



Determination 2011/030

Refusal to issue a code compliance certificate for a 13-year-old dwelling at 12 Lochiel Rd, Khandallah, Wellington



1. The matters to be determined

1.1 This is a determination under Part 3 Subpart 1 of the Building Act 2004¹ (“the 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.

The parties to the determination are:

- the owners Mr D & Mrs P Sullivan (“the applicants”), and
- the Wellington City Council (“the authority”), carrying out its duties and functions as a territorial authority or building consent authority.

1.2 This determination arises from the decision of the authority to refuse to issue a code compliance certificate for a 13-year-old house and double garage (“the dwelling”) because it was not satisfied that this building work complied with the Building Code (First Schedule, Building Regulations 1992).

¹ The Building Act 2004, the Building Code the Compliance Documents, past determinations, and guidance documents issued by the Department are available from the Department’s website at www.dbh.govt.nz or by contacting the Department on 0888 242 243.

1.3 The matter for determination² is whether the authority is correct in its decision to refuse to issue a code compliance certificate. In deciding this, I must consider:

1.3.1 **Matter 1: The external envelope**

Whether the external envelope of the dwelling (“the external envelope”) complies with Clause B2 Durability and Clause E2 External Moisture of the Building Code. The external envelope includes the components of the systems (such as the plaster and fibre-cement claddings, the windows, the roof tiles and the flashings), as well as the way the components have been installed and work together. I consider this matter in paragraph 6.

1.3.2 **Matter 2: Other relevant code requirements**

Whether the building work complies with the other relevant clauses of the Building Code, in particular Clause B1 and Clause E3 as nominated by the authority (Refer paragraph 4.3). I consider this matter in paragraph 7.

1.3.3 **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 matter in paragraph 8.

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

2. The building

2.1 The dwelling is a three storey stand-alone timber framed building and double garage located in a high-wind zone for the purposes of NZS3604³. The sloping site had two platforms cut and filled, allowing for two of the floor levels to be at ground level with direct access to the exterior.

2.2 A tiled deck with open metal balustrades is accessible from the living room, and is built over the lower level study. The deck tiles are laid over a liquid applied membrane on a plywood substrate.

2.3 The upper level is constructed within the steep pitched gable roof clad with corrugated long run iron.

2.4 The dwelling is clad with stucco plaster attached to a rigid backing of treated (H3) plywood direct fixed to the untreated timber framing. The gables of the house and the garage are clad with direct fixed bevel back weatherboard. The joinery is aluminium with internal timber reveals.

² In terms of section 177(1)(b) and 1772(d) of the Act. In this determination, unless otherwise stated, references to sections are to sections of the Act and references to clauses are to clauses of the Building Code

³ New Zealand Standard NZS 3604: 1999 Timber Framed Buildings.

- 2.5 The double garage is built on two levels. The lower level consists of plastered concrete block exterior walls and the street level is clad in direct fixed rusticated weatherboard. The garage roof has a combination of long run trapezoid profile iron and rubber membrane.
- 2.6 The expert noted that the exposed timber in the roof space appeared to be Douglas Fir, and the wall framing exposed when cladding was removed from a window jamb to sill junction had 'a pink hue consistent with H1 Boric treatment'.
- 2.7 The expert provided evidence from a technologist that samples taken from the exterior framing contained no detectable treatment and were 'most likely untreated perishable radiata pine'. Given this evidence and the date of construction in 1997, I consider that the exterior wall framing is untreated.

3. Background

- 3.1 On 30 October 1996, the authority issued a building consent for the construction of the house and double garage under the Building Act 1991. A total of 12 inspections were carried out by the authority during construction, which all passed, with the last inspection being a pre-line inspection for the garage on 24 June 1997. An 'advice of completion of building work' was received by the authority on 11 December 1998, however it appears no final inspection was undertaken until 7 April 2000.
- 3.2 The final inspection record dated 7 April 2000 indicates two items where remedial work required; 'hand rail to follow decking hand rail' and the height of the balustrade to be 1m. It appears that the issue regarding the balustrade height was resolved and did not require any further action to be taken. The applicants have stated that the remaining item has been completed.
- 3.3 The authority's summary of inspections notes 'ok to issue code compliance certificate if building is clear'. It is not apparent whether this refers to a document check prior to the application for, or issue of, a code compliance certificate.
- 3.4 In 2010 the applicants requested that the authority issue a code compliance certificate. In a letter to the applicants dated 11 October 2010, the authority refused to issue a code compliance certificate citing concerns at the length of time that had elapsed since the building work had been completed.
- 3.5 The applicants applied for a determination, which was received by the Department on 7 December 2010.

4. The submissions

4.1 The applicants forwarded copies of:

- a covering letter
- correspondence from the authority dated 11 October 2010 declining to issue a code compliance certificate
- the authority's building inspection diary notes
- the authority's site notice number 3112

4.2 In a letter dated 8 December 2010 the authority acknowledged the application and provided further information from its records including plans and specifications, inspection records and copies of correspondence.

4.3 The authority also advised the applicants that if they wished to obtain a Code Compliance certificate a report should be obtained to address all matters of concern but with specific regards to Clauses B1, B2, E2 and E3.

4.4 The authority's submission also advised of its procedure for reviewing building consents over five years old, the first step of which was a 'desktop review' used to recommend 'whether or not there is sufficient evidence that Council officers would be able to assess compliance if they were to visit'. It was the authority's view that it was 'unable to consider a code compliance certificate for this building consent.'

4.5 A draft determination was issued to the parties on 14 March 2011. The draft was issued for comment and for the parties to agree a date when the house complied with Building Code Clause B2 Durability.

4.6 Both parties accepted the draft without comment and agreed that the date of compliance with Clause B2 was 7 April 2000, being the date that the final inspection was undertaken.

5. The expert's report

5.1 As mentioned in paragraph 1.4, I engaged an independent expert to assist me. The expert is a member of the New Zealand Institute of Building Surveyors. The expert inspected the house on 20 January 2011 and furnished a report dated 9 February 2011.

5.2 General

5.2.1 The expert noted that the dwelling had been constructed in accordance with the plans with 'no major changes' to the consent details. The expert specifically noted that the sill construction was as detailed in the drawings. The dwelling had recently been painted, but the resealing of junctions such as window sills had not been done prior to painting.

5.2.2 The expert considered that the quality of construction and the internal finishing was of a good standard except for items noted in paragraph 5.4.

5.3 Moisture levels

5.3.1 The expert inspected the interior and observed visible evidence of water ingress, damage and/or decay at the following locations:

- mould on the wall at the base of the eastern corner of the family room.
- water ingress under the tiled deck/wall junction at the south west facing section of the wall
- rusting nails in the bottom plate at the northern corner of the study
- swelling in the skirting on either side of the shower on the lower floor
- damage to the deck framing which was visible from the subfloor
- decay in the timber reveals of the family room at the outside internal corners of the sill.

The expert also noted that there had previously been repairs to the flooring that were visible from within the subfloor below the windows in the family room.

5.3.2 The expert assessed the moisture content of the exterior walls by undertaking invasive moisture testing in areas considered at high risk. He noted elevated moisture content readings in the following areas:

- Lower floor bedroom, south west wall – 32%
- Lower floor bedroom, south east wall – 40%
- Left hand side kitchen window, bottom sill – 24%

I note that moisture levels about 18% generally indicate that external moisture is entering the structure and further investigations is required, and that readings over 40% indicate that the timber is saturated and decay will be inevitable over time.

5.3.3 The expert removed samples from three locations and forwarded them to a testing laboratory for decay and preservative analysis. The laboratory's report dated 2 February 2010 noted:

- Bottom plate, left hand side kitchen window – traces of early soft rot and incipient to early brown rot. Advanced soft rot in adhering building paper
- Plywood, left hand side kitchen window – fungal growth present. This growth had occurred over a long period of time as well as evidence of more recent activity. The plywood was noted as treated to a level of H3.
- Plasterboard wall in subfloor – advanced soft rot and tunnelling bacterial decay in paper fibres

5.4 Weathertightness

5.4.1 The expert inspected the external envelope and the interior of the building and found the following matters of concern:

Ground clearances

- ground clearances between the cladding and the finished ground level do not meet the requirements of NZS3604
- cladding only lapping past the base of the bottom plate by 5-15mm

The expert noted that this combination, and the ply of the rigid backing being exposed at the base of the walls, is and will continue to affect the durability of the cladding and wall framing.

Window and Door Flashings

The expert noted visible metal head flashings with jamb and sill flashings, but also observed that head flashings were cut flush with the edge of the frame and not sealed where they were embedded into the plaster. The expert also noted the following:

- insufficient kick outs at base of head flashings
- poorly designed flashing detail at back of chimney
- poorly detailed flashing system to side of skylight
- inadequate sill and jamb flashing design allowing water entry into the plaster and wall cavity

Penetrations

- posts fixed direct through the deck membrane
- a fence post fixed with fastenings that penetrate the stucco cladding
- pergola structure attached directly to the cladding
- penetrations not flashed or adequately sealed.

Stucco Cladding

The expert noted that the cladding only just runs past the bottom edge of the bottom plate. A membrane had been applied to the bottom plate to help keep moisture out, but the expert concluded that this would stop drainage of any water that may enter from above. The expert also found:

- poorly sealed fascias and barges, with an indication that these elements were fitted prior to the application of the plaster
- the reinforced mesh of the plaster had not been packed off the wall and had therefore not been able to be embedded into the plaster.

Deck

The expert observed water damage to the deck framing from within the subfloor as well as new timber suggesting that repairs have been undertaken in this area. The expert also noted:

- deck tiles that reduced the clearance between the wall cladding and the deck surface
- balustrades attached directly to the deck surface.

Retaining wall

The expert noted indications of moisture ingress in the corner of the study that backs onto a retaining wall and concluded that the waterproof membrane to the retaining wall of the study is not adequately protected.

5.5 Other building code clauses

5.5.1 From his investigation the expert concluded the following

Building Code clause	Assessment
B1 Structure	Does not comply <ul style="list-style-type: none"> • Connection of the bearers in ths subfloor accessible from the lower floor
B2 Durability	Does not comply
E1 surface moisture	Complies <ul style="list-style-type: none"> • The site has adequate natural drainage, no visible signs of ponding water on the section
E3 internal moisture	Does not comply <ul style="list-style-type: none"> • Water leaking from the lower floor shower that is causing damage at the skirting
F4 safety from falling	Does not comply <ul style="list-style-type: none"> • Balustrade at the upper floor landing is only 900mm high and not the required 1000mm

5.6 A copy of the expert's report was provided to the parties on 10 February 2011.

Matter 1: the external envelope

6. Weathertightness

6.1 The evaluation of building work for compliance with the Building Code and the risk factors considered in regards to weathertightness have been described in numerous previous determinations (for example, Determination 2004/1).

6.2 Weathertightness risk

6.2.1 The house has the following environmental and design features which influence its weathertightness risk profile:

Increasing risk

- minimal (100mm) or no eaves
- three storeys
- located in a high wind zone
- the cladding is stucco plaster over a rigid backing of plywood direct fixed to the (untreated) framing

- the deck is located above a living space

Decreasing risk

- the envelope has low complexity

6.3 When evaluated using the E2/AS1 risk matrix, the weathertightness features outlined in paragraph 6.4 show the house has a high weathertightness risk rating.

Weathertight performance

6.4 Generally the house is well constructed. However, taking into account the expert's comments I conclude that remedial work is required to those items noted in paragraph 5.4.1.

6.5 I also consider that further investigation is necessary, including the systematic survey of all risk locations, to determine causes and the full extent of moisture penetration, timber damage and the repairs required. The extent of any damage to the structural framing needs investigation to determine the building's continuing compliance with Clause B1.

Weathertightness conclusion

6.6 I consider the expert's report establishes that the current performance of the building envelope is not adequate because it is allowing water penetration through the cladding in at least one area at present. Consequently, I am satisfied that the house does not comply with Clause E2 of the Building Code.

6.7 The building work 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 house to remain weathertight. Because the cladding is currently allowing the ingress of moisture, the building work does not comply with the durability requirements of Clause B2.

6.8 The faults identified in the cladding are widespread in extent but discrete in nature and in my view have not led to a systemic failure of the cladding. I am therefore of the view that satisfactory rectification of the items outlined in paragraph 5.4.1 will result in the cladding being brought into compliance with Clauses E2 and B2.

6.9 Effective maintenance of claddings is important to ensure ongoing compliance with Clauses B2 and E2 of the Building Code and is the responsibility of the building owner. The Department has previously described these maintenance requirements, including examples where the external wall framing of the building may not be treated to a level that will resist the onset of decay if it gets wet (for example, Determination 2007/60)

Matter 2: the remaining code clauses

7. Discussion

7.1 Taking into account the comments of the expert outlined in paragraph 5.5.1, I am satisfied that the following remedial work is required to address areas of non-compliance in respect of Clauses B1, E3 and F4 of the Building Code

- Connections of bearers
- Leaking shower, and
- Upper floor landing balustrade

Matter 3: the durability considerations

8. Discussion

8.1 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).

8.2 These durability periods are:

- 5 years if the building elements are easy to access and replace, and failure of those elements would be easily detected during the normal use of the building
- 15 years if building elements are moderately difficult to access or replace, or failure of those elements would go undetected during normal use of the building, but would be easily detected during normal maintenance
- the life of the building, being not less than 50 years, if the building elements provide structural stability to the building, or are difficult to access or replace, or failure of those elements would go undetected during both normal use and maintenance.

8.3 In this case the delay between the completion of the building work in 2000 and the applicants’ request for a code compliance certificate has raised concerns that various elements of the building are now well through or beyond their required durability periods, and would consequently no longer comply with Clause B2 if a code compliance certificate were to be issued effective from today’s date.

8.4 It is not disputed, and I am therefore satisfied, that all the building elements, with the exclusion of those items identified in this determination as requiring remedial work, complied with Clause B2 on 7 April 2000. This date has been agreed between the parties, refer paragraph 4.6.

8.5 In order to address these durability issues when they were raised in previous determinations, I sought and received clarification of general legal advice about waivers and modifications. That clarification, and the legal framework and procedures based on the clarification, is described in previous determinations (for

example, Determination 2006/85). I have used that advice to evaluate the durability issues raised in this determination.

8.6 I have noted the recent correspondence with the authority and agree that an authority has the power to grant an appropriate modification or waiver of the Building Code, on application from an owner.

8.7 I continue to hold the view, and therefore conclude that:

- The authority has the power to grant an appropriate modification of Clause B2 in respect of the building elements, if this is requested by the owner.
- It is reasonable to grant such a modification because in practical terms, the building is no different from what it would have been if a code compliance certificate had been issued when the building work was completed in 1995 and 1999.

8.8 I strongly suggest that the authority record this determination, and any modification resulting from it, on the property file and also on any LIM issued concerning this property.

9. What is to be done?

9.1 The authority should issue a notice to fix requiring the owners to bring the building into compliance with the Building Code. The notice should identify the defects listed in paragraphs 5.4.1, 5.5.1, and 6.5, and refer to any further defects that might be discovered in the course of investigation and rectification. The notice should not specify how those defects are to be fixed and the building brought into compliance with the Building Code; that is a matter for the owners to propose and the authority to accept or reject.

9.2 In response to the notice to fix, the owners should engage a suitably qualified person to undertake a thorough investigation of the external envelope to determine the extent of the defects and produce a detailed proposal describing how the defects are to be remedied. The proposal should be submitted to the authority for approval. Any outstanding items of disagreement can then be referred to the Chief Executive for a further binding determination.

9.3 Once the agreed matters have been rectified to both parties' satisfaction, the authority may issue a code compliance certificate in respect of the building consent.

10. The decision

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

- the external envelope does not comply with Clauses E2 and B2 of the Building Code
 - the house does not comply with Clauses B1, E3 and F4 of the Building Code
- and accordingly I confirm the authority's decision to refuse to issue a code compliance certificate.

10.2 I also determine that:

- a) all the building elements installed in the house, , apart from the items that are to be rectified as described in Determination 2011/030, complied with Clause B2 on 7 April 2000.
- b) the building consent is hereby modified as follows:

The building consent is subject to a modification to the Building Code to the effect that for all of the building elements, with the exception of the items to be rectified as set out in paragraphs 5.4.1, 6.5 and 7.1 in Determination 2011/030,, clause B2.3.1 applies from 7 April 2000 instead of from the time of issue of the code compliance certificate.

Signed for and on behalf of the Chief Executive of the Department of Building and Housing on 8 April 2011.

John Gardiner
Manager Determinations