



Determination 2017/052

The refusal to issue a certificate of acceptance for recladding a 22-year-old building at 1/21 and 2/21 Sherborne Street, St Albans, Christchurch



Summary

This determination considers two applications made for a certificate of acceptance for the recladding of an existing building: the work has been undertaken without a building consent having been issued. Both applications were declined by the authority. The determination considers the compliance of the work itself, the basis on which the work was done, and whether the authority was correct to decline the applications.

1. The matters 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 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:

- Christchurch City Council (“the authority”), carrying out its duties as a territorial authority or building consent authority. The authority applied for the determination; and
- the owners of the building (“the owners”):
 - A and N Thomson, the owners of Unit 1 (“Unit 1 owners”)
 - C Rowe Builder Limited², the owner of Unit 2 (“the builder”)

1.3 The application for this determination arises from the following:

- The original two-unit building was built in about 1995 as one of three identical buildings clad in monolithic cladding fixed directly to the timber framing.

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

² Carpentry LBP No. BP 122119

- Following the Canterbury earthquakes in 2011, the builder replaced damaged cladding. Because he considered the extent of damage significant, in order to avoid delay a building consent was not obtained.
 - During 2011, the builder³ replaced the original direct-fixed cladding on the two attached units with an AAC⁴ cladding system installed over a drained cavity (“the recladding”).
 - In 2014, a designer documented the recladding and applied for a certificate of acceptance on behalf of the owners. Following an assessment, the authority refused to issue a certificate and issued a notice to fix to the owners.
 - In 2015, the designer submitted a second application for a certificate of acceptance. After inspecting the work, the authority again refused to issue a certificate for the recladding and issued a second notice to fix to the owners.
- 1.4 The authority is seeking a determination on the compliance of the recladding work and its decision to refuse a certificate of acceptance. The refusal was on the grounds that the authority was not satisfied that the recladding complied with certain clauses⁵ of the Building Code (First Schedule, Building Regulations 1992), in particular in relation to weathertightness and durability.
- 1.5 The matter to be determined⁶ is therefore whether the authority was correct to refuse to issue a certificate of acceptance and to issue the notices to fix for the recladding work. In deciding these matters, I must consider:
- The status of the alterations: whether the recladding and associated alterations required a building consent before the work was carried out. (I consider this in paragraph 5).
 - Weathertightness of the recladding: Whether the recladding work complies with Clause E2 External Moisture and Clause B2 Durability of the Building Code. The recladding includes the AAC backing panels, plaster coating, drained cavity, building wrap and flashings; together with the reinstalled exterior joinery and new downpipes, rainwater heads and entry canopies – as well as the way components are installed, work together and intersect with existing elements in the building. (I consider this in paragraph 5.3 and 5.4.)
 - Compliance of the new cladding with other clauses: whether the cladding complies with the other relevant clauses identified by the authority; namely Clause B1 Structure, and Clause C3 Protection from fire. (I consider these clauses in paragraph 5.6.)
- 1.6 In making my decisions, I have considered the submissions of the parties, the report of the consultant engaged by the authority (“the consultant”), the report of the expert commissioned by the Ministry to advise on this dispute (“the expert”) and the other evidence in this matter.

³ I note that the builder/owner is also a director of the wall cladding company

⁴ Autoclaved Aerated Concrete

⁵ 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.

⁶ Under sections 177(1)(b), 177(2)(f) and 177(3)(b) of the Act

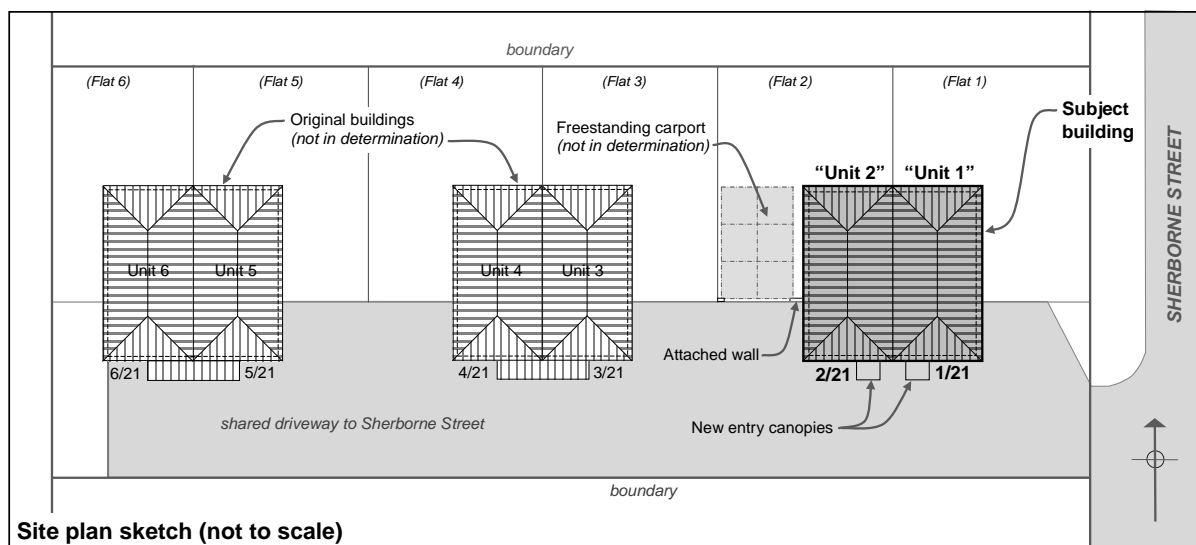
1.7 Matters outside this determination

- 1.7.1 This determination is limited to the recladding work, including the durability of the original timber framing underlying the cladding system. Except at intersections, this determination does not include original elements or the carport later erected.
- 1.7.2 In its correspondence, the authority limited its concerns to items associated with the clauses outlined in paragraph 1.5 and this determination does not address other clauses of the Building Code.

2. The building work and background

- 2.1 The building work consists of the replacement of wall cladding to a detached two-storeys-high building situated on a level site in an earthquake zone C and a low wind zone for the purposes of NZS 3604⁷. The building is shown in Figure 1.

Figure 1: Outline site plan



2.2 The original building

- 2.2.1 The building was one of three two-unit buildings constructed in about 1995⁸ and is located on subdivided leasehold sites with a shared driveway to the street as shown in Figure 1. The three buildings were identical in plan and form, with living areas on the ground floors and two bedrooms in the upper level.
- 2.2.2 Construction was conventional light timber frame, with concrete foundations and floor slabs, reinforced masonry party walls, timber framed first floors, monolithic wall claddings, aluminium windows and profiled metal roofing. The wall claddings consisted of fibre-cement sheets fixed through the building wrap to the framing and finished with an applied textured coating system ("textured fibre-cement").
- 2.2.3 The profiled metal roofs to each building comprise a hipped roof above each unit, with a membrane-lined internal gutter between. External gutters provide the only overhang above the walls, and drain into metal rain heads and down pipes situated centrally on the north and south elevations. At the time of construction, lean-to canopies to each building extended above the main south entry doors.

⁷ New Zealand Standard NZS 3604:1999 Timber Framed Buildings

⁸ The age of the buildings is taken from the Quotable Value website, and is a date after the land was subdivided in 1992 (the age of the building given in the application material ranges from the 1970's to 2004).

2.2.4 The builder provided a construction photograph showing original framing stamped 'Prolog Treated GS9 H1' and sample testing found boric-treatment to a level equivalent to H1.2. Based on this evidence and the likely date of framing in 1995, I consider that original framing was boric-treated to a level that provides some resistance to decay.

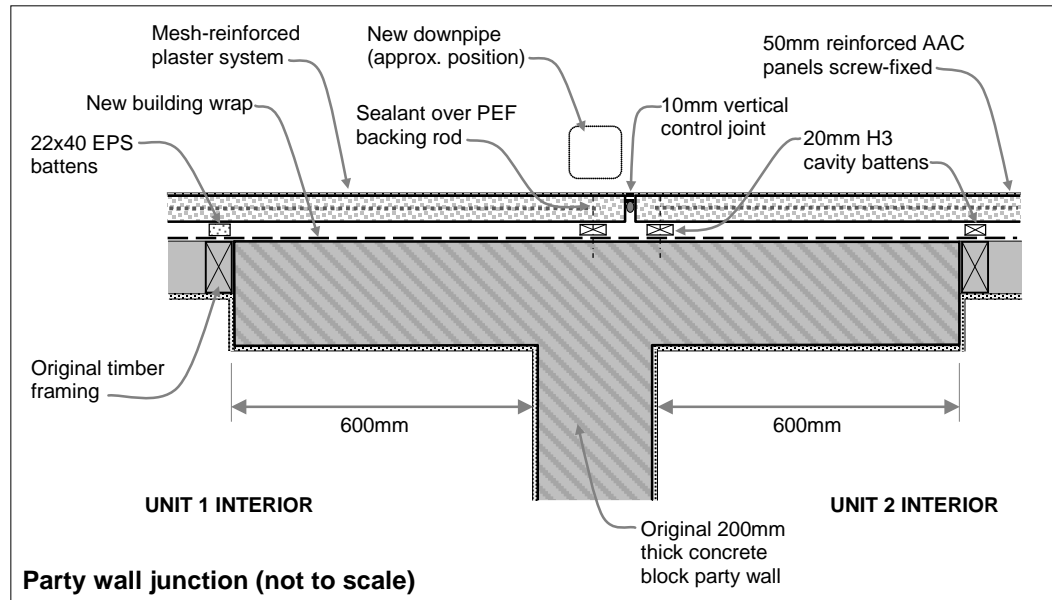
2.3 The new cladding to Units 1 and 2

2.3.1 Units 1 and 2 have been reclad with a proprietary monolithic cladding system, with 50mm thick reinforced AAC backing panels finished with a proprietary mesh-reinforced plaster system to form a monolithic finish. Panels are screw-fixed through battens and new building wrap into the original framing and then finished with a proprietary mesh-reinforced plaster system. Battens to Unit 1 are EPS⁹ and battens to Unit 2 are H3.1 treated timber as shown in Figure 2.

2.3.2 The 2200mm x 600mm lightweight reinforced concrete panels are installed horizontally with staggered butt-jointed joints. The system includes recommended details for windows, edges and other junctions, with purpose-made flashings for windows, edges and other junctions.

2.3.3 The manufacturer's 2010 'Technical Manual' ("the manual") set out requirements for vertical and horizontal control joints to be installed in walls exceeding 8m in length and height. Post-installation drawings¹⁰ include a detail of vertical control joints installed only at ends of the inter-party wall. Based on this detail together with the expert's on-site measurement, the as-built party wall junction appears to be as shown in Figure 2.

Figure 2: Party wall junction



2.3.4 At the time of installation in 2011, the cladding system had been appraised by BEAL¹¹ in an Appraisal Certificate No.C908 [2010], ("the BEAL Appraisal") which confirmed that, when installed in accordance with the 2010 manual and other specified conditions, the system would comply with performance requirements of

⁹ Expanded polystyrene

¹⁰ Drawing A5.03 Detail D11 amended 9 October 2014

¹¹ BEAL (Building Element Assessment Laboratory) Appraisal Certificate No.C908 [2010]. The most recent appraisal certificate for this cladding, dated August 2013, expired in August 2014.

Building Code Clauses B1, B2, C3, E2, and F2. The appraisal noted that the system was to (in summary):

- be ‘fixed over high density [EPS] battens or H3.1 timber battens’
- have panels installed horizontally in a stretcher-bond pattern, screw-fixed through cavity battens and into the framing
- include vertical control joints ‘at maximum 8m centres’ and ‘located at both internal and external corners’
- be installed ‘only by personnel trained and certified by [the cladding manufacturer]’ in accordance with ‘all aspects’ of design and installation and contained within the manufacturer’s ‘Technical Manual Edition Feb 2010’.

2.4 The 2011 recladding work

2.4.1 It appears that the original textured fibre-cement cladding suffered some damage during the Canterbury earthquakes in 2011 and the unit owners decided to replace the original cladding rather than repairing the damage. Believing that repairs were needed urgently, the owners elected to reclad the building without seeking a building consent for the work, which was completed in May 2011¹².

2.4.2 Based on the construction photographs, the builder initially completed the recladding work to Unit 2, using timber battens for that part of the work. When Unit 2 was complete, the recladding of Unit 1 was carried out using EPS battens.

2.4.3 An extensive set of photographs recorded the re-cladding work and show:

- fibre cement and building wrap removed, with signs of water stains to some areas of wrap, plywood bracing, and framing
- timber treatment markings to existing framing
- installation of new building wrap and vertical battens
- penetrations and meter box flashed with flexible flashing tape
- spaced vertical cavity battens installed
- existing joinery openings wrapped, with corner brackets and flexible flashing tape installed at corners of the openings
- joinery head flashings installed with wrap overlapping upstands and uPVC jamb and sill flashings installed with fitted corners
- top flashings installed with upstand underlapping existing fascia boards
- vertical control joints installed behind north and south down pipes
- ends of exposed reinforcing primed when panels cut, with some cut ends not protected with paint.

2.5 The 2014 application for a certificate of acceptance

2.5.1 In 2014, the owners engaged the designer to document the completed cladding work and five drawings dated 2 October 2014 were prepared. The designer submitted an application for a certificate of acceptance (“the 2014 application”) on 2 October 2014 (No. BAA 37000846), which stated that a building consent could not ‘practically be

¹² According to the authority ‘Certificate of Acceptance Report.’

obtained in advance because the building work had to be carried out urgently' to prevent 'serious damage to property' because 'the existing cladding system had failed and required urgent attention due to earthquake damage.' The application attached:

- drawings and specifications dated 1 September 2014
- certificate of design work dated 4 September 2014
- the manufacturer's 2012 cladding manual and the BEAL Appraisal.

2.6 The consultant's assessment

2.6.1 The authority engaged the consultant to assess the recladding work. The consultant requested further information and on 10 October 2014 the designer provided the manual and appraisal relevant in 2011 together with an amended drawing dated 9 October 2014 which added a detail at the party wall¹³. The designer noted that the remaining four items had been requested and would be forwarded when received.

2.6.2 In an email to the designer dated 17 October 2014, the consultant noted he had visually inspected the exterior with the owner of Unit 1 on 13 October 2014, who 'had documented and taken photos during the construction' and had agreed to provide photographs. The consultant noted that the following items would need to be addressed (in summary):

- lack of vertical control joints to 8.6m long east and west walls (Item 1)
- lack of sealing to base of panels (Item 2)
- deteriorating sealant to joinery (Item 3)
- exposed extract vents (Item 4)
- meter box to Unit 1 (Item 5)
- cable penetration to Unit 1 (Item 6)
- timber entry door details required (Item 7)
- carport wall to Unit 2 wall junction (Item 8)
- remaining outstanding documentation (Item 9).

2.6.3 In a report to the authority dated 21 May 2015, the consultant noted correspondence with the designer, attached inspection photographs taken during his site visit on 13 October 2014 and repeated the above list of outstanding items. The consultant recommended that the authority refuse the certificate of acceptance due 'to the lack of supporting documentation supplied from the installers of the system and the items potential non-compliance identified at the time of the site visit'.

2.7 The first refusal to issue a certificate of acceptance

2.7.1 In a letter to the designer dated 3 June 2015, the authority refused to issue a certificate of acceptance. The authority issued the unit owners with a notice to fix dated 3 June 2015 for 'Flat 1 & Flat 2', which stated that the recladding work had been carried out 'without a building consent in contravention of sections 40(1) and 44(1) of the Act (see Appendix A1.1). The notice also stated:

To remedy the contravention or non-compliance you must:

¹³ Drawing A5.03 Detail D11

- Apply for a building consent in order to carry out the remedial work as necessary to ensure compliance with the New Zealand Building Code,
- Complete the necessary remedial work, and
- Obtain a code compliance certificate on or before 03 September 2015.

2.7.2 According to the owners, they met with an authority official onsite following the refusal and ‘walked around the property’, with the official pointing out areas of concern.

2.8 The 2015 application for a certificate of acceptance

2.8.1 Some remedial work was apparently carried out and the designer submitted a new application for a certificate of acceptance (“the 2015 application”) dated 16 June 2015 (No. BAA 37000999), which included:

- amended drawings dated 9 October 2014
- certificate of design work dated 4 September 2014
- the manufacturer’s 2010 cladding manual and BEAL Appraisal
- some construction photographs provided by the builder.

2.8.2 The authority reviewed the information then inspected the cladding on 24 September 2015, completing a ‘Certificate of Acceptance Report’ on 30 September 2015 which noted that:

Elements that could not be verified by a non-invasive inspection or supporting statements confirming compliance with the Building Code are excluded from the Certificate of Acceptance approval.

2.8.3 The inspection identified ‘a number of potential items of non-compliance’, including:

- In regard to Clause B1:
 - the glass panels above the main entries
 - the lack of vertical control joints to the east and west walls
- In regard to Clause B2:
 - treatment of timber battens
 - exposed panel reinforcing not always painted to prevent corrosion
 - window detail not as per the manual
 - cannot verify door installation details
 - carport wall fixed against wall cladding.
- In regard to Clause C3:
 - battens are insufficient to provide fire/smoke separation at party wall
- In regard Clause E2, lack of compliance with manufacturer’s instructions:
 - some building wrap installed vertically
 - cavity not sealed off in some areas
 - metal flashing joints (apron flashing to top of cladding)
 - window flashings
 - no timber door details
 - minimal ground clearances
 - no cavity closure at gully trap

- carport wall fixed to wall cladding with no saddle flashing at junction (as above)

2.9 The second refusal to issue a certificate of acceptance

2.9.1 In separate letters to the owners dated 22 October 2015, the authority refused to issue a certificate of acceptance because it considered that the building work did not comply with:

1. Clause B1 – [Structure]
2. Clause B2 – [Durability]
3. Clause C3 – [Fire affection areas beyond the fire source]
4. Clause C6 – [Structural stability]
5. Clause E2 – [External moisture]

2.9.2 The authority issued separate notices to fix also dated 22 October 2015, which stated that the ‘replacement of cladding system’ had been carried out without a building consent. The notice stated the same, or very similar, means of remedying the contravention as for the first notices to fix (refer 2.7.1).

2.9.3 The owner of Unit 1 and the designer met with the authority on 3 November 2015. Although I have seen no formal record of these discussions, Unit 1’s owner kept notes, which were subsequently added to by the designer. Those notes included (in summary):

- the authority had not received some of the construction photos from the builder
- the authority agreed that an invoice for the cavity battens would suffice as evidence of treatment of the timber
- the authority said it appeared that battens at the party wall appeared to be too small, but agreed that a construction photo would suffice as evidence of the size used
- the authority questioned the installation of the building wrap, which appeared loose in some photos
- it was agreed the defective joint in the cladding apron flashing could be repaired with an over-flashing that overlapped the joint by 100mm
- two options were given to remedy the joinery head flashings: replacing the flashings, or altering existing flashings by adding downturns
- the authority agreed that work could be carried out providing a detailed photographic record was kept
- the authority required a builder’s producer statement for all work not covered by the cladding manufacturer’s producer statement.

2.9.4 Email correspondence between the builder and the authority followed (from 4 to 11 November 2015) as summarised in Table 1:

Table 1: Correspondence

Authority's statements/responses	Builder's queries/responses
Window head flashings Flashings must be replaced in accordance with E2/AS1 or manual. Any remedial work needs building consent.	Is building consent needed for remedial work to head flashings? (see paragraph 2.10)
Building wrap Not installed in accordance with manual. Need manufacturer's confirmation of compliance.	Manufacturer's information to be provided (see paragraph 2.11)
Cladding apron flashing Flashings must be replaced in accordance with E2/AS1 or manual. Remedial work needs building consent.	Is building consent needed for cladding apron flashing remedial work?
Cavity batten treatment Invoice does not prove battens were installed. Batten sample must be removed and tested.	Meeting had agreed that invoice for battens would be sufficient.
Safety of glass entry canopies Engineer's producer statement required. Manufacturer's documentation can be considered together with a producer statement. Must demonstrate code compliance.	Discussed in meeting Glass canopy manufacturer approached for documentation of glass and fixings. Producer statement for installation to be provided. (see paragraph 2.13)
Fire safety at party wall Battens in cavity at party wall too small. Cannot rely on builder's producer statement as builder has undertaken non-compliant work. A fire engineer's report is required.	20x45mm battens were installed as required. Can confirm by photos and builder's producer statement. Clarify reason for not relying on builder's producer statement.

2.10 The head flashing correspondence

2.10.1 The builder¹⁴ discussed the head flashing installation with the cladding appraiser BEAL (see paragraph 2.3.4), and in an email to BEAL dated 4 May 2016 the builder attached photographs of the end of the head flashing and noted the following (in summary):

- the end of the flashing runs past the jamb and is notched into the AAC panel, with no turn-up or turn-down and the ends bent slightly down.
- any moisture on the back of the upper panel would run along the top of the head flashing then continue down on the back of panels beside the windows in the same way as in a wall without a window
- whether or not the head flashing has a turn-up or turn-down will not affect the way the flashing will operate.

2.10.2 BEAL responded in an email dated 6 May 2016 stating that, providing the head flashing was installed in accordance with the 'old' appraisal that had expired in October 2011 'the head flashing design which is flat at the ends is acceptable.'

¹⁴ Who is also the cladding supplier

2.11 The building wrap correspondence

2.11.1 The builder sought confirmation from the building wrap manufacturer on installation requirements, attaching a photograph to an email dated 5 May 2016 stating that:

The stud height on the ground floor is 2.4 and the stud height on the second storey is 1.8 because of a sloping ceiling. The building wrap was exposed no longer than 5 to 10 days and had correct vertical and horizontal laps before the cladding was installed.

2.11.2 The wrap manufacturer responded in an email dated 5 May 2016, noting that ‘the main area of concern is to ensure the laps are sufficient’ in that:

Horizontal laps must be no less than 75mm wide, with the direction of the lap ensuring that water is shed to the outer face of the membrane. End laps must be made over framing and be no less than 150mm wide.

2.12 The situation remained unresolved and the Ministry received an application from the authority for a determination on 29 August 2016.

2.13 The manufacturer¹⁵ of the glass entry canopies subsequently provided a Producer Statement Construction PS3, dated 11 November 2016, which covered compliance with Building Code Clauses B1, B2, and F2 for ‘supply and install glass canopy, consisting of 10mm toughened safety glass and 316 marine grade stainless steel fixings’.

3. The submissions

3.1 In its application, the authority stated that the matters for determination were whether the authority’s decision refusing the certificate of acceptance was correct and also whether the ‘re-cladding of the building, rainwater heads and downpipes’ comply with the Building Code. The authority outlined the background to the owners’ application for a certificate of acceptance for the new cladding, noting that no consent had been sought for any remedial work carried out after the issue of the first notice to fix.

3.2 The authority forwarded a DVD that included copies of:

- the first application (No. BAA 37000846) dated 2 October 2014
 - post-installation drawings dated 1 September 2014 and other information
 - the consultant’s report dated 21 May 2015
 - the refusal to issue a certificate of acceptance and notice to fix dated 3 June 2015
- the second application (No. BAA 37000999) dated 16 June 2015
 - amended drawings dated 9 October 2014 and other updated information
 - the authority’s report dated 30 September 2015
 - the refusal to issue a certificate of acceptance and notice to fix dated 22 October 2015
- other correspondence, technical information and internal file notes.

3.3 The Unit 1 owner made a submission dated 18 November 2016 on behalf of both owners, which provided additional information about the sequence of events leading to the current impasse. The owners included the following comments (in summary):

¹⁵ NZ Frameless Glass Ltd

- The consultant's assessment in 2014 identified a list of items that needed to be attended to, none of which needed a building consent.
- At the site meeting following the 2014 refusal, the authority identified concerns and stated that a building consent could be sought or another application for a certificate of acceptance could be submitted.
- The owners decided to submit a new application because 'a building consent could not be applied for unless the entire cladding was removed'. Some reasons for declining the second application had not been given for the first refusal.

3.4 The unit owners provided copies of:

- invoices dated 15 and 23 April 2011 for H3.1 cavity battens
- notes recording the meeting with the authority on 3 November 2015
- correspondence between the builder and BEAL about the head flashings
- correspondence between the builder and the building wrap manufacturer
- the producer statement for the glazed entry canopies
- other correspondence and information.

3.5 A draft determination was issued to the parties for comment on 11 May 2017.

3.6 The authority requested an extension of time in which to respond to the draft, noting it had engaged an expert to carry out a desktop review of the information available. On 1 June 2017 the authority's advised it accepted the decision in the draft but submitted that compliance with Building Code clauses other than B2 had not been adequately demonstrated, and that the authority '[does] not accept the conclusion at [paragraph 5.7.1] that only addressing the matters noted will place [the authority] in the position of being able to issue a certificate of acceptance.'

3.7 The authority highlighted the following issues as being of concern (in summary):

- The original existing timber framing has sustained water damage in the past and the extent of deterioration is unknown, which is of serious concern. No invasive investigation has been carried out to the exterior face of the external wall framing.
- The cladding system relies solely on the framing for support, so the exclusion of the framing from the certificate of acceptance would be inappropriate.
- The window and door head flashings were not installed with the downturn drip edge as set out in the manufacturer's installation instructions. This compromises the cladding system and compliance with the Building Code.
- The apron flashing installed at the top of the external wall cladding is undersized, in the authority's opinion ongoing compliance with the Building Code is unlikely to be met without a high level of costly maintenance. It appears that sealant has been used to offset the undersized flashing, and it is unlikely that this will perform adequately.

3.8 The authority is of the view that further investigation and invasive testing of the framing is required to properly assess its condition, and further investigation is required into the installation of the window and door head flashings and the apron flashings at the top of the external wall cladding.

- 3.9 Neither the builder nor the owners commented the draft determination, however, on 15 June 2017 the builder responded to the authority's submission as follows:
- Concerns regarding the staining on the framing and plywood form the deterioration of the building paper had not previously been raised. There were no signs of deterioration in the framing timber and the framing was stamped to show it was Boron treated. The expert's moisture readings and the results of the sample taken do not support the authority's stated concerns.
 - All of the building wrap has been replaced and there is a 22mm drained cavity behind the new exterior cladding.
 - The turn down of the head flashings has no bearing on the performance of the cladding. (The builder provided email correspondence with BEAL dated 6 May 2016 which stated that 'the head flashing design which is flat at the ends, is acceptable'.)
 - The apron flashing has proven in-service performance. Maintenance has not been required in the preceding six years, and would not be costly as replacement of any deteriorated sealant would be carried out at the same time as repainting.
- 3.10 The authority provided a further submission on 21 June 2017 addressing the points raised by the builder. The authority maintained its view expressed in the previous submission.

4. The expert's report

4.1 General

- 4.1.1 As mentioned in paragraph 1.7, I engaged an independent expert to assist me. The expert is a member of the New Zealand Institute of Building Surveyors and inspected the building on 26 October 2016; providing a report completed on 17 April 2017, which was forwarded to the parties on 18 April 2017. The expert's scope of his inspection was to assess code compliance of the re-cladding work with associated parts of Clauses B1, B2, C3 and E2 of the Building Code.
- 4.1.2 The expert reviewed the six drawings submitted with the second application and noted that the overall 'architectural shape and form of the building is largely in accordance with the drawings', with the following discrepancies observed:
- upper windows to east and west elevations not installed in the original building
 - various other minor joinery changes.
- 4.1.3 The expert considered the building 'has been generally finished to an acceptable trade standard and is well maintained.' The exterior cladding was 'reasonably straight and fair' with most cladding penetrations and joinery junctions 'now well sealed, noting the initial lack of attention to detail'.
- 4.1.4 The expert assessed the AAC cladding system against the manufacturer's instructions and the BEAL Appraisal at the time of installation, noting that some repairs had been undertaken since the consultant's 2015 assessment.

4.2 The time framing and invasive investigations

- 4.2.1 The expert examined photos supplied by the applicant taken during the recladding work. The photographs showed ‘apparent moisture damage to timber framing, plywood bracing and insulation’ at about three locations, and a photograph showed confirmation of “H1” treatment.
- 4.2.2 The applicant verbally advised the expert that ‘no decay was found in the existing timber framing and no timber preservative was applied prior to recladding the units.’
- 4.2.3 The expert took invasive moisture readings at three sample locations, with moisture levels recorded from 8% to 9%. At the west wall of Unit 2 master bedroom, the drill shavings appeared ‘marginal’ so a sample was forwarded for analysis.
- 4.2.4 The laboratory report dated 2 February 2017 noted that:
- the sample was ‘most likely treated with boron’ equivalent to H1.2
 - the sample ‘contained fungal growths but no structurally significant decay’
 - framing ‘in similar condition can typically be left in situ’ providing further testing confirms that the sample is the worst case of the surrounding framing.

4.3 The building wrap

- 4.3.1 The authority had identified that the building wrap had been installed vertically to the upper level and the builder had sought confirmation from the wrap manufacturer (see paragraph 2.11). Construction photographs showed wrap installation with required horizontal and vertical laps. The expert considered the wrap installation was acceptable.

4.4 The cavity battens

- 4.4.1 The authority had questioned whether cavity battens had been adequately treated and therefore required sample testing. No testing was carried out, but the builder provided copies of invoices that did not specify the site. The expert noted that:
- Unit 1 used EPS cavity battens and Unit 2 used timber battens
 - the invoices indicate that a total of about 540m was delivered to site, which aligned with the 400m required for Unit 2
 - despite the lack of evidence, there was no reason to suggest that untreated battens were installed or that there was any problem with the battens installed.

4.5 The aluminium joinery head flashings

- 4.5.1 The construction photographs confirmed that all aluminium joinery had been removed, with new building wrap and flexible flashing tape installed to openings.
- 4.5.2 The consultant had photographed cracking at a sill junction and identified that as a ‘failed junction’. The expert considered that the underlying proprietary sill flashings with the upstand behind the sill flashing protected the junction, with cracking considered as a minor maintenance matter rather than a failed junction.

4.5.3 Head flashings had not been installed fully as described in E2/AS1, and the cladding manual. However, the expert noted that the authority had not undertaken an objective assessment of the as-built detail, instead requiring replacement of all head flashings under a new consent. Based on the construction photos, the expert noted:

- head flashings do not include stop ends or turn downs at the ends, with the flat ends confirmed by BEAL as acceptable
- flat ends are notched into the edges of cladding panels, and the jamb/head flashing junction sealed to prevent water tracking beyond the flashing ends
- replacing flashings would involve replacing sections of cladding around the window heads, which could compromise weathertightness with little benefit
- windows are recessed to give added protection (despite the lack of drip edges)
- although some windows lacked foam tape between the head flashing and head flange, sealant would provide a reasonable alternative to seal the gap
- regular maintenance of junctions should prevent any significant water entry
- although the carpet edge strip beside a north ranchslider was stained:
 - invasive moisture readings were low at 9% (with sound shavings)
 - the junction appeared well sealed, with visible DPC backflashing and flashing tape installed over the door sill
 - the reduced 60mm clearances were unlikely to have caused water entry
- although the carpet edge under a master bedroom north window was stained:
 - invasive moisture readings were low at 8% (with sound shavings)
 - there was no apparent water entry from the window
- based on the above investigations, water staining was likely to have pre-dated the alterations.

4.6 The timber entry doors

4.6.1 The consultant had noted in his report that ‘no supporting details have been provided for the flashing system around timber joinery’. The construction photographs show the existing timber doors left in place, with new building wrap installed over the head flashings. The doors have a planted jamb trim concealing a uPVC flashing and a timber door sill.

4.6.2 The expert noted that:

- head/jamb junctions are well sealed and protected by the glass canopies
- jamb junctions appear well sealed
- a metal flashing is installed below the timber door sill
- cracking at a sill/plaster junction is insignificant and appears to be a minor maintenance matter.

4.7 Cladding penetrations

4.7.1 The consultant had identified concerns about penetrations at the extract vents, the Unit 1 meter box and the Unit 1 data cable. The expert noted that construction photographs showed flashing tape installed between the meter box and the new building wrap prior to the panel installation.

4.7.2 The expert noted that some minor repairs had been carried out since the consultant's inspections and assessed cladding penetrations, noting that:

- meter boxes are now well sealed to the cladding
- the Unit 1 data junction box now appears to be well sealed, with surrounding plaster completed and repaired
- head flashings have been installed to the ground floor kitchen extract vents
- a head flashing could be added to the upper level exposed vent to Unit 1, with the upstand tucked under the flashing above
- the hose tap and pipe drain penetrations appear well sealed
- the aerial cable penetrates the Unit 2 upper west wall and is unsealed and poorly installed – directing water down the cable into the cladding.

4.8 The cladding base and clearances

4.8.1 The consultant had identified some areas at the base of the cladding which had not been sealed in accordance with the manual, and the authority had noted that areas above the gully traps lacked cavity closures. The expert noted that:

- the base of the panels had since been painted with a bituminous type coating
- no missing cavity closures were observed.

4.8.2 The consultant had also identified some areas where clearance between the cladding and paving were less than provided for in E2/AS1. The expert assessed clearances, noting that:

- cladding clearance at the north ranchslider is about 60mm, with about 100mm clearance to the interior floor slab
- despite the reduced clearance, water can drip from cladding, water splash is unlikely to cause deterioration of the panel and the paving is unlikely to pond
- the clearances are satisfactory in the circumstances.

4.9 Cladding apron flashing

4.9.1 The consultant was unable to verify whether the plaster extended under the apron flashing and the authority had identified defective joints. The expert noted that:

- the flashing joint is not mechanically fixed and the overlap is under 10mm, although the roofing code of practice requires joints to be mechanically fixed, with a 25mm fully sealed or 150mm unsealed overlap
- although panels are not plastered under the apron and thermal movement is likely to result in some wind-blown rain entry, the AAC cladding substrate is unlikely to deteriorate sufficiently to significantly reduce its durability
- there is no sign of panel deterioration after six years of service and the cladding is still likely to achieve its 15-year durability requirement providing the defective joint is remedied.

4.10 The rainwater heads

4.10.1 The consultant identified that the size of the overflow to the rainwater head was too small. The expert noted that the overflow had since been increased to about the same area as the downpipe, which he considered was satisfactory given that:

- the rain head has been reasonably well installed and there is additional overflow capacity at the rainhead/gutter junction
- construction photographs show metal gutters ends turned down into the rain head and the end of the internal membrane gutter turned down over a metal flashing into the rain head.

4.11 Panel reinforcing

4.11.1 The authority had observed that the ends of some reinforcing exposed when panels were cut had not been protected. However the expert noted that:

- the builder advised that the lack of priming shown was ‘simply a timing issue’ relating to when photos were taken, and all exposed steel had been primed
- the construction photos showed a mix of primed and unprimed reinforcing
- after six years, there was no corrosion stains on the cladding surface, and the cladding is expected to meet its 15-year minimum durability requirement.

4.12 Vertical control joints

4.12.1 Despite the lack of vertical control joints to the 8.6m long east and west walls, the expert noted that there is no evidence of associated cracking or movement after almost six years. (I also note that the wall length is close to the recommended maximum length.)

4.13 Carport wall/west wall junction

4.13.1 The consultant observed that the carport wall framing was fixed directly against the unit wall cladding, with cracking at the junction. The authority also stated that the carport wall did not comply with the manual. The expert noted that:

- the carport wall has a metal capping, with cracked sealant at the junction
- the capping end is embedded in the plaster, with no upstand or saddle flashing.
- the builder advised that the carport wall had been installed ‘effectively as a fence’, after cladding, plaster and paint to Unit 2 was complete.

4.13.2 While recommending maintenance in the form of installing sealant control joints at the junction, the expert considered that there was no effect on compliance given:

- the carport wall is a partition, rather than a house wall
- the completed house wall at the junction means there is unlikely to be any significant water transfer through the cladding into the underlying framing
- the lack of apparent damage to the building wall.

4.14 The glass canopies

4.14.1 The expert considered that the canopies were structurally sound, given that:

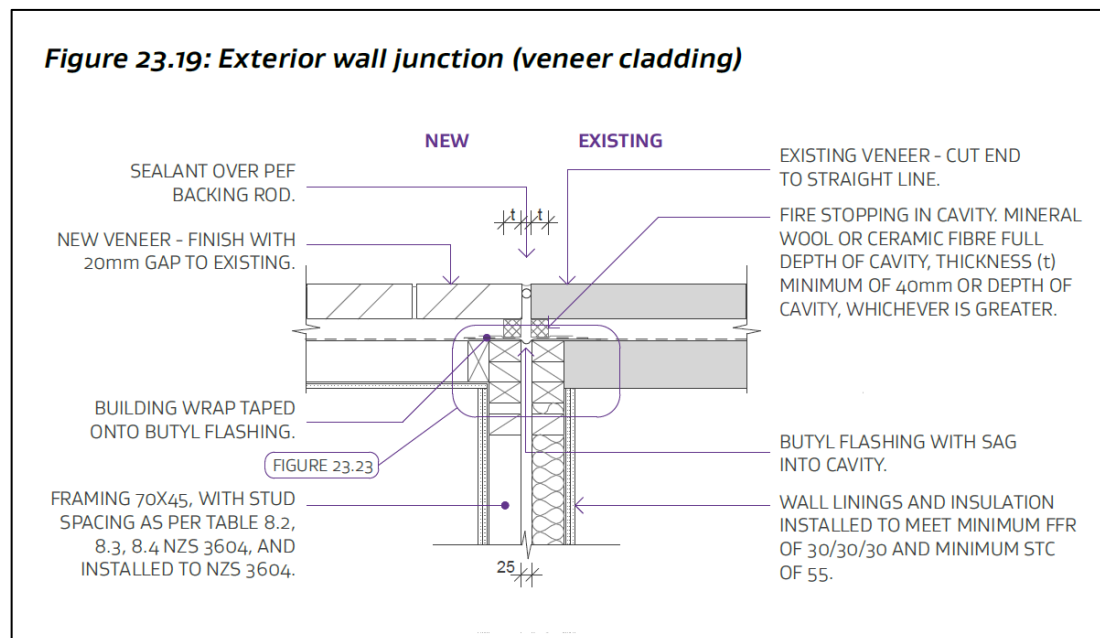
- the glass manufacturer has provided a producer statement (see paragraph 2.13)

- the builder has advised that support brackets are bolted through the cladding panels to angle brackets fixed to the timber framing
- the glass is marked as toughened
- no structural or safety issues were observed – no sagging or deflection that could indicate inadequate structural connections
- the canopies were completed six years ago. The canopies are in excellent condition and have remained so during many earthquake aftershocks.

4.15 Clause C3 Protection from fire

- 4.15.1 The authority is unwilling to rely on the builder's producer statement in regard to the party wall detail (see Figure 2), which shows 20mm deep battens in line with the cavity depth instead of 40mm battens as shown in a Ministry guidance detail¹⁶ (Figure 3). The authority requires a fire engineer's report.

Figure 3: Guidance detail



- 4.15.2 The expert assessed the party wall, comparing this with Figure 3, and concluded that the as-built fire separation provides at least the same fire separation given that:
- the Ministry detail shows fire stopping in the 40mm cavity installed over flashing tape and a butyl strip, with timber-framing and fire-rated linings either side of the party wall cavity immediately behind
 - although the post-construction detail D11 shows the 200mm concrete block party wall extending 400mm into each unit, interior drilling confirmed that the concrete block actually extends 600mm either side of the party wall – so, for a fire to spread between the units, it would have to burn through framing and battens and travel some 1.4m across the exterior of the blockwork.

¹⁶ Repairing and rebuilding houses affected by the Canterbury earthquakes, Part E: Repairing and rebuilding multi-unit residential buildings, April 2014, Multi-unit junction details

4.16 The expert's summary

4.16.1 The expert's conclusions on compliance are summarised in Table 2.

Table 2: The authority's concerns

Areas of concern identified by consult and/or authority	Expert's comments	My conclusion:
		Compliance (5.5.2 and 5.6)
		Maintenance (5.7.1)
Clause E2: External moisture (including Clause B2)		
Window head flashings	<ul style="list-style-type: none"> Sealed junctions Replacing could compromise while providing little benefit Some gaps need sealing No evidence of moisture penetration 	Complies
		<i>Seal small gaps under flashing Ensure ongoing maintenance</i>
Timber entry doors	<ul style="list-style-type: none"> Junctions well sealed Minor cracking at sill 	Complies
		Minor maintenance required
Cladding penetrations	<ul style="list-style-type: none"> TV aerial cable unsealed Upper vent lacks flashing Meter box and other service penetrations now well sealed TV aerial cable unsealed 	Does not comply: Minor repair required (TV cable and upper grille)
		Maintenance: Seal small gaps at east gully
Building wrap	<ul style="list-style-type: none"> Manufacturer confirmed requirements No evidence of non-compliance 	Complies
Cladding base	<ul style="list-style-type: none"> Unsealed bases now painted No gaps in closures observe 	Complies
Cladding clearances	<ul style="list-style-type: none"> Clearance to paving about 60mm Panel material unlikely to be affected by water splash Paving unlikely to pond No effect on 15-year durability 	Complies
Cladding top flashing	<ul style="list-style-type: none"> Not plastered beneath turn down but panel durability unlikely to be affected by wind-blown rain Overlaps only 10mm max 	Does not comply: Minor repair required (over flashings to short laps)
Rainwater heads	<ul style="list-style-type: none"> Overflow now increased Reasonably well installed 	Complies
Cavity batten treatment	<ul style="list-style-type: none"> Invoices align with expected dates and quantities No evidence of lack of treatment 	Complies
Panel reinforcing	<ul style="list-style-type: none"> Apparently just timing of photos Mix of primed/unprimed in photos No signs of rust stains to plaster No effect on 15-year durability 	Complies
Vertical control joints	<ul style="list-style-type: none"> No evidence of movement after 6 years of seismic aftershocks Wall length close to maximum 	Complies

Areas of concern identified by consult and/or authority	Expert's comments	My conclusion:
		Compliance (5.5.2 and 5.6)
		Maintenance (5.7.1)
Carport/wall junction	<ul style="list-style-type: none"> Sealant to metal capping cracked Cracks at vertical junctions Carport wall erected after unit wall No significant effect on weathertightness of building 	Does not comply: Minor repair required (sealants, movement joint)
Clause B1: Structure (including Clause B2)		
Entry canopies	<ul style="list-style-type: none"> Has PS3 from glass manufacturer In excellent condition, with no sagging or deflection after 6 years of seismic aftershocks 	Complies
Original timber framing	<ul style="list-style-type: none"> Original framing now more than 20 years old Framing confirmed as boron treated Some evidence of water entry prior to 2011 alterations Likely to have had some penetration through direct-fixed fibre-cement No evidence of penetration since 	Original framing may be excluded from the certificate of acceptance
Clause C3: Protection from fire		
Party wall end detail	<ul style="list-style-type: none"> Concrete blocks extend 600mm into each unit from party wall, meaning effective fire separation about 1.4m At least as good as guidance detail 	Complies

4.16.2 The expert concluded that the following items required minor repair:

- the lack of a head flashing to extract vent on the upper east wall
- the lack of weatherproofing to unsealed cable penetration on the upper west wall
- the lack of a cover flashing to the short lap to the top cladding flashing
- the lack of a sealed movement joint at the carport wall/Unit 2 wall junction.

4.16.3 The expert recommended maintenance to ensure ongoing compliance for:

- the small gaps behind the cladding at east gully trap
- minor cracks to plaster
- sealants at ends of and to gaps under head flashings
- sealants at joinery perimeters.

5. Discussion

5.1 The certificate of acceptance

5.1.1 Section 40 states that building work must not be carried out except in accordance with a building consent, and Section 96 of the Act (see Appendix A1.2) makes provision for the issue of a certificate of acceptance in certain circumstances; one of

these is where ‘a building consent was required but not obtained’ (section 96(1)(a)(ii)). In these circumstances an authority, may, on application, issue a certificate of acceptance, but only if it is satisfied ‘to the best of its knowledge and belief’ that the building work complies with the Building Code (section 96(2)).

- 5.1.2 First I must consider the status of the alterations; that is whether the recladding and associated alterations required a building consent before the work was carried out. Section 41 of the Act provides:
- 41 Building consent not required in certain cases
- (1) Despite section 40, a building consent is not required in relation to—
- (c) any building work in respect of which a building consent cannot practicably be obtained in advance because the building work has to be carried out urgently—
- (i) for the purpose of saving or protecting life or health or preventing serious damage to property; or.....
- 5.1.3 In the application for a certificate of acceptance, it was stated that a building consent could not practically be obtained in advance because the building work had to be carried out urgently to prevent ‘serious damage to property’ because ‘the existing cladding system had failed and required urgent attention due to earthquake damage.’
- 5.1.4 The cladding had suffered earthquake damage in September 2010 which worsened after February 2011 and the cladding was allowing water to enter. Based on correspondence from the builder to the supplier of the building wrap¹⁷, one of the owners of Unit 1 had apparently been advised by the authority to carry out the recladding work “under urgency” without consent and regularise the building work at a later date.
- 5.1.5 In the normal course of events I do not consider that replacement of damaged cladding would fall under section 41: typically temporary measures can be used to make the external envelope reasonably weathertight in order that a building consent can be sought. However given the circumstances following the Canterbury earthquake sequence, I am of the opinion it was likely that the processing of building consents at that time may have been subject to significant delay; meaning that it was reasonable for the owner to rely on advice suggesting the building work be carried out under section 41.
- 5.1.6 In the case of this building, the owners have applied for a certificate of acceptance for the re-cladding work carried out in 2011 which was completed without a building consent having first been obtained. The authority refused to issue a certificate of acceptance for the recladding work as it could not be satisfied on reasonable grounds that the building work complies with the Building Code.
- 5.1.7 At stated in past determinations¹⁸ Section 96(2) is silent on work that cannot be inspected and for which there is no evidence available to determine whether it complies with the Building Code. However, Form 9 requires an authority to list the building work that complies with the Building Code and in my view this list provides the basis for an authority to list only the building work that can be ascertained complies with the Building Code. In my view, Section 99(2) provides for a certificate of acceptance to be qualified by excluding specific building work.

¹⁷ Email on 5 May 2016

¹⁸ For example: Determination 2009/113 The refusal to issue a certificate of acceptance for building work to a relocated house at 896 Owahiwa Road, Parua Bay, Whangarei (Department of Building and Housing) 24 December 2009

5.2 The compliance of the recladding work

5.2.1 In its second refusal to issue a certificate of acceptance for the recladding work, the authority stated that it considered the building work did not comply with the relevant parts of Clauses B1, B2, C, and E2. The following paragraphs address those clauses.

5.3 Clause E2 External moisture

5.3.1 Taking account of the expert's report, the wall cladding appears to have been generally installed in accordance with good trade practice and the manufacturer's recommendations at the time of installation. However, I note the expert's comments in Table 2 and paragraph 4.16.2 and I consider the following areas require attention:

- the unflashed extract vent to the upper east wall
- the unsealed cable penetration to the upper west wall
- the short lap to the east side of the cladding apron flashing
- the junction of the carport wall with the west wall to Unit 2.

5.3.2 I also note the expert's comments summarised in Table 2 on other areas identified by the consultant and the authority, and I accept that those areas are adequate in these particular circumstances.

5.3.3 The expert's report has established that the current performance of the wall cladding is adequate because there is no evidence of recent moisture penetration into the timber framing. The expert's inspection of accessible components, the construction photographs and the other evidence have provided grounds for me to be satisfied that the 2011 recladding work complies with Clause E2 of the Building Code.

5.3.4 The cladding is a robust system, the building is in a low wind zone and is simple in shape and form, and it has no 'at risk' weathertightness features. I consider the AAC panels will also absorb liquid water that may enter the cavity which will then be able to dissipate as water vapour into the cavity.

5.4 Clause B2 Durability

5.4.1 The recladding work is also required to comply with the durability requirements of Clause B2, which requires a building to satisfy all the objectives of the Building Code throughout its effective life, and that includes the requirement for the recladding to remain weathertight for a minimum of 15 years.

5.4.2 The original building was constructed in about 1995 and was clad in textured fibre-cement cladding directly fixed to the timber framing. I concur with the expert's opinion that the building is likely to have suffered some moisture ingress during the 15 years prior to the installation of the new cladding, however, the treatment of the original framing will have protected it from the effects of moisture ingress to a limited extent. There is no evidence of moisture ingress since the recladding work was carried out in 2011.

5.4.3 Because the minor identified cladding faults occur in discrete areas, I am able to conclude that satisfactory rectification of areas outlined in paragraph 5.3.1 will result in the recladding complying with Clauses B2 of the Building Code insofar as it applies to Clause E2.

5.4.4 The certificate of acceptance was sought for the 2011 recladding only, and not for the original framing. The authority may specify that it applies only to the work undertaken without a consent, and does not apply to any of the original structure.

5.5 Compliance with other clauses (B1 Structure, C3 Fire effecting areas beyond the fire source)

- 5.5.1 I note the expert's comments in paragraph 4.14.1 in regard to the glass canopies and I concur that these are likely to be structurally adequate in the circumstances.
- 5.5.2 I also note the expert's comments in paragraph 4.15.2 and consider that the fire protection between the units is likely to be significantly higher than those shown in the guidance detail (see Figure 3), which was used by the authority for assessment of the as-built construction. I also consider that the fire separation provided by the original building has not been detrimentally affected by the recladding work.
- 5.5.3 Taking account of the expert's report, the construction photographs and the other evidence, I have reasonable grounds to conclude that the recladding work complies with Clause B1 and Clause C3 of the Building Code.

5.6 Maintenance

- 5.6.1 Although the building generally appears to have been well maintained over the past 6 years, the expert has identified a number of items that require maintenance in order to ensure ongoing compliance with Clause B2 Durability. Taking account of the expert's report, I therefore consider that attention is required in regard to the areas outlined in paragraph 4.16.3.
- 5.6.2 Effective maintenance of the building is important to ensure ongoing compliance with the Building Code and is the responsibility of the building owner. The Department has previously described maintenance requirements associated with the external building envelope, 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).

5.7 Conclusion

- 5.7.1 I am of the view that the authority will be in a position to issue the certificate of acceptance once the matters of compliance noted herein have been addressed.

6. The decision

- 6.1 In accordance with section 188 of the Building Act 2004, I hereby determine that the recladding work carried out in 2011 without a building consent does not comply with Clause B2 of the Building Code and accordingly, I confirm the authority's decision to refuse to issue a certificate of acceptance for the building work.

Signed for and on behalf of the Chief Executive of the Ministry of Business, Innovation and Employment on 7 July 2017.

John Gardiner
Manager Determinations and Assurance

Appendix: The legislation

A.1 Relevant provisions of the Building Act 2004

A1.1 With regard to the lack of a building consent for the work, the relevant sections of the Act are:

40 Buildings not to be constructed, altered, demolished, or removed without consent

(1) A person must not carry out any building work except in accordance with a building consent.

41 Building consent not required in certain cases

- (1) Despite section 40, a building consent is not required in relation to—
- (c) any building work in respect of which a building consent cannot practicably be obtained in advance because the building work has to be carried out urgently—
- (i) for the purpose of saving or protecting life or health or preventing serious damage to property; or.....

42 Owner must apply for certificate of acceptance if building work carried out urgently

(1) If, in reliance on section 41(1)(c), building work is carried out without a building consent having been obtained in respect of that work, the owner must, as soon as practicable after completion of the building work, apply for a certificate of acceptance under section 96

A1.2 With regard to a certificate of acceptance for the recladding, the relevant sections of the Act are:

96 Territorial authority may issue certificate of acceptance in certain circumstances

- (1) A territorial authority may, on application, issue a certificate of acceptance for building work already done —
- (b) if—
- (ii) a building consent was required for the work but not obtained...

99 Issue of certificate of acceptance

- (2) A certificate of acceptance may, if a territorial authority inspected the building work, be qualified to the effect that only parts of the building work were able to be inspected.
- (3) A territorial authority's liability for the issue of a certificate of acceptance is limited to the same extent that the territorial authority was able to inspect the building work in question.

99A Refusal of application for certificate of acceptance

If a territorial authority refuses to grant an application for a certificate of acceptance, the territorial authority must give the applicant written notice of —

- (a) the refusal; and
- (b) the reasons for the refusal.