Department of Building and Housing
Te Tari Kaupapa Whare

Determination 2009/53

The issue of a notice to fix for a house at 13 The Oaks, Ellerslie, Auckland

1. The matters to be determined

1.1 This is a determination under Part 3 Subpart 1 of the Building Act 2004[1] ("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 applicants are the owners, G Hamilton and E Niven ("the applicants"), and the other party is the Auckland City Council ("the authority"), carrying out its duties as a territorial authority or building consent authority.

1.2 This determination arises from the decision of the authority to refuse to issue a code compliance certificate and issue a notice to fix for a 15-year-old house because it was not satisfied that it complied with certain clauses of the Building Code[2] (First Schedule, Building Regulations 1992).

1.3 In order to determine whether the decision to issue a notice to fix was correct, I consider that the matters for determination, in terms of sections 177 and 188 of the Act, are:

[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.
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.

1.3.1 Matter 1: The external envelope

Whether the external envelope of the house complies with Clause B2 Durability and Clause E2 External Moisture of the Building Code. The "external envelope" includes the wall and roof claddings as installed to this house, their configuration, components and junctions with other building elements. By "the wall and roof claddings as installed" I mean the components of the systems (such as the backing materials, the plaster, the weatherboards, the roof tiles, the deck membrane, the flashings and the coatings), as well as the way the components have been installed and work together. (I consider this matter in paragraph 7.)

1.3.2 Matter 2: The remaining Building Code clauses

Whether certain building elements in the house, other than the claddings, comply with Building Code Clauses E1 Surface water, F4 Safety from falling, G12 Water supplies and G13 Foul water. (I consider this matter in paragraph 8.)

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. (I consider this matter in paragraph 9.)

1.4 The notice to fix cites contraventions of Clauses B1, B2, E1, E2, F4, G9, G12, G13 and H1 of the Building Code. I note that there are no specific items within the notice that relate directly to Clauses B1, G9 and H1, and I have received no evidence relating to a dispute about them. I have therefore not considered these clauses within this determination.

1.5 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 other evidence in this matter. I have evaluated this information using a framework that I describe in paragraph 6.

2. The building work

2.1 The building work consists of a house that is two storeys high in part and is situated on a flat site in a low wind zone for the purposes of NZS 3604[3]. Construction is generally conventional light timber frame, with concrete foundations and floor slabs, monolithic and weatherboard claddings, aluminium windows and concrete tile roofs. The single-storey garage west wall is a fire-rated concrete block boundary wall.

2.2 The house is fairly complex in plan and form, with bedrooms at ground floor level and living areas in the partial upper floor. The 20^{o} pitch hipped and gabled roofs have eaves projections of about 600mm overall, except at the garage west wall, and no verge projections, with the lower level roofs forming lean-tos against the upper walls.

2.3 An enclosed deck from the first floor living room infills the north-west corner. The upper north wall is recessed to provide a 900mm roof overhang above the membrane

[3] New Zealand Standard NZS 3604:1999 Timber Framed Buildings

deck floor, which is situated above a ground floor bedroom. The deck balustrades are clad with timber weatherboards on the outer face and painted fibre-cement sheet on the inner face, with a timber plate forming a cap to the top.

2.4 The expert took a timber sample from the framing and forwarded it to a testing laboratory for analysis. The bio-deterioration consultant's analysis confirmed the sample as treated with boron to an equivalent of H1.2. Based on this evidence and the age of construction in 1993, I consider that the framing is treated to H1.2.

2.5 The wall claddings

2.5.1 All of the upper walls and the majority of lower walls are clad in cedar rusticated weatherboards, with timber facings used at external corners.

2.5.2 The lower north walls and two small walls to the south are clad in monolithic cladding, which is a system described as solid plaster ("stucco") over a rigid backing. In this instance the backing consists of fibre-cement sheets fixed through the building wrap directly to the framing timbers, and covered by a slip layer of building wrap, and metal-reinforced solid plaster with a flexible paint coating.

3. Background

3.1 The authority issued a building consent for the house (No. 1993/4001563) on 6 May 1993 under the Building Act 1991. I have not seen a copy of the building consent. The building appears to have been constructed during 1993.

3.2 I note that the construction was prior to the advent of building certifiers; and authority would therefore have been responsible for carrying out inspections. Although documentation for the consent application proposes 11 inspections for the building, including pre-line building and plumbing and post-line inspections, the authority has no inspection records. Notwithstanding the lack of records, it is reasonable to assume that at least some inspections were undertaken during construction.

3.3 The first inspection record I have seen is that of a final inspection on 6 July 2005. The authority issued a site instruction to the owner that listed 11 items requiring attention, some of which appear to have been subsequently completed. The house was not re-inspected, no notice to fix was issued, and the house was sold in 2006.

3.4 When purchasing the house, the applicants note that they relied on the '2005 Council inspection backed by an independent report which said that the property was sound except for the master bedroom cladding'. I have not seen a copy of that report.

3.5 The notice to fix

3.5.1 The authority re-inspected the house on 23 September 2008, and the inspection record notes 'numerous items identified. Issues relating to cladding and finished floor levels. Peer review required, possible notice to fix'.

3.5.2 The authority issued a notice to fix, dated 7 November 2008, which attached a 'Photo file' of defects identified in the building. The notice 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.

3.5.3 The "particulars of contravention or non-compliance" listed defects and requirements regarding:

- claddings not installed per the manufacturer's specifications
- claddings and other items not installed per the acceptable/alternative solutions approved for the building consent
- claddings not installed per accepted trade practice
- drainage and ventilation of the cladding
- other building related issues
- documentation required to confirm compliance
- durability issues

The authority also required the applicants to prepare a proposed scope of work to address the areas of non-compliance (which are summarised in paragraph 10.1).

3.5.4 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 The Department received an application for a determination on 18 May 2009.

4. The submissions

4.1 In a statement dated 30 March 2009, which accompanied the application, the applicants outlined the background to the situation, noting that the notice to fix included many items not referred to in the earlier 2005 inspection. The applicants noted that moisture readings taken when purchasing the house had 'only showed a minor problem in the master bedroom' and they intended to upgrade the stucco cladding and the deck membrane. The applicants concluded:

> The building opinions and reports that we have received have all rated the property very sound and consistent with other 1993 buildings except for the feature walls of monolithic cladding.

4.2 The applicants forwarded copies of:

- the consent application documentation
- some of the drawings
- the final inspection and re-inspection records
- the notice to fix dated 7 November 2008.

4.3 The authority forwarded a CD-Rom, entitled 'Property File', which contained documents pertinent to this determination.

4.4 Copies of the submissions and other evidence were provided to each of the parties.

4.5 A draft determination was issued to the parties for comment on 9 July 2009.

4.6 The applicant accepted the draft without comment. The authority accepted the draft in a letter dated 14 July 2009 but noted that the notice to fix issued on 7 November 2008 included areas of contravention to Clauses B1, B2, E1, E2, F4, G9, G12, G13 and H1. However the authority did not provide any information regarding specific items that contravened Clauses B1, G9 or H1 (refer paragraph 1.4).

5. The expert's report

5.1 As mentioned in paragraph 1.5, 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 Building Surveyors. The expert inspected the house on 24 June 2009 and provided a report that was completed on 30 June 2009.

5.2 The expert noted that the house generally appeared to accord with the drawings, except that the areas of stucco cladding were on the lower walls instead of the upper walls. The expert noted that painting of the exterior lower walls had commenced.

5.3 The expert noted that no control joints were required for the dimensions of stucco cladding in this house, but described the stucco as generally 'below standard'.

5.4 The windows and doors

5.4.1 For the stucco-clad walls, the expert noted that the aluminium windows and doors have metal head flashings and are recessed back from the face of the plaster by about 10mm, with no visible signs of sill or jamb flashings.

5.4.2 For the weatherboard walls, the expert noted that the joinery is face-fixed over the cladding, with metal head flashings and 'rustic plugs' inserted under the jamb flanges.

5.5 Moisture levels and timber sample testing

5.5.1 The expert extracted two samples of timber. A sample taken from beneath the master bedroom north window was obviously decayed, so was not tested. The expert forwarded the other sample, from the inner face of the garage bottom plate, to a bio-deterioration laboratory for analysis of treatment and decay. The laboratory report confirmed that the sample:

- was treated with boron to an equivalent of about H1.2
- contained recently active prolific fungal growths, indicating elevated moisture.

5.5.2 The expert inspected the interior of the house and no evidence of moisture was observed. The expert took 11 invasive moisture readings through the cladding at areas considered at risk, and elevated readings were recorded as follows:

The bottom of the weatherboard walls

- 18% in the interior side of the bottom plate of the garage (north elevation), with fungal growth confirmed in the sample

The bottom of the stucco walls

- 25% in the bottom plate beside the master bedroom door (north elevation)
- 19% in the bottom plate at the north west corner of bedroom 2, beneath the deck balustrade
- 22% in the bottom plate of bedroom 1, beneath the end of the apron flashing (south elevation)
- 20% in the bottom plate below the master bedroom north window, and advanced decay in a timber extracted from this location

The windows in the stucco walls

- 20% and 21% below the jamb to sill junctions of the master bedroom north window, with advanced decay apparent in the cut-out below

The deck balustrades

- more than 40% at the mitre joint of the timber cap to the deck balustrade, with decay visible at the joint
- more than 40% in the balustrade framing below the mitre joint.

Moisture levels above 18% generally indicate that external moisture is entering the structure and further investigation is required.

5.6 Commenting specifically on the external envelope, the expert noted that:

The bottom of the stucco cladding

- the clearances from the bottom are insufficient, with the stucco contacting the ground or paving in some areas
- in the north bay of the master bedroom, the framing sits back from the face of the foundation wall, with the plaster continuous over the junction and no cladding overlap provided
- there are no capillary gaps, base flashings or drip edges at the bottom.

The weatherboard cladding

- some clearances from the bottom weatherboards are insufficient and, at the north wall of the garage, the weatherboard finishes below the paving, which is almost level with the garage floor slab
- the corner facings are not weatherproof, with little overlap over boards and gaps apparent where boards have contracted
- the painting of the cladding is unfinished.

Windows and doors

- the recessed windows in the stucco lack adequate jamb and sill flashings, with cracking, moisture penetration and decay apparent in a number of areas,
- the windows in the weatherboard cladding are not properly sealed under jamb flanges, with the boards shrinking away from the junction and gaps apparent
- the head flashings do not project sufficiently beyond the jambs
- the garage door jamb is not weatherproof, with no back-flashing or facing to the weatherboards, and gaps are apparent

The upper level deck

- the tops of the deck balustrade lack adequate weatherproofing, with no top flashings or saddle flashings at junctions with the walls, and high levels of moisture are apparent in the framing below
- the timber capping is flat and the handrail posts are fixed into the timber
- the deck membrane is peeling and requires maintenance, although the loss of adhesion is minor
- the membrane of the balustrade upstand is not dressed into the overflow outlet

General

- penetrations through the claddings are not adequately sealed
- the decorative panel to the garage gable walls lacks flashings
- the bottom of the apron flashings lack kick-outs
- the downpipes from upper roofs lack spreaders.

5.7 The expert also made the following comments on the claddings:

- Control joints are not required for the limited dimensions of stucco cladding in this house. (However I note here that control joints are required above and below windows and door openings.)
- Repair work on the roof tiles appears to have been completed, with no apparent defects except at the bottom of the apron flashings.
- Although there is little cladding clearance and step-down to the deck, the wall is recessed and the junction is sheltered beneath 900mm eaves, with no evidence of associated water penetration.
- The deck outlet is 65mm in diameter, and appears adequate for the size of the deck considering the shelter provided by the 900mm wide eaves above; and the 100mm x 50mm overflow is adequate, at about 1.5 times the outlet area.
- While there is one location where the catchment area of the upper roof appears to exceed 25m^2 (the limit noted in E2/AS1), the relevant roof area is not large and there is no sign of any associated moisture problems. (I note that limits to upper roof catchment areas are specified in E2/AS1, rather than in E1/AS1.)

5.8 The expert also noted that, although there was no evidence of back-flashings, timber facings had been installed to the junctions between the stucco and weatherboard claddings.

5.9 The remaining Building Code clauses

5.9.1 Commenting on the code compliance of the other items identified in the notice to fix, the expert noted that:

- there is one upper level window where a vanity unit could allow access to the opening so, for that window, the lack of a restrictor means that the window does not comply with Clause F4
- a vent from the upper toilet to the south is within 3m of an opening window, and therefore does not comply with Clause G13.

5.9.2 The expert also made the following comments:

- The 65mm diameter deck outlet appears sufficient for the upper deck size. (I note that this size complies with Table 5 of Clause E1/AS1 for the size of this deck; with a larger outlet size specified in E2/AS1, rather than in E1/AS1.)
- The pipe work and valves in the hot water cylinder were exposed and inspected; and they appear to comply with G12/AS1.
- Under normal use, the bath/shower diverter mixer will not allow any backflow of contaminated water into the main water supply and the flexible hose shower fitting therefore appears to comply with Clause G12. However this device is not specifically designed as a back-flow preventer and an atmospheric vacuum breaker could be fitted.
- Although the gully trap beside the north garage wall does not have a concrete surround and its top is less than 75mm above the paving, the area is well drained and sheltered under 600mm eaves, with no sign of damage or problems after 15 years.
- The lowest overflow level of any of the sanitary fixtures in the house is from the master bedroom shower, at about 200mm above the flood level of the associated gully dish; which is above the minimum 150mm required in G13/AS1.

5.10 A copy of the expert's report was provided to the parties on 30 June 2009.

6. Evaluation framework for code compliance

6.1 I have evaluated the code compliance of this building by considering the following two broad categories of the building work:

- The weathertightness of the external building envelope (Clause E2) and durability (Clause B2 insofar as it relates to Clause E2).

- The remaining Building Code clauses referred to in the notice to fix.

In the case of this house, weathertightness considerations are addressed first.

6.2 In evaluating the design of a building and its construction, it is useful to make some comparisons with the relevant Acceptable Solutions[4], which will assist in determining whether the features of this house are code compliant. However, in making this comparison, the following general observations are valid:

- Some Acceptable Solutions 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 external envelope

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. Weathertightness risk factors have also been described in previous determinations[5] (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 This house has 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 systems 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.

7.3.2 This house has the following environmental and design features which influence its weathertightness risk profile:

[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.

Increasing risk

- the house is two-storeys high in part
- the house is fairly complex in plan and form
- there is an enclosed deck, with clad balustrades, above a ground floor room
- some of the walls have monolithic cladding fixed directly to the framing
- there are two different types of wall cladding used on the house
- there are no verge projections to several gable end walls

Decreasing risk

- the house is in a low wind zone
- there are eaves projections that shelter most of the walls.
- the external wall framing is treated to a level that provides some resistance to decay if it absorbs and retains moisture

7.3.3 When evaluated using the E2/AS1 risk matrix, these features show that two elevations of the house demonstrate a moderate weathertightness risk rating and two elevations a high risk rating.

7.3.4 While these were not requirements when this house was constructed, a drained cavity is now required by E2/AS1 for stucco cladding at all risk levels, and for rusticated weatherboards at moderate and high risk levels.

7.4 Weathertightness performance of the roof and weatherboards

7.4.1 Generally the roof and weatherboard claddings appear to have been installed in accordance with good trade practice. However, taking account of the expert's report, I conclude that remedial work is necessary in respect of:

The timber weatherboards

- the lack of clearances from the garage floor slab and the bottom of the weatherboards to the paved area adjacent to the north wall of the garage
- the lack of clearance from the bottom of the weatherboards to the ground or paving in some other areas
- the lack of adequate seals to the window and door jamb flanges, and inadequate projections of head flashings beyond the jambs
- the lack of adequate weatherproofing to the corner facing boards, with gaps and insufficient overlaps of facings over the weatherboards in some areas
- the lack of adequate weatherproofing to the garage door jambs, with gaps apparent
- inadequately sealed penetrations, including to the garage decorative panel
- the deteriorating paint coating, with the repainting incomplete.

The deck

- the lack of adequate weatherproofing to the top of the balustrade, including at the junctions with the walls, with high levels of moisture penetration apparent
- the lack of adequate weatherproofing at the junction of the deck membrane with the overflow outlet through the balustrade
- maintenance required to the deck membrane, which is peeling in some areas.

The roof

- the lack of a kickout to the bottom of the apron flashings
- the lack of spreaders to downpipes discharging onto the lower roofs.

7.4.2 I note the expert's comments in paragraph 5.7 on some of the other cladding-related items identified by the authority, and I accept that these areas are adequate in the circumstances.

7.4.3 I also note the expert's comment in paragraph 5.8 regarding the installation of facings to the inter-cladding junctions. However, I take the view that the adequacy of these junctions must be considered in the light of the other defects identified in the stucco cladding (see below).

7.5 Weathertightness performance of the stucco cladding

7.5.1 It is clear from the expert's report that the stucco cladding is unsatisfactory in terms of its weathertightness performance, which has resulted in high levels of moisture penetration and evidence of decay to the framing.

7.5.2 Taking into account the expert's report, I conclude that the following areas require rectification:

- the lack of clearances from the bottom of the stucco to the ground or paving
- the lack of control joints above and below window and door openings
- the projecting foundation wall to some walls
- the lack of capillary gaps, adequate overlaps and drip edges to the bottom of the stucco
- the lack of and/or inadequate, sill, jamb and head flashings to windows
- the junctions between the stucco and the weatherboards
- the high levels of moisture penetration into the framing, with decay identified in one area and timber damage likely to also be present in other areas.

7.5.3 The lack of window flashings, and inadequate weatherproofing of other junctions have contributed to a systemic failure and considerable work is required to make the stucco code compliant, including the removal of cladding and the replacement of decayed timber. Further investigation is necessary, including the systematic survey of all risk locations, to determine the full extent of the timber damage and the repairs required.

7.6 Weathertightness conclusion

7.6.1 I consider the expert's report establishes that the current performance of the external envelope is not adequate because it is allowing water penetration into the house at present. Consequently, I am satisfied that the building does not comply with Clause E2 of the Building Code.

7.6.2 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 house to remain weathertight. Because the cladding faults on the house may allow the ingress of moisture in the future, the building work does not comply with the durability requirements of Clause B2.

7.7 The stucco cladding

7.7.1 I consider the expert's report establishes that the current performance of the stucco cladding is not adequate because there is evidence of moisture penetration and decay, and the stucco has not been installed according to good trade practice. In particular, it demonstrates the key defects listed in paragraph 7.5.2, which are likely to have contributed to the moisture penetration and decay evident within the external walls.

7.7.2 I have identified the presence of a range of known weathertightness risk factors for this house. The presence of the risk factors on their own is not necessarily a concern, but they have to be considered in combination with the faults identified in the stucco cladding system. It is that combination of risk factors and faults that indicate that the structure does not have sufficient provisions that would compensate for the lack of a drained and ventilated cavity within the stucco cladding system.

7.7.3 For the stucco cladding, I consider that final decisions on whether code compliance can be achieved by either remediation or re-cladding, or a combination of both, can only be made after a more thorough investigation of the cladding. This will require a careful analysis by an appropriately qualified expert. Once that decision is made, the chosen remedial option should be submitted to the authority for its approval.

7.7.4 I note that the Department has produced a guidance document on weathertightness remediation[6]. I consider that this guide will assist the owners in understanding the issues and processes involved in remediation work to the stucco cladding in particular, and in exploring various options that may be available to them when considering the upcoming work required to the house.

7.8 The weatherboard cladding, the deck and the roof

7.8.1 With regard to the roof and weatherboard claddings, 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 these parts of the external envelope being brought into compliance with Clauses B2 and E2.

[6] External moisture – A guide to weathertightness remediation. This guide is available on the Department's website, or in hard copy by phoning 0800 242 243

7.9 I note that, for a period of more than 15 years, there appears to have been a lack of maintenance that is likely to have contributed to the current condition of the external envelope of this house. 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 clauses

8. Discussion

8.1 Taking account of the expert's report, as outlined in paragraph 5.9.1, I consider that the following items require attention (the associated clauses are shown in brackets):

- The lack of a restrictor to the window above the upper level vanity unit (F4)
- The outlet position of the vent to the upper level toilet (G13).

8.2 I also note the expert's comments in paragraph 5.9.2 on the other items identified by the authority and accept that these areas are adequate in the circumstances.

Matter 3: The durability considerations

9. Discussion

9.1 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 completion of the building work during 1993.

9.2 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).

9.3 In previous determinations (for example Determination 2006/85) I have taken the view that a modification of this requirement can be granted if I can be satisfied that the building complied with the durability requirements at a date earlier than the date of issue of the code compliance certificate, that is agreed to by the parties and that, if there are matters that are required to be fixed, they are discrete in nature.

9.4 Because of the extent of the defects in the stucco cladding, and the possible consequential impact on the building's timber framing and therefore its structure, I am not satisfied that I have sufficient information on which to make a decision about this matter.

9.5 I also note that the notice to fix stated that the applicants may apply to the authority for a modification in respect of the durability provisions, and I therefore leave this matter to the parties to resolve once the cladding and all associated work has been made code compliant.

10. The notice to fix

10.1 The following table summarises conclusions on the items listed within the notice to fix dated 10 March 2008 and refers to the relevant code clauses and related paragraphs within this determination:

Notice to fix		My conclusions	Code Clauses	Paragraph references
Item	**Summarised requirement**			
2.1	**Not to manufacturer's specifications**			
a)	No evidence of control joints in stucco	Adequate	**E2, B2**	5.7 and 7.4.2
b)	Inadequate window flashings in stucco	Remedial work required.	**E2, B2**	5.6 and 7.5.2
c)	Lack of fall to stucco ledges etc	Remedial work required.	**E2, B2**	5.6 and 7.5.2
d)	Lack of capillary gap to stucco base	Remedial work required.	**E2, B2**	5.6 and 7.5.2
e)	Lack of capping to stucco base	Remedial work required.	**E2, B2**	5.6 and 7.5.2
f)	Cracks in stucco	Remedial work required.	**E2, B2**	5.6 and 7.5.2
g)	No sills	Remedial work required	**E2, B2**	5.6 and 7.5.2
2.2	**Not to relevant code requirements at the time**			
a)	Discharge of upper roof to lower roof	Adequate	**E2, B2**	5.7 and 7.4.2
b)	Lack of spreaders to downpipes	Remedial work required	**E2, B2**	5.6 and 7.4.1
c)	Vent pipe to close to eaves, windows etc	Remedial work required	**G13**	5.9.1 and 8.1
d)	Condition of deck membrane	Remedial work required	**E2, B2**	5.6 and 7.4.1
e)	Evidence of moisture ingress	Remedial work required	**E2, B2**	7.6.1 and 7.7.1
f)	Cracks to cladding	Remedial work required	**E2, B2**	5.6 and 7.5.2
g)	Lack of window head flashing projections	Remedial work required	**E2, B2**	5.6, 7.4.1 and 7.5.2
h)	Lack of or no evidence of flashings	Remedial work required	**E2, B2**	5.6, 7.4.1 and 7.5.2
i)	Inadequate sizes of deck outlets/overflows	Adequate	**E1** **E2, B2**	5.7 and 7.4.2 5.9.2 and 8.2
j)	Inadequate step-down to deck	Adequate	**E2, B2**	5.7 and 7.4.2
k)	Upper window sill heights	Remedial work required	**F4**	5.9.1 and 8.1
l)	Inadequate clearances to inside floor levels	Remedial work required	**E2, B2**	5.6 and 7.4.1

m)	Cladding overlap to bottom plates	Remedial work required	**E2, B2**	5.6 and 7.5.2
n)	Gulley trap surrounds and dish position	Adequate	**G13**	5.9.2 and 8.2
2.3	**Not to accepted trade practice**			
a)	Handrail fixed to balustrade top	Remedial work required	**E2, B2**	5.6 and 7.4.1
b)	Lack of back-flashings to inter-cladding junctions	Remedial work required	**E2, B2**	5.8, 7.4.3 and 7.5.2
c)	Claddings not weatherproof	Remedial work required	**E2, B2**	7.6.1 and 7.7.1
d)	Penetrations not sealed	Remedial work required	**E2, B2**	5.6 and 7.4.1
e)	Lack of drip edges	Remedial work required	**E2, B2**	5.6 and 7.5.2
f)	Lack of fall to balustrade top	Remedial work required	**E2, B2**	5.6 and 7.4.1
2.4	**Drainage and ventilation**			
	Inadequate drainage and ventilation of cladding		**E2, B2**	11.1
3.0	**Other building related issues**			
a)	Hot water cylinder	Adequate	**G12**	5.9.2 and 8.2
b)	Lack of back flow preventer to shower	Adequate	**G12**	5.9.2 and 8.2
c)	Condition of paintwork to claddings	Further work required	**E2, B2**	5.6, 7.4.1 and 7.9
d)	Condition of roof tiles	Adequate	**E2, B2**	5.7 and 7.4.2

10.2 The notice to fix also required certain documentation to be provided, including site inspection records and an electrical certificate of compliance. Given that the house was constructed in 1993 and the authority is unable to provide inspection records (refer paragraph 3.2), I consider these requirements to be unreasonable in the circumstances. I leave the remaining documentation to the parties to resolve.

10.3 I am satisfied that the building does not comply with the Building Code. In my opinion the authority made an appropriate decision to issue the notice to fix. However, I am of the view that some items identified in the notice are adequate, so the notice should be modified accordingly (refer to paragraph 11.2).

11. What is to be done now?

11.1 I note that the authority has issued a notice to fix that required provision for a cavity to provide for ventilation, drainage and moisture dissipation. Under the Act, a notice to fix can require the owner to bring the house 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 of a notice to fix, cannot specify how that compliance can be achieved. I concur with that view.

11.2 The notice to fix should be modified and reissued to the owner to take account the findings of this determination, identifying the items listed in paragraphs 7.4.1, 7.5.2 and 8.1, and referring to any further defects that might be discovered in the course of investigation and rectification, but not specifying how those defects are to be fixed. It is not for the notice to fix to stipulate directly how the defects are to be remedied and the house brought to compliance with the Building Code. That is a matter for the owner to propose and for the authority to accept or reject. It is important to note that the Building Code allows for more than one means of achieving code compliance.

11.3 I would suggest that the parties adopt the following process to meet the requirements of paragraph 11.1. Initially, the authority should issue the modified notice to fix. The owner should then produce a response to this in the form of a detailed proposal, based on further investigation as necessary (including investigation of the original framing timbers), and 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.

12. The decision

12.1 In accordance with section 188 of the Act, I hereby determine that:

- the external envelope does not comply with Building Code Clauses B2 and E2
- the building work does not comply with Building Code Clauses F4 and G13
- the authority is to modify the notice to fix, dated 7 November 2008, 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 28 July 2009.

John Gardiner

Manager Determinations