

## Determination 2008/89

### Refusal to issue a code compliance certificate for a 5-year-old building with brick veneer cladding at 461 Bealey Road, Aylesbury, Canterbury



#### 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, C Adams (“the applicant”), and the other party is the Selwyn District 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 a 5-year-old building because it is not satisfied that the building work complies with certain clauses of the Building Code<sup>2</sup> (Schedule 1, Building Regulations 1992).

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<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 I take the view that the matters for determination are:

**1.3.1 Matter 1: The cladding**

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

**1.3.2 Matter 2: The bracing to the garage**

Whether the bracing as installed to the garage of the building (“the bracing”) complies with Clause B1 Structure of the Building Code, taking into account the changes to the garage since the consent was issued.

**1.3.3 Matter 3: The durability considerations**

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

1.4 In making my decision, I have considered the submissions of the parties, the report of the independent expert commissioned by the Department to advise on this dispute (“the expert”) and the other evidence in this matter. I have evaluated this information using a framework that I describe more fully in paragraph 6.1.

1.5 In this determination, unless otherwise stated, references to sections are to sections of the Act and references to clauses are to clauses of the Building Code

## **2. The building**

2.1 The building work consists of a single-storey detached house, which is situated on a flat rural site, which is in a high wind zone for the purposes of NZS 3604<sup>3</sup>. The house is fairly simple in plan and form, with concrete foundations and floor slab, light timber frame construction, brick veneer cladding and a 25° profiled metal hipped and gabled roof with no eaves or verge projections.

2.2 The north elevation has a 1600mm deep lean-to veranda attached beneath the main roof level. Bay windows to the west and east gable end walls have lean-to hipped roofs.

2.3 The expert has noted that he was unable to confirm whether the wall framing is treated, and the specification calls for the framing timber to be “Oregon”. Given the date of construction in 2002, I consider that the external wall framing is unlikely to be treated.

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

### 3. Background

3.1 The authority issued a building consent (No. 020792) on 26 July 2002, and carried out various inspections during construction, including a pre-line inspection on 14 October 2002 that noted:

Amended plans to be provided to Council as discussed on site re brace/units garage.

3.2 The last inspection during construction appears to have been a “half-height veneer” inspection on 6 January 2003. No further inspections were undertaken until the authority carried out a final inspection on 23 April 2007, which identified various outstanding items that were subsequently completed.

3.3 The authority’s internal “BCA Code Compliance Certificate Circulation sheet” dated 26 May 2008 notes:

Do not issue CCC, too old and issues. All other requirements passed.

3.4 In a pro-forma letter to the applicant dated 16 June 2008, the authority outlined the durability periods required in the building code and noted that it was unable to issue a code compliance certificate because:

...as a result of the time lapsed, the Council cannot now be satisfied on reasonable grounds that the building work and elements will continue to satisfy the durability provisions of the Building Code for the prescribed period after the Code Compliance Certificate has been issued.

The authority also raised the matter of the interval between inspections (refer paragraph 3.2) and the changes to the garage (refer paragraph 3.1), noting:

There also appears to be 4½ years elapsed time between the ½ high brick veneer inspection (06/01/03) and the next, being Heating/Other on 23/04/07. In addition, it appears that the amended plans, requested at inspection dated 14/10/02, for the changes to bracing have not been supplied.

3.5 An application for a determination was received by the Department on 30 June 2008.

3.6 As the application was not accompanied by a letter from the applicant, the Department sought further information from the authority on the nature of the dispute. In an email to the Department dated 3 July 2008, the authority noted that a revised bracing plan had not been received and:

The length of time from half height to the next inspection also infers a potential for increased risk to B2.

### 4. The submissions

4.1 The applicant made no submission, and forwarded copies of:

- the drawings and specification
- the consent bracing calculations
- the letter from the authority dated 16 June 2008
- various other statements.

4.2 The authority made a submission in the form of a letter to the Department dated 15 July 2008, which referred to the concerns expressed in its letter dated 16 June 2008 (refer paragraph 3.4) and stated:

After reviewing the property file the Council has concerns regards increased risk to durability between the period from 6 January 2003 and 23 April 2007 (over 4 years in between) that the building has not been inspected.

4.3 The authority forwarded copies of:

- the building consent
- the consent drawings
- the inspection records.

4.4 A copy of the applicant's submission was provided to the authority, which responded with the above submission. The applicant made no response to the authority's submission.

4.5 The draft determination was issued to the parties on 26 August 2008. The draft was issued for comment and for the parties to agree a date when the building complied with Building Code Clause B2 Durability.

4.6 Both parties responded accepting the draft and nominating January 2003 as the date when compliance with Clause B2 was achieved. I have therefore taken the agreed date as 1 January 2003.

## **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 23 July 2008 and furnished a report that was completed on 8 August 2008.

5.2 The expert noted the construction was generally of reasonable quality, with flashings fitted "to the standard of the day". However, little or no maintenance had been carried out and some external painting had not been completed. The expert noted that "minor defects require attention to prevent moisture ingress in the future".

5.3 The expert noted that the windows and doors had been installed with no head flashings and with brick sills that were almost flat.

5.4 The expert inspected the interior and exterior of the house, taking non-invasive moisture readings internally, and observed no signs of moisture penetration into the wall framing. Due to the lack of evidence of moisture penetration and the nature of the construction materials, the expert did not consider it necessary to carry out invasive moisture testing.

5.5 Commenting specifically on the wall cladding, the expert noted that:

- there are water stains and eroding mortar below the fascia to the right of the entry door, where water has overflowed the end of the valley gutter above
- the head flanges of the windows butt against the steel lintel, with no flashing or weatherproofing protecting the junctions, and those windows that are not protected by the veranda roof are in danger of moisture penetration
- the brick sills to windows and doors are flat, and mortar joints are soft and eroding in some windows that are not protected by the veranda roof
- it is not clear whether the steel lintels above windows and doors are installed in accordance with the NZS 3604 requirements at the time of construction
- some gutters have insufficient fall and are ponding
- there is no gutter to the bay windows and timber is exposed at the roof edges, with water run-off degrading the mortar in the flat brick sills
- the paintwork to the top of the garage door frame is incomplete.

5.6 The expert made the following additional comments:

- Although there is no clearance of the bricks above the paving at the veranda areas, the paving is well drained and the junctions are protected by the 1.6m deep veranda roof.
- Although the window heads are not adequately weatherproofed, the joinery located beneath the veranda is protected by the 1.6m deep veranda roof.
- Although the brick window and door sills are flat, the joinery located beneath the veranda is protected by the 1.6m deep veranda roof.

5.7 The expert examined authority records, noting the inspections carried out and the consent bracing plan. The expert noted that the garage door had been moved from the east to the south elevation of the building. The expert recalculated the bracing based on the altered position of the garage door, concluding that additional bracing should be installed to each side of the garage door.

5.8 A copy of the expert's report was provided to each of the parties on 11 August 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.

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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).

- 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.

## **Matter 1: The cladding**

### **7. Weathertightness principles**

7.1 The approach in determining whether building work is weathertight and durable and is likely to remain so, is to apply the principles of weathertightness. This involves the examination of the design of the building, the surrounding environment, the design features that are intended to prevent the penetration of water, the cladding system, its installation, and the moisture tolerance of the external framing. The Department and its antecedent, the Building Industry Authority, have also described weathertightness risk factors in previous determinations<sup>5</sup> (for example, Determination 2004/1) relating to cladding and these factors are also used in the evaluation process.

7.2 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.

### **7.3 Weathertightness risk**

7.3.1 In relation to these characteristics I find that this building:

- is built in a high wind zone
- is a fairly simple, single-storey building
- has brick veneer cladding installed over a drained cavity
- has a 1.6m deep continuous veranda to the northern elevations and porch roof of a similar depth over the main entry to the southeast (together covering approximately 50% of the exterior cladding)
- has no eaves or verge projections above other walls
- has external wall framing that is not treated to a level that provides resistance to the onset of decay if the framing absorbs and retains moisture.

7.3.2 The house has 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.

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

7.3.3 When evaluated using the E2/AS1 risk matrix, the weathertightness features outlined in paragraph 7.3.1 show that all elevations of the house demonstrate a low weathertightness risk rating.

#### **7.4 Weathertightness performance: exterior cladding**

7.4.1 Generally the roof and wall claddings appear to have been installed in accordance with reasonable trade practice, but some areas have not been satisfactorily completed. Taking account of the expert's report, I conclude that remedial work is necessary in respect of the following:

- The moisture migrating behind the fascia above the main entry.
- The lack of head flashings, the flat brick sills and the inadequately sealed steel lintels to those windows and doors that are not protected by the veranda.
- The deteriorating mortar in the brick veneer at sills and some other areas.
- The inadequate fall to some of the gutters.
- The lack of gutters to the bay windows.
- The unfinished paintwork to the garage door frame.
- Confirmation that the steel lintels above the windows and doors are installed in accordance with NZS 3604.

7.4.2 I note the expert's comments in paragraph 5.6, and accept that these areas are adequate in the circumstances.

#### **7.5 Weathertightness: conclusion**

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

7.5.2 In addition, 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 house are likely to allow the ingress of moisture in the future, the building does not comply with the durability requirements of Clause B2.

7.5.3 Because the faults identified with the cladding system occur in discrete areas, I am able to conclude that satisfactory investigation and rectification of the items outlined in paragraph 7.4.1 will result in the house being brought into compliance with Clauses B2 and E2.

7.5.4 I note that the house is in need of maintenance. 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 applicant. 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 bracing to the garage**

### **8. Discussion**

- 8.1 Taking account of the expert's report and comments as outlined in paragraph 5.7, I conclude that remedial work is necessary in respect of the following:
- Additional bracing to either side of the garage door.
- 8.2 I consider the expert's report establishes that the building work does not comply with Clause B1 of the Building Code.

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

### **9. Discussion**

- 9.1 The authority has concerns about the durability, and hence the compliance with the building code, of certain elements of the building 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 The 5-year delay between the substantial completion of the building work consented in 2002 and the applicant's request for a code compliance certificate in 2007 raises the matter of when all the elements of the building 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 2003.
- 9.5 It is not disputed, and I am therefore satisfied, that all the building elements complied with Clause B2 on 1 January 2003, refer paragraph 4.6.



- 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, because 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 house into compliance with the Building Code, identifying the items listed in paragraphs 7.4.1 and 8.1 and referring to any further defects that might be discovered in the course of investigation and rectification, 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 house 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 would 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 owner should then produce a response to this in the form of a detailed proposal, produced in conjunction with a competent and suitably qualified person, as to the rectification or otherwise of the specified issues. Any outstanding items of disagreement can then be referred to the Chief Executive for a further binding determination.
- 10.3 I also note that a change from the consent drawings has been identified and I leave the matter of appropriate documentation of this change to the authority for resolution with the applicant.

## **11. The decision**

- 11.1 In accordance with section 188 of the Building Act 2004, I hereby determine that the house does not comply with Clauses B1 and B2 of the Building Code, and accordingly confirm the authority's decision to refuse to issue a code compliance certificate.
- 11.2 I also determine that:

- (a) all the building elements installed in the building, apart from the items that are to be rectified as described in this determination, complied with Clause B2 on 1 January 2003.
- (b) the building consent is modified as follows:
  - The building consent is subject to a modification to the Building Code to the effect that, Clause B2.3.1 applies from 1 January 2003 instead of from the time of issue of the code compliance certificate for all the building elements, except the items as set out in paragraphs 7.4.1 and 8.1 in Determination 2008/89.
- (c) once the matters set out in paragraphs 7.4.1 and 8.1 have been rectified to its satisfaction, 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 23 September 2008.

John Gardiner  
**Manager Determinations**