Department of Building and Housing
Te Tari Kaupapa Whare

Determination 2010/101

Refusal to issue a code compliance certificate for a 9-year-old house with monolithic and brick veneer cladding at 15 Church Road, Pukete, Hamilton

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, G Shaw ("the applicant"), and the other party is the Hamilton 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 primary concern about the compliance of the building appears to relate to its age and to the weathertightness of the cladding.

[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.

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:

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 cladding, the brick veneer, the concrete block walls, the windows, the roof cladding 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 remaining Building Code requirements

Whether the house complies with the remaining relevant clauses of the Building Code. (I consider this in paragraph 7.)

1.3.3 Matter 3: 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 8.)

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

2. The building work

2.1 The building work consists of a detached house which is three-storeys high in part and is situated on an excavated southeast sloping site in a low wind zone for the purposes of NZS 3604[4]. The house is two-storeys-high at the bottom of the slope and single-storey at the top, with a three-storey-high central section. The house is fairly complex in plan and form and is assessed as having a low to moderate weathertightness risk (see paragraph 6.2).

2.2 The lowest level is a partial basement garage and laundry area set into the slope of the site, with a concrete block retaining wall to the northwest. The basement has concrete foundations and floor slab and concrete block exterior walls, with specifically engineered steel posts and beams that support a suspended concrete floor slab. The slab incorporates permanent galvanised steel formwork on the underside and is cantilevered at the east corner to provide a deck with open metal and glass balustrades and a liquid-applied membrane floor.

2.3 The remaining construction is conventional light timber frame, with concrete foundations and floor slab, brick veneer and monolithic wall claddings, aluminium windows and asphaltic tile roofing. The 25° pitch hipped roofs have eaves projections of more than 600mm overall.

[3] Under section 177(b)(i) of the Act (prior to 7 July 2010)
[4] New Zealand Standard NZS 3604:1999 Timber Framed Buildings

2.4 The expert could see no evidence of timber treatment to the wall framing. Given the date of framing installation in 2001, I consider the external wall framing to the house is likely to be untreated.

2.5 The wall claddings

2.5.1 The upper walls and about half of the ground floor walls are clad in a form of monolithic cladding known as EIFS[5]. In this instance, the proprietary cladding system consists of 60mm polystyrene backing sheets fixed directly to the framing over the building wrap, to which a mesh-reinforced textured coating system has been applied. The system includes purpose-made flashings to windows, edges and other junctions.

2.5.2 The remaining ground floor walls are brick veneer, with painted fibre-cement panels above window and door heads. The basement walls are painted concrete block.

3. Background

3.1 The authority issued a building consent for the house (No. 97/086) on 16 April 1997 under the Building Act 1991. The authority's inspection records are limited to a handwritten inspection summary.

3.2 Construction of the basement and ground floor slab appears to have taken place during May and June 1997, with the last inspection recorded as the 'concrete floor' on 17 June 1997 after which construction appears to have stopped for some years. The next visit by the authority was recorded on 16 February 2000, with the summary noting 'reinforcing quite rusty' and the inspector recording that he contacted the engineer 'who had inspected it and found it [to] be OK'.

3.3 A further visit was made on 5 July 2000 and the summary noted 'no work done'. Construction re-commenced in 2001 and the authority carried out pre-line building and plumbing inspections on 7 and 8 August 2001. No further inspections were recorded and the applicant states that the house was substantially completed in 2001.

3.4 In a letter to the applicant dated 23 February 2006, the authority noted that it had not been advised whether building work was complete and ready for a final inspection. Unless contacted, the authority would therefore be noting that the consent had not received a code compliance certificate, which 'could affect the sale of this property in future, as this will be included on a LIM for prospective purchasers'.

3.5 In 2007 the authority developed a policy for managing building consents issued under the Building Act 1991; and its 'Building Unit Policy' dated 25 May 2007 outlined the policy as (in summary):

- code compliance certificates will not be issued for consents issued under the former Act
- consent records will be removed from circulation and stored

[5] Exterior Insulation and Finish System

- code compliance certificate applications will be refused and owners given options to:
  - Apply to the Department for a determination, or
  - obtain a building report from an independent expert to lodge on the file.
- Any information on the property file will be made available on the LIM.

3.6 The authority's computer record dated 8 January 2008 summarised the history of the building work as follows:

> Letter sent 23/11/1999 re lack of progress. Project inspected 05/07/2000 no progress. Letter sent to owner re concern in regard to construction site safety. Letter again sent 23/02/2006 requesting access. No response and due to age of consent we have not issued a code compliance certificate.

3.7 The inspection company's inspection report

3.7.1 It appears that the applicant sought a code compliance certificate in 2009, and was refused in accordance with the authority's policy outlined in paragraph 3.5. I have seen no copies of correspondence, but the applicant apparently elected to obtain a building report and engaged the inspection company to inspect the house and provide a building report.

3.7.2 The inspection company inspected the house on 24 September 2009 and provided an 'Incomplete Building Consent inspection report' dated 29 September 2009. The inspection company visually inspected the exterior and interior of the house, taking non-invasive moisture readings, and noted elevated readings at:

- the skirting adjacent to the shower opening in the ground floor ensuite
- in the lower wall and skirting behind the ground floor toilet.

3.7.3 The inspection company also noted other defects in the house, including:

- water pooling on the deck
- corrosion to steel beams in the garage
- ground levels too high in some areas
- lack of slope to the window sills of the corner windows
- the lack of restrictor stays to family room and bathroom windows
- the lack of a handrail to the lower staircase
- various other minor and maintenance items.

3.7.4 The inspection company concluded that:

- the overall condition of the house was 'average for its age' and it had 'not been well maintained due to being tenanted'
- some further investigation and remedial work was required, along with some general maintenance
- some other defects were the result of 'normal wear and tear', which could be addressed as normal maintenance.

3.8 The remedial work

3.8.1 The applicant carried out some repairs in response to the report and the inspection company revisited the house on 5 February 2010 to assess the work. In a letter to the applicant dated 8 February 2010, the inspection company reported that the following work had been carried out:

- the ensuite shower was repaired where high moisture levels had been apparent
- the leaking tap to the toilet cistern was replaced
- the deck was sealed with a 'paint on a waterproof agent'
- the corrosion to the steel beams was removed and the steel painted
- restrictor stays were fitted to family room and bathroom windows
- a handrail was fitted to the lower staircase.

3.8.2 The inspection company attached photographs and noted that the repairs appeared to be 'satisfactory and undertaken in a good tradesman like manner.'

3.9 The authority refused to issue a code compliance certificate and the Department received an application for a determination on 10 May 2010.

4. The submissions

4.1 The applicant made no submission and provided copies of:

- the building consent
- the inspection company's reports on the house.

4.2 In a letter to the Department dated 28 May 2010, the authority acknowledged the inspection company's reports and asked for the determination to consider amending the start of the durability provisions to the date of occupation of the house. The authority gave its reasons for refusing to issue a code compliance certificate, stating:

> Given the length of time that has elapsed since the construction of the dwelling [the authority] will not issue a code compliance certificate for the following reasons. [The authority] cannot be satisfied on reasonable grounds that the building will meet the provisions of the Building Code for:
>
> Durability in terms of B1 *[sic]*
>
> Weathertightness in terms of E2.

4.3 The authority provided copies of:

- the consent drawings
- the 'Building Unit Policy' dated 25 May 2007
- the computer record dated 8 January 2008.

4.4 A draft determination was issued to the parties on 30 August 2010. The draft was issued for comment and for the parties to agree a date when the house complied with Building Code Clause B2 Durability.

4.5 The applicant responded to the draft in a letter to the Department dated 8 September 2010. The applicant did not accept the draft saying, in summary, that:

- only non-invasive moisture measurements had been taken by the expert
- some of the features highlighted in the expert's report were protected by deep eaves overhangs
- the fibre-cement cladding had been lapped over the window heads, so no head flashing in these locations were necessary
- safety glass was standard on all shower doors
- it was agreed that some matters needed to be rectified.

I have taken account of these comments and amended the determination accordingly. I note the expert took one invasive moisture reading.

4.6 The authority responded to the draft determination in a letter to the Department dated 5 October 2010. The authority generally agreed with determinations technical findings with respect to code compliance. However, it did not agree with the view expressed in the draft determination that the authority had not been specific in giving its reasons for refusing to issue the code compliance certificate as required by section 95A of the Act. The authority submitted there was an apparent conflict in section paragraph 10.1 between a notice to fix not specifying how compliance was to be achieved, and with the authority specifying why the code compliance certificate was being refused.

4.7 In response to the authority, I do not believe there is a conflict between providing clarity to an owner about why a code compliance certificate is being declined (for example listing or describing non-compliant building elements) and not specifying how a particular matter is to be made code compliant.

4.8 The parties agreed that building elements, with the exception of the matters to be rectified, complied with Clause B2 in January 2002, which I have taken to be 1 January 2002.

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. The expert inspected the house on 21 July 2010 and provided a report that was completed on 10 August 2010.

5.2 General

5.2.1 The expert noted that the house generally accorded with the consent drawings, except that some brick areas had been replaced with EIFS cladding. He also noted that the consent drawings did not include construction details, a site plan or a drainage plan.

5.2.2 The expert noted that the overall quality of construction appeared to be good, with the exterior claddings 'well finished' and the flashings 'tidy and effective', apart from the areas noted in paragraph 5.4.3. The expert noted that the EIFS cladding was in need of repainting, but generally appeared to be in compliance with 'accepted standard practice'.

5.3 Windows

5.3.1 The windows and doors within the EIFS cladding have metal head flashings and are recessed by the cladding thickness. The expert removed the textured coating from the jamb to sill junction of a bedroom window, and noted that uPVC jamb and sill flashings were installed, with sealant applied at the junction.

5.3.2 The windows in the brick veneer walls are recessed by about 80mm, with a panel of fibre-cement overlapping the window head flange in lieu of a head flashing. Sloping bricks form a traditional sill that projects beyond the brick veneer below.

5.3.3 The expert also noted that the full-height windows to the north corners of the lounge and family room ("the corner windows") follow the curved fibre-cement upper wall, with multi-pane flat glass joined with silicon and mitre joints in the window frames.

5.4 The external envelope

5.4.1 The expert inspected the interior of the house and took non-invasive moisture readings, noting no evidence of moisture penetration except below the sills to the two corner windows in the lounge and family room. Because of the wide eaves, the flashings and the absence of any signs of moisture ingress, invasive testing was kept to a minimum.

5.4.2 The expert took invasive moisture readings into the timber sills of the corner windows and confirmed that moisture levels ranged from 18% to 20%. Moisture readings above 18% generally indicate that moisture is entering the structure and further investigation is needed.

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

- there is insufficient clearance below the EIFS cladding at the northwest entry
- clearance to the bottom course of some of the brick veneer is insufficient
- the base of some of the brick veneer lacks weepholes
- at the corner window to the lounge, the ground level is very close to the timber sills, and moisture levels beneath the sills are high
- some mitres at head and sill flanges of the corner windows are opening, the sills lack fall and high moisture levels are apparent beneath the sills
- there is a hairline crack in the EIFS, which also is due for repainting
- there is a build up of cement salts and mortar at the outer edge of the exposed metal formwork to the suspended concrete slab.

5.4.4 The expert made the following additional comments:

- Although the fibre-cement overlaps the window head flange in lieu of a head flashing, window heads are sheltered beneath deep eaves and there is a cavity behind the brick veneer that provides drainage around the windows.
- Although the cantilevered deck has light ponding, the concrete floor is coated with membrane coating, the deck floor drains beneath the balustrades, a new drainage outlet has been installed and there is a step up of 60mm to the inside.

5.5 Compliance with the remaining code clauses

5.5.1 The expert assessed the house for compliance with the other relevant clauses of the Building Code and made the following comments.

B1 Structure

- Inspection records note satisfactory inspections of foundations and floor slabs, and also imply that the basement structure was inspected by an engineer.
- The remaining construction is conventional and there is no evidence of structural stress or excessive movement.
- Structural elements appear to be unchanged, so the design engineer's producer statement and calculations remain relevant to the completed structure.

E1 Surface water

- Roof water is collected by gutters and directed into council's drains.
- There is a channel drain in front of one garage door, with the other relying on falls in the concrete driveway.
- There are no apparent problems relating to surface water drainage.

E3 Internal moisture

- The wet areas appear to be constructed in a compliant manner.
- A recent repair was observed to the shower base in the ensuite.

F2 Hazardous building materials

- The deck balustrade is aluminium-framed safety glass.
- The use of safety glass should be confirmed for shower doors and other glazed doors where needed.

I note that the inspection company's report noted that safety glass was installed in the full length windows in the lounge and family room, but described the glass in glazed doors as 'standard'.

F4 Safety from falling

- The glazed deck balustrade is at an appropriate height.
- The retaining wall to the southern corner is over 1 metre high, with no barrier.

I note that, following its initial report, the inspection company reported and photographed the installation of restrictor stays to windows and a handrail to the lower part of the basement staircase.

G1 Personal hygiene, G2 Laundering, G3 Food preparation, G4 Ventilation, G7 Natural light, G8 Artificial light

- The interior generally complies with the consent drawings, which show adequate provision to comply with these building code requirements.
- All areas appeared to be compliant.

G12 Water Supplies and G13 Foul Water

- Fixtures appear to be in normal operating condition with no apparent problems.
- The authority's inspection summary indicates satisfactory pre-line plumbing and drainage inspections.

H1 Energy Efficiency

- The authority's inspection summary indicates satisfactory pre-line inspections.
- The 60mm EIFS cladding should provide adequate insulation to those walls.
- I also note that the inspection company's report noted fibreglass insulation to the ceiling.

5.6 A copy of the expert's report was provided to the parties on 19 August 2010.

Matter 1: The external envelope

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 varies from single-storey to three-storeys-high
- the plan and form is fairly complex with some complex roof to wall junctions, some unconventional window joinery and three types of wall claddings
- some walls have monolithic cladding fixed directly to the framing
- the external wall framing is not likely to be treated to a level that provides resistance to decay if it absorbs and retains moisture

Decreasing risk

- the house is sited in a low wind zone
- most of the walls have deep eaves to shelter the cladding
- the basement and mid-level floor is concrete, and the only deck has a concrete floor.

6.2.2 When evaluated using the E2/AS1 risk matrix, these features show that one elevation of the house demonstrates a low weathertightness risk rating and the remaining a moderate risk rating. I note that, if the details shown in the current E2/AS1 were adopted to show code compliance, the EIFS cladding on the moderate risk elevations would require a drained cavity. However, I also note that this was not a requirement at the time of construction.

6.3 Weathertightness performance

6.3.1 The investigation shows the claddings appear to have been installed in accordance with good trade practice and to the recommendations of manufacturers of proprietary EIFS systems at the time. However, taking account of the expert's comments in paragraph 5.4, I conclude that remedial work is necessary in respect of the following:

- the inadequate EIFS clearances at the northwest entry
- the inadequate clearances to the bottom course of brickwork in some areas
- the lack of weepholes at the bottom of the brick veneer in some areas
- the high ground level at the lounge corner window
- the open mitres and flat sills to both corner windows
- further investigation of both corner windows to determine and rectify the cause(s) of high moisture levels and to verify the condition of the untreated timber under the sills
- the deteriorating paint coating to the EIFS cladding and the salts on the metal formwork to the underside of the concrete deck.

6.3.2 I note the expert's comments in paragraph 5.4.4 and accept that these areas are adequate in these particular circumstances.

6.3.3 Notwithstanding the fact that the EIFS is fixed directly to the framing, thus inhibiting free drainage and ventilation behind the cladding, I have noted certain compensating factors that assist the performance of the cladding in this particular case:

- There is no evidence of moisture penetration through the EIFS cladding after almost nine years.
- The cladding is generally installed according to good trade practice, in accordance with practices common at the time of construction.

These factors can assist the building to comply with the weathertightness and durability provisions of the Building Code.

6.4 Weathertightness conclusion

6.4.1 I consider the expert's report establishes that the current performance of the building envelope is not adequate because there are two areas showing signs of moisture ingress. Consequently, I am satisfied that the house does not comply with Clause E2 of the Building Code.

6.4.2 In addition, the building envelope is 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 house are likely to allow the ingress of moisture in the future, the building work does not comply with the durability requirements of Clause B2.

6.4.3 Because the faults identified with the claddings occur in discrete areas, I am able to conclude that satisfactory rectification of the items outlined in paragraph 6.3.1 will result in the building envelope being brought into compliance with Clauses B2 and E2 of the Building Code.

6.4.4 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 remaining Building Code requirements

7. Discussion

7.1 Taking account of the expert's report, I conclude that remedial work is necessary in respect of the following (relevant code clauses are shown in brackets):

- Confirmation of the use of safety glass in shower doors and other glazed doors where needed (F2).
- The lack of a barrier to the top of the retaining wall (F4).

7.2 I have reasonable grounds to conclude that the house complies with the remaining relevant clauses of the Building Code.

Matter 3: The durability considerations

8. Discussion

8.1 The authority also has concerns regarding the durability, and hence the compliance with the building code, of certain elements of the house taking into consideration the age of the original building work completed in 2001.

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 In this case the delay between the completion of the building work in 2001 and the applicant's request for a code compliance certificate has raised concerns that various 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. I have not been provided with any evidence that the authority did not accept that those elements complied with Clause B2 at a date in or after 2001.

8.5 It is not disputed, and I am therefore satisfied, that all the building elements, apart from the matters that are to be rectified, complied with Clause B2 on 1 January 2002. This date has been agreed between the parties, refer paragraph 4.8.

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) In the general case an authority has the power to grant an appropriate modification, or waiver, of the building code if this is requested by an owner.

(b) In this instance the authority has the power to grant an appropriate modification of Clause B2 in respect of all the building elements, if this is requested by the applicant.

(c) 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 in or after 2001.

8.8 I strongly suggest 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.

9. The actions of the authority

9.1 The authority refused to issue the code compliance certificate for the reasons stated in paragraph 4.2. The authority advised the Department that could not be 'satisfied on reasonable grounds' that the work complied with the Building Code with respect to 'durability' and 'weathertightness'. The Department has not seen any formal

correspondence between the authority and the applicant stating why the code compliance certificate was being refused.

9.2 In my view this approach is not helpful to the applicants and the authority has not met its obligations under section 95A of the Act in providing specific reasons for its decision to decline the code compliance certificate. The authority appears to have applied a policy that it used in all such instances, but it had not turned its mind to the code compliance of this particular building. The authority could have completed an inspection of the property and advised the applicants of the items that were not compliant, rather than simply refer the matter to the Department for determination.

10. What is to be done now?

10.1 The authority should issue a notice to fix that requires the owner to bring the house into compliance with the Building Code, identifying the defects listed in paragraph 6.3.1 and paragraph 7.1 and referring to any further defects that might be discovered in the course of rectification, but not specifying how those defects are to be fixed. It is 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.

10.2 I suggest that the parties adopt the following process to meet the requirements of paragraph 10.1. Initially, the authority should issue the notice to fix. The applicants 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 matters. Any outstanding items of disagreement can then be referred to the Chief Executive for a further binding determination.

10.3 Once the matters set out in in paragraph 6.3.1 and paragraph 7.1 have been rectified to its satisfaction, the authority may issue a code compliance certificate in respect of the building consent amended as outlined in paragraph 8.

11. The decision

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

- the external envelope does not comply with Building Code Clauses B2 and E2
- the retaining wall does not comply with Building Code Clause F4

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

11.2 I have insufficient evidence to allow me to determine whether the glass to the shower screens complies with Clause F2 of the Building Code.

11.3 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 this determination, complied with Clause B2 on 1 January 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 1 January 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 6.3.1 and paragraph 7.1 of Determination 2010/101.

Signed for and on behalf of the Chief Executive of the Department of Building and Housing on 26 October 2010.

John Gardiner
Manager Determinations