



## Determination 2017/039

# Regarding the refusal to issue a code compliance certificate for a 15-year-old house with monolithic cladding at 2D MacMaster Street, Richmond, Invercargill



### Summary

The determination arises from the authority's refusal to issue a code compliance certificate for a 15-year-old house with a monolithic cladding. The determination considers the authority's reasons for refusing the code compliance certificate, and whether the house complies with the requirements of the Building Code with respect to weathertightness and durability.

### 1. The matters to be determined

- 1.1 This is a determination under Part 3 Subpart 1 of the Building Act 2004<sup>1</sup> ("the current Act") made under due authorisation by me, John Gardiner, Manager Determinations and Assurance, Ministry of Business, Innovation and Employment ("the Ministry"), for and on behalf of the Chief Executive of the Ministry.
- 1.2 The parties to the determination are:
  - a current owner of the house, A Haqqani ("the applicant")
  - Invercargill City Council ("the authority"), carrying out its duties as a territorial authority or building consent authority.
- 1.3 This determination arises from the decision of the authority to refuse to issue a code compliance certificate for the 15-year-old house ("Unit D") because the authority is not satisfied that the building work complies with certain clauses<sup>2</sup> of the Building Code (First Schedule, Building Regulations 1992); in particular, in regard to the weathertightness and durability of the monolithic wall cladding.

<sup>1</sup> The Building Act, Building Code, compliance documents, past determinations and guidance documents issued by the Ministry are all available at [www.building.govt.nz](http://www.building.govt.nz) or by contacting the Ministry on 0800 242 243.

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

1.4 The matter to be determined<sup>3</sup> is the authority's exercise of its powers of decision in refusing to issue the code compliance certificate for the reasons given in its letter dated 2 August 2016 (see paragraph 3.6). In deciding this matter, I must consider whether the external wall cladding complies with Clause B2 Durability, and Clause E2 External moisture of the Building Code that was in force at the time the building consent was issued. The external wall cladding includes components of the cladding system (such as the backing sheets, the textured coating, the joints, the junctions, the windows and the flashings), as well as the way components have been installed and work together.

## 1.5 Matters outside this determination

1.5.1 In its letter dated 2 August 2016, the authority limited its concerns to items associated with the clauses outlined above (see paragraph 3.6.1); this determination does not address other clauses of the Building Code.

1.5.2 The original building consent (No. 2000/1161) was issued in 2000 for a group of three detached units as shown in Figure 1. In April 2016, the authority divided the original building consent into three separate consents as follows:

- Unit C: Building consent No. 2000/1161/A
- Unit D: Building consent No. 2000/1161/B (the subject house)
- Unit E: Building consent No. 2000/1161/C.

This determination is limited to consent No. 2000/1161/B for Unit D and does not consider the other consents.

1.5.3 I note that the owner will be able to apply to the authority for a modification of durability provisions to allow the durability periods specified in Clause B2.3.1 to commence from the date of substantial completion of Unit D in February 2002. Although I leave this matter to the parties to resolve in due course, I have taken the anticipated modification into account when considering the compliance of the claddings.

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

## 2. The building work

### 2.1 The development

2.1.1 The original corner property was subdivided during the 1990's, with separate titles issued on 13 November 1995<sup>4</sup> for eight lots with a shared driveway from MacMaster Street to the east. The detached Units E to H and the semi-detached Units A and B were constructed from the mid to late 1990's, with Units C to E following in 2001. A shared driveway runs from west to east to provide access from MacMaster Street to the garage of each unit as shown in Figure 1.

2.1.2 In his report, the expert took the garage door of Unit D as west-facing, but the drawings and actual orientation of the development show the driveway to the north of Units A to D as shown in Figure 1, and the authority's inspection records for Units

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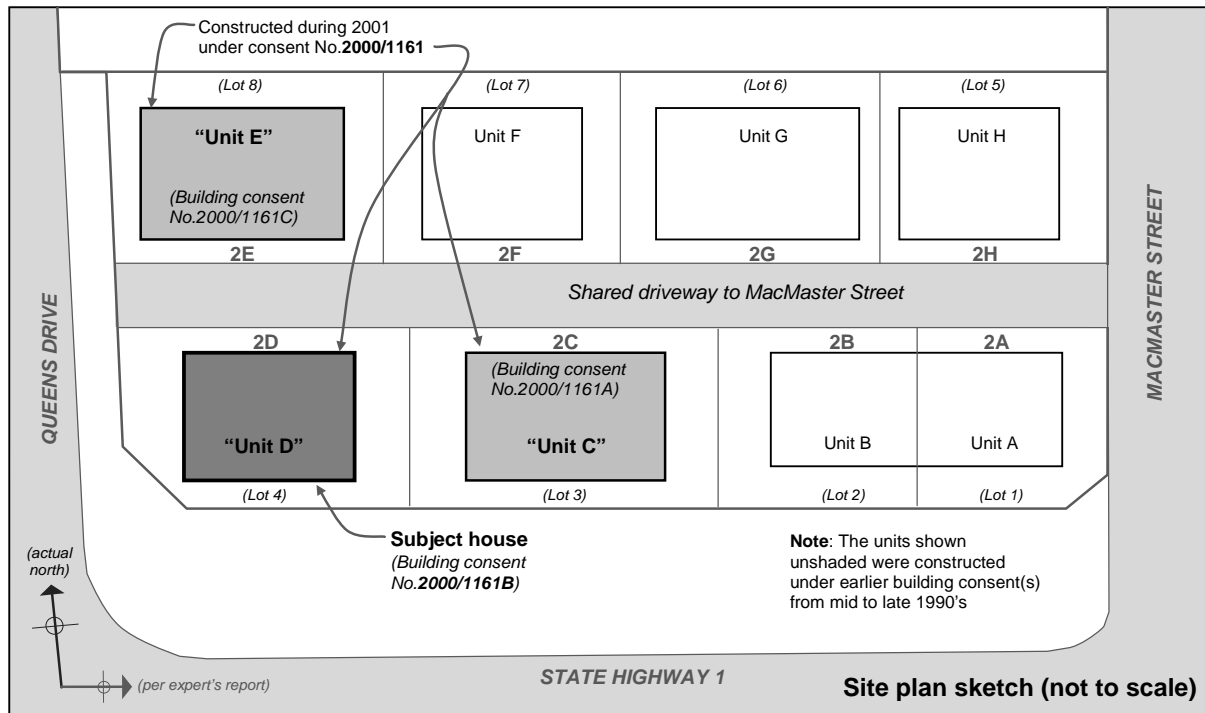
<sup>3</sup> Under sections 177(1)(b) and 177(2)(d) of the Act

<sup>4</sup> Certificate of Title details per Quotable Value NZ

C to E use the latter orientation. Because all records identify Unit D as the southwest unit, I have taken the garage door of Unit D as north-facing.

- 2.1.3 The building work covered by the original building consent consisted of three single-storey detached houses (Unit C, Unit D and Unit E) situated on a level building site in a medium wind zone for the purposes of NZS 3604<sup>5</sup>. The 2000 building consent has been divided into three separate consents, with the subject house Unit D now covered by consent No. 2000/1161/B.

**Figure 1: The development**



## 2.2 Unit D: the subject house

- 2.2.1 Unit D is simple in plan and form and is assessed as having a low weathertightness risk. Construction is generally conventional light timber frame, with a concrete floor slab and foundations, monolithic wall cladding, aluminium windows, and profiled metal roofing. The gabled roof has verge overhangs of about 400mm, with eaves of more than 600mm except above the projecting wall to bedroom 3. A gabled entry porch extends from the west gable end wall.
- 2.2.2 The wall cladding is a proprietary monolithic flush-finished fibre-cement system ("the textured cladding") consisting of 7.5mm thick fibre-cement sheets which are fixed directly through the building wrap to the framing and finished with an applied textured plaster coating system.
- 2.2.3 The specification called for the framing timber to be either 'Tan H1 or boron treated pinus'. However, the expert noted that two samples of timber tested<sup>6</sup> 'produced a negative result' for treatment. I also note that the authority has stated that the 'monolithic claddings are directly fixed over untreated timber' (see paragraph 3.6.1). Given the evidence and the date of construction in 2001, I consider that the external wall framing is not treated to provide resistance to timber decay.

<sup>5</sup> New Zealand Standard NZS 3604:1999 Timber Framed Buildings

<sup>6</sup> One sample from Unit C and one from Unit D

### **3. Background**

#### **3.1 Consent and construction**

3.2 The authority issued a building consent to a developer for the construction of Unit C, Unit D and Unit E (No. 2000/1161) on 22 September 2000 under the Building Act 1991 (“the former Act”).

3.2.1 The houses were constructed concurrently and the authority carried out various inspections of between January 2001 and February 2002. The subject house, Unit D, was completed in February 2002 and the inspection report on 8 February 2002 notes ‘All exterior claddings completed satisfactorily’, with ‘Weatherproofing completed’. On 15 February 2002, the inspection record notes ‘Unit D is now completed.’ The authority issued an interim code compliance certificate for Unit D on 27 February 2002.

3.2.2 When the units were substantially completed, the developer sold the houses to their original owners<sup>7</sup>; Unit D was sold in February 2002.

3.2.3 No final inspections were sought and no code compliance certificate was issued for the development as a whole. Unit D was sold to the applicant in April 2011.

#### **3.3 The 2015 final inspection (of all units)**

3.3.1 When offering Unit D for sale in 2015, the applicant discovered that a code compliance certificate had not been issued.

3.3.2 In an email to the applicant dated 27 November 2015, the authority noted that, as Unit D was built under a consent for three units, a code compliance certificate could not be issued until all three units were inspected and signed off as compliant – and a final inspection was required due to the significant time elapse since the last inspection. The first final inspection was booked for and apparently carried out on 5 December 2015 (I have not seen a copy of the inspection record).

3.3.3 In a series of emails between the applicant and the authority on 10 December 2015, the authority noted that the inspection had not passed, confirmed that new regulations are not enforced on older consents, and added that issues identified at the final inspection concerned mould in bathroom and the exterior cladding.

3.3.4 In response to the applicant’s query on 16 December 2015 as to whether it was possible to ‘separate the individual consents at this stage’, the authority noted in an email dated 24 December that this would be time-consuming and required the cooperation of all owners.

#### **3.4 The first refusal to issue a code compliance certificate**

3.4.1 In a letter dated 5 January 2016 to the owners of Unit C, Unit D and Unit E, the authority stated that ‘a code compliance certificate cannot be issued’ for the three houses constructed under building consent 2000/1161 due to building work ‘not being completed’.

3.4.2 In regard to Unit D, the authority stated:

Internal wet areas to be impervious to water, kitchen cupboard doors below sink are severely water damaged and will need to be repaired, and bathroom area has mould and showing signs of water damage to skirtings and ceiling area.

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<sup>7</sup> Based on Quotable Value sales records

3.4.3 In regard to the textured cladding on all units, the authority stated:

External claddings are in poor condition, window facings are open at corners and exterior timber either has no paint protection or requires to be maintained, ensure all window sills have slopes formed, all penetrations to be sealed and ground clearances to cladding to be achieved.

3.4.4 The authority also noted that ‘full final inspections’ would be required for all three units. In addition, an amendment in regards to the start date for durability requirements would be needed due to the age of the building consent.

### 3.5 The amended building consent and subsequent repairs

3.5.1 The authority received requests to divide the original consent. In a letter to the applicant, dated 13 April 2016, the authority confirmed that it had ‘split Building Consent 2000/1161 (for three dwellings) into three separate Building Consents’, with the new consent numbers for each house: the consent for Unit D was No. 2000/1161/B.

3.5.2 The applicant engaged a builder to address the items outlined in the authority’s letter of 5 January 2016. The builder’s invoice indicates that repairs were carried out to the textured cladding, including (in summary):

- plaster coating to window sills replaced and painted
- cowling added to west wall and penetrations sealed
- sealing of cladding and facing cracks, with repairs repainted
- painting of exposed timbers.

3.5.3 Although there is no evidence that an amendment to the building consent was submitted for the cladding repairs, the builder’s invoice noted ‘inspection with [the authority]’ which indicates some contact with the authority during the work despite the lack of any formal records.

3.5.4 Following completion of the work, the applicant entered into a sales agreement for the house, which was subject to a code compliance certificate being provided before the settlement date. The authority carried out a final inspection of Unit D on 29 July 2016 which did not pass (I have seen no record of that inspection).

### 3.6 The refusal to issue a code compliance certificate for Unit D

3.6.1 In a letter to the applicant dated 2 August 2016, the authority refused to issue a code compliance certificate for Unit D because it considered that:

...the claddings [are] NOT compliant with Clause E2 of the [Building Code], as the monolithic claddings are directly fixed over untreated timber and the cladding is cracking at joints and junctions.

3.6.2 The authority recommended that the applicant obtain independent third party expert advice on the issues with the claddings, and for that expert to provide options for a solution to the problems so as to be able to prove compliance with E2.

## **4. The submissions**

### **4.1 The applicant's submission**

4.2 The applicant applied for a determination, which was received by the Ministry on 28 October 2016.

4.2.1 In a statement with the application, the applicant outlined the background to the current situation, describing work carried out, and the reliance placed on the interim code compliance certificate when purchasing the house in 2011. The applicant challenged the authority's refusal to issue a code compliance certificate because (in summary):

- in the applicant's opinion different rules have been applied to the issue of the interim code compliance certificate
- work outlined in the authority's first refusal was carried out on the basis that this was a definitive list of all the work required. The authority's second refusal added the requirement to comply with 'Clause E2 of the [Building Code]
- the cladding has already 'given a service of 16 years', with regular inspections carried out of the rented house and no indication of weathertightness issues.

4.2.2 The applicant provided copies of:

- the 2000 building consent for Units C, D and E
- the authority's inspection report for Units C, D and E
- the interim code compliance certificate dated 27 February 2002 for Unit D
- the refusal to issue a code compliance certificate for Units C, D and E dated 5 January 2016
- the refusal to issue a code compliance certificate for Unit D dated 2 August 2016
- correspondence with the authority
- the builders invoice dated 4 August 2016 listing repairs to Unit D
- various other certificates, correspondence, statements and other information.

4.3 The authority made no submission in response to the application.

4.4 A draft determination was issued to the parties for comment on 18 April 2017.

4.5 The applicant accepted the draft without comment on 8 May 2017. The authority accepted the draft without comment on 17 May 2017.

## **5. The expert's report**

### **5.1 General**

5.1.1 As mentioned in paragraph 1.6, I engaged an independent expert to assist me who is a member of the New Zealand Institute of Building Surveyors. The expert carried out an site visit of Unit D on 11 January 2017; the expert's report was received on 3 February 2017 and forwarded to the parties on 10 February 2017.

5.1.2 As noted in paragraph 2.1.2, I have taken the garage door of Unit D as north-facing and have therefore amended the expert's references in the following paragraphs to align with the actual orientation as shown in Figure 1.

## 5.2 Clause E2 External moisture

5.2.1 The expert inspected the interior and took thermographic images of interior wall surfaces, which identified no evidence of moisture or significant thermal anomalies. The expert also took non-invasive moisture readings on the interior of external walls, around joinery units and at skirting level, noting some elevated readings with moisture levels generally highest on the west gable end wall and lowest on the north elevation. However, the expert noted no 'visual evidence of moisture ingress, staining discolouration or softness' to plasterboard linings.

5.2.2 The expert also took invasive moisture readings through the textured cladding at seven locations where non-invasive testing had indicated elevated moisture levels and recorded the following:

### West wall (locations 1 to 3):

- 20% under the sill/jamb junction of the living room window near the corner, with 16% in the bottom plate below (Location 1)
- 22% under the sill/jamb junction of the living room window near the kitchen, with 20% above the jamb and 42% in the bottom plate below (Location 2)
- 19% under the kitchen window sill, with 19% in the bottom plate below (Location 3)

### South wall (locations 4 and 5):

- 20% to the sill of the bedroom 2 window and 17% to the bottom plate, and 18% to the sill of the bedroom 3 window and 17% to the bottom plate.

### East wall (locations 6 and 7):

- 16% to the sill of the bedroom 3 window and 13% to the bottom plate, and 16% to the sill of the garage window and 15 % to the bottom plate.

Moisture levels over 18% generally indicate that external moisture is entering the structure and further investigation is required. I note that the moisture readings were taken in summer (although in wet weather) and may be higher during winter periods.

5.2.3 Where moisture levels of 42% were recorded at Location 2; the expert removed a small section of cladding over the bottom plate, exposing a sheet joint that had a closed-cell foam strip installed behind the joint. The expert observed 'clear evidence of decay damage and discolouration to the timbers'.

5.2.4 The expert extracted a timber sample from the bottom plate and forwarded it for analysis. The laboratory report dated 16 January 2017 noted that:

- the sample 'tested negative for Boron, Copper and Tin'
- the sample 'exhibited moderate brown rot and early soft rot'
- the timber 'should be replaced with sound timber'
- further samples 'may be required to diagnose the extent of the problem.'

### **5.3 The wall cladding**

5.3.1 The expert made the following observations (in summary):

- Recent remedial work had been carried out to most vertical cladding sheet joints, and all gable horizontal sheet joints showed patching repairs. Mitred joints to the planted window facings had also been repaired and recoated.
- Vertical joints formed as sealed control joints, including those below windows, had not required repair and appeared to be in good condition ‘with no evidence of thermal movement separation or sealant breakdown.’
- The closed-cell foam backing strips behind sheet joints appeared to be in place.
- The recent recoating of the planted sill had resulted in a lack of drainage gap below the sill flanges.
- The top coat of paint to the textured cladding had ‘lasted extremely well’ over the past 15 years but was ‘well past its expected life and due for recoating.’

5.3.2 After reviewing the authority’s inspection records, the expert considered that it was not clear whether issues regarding the textured cladding in the records related to Unit D or to other units. (However, I also note that problems regarding sheet joints and control joints were later raised about the southwest corner unit at pre-coating inspections of Unit D on 28 November and 7 December 2001).

5.3.3 Notwithstanding problems raised during construction, it is apparent from the inspections recorded in February 2002 that the authority signed off Unit D as compliant, with all work complete; this was confirmed by the interim code compliance certificate issued for Unit D on 27 February 2002.

5.3.4 The expert noted that there was evidence of the cladding allowing moisture entry to the timber framing on the west elevation and decay of the timber had occurred. The expert attributed the elevated non-invasive moisture readings, especially on the west and south elevations, to the type of cladding system, the location and the wet weather prior to his inspection. (I address these moisture investigations in paragraph 6.3.2)

5.3.5 Except for the localised bottom plate timber damage to the south wall, the expert concluded that the cladding system had maintained compliance with both Clauses B2 and E2 of the Building Code over the initial 15 years.

5.3.6 In addition, the expert recommended that the following repairs be carried out:

- Further investigation and targeted repairs to the damaged timber at Location 2.
- 5mm drainage gap to be installed to allow moisture to escape from sill flanges.
- Cladding paint should be recoated (maintenance).

### **5.4 Clause E3 Internal moisture**

5.4.1 The expert noted that the ‘internal wet areas’ identified in the authority’s letter of 5 January 2016 (see paragraph 3.4.2) had been attended to, and Unit D now complied with Clause E3 of the Building Code.



## **6. Discussion**

### **6.1 General**

- 6.1.1 The original building consent was issued under the former Act, and accordingly the transitional provisions of the current Act apply when considering the issue of a code compliance certificate for work completed under this consent. Section 436(3)(b)(i) of the current Act requires the authority to issue a code compliance certificate if it 'is satisfied that the building work concerned complies with the building code that applied at the time the building consent was granted'.
- 6.1.2 An application can be made to the authority for a modification of durability requirements to allow durability periods to commence from the date of substantial completion in 2002. Although that matter is not part of this determination (see paragraph 1.5.3), I have taken the anticipated modification into account when considering the weathertightness performance of the claddings.
- 6.1.3 In order to determine whether the authority correctly exercised its power in refusing to issue a code compliance certificate for Unit D, I must consider whether the building work complies with the Building Code that applied when the original building consent was issued.

### **6.2 The compliance of the wall cladding**

- 6.2.1 The evaluation of building work for compliance with the Building Code and the risk factors considered in regard to weathertightness have been described in numerous previous determinations (for example, Determination 2004/1).
- 6.2.2 Unit D has the following environmental and design features, which influence its weathertightness risk profile:

#### **Increasing risk**

- textured wall cladding is fixed directly to untreated timber framing

#### **Decreasing risk**

- Unit D is single-storey and simple in plan and form
- there are generous eaves to shelter most of the south and north walls.

- 6.2.3 Using the E2/AS1 risk matrix to evaluate these features, elevations are assessed as having a low weathertightness risk rating. If current E2/AS1 details were adopted to show code-compliance, drained cavities would be required for all elevations. However, this was not a requirement at the time of construction in 2001.

### **6.3 Weathertightness performance**

- 6.3.1 Generally, the claddings appear to have been installed in accordance with good trade practice and the manufacturer's instructions at the time of installation. However, the expert has identified that the areas outlined in paragraph 5.3.6 require attention.
- 6.3.2 In regard to the expert's moisture investigations, I make the following observations:
- Interior non-invasive moisture testing identified significant variations in moisture levels. A limited number of invasive moisture readings were taken into timber framing at seven locations, with eight readings above 18%, including five out of the six sill trimmers invasively measured (every sill trimmer on the west and south elevations).

- The expert inspected Unit D after cladding repairs had been undertaken. Moisture levels may have been higher during the years prior to the joint repairs. The testing was also carried out during summer, and moisture levels are likely to be higher during colder and wetter periods.
- The history of past moisture penetration into the untreated timber framing is unknown and there is therefore a risk that framing in these areas may be damaged or affected by fungal growth; once initiated, decay can continue at moisture levels over 18%.

6.3.3 Taking account of the above and of the expert's report, I consider that the following requires attention:

- Further investigation to establish the cause(s) for the high moisture levels beneath the west living room window, including additional exposure of framing and sampling to establish the extent of the timber damage and the repairs required.
- Further investigation and sampling of the untreated timber framing to the west and south elevations starting at the window sills and where elevated invasive readings were recorded.
- The lack of a drainage gap below the window sill flanges.

## 6.4 Conclusions

- 6.4.1 I consider the expert's report establishes that the current performance of the building envelope is not adequate because there is evidence of moisture penetration into the timber framing. Consequently, I am satisfied that the cladding currently does not comply with Clause E2 of the Building Code.
- 6.4.2 The durability requirements of Clause B2 include a requirement for wall claddings to remain weathertight for a minimum of 15 years. Although a modification of the durability provisions to allow provisions to commence from the date of substantial completion in 2002 will mean that most cladding areas have already met the minimum period specified in the Building Code, the expert's report has confirmed moisture ingress into the timber framing over an extended period.
- 6.4.3 I consider that past and current moisture penetration indicates that faults in the cladding system have resulted in the textured cladding failing to meet the performance requirements of Clause E2 for the period set out in Clause B2 from the time the building work was substantially completed. Consequently, I am satisfied that some areas of cladding do not comply with the durability requirements of Clause B2 insofar as it relates to Clause E2.
- 6.4.4 Final decisions on the extent of remedial work needed to achieve code-compliance can only be made after a more thorough investigation of the textured cladding and of the condition of the underlying timber framing; in particular, the west wall. This will require a careful analysis by an appropriately qualified expert to bring the cladding into compliance with Clauses E2 and B2, with the chosen remedial option submitted to the authority for its approval.
- 6.4.5 I also note the expert's comments in paragraph 5.4.1, and I accept that the interior wet areas of Unit D now comply with Clause E3 of the Building Code.

## 6.5 Maintenance

- 6.5.1 The expert has commented on the lack of maintenance to the paint coating of the textured cladding and I also note that Unit D was some 14 years old before significant cladding defects were repaired in response to the authority's first refusal to issue a code compliance certificate.
- 6.5.2 Although a modification of durability provisions will mean that much of the textured cladding has already met the minimum life required by the Building Code, the expected life of the building as a whole is considerably longer. Careful maintenance is needed to ensure that the claddings continue to protect the underlying framing for its minimum required life of 50 years for the structure.
- 6.5.3 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 Ministry has previously described these maintenance requirements, including examples where the external wall framing of the building may not be treated to a level that will resist the onset of decay if it gets wet (for example, Determination 2007/60).

## 6.6 Durability

- 6.6.1 The relevant provision of Clause B2 of the Building Code requires that building elements must, with only normal maintenance, continue to satisfy the performance requirements of the Building Code for certain periods ("durability periods") "from the time of issue of the applicable code compliance certificate" (Clause B2.3.1).
- 6.6.2 In this case the 15-year delay since the completion of Unit D in 2002 raises concerns that many elements of the building are now well through or beyond their required durability periods, and may consequently no longer comply with Clause B2 if a code compliance certificate were to be issued effective from today's date.
- 6.6.3 I have considered this issue in many previous determinations and I maintain the view that:
- (a) the authority has the power to grant an appropriate modification of Clause B2 in respect of all the building elements, if requested by an owner
  - (b) it is reasonable to grant such a modification, with appropriate notification, as in practical terms the building is no different from what it would have been if a code compliance certificate for the building work had been issued at the time of substantial completion in 2002.

I therefore leave the matter of amending the building consent to modify Clause B2.3.1 to the parties to resolve once remedial work has been completed.

## 7. What happens next?

- 7.1 I note that the building consent was issued to the original owner of the development, and as noted in Determination 2014/035<sup>8</sup>, no notice to fix is able to be issued to the current owners in respect of breaches of the Act or Regulations for work carried out by previous owners.

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<sup>8</sup> *Determination 2014/035: The issue of a notice to fix for weathertightness remedial work carried out by a previous owner at 16B Sunbrae Grove, Tauranga* 15 August 2014

- 7.2 If the applicant wishes to pursue a code compliance certificate, a detailed proposal should be developed to address the investigations and defects identified in paragraph 6.3.3 of this determination. The proposal should be produced in conjunction with a suitably qualified person experienced in weathertightness remediation and should include further invasive moisture testing and timber sampling. The proposal for repairs should then be submitted to the authority for its consideration and approval. Any outstanding items of disagreement can then be referred to the Chief Executive for a further binding determination.

## **8. The decision**

- 8.1 In accordance with section 188 of the Building Act 2004, I hereby determine that the external wall claddings to the house do not comply with Building Code Clauses E2 and B2 that was in force at the time the original building consent was issued, and accordingly I confirm the authority's decision to refuse to issue a code compliance certificate for the building work covered under the building consent No. 2000/1161/B.

Signed for and on behalf of the Chief Executive of the Ministry of Business, Innovation and Employment on 6 June 2017.

John Gardiner  
**Manager Determinations and Assurance**