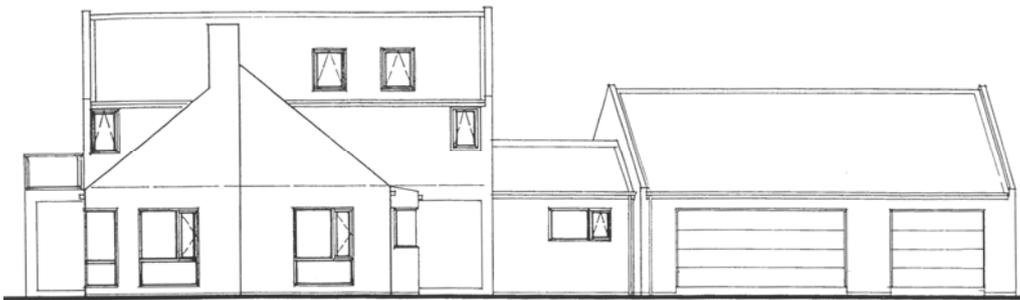


Determination 2008/54

Determination regarding the refusal to issue a code compliance certificate for an 8-year-old house at 410 Hamptons Road, Prebbleton, Christchurch



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 applicant is the owner, G Knight acting via his solicitor (“the lawyer”), and the other party is the Selwyn District Council (“the territorial authority”).
- 1.2 This determination arises from the decision of the territorial authority to refuse to issue a code compliance certificate for an 8-year-old house because it was not satisfied that it complied with certain clauses of the Building Code² (Schedule 1, 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 I consider that the matters for determination are:

1.3.1 Matter 1: The claddings

Whether the claddings as installed on the house 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: 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.

1.4 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 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 large detached house with an attached garage wing, which is situated on a flat rural site in a high wind zone for the purposes of NZS 3604³. The garage wing is attached to the south side of the house with a link roof. The building is generally single-storey, with an upper floor over the central part of the main house. Construction is conventional light timber frame, with a concrete slab and foundations, monolithic cladding and aluminium windows. The building is fairly complex in plan and form, with 40° pitch profiled metal gabled roofs that have no eaves projections, parapets at all gable ends and a timber-framed “chimney” to the west elevation.

2.2 A deck, with tiles over a butyl rubber membrane, extends from the upper level on the north elevation. The deck has metal and glass balustrades installed above monolithic-clad upstands. A timber pergola, with monolithic-clad columns is attached to the house along the eastern end of the north elevation.

2.3 The expert noted that the territorial authority’s inspection records described the framing as “Laserframe untreated pine”. Given the date of construction in 2000 and the lack of other evidence, I consider the external wall framing to be untreated.

2.4 The cladding system to the house is EIFS⁴ monolithic cladding. The expert has noted that the cladding details are similar to those specified for “Rockcote” (and I note that the drawings describe the cladding as “Rockcote or similar”), which includes purpose-made flashings to windows, edges and other junctions. The cladding consists of 40mm polystyrene backing sheets fixed directly to the framing

³ New Zealand Standard NZS 3604:1999 Timber Framed Buildings

⁴ External Insulation and Finish System

over the building wrap, and finished with a mesh-reinforced plaster system and an acrylic paint coating system.

3. Background

- 3.1 The territorial authority issued a building consent (No. 001024), on 10 February 2000. The consent appears to have been issued in January 2000, based on a stamp on the consent drawings, which is dated 12 January 2000 and notes “Siting approved”. One of the consent conditions was for the supply of a “construction statement confirming the system used” for the cladding installation.
- 3.2 The territorial authority carried out various inspections during construction, including a pre-line inspection on 24 May 2000 and a post-line inspection on 2 June 2000. It appears that the house was completed by July 2000, as the builder provided the owner with a “Completion Certificate” dated 18 July 2000.
- 3.3 The territorial authority carried out a final inspection on 2 August 2000, and the inspection record included a list of outstanding work that included a requirement for a producer statement for the monolithic cladding system.
- 3.4 I am not aware of any correspondence between the owner and the territorial authority until the territorial authority carried out a recheck inspection on 4 April 2005. The inspection record noted that the outstanding work identified during its final inspection had been completed, with the exception of the producer statement for the cladding installation.
- 3.5 The owner was apparently unable to obtain the producer statement, so engaged a specialist inspection company (“the inspection company”) to provide a report on “the general condition of the cladding as a whole”. The inspection company inspected the cladding on 15 June 2007 and, in a report (“the cladding report”) to the owner, noted a number of cladding defects and concluded that, while the cladding installation appeared to have been installed according to “common and accepted practices in use at the time”:
- ...it is apparent that there are some areas of the cladding that may not meet Clause E2 External Moisture of the New Zealand Building Code and therefore may also not meet Clause B2 of the New Zealand Building Code. This would have applied when constructed.
- 3.6 In a letter to the owner dated 22 June 2007 the territorial authority acknowledged receipt of the cladding report and stated that a code compliance certificate could not be issued unless a producer statement for the cladding was supplied, noting:
- If this is not possible then to obtain the services of an appropriate person/organisation, to provide details on rectification and submit them to the Council for approval prior to carrying out any work.
- 3.7 Following a telephone discussion, the territorial authority wrote to the owner on 4 September 2007 explaining that, irrespective of the producer statement issue, it could not issue a code compliance certificate as the “situation has now been surpassed by the time since the work was carried out”, and the cladding report indicated durability issues with the cladding. The territorial authority concluded:

Council can not therefore be satisfied on reasonable grounds that the building work and elements will continue to satisfy the durability provisions of the Building Code, because of the period since construction for the prescribed period required after a Code Compliance Certificate is issued.”

3.8 The Department received an application for a determination on 12 February 2008 and sought additional information, which was received on 12 March 2008.

4. The submissions

4.1 In a letter to the Department authority dated 11 February 2008, the lawyer briefly outlined the background of the project leading to the current situation.

4.2 The lawyer forwarded copies of:

- the specification and the consent drawings
- the correspondence from the territorial authority
- the cladding report
- various other statements.

4.3 The territorial authority made a submission in the form of a letter to the Department dated 21 February 2008, which stated that its concerns related to the compliance of the cladding system with Clauses E2 and B2, the lack of a construction statement for the cladding system and the durability of the building elements after almost 8 years.

4.4 The territorial authority forwarded copies of:

- the specification and the consent drawings
- the consent documentation
- the inspection records
- various producer statements, warranties and other information.

4.5 Copies of the submissions and other evidence were provided to each of the parties. Neither party made any further submissions in response to the submission of the other party.

4.6 A draft determination was issued to the parties on 8 May 2008. The draft was issued for comment and for the parties to agree a date when the building elements complied with Building Code Clause B2 “Durability”. Both parties agreed that the date of 1 August 2000 suggested in the draft determination was acceptable. The applicant accepted the draft on 28 May 2008.

4.7 The territorial authority commented on the draft determination in a letter to the Department dated 16 May 2008. I have considered the comments, and have incorporated them into the determination as I consider appropriate.

4.8 The territorial authority has stated that it considers paragraphs 7.2 and 7.3 of the draft determination to be in conflict. As explained in paragraph 7.3, I consider that any decision on partial or full re-cladding cannot be made without further investigation of

the areas of moisture penetration and decay; and this is beyond the scope of the expert's inspection and the matters considered in this determination. The level of remediation following that investigation is a matter to be decided between the applicant and the territorial authority as suggested in paragraph 9.2.

- 4.9 The territorial authority also stated that paragraph 10.2(a) of the draft determination "cannot be achieved in a practical sense unless a full re-clad is carried out". I note that paragraph 10.2(a) refers to compliance with Clause B2 when the building was completed, specifically excluding the items to be rectified. In the case of this house, the items to be rectified include whatever cladding rectification work is finally done. After investigation, the territorial authority may approve discrete repairs (which may well be the subject of a separate building consent), in which case it would be those repairs that are excluded.

5. The expert's report

- 5.1 As mentioned 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.
- 5.2 The expert inspected the house on 20 and 21 March 2008 and furnished a report that was completed on 24 March 2008, which noted that the house generally appeared to be in accordance with the consent drawings. The expert noted that, although the cladding finish was generally straight and fair, the "fixing and finish of the roof flashings was well below standard".
- 5.3 The expert noted that there were no control joints installed in the cladding. However, I note that similar EIFS cladding systems would not require control joints for the wall dimensions in this house.
- 5.4 The expert noted that the windows are recessed by the thickness of the cladding, with metal head flashings. The expert removed a small section of cladding at the jamb to sill junction of a garage window, and noted satisfactory uPVC sill and jamb flashings with sealant applied at the junction but no corner soakers. The expert also removed plaster at the head to jamb junction and noted that the "head flashing was installed correctly and extended past the outer leg of the joinery". I accept that the exposed junctions are typical of similar locations elsewhere in the building.

5.5 Moisture

- 5.5.1 The expert inspected the interior of the house, taking non-invasive moisture readings internally, and no evidence of moisture was observed, except for minor water staining and painting bubbles to the ceiling lining of the upper level ensuite. The expert took 12 invasive moisture readings through the cladding, and the following elevated readings and decay were noted:
- 22% in the top of the framing of a south parapet
 - 18% below the north parapet of the garage wing west elevation
 - 20% below the parapet at the southwest corner of the garage wing

- more than 50% in the polystyrene below the parapet at the southwest corner of the garage wing
- 20% below the parapet at the southeast corner of the garage wing
- advanced decay in the framing at the base of the southeast corner of the garage wing (where the expert removed a section of cladding).

5.5.2 I note that the invasive readings indicated that the equilibrium moisture content (“EMC”) ranged from about 9% to 14% at the time of inspection. Moisture levels that vary significantly from the EMC range generally indicate that external moisture is entering the structure and further investigation is required.

5.5.3 I also note that this inspection followed an extended dry spell, and I therefore consider that moisture levels will increase at other times of year, with more areas likely to exceed safe levels during periods of wet weather.

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

- the clearances from the bottom of the cladding to the paving and ground are inadequate in some areas
- in some areas, the bottom of the cladding is partly recessed into a rebate in the side of the concrete foundation wall, which traps moisture behind the cladding
- there are cracks (and some minor damage) in some areas of wall cladding
- the garage doors lack head flashings
- the step from the interior floor level to the deck floor is less than 20mm, leading to inadequate cladding overlaps and clearances to the deck floor
- the deck balustrades are fixed through the top of the deck upstands, which have flat monolithic-clad tops with algae accumulation indicative of ponding
- the overflow pipes through the deck upstands are poorly sealed
- the monolithic-clad pergola columns have flat uncapped tops that are penetrated by the beams and fixings (which appear inadequate)
- the parapet cappings do not extend over the cladding at the parapet ends, and have insufficient overlap at the parapet sides for the level of exposure
- the inner faces of some parapets are poorly finished, with bare timber exposed at the kitchen parapet
- the bottom of the apron flashings lack kickouts, with unsealed gaps and the flashing upstands turned into the cladding at the ends, allowing moisture to penetrate into the framing
- the ends of the gutters are embedded into the coating of the cladding
- the capping on the chimney lacks an anti-capillary kickout, and the overlap to the cladding is insufficient for the high wind exposure.

5.7 The expert also noted that the zinc edges of the parapet and ridge apron flashings were not adequately secured, with gaps are apparent in some areas

- 5.8 A copy of the expert's report was provided to the parties on 10 April 2008.
- 5.9 The territorial authority replied in a submission dated 22 April 2008, attaching all the material in the property file together with a series of photographs that provided additional views of areas photographed in the expert's report. The territorial authority commented in detail on a number of areas in the report, noting that some items inspected at the time of construction would not be acceptable now. The territorial authority also noted damage might be localised and consideration should be given before a decision was made to re-clad. The submission was copied to the other parties.

6. Evaluation for code compliance

6.1 Evaluation framework

- 6.1.1 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 determinations⁵ (for example, Determination 2004/1) relating to cladding and these factors are also used in the evaluation process.
- 6.1.2 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.

6.2 Weathertightness risk

- 6.2.1 In relation to these characteristics I find that this house:
- is built in a high wind zone
 - is a fairly complex building that is two storeys in part
 - has monolithic cladding fixed directly to the framing
 - has a deck, with a tiled floor and edge upstands, attached to the upper level
 - has an attached pergola
 - has no eaves projections to protect the cladding, and parapets to all gable ends
 - has external wall framing that is not treated to a level that will provide resistance to the onset of decay if the framing absorbs and retains moisture.
- 6.2.2 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

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

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.

- 6.2.3 When evaluated using the E2/AS1 risk matrix, the weathertightness features outlined in paragraph 6.2.1 show that all elevations of this house demonstrate a high weathertightness risk rating, and would require a drained cavity in order to comply with the current requirements of E2/AS1. I also note that a drained cavity was not a requirement at the time that the building was constructed.

Matter 1: The wall and roof claddings

7. Discussion

- 7.1 Taking into account the expert's report, I am satisfied that the current performance of the wall cladding installed on this house is inadequate because it has not been installed according to good trade practice. In particular, the monolithic cladding demonstrates the key defects listed in paragraph 5.76 and is allowing moisture penetration into the parapet walls through these defects, which in turn has led to advanced decay in the framing timber in at least one location.
- 7.2 I have also identified the presence of a range of known weathertightness risk factors in this high risk 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. 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 Because of the extent and apparent complexity of the faults that have been identified with the wall cladding, I am unable to conclude, with the information available to me, how the faults should be fixed and the cladding brought into compliance with Clauses B2 and E2. The full extent of moisture penetration, and the timber damage related to the defects in the parapets, cannot be determined without the removal of the cladding.
- 7.4 I therefore consider that final decisions on whether code compliance can be achieved by either specific repairs 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. Once that decision is made, the chosen repair option should be submitted to the territorial authority for its consideration and approval.
- 7.5 The defects to the roof cladding occur in discreet areas and I am able to conclude that satisfactory rectification of the item outlined in paragraph 5.7 will result in the roof becoming code-compliant.

- 7.6 I note that the Department has produced a guidance document⁶ on weathertightness remediation, and I consider that this guide will assist the owner in understanding the issues and processes involved in remediation work; and in exploring various options that may be available to him when considering the upcoming work required to the house.
- 7.7 Effective maintenance of claddings is important to ensure ongoing compliance with Clauses B2 and E2 of the Building Code and is the responsibility of the building owner. The Department has previously described these maintenance requirements, including examples where the external wall framing of the building may not be treated to a level that will resist the onset of decay if it gets wet (for example, Determination 2007/60).

Matter 2: The durability considerations

8. Discussion

- 8.1 The territorial 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 2000.
- 8.2 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).
- 8.3 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.
- 8.4 The 8-year delay between the substantial completion of the house and the applicant’s request for a code compliance certificate raises the issue of when all the elements of the building complied with Clause B2. I have not been provided with any evidence that, with the exception of the cladding, the territorial authority did not accept that those elements complied with Clause B2 at a date in 2000.
- 8.5 It is not disputed, and I am therefore satisfied, that all the building elements, with the exception of the wall and roof cladding, complied with Clause B2 on 1 August 2000. This date has been agreed between the parties, refer paragraph 4.6.

⁶ External moisture – A guide to weathertightness remediation

- 8.6 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.
- 8.7 I continue to hold that view, and therefore conclude that:
- (a) the territorial 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 house had been issued in 2000.
- 8.8 I strongly recommend that the territorial authority record this determination and any modifications resulting from it, on the property file and also on any LIM issued concerning this property.

9. What is to be done now?

- 9.1 I note that that the territorial authority has not issued a notice to fix. The territorial authority should now issue a notice to fix that requires the owners to bring the building up to compliance with the Building Code, incorporating the defects listed in paragraphs 5.6 and 5.7 referring to any further defects that might be discovered in the course of further investigation and rectification, but not specifying how those defects are to be fixed. It is not for the notice to fix to decide directly how the defects are to be remedied and the cladding brought to compliance with the Building Code. That is a matter for the owner to propose and for the territorial authority to accept or reject.
- 9.2 I would suggest that the parties adopt the following process to meet the requirements of paragraph 9.1. Initially, the territorial authority should issue the notice to fix. The owner should then produce a response to this in the form of a 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. The decision

- 10.1 In accordance with section 188 of the Act, I 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.
- 10.2 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 August 2000.

- (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 1 August 2000 instead of from the time of issue of the code compliance certificate for all building elements except the roof and wall claddings as set out in paragraphs 5.6 and 5.7 of Determination 2008/54.

- (c) the territorial authority is to issue a code compliance certificate in respect of the building consent as amended once the matters set out in paragraphs 5.6 and 5.7 have been fixed to its satisfaction,

Signed for and on behalf of the Chief Executive of the Department of Building and Housing on 27 June 2008.

John Gardiner
Manager Determinations