



Determination 2020/008

The refusal to issue a code compliance certificate for a 20-year-old house with monolithic cladding at 60 Godley Lane, Albany, Auckland



Summary

This determination considers the refusal to issue a code compliance certificate for a 20-year-old house due to concerns about its compliance with Building Code Clause E2 External moisture. The determination considers the authority's reasons for the refusal and performance of the building envelope with the requirements of the Building Code.

1. The matters to be determined

- 1.1 This is a determination under Part 3 Subpart 1 of the Building Act 2004 (“the Act”) made under due authorisation by me, Peta Hird, Acting Manager Determinations, Ministry of Business, Innovation and Employment (“the Ministry”), for and on behalf of the Chief Executive of the Ministry¹.
- 1.2 The parties to the determination are:
 - P and M Chapman as the current owners of the house (“the current owners”) acting through a building surveyor as their agent (“the current owners’ agent”)
 - Auckland Council (“the authority”), carrying out its duties as a territorial authority or building consent authority.
- 1.3 Ownership of the property changed during the course of the determination process. The application for determination was made by the previous owner (“the applicant”) who owned the property at the time and who was originally a party to the determination. The applicant was represented by a legal adviser.

¹ The Building Act and Building Code are available at www.legislation.govt.nz. The Building Code is contained in Schedule 1 of the Building Regulations 1992. Information about the Building Act and Building Code is available at www.building.govt.nz, as well as past determinations, compliance documents and guidance issued by the Ministry.

- 1.4 This determination arises from the decision of the authority to refuse to issue a code compliance certificate for a 20-year-old house. The refusal arose because the authority is not satisfied that the building work as completed complies with certain clauses² of the Building Code. The authority's concerns primarily relate to the weathertightness and durability of wall and roof claddings.
- 1.5 The matter to be determined³ is therefore whether the authority was correct to refuse to issue a code compliance certificate for the reasons given in:
- the authority's letter of refusal under section 95A⁴, dated 30 January 2014
 - its record of the inspection carried out on 29 September 2016, and
 - its letter of refusal dated 16 November 2017.
- 1.6 In deciding this matter, I must consider whether the envelope of the completed house complies with Clause B2 Durability and Clause E2 External moisture. This includes compliance with Clause B2 as it relates to Clause B1 Structure.
- 1.7 I consider the "completed house" includes:
- the majority of the building envelope remaining from the original 20-year-old construction, which is required to comply with the Building Code that was in force at the time the consent was issued in December 1996
 - building work carried out in about 2012 in order to enclose an upper deck ("the deck alterations")
 - recladding and reroofing work associated with the deck alterations
 - various other repairs carried out following the authority's final inspections in 2016.
- 1.8 In making my decision, I have considered:
- the submissions of the parties, including the property file provided by the authority
 - the report of the expert commissioned by the Ministry to advise on this dispute ("the expert")
 - the other evidence in this matter.
- 1.9 Matters outside this determination**
- 1.9.1 In its refusal to issue a code compliance certificate, the authority limited its concerns to items associated with the clauses outlined in paragraph 1.6 above. This determination does not address the interior of the house or other clauses of the Building Code.
- 1.9.2 The authority has noted that an application for a certificate of acceptance is required for the deck alterations that were carried out without building consent first being obtained. This determination does not address the lack of a building consent for those alterations.

² In this determination, 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 Act

⁴ Section 95A of the Act provides "If a building consent authority refuses to issue a code compliance certificate, the building consent authority must give the applicant written notice of– (a) the refusal; and (b) the reasons for the refusal."

2. The building work

2.1 The building work consists of a large detached house that is two storeys high in part and is situated on a large rural site in a high wind zone⁵. The expert and the drawings take the main entry as south-facing and this determination follows that convention. The 6-bedroom house is very complex in plan and form and is assessed as having a high weathertightness risk when using the E2/AS1⁶ risk matrix to evaluate the features of the house.

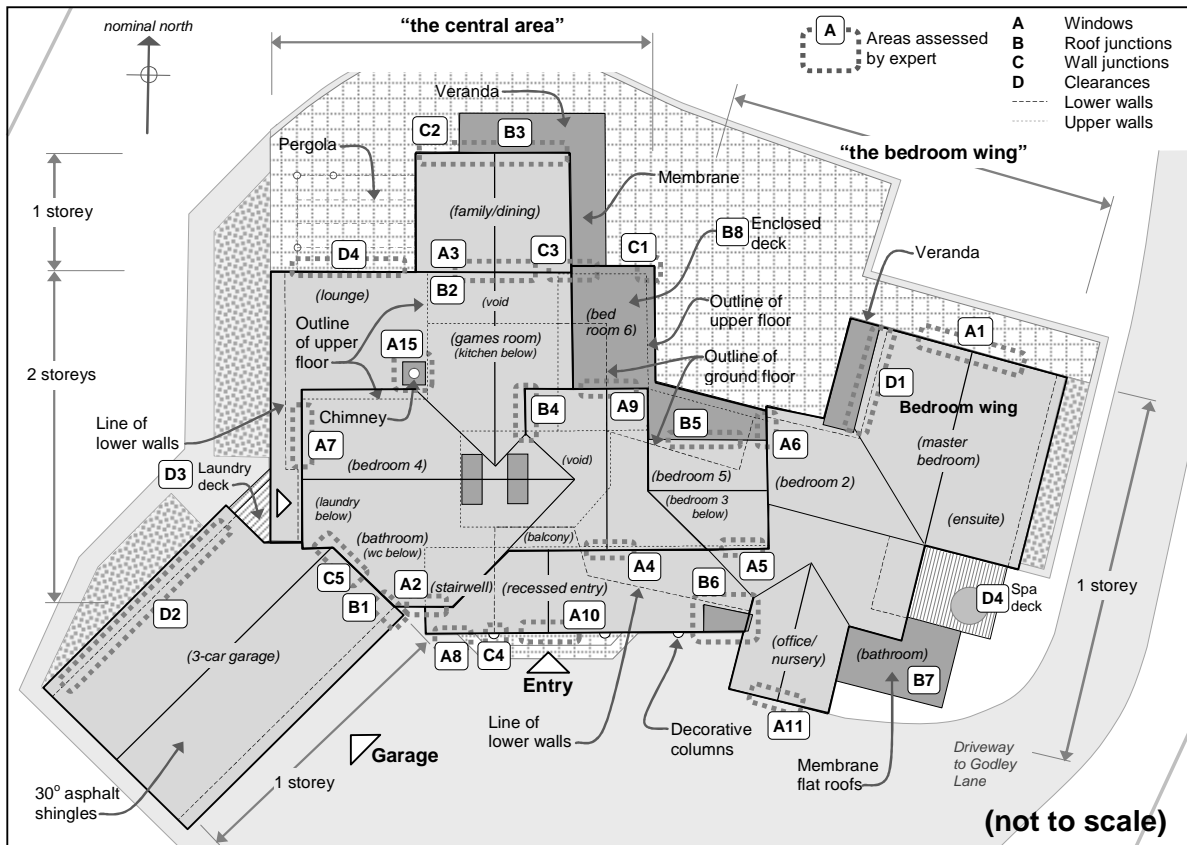


Figure 2: Approximate site plan

2.2 The house accommodates the following:

- in the lower level of the central area: entry atrium, lounge, kitchen and family room, toilet and laundry
- in the upper level of the central area: lounge/games room and three bedrooms and a bathroom
- in the bedroom wing: two bedrooms, and an office/nursery and bathroom
- a single-storey 3-car garage.

2.3 Construction is a mix of conventional timber framing and specifically designed elements, with a concrete slab to the garage and the southern part of the central area. The remaining ground floor has concrete masonry foundation walls with suspended timber-framed floors. Doors and windows are aluminium, walls are generally monolithic clad with minor areas of weatherboard to the north, and roofs are a mix of asphalt tiles and membrane.

⁵ Based on the bracing calculations. Wind zones are described in New Zealand Standard NZS 3604:1999 Timber Framed Buildings

⁶ The Acceptable Solution E2/AS1 for Clause E2 External moisture

2.4 The wall claddings

- 2.4.1 The cladding is a monolithic cladding system described as stucco over a solid backing. In this instance it consists of fibre-cement backing sheets fixed through the building wrap (labelled as the building paper in Figure 3) directly to the framing timbers, and covered by a slip layer of building wrap, galvanised steel mesh-reinforced 25mm thick 3-coat solid plaster and a flexible paint coating.
- 2.4.2 Figure 3 as provided by the owner/builder shows a typical window jamb. It is not clear how parts of this junction were constructed in practice.

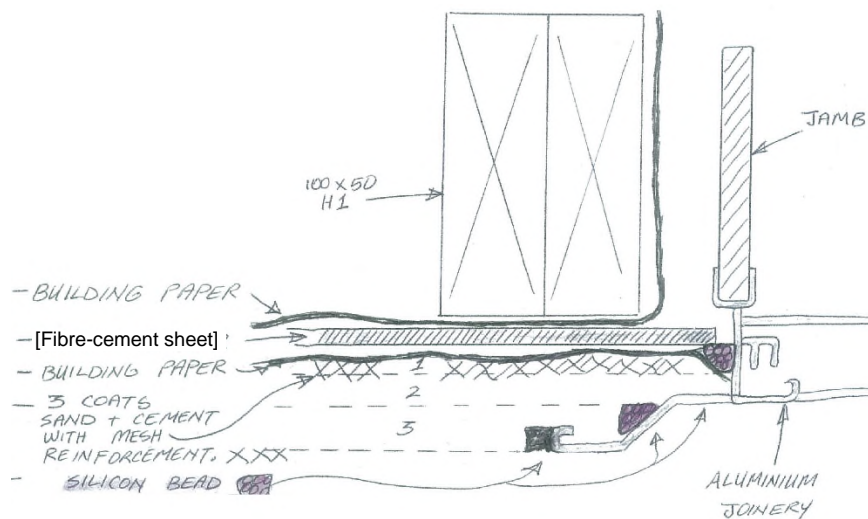


Figure 3: Typical window installation (as provided with the determination application)

- 2.4.3 The specification called for stucco installation to comply with the current standard, which at the time the building consent was issued was NZS 4251:1974⁷. When the stucco was installed in 1998/99, that standard had been updated to NZS 4251 Part 1:1998⁸. The specification also called for the installation to follow recommendations by the metal lath and fibre-cement backing sheet manufacturers, and the ‘advice detailed in the BRANZ Good Stucco Practice (Feb 1996)’.
- 2.4.4 The specification also called for control joints to:
- ...occur vertically at one jamb of every opening and at 4m centres and horizontally at floor lines of upper floors and at 4m centres maximum.
- 2.4.5 The later deck alterations, which were not carried out under a building consent, included new walls to enclose the upper deck, which are now clad in timber weatherboards fixed horizontally through 20mm thick timber battens and the building wrap to the framing.
- 2.4.6 When the original flat roofing was replaced in about 2014, which was also not carried out under a building consent, the requirement for upstands to roof/wall junctions also resulted in the need to reclad the adjacent north gable end above the veranda (Areas B3 and C2) and the upper level north gable end wall (Area A9). The chimney structure (Area A15) was also reclad at the same time, with weatherboards to match the wall cladding of the deck alterations.

⁷ New Zealand Standard NZS 4251:1974 Code of practice for solid plastering

⁸ New Zealand Standard NZS 4251: Solid plastering; Part 1: 1998 Cement plasters for walls, ceilings and soffits

2.5 The roof claddings

- 2.5.1 As shown in Figure 2, the multi-level roof is generally 30° pitch asphalt tiles, with roof overhangs limited to eaves of about 450mm overall and no verge overhangs. The specification called for the tiles to be ‘reinforced asphalt shingles with a mineral granular surface coating’ fixed over plywood underlay and roofing felt.’
- 2.5.2 The small membrane areas over low-pitched roofs are clad in a ‘torch on’ multi-layer bituminous membrane system. The original flat roofing was butyl rubber that was replaced in about 2014, apparently arising from difficulty in maintaining joint laps.

2.6 Timber treatment

- 2.6.1 The expert noted that framing appeared to be ‘an ad-hoc mix of untreated and boron treated framing’. The original specification called for framing to be ‘H1’⁹ treated. When the original framing was installed in 1997, NZMP 3640:1992¹⁰ classified the primary risk as insect attack, with H1 treatment required to achieve a minimum level of boron of 0.04% (in contrast to 0.4% for the current H1.2 level treatment).
- 2.6.2 The use of untreated kiln-dried framing timber became commonly accepted from the latter half of the 1990’s and the prolonged completion of the interior of the house is likely to explain the mix of timbers observed by the expert. Given this background and the other evidence, I therefore consider that the framing of this house is unlikely to be treated to a level that will provide significant resistance to fungal decay.
- 2.6.3 The applicant tested some timber framing for preservative treatment as noted in paragraph 4.2.2; the testing showed the presence of Permethrin. Permethrin is an insecticide commonly used in LOSP¹¹-treated timber and used to resist insect attack; it is not used to resist fungal decay. The testing also showed undisclosed concentrations of Boron at levels below that set out in NZS 3640:2003¹².

3. Background

3.1 Construction

- 3.1.1 The authority issued the building consent (No. A11685) on 18 February 1997 under the Building Act 1991 (“the former Act”). I note that one of the owners of the house was also the builder of the house (“the owner/builder”).
- 3.1.2 Conditions attached to the consent included a list of eight inspections required by the authority, which called for pre-lining inspections and a ‘pre-solid plaster inspection’. The inspection summary indicates that the authority carried out various inspections during construction, including:
- footings and floor slabs during March and April 1997
 - pre-line building during August and September 1997
 - post-line in October 1997.
- 3.1.3 The above indicates that the building was closed in by the end of 1997. I have seen no record of the pre-solid plaster inspection, though I note the fibre-cement solid

⁹ Hazard class H1 as defined in NZMP 3640 for use “where timber, including plywood, is used out of contact with the ground and in situations which are adequately ventilated and continuously protected from the weather by roofs or external walls. The primary risk to timber in this situation is from attack by wood-boring beetles...”

¹⁰ New Zealand Standard NZMP 3640:1992 Minimum Requirements of the NZ Timber Preservation Council Inc.

¹¹ Light Organic Solvent Preservative – typically a spirit-based solvent containing chemicals to provide protection from insects and decay.

¹² New Zealand Standard NZS 3640:2003 Chemical preservation of round and sawn timber

backing and joinery installation would have been visible during the October 1997 inspection.

- 3.1.4 An engineering consultant engaged by the applicant, (“the consultant”) noted that:
- ...the plaster installation was delayed 12 months due to economic [constraints]. In the interim, the [fibre-cement solid backing] was sealed and painted, and the first of the three sealant beads was applied behind the joinery fin [see Figure 3].
- 3.1.5 It appears that the stucco was complete by about 1999. The first final building and plumbing inspection was carried out on 29 May 2000, with the inspection record identifying a list of items to be completed, including areas where plaster extended below paving or ground level.
- 3.1.6 The house was not re-inspected until 15 April 2002, with the inspection record noting that cladding/ground clearances remained unresolved. On 6 June 2002, the owner/builder submitted two A4 sketch details, which were stamped as approved on 25 June 2002. The details called for the following:
- plaster to be cut above the tiled entry paving, to ‘allow for moisture escape’
 - 350mm wide concrete trench to be installed beside sub-floor footings.
- 3.1.7 In a letter to the applicant dated 21 October 2003, the authority confirmed that a further ‘final building inspection and plumbing and drainage inspection’ had been carried out and stated “inspections confirm that all work has been completed as per the approved plans”. However, a postscript to the letter also said “As discussed, no code compliance certificate will be issued due to the age of the building consent ...”.

3.2 Post-construction deck alterations

- 3.2.1 Moisture problems associated with the tiled north deck were apparently experienced, and in about 2012 or 2013¹³ the deck was repaired and enclosed to form Bedroom 6 and an extension to Bedroom 5 (refer Figure 2).
- 3.2.2 I note that a certificate of acceptance for the deck alterations is the mechanism to address the compliance of that building work. Accordingly, as noted in paragraph 1.9.2, the deck alterations are not considered in detail within this determination.

3.3 Determination 2013/07914

- 3.3.1 On 31 January 2013, a code compliance certificate was sought for the construction of the house. The authority refused to issue the certificate because of the age of the building work, and the applicant subsequently sought a determination on the matter.
- 3.3.2 Determination 2013/079 concluded the authority incorrectly exercised its powers of decision in refusing the code compliance certificate for the reasons it provided. The determination required the authority to make a new decision, and noted that this was ‘likely to include an inspection and a detailed assessment’ of the building work.

3.4 The 2014 refusal to issue a code compliance certificate and the repair work

- 3.4.1 The authority carried out a ‘durability final inspection’ of the house on 30 January 2014. The inspection record noted a number of items as a ‘fail’. The authority

¹³ The deck alterations and associated recladding was noted during the authority’s inspection of January 2014

¹⁴ Determination 2013/079 The exercise of an authority’s powers of decision in refusing to issue a code compliance certificate in 2003 for a 7-year-old house with monolithic cladding (12 December 2013)

issued notice under section 95A declining to issue code compliance certificate and identified matters requiring attention that largely related to the building envelope.

3.4.2 The applicant sought advice from the consultant and a property inspection company (“the inspection company”). It appears that weathertightness inspections were carried out on 18 February and 30 April 2014, with some repairs subsequently carried out prior to calling for a re-inspection.

3.4.3 The applicant has described difficulties in maintaining the overlapped joints to the butyl rubber roofs. As a result, the cladding to the flat roofs were replaced, together with adjacent walls (refer paragraph 2.4.6). The chimney structure was also re-clad about this time.

3.5 The June 2016 inspection

3.5.1 The authority inspected the house on 2 June 2016 with the consultant attending. The record initially recorded the inspection as failed, but was later changed to a pass.

3.5.2 Except for control joints, no other items were ticked as ‘fail’, with comments against roof and window flashings noting ‘performing as per building surveyors report’. The record did not identify any clauses likely to have been breached.

3.5.3 The inspection record provided comment in relation to peer review and vetting of documentation, signs of failure to northern elevation windows, and a maintenance schedule to be provided. The enclosing of the deck was accepted as part of the original consent.

3.6 The inspection company’s 2016 report and reinspection

3.6.1 The inspection company inspected the house on 27 July 2016 and provided the authority with a report titled ‘Re-inspection Addendum Report’, which was noted as an addendum to two weathertightness inspections carried out in 2014 (I have not seen the 2014 reports).

3.6.2 The inspection company carried out invasive moisture testing below door and window jambs using short probes inserted into framing from the inside. Readings generally ranged from 11% to 16% except for the following:

- 26% to over 40% below the west window to Bedroom 4, with:
 - water-stained timber exposed in the framing below the south jamb
 - past replacement of framing and plasterboard beneath the north jamb
- 22% below the south window to the office/nursery¹⁵.

3.6.3 The report considered that the elevated moisture was likely due to ‘an issue within the internal condensation drainage ... possibly related to a restriction with the [window joinery].’

3.6.4 Window repairs were subsequently carried out by a specialist aluminium joinery repair company and a further inspection was requested.

3.6.5 The authority inspected the house on 29 September 2016. The record of this inspection noted that remedial work to window frames had been carried out and recorded window and door flashings as ‘fail’ with ‘signs of systemic failure of joinery throughout the building.’

¹⁵ Noted in error as Bedroom 6 in the report.

3.6.6 The record also included annotated photographs to highlight the weathertightness concerns observed during the visit. The authority noted matters of concern relating to the age of the building and observed repairs, specific features of the stucco cladding and areas considered at risk from water ingress. The record concluded that the authority did 'not have reasonable grounds to accept that the building has performed in accordance with clauses E2 and B2 of the building code'.

3.7 The consultant's response

3.7.1 In a letter to the authority dated 18 September 2017 (noted as revised on 20 January 2018), the consultant responded to the authority's findings and proposed further repairs.

3.7.2 The consultant included the following comments (in summary):

- In regard to leaking mitres and systemic joinery defects:
 - leaking mitre joints affected only one of two window brands used on the house – being 28 out of 51 joinery units
 - only 2 of the 28 windows have been shown to leak, with the remaining 26 having only a potential problem with the mitre joints
 - the remaining 26 windows have been refurbished, and plasterboard removed under leaking units and a small area of framing replaced.
- In regard to the lack of sill flashings:
 - window joinery is installed 'well proud' of timber framing
 - the joinery is face-fixed, with sealant beads installed as shown in Figure 3
 - there has been no failure of sealant joints/junctions.
- In regard to control joints:
 - the lack of joints has not impaired performance of the stucco
 - there is no benefit in installing control joints after this time.
- In regard to 'high risk' junctions:
 - kickouts are installed to apron flashings, gutter ends are clear of plaster, which includes waterproof admixture to prevent moisture absorption
 - a 12mm drainage gap can be provided at deck/wall junctions of the small laundry deck
 - fascia and barge boards were installed on 25mm packers to allow plaster to be installed behind the boards
 - the lattice feature above the entrance is external to the building.
- One office/nursery reading was 22%, with no evidence of decay.
- The perimeter drainage is performing as required, with no subfloor moisture.

3.7.3 The consultant proposed repairs to address spouting to wall junctions, deck to wall junction, and collars to tops of columns at the front entry and east elevation. These repairs were subsequently carried out.

3.8 The 2017 refusal to issue a code compliance certificate

3.8.1 The consultant met with the authority on 6 October 2017 after which the authority confirmed in a letter dated 16 November 2017 that it 'did not have reasonable

grounds to be satisfied that the building is performing in accordance' with the relevant clauses of the Building Code.

3.8.2 The authority generally confirmed the findings of its 2016 inspection noting that the matters raised 'provide significant concern' when considering the performance of the house but should not be 'considered as a complete list of defects'. The authority noted (in summary):

- defects resulted in joinery repairs without removing units or authority oversight
- the direct-fixed stucco departs from NZS 4251: Part 1:1998 with regard to:
 - lack of jamb and sill flashings
 - head flashings buried in plaster
 - no control joints able to be identified
 - barge and fascia boards installed prior to plaster application
- there are high risk junctions with inadequate weathertightness protection at:
 - gutter/wall junctions
 - deck/wall junctions
 - flush fascia/barge board to plaster junctions
 - entry lattice feature, with a curved sill and no jamb/sill flashings.
- there was an elevated moisture reading of 22% in office/nursery.

3.9 The inspection company's 2018 report

3.9.1 Further correspondence followed without resolution and the applicant re-engaged the inspection company to report on the house. The inspection company assessed the house on 6 July 2018 and provided an undated report titled 'Weathertightness & Moisture Ingress Report.'

3.9.2 The report noted that the moisture investigation used a combination of invasive and non-invasive tools. The report resulted from a visual assessment of potential defects or risks, with non-invasive readings taken in those areas and invasive exterior drilling and probe measurements taken of any 'suspect' areas, and thermal imaging used as an additional guide. The non-invasive moisture readings ranged from 10% to 14%.

3.9.3 The report included 'exterior observations' and concluded that all moisture readings (non-invasive) fell 'well within' acceptable levels and no thermal anomalies were detected. No elevated moisture readings were "detected below penetrations, flashings, in pillars, joinery or at cladding junctions."

3.10 The application for a determination

3.10.1 The applicant was unable to resolve the situation and the Ministry received an application for a determination on 14 February 2019. The Ministry requested a copy of the property file from the authority, and this was received on 4 March 2019.

3.10.2 On 21 March 2019, the applicant approved testing as part of the expert's investigation with the proviso that invasive testing 'be confined to the interior of the building with unlimited access.' In an attached statement dated 21 March 2019, the inspection company confirmed that since early 2014, it had carried out 'invasive probe and non-invasive inspections each year' and provided updated reports.

4. The submissions

4.1 The initial submissions

4.1.1 The submission made on the applicant's behalf noted that the authority had been satisfied that the house complied with the Building Code when it carried out a final inspection on 31 October 2003. The applicant provided copies of weathertightness reports, an as-built sketch, and various other correspondence, statements and technical information.

4.1.2 The authority made a submission dated 26 March 2019, which included the following comments (in summary):

- The inspection company's reports have not demonstrated adequate weathertightness performance of the claddings, noting that the moisture readings taken from the building constructed in 1997 were questionable and that the report confirms compliance with Clause E2, but not Clause B2.
- It is known that moisture may be entrapped within the underlying structure with concealed fungal decay, while still appearing visually sound.
- The building has 'numerous details that are known to be vulnerable ... with historic failures to joinery units.'

4.1.3 The authority forwarded a digital copy of the property file on 4 March 2019, which included the consent documents and various other correspondence, statements and technical information pertinent to this determination.

4.2 The first draft determination and submissions received

4.2.1 A report by the expert engaged to assist me (refer paragraph 5) was forwarded to the parties on 10 June 2019, and a first draft of this determination ("the first draft") was issued to the parties for comment on 30 July 2019. The draft concluded that the building envelope does not comply with Clauses E2 and B2 of the Building Code that was in force at the time the original building consent was issued, and confirmed the authority's decision to refuse to issue the code compliance certificate.

4.2.2 On 7 August 2019 the applicant provided a submission in response to the first draft and advised the draft was not accepted. The submission said (in summary):

- The applicant is confident the timber framing was treated. The applicant had had three timber samples from Area A1 tested by an IANZ-accredited laboratory. The Permethrin test results were close to the level for hazard Class H1 and the Boron spot test results were a mixture of positive, negative and trace positive.
- The applicant's engineer also had three samples tested from differing locations (listed as 'Master Bed', 'Stair', 'Garage'), which confirmed 'Boron and Permethrin, albeit at levels below the current standard'.
- The laboratory assessment obtained by the expert typically exclude alternative treatments to Boron.

4.2.3 The applicant provided comment against specific areas as follows:

- **Area A1:** The replacement of the studs had 'no impact on compliance' with Clause B1. The 'historic failure' has been rectified and the sample taken by the expert was dry.

- **Area D3:** The small laundry deck was never connected to the building and no damage had occurred as result of its removal¹⁶.
 - **Area D4:** The deck around the spa was dismantled by the applicant and had not been attached to the building.
 - **Area B1** (The garage/toilet roof junction): This was a failure of a ‘discrete detail’ and not a failure of the flashing, and the framing was now dry.
 - **Area A8** (Window jamb to lower toilet): This was also described as a one-off defect arising from a fault in a lapped joint in an adjoining fascia board. The defect had been fixed.
- 4.2.4 The applicant considered that these areas and the ones identified by the expert as needing assessment had been addressed and were now compliant and did not require further investigation.
- 4.2.5 On 16 August 2019 the authority accepted the first draft subject to the following comments (in summary):
- The typical window jamb detail (Figure 3) was a critical junction ‘which could potentially cause damage to every elevation of the building’ particularly as there are no sill flashings. Deconstruction of a sample of these junctions was required to determine performance.
 - Paragraph 2.5.2 notes the replacement of the original flat roof. ‘This indicates a failure of the original membrane for whatever reason’. Replacement without inspection ‘leaves speculation as to whether any damage to the substrate had occurred’.
 - In two areas the expert says the ‘risk is overstated by the [authority]. No evidence of satisfactory performance had been provided and the sample areas should be deconstructed to determine this.’
- 4.2.6 On 20 August 2019 the authority provided a further submission:
- The authority believed the applicant had placed constraints on the expert. The authority had ‘no confidence’ in the expert report and ‘the method and scope of investigation’ and ‘there appears to be a level of bias towards the [applicant] ... throughout the draft determination’.
 - The ‘severely inhibited investigation, leaves the [applicant] with unrealistic expectations as to the level of performance’ of the building, and the limited ‘investigation could expose [the authority] in respect of ... parts/areas of the building that have not been investigated’.
 - ‘... invasive investigations carried out to the interior cannot reasonably confirm performance.’
 - The authority sought a peer review of the expert’s report and/or a hearing to elaborate on its concerns.
- 4.2.7 On 22 August 2019 the applicant responded to the authority’s submission saying (in summary):
- They strongly disputed the authority’s statements regarding the expert, noting their agreement to invasive testing and that the expert had carried out 25

¹⁶ This conflicts with the advice in the authority’s refusal letter dated 29 September 2016 which says the deck is attached directly to the laundry and garage walls.

invasive tests. Internal lining had been removed where suggested by the expert. The expert did not exhibit bias and had had no previous contact with the applicant.

- The authority should have issued the code compliance certificate after the final building inspection on 21 October 2003. The applicant provided the letter referred to in paragraph 3.1.7 (this letter also advises that the code compliance certificate will not be issued due to the age of the consent).
- The applicant cited the transitional provisions of the Act (section 436(3)(b)) with respect to the test for issuing the code compliance certificate.

4.2.8 The authority's 20 August 2019 submission was provided to the expert who made the following comment in response via email dated 29 August 2019 (the expert's email was provided to the parties on 30 August 2019).

The owner imposed no site constraints on the investigation Extensive exterior invasive moisture readings were taken.

Sufficient investigation was undertaken for the purposes of the determination (provided evidence sufficient for a decision whether [the authority] was correct to refuse to issue a [code compliance certificate], exhaustive investigation unnecessary). Junction deconstruction may be necessary as part of the post-determination process of investigation and rectification that will be required in the detailed proposal to be developed by a suitably qualified person for authority approval.

The flat roof surfaces appeared sound when walked over Any residual damage (if indeed it was present) would be unlikely to prevent the substrate lasting a further 15 years from the date the membrane was replaced.

4.2.9 The Ministry sent an email to the parties on 30 August 2019 noting:

- The purpose of the expert's assessment was not to provide "an exhaustive list of matters that may need to be remedied, but to establish a threshold from which it can be established whether or not [the authority] was correct to decline the [code compliance certificate]."
- The suggestion there was bias on the part of the expert in carrying out this work was not accepted, nor was a peer review of the expert's report required.
- The authority was asked to clarify its position that invasive investigations cannot reasonably confirm compliance against the performance Clauses for B2 and E2.

4.2.10 The authority responded on 6 September 2019 saying (in summary):

- In its view 'damage will be more advanced on the outer face of the framing, that is in contact with the direct fixed cladding system, than it will be on the interior face'.
- '...where there are multiple studs, lintels, or boundary joists the likelihood of damage is increased due to moisture being trapped between the studs and presence of a greater surface areas of timber in contact with the cladding.' The external face of multiple studs, lintels or boundary joists is 'impossible to observe internally'. The authority referred to the Ministry's guidance on remediation of timber framing¹⁷.
- The authority did not expect the expert to provide an exhaustive list of matters to be remedied, but it should be made clear that the scope of expert's

¹⁷ "Dealing with Timber in Leaky Buildings", Department of Building and Housing, June 2012

investigation was limited to considering whether the authority was correct to refuse the code compliance certificate and that there may be additional matters requiring investigation.

- The observation by the expert that ‘Junction deconstruction may be necessary...’ is helpful; the authority remains concerned about areas where no detailed assessment was undertaken. The authority’s “concerns regarding the conclusions drawn about the possible extent of moisture damage from the testing that occurred remain.”

4.2.11 I considered the parties submissions in response to the first draft and amended the determination as appropriate.

4.3 The second draft determination and submissions received

4.3.1 A second draft determination (“the second draft”) was issued to the parties for comment on 19 November 2019.

4.3.2 The current owners’ agent accepted the second draft on 1 December 2019 and advised he was acting for the new owners of the property and that the determination should be amended accordingly.

4.3.3 The authority accepted the draft determination on 23 January 2020 without comment.

5. The expert’s report

5.1 General

5.1.1 As mentioned in paragraph 1.8, 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 16 May 2019, providing a report completed on 7 June 2019 which was forwarded to the parties on 10 June 2019.

5.1.2 The expert considered the construction quality to be good; with exterior cladding and internal linings ‘reasonably straight and fair’ and cladding penetrations and joinery junctions ‘well sealed’. The expert noted that the house appeared to be well maintained and was ‘tidily presented, finished to an acceptable trade standard and has been recently redecorated’.

5.1.3 The expert had been provided with elevation drawings, which appeared to be ‘largely in accordance’ with ‘the overall architectural shape and form of the building’ (see Figure 2). The following discrepancies were noted:

- upper deck enclosed with weatherboard cladding over cavity, bi-fold aluminium joinery and torch on membrane roofing with 300mm eaves (Area B8)
- pergola over spa pool on the east elevation not installed (Area D4)
- gable end window to foyer void with flat not curved sill (Area A9).

5.1.4 In regard to timber framing treatment, the expert noted that the house ‘appears to be an ad-hoc mix of untreated and boron treated framing’ and observed:

- rafters stamped ‘H1’ in the roof space, with blocking stamped ‘Kiln Dried’ nearby along with a bottom plate stamped with a proprietary name for kiln-dried timber (Area C5)
- no treatment detected in sample from studs in Bedroom 1, with boron detected in adjacent bottom plates (Area A1)

- no boron detected in stairwell bottom plate (Area C4).

5.2 Applicable stucco standards

5.2.1 In regard to standards and guidance at the time of construction, the expert included the following comments (in summary):

- The BRANZ Good Stucco Practice publication of February 1996 applies.
- The authority claimed departures from NZS 4251: Part 1:1998, but the consultant maintained that NZS 4251:1974 applied.
- The consultant described delays in plastering until 1998/99 (refer paragraph 3.1.4) and the updated standard was published in July 1998.
- With backing sheets installed pre-July 1998 and plaster post-July, plaster installation is expected to accord with the 1998 standard where possible, taking into account any constraints from the already installed substrate.

(I note that the building consent was issued in 18 February 1997 and NZS 4251:1974 was referenced in Acceptable Solution E2/AS1 at this time.)

5.3 Moisture investigations

5.3.1 The expert limited invasive readings to sample areas considered at risk of moisture penetration and/or associated with concerns identified by the authority. The expert carried out invasive testing through the stucco around the perimeter of 17 windows and doors, including a cross-section of high-risk exposed windows.

5.3.2 Most readings varied from 8% to 15%. However, elevated readings or signs of damage were recorded as follows (with locations as per Figure 2 shown in brackets):

- 13%, but decayed drillings below window jamb to Bedroom 1 (Area A1)
- 20% to 21% below window jamb to lower toilet (Area A8)
- 22% below the garage/toilet roof junction (Area B1).

5.3.3 The expert carried out further investigation of the following areas (refer Figure 2):

- At the north window to Bedroom 1 (Area A1):
 - linings were removed below the west jamb to investigate the underlying framing, revealing visible decay to the outer part of a stud
 - a timber sample was extracted from the unaffected inside face of the decayed stud and forwarded for analysis, with no decay and no boron detected
 - another sample from the ‘weathered’ bottom plate beside the decayed stud was extracted for analysis, with no decay found but boron detected.
- At the lower toilet south window (Area A8):
 - drill shavings to east jamb were damp but appeared sound
 - shavings to west jamb were damp with ‘visibly decayed portions’.
- At the garage/toilet roof junction (Area B1):
 - an elevated moisture reading of 22% was taken at the top of the garage wall, below the end of the apron flashing above
 - the likely source of the moisture is the kickout flashing at the bottom of the apron flashing at the roof/wall junction.

- At the decorative corner column to the stairwell (Area C4):
 - previous repairs were carried out to the column to reduce risk of water ponding at the top
 - linings were removed from a cupboard under the stairs to investigate the underlying framing revealing no sign of historic or recent water entry
 - a timber sample was extracted from the outer face of the bottom plate and forwarded for analysis, with no decay and no treatment detected.

5.4 The stucco wall cladding

5.4.1 In regard to the authority's concerns regarding the lack of control joints, the expert noted that (in summary):

- although control joints required at the time of installation have not been installed, the stucco is in very good condition with no cracking observed
- minor repairs were visible at one location, on a narrow strip of plaster between windows and a roof junction where cracking would typically occur (Area A3)
- the only inter-storey stucco requiring a horizontal control joint is a narrow wall between the garage and the stairwell (Area A2)
- despite the lack of control joints, there is no evidence of significant cracking after 20 years.

5.4.2 In regard to the authority's concerns regarding the joinery flashings, the expert noted (in summary):

- The house was repainted recently with elastomeric type paint and the stucco is in very good condition, with joinery junctions all fully sealed
- Windows and doors have head flashings but no jamb or sill flashings
- In regard to head flashings:
 - head flashings extend past the joinery jambs
 - head flashings are deeply embedded within the plaster
 - stucco above butts against and is fully sealed to head flashing
 - BRANZ 1996 guidance called for a 20mm gap between upper stucco and head flashing, with a drip edge to allow drainage and to prevent capillary attraction of moisture behind the plaster.
- In regard to the lack of jamb flashings:
 - BRANZ 1996 guidance suggested side flashings for face-fixed joinery such as butyl rubber, polythene, heavy weight building paper, "J" moulds or casing beads
 - E2/AS1 at the time of construction did not include jamb flashing details, likewise the second edition published in February 1998
 - decay revealed at Area A1 indicates significant historic leaking at either the head or jamb, most likely the jamb.
- In regard to the lack of sill flashings:
 - the lack of sill flashings increases reliance on sealant
 - the sill detail appears similar to the jamb detail shown in Figure 3 (where the position of the decorative sill band is indicated by the dotted line)

- the planted decorative plaster sills¹⁸ have little or no slope to the top edge
- BRANZ 1996 guidance states that moisture allowed to sit on horizontal surfaces will migrate through fine cracks in the stucco, often causing internal damage; and recommends 15° minimum slopes to surfaces.
- In regard to the authority's concern about elevated moisture readings at windows to the office/nursery (Area A11) and Bedroom 4 (Area A7):
 - a known history of joinery defects resulted in refurbishment of joinery units without authority involvement and without units being removed
 - the office/nursery and Bedroom 4 window jamb and sill junctions are now fully sealed
 - normal moisture readings were taken below both windows and drill shavings looked sound.
- Window mitres were repaired in September 2016. Invasive testing around 17 joinery units, revealed moisture penetration and/or damage at two windows, refer paragraph 5.3.3 (Area A1 and Area A8).
- Except for the above, other joinery perimeter moisture readings were normal and drill shavings appeared sound.
- The expert concluded "While some doubt remains about other windows that are similarly sealed, I was satisfied that the cladding is largely performing adequately."

5.4.3 The expert assessed the other stucco cladding junctions identified by the authority and noted the following (in summary):

- In regard to barge boards (Area B2):
 - the boards were spaced off the framing prior to plastering
 - junctions are reasonably well sealed.
- In regard to the lattice grille at the entrance (Area A10):
 - the high level entrance lattice has a curved horizontal sill, with no apparent jamb/sill flashings
 - the concave timber sill sits above the timber framed entry arch, with a groove across the sill directing water flow off the sill and down the plastered face of the arch
 - junctions between trims and the lower arch are fully sealed, with a normal moisture reading taken in framing at the bottom of the arch and drill shavings appearing sound
 - any water penetration in this area will not enter the building interior.
- In regard to the decorative column at the entrance (Area C4):
 - previous repairs reduced the risk of water ponding on top of the column and entering the house
 - removal of interior linings revealed no evidence of moisture penetration, with no sign of any historic or recent water entry.
- There are very few stucco penetrations, with the bathroom extract vent hood penetration on the south elevation fully sealed.

¹⁸ Planted decorative elements such as sills are pre-moulded features applied to the partly-finished cladding; they typically receive the final finish coats of a plastered cladding system.

- In regard to gutter to wall junctions:
 - the authority is concerned that plaster had been unpainted (where the gutter end previously butted against plaster) and was therefore able to absorb moisture for 20 years
 - the stop end at the junction between the south elevation bathroom cladding and adjacent roof looks reasonably well installed and the stucco at the end of the gutter is now painted (Area A2)
 - invasive investigation was not possible due to height constraints.

5.5 The weatherboard wall cladding

5.5.1 The expert noted that the upper deck has been enclosed with weatherboard cladding over a cavity, including bi-fold aluminium joinery and 300mm wide eaves to the new membrane roofs.

5.5.2 The expert observed that (in summary):

- visible drainage slots below the new weatherboard cladding indicate that boards are installed over a drained cavity
- joinery in the timber weatherboard cladding appeared satisfactory, with sill flashings and timber scribes installed
- steel apron flashings are installed at asphalt tile/weatherboard junctions
- steel “Z” and cover flashings are installed at plaster/weatherboard junctions
- the chimney has been reclad with timber weatherboards, with butyl rubber upstands that appear reasonably well detailed
- there was no indication of any historic or recent water entry found on wall or ceiling linings, indicating the cladding is performing adequately.

5.6 The roofing and flashings

5.6.1 In regard to roof claddings and associated flashings, the expert noted:

- There is no sign of historic or recent water entry on ceiling linings.
- Access to roof spaces was limited, but no issues were noted in the garage roof space, with plywood substrates below asphalt tile roofing appearing in good condition, as did the building paper on the gable end wall.
- Roof lights appeared well flashed, with no evidence of water entry.
- The original butyl rubber gutter lining to the narrow internal gutter on the upper roof appeared to be in good condition (Area B4).
- In regard to low-pitched membrane roofs:
 - the enclosed deck roof is torch-on membrane with 300mm wide eaves
 - the original low-pitched roofs had been butyl rubber with lapped joints and it was decided to replace these areas with the seamless torch-on membrane, due to difficulty of maintaining the original lapped joints.
- In regard to junctions of the membrane roofs with walls and pitched roofing:
 - cladding was removed on some walls to install membrane upstands and stucco was replaced with timber weatherboards (Areas B2 and A9)

- lower asphalt roof tiles were carefully lifted in one piece, the membrane was installed up the plywood substrate and tiles were glued back down
- junctions appear to be well formed, with two small areas noted where membrane was not fully adhered (Area B5)
- junctions appear well detailed, with membrane in very good condition and no signs of historic or recent water entry found on soffit or veranda linings.
- Invasive testing revealed moisture penetration at the garage/toilet roof junction, refer paragraph 5.3.3 (Area B1). Except for this item the remaining roof junctions appeared to be satisfactory.

5.7 The subfloor and clearances

5.7.1 In regard to other items identified by the authority, the expert noted (in summary):

- drainage channels with grates are installed in the paving around the north elevation and appear well installed (Areas D1, D4 and similar)
- the grated channels drain into open channels on the east and west elevations, with no impediment to subfloor ventilation
- an open channel runs along the north west side of the garage floor slab into a sump at the west corner (Area D2)
- polythene is laid over the subfloor ground, with no signs of dampness observed from the access opening
- timber decking has been lifted and re-installed to provide drainage gaps at the deck/wall junctions (Areas D3 and D4).

5.8 The authority's response to the expert's report

5.8.1 The authority responded to the expert's report on 18 June 2019 and in a detailed submission challenged several of the expert's comments and findings, including a number of general comments on maintenance, the performance of buildings built in accordance with what was considered good practice at the time of construction and advances in weathertightness detailing. The following table summarises the authority's submission and the expert's response to the points raised.

Table 1: The authority's response to the expert's report

Expert's report	Authority's comments	Expert's response
Deck enclosure accepted as part of original consent. (Area B8)	Deck enclosure not accepted as part of original consent, certificate of acceptance to be applied for.	-
Replacement membrane and chimney recladding	If claddings prematurely failed, then consent required before building work carried out.	Work appeared to be recent, if replaced after 2013, then the 15-year durability period had finished.
Timber treatment	Concern about direct-fixed solid plaster cladding on untreated timber.	-
Plaster standards used / called for	Specifications call for stucco to follow BRANZ Good Stucco Practice and manufacturer's installation information.	Some of manufacturer's details now considered to be poor practice.

Expert's report	Authority's comments	Expert's response
Joinery perimeter junctions	Drainage gap needed at sills. With head flashings buried in plaster and no jamb or sill flashings, moisture may be trapped behind sill flange.	With no eaves, no flashings and with untreated framing, perimeter junctions are vulnerable. Appeared to be performing better than some stucco systems.
Window performance (Areas A1 and A8)	Damage found at two windows is sufficient evidence to require more robust investigations. Assessment through invasive assessment is inconclusive.	The lack of a sill flashing means any water that has entered the stucco is unable to exit.
Barge junctions (Area B2)	Questioned effectiveness of detail used, overlap of barge board over stucco minimal and not possible to seal stucco behind board. Performance reliant on barge board stability and sealant.	Risk is overstated, the detail may allow limited ingress but unlikely to be significant, barge boards are usually installed before plastering.
Lattice grille (Areas A10 and C4)	Close up photo shows rectangular section sill installed as curved sill, ad-hock method of shedding sill water via saw cut. With no suitable head, jamb or sill flashing, grille enclosure not protected from moisture ingress by any recognised method. One side of grille enclosure abuts stairwell wall.	Risk is overstated – highest risk junction under curved sill tested. If the sill is performing, lower risk jamb junctions also likely to be performing. (To the authority's last point: the adjacent stairwell wall at the west jamb of the grille was invasively tested with normal readings obtained).
Deck/wall junctions (Areas D3 and D4)	Laundry deck attached to stringer, stringer directly fixed through plaster into garage wall framing. Considered an at-risk junction, no invasive assessment carried out.	No indication of any water entry seen on the garage linings, possible that moisture has penetrated the wall as suggested.
Comment on expert's photographs		
Weatherboard to stucco flashing (Area C2)	Z flashing appears to be retrofitted, detail question and considered poor detailing and workmanship.	Flashing was retrofitted. Detail not ideal, but is carefully sealed and appears to be performing effectively.
Asphalt shingle to weatherboard flashing (Area C3)	Internal corner back flashing used as apron flashing, height of upstand unknown. No adhesion apparent between the flashing and the asphalt shingle.	Upstand likely to be same height as visible width so adequate. No apparent adhesion problem.
Head flashing	Junction poorly mitred with no overlap, reliant on sealant. Insufficient gap between barge and flashing to prevent capillary action.	Concerns are overstated.
Authority's general comments		
<p>In regard to the expert's investigation:</p> <ul style="list-style-type: none"> The expert had carried out a limited invasive investigation, wall linings were removed under one window only. Moisture readings alone cannot provide satisfactory evidence to demonstrate performance. 		The owner chose to remove the wall linings referred to. The evidence gathered was sufficient for the report.
<p>In regard to weathertightness risks of house:</p> <ul style="list-style-type: none"> This house has many departures from good practice known at time of construction. There is insufficient evidence to conclude that house has performed adequately. The expert's conclusion that cladding has "largely performed adequately" does not provide reasonable grounds to be satisfied on compliance. 		The failures identified show non-compliance.

6. Discussion

6.1 Compliance generally

- 6.1.1 The building consent considered in this determination 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 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 assessing the above, I have taken into account the age of various building elements in the house. An application can be made to the authority for a modification of durability requirements to allow durability periods for the house to commence from the date of the first final inspection in May 2000 (refer paragraph 3.1.5) rather than the date on which a code compliance certificate is issued. I have taken that modification into account in considering compliance with Clause B2.3.1.
- 6.1.3 The matter in dispute is whether the authority correctly exercised its power in its decision to refuse to issue the code compliance certificate for the consented work. In deciding this matter I have therefore considered whether those areas identified by the authority in its section 95A letter dated 30 January 2014 and subsequent correspondence, in particular its letter of refusal dated 16 November 2017 comply with the relevant performance clauses of the Building Code that applied at the time the building consent was granted.

6.2 The requirements of Clauses E2 and B2

- 6.2.1 The functional requirement for Clause E2 (at the time the consent was issued) was:

E2.2 *Buildings* shall be constructed to provide *adequate* resistance to penetration by, and the accumulation of, moisture from the outside.

In respect of the building’s external envelope the performance requirement (at the time the consent was issued) was set out in Clause E2.3.2 as follows:

E2.3.2 Roofs and exterior walls shall prevent the penetration of water that could cause undue dampness, or damage to *building elements*.

- 6.2.2 A breach of Clause E2.3.2 can arise from either damage to building elements or undue dampness; it does not require both. In various past determinations¹⁹ I have considered the term “undue dampness” to be a level of moisture that has, or will, result in detrimental effects on building elements, or the building occupants, or both.
- 6.2.3 The functional requirement for Clause B2 (at the time the consent was issued) was:

B2.2 *Building* materials, components and *construction* methods shall be sufficiently durable to ensure that the building, without reconstruction or major renovation, satisfies the other functional requirements of this code throughout the life of the *building*

Clause B2.3.1 sets out the periods for which building elements must, with only normal maintenance, continue to satisfy the performance requirements of the Building Code.

¹⁹ For example, 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 (17 December 2012)

6.3 Compliance with Clause E2

6.3.1 The evaluation of the external envelope and the risk factors considered in regards to weathertightness have been described in numerous previous determinations (for example, Determination 2004/1²⁰). 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 is very complex in plan and form, with a mix of claddings and multiple roof levels that result in many complex junctions
- there are no verge overhangs to shelter exposed gable end walls
- the stucco cladding is directly fixed to the framing timber
- only some of the framing timber may be treated to a level that provides resistance to decay

Decreasing risk

- some of the lower level stucco cladding is sheltered beneath deep overhangs.

6.3.2 Using the E2/AS1 risk matrix to evaluate these features, most elevations of the house are assessed as having a very high weathertightness risk rating. If the current E2/AS1 was adopted to show compliance, this would require a drained cavity; however, the current E2/AS1 was not in effect at the time the original building consent was issued in 1997 and the provision of a cavity is not prescribed in Clause E2 itself.

Clause E2 performance

6.3.3 While the expert considered that the cladding itself was performing adequately, he found a number of areas where moisture penetration had occurred that require further investigation:

- the north window to Bedroom 1 (Area A1)
- the south window to the ground floor toilet (Area A8)
- the apron flashing to the garage roof/wall junction (Area B1).

6.3.4 The expert considered some doubt remains about fully sealed windows, in that water may be able to penetrate the cladding around the windows but be unable to exit. I consider further investigation is necessary to determine how water has penetrated the cladding around the windows noted above, and once that is known, the appropriate remediation strategy, if any, can be applied elsewhere.

6.3.5 The expert accepts there may be some validity in the authority's contention that moisture may have penetrated the wall cladding at the wall/deck junctions (Areas D3 and D4) but notes that the performance of this junction can be readily assessed.

6.3.6 I note that the expert's assessment of the building envelope was generally in respect of the matters identified by the authority (refer paragraph 3.8): the expert's assessment is not to be considered a full weathertightness assessment of the building.

²⁰ Determination 2004/01 Refusal of a code compliance certificate for a building with a 'monolithic' cladding system: House 1 (11 March 2004)

- 6.3.7 The expert considered the weatherboard cladding and associated flashings were performing adequately. The expert considered the roof and associated flashings (to flat and pitched roofs) were performing adequately, with one exception that required attention (Area B1).

Clause E2 conclusions

- 6.3.8 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 and damage in a number of areas of the timber framing.
- 6.3.9 In general terms, Clause B2 requires the cladding to remain weathertight (i.e. meet the performance criteria in Clause E2.3.2 – preventing moisture ingress that would cause undue dampness or damage) for a minimum period of 15 years. Although the original roof and wall claddings are in the order of 20 years old, the past repairs and the expert's investigations indicate that moisture has penetrated the cladding over an unknown period within the minimum 15-year period required by Clause B2.3.1(b). I am therefore satisfied that the external envelope has not complied with Clause E2.
- 6.3.10 While Clause B2 requires the cladding to remain weathertight for a minimum of 15 years, the expected life of the building's structure is considerably longer, and the performance of the building envelope is relevant to the protection of the underlying structure of the house which has a minimum required life of 50 years. The expert's investigations revealed evidence of moisture ingress has resulted in deterioration to the framing in at least one location.
- 6.3.11 If specific features or areas of a cladding can be shown to be performing (i.e. protecting the structure from the penetration of water that could cause undue dampness or damage) then whatever means is being used to achieve this must be considered adequate in terms of meeting the performance requirements of Clause E2, including the use of building elements requiring regular maintenance such as paint coatings and sealant.

Clause B1 Structure

- 6.3.12 The damaged timber framing draws into question compliance with B1 Structure as some framing may have been damaged as a result of water ingress and could be affecting the building's structural performance. Based on the information available I cannot be satisfied that Clause B1 has been met with respect to Clause B2, but I have insufficient information to make a decision on whether the framing does not comply.

6.4 Clause B2 Durability

- 6.4.1 The relevant provision of Clause B2 of the Building Code requires that building elements must, with only normal maintenance, continue to satisfy the performance requirements of the Building Code for certain periods ("durability periods") "from the time of issue of the applicable code compliance certificate" (Clause B2.3.1).
- 6.4.2 In many previous determinations I have taken the view that a modification of this requirement can be granted if it can be shown that the building satisfied the durability requirements at a date earlier than the date of issue of the code compliance certificate, that is agreed to by the parties and that, if there are matters that are required to be fixed, they are discrete in nature.
- 6.4.3 In the case of this house, because of the nature of the defects found by the expert, which indicate that moisture has penetrated the cladding over an undefined period

and has resulted in deterioration to the framing in at least one location, I am not satisfied that there is sufficient information on which to make a decision about this matter at this time, and I leave this matter to the parties to resolve in due course.

6.5 Response to the parties' submissions not covered elsewhere

- 6.5.1 With respect to the parties' comments about the extent of remediation required and the process and testing necessary to inform the remediation process, I note the consent was issued under the former Act which was in effect until March 2005. Under section 43(1) of that Act, an owner was required seek a code compliance certificate as soon as practicable after the building work had been completed.
- 6.5.2 The requirements of the Building Code itself with respect to Clause E2 have not changed significantly in the period since the building consent for this work was issued in 1997. However, the understanding of the performance of building elements and construction methods have altered over that period.
- 6.5.3 In cases such as this, where a code compliance certificate is being sought 20 years after the building's completion, account needs to be taken of the nature of the building work in terms of complexity, construction, weathertightness risk, and what information is necessary to reasonably show that the subject building is compliant.
- 6.5.4 It is accepted that removal of internal linings only will not conclusively identify all areas of timber decay. It is also accepted that damage to timber framing may be more advanced on the outer face of the framing and where there are multiple studs, lintels and the like, as this increases the risk of moisture being trapped behind the cladding and reduces the ability of the timber to dry.
- 6.5.5 However, I do not accept that extensive external destructive testing is required to determine the performance a building envelope that has been in place for over 20 years where it can be shown that the building elements have not suffered damage or undue dampness due to moisture ingress during this time - such as by assessment of timber samples taken from areas likely to be at risk from moisture ingress. Timber samples that show undue dampness or damage can be further investigated using invasive methods to confirm the extent of any remedial work required.
- 6.5.6 The authority has criticised the expert's view that the authority overstated some matters. I am of the view that there are varying levels of weathertightness risk in the building and it would not be appropriate to treat every area as having the same high consequential effect from a cladding failure.

7. What happens next?

- 7.1 The authority may deal with the matter via a second notice issued under section 95A of the Act. The notice should include the investigations and defects identified herein (refer paragraphs 6.3.3, 6.3.4 and 6.3.5) and refer to any further defects that might be discovered in the course of investigation and rectification, but not specify how those defects are to be fixed – that is a matter for the applicant to propose and for the authority to accept or reject.
- 7.2 If the applicant still wishes to seek a code compliance certificate for the house, a detailed proposal should be developed and submitted to the authority for its approval produced in conjunction with a suitably qualified person.

7.3 A code compliance certificate will be able to be issued once there are reasonable grounds for the authority to be satisfied that the building complied with the Building Code that was in force when the consent was granted and the durability modification is resolved.

8. The decision

8.1 In accordance with section 188 of the Building Act 2004, I hereby determine that the building envelope does not comply with Clauses E2 and B2 of the Building Code that was in force at the time the original building consent was issued in 1997, and accordingly I confirm the authority's decision to refuse to issue a code compliance certificate for the house.

Signed for and on behalf of the Chief Executive of the Ministry of Business, Innovation and Employment on 12 May 2020.

Peta Hird
Acting Manager Determinations