



Determination 2018/012

The refusal to issue two code compliance certificates for alterations and additions to a house at 433 Marine Parade, Napier



Summary

This determination considers the compliance of alteration and additions to an existing two-storey house that was the subject of two building consents. The determination considers the compliance of the as-built work and whether the authority was correct in declining to issue code compliance certificates for the work.

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, Katie Gordon, Manager Determinations, 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:
 - the owner of the building, D McNicol (“the applicant”)
 - the Napier 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 11 to 15-year-old additions and alterations. The refusal arose because the authority is not satisfied that building work complies with certain clauses² of the Building Code (First Schedule, Building Regulations 1992). The authority’s concerns relate primarily to weathertightness of the completed house.

¹ The Building Act, Building Code, compliance documents, 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 In this determination, references to sections are to sections of the Act and references to clauses are to clauses of the Building Code.

- 1.4 The matter to be determined³ is therefore whether the authority was correct to refuse to issue a code compliance certificate for the reasons given in its letter dated 23 January 2015 (see paragraph 3.11). In deciding this matter, I must consider:
- (a) whether the external building envelope of the building (“House A”) complies with Clause B2 Durability and Clause E2 External moisture. The building envelope includes the components of the systems (such as the concrete and monolithic claddings, the timber framing, the windows, the deck and the roof cladding) as well as the way the components have been installed and work together. This includes compliance with Clause B1 Structure as it applies to weathertightness (see paragraph 1.5.1)
 - (b) whether other items identified by the authority comply with relevant Building Code clauses: namely E3 Internal Moisture and G13 Foul Water.

1.5 Matters within this determination

- 1.5.1 In its most recent refusal, the authority limited its concerns to items associated with the clauses outlined above and this determination does not address other clauses of the Building Code, apart from items noted by the expert (refer paragraph 1.6.1) during his inspection. The items identified in the refusal made no reference to specific structural defects and I take the authority’s reference to Clause B1 to be to the possible impact of weathertightness on the structure: I have therefore considered this matter under paragraph 1.4(a).
- 1.5.2 I note that the authority has also noted some outstanding documents that are not relevant to my conclusions on the matters to be determined. Taking into account the age of the building work, I leave matters of documentation to the parties to resolve.
- 1.5.3 I also note that the applicant can 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 dates of substantial completion of House A in 2003 and 2006. Although I leave this matter to the parties to resolve in due course, I have taken the anticipated modifications into account when considering the compliance of the claddings.
- 1.5.4 The subject building consents were issued to a building company (“the developer”) in 2002 (“the 2002 consent”) and 2006 (“the 2006 consent”). The 2002 consent included work to the part of an original building which now forms a separate detached house (“House B”) on a property with a separate title and address as shown in Figure 1: this determination is limited to House A at 433 Marine Parade.
- 1.5.5 In regard to House A, the authority’s records refer to the following:
- the 2002 consent (No. BC020956) issued to the developer on 30 August 2002 for alterations of the original building to provide two detached houses
 - the 2006 consent (No. BC060004) issued to the developer on 3 February 2006 for alterations to the upper floor of House A
 - the 2009 consent (which I have not seen) to fire-rate an external wall of House B, with a code compliance certificate issued in 2010.

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

1.6 The evidence

1.6.1 In making my decisions, I have considered:

- the submissions of the parties, including reports prepared for the applicant by:
 - a property inspection company (“the inspection company”)
 - a building consultant (“the consultant”)
- the report of the expert commissioned by the Ministry to advise on this dispute (“the expert”)
- the other evidence in this matter.

1.6.2 Within this determination, relevant reports are given the following titles:

Table 1: The relevant reports

Date	Report provided by:	Engaged by:	Title given in this determination
March 2013	inspection company	applicant	“the initial inspection report”
August 2014	consultant	applicant	“the consultant’s first report”
December 2014	consultant	applicant	“the consultant’s second report”
February 2015	consultant	applicant	“the consultant’s third report”
February 2018	expert	Ministry	“the expert’s report”

2. The building work

2.1 The building work consists of extensive additions and alterations that have resulted in a detached house situated on a level site in a high wind zone for the purposes of NZS 3604⁴. The site faces a beachfront road to the east and is classified in NZS 3604 as being of high risk of windblown sea-spray salt deposits. House A is fairly complex in plan and form.

2.2 The original building and property

2.2.1 The original street address was 98 Marine Parade and the property originally accommodated a bakery fronting Marine Parade to the east and a residence fronting Hastings Street to the west. The property became a council building for about 20 years, providing storage and maintenance facilities until about 1987, after which it accommodated various residential and commercial activities.

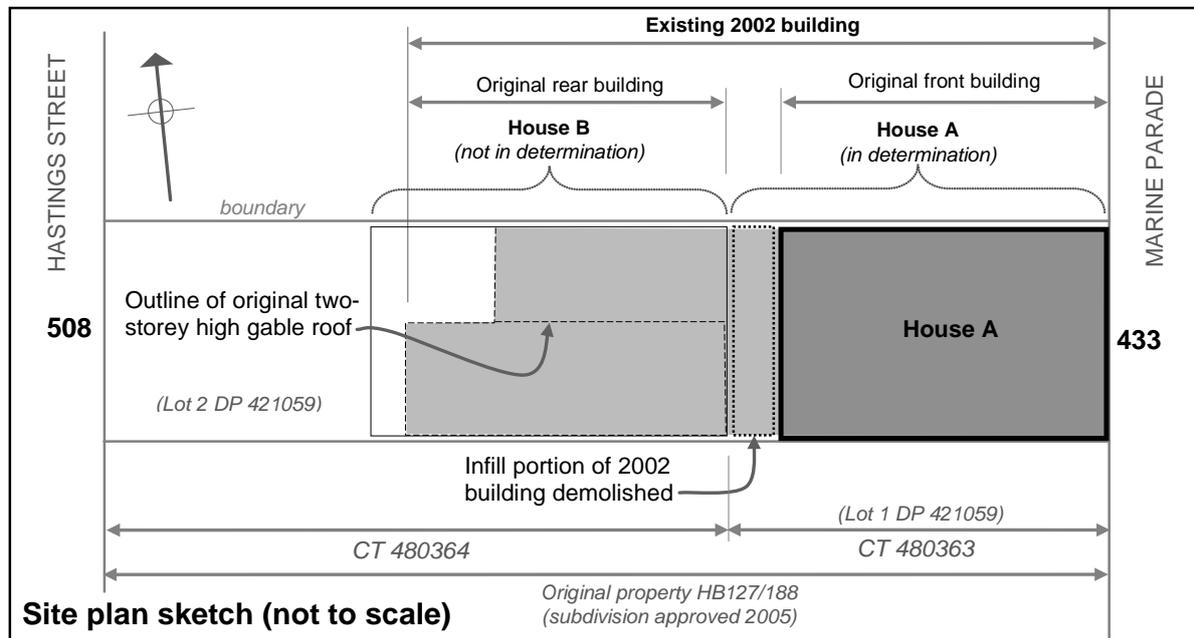
2.2.2 According to a memo to the then city engineer, dated 4 April 1986, the original front building was ‘a reinforced concrete column and beam single-storey structure with brick infill panels’ and the rear building was a two-storey concrete and brick structure with a single-storey timber-framed lean-to.

2.2.3 Subsequent alterations during the 1990’s appear to have included a timber-framed infill between the two buildings. The developer purchased the neighbouring property at No. 435 in July 2000 and No. 433 in February 2001.

⁴ New Zealand Standard NZS 3604:1999 Timber Framed Buildings

- 2.2.4 Following alterations in 2002 to provide two separate houses, a proposal to subdivide the original property into two lots was approved in 2005. Following further alterations to House A in 2006 and the fire rating of the east wall to House B in 2009⁵, new titles were issued for the properties in 2010 with House B becoming 508 Hastings Street and House A remaining as 433 Marine Parade as shown in Figure 1.

Figure 1: Background site plan



2.3 The 2002 alterations

- 2.3.1 The alterations under the 2002 building consent and 2003 amendment included the following work to House A:

- Level 1 (the lower level): Entry courtyard opening into a living/dining/kitchen area with a bathroom and bedroom to the north west and the existing single garage and toilet/laundry to the north east.
- Level 2 (the upper level): Bedroom, bathroom and study within the existing roof line (approved as a consent amendment in February 2003).

2.4 The 2006 alterations

- 2.4.1 According to the 2006 consent drawings and the 2013 as-built drawings, House A was subsequently developed as shown in Figure 2.

- 2.4.2 The 2006 alterations were limited to House A and the as-built drawings dated 19 February 2013 show the following work carried out during or after 2006:

- Demolition of the original roof and construction of a new extended first floor level beneath a new raised roof.
- Level 1 (the lower level): Entry courtyard opening into sitting room with a bedroom to the NW, bathroom/toilet to the west, spa room to the SW and laundry/storage areas along the north wall of the garage.

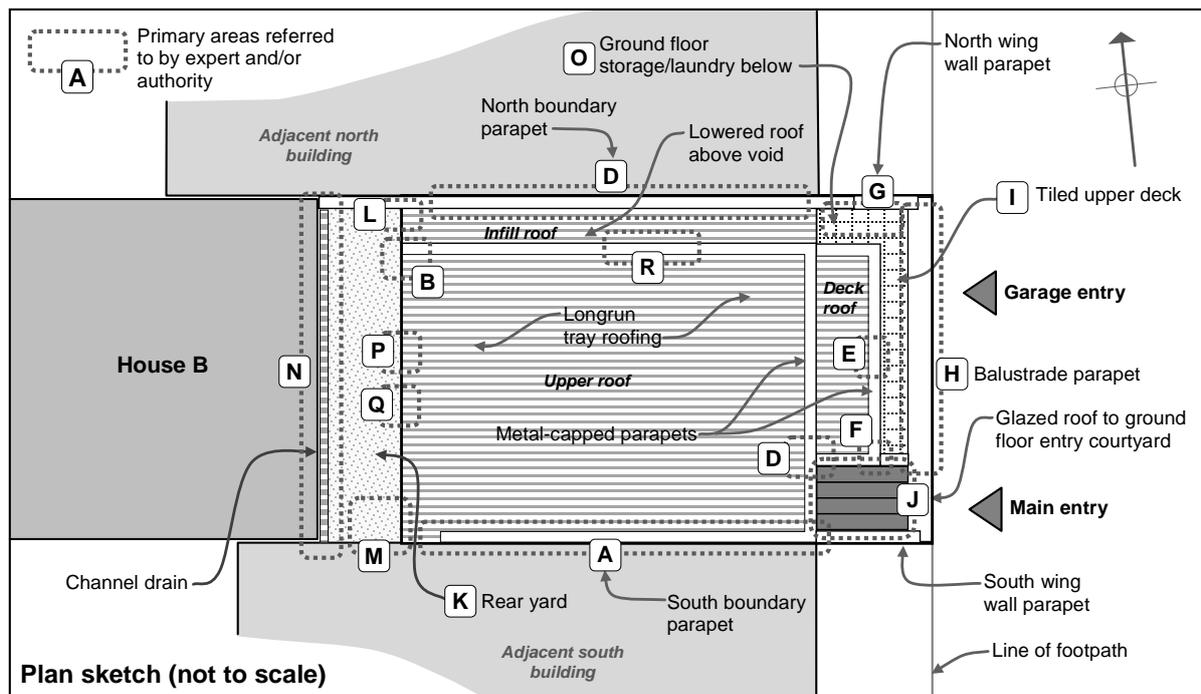
⁵ The authority advised that this consent was issued with a code compliance certificate in 2010.

- Level 2 (the upper level): New living/dining/kitchen area opening onto a deck to the east, with a bedroom to the NW, ensuite to the west and roof glazing above the ground floor east entry courtyard.

2.5 House A construction

2.5.1 The resulting construction of House A is a mix of the original masonry construction and conventional light timber frame; with a timber framed upper floor, monopitched profiled metal roofing, aluminium windows and monolithic wall claddings.

Figure 2: Diagrammatic Roof Plan



2.5.2 The 2003 consent drawings call for additional concrete foundations and floor slabs to be constructed over hardfill and damp proof membrane above the original concrete slab except within the garage area, where the existing slab was retained. However, it is not clear whether this work was carried out.

2.5.3 The 3° monopitched main roof slopes to an external gutter along the west wall, with north and east walls extended up to form metal capped roof parapets. The south parapet projects out from the north boundary wall of the adjacent building. Along the north, a strip of roofing above a crawlspace void forms an infill between the external north wall and the south boundary wall of the adjacent building and falls towards a gutter at the western end.

2.5.4 The 2006 specification called for external wall and parapet framing timber to be H1.2⁶ and deck framing to be H3.1. However, the expert observed wall framing in the north roof void that was stamped as untreated and kiln dried. Given the lack of evidence, I am unable to determine whether timber framing is treated to resist decay.

2.6 The wall claddings

2.6.1 The east street frontage wall is the original plastered masonry, with timber strapping forming columns, a horizontal band, and the wide parapet balustrade. The timber framed upper walls are clad in a form of monolithic cladding system known as

⁶ Timber treatment class to New Zealand Standard NZS 3602: Part 1: 2003 Timber and wood-based products for use in building

EIFS⁷. In this instance, the system consists of 40mm thick polystyrene backing sheets fixed through cavity battens and the building wrap to the framing and finished with a mesh reinforced plaster system.

- 2.6.2 The wall cladding to the lower level west wall and the east entry courtyard walls is textured fibre cement, which consists of 4.5 mm thick fibre-cement sheets fixed directly through the building wrap to the framing finished with an applied textured coating system. (I note that these lower walls were completed under the 2002 consent prior to the Acceptable Solution for Clause E2, E2/AS1, showing drained cavities for this type of cladding.)

3. Background

- 3.1 The authority issued the building consent (No. BC020956) to the developer on 30 August 2002 under the Building Act 1991 (“the former Act”) and a subsequent amendment on 18 February 2003, which added the construction of a partial upper level to House A within the existing roof line.

- 3.2 The authority carried out various inspections, including:

- foundations and floor slab in September 2002
- preline, bracing and sewer inspections in February 2003.

- 3.3 No final inspection was carried out and in 2005 the developer proposed the subdivision of the original property shown in Figure 1, which was stamped as approved by the authority on 8 September 2005.

3.4 The 2006 consent

- 3.4.1 The authority issued the building consent (No. BC060004) for House A to the developer on 3 February 2006 under the current Act to ‘upgrade first floor dwelling’. This work covered extensive alterations and additions that included a new upper floor and roof as described in paragraph 2.4.2.

- 3.4.2 The authority carried out various inspections, including:

- deck framing in May 2006
- first floor framing, flashings and wall linings in June 2006
- plumbing and drainage in June 2006.

- 3.4.3 No final inspection was carried out and the authority wrote to the developer on 29 February 2008 noting that no application for a code compliance certificate had been received.

3.5 The initial inspection report

- 3.5.1 The applicant purchased House A without a code compliance certificate in January 2013 and engaged a property inspection company to report on outstanding matters from the 2006 consent. Under cover of a letter to the authority dated 20 March 2013, the inspection company attached as-built drawings.

- 3.5.2 The inspection company noted that (in summary):

⁷ Exterior Insulation and Finish System

- as-built plan shows the relocated kitchen area, with plumbing work inspected on 27 June 2006 (I note that inspection record noted ‘pipework OK, but layout all changed’)
- capping to parapet against the fire-rated south boundary wall was lifted, revealing 140mm studs with two layers of 16mm plasterboard each side
- bracing was inspected on 16 June 2006
- the required parapet flashing has been fitted (identified at above inspection)
- the authority’s inspection summary, dated 22 March 2013, notes ‘New plans rec’d and filed, please check layout at final, other outstanding consent to be inspected also (BC 020956)’.

3.6 The April 2013 final inspection

3.6.1 The authority carried out the first final inspection on 4 April 2013, which ‘failed’ a number of items, most of which related to weathertightness. On the day of the inspection, the applicant submitted applications for code compliance certificates, which nominated the following completion dates:

- 1 April 2003 for the 2002 consent
- 1 November 2006 for the 2006 consent.

3.6.2 The authority sent separate letters to the applicant for the two building consents, both dated 16 April 2013 and both referring to the above inspection. The letters noted that the ‘inspection revealed the following faults’ – the items numbers are as noted in the letters (in summary):

- In regard to the 2002 consent:
 - change to floor plan layout (item 1)
 - framing/cladding clearances to front wall (item 2)
 - electrical certificate required (item 3)
 - rear stormwater drain location and discharge changed (item 4)
 - spa bath waste pipe detail and location required (item 5)
 - safety glass to back door required (item 6)
 - laundry ventilation details required (item 7)
- In regard to the 2006 consent:
 - details required for deck, glass entry roof, deck canopy, deck and balustrades (item 1A, B, C, D)
 - deck waterproofing producer statement required (item 2)
 - balustrade waterproofing producer statement required (item 3)
 - details required for sink and dishwasher waste (item 4)
 - exterior cladding producer statement required (item 5)
 - electrical certificate required (item 6)
 - roofing producer statement required (item 7)
 - lack of straps to water storage heater (item 8)
 - change to back channel drain (item 9)
 - unsealed pipe penetrations through cladding (item 10)

- smoke alarm producer statement required (item 11)
- wet seal certificate required (item 12)
- unsealed ensuite hand basin (item 13).

3.7 The July 2014 final inspection

3.7.1 Some of the above items were resolved and the authority re-inspected the house on 2 July 2014. The authority wrote to the applicant on 8 July 2014, noting that the ‘inspection revealed the following faults’ - the items numbers are as noted in the letter (in summary):

- In regard to the 2002 consent:
 - framing/cladding clearances to front wall (item 1)
rear surface water drain changed, House B surface water discharging into system (item 2).
- In regard to the 2006 consent:
 - details required for glass entry roof (item 1)
 - details required for deck gutter, drainage outlets, waterproofing and substructure (item 2)
 - balustrade waterproofing producer statement as statement provided lacks required detail (item 3)
 - deck waterproofing producer statement required (item 4)
 - roofing producer statement required (item 5)
 - smoke alarm producer statement required (item 6)
 - wet seal producer statement required (item 7)
 - glazing producer statement required (item 8)
 - (as item 9)

Written report from a suitably qualified building consultant detailing buildings compliance with:

- a. B1 Structure
- b. [B2] Durability
- c. [E2] External moisture.

3.8 The consultant’s first report

3.8.1 In response to the above, the applicant engaged a building consultant who reviewed the records and inspected the house with the applicant and the authority’s inspector on 6 August 2014. The consultant provided the applicant with a detailed report dated 22 August 2014, which was forwarded to the authority on 1 September 2014. The following paragraphs summarise comments in the report, with applicable references shown in Figure 2 provided in brackets.

3.8.2 In regard to the rear yard (Area K), the consultant noted that (in summary):

- the original plan showed the boundary in the middle of the yard but the subsequent subdivision located the boundary to the west of the yard
- inspection with the authority confirmed the boundary survey pin, the channel drain primarily takes surface water from House A.

3.8.3 In regard to the front east wall and entry (Area J), the consultant noted that (in summary):

- the east front wall is insitu concrete
- the polycarbonate roof shelters the previously open entry courtyard and was considered a wet area
- the glazing bars are fixed to a lintel beam strengthened by a metal plate
- the flashing to the south wing wall parapet includes an upstand behind the parapet face cladding and is further sealed with a waterproof membrane.

3.8.4 In regard to the front east deck (Area I), the consultant noted that (in summary):

- the framed deck is generally as shown in as-built drawings, the deck substrate is 18mm compressed fibre cement sheet covered with a PVC membrane and ceramic tiles. The membrane installation appears to be in accordance with the manufacturer's specifications
- the membrane-lined gutter against the balustrade parapet (Area H) falls to outlets at both ends; with the gutter size and outlets well within E2/AS1 Figure 16, and the second downpipe outlet serves as an overflow
- the top to the original masonry front wall was strapped and clad with fibre cement, with membrane extended over the fibre cement.

3.8.5 The consultant also noted that (in summary):

- the roofing installation appears to be in accordance with the Metal Roofing Code of Practice
- the shower tiler and underlying membrane are not known, but low non-invasive moisture readings show no evidence of moisture penetration
- safety glass has been used where required.

3.8.6 The consultant acknowledged that 'documentation is difficult to follow owing to the duplication of plans from as far back as 2002', but he considered House A appeared to comply with the Building Code.

3.9 The 2014 refusal to issue the code compliance certificates

3.9.1 In a letter to the applicant dated 14 October 2014, the authority noted that it had considered the consultant's report and other information against the items identified in its July 2014 inspection (see paragraph 3.7).

3.9.2 The authority considered the consultant's report to be 'inconclusive' so required 'further investigation and remedial work' on the items as summarised in Table 2:

Table 2: The authority's response to the consultant's first report

item	Areas as per authority's letter of 8 July 2013	Authority's letter of 14 October 2014
2002 consent		
1	framing/cladding clearances to front wall	Insufficient evidence of minimum 150mm clearances at base of perimeter walls
2	rear stormwater drain	-

item	Areas as per authority's letter of 8 July 2013	Authority's letter of 14 October 2014
2006 consent		
1	glass entry roof	Still required
2	deck gutter, drainage outlets, waterproofing and substructure	Deck gutter not as per drawings, no overflow design, future maintenance issues visible – not acceptable
3	balustrade waterproofing producer statement	Producer statement of 21 July 2014 insufficient as does not include membrane under tiles and in internal gutter
4	deck waterproofing producer statement	
5	roofing producer statement	Still required
6	smoke alarm producer statement	-
7 & 12	wet seal producer statement	Still required for first floor tiled shower
8	glazing producer statement	-

3.9.3 The authority refused to issue the code compliance certificates because it was:

...not satisfied that the building work relating to the waterproofing/structure of the specified items above complies with the following Clauses of the New Zealand Building Code that applied at the time the Building Consents were granted:

- B1 – Structure
- B2 – Durability
- E2 – External Moisture
- E3 – Internal Moisture

3.10 The consultant's second report

3.10.1 In a letter to the authority dated 1 December 2014, the consultant asked the authority to review the situation. The consultant responded to the authority's comments as summarised in Table 3:

Table 3: The consultant's response

item	Authority's letter of 14 October 2014	Consultant's comments
2002 consent		
1	Insufficient evidence of minimum 150mm clearances at base of perimeter walls	<ul style="list-style-type: none"> • inspection clearly showed that required clearances have been achieved • the work was in relation to consent No. BC020956 which has been 'withdrawn'
2006 consent		
1	Glass entry roof details still required	<ul style="list-style-type: none"> • as-built drawings were submitted and accepted by authority – and were recorded as 'Okay' • the roof shelters a previously open courtyard so limits on application of E2 should apply
2	Deck gutter, drainage outlets – not acceptable	<ul style="list-style-type: none"> • accords with submitted as-built drawings • gutter width meets E2/AS1

item	Authority's letter of 14 October 2014	Consultant's comments
3 & 4	Balustrade and deck waterproofing producer statement of 21 July 2014 insufficient	<ul style="list-style-type: none"> • compressed sheet and membrane visible at outer edge – assume used for whole deck • unable to provide producer statement, no requirement for producer statement in the building consent • no evidence of problems after 8 years, inspected by authority during construction
5	Roofing producer statement still required	<ul style="list-style-type: none"> • no evidence of water ingress after 8 years • inspected by authority during construction • appears to accord with the Metal Roofing Code of Practice
7 & 12	Wet seal producer statement still required for first floor tiled shower	<ul style="list-style-type: none"> • proven performance for at least the past 3 years, 'no elevated moisture ... readings' • unable to provide producer statement, no requirement for producer statement in the building consent • unreasonable to require destructive investigation without evidence of non-compliance

3.11 The 2015 refusal to issue the code compliance certificates

3.11.1 The authority carried out a further re-inspection of House A with the consultant on 15 January 2015 'to review the outstanding issues' and wrote to the applicant on 23 January 2015 noting that:

... we are not satisfied that the building work complies with the following clauses of the New Zealand Building Code that applied at the time the building consents were granted:

- B1 – Structure
- B2 – Durability
- E2 – External Moisture
- E3 – Internal Moisture
- G13 – Foul Water

3.11.2 The authority provided 'more specific information detailing the outstanding issues' (some with photographs) as following (in summary); numbered using the authority's reference, areas as noted in Figure 2:

1. Parapet capping/wall junction (Area D)
2. Unpainted and cracked fibre cement to roof parapet (Area A)
3. Roof/wall flashing (Area M)
4. Unpainted fibre cement patch to roof parapet above lounge (Area A)
5. Deck posts/deck floor junctions (Area I)
6. Deck post/balustrade parapet junction (Area F)
7. Drainage inspection junction (Area L)
8. Adjacent north building wall/cladding junction (Area L)
9. Cladding crack (Area L)
10. Unsealed pipe penetration to upper west cladding (Area L)
11. Entry roof glazing/adjacent south building wall junction (Area J)
12. Balustrade parapet/north wing wall junction (Area G)

13. North wing wall/deck tiles junction (Area G)
 14. Lack of maintenance to exterior cladding
 15. Floor clearances (Area J)
 16. Weathertightness of entry courtyard glazed roof (Area J)
 17. Weathertightness of deck internal gutter (Area H)
 18. Weathertightness of deck floor (Area I)
 19. Weathertightness of roofing
 20. Waterproofing of upper ensuite shower.
- 3.11.3 In a phone call with the applicant on 26 January 2015, the authority confirmed that the above items required addressing or a determination should be sought.
- 3.12 The Ministry received an application for a determination on 27 October 2017, which was accepted on 3 November 2017.

4. The submissions

4.1 The initial submissions

- 4.1.1 The applicant made no submission and provided copies of the authority's refusal to issue the code compliance certificates dated 23 January 2015.
- 4.1.2 In response to an inquiry by the Ministry the authority confirmed in an email dated 7 November 2017 that the matters described in its letter dated 23 January 2015 declining the consents (refer paragraph 3.11) still represented its current position regarding the compliance of the work.
- 4.1.3 An electronic copy of the property file for the site was provided which contained documents pertinent to the determination including:
- the 2002 and 2006 building consents
 - consent documentation for both building consents
 - inspection records for both building consents
 - subdivision plan approved on 8 September 2005
 - as-built drawings for House A
 - the initial inspection report dated 20 March 2013
 - the first final inspection record dated 4 April 2010
 - the final re-inspection records dated 2 July 2014 and 15 January 2015
 - the consultant's reports dated 22 August 2014 and 1 December 2014
 - the authority's first refusal to issue the code compliance certificates dated 14 October 2014
 - the authority's second refusal to issue the code compliance certificates dated 15 January 2015
 - various other historic records, statements and other information

4.2 The draft determination and responses received

- 4.2.1 A draft determination was issued to the parties for comment on 9 March 2018.
- 4.2.2 The authority accepted the draft subject to non-contentious comments on 28 March 2018. The authority noted typographical errors and the like. I have amended the determination to take account of the comments received.
- 4.2.3 The applicant accepted the draft without comment on 29 March 2018.

5. The expert's report

5.1 General

- 5.1.1 As mentioned in paragraph 1.6.1, I engaged an independent expert to assist me. The expert is a member of the New Zealand Institute of Building Surveyors and inspected the house on 7 December 2017, providing a report completed on 2 February 2018. The parties were provided with a copy of the report on the same day.
- 5.1.2 The expert noted that the scope of his inspection was to assess code compliance of areas identified by the authority with the associated parts of Clauses B2, E2, and E3 (including Clause B1 insofar as it applies the Clause E2).
- 5.1.3 Although the building generally appeared 'tidily presented and reasonably well maintained', the expert considered that overall construction quality was 'low to moderate' with various cladding issues observed that 'typically related to poor workmanship or non-compliance with manufacturers' instructions'.

5.2 The drawings

- 5.2.1 I note that the copies of the consent and as-built drawings are of poor quality and difficult to decipher. The following drawings were provided:
- For the 2002 consent:
 - Sheet 1 covered the site/drainage plans for House A and House B
 - Sheets 2 and 3 covered plans, elevations and details for House A
 - Sheets 4 and 4A covered plans, sections and details for House B⁸
 - Sheet 5 added a mezzanine level within the original roofline of the single-storey House A, as an amendment approved on 18 February 2003.
 - For the 2006 consent (new raised roof and upper level):
 - Sheet 1 showed the existing 2002 House A and the new first floor
 - Sheet 2 covered sections and roof details for the new first floor
 - As-built Sheet 1A shows rear yard and deck to House A
 - As-built Sheet 1B adds House A roof details to Sheet 2.
- 5.2.2 The expert noted that the 'overall architectural shape and form of the building is largely in accordance with the consented/as-built drawings' with observed discrepancies including:
- timber strapped and monolithic-clad balustrade in lieu of concrete with tiled top shown in the as-built drawings
 - no clearance at entry threshold in lieu of floor slab laid over original slab shown in the 2002 consent drawings

⁸ Noted as 'Hastings St residence'

- minor amendments to joinery layout.

5.3 Moisture investigations

5.3.1 The expert took a total of 12 invasive moisture readings into framing timber at areas considered at risk, with most readings varying between 10% and 15%. However, the readings included:

- 26% at the base of the central deck roof post (Area E), with a reading of 17% at the south post (Area F)
- 12% but with highly decayed drillings beside doors to entry courtyard (Area J).

Readings over 18% generally indicate that moisture is entering the framing and further investigation is needed. (I note the expert's inspection was carried out in summer and moisture levels are expected to be higher during winter months.)

5.3.2 The expert also removed a small section of textured fibre cement from the bottom of the north concrete boundary wall/lower wall junction where cladding cracks were observed. Disintegrating building wrap and 'highly decayed' timber were observed.

5.3.3 The expert also took surface readings on the upper ensuite shower tiles and an elevated reading was noted on the surface of the shower/bedroom wall. The expert investigated this by lifting bedroom carpet and observed no evidence of moisture penetration, with a low 10% moisture reading taken into the bottom plate of the wall.

5.3.4 The expert also observed apparent repairs to linings beside the ground floor shower and 'slightly elevated' 17% moisture levels in the adjacent skirting. The expert water-tested the shower cubicle for about 20 minutes by directing water towards the corner near the repairs. Although some water escaped under the shower door and ponded on the floor against the skirting, no change to adjacent moisture levels were observed.

5.3.5 The expert considered localities identified by the authority and commented on their weathertightness and durability performance. The following paragraphs summarise the expert's comments on relevant features of the external building envelope, with localities of areas as identified in Figure 2.

5.4 Deck junctions

5.4.1 In regard to the deck canopy columns, the expert noted:

- column cladding butts against the deck floor tiles, with sealant at the junction
- high moisture levels at the bottom of the central column, although drillings appeared in reasonable condition (Area E)
- slightly elevated moisture levels at the column/balustrade parapet top (Area F).

5.4.2 In regard to balustrade parapets (Area H) – the expert noted:

- timber framed parts of balustrade are clad in direct fixed textured fibre cement
- balustrade tops are wrapped in fibreglass mesh reinforcing then texture coated
- balustrade tops slope 4° to 5° towards the deck area
- although the south balustrade cladding butts against deck floor tiles, moisture levels are only 12% to 15%, with no evidence of associated moisture penetration – likely due to a membrane upstand behind the cladding.

5.4.3 In regard to tiled deck (Area I) – the expert noted:

- the deck floor slopes at an average of 0.7° towards the north and east
- there is a coved tile upstand at the deck/west wall junction, with low 10% moisture reading in the bottom plate
- the threshold under the service door to the north void is clad, with the cavity sealed off by the deck tiles but no indication of water entry
- the deck floor falls towards a membrane lined gutter along the east balustrade, with two gutter outlets but no overflow
- there was no evidence of moisture entry into the garage below the gutter, with low moisture readings in the garage ceiling lining.

5.4.4 In regard to the north wing wall parapet (Area G) – the expert noted:

- an unconventional flashing extends over the original concrete wall/deck tile junction, with evidence of water penetration into the paint cupboard below
- flaking paint, efflorescence and ‘highly elevated’ surface moisture levels were observed on the north wall of the paint cupboard beneath the deck (Area G)
- in the cupboards beneath the roof void (Area D), there was no evidence of current moisture penetration although paint flaking indicated historic water entry (likely prior to the 2006 alterations which included the roof void).

5.5 The entry courtyard roof

5.5.1 In regard to the glazed roof over the entry court (Area J) – the expert noted:

- north and west wall EIFS below glazing is fixed over cavities
- cavity above entry doors restricted by flashing under cladding
- low moisture levels in ceiling to north of glazing
- low moisture level in ceiling trim below glazing/south wing parapet wall, where authority was concerned about flashing
- no evidence of moisture penetration resulting from roof glazing.

5.6 Ground clearances

5.6.1 In regard to entry courtyard doors – the expert noted:

- the wall is beneath the roof glazing (Area J)
- there is little or no floor clearance to the interior slab from courtyard tiles
- despite low moisture levels in the bottom plate, ‘highly decayed’ drillings indicate historic damage prior to installation of the roof glazing (see above).

5.7 Roof flashings

5.7.1 In regard to roof and roof parapet flashings – the expert noted:

- although the flashing to the west end of the roof parapet between the upper roof and infill roof is vulnerable, some protection is provided by the EIFS cavity and there is no evidence of current water entry (Area B)
- the south boundary wall/roofing junction at the south west corner of the upper roof is not securely fixed and not weathertight, with no indications of current moisture penetration but cladding cracks below that risk water entry (Area M)

- fibre cement cladding to south boundary parapet has been patched and painted, with no indication of moisture penetration below (Area A)
- the near flat parapet capping to the deck canopy roof is face-fixed at the junction with the wall, with no indications of moisture penetration and the EIFS cavity able to drain any minor penetration onto the roof (Area D).

5.8 Wall cladding junctions

5.8.1 In regard to the rear yard cladding junctions (Area K) – the expert noted:

- the concrete/textured fibre cement junction to the north west corner of the lower floor is cracked with no underlying flashing – a cut-out (see paragraph 5.3.2) revealed ‘highly decayed’ framing at the base of the junction (Area L)
- there are also cracks at the north west corner of the upper floor between the upper level EIFS cladding and the concrete boundary walls that require repair, although there are no signs of water entry due to the drained cavity behind the EIFS (Area L)
- there are also cracks at the south west corner of the upper floor that require repair, although there are no signs of water entry due to the drained cavity behind the EIFS (Area M)
- there are no control joints to the lower textured fibre cement cladding, with a fine vertical crack above and below the bathroom window (Area P)
- a pipe penetration below the upper EIFS is unsealed (Area L)
- a vertical pipe above the west gully trap is partially embedded into the direct fixed cladding, making it vulnerable to water entry (Area Q).

5.9 The authority’s other concerns

5.9.1 In regard to shower junctions, the expert noted that:

- surface readings on shower tiles to upper ensuite showed an elevated reading on the surface of the shower/bedroom wall, but lifted carpet revealed no evidence of moisture penetration, with a low 10% moisture reading taken into the bottom plate (see paragraph 5.3.3)
- repairs were apparent to the ground floor shower and water testing showed no evidence of moisture penetration (see paragraph 5.3.4).

5.9.2 In regard to other areas, the expert noted:

- the drainage inspection junction at the north west corner has now been scraped out, allowing access for inspection (Area L)
- around the dishwasher recessed within the lowered roof void (Area R):
 - missing insulation in the north wall
 - unsupported pipework and electric wiring.

5.10 The expert's conclusions

5.10.1 The expert considered that his investigations had revealed areas:

...that have implications for compliance with the New Zealand Building Code. A summary of deficiencies that may require remedial work to achieve code compliance follows:

- Inadequate base cladding clearances
- Inadequate deck clearances and flashings
- Inadequately sealed cladding junctions
- Lack of cladding control joints
- Unsealed cladding penetrations
- Insecure roof flashings
- Missing thermal insulation
- Unsupported pipework and cabling.

6. Compliance generally

6.1 Although the 2002 building consent was issued under the former Act; the majority of the building work to House A (including the entire upper level) was carried out either under or following the 2006 consent issued under the current Act, with only some lower claddings, linings and bathroom of House A remaining from the 2002 work.

6.2 Section 94 of the Act requires an authority to issue a code compliance certificate only if it is satisfied on reasonable grounds that the building work complies with the building consent. Determination 2009/069⁹ considered a two-stage approach to the issuing of a code compliance certificate under the Act: firstly, whether there were reasonable grounds to be satisfied that building work complied with the building consent; and second, whether items not in accordance with the consent comply with the Building Code.

6.3 The matter in dispute is whether the authority correctly exercised its power in its decision to refuse to issue the code compliance certificate for these alterations. In deciding this matter, I have therefore considered:

- whether the alteration work complies with the building consent and the relevant clauses of the Building Code
- whether there are reasonable grounds for the authority to issue a code compliance certificate for the alteration work.

6.4 In assessing the above, I have taken into account the age(s) of various elements in the house. Ground floor areas remaining from the 2002 consent (including the exterior lower wall cladding) are now more than 15 years old, with the remaining work more than 11 years old.

6.5 In order for me to form a view as to the code compliance of the alterations, I have established what evidence was available and what could be obtained considering that House A is completed, and some elements are not able to be cost-effectively inspected. A visual inspection of accessible components can provide reasonable grounds to form a view on the code compliance of the alterations to this house.

⁹ Determination 2009/069 The issuing of a code-compliance certificate for a house located at 15 Landmark Terrace, Orewa *Department of Building and Housing* 26 August 2009

6.6 In summary, I find that the following evidence allows me to form a view as to the code compliance of the building work as a whole:

- The various drawings and specifications.
- The authority's inspection records.
- The consultant's reports
- The expert's report as outlined above.
- The age(s) of various parts of the completed building.

6.7 The following paragraphs consider weathertightness as the authority's primary concern, followed by other items raised by the authority in its 2015 refusal to issue code compliance certificates or observed by the expert during his inspection.

7. Discussion: Clause E2 External moisture

7.1 The evaluation of the external building envelope 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).

7.2 Weathertightness risk

7.2.1 House A has environmental and design features that influence its weathertightness risk profile, including:

Increasing risk

- the building is two-storied and in a high wind zone
- there are some complex inter-cladding junctions
- roofs incorporate parapets, no roof overhangs to shelter wall claddings
- there is an enclosed deck over habitable spaces below
- the deck includes clad balustrades and canopy columns
- the lower monolithic wall cladding is fixed directly to the wall framing
- the timber treatment level is not known

Decreasing risk

- the upper monolithic wall cladding is fixed over a drained cavity
- a deck canopy shelters some deck to wall junctions.

7.2.2 Using the E2/AS1 risk matrix to evaluate these features, the house is assessed as having a high weathertightness risk. If details shown in the current E2/AS1 were adopted to show code compliance, a drained cavity would be required for the ground floor textured fibre cement wall cladding. However, this was not a requirement at the time of construction in 2002.

7.2.3 The expert has investigated roof and wall claddings and found their installation and performance generally satisfactory, with some areas that require attention. Taking account of his report, I consider the expert's report establishes that the current performance of the house envelope is not adequate because there is evidence of current moisture penetration into several areas of the underlying timber and consider that remedial work is required to the areas outlined in paragraph 5.10.1.

7.2.4 Taking account of the above, together with the other areas investigated by the expert, I conclude that investigation and/or remedial work is necessary in respect of the following areas:

- bottom of the deck columns (Area E and Area F)
- concrete wall/deck tile junction at the north wing wall (Area G)
- flashing to the west end of inter-roof parapet (Area B)
- south boundary wall/roofing junction at the SW corner (Area M)
- cracks to the inter-cladding junction at SW corner (Area M)
- cracked and leaking inter-cladding junction at NW corner (Area L)
- unsealed pipe penetration at the NW corner (Area L)
- the lack of control joints to west wall textured fibre cement (Area P)
- embedded vertical pipe above west gully trap (Area Q)

Consequently, I am satisfied that House A does not comply with Clause E2 of the Building Code.

7.2.5 Claddings are also required to comply with the durability requirements of Clause B2, which require the altered areas to satisfy all the objectives of the Building Code throughout their effective life. The durability requirements of Clause B2 include a requirement for wall claddings to protect the underlying framing for a minimum of 15 years and for timber framing to remain structurally adequate for a minimum of 50 years. A modification of the durability provisions to allow provisions for the lower cladding to commence from substantial completion in 2003 would mean that most ground floor textured fibre cement retained from the 2002 consent has already met the minimum life required by the Building Code.

7.2.6 The evidence of current and historic moisture penetration over a significant period of time satisfies me that some areas of the lower wall cladding does not comply with the durability requirements of Clause B2 insofar as it applies to Clause E2.

7.2.7 Because the identified cladding faults occur in discrete areas, I am able to conclude that satisfactory investigation and rectification of areas outlined in paragraph 7.2.4 will result in the external building envelope of House A being brought into compliance with Clauses E2 and B2 of the Building Code.

8. Discussion: The remaining Building Code clauses

8.1 Taking account of the above, together with the other areas investigated by the expert, I conclude that investigation and/or remedial work is necessary in respect of the following areas:

8.2 In regard to Clause B1 Structure, investigation into extent and significance of decay for:

- historic moisture penetration beside doors to entry courtyard (Area J)
- current moisture penetration into framing at the NW corner (Area L)

I therefore have insufficient evidence on which to make a decision in respect of Clause B1 Structure with regard to the timber framing to these areas.

- 8.3 In regard to area around recessed dishwasher within roof void (Area R)
- unsupported electrical cables (Clause G9 Electricity)
 - unsupported pipework (Clause G12 Water supplies, G13 Foul water)
 - lack of insulation to void/kitchen wall (Clause H1 Energy efficiency).

I consider this work does not comply with Clauses G9, G12, G13, and H1.

9. Discussion: Other matters

9.1 Maintenance

- 9.1.1 Effective maintenance is important to ensure ongoing compliance with Clauses B2, E2 and E3 of the Building Code and is the responsibility of the building owner. The Ministry has previously described these maintenance requirements (for example, Determination 2007/60).

9.2 Departures from the 2006 building consent

- 9.2.1 The 2006 consent was issued under the current Act, and Section 94(1)(a) of the Act requires an authority to 'issue a code compliance certificate if it is satisfied, on reasonable grounds' that the building work complies with the building consent. When considering the issue of a code compliance certificate for a building consent where the as-built construction differs from that consented, it is important to consider whether the completed work complies with the Building Code.
- 9.2.2 There will often be minor variations from the consent documents and the authority should always be informed of these so that a proper process for dealing with these can be established. When changes are minor and the work complies with the Building Code an authority can record these by way of adequately detailed as-built drawings. The procedure for addressing such changes is addressed in the Building (Minor Variations) Regulations 2009, which defines minor variations.
- 9.2.3 In this case, I acknowledge that the authority accepted the as-built drawings of House A on 19 February 2013 and I consider that the variations identified by the expert from the as-built drawings are not of such a significant level that they would warrant a formal amendment of the building consent. I therefore leave the resolution of final as-built drawings to the parties to resolve once the remedial work is complete.

10. What happens next?

- 10.1 The authority may issue a notice under section 95A taking into account the findings of this determination, identifying the areas outlined in paragraph 8.1. The applicant should produce a detailed proposal to specifically address the matters of non-compliance and investigation for the areas identified, produced in conjunction with a competent person with suitable experience in weathertightness remediation, as to the investigation and rectification or otherwise of the specified matters.
- 10.2 The detailed proposal should be submitted to the authority for its consideration and approval, with any outstanding items of disagreement able to be referred back to the Chief Executive for a further binding determination if necessary. A code compliance certificate will be able to be issued for House A once the above matters have been satisfactorily addressed.

11. The decision

- 11.1 In accordance with section 188 of the Building Act 2004, I hereby determine that the alterations comply with the relevant clauses of the Building Code with the following exceptions:
- some areas of the external building envelope do not comply with Clauses E2 and B2 of the Building Code
 - the cabling, pipework and walls around the recessed dishwasher within the roof void do not comply with Clauses G9, G12, G13, and H1 of the Building Code
- and accordingly, I confirm the authority's decision to refuse to issue code compliance certificates for the alterations.
- 11.2 I consider there is insufficient evidence to show that the timber framing to the areas noted in paragraph 8.2 comply with Clause B1 Structure.

Signed for and on behalf of the Chief Executive of the Ministry of Business, Innovation and Employment on 20 April 2018.

Katie Gordon
Manager Determinations