

Determination 2008/64

Determination regarding the code compliance of a house at 25 Whakamarama Road, RD6, Tauranga



1. The matters 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, Mr and Mrs McLean (“the applicants”), acting through the builder, Belvedere Construction Ltd (“the builder”) and the other party is the Western Bay of Plenty District Council, in its role as a building consent authority (“the authority”). I note that one of the applicants was also the plasterer for the building.
- 1.2 I take the view that the matter for determination is whether a 5-year old house complies with the requirements of the Building Code² (First Schedule, Building Regulations 1992) as required by sections 177(a) and 188 of the Act.
- 1.3 I note that the authority has stated in a certificate of acceptance it has issued that it is satisfied the building complies with the requirements of Building Code Clauses E1, F2, F4,G1 to G7, and H1 (with respect to the ceiling insulation only).

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

² The Building Code is available from the Department’s website at www.dbh.govt.nz.

1.4 The authority made a late submission, as outlined in paragraph 4.6, that the compliance of the house with Clause B2 Durability should be added as a matter to be determined.

1.5 The matter arose because the building work had been undertaken under the supervision of Bay Building Certifiers (“the building certifier”), which was duly registered as a building certifier under the former Building Act 1991, but which went into voluntary liquidation before it had issued a code compliance certificate for the building work.

1.6 I therefore take the view that the matters for determination are:

1.6.1 Matter 1: The building envelope

Whether the claddings as installed on the house comply with Clauses B2 and E2. By “the claddings as installed” I mean the components of the system (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.

1.6.2 Matter 2: Compliance with the remaining code clauses

Whether the building as a whole complies with the remaining code clauses other than those contained in the certificate of acceptance issued by the authority (being Clauses B1, G12, G13, and H1).

1.6.3 Matter 2: The durability considerations

Whether the building elements comply with Clause B2 “Durability” of the Building Code, taking into account the age of the building work.

1.7 In order to determine Matter 1, 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?
- (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?

I address these questions in paragraphs 5 and paragraph 9

1.8 The applicants’ submission seems to indicate that there has been a refusal to issue a code compliance certificate. However, I have not received any documentation that shows that a request for a code compliance certificate has been made by the applicant or that the authority has refused such a request.

1.9 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 7.1.

1.10 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 detached house situated on a rural site sloping down to the north, which is in a moderate wind zone for the purposes of NZS 3604³. The house is fairly complex in form and is 2-storeys high on the north elevation and single-storey on the south, with a partial basement level accommodating the garage and entry foyer. The construction of the basement level is specifically engineered, with concrete foundations and slab, concrete block walls (including retaining walls) and a suspended concrete floor to the upper level. The remaining construction is conventional light timber frame, with concrete slabs and foundations, monolithic claddings, and aluminium windows. The 25° pitch profiled metal gabled roof is stepped down at the ends, and has eaves and verge projections of about 600mm except for a projecting section and several recessed sections of the upper north wall.
- 2.2 A deck, with open metal balustrades, runs along the north face of the house. The deck floor of the central area is tiled concrete and partly situated above enclosed basement areas, while the ends have spaced timber slats over open timber framing.
- 2.3 The expert noted that he was informed by the builder that the timber wall framing was untreated. Given the date of construction and the lack of other evidence, I consider the external wall framing to be untreated.
- 2.4 The monolithic cladding is restricted to the upper level, and is a system described as solid plaster over a rigid backing. In this instance it consists of 4.5 mm “Hardibacker” sheets fixed over 50mm x 25mm H3 treated timber battens installed over the building wrap and framing timbers, then covered by a slip layer of building wrap, metal-reinforced 21mm thick solid plaster (with fibreglass added to the plaster mix) and a flexible paint coating.
- 2.5 The cladding applicator, who is also one of the applicants, has supplied a producer statement dated 15 August 2007 for the solid plaster, which notes that the cladding system was applied in accordance with NZS 4251⁴ and recognised standard solid plastering methods.

3. Background

- 3.1 The authority issued a building consent (No. 67834) on 9 September 2002, under the Building Act 1991, based on a building certificate, which I have not seen, issued by the building certifier.
- 3.2 The building certifier carried out the following inspections during construction:
- footings on 26 September and 1 October 2002 (which passed)
 - underfloor on 4 October and 29 October 2002 (which passed)
 - slab on 16 October 2002 (which passed)
 - building preline on 13 December 2002 (which passed)

³ New Zealand Standard NZS 3604:1999 Timber Framed Buildings

⁴ New Zealand Standard NZS 4251:1974 Code of practice for solid plastering

- plumbing preline on 10 January 2003 (which passed)
- drainage on 22 January 2003 (which passed)
- final inspection on 25 August 2003 (which passed for plumbing).

The inspection summary for the final inspection notes “gap between handrail and exterior deck 110mm”.

- 3.3 The building certifier went into voluntary liquidation before it could issue a code compliance certificate.
- 3.4 I have received no records of any correspondence about the project until the builder followed the matter up with Bay Inspections Ltd, whose operations manager (“the manager”) responded in a facsimile dated 3 August 2007. The manager advised that he had been employed by the building certifier and that he had checked the inspection records. He noted that the job had progressed well with all the required inspections carried out and passed, and he considered that the cladding was likely to have been completed properly as “the owner is a very experienced solid plasterer with an excellent reputation”. The manager explained that, although in a position of having to “stand behind a third party’s work”, the authority should have reasonable grounds to issue a certificate of acceptance.
- 3.5 The authority issued a certificate of acceptance (No. 77545) under section 99 of the Act on 30 August 2007. The certificate accepted the compliance of:
1. Finished ground levels; excepting cladding to suspended deck clearance
 2. Ceiling insulation
 3. Safety glazing
 4. Sealing of floors, walls and ceiling surfaces in wet areas but does not include tanking of showers.
 5. Installation of hot water cylinder
 6. Natural light
 7. Natural ventilation
 8. Safety from falling
 9. Access routes.

The certificate also stated:

This certificate does not include the structure, exterior cladding/weathertightness of the building or water pipes, waster pipes or other enclosed services or materials.

- 3.6 The Department received an application for a determination on 13 March 2008.

4. The submissions

- 4.1 Within the application form, the applicants stated that the matter for determination was the refusal of the authority to issue a code compliance certificate. I have referred to this matter in paragraph 1.8.
- 4.2 The applicants forwarded copies of:
- the drawings
 - the building consent

- the building certifier's inspection summary
- the facsimile from Bay Inspections Ltd dated 3 August 2007
- the producer statement for the cladding.

4.3 The authority made no submission.

4.4 A copy of the applicants' submission and other evidence was provided to the authority, which did not respond to the information.

4.5 A draft determination was issued to the parties on 27 May 2008. The applicant accepted the draft on 4 June 2008.

4.6 In an emailed submission to the Department, dated 20 June 2008, the authority noted that it holds an unsigned application for a certificate of acceptance for the building work. The territorial authority also noted:

The building consent was issued 9/9/2002 and a final inspection carried out by the Certifier 25/8/2003. It could reasonably have been expected to have been completed at that date and I believe it would be appropriate for the determination to reflect this in terms of directing that the building consent be amended accordingly.

4.7 I have added Clause B2 Durability as a matter to be determined which I discuss in paragraph 10.

4.8 A second draft determination was sent to the parties for comment on 25 June 2008. Both parties accepted the draft without comment.

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 building work is completed and some of the elements are not able to be cost-effectively inspected.

5.2 In this case the evidence provided by the applicants consists of the summary of inspections carried out by the building certifier and the certificate of acceptance issued by the authority. I first need to decide if I can rely on those inspections that were undertaken by the building certifier, particularly in regard to inaccessible building components.

5.3 In this case, the authority does not believe it can rely on the building certifier's reports and any decision it makes with respect to compliance is limited by what items it is able to inspect. I therefore need to decide if I can rely on the building certifier's inspection summary, particularly in regards to inaccessible building components.

5.4 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. However, before deciding whether or not to rely on its inspection record, I consider it important to look for evidence that corroborates that record.

- 5.5 In this particular case, 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.
- 5.6 I note that the inspection summary indicates that 12 inspections were required for the project, and 10 inspections were carried out, with the only outstanding item appearing to be the compliance of the deck balustrade, which is now accepted as compliant by the authority (refer paragraph 3.5, item 8).
- 5.7 In summary, I find that the following allows me to form a view as to the code compliance of the building work as a whole:
- The summary of inspections carried out by the building certifier which indicates satisfactory inspections of the inaccessible components.
 - The certificate of acceptance dated 30 August 2007, which indicates compliance of various building elements.
 - The expert's report as outlined below.

6. The expert's report

- 6.1 As mentioned in paragraph 1.9, I engaged an independent expert to provide an assessment of the condition of the building. The expert is a member of the New Zealand Institute of Building Surveyors.
- 6.2 The expert inspected the house on 3 April 2008 and furnished a report that was completed on 10 April 2008, which noted that the house appeared to be in accordance with the consent drawings.

6.3 The building envelope

- 6.3.1 The expert described the building as well-maintained and noted that the cladding had been repainted. Workmanship appeared to be of high standard, with all flashings "completed in a good tradesman like manner" and the cladding in good condition, with control joints installed above and below windows.
- 6.3.2 The expert noted that the windows were face-fixed against the backing sheets, with metal head flashings, no sill flashings and sealant applied under and around the window flanges. There was no sign of any moisture penetration. Although the windows lack sill flashings, they are generally protected beneath roof overhangs and are further protected by the cavity should moisture penetrate the sills.
- 6.3.3 The expert noted that the cavity system incorporated 25mm gaps at the ends of the horizontal battens to allow drainage, with a continuous bottom batten forming the cavity closure. The bottom batten was drilled with 12mm holes at 600mm centres.
- 6.3.4 The expert inspected the interior of the house, taking non-invasive moisture readings internally, and no evidence of moisture was observed. As the only obvious high risk areas are the junctions of the cladding with the decks and there was also no indication of any moisture problems, the expert did not consider it necessary to carry out invasive moisture testing.

6.3.5 Commenting specifically on the wall cladding, the expert noted that the holes drilled through the batten cavity closure did not allow sufficient drainage from the cavity.

6.3.6 The expert also noted that, although the plaster butts against the deck tiles and the timber decking, the tiled concrete floors are well drained away from the junctions and the junctions of the timber decking are protected beneath the eaves – and these junctions should remain weathertight if regularly inspected and maintained.

6.4 Compliance with the remaining code clauses

6.4.1 B1 Structure

The inspection record notes adequate inspections of the slab and foundations, and the internal and external visual inspection showed no signs of problems. No producer statement for the construction has been supplied, but the applicant has advised that the engineer would be consulted.

6.4.2 E3 Internal moisture

The tanking to the showers could not be inspected, but no elevated moisture levels or signs of leaking were detected. (I note that the authority has accepted the other elements related to internal moisture).

6.4.3 G12 Water Supplies, and G13 Foul Water

The building certifier's inspection summary indicates that satisfactory plumbing and drainage inspections were undertaken, and the as-built drainage plan was supplied. The expert noted that all fixtures appear to be in good operating condition with no evidence of leaks.

6.4.4 H1 Energy Efficiency

The building certifier's inspection summary indicates that satisfactory preline inspections were undertaken. (I note that the authority has accepted the ceiling insulation).

6.5 A copy of the expert's report was provided to the parties on 17 April 2008.

Matter 1: The building envelope

7. Evaluation for code compliance

7.1 Evaluation framework

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

- The weathertightness of the external building envelope (Clause E2) and durability (Clause B2 in so far as it relates to Clause E2).
- The remaining relevant code requirements.

In the case of this house, 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 Solutions⁵, 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 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 the building envelope

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 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 determinations⁶ (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 this house:

- is built in a moderate wind zone
- is a fairly complex, 2-storey building
- has solid plaster cladding over a drained cavity, to the upper walls
- has concrete block basement walls and concrete slab floors to all levels
- has eaves and verge projections of about 600mm above most 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

⁵ 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.

⁶ Copies of all determinations issued by the Department can be obtained from the Department's website.

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 one elevation of the house demonstrates a medium weathertightness risk rating and the remaining elevations a low rating. I note that, if the details shown in E2/AS1 were adopted to show code compliance, the monolithic cladding on this house would require a drained cavity.

7.4 Weathertightness performance

- 7.4.1 Generally the cladding appears to have been installed in accordance with NZS 4251 and good trade practice. Taking account of the expert's report, I conclude that remedial work is necessary in respect of the following:

- Inadequate provision of drainage through the bottom cavity battens.

- 7.4.2 I note the expert's comment in paragraph 6.3.2 on the lack of sill flashings, and I accept that the window installation is adequate in these particular circumstances.

- 7.4.3 I also note the expert's comment in paragraph 6.3.6 on the deck to wall junctions, I accept that these are adequate in the particular circumstances, taking into account the following considerations:

- The tiled decks have well-drained concrete floors with concrete walls below and, except for the dining room projection, are recessed beneath deep roof overhangs.
- At the projecting wall, any moisture that may penetrate the deck junction will be kept away from the building wrap and the wall framing by the cavity and the step in the concrete slab, with the consequences of any unlikely damage being limited to the cavity battens.
- The timber deck junctions are sheltered beneath the eaves and any moisture that may penetrate will be kept away from the building wrap and the framing and drained to the outside by the cavities.

7.5 Conclusion

- 7.5.1 I consider the expert's report establishes that the current performance of the cladding is adequate because it is currently preventing water penetration into the building. 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 work 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 rectification of the item outlined in paragraph 7.4.1 will result in the house being brought into compliance with Clauses B2 and E2.
- 7.5.4 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 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: Compliance with the remaining code clauses

8. Evaluation for code compliance

- 8.1 Based on the expert's comments as outlined in paragraph 6.4, there appears to be no evidence of any lack of compliance with other relevant clauses of the Building Code. However, I also note that the following documentation has not been supplied:
- A structural engineer's producer statement for the specifically engineered parts of the construction.
- 8.2 Taking account of the expert's assessment of visible components of the building together with the inspection records, the certificate of acceptance and the other documentation, I consider that the building is likely to comply with the provisions of the remaining relevant code clauses.
- 8.3 In addition, an energy works certificate should be supplied to the authority, if this has not been supplied already, to confirm compliance with Clause G9.

8.4 Conclusion

- 8.4.1 I consider that the expert's inspection and comments as outlined in paragraph 6.4 establishes that the building work complies with Clauses E3, G12, G13 and H1 of the Building Code. I also consider that, providing the documentation outlined in paragraph 8.1 is supplied, the building work will comply with Clause B1 of the Building Code.
- 8.4.2 Based on the expert's assessment of visible components of the building, together with the inspection records, the certificate of acceptance and other documentation, I therefore consider that the building is likely to comply with the provisions of the remaining relevant code clauses when the outstanding documentation is provided.

9. The appropriate certificate to be issued

- 9.1 Having found that the building can be brought into compliance with the Building Code, I must now determine whether the authority can issue either a certificate of acceptance or a code compliance certificate.

- 9.2 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, the authority may, on application issue a certificate of acceptance.
- 9.3 In this instance, it appears that the applicants filled in, but did not sign, an application for the certificate of acceptance issued by the authority on 30 August 2007 (refer paragraph 4.6). However, I take the view that the applicants' submission (refer paragraph 4.1) indicates that they want a code compliance certificate, rather than a certificate of acceptance.
- 9.4 In this situation, where I have reasonable grounds to conclude that the consented building work can be brought into compliance with the Building Code, I am of the view that the certificate of acceptance was not the only possible outcome, and that a code compliance certificate is the appropriate certificate to be issued in due course.

Matter 3: The durability considerations

10. Discussion

- 10.1 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 completion of the building during 2003.
- 10.2 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).
- 10.3 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.
- 10.4 The 5-year delay between the substantial completion of the house and the applicant's request for a code compliance certificate raises the issue of when the building elements complied with Clause B2.
- 10.5 The final inspection carried out on 25 August 2003 noted only one outstanding item (gap between handrail and exterior deck). I also note that this date has been proposed by the authority as the date when the building was complete. I am

therefore of the opinion that compliance with Clause B2 was achieved on 25 August 2003.

- 10.6 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.
- 10.7 I continue to hold that view, and therefore conclude that:
- (c) the authority has the power to grant an appropriate modification of Clause B2 in respect of all the building elements.
 - (d) 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 house had been issued in 2003.
- 10.8 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.

11. What is to be done now?

- 11.1 A notice to fix should be issued that requires the owners to bring the house into compliance with the Building Code, identifying the items listed in paragraph 7.4.1 and paragraph 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 stipulate directly 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.
- 11.2 I would suggest that the parties adopt the following process to meet the requirements of paragraph 11.1. 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.

12. The decision

- 12.1 In accordance with section 188 of the Building Act 2004, I hereby determine that the building does not comply with clauses B1, and B2 of the Building Code.
- 12.2 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 25 August 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 25 August 2003 instead of from the time of issue of the code compliance certificate for all building elements except the items to be rectified as set out in paragraphs 7.4.1 and 8.1 of Determination 2008/64.

- (c) The authority is to issue a code compliance certificate in respect of the building consent as amended, once the matters set out in paragraphs 7.4.1 and 8.1 have been fixed to its satisfaction.
- (d) I reverse the decision of the authority to issue the certificate of acceptance dated 30 August 2007. The certificate of acceptance is to be withdrawn after the code compliance certificate has been issued.

Signed for and on behalf of the Chief Executive of the Department of Building and Housing on 15 July 2008.

John Gardiner
Manager Determinations