MINISTRY OF BUSINESS, INNOVATION & EMPLOYMENT
HIKINA WHAKATUTUKI

Determination 2015/068

Regarding the refusal to issue a code compliance certificate for a 16-year-old house with monolithic cladding at 72 Westridge Drive, Tauranga

Summary

This determination considers the compliance of the building work in light of a refusal to issue a code compliance certificate; the refusal was primarily on the grounds of concerns regarding weathertightness and durability of the exterior cladding given the building's age.

1. The matters to be determined

1.1 This is a determination under Part 3 Subpart 1 of the Building Act 2004[1] ("the current Act") made under due authorisation by me, John Gardiner, Manager Determinations and Assurance, Ministry of Business, Innovation and Employment ("the Ministry"), for and on behalf of the Chief Executive of the Ministry.

1.2 The parties to the determination are:

- D Wilkinson ("the applicant"), who is one of the owners of the house
- Tauranga City Council ("the authority"), carrying out its duties as a territorial authority or building consent authority.

1.3 This determination arises from the decision of the authority to refuse to issue a code compliance certificate for the 16-year-old house because the authority was not satisfied that the building work complied with certain clauses[2] of the Building Code (First Schedule, Building Regulations 1992). The authority's concerns about the compliance of the building work relate primarily to the weathertightness and durability of the exterior cladding, given the building's age.

[1] The Building Act, Building Code, compliance documents, past determinations and guidance documents issued by the Ministry are all available at www.building.govt.nz or by contacting the Ministry 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 that was in force at the time the consent was issued.

1.4 The matter to be determined[3] is therefore whether the authority was correct to refuse to issue the code compliance certificate for the reasons given in its letter dated 19 December 2014. In deciding this matter, I must consider whether the external building envelope of the house complies with Clause B2 Durability and Clause E2 External moisture of the Building Code that was in force at the time the consent was issued. The building envelope includes the components of the systems (such as the monolithic wall cladding, the stone veneer, the windows and the roof cladding) as well as the way the components have been installed and work together.

1.5 Matters outside this determination

1.5.1 In its letter dated 19 December 2014 (see paragraph 3.6) the authority limited its concerns to items associated with the clauses outlined above. Except for other items noted by the expert during his inspection, this determination does not address other clauses of the Building Code.

1.5.2 I note that the owner will be able to apply to the authority for a modification of durability provisions to allow the durability periods specified in Clause B2.3.1 to commence from the date of substantial completion in 1999. Although I leave this matter to the parties to resolve in due course, I have taken the anticipated modification into account when considering compliance of the external building envelope.

1.6 I note that a building certifier inspected the construction of this house in 1999 on the authority's behalf. The company ceased operating as a building certifier in 2005, but continued operating under a different name as the authority's agent, providing inspection services. In this determination, both entities are referred to as "the authority's contractor".

1.7 In making my decision, I have considered:

- the submissions of the parties, including the report by the property inspection company engaged by the applicant to report on the house ("the inspection company")
- the report of the expert commissioned by the Ministry to advise on this dispute ("the expert")
- the other evidence in this matter.

2. The building work

2.1 The building work consists of a detached house situated on a gently sloping sheltered site in a medium wind zone for the purposes of NZS 3604[4]. The expert takes the garage doors as west-facing, and this determination follows that convention. The single-storey house is fairly complex in plan and form and is assessed as having a medium weathertightness risk.

2.2 Construction is generally conventional light timber frame, with a concrete floor slab stepped to suit the site slope, concrete block foundations and retaining walls, monolithic and stone veneer claddings, aluminium windows, and asphalt shingle roofing. The expert observed no evidence of timber treatment and, given the date of

[3] Under sections 177(1)(b) and 177(2)(d) of the Act
[4] New Zealand Standard NZS 3604:1999 Timber Framed Buildings

construction in 1999, I consider that the external wall framing is unlikely to be treated.

2.3 The 25^{o} pitch hipped and gabled roof has eaves and verges of about 600mm, except for the projecting ensuite wall to the south elevation and the deep veranda around the northeast corner. The hallway internal steps, dining and kitchen areas have timber plank flooring laid over timber battens, with vents installed through the external walls to provide ventilation to the underfloor cavity.

2.4 The wall claddings

2.4.1 The primary wall cladding is a proprietary monolithic flush-finished fibre-cement system ("the textured cladding") consisting of 7.5mm thick fibre-cement sheets which are fixed directly through the building wrap to the framing and finished with an applied textured coating system.

2.4.2 The north and west front elevations include stone schist veneer cladding below window sill height. The veneer is installed over 4.5mm fibre-cement backing sheets which are fixed over 50mm x 50mm vertical battens that form a cavity. Drainage pipes installed at the base provide cavity ventilation and the top of the veneer is capped with sloping stone, with an underlying flashing that extends from under the upper wall cladding over the top of the cavity. Additional weep holes were provided to the bottom of the veneer (see paragraph 3.4.1) in 2006.

3. Background

3.1 The authority issued a building consent for the house (No. 99/0975) to the original owner on 26 May 1999 under the Building Act 1991 ("the former Act"). The consent documentation was prepared by a group housing company ("the builder") and was stamped as approved by the authority's contractor.

3.2 Construction commenced in May 1999 and the authority's contractor carried out various inspections during construction, including pre-line building and plumbing inspections in July 1999. The last inspection recorded was a drainage inspection for the septic tank on 27 July 1999.

3.3 The 2006 inspections

3.3.1 No final inspection was carried out until the original owner prepared to sell the property in 2006 and sought a code compliance certificate. The authority's contractor visited the house in February 1999 for 'an assessment of the building with a view to providing an assessment letter to the [authority] as was the practise then.'

3.3.2 The assessment by the authority's contractor noted the following (in summary):

- cracks in the textured cladding at internal corners, around soffit moulding and the cladding/stone junction
- some unsealed floor tiles
- producer statement required from the cladding installer to confirm that the installation conformed with the manufacturer's specification, including:
  - the backing sheets
  - the windows installation and sealing.

3.3.3 The builder informed the authority's contractor that repair work had been carried out and the authority's contractor carried out an inspection on 19 July 1999. The inspection summary described the external building envelope and noted that limited non-invasive testing recorded moisture levels from 12% to 16%.

3.3.4 The authority's contractor did not recommend that the authority consider issuing a code compliance certificate due to the following concerns:

> 1. Time lapsed since completion.
> 2. Ground levels in relation to floor levels appear too high in two areas.
> 3. There does not appear to be a draining rebate behind the schist veneer.
> 4. The Schist to [fibre-cement] junction does not appear to be flashed in any way.
> 5. Some of the joinery to cladding areas have minor cracking. [The authority's contractor was] able to insert a plastic card into one of these cracks by a garage access door and this established that there is no seal between the joinery and the cladding and that there is total reliance on a "fillet" surface seal.

3.4 2006 correspondence

3.4.1 In a letter to the authority's contractor dated 8 August 2006, the builder attached a sectional detail showing the stone veneer and its junction with the textured cladding. The builder noted he had found the house to be 'in excellent health and condition'; and commented on issues raised about the cladding (in summary):

- Paving and ground levels have been checked and some limited areas of garden were too high so the owner has agreed to lower these (item 2).
- The stone veneer includes drain holes at least 50mm below the floor level and additional weep holes will be drilled at the bottom (item 3).
- The stone/cladding junction is flashed as per detail attached (item 4).
- Windows and doors were installed in accordance with the manufacturer's 1996 instructions and good trade practice at the time (item 5).

3.4.2 In a letter to the applicant dated 30 August 2006, the builder noted that remedial work was being completed.

3.4.3 In a letter to a lawyer[5] dated 7 November 2006 a building surveyor confirmed that the house appeared to 'now comply with E2'. The surveyor noted that this did 'not guarantee that the dwelling will continue to comply with E2' as the windows did not appear to be sealed in accordance with the manufacturer's instructions at the time. However, he noted that the joinery appeared to be 'performing and with normal maintenance should continue to perform.'

3.4.4 In a subsequent letter to the lawyer dated 6 December 2006, the building surveyor noted that he had discussed the window installation with the builder, who had agreed that 'a continuous bead of sealant will be applied under the window overlap'. He confirmed on 12 December 2006 that sealant had been installed between the textured cladding and the jamb flanges 'of all exterior joinery (where practicable)' and stated:

> In my opinion, this dwelling has now been constructed in accordance with the relevant Building Code, industry guidelines and manufacturers recommendations that were relevant at the time of construction and any shortcomings that were highlighted in the report by [the authority's contractor] during their final inspection.

[5] I have assumed the lawyer represented the applicant, although that is not clear from the letters.

3.4.5 The authority was still unwilling to issue a code compliance certificate for the house; however the applicant went ahead with purchasing the property.

3.5 The inspection company's report

3.5.1 In 2014 the applicant decided to sell the house and engaged an inspection company to report on the house. The company inspected the house on 11 November 2014 and provided a report on the same date which described the construction and noted that the exterior was 'in a good condition for its age and well maintained', with no requirement for major replacement of claddings. However, the inspection company also noted 'there are some areas which require maintenance or remedial work' to prevent possible future water penetration.

3.5.2 The inspection company took non-invasive moisture readings and noted elevated readings to the tiled bathrooms as follows:

- in the master ensuite:
  - at the bottom of the shower glass/tile junction
  - the lower walls and floor inside the shower
  - an isolated spot at the skirting opposite the shower cubicle
- in the semi-ensuite to bedroom 2:
  - lower internal wall
  - the bottom of all walls to the shower cubicle
  - through the cladding into exterior framing, around the jamb/sill junction, the bottom plate below and the shower cubicle wall.

3.5.3 In regard to exterior wall claddings the report also noted:

- minor areas of unsealed fibre-cement
- various cracks requiring maintenance
- fascia boards fixed against untextured fibre-cement
- the lack of cladding clearances in some areas.

3.6 A copy of the report was forwarded to the authority and a code compliance certificate was requested for the house. The authority responded on 19 December 2014, noting that a determination could be sought on the matter and stating:

> After reviewing the report from [the inspection company] we are unable to issue CCC as several areas of non-compliance have been identified. The areas identified in the report would need to be addressed and invasive testing would need to be carried out to confirm weathertightness.

3.7 Failing to resolve the situation, the applicant applied to the Ministry for a determination on 8 May 2015.

4. The submissions

4.1 The applicant's submission

4.1.1 In a statement accompanying the application, the applicant outlined the background to the situation, describing work carried out and the advice obtained when purchasing the house in 2006 (see paragraph 3.4). The applicant considered the 2014 inspection company's report as 'pretty supportive of a well maintained house in good condition' and explained that all issues identified had since been attended to.

4.1.2 The applicant provided copies of:

- some of the consent drawings
- the 2006 letters from the builder and the building surveyor
- the inspection company's report dated 11 November 2014
- some current photographs of the house.

4.2 The authority made no submission in response to the application, but provided a copy of its letter to the applicant dated 19 December 2014 which set out the reasons for refusing to issue a code compliance certificate for the house.

4.3 A draft determination was issued to the parties for comment on 27 July 2015.

4.4 The authority accepted the draft without further comment in a response received on 3 August 2015.

4.5 The applicant accepted the draft determination in a response received on 14 September 2015, and on 28 September sought advice on what steps to take after the determination was issued.

5. The expert's report

5.1 As mentioned in paragraph 1.7, I engaged an independent expert to assist me. The expert is a member of the New Zealand Institute of Building Surveyors and inspected the house on 24 June 2015, providing a report completed on 9 July 2015. The parties were provided with a copy of the report on 14 July 2015.

5.2 General

5.2.1 The expert noted the scope of his inspection was an assessment of compliance with Clauses B2 and E2 of the Building Code that was in force at the time the consent was issued. The expert noted that his assessment had also identified concerns regarding compliance with Clause E3 Internal Moisture.

5.2.2 The expert noted that the floor plan of the house generally accorded with the consent floor plan. He considered that the house had 'been constructed and finished with good quality materials, general workmanship is good, and the house is very well presented and has been very well maintained.' The expert observed that the asphalt shingle roof was in 'excellent condition for its age', with 'well executed/sealed penetrations and no evidence of failure.'

5.3 The textured cladding

5.3.1 The expert stated that the textured cladding was generally 'well installed and aligned' apart from areas identified in his report, with fibre-cement backing sheets in accordance with the manufacturer's instructions and no 'visual evidence of inadequate fixing'.

5.3.2 The expert observed that windows and doors had been face-fixed against the cladding, with metal head flashings that extended sufficiently beyond jamb flanges. The expert was able to insert a blade behind a sheltered window jamb flange – indicating the lack of seals behind that particular jamb flange. However, he noted that 'all joinery has been extremely well fillet sealed', with sealant applied at the edge of the frame and no evidence of failure.

5.3.3 As noted in paragraph 3.4.4, the builder had apparently sealed under joinery flanges in 2006. In response to a request for clarification, the expert subsequently confirmed in an email to the Ministry dated 20 July 2015 that 'it is visually obvious that all window and door/cladding junctions have been thoroughly sealed' and added that he had observed 'no evidence to suggest that retrofitting did not take place'.

5.3.4 The expert was unable to sight underlying construction at the textured cladding/stone junction. However, he observed no evidence of failure and noted that the inspection summary indicated the authority had been satisfied with the detail provided by the builder, and drainage weep holes were provided.

5.4 Moisture testing

5.4.1 Non-invasive readings were taken both externally and internally, with particular focus on high risk locations such as below apron flashings, penetrations, below jamb/sill junctions, at bottom plates and in bathroom areas. Except for one bathroom, the expert considered readings were 'within the acceptable range'.

5.4.2 High moisture levels were noted in the exterior wall of the bedroom 2 bathroom, and invasive readings were taken to investigate this further. (I note that the inspection company had also recorded high moisture levels in that bathroom, along with the ensuite bathroom to the master bedroom (see paragraph 3.5.2), but the expert did not note elevated non-invasive readings in the latter.)

5.4.3 As well as investigating the bedroom 2 bathroom, the expert also took invasive moisture readings through the textured cladding at areas considered at risk of moisture penetration, with most readings from about 9% to 15%. However, the expert noted the following elevated readings:

- 33% and decay in two locations below the window to the ensuite bathroom adjacent to bedroom 2 where high non-invasive readings had been noted
- 18% in the east bottom plate to bedroom 1, adjacent to the doors where clearances to paving are limited
- 21% in the south bottom plate to the garage, adjacent to the side door where the clearance to paving is limited.

In note that moisture levels over 18% generally indicate that external moisture is entering the structure and further investigation is required. Moisture readings were taken during the wet winter period and are therefore likely to represent higher levels of expected seasonal variation.

5.5 The building envelope

5.5.1 Commenting specifically on the external envelope, the expert noted:

- the lack of cladding clearances from paving has resulted in elevated moisture levels into bottom plates not protected under deep verandas
- the textured coating does not extend behind the fascia board above the projecting wall of the master ensuite.

5.5.2 The expert made the following additional comments on the textured cladding:

- Although clearances to paving are reduced on the east elevation, those areas are protected beneath deep veranda overhangs, with no evidence of moisture ingress.

- Although some wall claddings contact lower roofs, most wall/roof junctions are sheltered beneath deep verge overhangs, with no evidence of associated elevated moisture levels or premature deterioration.
- Although some sheltered windows and doors may lack seals behind jamb flanges, the fillet seals are applied well, with no evidence of associated moisture penetration or deterioration.
- Although several walls are 'marginally over' the 5.4m limit recommended by the manufacturer for installing vertical control joints, there is no sign of cracking or moisture penetration.
- Although the meter box and pipe penetrations rely on sealant for weatherproofing, the sealant is in good condition and the meter box is sheltered under a deep verge overhang, with no evidence of moisture penetration.

5.6 Clause E3 Internal Moisture

5.6.1 The expert noted that moisture readings in the ensuite bathroom to bedroom 2 indicated that moisture was likely to be penetrating into framing from the interior, with very high moisture levels and decayed drillings. Further investigation is needed to confirm the cause(s), with remedial work to the framing and repairs as required.

5.7 Summary

5.7.1 The expert concluded that the following areas required further investigation and/or remedial work to comply with associated clauses of the Building Code:

- Clearances to paving at areas not sheltered by deep eaves (E2).
- Unsealed cladding behind fascia boards (E2).
- Moisture penetration into bathroom wall framing (E3).

6. Compliance generally

6.1 This building consent was issued under the former Act, and accordingly the transitional provisions of the Act apply when considering the issue of a code compliance certificate for work completed under this consent. Section 436(3)(b)(i) of the transitional provisions of the current Act require the authority to issue a code compliance certificate if it 'is satisfied that the building work concerned complies with the building code that applied at the time the building consent was granted'.

6.2 In order to determine whether the authority correctly exercised its power in refusing to issue a code compliance certificate, I must consider whether the building work complies with the Building Code that was in force at the time the consent was issued. I therefore consider the code compliance of the external building envelope.

6.3 An application can be made to the authority for a modification of durability requirements to allow durability periods to commence from the date of substantial completion in 1999. Although that matter is not part of this determination (see paragraph 1.4), I have taken the anticipated modification into account when considering the weathertightness performance of the claddings as most areas of cladding have continued to perform for the 15 years required.

7. Discussion: the external envelope

7.1 The evaluation of building work for compliance with the Building Code and the risk factors considered in regards to weathertightness have been described in numerous previous determinations (for example, Determination 2004/1).

7.2 Weathertightness risk

7.2.1 This house has the following environmental and design features, which influence its weathertightness risk profile:

Increasing risk

- the house has two types of wall cladding and some complex junctions
- walls have textured fibre-cement cladding fixed directly to the framing
- external wall framing is not treated to a level that provides sufficient resistance to decay if it absorbs and retains moisture.

Decreasing risk

- the house is single-storey
- there are generous eaves to shelter most of the walls
- some lower walls have stone veneer over a drained cavity.

7.2.2 Using the E2/AS1 risk matrix to evaluate these features, elevations are assessed as having a moderate weathertightness risk rating. If current E2/AS1 details were adopted to show code compliance, drained cavities would be required for all elevations. However, this was not a requirement at the time of construction in 1999.

7.3 Weathertightness performance

7.3.1 Generally the claddings appear to have been installed in accordance with good trade practice and the manufacturer's instructions at the time. However the expert has identified that the areas outlined in paragraph 5.5.1 require attention.

7.3.2 I also note the expert's opinions as outlined in paragraph 5.5.2 and accept that those areas are adequate in the particular circumstances described.

7.4 Weathertightness conclusion

7.4.1 I consider the expert's report establishes that the current performance of the building envelope is not adequate because there is evidence of limited moisture penetration into some areas of the timber framing. Consequently, I am satisfied that the cladding currently does not comply with Clause E2 of the Building Code.

7.4.2 The durability requirements of Clause B2 include a requirement for wall claddings to remain weathertight for a minimum of 15 years. Although a modification of the durability provisions to allow provisions to commence from the date of substantial completion in 1999 will mean that most cladding areas have already met the minimum life required by the Building Code, I am satisfied that several areas of cladding did not comply with Clause E2 for the period required by the code and therefore did not comply with the durability requirements of Clause B2.

7.4.3 Because the identified moisture penetration and cladding faults occur in discrete areas, I am able to conclude that satisfactory investigation and rectification of areas outlined in paragraph 5.5.1 will result in the textured cladding being brought into compliance with Clauses E2 and B2 of the Building Code.

7.4.4 It is emphasised that each determination is conducted on a case-by-case basis. Accordingly, the fact that a particular cladding system has been established as being code compliant in relation to a particular building does not necessarily mean that the same cladding system will be code compliant in another situation.

7.5 Maintenance

7.5.1 Although a modification of durability provisions will mean that most of the wall claddings have already met the minimum life required by the Building Code, the expected life of the building as a whole is considerably longer. Careful maintenance therefore needs to continue to ensure that the claddings continue to protect the underlying framing for its minimum required life of 50 years for the structure. Maintenance is the responsibility of the building owner.

7.5.2 The Ministry 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).

7.6 Clause E3 Internal moisture

7.6.1 Taking account of the expert's report, I consider that further investigation is required into the cause(s) for the high moisture levels and decay found in the bathroom to bedroom 2, with appropriate repairs carried out as required.

7.6.2 I also note the inspection company's report of high moisture levels to the master bedroom ensuite indicate that further investigation is also needed to that location. Although past repairs may have been effective in preventing current moisture penetration, there may be damage to framing in that bathroom from past penetration.

7.6.3 Because all three bathrooms have similar fittings and finishes, and the inspection company's report found high moisture levels in the ensuite to bedroom 1; I consider that the other two bathrooms also require further investigation to confirm their compliance with Clause E3 of the Building Code.

7.7 Durability

7.7.1 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).

7.7.2 In this case the 16-year delay since the completion of the house in 1999 raises concerns that many elements of the building are now well through or beyond their required durability periods, and would consequently no longer comply with Clause B2 if a code compliance certificate were to be issued effective from today's date.

7.7.3 I have considered this issue in many previous determinations and I maintain the view that:

(a) the authority has the power to grant an appropriate modification of Clause B2 in respect of all the building elements, if requested by an owner

(b) it is reasonable to grant such a modification, with appropriate notification, as in practical terms the building is no different from what it would have been if a code compliance certificate for the building work had been issued at the time of substantial completion in 1999.

7.7.4 I therefore leave the matter of amending the building consent to modify Clause B2.3.1 to the parties once the outstanding compliance matters are resolved.

8. What happens next?

8.1 I note that the building consent was issued to the former owner of the house, and as noted in Determination 2014/035[6], no notice to fix is able to be issued to the current owners in respect of breaches of the Act or Regulations in relation to work carried out by previous owners.

8.2 If the applicant wishes to pursue a code compliance certificate, a detailed proposal should be developed to address the investigations and defects identified in paragraphs 5.5.1 and 7.6 of this determination. The proposal should be produced in conjunction with a suitably qualified person and should include further invasive moisture testing and identification of timber treatment. The proposal should then be submitted to the authority for its consideration and approval. Any outstanding items of disagreement can then be referred to the Chief Executive for a further binding determination.

9. The decision

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

- some of the timber framing does not comply with Building Code Clause B2 insofar as it relates to Clause B1
- some areas of the external wall claddings do not comply with Building Code Clauses E2 and B2
- the bathroom walls do not comply with Building Code Clause E3

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 Ministry of Business, Innovation and Employment on 29 October 2015.

John Gardiner
Manager Determinations and Assurance

[6] Determination 2014/035: The issue of a notice to fix for weathertightness remedial work carried out by a previous owner