



Determination 2015/015

The refusal to issue a code compliance certificate for a 16-year-old house with monolithic and brick veneer claddings at 181 Frasers Road, Leeston



1. The matters to be determined

- 1.1 This is a determination under Part 3 Subpart 1 of the Building Act 2004¹ (“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:
- the current owner of the house, D Farr (“the applicant”)
 - Selwyn District 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 a 16-year-old house because it was not satisfied that the building work complied with certain clauses² 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.
- 1.4 The matter to be determined³ is therefore whether the authority was correct to refuse to issue the code compliance certificate for the reasons given in its letter dated 24 May 2012. In deciding this matter, I must consider:
- (a) 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 brick

¹ The Building Act, Building Code, compliance documents, past determinations and guidance documents issued by the Ministry are all available at www.dbh.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.

³ Under sections 177(1)(b) and 177(2)(d) of the current Act

vener, the windows and the roof cladding) as well as the way the components have been installed and work together. I consider this in paragraph 6.2.

- (b) Whether other items identified by the authority comply with relevant Building Code clauses: namely Clauses B1 Structure, G9 Electricity, G12 Water supplies, and G13 Foul Water. And whether items noted by the expert and the property inspection company during their inspections comply with Clauses E3 Internal moisture, and H1 Energy efficiency. I consider this in paragraph 6.3.

1.5 Matters outside this determination

- 1.5.1 When refusing to issue the code compliance certificate, the authority limited its concerns to items raised as described in paragraph 3.5.1. Apart from 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. I leave this matter to the parties to resolve.
- 1.5.3 The authority also noted the failure to commence building work within 6 months of the issue of the building consent in 1997, as specified in the consent conditions (see paragraph 3.1.2). However, I note that no further reference was made to this until the refusal to issue the code compliance certificate in 2012. I consider that the date of commencement of building work was accepted by the authority at the time and the issue as no longer relevant.
- 1.6 In making my decisions, I have considered:
- the submissions of the parties, including:
 - the pre-purchase earthquake damage report by a licensed building practitioner engaged by the applicant to report on the house (“the LBP”)
 - 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 single-storey three bedroom house with an attached garage situated on an exposed rural site in a high wind zone for the purposes of NZS 3604⁴. The building plan is made up of two offset rectangles sited along the south boundary of the level site, with the garage section to the east and the rectangular house section to the west. The house is fairly simple in plan and form and is assessed as having a low weathertightness risk.
- 2.2 Construction is generally conventional light timber frame, with concrete foundations and floor slabs, brick veneer and monolithic wall claddings, aluminium windows and profiled metal roofing.

⁴ New Zealand Standard NZS 3604:1999 Timber Framed Buildings

- 2.3 The house and garage have symmetrical roof plans, with an internal gutter at the intersection of the two roofs. The roofs include hips, gables and dutch gables with battened fibre-cement cladding to gable ends. The roofs have eaves of about 600mm overall with verge overhangs of about 300mm to the dutch gable end walls.
- 2.4 The expert observed no evidence of treatment markings on timber he was able to inspect within ceiling cavities and, given the date of construction in 1998, I consider that the external wall framing is unlikely to be treated.

2.5 The claddings

- 2.5.1 The primary wall cladding is a form of monolithic cladding system known as EIFS⁵. In this instance, the system consists of 40mm polystyrene backing sheets fixed directly to the framing over the building wrap, to which a proprietary mesh-reinforced plaster system has been applied. Proprietary plaster systems in common use at the time of construction included purpose-made flashings to windows, edges and other junctions. Full height EIFS extends along the south elevation and around the corner as far as the south door jamb of the southwest bedroom.
- 2.5.2 Elsewhere, part-height brick veneer over a 40mm drained cavity extends up to sill level of some of the windows. At the junction of the brick and EIFS, a projecting sloping sill formed from plastered polystyrene is located on top of the brick veneer. Plastered polystyrene sills are planted below sills of windows installed within EIFS-clad walls.
- 2.5.3 At the dutch gable ends, fibre-cement sheet is fixed through building wrap directly to the framing, with vertical timber battens installed over joints and at mid-sheet.

3. Background

3.1 The consent documentation

- 3.1.1 The two sheets of consent drawings were prepared and the building consent applied for in August 1994 although the consent was not issued until 1997. I note that the drawings are rudimentary, with various conflicts and minimal description or detail. According to the authority, the specification 'called for solid plaster to NZS3604 over Harditex', although elevations show fibre-cement sheet cladding with vertical battens installed over joints and at mid-sheets. The drawings also show asymmetrical gable roofs with no eaves or verges.
- 3.1.2 The authority issued building consent no. R416452 to the original owner/builder of the house on 12 February 1997 under the former Act. The consent conditions listed required inspections, which included inspections of foundations, concrete reinforcing and plumbing pipe work. The attached notes also included the statement that:

This Building Consent shall lapse and be of no effect if the building work concerned has not commenced within six calendar months after the date of issue of the consent.

3.2 Construction

- 3.2.1 Construction did not commence until mid-1998, with the authority inspecting the garage foundation on 2 June 1998. It appears that construction by the owner/builder was prolonged and the authority carried out a pre-line inspection on 28 October 1998, which identified work that was required, stated that trusses were 'made up on

⁵ Exterior Insulation and Finish System

site by owner/builder' and noted that 'a decision will need to be made by [the authority].'

- 3.2.2 In a letter to the owner/builder dated 30 October 1998 the authority noted the change from a 'beam roof structure to a truss one' and required amended drawings and:

An engineer's statement clearly setting out that the trusses are designed and manufactured to take the wind and snow loads of the area.'

The authority carried out a further bracing inspection on 3 December 1998, which passed but again noted the need for an engineer's statement on the trusses.

3.3 The timber trusses

- 3.3.1 The owner engaged a structural engineer who inspected the trusses on 10 December 1998 and wrote to the owner/builder and the authority on 15 December noting that the measured deflections of the garage trusses were 'very small'.

- 3.3.2 However, the engineer considered that the deflection to the house trusses was 'excessive'; due mostly to joint slippage between top and bottom chords but also to 'creep deflection' which was expected to double over the next three years.

- 3.3.3 The engineer outlined the work required to be done before a producer statement could be issued for construction review of the trusses, stating:

...a pair of nail tooth plate connectors are required at each joint. This shall be constructed at every joint throughout the house. A central vertical strut connecting the apex and bottom chord will minimise further creep deflections, and shall be constructed with a pair of nail tooth plate connectors at each end, throughout the house.

3.4 Continuing construction

- 3.4.1 According to the inspection records, the authority wrote to the owner/builder on 14 May 1999. I have not seen a copy of that letter. However, no further inspections were carried out until the authority visited the site and took photographs on 27 August 1999; the photographs show that the house was substantially completed at that time.

- 3.4.2 The authority then met with the owner/builder on site on 2 September 1999 and the record noted that a drainage/surface water inspection and a final inspection would be required before a code compliance certificate could be considered. The record noted that work was still outstanding from the pre-line and post-line inspections and also listed work that would need to be checked as follows:

1. Tempering valve
2. Insulation in ceiling
3. Remove switch plate in outside wall to check fibreglass
4. Check that trusses are tied down
5. Producer Statement plumber
6. Alterations to trusses defined by engineer have been carried out
7. At this stage the exterior plaster/material issue should have been verified.

- 3.4.3 The authority carried out an inspection on 11 November 1999 and the record for stormwater noted that the work complied with the building consent. The other record of the inspection was ticked as applying to 'structure' and 'other' and noted:

The back wall has been holed and inspected for fibreglass, building paper and open cell polystyrene.

All work complies

3.4.4 The final inspection was carried out on 4 May 2011, and the inspection record listed a number of items requiring attention. The record of the reinspection on 27 December 2011 notes ‘all items from inspection (final)’ on 4 May 2011 were ‘now completed’ but also noted that a smoke detector needed to be installed. On 1 May 2012, the owner/builder delivered photographs dated 27 April 2012, which showed smoke detectors and applied for a code compliance certificate.

3.5 The refusal to issue a code compliance certificate

3.5.1 In a letter to the owner/builder dated 24 May 2012, the authority noted that the building consent had been issued in February 1997 but no application for a code compliance certificate had been made until 9 January 2012. The authority refused to issue the certificate for the following reasons, in summary (the item numbers are taken from the authority’s letter):

- items 1 to 3:
 - failure to commence work within 6 months of consent issue (item 1 not considered in this determination – see paragraph 1.5.3)
 - time elapsed since completion in 1999 and the authority’s liability for durability provisions commencing from issue date of the code compliance certificate (items 2 and 3 – see paragraph 6.1.3)
- pre-pour concrete inspections not carried out per consent conditions (item 4)
- lack of verification of water supply quality (item 5)
- lack of producer statement for plumbing work (item 6)
- in regard to the wall claddings:
 - pre-plaster inspections not carried out (item 7)
 - lack of maintenance (item 8)
 - cladding and slab clearances from paving levels (item 9)
- lack of producer statement for sewerage disposal system (item 10)
- lack of engineer’s producer statement for timber roof trusses (item 11)
- lack of certificate for electrical work (item 12).

3.6 The LBP’s report

3.6.1 The original owner/builder offered the property for sale in 2012 without a code compliance certificate. The LIM report noted the lack of a code compliance certificate, and the applicant (at the time being the prospective purchaser) engaged an LBP experienced in inspecting post-earthquake damage for insurance companies to investigate the condition of the house.

3.6.2 The LBP inspected the house and provided an undated report in the form of an ‘Earthquake damage property information form’ that noted no earthquake damage to the floor slab, roof and wall framing, plumbing and drainage, or electrical work. Minor movement cracking was noted to brickwork and interior linings, with minor nail popping to the western end of the roof. The applicant then completed the purchase of the house from the original owner/builder.

3.6.3 When preparing to sell the house in 2014, the applicant spoke to the authority about the lack of a code compliance certificate and was provided with a copy of the letter dated 24 May 2012 (see paragraph 3.5.13.5). When explaining its refusal, the

authority apparently indicated that most reasons ‘were void as the house is 16 years old and stood up to major earthquakes and that proves the integrity of the house build.’

3.6.4 The Ministry received an application for a determination on 7 January 2015.

3.7 The inspection company’s report

3.7.1 The applicant continued to market the property and engaged the inspection company to report on the house. The company inspected the house on 5 February 2015 and provided an undated report which described the construction and noted that the house had ‘a number of maintenance requirements’.

3.7.2 The inspection company took non-invasive moisture readings and noted elevated readings around the north bay window, beside west-facing ranchsliders, below a south bedroom window and in the garage bottom plate.

3.7.3 The report identified various interior areas where maintenance was required, including investigation of a possible plumbing leak in the wall between the master bedroom and the bathroom where moisture readings were elevated.

3.7.4 The company inspected the ceiling space, noting that the hot water cylinder had been recently replaced, with seismic restraints in place and a wetback system installed to the woodburner. The report noted that additional nail plates were required to the base of the timber truss closest to the manhole access. Numerous gaps in the fibreglass ceiling insulation were also noted.

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

- gaps at the cladding to joinery junctions
- the lack of visible head flashings
- the limited threshold heights at door openings
- the lack of cladding clearances in some areas
- deteriorating paintwork
- downpipes not discharging into stormwater system.

3.8 Ongoing remedial work

3.8.1 At various times prior to and following the expert’s report (see paragraph 5) and the preparation of the draft determination, the applicant carried out various repairs, including:

- installation of chain restraints to the exterior gas cylinder
- repair of the downpipes to discharge into the stormwater system
- opening up the bedroom side of the bathroom partition where high moisture levels had been recorded, to allow investigation of the concealed plumbing
- replacement of defective sealant to the tiled bathroom floor/wall junction which had allowed moisture to penetrate into the bottom plate
- installation of additional ceiling insulation to remedy the observed gaps.

4. The submissions

4.1 The initial submissions

4.1.1 In a statement accompanying the application, the applicant outlined the background to the situation and described work carried out since purchasing the house in 2012. The applicant noted the advice obtained when they purchased the house without a code compliance certificate and the lack of any significant damage resulting from the earthquakes prior to their purchase, noting that there had been no moisture problems during their occupation. The applicant explained that they now wished to sell the house and had discussed with the authority the reasons for refusing to issue a code compliance certificate (see paragraph 3.6.3). However, although they considered the house to be well maintained and in 'very good condition', the lack of a code compliance certificate continued to impede the sale of the property.

4.1.2 The applicant provided copies of:

- the inspection records
- the letter from the engineer dated 15 December 1998
- the letter from the authority dated 24 May 2012
- the reports from the LBP and the inspection company
- various photographs of the house
- various other statements and other information.

4.1.3 In an email to the Ministry dated 22 January 2015, the authority acknowledged the application and stated that the reasons outlined in its letter to the original owner/builder on 24 May 2012 (see paragraph 3.5.1) remained relevant. The authority continued to refuse to issue a code compliance certificate because it:

...is not in a position to be satisfied on reasonable grounds that all building work complies with the Building Code (of the day)

4.1.4 A draft determination was issued to the parties for comment on 18 March 2015.

4.2 The applicant's response to the draft determination

4.2.1 The applicant accepted the draft determination on 26 March 2015 and emailed the Ministry on 29 March 2015 attaching photographs and also a copy of an earlier email to the authority.

4.2.2 The email to the authority dated 23 March 2015 explained that high moisture levels and the concealed plumbing in the partition between the master bedroom and bathroom had been investigated by a plumber. No plumbing leak was found but failing sealant had been replaced. That email also explained that gaps in ceiling insulation identified by the expert had now been remedied (see paragraph 3.8.1).

4.2.3 The applicant included the following comments (in summary):

- Photographs of the bathroom partition were taken from inside the wardrobe and show that the wall is now dry. The framing will be left exposed pending the final outcome of the determination.
- All additional ceiling insulation has now been installed.

- Bedroom 3 (where high moisture levels were recorded in the south wall) was redecorated last year, with no sign of moisture on the concrete floor at that time. There is also no evidence of moisture on interior finishes now.
- The bottom of the cladding is sealed against the concrete paving, which is sheltered by 600mm deep eaves, slopes away from the wall, and never ponds.

4.3 The authority's response to the draft determination

4.3.1 The authority responded to the draft determination on 31 March 2015. The authority did not accept the draft and attached a letter setting out comments on the expert's report and the draft.

4.3.2 The authority included the following comments (in summary):

- Untreated rafters are exposed beneath the eaves overhang and penetrate the cladding, risking moisture penetration during routine washing and also deterioration of the structural capacity of the members due to exposure to weather over time. (I comment on this in paragraph 6.2.16)
- Photographs of exposed framing in the bathroom wall show inadequate bracing likely to be typical throughout the house and water damage to the plasterboard is also likely to have reduced its bracing capacity, making it unlikely the building will continue to perform adequately for its effective life of 50 years minimum. (I comment on this in paragraph 6.3.8).
- The electrical work was not inspected as this work is self-certifying; in the absence of an energy works certificate there is no way of demonstrating compliance of the electrical work that is part of the building consent. (I comment on this in paragraph 6.3.15).
- There appears to be no legal agreement for the supply of water from the neighbouring property, either for current owners or future owners. (I comment on this in paragraph 6.3.20).
- The expert reports that the septic tank discharges to a soak pit, although the building and resource consents call for disposal to a trench dispersal system. As the disposal system has been operating at an unknown capacity in the past, there is no evidence that it would continue to perform should the system be used to its full capacity of one cubic metre per day as per the resource consent conditions. (I comment on this in paragraph 6.3.25).
- The photographs taken by the property inspection company show gas work that does not comply. (I note here that the applicant has stated that the gas cylinder shown in the photographs has been restrained and this matter can be simply verified by the authority in due course.)

4.4 The applicant's response to the authority's submission

4.4.1 The applicant responded to the authority's comments on the draft determination in an email to the Ministry dated 12 April 2015, including the following (in summary):

- The exterior has been 'power washed each year' with no apparent moisture penetration or evidence of moisture damage.
- The bathroom partition is the only wall where the waste pipe goes through the framing. The bathroom plasterboard is 'aqualine' and is dry.

- All wiring sockets and the switchboard were checked by a registered electrician three years ago and there have been no problems with the electrical system since the house was completed 16 years ago.
- For the past 17 years water has been supplied from the neighbour's tank, which supplies several properties. The neighbour is happy to continue the arrangement and have stated that if their property was sold, the new owners would need to give at least 12 months notice in writing of any change.
- The gas cylinder has now been chained as recommended by the property inspection company.

4.5 I have considered the parties responses to the draft and I have amended the determination as appropriate.

5. The expert's report

5.1 As mentioned in paragraph 1.6, 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 10 February 2015, providing a report completed on 2 March 2015.

5.2 General

5.2.1 The expert generally considered construction quality to be at 'an acceptable trade standard' apart from areas identified in his report. The expert noted that wall cladding and linings were generally straight and fair of finish, but the standard of plaster workmanship was 'below average'. Roof flashings had been 'neatly installed and are operating effectively'.

5.2.2 The expert noted that the scope of his inspection was to 'provide an opinion about items 5 to 12 in the letter dated 24 May 2012' from the authority and to assess code compliance, with particular attention to Clauses B2 and E2. The expert noted that his report also assessed compliance with Clauses B1, E1⁶, G9, G12, G13 and H1.

5.2.3 The expert noted that the floor plan of the house generally accorded with the consent floor plan. However, significant changes include:

- increased offset between house structure and garage structure
- the addition of a bay window to the west end of the north elevation
- EIFS and brick veneer in lieu of battened fibre-cement shown in elevations
- roof design 'totally different' with:
 - symmetrical roof plans in lieu of asymmetrical gables
 - dutch gables and hips, with eaves in lieu of gables with no eaves
 - internal gutter to house/garage intersection
 - timber roof trusses to house section in lieu of beamed skillion roof.
- battened fibre-cement cladding to dutch gable end walls.

⁶ The Clause E1 Surface water matter concerned a downpipe not discharging properly into a surface water drain. This has now been rectified by the owner.

5.3 Clauses B1 Structure (item 11)

5.3.1 The expert inspected the roof framing, noting no indication of treatment markings but also no signs of damage or decay to the timbers. Taking into account alterations to the roof trusses required by the engineer during construction (see paragraph 3.3.3), the expert noted that:

- nail plates are fixed to both sides of chord connectors and vertical struts are fitted in accordance with the engineer's recommendations
- vertical struts are connected to the bottom chord with nail plates to both side and plywood connectors are installed at the apex, fixed with 40mm stainless steel ring grip nails
- a string line allowed deflection to be measured at 16mm over the 3.2m span across the kitchen ceiling, compared to the 22mm expected by the engineer
- the maximum ceiling span is 3.6m across the lounge and deflections are not 'easily detectable from below with the naked eye'
- since construction the roof framing has survived significant earthquakes and storms, with no signs of damage.

5.4 Clause E2 Weathertightness (items 7, 8 and 9)

5.4.1 The expert assessed the weathertightness of the exterior building envelope and his findings are summarised in the following paragraphs:

Moisture testing

5.4.2 The expert noted no evidence of moisture penetration on the interior of external walls, with semi-invasive readings into skirtings, linings and below jamb/sill junctions 'all well within an acceptable range'.

5.4.3 The expert also took invasive moisture readings through the EIFS cladding at areas considered at risk of moisture penetration. The expert noted that readings at the kitchen north and east window jambs above the brick sill were all below 10% despite the lack of drainage at the sill. However, the expert noted the following:

- 27% in the south bottom plate to bedroom 3 where the concrete path is level with the interior floor level
- 18% in the bottom plate to the west wall where the concrete patio is almost level with the interior floor level

5.4.4 I note that moisture levels over 18% generally indicate that external moisture is entering the structure and further investigation is required. I also note that the moisture readings were taken during a dry summer period and would be expected to be higher during wetter seasons.

The building envelope

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

- the bottom of the EIFS cladding butts against concrete paths and patios and moisture is penetrating into the bottom plate on the south and west elevations (I note that the property inspection company also identified elevated moisture in the garage bottom plate)

- at the west end of the lounge, the concrete patio was poured against the brick veneer; with the surface 50mm above the bottom of the cavity, allowing wind-blown rain to enter via weep holes to pool at the bottom of the cavity
- the bottom of the EIFS to the south elevation is finished with a Z flashing that falls towards the cladding, allowing water to pool against the plaster
- all plumbing penetrations through the EIFS are poorly sealed.

5.4.6 The expert made the following additional comments on the claddings:

- Although the upper edges of the corrugated roofing have no stop-ends to prevent windblown rain penetrating into the roof space, there is no evidence of moisture penetration or damage after some 16 years.
- The flashing to the north end of the internal gutter is lapped towards the direction of water flow and therefore relies on regularly checking and maintaining an appropriate flexible sealant for weathertightness of the junction.
- Although there are no visible head flashings, windows are recessed by the depth of the EIFS and are well sheltered below the 600mm sloping eaves, with no signs of moisture penetration as a result of the omission after 16 years.
- Although plaster to the polystyrene sills to kitchen windows is 10mm over the edge of the aluminium flanges, which prevents sill drainage, there is no sign of moisture penetration with low moisture levels recorded.
- Although the EIFS plaster continues over polystyrene sills, there is no sign of any moisture penetration and any moisture that may penetrate the junctions is able to drain into the brick veneer cavity.

5.4.7 In regard to cladding maintenance (item 8 in the refusal), the expert noted the following:

- Most EIFS cladding systems are recommended to be repainted every 7 to 10 years, but there is no evidence that the EIFS to this house has been repainted since its completion in 1999.
- There are numerous hairline cracks visible on the south wall, which need to be addressed as soon as possible.
- Sealant to window and door heads and jambs has recently been replaced and is in good condition.
- The corrugated roofing has also not been repainted in the last 16 years and the junctions between hip flashings and dutch gables require maintenance.

5.4.8 At the time of his inspection, the expert observed that a downpipe was not directed into the stormwater system, I note that a photograph subsequently submitted by the applicant indicates that this has now been satisfactorily remedied.

5.5 Clause G9 Electricity (item 12)

5.5.1 The expert observed no evidence of electrical problems and noted that the only electrical certificate of compliance he was able to sight was for the recent installation of a heat transfer and ventilation system. He was advised that the same electrician had visited on other occasions for minor work and 'to check all sockets'.

5.6 Clause G12 Water supplies (items 5 and 6)

5.6.1 The expert was informed that the water supply was provided from a well and tank located on a neighbouring property although he did not see any legal documentation relating to rights to the water. The expert noted that:

- consent conditions did not specify testing but three ‘water sample analytical reports’ are held in the authority’s records, which provide test results for samples obtained on 17 June, 24 August and 21 September 2011
- tests identified no areas of non-compliance with health standards and indicated that water was fit for use as potable water at the time of testing.

5.6.2 The expert noted that the hot water cylinder was replaced when a solid fuel heater and wet-back was installed in 2013 under a separate building consent (No. BC 130593). The installation was issued with a code compliance certificate on 10 May 2013 and the expert noted the following:

- The cold water intake pipe is fitted with a pressure reducing valve and a tempering valve is fitted to reduce water temperature to bathing areas.
- The cylinder is restrained against earthquake movement.
- The safe tray appears to have been replaced and is connected to an overflow pipe that disperses to the outside.
- Pipes in the ceiling space are wrapped with felt lagging. Lagging is not pipe insulation as it is described in paragraph 6.7.6 of G12/AS1.

5.7 Clause G13 Foul water (items 6 and 10)

5.7.1 The expert noted that shower and wash basin wastepipes are short lengths and do not need venting. Although the kitchen sink waste is over 3.5m, the expert tested its performance by emptying the sink and observed that water was not sucked from the water trap during the process. The expert considers that waste pipes comply with the performance requirements of Clause G13.

5.7.2 The onsite foul water treatment system is a triple chamber system discharging to a soak pit, and appeared to be the original system installed. Although no servicing records were available, the expert noted:

- The electric pump has apparently been recently replaced (I note the applicant has stated that the septic tank was emptied and serviced, with electrical work checked during the pump replacement).
- The system appears to be operating well, with water able to be heard running into the first chamber when toilets are flushed.
- There are no smells or areas of wet and boggy ground to indicate problems and the system appears to have operated satisfactorily for 16 years.

5.8 Summary

5.8.1 During his inspection of the ceiling space, the expert also noted that there were some large gaps in the fibreglass ceiling insulation, which compromised compliance with Clause H1 Energy Efficiency.

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

- Leaking at the bottom of EIFS to the south and west elevations associated with concrete paving levels, bottom flashings and/or plumbing penetrations (E2)
- Ceiling insulation (H1).

5.9 A copy of the expert's report was issued to the parties for comment on 5 March 2015. The accompanying letter noted that the report was specific to the issues raised in the application and may therefore not identify all the faults in the building and recommended that 'you do not undertake any remedial work until you have been issued with the final determination'.

6. Discussion

6.1 General

6.1.1 The 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 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'.

6.1.2 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 granted. The following paragraphs therefore consider the code compliance of the house.

6.1.3 The authority has expressed its concern regarding its potential liability in regarding the age of the house (refer paragraph 3.5.1). I have addressed this matter in previous determinations involving this authority; for example Determination 2014/006⁷ in which I said:

6.5.2 I consider that the period of delay between the issue of a building consent and the request for a final inspection or code compliance certificate does not prevent the authority making a decision with respect to compliance, and is not a ground under the Act for refusing to issue a code compliance certificate. I also note that it is an owner's responsibility to seek a code compliance certificate on completion of work undertaken under a building consent.

6.5.3 Section 393 provides that, in respect of the issue of a code compliance certificate, the 10 year long-stop limitation period commences from the time the code compliance certificate is issued (section 393(2) and (3)(a) of the Act).

6.5.4 While the authority remains potentially liable for the issue of any code compliance certificate the authority is required to consider the relevant provisions of the Act when deciding whether to issue a code compliance certificate. Those provisions do not provide for the authority to refuse to issue a code compliance certificate because there may be potential liability associated with the performance of that function. The authority has a range of statutory functions under the Act and, in my view, it is not for the authority to refuse to carry out its functions because there may be potential liability associated with the performance of those functions.

6.1.4 I continue to hold the view expressed in that determination.

⁷ Determination 2014/006 Regarding the refusal to issue a code compliance certificate for a 13-year-old house with monolithic cladding.

6.2 The external envelope

6.2.1 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 2004/1⁸).

Weathertightness risk

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

Increasing risk

- the house is in a high wind zone
- the house has two wall claddings and some complex junctions
- walls have EIFS 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 and simple in plan and form
- there are generous eaves to shelter upper walls
- some lower walls have brick veneer over a drained cavity.

6.2.3 Using the E2/AS1 risk matrix to evaluate these features, elevations are assessed as having a low 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 1998.

Weathertightness performance

6.2.4 I note that 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 1.5.2), I have taken the anticipated modification into account when considering the weathertightness performance of the claddings.

6.2.5 Many areas of cladding have continued to perform for the 15 years required; however some areas have not remained weathertight, and there is evidence of moisture penetration resulting from defects that have existed since the house was completed. I therefore consider it likely that moisture has been penetrating for some time, which may have caused damage to the underlying untreated timber.

6.2.6 I note that the expert carried out invasive moisture testing of areas adjacent to windows, which indicated that the window installation was generally satisfactory. However at the time of his inspection on 10 February 2015, the expert had not seen the inspection company's report which was provided to the Ministry on 11 February. As outlined in paragraph 3.7.2, the inspection company also found elevated moisture levels around the north bay window and in the garage bottom plate

6.2.7 Generally the claddings appear to have been installed in accordance with average trade practice and the manufacturer's instructions at the time. However, taking

⁸ Determination 2004/1 Refusal of a code compliance certificate for a building with a "monolithic" cladding system

account of the expert's report and the inspection company's report, I conclude that the following areas require further investigation and remedial work:

- further invasive testing and investigation to establish the extent of moisture penetration and possible damage to the untreated bottom plates
- invasive moisture testing and investigation of the north bay window to establish cause(s) for the elevated readings in the inspection company's report
- cladding and slab clearances at the concrete paving and patios
- inadequate flashing to the bottom of the south EIFS cladding
- unsealed pipe penetrations through the EIFS cladding.

6.2.8 I note the expert's comments in paragraph 5.4.7 on items requiring attention to ensure ongoing weathertightness and I accept that this work may be carried out during the above remedial work or otherwise as maintenance.

6.2.9 I also note the expert's opinions as outlined in paragraph 5.4.6 and accept that those areas are adequate in the particular circumstances described.

Weathertightness conclusion

6.2.10 I consider the expert's report establishes that the current performance of the building envelope is not adequate because there is evidence of moisture penetration into some of the timber framing. Consequently, I am satisfied that the cladding currently does not comply with Clause E2 of the Building Code. I am also satisfied that at the time of completion the cladding did not comply with Clause E2 for the period required by the code.

6.2.11 The building envelope is required to comply with the durability requirements of Clause B2, which requires a building to satisfy all the objectives of the Building Code throughout its effective life. The cladding systems are required to satisfy Clause E2 for a minimum of 15 years; however the expected life of the framing is a minimum of 50 years. Careful attention to the performance of the external envelope is needed to ensure that it protects the underlying structure for the minimum required life of 50 years.

6.2.12 Although the wall claddings are now 16 years old, summer moisture levels in some bottom plates and around the bay window are elevated, which indicates that identified defects may have allowed moisture ingress over an extended period. I take the view that such moisture penetration indicates that the cladding did not meet the minimum life required by the Building Code and I am therefore satisfied that the building envelope did not comply with the durability requirements of Clause B2.

6.2.13 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 6.2.7 will result in the EIFS cladding being brought into compliance with Clauses E2 and B2 of the Building Code.

6.2.14 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.

Maintenance of the exterior envelope

- 6.2.15 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 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 2007/60⁹).
- 6.2.16 In the case of this particular house, I note the following:
- Although a modification of the durability provisions to allow the provisions to commence from the date of substantial completion in 1999 means that many areas of cladding have remained weathertight for the 15 years required, the expected life of the building as a whole is considerably longer than the minimum life required by the Building Code for the EIFS cladding; careful maintenance will be required to protect the untreated timber framing.
 - The expert has commented on cladding deterioration resulting from the lack of maintenance of the exterior of this house, although the authority has noted that regular washing of the EIFS cladding as part of routine maintenance would have risked moisture penetration at the junction with the exposed eaves rafters.
 - Although the penetrations of the rafters through the wall cladding are sheltered below deep eaves, washing the cladding as part of routine maintenance exposes junctions to high pressure water. It is therefore particularly important to monitor and maintain the weathertightness of the junctions.
 - The untreated eaves rafters are also exposed to the weather and face the risk of structural deterioration over time. Although sheltered beneath the eaves with air flow around the rafters allowing timber to readily dry, the ends are more exposed to weather. Careful monitoring and maintenance will be therefore necessary to ensure the rafters ongoing structural capacity.

6.3 The remaining code requirements

- 6.3.1 Taking account of the expert's report and the other evidence, the following paragraphs address the compliance of certain elements of this house with the other Building Code clauses in force at the time of construction and identified by the authority in its refusal to issue a code compliance certificate for the house.
- 6.3.2 I note that the authority has required a number of producer statements as evidence of compliance. In a number of previous determinations I have addressed the issue of authorities requiring producer statements in order that a code compliance certificate can be issued (for example Determination 2013/053¹⁰).
- 6.3.3 There is no basis in the Act for an authority to require a producer statement as a condition for establishing compliance for issuing a code compliance certificate.
- 6.3.4 An authority accepts any producer statement at its discretion if it believes it is reasonable to do so: an authority is liable for that decision. A producer statement is not a product warranty or guarantee of compliance; it is a professional opinion on compliance. The authority remains solely responsible for deciding it is satisfied on

⁹ Determination 2007/060 Determination regarding a code compliance certificate for a house with monolithic and weatherboard wall cladding systems

¹⁰ Determination 2013/053 Regarding the refusal to issue a code compliance certificate due to the lack of a producer statement for drainage work to a house

reasonable grounds that any building work complies with the Act. In my view the receipt of a producer statement does not lessen the authority's liability in establishing compliance with the Building Code.

- 6.3.5 Although the authority is entitled to accept a producer statement if one is offered, it should not rely on that to the exclusion of other evidence that demonstrates code compliance or otherwise.

Clause B1: Structure – Missing inspections (item 4)

- 6.3.6 The building consent conditions contained a list of inspections required during construction, which included pre-pour inspections of the foundations and floor slab. In the case of this house, I observe that:

- the house is a simple structure with conventional foundations and floor slab
- the inspection records (see paragraph 3.2) generally indicate that the authority:
 - inspected garage foundations, which are similar to the house foundations
 - inspected above-ground stages of construction that involved structural bracing and fixings and allowed work to proceed
 - made no mention during pre-line, post-line and final inspections of concerns about the foundations, concrete slab or associated elements
 - noted no concerns during in final inspections 1999 and in 2011, with no mention of outstanding structural inspections
- since final inspections, the foundations and floor slab have experienced severe earthquake movement which would have tested their structural performance
- the expert, LBP and inspection company noted no visible signs of structural settlement or external movement and no significant cracks to internal linings.

- 6.3.7 Taking the above into account, I am able to conclude that there are reasonable grounds to come to the view that the foundations and floor slabs to this house comply with Clause B1 of the Building Code, notwithstanding the lack of the authority's inspection of those elements.

- 6.3.8 Although the authority noted that bracing exposed in the partition wall appears to be below the level required by NZS 3604 and the plasterboard appears to be water damaged, I note that the exposed framing has withstood earthquake forces with no apparent signs of undue movement. I also note that the framing has been left exposed, allowing additional bracing to be installed if necessary. However, I remain satisfied that the lack of evidence of significant damage in the house following the earthquakes provides me with reasonable grounds to conclude that the bracing of the house as a whole is adequate in these circumstances.

Clause B1: Structure – Timber trusses (item 11)

- 6.3.9 The expert, the LBP and inspection company noted no visible signs of structural settlement or external movement, no significant cracks to internal lining joints and no sticking doors. The expert has inspected the timber trusses and has confirmed that the engineer's modifications appear satisfactory and the deflection acceptable.
- 6.3.10 The lack of movement indicates that the roof structure has performed satisfactorily over the 16 years since it was completed in 1999, which has included severe earthquake and storm forces expected to have tested its structural performance.

Clause E3 Internal moisture

- 6.3.11 The property inspection company recorded high moisture readings at the bottom of the internal wall between the tiled shower and the master bedroom which needed further investigation and remedial work (refer paragraph 3.7.3).
- 6.3.12 These were subsequently investigated and the applicant's plumber identified deteriorated sealant at the tiled floor/wall junction, which was replaced (refer paragraph 4.2.3). Photographs of the exposed framing in the partition now show no current signs of moisture through the junction.

Clause G9 Electricity (item 12)

- 6.3.13 In response to the draft determination the authority expanded on its views regarding what it considers is a requirement for an energy works certificate in order that the authority can establish compliance for the purpose of issuing the code compliance certificate (refer paragraph 4.3.2, bullet point #3).
- 6.3.14 While section 94(3) of the Act says that failure to provide an energy works certificate is 'sufficient reason' to refuse to issue a code compliance certificate, the absence of a certificate does not prevent a code compliance certificate from being issued. I note here that the provisions under the former and current Acts are substantially the same.
- 6.3.15 I have addressed the matter of energy works certificates in a previous determinations involving the authority¹¹. In addition, in Determination 2013/018¹² I said:
- 7.3.3 Energy work is self-certifying, and I note that an energy works certificate would not be able to be required if the work concerned did not form part of the consent. I also note that the absence of an energy works certificate does not of itself mean that the building work does not comply with the performance requirements of the Building Code.
- 7.3.4 While section 94(3) of the Act says that failure to provide an energy works certificate is 'sufficient reason' to refuse to issue a code compliance certificate, the absence of a certificate does not prevent a code compliance certificate from being issued. I remain of the view this provision allows the authority to apply this requirement as it considers appropriate.
- 7.3.5 The authority has expressed concerns that it would be inappropriate for it to assess the Building Code compliance of energy work in the absence of the relevant certificates under the Plumbers, Gasfitters, and Drainlayers Act 2006 or the Electricity Act 1992 as to do so would be a breach of the provisions of those Acts. However, there is nothing in those Acts that prevents an authority assessing the Building Code compliance of energy work and deciding whether or not to issue a code compliance certificate. Given the extremely narrow range of energy work that requires a building consent (see section 43(2) of the Act) I expect this issue is likely to arise very infrequently. If an authority were in a position to make its own assessment of whether particular energy work complied with the relevant provisions of the Building Code that would in no way affect the owner's obligations under those other Acts...
- 6.3.16 The obligations set out in sections 92(4) and 94(3) of the current Act with respect to the provision of an energy works certificate only apply to the energy work described in section 43(2) – this work is limited to specified systems covered by a compliance schedule (most likely in a commercial building) and energy work where if the work requires consent, consent could not be granted unless it was subject to a waiver or

¹¹ Determination 2013/035 Regarding the refusal to issue a code compliance certificate for a 14-year-old house and a 15-year-old quarantine building; Determination 2013/060: Regarding the refusal to issue a code compliance certificate for a 10-year-old house with a concrete tile roof

¹² Determination 2013/018 Regarding the refusal to issue a code compliance certificate and the issue of a notice to fix for a 10-year-old house with monolithic cladding

modification of the Building Code. While I have referred to the current Act, I note that the energy works provisions under the former Act, under which the subject consent was granted, are substantially the same as the current Act.

- 6.3.17 I note that the requirements for energy works certificates under the Gas Act or Electricity Act establishes compliance of gas or electrical work with those Acts/Regulations; that compliance is also compliance with the Building Code. However there is no requirement in the Building Act for those certificates in order that a code compliance certificate may be issued. What is required is compliance with the Building Code.
- 6.3.18 Where an energy works certificate has not been provided an authority will need to satisfy itself as to compliance with the Building Code. I note that in this case more recent work has been undertaken in the house by a registered electrician with no apparent difficulty arising from the original installation.

Clause G12 Water Supplies (item 5)

- 6.3.19 The expert noted that water supply testing in 2011 confirmed that the water was fit for use as potable water at the time of testing. While the authority considers further water tests are necessary, the water is supplied from another property and the owners have used the water for 16 years with no apparent ill effects. I consider the water is potable for the purposes of Clause 12.
- 6.3.20 The authority has commented on the lack of legal documentation relating to rights to the water; I do not consider this a matter that affects the compliance of the water supply. I note that the neighbour has offered to formalise the current arrangement.
- 6.3.21 Hot water is provided by a new hot water cylinder installed under a separate building consent and issued with a code compliance certificate on 10 May 2013.
- 6.3.22 The high moisture levels identified by the property inspection company in the partition between the bathroom and bedroom were subsequently investigated and the applicant's plumber identified deteriorated sealant at the tiled floor/wall junction, which was subsequently replaced. Photographs of the exposed plumbing pipes in the partition show no sign of plumbing leaks.

G13 Foul Water (items 6 and 10)

- 6.3.23 The building consent conditions contained a list of inspections required during construction, which included pre-pour inspections of the in-slab plumbing work. In regard to the drainage for this house, I observe that:
- plumbing fixtures are installed against exterior walls so no pipes are expected within the floor slab, with waste and foul water pipes taken through the EIFS cladding on the south elevation and the kitchen sink discharging into a gully trap on the north elevation
 - the pump to the septic tank was recently replaced, during which the tank was emptied and serviced, with electrical work also checked at the time
 - the expert noted no evidence of any problems with the effluent disposal system, which appeared to be operating satisfactorily
 - the expert also noted that waste pipes from plumbing fixtures operated satisfactorily, with no evidence of problems after 16 years.

- 6.3.24 I concur with the expert's opinion that the continuing in-service performance of the sewer and waste systems over the past 16 years indicate that these systems are adequate. Taking the above into account, I therefore consider that I have reasonable grounds to conclude that the foul water and stormwater systems comply with Clause G13 of the Building Code.
- 6.3.25 In its submission on the draft determination the authority also referred to resource consent conditions in regards to the capacity. I note here that matters under the Resource Management Act 1991 are outside the ambit of this determination.

H1 Energy Efficiency

- 6.3.26 During his inspection of the ceiling space, the expert also noted dislodged and gaps in fibreglass ceiling insulation which required attention in order for the house to comply with Clause H1. However, following the expert's inspection, it appears that this has now been remedied (see paragraph 4.2.2).

Conclusion on other clauses

- 6.3.27 In summary, taking account of the expert's report, the inspection company's report and subsequent repair work, I conclude that the house complies with the other relevant clauses of the Building Code, providing the following areas are verified in due course:
- in regard to Clauses E3 and G12, the adequacy of the repair work and the condition of the exposed framing and pipe work
 - in regard to Clauses H1, the adequacy of the coverage of the ceiling insulation.

7. What happens next?

- 7.1 I note that the building consent was issued to the former owner of the house, and as noted in Determination 2014/035¹³, no notice to fix is able to be issued to the current owners in respect of breaches of the Act or Regulations for work carried out by previous owners.
- 7.2 The applicant should develop and submit a detailed proposal to the authority to address the matters of non-compliance noted in this determination. The proposal should be produced in conjunction with a suitably qualified person as appropriate and be submitted to the authority for its consideration and approval. A code compliance certificate will be able to be issued once these matters have been rectified.
- 7.3 Any outstanding items of disagreement can then be referred to the Chief Executive for a further binding determination.

¹³ Determination 2014/035: The issue of a notice to fix for weathertightness remedial work carried out by a previous owner

8. The decision

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

- the external wall claddings do not comply with clauses E2 and B2 of the Building Code that was in force at the time the consent was issued, and
- at the time of the authority's decision the tiled shower did not comply with Clause E3 and the ceiling insulation did not comply with clause H1;

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 6 May 2015.

John Gardiner
Manager Determinations and Assurance