



Determination 2015/075

The refusal to issue a code compliance certificate for a 15-year-old house at 72 Te Wharau Drive, Greenhithe



Summary

This determination considers the authority's decision to refuse to issue a code compliance certificate for a 15-year-old house. The grounds for the refusal were the authority's concerns regarding the performance of the exterior cladding in terms of weathertightness and durability. The determination reviewed the reasons given for the refusal and considered whether the items identified in the refusal comply with the Building Code.

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, G Parker ("the applicant")
 - Auckland Council ("the authority")², 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 the 15-year-old house because it was not satisfied that the building work complied with certain clauses³ 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.

¹ The Building Act, Building Code, compliance documents, past determinations and guidance documents issued by the Ministry are all available at www.building.govt.nz or by contacting the Ministry on 0800 242 243.

² Before the application was made, North Shore City Council was transitioned into Auckland Council; "the authority" is used for both.

³ Unless otherwise stated, references to sections are to sections of the current Act and references to clauses are to clauses of the Building Code that was in force at the time the building consent was issued.

1.4 The matter to be determined⁴ is therefore the exercise of the authority's power of decision in refusing to issue the code compliance certificate for the reasons given in its letter dated 28 January 2015 (refer paragraph 3.6) under section 95A. In deciding whether to confirm, reverse or modify the authority's decision, I must consider 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 consents were issued. The building envelope includes the components of the systems (such as the monolithic wall cladding, the precast concrete panels, the deck, the windows and the roof cladding) as well as the way the components have been installed and work together.

1.5 Matters outside this determination

1.5.1 When refusing to issue the code compliance certificate, the authority also referred to non-compliance with Clause B1 of the Building Code but did not identify any specific structural items. I have therefore taken the view that structural concerns are limited to possible consequential structural damage to the timber framing as a result of moisture penetration through the external envelope. Clause B1 is therefore considered as part of the matter set out in paragraph 1.4.

1.5.2 The authority's refusal also referred to non-compliance with Clause E3 of the Building Code. No items identified in the letter relate to that clause, nor did the authority's 'durability final inspection' identify any matters in relation to Clause E3. Accordingly I do not consider compliance with Clause E3 in this determination.

1.5.3 I have received no information and the authority has raised no concerns about the swimming pool that was part of the building consent issued for the house. The expert's assessment was limited to the external building envelope of the house and this determination does not consider pool safety.

1.5.4 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 2000. Although I leave this matter to the parties to resolve in due course, I have provided comment in paragraph 6.4, and I have taken the anticipated modification into account when considering the matter of the issue of the code compliance certificate.

1.6 In making my decision, I have considered the submissions of the parties, the report of the expert commissioned by the Ministry to advise on this dispute ("the expert") and the other evidence in this matter.

2. The building work

2.1 The building work consists of a detached house that is two storeys high in part and is situated on a level site in a high wind⁵ zone for the purposes of NZS 3604⁶. The expert takes the garage doors as facing north and this determination follows that convention.

2.2 Construction of the house is generally conventional light timber frame, with concrete foundations and floor slab, monolithic and weatherboard wall claddings, membrane and profiled metal roofing, and aluminium joinery. The house is fairly complex in

⁴ Under sections 177(1)(b) and 177(2)(d) of the current Act

⁵ According to the authority's records and the bracing calculations

⁶ New Zealand Standard NZS 3604:1999 Timber Framed Buildings

plan and form, with some complex junctions, and is assessed as having a high weathertightness risk.

- 2.3 Roofs are a mix of gables and monopitched roofs set at various levels, with a flat membrane area forming a wide ‘internal gutter’ above a corridor. Profiled metal roofs have eaves and verge projections of about 400mm to 600mm overall, with exposed rafters and outriggers beneath the overhangs. A lean-to veranda wraps around the northwest, with paving extending out to the pool.
- 2.4 The two-storey section includes a tiled deck to the north wall of the master bedroom, which is built above a ‘bay’ to the living space below. The bay walls and weatherboards extend up to form balustrades, which are clad in stucco on the deck side and include a flat timber capping to the top. Deck tiles are adhered to a butyl rubber membrane with a plywood substrate.

2.5 Timber treatment

- 2.5.1 The expert forwarded two samples of framing timber for laboratory testing, which detected no preservative in one of the samples, with the other containing boron to a level equivalent to H1.2. Given the date of framing installation in 2000, I consider that some of the external framing is not treated to a level that will provide resistance to fungal decay if it is subject to regular, cyclical, or continuous wetting.

2.6 The wall claddings

- 2.6.1 The two-storey walls and upper walls above the lean-to veranda are clad in bevel backed timber weatherboards fixed through the building wrap directly to the timber framing. On the north elevation, the weatherboards to the ‘bay’ extend up on a parapet wall that forms the balustrade to the upper deck.
- 2.6.2 The remaining walls are clad in a monolithic cladding system described as stucco over a solid backing. The system consists of fibre-cement backing sheets fixed through the building wrap directly to the framing timbers, covered by a slip layer of building wrap, metal-reinforced 20 mm thick solid plaster and a flexible paint coating.

3. Background

- 3.1 The authority issued the building consent (No. A15245) to the original owner on 2 January 2000 under the Building Act 1991 (“the former Act”).
- 3.2 The authority made various inspections during construction in 2000, including pre-line inspections in April and May 2000, external plaster reinforcing in May (see paragraph 5.5.2) and a post-line inspection in June 2000. The last inspection noted in the authority’s inspection summary was for a vehicle crossing on 17 August 2000 and it appears that the house was substantially completed by about September 2000.
- 3.3 The authority’s inspection summary records a final inspection on 22 April 2004 and a reinspection on 31 October 2005 which noted ‘watertightness issues still to be resolved’. The authority carried out a visual weathertightness inspection on 9 November 2005, which identified various risk factors and cladding defects.

3.4 The 2005 refusal to issue a code compliance certificate

- 3.4.1 In a letter to the original owner dated 9 December 2005, the authority stated that the Building Code required that building work must remain durable for specific periods of time after the code compliance certificate is issued and noted that the inspection process for monolithic claddings had changed since the time that the building consent for the house was processed.
- 3.4.2 The authority listed certain risk factors identified with the building, together with a list of defects and outstanding items, and concluded that '[the authority] is unable to issue a code compliance certificate'.
- 3.5 The house was sold without a code compliance certificate to a second owner in 2006, and then to the applicant in 2009. I have seen no further correspondence about the property until the applicant sought a code compliance certificate in late 2014.

3.6 The 2015 refusal to issue a code compliance certificate

- 3.6.1 The authority inspected the house again on 27 January 2015 and the 'durability final inspection' record identified a number of cladding-related items. The authority wrote to the applicant on 28 January 2015 to advise that 'under Section 95A of the Building Act 2004 a [code compliance certificate] cannot be issued.' The authority stated that:
- Following the site inspection and subsequent 'peer review' process, [the authority] could not be 'satisfied on reasonable grounds' that building works comply with the NZ Building Code, or that it is performing as intended.
- 3.6.2 In order for a code compliance certificate to be issued the authority stated the applicant must investigate the performance of the building taking into account areas of concern identified by the authority which included, but were not limited to:
1. Concerns regarding B1, B2, E2 & E3
 2. Cladding to ground clearances...
 3. Plaster cladding control joints not evident. Cracking sighted ...
 4. [Weatherboard] cladding is decayed & degraded in areas. ...
 5. Flashings not constructed in a manner which diverts water away from the building
 6. Deck barrier
 7. Deck membrane
 8. Elevated non-invasive moisture readings identified in [some] areas...
 9. (Repeat of item 4)
 10. 'Beam penetrations not flashed, sealed
 11. Roof and cladding not accessed in their entirety...
- 3.7 The Ministry received an application for a determination on 12 February 2015 and sought further information from the parties, which was received on 15 April 2015.

4. The submissions

4.1 The initial submissions

- 4.1.1 The applicant provided copies of:
- the specification and one consent drawing
 - the building consent

- a final inspection record dated 22 April 2004
- the ‘durability final inspection’ record dated 27 January 2015
- the authority’s letter of refusal dated 28 January 2015
- the authority’s photographs of the house dated 9 November 2005.

4.1.2 The authority forwarded a CD-Rom, entitled ‘Property File’, which contained documents pertinent to this determination including:

- the consent documentation
- the inspection records and summaries
- the letter to the original owner dated 9 December 2005
- various photographs and other information.

4.2 The draft determination and responses received

4.2.1 A draft determination was issued to the parties for comment on 31 July 2015.

4.2.2 In a response received on 5 August 2015, the authority accepted the draft without further comment.

4.2.3 The applicant engaged a building consultant (“the consultant”), who responded to the expert’s report and the draft determination in a letter to the Ministry dated 20 October 2015. The submission attached a report titled ‘Latest Visual Colour Rating’ (“the monitoring report”) updated on 1 September 2015, which provided results of readings taken from permanent moisture detection units (“MDUs”) installed into bottom plates (see paragraph 4.3 and Table 2).

4.2.4 The consultant considered that MDU readings generally confirmed the expert’s investigations and maintained that sufficient investigation had been carried out for discrete repairs to be identified. He included a general scope of work in response to areas identified by the expert.

4.2.5 The consultant made various detailed comments which I have summarised in the table below. I have considered the consultant’s comments and amended the draft as I consider appropriate.

Table 1:

Consultant’s general comments	My general response	Paragraphs
Deck proposed to be removed and roofed over, allowing framing to be investigated at the time	It is the owner’s responsibility to submit a detailed proposed for the authority’s approval.	7.2 & 7.3
Apart from deck, moisture readings indicate a reasonable level of performance, considering the time of the year	Elevated moisture levels and significant variations in readings do not indicate reasonable performance. Dense fungal growth has resulted from moisture penetration and uncertainty on framing treatment mean further investigation of all framing with elevated moisture is required.	4.3.4, 4.3.5, 5.3.3 & 6.3.3

The house has generally withstood the test of time, with some allowance for expected wear and tear. Cladding has provided sufficient durability	There is no evidence that the cladding was weathertight for the first 15 years after installation; there is strong evidence of moisture penetration over a prolonged period, which indicates that cladding did not meet the performance requirements of Clause E2.3.2 for the period set out in Clause B2.3.1	4.3.3 Table 2, & 6.3.2
Discrete repairs can be carried out as part of normal maintenance	The extent of defects and required investigation is significantly beyond 'normal' maintenance. Where the cladding has failed to satisfy Clause E2.3.2 for the 15-year period set out in Clause B2.3.1, and the cladding undergoes remedial work, if that work is an alteration of the as-built system then in my view it cannot be considered 'normal maintenance' as described in B2/AS1 and E2/AS1. ⁷	4.3.5 & 5.10.1
Investigation has now been done in the form of the probe installation, which confirms only localised failure.	The monitoring report identifies other locations, which need further investigation of underlying framing. Some framing has no treatment, and treatment to H1.2 provides only limited protection against decay in conditions where there is continuous or repeated long-term moisture penetration.	4.3.3 Table 2 & 4.3.5
The determination must result in a clearly defined scope of work.	It is the owner's responsibility to submit a proposed scope of work for the authority's approval.	4.3.6, 7.2 & 7.3

4.3 The moisture detection system's results

- 4.3.1 The monitoring report provided by the consultant included readings from 40 MDUs inserted into bottom plates and various other at-risk locations. The MDUs continually record moisture content at about 4mm from the outer face of the bottom plates.
- 4.3.2 During probe installation, a 'timber strength comparative measurement tool' provides a comparative indication of the residual timber strength at the inner and outer sides of the framing. Probe drillings are also collected and those samples are assessed for visual discolouration of the framing timber at that location. (I have not seen photographs of the drillings.)
- 4.3.3 The moisture levels recorded at the outer side of the framing at the MDU location for this house are summarised in Table 2:

Table 2:

Colour	Description	Moisture levels	No. of MDUs	% of readings with high moisture levels
Green	'OK'	up to 15%	13	
Yellow	'Watch'	15% to 18%	2	
Orange	'Warning'	18% to 25%	16	47%
Red	'Danger'	over 25%	3	9%
Total numbers (6 MDU's recorded no outer reading)			34	56%

⁷ See also Determination 2014/062 Regarding the refusal to issue a code compliance certificate and the issue of a notice to fix for an 11-year-old house with mixed claddings, *Ministry of Business, Innovation and Employment*, 17 December 2014

- 4.3.4 More than half of locations summarised in Table 2 show high moisture levels and, although some timber framing is treated to H1.2 level, the extent of moisture entry is likely to have resulted in damage to some framing. I also note that prolonged moisture conditions are likely to have resulted in leaching of boron from timber in some areas with an associated reduction in decay resistance.
- 4.3.5 With regard to the need for further investigation of the framing condition, I accept that the laboratory report dated 22 June 2015 found no structurally significant decay in the only two samples tested and gave preliminary guidance that replacement would not be needed for those two locations. However, the report also stated:
- Executive Summary
- IV. Results showed that samples 1 and 2 had been exposed to conditions close to those conducive to severe decay, e.g., severe decay nearby is possible, and future severe decay is possible, e.g., in the absence of suitable remediation. Moisture hazards often compound suddenly, e.g. the initial 5-10 years of a buildings life is often misleading as a guide to the rate of future water damage which may accelerate suddenly.
- ...
- Discussion and Conclusions
3. There is an important caveat to the diagnosis for samples 1 and 2, this being that severe decay is often present near wood in this condition. Results suggested that these samples may have been exposed to conditions close to those conducive to severe decay...
- It is vital to establish the limits and causes of affected wood which may require extensive removal of cladding and/or other building material and/or iterative analysis.
- 4.3.6 The monitoring report provides additional evidence to support the expert's findings and supports my conclusion that the extent and significance of timber damage in the framing needs to be further explored (see paragraph 5.10.1).
- 4.3.7 The consultant's submission noted the applicant was seeking 'a clear pathway going forward' with respect to further investigation and the remedial work. While I can provide some comment to assist the parties (refer paragraph 7); the Building Code is a performance-based document: this gives an owner options as to how compliance can be achieved. Any intended remediation solution will follow from an owner electing to use a particular compliance path and describing this in a proposal to the authority.
- 4.3.8 In relation to the matter to be determined, being the authority's refusal to issue the code compliance certificate, the provisions of the Act only enable me to confirm, reverse, or modify the authority's decision. The provisions of the Act do not enable me to establish a definitive list of defects requiring remediation, nor to set out a scope of works required to bring a building into compliance. However, I am able to make a decision in respect of the compliance of proposed building, as might arise from a dispute about the remedial work referenced in paragraph 7.

5. The expert's report

5.1 General

- 5.1.1 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 Architects and inspected the house on 13 April 2015, providing a report completed on 15 July 2015. The parties were provided with a copy of the report on 15 July 2015.

- 5.1.2 The expert provided an opinion about items identified in the authority's refusal letter dated 28 January 2015, and on the compliance of the building with the associated clauses B2 and and E2 identified by the authority.
- 5.1.3 The expert noted that only one drawing of the site plan and elevations was available, and no detailed comparison of the as-built construction with the consent drawings was possible.
- 5.1.4 The expert observed that various areas of the external envelope were in need of maintenance. In particular, the deck balustrade capping plate and the weatherboards had deteriorated due to delayed repainting.

5.2 Moisture testing and destructive investigations

- 5.2.1 The expert inspected the interior, observing that the internal linings were 'free from mould, stains, swelling or other signs of moisture ingress.'
- 5.2.2 The expert took invasive moisture readings using long probes from the inside at various sample locations considered at-risk, with some holes drilled from the outside. The expert recorded:
- 19% in the bottom plate beside the north garage door (Sample 1)
 - 16% and 18% in bottom plates beside the upper deck doors
 - over 18% the sill/jamb junction to the north window below the deck
 - over 18% in the bottom plate to the northwest corner adjacent to the veranda
 - two readings over 18% in west bottom plate of the southwest bedroom (Sample 2)
 - 21% and 22% in bottom plate below the upper deck balustrade.
- 5.2.3 Readings over 18% generally indicate that moisture is entering the framing and further investigation is needed. The expert also noted that his inspection followed periods of heavy winter rain and readings therefore represented the peak of expected seasonal variation, with lower readings expected during summer months.

5.3 Sample analysis

- 5.3.1 To investigate timber treatment and condition, the expert made cut-outs through the stucco beside the garage door and through the lining below the west window to the southwest bedroom. The expert forwarded two samples for analysis of condition.
- 5.3.2 The laboratory report dated 22 June 2015 reported:
- Sample 1: Garage stud base –
 - likely equivalent to H1.2 boron treated
 - fungal growths but no structurally significant decay detected.
 - Sample 2: Southwest bedroom bottom plate:
 - most likely untreated radiata pine.
 - dense fungal growths but no structurally significant decay detected
 - traces of superficial soft rot in outer 1mm detected.
- 5.3.3 The report stated that both samples are 'typically found in moisture compromised wall cavities and other locations, and/or on the periphery of more seriously affected

framing sometimes in need of replacement', noting that both samples had been exposed 'to conditions conducive to severe decay' and nearby decay is possible.

5.4 Cladding clearances

5.4.1 The expert assessed base details to the stucco and noted:

- clearances to paving varied from about 20mm to 100mm⁸
- on the south elevation, reduced clearances had not caused problems (with readings below 16%), due to the shelter from the eaves and the fall of the paving away from the junction
- in more exposed locations insufficient clearance is likely to have contributed to elevated moisture levels in bottom plates, with damage possible to areas with untreated bottom plates.

5.4.2 The expert also assessed base details to the weatherboard walls and noted:

- although there is no clearance from boards to paving at the main entry moisture levels are low, this is likely to be due to the shelter of the entry canopy
- on the same east wall, the bottom boards are less than 175mm⁹ above garden soil, although this had not resulted in moisture penetration into bottom plates.

5.5 The stucco walls

5.5.1 The stucco has repaired and unrepaired cracks in a number of areas, which the expert noted could have resulted from one or a combination of the following:

- inadequate curing, which is considered likely due to the predominance of cracking to west and north walls where plaster could have prematurely dried before curing to full strength
- moisture expansion due to moisture induced framing movement
- the possible lack of control joints.

5.5.2 The expert noted no visible evidence of control joints.

(I note that the authority carried out an 'external plaster reinforcing' inspection, which should have identified the lack of control joints in the underlying construction. The 'solid plaster reinforcing checklist' was completed on 10 May 2000 and ticked the following as being inspected and passed as satisfactory:

10mm wide control joints are required in base layer at not less than 4m intervals, horizontal and vertical

[control joints] are recommended vertically above and below openings in lines with jambs and between storey levels.)

5.6 Windows and doors

5.6.1 The expert inspected joinery installed in stucco walls and noted:

- metal head and sill flashings
- joinery fixed against fibre-cement backing sheets, with stucco applied after installation and frames recessed by the plaster thickness

⁸ Acceptable Solution E2/AS1 sets out a minimum clearance above paving at 100mm

⁹ Acceptable Solution E2/AS1 sets out a minimum clearance above unpaved ground at 175mm

- the solid plaster butts against the head and sill flashings, with a narrow unsealed joint between the jamb flanges and protruding plaster
- the elevated moisture and fungal growth in Sample 2 from below the southwest bedroom window likely to be due to one or a combination of the following:
 - moisture trapped at the head flashing
 - moisture penetrating unsealed joint at the jamb then into backing sheets
 - the possible lack of jamb flashings allowing moisture into framing
 - cracks in the stucco plaster
 - moisture penetrating the nearby roof junction.

5.6.2 The expert inspected joinery installed in weatherboard walls and noted:

- joinery face-fixed against boards, with metal head flashings and timber scribes against the jamb flanges
- the sill flange overlaps the weatherboards, allowing a drainage gap
- some scribes have been poorly installed without pre-priming and are deteriorating, with unsealed gaps apparent at jamb flanges
- elevated moisture levels recorded at the bottom of the bay walls under the deck could be due to one or a combination of:
 - moisture penetrating unsealed, poorly installed and warped scribes
 - moisture penetrating the deck and/or balustrades above.

5.7 The roofs

5.7.1 The expert inspected flat membrane roof areas and noted:

- metal roof claddings appear sound, with no evidence of anything likely to have caused deterioration of underlying framing
- membrane roofing above the west wing corridor is turned up to provide an upstand behind the upper stucco walls, which appears generally satisfactory
- however, the end of the upstand lacks a kickout to divert water into the gutter and water is able to penetrate behind the plaster, which could contribute to elevated moisture levels recorded in the bedroom wall below
- the edge of the membrane entry canopy also lacks a kickout to divert water into the gutter at the junction with the garage wall
- moisture ingress at that junction may have contributed to framing expansion and consequential cracking (I also note that junction is in the vicinity of high moisture levels recorded beside the garage door).

5.7.2 The expert assessed rafter penetrations at the oblique eaves and noted:

- no visible collars, flashings or seals at rafter/cladding junctions
- low moisture levels and lack of evidence of leaks below, which indicates satisfactory performance – likely due to mitigating features including:
 - the deep roof overhang
 - the relatively low pitch of the roof
 - the lack of exposure to prevailing winds.

5.8 The deck

- 5.8.1 The expert noted that the upper deck membrane floor is tiled and balustrades are stucco-clad on the inner face with weatherboards continuing up from lower walls to clad the outer face. The expert noted:
- the flat timber plate to the top of the balustrade has deteriorated, with moss growth, ponding water and peeling paintwork – but moisture levels below the capping are low
 - the ends of an underlying membrane flashing wrapped over the top of the framing are visible at capping/wall junctions – which appears to have protected underlying framing from moisture penetration
 - debris has accumulated at balustrade/membrane junctions, resulting in moss and plant growth
 - there are signs of leaking at the deck doors, which needs further investigation, with corroded carpet fixings and water stained edge battens that may indicate moisture penetration through deteriorated jamb scribes.

5.9 The authority's list of concerns

- 5.9.1 The expert also assessed the list of concerns identified by the authority in its section 95A letter; the table below summarises the expert's opinion.

Table 3:

Areas of concern in S95A refusal (summary)		Expert's finding	Relevant paragraphs
1	Non-compliance and concern regarding B1, B2, E2, & E3	B2, E2: Agreed B1, E3: No issues identified	5.10.1 1.5
2	Cladding to ground clearances	Agreed, but clearance satisfactory to sheltered walls	5.4
3	Control joints and cracking in stucco	Agreed, but moisture ingress may be due causes other than these	5.5.2
4	Decayed and degrading weatherboards	Deterioration due to delayed maintenance, no evidence of decay	5.1.4
5	Flashings not diverting water from cladding	Some roof flashings not adequate	5.7.1
6	Deck barrier	Satisfactory performance to date	5.8.1
7	Deck membrane	Membrane under tiles so unable to inspect, but no evidence of water ingress below	
8	Elevated non-invasive moisture readings	Some elevated invasive readings	5.2
9	(Repeat of item 4)		
10	Beam penetrations	Satisfactory performance to date	5.7.2
11	Lack of access to inspect roof, cladding	Roofing appears satisfactory, cladding covered elsewhere herein	5.7

5.10 Summary

5.10.1 The expert concluded that the construction does not comply with the Building Code and the following areas required further investigation and/or remedial work (I note that this is not necessarily a full list of defects):

- stucco clearances to parts of the north and west elevations
- unsealed joinery jamb/cladding junctions
- membrane/wall/gutter junctions
- cracks to the stucco cladding
- further investigation needed to establish:
 - cause of water ingress, including the leak at the deck doors
 - the extent of moisture penetration and timber damage
- appropriate remediation of damaged timber framing.

6. The compliance of the building envelope

6.1 Generally

6.1.1 I note that the building consent considered in this determination was issued under the former Act, and accordingly the transitional provisions of the current Act apply when considering the issue of a code compliance certificate for work completed under these consents. Section 436(3)(b)(i) of the transitional provisions of the current Act requires the authority to issue a code compliance certificate only 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 for this house, I must therefore consider whether the claddings comply with the relevant provisions of the Building Code. The following paragraphs therefore consider the code-compliance of the external building envelope.

6.1.3 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, which influence its weathertightness risk profile:

Increasing risk

- the house is two storeys high in part and is in a high wind zone
- the house has two types of wall cladding and some complex junctions
- some of the roofs include oblique eaves with exposed rafters
- an enclosed upper deck with clad balustrades is built above a lower living area
- some of the external wall framing is not treated to a level that provides sufficient resistance to decay if it absorbs and retains moisture.

Decreasing risk

- there are generous eaves to shelter some walls.

6.2.2 Using the E2/AS1 risk matrix to evaluate these features, elevations are assessed as having a high weathertightness risk rating. If current E2/AS1 details were adopted as a means of establishing code-compliance, a drained cavity would be required to all elevations; this was not a requirement for either the stucco or weatherboard at the time the consent was issued.

6.3 Weathertightness conclusion

6.3.1 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 areas of the timber framing. Consequently, I am satisfied that the claddings currently do not comply with Clause E2 of the Building Code.

6.3.2 The moisture levels observed by the expert together with laboratory results on the timber condition indicate that moisture has penetrated claddings over an extended period. I take the view that this moisture ingress means the claddings have not met the 15 minimum period required by the Building Code; I am therefore satisfied that the building envelope does not comply with the durability requirements of Clause B2.

6.3.3 In addition, the required minimum durability period for the timber structure is for the life of the building being not less than 50 years. Because the cladding faults have led to the timber framing being damaged, the building work does not comply with the durability requirements of Clause B2 insofar as it applies to Clause B1.

6.3.4 I consider the deteriorating weatherboards and timber capping to be an item of maintenance. Given the 15-year age of the cladding and the lack of evidence of water ingress and damage to date arising from these specific defects there is no evidence of non-compliance.

6.3.5 It is emphasised that each determination is conducted on a case-by-case basis. Accordingly, the fact that particular cladding systems have been established as being code compliant in relation to a particular building does not necessarily mean that the same cladding systems will necessarily be code-compliant in another situation.

6.4 Durability and maintenance

6.4.1 Clause B2.3.1 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 that a code compliance certificate is issued.

6.4.2 In the current case the delay since the completion of the house creates the issue that many elements of the building are now well through or beyond their required durability periods. As a result, they would in all likelihood no longer comply with Clause B2 if a code compliance certificate were to be issued effective from today's date.

- 6.4.3 I have considered this issue in many previous determinations. In those determinations I have formed the view, which applies equally in the current case, that:
- the authority has the power to grant an appropriate modification of Clause B2 in respect of all the building elements, if requested by an owner
 - it is reasonable to grant such a modification, with appropriate notification, where 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 at the time of substantial completion.
- 6.4.4 I leave the matter of amending the building consent to modify Clause B2.3.1 to the parties once the compliance issues are addressed.
- 6.4.5 The expert has identified a number of areas where a lack of maintenance has led to deterioration of claddings and components. Although a modification of durability provisions will mean that most areas of the claddings have already met the minimum life required by the Building Code, the expected life of the building as a whole is considerably longer. Careful maintenance is needed and must continue to ensure that claddings continue to protect the underlying framing for its minimum required life of 50 years for the structure.
- 6.4.6 Maintenance 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 2007/60).

7. What happens next?

- 7.1 I note that the building consent was issued to a previous owner, and a notice to fix cannot now be issued to the current owner in respect of breaches of the Act or Regulations for building work carried out by a previous owner¹⁰.
- 7.2 If the applicant wishes to pursue a code compliance certificate, a detailed proposal should be developed to remediate the non-compliant building work. I am of a view that the defects identified in paragraph 5.10.1 indicate that the non-compliance is discrete in nature rather than systemic.
- 7.3 In response to the applicant's request for further detail on investigation, I consider that a plan for investigation, including the removal of linings around areas of high moisture entry and allowance for the authority's inspection of exposed areas, is a necessary first step. The results of such an investigation can then allow a reliable remediation plan to be prepared.
- 7.4 The remediation proposal should be submitted to the authority for its consideration and approval. Any outstanding items of disagreement can then be referred to the Chief Executive for a further binding determination

¹⁰ Refer Determination 2014/035: The issue of a notice to fix for weathertightness remedial work carried out by a previous owner *Ministry of Business, Innovation and Employment*, 15 August 2014

8. The decision

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

- the timber framing does not comply with Building Code Clause B2 insofar as it applies to Clause B1
- external claddings do not comply with Building Code Clauses E2 and B2

and accordingly, the authority correctly exercised its powers of decision in refusing to issue the code compliance certificate, and I confirm the authority's decision.

Signed for and on behalf of the Chief Executive of the Ministry of Business, Innovation and Employment on 3 December 2015.



John Gardiner
Manager Determinations and Assurance