Department of Building and Housing
Te Tari Kaupapa Whare

Determination 2010/095

Refusal to issue a code compliance certificate for a 12-year old house at 131A Seaview Road, Paraparaumu Beach

1. The matters to be determined

1.1 This is a determination under Part 3 Subpart 1 of the Building Act 2004[1] ("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 Mr A Pye ("the applicant") and the other party is the Kapiti Coast District Council ("the authority"), carrying out its duties as a territorial authority or building consent authority.

1.2 This determination arises from the decision of the authority to refuse to issue a code compliance certificate for a 12-year-old house because it was not satisfied that the building work complied with certain clauses[2] of the Building Code (First Schedule, Building Regulations 1992).

1.3 The matter to be determined[3] is therefore whether the authority was correct to refuse to issue a code compliance certificate. In deciding this, I must consider Whether the external claddings of the dwelling comply with Clause B2 Durability and Clause E2 External Moisture of the Building Code

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.

[1] The Building Act, Building Code, Compliance documents, past determinations and guidance documents issued by the Department are all available at www.dbh.govt.nz or by contacting the Department on 0800 242 243.
[2] 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.
[3] Under section 177(b)(i) of the Act (prior to 7 July 2010)

2. The building work

2.1 The building work consists of a double-storey timber framed building constructed at the rear of a gently sloping section, which is situated within a very high wind and sea spray zone for the purposes of NZS 3604[4].

2.2 I note that a second dwelling and separate garage have also been constructed at the front of the section, and are accessed via a shared driveway. There have been no concerns raised as to the compliance of these buildings with the requirements of the Building Code, and consequently this determination does not consider that work.

2.3 The dwelling which is the subject of this determination has a concrete floor slab at ground level, with no ventilated subfloor.

2.4 An internally accessed double garage is incorporated into the lower level of the dwelling, and a timber deck extends along two sides of the dwelling at first floor level. A timber decked area is also located at ground floor level.

2.5 A retaining wall has been constructed beneath the first floor deck on the west elevation of the dwelling. The driveway is also retained along the south elevation.

2.6 The dwelling has aluminium window and door joinery throughout, and the roof is metal.

2.7 The cladding is a stucco plaster system which is direct-fixed over building wrap with expanded mesh reinforcement. There is no internal drainage cavity.

2.8 The expert was unable to establish whether or not the timber framing in the walls, roof and flooring of the dwelling had been treated. Given the date of construction in 1997, I consider that the wall framing is untreated.

3. Background

3.1 The authority issued a building consent (No. 970455) for the dwelling on 20 June 1997, under the Building Act 1991.

3.2 The authority carried out nine inspections during construction in 1997 and 1998, including a 'final inspection' on 2 July 1998. The authority noted in their inspection records that aspects of the 'pre-line' inspection, including wall framing and moisture elements appeared to be incomplete, and that the 'post-line' inspection also appeared to be incomplete.

3.3 A file note of a meeting between the authority and the owner on 17 February 2010 states that a final inspection was carried out on 2 July 1998, during which several non-compliant issues were identified. The authority subsequently conveyed these issues to the owner in a letter dated 3 July 1998.

[4] New Zealand Standard NZS 3604:1999 Timber Framed Buildings

3.4 In a letter dated 18 September 2002, the authority advised the owner that no code compliance certificate had been issued. There were still outstanding issues to resolve when the authority again wrote to the owner on 18 July 2003 and 29 January 2004.

3.5 In a letter to the owner dated 19 May 2004, the authority stated its refusal to issue a code compliance certificate for the dwelling, explaining that:

> … it was not satisfied that Clause E2 and B2 had been met and … that the building should be re-clad or a determination sought.

3.6 The authority expanded on its particular concerns related to:

- The solid plaster system, which the authority was not given an opportunity to inspect for its compliance in terms of reinforcement, flashing installation, and the correct placement of control joints
- The evidence of failure of the cladding system.

3.7 No further contact occurred between the authority and the owner until 15 February 2010, following which a meeting was held between the two parties at the property on 17 February 2010. The meeting involved discussions relating to the manner in which the cladding might be repaired or replaced in order that a code compliance certificate could be issued. The matter remained unresolved at the conclusion of the meeting.

3.8 The Department received an application for a determination on 28 May 2010.

3.9 The authority subsequently issued a notice to fix dated 18 June 2010 which stated under 'Particulars of contravention or non-compliance':

> Weathertightness appears to be inadequate, with failure of solid plaster cladding system on external walls of dwelling, compromising compliance with clauses E2.2 and B2.2 ...
>
> To remedy the contravention or non-compliance you must:
>
> Replace the cladding with a complying system to meet the requirements of the New Zealand Building Regulations 1992.

4. The submissions

4.1 The applicant forwarded copies of:

- the consent drawings and specifications
- the authority's file note dated 17 February 2010
- the correspondence with the authority
- various other information.

4.2 The authority acknowledged the application on 14 June 2010 and on 23 June 2010 forwarded copies of:

- the authority's file note dated 17 February 2010
- the notice to fix dated 18 June 2010
- correspondence with the applicant
- inspection records

4.3 The draft determination was issued to the parties for comment on 21 September 2010. Both parties accepted the draft without comment.

5. The expert's report

5.1 As mentioned in paragraph 1.4, I engaged an independent expert to assist me. The expert is a member of the New Zealand Institute of Building Surveyors. The expert inspected the dwelling on 12 July 2010 and provided a report dated 30 July 2010.

5.2 The expert confirmed that changes from the consent drawings included:

- a mixture of plywood with battens plus spray finish on a fibre-cement sheet cladding system replaced with stucco plaster over building wrap
- the roof line on the north elevation has been extended out to the edge of the deck
- the decking on the southwest elevation corner has been extended, with stepped access provided to the first floor deck
- an additional deck has been built along the total length of the north elevation of the ground floor
- the orientation of the internal staircase and the position of the front entrance door on the south elevation differ from the original plans, and in addition the front elevation differs aesthetically from the plan at both ground and first floor levels
- the layout of the bathroom fittings in the ground floor bathroom.

5.3 General

5.3.1 The expert reported that the workmanship is 'moderate' in quality and detail and the appearance of the exterior does not indicate any major maintenance has taken place since construction.

5.4 Moisture levels

5.5 The expert inspected the interior and observed paint and plasterboard damage at ceiling level in the living room ceiling. However the owner stated that this was the result of a leak in the roof which had subsequently been repaired, and the expert found no raised moisture readings at this location.

5.5.1 The expert took invasive moisture readings in several locations, a number of which were elevated or showed evidence of moisture penetration as follows:

- 43% at the control joint on the west elevation wall at mid wall height
- 40% in the skirting of the outside wall in bedroom 2
- 40% in the skirting boards adjacent to the shower in the ground floor bathroom.
- 43% and 50% at a cut out in the exterior bottom plate level on the west elevation wall

The expert observed that there was no cavity within the wall at the cut out, and that the building paper had disintegrated and the timber was wet and decayed. I note that readings of over 40% indicate that the wood is saturated and decay will be inevitable over time.

5.6 The external envelope

5.6.1 Commenting specifically on the external envelope, the expert noted that:

General

- There are no visible control joints to the cladding on the south face. A control joint in the west face was not constructed to 'standard trade practice' with no sealant joint to the outer surface of the plaster
- The cladding system in its present form is not working, and cannot be seen to provide an alternative and/or acceptable solution
- All elevations have substantial cracking in the plaster

Windows and doors

- The expert observed that the stucco-to-aluminium frame junctions and head flashing junctions are poorly detailed, and that opportunities for water entry exist at these locations
- In addition, the expert noted that the cement-based plaster finish has been carried up to the aluminium window frame, which potentially allows a reaction between the two materials to occur

Ground clearances

- There are insufficient ground clearances and the cladding is carried below the ground level along the east, south and west elevations
- There is insufficient ground clearance between the concrete floor slab and the ground level

The decks

- The balustrade along the deck on the west elevation has been poorly constructed without a metal cap flashing, and that the existing timber cap has experienced substantial shrinkage, allowing water ingress into the timber framing below
- The timber decking at ground level on the north elevation has been built against the base of the cladding
- The timber decking at the first floor level has been built up to and against the cladding with no provision of a gap between the deck and the wall or between the ribbon plate and the wall.

5.7 Other observations

5.7.1 The expert observed popping nail heads and paint damage to the skirting boards either side of the shower in the ground floor bathroom and elevated moisture readings were recorded (refer paragraph 5.5.1).

5.8 A copy of the expert's report was provided to the parties on 3 August 2010.

6. The external envelope

6.1 The evaluation of building work for compliance with the Building Code and the risk factors considered in regards to weathertightness have been described in previous determinations.

6.2 Weathertightness risk

6.2.1 This house has the following environmental and design features, which influence the weathertightness risk profile of the dwelling:

Increasing risk

- the house is generally two-storeys high
- the house is located in a very high wind and sea spray zone
- the walls have monolithic cladding fixed directly to the framing
- eaves vary from 0 to 1500mm, providing protection to only some of the elevations

Decreasing risk

- the house is somewhat sheltered from prevailing weather
- the house is simple in plan and form

6.2.2 Using the E2/AS1 risk matrix to evaluate these features, all elevations are assessed as having a high weathertightness risk rating. If the details shown in the current E2/AS1 were adopted to show code compliance, a drained cavity would be required for solid plaster cladding at all risk levels. However, this was not a requirement at the time of construction.

6.3 Weathertightness performance

6.3.1 It is clear from the expert's report that the external envelope is unsatisfactory in terms of its weathertightness performance, which has resulted in moisture penetration and decay to some of the framing. Taking account of the expert's report, I conclude that remedial work to the addition is necessary in respect of:

- the lack of adequate provision of control joints in the cladding system
- the poor quality of the exterior plaster coating application that has resulted in substantial cracking in the plaster coating
- the poorly detailed stucco-to-aluminium frame junctions and head flashing junctions
- the inadequate clearances below the cladding in some areas, including the ground floor decking
- the inadequate weatherproofing of the external balustrade in some places.

6.3.2 The inadequate weatherproofing of many joints and junctions has contributed to a systemic failure of the external envelope. Further investigation is necessary, including the systematic survey of all risk locations, to determine the causes and full

extent of moisture penetration, timber damage and the repairs required. In addition, the extent of any damage to the structural framing needs investigation to determine the buildings' compliance with Clause B1 Structure.

6.4 Conclusion

6.4.1 I consider the expert's report establishes that the current performance of the building envelope is inadequate because it is not preventing water penetration through the claddings at present. Consequently, I consider that the dwelling does not comply with Clause E2 of the Building Code.

6.4.2 In addition, the building envelope 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 dwelling are currently allowing the ingress of moisture, I consider that the building work does not comply with the durability requirements of Clause B2.

6.4.3 I consider that final decisions on how code compliance can be achieved by either remediation or re-cladding, or a combination of both, can only be made after a more thorough investigation of the cladding and the condition of the underlying timber framing. This will require a careful analysis by an appropriately qualified expert, and should include a full investigation of the extent, level and significance of the timber decay to the framing. Once that decision is made, the chosen remedial option should be submitted to the authority for its approval.

6.4.4 The Department has produced a guidance document on weathertightness remediation[5]. I consider that this guide will assist the owner in understanding the issues and processes involved in remediation work to the stucco cladding in particular, and in exploring various options that may be available when considering the work that will be required to bring the additions into code compliance.

6.5 I note that, although the authority's refusal to issue a code compliance certificate was on the grounds it could not be satisfied that the dwelling complies with Clauses E2 and B2, the expert has observed significantly elevated moisture readings at the skirting boards either side of the shower (refer paragraph 5.7.1). Taking account of the expert's findings, I conclude that the ground floor bath room does not comply with Clause E3 Internal Moisture of the Building Code.

7. What is to be done now?

7.1 I am satisfied that the external envelope does not comply and that the authority was correct in issuing a notice to fix. However I note that the ground floor bathroom does not comply with Clause E3 and that the notice to fix should be modified and re-issued to take account of this. The notice should also identify the areas listed in paragraph 6.3.1 and refer to any further defects that might be discovered in the course of investigation and rectification, but should not specify how those defects are to be fixed. It is not for the notice to fix to specify how the defects are to be

[5] External moisture – A guide to weathertightness remediation. This guide is available on the Department's website, or in hard copy by phoning 0800 242 243.

remedied and the building brought to compliance with the Building Code. That is a matter for the owners to propose and for the authority to accept or reject.

7.2 I suggest that the parties adopt the following process to meet the requirements of paragraph 7.1. The applicant should produce a response to notice to fix in the form of a detailed proposal, produced in conjunction with a competent and suitably qualified person, as to the investigation and 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.

8. The decision

8.1 In accordance with section 188 of the Building Act 2004, I hereby determine that:

- the external envelope of the dwelling does not comply with Clauses E2 and B2 (insofar as it relates to Clause E2) of the Building Code
- the dwelling does not comply with Clause E3 of the Building Code

and accordingly, I confirm the authority's decision to refuse to issue a code compliance certificate.

Signed for and on behalf of the Chief Executive of the Department of Building and Housing on 18 October 2010.

John Gardiner
Manager Determinations