



## The issue of notices to fix for alterations to five chalets at Waiheke Resort, 4 Bay Road, Waiheke Island, Auckland



### 1. The matters to be determined

1.1 This is a determination under Part 3 Subpart 1 of the Building Act 2004<sup>1</sup> (“the Act”) made under due authorisation by me, John Gardiner, Manager Determinations, Department of Building and Housing (“the Department”), for and on behalf of the Chief Executive of that Department.

### 1.2 The parties

1.2.1 The applicants are the owners of five accommodation buildings (“the chalets”) in the resort (“the applicants”), acting via a property management company (“the management company”):

- 2/4 Bay Rd: L and J Cleland (“Unit 2”)
- 3/4 Bay Rd: S and G Thomas (“Unit 3”)
- 5/4 Bay Rd: Paul Properties Ltd (“Unit 5”)
- 7/4 Bay Rd: Kiwi Comfort Ltd (“Unit 7”)
- 17/4 Bay Rd: D and P Nunns (“Unit 17”)

1.2.2 The other party is the Auckland City Council (“the authority”) carrying out its duties and functions as a territorial authority or building consent authority.

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

1.3 This determination arises from the decision of the authority to issue notices to fix for alterations to the chalets because it was not satisfied that the work complied with certain clauses<sup>2</sup> of the Building Code (First Schedule, Building Regulations 1992).

1.4 The matter to be determined<sup>3</sup> is therefore whether the authority was correct to issue the notices to fix for the chalets. In deciding this, I must consider:

- **The appropriate notices to issue**

Whether the issue of notices to fix was the appropriate statutory mechanism to be applied if the buildings were dangerous or insanitary (I consider this in paragraph 6)

- **The external claddings**

Whether the altered wall and roof claddings to the chalets (“the claddings”) comply with Clause B2 Durability and Clause E2 External Moisture of the Building Code. The claddings include the components of the systems (such as the fibre-cement backing sheets, the coatings, the underlying plywood sheets, the windows, the replaced roof cladding and the flashings), as well as the way the components have been installed and work together. (I consider this in paragraph 8.)

- **Other relevant code clauses**

Whether various other items identified by the authority in the notices to fix comply with the relevant clauses of the Building Code (I consider this in paragraph 9.).

## 1.5 Matters outside this determination

1.5.1 The notices to fix cite contraventions of all clauses of the Building Code. However, I note that the specific items within the notices are limited to Clauses B1 Structure, B2 Durability, E1 Surface water, E2 External Moisture, E3 Internal Moisture, G9 Electricity, G12 Water Supplies and G13 Foul Water. This determination therefore does not consider the remaining clauses of the Building Code.

1.5.2 The notices to fix also outline requirements for durability of building elements, taking into account the ages of the alteration work. The notices state that an application for a modification of the requirements could be applied for to allow durability periods to commence from the dates of substantial completion. I therefore leave this matter to the parties to resolve and do not consider it further.

1.5.3 The notices to fix were issued for building work carried out under building consent numbers 99/05061 and 03/03998 issued under the Building Act 1991 (“the former Act”). Notices to fix were also issued for cladding alterations which were carried out without a building consent to another building in the development (Building AN). Although the owners of that building were part of the same application, their notices are considered in a separate Determination.

1.6 In making my decision, I have considered the submissions of the parties, the report of the expert commissioned by the Department to advise on this dispute (“the expert”) and the other evidence in this matter. I have evaluated this information using a framework that I describe more fully in paragraph 7.

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<sup>2</sup> 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.

<sup>3</sup> Under section 177(b)(iii) of the Act

## 2. The building work

2.1 The chalets are part of a larger 'resort' development situated on a steeply sloping north-facing site in a high wind zone for the purposes of NZS 3604<sup>4</sup>. The resort is operated as a holiday and conference venue and has about 52 accommodation units; ranging from small detached 'chalets' and motel-style 'studios' up to larger 'villas'.

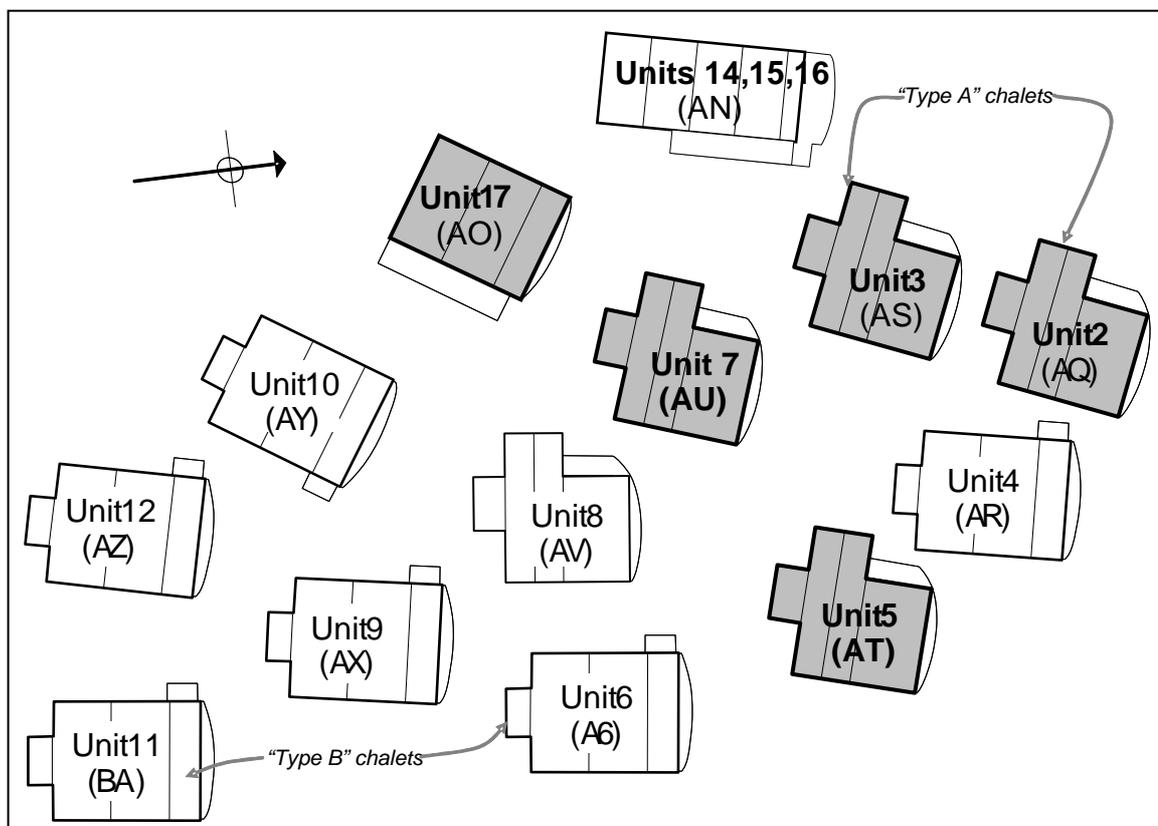
### 2.2 The development

2.2.1 The original development gained town planning consent in 1982 to establish a holiday park, which included a restaurant/kitchen, ablution blocks, an amenities building and 12 cabins (the chalets). These original buildings were constructed during 1983 or 1984 as the holiday park was operating prior to 1985<sup>5</sup>.

2.2.2 In 1990 the development was subdivided and consent was granted to unit title the accommodation buildings in 1996. The development has continued to expand since then; with new units and facilities added, along with many building consents issued for extending and altering the older buildings (including the chalets considered in this determination).

### 2.3 The chalets

2.3.1 The chalets, with neighbouring buildings, are shown in the following sketch:



<sup>4</sup> New Zealand Standard NZS 3604:1999 Timber Framed Buildings

<sup>5</sup> Source: 1990 report on planning applications and consents

- 2.3.2 The Type A chalets (Units 2, 3, 5 and 7) are very similar in design and construction and were altered under the same building consent in 1999. Unit 17 and the building containing Units 14 to 16 (considered in a separate Determination) had new decks added under the same consent in 2000. Another consent for alterations to Unit 17 was issued in 2003.
- 2.3.3 Construction of the chalets is conventional light timber frame, with timber pile foundations, texture-coated fibre-cement cladding, aluminium windows and profiled metal roofing. The chalets are simple in plan and form, and have a low weathertightness risk (see paragraph 8.2).
- 2.3.4 The monolithic wall cladding consists of 7.5mm fibre-cement sheets fixed through the original 14mm V-grooved plywood cladding and building wrap to the framing, and finished with an applied textured coating system. Below the floor level, the texture-coated fibre-cement is installed directly over the framing, with the back of the sheets exposed to the sub-floor area.

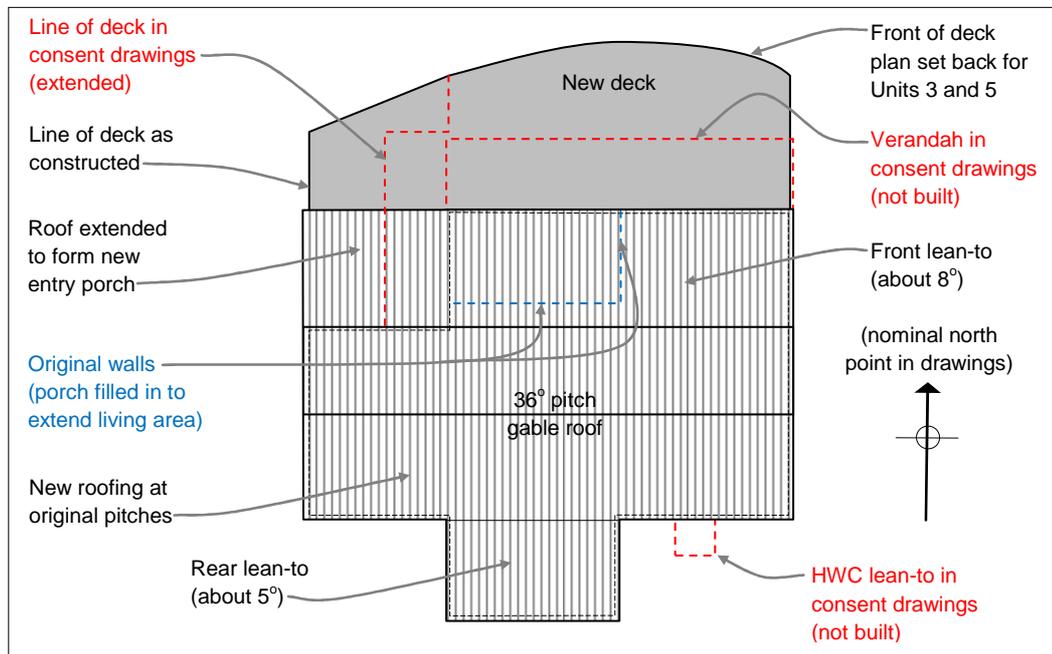
## **2.4 Units 2, 3, 5 and 7 (Type A chalets)**

- 2.4.1 These chalets are simple single-storey detached buildings about 50m<sup>2</sup> in area. Based on the limited sketches of the original buildings, the chalets appear to have originally provided three bedrooms opening off a small living area, with a small bathroom in a rear lean-to.
- 2.4.2 The original consent drawings<sup>6</sup> for the additions and alterations to these chalets included:
- extensions to living areas
  - new bathrooms and kitchens
  - new timber decks (of varying areas)
  - new roofs, extended to form verandahs above the decks
  - new aluminium windows and monolithic wall cladding
  - substantial changes to interior partitions to provide two bedrooms only.
- 2.4.3 It is apparent from the expert's report and the photographs in the notices to fix that the work undertaken on these chalets has changed considerably from that shown in the consent drawings. While most of those changes relate to the reduced level of work carried out to most of the interiors, there are also significant changes to the exteriors of all of the chalets.

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<sup>6</sup> Under building consent YC/99/05061

2.4.4 The following sketch compares outlines of the original chalets, the consent drawings and what generally appears to have been constructed:



2.4.5 The 36° pitch gable roof has no eaves or verge projections, and reduces to 5° pitch over the rear lean-to and about 8° over a front porch and bedroom. The consent drawings showed the low pitched roof extending as a verandah above the front deck.

2.4.6 The consent drawings call for the exterior wall cladding to be texture-coated fibre-cement ‘fitted over existing plywood’. The consent drawings also call for existing windows to be removed and replaced with new aluminium windows of different sizes installed in different locations. For most of the chalets, at least some windows appear to be unchanged in size and position.

## 2.5 Unit 17

2.5.1 Unit 17 is a small 35m<sup>2</sup> one-bedroom chalet with a simple rectangular plan. The 36° pitch gable roof has no eaves or verges and reduces to a low pitched verandah above the front deck. No changes were made to the existing roof and the consent elevations note the wall cladding as ‘existing texture coat exterior’, although it is not clear when that cladding was installed.

2.5.2 The 2003 building consent<sup>7</sup> for this unit describes the building work as ‘Internal renovation of Unit New kitchenette & Bathroom’. However the consent drawings shows three new windows and two sets of new sliding doors to the deck, with the original centre front door removed then clad and lined to provide a bracing panel.

<sup>7</sup> Under building consent YC/03/03998

## 2.6 Timber treatment

- 2.6.1 Given the date of the original construction in about 1984, I consider that the original exterior wall framing to all of the chalets is likely to be boracic-treated.
- 2.6.2 The expert took a sample from the original plywood cladding of Building AN and forwarded it to a testing laboratory for analysis. The biodeterioration consultant's analysis confirmed that the plywood samples were CCA treated to a level equivalent to about H3.2. I accept that the tested sample is also typical of the original plywood cladding to the chalets.

## 3. Background

- 3.1 The following building consents relevant for the subject chalets were issued by the authority under the Building Act 1991:
- (a) No. YC/99/05061 dated 29 June 1999 for 'alterations to accommodation units 2,3,5,7 & 8'
  - (b) No. YC/00/00732 dated 15 February 2000 for 'additions and repairs to decks on units 1 (AM), 14/15/16 (AN) and 17 (AO), which was subsequently issued with a code compliance certificate dated 28 November 2002.
  - (c) No. YC/03/03998 dated 10 June 2003 for 'internal renovation of unit, new kitchenette & bathroom' for alterations to Unit 17.
  - (d) No. BLD 2003/15687/01 dated 5 December 2003 for 'interior alterations to unit AS' (Unit 3).

**Table 1**

<b>UNIT No (current)</b>	<b>Current building references</b>	<b>CT references</b>	<b>TYPE (A or other)</b>	<b>Comment</b>	<b>Consents (refer above)</b>
<b>2</b>	<b>AQ</b>	<b>119A/930</b>	<b>A</b>	YC/99/05061	<b>(a)</b>
<b>3</b>	<b>AS</b>	<b>119A/932</b>	<b>A</b>	YC/99/05061 BLD 2003/15687/01	<b>(a)</b> <b>(d)</b>
<b>5</b>	<b>AT</b>	<b>119A/933</b>	<b>A</b>	YC/99/05061	<b>(a)</b>
<b>7</b>	<b>AU</b>	<b>119A/934</b>	<b>A</b>	YC/99/05061	<b>(a)</b>
<b>14</b>	<b>AN</b>	<b>119A/927</b>	<b>Other</b>	3 motel type studio units YC/00/00732 (decks – CCC issued) <i>Part of this application, but considered in a separate Determination.</i>	<b>(b)</b>
<b>15</b>					
<b>16</b>					
<b>17</b>	<b>AO</b>	<b>119A/928</b>	<b>Other</b>	YC/03/03998 (renovation) YC/00/00732 (decks – CCC issued)	<b>(c)</b> <b>(b)</b>

3.2 Construction of the decks to the chalets was completed first. A letter dated 27 March 2000 from the authority's building inspector to the management company confirmed that he had inspected deck additions, including to Units 2,3,5,7 and 17, on 24 March 2000. The letter stated that 'the deck platforms have all been constructed as per the approved plans' and also noted:

It is understood that the approved internal alterations to the units are now not going to be done, and the units are to be redecorated with no structural changes.

### **3.3 The alterations to Units 2, 3, 5 and 7**

3.3.1 A new building consent was issued in February 2002 for refurbishing work to Unit 8, with a code compliance certificate subsequently issued on 10 June 2002. It therefore appears that all work to Unit 8 was excluded from consent 99/05061.

3.3.2 A second new building consent (No.03/15687) dated 5 December 2003 was issued for all of the interior alterations to Unit 3. A code compliance certificate for that consent was issued on 26 April 2004; and all interior work to Unit 3 was therefore excluded from consent 99/05061.

3.3.3 Based on the comment in the inspector's letter (see paragraph 3.2), it appears that the interior work originally in consent 99/05061 was significantly reduced (for at least some chalets). Any work additional to the decks appears to have been delayed as pre-line inspections of the chalets were not carried out until March 2004.

3.3.4 It is unclear if building consent 99/05061 has been amended to reflect the work on other units carried under separate building consents with subsequent code compliance certificates.

### **3.4 The alterations to Unit 17**

3.4.1 The deck repairs and additions carried out under consent YC/00/00732 were issued with a code compliance certificate on 28 November 2002.

3.4.2 Work under consent YC/03/03998 was carried out after the deck repairs and additions. Although described in the consent as 'internal renovation', this building work included extensive alterations to the north wall and also the addition of new windows to the east and west walls.

3.4.3 The authority carried out a pre-line inspection on 17 July 2003 and a post-line inspection on 19 August 2003, which included the bracing installed between the new sliding doors to the verandah.

3.4.4 A final inspection was carried out on 7 January 2004, which passed all building elements included in the consent drawings but noted 'dispensation required for ramps etc'. This was apparently an oversight, as dispensation for accessibility was not required due to the private ownership of the building.

### 3.5 The notices to fix for the chalets

- 3.5.1 In order to clarify the status of some older outstanding building consents, the authority carried out inspections of various buildings in the development and issued notices to fix depending on the results of those inspections.
- 3.5.2 The authority inspected the chalets on 19 August 2008, and wrote to the owners on 30 September 2008, stating that the authority was not satisfied that their units complied with the 'building code in a number of respects'; recommending that they:
- ...engage the services of a suitably qualified person to review the attached NTF and to develop a proposed scope of work, which in their view would address all the areas of contravention. Council will then review this proposal and if it agrees with it, will then advise you as to whether a building consent needs to be applied for.
- 3.5.3 The authority issued notices to fix for each chalet, dated 7 November 2008, which attached 'Photo files' of defects identified in each building. The notices stated that it was not satisfied that the building work complied with the consent, or with some clauses of the Building Code, or with the Building Act.
- 3.5.4 The 'particulars of contravention or non-compliance' listed the following summarised defects for the chalets (with ticks showing items applying to each unit):

**Table 2**

Notices to fix items (combined summary)	Unit 2	Unit 3	Unit 5	Unit 7	Unit 17
<b>2.0 Issues related to cladding</b>					
Wall cladding changed without consent					a) ✓
<b>2.1 Wall cladding not installed per manufacturer's specifications</b>					
Wall cladding gap at bottom	a) ✓	a) ✓			
Cladding junction with head flashing	b) ✓	b) ✓	a) ✓	a) ✓	a) ✓
Only edge sealant to window jamb flanges	c) ✓	c) ✓			b) ✓
No sill flashing and drainage gap	d) ✓	d) ✓	b) ✓	b) ✓	c) ✓
Clearances below bottom of cladding	e) ✓	e) ✓	c) ✓	c) ✓	
Clearances from interior floor to ground	f) ✓	f) ✓	d) ✓	d) ✓	
Unpainted sheet edges	g) ✓	g) ✓		e) ✓	d) ✓
Overhang of cladding below bottom plate	h) ✓			f) ✓	
<b>2.2 Items not installed per acceptable/alternative solutions approved for consents</b>					
Insufficient roof fixings for wind zone	a) ✓	a) ✓	a) ✓	a) ✓	
Downpipes discharging onto ground			b) ✓		
Overflashings for high wind/low pitches		b) ✓	d) ✓		
Overhang at gutters		c) ✓	e) ✓	c) ✓	
Roof pitch of lean-tos less than 8°	b) ✓				
Insufficient downpipe fixings	c) ✓	d) ✓	c) ✓ f) ✓	b) ✓	
Cladding required behind gutters/fascias etc	d) ✓	e) ✓	g)	d) ✓	
Roofs and walls not proved weathertight	e) ✓	f) ✓	h) ✓		
Cladding cracks	f) ✓			e) ✓	

<b>Notices to fix items (combined summary)</b>	<b>Unit 2</b>	<b>Unit 3</b>	<b>Unit 5</b>	<b>Unit 7</b>	<b>Unit 17</b>
Inadequate flashings,/reliance on sealants	g) ✓	g) ✓	i) ✓	f) ✓	
Step down to deck less than 100mm				g) ✓	
No drainage gap at junction with decking	h) ✓	h) ✓	j) ✓	h) ✓	
Structure/connections at deck porch area	i) ✓	i) ✓	k) ✓	i) ✓	
Size and fixing of lintel at sliding entry door				j) ✓	
Sub-floor - Piles, framing, connections etc	j) ✓	j) ✓	l) ✓	k) ✓	
Sub-floor clearances	k) ✓	k) ✓	m) ✓	l) ✓	
Sub-floor ventilation	l) ✓	l) ✓	n) ✓	m) ✓	
Gradients of sub-floor wastepipes				n) ✓	c) ✓
Vent pipe termination clearances	m) ✓	n) ✓	o) ✓	o) ✓	
Unsupported pipes in sub-floor	n) ✓	o) ✓	p) ✓	p) ✓	a) ✓
HWC installation	o) ✓	m) p) ✓	q) ✓	q) ✓	b) ✓
Surface water drainage			r) ✓	r) ✓	
Surface water to be via a sump			s) ✓	s) ✓	
<b>2.3 Items not installed to accepted trade practice</b>					
Unsealed penetrations through cladding	a) ✓				
No drip edges to wall cladding	b) ✓	b) ✓	b) ✓	b) ✓	
Cracked shower tiles				c) ✓	
<b>2.4</b> Lack of drainage and ventilation of cladding	✓	✓	✓	✓	✓
<b>3.0 Changes to building consents</b>					
Floor plan different to consent plan	a) ✓	a) ✓	a) ✓	a) ✓	✓
Verandah/post detail	b) ✓	b) ✓	b) ✓	b) ✓	✓
HWC installed in sub-floor	c) ✓	c) ✓	c) ✓	c) ✓	✓
Timber retaining wall added			d) ✓	d) ✓	
Cladding changed					<b>2.0</b> a) ✓
New HWC installed					a) ✓
<b>4.0 Other issues</b>					
Smoke detectors	a) ✓	a) ✓	a) ✓	a) ✓	
Unsupported wiring	b) ✓	c) ✓	c) ✓	c) ✓	b) ✓
Safety glass to garden shed		b) ✓	b) ✓	b) ✓	a) ✓
Non-return valve to shower hoses	c) ✓	d) ✓	d) ✓	d) ✓	c) ✓
Gutter cleaning	d) ✓	e) ✓	e) ✓	e) ✓	
Cladding maintenance		f) ✓	f) ✓	f) ✓	

3.5.5 The authority required the applicants to prepare a proposed scope of work ‘prepared by a recognised building expert’ to address the areas of non-compliance.

- 3.5.6 With regard to durability requirements, the notice stated that the applicants could apply to the authority for a modification to allow the requirements of Clause B2 to 'commence from the date of substantial completion, as opposed to the date of the Code Compliance Certificate.'
- 3.6 Correspondence between the management company and the authority followed without resolution, and the Department received an application from the property manager for Units 2, 3, 5, 7 and 17 on 18 November 2009.
- 3.7 The Department sought further information on the notices to fix and clarification on the subject buildings, which was received from the authority on 21 December 2009. On 2 March 2010, the owners of Units 14/15/16 elected to join the determination. Due to its different size and design, that building is considered in a separate Determination.

#### **4. The submissions**

- 4.1 The management company's submission outlined the background to the situation, explaining how the authority's inspections had led to a number of notices to fix being issued to the owners of various buildings in the development. The management company stated that the building work had been inspected, although few records could be located. Discussions had been held with the authority on a proposed schedule of works without being able 'to agree on a format to resolve the situation'.
- 4.2 The management company forwarded copies of:
- some inspection summaries
  - some correspondence with the authority
  - information from the LIM reports on buildings in the development
  - various drawings and other information.
- 4.3 The authority acknowledged the application, clarifying which buildings in the development were involved in the application and noting the building references used in the property records.
- 4.4 The authority forwarded copies of information and a CD-Rom that was entitled 'Property File'. The documents relating to the building work considered in this determination included:
- consent drawings for alterations to various buildings
  - some inspection records and summaries
  - some correspondence with the applicants
  - a letter dated 27 March 2000 from the authority's building inspector to the management company and the authority regarding the deck additions
  - the notices to fix for the units

- various documents relating to the history of the development, including a 1990 report on planning applications and consents for the development.

4.5 A determination was issued to the parties for comment on 10 June 2010. The applicants and the authority accepted the draft without comment.

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

5.1 As mentioned in paragraph 1.6, I engaged an independent expert to assist me. The expert is a member of the New Zealand Institute of Building Surveyors. The expert inspected the units on 9 February, 5 March and 19 March 2010.

5.2 The expert provided a report that was completed on 12 April 2010. The report included Building AN (Units 14/15/16), which is considered in a separate Determination. The following is therefore limited to information relevant to the chalets.

5.3 The expert included the following general comments on the chalets:

- The texture-coated fibre-cement cladding is installed directly over the original 14mm plywood sheet cladding. The underlying plywood sheets incorporate 9mm wide x 5mm deep vertical grooves at about 150mm centres.
- With the exception of the sub-floor cladding, the cladding generally appears 'straight and is evenly finished', although it is due or becoming due for repainting. There are no walls that require control joints.
- The windows are face-fixed with metal head flashings that have varying projections beyond the jambs. (I note that some existing windows were removed and new windows are installed in different locations, with new head flashings; while some existing windows appear to have been re-installed in the same locations, using existing head flashings.)
- The decks have been installed prior to the new cladding (see paragraph 0), with the original plywood cladding continuing down over the boundary joists. The overlaid fibre-cement finishes at the timber decking, with no or a minimal gap at the junction.
- Cladding and floor level clearances above ground are satisfactory, as all floors are elevated above the sub-floor area. (As the sub-floor framing is exposed, I note that any moisture penetrating through that cladding should have no significant effect.)
- Pipe penetrations are from the sub-floor area rather than through the walls. The roof water is piped to storage and soakpits.

## **5.4 Moisture testing**

5.4.1 The expert inspected the interiors of the chalets and noted no evidence of moisture penetration. Due to the similarity of construction, the expert restricted moisture testing to Unit 17 and took non-invasive moisture readings on the inside of interior walls, recording a maximum of 12%.

5.4.2 The expert also took six invasive moisture readings on the south and west elevations at areas considered at risk, with readings ranging from 9% to 12%. I accept that the moisture levels recorded in Unit 17 are indicative of the likely moisture levels in the other chalets.

## 5.5 Sample testing of the original plywood cladding

5.5.1 While inspecting the building containing Units 14/15/16, the expert removed a sample of the original plywood cladding from the bottom of a wall in close proximity to the ground and forwarded it to a testing laboratory for analysis. The expert noted that the original cladding had been installed over 'bituminous double-sided foil' building wrap.

5.5.2 The biodeterioration consultant's analysis confirmed that the plywood sample was 'almost certainly' CCA treated to a level equivalent to about H3.2. The analysis also showed 'pockets of early soft rot in the outer 1-2mm up to 40mm from the bottom edge'. I accept that the plywood sample tested is likely to be typical of the original plywood cladding of the chalets.

5.6 The expert commented on the items identified in the notices to fix for the building as summarised in the following table. I have expanded on those comments where appropriate (with my comments shown in italics within brackets).

**Table 3**

Combined list for chalets	Unit No.	Expert's comments (with my comments in italics within brackets)
<b>2.1 Wall cladding not installed per manufacturer's specifications</b>		
Wall cladding anti-capillary gap at bottom	2,3	Not applicable ( <i>wall cladding is proud of sub-floor cladding, which is exposed on the inside of the sub-floor space</i> ).
Cladding junction with head flashing	all	There is no gap above the head flashings.
Only edge sealant to window jamb flanges	2,7,17	The jambs are sealed with fillets of sealant applied at the edge.
	3	Sealant is failing in some areas.
No sill flashing and drainage gap	all	The windows are face-fixed without sill flashings and drainage gaps. ( <i>Face-fixed windows required drainage gaps but not usually sill flashings at the time of cladding work</i> ).
Clearances below bottom of cladding	2,3,5,7	Not applicable ( <i>as sub-floor cladding is unlined on inside</i> ).
Clearances from interior floor to ground	2,3,5,7	Floors are above sub-floor spaces. Step down to deck is 65mm.
Unpainted sheet edges	2,5,7,17	Bottom edges are visible and are not painted.
Overhang of cladding below bottom plate	2,7	The underlying plywood overlaps boundary joists.
<b>2.2 Items not installed per acceptable/alternative solutions approved for consents</b>		
Insufficient roof fixings for wind zone	2,3,5,7	Insufficient roof fixings for high wind zone.
	17	Insufficient ( <i>original roof unchanged in building work</i> ).
Downpipes discharging onto ground	5	Stormwater piped into soakpits. No discharge onto ground.

<b>Combined list for chalets</b>	<b>Unit No.</b>	<b>Expert's comments (with my comments in italics within brackets)</b>
Overflashings for high wind/low pitches	3 2,5	No over-flashing to rear lean-to. Inadequate over-flashing installed.
50mm overhang at gutters	3	40mm at porch.
	5	40mm at rear
	7	40mm at rear, secondary underflashing added to front.
	17	40mm ( <b>original roof unchanged in building work</b> ).
Roof pitch of lean-to's less than 8°	2	Roof replaces the original, with all at the same pitch. Front roof at 7° to 9°, rear lean-to 6° but is original pitch.
Insufficient downpipe fixings	2,3,5,7	Insufficient downpipe fixings
	17	Insufficient ( <b>but downpipes unchanged in building work</b> ).
Cladding required behind gutters/fascias etc	2,3,5,7	Cladding overlaid up to fascias. ( <b>but original plywood cladding extended behind fascias</b> )
Roofs and walls not proved weathertight	2,3,5	No evidence of moisture penetration.
Cladding cracks	2	Cracks limited to poorly aligned sub-floor cladding.
	3	Some joint cracks repaired.
	7	No cladding cracks observed.
	17	Some cracks with some repaired, most cracks to sub-floor.
Inadequate flashings,/reliance on sealants	2	Inadequate over-flashing to rear lean-to and ridge flashing end.
	3	No over-flashing to rear lean-to
	5	Inadequate over-flashing to rear lean-to.
Step down to deck less than 100mm	5	Step down to side entry deck 65mm.
	7	Step down to front decks are 65-70mm
		( <b>However no signs of water ingress</b> )
No drainage gap at junction with decking	2,3,5,7	Decks installed against original plywood, before over-cladding.
Structure/connections at deck porch area	2,3,5,7	The beam size appears inadequate ( <b>the verandahs shown in the drawings were replaced with extended entry porches</b> ).
Size and fixing of lintel at sliding entry door	7	Cannot be seen – unable to confirm ( <b>needs investigation</b> ).
Sub-floor - Piles, framing, connections etc	2,3	Unable to access sub-floor ( <b>assumed to be same as unit 5</b> )
	5,7	Some inadequate piles ( <b>but sub-floor is original</b> )
Sub-floor clearances	2,3	Unable to access sub-floor ( <b>assumed to be same as unit 5</b> )
	5,7	Unable to measure minimum, but close to 550mm clearance.
Sub-floor ventilation	2,3	Unable to access sub-floor ( <b>assumed to be same as unit 5</b> )
	5,7	Some limited gaps in cladding/decking.
Gradients of sub-floor wastepipes	5, 17	Some pipe gradients insufficient.
	7	Disconnected pipe in sub-floor.
Vent pipe termination clearances	2,5	Only 1.5m above ground.
	3	Only 2.5m above ground.
	7	Only 2.4m above ground, 500mm above bathroom window.
Unsupported pipes in sub-floor	2,3	Unable to access sub-floor ( <b>assumed to be same as unit 5</b> )
	5,7	Unsupported pipework observed ( <b>unclear what is original</b> ).
HWC installation	2,3	Unable to access sub-floor ( <b>assumed to be same as unit 5</b> )
	5	Old cylinder with substandard installation ( <b>appears original</b> ).
	7	No platform or restraint ( <b>age of cylinder unclear</b> ).
Surface water drainage	5,7	Surface water drains on sloping ground ( <b>as per original</b> )
Surface water to be via sump	5,7	Surface water drains on sloping ground ( <b>as per original</b> ).

Combined list for chalets	Unit No.	Expert's comments (with my comments in italics within brackets)
<b>2.3 Items not installed to accepted trade practice</b>		
Unsealed penetrations through cladding	all	There are no pipe penetrations through main walls as pipe connections are through the floor <i>(However, some fixings to downpipes, light fittings etc. may need sealing)</i>
No drip edges to wall cladding	2,3,5,7	Drip edges at junction with sub-floor cladding include thickness of original plywood.
Cracked shower tiles	7	No cracked tiles observed in fully tiled bathroom.
<b>2.4 Drainage and ventilation</b>		
Lack of drainage and ventilation of cladding	all	<i>(Cladding fixed against original grooved plywood sheets)</i>
<b>3.0 Changes to building consents</b>		
Floor plan different to consent plan	2,5,7,17	Floor plan significantly changed from consent
	3	<i>(Not applicable for interior changes to 3 – CCC issued)</i>
Verandah/post detail	all	<i>(Verandah not constructed so detail expected to change).</i>
HWC installed in sub-floor	all	Applies for all units <i>(as per original, with some original HWC's.)</i>
Timber retaining wall added	5	Wall about 1.2m high and 200mm from rear lean-to wall.
	7	Wall about 1.1m high and 60-230mm from rear lean-to wall.
Cladding changed	17	<i>(Was pre-existing as consent, drawings note 'existing texture coat exterior' and cladding 'to match existing' for bracing panel.)</i>
New HWC installed	17	New cylinder – installation appears satisfactory.
<b>4.0 Other issues</b>		
Smoke detectors	2,3,5,7	No smoke detectors <i>(but not required at the time)</i>
Unsupported wiring	2,3	Unable to access sub-floor <i>(assumed to be same as unit 5)</i>
	5,7,17	Unsupported wiring in sub-floor observed.
Safety glass to garden shed <i>(No garden shed(s) noted or included in consent.)</i>	3,5,7	Bathroom screens not marked <i>(but proprietary products).</i>
	17	Bathroom screen marked as safety.
Non-return valve to shower hoses	2,5,7,17	Not confirmed.
	3	<i>(Not applicable – Unit 3's interior work issued with CCC)</i>
Gutter cleaning	2,3,5,7	Overdue for cleaning <i>(maintenance)</i>
Cladding maintenance	3,5,7	The units are coming due for repainting. <i>(maintenance)</i>
	17	General maintenance is poor. <i>(maintenance)</i>

5.7 A copy of the expert's report was provided to the parties on 19 April 2010.

## 6. The appropriate notices to issue

6.1 The expert has identified a number of defects relating to the original construction of the chalets; and others that I am unable to identify as part of the original construction or the building work under the consents. Some defects clearly relate only to parts of the original construction and have not been affected by the alterations.

- 6.2 Defects in the original construction cannot be required to be remedied, except in specific circumstances where they are found to be dangerous or insanitary under Section 121 of the Act. I do not consider that the notices to fix were appropriate to deal with the specific concerns relating to the structural integrity or safety of the wiring of the original construction.
- 6.3 In regard to the above, taking account of the expert's report and the other evidence, I accept that the following areas of the original construction require investigation:
- Clause B1:
    - safety of the original subfloor piles and framing (Units 2, 3, 5 and 7)
    - safety of existing timber retaining walls (Units 5 and 7)
    - inadequate fixings to original roofs for the high wind zone (all units)
    - inadequate platforms and lack of earthquake restraints to original/existing hot water cylinders (Units 2, 3, 5 and 7).
  - Clause G9: Unsupported/unsafe existing wiring in subfloor areas (all units).
- 6.4 If the above items are confirmed as being part of the original structure and are investigated and classified as dangerous in terms of s121(1)(a)(i); then the authority is able to give written notice to 'reduce or remove the danger' under Section 124, which sets out the powers of territorial authorities in respect of dangerous buildings.
- 6.5 If items listed in paragraph 6.3 are part of the original construction, but are found not to be dangerous; I strongly recommend they be attended to along with the following additional items in the original construction noted in the expert's report:
- Clauses G12 and G13:
    - unsupported existing pipework in the subfloor areas (all units)
  - Clause G13:
    - inadequate existing pipe gradients in the subfloor areas (all units)
    - the disconnected pipe in the subfloor area (Unit 7)
    - any existing vent pipe terminations (Units 2, 3, 5 and 7).
- 6.6 Building work not included in the building consents**
- 6.6.1 The authority has identified a number of areas in each notice to fix for the chalets as 'changes to building consent'. Some of these areas relate to work which was in the building consents but was not carried out. Where this is the case, the building consent should be amended to remove that work, with the drawings amended accordingly.
- 6.6.2 The authority has also identified other areas that appear to relate to repairs and maintenance carried out at various times to some of the chalets. Section 41(1)(b) of the Act states that a building consent is not required for any building work described in Schedule 1 (refer Appendix, paragraph 13.3), which includes repairs and maintenance where components are replaced with comparable components or assembly in the same position (for example, the replacement of a hot water cylinder in the same position).

- 6.6.3 The authority has also identified the cladding to Unit 17 as work carried out without a building consent in breach of Section 40 of the Act (refer Appendix, paragraph 13.1). However, the consent drawings for BC 03/03998 clearly label the cladding as 'existing texture coat exterior'. While the cladding work may not have been authorised at the time it was installed, I regard the lack of consent for the textured cladding to be a separate and pre-existing issue to the particular building consent addressed by the notices to fix. Notwithstanding the question of a consent for the work, the cladding to Unit 17 is required to comply with the Building Code.

## 7. Evaluation framework

- 7.1 The alteration work to the chalets consented prior to 2004 needs to comply with the Building Code to the extent required by Section 38 of the Building Act 1991 (see Appendix, paragraph 13.2). In the case of these chalets, the work must continue to comply with the code to 'at least the same extent as before the alteration.' The level of compliance is generally lower than that applying to the construction of a new building or addition.

- 7.2 Taking account of the nature and history of the alteration work, I have evaluated the code compliance of the consented building work (to the extent required by the Act) by considering the following two broad categories of the building work:

- The weathertightness of the external claddings (Clause E2) and durability (Clause B2 in so far as it relates to Clause E2).
- Defects identified by the authority that relate to other clause requirements.

In the case of these alterations, weathertightness considerations are addressed first.

## 8. The external claddings

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

### 8.2 Weathertightness risk

- 8.2.1 These chalets have the following environmental and design features which influence their weathertightness risk profile:

#### Increasing risk

- the chalets are in a high wind zone
- except for porches, the chalets have no eaves to provide shelter to the walls
- monolithic wall cladding is fixed directly over the original plywood cladding

#### Decreasing risk

- the chalets are simple single-storey buildings, with few complex junctions
- the attached free-draining timber decks have open metal balustrades.

- 8.2.2 When evaluated using the E2/AS1 risk matrix, these features show that the elevations of the chalets demonstrate a low weathertightness risk rating. I note that, if the details shown in the current E2/AS1 were adopted to show code compliance, the monolithic cladding on this building would not require a drained cavity. I also note that a drained cavity was not a requirement of E2/AS1 at the time of the alterations.

### 8.3 The overlaid cladding

- 8.3.1 The original tanalised plywood cladding remains in place beneath the new fibre-cement cladding and the potential for deterioration of this plywood due to moisture ingress needs to be considered. Although the original plywood was likely to have provided some limited bracing function, the consent drawings show that bracing is provided by interior linings and the new exterior fibre-cement sheets. I also note that the chalets are now more than 25-years-old.
- 8.3.2 In Determination 2008/37, which considered monolithic cladding that overlaid treated plywood substrate, I accepted that even if moisture were to gain access to the building wrap it did not follow that water would gain access to the plywood beneath it. However, these chalets have texture-coated fibre-cement cladding installed directly against the treated plywood, without a building wrap between the materials.
- 8.3.3 The original plywood is fixed through a bituminous double-sided foil building wrap to the borac-treated timber framing of the chalets. If moisture reaches the plywood, the underlying wrap should protect against moisture reaching the timber framing and the 9mm wide x 5mm deep grooves may provide some degree of drainage and drying. As the plywood is treated to the equivalent of H3.2, it should be able to withstand moisture long enough to allow repairs to the outer cladding to take place. However, maintaining the weathertightness of the cladding is important to reduce the risk of moisture damage to the underlying plywood (see paragraph 8.5.4).

### 8.4 Weathertightness performance of the chalets

- 8.4.1 Taking account of the expert's report and his comments on the notices to fix, I conclude that the following investigation and/or remedial work is necessary (with the relevant unit numbers noted in brackets):

#### **Windows and doors not sheltered under verandahs**

- lack of jamb seals behind jamb flanges and lack of drainage gaps under the sill flanges (all units)
- inadequately sealed ends of head flashings to some exposed windows (Unit 17)

#### **The wall cladding**

- lack of sufficient ventilation gaps below the sub-floor cladding (all units)
- cracks in the cladding (Units 2, 3 and 17)
- unpainted edges of the fibre-cement backing sheets (all units)
- lack of clearance of the cladding above the deck, to prevent moisture wicking into the bottom of the fibre-cement (Units 2, 3, 5 and 7)
- inadequate ventilation gaps under the sub-floor cladding (all units)

- unsealed fixings of light fittings and downpipes through the cladding (all units)

#### **The roof cladding**

- inadequate fixings for the high wind zone (all units)
- inadequate fixings of downpipes (all units)
- lack of an over-flashing at the rear change in roof pitch (Unit 3)
- inadequate over-flashing at the rear change in roof pitch (Units 2 and 5)
- inadequate weatherproofing to the ends of the ridge flashing (Unit 2).

8.4.2 The expert also observed that maintenance is required to clear debris accumulated in the gutters of all units.

### **8.5 Weathertightness conclusion**

8.5.1 I consider the expert's report establishes that the current performance of the claddings is adequate because they are preventing water penetration through the building envelopes at present. Consequently, I am satisfied that the chalets comply with Clause E2 of the Building Code.

8.5.2 However, the building work is also required to comply with the durability requirements of Clause B2. Clause B2 requires that a building continues to satisfy all the objectives of the Building Code throughout its effective life, and that includes the requirement for the chalets to remain weathertight. Because the cladding faults are likely to allow the ingress of moisture in the future, the alterations to the chalets do not comply with the durability requirements of Clause B2.

8.5.3 Because the faults identified with the claddings occur in discrete areas, I am able to conclude that satisfactory rectification of the items outlined in paragraph 8.4.1 will result in the chalets being brought into compliance with Clauses B2 and E2.

8.5.4 As discussed in paragraph 8.3.3, the installation of the cladding directly over the original plywood means that care is needed to ensure that the underlying plywood is not damaged; and that means maintaining the weathertightness of the cladding. Effective maintenance of claddings is important to ensure ongoing compliance with Clauses B2 and E2 of the Building Code and is the responsibility of the building owner. The Department has previously described these maintenance requirements, including examples where the external wall framing of the building may not be treated to a level that will resist the onset of decay if it gets wet (for example, Determination 2007/60).

### **9. Other relevant code clauses**

9.1 Taking into account the expert's report, I consider that the following items require investigation and/or repair for any new or altered elements:

- Clause B1: new porch beams and connections (Units 2, 3, 5 and 7)
- Clause G9: electrical certificates of compliance for altered wiring (all units).
- Clauses G12 and G13: unsupported new pipework in subfloor areas (all units)

- Clause G13:
  - inadequate new pipe gradients in subfloor areas (all units)
  - any new vent pipe terminations (Units 2, 3, 5 and 7).

9.2 The authority also identified some defects related to Building Code Clauses E1 and E3. Taking into account the expert's report, I consider that the chalets comply with Clauses E1 and E3 to the extent required by the Act.

9.3 I also note that the authority raised the lack of smoke alarms. While these were not a requirement at the time the alterations to Units 2, 3, 5 and 7 were carried out, I strongly urge the owners to install these.

## 10. The notices to fix

10.1 In conclusion, I have formed the view that the notices to fix are inadequate as they:

- do not clearly differentiate between any unconsented (additional) work and work covered by a building consent but not compliant with the Code
- include work that appears to relate repairs and maintenance, which does not require a building consent and to items not included in the building consents
- do not adequately differentiate between varying alterations carried out to individual chalets
- do not identify 'substandard work' completed or started prior to the Act or already issued with a code compliance, some of which may be better managed through the issue of a dangerous and or insanitary notice.

10.2 I also note the obvious significant changes from the building consent drawings, which require modification to reflect the building work as completed and I leave this matter to the authority to resolve with the applicants as it considers appropriate.

## 11. What is to be done now?

11.1 Although I am satisfied that the alterations to the chalets do not comply with the Building Code and that the authority made an appropriate decision to issue notices to fix, I am of the view that many items identified in the notices are either adequate for alteration work or are related to pre-existing construction. The authority should re-inspect the chalets to clarify the original or existing elements of the construction and the actual construction completed in each building, taking into account the findings of this determination.

11.2 The notices should then be modified to take into account the extent of original construction, the extent of work carried out under the outstanding building consents, the level of compliance required for alteration work and the findings of this determination. The notices should identify the areas listed in paragraph 8.4.1 and paragraph 9.1 and refer to any further defects that might be discovered in the course of investigation and rectification, but should not specify how those defects are to be fixed. It is not for the notices to fix to specify how defects are to be remedied.

- 11.3 I suggest that the parties adopt the following process to meet the requirements of paragraph 11.2. Initially, the authority should re-issue the notices to fix. The applicants should then produce a response to this in the form of a detailed proposal as to the rectification of the specified matters. Any outstanding items of disagreement can then be referred to the Chief Executive for a further binding determination.

## **12. The decision**

- 12.1 In accordance with section 188 of the Building Act 2004, I hereby determine that, for all of the chalets:

- various altered components do not comply with Building Code Clause B1
- the altered external envelopes do not comply with Building Code Clause B2
- the altered sub-floor wiring does not comply with Building Code Clause G9
- the altered sub-floor pipework and vent pipe terminations do not comply with Building Code Clauses G12 and G13.

and accordingly, I determine that the authority is to modify the notices to fix issued for building consents YC/99/05061 and YC/03/03998, to take account of the findings of this determination.

Signed for and on behalf of the Chief Executive of the Department of Building and Housing on 19 July 2010.

John Gardiner  
**Manager Determinations**

## 13. Appendix: The legislation

13.1 With regard to the unauthorised changes to these chalets, the relevant section of the former Act was Section 32(1), and of the current Act is:

**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.

13.2 Section 41(1)(b) of the Act states that a building consent is not required for any building work described in Schedule 1, which includes:

**Exempt building work**

A building consent is not required for the following building work:

- (a) any lawful repair and maintenance using comparable materials, or replacement with a comparable component or assembly in the same position, of any component or assembly incorporated or associated with a building, including all lawful repair and maintenance of that nature that is carried out in accordance with the Plumbers, Gasfitters, and Drainlayers Act 1996..

13.3 The relevant section of the Act in regard to alterations is:

**433 Transitional provision for building consents granted under former Act**

- (1) A building consent that was granted under section 34 of the former Act before the commencement of this section must, on that commencement, be treated as if it were a building consent granted under section 49.

The relevant section of the Building Act 1991 in regard to alterations is:

**38. Alterations to existing buildings**

No building consent shall be granted for the alteration of an existing building unless the territorial authority is satisfied that after the alteration the building will---

- (a) Comply with the provisions of the building code for means of escape from fire, and for access and facilities for use by people with disabilities (where this is a requirement in terms of section 25 of the Disabled Persons Community Welfare Act (1975), as nearly as is reasonably practicable, to the same extent as if it were a new building; and
- (b) Continue to comply with the other provisions of the building code to at least the same extent as before the alteration.