

Determination 2024/004

Regarding the refusal to carry out a final inspection and issue a code compliance certificate for a 22-year-old house at 34 Arataki Road, Havelock North

Summary

This determination considers an authority's decision to refuse to issue a code compliance certificate for a building consent granted in 2000 under the Building Act 1991. The determination discusses the reasons given by the authority for the refusal, and how they relate to Building Code clauses B1 Structure, B2 Durability, E2 External moisture that applied in 2000.



The legislation which is discussed in this determination is contained in Appendix A. In this determination, unless otherwise stated, references to “sections” are to sections of the Building Act 2004 (“the Act”) and references to “clauses” are to clauses in Schedule 1 (“the Building Code”) of the Building Regulations 1992. The relevant clauses are contained in Appendix B.

The Act and the Building Code are available at www.legislation.govt.nz. Information about the legislation, as well as past determinations, compliance documents (eg Acceptable Solutions) and guidance issued by the Ministry, is available at www.building.govt.nz.

1. The matter to be determined

- 1.1. This is a determination made under due authorisation by me, Peta Hird, Principal Advisor 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:
 - 1.2.1 the owners of the house, N A Wright and Y Wright (“the owners”); and
 - 1.2.2 Hastings District Council (“the authority”), carrying out its duties as a territorial authority or building consent authority.
- 1.3. This determination arises from the authority’s decisions to refuse to carry out a final inspection and issue a code compliance certificate for a (now) 22-year-old house. The refusal arose because the authority is not satisfied that the building work complies with certain clauses of the Building Code. The authority’s concerns are about the structure and durability of the laminated timber framing used, and the weathertightness of the first-floor solid plaster cladding.
- 1.4. The matter to be determined, under section 177(1)(b) and (2)(d), is the authority’s decision to refuse to issue a code compliance certificate for the building work carried out under building consent ABA20001347.
- 1.5. In deciding this matter, I will consider the reasons for refusal given by the authority in its correspondence with the owners, and its refusal to conduct a final inspection of the building work.

¹ The Building Act 2004, section 185(1)(a) provides the Chief Executive of the Ministry with the power to make determinations.

2. The building work

- 2.1. The building is a four-bedroom two-storey house, with an attached double garage, on a flat section in a residential area in Havelock North. The property is in a high-wind zone.
- 2.2. A previous owner of the property applied for the building consent to construct the dwelling and garage, which was granted by the authority on 21 September 2000 (ABA20001347). The building consent was granted pursuant to section 34 of the Building Act 1991 (“the former Act”). The authority advises that the building consent application was processed by an independent company of approved building certifiers (“the building certifier”).² The building certifier has since ceased operating.
- 2.3. Work on the house began in September 2000 and was substantially completed in June 2001.
- 2.4. The house has concrete foundations and a concrete floor at ground level, and a suspended timber and particleboard floor at first floor level. With respect to the structural wall framing, the consented plans show that for the exterior walls 90 x 45mm framing was to be used, with studs at 600mm centres (maximum), and dwangs at 800mm centres (maximum). For the internal walls, 90 x 45mm framing was to be used, with 69 x 45mm framing allowed where shown on the plans, and studs at 600mm centres (maximum).
- 2.5. The general specifications for the house stated that ‘All framing timbers to be as NZS 3604 1990³ ... Structural sizes , spacing and fixing details per NZS 3604 1990 and Amendments – deviations to NZS 3604 to be supplied by Engineer or to manufacturer’s specification’. NZS 3603⁴ is also referred to. In addition, the specifications for the structural wall bracing stated that ‘Framing shall be in accordance with NZS 3604: 1990 or similar standard’.
- 2.6. The finished house uses a mixture of solid timber and laminated timber structural framing. The solid timber framing is 90 x 45mm grade 1 radiata pine. The laminated framing is also 90 x 45mm, made up of two 90 x 22.5mm grade 2 radiata pine laminates glued together.

² As provided for under section 56 of the Building Act 1991.

³ New Zealand Standard 3604:1990 *Code of practice for light timber frame buildings not requiring specific design*

⁴ New Zealand Standard 3603:1993 *Timber structures*

- 2.7. The house also has laminated beams, joists and lintels. At the builder's request, a company of consulting engineers ("the consulting engineers") assessed the strength and suitability of these laminated beams, joists and lintels for use in the construction of the house, and provided various reports dated 4 and 23 February 2000. In essence, these reports stated that the laminated beams, joists and lintels could be used in place of the equivalent timber and steel components, provided certain requirements were met. The consulting engineers' reports form part of the approved documentation for the building consent, and as far as I am aware the use of the laminated timber beams, joist and lintels are not in issue. The authority's concerns are limited to the framing, with regard to the use of laminated timber and durability in relation to moisture ingress.
- 2.8. With respect to the external cladding for the house, the ground floor is clad in 70 series brick veneer over a 50mm drained and vented cavity, while the first floor is clad in solid plaster stucco over diagonal hit and miss timber backing. It is the first-floor cladding that is the subject of this determination.
- 2.9. The first-floor cladding is described in the consented plans as 'Solid plaster & reinforcement mesh on building paper on to hit & miss rigid backing system of diagonal timber sheathing (150x25 @ 399 ctrs) Ref: NZS 3604:1990 Appendix G3.2(c)'. In a report dated 7 February 2000, the consulting engineer developed and assessed a specific engineering design for the rigid backing system (which it refers to as diagonally sarked bracing), and this also formed part of the approved building consent documents. The design was calculated with the diagonal timber sarking fixed to the outer face of the structural wall framing using a mixture of nails and strap fixings. The consulting engineers' design refers to NZS 4203:1992⁵, NZS 3603:1993 and NZS 3604:1990.
- 2.10. For the remainder of the exterior envelope, the roof is clad with clay tiles, drained via spouting and downpipes, and the joinery is powder-coated aluminium joinery, with a solid timber front door. The joinery is recessed within the external walls, and has metal head, jamb and sill flashings.
- 2.11. Over the time that the house was being constructed, the building certifier carried out inspections of the building work between 25 September 2000 until 5 February 2001, including: the foundations; sub floor; floor slab; wall structure – timber framing; pre-lining; plumbing; insulation; drainage; the solid plastering; and external cladding. An inspection summary records that the majority of these inspections showed the building work complied and the inspections were passed.

⁵ New Zealand Standard NZS 4203:1993 *General structural design and design loadings for buildings*

- 2.12. During the pre-line inspection in November 2000, the building certifier noted that some of the consented framing had been replaced with laminated framing studs. The certifier requested an engineering report on the compliance of the substitute studs, because of their concerns about potential delamination.
- 2.13. The builder subsequently arranged for another consulting engineer (“the builder’s engineer”) to visit the property and inspect the framing to determine whether it complied with the Building Code. The builder’s engineer inspected the framing studs on 30 November and 5 December 2000, and provided a report dated 8 December 2000⁶.
- 2.14. The builder’s engineer’s report noted that a mixture of consented studs and substitute laminated studs had been used. The studs are at a maximum of 600mm centres and 2400mm long. The consented studs were constructed from 90 x 45mm kiln-dried radiata pine. The 90 x 45mm laminated studs were made up of two 90 x 22.5mm radiata pine laminates glued together, using a melamine adhesive.
- 2.15. The builder’s engineer noted that the laminated studs had been manufactured by a local company, and did not ‘carry a certificate’, nor were ‘covered by a general approval solution’. The report noted that several of the laminated studs had ‘substantial defects’ such as knots and holes in one of the laminates, and some ‘had defects coinciding in both laminates in one cross section’. The builder’s engineer considered that these defective studs were not acceptable.
- 2.16. Following further research into the strength requirements for the various types of walls, the builder’s engineer concluded that:
- grade 2 radiata studs or laminated radiata studs with ‘holes and knots allowable [in] up to 50% of the timber cross section’ were acceptable for:
 - internal non load-bearing walls, with an 8.38kN maximum factored stud load
 - internal load-bearing walls supporting less than 3.3m tributary width of floor
 - upper storey walls, with a 5.7kN maximum factored stud load
 - non load-bearing external walls, with a 5.7kN maximum factored stud load
 - grade 1 radiata studs were required for lower storey load-bearing exterior walls.

⁶ ‘Report on compliance of laminated studs in 2 storey house in Lot 18 Arataki Road with performance criteria of the N.Z. Building Code.’

- 2.17. Initially the builder's engineer recommended that the builder should replace or duplicate 'all studs that [the builder] considered substandard'. At the second inspection, the builder's engineer then identified 18 additional studs that required further strengthening work.
- 2.18. The report recorded that all of this recommended remedial work was subsequently done. It concluded that:
- with respect to the 'strength requirement' in the Building Code, the laminated studs satisfied the 'strength performance criteria ... based on analysis to NZS 3603'
 - with respect to the durability requirement in the Building Code, a durability period of 50 years is required for both the timber and the glue used in the laminated studs. The manufacturer of the laminated studs had provided evidence of its quality control system, which it uses to regularly strength test 'glued samples'. In addition, the glue 'is commonly used for laminated beams and is expected to have 50 years of lifetime'. The engineer attached an article on the glue's durability to their report.
- 2.19. The building certifier's last inspection was undertaken on 5 February 2001, and approved the installation of the plaster mesh and flashings, prior to the installation of the plaster coating for the first-floor external cladding. The inspection noted 'Uncut control joints to be scratched in concealed'.
- 2.20. There are no records of further inspections undertaken by the building certifier, and it appears that once the building work was complete, the previous owners did not apply for a code compliance certificate.

3. Background

- 3.1. The current owners purchased the property in January 2009.
- 3.2. On 21 April 2021, the owners applied for a code compliance certificate for the building work completed under building consent ABA20001347 to construct the dwelling. The application affixed the building certifier's summary record of the inspections it had carried out.
- 3.3. On 21 May 2021, the authority sent a letter refusing to issue a code compliance certificate for the building work. The refusal was based on a review of the property file, with no final inspection undertaken. The authority stated that the refusal was because it could not be satisfied on reasonable grounds that the building work complied with the Building Code that applied at the time that the

building consent was granted, in particular clauses B1 Structure, B2 Durability and E2 External Moisture.

- 3.4. With respect to clauses B1 and B2, the authority considered there was insufficient evidence on file or in the application to show that the framing in the dwelling complied. The structural framing used differed from that shown in the consented plans and specifications – it had changed from solid timber framing to a mix of solid and laminated timber. There was no record of this amendment being approved, and the authority was of the view insufficient evidence to show the replacement framing complied with clauses B1.3.1, B1.3.2, B1.3.3, B1.3.4, B2.3.1 and B2.3.2.
- 3.5. With respect to clause E2, the authority considered there was insufficient evidence to show the completed cladding system complied. The plans and specifications approved as part of the building consent and the records of inspections did not, in the authority's opinion, provide sufficient evidence that the cladding system was installed in accordance with the building consent or that it complied with the Building Code that was in force when the consent was granted. In particular, the authority was concerned about flashings around the penetrations in the external cladding, such as the windows and doors, and was not satisfied that compliance had been achieved with clauses E2.3.2, E2.3.3, E2.3.4 and E2.3.5.
- 3.6. The owners applied for a determination on 10 September 2021 about the authority's refusal to issue a code compliance certificate for the completed building work. Following correspondence with the Ministry, the applicant confirmed that the authority was not willing to carry out a final inspection and requested that the determination cover this refusal too.

4. Submissions

Owners

- 4.1. The owners made a submission with their application for a determination, which set out the background to the dispute and made the following main points.

The refusal to inspect

- 4.1.1. The applicants are unsure how the authority has made its decision to refuse the code compliance certificate when it has not carried out a final inspection or any inspections of the building work.
- 4.1.2. The authority's refusal to inspect is in breach of section 94. The lack of a final inspection casts doubt on whether the authority has 'considered fully whether the

building complies with the Building Consent or not'. The authority's refusal is also at odds with its own published process.

The structural framing

- 4.1.3. The builder's engineer 'supervised the alteration work of using some alternative framing'. The change has been inspected and passed by the engineer.
- 4.1.4. The original building consent specified glued and laminated timber beams for the floor joists and lintels.
- 4.1.5. The authority considers an amendment should have been applied for. The building consent was processed and inspected by the building certifier and any changes or amendment would have been processed by the certifier.
- 4.1.6. There is sufficient information on the file to be satisfied that the house complies with clauses B1 and B2.
- 4.1.7. A building consultant engaged by the owner, inspected the house, and by observation of the exposed garage framing and by removing power points to provide visibility of the framing within other parts of the house, noted that only standard timber framing has been used.

The external cladding

- 4.1.8. With respect to compliance with Clause E2, the "drained cavity"⁷ used behind the ground and first floor cladding is formed from 150mm x 25mm tanalised boards at 45 degrees, which is 'incredibly strong'.
- 4.1.9. The building certifier carried out 'several' inspections of the cladding. The plaster mesh inspection initially failed but was passed on 5 February 2001. This would have included the flashings, control joints and mesh fixings.
- 4.1.10. The building consent documents for the cladding have been followed. They contain limited detail for the window flashings, which was typical at that time.

The authority's refusal

- 4.1.11. The owners are of the view it was difficult for the authority to refuse the code compliance certificate when it did not process the Building Consent. The authority is trying to apply today's building code retrospectively to a house that was consented and built in 2000.
- 4.1.12. The owners also stated that, with respect to durability, they knew they would need to apply for a 'waiver under B2.3.1 as to the actual completion date of June 2001' before a code compliance certificate could be issued. They did not have the opportunity to discuss this with the authority, as the authority simply refused the

⁷ The authority disputes that there is a drained cavity behind the first floor cladding.

code compliance certificate. The owners' agent is aware that for other properties in the area the authority typically carries out a final inspection, then requests a specialist inspection if required. It does not usually refuse to inspect.

The owners' expert's report

- 4.2. In response to the Ministry's request for information to support the application, the owners engaged a registered building surveyor ("the owners' expert"), who provided a report on 15 December 2022.
- 4.3. The owners' expert carried out site inspections of the building work on 21 September and 2 November 2022. The inspections were limited to the accessible internal and external areas on the first floor of the house.
- 4.4. The initial inspection used non-invasive capacitance testing to assess possible moisture entry in areas near locations of concern, and to indicate areas where further investigation was necessary. This testing indicated that there was 'possible moisture present' in several locations and 'likely moisture present' at one though this latter may have been affected by condensation.
- 4.5. The owner's expert observed other signs of potential water ingress:
 - cracking to the wall and minor staining to the floor beneath the window in bedroom 2
 - cracking in the wall beneath the window and at the junction with the skirting, deterioration of the window sill, and staining on the wall and carpet grip in bedroom 4
 - water stains beneath the window and a flaking window sill in bedroom 3
 - cracking in the wall above and below the window in the master bedroom, with indications that repairs had been carried out to the linings in the past, and staining on the floor in the corner (although it was noted this could be due to plumbing leaks from the adjacent ensuite).
- 4.6. The owners' expert also inspected the external cladding, noting it had been installed in accordance with NZS 3604:1990 and there were metal flashings around the joinery. The expert then made numerous observations about matters potentially affecting the external cladding's compliance, as summarised below.
 - 4.6.1. On the front elevation, adjacent to the main bedroom, there is a lack of clearance to the adjacent roof where the ridging to the hip is installed, which is necessary in preventing moisture holding and possible penetrating behind the cladding.
 - 4.6.2. On all elevations, where the windows are recessed in the plaster, there are cracks at the side junctions between the joinery and the plaster, and the base of the

joinery is embedded within the plaster. These cracks create gaps, allowing moisture to penetrate at the side of the joinery which is then not be able to discharge at the base of the window. This increases the likelihood of moisture entering behind the cladding and affecting the timber framing. In places, cracking has occurred at the base and head of the windows, presumably due to moisture movement and these cracks could also allow further moisture entry. In other places, the cracking had spread over the face of the plaster.

- 4.6.3. On the south, east and north-facing elevations, the plaster has been provided with some control joints. According to the standard cited in the Acceptable Solution that applied at the time of construction⁸, these should be at 4m centres. Based on this, there are insufficient control joints installed on these elevations, and those that are installed are only on the surface of the plaster rather than extending its full depth. Both of these matters are potentially contributing to the cracking evident on these elevations.
 - 4.6.4. The metal flashing where the garage roof abuts the plaster coating on the south elevation has not been provided with a diverter to prevent moisture entering behind the cladding.
 - 4.6.5. The roof-to-wall junctions on the northern side of the dwelling have been sealed, and there are gaps in this, which will allow moisture entry behind the plaster cladding.
 - 4.6.6. There is an area above the spouting from the secret gutter above the ground-floor dining area where 'moisture may track behind the cladding'.
 - 4.6.7. The area where the spoil and waste pipes penetrate the first floor cladding do not have protective flanges fitted to prevent moisture ingress through any cracks that form as a result of differential movement between the plaster coating and pipes.
- 4.7. Invasive investigations were then carried out, removing sections of the internal wall linings to allow resistance-type moisture content readings to be taken from the exposed framing in six areas of concern. This testing returned the following results.
- 4.7.1. In bedroom 4, although there was some evidence of past moisture ingress, no significant damage had been caused and the readings were all 'within a low moisture content range below 18%, which would be expected for timber framing performing effectively'. Readings ranged between 10.2% and 13.6%.

⁸ NZS 4251:1974 *Code of practice for solid plastering*

- 4.7.2. In the retreat, the inspection did not show any 'significantly affected timber framing', although the moisture content readings between 16.3% and 18.6% were higher than those taken in the adjacent bedroom 4.
 - 4.7.3. In bedroom 3, staining to the window trimmer, framing and bottom plate confirmed that moisture had penetrated behind the cladding adjacent to the window. Moisture content readings taken from the framing ranged between 17.3% and 20.9%.
 - 4.7.4. In bedroom 2, some staining was observed on the wall insulation, but there was no visible evidence of damage to the timber framing. Markings on the framing in this location confirmed it was untreated kiln-dried framing. All moisture readings in this location were between 12.9% and 13.6%.
 - 4.7.5. In the main bedroom, some staining to the plasterboard and insulation, corrosion of a framing fixing, and staining and creasing of the wall underlay was observed, but there was no visible evidence of damage to the timber framing. Moisture readings taken from the framing in this location were between 14.6% and 17.5%, although a reading taken from the underside of a dwang beside the window was 18.9%, suggesting that moisture is entering behind the cladding at the side of the window where cracking is evident externally.
- 4.8. The owners' expert provided a report dated 15 December 2022 detailing the findings of the investigations. The main findings included the following (in summary).
- 4.8.1. Most of the invasive moisture testing readings were low, indicating that the cladding and framing are performing as they should.
 - 4.8.2. The two exceptions, where the moisture content readings were at a 'medium level' (around the windows in the main bedroom and bedroom 3), showed that moisture is penetrating the cladding in these places. In the expert's opinion this was due to 'the lack of adequate clearance between the perimeter flashings to the joinery and the plaster coatings' and this was contributing to the 'cracking occurring on the elevations adjacent to the window openings'.
 - 4.8.3. The 'extent of moisture penetration behind the cladding is at present minimal and has not had a significant effect upon the performance of the existing timber framing'. If the cracking was left unattended, though, it would affect the framing's durability.

- 4.8.4. Other factors contributing to the cracking were the lack of control joints in the plaster coating, which needed to occur at 4m centres around the perimeter of the dwelling, and the inadequate depth of the existing control joints.
- 4.9. The owners' expert provided a comprehensive list of recommended works they considered necessary to the plaster coated section of the dwelling to maintain its weathertightness and durability.

Authority

- 4.10. The authority made a submission in response to the application for a determination, in which it set out the background to the dispute and made the following main points.

The authority's decision

- 4.10.1. As the owners have applied for a code compliance certificate 20 years after the building work was carried out, the authority must assess the application pursuant to the transitional provisions in section 436 of the Building Act 2004. This requires the authority to be satisfied that the building work complies with the Building Code that applied at the time the consent was granted. Based on the documentation in the property file, including the inspection reports, the authority is not satisfied.

The structural framing

- 4.10.2. With respect to the structural framing, the authority is not satisfied it complies with clauses B1 and B2 because changes were made during construction⁹ without an amendment being sought to the consent, as required by section 33(4) of the former Act, or 'suitable evidence' being provided of compliance. An inspection would not help in assessing compliance. The owners need to provide the authority with 'suitable evidence'.
- 4.10.3. Similarly, there is no evidence to show how the laminated timber studs comply. They may not comply with *NZS 3603: 1993 Timber structures*, or *AS/NZS 4357:1995 Structural laminated veneer lumber*.
- 4.10.4. An inspection on 28 November 2000 identified that several laminated studs had 'substantial defects' and the timber was 'visually assessed' as grade 2 radiata. NZS 3603 excludes grade 2 from 'use as a structural grade timber

⁹ The framing timber was changed to include a mix of laminated and planer gauged timber.

as it has no assigned characteristic strength and stiffness properties’.

Although some studs were replaced or doubled up, and this was overseen by the builder’s engineer, ‘there is nothing to confirm how the remaining studs have performed or will continue to perform to meet the structural and durability requirements of the building code.’

4.10.5. With respect to the structural wall bracing on the first floor of the house, the consulting engineer developed a specific engineered design for this. However, it is not apparent whether the consulting engineer was aware of or took into account the laminated wall framing. The fixings through the sarking and the fixing straps into the narrow edge of the laminated studs ‘may be compromised and not achieve the engineer’s calculated values’.

4.10.6. The company that manufactured the laminated framing is no longer in business, so the authority is unable to speak with the company about the framing, and it is not known what quality management system and independent testing it used.

4.10.7. The authority considers it possible that there will be delamination of the studs and lintels, and the house’s structural integrity for its 50-year durability period has not ‘been established’. An inspection will not help with the assessment of this and the owners must provide suitable evidence.

The external cladding

4.10.8. With respect to the external cladding, the authority is not satisfied it complies with Clause E2. In particular, the first-floor cladding system has ‘insufficient cladding details’ for the authority to be satisfied it complies, and an inspection would not help with this. The exterior joinery appears to be set back from the exterior face of the solid plaster, which ‘requires careful detailing to ensure weathertightness is retained’. However, any flashings used will be hidden and unable to be inspected. If moisture penetrates beyond the plaster, it could ‘track along the diagonal sheathing directly into the termination of junctions with exterior joinery, the structural framing, or first floor framing’. This is a known cause of weathertightness failure.

The authority’s refusal to inspect

4.10.9. With respect to its decision to refuse to issue the code compliance certificate without first undertaking an inspection, the authority noted that

the Act does not require an inspection. In particular, section 222 states that the authority is 'entitled' to inspect.

- 4.10.10. In addition, the authority considers the records on file clearly demonstrate that the building does not comply with the Building Code that was in force at the time, and there is 'nothing to be gained' from an inspection now. The authority is entitled to rely on the inspection records and the building's performance over the past 20 years, which in this case reveal that further evidence needs to be gathered, and that evidence is a matter for the owners.

The owners' expert's report

- 4.10.11. The report indicates that there are various weathertightness issues with the owner's house and reinforces the authority's concerns regarding compliance with Clause E2.
- 4.10.12. Having seen the report, the authority maintains it was correct to refuse to issue the code compliance certificate.

Responses to the draft determination

- 4.11. A draft determination was issued to the parties for comment on 15 November 2023.
- 4.12. The authority accepted the draft on 6 December 2023. Their comments are as follows:
- 4.12.1. The building's diagonal hit and miss timber sheathing does not provide a 'drained cavity', and due to the smaller footprint of the first floor of the house and the wall terminating over the lower roof, there is no drainage path to exterior.
- 4.12.2. The installation of the metal head, jamb and sill flashings has not been confirmed via an inspection.
- 4.12.3. Considerable time that has elapsed since the building work was completed, and many of the elements are concealed, even with further remedial work and/or invasive investigations, it may not be possible for the authority to be satisfied on reasonable grounds that the test for issuing a code compliance certificate is met.

- 4.12.4. The authority also requested the determination “explain that further steps will also be required of the owner to demonstrate compliance with Clauses B1 and B2 of the Code.”
- 4.13. On 7 December 2023 the owners also accepted the draft but provided some comments:
- 4.13.1. They disagree that the building does not have a drainage plane, as there is “base flashing at the bottom of the stucco that deflects the water to the exterior to either the roof or over the brickwork.”
- 4.13.2. The certifier’s inspection notes are evidence that flashings are in place.
- 4.13.3. The existing information on file relating to the structural framing was sufficient to demonstrate compliance and a formal amendment would not have historically been required. The authority was trying to apply today’s process to a historic building consent.
- 4.13.4. With respect to the authority’s reasons for its refusal to carry out an inspection citing section 222, the owners referred to section 222(4)(a) stating that the authority is required to take “all reasonable steps” which cannot occur without undertaking an inspection.
- 4.13.5. With regards to next steps, they are prepared to carry out the recommended works from their expert’s report in order to meet the code compliance requirements for Clause E2. For B2, the owners are prepared to request a durability waiver¹⁰. Further guidance was sought as to what would be required to satisfy the authority of clause B1, the suggestion being to submit a report from a Chartered Professional Engineer for council to consider.
- 4.14. I have carefully considered the parties’ submissions in response to the draft and amended the determination where I deem appropriate.

¹⁰ I note that a modification of clause B2.3.1 can allow the required durability periods to begin from the date of substantial completion rather than from the date of issue of a code compliance certificate.

5. Discussion

Legislation

5.1. The building consent was granted under the former Act. Therefore, the transitional provision in section 436 of the current Act applies. Section 436(3) provides that section 43 of the former Act remains in force, but must be read as if:

a code compliance certificate may be issued only if the territorial authority is satisfied that the building work concerned complies with the building code that applied at the time the building consent was granted

5.2. Section 436 of the current Act, and section 43 of the former Act, are set out in full in Appendix A.

5.3. Where an authority is not satisfied that the building work complies with the Building Code that applied at the time, then section 43(5) of the former Act provides:

(5) Where a building certifier or a territorial authority refuses to issue a code compliance certificate, the applicant shall be notified in writing specifying the reasons

5.4. In this case, the authority notified the owners, in a letter dated 21 May 2021, that it had decided to refuse to issue a code compliance certificate for the building work. The reason given for the refusal was that it could not be satisfied on reasonable grounds that the building work complied with the Building Code that applied at the time the building consent was granted. Specifically, the authority was not satisfied the work complied with:

- clause B1 Structure, in particular clauses B1.3.1, B1.3.2, B1.3.3 and B1.3.4
- clause B2 Durability, in particular clauses B2.3.1 and B2.3.2
- clause E2 External Moisture, in particular clauses E2.3.2, E2.3.3, E2.3.4 and E2.3.5.

5.5. It is the version of the Building Code that was in force at the time the building consent was issued that must be complied with (set out in full in Appendix B).

Reasons given for refusal

5.6. To determine the matter, I must first consider the reasons the authority gave for refusing to issue a code compliance certificate. As stated above, these reasons were set out in the authority's letter of 21 May 2021.

5.7. The owners also sought a determination on the authority's refusal to carry out a final inspection, submitting that the authority did not follow section 94 of the Act to fully consider whether the building complies. I note that there is nothing in section 94 to dictate how that compliance must be established, for example through

inspections, it simply states that the building consent authority must issue the code compliance certificate if it is satisfied “on reasonable grounds”.

Was a final inspection required?

- 5.8. Previous determinations¹¹ have discussed the purpose and value of inspections by an authority in relation to an application for a code compliance certificate. Inspections not only give authorities information upon which to base their compliance decisions, but also help inform their written notices about those decisions in providing owners with specific reasons for any refusal.
- 5.9. Section 15(1)(h) of the Act states that “a building consent authority may inspect building work for which it has granted a consent”, and section 90 of the Act gives authorities the powers to inspect building work, but neither creates an obligation to do so for the purpose of deciding whether to issue a code compliance certificate.
- 5.10. On reading section 222, I consider that the “taking of all reasonable steps” in subsection (4) does not refer to the authority’s responsibilities to carry out inspections for building work, but instead relates to the definition of what is meant by ‘inspections’. The operative provision is section 222(1)(a) which grants a power or ‘entitlement’ to inspect, but not an obligation.
- 5.11. The authority considers that an inspection would have been of limited use here, as it would not have addressed the lack of inspection records during construction or intended construction details, and many of the building elements that the authority was concerned about would have been unable to be inspected as they are now concealed.
- 5.12. Regardless, it does raise the question of whether, the authority has been able to make a fully informed judgement about the compliance of the building work when it had not conducted any inspections itself to observe how the building has performed over the past 22 years. In this instance, the building certifier’s file was incomplete and missing the full record of inspections and, given the length of time that has passed in the interim, conducting an inspection might have validated the existing records on file as well as have allowed the authority to identify additional areas of concern or non-compliance.

Adequacy of reasons provided

- 5.13. When refusing a code compliance certificate (whether under section 43 of the former Act or section 95A of the current Act) an authority must provide adequate reasons. Previous determinations have discussed what is expected from an authority in this situation¹². Essentially, an authority’s refusal cannot be generalised,

¹¹ See, for example, Determination 2022/007 and Determination 2023/018.

¹² See for example, Determination 2020/005 *Regarding the refusal to issue a code compliance certificate for a 22-year-old house* (7 May 2020) at paragraphs 5.2.4–5.2.5.

but instead must provide sufficiently explicit, specific, clear and valid reasons why compliance has not been achieved, so the owner can consider the work required to remedy the situation.

5.14. The authority's letter dated 21 May 2021 cites the specific code clauses where the authority does not feel satisfied compliance has been established and broadly why. However, as I earlier noted at 5.12, an authority in making decisions regarding whether a code compliance certificate should be issued must consider all the information available to decide whether it is satisfied that the building work complied with the Building Code that applied at the time the building consent was granted. The authority would have been assisted in making this decision had it conducted an inspection. Having considered all the information available, including from an inspection, means the authority is able to explain its reasons insofar as they relate to the building work as constructed. In turn this informs the owner of those issues for which additional information may be required for the authority to be satisfied as to compliance.

Evidence to establish compliance

5.15. In the following paragraphs I consider the compliance of those aspects of the building work that were identified in the authority's refusal to issue the code compliance certificate.

5.16. For all three clauses – B1, B2 and E2 – the authority has given lack of evidence of compliance with the Building Code as one of its reasons for refusal.

5.17. The Building Code is performance-based, and there are several ways in which compliance can be established. One of the common ways of establishing compliance is by way of the relevant Acceptable Solution or Verification Methods.¹³ But this is not the only way of establishing compliance. Compliance may also be established through another pathway or evidence, as an alternative solution (for example, by demonstrating the work's compliance with an established standard), or, in the case of a building where considerable time has passed, the in-service performance.

5.18. Turning first to clause E2, neither the building consent nor the consented specifications for the owners' house detail how compliance with clause E2 was to be achieved, which was not uncommon in that era. However, some details of the cladding system were included in the consented plans: the first-floor cladding was described as 'Solid plaster & reinforcement mesh on building paper on to hit & miss rigid backing system of diagonal timber sheathing (150x25 @ 399 ctrs) Ref: NZS 3604:1990 Appendix G3.2(c)'. The rigid backing system was the subject of a specific

¹³ Section 22(2) provides that a person who complies with an Acceptable Solution or a Verification Method must, for the purposes of this Act, be treated as having complied with the provisions of the building code to which that Acceptable Solution or Verification Method relates.

engineered design by the consulting engineer, which referenced NZS 4203:1992, NZS 3603:1993 and NZS 3604:1990 and formed part of the consent documentation.

- 5.19. New Zealand Standard NZS 3604:1990 referred to in the consented plans is a code of practice for light timber framed buildings not requiring specific design. Paragraph 8.5.1 of the standard specifies that “Solid plaster finish shall comply with Appendix G.” Appendix G of the standard sets out “requirements for solid plaster exterior wall coverings”, and in paragraph G2.1 itself references NZS 4251:

G2.1

The materials, proportions, mixes, reinforcement, and application of plaster shall comply with NZS 4251 except as specifically varied by this Appendix.

- 5.20. Other paragraphs of relevance in this case are:

5.20.1. G3.1, which states that solid plaster should be applied to a rigid backing, except in certain circumstances where non-rigid backing can be used

5.20.2. G3.2, which states that rigid backing can include “Close boarded diagonal timber sheathing” of a particular specification

5.20.3. G4.1, which states “Control joints shall be provided at not more than 4 m centres horizontally and vertically by cutting or physical separation”.

- 5.21. NZS 4251 cited in paragraph G2.1 sets out the requirements for solid plaster in buildings, including on external walls, and was also cited at paragraph 2.3.2(c) of the Acceptable Solution for E2 that applied at the time the consent was granted¹⁴.

- 5.22. The upshot of this is that the consented plans show that aspects of the compliance of the external cladding to the first floor of the owners’ house were to be established by way of NZS 3604:1990 and NZS 4251, both of which were cited in the Acceptable Solution E2/AS1.

- 5.23. The authority in its refusal letter has not asserted that the plaster cladding as constructed does not comply with the Building Code. Instead, it has stated that it had insufficient evidence before it to be satisfied that the system complied because there was a lack of detail in the plans and specifications to demonstrate compliance, and a lack of information in the building certifier’s inspection records to demonstrate that the cladding system had been installed in accordance with the standards cited in the building consent documentation.

- 5.24. The building certifier’s inspection records provide scant detail of the inspection findings. They also show that the last inspection, carried out on 5 February 2001, was of the plaster mesh and flashings. No further inspections are recorded as

¹⁴ Acceptable solution E2/AS1, as set out in: Building Industry Authority. (1998). *Approved document: External moisture: E2* [Second edition].

having been carried out, including of the finished plaster. There was also no final inspection.

- 5.25. Accordingly, the authority has no evidence of whether the plaster cladding was completed correctly, including whether the junctions between the claddings and the flashings, and other high-risk areas of the external cladding, complied with the cited standard or with the Building Code.
- 5.26. Given the time that had elapsed between when the building work was finished, and the application for a code compliance certificate was made, there are some limitations to a visual inspection of the cladding. Many of the elements that make up the cladding assembly are concealed beneath the plaster, and a visual inspection alone without further invasive testing (as was done in the expert's report) is unlikely to establish whether the cladding was functioning as intended. I note for clarity that this does not detract from the views I have expressed in paragraph 5.14 about the role inspections play in authorities making an informed decision.
- 5.27. It is for the owners, as the applicants for a code compliance certificate, to provide sufficient information to support their application, which they subsequently did by engaging a building surveyor to assess the performance of the cladding.

Weathertightness performance

- 5.28. In considering the compliance of the external envelope, I have taken into account that the cladding is now some 22 years old. With regards to durability, I note that the owners 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 the building work was completed in 1999. Subject to such a modification, the cladding is now beyond the required 15-year durability period.¹⁵
- 5.29. Considering the findings of the owner's expert (see paragraphs 4.6.1 to 4.6.7), it is evident that the cracks in the plaster (and the resultant moisture ingress) are not due to a failure to adequately maintain the cladding, but to defects in how it had been constructed. As a result, the cladding has been allowing penetration of external moisture which has caused undue dampness that could result in damage to underlying building elements. However, it is unclear when the penetration of external moisture started to occur, whether it was during a period of 15 years since the completion of the building work or sometime after.
- 5.30. The performance of the underlying framing, as a structural element, has a minimum intended life of 50 years¹⁶. In my view, the shortfalls in the external cladding identified by the owner's expert and the likelihood of ongoing ingress of external moisture have consequential effects for the compliance with clauses B1 and B2 of underlying building elements, including the timber framing. As the authority has

¹⁵ As per B2.3.1(b)

¹⁶ Clause B2.3.1(a)

noted, moisture entering external cladding and tracking along backing sheets or other building elements to their junctions with the wall framing is a major cause of weathertightness issues in buildings that can cause damage to timber framing.

- 5.31. The owner's expert's investigations indicate that the "extent of moisture penetration behind the cladding is at present minimal and has not had a significant effect upon the performance of the existing timber framing". However, these investigations are limited in their scope; assessing the framing's ongoing compliance was not the purpose of either the expert's investigations or report. I consider this is supported by the expert stating that they were asked to "confirm the weathertightness of the cladding on the second level of the dwelling and to outline the scope of any works required."
- 5.32. I am of the view that additional issues may be present in the framing due to the external moisture breaching the external envelope. I note in this context that the expert has identified the wall framing as being untreated, which I consider adds to the uncertainty around what impact, if any, moisture ingress to date has had on the framing's ongoing durability.

Structure

- 5.33. Following a request from the building certifier, the builder engaged an engineer who produced a two-page report on 8 December 2000 stating their inspections' findings on two occasions and concluding that the remedied framing complies with B1 and B2. The owner considers that this is sufficient to show compliance using laminated timber studs.
- 5.34. I note that a range of evidence can be provided by an engineer when assessing compliance with B1. This can include, but is not limited to, calculations, visual inspections, drawings supported by a producer statement to confirm the scope and experience of the person providing the assessment.
- 5.35. Considering the form of construction and the engineer's covering letter with little to no supporting information, I am of the view that additional information, calculations, or other forms of evidence is necessary before compliance with B1 can be established.

Conclusion

- 5.36. The test for an authority under 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 complies with the building code that applied at the time the building consent was granted'.

5.37. For the following reasons, I am of the view this test has not been met:

5.37.1. additional information, calculations, or other forms of evidence is necessary before compliance with B1 can be demonstrated for the framing insofar as it varies from the consented design

5.37.2. there is evidence of external moisture ingress that is causing undue dampness that is likely result in damage to the underlying timber framing resulting in non-compliance with clause B2.3.1(a).

6. Decision

6.1. In accordance with section 188 of the Building Act 2004, I confirm the authority's decision to refuse to issue the code compliance certificate.

Signed for and on behalf of the Chief Executive of the Ministry of Business, Innovation and Employment on 21 February 2024.

Peta Hird

Principal Advisor Determinations

Appendix A.1: Building Act 2004

436 Transitional provision for code compliance certificates in respect of building work carried out under building consent granted under former Act

- (1) This section applies to building work carried out under a building consent granted under section 34 of the former Act.
- (2) An application for code compliance certificate in respect of building work to which this section applies must be considered and determined as if this Act had not been passed.
- (3) For the purposes of subsection (2), section 43 of the former Act—
 - (a) remains in force as if this Act had not been passed; but
 - (b) must be read as if—
 - (i) a code compliance certificate may be issued only if the territorial authority is satisfied that the building work concerned complies with the building code that applied at the time the building consent was granted; and
 - (ii) section 43(4) were omitted.

Appendix A.2: Building Act 1991

43 Code Compliance Certificate

- (1) An owner shall as soon as practicable advise the territorial authority, in the prescribed form, that the building work has been completed to the extent required by the building consent issued in respect of that building work.
- (2) Where applicable, the owner shall include with that advice either—
 - (a) Any building certificates issued by building certifiers under section 56 of this Act to the effect that any items of the building work comply with specified provisions of the building code; or
 - (b) A code compliance certificate issued by a building certifier under this section and section 56(3) of this Act to the effect that all of the building work complies with each of the relevant provisions of the building code.
- (2A) In any case where the building work comprises or includes energy work in respect of which a building consent has been issued, the owner shall include with that advice any energy work certificate that relates to that energy work.
- (3) Except where a code compliance certificate has already been provided pursuant to subsection (2) of this section, the territorial authority shall issue to the applicant in the prescribed form, on payment of any charge fixed by the territorial authority, a code compliance certificate, if it is satisfied on reasonable grounds that—
 - (a) The building work to which the certificate relates complies with the building code; or
 - (b) The building work to which the certificate relates complies with the building code to the extent authorised in terms of any previously approved waiver or modification of the building code contained in the building consent which relates to that work.
- (3A) Failure to provide to a territorial authority an energy work certificate in respect of any energy work in respect of which a building consent has been issued shall be sufficient grounds for the territorial authority to refuse to issue a code compliance certificate in respect of that energy work.
- (4) The provisions of this section shall be deemed to enable interim code compliance certificates to be issued, subject to specified conditions, in respect of any part of any building work for which a building consent had previously been issued, whether or not it was previously intended that different parts of that building work were to have been

completed in stages, but those interim certificates shall be replaced by the issue of a single code compliance certificate for the whole of the building work at the time the work is completed, to the extent required by the building consent.

- (5) Where a building certifier or a territorial authority refuses to issue a code compliance certificate, the applicant shall be notified in writing specifying the reasons.
- (6) Where a territorial authority considers on reasonable grounds that it is unable to issue a code compliance certificate in respect of particular building work because the building work does not comply with the building code, or with any waiver or modification of the code, as previously authorised in terms of the building consent to which that work relates, the territorial authority shall issue a notice to rectify in accordance with [section 42](#) of this Act.
- (7) Where a territorial authority is notified by a building certifier pursuant to [section 56\(4\)](#) of this Act that the certifier considers that particular building work does not comply with the building code, the territorial authority shall issue a notice to rectify in accordance with [section 42](#) of this Act.
- (8) Subject to subsection (3) of this section, a territorial authority may, at its discretion, accept a producer statement establishing compliance with all or any of the provisions of the building code.

Appendix B: Building Regulations 1992 – The Building Code¹⁷

Clause B1 - Structure

Objective

- B1.1 The objective of this provision is to:
- (a) Safeguard people from injury caused by structural failure,
 - (b) Safeguard people from loss of amenity caused by structural behaviour; and
 - (c) Protect *other property* from physical damage caused by structural failure.

Functional requirement

- B1.2 *Buildings, building elements and sitework* shall withstand the combination of loads that they are likely to experience during *construction* or *alteration* and throughout their lives.

Performance

- B1.3.1 *Buildings, building elements and sitework shall have a low probability of rupturing, becoming unstable, losing equilibrium, or collapsing during construction or alteration and throughout their lives.*
- B1.3.2 *Buildings, building elements and sitework shall have a low probability of causing loss of amenity through undue deformation, vibratory response, degradation, or other physical characteristics throughout their lives, or during construction or alteration when the building is in use.*
- B1.3.3 Account shall be taken of all physical conditions likely to affect the stability of *buildings, building elements and sitework*, including:
- (a) Self-weight,
 - (b) Imposed gravity loads arising from use,
 - (c) Temperature
 - (d) Earth pressure
 - (e) Water and other liquids
 - (f) Earthquake
 - (g) Snow
 - (h) Wind,
 - (i) *Fire*,
 - (j) Impact,
 - (k) Explosion
 - (l) Reversing or fluctuating effects,
 - (m) Differential movement
 - (n) Vegetation,
 - (o) Adverse effects due to insufficient separation from other buildings
 - (p) Influence of equipment, services, non-structural elements and contents
 - (q) Time dependent effects including creep and shrinkage, and
 - (r) Removal of support.
- B1.3.4 Due allowance shall be made for:
- (a) The consequences of failure,
 - (b) The intended use of the building,
 - (c) Effects of uncertainties resulting from *construction activities*, or the sequence in which *construction* activities occur,
 - (d) Variation in the properties of materials and the characteristics of the site, and
 - (e) Accuracy limitations inherent in the methods used to predict the stability of *buildings*.

¹⁷ As at 21 September 2000 when building consent ABA20001347 was granted.

Clause B2 - Durability

Objective

- B2.1 The objective of this provision is to ensure that a *building* will throughout its life continue to satisfy the other objectives of this code.

Functional requirement

- 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*.

Performance

- B2.3.1 *Building elements* must, with only normal maintenance, continue to satisfy the performance requirements of this code for the lesser of the *specified intended life* of the *building*, if stated, or:
- (a) the life of the building, being not less than 50 years, if:
 - (i) those *building elements* (including floors, walls, and fixings) provide structural stability to the *building*, or
 - (ii) those *building elements* are difficult to access or replace, or
 - (iii) failure of those *building elements* to comply with the *building code* would go undetected during both normal use and maintenance of the *building*.
 - (b) 15 years if:
 - (i) those *building elements* (including the *building* envelope, exposed plumbing in the subfloor space, and in-built chimneys and flues) are moderately difficult to access or replace, or
 - (ii) failure of those *building elements* to comply with the *building code* would go undetected during normal use of the *building*, but would be easily detected during normal maintenance.
 - (c) 5 years if:
 - (i) the *building elements* (including services, linings, renewable protective coatings, and *fixtures*) are easy to access and replace, and
 - (ii) failure of those *building elements* to comply with the *building code* would be easily detected during normal use of the *building*.

Limits on application: Performance B2.3.1 applies from the time of issue of the applicable *code compliance certificate*. *Building elements* are not required to satisfy a durability performance which exceeds the *specified intended life* of the *building*.

- B2.3.2 Individual building elements which are components of a building system and are difficult to access or replace must either:
- (a) All have the same durability, or
 - (b) Be installed in a manner that permits the replacement of *building elements* of lesser durability without removing *building elements* that have greater durability and are not specifically designed for removal and replacement.

Clause E2 – External Moisture

Objective

- E2.1 The objective of this provision is to safeguard people from illness or injury that could result from external moisture entering the *building*.

Functional requirement

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

Limit on application: Requirement E2.2 shall not apply to *buildings* in which moisture from outside would result in effects which are no more harmful than those likely to arise indoors during normal use.

Performance

- E2.3.1 Roofs shall shed precipitated moisture. In locations subject to snowfalls, roofs shall also shed melted snow.
- E2.3.2 Roofs and exterior walls shall prevent the penetration of water that could cause undue dampness, or damage to *building elements*.
- E2.3.3 Walls, floors, and structural elements in contact with the ground shall not absorb or transmit moisture in quantities that could cause undue dampness, or damage to *building elements*.
- E2.3.4 *Building elements* susceptible to damage shall be protected from the adverse effects of moisture entering the space below suspended floors.
- E2.3.5 *Concealed spaces* and cavities in *buildings* shall be constructed in a way which prevents external moisture being transferred and causing condensation and the degradation of *building elements*.

...