



Department of
Building and Housing
Te Tari Kaupapa Whare

Determination 2008/110

1 December 2008

Determination regarding a Notice to Fix for additions to a house at 10 Pinewood Street, New Windsor, Auckland



1. The matter to be determined

- 1.1 This is a determination under Part 3 Subpart 1 of the Building Act 2004¹ (“the Act”) made under due authorisation by me, John Gardiner, Manager Determinations, Department of Building and Housing (“the Department”), for and on behalf of the Chief Executive of that Department. The applicant is the owner of the property, B McKenna (“the applicant”) and the other party is the Auckland City Council (“the authority”) carrying out its duties and functions as a territorial authority or building consent authority.
- 1.2 This determination arises from the decision of the territorial authority to issue a notice to fix for 5 to 7-year-old additions (“the additions”) to a house because it is not satisfied that the building work complies with certain clauses of the Building Code² (Schedule 1, Building Regulations 1992).

¹ The Building Act 2004 is available from the Department’s website at www.dbh.govt.nz.

² The Building Code is available from the Department’s website at www.dbh.govt.nz.

1.3 I consider that the matters for determination are:

1.3.1 Matter 1: The claddings

Whether the claddings as installed on the additions (“the claddings”) comply with Clause E2 External Moisture of the Building Code. By “the cladding as installed” I mean the components of the systems (such as the backing materials, the flashings, the joints and the plaster and/or the coatings) as well as the way the components have been installed and work together.

1.3.2 Matter 2: The remaining Building Code matters

Whether certain building elements in the house, other than the claddings, comply with Clauses B1, D1, E1, E3, G9, G13 and H1 of the Building Code.

1.3.3 Matter 3: The durability considerations

Whether the building elements in the house comply with Clause B2 “Durability” of the Building Code, taking into account the age of the building work.

1.4 In making my decision, I have considered the submissions of the parties, the report of the independent 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 6.1.

2. The building

2.1 The building work consists of a 2-storey extension and an upper level addition, including associated alterations, to an existing detached house situated on a west-sloping site, which is in a medium wind zone for the purposes of NZS 3604³. The original small single-storey house was built during the 1940’s then extended to the west in 1977, including a part basement level set into the slope of the site.

2.2 Prior to the additions considered in this determination, the house had conventional light timber frame construction, concrete and concrete block basement, brick veneer wall cladding, timber windows and a 30° pitch concrete tile hipped roof.

2.3 The recent additions have been carried out in stages, the first in 2001 and the second in 2003. The plastering of the existing brick veneer (which was not part of the consented work) was completed during 2005, with deck tiling not completed until early 2008. The additions have involved associated alterations to the western end of the original house.

2.4 The expert noted that he was advised by the applicant that the wall framing was untreated. Given the dates of construction in 2001 and 2003 and the lack of other evidence, I consider that the exterior wall framing in both stages of the alteration work is untreated.

In this determination, unless otherwise stated, references to sections are to sections of the Act and references to clauses are to clauses of the Building Code.

³ New Zealand Standard NZS 3604:1999 Timber Framed Buildings

2.5 Stage 1: conservatory and deck addition

- 2.5.1 The majority of this work was carried out by the owner, and consisted of an extension to the western end of the house to provide a conservatory with an adjacent timber deck and a carport area beneath (“the conservatory and deck addition”). The conservatory has monolithic cladding to some walls and a proprietary aluminium conservatory glazing system that includes a 30° pitch metal sandwich panel gable roof with 430mm verge projections at the gable end.
- 2.5.2 The conservatory glazing forms the walls of the north and west elevations and continues around the southwest corner to become part-height for about half of the south elevation. The proprietary conservatory glazing system includes metal corner posts, lintels, fixing brackets, trim, gutters and supports to the base of the roof panels. An engineer has provided producer statements dated 11 April 1995 and 15 January 1997 for the general structural design of the glazing system.
- 2.5.3 The proprietary conservatory roof is a “Bondor” system incorporating 50mm thick panels with a polystyrene core sandwiched between outer layers of pre-coated galvanised steel (“Color Steel”) profiled at the panel edges to provide “tongue-in-groove” joints that have sealant applied at the junctions. The expert has noted that the manufacturer’s current recommendations include the provision of “seagull” flashing strips over the panel joints, although this was not a recommendation at the time of construction.
- 2.5.4 The carport joists support the conservatory and deck above and are proprietary “Twinaplate” composite beams with untreated timber flanges and a corrugated steel web. The timber flanges are untreated, but the expert has noted that preservative appears to have been site-applied to the upper surface of the top flange.
- 2.5.5 The deck has a tiled floor and monolithic-clad balustrades that extend down a staircase at the western end. The treated plywood substrate is overlaid with a liquid-applied fibreglass reinforced membrane that was applied by the applicant. The membrane manufacturer has inspected the membrane and has provided a producer statement dated 12 April 2007, which confirms that the application is satisfactory and in accordance with its recommendations at the time of installation.
- 2.5.6 The wall and deck balustrade cladding is a form of monolithic cladding, which consists of 7.5 mm thick fibre-cement sheets fixed through the building wrap to the framing, and finished with an applied textured coating system.
- 2.5.7 The expert noted that the applicant had informed him that CCA treated “C4 fence posts” were used for the balustrade framing and notes that the construction photographs appear to confirm this. The expert also observed that the colour of the primary deck stair framing indicated that this was CCA treated. Given the date of construction in 2001 and 2003 and the lack of other evidence, I consider that the remaining deck framing is untreated.

2.6 Stage 2: entry addition

- 2.6.1 The second stage of the work (“the entry addition”) was carried out by a builder, with the owner completing some interior finishing work. The entry addition consists

of a 2-storey infill of the northwest corner of the existing house to provide a new side entry at mid-floor landing height, with access up to the main floor level and down to a rear entry porch beside the driveway.

- 2.6.2 The addition is timber-framed, with a concrete slab and retaining walls, monolithic cladding, aluminium windows and a 15° pressed metal roof linking to the original concrete tile roof with eave projections of about 600mm overall.
- 2.6.3 The wall cladding is a form of monolithic cladding, which consists of 7.5 mm thick fibre-cement sheets fixed through 20mm timber battens and the building wrap to the framing, and finished with an applied textured coating system. The H3 treated cavity battens form a cavity between the cladding sheets and the building wrap and are grooved to provide additional drainage and ventilation. The cladding applicator has provided a “Producer Statement” dated 17 May 2005, for the cladding system used on this part of the building work.

3. Background

- 3.1 The authority issued a building consent (No BLD 36000164601) on 21 March 2000. I note that the consent was issued under the Building Act 1991 (“the former Act”).
- 3.2 The applicant began work on the conservatory and deck addition in 2001, and the authority carried out various inspections of the construction, including pre-line inspections on 18 April and 21 May 2001. Apart from some finishing items, the building work to this part appears to have been completed in 2001.
- 3.3 In 2003, the applicant engaged a builder to construct the entry addition and work commenced in March 2003. The authority carried out various inspections of the construction, including a pre-line inspection on 25 May 2003.
- 3.4 Construction of the entry addition appears to have been completed by about August 2003. Plastering of the original brick veneer walls was carried out in 2004, but I note that this work was not covered by the building consent.
- 3.5 The authority carried out a final inspection on 24 January 2005, which identified the following outstanding items:
- wall lining and sealing around kitchen bench
 - smoke alarm to downstairs area
 - downpipe fixings and penetration sealing
 - exterior painting
 - completion of laundry tub area
 - seismic straps to hot water cylinder
 - producer statements for deck membrane.
- 3.6 It appears that the outstanding work and the tiling to the deck were not completed until early 2008, after which a re-check final inspection was requested. According to

the applicant, the authority informed him that, as the consent had been issued more than 5 years previously, a new final inspection would be required.

3.7 The authority undertook a final inspection of the additions on 24 June 2008, and the inspection record notes:

Failed – numerous areas of non compliance with the New Zealand Building Code.

- issues relating to cladding and deck.
- a peer review is required, possible notice to fix which will help the owner identify those areas.

3.8 In a letter to the applicant dated 11 July 2008, the authority attached a notice to fix with a series of photographs taken during the final inspection and stated that it could not issue a code compliance certificate as it could not be satisfied that the building work complied with the building code.

3.9 The attached notice to fix, also dated 11 July 2008, stated that the authority was not satisfied that the building work complied with the consent, or with some clauses of the Building Code, or with the Building Act. The “particulars of contravention or non-compliance” attached to the notice listed defects and requirements regarding:

- items not installed per the manufacturer's specifications (an unconfirmed cladding system has been used)
- items not installed per the acceptable/alternative solutions approved for the building consent
- items not installed per accepted trade practice
- drainage and ventilation
- changes to the building consent
- other building related issues
- durability issues.

(I summarise the items within the notice to fix in paragraph 9.)

The notice also set out the actions that the applicant was to undertake to remedy the contravention or items of non-compliance, and attached a set of photographs illustrating areas of non-compliance.

3.10 The Department received an application for a determination on 19 August 2008.

4. The submissions

4.1 The applicant made a submission dated 15 August 2008, which outlined the staging of the project and noted that, although he had not been informed that there was any time limit imposed on the items identified in the first final inspection, the new final inspection had resulted in many items earlier passed being failed or reversed. The applicant concluded:

It is recognised in some areas the construction departs from the original Building Consent, however to date no evidence of any serious failure has been produced and the construction has proven to be functional over the past 3 – 6 years

(depending on which part of the construction is considered) e.g. PBS Ventclad was used for the house walls where directfix Harditex was originally specified.

4.2 The applicant forwarded copies of:

- the drawings and specification
- the consent documentation
- some of the inspection records
- photographs taken during construction
- the notice to fix dated 11 July 2008
- various other calculations and statements.

4.3 The authority forwarded a CD-Rom that was entitled “Property File” that contained documents pertinent to this determination, including:

- the consent documentation
- the inspection records
- correspondence with the owners.

4.4 Copies of the submissions and other evidence were provided to each of the parties. Neither party made any further submissions in response to the submission of the other party.

4.5 The draft determination was issued to the parties on 8 October 2008. The draft was issued for comment and for the parties to agree a date when the house complied with Building Code Clause B2 Durability.

4.6 Both parties accepted the draft without comment and submitted that compliance with B2 was achieved on 01 September 2003.

5. The expert’s report

5.1 As discussed in paragraph 1.4, I engaged an independent expert to provide an assessment of the condition of those building elements subject to the determination. The expert is a member of the New Zealand Institute of Architects. The expert inspected the house on 1 September and 4 September 2008 and furnished a report that was completed on 10 September 2008.

5.2 The expert noted that the general construction quality appeared variable. Visually the cladding surfaces were generally “straight and fair”, with the coatings “uniform, well adhered and free from signs of discolouration or other signs of aging”. The expert also noted that the roof flashings were complex at junctions of the dissimilar roof claddings, although they appeared to be performing adequately despite an “untidy appearance”.

5.3 The expert noted that the additions differed from the consent drawings in various areas, including:

- a glazed door and window panel in lieu of glass blocks at the new entry
- various other window changes
- changes to the monolithic cladding systems
- change to the brand (but not the type) of roof panels on the conservatory.

5.4 The expert removed a small area of coating to the cladding on the entry addition, and noted that satisfactory horizontal and vertical control joints had been installed. The expert also noted that the base of the cladding and the flashing over the concrete block retaining wall appeared satisfactory.

5.5 The owner removed a section of lining above the carport, and the expert observed the underlying deck framing, noting signs of timber preservative applied to the top of the joists. The expert noted no signs of moisture entry into the framing, and moisture levels were measured at less than 16% in the top flanges of the joists.

5.6 Windows

5.6.1 The expert noted that the conservatory glazing was face-fixed, with the 35mm flange overlapping the cladding at the sills and jambs. On the north and side elevations, the conservatory fascia overlapped the flange in lieu of a head flashing, and this appeared to provide adequate protection. At the west gable end, the head flange butted against the verge soffit, and was protected by the 430mm roof overhang.

5.6.2 The expert noted that the windows to the entry addition were face-fixed, with metal head flashings that project beyond the jambs. The expert probed behind the jamb flange of one of the windows, and was able to feel a seal installed between the flange and the cladding.

5.7 The expert inspected the interior of the house, taking non-invasive moisture readings internally and no elevated moisture readings were noted. The expert took 16 invasive moisture readings through claddings at high risk positions, and 8 elevated readings were noted as follows:

- 17% to 23% in the top plates of the deck and stair balustrades
- 24% to 26% in the conservatory boundary joists
- 21% and 22% in the exposed untreated framing of the deck stairs.

Most readings ranged from 11% to 16%, indicating the likely equilibrium moisture levels in the framing. Moisture levels that vary significantly after cladding is in place generally indicate that external moisture is entering the structure. The expert also noted that his inspection followed very wet winter weather, and the readings were likely to represent the upper end of the range in seasonal variation.

5.8 Stage 1: conservatory and deck addition

5.8.1 Commenting specifically on the wall cladding, the deck, and the roof claddings on the conservatory and deck addition, the expert noted that:

- there is a crack in the cladding at the south west corner, where high moisture levels were recorded
- the jambs of the conservatory glazing have a bead of sealant applied at the edge of the flange, with no seals between the flange and the cladding
- the head of the conservatory glazing at the gable end is not sufficiently sealed against the soffit
- there is no provision for water collected in the bottom channel of the glazing to drain safely to the outside, and high moisture levels were recorded in the boundary joists below
- at the north west corner, there is unsealed fibre-cement apparent, with a gap allowing wind-blown rain to penetrate and soak into the fibre-cement sheets
- some fixing holes at the sliding door sill channels are poorly sealed
- there are fine cracks to some areas of the balustrade cladding
- the handrail is fixed through the top of the balustrade cladding, without a full seal beneath the plate and high moisture levels were recorded below which, while not endangering the treated balustrade framing, may penetrate to the untreated boundary joists below
- the joists over the carport are untreated, with preservative applied only on the top edges of the timber
- there is no saddle flashing installed at the junction of the balustrade with the wall cladding, and high moisture levels were recorded in the boundary joists
- in some areas, the deck tiles are turned up against the cladding with sealant applied at the top, risking water penetrating behind the tile
- at the deck stairs, there is no clearance from the bottom of the balustrade cladding to the stair tiles and moisture has penetrated into the stair framing.

5.8.2 The expert made the following additional comments:

- Although there is no vertical control joint in the 6m south wall, the wall length is only 600mm beyond the 5.4m length recommended by the manufacturer and there is no indication of associated cracking after a period of about 7 years.
- Although the deck slope is less than 1:60, there are no signs of ponding on the deck tiles or associated moisture penetration.
- Although the balustrades lack cappings, they appear to be in accordance with the manufacturer's details at the time of construction, with a slope of 1:10 and a membrane over the CCA treated balustrade framing.
- Although the conservatory roof panels lack joint flashings as currently recommended, these were not required by the manufacturer at the time of construction and there are no indications of associated moisture penetrations.
- While the junction between the cladding and the original brick veneer lacks a flashing, the cladding has been overlapped and sealed against the brick and there is no evidence of associated moisture penetration after 7 years.

- While the head flashing above to the south vent grille has been retro-fitted, the grille is installed onto a brick veneer wall and should be satisfactory.

5.9 Stage 2: entry addition

5.9.1 Commenting specifically on the wall cladding on the entry addition, the expert noted that:

- at the north entry step, there is no clearance from the bottom of the cladding to the tiles.

5.9.2 The expert made the following additional comment:

- Although the cladding base overlaps and clearances from the interior floor level to the paving are limited at the new entry porch to the west, the walls are protected against the weather by the recess.

5.10 Other Building Code matters

5.10.1 Commenting on other building code matters included in the notice to fix, the expert noted that:

- the handrail to the deck stairs finishes short of the bottom two steps
- the paving at the rear entry porch is 130mm below the level of the adjacent driveway, which creates a danger of flooding into the interior should the drain be blocked
- the position of the vent pipe from the foul water discharge pipe is too close to building elements.

5.10.2 The expert made the following additional comments on other building code matters included in the notice to fix:

- While the capacity of the overflows to the deck are below the requirements, the deck is open to the stairs, which provide an adequate alternative overflow should the gutter outlet be blocked.
- The kitchen bench and tiling has now been completed.
- The weep holes in the plastered brick veneer have now been recut through the plaster.
- The electrical switches and lights were removed to allow completion of the tiling and have now been refixed.

5.11 A copy of the expert's report was provided to each of the parties on 11 September 2008.

5.12 The applicant responded to the expert's report in an email to the Department dated 24 September, noting that the conservatory glazing manufacturer had inspected the installation on 24 September, and the channel had been obstructed with debris that had trapped water within the channel. The applicant considered that this was the cause of the moisture in the boundary joists, and planned to provide additional drainage to the channel.

6. Evaluation for code compliance

6.1 Evaluation framework

6.1.1 In evaluating the design of a building and its construction, it is useful to make some comparisons with the relevant Acceptable Solutions⁴, which will assist in determining whether the features of these additions are code compliant. However, in making this comparison, the following general observations are valid:

- Some Acceptable Solutions are written conservatively to cover the worst case, so that they may be modified in less extreme cases and the resulting alternative solution will still comply with the Building Code.
- Usually, when there is non-compliance with one provision of an Acceptable Solution, it will be necessary to add one or more other provisions to compensate for that in order to comply with the Building Code.

Matter 1: The claddings

7. Weathertightness

7.1 The approach in determining whether building work is weathertight and durable and is likely to remain so, is to apply the principles of weathertightness. This involves the examination of the design of the building, the surrounding environment, the design features that are intended to prevent the penetration of water, the cladding system, its installation, and the moisture tolerance of the external framing. The Department and its antecedent, the Building Industry Authority, have also described weathertightness risk factors in previous determinations⁵ (for example, Determination 2004/1) relating to cladding and these factors are also used in the evaluation process.

7.2 The consequences of a building demonstrating a high weathertightness risk is that building solutions that comply with the Building Code will need to be more robust. Conversely, where there is a low weathertightness risk, the solutions may be less robust. In any event, there is a need for both the design of the cladding system and its installation to be carefully carried out.

7.3 Weathertightness risk

7.3.1 In relation to these characteristics I find that these additions:

- are built in a medium wind zone
- are fairly simple, 2-storey structures
- have an enclosed deck, with clad balustrades, to the upper level
- have part of the monolithic cladding installed over a drained cavity
- have part of the monolithic cladding fixed directly to the framing

⁴ An Acceptable Solution is a prescriptive design solution approved by the Department that provides one way (but not the only way) of complying with the Building Code. The Acceptable Solutions are available from The Department's Website at www.dbh.govt.nz.

⁵ Copies of all determinations issued by the Department can be obtained from the Department's website.

- have eaves projections that vary from the gutter only to more than 600mm
- have external wall framing that is not treated to a level that provides resistance to the onset of decay if the framing absorbs and retains moisture.

7.3.2 The additions have been evaluated using the E2/AS1 risk matrix. The risk matrix allows the summing of a range of design and location factors applying to a specific building design. The resulting level of risk can range from 'low' to 'very high'. The risk level is applied to determine what cladding can be used on a building in order to comply with E2/AS1. Higher levels of risk will require more rigorous weatherproof detailing; for example, a high risk level is likely to require a particular type of cladding to be installed over a drained cavity.

7.3.3 When evaluated using the E2/AS1 risk matrix, the weathertightness features outlined in paragraph 7.3.1 show that all elevations of the additions demonstrate a moderate weathertightness risk rating.

7.4 Weathertightness performance: exterior claddings

7.4.1 Generally the roof and wall claddings appear to have been installed in accordance with reasonable trade practice, but some areas have not been satisfactorily completed. Taking account of the expert's report and comments as outlined in paragraphs 5.8.1 and 5.9.1, I conclude that remedial work is necessary in respect of the following:

Stage 1: conservatory and deck addition

- the cracks in the balustrade and wall cladding
- the lack of seals behind the jamb flanges of the conservatory glazing
- the inadequate sealing of the conservatory glazing to the verge soffit
- the lack of drainage from the bottom channel of the conservatory glazing
- the inadequate sealing of some sliding door fixings in the bottom channel
- the lack of weatherproofing of the bottom of the conservatory glazing at the north west corner, with a large gap and unsealed fibre cement exposed
- the inadequate sealing of handrail penetrations into the top of the balustrade
- the lack of timber preservative to the untreated joist flanges
- the lack of saddle flashings to the junctions of the balustrade with the walls
- the tiled upstand against the wall cladding around the deck
- the lack of clearance of the balustrade cladding to the tiles at the deck stairs.

Stage 2: entry addition

- the lack of clearance of the cladding to the tiles at the north entry steps.

7.4.2 I note the expert's comments in paragraphs 5.8.2 and 5.9.2, and accept that these areas are adequate in the circumstances.

7.4.3 Notwithstanding the fact that the cladding to the conservatory and deck addition is fixed directly to the timber framing, thus limiting drainage and ventilation behind the cladding, I have noted certain compensating factors that assist the performance of the cladding in this particular case:

- apart from the noted exceptions, the cladding is installed to good trade practice
- the walls are limited in extent
- the balustrade cladding is over treated balustrade framing
- moisture penetration seems limited to areas where defects have been identified.

7.4.4 I consider that these factors help compensate for the lack of a drained cavity to the balustrades and some walls, and provide some assurance that the building work will comply with the weathertightness and durability provisions of the Building Code.

7.5 Weathertightness: conclusion

7.5.1 I consider the expert's report establishes that the current performance of the cladding is not adequate because there is evidence of moisture penetration. Consequently, I am satisfied that the additions do not comply with Clause E2 of the Building Code.

7.5.2 In addition, 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 additions to remain weathertight. Because the cladding faults on the additions are likely to allow the ingress of moisture in the future, the building work does not comply with the durability requirements of Clause B2.

7.5.3 Because the faults identified occur in discrete areas, I am able to conclude that satisfactory rectification of the items outlined in paragraph 7.4.1 will result in the cladding being brought into compliance with Clauses B2 and E2.

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

Matter 2: The remaining Building Code matters

8. Discussion

8.1 Taking account of the expert's report and comments as outlined in paragraph 5.10.1, I conclude that remedial work is necessary in respect of the following:

- The bottom of the handrail to the deck stairs.
- The drainage of the paving at the rear entry porch, where the level is below the adjacent driveway.

- The position of the outlet to the vent pipe from the foul water discharge pipe.

8.2 I therefore consider the expert's report establishes that the building work does not comply with Clauses D1, E1 and G13 of the Building Code. I also note that, while the installation of smoke detectors was not a requirement at the time of construction, their installation is strongly recommended.

8.3 I note the expert's comments in paragraph 5.10.2, and accept that these matters are adequate in the circumstances. I therefore consider that the building work complies with the other relevant clauses of the Building Code.

9. Summary response to the notice to fix

9.1 The following table summarises conclusions on the items listed within the notice to fix dated 11 July 2008, referring to related paragraphs within this determination:

Notice to fix		My conclusion as to what rectification work is required.	Paragraph reference
Item	Summarised requirement		
2.1	Not to manufacturer's specifications		
a)	Cladding system not confirmed	Cladding systems now identified	2.5.6 2.6.3
2.2	Not to relevant code requirements at the time		
a)	Cracks to cladding.	Remedial work required	7.4.1
b)	Conservatory roof panels	Nil. System approved at consent stage and performing adequately	
c)	Inadequate flashings	Some remedial work required	7.4.1
d)	No handrail at bottom of deck stairs	Remedial work required	8.1
e)	Handrails penetrate top of deck balustrade	Remedial work required	7.4.1
f)	Untreated joists above carport	Untreated timber permitted at time of construction – but preservative needed to improve durability	7.4.1
g)	Outlets and overflows to deck	Nil. Adequate in circumstances	
h)	Floor clearances	Nil. Applies only to back entry porch – adequate in circumstances	
i)	Cladding base overlap	Nil. Applies only to back entry porch –adequate in circumstances	
j)	Porch paving level below drive	Remedial work required	8.1
k)	Open vent pipe position	Remedial work required	8.1
2.3	Not to accepted trade practice		
a)	Lack of saddle flashings	Remedial work required	7.4.1
b)	Handrails penetrate top of deck balustrade	Remedial work required	7.4.1
c)	Weathertightness of balustrades	Nil. Balustrades in accord with manufacturer's instructions and framing CCA treated – adequate in circumstances	

d)	Junction between cladding and brick veneer	Nil. Adequate in circumstances	
e)	Tiles turned up against cladding	Remedial work required	7.4.1
f)	Penetrations through the cladding	Nil. Penetrations are through brick veneer. Vent grille now adequately flashed – adequate in circumstances	
g)	No gap between cladding and foundation walls	Nil. Entry addition cladding on cavity and flashed over the retaining wall – adequate in circumstances	
h)	Lack of drip edges to bottom of cladding	Nil. Cavity closure has drip edge – adequate in circumstances	
i)	Window head projections	Nil. Adequate in entry addition Not applicable to conservatory	
j)	Kitchen bench not sealed to wall lining	Nil. Sealing now completed	
k)	Wall tiling to kitchen incomplete	Nil. Tiling now completed	
2.4	Drainage and ventilation		
	Inadequate drainage and ventilation of cladding	Nil. Entry addition cladding on cavity. Other direct fixed cladding adequate in circumstances	2.6.3 7.4.3
3.0	Changes to building consent		
a)	Cladding system changed	TA and applicants to resolve	
4.0	Other building related issues		
a)	Weep holes in brick veneer plastered over	Nil. The weep holes have been recut	
b)	Smoke detectors	Recommended (but not a requirement of the Building Code at time of construction)	8.2
c)	Electrical work not safe	Nil. Fittings removed for completion of tiling and now refixed	
5.0	Durability issues		
	Concerned re times measured from CCC issue	Amend to date from completion	10 and 12.2

Matter 3: The durability considerations

10. Discussion

- 10.1 The authority has concerns about the durability, and hence the compliance with the building code, of certain elements of the building taking into consideration the age of the building work completed in 2001 and 2003.
- 10.2 The relevant provision of Clause B2 of the Building Code requires that building elements must, with only normal maintenance, continue to satisfy the performance requirements of the Building Code for certain periods (“durability periods”) “from the time of issue of the applicable code compliance certificate” (Clause B2.3.1).
- 10.3 These durability periods are:
- 5 years if the building elements are easy to access and replace, and failure of those elements would be easily detected during the normal use of the building

- 15 years if building elements are moderately difficult to access or replace, or failure of those elements would go undetected during normal use of the building, but would be easily detected during normal maintenance
 - the life of the building, being not less than 50 years, if the building elements provide structural stability to the building, or are difficult to access or replace, or failure of those elements would go undetected during both normal use and maintenance.
- 10.4 The 5-year delay between the substantial completion of the building work consented in 2000 and the applicant's request for a code compliance certificate in 2008 raises the matter of when all the elements of the building complied with Clause B2. I have not been provided with any evidence that the authority did not accept that those elements complied with Clause B2 at a date in 2003.
- 10.5 It is not disputed, and I am therefore satisfied, that all the building elements complied with Clause B2 on 1 September 2003. This date has been agreed between the parties, refer paragraph 4.6.
- 10.6 In order to address these durability issues when they were raised in previous determinations, I sought and received clarification of general legal advice about waivers and modifications. That clarification, and the legal framework and procedures based on the clarification, is described in previous determinations (for example, Determination 2006/85). I have used that advice to evaluate the durability issues raised in this determination.
- 10.7 I continue to hold that view, and therefore conclude that:
- (a) the authority has the power to grant an appropriate modification of Clause B2 in respect of all the building elements.
 - (b) it is reasonable to grant such a modification, with appropriate notification, because in practical terms the building is no different from what it would have been if a code compliance certificate for the building work had been issued in 2003.
- 10.8 I strongly recommend that the authority record this determination and any modifications resulting from it, on the property file and also on any LIM issued concerning this property.

11. What is to be done now?

- 11.1 I note that the authority has issued a notice to fix that required provision for adequate ventilation, drainage and vapour dissipation. Under the Act, a notice to fix can require the owner to bring the additions into compliance with the Building Code. The Building Industry Authority has found in a previous Determination 2000/1 that a Notice to Rectify (the equivalent to a notice to fix under the Building Act 2004) cannot specify how that compliance can be achieved. I concur with that view.
- 11.2 The authority shall withdraw the notice to fix. A new notice to fix is to be issued in its place that requires the owners to bring the building up to compliance with the

Building Code, identifying the defects listed in paragraphs 7.4.1 and 8.1 and referring to any further defects that might be discovered in the course of rectification, but not specifying how those defects are to be fixed. That is a matter for the owners to propose and for the authority to accept or reject. It is important to note that the Building Code allows for more than one method of achieving compliance.

- 11.3 I would suggest that the parties adopt the following process to meet the requirements of paragraph 11.2. Initially, the authority should issue the notice to fix. The owners with their builder should then produce a response to this in the form of a detailed proposal, produced in conjunction with a competent and suitably qualified person, as to the rectification or otherwise of the specified issues. Any outstanding items of disagreement can then be referred to the Chief Executive for a further binding determination.
- 11.4 I also note that changes from the consent drawings have been identified and I leave the matter of appropriate documentation of these changes for the authority to resolve with the applicant.

12. The decision

- 12.1 In accordance with section 188 of the Building Act 2004, I hereby determine that the building does not comply with Clauses B2, D1, E1, E2, E3 and G13 of the Building Code, and accordingly confirm the authority's decision to issue a notice to fix.
- 12.2 I also determine that:
- (a) all the building elements installed in the building, apart from the items that are to be rectified as described in this determination, complied with Clause B2 on 1 September 2003.
 - (b) the building consent is modified as follows:

The building consent is subject to a modification to the Building Code to the effect that, Clause B2.3.1 applies from 01 September 2003 instead of from the time of issue of the code compliance certificate for all the building elements, except the items as set out in paragraphs 7.4.1 and 8.1 in Determination 2008/110.
 - (c) once the matters set out in paragraphs 7.4.1 and 8.1 together with any other matters arising from a more extensive investigation, have been rectified to its satisfaction, the authority is to issue a code compliance certificate in respect of the building consent as amended.

Signed for and on behalf of the Chief Executive of the Department of Building and Housing
on 1 December 2008

John Gardiner
Manager Determinations