

Determination 2008/26

Refusal of a code compliance certificate for alterations to a house at 72 Owhiro Bay Parade, Owhiro Bay, Wellington



1. The matter to be determined

- 1.1 This is a determination under Part 3 Subpart 1 of the Building Act 2004¹ (“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 applicants are the owners of the building, R Maclean and M Mitchell (“the applicants”) and the other party is the Wellington City Council (“the territorial authority”). I note that R Maclean is also the designer of the building work.
- 1.2 The matter for determination is whether the territorial authority’s decision to decline to issue a code compliance certificate for 5-year-old alterations to a house is correct. The refusal arose because the building work had been undertaken under the supervision of Prime Building Compliance Ltd (“the building certifier”), which was duly registered as a building certifier under the former Building Act 1991 but which had limitations imposed on its scope of approval with regard to compliance with E2/AS1 for residential buildings before it issued a code compliance certificate for the building work.

¹ The Building Act 2004 is available from the Department’s website at www.dbh.govt.nz.

1.3 I consider that the matters for determination are whether:

1.3.1 Matter 1: The claddings

Whether the roof and wall claddings as installed to the alterations comply with Clauses B2 and E2 (see sections 177 and 188 of the Act). By “the claddings as installed” I mean the components of the systems (such as the backing materials, the flashings, the joints and the coatings) as well as the way the components have been installed and work together.

1.3.2 Matter 2: Other Building Code clauses

Whether the building elements, other than the claddings, comply with the relevant clauses of the Building Code.

1.4 In order to determine the matter, I must address the following questions:

- (a) Is there sufficient evidence to establish that the building work as a whole complies with the Building Code? If so, a code compliance certificate can be issued.
- (b) If not, are there sufficient grounds to conclude that, once any outstanding items are repaired and inspected, the building work will comply with the Building Code? If so, a code compliance certificate can be issued in due course.

I address question a) in paragraph 5 and question b) in paragraph 10.

1.5 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 7.1.

1.6 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 alterations to an existing detached house situated on a flat site, which is in a very high wind zone for the purposes of NZS 3604². The site fronts onto a coastal road, and has a steep south-facing hill directly behind the house. The original house was built around 1920, and is a single storey building with rough-cast plastered concrete walls, concrete internal walls, suspended timber-framed floors, timber windows and a profiled metal hipped roof with a rear lean-to. An earlier structure at the rear of the site appears to have been an original bach, which was later attached to the western end of the house lean-to.

2.2 The alteration work includes:

- the construction of a new timber-framed membrane-covered roof structure above two existing bedrooms in the northeast corner of the rear lean-to,

^{2 2} New Zealand Standard NZS 3604:1999 Timber Framed Buildings

including the removal of an existing fireplace and the installation of high-level aluminium windows above the original concrete walls

- a new opening within the existing concrete wall between the kitchen and the living room
- the removal of a bay window to the front south elevation and the installation of a new aluminium window into the structural opening in the existing concrete wall.

2.3 The expert was unable to inspect the framing. However I note that the drawings specify the framing as “boric treated”, and the building certifier has described the framing (in the pre-line inspection record). as “Framing mainly H3” and “Ceiling battens H1”. I have received no other written evidence as to the treatment, if any, of the external wall framing timber. I therefore consider that the new wall and roof framing is likely to be treated to a level that will provide resistance to fungal decay.

2.4 The small section of wall below the sill of the new front window is clad in painted 6mm fibre-cement sheet, with timber battens over sheet joints and at mid-sheet.

2.5 New timber-framed walls are erected above the existing concrete bedroom walls to raise the new roof, which falls at 1.5° pitch towards a membrane-lined gutter beneath the eaves of the original roof. The roof and upper walls are clad in a liquid-applied deck membrane “Sonoshield Sonoguard” applied over 18mm plywood. I note that the BRANZ Appraisal Certificate No. 498 (2006) describes the product as a “liquid-applied UV resistant, moisture curing polyurethane waterproofing system with an integral aggregate wear layer”, which is applied to a minimum thickness of 1.6mm.

2.6 The manufacturer of the membrane, MBT (Australia) Pty Ltd has provided a 10-year “Product Guarantee” dated 23 March 2004 relating to the “Sonoshield Sonoguard” system. I have seen no producer statement or warranty for the installation of the membrane.

3. Background

3.1 Prime Building Compliance Ltd (“the building certifier”) was approved as a building certifier under section 53 of the Building Act 1991 on 5 January 1999.

3.2 The territorial authority issued a building consent (No. 94194 dated 14 October 2002), based on a building certificate (No. 200223201 dated 9 October 2002) issued by the building certifier for the purposes of gaining a building consent. The scope of engagement of the building certifier at that time contained no limitations with respect to Clause E2 External Moisture. The building consent was issued for:

New internal opening. Replacement of the existing roof on the rear of the house. New garage space.

3.3 The building certifier carried out the following inspections during construction:

- exterior pre-line and structure on 5 November 2002 (which passed)
- interior pre-line on 9 January 2003 (which passed).

- 3.4 I have received no records of further inspections undertaken during 2003 and, in February 2004, the building certifier's approval was amended, with respect to Clause E2 External Moisture, to restrict the certification of residential buildings to work that was covered by the Acceptable Solution E2/AS1.
- 3.5 On 17 March 2004, the applicant applied for an amendment to the building consent, attaching amended drawings that showed the garage space omitted, the garage door replaced with an aluminium window with fibre-cement cladding below and the addition of a clerestory window to the west wall of the raised roof area. At this time E2/AS1 did not include fibre-cement cladding.
- 3.6 The building certifier carried out a final inspection of the alterations on 31 March 2004, which included passing the weathertightness aspects of the claddings and windows. The only outstanding item noted in the inspection record was work required to install smoke detectors, which was subsequently confirmed as completed.
- 3.7 On 5 April 2004, the building certifier issued a code compliance certificate (C/C2002-3201) to the applicants, which noted that the certificate was:
- A final Code Compliance Certificate issued in respect of all the building work under the above Building Consent.
- 3.8 In a letter to the owners dated 6 April 2004, the territorial authority approved the amendment to the building consent, subject to the provision of an onsite car park and flashings to the new exterior window.
- 3.9 The applicants forwarded the code compliance certificate to the territorial authority on 1 October 2004.
- 3.10 The territorial authority wrote to the applicants and the building certifier on 8 October 2004, stating that it could not accept the code compliance certificate for the alterations as:
- the code compliance certificate dated 5 April 2004 predated the approval for the amendments to the consent on 6 May 2004
 - the alterations had claddings not covered by the Acceptable Solution E2/AS1, which were therefore outside the building certifier's amended approval (refer paragraph 3.4).
- 3.11 The building certifier's approval as a certifier expired on 30 December 2004.
- 3.12 I am not aware of any further communication between the parties until the applicant phoned the territorial authority on 7 December 2007 seeking information about the status of the amended building consent.
- 3.13 In an email to the applicant dated 11 December 2007, the territorial authority summarised the history of the building consent and noted that it had received no response from the building certifier to its letter of 8 October 2004. The territorial authority explained that a code compliance certificate could not be issued as it had not inspected the work, and outlined the following options for the owners:
- apply for a determination on the compliance of the work

- apply for a certificate of acceptance for the work
- take no further action.

3.14 The Department received an application for a determination on 17 December 2007.

4. The submissions

4.1 The applicants forwarded copies of:

- the consent drawings and the amended drawings
- the building certifier's inspection records
- the code compliance certificate dated 5 April 2004
- the correspondence from the territorial authority
- the code compliance certificate for electrical work
- information and warranty on the roof membrane
- various other engineering calculations and other statements.

4.2 The territorial authority wrote to the Department on 24 December 2007, setting out the background to the dispute. The territorial authority stated that it had not carried out any inspections of the building work, nor had the building certifier notified the territorial authority that it was unable to inspect or certify the building work as required by section 57 (3) of the 1991 Act. As the building certifier had not supplied a building certificate under section 56 of the 1991 Act for the work or an acceptable code compliance certificate, the territorial authority had insufficient grounds to be satisfied that the work was code compliant. In addition, the territorial authority considered that the issuing of a certificate of acceptance under section 437 of the Act was the appropriate method to deal with the issues.

4.3 The territorial authority forwarded copies of:

- the building certificate and scope of engagement dated 9 October 2002
- the email to the applicant dated 11 December 2007.

4.4 Copies of the submissions and other evidence were provided to the applicants and the territorial authority. Neither party made any further submissions in response to the submission of the other party.

4.5 A copy of the draft determination was sent to the parties for comment on 4 March 2008.

5. Grounds for the establishment of code compliance

5.1 In order for me to form a view as to code compliance, I need to establish what evidence is available and what can be obtained considering that the alteration work is completed and some of the elements are not able to be cost-effectively inspected.

- 5.2 In this case the evidence consists of the records of inspections carried out by the building certifier. I also consider that the code compliance certificate is evidence of the building certifier's satisfaction with the code compliance of the building work at the time that the certificate was issued, despite the certificate not being acceptable due to the scope limitations imposed three months earlier.
- 5.3 The territorial authority does not believe it can rely on the building certifier's reports and purported code compliance certificate, because of the building certifier's insurance cover and the date of the issue of the code compliance certificate. Therefore, it has insufficient grounds to be satisfied that the work is code compliant.
- 5.4 I therefore need to decide if there are reasonable grounds to come to the view that the work is code compliant, particularly in regards to inaccessible building components.
- 5.5 In deciding whether or not to rely on the building certifier's inspection records, my approach is to look for evidence that corroborates them. In this particular case, the corroboration comes from the visual inspection of the accessible components by the expert, which can be used to verify whether the building certifier's inspections were properly conducted. I note that this visual inspection includes an assessment of weathertightness issues with regard to the claddings.
- 5.6 Accordingly, given the observations in the expert's report, and in the absence of any evidence to the contrary, I take the view that I am entitled to rely on the inspections undertaken by the building certifier.
- 5.7 In summary, I find that the following do allow me to form a view as to the code compliance of the building work as a whole:
- the records of the four inspections carried out by the building certifier which include satisfactory inspections of the inaccessible components.
 - the code compliance certificate dated 5 April 2004
 - the expert's report as outlined below.

6. The expert's report

- 6.1 As mentioned in paragraph 1.5, 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.
- 6.2 The expert inspected the alterations on 4 February 2008 and furnished a report that was completed on 7 February 2008. The expert noted that, apart from the items outlined in paragraph 6.4.3, the building work appeared to be of an adequate standard, with the membrane cladding satisfactory and junctions with the existing walls "adequate and well formed".
- 6.3 The expert noted changes to the amended consent drawings, including:
- the addition of a non load-bearing timber-framed partition

- the 18mm plywood roof substrate extended down the upper walls, in lieu of fibre cement, beneath the membrane.

The expert considered that the change to plywood provided a stronger and more durable substrate for the membrane.

6.4 The claddings

6.4.1 The expert noted that the new windows are face-fixed with aluminium head flashings. The windows in the membrane cladding are face-fixed onto a planted timber border, with the membrane extended around the border and the window unit sitting proud of the timber-framed upper walls. The expert noted that the windows appeared to be well flashed and sealed.

6.4.2 The expert inspected the interior of the alterations, and no evidence of moisture was observed. The expert took extensive non-invasive moisture readings through the membrane from the outside. As there were no obvious risky areas and no indication of any moisture problems, the expert did not consider it necessary to carry out invasive moisture testing.

6.4.3 Commenting specifically on the claddings to the alterations, the expert noted that:

- the apron flashing at the junction of the upper membrane wall with the existing corrugated steel lean-to roof is corroding
- one end of the flashing above an existing window in the east elevation (below the upper membrane wall) is not weathertight, with gaps apparent.

6.4.4 The expert also noted that, although the front sealing on the driveway covered the bottom edge of the fibre cement cladding, the back of the cladding is open to the subfloor area and well below the level of the existing timber floor. The expert considered that the detail protected the area from wind-blown sand accumulation, and presented little risk to any timber framing as any moisture wicking into the cladding is able to dissipate into the subfloor.

6.5 Other relevant code clauses

6.5.1 The expert noted that the smoke detectors installed during construction had been removed.

6.5.2 The expert also assessed the consented building work for compliance with other relevant building code clauses, and made the following comments on those clauses relevant to these alterations:

- **B1 Structure**

The building certifier's pre-line inspection record indicated satisfactory inspection of structural fixings and framing, and the internal and external visual inspection provided no evidence of structural problems.

- **E1 Surface Water**

The new driveway drains away from the house, and all stormwater drains to stormwater drains, with no apparent drainage problems.

- **E3 Internal moisture**

There were no signs of actual or potential moisture problems within the consented building work.

- **G4 Ventilation**

Opening windows provide adequate natural ventilation.

- **G7 Natural Light**

The alterations have adequate provision of natural light to all habitable rooms.

- **G9 Electricity**

An Electrical Certificate of Compliance has been provided for the alteration work.

- **H1 Energy Efficiency**

The building certifier's pre-line inspection record indicates that wall and ceiling insulation was inspected and passed as satisfactory.

6.6 A copy of the expert's report was provided to the parties on 8 February 2008.

7. Evaluation for code compliance

7.1 Evaluation framework

7.1.1 I have evaluated the code compliance of these alterations by considering the following two broad categories of the building work:

- The weathertightness of the new exterior walls and roof claddings (Clause E2) and durability (Clause B2 in so far as it relates to Clause E2).
- The remaining code requirements relevant to the consented alterations.

In the case of these alterations, weathertightness considerations are addressed first.

7.1.2 In evaluating the design of a building and its construction, it is useful to make some comparisons with the relevant Acceptable Solutions³, which will assist in determining whether the features of these houses are code compliant. However, in making this comparison, the following general observations are valid:

- Some Acceptable Solutions cover the worst case, so that they may be modified in less extreme cases and the resulting alternative solution will still comply with the Building Code.
- Usually, when there is non-compliance with one provision of an Acceptable Solution, it will be necessary to add some other provision to compensate for that in order to comply with the Building Code.

7.2 Evaluation of external building envelope for E2 and B2 Compliance

7.2.1 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

³ 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.

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 determinations⁴ (for example, Determination 2004/1) relating to cladding and these factors are also used in the evaluation process.

- 7.2.2 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 the alterations:

- are to an existing house in a very high wind zone
- are one storey high
- are to a simple house, which has mainly concrete exterior and interior walls
- have limited areas of external wall framing that is likely to be treated to a level that provides resistance to the onset of decay if the framing absorbs and retains moisture.

- 7.3.2 The alterations have been evaluated using the E2/AS1 risk matrix. The risk matrix allows the summing of a range of design and location factors applying to a specific building design. The resulting level of risk can range from 'low' to 'very high'. The risk level is applied to determine what claddings 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.

- 7.3.3 When evaluated using the E2/AS1 risk matrix, the weathertightness features outlined in paragraph 7.3.1 show that all relevant elevations of the building work demonstrate a low weathertightness risk rating. I note that, if the details shown in E2/AS1 were adopted to show code compliance, the fibre-cement cladding on this house would not require a drained cavity. I also note that the membrane cladding is not covered by the details shown in E2/AS1.

7.4 Weathertightness performance: exterior cladding

- 7.4.1 Generally the cladding appears to have been installed in accordance with good trade practice. However, based on the expert's opinion, I accept that remedial work is necessary in respect of the following:

- the corroded apron flashing at the junction of the existing lean-to roof

⁴ Copies of all determinations issued by the Department can be obtained from the Department's website.

- the inadequate weatherproofing of one end of the flashing above an existing window in the east elevation.

7.4.2 I also note the expert's additional comment in paragraph 6.4.4, and I accept that the base of the fibre-cement cladding beneath the new front window is adequate in the circumstances.

7.5 Evaluation of other code requirements

7.5.1 Based on the expert's comments as outlined in paragraph 6.5.2, there appears to be no evidence of any lack of compliance with the relevant clauses of the Building Code. I note the expert's comment in paragraph 6.5.1 with respect to smoke detectors and I respond to this in paragraph 9.1.1.

7.5.2 Taking account of the expert's assessment of visible components of the building together with the inspection records and the other documentation, I consider that the alterations are likely to comply with the provisions of the remaining relevant code clauses.

Matter 1: The cladding

8. Discussion

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

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

8.3 Because the faults identified with the cladding system occur in discrete areas, I am able to conclude that satisfactory rectification of the items outlined in paragraph 7.4.1 will result in the building becoming and remaining weathertight and in compliance with Clauses B2 and E2.

8.4 As stated in paragraph 11.1, other faults may become evident during the course of rectifying the faults outlined in paragraph 7.4.1. If the process described in paragraph 11.2 is followed, the territorial authority will be able to satisfy itself, by appropriate inspection, that faults identified in the course of rectification are themselves rectified. The territorial authority may of course decline to issue a code compliance certificate if any of the faults described in paragraph 7.4.1, or associated faults that are discovered in the course of rectification, are not rectified to its satisfaction.

- 8.5 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: Other Building Code matters

9. Discussion

- 9.1.1 I note that smoke detectors are not currently installed, although it appears detectors may have been installed in the past (refer paragraphs 3.6 and 6.5.1). This was not a requirement of the Building Code at the time of construction, however, I strongly recommend that they be installed in accordance with F7/AS1.
- 9.1.2 I also consider that the expert's inspection and comments as outlined in paragraph 6.5.2 establishes that the building work complies with all other relevant clauses of the building code. Based on the expert's assessment of visible components of the building, together with the inspection records and other documentation, I consider that the building is likely to comply with the provisions of the remaining relevant code clauses.
- 9.1.3 I accordingly consider that the building work complies with Clauses B1, E1, E3, G4, G7, G9 and H1 of the Building Code.

10. The appropriate certificate to be issued

- 10.1 Having found that the building can be brought into compliance with the Building Code, I must now determine whether the territorial authority should issue either a certificate of acceptance or a code compliance certificate.
- 10.2 Section 437 of the Act provides for the issue of a certificate of acceptance where a building certifier is unable or refuses to issue either a building certificate under section 56 of the former Act, or a code compliance certificate under section 95 of the current Act. In such a situation, a territorial authority may, on application, issue a certificate of acceptance or a code compliance certificate.
- 10.3 I am of the view that a code compliance certificate is the appropriate certificate to be issued in this situation, as I have reasonable grounds to conclude that the building work can be brought into compliance with the Building Code.
- 10.4 I note that under the Building Act 1991 a building certifier was not able to issue a valid building certificate unless the building certifier had in place an appropriate scheme of insurance to cover the work that was being certified. In this instance, I also note that the code compliance certificate was in respect of work that had not yet been approved by the territorial authority as an amendment to the original consent.

11. What is to be done now?

- 11.1 I note that the territorial authority has not issued a notice to fix. A notice to fix should be issued that requires the applicants to bring the additions and alterations into compliance with the Building Code, identifying the defects listed in paragraph 7.4.1, and any further defects that might be discovered in the course of rectification. The notice to fix should not specify how the defects are to be rectified. That is a matter for the applicants to propose and for the territorial authority to accept or reject. It is important to note that the Building Code allows for more than one method of achieving compliance.
- 11.2 I suggest that the parties adopt the following process to meet the requirements of paragraph 11.1. Initially, the territorial authority should issue the notice to fix. The owner should then produce a response to this in the form of a technically robust proposal, 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.
- 11.3 I note that the expert has identified several changes from the approved amended building consent and has noted no apparent problems related to the changes (refer paragraph 6.3). I therefore consider that appropriate documentation of these changes is best left to the applicants and the territorial authority to resolve.

12. The Decision

- 12.1 In accordance with section 188 of the Building Act 2004, I hereby determine that the claddings do not comply with Clause B2 of the Building Code, and accordingly confirm the territorial authority's decision to refuse to issue a code compliance certificate.
- 12.2 The territorial authority shall issue a code compliance certificate once the items listed in the notice to fix have been fixed to its satisfaction.
- 12.3 I note that the expert has identified several changes from the approved amended building consent and has noted no apparent problems related to the changes (refer paragraph 6.3). I therefore consider that appropriate documentation of these changes is best left to the applicants and the territorial authority to resolve.

Signed for and on behalf of the Chief Executive of the Department of Building and Housing on 29 April 2008.

John Gardiner
Manager Determinations