Department of Building and Housing
Te Tari Kaupapa Whare

Determination 2010/109

Refusal to issue a code compliance certificate for a 16-year-old house at 6A Haronui Road, Greenlane, Auckland

1. The matter 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.

1.2 The parties are:

- Mr L Shi, Ms C An and T Kha who are the owners of the house ("the applicants") acting through their real estate agent ("the agent")
- The Auckland 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 and instead issue a notice to fix for the applicants' 16-year-old house, because it was not satisfied that the house complied with various clauses[2] of the Building Code (First Schedule, Building Regulations 1992).

[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 stated otherwise, references to sections are to sections of the Act and references to clauses are to clauses of the Building Code.

1.4 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 house complies with the relevant clauses of the Building Code.

1.5 The notice to fix outlines requirements for durability of building elements, taking into account the age of the building work. The notices state that an application for a modification of the requirements could be applied for to allow durability periods to commence from the dates of substantial completion. This matter is not in dispute and I leave this to the parties to resolve.

1.6 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.

2. The building

2.1 The house is a two-storey dwelling situated on a suburban site in a low wind zone and outside the sea spray zone and for the purposes of NZS 3604[4]. The site slopes gently to the east and the house faces to the south-west.

2.2 The house is generally conventional timber framed construction founded on timber piles, with the garage founded on a concrete base. The house is moderately complex in shape and form. The cladding is 60mm direct fixed EIFS[5]. The exterior door and window joinery is aluminium.

2.3 The roof is clad with trough section long-run roofing. The widths of the eaves vary, from being flush with the wall below in some places to up to 400mm in others. There is a small timber deck built off the living areas at ground-floor level.

2.4 The expert was unable to determine whether the external wall framing timber was treated, however given the date of construction I consider the external wall framing is unlikely to be treated to a level that would provide resistance to decay.

3. Background

3.1 The authority issued a building consent (No. TC/94/05394, also referred to as B/1994/4005394) for the house on 12 September 1994, and the building work was substantially completed around the beginning of 1995. No code compliance certificate was applied for or issued at that time.

3.2 In September 2009, the agent contacted the authority about the outstanding code compliance certificate, and the authority carried out a final inspection of the house on 16 November 2009 to assess whether a code compliance certificate could be issued.

3.3 The authority wrote to the applicants on 30 November 2009, advising that the house did not comply with various clauses of the Building Code and issued a notice to fix.

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

3.4 The notice to fix, (No. 330, also dated 30 November 2009) set out the matters that the authority believed did not comply with the Building Code. These included, in summary:

- inability to verify flashings around windows and doors
- the coverage of the EIFS plaster behind barge and facia boards, etc
- sealing of penetrations through the cladding
- inadequate ground clearance to the cladding
- the adequacy of roof apron flashings
- lack of spreaders to downpipes, the discharge of downpipes to a sump and not directly to the surface water disposal system
- lack of clearance between decks and the cladding
- air extract fans not discharging directly to the outside
- lack of handrails to the internal stair
- sealing of junctions, penetrations associated with bathroom and toilet joinery and fittings
- lack of as-built drainage plans.

A photo file was attached to the notice to fix showing areas where issues had been identified.

3.5 I have received no details of any subsequent correspondence or discussions between the parties following the issue of the notice to fix.

3.6 The Department received an application for a determination on 11 May 2010.

4. The submissions

4.1 The applicants forwarded copies of:

- the building consent and notice to fix
- plans and specifications for the original building consent
- correspondence from the authority
- a pre-purchase property inspection report, completed for a third party, dated 29 July 2009
- a LIM report dated 31 July 2009, including drainage plans.

4.2 The authority acknowledged the application and forwarded copies of information and a CD-Rom that was entitled ‘Property File’. The documents relating to the building work considered in this determination included:

- Historical records pertaining to the site
- Details and conditions applicable to the building consent.

4.3 A draft determination was issued to the parties for comment on 10 August 2010.

4.4 The authority accepted the draft without comment.

4.5 In a letter received by the Department on 26 October 2010, the applicants did not accept the draft determination and provided further comment and photographs. The applicant's noted that the expert had made an error regarding the construction of the house (being on timber piles as opposed to founded on a concrete slab), and I have amended the determination accordingly.

4.6 The applicants also provided a number of photographs and identified the framing timber as being 'treated Pinex 708 H1'. I note however that this does not establish that the timber has been treated to a level that would provide resistance to decay if it absorbs and retains moisture, and that it would be prudent for a timber sample to be provided to a testing laboratory for preservative analysis as part of the investigation required (refer paragraph 6.4.4).

5. The expert's report

5.1 General

5.1.1 As mentioned in paragraph 1.6, 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 11 June and 29 June 2010 and furnished a report dated 5 July 2010. A copy of the report was provided to the parties.

5.1.2 The expert noted that the house generally appeared to be built according to the consented plans except the proposed surface water detention tank was located in the driveway (the as-built location is in the rear lawn).

5.1.3 The expert observed that, in general, the house had been constructed to a good standard and was well-maintained.

5.2 Moisture levels

5.2.1 The expert carried out non-invasive moisture readings of the internal surfaces of the house's external walls. No elevated readings were found.

5.2.2 The expert carried out invasive investigations around the ground-floor living room window. These revealed that neither sill nor jamb window flashings had been used and that the window relied upon 'a small perimeter bead of sealant' to make the junctions between the joinery and the cladding weathertight. Moisture had penetrated the cladding around the window and been absorbed by the timber framing below.

5.2.3 The expert noted that 'the timber frame was soft, clearly wet and a penetration moisture reading of 44.6% was recorded'. A moisture reading of this magnitude indicates that the timber is saturated. The expert considered it 'probable that the balance of the windows are constructed in a similar manner'.

5.3 Weathertightness observations

5.3.1 Commenting on the weathertightness detailing, the expert noted the following:

Framing

- The timber treatment for the external wall framing was not known. Timber used in the garage roof space framing was treated to H1.
- Observations and invasive investigations showed that moisture has entered the timber framing which would have had an adverse effect in its durability.

Cladding

- The cladding was straight and evenly finished, with its plaster finish in good condition and no signs of cracking.
- Throughout the house, the plaster to the EIFS was not continued under adjacent barge or fascia boards.
- In several places (including the deck) timber and other abutments were hard up against the cladding, which may enable moisture to become trapped and penetrate the cladding.
- Fixings for the external handrail were penetrating the cladding and were not adequately sealed.

Flashings

- There was no evidence that jamb or sill flashings had been used on any of the windows.
- There was no head flashing on the lounge bay window and typically head flashings on the remaining windows had their ends buried in the EIFS cladding.
- The kick out flashings at the roof to wall junctions had been constructed in a satisfactory manner.

Penetrations

- In general, the sealing of penetrations had been poorly executed.

Ground clearances

- In general, the clearance between the ground level and the cladding was adequate, except in two places, namely the southerly quarter of the lounge and the garage threshold.

5.4 Other observations

5.4.1 Commenting on the other matters listed in the authority's notice to fix, the expert noted the following:

- None of the downpipes from the upper roofs had been fitted with spreaders.
- The air extract system to the bathroom exhausts into the drain vent.
- There is no handrail to the internal stairs.

- There are no smoke detectors in the house. (I note that this was not a requirement of the Building Code at time of construction.)
- There is no sealing around the bathroom service pipes, vanities and the laundry tub.

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

6.2 Weathertightness risk

6.2.1 This house has the following environmental and design features that influence its weathertightness risk profile.

Increasing risk

- The house is two storeys high.
- Roof and wall joins are exposed in places.
- There are limited eaves or verge projections to shelter walls.
- The cladding is directly fixed to the framing.

Decreasing risk

- The house is located in a low wind zone.
- The house has a medium complexity in plan and form.
- There is an open timber deck at ground level, but no upper level or enclosed decks.

6.2.2 When evaluated using the E2/AS1 risk matrix, these features show that the house demonstrates a medium to high weathertightness risk rating. I note that if the current details of E2/AS1 were adopted to show code compliance, a drained and ventilated cavity would be required. However, a drained cavity was not a requirement of E2/AS1 at the time of construction.

6.3 Weathertightness performance

6.3.1 It is clear from the expert's report that the cladding installed on the house is unsatisfactory in terms of its weathertightness because elevated moisture levels were recorded and observed in the external wall framing timbers.

6.3.2 Taking into account the expert's report and comments, (refer paragraph 5.3), I conclude that the following items require rectification with respect to weathertightness:

- the weathertightness of the junctions of the external joinery to the cladding
- the separations between the cladding and the deck, external handrail and other abutments

- inadequate clearance between the ground and bottom edge of the cladding at some locations
- plaster to the EIFS under adjacent barge, fascia boards, etc
- spreaders to downpipes discharging from upper level roofs
- weathertightness of penetrations through the cladding.

6.4 Weathertightness conclusion

6.4.1 I consider the expert's report establishes that the current performance of the cladding is not adequate because there is evidence of moisture penetration and retention. In particular, the cladding and joinery demonstrate key defects (see paragraph 5.3.1) that are likely to have contributed to the current moisture penetration and put the house at risk of further water penetration in the future.

6.4.2 The expert's report also identified the presence of a range of known weathertightness risk factors in this house. The presence of the risk factors on their own is not necessarily a concern, but they have to be considered in combination with the faults identified in the cladding system. It is that combination of risk factors and faults that indicate that the structure does not have sufficient provisions that would compensate for the lack of a drained and ventilated cavity. Consequently, I am not satisfied that the cladding system, as installed, complies with Clause E2 of the Building Code.

6.4.3 In addition, the building work is also required to comply with the durability requirements of Clause B2. Because the cladding faults on the house may allow further ingress of moisture in the future, the building work does not comply with the durability requirements of Clause B2.

6.4.4 I consider that final decisions on whether code compliance can be achieved by either remediation or re-cladding can only be made after a more thorough investigation of the cladding to verify the extent of the damage. Given the age of the building, and therefore the time that the framing may have been exposed to moisture ingress, I consider the condition of the timber framing will also need to be determined.

6.4.5 The investigation will require a careful analysis by an appropriately qualified expert. Once that decision is made, the chosen remedial option should be submitted to the authority for its comment and approval.

7. Discussion: the remaining Building Code clauses

D1 Access routes

7.1 Clause D1 requires handrails 'to provide support and to assist with movement along a stair …'. D1/AS1 describes where handrails are to be provided. The internal stair is a 'secondary private stairway' as defined in D1/AS1 and has more than two risers, and as such is required to have a handrail to one side of the stair. The internal stair has no handrail and therefore it does not comply with Clause D1.

E1 Surface water

7.2 The notice to fix says a garage downpipe discharging into a surface water sump and not the 'approved [surface] water disposed system' is not compliant. The sump is part of the surface water disposal system; I therefore consider the discharge of the downpipe into the sump is code compliant.

E3 Internal Moisture

7.3 Clause E3 requires that 'building elements likely to be splashed must be constructed in a way that prevents water splash from penetrating behind linings or into concealed spaces.' The expert has noted a number instances where re are there is a lack of sealing around bathroom fixtures and fittings that will allow water splash into concealed spaces. I conclude that the building work does not comply with Clause E3.

G4 Ventilation

7.4 The exhaust air to the bathroom extract fan is discharged into the drainage stack. This method of exhausting the air to the outside uses pipe work intended for an entirely different use, being the ventilation of the foul water drainage system. The discharge of the bathroom extract fan into the stack may well adversely effect the ventilation of the foul water drainage system.

7.5 I do not consider the ventilation of the bathroom extract fan into the drainage stack is complaint with Clause G4. The effect on compliance with Clause G13 is unknown.

8. What is to be done now?

8.1 The authority should issue an updated notice to fix requiring the owners to bring the building into compliance with the Building Code. The notice should identify the defects listed in paragraphs 6.3.2, 7.1, 7.3, and 7.5 and refer to any further defects that might be discovered in the course of investigation and rectification. The notice to fix should not specify how the defects are to be remedied and the building brought into compliance with the Building Code, as that is a matter for the applicant to propose and the authority to accept or reject.

8.2 In response to the notice to fix, the applicant should engage a suitably qualified person to undertake a thorough investigation of the external envelope to determine the extent of the defects. A detailed proposal describing how all of the defects are to be remedied should be submitted to the authority for 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 determine that the building does not comply with Building Code Clauses B2, D1, E2, E3, and G4 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 3 November 2010.

John Gardiner
Manager Determinations