



Determination 2012/024

The refusal to issue a code compliance certificate for an eight year old house and garage at 30 Mairie Street, Nelson



1. The matter to be determined

- 1.1 This is a determination under Part 3 Subpart 1 of the Building Act 2004¹ (“the current Act”) made under due authorisation by me, John Gardiner, Manager Determinations, Department of Building and Housing (“the Department”), for and on behalf of the Chief Executive of that Department.
- 1.2 The parties to the determination are:
- the applicant is the owner of the house, A Bary (“the applicant”)
 - Nelson City Council (“the authority”), carrying out its duties and functions as a territorial authority and a building consent authority.
- 1.3 This determination arises from the decision of the authority to refuse to issue a code compliance certificate for the eight year old house and garage because it was not satisfied that the building work complied with certain clauses² of the Building Code (First Schedule, Building Regulations 1992).

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

² In this determination, unless otherwise stated, references to sections are to sections of the Act and references to clauses are to clauses of the Building Code.

- 1.4 The matter to be determined³ is whether the authority correctly exercised its powers when it refused to issue a code compliance certificate for the house and garage. In deciding this I must consider:

Matter 1: The external envelope

Whether the external envelope of the building work complies with the Clauses E2 External Moisture and B2 Durability of the Building Code. The external envelope includes the cladding, its configuration and components, junctions with other building elements, formed openings and penetrations, as well as the way the components have been installed and work together. I consider this in paragraph 6.

Matter 2: The remaining code requirements

Whether the house complies with other relevant Building Code clauses identified in the notice to fix: E3 Internal Moisture, F2 Hazardous Building Materials, F4 Safety from Falling, and G4 Ventilation. I consider this in paragraph 7.

Matter 3: The durability considerations

Whether the elements that make up the building work comply with Clause B2 Durability of the Building Code, taking into account the age of the building work. I consider this in paragraph 9.

- 1.5 In making my decision, I have considered the submissions of the parties, the report produced by the expert commissioned by the Department to advise on this dispute (“the expert”), and the other evidence in this matter. The relevant legislation is set out in Appendix A.

2. The building

- 2.1 The building work in question consists of a three-storey house with four separate levels and a separate single-storey garage constructed on a steeply sloping site situated in a high wind zone in terms of NZS 3604⁴.
- 2.2 The house is timber-framed with a concrete lower level floor slab and foundations and suspended timber intermediate floors. The garage is also timber-framed, including its floor and foundations.
- 2.3 A suspended timber-framed car deck forms drive-on access to the garage at the uppermost (street) level. The end of the deck is supporting compacted driveway hardfill and in essence acting as a low retaining wall. This joist is in turn connected to the garage bearer.
- 2.4 The cladding to both buildings is direct fixed solid plaster with a painted pebble-dash finish laid over a plywood substrate, and the joinery is aluminium throughout. The hipped roofs to the buildings have 600mm wide eaves projections and are clad with long run metal roofing at a nominal pitch of 12.5%.
- 2.5 The expert has established that the wall framing to the buildings is Douglas fir, which is unlikely to be treated. This timber type is contrary to that specified, which was H1 treated Radiata Pine. Given the date of construction between 1997 and 2003, and the lack of other evidence, I consider the external wall framing to be untreated.

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

⁴ New Zealand Standard NZS 3604:1999 Timber Framed Buildings

- 2.6 Timber-framed cantilevered balconies are located to the higher level northwest and southeast elevations of the house. The decks to these are constructed with plywood finished with a liquid membrane. The deck to the northwest balcony is also clad with tiles and the expert is of the opinion that the deck to the southwest balcony has been recoated.
- 2.7 The balustrade to the southeast balcony consists of open metal railings faced with acrylic sheets. The balustrade to the northwest balcony consists of a plastered timber-framed upstand with a timber fence that is also faced with acrylic sheets.
- 2.8 An exterior ramp, complete with a landing and a diagonal trellis balustrade, leads up to the southeast laundry.

3. Background

- 3.1 On 28 November 1997 the authority issued building consent No 971350 (which I have not seen) for the house and garage under the Building Act 1991 (“the former Act”).
- 3.2 On 22 January 1998 the authority issued resource consent No 975600 for the erection of an over-height dwelling.
- 3.3 The information that I have received indicates the construction of the house took place between 1997 and 2003.
- 3.4 The house and the garage were subject to various inspections and following a “final inspection” of the buildings, the authority wrote to the applicant on 29 January 2003. The authority listed some 19 items that required attention before it would be able to issue a code compliance certificate.
- 3.5 In a letter to the applicant dated 20 February 2007, the authority noted that it had carried out a further “final inspection” and listed some 14 items that required attention before it would be able to issue a code compliance certificate.
- 3.6 On 21 March 2007, following an application for a code compliance certificate, the authority wrote to the applicant stating that it was unable to issue a code compliance certificate for the buildings due to the extended time that had elapsed between the commencement of the building work and the date of the second final inspection in 2007. This amounted to a time span of some nine years. In particular, the authority could not be satisfied on reasonable grounds that the building elements would continue to satisfy the durability requirements of the Building Code after the issue of the code compliance certificates.
- 3.7 The authority also noted that during the two previous final inspections of the buildings it had raised various issues of concern; in particular compliance with Clauses B2 and E2 was in doubt.
- 3.8 The Department received an application for a determination on 13 September 2011.

4. Submissions

- 4.1 The applicant forwarded copies of:
- two plans and the specification for the buildings
 - some of the building and resource consent documentation

- correspondence from the authority
- some of the inspection reports prepared by the authority.

4.2 The authority did not make a submission in response to the application.

4.3 The draft determination was issued to the parties for comment on 8 November 2011. The authority accepted the draft without comment on 13 February 2012.

4.4 The applicant made two further submissions received by email on 25 February and 20 March 2012. The submissions responded to content within the expert's report (refer paragraph 5.3.6).

5. The expert's report

5.1 As set out in paragraph 1.5, I engaged an independent expert, who is a member of the New Zealand Institute of Building Surveyors, to carry out an inspection of the buildings. The expert visited the site on 19 October 2011 and provided me with a report that was completed on 26 October 2011.

5.2 General

5.2.1 The expert described the construction of the buildings and the background to the dispute. In general, the expert considered that the construction workmanship was of an average quality, but in particular, the provision of weathertightness for the decking and cladding was of poor quality. The expert also noted that the external envelope has been poorly maintained, especially as regards the painting and the roof areas.

5.2.2 The expert identified as-built elements to both the house and the garage that differed from the consented plans, including

- the ground floor rumpus room is a separate apartment with a kitchen and bathroom installed
- the cladding to the buildings and to the decks has been changed
- the deep dish channel at the interface between the driveway and the timber car deck has not been constructed
- ground clearances have not been achieved with many bearers in ground contact
- the open balustrade has larger openings, and the balustrade to the car deck differs
- steps to the laundry have been substituted with a ramp
- the downpipe from the garage roof now discharges onto the lower house roof
- roof cladding differs from that specified
- there are additional windows.

5.3 Moisture levels

5.3.1 The expert inspected the interior of the house, noting that non-invasive moisture content readings were high in a number of areas. The expert also observed that the

skirtings and door jambs were swollen adjacent to the laundry door and to the laundry tub, and at the ground and first floor showers.

- 5.3.2 The expert removed areas of the external cladding to ascertain construction details and carried out invasive moisture testing to 15 areas at various levels of the buildings' exterior walls considered to be at high risk of moisture penetration, recording readings from 20% to 40% as follows:

Northwest deck

- Over 40% at the bottom plate of the balustrade
- 34% at the top of the solid balustrade
- 22% at the bottom plate to the left hand side of the entry door at the northwest deck
- 22% and over 40% where the balustrade and house cladding finish hard down onto the deck surface
- 38% where the timber stair from the car deck penetrates the balustrade
- 40% immediately below the structural timber bearer

Northwest car deck

- Over 40% at the bottom plate to the right of the garage door opening
- 32% at the garage boundary joist / drive interface
- 20% in the plywood flooring

Southeast elevation

- 24% to the left side of the laundry door jamb
- Over 40% in plywood substrate and 32% in framing at the jam / sill cut out
- Over 40% in two readings to the ground floor apartment window

The expert also observed four high non-invasive moisture readings at the southwest deck balustrade connections and three high non-invasive moisture readings at the southeast laundry ramp.

- 5.3.3 I note that moisture readings above 18%, or which vary significantly, generally indicate that moisture is entering the structure and further investigation is needed. Readings over 30% indicate that the timber is saturated and decay will be inevitable over time.

- 5.3.4 Commenting specifically on the external envelope of the buildings, the expert noted that:

The house and garage

- the stucco mesh embedment into the external plaster scratch coat is poor
- an anti-capillary gap has not been established at the base of the external cladding and the foundations and the plaster is also breaking away from the base flashings
- cracks are evident in the external plaster and at the junctions with the exterior aluminium joinery

- the house plaster is finished hard down onto the balcony decking, the laundry ramp, and the driveway
- jamb and sill flashings have not been installed to the external joinery units
- the electrical meter board is not flashed
- certain penetrations through the external cladding are not flashed or sealed
- there is staining evident at the junction of the external cladding and the fascias that requires further investigation
- a considerable number of nails securing the roofing have sprung and there is a heavy reliance on sealants at the flashing junctions
- the top upturn to the roofing sheets is minimal
- no kick-out flashing is installed to one apron flashing and the proprietary boot flashings are not installed in a proper fashion.
- two downpipes from the garage roof discharge at critical junctions of the roof below them and are not fitted with spreaders
- the tanking membrane to the concrete foundation walls terminates below ground level and is not sealed against the concrete at its top edge
- sections of the garage bearers, the treatment of which is unconfirmed, are in contact with the ground
- one deck bearer penetrates the cladding and this junction is not flashed.

The balconies

- the steel balustrades are surface mounted through the top of the deck and penetrates the membrane
- the handrail connections with the house cladding are either not adequately weatherproofed or are reliant on sealant
- the liquid membrane is poorly dressed at the interface with the house cladding on the southwest deck and the laundry deck and is failing around balustrade connections to the southwest deck
- on the southwest deck the joints in the boundary joist and the joist interface with the cladding are not satisfactorily weatherproofed
- the air conditioning unit screw fixings on the southwest deck pierce the deck membrane
- the liquid membrane on the northwest deck has been turned down over the boundary joist and not up behind the solid balustrade cladding system
- the solid balustrade on the northwest deck does not have a weatherproofed top and has been nailed through the membrane
- the step-down from the house to the northwest deck is inadequate
- the timber stair from the car deck down to the entrance penetrates the northwest deck balustrade.

The northwest car deck, driveway and adjacent sub floor

- the retrospectively installed slot drain is not continuous, and the adjacent flashing is allowing water to enter the door jamb junctions
- the balustrade has a cracked member and the timber rails have been fixed through the cladding allowing possible water ingress
- there is a significant amount of water seepage through the retaining wall that supports the garage level.

5.3.5 Commenting on other relevant code clauses, the expert noted the following:

Clause F4 – Safety from falling

- A dining room window, which has a floor-to-sill height of 760mm and a fall height exceeding 1000mm, lacks a restrictor stay.
- The width of the treads to the internal stair varies between 240mm to 280mm.
- The gap between the balustrade post (laundry ramp) and the house is 120mm wide, which is more than the 100mm allowable.
- There are gaps in the balustrade to the northwest balcony that exceed 100mm.

G4 – Ventilation

- The mechanical extract system to the bathroom in the ground floor apartment was small and not interconnected to the light. The bathroom was ‘very musty’.

E3– Internal moisture

- The ground floor and first floor showers are leaking and have damaged the adjacent linings and trim.

B1 – Structure

- The end floor joist of the car deck is retaining hardfill and is only nailed to the adjacent bearer.
- A bearer under the adjacent bathroom is not bolted in place.

H1 – Energy efficiency

- Insulation has not been provided under the laundry floor.

C3 – Spread of fire

- Consent had not been issued for the rumpus room to be converted into an apartment and it was not evident the work complied with Clause C3.

5.3.6 The expert’s report was sent to the parties for comment on 31 October 2011. The applicant responded in a letter dated 18 January 2012 (received by email on 25 February 2012). The applicant advised that the ground floor ‘laundry toilet, shower and two rooms [were] permitted’, that water damage to skirting boards in the laundry was the result of a flood that occurred some time ago, damage to skirting boards was caused by shower doors being left open, and the timber decking was ‘h4 treated and is not in any danger of failing’.

5.3.7 In response to the applicant’s submission while I accept that the laundry, toilet and shower were consented, the establishment of the ground floor as a separate apartment has implications in respect of Clause C3 as regards ‘adjacent household units’. In

respect of the laundry and shower; I accept the expert's findings that the detailing at the deck connection to the laundry and the level of moisture content recorded indicate moisture ingress from the exterior as opposed to an internal 'flood', and that the evidence of moisture damage around the shower requires further investigation. I accept the applicant's assertion as regards the level of timber treatment to the decking; however I note the expert's observations of the detailing which has led to moisture ingress affecting timber that is less durable.

6. Matter 1: The external envelope

6.1 Weathertightness performance

- 6.1.1 It is clear from the expert's report that the external envelope of the house and garage are unsatisfactory in terms of weathertightness performance, which has resulted in moisture penetration in numerous areas and decay is likely in the framing. The performance and immediate safety of the northwest balcony and car deck are of particular concern.
- 6.1.2 Significant work is required to make the building envelope weathertight and durable. Further intensive investigation is necessary, including the systematic survey of all risk locations plus an assessment of the condition of the timber framing. Such a survey will need to determine the causes and the full extent of moisture ingress.

6.2 Weathertightness conclusion

- 6.2.1 I consider the expert's report establishes that the current performance of the external envelope to the house and garage is not adequate because there is evidence of extensive moisture penetration in the timber framing. Consequently, I am satisfied that the house and garage do not comply with Clause E2 of the Building Code
- 6.2.2 In addition, the external envelope is also required to comply with the durability requirements of Clause B2. Clause B2 requires that a building continues to satisfy all the objectives of the Building Code throughout its effective life, and that includes the requirement for the building work to remain weathertight. Because the cladding faults on the buildings are likely to allow the ingress of moisture in the future, the building work does not comply with the durability requirements of Clause B2.
- 6.2.3 I consider that final decisions on whether code compliance can be achieved by either remediation or re-cladding, or a combination of both, can only be made after a more thorough investigation of the cladding and the condition of the underlying timber framing. This will require a careful analysis by an appropriately qualified expert, and must include a full invasive investigation of the extent, level and significance of the moisture levels and timber decay to the framing. Once that decision is made, the chosen remedial option should be submitted to the authority for its approval.
- 6.2.4 I note that the Department has produced a guidance document on weathertightness remediation⁵. I consider that this guide will assist the owner in understanding the issues and processes involved in remediation work to the buildings, and in exploring various options that may be available when considering the upcoming work required to the development.

⁵ External moisture – A guide to weathertightness remediation. This guide is available on the Department's website, or by phoning 0800 242 243

7. Matter 2: The remaining Building Code clauses

7.1 Taking account of the expert's report and the other evidence, I consider that the following areas require investigation and appropriate repair if necessary (applicable clauses are provided in brackets):

- The lack of a restrictor stay to the dining room window (F4).
- The varying treads on the internal stairs (F4).
- The gaps between the balustrade posts to the northwest balcony (F4).
- The gap between the balustrade post to the laundry ramp and the house (F4).
- The leaking showers (E3).
- The end floor joist of the car deck and the bearer under the adjacent bathroom (B1).
- The lack of insulation to the laundry floor (H1).

7.2 The expert also identified that consent had not been granted for the rumpus room to be converted into an apartment and it was not evident the work complied with Clause C3. The mechanical extract system to the bathroom is also not considered adequate.

8. The authority's decision

8.1 As the building consent was issued under the former Act, the issuing of code compliance certificate is subject to the requirements of section 436 of the current Act. Accordingly, the buildings have to comply with the requirements of the Building Code that was in force at the time the consent was granted in order for the code compliance certificate to be issued.

8.2 As I have come to the conclusion that the house and garage do not comply with the Building Code, I consider that the authority correctly exercised its powers in refusing to issue the code compliance certificate.

9. Matter 3: The durability considerations

9.1 The authority has concerns about the durability, and hence the compliance with the Building Code, of certain elements of the building taking into consideration the completion of the house during 2003.

9.2 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).

9.3 In previous determinations (for example Determination 2006/85) I have taken the view that a modification of this requirement can be granted if I can be satisfied that the building complied with 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.

9.4 Because of the extent of further investigation required into the condition of the timber framing and therefore to parts of the building's structure, and the potential

impact of such an investigation on the external envelope, I am not satisfied that there is sufficient information on which to make a decision about this matter at this time.

10. What is to be done now?

- 10.1 The authority should issue a notice to fix that requires the owner to bring the building work relevant to building consent No 971350 into compliance with the Building Code, identifying the items listed as being non-compliant as set out in paragraphs 5.3.4 and 7.1 and referring to any further the further defects that may be discovered in the course of investigation and rectification. It is not for the notice to fix to specify how the defects are to be remedied and the building brought to compliance with the Building Code. That is a matter for the owner to propose and for the authority to accept or reject.
- 10.2 The applicant should then produce a response to this in the form of a detailed proposal, produced in conjunction with a competent and suitably qualified person, as to the rectification or otherwise of the specified matters. Any outstanding items of disagreement can then be referred to the Chief Executive for a further binding determination.
- 10.3 I also note that the expert has noted changes from the original documentation that are apparent in the constructed building work (refer paragraph 5.2.2). The applicant should take the necessary steps to seek amendments to the documentation relating to the original building consent in accordance with the completed work.
- 10.4 Once the matters have been rectified to its satisfaction, the authority may issue a code compliance certificate for the house and garage in respect of the building consent, providing that the building consent is modified in respect of Clause B2.3.1⁶.
- 10.5 In respect of the building work carried out to form the ground floor apartment; if the work was not subject to a building consent the applicant should apply to the authority for a certificate of acceptance that would cover this work.

11. The Decision

- 11.1 In accordance with section 188 of the Building Act 2004, I determine that the house and garage do not comply with the requirements of the Building Code current at the time the building consent was issued, and accordingly I confirm the authority's exercise of its powers when it refused to issue a code compliance certificate for the house and garage.

Signed for and on behalf of the Chief Executive of the Department of Building and Housing on 26 March 2012.

John Gardiner
Manager Determinations

⁶ I refer the parties to Determination 2011/064 and to the article titled 'Modification of durability periods' in Codewords Issue 39 – August 2009 for further information as regards durability modifications.

Appendix A: The relevant legislation

A1 The relevant provisions of the Act are:

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 a 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.