

Determination 2007/36

Refusal of a code compliance certificate for a house at 7 Goodwin Street, Onerahi, Whangarei



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, Determinations Manager, 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 Weatherley (“the applicants”) and the other party is the Whangarei City Council (“the territorial authority”).
- 1.2 The matter for determination is the territorial authority’s decision to refuse to issue a code compliance certificate for the 10-year-old alterations and additions to a house because it was not satisfied that they complied with clauses B2 “Durability” and E2 “External Moisture” of the Building Code² (First Schedule, Building Regulations 1992).

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.

- 1.3 The matters to be determined are whether:
1. the cladding as installed to the walls of the building (“the cladding”), complies with clause E2 (see sections 177 and 188 of the Act). By “the cladding 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; and
 2. all the building elements installed in the house comply with clause B2 of the Building Code, considering the time that has elapsed since the elements were constructed.
- 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. With regard to the cladding, 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 alterations and additions to a single storey detached house situated on a slightly sloping site, which is in a medium wind zone for the purposes of NZS 3604³. The altered house is a maximum of two storeys high and is relatively simple in plan and form. Construction is conventional light timber frame constructed on either concrete or timber-framed floors. The pitched roofs are at two main levels with hip and wall-to-roof junctions. Apart from one high-level end wall, which has flush fascias, the roofs have 600mm wide eaves projections.
- 2.2 A large timber-framed open deck with a timber-framed balustrade is constructed at one elevation of the house supported on timber beams and columns. A similarly constructed landing with a set of timber access steps is situated at the main entry.
- 2.3 I have received no written evidence as to the treatment, if any, of the external wall framing timber. However, the expert is of the opinion that it is likely to be treated and the applicants have stated that the framing timbers used to construct the balcony and the balustrades are either H3 or H4 treated.
- 2.4 The new and existing walls of the house are clad with fibre-cement sheets fixed through the building wrap to the framing, and finished with texture coated and painted systems. I note that the original plans show the cladding to be “Insulclad” and I have not received any information as to whether the original consent has been amended to accommodate this variation.
- 2.5 I have received no copies of producer statements or warranties for the cladding.

^{3 3} New Zealand Standard NZS 3604:1999 Timber Framed Buildings

3. Sequence of events

- 3.1 The territorial authority issued a building consent on 15 January 1996. This was reportedly based on a building certificate (which I have not seen) issued by Building Certifiers (Whangerei) Ltd (the “building certifier”).
- 3.2 The building certifier carried out some inspections in 1996. According to a report provided to the applicants by a consultant (“the consultant”), the building certifier carried out a final inspection of the property but was unable to issue a final certificate as the deck had not been completed and some handrails had not been installed. I have not received any further documentation to verify this information.
- 3.3 On 28 June 2006 the territorial authority wrote to the applicants, stating that, as it believed the building did not comply with clauses B2 and E2, it was not able to issue a code compliance certificate.
- 3.4 The applicants engaged the consultant to carry out a “safe and sanitary non-invasive inspection” of the house. Following an inspection of the property, the consultant produced a report dated 26 July 2006, which was subject to certain limitations. In summary, the consultant stated that the house had been completed in accordance with the approved plans and documents. According to the report, the items outstanding at the time of the final inspection had been completed and met the requirements of the Building Code of the day. The consultant also confirmed its view that the house was “safe and sanitary”.
- 3.5 The territorial authority did not issue a notice to fix as required under section 164(2) of the Building Act 2004.
- 3.6 An application for a determination was received by the Department on 29 September 2006.

4. The submissions

- 4.1 The applicants forwarded copies of:
- the plans and specifications
 - the building consent
 - some inspection records
 - the letter dated 28 June 2006 from the territorial authority
 - the consultant’s report of 26 July 2006.
- 4.2 A copy of the draft determination was sent to the parties for comment on 24 November 2006. The territorial authority accepted the draft.
- 4.3 The applicants responded saying they did not accept the draft determination for the same reasons that they did not accept the expert’s report (refer paragraph 5.6).

5. The expert's report

- 5.1 As discussed in paragraph 1.4, I engaged an independent expert capable of providing 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.
- 5.2 The expert inspected the claddings of the house on 26 October 2006, and furnished a report that was completed on 1 November 2006. The expert noted that the general standard of workmanship and finishing is to a “basic standard only with poor attention to detail”. In particular, “basic [construction] principles have been ignored . . . creating high-risk areas”.
- 5.3 The expert took non-invasive moisture readings internally and externally around the new extension and some elevated readings were noted. Invasive moisture readings were taken through the wall cladding and where the expert had removed cladding at two locations. Readings of 21% at the southwest corner wall and 64% at the kitchen window location were obtained. Badly decayed timber was evident at the latter location and there is evidence of water ingress at the internal garage wall. Moisture levels above 18% recorded after cladding is in place generally indicate that external moisture is entering the structure.
- 5.4 Commenting specifically on the cladding, the expert noted that:
- there are cracks in the cladding at some locations
 - the sheet layout does not comply with the manufacturer's instructions
 - there are no vertical control joints evident in the cladding
 - the bottom of the cladding has been taken down to ground level at most locations
 - cladding is taken hard down onto the roofing at some locations and also onto the decking
 - the head flashings above the external joinery units have limited projection past the jamb lines, and the joinery units lack jamb and sill flashings
 - the top of the deck balustrades are flat and also lack metal flashings at some locations
 - The gutter above the kitchen window has been cut away
 - some penetrations are inadequately sealed or flashed and there is a large hole in the cladding to the existing structure.
- 5.5 Copies of the expert's report were provided to each of the parties on 10 November 2006.

5.6 The applicants responded to the expert's report in an email to the Department dated 20 November 2006. The applicants noted that the cladding was fixed in accordance with the manufacturer's instructions and BRANZ documentation and the same details applied in February 2006. The work had previously been passed by the territorial authority. The applicants queried some details of the expert's report particularly in regard to flashings, ground clearances and control joints. It was noted that the balcony was constructed with H3 or H4 Tanalised timber framing and the timber decay was due to guttering problems and was not due to the cladding. The applicants noted that the main high moisture reading was around a window, and this problem could easily be rectified.

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 Solution⁴, in this case E2/AS1, 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.

6.1.2 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 determinations⁵ (refer to Determination 2004/1 *et al*) relating to cladding and these factors are also used in the evaluation process.

6.1.3 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.

⁴ 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.

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

6.2 Weathertightness risk

6.2.1 In relation to these characteristics I find that the house:

- is built in a medium wind zone
- is a maximum of two storeys high
- is relatively simple in plan and form
- generally has 600mm wide eaves projections
- has one external large open deck
- has 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. However, the timber has already experienced decay at some locations.

6.2.2 When evaluated using the E2/AS1 risk matrix, all elevations of the house demonstrate a moderate weathertightness risk. The matrix is an assessment tool that is intended to be used at the time of application for consent, before the building work has begun and, consequently, before any assessment of the quality of the building work can be made. Poorly executed building work introduces a risk that cannot be taken into account in the consent stage but must be taken into account when the building as actually built is assessed for the purposes of issuing a code compliance certificate.

7 Conclusion

7.1 Taking into account the expert's report, I am satisfied that the current performance of the cladding installed on this house is inadequate because it has not been installed according to good trade practice. The cladding is, at present, allowing water penetration into the walls through defects in the cladding, which in turn has led to the framing timber rotting at some locations. In particular, the cladding demonstrates the key defects listed in paragraph 5.4.

7.2 I have also identified the presence of a range of known weathertightness risk factors in this house. The presence of the risk factors on their own is not necessarily a concern, but they have to be considered in combination with the significant faults identified in the cladding system as installed. It is that combination of risk factors and faults that indicate that the structure does not have sufficient provisions that would compensate for the lack of a drained and ventilated cavity. Consequently, I am not satisfied that the cladding system as installed complies with either clause B2 or clause E2 of the Building Code.

7.3 I find that, because of the extent and apparent complexity of the faults that have been identified with the cladding, I am unable to conclude, with the information available to me, that fixing the identified faults, as opposed to partial or full re-cladding, could

result in compliance with clauses B2 and E2. I consider that final decisions on whether code compliance can be achieved by either targeted repair or re-cladding, or a combination of both, can only be made after a more thorough investigation of the cladding. This will require a careful analysis by an appropriately qualified expert.

7.4 Once that decision is made, the chosen remedial option should be submitted to the territorial authority for its comment and approval. If the territorial authority chooses to reject the proposal, then the applicants are entitled to seek a further Determination on whether the proposed remedial work will led to compliance with the requirements of clauses B2 and E2.

7.5 As the cladding defects are so manifest, and in the absence of any confirming evidence, I cannot conclude that the remainder of the building elements used in the alterations and additions complied with clause B2 when the house was substantially completed. This conclusion is supported by the fact that some of the framing timber is rotten, which in itself is a failure of the B2 requirement.

8 The decision

8.1 In accordance with section 188 of the Act, I hereby determine that the building does not comply with clauses B2 and E2 of the Building Code, and accordingly confirm the territorial authority's decision to refuse to issue a code compliance certificate.

8.2 I note that the territorial authority has not issued a Notice to Rectify or a notice to fix as required, respectively, by section 43(6) of the former Act or section 164(2) of the current Act. A notice to fix should now be issued that requires the owners to bring the building up to compliance with the Building Code, identifying the defects listed in paragraph 5.4 and referring to any further defects that might be discovered in the course of rectification, but not specifying how those defects are to be fixed. It is important to note that the Building Code allows for more than one method of achieving compliance.

8.3 I would suggest that the parties adopt the following process to meet the requirements of paragraph 8.2. Initially, the territorial authority should issue the new notice to fix, listing all the items that the territorial authority considers to be non-compliant. 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.

Signed for and on behalf of the Chief Executive of the Department of Building and Housing on 29 March 2007.

John Gardiner
Determinations Manager