Department of Building and Housing
Te Tari Kaupapa Whare

Determination 2011/107

The issue of a notice to fix in respect of 10-year-old additions and alterations at 29 Halesowen Ave, Sandringham, 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 to the determination are:

- the owners, D and B Osborne ("the applicants")
- Auckland Council[2] ("the authority"), carrying out its duties and functions as a territorial authority or building consent authority.

1.3 This determination arises from the authority's decision to issue a notice to fix because it was not satisfied that the additions and alterations complied with certain clauses[3] of the Building Code (First Schedule, Building Regulations 1992). The

[1] The Building Act 2004, the Building Code the Compliance Documents, past determinations, and guidance documents issued by the Department are available from the Department's website at www.dbh.govt.nz or by contacting the Department on 0888 242 243.

[2] The building consent and inspections were issued/undertaken by Waitakere City Council which was transitioned into the Auckland Council. The term authority is used for both

[3] 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.

authority's concerns regarding compliance of the building work relate primarily to the weathertightness of the building.

1.4 The matter to be determined[4] is therefore whether the authority was correct in its decision to issue a notice to fix. In deciding this, I must consider whether the addition and alterations comply with the Building code that was current at the time of consent. Based on the information provided and the notice to fix, the areas of compliance in dispute are Clauses E2 and B2.

1.5 Therefore, I have considered whether the external envelope of the building ("the external envelope") complies with Clause E2 External Moisture and Clause B2 Durability of the Building Code. The external envelope includes the components of the systems (such as the wall claddings, the windows, the roof claddings and the flashings), as well as the way the components have been installed and work together.

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 other evidence in this matter.

2. The building work

2.1 The building is a single storey house located in a low wind zone in terms of NZS3604[5]. The original house was constructed in the 1930s with solid concrete walls and featured a heavily textured plaster finish.

2.2 The addition that is the subject of this determination comprises a two bedroom addition and entry/conservatory that is sited on the north elevation of the existing house. The addition was founded on the existing concrete patio, and timber bearers and joists have been attached to the patio.

2.3 The addition is conventional light weight timber framing with a 20° pitched hand painted corrugated iron roof with a flat roof over the entry that is supported by two timber posts. The roof-to-wall junctions formed by the flat roof are largely sheltered under eaves of approximately 300mm. The cladding is plaster over fibre-cement board, with a texture coating applied to match the appearance of the original house. Joinery is wooden.

2.4 The consented plans specify that the timber posts and joists were to be H5 and H3 treated. However I consider that, given the date of construction in 2002, it is likely that balance of the wall framing to this addition is not treated.

3. Background

3.1 On 25 June 2002 the authority issued building consent No. 2002/3604163 under the Building Act 1991 for the addition and alterations.

3.2 The following inspections were undertaken:

- Foundation – 5 July 2002, passed
- Pre-line – 3 September 2002, failed (sill trays required)
- Post-line – 17 September 2002, passed

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

3.3 It appears that no further inspections were undertaken until 15 March 2011, when a final inspection was carried out. This inspection failed in respect of a number of items related to the cladding.

3.4 In response to the failure of the final inspection, the owners commissioned a thermal imaging report. I have seen no correspondence between the applicants and the authority in respect of this report; however I note that in terms of weathertightness assessment thermal imaging on its own is of limited value in gauging the performance of a building's external envelope.

3.5 A notice to fix was issued on 16 May 2011. The listed defects were, in summary (with associated code clauses shown in brackets):

- direct fixed cladding and lack of drainage and ventilation to wall framing (E2)
- fixings through the stringer of the pergola (E2)
- damage to a corner of the building possibly from moisture penetration (E2)
- lack of clearance between cladding system and paved and unpaved surfaces (E2)
- lack of kick out flashings where roof finishes within length of an adjacent wall (E2)
- durability of building work given age of construction (B2).

3.6 An application for a determination was received by the Department on 27 June 2011.

4. The submissions

4.1 The applicant forwarded copies of:

- the notice to fix
- photographs of the exterior of the addition.

4.2 The authority acknowledged the application and provided a copy of the property file on CD Rom, but did not make a submission in response.

5. The expert's report

5.1 As mentioned in paragraph 1.6, I engaged an independent expert, who is a member of the New Zealand Institute of Building Surveyors, to assist me. The expert inspected the addition on 25 August 2011, providing a report dated 2 September 2011. A copy of the report was provided to the parties on 5 September 2011.

5.2 General

5.2.1 The expert noted that the quality of the plastering appeared (generally) good but also noted that since the time of construction no sealant had been reapplied or other maintenance work carried out. The expert also considered the roof to wall junction about the front entry to be 'untidy and incomplete'.

5.3 Weathertightness

5.3.1 The expert inspected the interior of the house and took non-invasive moisture readings; noting no evidence of moisture penetration.

5.3.2 The expert took invasive moisture readings through the wall cladding into the framing at locations considered to be at particular risk of moisture penetration. The expert noted the following elevated readings:

- northeast corner, ground level 18%
- north wall, mid point at gound level 32%
- northeast corner of north facing French doors, ground level 22%
- northwest corner of north facing French doors, ground level 32 - 40%
- west elevation, fascia of entry porch roof 22%

I note that moisture readings above 18%, or which vary significantly, generally indicate that moisture is entering the structure and further investigation is needed. Readings in the range of 32- 40% indicate that the timber is saturated and decay will be inevitable over time.

5.3.3 Commenting specifically on the envelope of the building addition the expert noted:

- In places the cladding is in contact with the ground and in addition to elevated moisture content readings there is mould on the rear side of the fibre-cement base cladding. This has resulted in high levels of moisture ingress.
- No back flashing, jamb flashing or sill flashing had been provided between the door jamb and the cladding system (north elevation). The building wrap had been placed behind the head flashing. These had resulted in high levels of moisture ingress at the base of the door jamb.
- There was ponding to the flat roof over the front entry.
- No chased over flashing has been installed at the junction between the roof of the addition and wall of the original bungalow (western end).
- The fascia at the edge of the roof covering the front entry porch was neither flashed nor did the roof membrane extend over the top edge of the fascia boards. This is allowing moisture to drain behind the fascia board and is causing damage to the fascia board and soffit.
- Cracking to the cladding above the lounge doors (north elevation) is evident.
- The pergola was face fixed to the wall cladding.
- There is an unsealed electrical penetration on the east elevation.

5.3.4 The expert also noted:

- The threshold between the tiled deck and door joinery is approximately 50mm.
- No control joints were evident along the north elevation.
- Sill flashings are installed to the window (north elevation) but there are unlikely to be jamb flashings since none had been installed to the French door.
- The bottom end of the valley flashing where the roof of the addition drains to the entry porch roof required cleaning out.

There was no evidence of moisture ingress associated with these items.

6. Discussion

6.1 As described in paragraph 1.4, the areas in compliance in dispute are Clauses E2 and B2 of the Building Code. I have therefore evaluated the building in terms of its weathertightness.

6.2 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).

6.3 Weathertightness risk

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

Increasing risk

- the cladding is directly fixed
- timber treatment is unknown

Decreasing risk

- the house is in a low wind zone
- the envelope is simple
- the addition and original bungalow is single storey
- there are eaves that provide shelter to some of the cladding.

6.3.2 When evaluated using the E2/AS1 risk matrix, the weathertightness features outlined in paragraph 6.3.1 show the house has a low weathertightness risk rating. If details shown in the current E2/AS1 were adopted to show code compliance, a drained cavity would not be required.

6.4 Weathertightness conclusion

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

6.4.2 The external 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. As there is evidence the faults to the external envelope are currently allowing the ingress of moisture, the building work does not comply with Clause B2.

6.4.3 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).

6.5 The notice to fix

6.5.1 The notice to fix identified non-compliance with Clause B1 Structure, though no further reference or particular building element that contravened Clause B1 was identified in the notice. I consider however that further investigation is necessary to determine the cause of the water ingress and the extent of possible damage to the timber framing as a result of water ingress over the nine years since the cladding was installed to the addition, and to establish the ongoing compliance of the external framing with Clause B1 Structure.

7. What is to be done now?

7.1 I am satisfied that the addition does not comply with the Building Code, and that the authority made an appropriate decision to issue the notice to fix.

7.2 The notice to fix should be modified to take account the findings of this determination, identifying the items listed in paragraph 5.3.3 and investigation as described in paragraph 6.5.1, and referring to any further defects that might be discovered in the course of investigation and rectification but not specifying how those defects are to be fixed. It is not for the notice to fix to stipulate directly how the defects are to be remedied and the house brought to compliance with the Building Code. That is a matter for the owner to propose and for the authority to accept or reject. It is important to note that the Building Code allows for more than one means of achieving code compliance.

7.3 The applicants should then produce a response to this in the form of a detailed proposal for the additions, produced in conjunction with a competent and suitably qualified person, for the rectification of the specified matters. Any outstanding items of disagreement can then be referred to the Chief Executive for a further binding determination.

8. The decision

8.1 In accordance with section 188 of the Act, I hereby determine that the external envelope of the addition does not comply with Clauses B2 and E2 of the Building Code, and accordingly I confirm the authority's decision to issue the notice to fix.

8.2 I also determine that the authority should modify the notice to fix to take account of the findings of this determination.

Signed for and on behalf of the Chief Executive of the Department of Building and Housing on 20 December 2011.

John Gardiner
Manager Determinations