The expert inspected the building interior, taking non-invasive moisture readings of the sleep-out area and no elevated readings were recorded. The expert also took invasive readings from the inside and at sample areas from the exterior, and the highest reading was recorded at less than 16%.

## 5.5 The windows

5.5.1 The windows were face-fixed over the corrugated cladding, with metal head flashings that finished in line with the jamb flanges and corrugated foam seals behind the jamb flanges. The expert considered that the window installation appeared generally satisfactory, given shelter provided by the soffits.

5.5.2 The expert removed sections of cladding above and below an exposed window to the east wall to observe the underlying construction and noted that:

- there was no sign of moisture penetration or mould on the building wrap
- the 40mm up-stand to the head flashing was overlapped by the building wrap
- a sill flashing overlapped the lower building wrap behind the cladding
- underlying metal jamb flashings were visible behind the corrugated foam
- there was no evidence of air seals (I note that these were not standard practice at the time of construction).

5.6 Investigating flashings at other junctions, the expert noted that:

- in addition to the proprietary corner over-flashing, the bottom of an additional under-flashing was visible
- flashings were installed at other junctions, although some were not sealed
- penetrations appeared to be satisfactorily flashed and sealed.

5.7 Commenting specifically on the exterior, the expert noted that:

### The wall cladding

- the painting to timber fascias and soffits is incomplete, with no finishing coats
- the corrugated bituminous cladding has no protective coating
- the clearances below the bottom of the cladding to the adjacent ground or paving is insufficient in some areas
- the cladding sheets lack fixings in some areas and in other areas, fixings have been over-tightened
- the bottom of the cladding lacks vermin-proofing

- the top of some over-flashings and the ends of some window head flashings require sealing

#### **The roof junctions**

- the bottom of the apron flashing to the junction with the original house lacks a kick-out and is reliant on sealant for weatherproofing
- the projecting ridge to the east is 'poorly formed' and unlikely to remain weathertight, with the junctions to the walls inadequately flashed

5.8 The expert made the following additional comments:

- Although the bottom of the cladding overlaps by 45mm rather 50mm, there is no sign of associated moisture penetration.
- Although the window sill flashing terminates behind the cladding, the sill flanges overlap the cladding, the windows are generally sheltered beneath soffits and there is no sign of moisture reaching the building wrap.

### **5.9 Other relevant code requirements**

#### **Bracing**

5.9.1 The expert supplied a floor plan showing the bracing panels provided, taking into account the changes to the windows, and provided it to a Chartered Professional Engineer for an opinion on the bracing to the addition. The engineer responded on 23 July 2010.

5.9.2 Taking into account the original house butting against the western end of the addition and the existing garage against part of the northern wall, the engineer considered there was not 'problem with the bracing as shown on your supplied drawing' and concluded that the bracing was likely to be adequate.

#### **Surface water and waste water disposal**

5.10 The expert noted that:

- a down-pipe to the south discharges directly onto the ground, with no soakpit
- it is not clear where or how the waste water from the kitchen is disposed of.

5.11 A copy of the expert's report was provided to the parties on 3 August 2010.

5.12 In its letter to the Department dated 13 September 2010 (see paragraph 4.5.1), the authority included the following comments on the expert's report (in summary):

- The stormwater drainage required a re-inspection when completed which was not carried out. The property is in a flood area with a high ground water table, which means that soak pits will not work.
- The engineer's opinion on the bracing is based only on the information he received and is based on the assumption that the braces were installed, but these were not verified on site.



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

### **6. Weathertightness**

#### **6.1 Weathertightness performance**

- 6.1.1 Taking account of the expert's report, I conclude that remedial work to the addition is necessary in respect of:
- the painting to fascias and soffits
  - the lack of protective coating to the corrugated cladding (refer paragraph 6.1.3)
  - the inadequate clearances below the cladding in some areas
  - the lack of, or over-tightened fixings to some areas of the cladding
  - the lack of vermin-proofing to the bottom of the cladding
  - inadequate sealing of some flashings and ends of head flashings
  - the lack of a kick-out to the apron flashing end at the addition/house junction
  - the inadequate weatherproofing of the eastern end of the roof ridge.
- 6.1.2 I also note the expert's comments in paragraph 5.8, and I am satisfied that these areas are adequate in the circumstances.
- 6.1.3 The expert observed no evidence of declining performance of the corrugated cladding from the effects of ultraviolet and/or weathering to date; likely to be due to the lack of severe exposure conditions in this particular case. Although the cladding may continue to perform effectively for a further 8 years, and therefore achieve the minimum 15-year durability required by the Building Code, I consider that the cladding should be painted and then subjected to a regular maintenance painting programme to ensure that the code requirements continue to be met.

#### **6.2 Weathertightness conclusion**

- 6.2.1 I consider the expert's report establishes that the current performance of the building envelope is adequate because it is preventing water penetration through the claddings at present. Consequently, I am satisfied that the addition complies with Clause E2 of the Building Code.
- 6.2.2 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 on the addition are likely to allow the ingress of moisture in the future, the building work does not comply with the durability requirements of Clause B2.
- 6.2.3 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 6.1.1 will result in the building envelope being brought into compliance with Clause B2 of the Building Code.

- 6.2.4 I note the expert's comments regarding the lack of maintenance to the addition. 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 structural bracing**

### **7. The bracing**

- 7.1 I note the authority's inspection records as outlined in paragraph 3.2. The 'pre-line/bracing' record shows that bracing was inspected at a stage when the ties across the east corners of the ceiling framing would have been visible, and the 'post line bracing' record indicates that the bracing panels were satisfactorily fixed.
- 7.2 The authority's inspection records and the engineer's statements in paragraph 5.9.2 allow me to conclude that the bracing is likely to be adequate, despite changes to the windows. Consequently, I am satisfied that the structural bracing to the addition complies with Clause B1 of the Building Code.

### **8. Surface water and waste water disposal**

- 8.1 Taking account of the expert's comments in paragraph 5.9, I conclude that remedial work or investigation is necessary in respect of:
- the lack of adequate disposal of water discharging from the south down-pipe
  - the fall of the ground towards the south wall of the garage
  - confirmation of adequate disposal of the waste water from the kitchen.

## **Matter 3: The durability considerations**

### **9. Discussion**

- 9.1 The authority has concerns regarding the durability, and hence the compliance with the building code, of certain elements of the addition taking into consideration the age of the building work completed in 2003.
- 9.2 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).
- 9.3 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.

9.4 In this case the delay between the completion of the building work in 2003 and the applicant's request for a code compliance certificate has raised concerns that various elements of the addition are now well through or beyond their required durability periods, and would consequently no longer comply with Clause B2 if a code compliance certificate 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 a date in 2003.

9.5 It is not disputed, and I am therefore satisfied, that all the building elements in the addition, with the exception of those items that are to be rectified, complied with Clause B2 on 31 December 2003. This date has been agreed between the parties, refer paragraph 4.4.

9.6 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.

9.7 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 building is no different from what it would have been if a code compliance certificate for the building work had been issued in 2003.

9.8 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.

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

10.1 A notice to fix should be issued that requires the owner to bring the addition into compliance with the Building Code, including the defects identified in paragraph 6.1.1 and paragraph 8.1, 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 addition brought to compliance with the Building Code. That is a matter for the owner to propose and for the authority to accept or reject.

- 10.2 I suggest that the parties adopt the following process to meet the requirements of paragraph 10.1. 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, produced in conjunction with a competent and suitably qualified person, as to the investigation and 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.
- 10.3 Once the matters set out in in paragraph 6.1.1 and paragraph 8.1 have been rectified to its satisfaction, the authority shall issue a code compliance certificate in respect of the building consent amended as outlined in paragraph 9.

## 11. The decision

- 11.1 In accordance with section 188 of the Building Act 2004, I hereby determine that:
- the external envelope of the addition complies with Clause E2 but does not comply with Clause B2 of the Building Code, insofar as it relates to Clause E2
  - the addition does not comply with Clause E1 of the Building Code
- and accordingly, I confirm the authority's decision to refuse to issue a code compliance certificate.
- 11.2 I also determine that the bracing of the addition complies with Clause B1 of the Building Code
- 11.3 I am unable to determine whether the disposal of waste water from the kitchen complies with Clause G13 of the Building Code.
- 11.4 I also determine that:
- (a) all the building elements installed in the addition, apart from the items that are to be rectified as described in Determination 2010/90, complied with Clause B2 on 31 December 2003.
  - (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 31 December 2003 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 paragraphs 6.1.1 and paragraph 8.1 of Determination 2010/90.

Signed for and on behalf of the Chief Executive of the Department of Building and Housing on 20 September 2010.

John Gardiner  
**Manager Determinations**