Department of Building and Housing
Te Tari Kaupapa Whare

Determination 2012/006

Refusal to issue a code compliance certificate for a 9-year-old house with monolithic and metal claddings at 25 Matawha Way, Brookfield, Tauranga

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, H Fraser-Brown ("the applicant") acting through a solicitor, and the other party is the Tauranga City 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 9-year-old house, because it is not satisfied that the building work complies 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 to its age and to the weathertightness of the cladding (see paragraph 4.4).

[1] The Building Act 2004, 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.

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 matter, I must consider:

1.3.1 Matter 1: The external envelope

Whether the external building envelope of the house complies with Clause B2 Durability and Clause E2 External Moisture of the Building Code. The building envelope includes the components of the systems (such as the monolithic and profiled metal wall claddings, the windows, the roof claddings and the flashings), as well as the way the components have been installed and work together. I consider this in paragraph 6.

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 house. I consider this in paragraph 7.

1.4 I note that Bay Building Certifiers Limited, who was duly registered under the Building Act 1991, inspected the construction of this house in 2001 and 2002 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 to provide inspection services for the authority. In this determination, both entities are therefore referred to as "the authority's contractor".

1.5 In making my decision, I have considered the applicant's submission, the report of the expert commissioned by the Department to advise on this dispute ("the expert"), and the other evidence in this matter.

2. The building work

2.1 The building work consists of a single-storey house with a basement garage situated on an excavated sloping site in a medium wind zone for the purposes of NZS 3604[4]. Construction is generally conventional light timber frame, with concrete foundations and floor slab to the basement and timber piles elsewhere, monolithic and profiled metal wall claddings, aluminium windows, and profiled metal roofing. The house is assessed as having a low to high weathertightness risk.

2.2 The 20^{o} pitch hipped roof to the upper level extends as gables to the north, with a lower level hipped roof over the basement garage to the north. Eaves and verge projections are about 600mm, except for the bathroom on the south elevation, bedroom 2 on the west elevation and the kitchen on the east elevation, where the projecting walls are sheltered only by gutters.

2.3 An enclosed deck, with a membrane floor and clad balustrades, opens off the north living areas and except for the western end is set down within the garage roof space. The balustrades are clad with profiled metal on the outside and monolithic cladding on the deck side.

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

2.4 The expert noted that the framing in the unlined garage was marked as untreated. Given this evidence and the date of the framing installation in 2001, I consider that the exterior wall framing of this house is not treated.

2.5 The wall claddings

2.5.1 The monolithic wall cladding is a proprietary flush-finished fibre-cement cladding system that consists of 7.5mm thick fibre-cement sheets fixed directly through the building wrap to the framing, and flush-finished with an applied textured coating system ("the flush-finished fibre-cement"). The profiled metal cladding is colour-coated horizontal corrugated steel ("the corrugated steel"), which is fixed directly through a paper-based roof underlay to the framing.

2.5.2 Corrugated steel is installed to all walls on the south elevation, the north wall of bedroom 1 and the adjoining west projection of bedroom 2, the projecting walls of the kitchen on the east elevation and the outer faces of the deck balustrades. The remaining walls of the house are clad in flush-finished fibre-cement.

3. Background

3.1 The authority issued a building consent for the house (No. 5839) on 9 April 2001 under the Building Act 1991, based on drawings stamped as approved by the authority's contractor.

3.2 The authority's contractor carried out various inspections during construction, including pre-line building inspections on 7 November 2001. An inspection on 9 November 2001 noted:

> Outside check for corrugated iron etc fail. Contact [manufacturer] regarding fixings of corrugated iron and cladding, excluding interface with [fibre-cement].

3.3 The final building inspection was carried out on 5 June 2002, and the inspection of the cladding was apparently satisfactory as the inspection summary identified no outstanding items and required a producer statement for the 'texture coating'.

3.4 In 2011, the applicant's solicitor sought a code compliance certificate on behalf of the applicant; and wrote to the authority on 20 September 2011, asking it to 're-open the [authority's] property file and arrange a final inspection of the dwelling in order to advise whether a CCC can be issued.' The solicitor noted a previous discussion with the authority and understood that a producer statement for the cladding was outstanding.

3.5 The authority responded on 21 September 2011, refusing to issue a code compliance certificate and stating:

> The reason for this refusal is that [the authority] is unable to establish if the dwelling continues to meet the building code requirements of E2 External Moisture and B2 Durability. This means that the [a]uthority cannot be satisfied the building work complies with the building consent as required by Section 94 of the Building Act 2004.

4. The submissions

4.1 In a letter to the Department on behalf of the applicant dated 28 September 2011, the solicitor stated that the only outstanding building matter was the lack of a producer statement for the textured cladding and provided copies of the two relevant letters.

4.2 The authority acknowledged the application but made no submission in response.

4.3 The Department sought further explanation from the authority, as no mention had been made of an inspection and it was therefore unclear why the authority was unable to establish compliance. At the Department's request, the authority provided copies of:

- some of the consent drawings
- the inspection summary.

4.4 In an email to the Department dated 13 October 2011, the authority explained that the building consent had be approved and the work inspected by a 'private building certifier' (see paragraph 1.4) and the authority

> ...has at no time visited the site, therefore our comments on the reasons for not issuing a CCC still stand. The dwelling has a face fixed monolithic cladding [and] does not have sill flashings etc.

4.5 A draft determination was issued to the parties on 19 December 2011. The draft was issued for comment and for the parties to agree dates when the house complied with Building Code Clause B2 Durability.

4.6 Both parties accepted the draft without further comment and agreed that compliance with B2 was achieved on 5 June 2002.

5. The expert's report

5.1 As mentioned in paragraph 1.5, 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 18 November 2011; providing a report dated 24 November 2011. A copy of the expert's report was provided to the parties on 29 November 2011.

5.2 General

5.2.1 The expert considered that the wall cladding was 'straight and generally well fixed', but was due for re-painting and there was widespread cracking at joints. The expert noted that roof flashings appeared 'well sealed/flashed'.

5.2.2 The expert also noted that ground clearances appeared satisfactory and penetrations through the claddings were 'well sealed'. The butyl rubber deck membrane was laid to a 1:60 fall to a drain, with an overflow provided.

5.2.3 The expert inspected the interior of the house and took non-invasive moisture readings; noting no evidence of moisture penetration. The expert also took invasive moisture readings through the wall cladding into the framing at 24 locations

considered to be at particular risk of moisture penetration. There were no elevated moisture levels, with readings varying from 6% to 11%.

5.3 Windows and doors

5.3.1 The expert observed that windows and doors in the flush-finished fibre-cement had metal head flashings with satisfactory projections past the jamb flanges. The joinery had been face-fixed against the fibre-cement backing sheets prior to applying the coating system. The expert inserted a blade behind a window jamb flange and noted that there was no sign of seals behind the flanges, with a small fillet of sealant applied at the edge of the frame.

5.3.2 Windows and doors in the corrugated steel had metal head flashings that extended about 30mm past the jamb flashings, which are pre-formed channels that direct any moisture penetrating at the jamb back to the outside. The expert considered that the installation appeared satisfactory (although I note there are no corrugated compressible foam seals installed at the jamb flashings).

5.4 Commenting specifically on the external envelope of the house, the expert noted that:

The flush-finished fibre-cement

- there are no vertical control joints installed (I also note that the cladding is painted in a dark colour likely to increase movement of the backing sheets)
- there are many cracks at cladding joints, including at external corner joints
- finishing compound removed at a corner revealed that no uPVC corner angle was fitted and no reinforcing mesh was embedded in the plaster
- the cladding is due for re-painting
- windows are face-fixed against fibre-cement backing sheets, with no seals behind jamb flanges and the coating applied after the window installation

The corrugated steel wall and roof claddings

- there are no corrugated compressible foam seals inserted at the pre-formed jamb and corner flashings to the wall cladding
- the apron flashings lack kick-outs at the bottom and rely on sealants only for waterproofing
- there are no spreaders to downpipes from upper roofs onto lower roofs.

5.5 The expert also made the following comments:

- Although the step down to the enclosed deck is less than 100mm, the junctions appear satisfactorily weathertight with no sign of moisture penetration into the unlined timber framing of the garage below
- The metal balustrade capping has little fall, however the capping is well fixed with ‘well executed’ joints and there is no sign of moisture penetration.
- The meter box relies on sealant for weatherproofing, but it is sheltered beneath 600mm eaves and moisture levels are low in the framing below.

Matter 1: The cladding

6. Weathertightness

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 numerous previous determinations (for example, Determination 2004/1).

6.2 Weathertightness risk

6.2.1 The house has the following environmental and design features which influence its weathertightness risk profile:

Increasing risk

- the house is two-storeys high in part and in a medium wind zone
- the house is fairly complex in plan and form
- there are two types of cladding fixed directly to the framing
- some walls have no eaves to shelter the cladding
- an upper level deck is set within the lower roof of the garage
- the external wall framing is not treated to a level that provides resistance to decay if it absorbs and retains moisture.

Decreasing risk

- there are eaves to shelter some areas of the cladding.

6.2.2 When evaluated using the E2/AS1 risk matrix, one elevation of the house demonstrates a high weathertightness risk rating, one elevation a low rating, and the remaining elevations moderate risk ratings. I note that, if the details shown in the current E2/AS1 were adopted to show code compliance, the flush-finished fibre-cement and horizontal corrugated steel cladding would require a drained cavity at all risk levels. However, I also note that a drained cavity was not a requirement at the time of construction.

6.3 Weathertightness performance

6.3.1 Taking account of the expert's comments in paragraph 5.4, I consider that the flush-finished fibre-cement cladding has not been installed in accordance with the manufacturer's instructions at the time in a number of respects, which has resulted in the cracking apparent in many joints and corners.

6.3.2 I therefore conclude that remedial work is necessary for the following areas:

- for the flush-finished fibre-cement wall cladding:
  - the lack of uPVC angles and reinforcing mesh to the external corners
  - investigation into the inclusion of reinforcing mesh at cracked joints
  - the lack of a vertical control joint in the wall over 5.4m in length
  - the deteriorating dark-coloured paint finish to the cladding

- the lack of seals behind jamb flanges and drainage gaps at sill flanges
- for the corrugated steel cladding, the lack of corrugated compressible foam seals inserted at pre-formed jamb and corner flashings
- the lack of kick-outs to the bottom of roof-to-wall apron flashings
- the lack of spreaders to downpipes discharging onto lower roofs.

6.3.3 I also note the expert's comments as outlined in paragraph 5.5 and accept that these areas are adequate in the particular circumstances.

6.4 Weathertightness conclusion

6.4.1 I consider the expert's report establishes that the current performance of the claddings is adequate because there is no evidence of moisture penetration into the timber framing. Consequently, I am satisfied that the house complies with Clause E2 of the Building Code.

6.4.2 However, 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 will allow the ingress of moisture in the future, the building work does not comply with the durability requirements of Clause B2 insofar as it relates to Clause E2.

6.5 Because the house has remained weathertight for more than nine years and the identified cladding faults occur in discrete areas, I am able to conclude that satisfactory investigation and rectification of the items outlined in paragraph 6.3.2 will result in the external envelope being brought into compliance with Clause B2 of the Building Code insofar as it relates to Clause E2.

6.6 The expert has noted that the flush-finish fibre-cement cladding is cracked and due for re-painting. 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

7. Discussion

7.1 There are 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 house in 2002.

7.2 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).

7.3 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.

7.4 In this case the delay between the completion of the building work and the applicant's request for a code compliance certificate in 2011 has raised 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 was to be issued effective from today's date. However, I have not been provided with any evidence that elements did not comply with Clause B2 in June 2002.

7.5 It is not disputed, and I am therefore satisfied, that all the building elements in respect of consent No 5839, excluding those items that are to be rectified as described in paragraph 6.3.2 of this determination, complied with Clause B2 on 5 June 2002 (refer paragraph 4.6).

7.6 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.

7.7 I continue to hold that view, and therefore conclude 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 code compliance certificates for the building work had been issued in 2002.

7.8 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.

8. The actions of the authority

8.1 In its refusal to issue a code compliance certificate for this house, the authority referred to compliance with the building consent (refer paragraph 3.5). However, this building consent was issued in 2001 under section 34 of the Building Act 1991. Under the transitional provisions of the Act, section 436(3)(b)(i) requires 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'.

8.2 Section 95A of the Building Act requires the authority to give reasons for refusal to issue a code compliance certificate; which in this case would require identification of non-compliance with the Building Code that was in force at the time of issue of the building consent. I do not consider the authority's letter of 21 September 2011 to the applicant sufficient.

8.3 It is important that, should an owner be declined a code compliance certificate, they be given clear and appropriate reasons why. In my view, section 95A requires the authority to at least identify the particular aspects of the building that do not comply. The owner can either then take the appropriate action or apply for a determination if the reasons are disputed.

8.4 In addition, the authority's submission for this determination does not provide me with any evidence of why it considers the house is not code-compliant. I do not believe that referring to inspections carried out by a building certifier is an acceptable reason, as that same building certifier continued operating as the authority's agent to provide inspection services for the authority.

8.5 In regard to this house, the main evidence as to code compliance is able to be gathered from the inspection summary, the performance of the exterior envelope over the past nine years, and a visual assessment of the claddings. An assessment would then have revealed whether further evidence needed to be gathered to determine compliance. I note that the authority did not attempt to assess compliance.

8.6 Had an appropriate inspection of this house been carried out in response to the request for a code compliance certificate, the authority could have readily identified those defects requiring attention and any requirement for further investigation; without needing the applicant to apply for a determination. A determination, should one prove necessary, should follow such an inspection not precede it.

9. What happens next?

9.1 A notice to fix should be issued that requires the owner to bring the house into compliance with the Building Code, including the defects identified in paragraph 6.3.2, but not specifying how those defects are to be fixed. It is not for the notice to fix to specify how the defects are to be 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.

9.2 I suggest that the parties adopt the following process to meet the requirements of paragraph 9.1. The applicant should produce a response to the 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.

10. The decision

10.1 In accordance with section 188 of the Building Act 2004, I hereby determine that the external building envelope does not comply with Clause B2 of the Building Code insofar as it relates to Clause E2, and accordingly I confirm the 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 house, apart from the items that are to be rectified as described in Determination 2012/006, complied with Clause B2 on 5 June 2002.

(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 5 June 2002 instead of from the time of issue of the code compliance certificate for all the building elements, except the items to be rectified as set out in paragraph 6.3.2 of Determination 2012/006.

Signed for and on behalf of the Chief Executive of the Department of Building and Housing on 3 February 2012.

John Gardiner
Manager Determinations